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Hawaiian Volcano Observatory
Annual Seismic Summary

1956 to 1985 Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Open-File Reports 2007-1316 – 2007-1345
U.S. Department of the Interior
U.S. Geological Survey

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January, February, and March 1956
By Gordon A. Macdonald and Jerry P. Eaton

Summary 2
April, May, and June 1956
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Summary 3
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Summary 4
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DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

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Thomas L. Wright and Jennifer S. Nakata

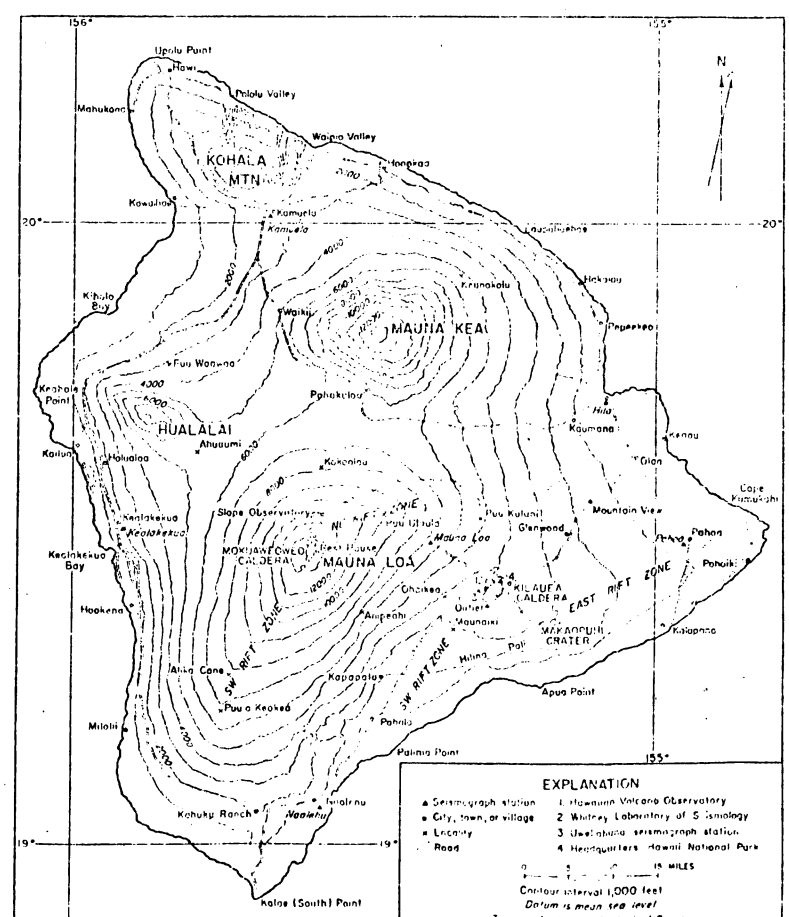
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATOR SUMMARY I

January-March 1956

By

G. A. Macdonald and J. P. Eaton



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Obs tory, seismograph stations operated by the observatory, and localities ment. in text

Feb. 9,	eP	14:39:56.7,	32° N., 116° W. Lower California.
	iL	14:52:38,	Magnitude 6¼-7.
	eT	15:16:27,	
Feb. 12,	iP	12:01:31.8,	19° N., 119½° E. Off northwest coast of Luzon, P. I. Magnitude 6¼-6½.
Feb. 19,	eL	02:37,	52° N., 131½° W. Queen Charlotte Islands. Magnitude 6¾.
Feb. 18,	iP	07:43:52.2,	30° N., 137½° E. South of Honshu, Japan. Depth about 450 km. Magnitude 7¼-7½.
Mar. 3,	iP	00:12:58.2,	15° S., 173½° W. Samoa Islands region. Magnitude 6½-6¾.
Mar. 13,	eP	13:24:43.8,	7° N., 82° W. Off south coast of Panama.
Mar. 22,	iP	06:45:52.3,	3½° S., 79° W. Ecuador. Depth about 100 km Magnitude 6½-6¾.

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs on the islands of Hawaii and Maui operated by the Hawaiian Volcano Observatory. Except for smaller earthquakes of special interest, only earthquakes classed as slight or larger were included in the list. The intensity ratings assigned are based on the Bosch-Omori seismograph at the Whitney Laboratory. This intensity scale has been extended empirically to permit its use with the Loucks-Omori and Sprengnether seismographs. The entries for a given earthquake are: date, time of arrival at the nearest station (Hawaiian standard time), intensity at the nearest station, name of the nearest station, epicenter, and general remarks.

Jan. 9, 05:02:55, slight at Uwekahuna. Near Kilauea caldera.

Feb. 5, 07:21:03, slight at Uwekahuna. Kaoiki fault near Halfway House. Felt at Hawaii National Park and Pahala.

Feb. 18, 17:02:50, moderate at Uwekahuna. Kaoiki fault west of Kilauea caldera. Felt at Hawaii National Park.

Mar. 3, 21:49:35, Moderate at the Whitney Laboratory. Ten km south of Kilauea caldera at a depth of about 10 km. Felt at Hawaii National Park, Olaa, and Hilo.

Mar. 9, 13:35:00, slight at the Whitney Laboratory. Northeast rim of Kilauea caldera. Felt at the Volcano House.

Mar. 10, 01:58:07, slight at Hilo. Off east coast of Hawaii about 20 km east northeast of Hilo at a depth of about 40 km. Felt at Hilo and Glenwood.

Mar. 29, 15:53:27, moderate at Pahoa. East rift of Kilauea south of Pahoa. Felt at Pahoa.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on the seismographs at the Hawaiian Volcano Observatory (19° 25.4' N. latitude, 155° 17.7' W. longitude). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. Locations of epicenters, magnitudes, and depths of focus are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Jan. 10, eP 09:01:46.4, 25° S., 176° W. Tonga Islands region.
eS 09:09:05.7, Depth about 200 km. Magnitude 7¼.

Jan. 31, iP 09:26:19.2, 4° S., 152° E. New Ireland. Depth about 400 km. Magnitude 7-7¼.

Feb. 1, iP 13:50:56.1, 19° N., 145½° E. Marianas Islands. Depth about 350 km. Magnitude 6¼-7.

PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals more frequently than once a year. Heretofore this material was available in *The Volcano Letter*, published by the University of Hawaii, but discontinued with issues number 529 and 530, July-December, 1955. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Summary of volcanic conditions

January

The Hawaiian volcanoes were very quiet during January. Only 12 earthquakes were recorded during the month on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeastern rim of Kilauea caldera. Of these, only 7 were larger than tremors. This is the smallest number since October 1947, when only 11 quakes were recorded, and is the same as the number recorded during February 1954. The more sensitive Sprengnether vertical seismograph at the Uwekahuna station recorded a total of 114 earthquakes during January, but almost all of them were very small.

The gradual subsidence of Kilauea caldera and the surrounding area that had continued through the last months of 1955, following the end of the eruption in east Puna, finally stopped during January, and during the last third of the month there was a small accumulation of northward tilting of the ground surface at the Whitney Laboratory, suggesting the possibility of a small reinflation of the volcano.

February

Volcanic conditions in February were even quieter than in January. The seismograph at the Whitney Laboratory of Seismology recorded only 9 earthquakes during the month, the smallest number for more than 15 years. The Sprengnether vertical seismograph at Uwekahuna recorded 81 earthquakes. The Loucks-Omori seismograph at the Mauna Loa station recorded 28 quakes, and that at the Pahoa station recorded 26. Thus there was more earthquake activity both on Mauna Loa and on the east rift zone of Kilauea than in the Kilauea caldera region.

Tilting of the ground at the Whitney Laboratory was approximately normal in the east-west direction, but there was appre-

ciably less southward tilting than usual at that season of the year. This suggests a slight tumescence of the volcano, probably resulting from an increase of magmatic pressure beneath the caldera region.

March

Earthquake activity at Kilauea volcano increased markedly during March, as compared to that during January and February. The seismograph in the Whitney Laboratory recorded 34 earthquakes, and the more sensitive Sprengnether seismograph at Uwekahuna recorded 197 quakes. The Mauna Loa seismograph recorded 38 quakes, and that at the Pahoa station recorded 22. Even with the increase in activity, however, the number of quakes recorded in the Kilauea caldera region was only slightly greater than that normally recorded during times of volcanic quiet.

Most of the earthquakes appear to have originated in the vicinity of Kilauea caldera, several of them at a depth of about 15 km. Some originated along the east rift zone of Mauna Loa, and others along the east rift zone of Kilauea in east Puna. A quake at $13^h\ 35^m$ on March 9, felt as a sharp short shake in the Headquarters area of Hawaii National Park, came from a focus beneath Kilauea caldera. A quake at $1^h\ 58^m$ on March 10 was felt from Glenwood to Hilo. It seems to have originated about 20 km east northeast of Hilo at a depth of about 40 km.

Many small landslides occurred during the month on the walls of Halemaumau crater. Most of them were on the southwest and northeast sides, where the rift zone intersects the crater walls.

Early on the morning of March 27 a highly sensitive vertical electromagnetic seismograph in a new station at the south edge of Kilauea caldera recorded about 3 hours of continuous tremor resembling that known to accompany the movement of liquid lava in the feeding conduits of the volcano. The tremor was so small that it is barely visible on the records from the other seismographs. It probably was caused by movement of magma deep beneath Kilauea caldera. However, because this new instrument has much higher magnification than any instrument previously operated at Kilauea, we do not know whether or not small-amplitude tremor of this sort is unusual.

As during February, southward tilting of the ground at the Whitney Laboratory was much less than usual at that season of the year, probably indicating a small increase of magmatic pressure beneath the caldera region. Westward tilting was approximately normal in amount.

2. Earthquakes recorded on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeast rim of Kilauea caldera.

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity*
Jan. 1	0	1	0	0	0	0	1	0.5
8	0	3	0	1	0	0	4	3.5
15	0	0	0	0	0	0	0	0
22	2	2	0	0	0	0	4	1.5
29	2	0	0	0	0	0	2	0.5
Feb. 5	0	0	0	1	0	0	1	2.0
12	0	2	0	0	1	0	3	4.0
19	0	3	0	0	0	0	3	1.5
26	1	1	0	0	1	0	3	3.75
Mar. 4	4	3	1	1	0	0	9	5.5
11	0	2	0	0	0	0	2	1.0
18	10	4	0	0	0	0	14	4.5
25	1	3	2	0	0	0	6	3.75

*Local seismicity is an arbitrary value. Each local earthquake is assigned a seismicity value according to its strength, as follows: tremor, 0.25; very feeble, 0.5; feeble, 1.0; slight, 2.0; moderate, 3.0; strong, 4.0. These values are totaled to give the weekly local seismicity. Continuous volcanic tremor is ignored in the calculation. The strength assigned to the earthquake depends on the double amplitude of the maximum oscillation it causes on the Bosch-Omori seismograph, as follows: Tremor, less than 0.5 mm; very feeble, 0.5 to 4 mm; feeble, 4 to 11 mm; slight, 11 to 25 mm; moderate, 25 to 60 mm; strong, greater than 60 mm.

3. Table of tilt at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	Direction	Amount (seconds of arc)	Direction	Amount (seconds of arc)
Jan. 1	N 45° E	0.7	S	0.3
8	S 39° E	2.1	N 34° W	1.2
15	S 57° E	0.4	N 45° W	0.4
22	N 71° W	0.4	S 64° W	0.7
29	N	0.1	S 14° E	1.3
Feb. 5	S 71° W	0.4	S 31° E	1.9
12	N 71° W	0.4	S	0.3
19	N	0.1	S 45° E	0.9
26	S 39° W	0.8	W	0.6
Mar. 4	S 45° W	0.8	.....	0.0
11	S 34° W	0.4	E	0.3
18	W	0.1	S 27° E	1.4
25	S 79° W	0.6	N 26° W	0.7

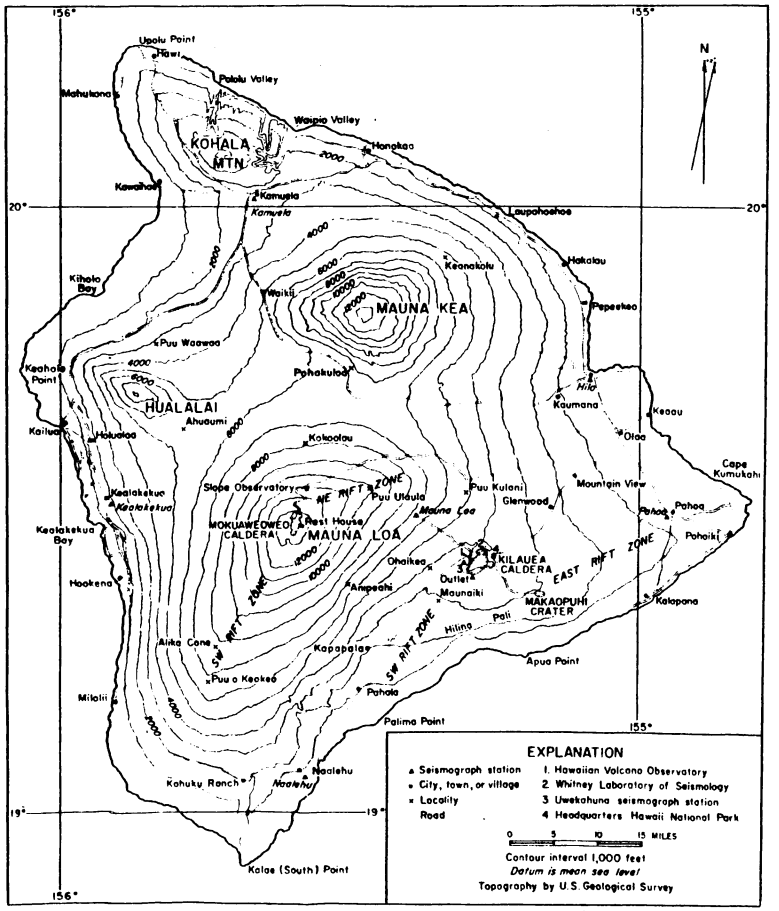
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 2

April–June 1956

By

G. A. Macdonald and J. P. Eaton



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

magnitudes, and depths of focus are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Apr. 18, eP 11:07:31.2, 52° N., 178° W. Andreanof Islands, Aleutian Islands. Magnitude 6-6¼.

Apr. 22, eP 17:29:17.8, 54° N., 162° W. South of Alaska Peninsula. Magnitude 6.

Apr. 23, eP 03:41:12.5, 42½° N., 144° E. Off east coast of Hokkaido. Felt. Magnitude 6½-6¾.

May 6, eT 21:40:20.8, 54½° N., 162½° W. Unimak Island region, Alaska. Magnitude 5½-5¾.

May 23, iP 20:55:40.4, 25½° S., 179° W. Fiji Islands. Depth about
iS 21:00:35.4 450 km. Magnitude 7¼.

May 26, eP 20:28:43.0, 19° S., 178½° W. Fiji Islands. Depth about 550 km. Magnitude 6¼-6½.

May 28, eP 13:35:43.3, 1° N., 121½° E. Northern Celebes. Depth about 100 km.

May 30, eP 15:50:03.5, 23° S., 178½° W. Tonga Islands region. Depth about 350 km.

June 4, eP 07:16:08.2, 52° N., 170½° W. Fox Islands, Aleutian Islands. Magnitude 6¼.

June 13, eP 12:19:45.1, ½° S., 124½° E. Near coast of Celebes. Depth about 200 km.

June 28, eS 13:10:07, 49° N., 129½° W. Off coast of Vancouver
eL 13:14:42 Island, British Columbia. Magnitude 6¼-6½.

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs on the islands of Hawaii and Maui operated by the Hawaiian Volcano Observatory. Except for smaller earthquakes of special interest, only earthquakes classed as slight or larger were included in the list. The intensity ratings assigned are based on the Bosch-Omori seismograph at the Whitney Laboratory. This intensity scale has been extended empirically to permit its use with the Loucks-Omori and Sprengnether seismographs. The entries for a given earthquake are: date, time of arrival at the nearest station (Hawaiian standard time), intensity at the nearest station, name of the nearest station, epicenter, and general remarks.

Apr. 5, 18:48:21, slight at Uwekahuna. About 10 km south of Kilauea caldera at a depth of about 15 km.

Apr. 7, 08:30:57, slight at Mauna Loa. Near the Mauna Loa Slope Observatory at a depth of about 10 km.

Apr. 15, 19:09:20, moderate at Kamuela. About 20 km north northwest of Keahole Point at a depth of about 15 km. Felt at Honokaa.

May 13, 21:53:36, moderate at Kamuela. 20° 17' N., 155° 17' W., about 75 km east of Hana, Maui and about 90 km north of Laupahoehoe, Hawaii. Depth probably about 20 km. Felt from Hawaii National Park on Hawaii to Honolulu on Oahu.

May 21, 01:06:30, slight at Kamuela. Fifteen km northwest of Kamuela at a depth of about 30 km.

May 27, 15:41:00, strong at Mauna Loa. Five km north of Ainapo at a depth of about 5 km. Felt from Kealakekua to Hilo, strongly at Kapapala.

June 7, 00:35:58, moderate at Kona. Near Kealakekua, probably at a shallow depth. Felt at Kealakekua.

June 14, 15:09:55, strong at Kona. Several km north of Kealakekua at a depth of about 5 km. Felt throughout Kona and as far as the Hawaiian Volcano Observatory.

June 24, 15:30:59, slight at Mauna Loa. About 15 km deep near the Mauna Loa seismograph station.

June 24, 15:31:38, slight at Mauna Loa. About 15 km deep near the Mauna Loa seismograph station.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on the seismographs at the Hawaiian Volcano Observatory (19° 25.4' N. latitude, 155° 17.7' W. longitude). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. Locations of epicenters,

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1. Summary of volcanic conditions

April

Seismic activity dropped to a very low level during April. Only 8 earthquakes were recorded by the seismograph beneath the Volcano House. The more sensitive seismograph at Uwekahuna recorded 120 earthquakes during the month, but most of these were very small.

At 7:09 p.m. on April 15 an earthquake originating about 15 km deep 20 km north northwest of Keahole Point was felt at Honokaa. A small swarm of earthquakes about 45 km beneath Kilauea caldera on April 18 and April 19 was followed by a sequence of tiny, shallow earthquakes in or near Kilauea caldera between April 24 and April 30.

Tilting of the ground surface at the northeast rim of Kilauea caldera was negligible during April. Since the normal tilting at this point during April was moderate in amount and directed toward the southwest, the absence of tilt may reflect a slight swelling of the top of Kilauea volcano.

May

Seismic activity in Hawaii increased somewhat during May. Nineteen earthquakes were registered by the seismograph be-

neath the Volcano House, and the more sensitive seismograph at Uwekahuna recorded about 220 mostly very small earthquakes.

An earthquake felt from Hawaii National Park on Hawaii to Honolulu on Oahu at 9:54 p.m. on May 13 originated about 75 km east of Hana, Maui, at a depth of about 20 km. This epicenter lies on the northeast margin of the Hawaiian Arch along a line which has been the site of several large earthquakes during the last 20 years.

At 3:41 p.m. on May 27 an earthquake stemming from a focus about 5 km north of Ainapo and 5 km deep was felt from Kealakekua to Hilo. The shaking was reported to be severe at Kapapala.

Tilting of the ground surface at the Volcano House was toward the northeast and in excess of the normal amount. The reversal from westward to eastward in the east-west component of tilt occurred nearly three months earlier than usual. This early reversal could nave been caused by a tumescence of Mauna Loa; but so many factors, including temperature and rainfall, affect the tilt recorded at the Volcano House that no certain interpretation is possible.

June

Seismic activity on Hawaii again dropped to a very low level during June. Only 5 earthquakes were registered on the seismograph beneath the Volcano House during the month. At Uwekahuna the sensitive Sprengnether seismograph recorded about 300 earthquakes. Most of these were very small, however.

At 12:35 a.m. on June 7 a sharp earthquake originating within a few km of Kealakekua was felt in central Kona. A somewhat larger earthquake from the same region was felt from Kona to Hawaii National Park at 3:09 p.m. on June 14.

On June 30 several hundred very tiny earthquakes from deep beneath Kilauea caldera were recorded at Mauna Loa and Uwekahuna. Swarms of tiny earthquakes have stemmed from this source several times a year for the last three years.

Northward tilting of the earth's surface at the Volcano House was slightly more than normal. The rate of eastward tilting at this location, which had been abnormally rapid for several months, gradually decreased to normal during the last two weeks of June.

2. Earthquakes recorded on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeast rim of Kilauea caldera.

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity *
April 1	2	1	1	1	0	0	5	4.00
8	1	0	0	0	0	0	1	.25
15	0	2	0	1	0	0	3	3.00
22	0	0	0	0	0	0	0	0.00
29	2	5	0	0	0	0	7	3.00
May 6	0	1	0	0	0	0	1	.50
13	1	2	0	1	0	0	4	3.25
20	0	1	0	0	0	0	1	.50
27	2	3	0	0	0	1	6	6.00
June 3	0	0	1	0	0	0	1	1.00
10	0	0	0	1	0	0	1	2.00
17	0	1	0	0	0	0	1	.50
24	0	2	0	0	0	0	2	1.00

*Local seismicity is an arbitrary value. Each local earthquake is assigned a seismicity value according to its strength, as follows: tremor, 0.25; very feeble, 0.5; feeble, 1.0; slight, 2.0; moderate, 3.0; strong, 4.0. These values are totaled to give the weekly local seismicity. Continuous volcanic tremor is ignored in the calculation. The strength assigned to the earthquake depends on the double amplitude of the maximum oscillation it causes on the Bosch-Omori seismograph, as follows: tremor, less than 0.5 mm; very feeble, 0.5 to 4 mm; feeble, 4 to 11 mm; slight, 11 to 25 mm; moderate, 25 to 60 mm; strong, greater than 60 mm.

3. Table of tilt at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	Direction	Amount (seconds of arc)	Direction	Amount (seconds of arc)
April 1	S 63° W	0.3	W	0.3
8	N 57° W	0.4	S 18° E	1.0
15	N 72° E	0.8	S 63° E	0.7
22	S 22° W	0.7	N 45° W	0.5
29	N	0.5	W	0.3
May 6	N	0.8	S 45° E	0.5
13	E	0.5	E	0.3
20	.....	0	W	0.3
27	N 63° E	0.5	N 27° W	1.4
June 3	N 18° E	0.4	N 57° W	1.2
10	N 27° E	0.5	N 63° W	0.7
17	W	0.2	Record interrupted by work in vault.	
24	N 18° E	0.4		

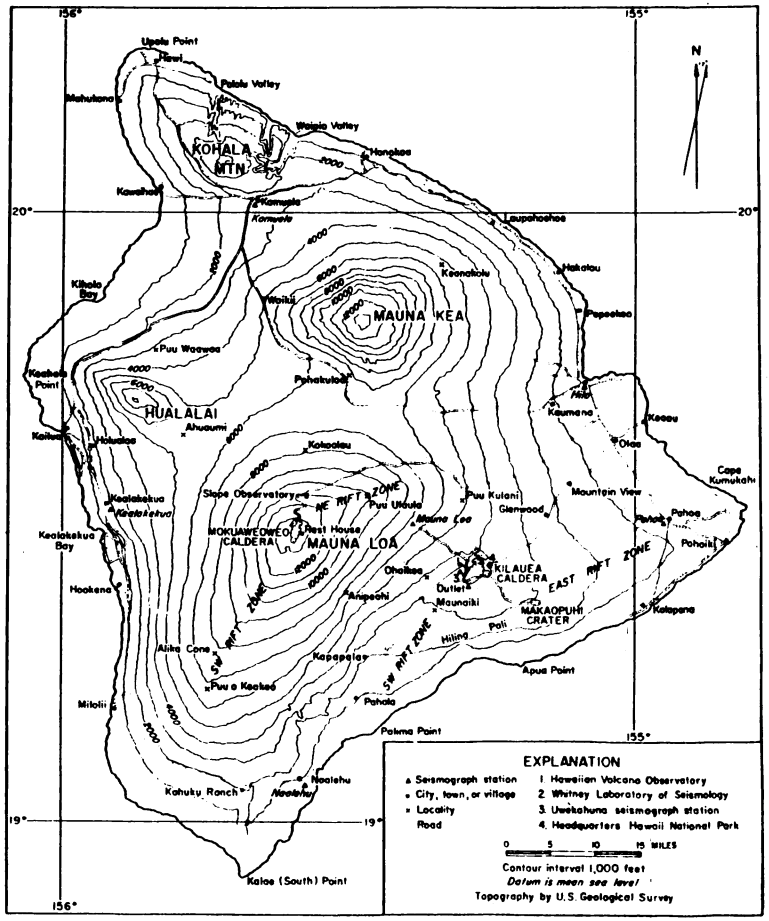
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 3

July–September 1956

By

J. P. Eaton and George D. Fraser



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

July	9,	eP	10:08:00.7,	20° N., 73° W. Near coast at Haiti. Moderate property damage of Port de Paix. Depth about 100 km. Magnitude 6½-6¾.
	17,	iP	07:45:43.4,	7° S., 126½° E. Banda Sea. Depth about 450 km. Magnitude 6¾.
	18,	iP	06:30:55.1,	5° S., 130° E. Banda Sea. Magnitude 7-7½.
	23,	eP	19:36:10.7,	24° S., 102° W. Easter Island region. Magnitude 6¼-6¾.
		eS	19:44:34	
		eL	19:51:26	
Aug.	9,	iP	23:07:59.6,	15° S., 176° W. Samoa Islands region. Depth about 250 km. Magnitude 6¾.
		iS	13:13:46	
		eL	13:16:57	
	12,	eP	17:09:46.7,	34° N., 138° E. Near south coast of Honshu, Japan. Magnitude 6½-6¾.
		eS	17:18:07	
	14,	eL	03:59:46,	Prince Edward Islands region, South Indian Ocean.
	15,	iP	11:03:31.9,	½° S., 123° E. Northern Celebes. Depth about 150 km.
		iS	11:13:44	
		eL	11:25:19	
	15,	eS	13:28:41,	46° N., 151° E. Kurile Islands. Magnitude 6¼.
		eL	13:35:39	
	24,	eP	04:35:21.2,	53° N., 172½° E. Near Islands, Aleutian Islands. Magnitude 6½.
		eS	04:41:40	
		eL	04:46:24	
	30,	eP	04:31:15.1,	54° N., 164° W. Unimak Island, Aleutian Islands. Magnitude 6.
		eS	04:40:27	
		eL	04:41:53	
	30,	eP	05:31:26;	41° N., 126½° W. Off coast of northern California. Magnitude 5½.
		eS	05:38:25	
		eT	06:04:42	
Sept.	11,	eL	02:52:50,	16½° S., 178° E. Fiji Islands. Magnitude 6-6¼.
	11,	eP	21:12:41.7,	40½° N., 155° E. Northern Kurile Islands. Magnitude 6-6¼.
		eS	21:19:51	
		eL	21:26:03	
	16,	eL	09:28:25,	34° N., 69½° E. Magnitude 6¼-6½.
	20,	eP	22:00:38.4,	51½° N., 159½° E. Near south coast of Kamchatka. Magnitude 6¼.
		eS	22:07:37	
	24,	eP	06:12:06.8,	15½° S., 173½° W. Samoa Islands. Magnitude 6.
		eL	06:22:10	
	24,	eP	07:11:16.0,	22° S., 175° E. Fiji Islands region.
		eL	07:23:05	
	29,	iP	22:34:36.7,	3° N., 128° E. Off north coast of Halmahera. Depth about 60 km.
	29,	eP	23:30:48.9,	35½° N., 140° E. Central Honshu, Japan. One killed, several injured and minor property damage in Tokyo. Depth about 60 km. Magnitude 6¾-7.

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs on the islands of Hawaii and Maui operated by the Hawaiian Volcano Observatory. Except for smaller earthquakes of special interest, only earthquakes classed as slight or larger were included in the list. The intensity ratings assigned are based on the Bosch-Omori seismograph at the Whitney Laboratory. This intensity scale has been extended empirically to permit its use with the Loucks-Omori and Sprengnether seismographs. The entries for a given earthquake are: date, time of arrival at the nearest station (Hawaiian standard time), intensity at the nearest station, name of the nearest station, epicenter, and general remarks.

July	26, 01:40:45,	moderate at Naalehu. About five km southeast of Puu o Keokeo on the southwest rift of Mauna Loa. Felt in central Kona.
Aug.	1, 23:22:14,	slight at Naalehu. Ten km north of Naalehu at a depth of about five km.
	3, 15:36:28,	slight at Uwekahuna. Thirty km deep under Kilauea Iki.
Sept.	5, 22:36:35,	slight at Naalehu. About 10 km northnorthwest of Naalehu at a depth of about five km.
	7, 08:15:06,	slight at Uwekahuna. Kaoiki fault near Halfway House at a depth of about 30 km.
	26, 00:43:37,	slight at the Whitney Laboratory. Fifteen km west southwest of Kalapana along the south shore of Kilauea at a depth of about 10 km. Felt in Hilo.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on the seismographs at the Hawaiian Volcano Observatory (19° 25.4' N. latitude, 155° 17.7' W. longitude). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. Locations of epicenters, magnitudes, and depths of focus are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

July	4, eP 00:47:23.7,	18° S., 178½° W. Fiji Islands. Depth about 450 km.
	9, eP 03:30:43.6,	37° N., 26° E. Aegean Sea. 42 killed and many injured. Several towns destroyed on Thira and Ios Islands. Magnitude 7¼-8.

PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals more frequently than once a year. Heretofore this material was available in *The Volcano Letter,* published by the University of Hawaii, but discontinued with issues number 529 and 530, July-December, 1955. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Summary of volcanic conditions

July

A flurry of tiny, shallow earthquakes originating in or near Kilauea caldera the last week of the month made July the most seismic month for Hawaii since April, 1955. On the Sprengnether seismograph at Uwekahuna almost 1400, mostly very small earthquakes were recorded. The Bosch-Omori seismograph in the Whitney station recorded 206 disturbances, of which 51 were earthquakes larger than tremors.

These earthquakes were very similar in appearance to those which accompanied the marked downwarping of the caldera and surrounding area in March and April, 1955, during the Puna eruption.

An earthquake originating about five km southeast of Puu o Keokeo on the southwest rift of Mauna Loa at 1:41 a.m. on July 26 was felt in central Kona.

The rate of eastward tilting of the earth's surface at the Whitney station was somewhat less than normal during July. Northward tilting, however, proceeded at about twice the rate normal for the month.

August

Seismic activity on Hawaii remained at a moderate level during August. Twenty-eight earthquakes registered on the Bosch-Omori seismograph in the Whitney station. Almost all of the more than 400 earthquakes recorded by the Sprengnether seismograph at Uwekahuna originated in or near Kilauea caldera and were very small.

The largest earthquake of the month occurred at 3:36 p.m. on August 3. It originated about 30 km deep under Kilauea Iki Crater just east of Kilauea caldera and was reported felt by no one.

A small earthquake at 11:21 p.m. on August 23 was felt by a few residents of Kona.

At the Whitney station the northward component of tilting of the ground surface was normal for August, but the eastward component was only one third of the normal amount.

September

Frequent, tiny earthquakes in and near Kilauea caldera marked the month of September at Hawaii's volcanoes. Twenty earthquakes were recorded at the Whitney station. The Sprengnether seismograph at Uwekahuna registered 344 earthquakes. Almost all of these were very small and originated in Kilauea caldera.

A shallow earthquake near Kalalua Crater on the east rift of Kilauea was felt in the Volcano area at 7:09 p.m. on September 12. A slightly larger earthquake originating southwest of Kalapana at a depth of about 10 km at 12:44 a.m. on September 26 was felt in Hilo.

Northeastward tilting of the earth's surface at the Whitney station proceeded at about half the rate normal for September.

2. Earthquakes recorded on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeast rim of Kilauea caldera.

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity *
July 1	1	1	0	0	0	0	2	0.75
8	8	2	0	0	0	0	10	3.00
15	30	2	0	0	0	0	32	8.50
22	22	12	1	0	0	0	35	12.50
29	102	34	2	0	0	0	138	44.50
Aug. 5	1	0	0	0	0	0	1	.25
12	2	0	0	0	0	0	2	.50
19	2	10	0	0	0	0	12	5.50
26	2	2	0	0	0	0	4	1.50
Sept. 2	1	3	1	0	0	0	5	2.75
9	0	1	2	0	0	0	3	2.50
16	4	4	0	0	0	0	8	3.00
23	1	0	0	1	0	0	2	2.25

*Local seismicity is an arbitrary value. Each local earthquake is assigned a seismicity value according to its strength, as follows: tremor, 0.25; very feeble, 0.5; feeble, 1.0; slight, 2.0; moderate, 3.0; strong, 4.0. These values are totaled to give the weekly local seismicity. Continuous volcanic tremor is ignored in the calculation. The strength assigned to the earthquake depends on the double amplitude of the maximum oscillation it causes on the Bosch-Omori seismograph, as follows: Tremor, less than 0.5 mm; very feeble, 0.5 to 4 mm; feeble, 4 to 11 mm; slight, 11 to 25 mm; moderate, 25 to 60 mm; strong, greater than 60 mm.

3. Table of tilt at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	Direction	Amount (seconds of arc)	Direction	Amount (seconds of arc)
July 1	N 22° E	0.7	Record interrupted by work in vault.	
8	N 23° W	.9		
15	N 37° E	.6		
22	N 22° E	.7	W 33° S	0.5
29	N 37° E	.6	S	.5
Aug. 5	N 14° E	.5	W	.3
12	N 11° W	.6	N	.2
19	N 27° E	.3	N 31° W	.9
26	N 33° W	.4	W 37° N	1.5
Sept. 2	E 33° N	.4	W 6° S	1.5
9	N 45° E	.5	N 33° W	1.1
16	N	.1	S 45° W	1.1
23	E	.2	W 8° N	1.1

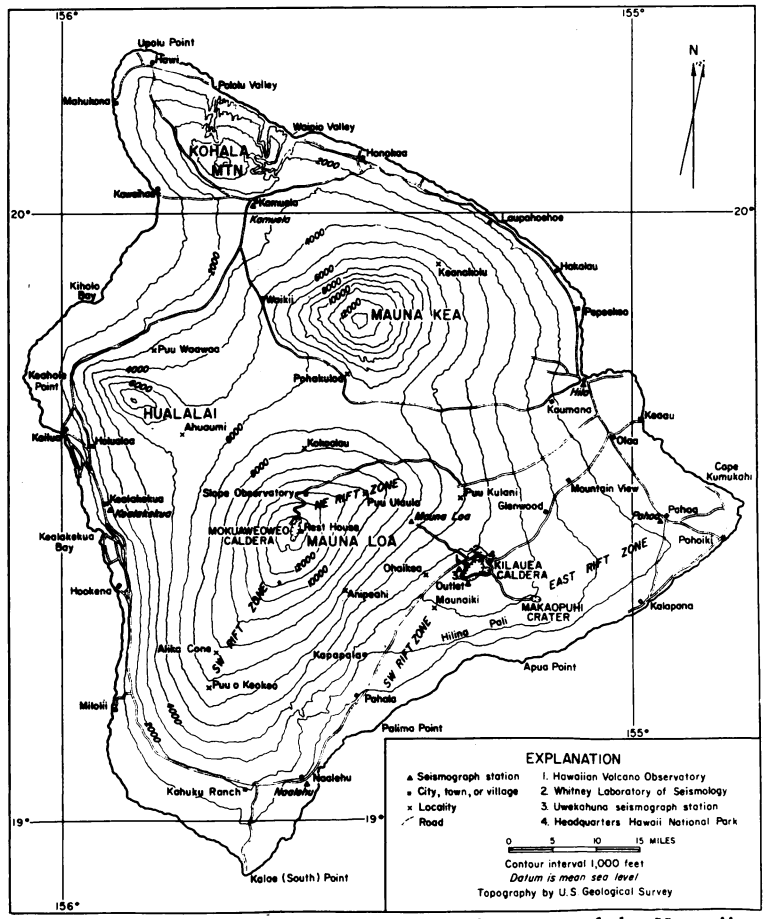
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 4

October–December 1956

By

J. P. Eaton and George D. Fraser



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

Oct. 26,	eS eL	23:06:29, 23:13:11	14° S., 167° E. New Hebrides Islands. Magnitude 6½.
Oct. 28,	iP iS eL	03:38:27.4, 03:46:23 03:54:23	32° S., 179° W. Kermades Islands. Magnitude 6½.
Nov. 4,	eP	07:14:04.9,	20½° S., 176½° W. Tonga Islands. Depth about 100 km. Magnitude 6½-6¾.
Nov. 9,	iP eS	13:15:53.9, 13:23:44	17° N., 94° W. Southern Mexico. Slight damage in Oaxaca Province. Depth about 150 km. Magnitude 6.
Nov. 17,	eP eL eT	20:35:03.8, 20:43:29 21:14:43	54½° N., 134° W. Queen Charlotte Islands region. Felt: Ketchikan, Alaska. Magnitude 6¼-6½.
Nov. 28,	eP eL	19:36:01, 19:50:40	49½ N., 155° E. Northern Kurile Islands. Magnitude 6¾-7.
Nov. 29,	eP	09:25:03.3,	27° N., 141° E. Bonin Islands. Magnitude 7.
Dec. 8,	eP iS iL	16:17:53, 16:23:23 16:27:21	51° N., 179½° W. Andreanof Islands, Aleutian Islands. Magnitude 6½.
Dec. 18,	eP eS iL eT	02:44:39.3, 02:56:49 03:14:11 04:27:54	25½° S., 68½° W. Chile-Argentina border. Felt: Antofagasta and Copiapo. Magnitude 6¾-7¼.
Dec. 21,	iS eL eT	09:12:04, 09:14:20 09:44:58	51° N., 131° W. Queen Charlotte Islands. Magnitude 6½-6¾.
Dec. 23,	eP	08:47:03,	22° N., 144½° E. Marianas Islands region. Depth about 100 km. Magnitude 6½.
Dec. 27,	iP iS eL	00:22:27.0, 00:29:08 00:33:13	24° S., 177° W. Tonga Islands region. Depth about 300 km. Magnitude 7-7¼.
Dec. 28,	eP eS eL	14:34:56.1, 14:45:42 14:55:03	38° S., 167½° E. Near coast of North Island, New Zealand. Depth about 150 km. Magnitude 6¼-6¾.

Oct. 20, 22:05:14, feeble at Pahoa. Near the south shore of Kilauea 10 km southwest of Kalapana at a depth of about 5 km. Felt in Hilo.

Oct. 25, 07:05:14, slight at Uwekahuna. Near Kilauea caldera at a depth of 30 km.

Nov. 3, 08:05:12, slight at Uwekahuna. Near Kilauea caldera at a depth of about 10 km.

Nov. 13, 00:11:25, slight at Uwekahuna. On the Kaoiki fault near Kilauea caldera at a depth of about 10 km. Felt at the north rim of Kilauea caldera.

Nov. 15, 17:43:46, slight at Mauna Loa. Near the Mauna Loa seismograph station at a depth of about 10 km.

Dec. 14, 19:13:21, feeble at Kona. Near the Kona seismograph station. Felt in Kona.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on the seismographs at the Hawaiian Volcano Observatory (19° 25.4' N. latitude, 155° 17.7' W. longitude). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. Locations of epicenters, magnitudes, and depths of focus are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Oct. 11,	eP 02:33:33.1, eS 02:40:46 iL 02:47:57	46° N., 150½° E.	Kurile Islands. Felt: Hokkaido, Japan. Depth about 100 km. Magnitude 7¼-7½.
Oct. 11,	eP 16:55:24.4, eS 17:00:41 iL 17:02:07 eT 17:28:32	40½° N., 126½° W.	Off Cape Mendocino, Calif. Felt: Coastal area of northern California. Magnitude 6.
Oct. 19,	eL 14-42,	56½° S., 122° W.	South Pacific Ocean. Magnitude 6½.
Oct. 19,	eP 20:55:03.5, eS 21:01:08 eL 21:05:16	52° N., 177° E.	Rat Islands, Aleutian Islands. Magnitude 6¾.
Oct. 23,	eP 08:53:28.0,	13½° N., 120½° E.	Mindoro Island, Philippine Islands. Depth about 100 km.
Oct. 24,	eP 14:53:06.3, iS 15:01:58 iL 15:09:37	12° N., 87° W.	Near coast of Nicaragua. Minor damage at Managua. Felt: Southern El Salvador. Magnitude 7-7¼.
Oct. 25,	eP 05:32:43,	12° N., 87° W.	Nicaragua aftershock. Felt: El Salvador and Nicaragua. Magnitude 6-6½.

PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals more frequently than once a year. Heretofore this material was available in *The Volcano Letter,* published by the University of Hawaii, but discontinued with issues number 529 and 530, July-December, 1955. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Summary of volcanic conditions.

October

The swarm of tiny earthquakes from the region of Kilauea caldera that began near the end of July continued through October. At Uwekahuna the Sprengnether seismograph recorded 702 quakes. As in past months these earthquakes predominantly were very small and originated in or near Kilauea caldera at shallow depths.

At 12:45 a.m. on October 16, a strong earthquake from an epicenter at sea about 45 km west of Kailua, Kona, was felt over the entire island of Hawaii and as far north as Honolulu on Oahu.

At the Whitney station on the northeast rim of Kilauea caldera, northeastward tilting of the earth's surface continued at a rate slightly less than normal for October.

November

During November the swarm of small earthquakes from Kilauea caldera declined slightly. The Sprengnether seismograph at Uwekahuna registered 562 quakes, most of which originated within a few km of the station.

Only one earthquake was reported felt during November. It occurred at 12:26 a.m. on the 13th on the Kaoiki fault near Kilauea caldera and was felt along the north rim of the caldera.

At the Whitney station normal eastward tilting continued through the month, but tilting toward the north reversed sharply in mid-November. This reversal from northward to southward tilting occurred about one month earlier than usual.

December

Seismic activity declined slightly during December. Almost all of the 439 disturbances recorded by the Sprengnether seismograph at Uwekahuna originated at Kilauea caldera and were very small.

The only earthquake reported felt during the month shook central Kona at 7:13 p.m. on December 14.

At the Whitney station on the northeast rim of Kilauea caldera, southward tilting of the ground surface was slightly in excess of the amount normal for December.

2. Earthquakes recorded on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeast rim of Kilauea caldera.

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity *
Sept. 30	2	1	0	0	0	0	3	1.00
Oct. 7	3	0	0	0	0	0	3	0.75
14	0	1	2	0	0	1	4	6.50
21	2	1	0	0	0	0	3	1.00
28	2	1	0	0	0	0	3	1.00
Nov. 4	4	1	0	0	0	0	5	1.50
11	2	4	1	0	0	0	7	3.50
18	16	5	0	0	0	0	21	6.50
25	23	14	0	0	0	0	37	12.75
Dec. 2	13	8	0	0	0	0	21	7.25
9	6	2	0	0	0	0	8	2.50
16	7	2	0	0	0	0	9	2.75
23	11	5	0	0	0	0	16	5.25

* Local seismicity is an arbitrary value. Each local earthquake is assigned a seismicity value according to its strength, as follows: tremor, 0.25; very feeble, 0.5; feeble, 1.0; slight, 2.0; moderate, 3.0; strong, 4.0. These values are totaled to give the weekly local seismicity. Continuous volcanic tremor is ignored in the calculation. The strength assigned to the earthquake depends on the double amplitude of the maximum oscillation it causes on the Bosch-Omori seismograph, as follows: tremor, less than 0.5 mm; very feeble, 0.5 to 4 mm; feeble, 4 to 11 mm; slight, 11 to 25 mm; moderate, 25 to 60 mm; strong, greater than 60 mm.

3. Table of tilt at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	Direction	Amount (seconds of arc)	Direction	Amount (seconds of arc)
Sept. 30	E 18° N	0.8	W 18° N	0.5
Oct. 7	N 45° E	0.2	W	0.5
14	E 34° N	0.9	W 18° S	1.0
21	E 27° S	0.3	W	0.2
28	N 45° E	1.0	W 34° N	0.5
Nov. 4	E 11° N	0.6	N 27° W	0.3
11	S	0.1	W 18° S	0.5
18	E	0.7	W 27° N	0.3
25	S 18° E	0.8	S 14° E	0.6
Dec. 2	S 30° W	1.0	E 22° N	0.8
9	S 45° W	0.2	W 11° S	0.8
16		0	W 18° N	0.5
23	E 18° N	0.4	S	0.5

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs on the islands of Hawaii and Maui operated by the Hawaiian Volcano Observatory. Except for smaller earthquakes of special interest, only earthquakes classed as slight or larger were included in the list. The intensity ratings assigned are based on the Bosch-Omori seismograph at the Whitney Laboratory. This intensity scale has been extended empirically to permit its use with the Loucks-Omori and Sprengnether seismographs. The entries for a given earthquake are: date, time of arrival at the nearest station (Hawaiian standard time), intensity at the nearest station, name of the nearest station, epicenter, and general remarks.

Oct. 11, 12:53:34, slight at Kamuela. About 20 km northwest of Kamuela at a depth of about 15 km. Felt in Kamuela.

Oct. 16, 00:44:55, strong at Kona. At sea about 45 km west of Kailua, Kona, at a shallow depth. Felt over the entire island of Hawaii and as far as Honolulu on Oahu.

Oct. 16, 17:31:24, slight at Kona. Aftershock of previous earthquake. Felt in Kona.

Oct. 20, 20:23:04, very feeble at Pahoa. Near the south shore of Kilauea 10 km southwest of Kalapana at a depth of about 5 km. Felt in Hilo.

Hawaiian Volcano Observatory
1957 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 5
January, February, and March 1957
By Jerry P. Eaton and George D. Fraser

Summary 6
April, May, and June 1957
By Jerry P. Eaton and George D. Fraser

Summary 7
July, August, and September 1957
By Jerry P. Eaton and George D. Fraser

Summary 8
October, November, and December 1957
By Jerry P. Eaton and George D. Fraser

Open-File Report 2007-1317
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

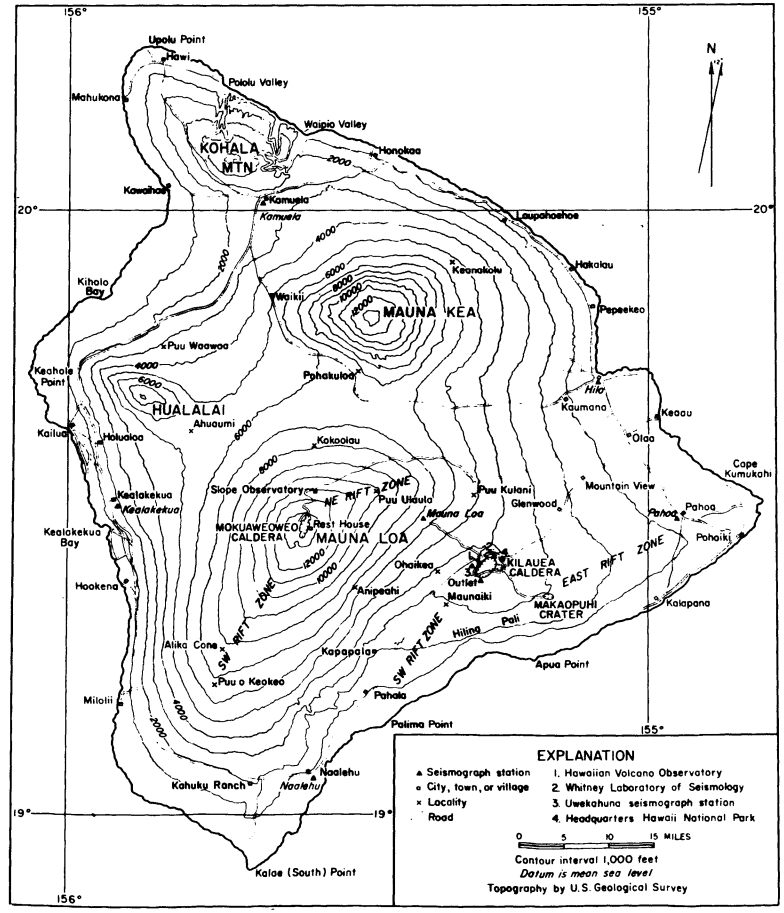
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 5

January-March 1957

By

J. P. Eaton and George D. Fraser



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

Mar. 29

H Tmax 08:08:30

53½ N., 167 W., 07:25:58

Mar. 29

U iP 22:56:39.5 c
eL 23:07:45

H eL 23:05:17
Tmax 23:32:15

53 N., 169 W., 22:49:51
Magnitude 6-6¼

Mar. 30

H Tmax 01:27:10

51½ N., 179½ W., 00:42:40

Mar. 30

U iP 09:24:04.3 d
Tmax 10:02:43

H Tmax 10:00:10

52 N., 175 W., 09:17:00

Mar. 31

U eP 10:15:46
eL 10:25:31
Tmax 10:55:00

H Tmax 10:52:45

51½ N., 178 W., 10:08:28

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PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals more frequently than once a year. Heretofore this material was available in *The Volcano Letter*, published by the University of Hawaii, but discontinued with issues number 529 and 530, July-December, 1955. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Summary of volcanic conditions

January

The swarm of tiny earthquakes which has been emanating from Kilauea caldera since July, 1956, continued into 1957. Of the 490 earthquakes recorded by the Sprengnether seismograph at Uwekahuna during the month, 360 originated at moderate depths beneath the caldera on January 12, 13, and 14. Most of the others were from shallow foci in or near the caldera.

Four earthquakes were reported felt on Hawaii during January. At 9:26 p. m. on January 6 an earthquake from an epicenter near the northeast rim of Kilauea caldera was felt at Hawaii National

Park headquarters. An earthquake in Kona on January 6 was felt by many people in central Kona at 8:45 a. m. The largest earthquake on Hawaii during the month originated seven km east of Anipeahi on the southeast flank of Mauna Loa at 12:54 p. m. on January 7. It was felt from Kilauea caldera to central Kona. An earthquake from an epicenter in Kona was felt by several people in central Kona at 6:35 p. m. on January 22.

Tilting of the ground surface at the Whitney station was marked by the absence of strong southerly tilting normal for January. Westward tilting recorded during the month was only slightly less than normal.

February

The number of earthquakes recorded on the Sprengnether seismograph at Uwekahuna increased to 525 for February. Almost all of these earthquakes were very small and stemmed from shallow foci in or near Kilauea caldera.

The largest earthquake of the month, which was felt near Kilauea caldera and in central Kona, originated 7 km west of Apua Point at a depth of 15 km on February 11 at 2:03 p. m. An earthquake in Kona at 5:35 p. m. on February 23 was felt by many people in central Kona.

Tilting of the earth's surface recorded at the Whitney station was in the southwesterly direction normal for this season, but its amount was only one fifth of that expected for February.

March

Increased seismic unrest at Kilauea caldera raised the number of earthquakes recorded by the Sprengnether seismograph at Uwekahuna to 1,260 for March. These earthquakes, half of which occurred on March 2, 3, and 4, were predominantly from extremely shallow foci in or near the caldera.

An earthquake which originated 10 km beneath the sea 25 km southeast of Apua Point at 7:57 a. m. on March 13 was felt just east of Kilauea caldera. A slightly larger earthquake with a focus 30 km deep and 5 km west of Uwekahuna which occurred at 10:07 a. m. on March 14 was not reported felt.

At the Whitney station on the northeast rim of the caldera strong southerly tilting normal for March was entirely absent. Only a weak westerly tilting which was normal in direction but only one third of the normal amount was recorded.

Mar. 23

U iP 05:24:20.2 d

H iP 05:24:18.1 d

5½ S., 131 E., 05:12:31
Magnitude 7

Mar. 23

H Tmax 09:35:33

Mar. 23

U eP 13:31:33

51½ N., 179 W., 13:24:33

Mar. 23

H Tmax 22:51:18

Mar. 23

U eP 07:36:33 c
Tmax 08:15:50

H Tmax 08:13:33

51 N., 179½ W., 07:29:15

Mar. 24

U eP 08:29:38.3 c
eL 08:38:44
Tmax 09:09:13

H eL 08:39:33
Tmax 09:07:41

51 N., 130 W., 08:22:23
Magnitude 6-7

Mar. 24

U iP 11:13:00.5 d
Tmax 11:50:45

H Tmax 11:48:43

52½ N., 169½ W., 11:06:10

Mar. 24

U iP 11:43:47.0 d
eL 11:53:03
Tmax 12:21:03

H eP 11:43:36
Tmax 12:19:15

52½ N., 171½ W., 11:36:50

Mar. 24

H Tmax 14:37:59

Mar. 25

U eP 00:46:17.1 c
Tmax 01:23:57

H Tmax 01:21:48

53 N., 168 W., 00:39:22

Mar. 25

H Tmax 01:47:28

52 N., 176 W., 01:03:59

Mar. 25

U eP 14:20:26.6

54 N., 165½ W., 14:13:33

Mar. 26

H Tmax 02:53:04

54 N., 165½ W., 02:10:15

Mar. 26

H Tmax 03:37:14

51 N., 177½ W., 02:47:50

Mar. 26

U iP 16:09:01.1 d

50½ N., 180 W., 16:01:53

Mar. 28

H Tmax 18:04:44

Mar. 28

U eL 20:29:24

51 N., 171½ W., 20:08:20

Mar. 29

U iP 05:17:24.8 d
iS 05:22:59
eL 05:25:29
Tmax 05:54:46

H eP 05:17:15
eS 05:22:29
eL 05:24:26
Tmax 05:52:47

53½ N., 167 W., 05:10:28

Mar. 17—Continued

H eL 23:00:14
Tmax 23:27:23

54 N., 166 W., 22:44:44
Magnitude 6½

Mar. 18

U eP 02:32:22
eL 02:41:34
Tmax 03:09:54

H Tmax 03:07:45

52½ N., 171 W., 02:24:39

Mar. 18

U eL 21:40

6 S., 152 E., 21:14:12

Mar. 19

H Tmax 04:22:48

52 N., 175½ W., 03:39:35

Mar. 19

H Tmax 12:12:31

51½ N., 176½ W., 11:28:50

Mar. 19

U iP 12:57:50.9 c
eS 13:03:59
eL 13:07:17
Tmax 13:36:30

H eP 12:57:43
eL 12:05:03
Tmax 13:34:11

51½ N., 175 W., 12:50:51
Magnitude 6¾

Mar. 19

H Tmax 21:08:01

Mar. 20

U eP 00:29:09

53 N., 169 W., 00:22:25

Mar. 20

H Tmax 01:25:21

Mar. 21

U iP 12:38:25.2 d

H eP 12:38:14
Tmax 13:13:52

52 N., 171 W., 12:31:30

Mar. 22

H Tmax 00:18:32

Mar. 22

U iP 14:28:03.7 c
i 14:28:14.6 d
iS 14:33:37
eL 14:37:06
Tmax 15:05:55

H eP 14:27:49
eS 14:33:05
eL 14:34:47
Tmax 15:03:39

54 N., 166 W., 14:21:06
Magnitude 7

Mar. 22

U eP 14:40:01.5 c
Tmax 15:17:25

H Tmax 15:15:16

54 N., 165½ W., 14:33:13

Mar. 22

U eP 17:16:39.0
Tmax 17:54:32

H Tmax 17:52:15

52½ N., 171 W., 17:09:51

Mar. 22

U eL 20:00:02
eT 20:25:21
iT 20:26:04
Tmax 20:26:20

H eT 20:25:49
Tmax 20:26:18

37.9 N., 122.6 W., 19:44:22
Magnitude 5¼-5½

Mar. 23

H Tmax 00:56:43

2. Earthquakes recorded on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeast rim of Kilauea caldera.

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity*
Dec. 30	0	0	0	0	1	0	1	3.00
Jan. 6	1	0	1	1	0	0	3	3.25
13	0	4	0	0	0	0	4	2.00
20	0	2	0	0	0	0	2	1.00
27	1	6	0	0	0	0	7	3.25
Feb. 3	3	3	0	0	0	0	6	2.25
10	4	6	0	0	1	0	11	6.00
17	0	3	0	0	0	0	3	1.50
24	0	3	0	0	0	0	3	1.50
Mar. 3	0	2	0	0	0	0	2	1.00
10	0	4	2	0	0	0	6	4.00
17	8	2	0	0	0	0	10	3.00
24	1	3	0	0	0	0	4	1.75

* Local seismicity is an arbitrary value. Each local earthquake is assigned a seismicity value according to its strength, as follows: tremor, 0.25; very feeble, 0.5; feeble, 1.0; slight, 2.0; moderate, 3.0; strong, 4.0. These values are totaled to give the weekly local seismicity. Continuous volcanic tremor is ignored in the calculation. The strength assigned to the earthquake depends on the double amplitude of the maximum oscillation it causes on the Bosch-Omori seismograph, as follows: Tremor, less than 0.5 mm; very feeble, 0.5 to 4 mm; feeble, 4 to 11 mm; slight, 11 to 25 mm; moderate, 25 to 60 mm; strong, greater than 60 mm.

3. Table of tilt at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	Direction*	Amount (seconds of arc)	Direction	Amount (seconds of arc)
Dec. 30	N 56° W	0.4	----------	0
Jan. 6	N 45° E	1.0	N 76° W	1.3
13	S 58° W	1.1	W	0.5
20	S 53° E	0.6	N 72° E	0.3
27	N 76° W	0.5	W	0.3
Feb. 3	N 72° E	0.4	W	0.6
10	S 27° E	0.3	N 18° W	0.5
17	S 45° W	0.5	N 57° E	0.5
24	S 50° W	0.9	S 45° E	0.9
Mar. 3	N 9° W	0.7	E	0.2
10	S 45° W	0.2	N 51° W	0.8
17	S 56° E	0.4	S 18° W	0.5
24	N 53° W	0.6	E	0.5

* Note: In some previous issues, some unconventional expressions of direction were used, i.e., E 18° N, or W 18° N.
The directions are correct as stated, and not typographic errors.

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs on the islands of Hawaii and Maui operated by the Hawaiian Volcano Observatory. Except for smaller earthquakes of special interest, only earthquakes classed as slight or larger were included in the list. The intensity ratings are based on the Bosch-Omori seismograph at the Whitney Laboratory. This intensity scale has been extended empirically to permit its use with the Loucks-Omori and Sprengnether seismographs. The entries for a given earthquake are: date, origin time (Hawaiian standard time), intensity at the nearest station, epicenter, and general remarks.

Jan. 3, 21:25:42, moderate at the Whitney Laboratory. Northeast rim of Kilauea caldera. Felt by a few people at Hawaii National Park headquarters.

Jan. 6, 03:52:46, slight at Mauna Loa. Ten km southwest of the Mauna Loa seismograph station at a shallow depth.

Jan. 6, 08:45, feeble at Kealakekua Central Kona. Felt by many people in central Kona.

Jan. 7, 12:54:15, moderate at Mauna Loa. Seven km east of Anipeahi at a shallow depth. Felt from Kilauea caldera to Kona. Magnitude 4.3.

Jan. 22, 18:35:24, slight at Kealakekua. Central Kona. Felt by several people in central Kona.

Jan. 29, 07:36:42, feeble at Naalehu. At sea south of Hawaii 35 km west southwest of Naalehu at a depth of about 5 km.

Feb. 11, 14:03:24, moderate at Uwekahuna. Seven km west of Apua point at a depth of 15 km. Felt in the vicinity of Kilauea caldera and in central Kona. Magnitude 4.0.

Feb. 23, 17:34:32, moderate at Kealakekua. Central Kona. Felt by many people in central Kona.

Mar. 2, 05:04:33, moderate at Mauna Loa. Five km southwest of the Mauna Loa seismograph station at a depth of 5 km.

Mar. 6, 00:01:25, slight at Naalehu. Five km north of Naalehu.

Mar. 13, 07:57:26, very feeble at Uwekahuna. Twenty-five km southeast of Apua point at a depth of about 10 km. Felt near Kilauea caldera. Magnitude 3.5.

Mar. 14, 10:06:48, slight at Uwekahuna. Five km west of Uwekahuna at a depth of 30 km. Magnitude 3.8.

Mar. 17, 10:51:11, slight at Mauna Loa. Seven km south of the Mauna Loa seismograph station at a depth of 5 km.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on seismographs of the Hawaiian Volcano Observatory on Hawaii

Mar. 13

H Tmax 08:05:57

52 N., 178 W., 07:21:54

Mar. 13

H Tmax 09:50:42

52½ N., 170 W., 09:09:34

Mar. 13

U iP 15:49:17.4 d
iS 15:55:04
eL 15:58:52
Tmax 16:28:50

H eP 15:49:05.8
eL 15:56:50
Tmax 16:20:17

51½ N., 179 W., 15:42:05
Magnitude 6¾

Mar. 13

U eP 20:06:45
eS 20:11:40
eL 20:15:10
Tmax 20:43:48

H Tmax 20:42:03

54 N., 166 W., 19:59:23

Mar. 14

U eL 02:10:16

52½ N., 169 W., 01:52:16

Mar. 14

U Tmax 04:20:13

Mar. 14

H Tmax 11:16:38

Mar. 14

U iP 14:54:48.1 d
iS 15:00:41
eL 15:04:25
Tmax 15:33:44

H eP 14:54:36
eS 15:00:13
eL 15:02:06
Tmax 15:31:38

51½ N., 177 W., 14:47:45
Magnitude 7¼-7½

Mar. 14

U iP 15:58:06.3 c

51½ N., 177½ W., 15:51:00

Mar. 15

U iP 02:58:59.4 d
iS 03:04:33
eL 03:07:37
Tmax 03:36:28

H eP 02:58:36
eL 03:06:12
Tmax 03:34:28

53 N., 167 W., 02:52:08
Magnitude 6½-6¾

Mar. 16

U eP 02:41:30.2 d
i 02:41:47.7 d
iS 02:47:15
eL 02:51:01
Tmax 03:21:20

H eP 02:41:17
eS 02:46:43
eL 02:49:08
Tmax 03:18:46

52 N., 179 W., 02:34:12
Magnitude 6¾-7

Mar. 17

U eL 08:21

51 N., 179 W., 07:53:51

Mar. 17

U Tmax 12:14:42

H Tmax 12:12:39

53½ N., 167 W., 11:30:07

Mar. 17

U eP 16:23:58 d
eL 16:32:54

H eL 16:32:13

52½ N., 166 W., 16:17:13

Mar. 17

U eP 22:51:39.6 c
eS 22:57:15
eL 23:00:54
Tmax 23:29:12

Mar. 10

H Tmax 21:55:11

Mar. 11

U eL 00:26:02

52 N., 174 W., 00:08:07

Mar. 11

U iP 03:19:45.8 d
eS 03:25:39
eL 03:28:48
Tmax 03:58:47

H eP 03:19:32
eL 03:27:12
Tmax 03:56:15

51 N., 177 W., 03:12:41
Magnitude 6¾-7

Mar. 11

U iP 10:05:36.2 d
iS 10:11:13
eL 10:14:29
Tmax 10:43:02

H eP 10:05:27.5
eS 10:10:49
eL 10:12:46
Tmax 10:40:53

53 N., 164½ W., 09:58:42
Magnitude 6¾-7¼

Mar. 11

U iP 15:02:31.7 c
iS 15:08:15
eL 15:12:01
Tmax 15:42:12

H eP 15:02:15
eS 15:07:49
eL 15:10:04
Tmax 15:39:36

51½ N., 178½ W., 14:55:19
Magnitude 6¾-7¼

Mar. 11

U iP 15:43:08.1 c
Tmax 16:22:18

H eP 15:42:57
Tmax 16:20:15

51½ N., 178 W., 15:35:58

Mar. 12

H Tmax 03:04:57

53 N., 170½ W., 02:22:57

Mar. 12
U iP 07:35:43.6 c
iS 07:41:21
eL 07:44:35
Tmax 08:13:56

H eL 07:43:27
Tmax 08:11:42

51½ N., 173½ W., 07:28:40
Magnitude 6¼-7

Mar. 12

U eP 07:46:25.7 c
Tmax 08:25:48

H Tmax 08:23:33

52 N., 178 W., 07:39:17
Magnitude 6¼-6½

Mar. 12

U eP 11:51:54.4 c
e 11:52:04 c
iS 11:57:40
eL 12:01:20
Tmax 12:31:06

H eP 11:51:47
eS 11:57:28
eL 11:59:43
Tmax 12:29:03

51 N., 177 W., 11:44:50
Magnitude 7-7¼

Mar. 12

U eP 12:53:07.0 c
Tmax 13:30:32

H Tmax 13:28:22

53 N., 168½ W., 12:46:12

Mar. 12

H Tmax 20:43:07

Mar. 13

U iP 02:55:13.1 d
eL 03:03:45
Tmax 03:32:45

52 N., 171½ W., 02:48:20

(Uwekahuna, U, 19° 25.4' N, 155° 17.6' W, 1240m) and on Maui (Haleakala, H, 20° 46.0' N, 156° 15.0 W, 2090m). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Jan. 2

U eP 00:46:13.0 c
iS 00:51:48
eL 00:54:48

53° N., 168½° W., 00:39:22
Magnitude 6½-6¾

Jan. 2

U eP 02:24:26.8 c
iS 02:29:58
eL 02:33:00

H Tmax 03:00:06

52½ N., 168 W., 02:17:35
Magnitude 6¾

Jan. 2

U eP 03:19:42.8 c
iS 03:25:16
eL 03:28:32

H eL 03:27:13
Tmax 03:55:32

53 N., 168 W., 03:12:52
Magnitude 7

Jan. 2

U eP 03:55:37.7 c
eS 04:01:13

H eL 04:04:58
Tmax 04:31:01

53 N., 168 W., 03:48:44
Magnitude 7-7¼

Jan. 2

U eP 04:10:18

52½ N., 169 W., 04:03:26

Jan 2

U eP 10:56:25.0
eS 11:01:56
eL 11:04:56

H eL 11:04:40

52½ N., 168 W., 10:49:32

Jan. 3

U eP 00:47:58

53 N., 168 W., 00:41:02

Jan. 3

U iP 12:58:17.6 c
eS 13:06:19

H eP 12:58:08.6

44 N., 130 E., 12:48:27
Magnitude 7. Depth about 600 km.

Jan. 9

U iP 07:59:56.2 c
eS 08:05:22
eL 08:08:37

H eL 08:07:15

53 N., 167½ W., 07:52:56
Magnitude 6¼-6½

Jan. 17

U eP 22:36:28.7 c

33 N., 137½ E., 22:26:10

Jan. 25
U iP 03:43:56.4 d
eL 03:53:35
Tmax 04:22:58

H Tmax 04:20:27

51½ N., 177 W., 03:36:47

Jan. 28

U eP 08:23:47.9 d
eL 08:34:02

H eP 08:23:57

15½ S., 173 W., 08:16:19

Feb. 3

U eP 17:33:41.1
eS 17:40:46
eL 17:45:05

53½ N., 159 E., 17:24:50
Magnitude 6¼-6¾

Feb. 9

U eL 16:51:43

41½ N., 126 W., 16:38:10
Magnitude 6¼-6½

Feb. 10

U eP 22:44:09.1 c

10 N., 126 E., 22:32:15
Magnitude 6½-6¾

Feb. 10

U eP 23:02:53.5 d

10½ N., 126½ E., 22:50:52
Magnitude 6¾

Feb. 11

U eP 01:26:44 c

10 N., 126 E., 01:14:44

Feb. 13

U eP 00:41:40.2 d

10 N., 126½ E., 00:29:48

Feb. 13

U eP 12:45:48

18 S., 170 E., 12:36:51

Feb. 17

U eP 16:11:21.5 c

Banda Sea?, 16:03:55

Feb. 21

U eP 14:36:58.0 c

53 N., 171 W., 14:30:06
Magnitude 6¾. Depth about 100 km.

Feb. 23

U eP 20:38:03.5 d

H eP 20:38:01.9
eL 21:03

24 N., 122 E., 20:26:12
Magnitude 7-7¼

Mar. 9

U iP 14:29:29.3 c
i 14:29:47.1 c
Tmax 15:09:19

H eP 14:29:06.0
Tmax 15:06:45

51 N., 175 W., 14:22:27
Magnitude 8-8½, Tsunami

Mar. 9

U P 14:39:29
Tmax 15:17:43

H Tmax 15:15:40

Mar. 9

U eP 15:48:48.7
Tmax 16:26:29

H Tmax 16:25:55

50½ N., 177 W., 15:41:50

Mar. 9

H Tmax 16:59:55

Mar. 9

H Tmax 17:29:40

51½ N., 174 W., 16:45:26

Mar. 9

H Tmax 18:40:10

Mar. 9

H Tmax 20:20:30

51½ N., 173 W., 19:37:31

Mar. 9

U iP 20:46:08.4 d
iS 20:51:42
eL 20:54:35
Tmax 21:23:35

H eP 20:45:58
eL 20:53:21
Tmax 21:21:44

52½ N., 169½ W., 20:39:15
Magnitude 6¾-7¼

Mar. 9

H Tmax 22:16:55

Mar. 9

H Tmax 22:38:55

53 N., 168 W., 21:56:24

Mar. 10

H Tmax 01:15:55

Mar. 10

H Tmax 02:26:05

Mar. 10

U iP 03:13:11.4 d
eS 03:18:46
eL 03:22:14

H eP 03:13:05
Tmax 03:49:10

52 N., 176 W., 03:06:02
Magnitude 6½-6¾

Mar. 10

U iP 03:15:59.5 c
Tmax 03:53:09

H Tmax 03:51:55

51½ N., 174 W., 03:08:55

Mar. 10

H Tmax 05:13:10

Mar. 10

H Tmax 08:12:40

52 N., 176 W., 07:23:18

Mar. 10

H Tmax 10:57:25

Mar. 10

U eP 11:27:36
iS 11:33:12
eL 11:38:52
Tmax 12:05:19

H Tmax 12:03:05

52 N., 171 W., 11:19:57

Mar. 10

U eP 12:42:55.0
eL 12:51:18
Tmax 13:21:31

51 N., 171 W., 12:36:04

Mar. 10

U eP 13:17:43.6
Tmax 13:56:38

H Tmax 13:55:25

51½ N., 180 W., 13:10:13

Mar. 10

U eP 13:35:51.1
eL 13:45:11
Tmax 14:15:16

H Tmax 14:12:15

51½ N., 179 W., 13:28:30

Mar. 10

H Tmax 14:32:55

Mar. 10

U eP 15:33:18.3
iS 15:38:55
eL 15:42:21
Tmax 16:11:15

H Tmax 16:08:45

52 N., 173 W., 15:26:23
Magnitude 6¾

Mar. 10

U eP 16:46:43.0
Tmax 17:23:45

H Tmax 17:22:30

51½ N., 173½ W., 16:37:45

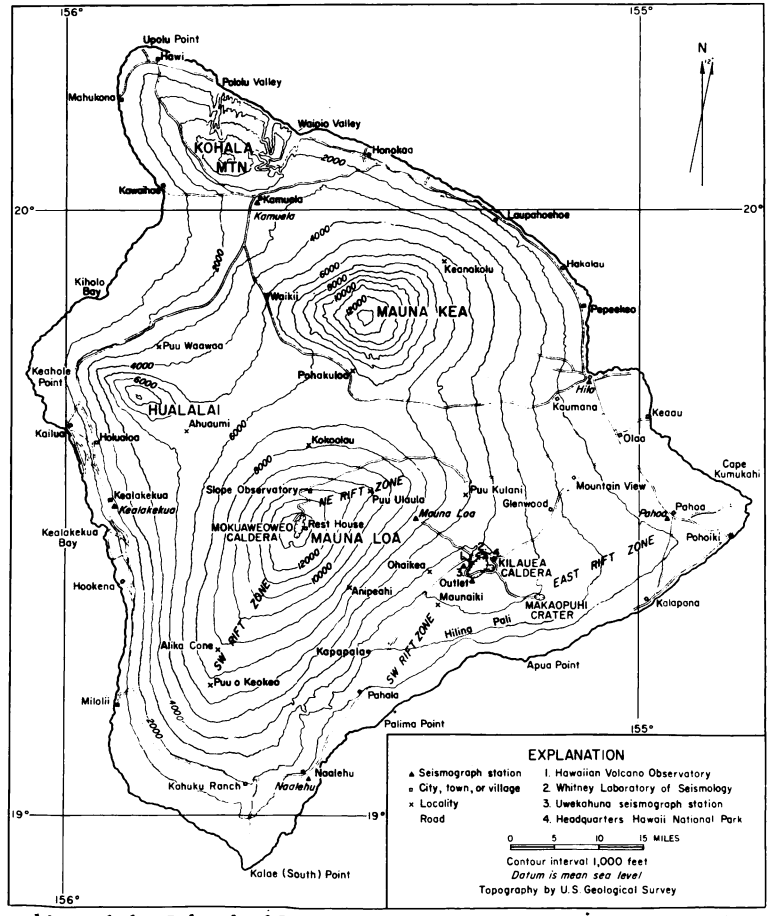
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 6

April–June 1957

By

J. P. Eaton and George D. Fraser



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

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PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals more frequently than once a year. Heretofore this material was available in *the Volcano letter,* published by the University of Hawaii, but discontinued with issues number 529 and 530, July-December, 1955. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Summary of volcanic conditions

April

The Sprengnether seismograph at Uwekahuna recorded 590 earthquakes during April as seismic activity at Kilauea continued at a high level. Almost all these earthquakes were very small and originated at shallow depths in or near Kilauea caldera.

The earthquake that was felt in Kamuela at 10:29 p.m. on April 5 originated near Kamuela. Hawaii's largest earthquake for the month occurred just south of Kilauea caldera at 9:58 a.m. on April 6. It was felt in the vicinity of the caldera.

At the Whitney station on the northeast rim of Kilauea caldera, gentle northeasterly tilting of the earth's surface prevailed during April instead of the moderate southwesterly tilting normal for the month. This evidence for tumescence of the summit of of Kilauea was supported by the northwesterly tilting recorded at Uwekahuna on the west rim of the caldera.

May

Seismic unrest at Kilauea continued through the first three weeks of May. The Sprengnether seismograph at Uwekahuna recorded 705 earthquakes during the month. As in previous months, most of these earthquakes were very small and originated at shallow depths in or near Kilauea caldera.

An earthquake that occurred about 5 km southwest of Pahala at 4:52 p.m. on May 14 was felt at Kapapala. The largest earthquake of the month on Hawaii was felt from Hilo to Kapapala at 3:38 a.m. on May 16. It originated about 5 km south of the Mauna Loa seismograph station. At 10:53 on May 18 a few persons in Capt. Cook felt an earthquake that stemmed from the Kealakekua fault. An earthquake from a focus 35 km deep and 10 km southeast of Uwekahuna was felt from Kilauea caldera to Hilo at 6:47 a.m. on May 21. This earthquake marked the end of the months-long sequence of shallow earthquakes at Kilauea caldera.

Tilting of the earth's surface outward from Kilauea caldera recorded at the Uwekahuna and Whitney stations during April ceased abruptly at the end of the first week in May. For the remainder of the month both stations recorded a moderate tilting toward the caldera.

June

Only 90 earthquakes were recorded by the Sprengnether seismograph at Uwekahuna during June. This is the smallest number recorded during any month since February 1956.

A small earthquake beneath the northeast rim of Kilauea caldera was felt sharply in the vicinity of the caldera at 6:41 a.m. on June 5. Two small earthquakes were felt at Capt. Cook during June. The first of these occurred at 12:36 a.m. on June 9; the second, at 10:37 p.m. of June 20. The largest earthquake of the month originated 13 km north of Naalehu at 11:00 p.m. on June 23. It was not reported as felt.

At the Whitney station moderate southwesterly tilting of the earth's surface replaced the moderate northwesterly tilting normal for June.

2. Earthquakes recorded on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeast rim of Kilauea caldera.

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity *
Mar. 31	0	3	0	1	0	0	4	3.25
Apr. 7	0	0	0	0	0	0	0	0.00
14	16	2	0	0	0	0	18	5.00
21	5	8	0	0	0	0	13	5.25
28	25	13	0	1	0	0	39	14.75

June 19,

U eP 08:10:21
iS 08:16:36
eL 08:19:51

16½° S, 176½° E, 08:01:30

Magnitude 6½-6¾

June 20,

U iP 01:16:04.8 d

H iP 01:15:57.1

20° N, 145½° E, 01:06:25

June 22,

U iP 06:29:03.1 d
eS 06:37:04
eL 06:44:12

H iP 06:29:03.5 d

16° N, 94° W, 06:19:06

Magnitude 6½

June 23,

U iP 00:01:38.5 d
eS 00:10:43
eL 00:18:51

H eS 00:11:15

1° S, 137° E, 23:50:23

Magnitude 7-7¼

June 23,

U eL 03:45:39
Tmax 04:18:05

H Tmax 04:16:42

58½° N, 137° W, 03:27:02

Magnitude 5½-5¾

June 24,

U iP 09:59:42.7

16° N, 94° W, 09:49:47

June 27,

U eP 00:21:01.7 d
eS 00:30:34
eL 00:40:28

H iP 00:20:53.1 d
eS 00:30:23
eL 00:40:09

56½° N, 116° E, 00:09:28

Magnitude 7½-7¾

June 29,

U iP 07:54:57.3 c
eS 08:00:29
eL 08:03:34

H Tmax 08:30:48

51½° N, 166° W, 07:48:18

June 29,

H Tmax 11:34:00

51½° N, 178° W, 10:49:42

Table–Continued

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity *
May 5	11	6	0	0	0	0	17	5.75
12	33	10	0	1	0	0	43	15.25
19	4	0	1	0	0	0	5	2.00
26	1	0	0	0	0	0	1	0.25
June 2	0	2	0	0	1	0	3	4.00
9	0	0	0	0	0	0	0	0.00
16	0	1	0	0	0	0	1	0.50
23	1	0	1	0	0	0	2	1.25

* Local seismicity is an arbitrary value. Each local earthquake is assigned a seismicity value according to its strength, as follows: tremor, 0.25; very feeble, 0.5; feeble, 1.0; slight, 2.0; moderate, 3.0; strong, 4.0. These values are totaled to give the weekly local seismicity. Continuous volcanic tremor is ignored in the calculation. The strength assigned to the earthquake depends on the double amplitude of the maximum oscillation it causes on the Bosch-Omori seismograph, as follows:

Tremor, less than 0.5 mm; very feeble, 0.5 to 4 mm; feeble, 4 to 11 mm; slight, 11 to 25 mm; moderate, 25 to 60 mm; strong, greater than 60 mm.

3. Table of tilt at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	Direction	Amount (seconds of arc)	Direction	Amount (seconds of arc)
March 31	.....	0.0	N 72° W	0.5
April 7	S	0.4	N 56° W	0.5
14	S 27° E	0.3	N 45° W	0.6
21	N 23° E	0.9	N 76° W	1.2
28	E	0.1	N 56° W	0.5
May 5	S 11° E	0.6	N	0.3
12	S 63° W	0.3	S 63° W	0.7
19	W	0.5	S 67° E	1.2
26	S 72° W	0.4	N 82° E	1.1
June 2	S 53° W	0.6	S 56° E	1.1
9	S	0.7	N 14° E	0.6
16	N 45° W	0.2	N 41° W	1.4
23	N 63° W	0.3	S	0.2

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs operated by the Hawaiian Volcano Observatory on the islands of Hawaii and Maui. Except for smaller earthquakes of special interest, only earthquakes classed as slight or larger were included in the list. The intensity ratings are based on the Bosch-Omori seismograph at the Whitney Laboratory. This intensity scale has been extended empirically to permit its use with the Loucks-Omori and Sprengnether seismographs. The entries for a given earthquake are: date, origin time (Hawaiian standard time), intensity at the nearest station, epicenter, and general remarks.

Apr. 5, 22:28:40, moderate at Kamuela. Near Kamuela at a depth of about 30 km. Felt 5 km northwest of Honokaa.

Apr. 6, 09:57:38, slight at Uwekahuna. Five km south of Uwekahuna at a depth of about 35 km. Felt in the vicinity of Kilauea caldera. Magnitude 3.8.

Apr. 28, 12:00:40, slight at Uwekahuna. Five km west of Makaopuhi Crater at a depth of 15 km. Magnitude 3.3.

May 14, 16:51:47, feeble at Naalehu. Five km southwest of Pahala at a depth of 20 km. Felt at Kapapala.

May 16, 03:38:27, moderate at Mauna Loa. Five km south of the Mauna Loa seismograph station at a depth of 15 km. Felt from Hilo to Kapapala. Magnitude 3.5.

May 18, 10:52:56, very feeble at Kealakekua. Kealakekua fault. Felt at Capt. Cook.

May 21, 06:46:44, feeble at the Whitney station. Ten km southeast of Uwekahuna at a depth of 35 km. Felt from Kilauea caldera to Hilo. Magnitude 3.1.

June 5, 06:41:19, moderate at the Whitney station. One km north of the Whitney station at a depth of 2 km. Felt along the northeast rim of Kilauea caldera.

June 5, 20:43:02, very feeble at Pahoa. Sixty km south of Pahoa (18° 57' N, 154° 56' W) at a depth of 55 km. Magnitude 3.0.

June 9, 00:35:52, feeble at Kealakekua. Kealakekua fault. Felt at Capt. Cook.

June 20, 22:37:15, very feeble at Kealakekua. Kealakekua fault. Felt at Capt. Cook.

June 23, 23:00:25, moderate at Naalehu. 13 km north of Naalehu at a depth of 5 km. Magnitude 3.3.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on seismographs of the Hawaiian Volcano Observatory on Hawaii (U=Uwekahuna, 19° 25.4' N, 155° 17.6' W, 1240m), and Maui (H=Haleakala, 20° 46.0' N, 156° 15.0' W, 2090m). Beginnings

June 6,

U iP 20:01:49.4

3° N, 126½° E, 19:49:47

June 7,

H Tmax 03:30:42

51½° N, 179° W, 02:46:40

June 10,

U iP 01:13:00.5

H iP 01:12:59.3

9° S, 117° E, 00:59:54

June 10,

U iP 03:22:58.8 c

H iP 03:22:52.8 c

13½° N, 143½° E, 03:13:11

Magnitude 6¾-7

June 11,

U eP 14:59:07.6
iS 15:06:46
eL 15:13:45

H iP 14:59:14.4

30° S, 178° W, 14:49:47

Depth about 100 km.
Magnitude 6¾-7

June 11,

U eP 19:01:34.3

H eP 19:01:28.4 d

18° N, 120½° E, 18:49:24

June 12,

U eP 00:00:58

H eP 00:00:45
Tmax 00:37:31

52° N, 176° W, 23:53:57

June 12,

U eP 08:38:17.5 c

H eP 08:38:06.9 c

41½° N, 142½° E, 08:28:34

June 13,

U eP 10:47:38.2 c
iS 10:53:17
eL 10:56:25
Tmax 11:26:26

H eP 10:47:29 c
Tmax 11:24:09

51½° N, 175° W, 10:40:38

Magnitude 7

June 13,

U iP 21:39:42.2 c

½° N, 123½° E, 21:27:18

June 14,

U iP 06:31:26.6 d
eS 06:37:04
eL 06:40:56
Tmax 07:09:40

H Tmax 07:07:57

52° N, 175½° W, 06:24:20

Magnitude 6¼

June 15,

U eP 18:25:15
eS 18:30:53
eL 18:35:23
Tmax 19:02:41

H Tmax 19:00:38

52° N, 171° W, 18:18:20

Magnitude 6

June 17,

U iP 06:24:13 d

15° S, 173½° W, 06:16:44

Magnitude 5¾

June 18,

U iP 11:30:57.7 c

18° N, 120½° E, 11:18:53

Depth about 60 km.

June 18,

U iP 18:05:49.3 d
iS 18:13:42
eL 18:21:08

25° S, 170° E, 17:56:03

Magnitude 6

May 2,
U eP 11:35:58.9
H Tmax 12:11:35
52½° N, 169° W, 11:29:13

May 2,
U eP 11:45:43.8
Tmax 12:23:00
H Tmax 12:21:25
52½° N, 169° W, 11:38:52

May 2,
U iP 21:48:17.3 d
7½° S, 120° E, 21:36:25
Depth about 600 km.

May 8,
U eP 20:17:15.6 d
eL 20:26:47
15½° S, 179° E, 20:09:55
Depth about 400 km.

May 18,
U eP 05:30:19
51° N, 171° W, 05:24:01

May 20,
U eL 02:08
51° N, 180°, 01:50:54

May 21,
U iP 01:21:36.7 d
iS 01:29:23
H iP 01:21:28.5 d
21½° N, 144° E, 01:11:58
Depth about 100 km.

May 22,
U eP 13:36:39.6
eS 13:42:21
eL 13:45:19
H eP 13:36:27.2 d
eS 13:40:47
eL 13:43:47
Tmax 14:11:44
50° N, 177° W, 13:29:44
Magnitude 6½

May 24,
U iP 02:49:43.9 d
H iP 02:49:48.6 d
3° N, 76½° W, 02:37:37
Magnitude 6½-6¾

May 24,
U eP 03:43:42
Tmax 04:20:43
H Tmax 04:18:44
53° N, 167½° W, 03:36:33
Magnitude 6-6¼

May 26,
U e 06:55:02
eL 07:29:39
41° N, 31° E, 06:33:31
Magnitude 7

May 31,
U eP 22:24:27
H eP 22:24:17.4
Tmax 23:01:29
51° N, 179½° W, 22:17:10

June 4,
U iP 11:23:38.0 c
H iP 11:23:38.1 c
10½° S, 166½° E, 11:14:50

June 4,
U iP 17:12:25.5 c
H iP 17:12:31.1 c
17½° S, 178° W, 17:05:02
Depth about 550 km.
Magnitude 6¼-6½

June 6,
H Tmax 04:14:45
52° N, 178° W, 03:30:22

June 6,
U eP 05:45:29.8 c
Tmax 06:22:30
H e 05:45:24
Tmax 06:20:45
52° N, 171½° W, 05:38:27

of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Apr. 1,
U iP 08:06:04.2
4½° N, 129° E, 07:54:20
Depth about 100 km.

Apr. 1,
U eP 11:42:19.3
51° N, 173° W, 11:35:30

Apr. 2,
U iP 00:46:33.6 c
51° N, 173° W, 00:39:42

Apr. 2,
U eP 20:23:47.5
51½° N, 173° W, 20:16:57

Apr. 2,
U eP 21:34:47.4
51° N, 173° W, 21:27:54

Apr. 4,
U iP 00:20:19.8 d
58° N, 155½° W, 00:13:08
Depth about 150 km.

Apr. 5,
U iP 02:56:36.7 c
Tmax 03:33:51
H Tmax 03:31:50
52° N, 172½° W, 02:49:39
Magnitude 6½

Apr. 5,
U iP 07:39:39.4 d
26½° S, 177° W, 07:30:22
Depth about 100 km.
Magnitude 6¾

Apr. 5,
U eP 16:22:57.2 d
12½° N, 88° W, 16:12:20
Depth about 100 km.

Apr. 7,
U eP 10:25:20.8
1° S, 137½° E, 10:14:08
Magnitude 6-6¼

Apr. 8,
U iP 20:29:29.9 d
8½° N, 83° W, 20:18:09
Magnitude 6½

Apr. 9,
U iP 00:34:11.5 c
30½° N, 138½° E, 00:24:39
Depth about 450 km.
Magnitude 6¼-6¾

Apr. 9,
H Tmax 10:43:38
51° N, 178½° W, 09:59:27

Apr. 9,
U eP 11:09:25.9 d
Tmax 11:48:22
H Tmax 11:46:19
51½° N, 178½° W, 11:02:12

Apr. 9,
H Tmax 18:24:26
51½° N, 179½° W, 17:40:13

Apr. 9,
U iP 20:30:45.6 c
52½° N, 169° W, 20:23:56

Apr. 9,
H Tmax 23:33:48
51½° N, 177° W, 22:49:47

Apr. 10,
U eP 03:32:27.8 c
Tmax 04:09:33
H Tmax 04:07:27
53° N, 168° W, 03:25:20

Apr. 10,
U iP 05:21:37.1 d
15½° N, 98° W, 05:12:08
Magnitude 6½-7

Apr. 10,
U iP 09:16:18.2 c
51° N, 177° W, 09:09:18

Apr. 10,
U eP 11:37:06.0 c
eS 11:42:42
eL 11:46:04
Tmax 12:15:48
H eL 11:44:52
Tmax 12:14:42
56° N, 154° W, 11:29:58
Magnitude 7-7¼

Apr. 10,
U eP 13:28:20
Tmax 14:06:16
51½° N, 176½° W, 13:20:14

Apr. 12,
H Tmax 05:01:50
51½° N, 178½° W, 04:17:45
H Tmax 07:37:58
51½° N, 176° W, 06:49:11

Apr. 12,
H Tmax 13:46:48
Andreanof Islands, 13:03:45

Apr. 13,
U e 03:53:43
eL 03:59:48
Tmax 04:29:01
48½° N, 128° W, 03:44:00

Apr. 13,
U eP 06:42:04 d
6½° N, 126½° E, 06:30:08

Apr. 14,
U eP 19:25:26.2 c
i 19:25:28.3 d
eS 19:31:32
eL 19:34:41
Tmax 20:03:31
H iP 19:25:35.3
eL 19:34:45
Tmax 20:06:03
15½° S, 173° W, 19:17:57
Magnitude 7½-8

Apr. 14,
U iP 21:06:03.6
50½° N, 179° W, 20:59:00

Apr. 15,
U eP 10:45:47.6 d
eS 10:51:35
eL 10:55:19
H Tmax 11:22:50
51½° N, 179° W, 10:38:37

Apr. 15,
H Tmax 20:37:16
51½° N, 176° W, 19:53:39

Apr. 15,
U eP 21:39:59
eS 21:45:21
eL 21:50:19
H Tmax 22:18:26
51½° N, 167° W, 21:33:05

Apr. 16,
U eP 04:16:46.3 c
ipP 04:18:53.5 c
eG 04:44:22
4½° S, 107½° E, 04:04:04
Depth about 600 km.
Magnitude 7½

Apr. 17,
U eP 08:15:15.5 c
20° S, 176° W, 08:07:58
Depth about 200 km.

Apr. 17,
U eP 09:34:47.4 c
Tmax 10:12:08
52½° N, 171° W, 09:27:54

Apr. 17,
U eP 13:31:47.4
Tmax 14:09:15
H Tmax 14:07:26
52½° N, 169° W, 13:24:58

Apr. 18,
U eP 07:07:12.0 d
Tmax 07:45:49
51½° N, 176° W, 07:00:06

Apr. 19,
U eP 15:51:34.2 c
eS 15:57:01
eL 15:59:54
51½° N, 168½° W, 15:44:53

Apr. 19,
U iP 22:26:14.1 d
i 22:26:25 c
iS 22:31:43
eL 22:34:36
H Tmax 23:02:05
52° N, 166½° W, 22:19:26
Magnitude 7-7¼

Apr. 20,
U eL 07:24
54½° S, 148½° E, 06:48:04

Apr. 21,
U eP 21:24:46.9 c
H eP 21:24:55.2
7° N, 72° W, 21:12:26
Magnitude 6½-6¾

Apr. 25,
U eP 02:44:37.5 d
eL 03:24
36½° N, 29° E, 02:25:36
Magnitude 7-7¼

Apr. 25,
U eP 11:18:09.9 c
1½° N, 126° E, 11:06:02

Apr. 25,
U eL 22:14
33° N, 115½° W, 21:57:36
Magnitude 5½-6

Apr. 25,
U eL 22:40
33½° N, 115½° W, 22:24:11
Magnitude 5½-6

Apr. 28,
U iP 01:35:36.8 d
7° N, 127° E, 01:23:40
Magnitude 5¾-6

Apr. 28,
U eL 15:06
52½° N, 168½° W, 14:48:52

Apr. 29,
U eL 04:48
52½° N, 168½° W, 04:30:04

May 1,
U eP 23:35:18.5 d
52½° N, 171° W, 23:28:09

May 2,
H Tmax 03:04:44
54° N, 166° W, 02:22:18

May 2,
U iP 04:06:53.5 c
72° N, 67½° W, 03:55:34
Magnitude 6-6½

May 2,
U eP 10:46:30 d
eL 11:10:53
56½° S, 123° W, 10:34:14

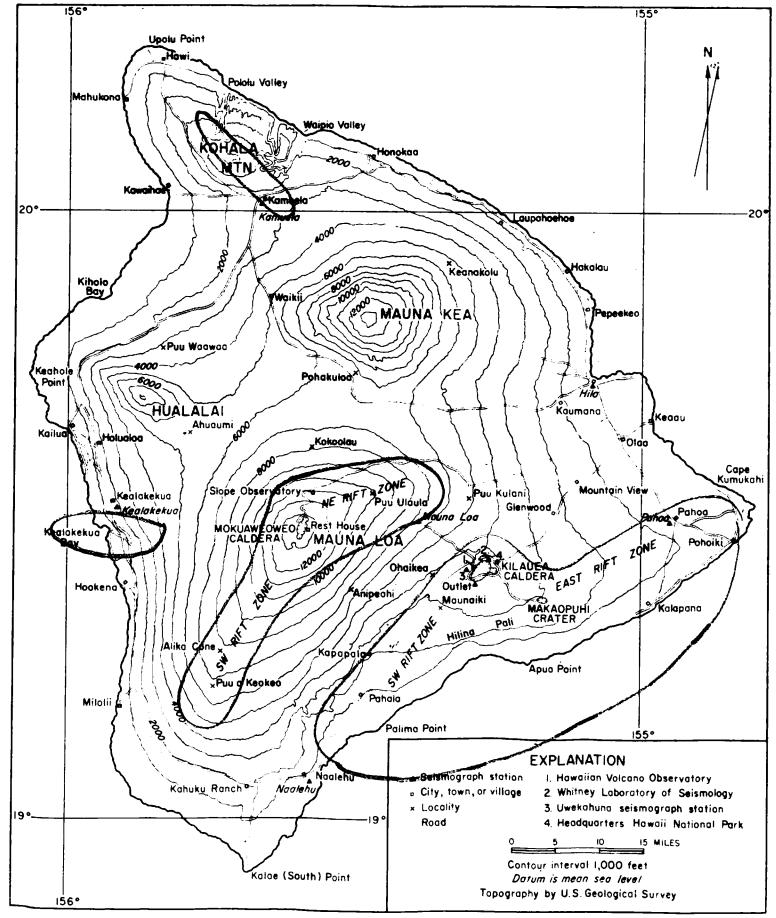
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 7

July-September 1957

By

J. P. Eaton and George D. Fraser



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

Aug. 28,

U eP 23:59:54

21° N, 145° E, 23:50:15

Sept. 7,

U eP 10:13:50
eL 10:23:32
Tmax 10:53:13
H eP 10:13:43
Tmax 10:50:56

51½° N, 178½° W, 10:06:47

Sept. 10,

U iP 15:39:43

5° N, 125½° E, 15:29:40

Sept. 12,

U eP 00:38:49

17½° N, 85° W, 00:28:02

Sept. 20,

U eP 23:14:13

52° N, 170½° W, 23:07:22

Sept. 24,

U iP 08:33:01.4 d
eS 08:42:39
eG 08:51:29
H eP 08:32:56.8 d

5½° N, 127° E, 08:21:05
Magnitude 7¾

Sept. 26,

U eP 12:13:36

39½° S, 174½° E, 12:03:01
Depth 150 km

Sept. 27,

U iP 04:20:35 d

1° S, 127° E, 04:08:23

Sept. 27,

U eP 04:30:52

1° S, 127½° E, 04:18:49

Sept. 27,

UTmax 06:32:20
HTmax 06:30:25

53° N, 168° W, 05:48:15

Sept. 28,

U iP 00:37:01.4 c
H iP 00:36:52.5 c

30½° N, 137½° E, 00:27:31
Depth about 500 km.
Magnitude 6¾

Sept. 28,

U iP 14:27:32.9 d
iS 14:33:35
H iP 14:27:38.3 d
iS 14:33:46

20½° S, 178° W, 14:20:00
Depth about 650 km.
Magnitude 7 - 7½

Sept. 29,

U iP 06:49:36.7 c

0°, 124° E, 06:37:33
Depth about 200 km.

Sept. 29,

U iP 08:21:36.5
H iP 08:21:41.5

25° S, 178½° E, 08:12:22
Depth about 600 km.
Magnitude 6¼

33402

PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals more frequently than once a year. Heretofore this material was available in *The Volcano Letter,* published by the University of Hawaii, but discontinued with issues number 529 and 530, July-December, 1955. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Summary of Volcanic Conditions

July

The Sprengnether seismograph at Uwekahuna recorded 190 earthquakes during July. Most of these earthquakes were very small and originated in the vicinity of Kilauea caldera.

A strong earthquake originating about 8 km southwest of Waikii at 12:54 a.m. on July 4 was felt generally over the island of Hawaii. Nine minutes later, at 1:03 a.m., a sharp earthquake stemming from the Kaoiki fault about 5 km southwest of Ohaikea was felt in Hawaii National Park and Kealakekua.

On July 22 at 10:17 a.m. a moderate earthquake originated beneath the sea about 35 km north of the Haleakala, Maui, seismograph station. This earthquake was not reported felt.

The largest earthquake of the month occurred at 1:41 a.m. on July 26. This earthquake, which was felt in Kealakekua, originated beneath the sea about 30 km west of Hawi.

Small earthquakes from epicenters in central Kona were felt in Kealakekua at 9:32 a.m. on July 19 and at 2:17 a.m. on July 27.

Tilting of the earth's surface at the Whitney Laboratory was normal for July.

August

The relatively low level of seismic activity at Kilauea that characterized June and July extended into August. 200 earthquakes were registered on the Sprengnether seismograph at Uwekahuna. About half of these quakes originated at Kilauea caldera and were very small.

The largest earthquake in the Hawaiian area in many months originated at a shallow depth beneath the sea 45 km east of Hana, Maui, at 12:42 a.m. on August 18. This earthquake was felt generally over the islands of Maui and Hawaii. 59 earthquakes, including 9 with magnitudes of 3.0 or greater, stemmed from this region during August.

A moderate earthquake from an epicenter beneath the sea 30 km east of Naalehu at 5:21 p.m. on August 21 was not reported felt.

Three small, sharp earthquakes that originated near the northeast rim of Kilauea caldera at 8:38 a.m., 8:41 a.m., and 8:47 a.m. on August 23 were felt at Hawaii National Park Headquarters.

A moderate earthquake from a focus about 35 km beneath the summit of Kohala mountain was felt at Pohakuloa and Kukuihaele on August 26.

Tilting of the earth's surface at the Whitney Laboratory was approximately normal for August.

September

A mild resurgence of seismic activity in the vicinity of Kilauea caldera during mid-September raised the number of earthquakes recorded by the Sprengnether seismograph at Uwekahuna to 310. Most of these earthquakes occurred on September 8, 14, and 15 and originated at depths of more than 30 km.

A moderate earthquake from a focus about 30 km deep and 5 km northwest of Kamuela at 6:28 a.m. on September 4 was not reported felt.

An earthquake from an unusual source was felt in Hilo at 9:31 a.m. on September 5. It originated 10 km north of Keaau at a depth of 50 km.

The largest of 9 earthquakes originating 45 km east of Hana, Maui, during September occurred at 1:36 a.m. on September 7. It was not reported felt.

An earthquake from an epicenter 5 km east of Apua Point was felt in Hilo at 5:23 a.m. on September 14.

The largest earthquake of the month originated at 3:37 a.m. on September 29 on the Kaoiki fault 5 km south of Ohaikea. This

July 27,

U eP 15:49:20.9

5½° N, 127½° E, 15:37:30

July 28,

U iP 08:49:25.3 d
e 08:49:38
eS 08:56:58
eG 09:00:24
Tmax 09:46:23
H eP 08:49:31.0 d
i 08:49:41
Tmax 09:47:19

17° N, 99° W, 08:40:04
Magnitude 7¼ - 7½

July 29,

U eS 17:54:05
eL 17:57:25
Tmax 19:13:13

23½° S, 71½° W, 17:15:14
Magnitude 6¾ - 7¼

Aug. 4,

U iP, 14:25:40

17° N, 99½° W, 14:16:18

Magnitude 6¼

Aug. 12,

U eP 07:20:53

6° N, 124½° E, 07:08:38

Aug. 16,

U eP 23:40:56.7
iS 23:48:13
Tmas 00:34:42
H Tmax 00:37:12

10½° N, 104° W, 23:31:55
Magnitude 6½ - 6¾

Aug. 17,

U iP 12:49:18.5 c

29° N, 141° E, 12:39:23

Aug. 18,

U eP 08:48:59.5
eS 08:58:59
eL 09:08:51

12° N, 124° E, 08:36:57

Aug. 18,

U eP 21:21:40.1 c

16½° N, 99° W, 21:10:42

Aug. 18,

U ep 21:51:31
eS 21:58:21
eL 22:04:31
H Tmax 22:43:14

50° N, 157° E, 21:42:30
Magnitude 6¼ - 6½

Aug. 20,

U eP 12:11:09.1
eS 12:18:42
eL 12:23:23

10° S, 161° E, 12:01:54
Magnitude 6¼ - 6½

Aug. 22,

U eP 08:07:36.0 d

1° N, 126° E, 07:55:06

Aug. 22,

U eP 16:53:01

15° S, 168° E, 16:43:35

Aug. 23,

U eP 02:09:50
eS 02:17:37
Tmax 03:09:12

6° S, 154½° E, 02:00:05
Magnitude 6½

Aug. 27,

U iP 21:04:43 d

25½° S, 178° E, 20:56:29
Depth about 650 km.

phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

July 2,

U e 01:12:21
eL 01:38:21

36° N, 53° E, 00:42:23
Magnitude 7¼ - 7½

July 3,

U eP 12:31:42.9 d
eS 12:37:26
eL 12:40:58

50½° N, 179° W, 12:24:37
Magnitude 5¾ - 6¼

July 7,

U iP 16:20:51.1 c
H iP 16:20:49.5 c

6½° S, 156° E, 16:11:15
Magnitude 6¾

July 10,

U eP 09:15:30.4 c
eS 09:25:03
eL 09:33:18

8° N, 82½° W, 09:04:08
Magnitude 6½ - 7

July 14,

U iP 06:32:44.8 d
iS 06:39:52
H iP 06:32:50.8 d

27½° S, 177° W, 06:23:50
Depth about 200 km.
Magnitude 6¾ - 7¼

July 14,

U iP 08:20:10.1 c
iS 08:27:43
eL 08:34:47
H iP 08:20:16.4 c

30° S, 177° W, 08:10:45
Magnitude 6¾ - 7

July 17,

U eP 11:18:57.2 c
eS 11:26:00
eL 11:30:09
H iP 11:18:58.2 c

11° S, 167° E, 11:10:10
Magnitude 6¼ - 6½

July 18,

U iP 12:16:10.0 c
H iP 12:16:04.0 c

30° N, 139° E, 12:06:39
Depth about 400 km.

July 22,

U eP 06:26:48.8 c

33½° S, 178° W, 06:16:52

July 23

U eP 00:52:16.6 d
eS 00:58:00
eL 01:01:42
Tmax 01:31:04
H eP 00:52:01.7
Tmax 01:29:05

52° N, 177° W, 00:45:12
Magnitude 6¼ - 6½

July 24,

U eS 11:19:00
eL 11:23:40
H iP 11:11:42.9 c

20° S, 169° E, 11:02:30
Magnitude 6½

July 25,

U iP 07:49:39.6
eS 07:55:15
eL 07:58:44
H Tmax 08:26:20

51° N, 177° W, 07:42:25
Magnitude 6¼

earthquake, which had a focal depth of about 25 km, was felt at the Mauna Loa Slope Observatory and at Capt. Cook.

At the Whitney Laboratory mild southeasterly tilting replaced the strong northeasterly tilting of the ground normally recorded during September.

2. Earthquakes recorded on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeast rim of Kilauea caldera.

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity *
June 30	0	0	1	0	0	1	2	5.00
July 7	1	1	0	1	0	0	3	2.75
14	0	1	0	0	0	0	1	0.50
21	1	2	0	0	0	0	3	1.25
28	1	1	0	0	0	0	2	0.75
Aug. 4	0	1	1	0	0	0	2	1.50
11	0	4	1	0	0	0	5	3.00
18	1	2	2	0	1	1	7	10.25
25	1	4	0	0	0	0	5	2.25
Sept. 1	1	1	1	0	0	0	3	1.75
8	0	1	2	0	0	0	3	2.50
15	54	1	0	0	0	0	55	14.00
22	0	1	0	0	0	0	1	0.50

*Local seismicity is an arbitrary value. Each local earthquake is assigned a seismicity value according to its strength, as follows: tremor, 0.25; very feeble, 0.5; feeble, 1.0; slight, 2.0; moderate, 3.0; strong, 4.0. These values are totaled to give the weekly local seismicity. Continuous volcanic tremor is ignored in the calculation. The strength assigned to the earthquake depends on the double amplitude of the maximum oscillation it causes on the Bosch-Omori seismograph, as follows:

Tremor, less than 0.5 mm; very feeble, 0.5 to 4 mm; feeble, 4 to 11 mm; slight, 11 to 25 mm; moderate, 25 to 60 mm; strong, greater than 60 mm.

3. Table of tilt at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	Direction	Amount (seconds of arc)	Direction	Amount (seconds of arc)
June 30	N 27° W	0.5	Instrument out of order	
July 7	N 27° W	0.3		
14	W	0.1		
21	N 27° E	0.3		

Table–Continued

Week beginning		Whitney station (northeast rim)		Uwekahuna station (west rim)	
		Direction	Amount (seconds of arc)	Direction	Amount (seconds of arc
July	28	N 57° E	0.4	N 27° W	0.3
Aug.	4	N	0.4	N 79° W	0.8
	11	N 76° E	0.5	W	0.2
	18	N 11° W	0.6	N 79° W	0.8
	25	E	0.4	W	0.2
Sept.	1	S 18° E	0.4	S 18°E	0.5
	8	S 72° E	0.4	N 45°W	0.2
	15	S 45° E	0.3	N 57° W	0.5
	22	N 18°W	0.4	S 63° W	0.7

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs operated by the Hawaiian Volcano Observatory on the islands of Hawaii and Maui. Except for smaller earthquakes of special interest, only earthquakes classed as slight or larger were included in the list. The intensity ratings are based on the Bosch-Omori seismograph at the Whitney Laboratory. This intensity scale has been extended empirically to permit its use with the Loucks-Omori and Sprengnether seismographs. The entries for a given earthquake are: date, origin time (Hawaiian standard time), intensity at the nearest station, epicenter, and general remarks.

July 4, 00:53:59, strong at Kamuela. 8 km southwest of Waikii at a depth of about 15 km. Felt generally over the island of Hawaii. Magnitude 4.5.

July 4, 01:03:28, feeble at Uwekahuna. 5 km southwest of Ohaikea at a depth of about 15 km. Felt in Kealakekua and Hawaii National Park. Magnitude 2.8.

July 13, 00:01:06, slight at Uwekahuna. Kilauea caldera.

July 19, 09:31:51, near Kealakekua. Felt in Kealakekua.

July 22, 10:17:22, 35 km north of the Haleakala seismograph station at a depth of about 35 km. Magnitude 3.2.

July 26, 01:40:30, strong at Kamuela. About 30 km west of Hawi. Felt in Kealakekua. Magnitude 4.6.

July 27, 02:16:57, feeble at Kealakekua. Near Kealakekua. Felt in Kealakekua.

Aug. 10, 14:43:43, 20° 48' N, 155° 28' W. 45 km east of Hana, Maui, at a depth of about 10 km. Magnitude 4.2.

Aug. 11, 04:39:26, 20° 48' N, 155° 28' W. Depth about 10 km. Magnitude 4.3.

Aug. 11, 09:39:18, 20° 48' N, 155° 28' W. Depth about 10 km. Magnitude 4.0.

Aug. 18, 00:41:56, 20° 48' N, 155° 28' W. 45 km east of Hana, Maui, at a depth of about 10 km. Felt widely on the islands of Hawaii and Maui. Magnitude 5.6.

Aug. 19, 15:52:07, 45 km east of Hana, Maui. Magnitude 3.0.

Aug. 19, 18:38:10, 45 km east of Hana, Maui. Magnitude 3.0.

Aug. 21, 17:21:05, slight at Naalehu. About 30 km east of Naalehu at a depth of about 15 km. Magnitude 3.5.

Aug. 23, 08:38, feeble at the Whitney Laboratory. Felt at Hawaii National Park Headquarters.

Aug. 23, 08:41:14, moderate at the Whitney Laboratory. Felt at Hawaii National Park Headquarters.

Aug. 23, 08:46:44, very feeble at the Whitney Laboratory. Felt at Hawaii National Park Headquarters.

Aug. 26, 08:04:18, 45 km east of Hana, Maui. Magnitude 3.2.

Aug. 26, 16:58:52, strong at Kamuela. Beneath the summit of Kohala mountain at a depth of about 35 km. Felt at Kukuihaele and Pohakuloa. Magnitude 3.3.

Aug. 28, 09:59:52, 45 km east of Hana, Maui. Magnitude 3.0.

Sept. 4, 06:28:18, 5 km northwest of Kamuela at a depth of about 30 km. Magnitude 3.3.

Sept. 5, 09:31:24, slight at Hilo. 10 km north of Keeau at a depth of 50 km. Felt in Hilo. Magnitude 3.3.

Sept. 7, 01:35:13, 20° 46' N, 155° 27' W. 45 km east of Hana, Maui, at a depth of about 5 km. Magnitude 3.6.

Sept. 8, 08:37:22, 60 km beneath the Mauna Loa seismograph station. Magnitude 2.3.

Sept. 8, 19:36:08, 20° 16' N, 157° 38' W. 115 km south of Koko Head, Oahu. Magnitude 2.7.

Sept. 14, 05:22:48, very feeble at the Whitney Laboratory. 5 km east of Apua Point at a depth of about 5 km. Felt in Hilo. Magnitude 2.5.

Sept. 14, 15:38:46, 45 km east of Hana, Maui. Magnitude 3.0.

Sept. 17, 11:47:37, 45 km east of Hana, Maui. Magnitude 3.0.

Sept. 29, 03:37:02, slight at Uwekahuna. 5 km south of Ohaikea at a depth of about 25 km. Felt at the Slope Observatory and Capt. Cook. Magnitude 3.9.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on seismographs of the Hawaiian Volcano Observatory on Hawaii (U=Uwekahuna, 19° 25.4' N, 155° 17,6' W, 1240m), and Maui (H=Haleakala, 20°46.0' N, 156°15.0' W, 2090m). Beginnings of

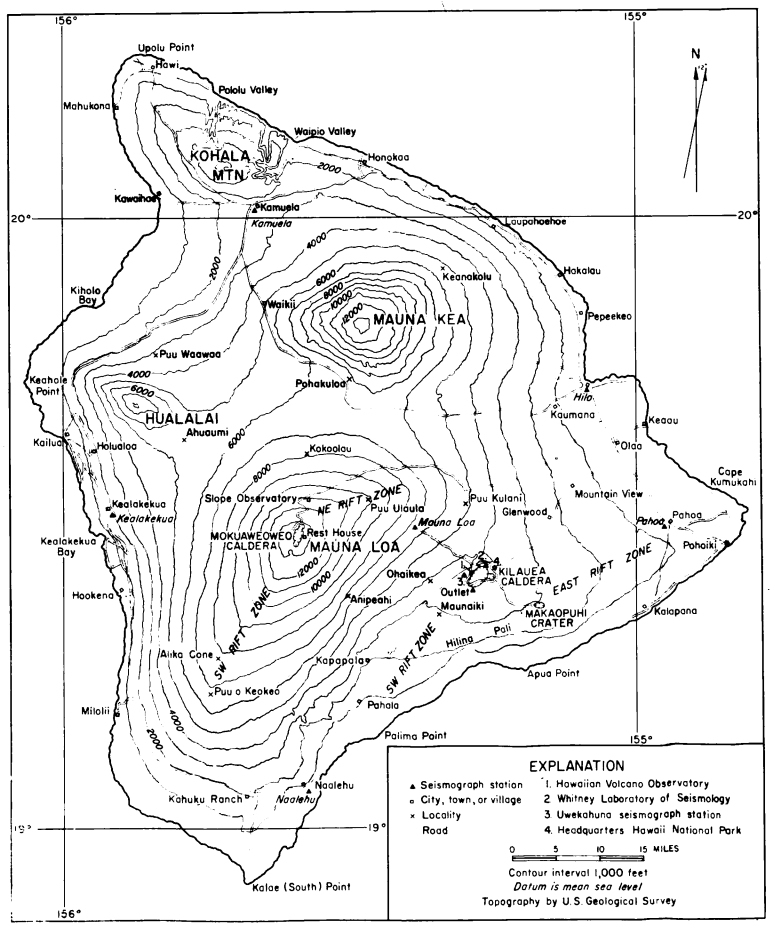
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 8

October–December 1957

By

J. P. Eaton and George D. Fraser



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

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PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals more frequently than once a year. Heretofore this material was available in *The Volcano Letter,* published by the University of Hawaii, but discontinued with issues number 529 and 530, July-December, 1955. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Summary of Volcanic Conditions

October

The Sprengnether seismograph at Uwekahuna recorded only 120 earthquakes during October. Most of these earthquakes were very small and originated at shallow depths near Kilauea caldera or along the Kaoiki fault zone southwest of the caldera.

An earthquake from an epicenter near Keahole Point was felt in Capt. Cook at 1:03 a. m. on October 25. At 7:24 p. m. on October 28 a small, sharp earthquake originating at the eastern rim of Kilauea caldera was felt at Hawaii National Park Headquarters. An earthquake felt in Capt. Cook at 5:48 a. m. on October 31 stemmed from the Kealakekua fault about 5 km southeast of Kealakekua.

Moderate northeasterly tilting of the ground at the Whitney station was normal for October.

November

Seismic activity in Hawaii remained at a low level during November. Most of the 165 earthquakes recorded by the Sprengnether seismograph at Uwekahuna were very small and stemmed from Kilauea caldera or the adjacent portion of the Kaoiki fault zone.

An earthquake felt in Kealakekua and Capt. Cook at 2:31 a.m. on November 16 originated beneath the ocean 30 km west of Kailua. At 8:21 p. m. on November 23 an earthquake from an epicenter near Anipeahi was felt at Hawaii National Park, Kealakekua, and Kamuela. A small earthquake from the Kealakekua fault was felt in Capt. Cook at 5:16 p. m. on November 30.

At the Whitney station the northward component of ground tilting was normal for November, but the eastward component was about three times greater than normal.

December

The Sprengnether seismograph at Uwekahuna recorded only 160 earthquakes during December. As in preceeding months most of these earthquakes were very small and originated near Kilauea caldera at shallow depths.

No earthquakes were reported felt on Hawaii during December.

The largest earthquake of the month originated beneath the ocean about 45 km east of Hana, Maui, at 01:21 p. m. on December 6.

At the Whitney station on the northeastern rim of Kilauea caldera gentle northwesterly tilting of the ground replaced the moderate northeasterly tilting normal for December.

2. Earthquakes recorded on the Bosch-Omori seismograph in the Whitney Laboratory of Seismology, on the northeast rim of Kilauea caldera.

Week beginning	Minutes of tremor	Very feeble	Feeble	Slight	Moderate	Strong	Total	Local seismicity*
Sept. 29	0	1	0	1	0	0	2	2.50
Oct. 6	1	0	0	0	0	0	1	0.25
13	1	0	0	0	0	0	1	0.25
20	0	0	1	0	0	0	1	1.00
27	0	1	1	0	0	0	2	1.50
Nov. 3	0	1	0	0	0	0	1	0.50
10	0	1	0	0	0	0	1	0.50
17	0	3	1	1	0	0	5	4.50
24	0	3	0	0	0	0	3	1.50
Dec. 1	1	3	0	0	0	0	4	1.75
8	1	1	0	0	0	0	2	0.75
Dec. 15	0	2	0	0	0	0	2	1.00
22	0	0	0	0	0	0	0	0.00

* Local seismicity is an arbitrary value. Each local earthquake is assigned a seismicity value according to its strength, as follows: tremor, 0.25; very feeble, 0.5; feeble, 1.0; slight, 2.0; moderate, 3.0; strong, 4.0. These values are totaled to give the weekly local seismicity. Continuous volcanic tremor is ignored in the calculation. The

Nov. 25,

H Tmax 22:57:28

45° N, 130° W, 22:16:44

Nov. 26,

U eP 11:42:46
eS 11:48:24
eL 11:51:58

51½° N, 176° W 11:35:44

Nov. 28,

U eP 20:59:06
eS 21:06:13
eL 21:12:39
Tmax 21:52:09
H eP 20:59:04
Tmax 21:52:32

15° S, 168½° E, 20:50:10

Nov. 29,

U iP 22:32:50 d
iS 22:43:09
H iP 22:32:56 c

21° S, 66° W, 22:19:38
Depth about 200 km
Magnitude 7½-8

Dec. 4,

U iP 03:50:36 c
iS 04:01:08
iL 04:13:50
H iP 03:50:30 d
eS 04:01:03
eL 04:16

45½° N, 99½° E, 03:37:45
Magnitude 7¾-8

Dec. 7,

U iP 03:28:21 c

6½° S, 123½° E, 03:16:43
Depth about 550 km

Dec. 10,

U iP 14:45:37 c
iS 14:53:19
eL 14:58:08

6° S, 154½° E, 14:35:57
Magnitude 6½-6¾

Dec. 13,

U iS 20:38:40
eL 20:41:09

52½° N, 170° W, 20:26:22

Dec. 16,

U Tmax 18:15:13
H Tmax 18:14:15

50° N, 127° W, 20:26:22

Dec. 17,

U eP 05:18:40
eS 05:25:35
eL 05:31:42

43½° N, 162° E, 05:10:11
Magnitude 6¾

Dec. 17,

U eP 13:58:57 c
iS 14:05:51
iL 14:10:09
Tmax 14:52:19
H iP 13:58:57 c
eS 14:05:54
eL 14:10:40

12° S, 167° E, 13:50:05
Magnitude 7¾

Dec. 26,

U iP 12:18:59 c
eL 12:35

32½° S, 178° W, 12:09:11

Dec. 26,

U Tmax 13.01:08

41½° N, 127° W, 12:20:35

Dec. 31,

U eP 14:39:49
eL 15:02:26

45° S, 165½° E, 14:28:15

38350

Table–Continued

strength assigned to the earthquake depends on the double amplitude of the maximum oscillation it causes on the Bosch-Omori seismograph, as follows: tremor, less than 0.5 mm; very feeble, 0.5 to 4 mm; feeble, 4 to 11 mm; slight, 11 to 25 mm; moderate, 25 to 60 mm; strong, greater than 60 mm.

3. Table of tilt at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	Direction	Amount (seconds of arc)	Direction	Amount (seconds of arc)
Sept. 29	N 79° E	0.6	N 34° W	0.5
Oct. 6	E	0.4	E	0.2
13	N 45° E	0.7	N 63° W	0.3
20	N 81° E	0.7	S 45° W	0.2
27	N 51° E	1.5	N 37° W	0.3
Nov. 3	N 40° E	0.9	W	0.4
10	N 63° E	0.5	S 81° E	0.9
17	S 74° E	0.9	S 72° W	1.0
24	N 60° E	1.0	N 79° W	0.8
Dec. 1	S 27° W	0.8	S 72° E	0.5
8	N 30° E	1.7	S 68° W	0.8
15	S 84° W	1.20	N 56° E	0.5
22	E	0.6	W	0.2

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs operated by the Hawaiian Volcano Observatory on the islands of Hawaii and Maui. Except for smaller earthquakes of special interest, only earthquakes classed as slight or larger were included in the list. The intensity ratings are based on the Bosch-Omori seismograph at the Whitney Laboratory. This intensity scale has been extended empirically to permit its use with the Loucks-Omori and Sprengnether seismographs. The entries for a given earthquake are: date, origin time (Hawaiian standard time), intensity at the nearest station, epicenter, and general remarks.

Oct. 20, 05:09:43, slight at Uwekahuna. 5 km west of Ohaikea at a depth of about 5 km. Magnitude 2.8.

Oct. 25, 01:02:38, very feeble at Kealakekua. Near Keahole Point. Felt at Captain Cook. Magnitude 2.2.

Oct. 28, 19:23:57, feeble at the Whitney station. East rim of Kilauea caldera. Felt at Hawaii National Park Headquarters.

Oct. 31, 05:48:24, feeble at Kealakekua. On the Kealakekua fault about 5 km southeast of Kealakekua. Felt at Capt. Cook.

Nov. 9, 11:26:25, very feeble at Kamuela. 25 km northwest of Kamuela at a depth of 35 km. Magnitude 3.1

Nov. 16, 02:30:32, very feeble at Kealakekua. 30 km west of Kailua at a shallow depth. Felt at Kealakekua and Capt. Cook. Magnitude 3.5.

Nov. 23, 20:21:28, moderate at Uwekahuna. 10 km southwest of the Mauna Loa seismograph station at a depth of 5 km. Felt at Hawaii National Park, Kealakekua, and Kamuela. Magnitude 3.5.

Nov. 30, 17:15:45, Kealakekua fault. Felt at Capt. Cook.

Dec. 6, 13:20:34, 45 km east of Hana, Maui, at a depth of about 5 km. Magnitude 3.2.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on seismographs of the Hawaiian Volcano Observatory on Hawaii (U = Uwekahuna, 19° 25.4' N, 155° 17.6' W, 1240m), and Maui (H = Haleakala, 20° 46.0' N, 156° 15.0' W, 2090m). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Oct. 3,

U iP 06:09:53

4° S, 134° E, 05:58:08

Oct. 5,

U eP 16:18:22

10½° S, 122½° E, 16:05:38

Oct. 10,

U eP 19:00:54
Tmax 19:38:41

54° N, 166° W, 18:53:59
Magnitude 5¾

Oct. 15,

U iP 06:04:34

30° S, 179° W, 05:55:21
Depth about 100 km.

Oct. 19,

U eP 18:40:45 c

23½° N, 122° E, 18:28:50
Magnitude 6½-6¾

Oct. 23,

U eP 06:03:43
eS 06:09:13
eL 06:12:37
Tmax 06:40:22
H Tmax 06:38:58

52½° N, 169½° W, 05:56:52
Magnitude 6¼

Oct. 24,

U eP 00:26:33
eS 00:33:47
eL 00:40:09

14½° S, 167½° E, 00:17:37
Magnitude 6½

Oct. 24,

U iP 09:15:05 c
H iP 09:15:12 c

20½° S, 179° W, 09:07:30
Depth about 550 km

Oct. 25,

U eP 10:12:31
iS 10:19:22
iL 10:24:53

50½° N, 156½° E, 10:03:32
Magnitude 6½-6¾

Oct. 26,

U iP 08:33:50

20½° S, 178° W, 08:26:12
Magnitude 6-6¼

Oct. 27,

U eP 22:41:07
eL 23:02:20
H eP 22:41:01

56° N, 161° E, 22:32:25
Magnitude 6½-6¾

Oct. 31,

U eP 10:19:27
eS 10:28:55
iL 10:40:48

6½° N, 83° W, 10:07:54
Magnitude 6½-6¾

Nov. 2,

U iP 07:30:53 c

15° N, 93½° W, 07:20:58
Depth about 100 km

Nov. 2,

U eP 18:39:15
eS 18:46:30
eL 18:51:04

13° S, 166½° E, 18:30:24

Nov. 5,

U eP 10:02:16 d

13° S, 169° E, 09:54:29
Depth about 650 km

Nov. 13,

U iP 17:32:28 c
iL 17:48:21
H eP 17:32:33

33° S, 179° W, 17:22:41
Magnitude 6½-6¾

Nov. 16,

U eP 01:56:08 c
eS 02:01:41
eL 02:05:24

51½° N, 177° W, 01:48:48

Nov. 17,

U iP 18:04:36 c

30½° N, 138° E, 17:55:04
Depth about 450 km

Nov. 20,

U eP 12:47:19 c
eS 12:52:54
eL 12:54:42
Tmax 13:25:02
H eP 12:47:11
Tmax 13:22:55

54° N, 165° W, 12:40:23
Magnitude 6¼-6½

Nov. 23,

U eP 01:05:30
eS 01:11:04
eL 01:14:53
Tmax 01:42:48

52½° N, 168° W, 00:58:33

Nov. 25,

U eL 19:08:43
Tmax 19:40:45
H Tmax 19:40:25

44° N, 130° W, 18:55:12

Nov. 25,

U eL 20:48:00
Tmax 21:13:30
H Tmax 21:12:38

44½° N, 129½° W, 20:32:25

Hawaiian Volcano Observatory
1958 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 9
January, February, and March 1958
By Jerry P. Eaton and George D. Fraser

Summary 10
April, May, and June 1958
By Jerry P. Eaton and George D. Fraser

Summary 11
July, August, and September 1958
By Jerry P. Eaton and Harold L. Krivoy

Summary 12
October, November, and December 1958
By Jerry P. Eaton and Harold L. Krivoy

Open-File Report 2007-1318
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

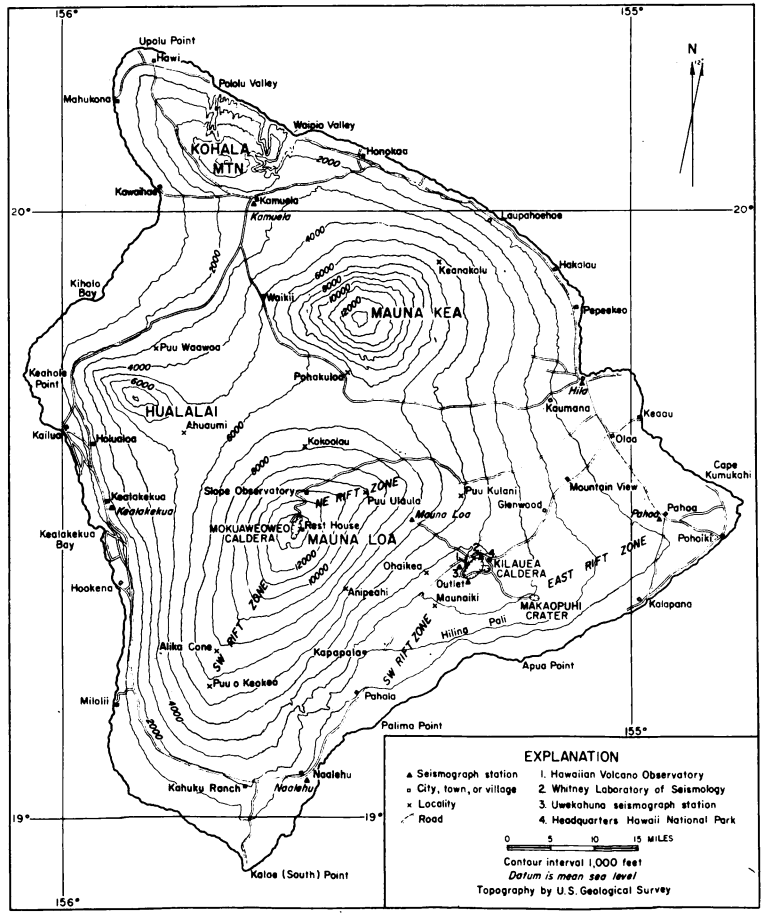
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 9

January–March 1958

By

J. P. Eaton and George D. Fraser



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

Mar. 11,

U eS 14:15:44
eL 14:21:59

13° S, 167° E, 13:59:00

Mar. 20,

U eP 01:44:47.6
iS 01:50:11
eQ 01:51:48
eR 01:53:20

51° N, 173° W, 01:38:04

Mar. 31,

U iP 10:40:44.7

17° N, 93½° W, 10:30:56
Depth about 100 km.

42989

PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals shorter than once a year. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Chronological Summary

January

Most of the 239 earthquakes registered by seismographs at Uwekahuna during January were very small. The chief sources of this weak seismic activity were Kilauea caldera and the Kaoiki fault zone west of the caldera.

An earthquake from a focus 25 km beneath Kilauea caldera at 2:27 a. m. on January 14 was felt along the north rim of the caldera. At 4:54 a. m. on January 20 an earthquake from an epicenter near Laupahoehoe was felt at Hakalau.

The largest earthquake in the Hawaiian area during January was not reported felt. It originated 15 km southeast of Hana, Maui, at a depth of about 45 km at 9:26 p. m. on January 19.

At 12:54 p. m. on January 28 an earthquake occurred beneath the ocean about 220 km south of Kalapana. This epicenter lies farther southeastward along the prolongation of the Hawaiian chain than that of any earthquake previously reported.

Gentle southeasterly tilting of the earth's surface at the Whitney station replaced the moderate southerly tilting normal for January.

February

Seismographs at Uwekahuna recorded 292 earthquakes during February. As in previous months most of these earthquakes were very small and originated at shallow depths beneath Kilauea caldera or along the Kaoiki fault zone west of the caldera.

A small, sharp earthquake from the northeast rim of Kilauea caldera was felt at Hawaii National Park Headquarters at 2:11 p.m. on February 11. The largest earthquake of the month, which originated 17 km southeast of Naalehu at a depth of about 35 km, was felt at Naalehu and Pahoa on February 15 at 4:49 p. m. At 7:19 a. m. on February 20 on earthquake from an epicenter 10 km northeast of Honokaa was felt at Kamuela.

An earthquake from a shallow focus 8 km northeast of Ulupau Head, Oahu, awakened residents of windward Oahu at 4:01 a. m. on February 23.

At the Whitney station on the northeast rim of Kilauea caldera, tilting of the earth's surface was in the southwesterly direction normal for February but was much weaker than usual.

March

Continuing mild seismic activity at Kilauea caldera and along the nearby Kaoiki fault zone accounted for most of the 226 earthquakes recorded by seismographs at Uwekahuna during March.

An earthquake felt in Hilo at 9:44 a. m. on March 9 originated about 15 km southwest of Kalapana.

A swarm of earthquakes from an unusual epicenter, 5 km west of Keanakolu on the northeast flank of Mauna Kea, was recorded by Observatory seismographs from March 9 to March 14. Of the 11 earthquakes of this swarm that were magnitude 2.5 or larger, at least 5 were felt at Honokaa. These earthquakes were felt at 3:09 a. m. on March 10, at 10:13 p. m. on March 11, at 9:06 p. m. and 11:19 p. m. on March 12, and at 8:10 a. m. on March 13.

At 3:09 p. m. on March 13 an earthquake from a focus 20 km beneath Puu Kulani was felt a few km east of Kilauea caldera.

An earthquake from an epicenter 10 km northeast of Apua Point was felt in Hilo at 1:30 p. m. on March 29.

Strong southwesterly tilting of the earth's surface recorded at the Whitney station was normal for March.

2. Local Earthquake Summary

Week beginning	Number of Earthquakes		Minutes of continuous tremor*
	magnitude ≥ 2.5	magnitude < 2.5	
Dec. 29	3	63	0
Jan. 5	3	65	0
12	1	45	0
19	2	51	41
26	1	43	0
Feb. 2	0	105	13
9	2	60	0

Feb. 1,

U eP 18:14:38.8
iS 18:24:18
eR 18:38:28

2° N, 79° W, 18:02:39
Magnitude 6¾ - 7 (Pas)

Feb. 1,

U eP 20:57:39
eS 21:07:28
eQ 21:18
eR 21:20:48

1½° N, 79° W, 20:45:45
Magnitude 6¾ (Pas)

Feb. 2,

U eP 08:20:46
eS 08:28:02
eR 08:34:17

48½° N, 154½° E, 08:11:53
Magnitude 6½ - 6¾ (Pas)

Feb. 7,

U iP 23:36:14.0 c

31½° N, 104° E, 23:23:30

Feb. 12,

U eP 23:50:47.6
eS 23:56:53
eR 24:00:07

52° N, 175° W, 23:43:45
Magnitude 6 (Pas)

Feb. 15,

U eP 01:56:02.9 d
eS 02:03:47
eR 02:10:50

44° N, 147° E, 01:46:40
Magnitude 6 - 6½ (Pas)

Feb. 16,

U eP 06:14:06
eS 06:22:00
eR 06:29:50

39° N, 142° E, 06:04:05
Magnitude 6 - 6¼ (Pas)

Feb. 22,

U iP 10:57:17.6 c
iS 11:02:51
eQ 11:04:31
iR 11:05:55
Tmax 11:57:06.2 c

50½° N, 175° W, 10:50:23
Magnitude 6¾ (Pas)

Feb. 23,

U eP 10:57:37.4 c

24° N, 141½° E, 10:47:40

Feb. 24,

U eP 12:39:53.2

45° N, 99° E, 12:27:06

Mar. 3,

U iP 16:26:44.8 d

55½° N, 166½ E, 16:18:17
Magnitude 6¼ - 6½ (Pas)

Mar. 3,

U eP 17:41:15

55½° N, 166° E, 17:32:47

Mar. 9,

U eP 10:31:34
eS 10:39:57
eL 10:47:36

34° S, 178½° W, 10:22:25
Depth about 60 km.
Magnitude 6½ - 6¾ (Pas)

Mar. 11,

U eP 00:37:29.5
epP 00:37:52.4
iS 00:46:55
eQ 00:55:45
iR 01:00:12

25½° N, 125° E, 00:25:56
Depth about 60 km
Magnitude 7 (Pas)

Jan. 15,

U eP 19:27:21.9 d
iS 19:37:57
eSS 19:44:01
iQ 19:50:57
eR 19:55:11
Tmax 21:06:19

16½° S, 71½° W, 19:14:29
Depth about 100 km
Magnitude 7 (Pas)

Jan. 15,

U eP 22:24:47.2
eS 22:31:51
eSS 22:35:21
eQ 22:36:36
iR 22:38:21

13½° S, 167° E, 22:15:44

Jan. 16,

U eL 11:26:50

14° S, 167° E, 11:03:32

Jan. 17,

U eP 04:26:11.5

1° S, 127° E, 04:14:02

Jan. 18,

U eP 15:34:08

29° S, 13° W, 15:14:26

Jan. 19,

U eP 14:19:15.6 c
ipP 14:19:25
iS 14:29:00
iR 14:42:33
H iP 14:19:28.4 c

1½° N, 79½° W, 14:07:23
Magnitude 7½ (Pas)
Seismic sea wave damage at Las Emeraldas and Guayaquil, Ecuador.

Jan. 19,

U eP 14:55:16
iS 15:05:06
iR 15:21:21

1½° N, 79½° W, 14:43:24
Magnitude 6¾ (Pas)

Jan. 23,

U iP 09:01:14.7 c
H iP 09:01:17.3 c

18½° S, 170° E, 08:52:23
Depth about 150 km.

Jan. 24,

U eP 06:02:42.9 c
iS 06:09:36
iR 06:15:51

56½° N, 163° E, 05:53:58
Magnitude 6½ (Pas)

Jan. 26,

U eL 04:10:21

54° S, 133° W, 03:35:21

Jan. 27,

U eP 07:51:29
eS 07:57:31
iR 08:01:21

15° S, 174° W, 07:43:58
Magnitude 6¾ (Pas)

Jan. 30,

U eS 06:30:50
eL 06:38:30

7½° S, 155½° E, 06:13:24
Magnitude 6½ (Pas)

Feb. 1,

U iP 16:22:08.0 d
eS 16:31:50
eSS 16:36:40
eQ 16:42:21
iR 16:44:58

2° N, 79° W, 16:10:15
Magnitude 6¾-7 (Pas)

Table–Continued

Week beginning	Number of Earthquakes		Minutes of continuous tremor*
	magnitude ≥2.5	magnitude <2.5	
Feb. 16	3	68	51
23	1	49	0
Mar. 2	3	25	0
9	14	84	9
16	3	43	0
23	1	34	0

*Recorded at Uwekahuna on a vertical component electromagnetic seismograph with a peak magnification of 20,000 and galvanometer and seismometer periods of 0.5 second.

3. Tilt coordinates* at seismograph stations on the rim of Kilauea caldera.

	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	N-S	E-W	N-S	E-W
Jan. 5	500	500	500	500
12	497	500	499	500
19	496	502	500	504
26	495	504	500	502
Feb. 2	497	499	501	499
9	495	501	503	499
16	495	503	502	498
23	492	501	504	497
Mar. 2	491	498	507	490
9	493	503	504	490
16	488	497	502	491
23	483	491	503	488
30	480	491	503	490

*All tilt coordinates were arbitrarily set equal to 500 on January 5, 1958. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface: i.e. to a relative subsidence toward the north and east. A one unit change in coordinate reveals a tilting of one part per million (one mm per km) in the direction indicated.

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs operated by the Hawaiian Volcano Observatory on the islands of Hawaii and Maui. Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater were included in the list. The entries for a given earthquake are: date, origin time (Hawaiian standard time), epicenter, and general remarks.

Jan. 1, 13:47:32, 35 km west of Milolii at a depth of about 15 km. Magnitude 2.9.

Jan. 2, 06:01:36, Kealakekua fault. Magnitude 2.8.

Jan. 2, 21:19:02, Central Kona. Magnitude 2.7.

Jan. 5, 17:35:39, South shore of Kilauea 13 km southwest of Kalapana at a depth of about 5 km. Magnitude 2.5.

Jan. 5, 20:37:27, 25 km west of Milolii at a depth of about 15 km. Magnitude 2.9.

Jan. 6, 15:39:49, 60 km south of Kalapana at a depth of about 15 km. Magnitude 2.8.

Jan. 14, 02:26:59, Beneath Kilauea caldera at a depth of about 25 km. Felt near Hawaii National Park Headquarters. Magnitude 2.6.

Jan. 15, 23:07:58, Beneath Puu Koae at a depth of about 30 km. Magnitude 2.7.

Jan. 19, 21:26:04, 15 km southeast of Hana, Maui, at a depth of about 45 km. Magnitude 3.7.

Jan. 20, 04:54:17, Near Laupahoehoe at a depth of about 15 km. Felt at Hakalau. Magnitude 2.5.

Jan. 28, 12:53:55, 220 km south of Kalapana. Magnitude 3.3.

Feb. 11, 14:10:39, Northeast rim of Kilauea caldera at depth of 2 km or less. Felt at Hawaii National Park Headquarters and Kilauea Military Camp. Magnitude 1.9.

Feb. 14, 13:38:17, 40 km east of Hana, Maui. Magnitude 3.0.

Feb. 15, 16:48:38, 17 km southeast of Naalehu at a depth of about 35 km. Felt at Naalehu and Pahoa. Magnitude 3.9.

Feb. 19, 18:53:45, North rim of Kilauea caldera at a depth of about 30 km. Magnitude 2.7.

Feb. 20, 07:19:23, 10 km northwest of Honokaa at a depth of about 15 km. Felt at Kamuela. Magnitude 3.0.

Feb. 20, 12:51:13, 10 km east of Apua Point at a depth of about 40 km. Magnitude 2.8.

Feb. 23, 04:00:35, 8 km northeast of Ulupau Head, Oahu, at a shallow depth. Felt on Oahu. Magnitude 3.7.

Mar. 2, 09:52:39, 35 km south of Kilauea caldera at a depth of about 40 km. Magnitude 2.8.

Mar. 3, 08:44:20, 7 km west of Pahala at a shallow depth. Magnitude 2.5.

Mar. 5, 01:59:25, 10 km southwest of the Mauna Loa seismograph station at a depth of about 5 km. Magnitude 3.1.

Mar. 9, 09:43:52, South shore of Kilauea 15 km southwest of Kalapana at a depth of 5 km. Felt in Hilo. Magnitude 3.5.

Mar. 10, 03:09:04, 5 km west of Keanakolu. Felt at Honokaa. Magnitude 2.7.

Mar. 10, 20:34:57, 2 km east of Puu Koae at a depth of about 30 km. Magnitude 3.0.

Mar. 11, 03:27:39, 5 km west of Keanakolu. Magnitude 2.5.

Mar. 11, 18:35:47, 5 km west of Keanakolu. Magnitude 2.6.

Mar. 11, 22:13:01, 5 km west of Keanakolu. Felt at Honokaa. Magnitude 2.9.

Mar. 12, 06:27:33, 5 km west of Keanakolu. Magnitude 2.6.

Mar. 12, 21:05:46, 5 km west of Keanakolu. Felt at Honokaa. Magnitude 2.9.

Mar. 12, 22:13:53, 5 km west of Keanakolu. Magnitude 2.5.

Mar. 12, 23:19:20, 5 km west of Keanakolu. Felt at Honokaa. Magnitude 2.9.

Mar. 13, 08:10:21, 5 km west of Keanakolu at a depth of about 15 km. Felt at Honokaa. Magnitude 3.1.

Mar. 13, 11:06:41, 5 km west of Keanakolu. Magnitude 2.5.

Mar. 13, 15:08:33, Near Puu Kulani at a depth of about 20 km. Felt just east of Kilauea caldera. Magnitude 2.7.

Mar. 14, 00:14:31. 5 km west of Keanakolu. Magnitude 2.5.

Mar. 16, 19:34:11. 10 km south of Puu o Keokeo at a depth of about 5 km. Magnitude 2.7.

Mar. 19, 08:48:47. 35 km south of the Mauna Loa seismograph station at a depth of 35 km. Magnitude 3.2.

Mar. 20, 23:46:01. 5 km northeast of Apua Point at a depth of about 5 km. Magnitude 2.7.

Mar. 29, 13:29:46. 10 km northeast of Apua Point at a depth of about 5 km. Felt in Hilo. Magnitude 3.0.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on seismographs of the Hawaiian Volcano Observatory on Hawaii (U = Uwekahuna, 19° 25.4' N, 155° 17.6' W, 1240m), and Maui (H = Haleakala, 20° 46.0' N, 156° 15.0' W, 2090m). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Jan. 5,

U eP 08:16:41.7

2° N, 122½° E, 08:05:11
Depth about 550 km.

Jan. 11,

U iP 13:37:33.4 c
iS 13:34:16

23½° S, 177° W, 13:18:47

Jan. 13,

U eP 00:09:49.2

52½° N, 177° E, 00:02:24
Depth about 100 km.

Jan. 13,

U eP 03:03:19.9
eL 03:16:26

7° N, 83° W, 02:52:40

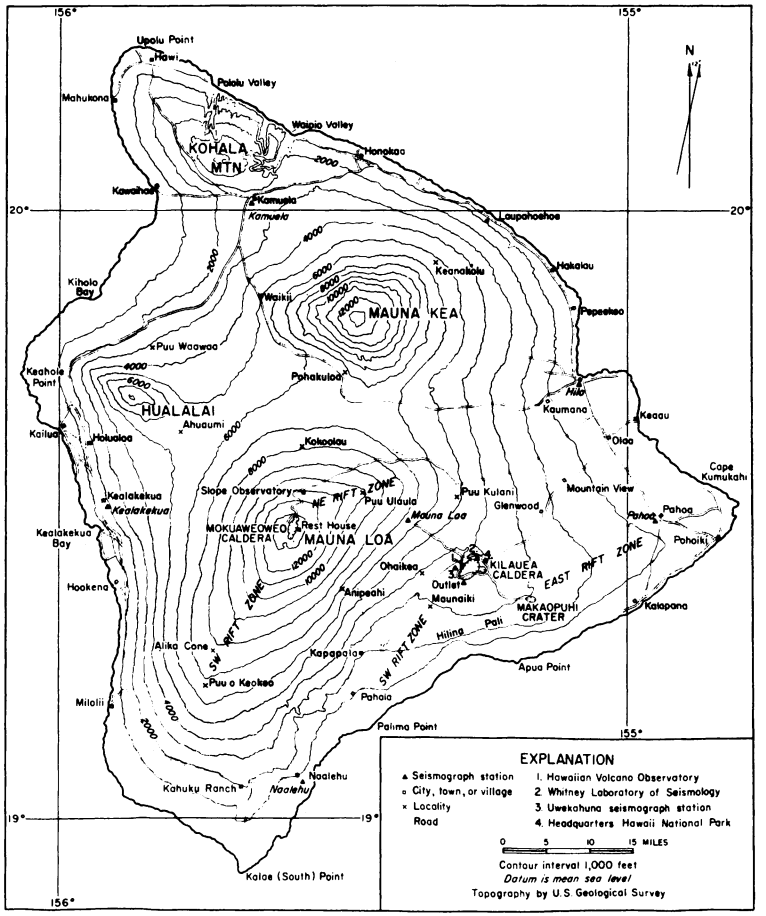
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 10

April–June 1958

By

J. P. Eaton and George D. Fraser



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

June 26,

U iP 04:46:58.6 c
ipP 04:47:27
iR 05:00:20

54½° N, 15½° E, 04:38:12
Depth slightly greater than normal
Magnitude 6½-6¾ (Pas)

June 26,

U eR 23:55:15

31° N, 141½° E, 23:29:32

June 27,

U eP 05:55:03
eR 06:14

13° N, 88½° W, 05:44:28
Depth about 60 km
Magnitude 6 (Pas)

June 29,

U eR 09:34

16½° S, 172° W, 09:14:37

June 30,

U eS 18:44:05
iR 18:50:05

31° N, 141½° E, 18:26:20
Magnitude 6¾ (Pas)

47266

June 3,

U iP 19:40:50.4 c
iS 19:47:59
eQ 19:51:48
iR 19:54:33

15° S, 168° E, 19:31:52
Magnitude 6½ (Pas)

June 4,

U iP 14:36:39.6 d
iS 14:42:12
eQ 14:43:52
iR 14:45:22

52½° N, 167° W, 14:29:50
Magnitude 6-6¼ (Pas)

June 6,

U eP 09:22:29
iS 09:31:41
iSS 09:36:15
iQ 09:40:22
iR 09:42:20
Tmax 10:38:13

8° N, 84½° W, 09:11:14
Magnitude 6½-6¾ (Pas)

June 8,

U eP 00:45:41
eR 00:54:30
Tmax 01:23:00
HTmax 01:20:54

53° N, 167° W, 00:38:52
Magnitude 6½-6¾ (Pas)

June 12,

U iP 20:59:47
iS 21:05:13
eQ 21:07:02
eR 21:08:08
H eP 20:59:37
Tmax 21:35:25

53° N, 167° W, 20:52:57
Magnitude 6½ (Pas)

June 15,

U iP 15:01:57
iS 15:07:50
H iP 15:02:02

18° S, 178½° W, 14:54:37
Depth about 600 km
Magnitude 6¼ (Pas)

June 16,

U eQ 08:29:46
eR 08:31:36

14½° S, 177½° W, 08:13:07

June 17,

U eP 19:16:30
eR 19:33:43

25° N, 142½° E, 19:06:43
Depth about 60 km

June 19,

U eP 05:26:53
eS 05:33:48
eR 05:39:09

49½° N, 156° E, 05:18:00
Magnitude 6½ (Pas)

June 20,

U eQ 01:04:25
eR 01:07:45

16° S, 173° W, 00:47:58

June 25,

U eP 09:47:03.2 d
eS 09:55:30
eQ 10:02:10
iR 10:04:50
H iP 09:46:59.6 d

3° S, 144½° E, 09:36:30
Magnitude 6¼-6½ (Pas)

PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals shorter than once a year. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Summary of Volcanic Conditions

April

Increased seismic activity near Kilauea caldera was responsible for most of the 920 earthquakes recorded during the month by seismographs at Uwekahuna. On April 1 about 200 small earthquakes accompanied by several hours of weak spasmodic tremor originated at a depth of about 60 km a few km north of Uwekahuna. Most of the other earthquakes during April were very small and originated at shallow depths in or near Kilauea caldera.

An earthquake felt in Hilo at 6:07 a.m. on April 21 stemmed from a focus 5 km northwest of Apua Point and 15 km deep.

The largest earthquake of the month was felt over most of the island of Hawaii at 3:07 a.m. on April 24. It originated beneath the ocean 5 km north of Laupahoehoe at a depth of about 25 km.

At the Whitney station gentle northerly tilting of the earth's surface replaced the gentle southerly tilting normal for April.

May

Most of the 440 earthquakes registered by seismographs at Uwekahuna during May were very small and originated at shallow depths in or near Kilauea caldera.

The largest earthquake of the month originated 10 km south of Mokuaweoweo at 12:33 a.m. on May 19.

No earthquake was reported felt during May.

Weak westerly tilting of the earth's surface recorded at the Whitney station was normal for May.

June

Seismographs at Uwekahuna recorded 310 earthquakes during June. Shallow earthquakes at Kilauea caldera were less numerous than during April and May.

Two small earthquakes from shallow foci along the north rim of Kilauea caldera were felt in that region on June 3. The first occurred at 10:52 p.m.; the second, at 10:55 p.m.

The largest earthquake of the month originated 5 km southeast of Ahuaumi at a depth of about 15 km at 11:04 a.m. on June 17. It was not reported felt.

Gentle easterly tilting of the earth's surface at the Whitney station replaced the gentle northerly tilting normal for June.

2. Local Earthquake Summary

Week beginning	Number of Earthquakes*		Minutes of continuous tremor*
	magnitude ≥ 2.5	magnitude < 2.5	
Mar. 30	3	250	270
Apr. 6	1	250	0
13	2	144	0
20	3	178	0
27	4	129	0
May 4	2	185	0
11	1	131	0
18	3	43	0
25	1	39	4
June 1	7	41	0
8	1	39	5
15	1	36	37
22	1	117	5

*Recorded at Uwekahuna on a vertical component electromagnetic seismograph with a peak magnification of 20,000 and galvanometer and seismometer periods of 0.5 second.

3. Tilt coordinates* at seismograph stations on the rim of Kilauea caldera.

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	N-S	E-W	N-S	E-W
Apr. 6	483	493	503	491
13	486	494	504	491
20	488	493	503	492
27	487	494	504	489
May 4	488	496	506	491
11	488	494	506	486
18	491	495	507	486
25	487	493	507	485

May 17,

U eQ 07:27:26
eR 07:30:16

3° S, 147½° E, 07:02:25

May 18,

U eP 02:41:52
eS 02:48:57
eQ 02:53:35
eR 02:55:26

13° S, 167° E, 02:32:52
Magnitude 6¼ - 6½ (Pas)

May 18

U eR 03:54

13° S, 167° E, 03:31:18

May 18,

U eR 05:50

13°S, 167° E, 05:26:44
Depth about 60 km.

May 18,

U eP 12:30:18
eS 12:37:25
eQ 12:42:05
eR 12:43:40

13° S, 167° E, 12:21:18
Magnitude 6 - 6¼ (Pas)

May 19,

U eR 00:28:35

13° S, 167° E, 00:06:00

May 22,

U eQ 15:33:32
eR 15:36:08

3° S, 146° E, 15:08:00

May 25,

U eR 00:51:46

51½° N, 177° W, 00:35:23
Magnitude 5½ - 5¾ (Pas)

May 25,

U eR 15:10:46

51½° N, 177° W, 14:54:30

May 25,

U eP 21:23:49
eS 21:33:51
iR 21:48:28

3° S, 77° W, 21:11:45
Depth about 100 km.
Magnitude 6½ (Pas)

May 26,

U iPup 11:03:31.0 c
Tmax 11:41:10
H ePdn 11:03:18.6 d
Tmax 11:39:12

53° N, 169½° W, 10:56:30
Magnitude 6 - 6¼ (Pas)

May 29,

U eP 07:08:44

16½° N, 97½° W, 06:59:11

May 30,

U eP 16:23:19

25° N, 122° E, 16:11:40
Depth about 100 km

May 30,

U eP 18:11:43
iS 18:17:08
iQ 18:19:14
iR 18:20:12
Tmax 18:49:12
H Tmax 18:47:06

52½° N, 169° W, 18:04:50
Magnitude 6 - 6¼

May 31,

U iP 19:41:28 c*
iS 19:48:41
iQ 19:52:31
iR 19:54:41
Tmax 20:35:10

15° S, 169° E, 19:32:30
Magnitude 7½ (Pas)

*c on long period vertical
d on short period vertical

Apr. 15,

U eS 04:13:10
eR 04:23:36

9° N, 84° W, 03:52:39
Magnitude 6¾ (Pas)

Apr. 16,

U iP 12:48:21.6 c

14° N, 120½° E, 12:36:24
Depth about 150 km

Apr. 17,

U eR 06:50:27

6° S, 155° E, 06:21:43

Apr. 17,

U eR 10:30:47

5½° S, 152° E, 10:04:46

Apr. 19,

U eR 04:22:01

26½° N, 110½° W, 04:03:26
Magnitude about 6 (Pas)

Apr. 21,

U eP 20:22:25
eS 20:28:29
eR 20:31:59

15° S, 174½° W, 20:14:47
Magnitude 6½ (Pas)

Apr. 23,

U eS 03:14:23
eR 03:20:49

45° N, 152° E, 02:57:40

Apr. 27,

U eS 19:16:12
eR 19:19:03
Tmax 19:48:23

52½° N, 169° W, 19:03:50

Apr. 28,

U eP 12:00:20
eS 12:10:49
eQ 12:23:23
eR 12:27:29

11° S, 74° W, 11:47:40
Magnitude 6½ (Pas)

May 1,

U iP 00:37:49.6 c
H iP 00:37:51.9 c

13½° S, 16½° E, 00:29:15
Depth about 200 km.
Magnitude 6¼ (Pas)

May 6,

U eQ 00:10:36
eR 00:11:56
Tmax 00:44:02
HTmax 00:42:48

57½° N, 136½° W, 23:53:29 (May 5)

May 9,

U eR 01:11:55

1½° N, 94½° W, 00:44:12
Magnitude 6 (Pas)

May 10,

U eQ 23:12:42
eR 23:15:49

65° N, 152½° W, 22:54:40
Magnitude 6¼ - 6½ (Pas)

May 11,

U eQ 05:43:49
eR 05:45:44

65° N, 152½° W, 05:23:54
Magnitude 6¼ - 6½ (Pas)

May 12,

U eP 18:37:51

12° N, 162° E, 18:37:58

Table–Continued

Week beginning	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	N-S	E-W	N-S	E-W
June 1	489	492	503	488
8	492	497	501	490
15	492	497	502	488
22	490	498	506	488
29	489	497	510	482

* All tilt coordinates were arbitrarily set equal to 500 on January 5, 1958. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface: i.e. to a relative subsidence toward the north and east. A one unit change in coordinate reveals a tilting of one part per million (one mm per km) in the direction indicated.

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs operated by the Hawaiian Volcano Observatory on the islands of Hawaii and Maui. Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater were included in the list. The entries for a given earthquake are: date, origin time (Hawaiian standard time), epicenter, and general remarks.

Apr. 1, 10:18:56, 5 km north of Uwekahuna at a depth of about 60 km. Magnitude 2.5. This is the largest of several hundred small earthquakes originating at this location between 04:00 and 18:00 on Apr. 1.

Apr. 3, 10:16:12, southwest rift of Mauna Loa near Puu o Keokeo at a depth of about 5 km. Magnitude 2.7.

Apr. 4, 00:25:51, beneath the summit of Kohala Mountain at a depth of about 35 km. Magnitude 2.7.

Apr. 8, 11:35:12, 20° 04' N, 157° W, about 140 km south of Honolulu. Magnitude 3.0.

Apr. 15, 11:13:50, 5 km northwest of Apua Point at a depth of about 5 km. Magnitude 2.8.

Apr. 18, 07:57:41, on the Kealakekua fault 5 km south of Kealakekua at a depth of about 5 km. Magnitude 2.5.

Apr. 21, 06:06:36, 5 km northwest of Apua Point at a depth of about 15 km. Felt in Hilo. Magnitude 3.2.

Apr. 24, 03:06:33, beneath the ocean 5 km north of Laupahoehoe at a depth of about 25 km. Felt over most of the island of Hawaii. Magnitude 4.3.

Apr. 26, 18:29:43, 10 km southwest of Kiholo Bay at a depth of about 15 km. Magnitude 2.5.

Apr. 27, 20:53:24, Kealakekua fault at a depth of about 5 km. Magnitude 3.2.

Apr. 27, 21:58:59, Kealakekua fault 5 km south of Kealakekua at a depth of about 15 km. Magnitude 2.5.

Apr. 28, 08:11:00, 35 km west of Upolu Point. Magnitude 2.8.

May 3, 00:12:20, 15 km west of Keahole Point at a depth of about 15 km. Magnitude 2.5.

May 5, 01:59:18, 25 km southwest of Kealakekua Bay. Magnitude 2.5.

May 6, 22:37:35, 5 km west of Pahala at a depth of about 5 km. Magnitude 3.0.

May 13, 05:03:39, 18° 45' N, 156° 20' W, about 80 km west of Kalae. Magnitude 3.0.

May 18, 16:13:48, near coast of Kilauea about 45 km south of Hilo at a depth of about 5 km. Magnitude 3.0.

May 19, 00:32:48, 10 km south of Mokuaweoweo at a depth of about 10 km. Magnitude 3.2.

May 22, 08:20:39, 10 km southwest of the Mauna Loa seismograph station at a shallow depth. Magnitude 2.7.

May 28, 13:28:23, south shore of Hawaii about 15 km south-southeast of Pahoa at a depth of about 5 km. Magnitude 2.6.

June 3, 22:51:49, north rim of Kilauea caldera at a shallow depth. Felt on the north rim of Kilauea caldera. Magnitude 0.9.

June 3, 22:55:10, north rim of Kilauea caldera at a shallow depth. Felt on the north rim of Kilauea caldera. Magnitude 1.7.

June 4, 16:17:46, 10 km east of Kamuela at a depth of 35 km. Magnitude 3.0.

June 5, 12:57:36, 2 km southwest of Ohaikea at a depth of about 5 km. Magnitude 3.0.

June 5, 16:43:03, 20 km west-southwest of Naalehu at a depth of 35 km. Magnitude 2.9.

June 5, 16:47:09, 18° 59'N, 155° 28' W, about 15 km southeast Naalehu, at a depth of 35 km. Magnitude 3.3.

June 5, 16:58:03, aftershock of previous quake. Magnitude 2.7.

June 5, 21:38:18, 10 km north of Naalehu at a depth of 5 km. Magnitude 2.6.

June 6, 11:46:25, near Puu o Keokeo at a depth of about 15 km. Magnitude 3.0.

June 11, 22:34:20, 20 km west of Kailua. Magnitude 2.7.

June 17, 11:03:55, 5 km southeast of Ahuaumi at a depth of 15 km. Magnitude 3.5.

June 21, 03:42:35, 19° 10' N, 154° 45' W, about 40 km south of Cape Kumukahi. Magnitude 2.4.

June 25, 02:41:40, 21° 08' N, 155° 00' W, about 125 km northeast of Upolu Point. Magnitude 3.1.

June 30, 04:21:40, 19° 01' N, 154° 53' W, about 50 km south of Pahoa. Magnitude 3.0.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on seismographs of the Hawaiian Volcano Observatory on Hawaii (U=Uwekahuna, 19° 25.4' N, 155° 17.6' W, 1240m), and Maui (H=Haleakala, 20° 46.0' N, 156° 15.0' W, 2090m). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Apr. 7,

U eP 15:39:12.8 c
iS 15:46:05
iQ 15:49:30
iR 15:51:55
H eP 15:38:59.6 c
eS 15:45:45
eQ 15:49:10
eR 15:51:05

66½° N, 157° W, 15:30:38
Magnitude 7 (Pas)

Apr. 7,

U eP 18:14:46
eS 18:22:40

38½° N, 143° E, 18:05:02

Apr. 9,

U iP 06:22:38

56½° N, 139° W, 06:15:12

Apr. 10,

U eR 23:37:19

4½° S, 107° W, 23:12:47
Magnitude 6 (Pas)

Apr. 11,

U iP 23:20:19 c
eS 23:27:24
eR 23:33:18

47½° N, 153½° E, 23:11:26
Depth about 100 km
Magnitude 6¼ (Pas)

Apr. 12,

U iS 12:01:06
eQ 12:04:13
eR 12:05:23

26½° N, 111° W, 11:46:58
Magnitude 6½ (Pas)

Apr. 13,

U eP 09:15:55

66° N, 156° W, 09:07:24
Magnitude 6¾ (Pas)

Apr. 13,

U eP 12:37:45
iS 12:44:43
iR 12:50:38

53° N, 161° E, 12:29:07
Magnitude 6½ (Pas)

Apr. 14,

U eP 21:44:26
iS 21:54:11
iSS 21:59:06
eQ 22:04:10
eR 22:07:28

1° N, 79½° W, 21:32:28
Magnitude 6¾-7 (Pas)

Apr. 15,

U eP 01:42:39
eS 01:52:22
eSS 01:57:13
eR 02:05:50

1° N, 79½° W, 01:30:43

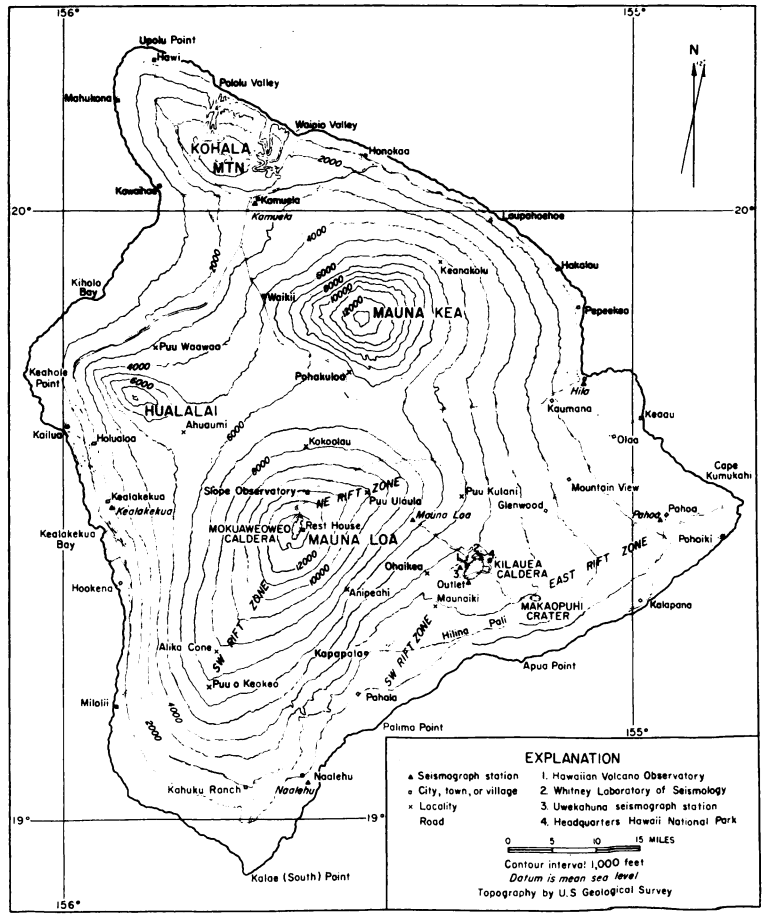
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 11

July–September 1958

By

J. P. Eaton and Harold L. Krivoy



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

Sept. 19,

U iP 08:24:34.0 d

2½° N, 127° E, 08:12:33

Sept. 20,

U iP 17:19:02.8 c
iS 17:26:45
eQ 17:31:25
iR 17:34:21
H iP 17:19:01.5 c

Sept. 24,

U eP 03:52:20
eS 03:58:29
iQ 04:01:07
iR 04:02:45
Tmax 04:35:51

Sept. 25,

U ePS 07:48:58
eSS 07:54:34
eG 08:05:38
eR 08:10:48

9° N, 39½° W, 07:20:01
Magnitude 6½ (Pas)

Erratum: Tilt coordinates for the Whitney station reported in Summary 10, April-June 1958, were in error. Correct coordinates are as follows:

Date	Whitney station (northeast rim)	
	N-S	E-W
Apr. 6	476	487
13	475	484
20	476	482
27	475	484
May 4	473	481
11	475	481
18	474	478
25	476	483
June 1	471	480
8	472	477
15	472	477
22	472	478
29	472	480

59736

Sept. 2,

U eR 03:21:37

6½° S, 155° E, 02:56:34
Depth about 100 km.

Sept. 2,

U eR 20:34:33

15° N, 92½° W, 20:07:04

Sept. 3,

U ePKS 04:07:20
ePPS 04:18:09
eSS 04:24:41
eR 04:44:53

0°, 18° W, 03:44:24

Sept. 3,

U eS 08:28:11
iR 08:35:48

40½° N, 143° E, 08:10:26
Depth about 60 km.

Sept. 4,

U eP 22:04:47
eS 22:15:34
eQ 22:31:36
iR 22:35:32

33½° S, 69½° W, 21:51:08
Magnitude 6¾-7 (Pas)

Sept. 7,

U eR 05:09:46

10° S, 153° E, 04:40:57

Sept. 8,

U eP 05:34:20
eS 05:41:17
iS 05:49:25
HTmax 06:24:41

53½° N, 159° E, 05:25:37

Sept. 9,

U eR 11:55:18

46° N, 151° E, 11:32:05

Sept. 9,

U eR 22:41:48

54° N, 171° E, 22:23:37

Sept. 11,

U eR 18:34:39

7½° N, 126½° E, 18:01:44

Sept. 14,

U iP 14:32:58
eR 14:56:51

57° N, 121° E, 14:21:37
Magnitude 6¼-6½ (Pas)

Sept. 15,

U eQ 05:58:30

8½° N, 103½° W, 05:36:18

Sept. 15,

U iP 19:57:11.8 c
epP 19:59:24
isP 20:00:26
eS 20:06:38
eSP 20:07:29
esS 20:10:47
esPS 20:21:23
H iP 19:57:08.7

2½° N, 120½° E, 19:45:40
Depth about 600 km
Magnitude 6-6¼ (Pas)

Sept. 17,

U eR 12:46:13

48½° N, 155° E, 12:23:50

PREFATORY NOTE

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1. Chronological Summary

July

The first week of July brought the most impressive seismic display recorded in Hawaii since the end of the 1955 eruption of Kilauea. From July 3 through July 6 a great swarm of small earthquakes accompanied by many hours of spasmodic tremor stemmed from a source about 10 km northeast of Kilauea caldera and 55 km deep. Although 48 of these earthquakes were larger than magnitude 2.5, the largest being magnitude 3.4, none was reported felt. Seismographs in the Mauna Loa station and in the new "Desert" station 4 km southwest of Mauna Iki recorded over 2100 separate earthquakes and almost 60 hours of nearly continuous spasmodic tremor during this swarm. On seismographs nearer the caldera in the Outlet and Uwekahuna stations the swarm was less impressive. Fewer earthquakes were discernable at these stations; and records of earthquakes that were recorded were smaller and had less distinct P phases than at Mauna Loa or Desert. Short period earthquake waves such as those characterizing these earthquakes are strongly attenuated when they pass up through the crust beneath Kilauea caldera.

Seismographs at Uwekahuna registered about 1100 earthquakes during July. 150 of these quakes originated at shallow depths beneath the caldera during the last week of the month.

An earthquake from a focus about 12 km south of Cape Kumukahi and 35 km deep was felt in Hilo, Pahoa, and the Volcano district at 2:12 p. m. on July 2. The largest earthquake of the month, magnitude 3.8, occurred about 55 km west of Kailua, Kona,

at 4:21 a. m. on July 13. It was felt in Kealakekua. The earthquake felt in Capt. Cook at 7:18 p. m. on July 16 originated about 25 km north of Naalehu at a depth of 35 km.

Tilting of the earth's surface at the Whitney station on the northeast rim of Kilauea caldera was about normal for July.

August

Most of the 400 earthquakes recorded by seismographs at Uwekahuna during August were very small and stemmed from shallow foci beneath Kilauea caldera.

Three earthquakes were felt in the vicinity of Kilauea caldera during the month. The first of these originated about 5 km southwest of the Outlet seismograph station at a depth of about 30 km at 9:01 a. m. on August 11. The other two occurred about 15 km beneath Kilauea caldera on August 20; the first, at 9:46 a. m. and the second, at 01:14 p. m.

The largest earthquake of the month originated near Hookena at 12:43 a. m. on August 21. It had a magnitude of 3.8 and was felt in Kealakekua and Capt. Cook.

Moderate northeastward tilting recorded at the Whitney station was about normal for August.

September

Only 275 earthquakes were registered by seismographs at Uwekahuna during September. Most of these earthquakes originated beneath Kilauea caldera, and some of them had unusually shallow foci.

At 4:06 p. m. on September 8 an earthquake with a magnitude of only 0.6 that originated along the northeast rim of Kilauea caldera was felt just south of Hawaii National Park Headquarters. On September 9 at 11:04 a. m. another earthquake from the same region was felt at Hawaii National Park Headquarters. A magnitude 3.8 earthquake, the largest of the month, that occurred 10 km north of Naalehu at a depth of 25 km was felt from Hilo to Kealakekua at 8:48 p. m. on September 28.

The strong northeastward tilting of the earth's surface recorded at the Whitney station was normal for September.

Aug. 17,

U iP 21:21:18.1 c
eR 21:40:48
35½° S, 179½° W, 21:11:09

Aug. 19,

U eP 04:55:48
eS 05:01:29
iR 05:07:31
19° S, 175° E, 04:45:45

Aug. 19,

U eR 16:22:45
51½° N, 175½° W, 16:06:18

Aug. 19,

U eR 16:51:33
53° N, 160° E, 16:29:44

Aug. 19,

U iS 12:06:16
iR 12:14:33
1° S, 149½° E, 21:48:07

Aug. 20,

U iP 03:49:08
iS 03:56:23
eQ 04:02:28
iR 04:03:23
14° S, 167° E, 03:40:07
Magnitude 6¼-6½ (Pas)

Aug. 21,

U eP 21:07:30
18° S, 176° W, 20:59:10
Depth about 250 km.

Aug. 24,

U iP 17:06:14.8 d
14° N, 121° E, 16:54:25
Depth about 150 km.

Aug. 26,

U eR 12:43:58
14° S, 167° E, 12:20:43

Aug. 26,

U eS 13:01:36
eR 13:07:48
14° S, 167° E, 12:45:02

Aug. 26,

U eS 18:11:58
eR 18:18:38
14° S, 167° E, 17:55:34

Aug. 26,

U eS 23:48:12
eR 23:54:30
14° S, 167° E, 23:31:38

Aug. 27,

U iS 02:43:05
eR 02:50:34
4½° S, 104½° W, 02:25:32

Aug. 29,

U eS 12:40:40
eR 12:47:00
14½° S, 167° E, 12:24:23
Magnitude 5¾-6 (Pas)

Aug. 30,

U eS 18:52:17
iR 18:57:35
27½° N, 112° W, 18:38:18

Aug. 31,

U eS 23:15:02
iR 23:20:32
63° N, 144½° W, 23:00:16
Magnitude 5¾-6 (Pas)

Sept. 1,

U eR 01:18:32
24° S, 175½° W, 00:57:10

Sept. 2,

U eR 02:40:26
10½° S, 164½° E, 02:27:41

Aug. 12,

U eR 08:32:29

51½° N, 175° W, 08:15:59

Aug. 12,

U eP 19:37:15
eS 19:47:11
iG 19:57:43
eR 20:01:04

0°, 126½° E, 19:25:05

Aug. 13,

U eR 04:27:29

½° N, 126° E, 03:50:35

Aug. 13,

U eP 20:20:00
eS 20:25:40
eR 20:29:33

51° N, 177½° W, 20:13:00

Aug. 14,

U eP 15:02:09.6
iS 15:07:49
iR 15:10:57

52° N, 175° W, 14:55:10
Magnitude 6½ (Pas)

Aug. 15,

U eR 02:54:27

6° S, 150½° E, 02:26:51

Aug. 15,

U eP 20:04:20.2
ePP 20:06:43
iS 20:11:17
iSS 20:14:58
eQ 20:15:30
iR 20:17:05
H eP 20:04:12
eR 20:16:46
Tmax 20:54:57

53° N, 160½° E, 19:55:39
Depth about 60 km.
Magnitude 6¾ (Pas)

Aug. 15,

U iP 22:41:10.7 d
ipP 22:42:02
iS 22:51:02
esS 22:52:01
iG 23:01:56
eR 23:02:56

1½° N, 125° E, 22:29:17
Depth about 200 km
Magnitude 6¾-7 (Pas)

Aug. 16,

U eP 13:24:54
iS 13:30:33
iR 13:34:06
HTmax 14:01:43

51½° N, 176° W, 13:17:52
Magnitude 6-6¼ (Pas)

Aug. 16,

U eG 20:05:45
eR 20:14:25

34½° N, 48° E, 19:13:45

Aug. 17,

U eS 09:21:18
iR 09:24:47

51½° N, 176° W, 09:08:35

Aug. 17,

U eR 11:07:10

51° N, 176° W, 10:50:40

Aug. 17,

U eR 11:32:25

51½° N, 176° W, 11:16:13

Aug. 17,

U eP 18:12:27
eS 18:20:15
eQ 18:26:25
iR 18:29:21

3° S, 145½° E, 18:01:05

2. Local Earthquake Summary

Week beginning	Number of Earthquakes*		Minutes of continuous tremor*
	magnitude ≥ 2.5	magnitude < 2.5	
June 29	49	700	470
July 6	5	150	0
13	5	44	0
20	2	67	29
27	3	129	45
Aug. 3	6	30	0
10	2	135	18
17	4	35	123
24	0	43	6
31	1	51	18
Sept. 7	2	137	6
14	3	42	7
21	0	31	0
28	2	43	0

*Recorded at Uwekahuna on a vertical component electromagnetic seismograph with a peak magnification of 20,000 and galvanometer and seismometer periods of 0.5 second.

3. Tilt coordinates* at seismograph stations on the rim of Kilauea caldera.

Date	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	N-S	E-W	N-S	E-W
July 6	474	481	506	483
13	476	482	507	482
20	475	482	507	479
27	476	483	504	480
Aug. 3	479	484	505	483
10	480	487	507	477
17	480	486	505	475
24	479	484	507	474
31	482	485	510	474
Sept. 7	487	485	512	478
14	492	486	512	478
21	492	488	512	476
28	496	492	511	474

*All tilt coordinates were arbitrarily set equal to 500 on January 5, 1958. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface: i.e. to a relative subsidence toward the north and east. A one unit change in coordinate reveals a tilting of one part per million (one mm per km) in the direction indicated.

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs operated by the Hawaiian Volcano Observatory on the islands of Hawaii and Maui. Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater were included in the list. The entries for a given earthquake are: date, origin time (Hawaiian standard time), epicenter, and general remarks.

July 2, 06:40:38, 15 km west of Keahole Point. Magnitude 2.5.

July 2, 14:11:48, 19° 25' N, 154° 48' W, about 12 km south of Cape Kumukahi at a depth of about 35 km. Felt in Hilo, Pahoa, and the Volcano district. Magnitude 3.6.

July 3-6, On these days a major swarm of earthquakes and associated spasmodic tremor originated about 55 km beneath a region about 10 km northeast of Kilauea caldera. The largest of approximately 2100 earthquakes from this source (abbreviated Kilauea-Mauna Loa deep) are listed separately below. None of these earthquakes was reported felt.

July 3, 23:32:24, Kilauea-Mauna Loa deep. Magnitude 2.5.
July 3, 23:49:10, Kilauea-Mauna Loa deep. Magnitude 2.5.
July 4, 01:51:52, Kilauea-Mauna Loa deep. Magnitude 2.5.
July 4, 05:14:51, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 4, 05:40:32, 30 km east of Naalehu at a depth of about 15 km. Magnitude 2.5.
July 4, 06:34:49, Kilauea-Mauna Loa deep. Magnitude 3.1.
July 4, 08:07:01, Kilauea-Mauna Loa deep. Magnitude 2.5.
July 4, 08:46:06, Kilauea-Mauna Loa deep. Magnitude 3.2.
July 4, 09:33:58, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 4, 09:37:30, Kilauea-Mauna Loa deep. Magnitude 3.2.
July 4, 10:44:45, Kilauea-Mauna Loa deep. Magnitude 3.1.
July 4, 11:35:15, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 4, 11:39:33, Kilauea-Mauna Loa deep. Magnitude 3.1.
July 4, 11:59:58, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 4, 13:15:18, Kilauea-Mauna Loa deep. Magnitude 2.8.
July 4, 14:06:00, Kilauea-Mauna Loa deep. Magnitude 3.3.
July 4, 14:20:02, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 4, 14:25:46, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 4, 14:53:08, 30 km west of Hookena at a depth of about 10 km. Magnitude 3.1.
July 4, 15:27:36, Kilauea-Mauna Loa deep. Magnitude 2.8.
July 4, 15:40:47, Kilauea-Mauna Loa deep. Magnitude 3.1.
July 4, 15:47:36, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 4, 15:51:22, Kilauea-Mauna Loa deep. Magnitude 2.5.

July 21,

U eS 07:41:44
iR 07:48:44
44½° N, 147½° E, 07:24:58
Magnitude 6-6¼ (Berk)

July 21,

U iP 14:44:29
iS 14:50:12
iR 14:53:53
Tmax 15:23:30
HTmax 15:21:22
51½° N, 178° W, 14:37:18
Magnitude 6¼ (Berk)

July 22,

UTmax 04:46:49
HTmax 04:45:42
58½° N, 138° W, 03:55:35

July 23,

U eP 10:37:08
iS 10:45:08
iR 10:56:51
31° N, 142° E, 10:27:19

July 24,

U eR 13:23:28
52½° N, 170° W, 13:08:05

July 26,

UTmax 21:21:49
12° N, 161½° E, 20:29:59

July 26,

U iP 17:49:12 d
epP 17:51:26
iS 17:38:49
i 18:00:31
isS 18:03:14
iSS 18:04:07
13½° S, 69° W, 17:37:09
Depth about 650 km
Magnitude 7-7¼ (Pas)

July 30,

U eL 03:11:23
44½° N, 148½° E, 02:47:17

July 30,

U eP 04:55:55
eS 05:05:39
eR 05:15:43
2½° S, 140° E, 04:44:53

July 30,

U eL 15:46:13
South Pacific Ocean, 15:10:18

Aug. 1,

U i 05:46:53
iS 05:50:43
esS 05:54:02
16° S, 176½° W, 05:37:50
Depth about 450 km

Aug. 3,

U i 01:14:12.0 c
21½° S, 179° W, 01:06:24

Aug. 4,

U iP 04:25:06.3 c
eQ 04:45:08
eR 04:48:36
H eP 04:25:02.2
6° S, 130° E, 04:13:19
Depth about 150 km

Aug. 6,

U eP 21:16:47
eS 21:22:55
eR 21:27:15
H iP 21:16:56
17° S, 173° W, 21:09:09
Magnitude 6¾ (Pas)

Aug. 10,

U eR 18:31:43
3½° S, 151° E, 18:05:54

Aug. 11,

U eR 08:16:44
18° S, 168½° E, 07:53:12

July 12,

U eP 03:37:26.3
eR 03:48
Tmax 04:17:55
HTmax 04:17:53

12° N, 165° E, 03:29:58

July 13,

UTmax 09:01:09
HTmax 08:59:57

58.3° N, 136.9° W, 08:10:02
Magnitude 5½-5¾ (Pas)

July 13,

U iP 12:12:53.3 d
H iP 12:12:53.0 d

10° S, 161½° E, 12:03:50
Depth about 100 km

July 16,

U eR 04:08:59

51½° N, 176½° W, 03:52:39

July 16

U eS 13:13:33
iQ 13:20:41

29½° S, 113° W, 12:54:18
Magnitude 6 (Berk)

July 16,

U eS 17:10:30
eR 17:16:56

12° S, 166½° E, 16:54:17

July 16,

U eR 19:02:52

12° S, 166½° E, 18:40:21

July 17,

UTmax 14:39:50
HTmax 14:38:29

57½° N, 137° W, 13:48:45

July 17,

U eS 19:14:55
iR 19:18:37

51° N, 176° W, 19:02:10
Magnitude 5¾ (Berk)

July 17,

U eP 21:06:25
eS 21:12:04
iR 21:15:39

51° N, 177½ W, 20:59:17
Magnitude 6 (Berk)

July 18,

U eP 00:46:34
eS 00:52:04
iR 00:55:30

51° N, 176½° W, 00:39:18
Magnitude 5¾ (Berk)

July 18.

U iP 01:59:17.0 c

4° S, 78° W, 01:47:21
Depth about 100 km

July 18,

HTmax 17:54:03

58½° N, 138½° W, 17:03:58

July 19,

U iP 06:41:16.7 c

4° S, 138½° E, 06:30:19
Depth about 150 km

July 19,

U iP 09:11:16.6 d

July 19,

U eP 18:28:40.4 c
eQ 18:47:45
eR 18:49:05
H eP 18:28:41

0°, 129½° E, 18:16:52

July 4, 17:09:18, Kilauea-Mauna Loa deep. Magnitude 3.4.
July 4, 18:06:37, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 4, 19:19:44, Kilauea-Mauna Loa deep. Magnitude 3.1.
July 4, 20:52:35, Kilauea-Mauna Loa deep. Magnitude 3.1.
July 4, 20:54:25, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 4, 22:09:56, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 4, 22:37:11, Kilauea-Mauna Loa deep. Magnitude 2.9.
July 4, 23:45:02, Kilauea-Mauna Loa deep. Magnitude 2.9.
July 5, 00:34:38, Kilauea-Mauna Loa deep. Magnitude 2.9.
July 5, 02:16:04, Kilauea-Mauna Loa deep. Magnitude 3.3.
July 5, 03:04:44, Kilauea-Mauna Loa deep. Magnitude 3.1.
July 5, 04:06:57, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 5, 05:16:49, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 5, 05:40:19, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 5, 05:51:00, Kilauea-Mauna Loa deep. Magnitude 3.1.
July 5, 07:36:09, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 5, 08:05:01, Kilauea-Mauna Loa deep. Magnitude 2.9.
July 5, 11:49:17, Kilauea-Mauna Loa deep. Magnitude 2.8.
July 5, 13:20:53, Kilauea-Mauna Loa deep. Magnitude 2.8.
July 5, 15:16:52, Kilauea-Mauna Loa deep. Magnitude 3.0.
July 5, 16:12:19, Kilauea-Mauna Loa deep. Magnitude 2.5.
July 5, 18:43:21, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 5, 18:58:39, Kilauea-Mauna Loa deep. Magnitude 2.5.
July 6, 02:57:40, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 6, 08:50:02, Kilauea-Mauna Loa deep. Magnitude 2.7.
July 6, 11:26:30, Kilauea-Mauna Loa deep. Magnitude 2.6.
July 6, 13:25:30, Kilauea-Mauna Loa deep. Magnitude 3.2.
July 11, 04:07:15, 15 km northwest of Naalehu at a depth of about 15 km. Magnitude 2.5.
July 13, 04:20:52, 55 km west of Kailua, Kona. Felt in Kealakekua. Magnitude 3.8.
July 13, 12:04:36, 20 km north of Naalehu at a depth of about 5 km. Magnitude 2.7.
July 16, 19:17:58, 25 km north of Naalehu at a depth of about 35 km. Felt in Capt. Cook. Magnitude 3.3.
July 17, 15:53:54, 5 km south of Puu Ulaula at a depth of about 10 km. Magnitude 2.6.
July 19, 22:57:58, 25 km west of Kealakekua Bay. Magnitude 2.6.
July 23, 06:17:39, 15 km east of Apua Point at a depth of about 30 km. Magnitude 2.5.
July 26, 06:27:57, 25 km west of Keahole Point. Magnitude 2.9.
July 28, 16:26:01, about 30 km from the Haleakala seismograph station at a depth of at least 15 km. Magnitude 2.5.
Aug. 2, 09:52:26, 10 km west of Pahala at a depth of about 5 km. Magnitude 2.7.
Aug. 2, 19:00:28, 10 km north of Naalehu at a depth of about 5 km. Magnitude 2.6.
Aug. 5, 21:52:32, 5 km northwest of Apua Point at a depth of 5 km. Magnitude 2.7.

Aug. 6, 09:39:13, 50 km from the Haleakala seismograph station. Magnitude 2.9.

Aug. 8, 11:33:51, 5 km southeast of Hakalau at a depth of about 35 km. Magnitude 2.6.

Aug. 8, 13:11:06, 5 km southwest of Pahala at a depth of about 40 km. Magnitude 3.0.

Aug. 8, 18:20:49, 10 km southwest of the Mauna Loa seismograph station at a shallow depth. Magnitude 3.0.

Aug. 9, 12:53:42, On the Kealakekua fault about 5 km southwest of Kealakekua at a depth of about 10 km. Magnitude 3.2.

Aug. 11, 09:01:28, 5 km southwest of the Outlet seismograph station at a depth of about 30 km. Felt near Kilauea caldera. Magnitude 3.7.

Aug. 15, 01:50:03, 5 km southwest of Hookena at a depth of about 15 km. Magnitude 3.1.

Aug. 17, 00:27:32, 10 km west of Mahukona at a depth of about 45 km. Magnitude 3.3.

Aug. 20, 09:46:07, beneath Kilauea caldera at a depth of about 15 km. Felt near the east rim of Kilauea caldera and in Hilo. Magnitude 3.7.

Aug. 20, 13:13:55, beneath Kilauea caldera at a depth of about 15 km. Felt near the east rim of Kilauea caldera. Magnitude 2.5.

Aug. 21, 00:42:57, near Hookena at a depth of about 5 km. Felt in Kealakekua and Capt. Cook. Magnitude 3.8.

Sept. 1, 00:05:24, 10 km east of Puu o Keokeo at a depth of about 5 km. Magnitude 2.9.

Sept. 7, 02:02:07, 10 km south of Apua Point at a depth of about 10 km. Magnitude 3.4.

Sept. 8, 07:01:59, 20° 52' N, 155° 53' W, 15 km northeast of Hana, Maui, at a depth of 40 km. Magnitude 3.4.

Sept. 8, 16:06:10, near the northeast rim of Kilauea caldera at a very shallow depth. Felt just south of Hawaii National Park Headquarters. Magnitude 0.6.

Sept. 9, 11:07:39, near the northeast rim of Kilauea caldera at a shallow depth. Felt at Hawaii National Park Headquarters. Magnitude 1.7.

Sept. 17, 01:47:35, 25 km west of Keahole Point. Magnitude 2.9.

Sept. 18, 04:13:48, 13 km southeast of Makaopuhi at a depth of about 45 km. Magnitude 3.1.

Sept. 20, 20:09:18, 10 km east of Kamuela at a depth of about 40 km. Magnitude 2.7.

Sept. 28, 20:48:06, 10 km north of Naalehu at a depth of about 25 km. Felt from Hilo to Kealakekua. Magnitude 3.8.

Sept. 29, 01:08:49, 20 km north of Kamuela at a depth of about 25 km. Magnitude 2.5.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on seismographs of the Hawaiian Volcano Observatory on Hawaii (U=Uwekahuna, 19° 25.4' N, 155° 17.6' W, 1240m), and Maui (H=Haleakala, 20° 46.0' N, 156° 15.0' W, 2090m). Beginnings of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

July 1,

U eP 06:00:13 c
eS 06:05:54
eR 06:09:40

54½° N, 176½° W, 05:53:07
Magnitude 6 (Pas)

July 3,

U eP 06:36:32 d
iS 06:43:42
eR 06:49:47

29° S, 179° W, 06:27:44
Depth about 400 km
Magnitude 6 (Pas)

July 3,

U eR 00:58:22

55° S, 126° W, 10:23:02

July 4,

U eR 19:10:21

6° N, 125° E, 18:34:03

July 10,

U iP 06:23:39.6 d
iScP 06:29:12
iS 06:30:02
iL 06:33:03
Tmax 07:07:00
H eP 06:23:34.8
eS 06:29:50
eL 06:32:40
Tmax 07:05:52

58.6° N, 137.1° W, 06:15:51
Magnitude 8 (Pas)

July 10,

U iP 08:06:09 c

Aftershock

July 10,

U eP 12:34:37 c

Aftershock

July 11,

U e 19:35:48
eR 19:52:56

21° S, 69° W, 19:10:20
Magnitude 6½ (Pas)

July 11,

U Tmax 20:41:04
H Tmax 20:40:01

57½° N, 137½° W, 19:50:08

July 12,

U eS 01:05:46
iR 01:13:04
Tmax 01:56:20

5° S, 106½° W, 00:48:30
Magnitude 6 (Pas)

July 12,

U eR 02:56:48

4½° S, 105½° W, 02:31:55

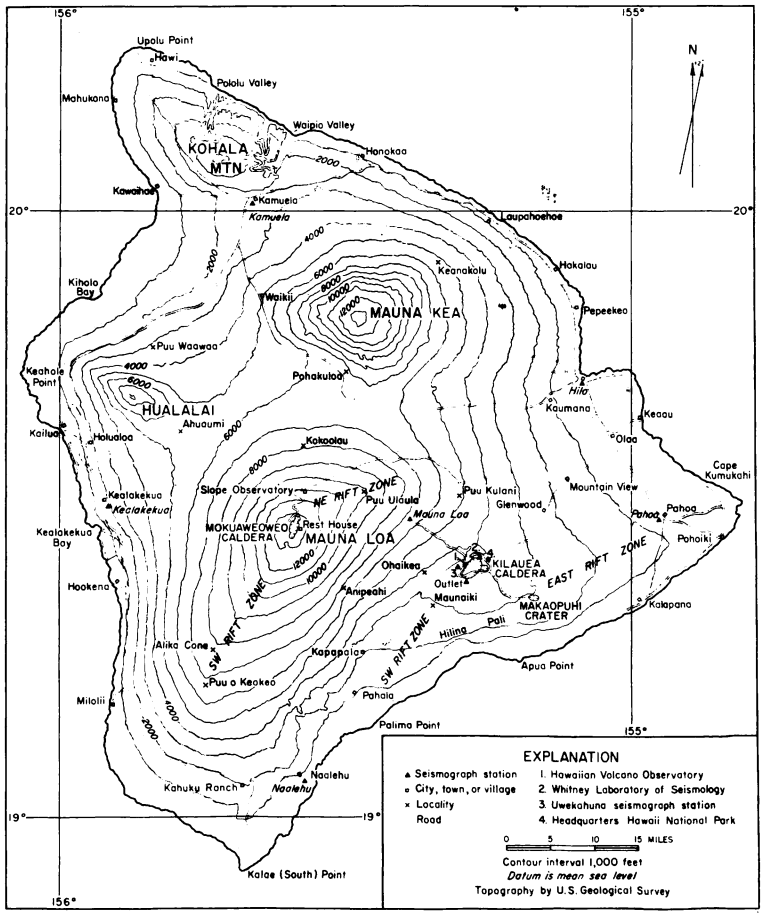
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY SUMMARY 12

October–December 1958

By

J. P. Eaton and Harold L. Krivoy



Map of the Island of Hawaii, showing location of the Hawaiian Volcano Observatory, seismograph stations operated by the observatory, and localities mentioned in text.

Nov. 30,

U iP 01:42:29.7 c
eR 01:58:14

32° N, 137½° E, 01:32:41
Magnitude 6

Dec. 2,

H Tmax 18:25:36

40½° N, 125° W, 17:43:30
Magnitude 4-4½

Dec. 3,

U eR 10:26:30

19° N, 121½° E, 09:48:26

Dec. 6,

U eR 10:06:40

6½° N, 83° W, 09:33:45
Magnitude 6-6¼

Dec. 7,

U iP 02:57:52.4

4° N, 127° E, 02:45:49

Dec. 8,

U eR 12:32:30

44° N, 149½° E, 12:08:23

Dec. 10,

U iP 07:12:51.1
ipP 07:13:48.4
iS 07:20:57
isS 07:23:09
H iP 07:12:56.7

37° N, 176½° E, 07:02:59
Depth about 300 km
Magnitude 6¾

Dec. 10,

U eP 14:50:45.2

5° N, 126° E, 14:39:00
Depth about 200 km.

Dec. 10,

U iR 22:08:40

24½° N, 109° W, 21:49:20
Magnitude 5¾

Dec. 14,

U iR 07:43:31

35° S, 108½° W, 07:11:28
Magnitude 6

Dec. 17,

U eP 09:06:50.7

33° N, 137° E, 08:57:10
Depth about 400 km.

Dec. 19,

U eR 18:52:51

51½° N, 177½° W, 18:36:23

Dec. 23,

U eR 07:02:36

2° N, 79° W, 06:27:15

Dec. 25,

U iP 08:15:32:2 c
eS 08:23:33
iR 08:32:07
H iP 08:15:30.3 c

Dec. 30,

U eP 08:49:20.3 d

35½° S, 105½° W, 08:37:56
Magnitude 6

62695

PREFATORY NOTE

This summary of observations made at the Hawaiian Volcano Observatory is published for the use of volcanological and seismological observatories and others interested in the data at intervals shorter than once a year. Those who wish to receive this summary should request inclusion on the mailing list from the Director, U. S. Geological Survey, Washington 25, D. C.

1. Chronological Summary

October

Continuing mild, shallow seismic activity at Kilauea caldera accounted for most of the 338 earthquakes recorded at Uwekahuna during October.

An earthquake felt in Kealakekua at 10:15 p. m. on October 22 originated beneath the ocean about 20 km west of Hookena. Its magnitude was 2.8.

On October 22, 23, and 24 a group of moderate earthquakes stemmed from a shallow focus beneath the ocean about 25 km south of Uwekahuna. The two largest earthquakes of this group, both of magnitude 4.3, were reported felt. The quake at 11:43 p.m. on October 22 was felt from Hawaii National Park to Kealakekua; that at 12:23 p. m. on October 23 was felt at Pahala.

Strong northeasterly tilting recorded at the Whitney station was normal for the month.

November

Only 138 earthquakes were recorded at Uwekahuna during November. Most of these were small and occurred near Kilauea caldera.

The largest earthquake of the month originated about 30 km beneath the southeast rim of Kilauea caldera at 5:56 a. m. on November 2. Its magnitude was 4.4, and it was felt from Hawaii National Park to Hilo.

A magnitude 3.0 earthquake that was felt in Kealakekua at 8:48 p. m. on November 14 stemmed from a shallow focus about 8 km southwest of Kealakekua.

Moderate northeastward tilting at the Whitney station was normal for the month.

December

216 earthquakes were recorded by seismographs at Uwekahuna during December.

The only earthquake reported felt during the month occurred about 7 km northwest of Hilo at a depth of 45 km at 9:17 a. m. on December 27. This earthquake, with a magnitude of 4.5, was felt over most of Hawaii. It was the largest quake in the Hawaiian Islands since the magnitude 5.6 earthquake that occurred 45 km east of Hana, Maui, on August 18, 1957.

Tilting of the ground at the Whitney station was about normal for the month.

2. Local Earthquake Summary

Week beginning	Number of Earthquakes *		Minutes of continuous tremor*
	magnitude $\geq$ 2.5	magnitude < 2.5	
Oct. 2	1	117	2
9	1	45	0
16	4	74	3
23	7	70	13
30	4	32	0
Nov. 6	2	18	0
13	2	32	0
20	1	35	3
27	0	34	0
Dec. 4	1	32	7
11	1	36	0
18	3	34	0
25	2	97	0

*Recorded at Uwekahuna on a vertical component electromagnetic seismograph with a peak magnification of 20,000 and galvanometer and seismometer periods of 0.5 second.

3. Tilt coordinates* at seismograph stations on the rim of Kilauea caldera.

Date	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	N-S	E-W	N-S	E-W
Oct. 2	499	496	512	470
9	502	496	511	469
16	505	495	512	468

Nov. 12,

U iP 20:32:44.8 c
e 20:39:07
iS 20:40:13
eSS 20:43:43
iQ 20:44:43
iR 20:47:43
Tmax 21:13:33
H eP 20:32:32.9

44½° N, 148½° E, 20:23:26
Magnitude 6¾-7

Nov. 13,

U eR 03:20:43

44° N, 148½° E, 02:56:26

Nov. 13,

U eR 04:28:27

44½° N, 148° E, 04:04:37

Nov. 14,

U eR 05:39:04

36° S, 102° W, 05:04:25

Nov. 14,

U iP 05:56:36.2 c
ipP 05:56:53.0

Nov. 14,

U eR 05:58:56

44° N, 149° E, 05:34:53

Nov. 14,

U eP 14:00:15.2
eG 14:17:29
eR 14:23:44

6° S, 131° E, 13:48:20

Nov. 15,

U iR 09:24:39

44° N, 149° E, 09:00:45
Magnitude 6½-6¾

Nov. 16,

U iR 18:02:05

16° S, 172° W, 17:44:48
Magnitude 6¼

Nov. 17,

U eP 09:55:39.4

10½° S, 162½° E, 09:46:30

Nov. 18,

U eR 08:02:25

50½° N, 179° E, 07:45:20

Nov. 19,

U eS 09:40:50
eR 09:47:46

44° N, 149° E, 09:23:51
Depth about 60 km.

Nov. 19,

U iP 04:03:38.0

31° S, 179° W, 03:53:56

Nov. 19,

U iP 15:09:58.4 c

60½° N, 150½° W, 15:02:15
Depth about 60 km.

Nov. 20,

U eR 05:58:21

52° N, 159½° E, 05:36:33

Nov. 20,

U eP 14:27:24.3
eR 14:31:46

45° N, 149½° E, 14:18:04
Depth about 60 km.

Oct. 28,

U eR 04:52:16

62½° S, 157° W, 04:14:55

Oct. 28,

U eR 11:36:36

30½° N, 85° E, 10:46:27

Oct. 29,

U iR 00:07:17

52° N, 179½° E, 23:50:08 (Oct. 28)

Oct. 29,

U eP 07:51:29.2 d
Tmax 08:31:55
H eP 07:51:17
Tmax 08:29:30

51½° N, 179½° E, 07:44:10
Magnitude 6¼

Oct. 31,

U iP 23:51:05.5 d

25° N, 122½° E, 23:39:27
Depth about 100 km.

Nov. 1,

U eP 03:48:40.7
iS 03:56:41
eG 04:01:38
iR 04:05:00

3° S, 150° E, 03:38:35
Magnitude 6¼-6½

Nov. 1,

U eP 12:25:38
eS 12:33:18
iR 12:40:10

17½° S, 168° E, 12:16:36
Magnitude 6-6¼

Nov. 1,

U eS 16:07:10
eR 16:14:18

17½° S, 168° E, 15:50:10

Nov. 4,

U eP 08:41:01
eR 08:55:19

28° N, 140½° E, 08:28:28

Nov. 4,

U eR 23:30:35

50° S, 115° W, 22:54:46

Nov. 6,

U eP 15:41:49

6° S, 128° E, 15:30:06
Depth about 250 km.

Nov. 6,

U iP 23:07:21.5 c
iS 23:14:31
iR 23:22:11
Tmax 24:04:30
H iP 23:07:10.9 c
iS 23:14:24
eQ 23:18:54
iR 23:21:07

44½° N, 148½° E, 22:58:06
Depth about 60 km.
Magnitude 8-8¼

Nov. 7,

U eP 01:52:11

44½° N, 149½° E, 01:42:56

Nov. 7,

U eR 05:27:41

44½° N, 149° E, 04:59:56
Depth about 60 km.

Nov. 8,

U iP 09:31:31.8 d
iS 09:38:45
eR 09:47:21

52° N, 159½° E, 09:22:53

Nov. 12,

U eR 11:04:20

7° S, 156° E, 10:39:47
Depth about 100 km.

Table–Continued

Date	Whitney station (northeast rim)		Uwekahuna station (west rim)	
	N-S	E-W	N-S	E-W
23	506	502	510	469
30	508	506	512	454
Nov. 6	509	510	511	453
13	512	512	512	462
20	515	516	511	459
27	513	516	512	460
Dec. 4	515	518	512	457
11	516	518	511	458
18	516	516	510	458
25	517	515	510	457

*All tilt coordinates were arbitrarily set equal to 500 on January 5, 1958. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface: i. e. to a relative subsidence toward the north and east. A one unit change in coordinate reveals a tilting of one part per million (one mm per km) in the direction indicated.

LOCAL EARTHQUAKES

The data for the following local earthquakes were determined from seismographs operated by the Hawaiian Volcano Observatory on the islands of Hawaii and Maui. Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater were included in the list. The entries for a given earthquake are: date, origin time (Hawaiian standard time), epicenter, and general remarks.

Oct. 8, 14:42:41, 10 km southwest of Hilo at a depth of about 25 km. Magnitude 2.5.

Oct. 9, 04:57:10, 15 km northwest of Mokuaweoweo at a depth of about 5 km. Magnitude 2.5.

Oct. 21, 10:20:45, 20 km southwest of Kalapana at a depth of about 10 km. Magnitude 2.8.

Oct. 22, 22:14:47, 20 km west of Hookena at a depth of about 15 km. Felt in Kealakekua. Magnitude 2.8.

Oct. 22, 23:43:28, offshore south of Kilauea at 19° 12.5' N, 155° 19' W at a shallow depth. Felt from Hawaii National Park to Kealakekua. Magnitude 4.3.

Oct. 22, 23:50:53, 19° 12.5' N, 155° 19' W at a shallow depth. Magnitude 3.9.

Oct. 23, 03:21:19, 19° 12.5' N, 155° 19' W at a shallow depth. Magnitude 3.2.

Oct. 23, 04:38:55, 19° 12.5' N, 155° 19' W at a shallow depth. Magnitude 3.5.

Oct. 23, 12:23:23, 19° 12.5' N, 155° 19' W at a shallow depth. Felt at Pahala. Magnitude 4.3.

Oct. 24, 17:24:12, 19° 12.5' N, 155° 19' W at a shallow depth. Magnitude 2.7.

Oct. 25, 00:01:49, south rim of Kilauea caldera at a depth of about 15 km. Magnitude 2.5.

Oct. 26, 19:39:28, 10 km northeast of the summit of Mauna Kea at a depth of about 15 km. Magnitude 2.7.

Oct. 29, 19:55:27, 20 km southeast of Kamuela at a shallow depth. Magnitude 2.8.

Oct. 30, 13:17:19, 15 km northwest of Mokuaweoweo at a depth of about 30 km. Magnitude 2.6.

Oct. 31, 03:55:37, offshore 10 km northeast of Honokaa at a depth of 5 km. Magnitude 3.1.

Nov. 1, 08:52:16, 10 km northwest of Pahala at a depth of about 15 km. Magnitude 3.0.

Nov. 2, 05:55:44, 4 km southeast of Uwekahuna at a depth of about 30 km. Felt from Hawaii National Park to Hilo. Magnitude 4.4.

Nov. 7, 08:59:07, about 5 km west of Puu o Keokeo at a depth of about 15 km. Magnitude 3.2.

Nov. 10, 01:36:54, 5 km northwest of Apua Point at a depth of about 25 km. Magnitude 3.0.

Nov. 14, 20:47:47, 8 km southwest of Kealakekua at a depth of about 5 km. Felt at Kealakekua. Magnitude 3.0.

Nov. 14, 20:49:46, 8 km southwest of Kealakekua at a shallow depth. Magnitude 2.6.

Nov. 23, 12:10:19, 20 km southeast of Naalehu at a depth of about 25 km. Magnitude 3.0.

Dec. 7, 21:41:15, 8 km southwest of Kalapana at a depth of about 25 km. Magnitude 2.6.

Dec. 15, 23:37:16, 15 km southeast of Kamuela at a depth of about 30 km. Magnitude 3.2.

Dec. 23, 21:17:35, 5 km north of Kapapala at a depth of about 25 km. Magnitude 3.4.

Dec. 24, 17:05:21, about 5 km west of Ohaikea at a depth of about 10 km. Magnitude 3.5.

Dec. 27, 09:17:24, 7 km northwest of Hilo at a depth of about 45 km. Felt from Hilo to Kealakekua. Magnitude 4.5.

Dec. 31, 00:55:42, 10 km southeast of Hookena at a depth of about 15 km. Magnitude 2.7.

DISTANT EARTHQUAKES

The following earthquakes of distant origin were recorded on seismographs of the Hawaiian Volcano Observatory on Hawaii (U=Uwekahuna, 19° 25.4' N, 155° 17.6' W, 1240m), and Maui (H=Haleakala, 20° 46.0' N, 156° 15.0' W, 2090m). Beginnings

of phases are given in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determinations of Epicenters published by the U. S. Coast and Geodetic Survey.

Oct. 1,

U eR 10:11:13

57° S, 147° E, 09:29:43

Oct. 2,

U eP 15:12:42.4

7½° N, 127° E, 15:00:50

Oct. 3,

U eP 00:45:22.7

13½° N, 120° E, 00:33:07

Oct. 4,

U eR 12:12:24

22½° N, 144½° E, 11:33:07

Oct. 6,

U eP 00:56:42.9

32° S, 179½° E, 00:47:20
Depth about 250 km.

Oct. 7,

U eP 12:42:38
iS 12:50:30
eG 12:56:26
iR 12:58:32

5° S, 15½° E, 12:32:40
Magnitude 6¼-6½

Oct. 9,

U eS 11:58:16
iR 12:19:09

55½° S, 27½° W, 11:20:17

Oct. 10,

U eP 08:39:01
eS 08:46:01
iR 08:52:04

53½° N, 160½° E, 08:30:26
Depth about 100 km.

Oct. 10,

U eS 15:38:42
eR 15:51:02

27½° N, 125½° E, 15:18:42
Depth about 250 km.
Magnitude 6¾

Oct. 19,

U eR 02:29:44

19° S, 172½° W, 01:53:54

Oct. 19,

U eP 11:52:37

34½° S, 178° W, 11:42:42

Oct. 20,

U eP 01:02:42
iR 01:12:02
HTmax 01:38

52° N, 175° W, 00:55:34

Oct. 20,

U iR 01:57:20

9½° S, 112½° E, 01:12:30

Oct. 26,

U eP 02:30:20

5½° N, 117° E, 02:17:32

Hawaiian Volcano Observatory
1959 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 13
January, February, and March 1959
By Jerry P. Eaton and Harold L. Krivoy

Summary 14
April, May, and June 1959
By Jerry P. Eaton and Harold L. Krivoy

Summary 15
July, August, and September 1959
By Jerry P. Eaton and Harold L. Krivoy

Draft of
Summary 16
October, November, and December 1959
By Harold L. Krivoy, Michael P. Lane, and Jerry P. Eaton

Open-File Report 2007-1319
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 13

January-March 1959

by

J. P. Eaton and H. L. Krivoy

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HAWAIIAN VOLCANO OBSERVATORY SUMMARY 13

By J. P. Eaton and H. L. Krivoy

Preface

The gradual improvement of instruments and techniques employed in recording events at Hawaiian volcanoes necessitates an occasional revision of the content and format of this summary. In such revision a compromise is sought between the need to summarize current data as fully as possible and the desirability of maintaining continuity in the type of data reported and the nature of its presentation.

In Summary 9 the local earthquake statistical summary was modified to eliminate its arbitrary dependence on the obsolete seismograph at the Whitney station, and the summary of tilting at Kilauea caldera was modified to permit a simpler, more useful presentation of the data. Revisions incorporated into the present summary (13) again involve local earthquakes and tilting. To permit the reporting of epicenters of local earthquakes with the added precision made possible by recent improvements in the seismograph network, epicenter locations will now be given in terms of geographic coordinates; and the map (fig. 2) has been provided with latitude and longitude guides. The pattern of tilting around Kilauea caldera delineated by the newly developed liquid-level tiltmeter bases* will also be displayed in summaries covering quarters during which measurements are made. Weekly indications of tilting at the Whitney station will be discontinued, for they have proved to be so strongly dependent on vagaries of temperature and rainfall as to be generally unreliable as an index to the swelling and shrinking of the volcano.

This summary also describes seismograph installations operated by the U.S. Geological Survey in Hawaii. Changes in the network will be reported in the summary covering the quarter during which they occur, and the entire network will be redescribed in the summary covering the first quarter of each year.

Chronological summary

Measurements made during the first week of February at tilt bases around Kilauea caldera revealed that the ground surface had tilted outward from the south edge of the caldera since October 1958. From a maximum rate of about 3 microradians per month at Uwekahuna and Summer Camp, tilting decreased rapidly at greater distances from the caldera.

*J. P. Eaton, A portable water-tube tiltmeter, Seism. Soc. Amer. Bull., v. 49, no. 4, p. 301-316, October 1959.

Tilting at Uwekahuna vault during the first quarter of 1959 was rather erratic and did not reflect the gentle swelling of the Kilauea summit indicated by the tilt bases around the caldera.

More than 1,000 earthquakes were recorded at Uwekahuna during January. About 400 of these originated at very shallow depths beneath Kilauea caldera. On January 5 and 6 about 600 small to moderate earthquakes and several hours of accompanying tremor from a source about 60 km deep and 10 km northeast of the caldera were registered by seismographs around the summit of Kilauea and at Hilo. Although 29 earthquakes of this swarm were of magnitude 2.5 or larger, none was felt.

The largest earthquake in the Hawaiian region during January occurred beneath the sea about 125 km south of Honolulu at 20°15' N., 157°55' W. on January 12 at 01^h05^m. Although its magnitude was 4.0, it was not felt.

An earthquake with a magnitude of only 1.6 which originated at a very shallow depth beneath Kilauea caldera was felt at the caldera at 16^h11^m on January 29. A magnitude 2.9 earthquake from an epicenter about 12 km east-northeast of Apua Point was felt in Hilo at 05^h33^m on January 30.

Only 175 earthquakes were recorded at Uwekahuna during February, marking a sharp decline in the number of shallow earthquakes beneath the caldera.

At 23^h29^m on February 9 a magnitude 3.5 earthquake from a source about 5 km south of the caldera and 10 km deep was felt at Kilauea caldera and at Hilo.

On the evening of February 19 three earthquakes from an origin about 12 km northeast of Apua Point and 5 km deep were felt at scattered points over most of the island of Hawaii. The first of these earthquakes, with a magnitude of 4.0, occurred at 19^h58^m. It was followed, at 20^h00^m, by a magnitude 4.5 earthquake, the largest earthquake in the Hawaiian region during February, which was felt at least as far away as Honokaa. The third earthquake, with a magnitude of 3.5, occurred at 20^h35^m.

The number of earthquakes recorded at Uwekahuna declined to 130 for March. Five of these were felt.

At 05^h32^m on March 5 a magnitude 3.5 earthquake from a focus 5 km deep and 10 km north-northwest of Apua Point was felt from the vicinity of the Desert seismograph station to Hilo.

The earthquake felt in Capt. Cook at 16^h45^m on March 6 originated beneath the ocean about 15 km west of Keahole Point. Its magnitude was 4.0.

An earthquake with a magnitude of 3.5 from a source 5 km southeast of Waikii and 15 km deep was felt at Pohakuloa at 04^h26^m on March 9. At 07^h45^m on March 12 a magnitude 4.0 earthquake with an epicenter 10 km southeast of Honokaa and a focal depth of about 15 km was felt at Kukuihaele (10 km northwest of Honakaa).

The earthquake which was felt at Kilauea caldera and Capt. Cook at 07^h49^m on March 17 emanated from a focus 10 km southeast of Mokuaweoweo and 5 km deep. Its magnitude was 3.5.

Briefly, this quarter may be summarized as a period of continuing, slow inflation of the summit of Kilauea. The swarm of tiny shallow earthquakes beneath Kilauea caldera which was so pronounced in January declined greatly during February and March.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter (tables 1 and 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were bugun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, that is, to a relative subsidence toward the north and east. A 1-unit change in coordinate corresponds to a 1-microradian (1 mm per km) tilt in the direction indicated.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of the Observatory, and distant earthquakes originating farther than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, weekly totals of earthquakes with magnitudes of 2.5 or greater, earthquakes with magnitudes less than 2.5, and minutes of continuous tremor, all recorded on the HVO-1 seismograph at Uwekahuna, are reported in table 3. Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 2, and essential data on the stations are given in table 6.

Table 1.--Tilt coordinates at Uwekahuna vault, January-March 1959

Date	N-S	E-W	Date	N-S	E-W
Jan. 4	511	455	Feb. 22	506	456
11	513	457	Mar. 1	504	458
18	508	457	8	505	459
25	504	458	15	507	460
Feb. 1	506	456	22	507	464
8	504	457	29	511	466
15	504	458			

Table 2.--Tilt coordinates and changes at tilt bases around Kilauea caldera (see fig. 1)

Tilt base (location)	Date (1959)	Tilt coordinates		Direction and rate of tilting since last reading (10^{-6} rad/mo)		Date of last reading (1958)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Feb. 2	543.9	472.7	3.3	N. 33° W.	Oct. 2
Tree Molds (19°26.3' N., 155°17.3' W.)	Feb. 5	508.6	499.0	2.2	N. 7° W.	Oct. 9
Summer Camp (19°24.6' N., 155°15.6' W.)	Feb. 8	508.4	427.1	3.1	N. 77° E.	Oct. 7
Sand Spit (19°24.1' N., 155°16.8' W.)	Feb. 8	505.1	494.1	2.4	N. 49° W.	Oct. 31
Kalihipaa (19°21.4' N., 155°15.3' W.)	Feb. 9	495.9	503.3	0.9	S. 42° E.	Oct. 6
Keamoku (19°25.1' N., 155°19.0' W.)	Mar. 2	500.0	500.0	---	---------	-------
Kamokukolau (19°22.7' N., 155°16.6' W.)	Mar. 4	500.0	500.0	---	---------	-------

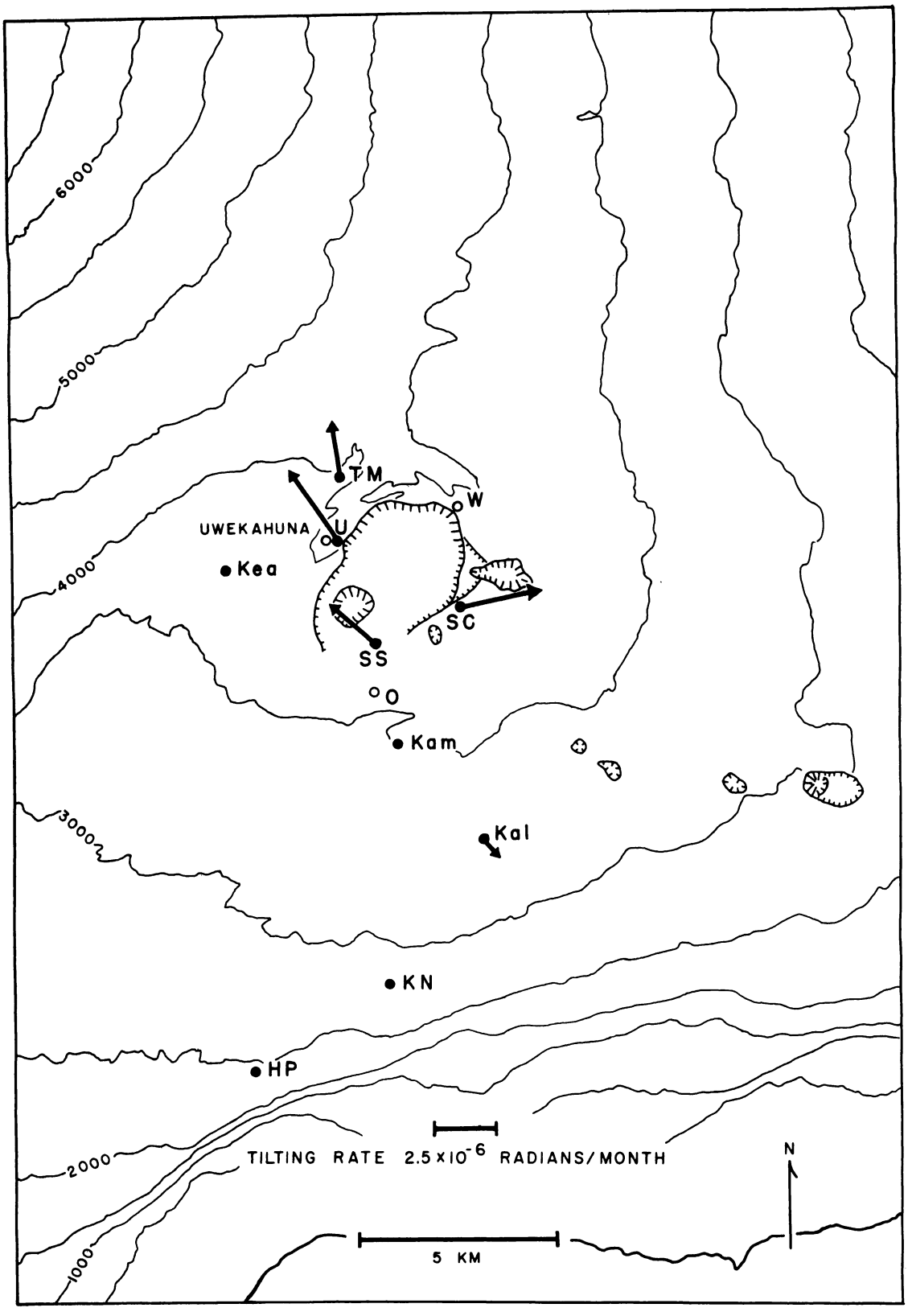

Figure 1.--Tilting of the ground around Kilauea caldera, Oct. 6, 1958, to Feb. 6, 1959. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Table 3.--Local earthquakes and tremor recorded by the HVO-1 seismograph at Uwekahuna, January-March 1959

Week beginning	Number of earthquakes		Minutes of continuous tremor
	Magnitude ≥2.5	Magnitude <2.5	
Jan. 4	33	ca. 700	ca. 400
11	1	57	106
18	0	115	14
25	4	84	68
Feb. 1	1	37	3
8	4	45	0
15	5	39	30
22	3	40	0
Mar. 1	2	23	0
8	4	35	33
15	2	32	0
22	5	18	64
29	3	26	0

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January-March 1959

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Time is Hawaiian standard]

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Latitude	Longitude	Description	
					N	W		
Jan. 1	18	36	00	2.5	19°21'	155°56'	5 km SW of Hookena-------	Depth about 15 km.
2	00	19	39	2.8	19°25'	155°26'	10 km NW of Desert seismograph.	Depth about 5 km.
2	04	15	08	2.8	19°29'	155°56'	5 km SSW of Kealakekua---	Do.
3	03	04	35	2.5	19°26'	155°56'	4 km WNW of Honaunau-----	Depth about 10 km.
3	18	25	38	2.9	19°26'	155°16'	Beneath NE rim of Kilauea caldera.	30 km deep.
5	07	35	17	2.6	19°33'	155°39'	10 km NW of Mokuaweoweo--	At shallow depth.
5	15	41	34	2.5	19°29'	155°13'	10 km NE of Uwekahuna----	Depth about 60 km. One of several hundred small earthquakes from this source Jan. 5-6.
5	16	25	26	2.9	--do---	---do---	-----do-----------	Do.
5	16	35	31	2.5	--do---	---do---	-----do-----------	Do.
5	18	00	10	2.5	--do---	---do---	-----do-----------	Do.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January-March 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Latitude	Longitude	Description	
					N	W		
Jan. 5	18	07	22	2.6	19°29'	155°13'	10 km NE of Uwekahuna----	Depth about 60 km. One of several hundred small earthquakes from this source Jan. 5-6.
5	19	30	42	3.2	--do---	---do---	-----do----------	Do.
5	20	55	13	2.7	--do---	---do---	-----do----------	Do.
5	21	13	04	2.8	--do---	---do---	-----do----------	Do.
5	22	03	46	2.5	--do---	---do---	-----do----------	Do.
5	22	09	04	2.5	--do---	---do---	-----do----------	Do.
5	22	33	17	2.5	--do---	---do---	-----do----------	Do.
5	22	34	03	2.5	--do---	---do---	-----do----------	Do.
5	22	54	53	2.9	--do---	---do---	-----do----------	Do.
5	23	01	02	2.9	--do---	---do---	-----do----------	Do.
6	00	21	24	2.5	--do---	---do---	-----do----------	Do.
6	02	39	24	3.0	--do---	---do---	-----do----------	Do.
6	04	01	32	2.7	--do---	---do---	-----do----------	Do.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

January-March 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Latitude	Longitude	Description	
					N	W		
Jan. 6	04	09	21	2.9	19°29'	155°13'	10 km NE of Uwekahuna---	Depth about 60 km. One of several hundred small earthquakes from this source Jan. 5-6.
6	04	25	13	2.5	---do---	---do---	-----do-----------	Do.
6	04	35	18	2.5	---do---	---do---	-----do-----------	Do.
6	05	13	03	2.8	---do---	---do---	-----do-----------	Do.
6	05	46	49	2.9	---do---	---do---	-----do-----------	Do.
6	06	36	26	2.8	---do---	---do---	-----do-----------	Do.
6	06	42	17	2.5	---do---	---do---	-----do-----------	Do.
6	10	38	20	2.5	---do---	---do---	-----do-----------	Do.
6	11	50	24	2.8	---do---	---do---	-----do-----------	Do.
6	12	08	35	3.6	20°45'	155°32'	120 km east of Hana, Maui.	Depth about 15 km.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

January-March 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Latitude	Longitude	Description	
					N	W		
Jan. 6	13	20	54	2.5	19°29'	155°13'	12 km NE of Uwekahuna---	Depth about 60 km.
6	14	51	12	2.7	---do---	---do----	-----do----------	Do.
6	19	03	14	2.7	---do---	---do----	-----do----------	Do.
7	17	37	43	2.5	19°26'	155°28'	10 km SW of Mauna Loa seismograph.	Depth about 5 km.
10	08	58	32	3.2	19°19'	155°10'	7 km NNE of Apua Point--	At shallow depth.
12	01	05	15	4.0	20°15'	157°55'	125 km south of Honolulu.	Depth about 15 km.
26	00	36	43	2.6	19°24'	155°29'	13 km NW of Desert seismograph.	Depth about 5 km.
29	16	10	45	1.6	19°25'	155°17'	Felt at Kilauea caldera-	At shallow depth.
30	01	16	17	2.7	19°22'	155°25'	5 km NW of Desert seismograph.	Depth about 10 km.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January-March 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Latitude	Longitude	Description	
					N	W		
Jan. 30	05	32	41	2.9	19°19'	155°07'	12 km ENE of Apua Point. Felt in Hilo.	Depth about 10 km.
Feb. 5	13	28	12	2.7	20°00'	155°34'	10 km east of Kamuela---	Depth about 15 km.
9	23	28	51	3.5	19°21;	155°17'	5 km south of Outlet seismograph. Felt at Kilauea caldera and Hilo.	Depth about 10 km.
10	14	01	44	2.6	19°23'	155°25'	7 km NW of Desert seismograph.	Depth about 5 km.
10	19	10	27	2.5	19°13'	155°13'	5 km SW of Apua Point---	Do.
13	02	30	40	2.5	19°22'	155°19'	5 km SW of Outlet seismograph.	Do.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

January-March 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Latitude	Longitude	Description	
					N	W		
Feb. 17	19	50	53	3.0	19°45'	156°12'	15 km west of Keahole Point.	Depth about 15 km.
19	19	58	01	4.0	19°21'	155°09'	12 km NE of Apua Point. Felt at scattered points over the Island of Hawaii (Capt. Cook, Honokaa, Hilo, Hawaii National Park).	Depth about 5 km.
19	20	00	28	4.5	--do---	---do---	-----do----------	Do.
19	20	35	04	3.5	--do---	---do---	-----do----------	Do.
20	16	04	08	3.4	19°13'	156°23'	50 km west of Milolii--	Depth about 10 km.
26	00	10	27	3.4	19°29'	156°28'	60 km west of Kealakekua Bay.	Depth about 15 km.
28	00	24	17	3.2	19°13'	155°32'	7 km west of Pahala----	At shallow depth.
28	06	54	54	3.2	19°26'	155°29'	20 km west of Uwekahuna	Depth about 5 km.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January-March 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Latitude	Longitude	Description	
					N	W		
Mar. 5	05	32	10	3.5	19°20'	155°13'	10 km NNW of Apua Point. Felt from Kapapala (10 km SW of Desert seismograph) to Hilo.	Depth about 5 km.
6	16	45	15	4.0	19°44'	156°12'	15 km west of Keahole Point. Felt at Capt. Cook.	Depth about 15 km.
9	04	25	42	3.5	19°50'	155°38'	5 km SE of Waikii. Felt at Pohakuloa.	Do.
9	10	16	33	2.8	19°22'	155°26'	7 km NW of Desert seismograph.	Depth about 10 km.
10	21	08	58	2.5	19°23'	155°20'	7 km SW of Uwekahuna on SW rift zone of Kilauea.	Do.
12	07	44	55	4.0	20°01'	155°25'	10 km SE of Honokaa. Felt at Kukuihaele (10 km NW of Honokaa).	Depth about 15 km.
17	07	49	07	3.5	19°24'	155°32'	10 km SE of Mokuaweoweo caldera. Felt at Kilauea caldera and Capt. Cook.	Depth about 5 km.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January-March 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Latitude	Longitude	Description	
					N	W		
Mar. 21	05	37	31	2.7	19°26'	155°33'	7 km SE of Mokuaweoweo caldera.	Depth about 15 km.
22	00	40	19	3.0	19°26'	155°16'	Beneath NE rim of Kilauea caldera.	35 km deep.
22	00	58	01	2.6	19°26'	155°30'	20 km west of Uwekahuna-	At shallow depth.
24	01	16	52	2.6	19°23'	155°16'	2 km east of Outlet seismograph.	Depth about 10 km.
25	07	27	14	2.7	20°02'	155°25'	8 km SE of Honokaa----	Depth about 15 km.
25	12	51	13	3.0	19°14'	155°11'	3 km south of Apua Point.	Do.
29	10	52	31	2.6	19°23'	155°18'	2 km west of Outlet seismograph.	Depth about 10 km.
30	01	39	01	3.2	19°12'	155°33'	15 km north of Naalehu--	At shallow depth.

Table 5.--Distant earthquakes

[Times are reported in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d", that it was a dilatation. Station symbols, locations, and instrumentation are presented in table 6. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determination of Epicenters published by the U.S. Coast and Geodetic Survey.]

Jan. 5				
M	Z	iP	09:56:03.1	c
O	Z	iP	09:56:02.5	c
D	Z	iP	09:56:01.6	c
U	Z	iP	09:56:02.5	c
U	PEZ	eS	10:03:35	
U	PEZ	eR	10:11:07	
171-1/2° E., 22° S., 09:46:42 Loyalty Is. region Magnitude 6-1/2 to 6-3/4				
Jan. 13				
U	PEZ	eR	01:41:16	
13-1/2° N., 146° E., 01:15:25 Mariana Is. Magnitude 6-3/4				
Jan. 13				
O	Z	eP	08:45:20.7	
9° N., 33-1/2° W., 08:34:08 Costa Rica region h = 100				
Jan. 15				
M	Z	iP	21:28:45.3	c
O	Z	eP	21:28:45.6	c
D	Z	eP	21:28:44.7	c
U	Z	iP	21:28:44.7	c
Hi	Z	iP	21:28:47.6	c
25-1/2° S., 180° South of Fiji Is. h = 500 Magnitude 6-1/2				
Jan. 16				
M	Z	eP	01:38:16.4	
D	Z	e	01:38:16.7	
U	Z	eP	01:38:20.6	
U	PEZ	eS	01:43:29	
U	PEZ	eR	01:47:36	
52° N., 171° W., 01:31:25 Fox Is. Aleutian Is. h = 60				

Table 5.--Distant earthquakes--Continued

Jan. 16

M	Z	T	17:37	
O	Z	T	17:37	
D	Z	T	17:37	
U	Z	T	17:37	
Hi	Z	T	17:37	
Ha	Z	T	17:36	

52° N., 131-1/2° W.
Queen Charlotte Is.

Jan. 22

M	Z	eP	05:20:11.3	
O	Z	e	05:20:15.9	
D	Z	e	05:20:10.9	
U	Z	eP	05:20:13.7	c
U	PEZ	iP	05:20:13.5	d
U	PEZ	iS	05:28:06	
U	PEN	eQ	05:33:36	
U	PEZ	iR	05:36:02	
Hi	Z	eP	05:21:04.8	d
Ha	Z	e	05:21:04.8	

34° N., 142° E., 05:10:25
Coast of Honshu, Japan
Magnitude 6-3/4 to 7

Jan. 24

M	Z	iP	05:18:23.6
O	Z	e	05:18:23.3
D	Z	e	05:18:23.8
Hi	Z	eP	05:18:23.1
Hi	Z	ipP	05:18:46.9

37-1/2° N., 141° E., 05:08:35
Coast of Honshu, Japan
h = 100

Jan. 24

O	Z	eP	19:52:28.9
D	Z	e	19:52:29.4

15° N., 92-1/2° W., 19:42:20
Mexico-Guatemala border
Magnitude 6-1/4

Jan. 26

U	Z	iP	05:55:42.9

16-1/2° S., 174-1/2° W., 05:48:27
Samoa Is. region
H = 300

Jan. 29

U	Z	eP	20:28:18.7
U	PEZ	eR	20:37:26

52° N., 174° W., 20:21:27
Andreanof Is. Aleutian Is.
Magnitude 5-3/4 to 6

Table 5.--Distant earthquakes--Continued

Jan. 30

M	Z	iP	00:28:38.5	c
O	Z	iP	00:28:37.6	c
D	Z	iP	00:28:38.5	c
U	Z	iP	00:28:38.3	c
U	PEZ	eR	00:42:52	
Hi	Z	iP	00:28:38.6	c
Ha	Z	iP	00:28:38.6	c

10° S., 161° E., 00:19:25
Solomon Is.
Magnitude 6-3/4

Jan. 30

M	Z	iP	18:18:49.6	d
O	Z	iP	18:18:49.2	d
D	Z	iP	18:18:48.3	d
U	Z	iP	18:18:49.5	d
Hi	Z	iP	18:18:51.9	d
Ha	Z	iP	18:18:55.0	d

31° S., 179° W., 18:09:02
Kermadec Is.

Jan. 30

U	PEZ	eR	21:04:17

44° N., 144° E., 20:38:58
Hokkaido, Japan
Magnitude 5-3/4 to 6

Jan. 30

M	Z	iP	22:26:27.6
U	PEE	iS	22:34:19
U	PEZ	iR	22:41:59

44° N., 144° E., 22:16:47
Hokkaido, Japan
Magnitude 6-1/4

Feb. 2

M	Z	iP	04:08:18.1	d
O	Z	iP	04:08:18.5	d

6-1/2° S., 126° E., 03:56:12
Banda Sea
h = 150

Feb. 5

M	Z	iP	01:12:01.9	
O	Z	iP	01:12:02.4	
D	Z	iP	01:12:02.7	
Hi	Z	iP	01:12	

57-1/2° N., 157-1/2° W., 01:40:50
Alaska Peninsula
h = 100

Table 5.--Distant earthquakes--Continued

		Feb. 6		
M	Z	iP	14:40:03.1	c
O	Z	iP	14:40:03.6	c
D	Z	iP	14:40:03.7	c
U	Z	iP	14:40:03.1	d
U	Z	i	14:40:18.0	
U	Z	Tmax	15:18:42	
U	PEZ	eS	14:45:49	
U	PEZ	eR	14:48:48	
Hi	Z	eP	14:40:02.2	c
Hi	Z	i	14:40:16.6	
Ha	Z	eP	14:39:49.1	c
Ha	Z	i	14:40:04.8	
Ha	Z	Tmax	15:16:25	
51-1/2° N., 175-1/2° W., 14:33:02 Andreanof Is. Aleutian Is. Magnitude 6				

		Feb. 7		
M	Z	iP	09:48:43.8	c
M	Z	i	09:48:57.8	
O	Z	iP	09:48:43.0	c
O	Z	i	09:48:57.1	
D	Z	iP	09:48:43.6	c
D	Z	i	09:48:57.5	
U	Z	eP	09:48:42.8	d
U	Z	i	09:48:56.7	
U	PEZ	iP	09:48:42.0	c
U	PEE	iS	09:58:23.8	
U	PEN	iS	09:58:26.6	
U	PEZ	iS	09:58:27.8	
U	PEN	iG	10:08:29	
U	PEZ	iR	10:11:11	
Hi	Z	iP	09:48:42.2	d
Ha	Z	eP	09:48:52.1	c
4° S., 81-1/2° W., 09:36:51 Coast of Peru Magnitude 7-1/4				

Table 5.--Distant earthquakes--Continued

Feb. 7

M	Z	iP	10:21:22.0	d
O	Z	iP	10:21:22.6	d
D	Z	iP	10:21:22.0	d
U	Z	iP	10:21:24.1	d
Hi	Z	iP	10:21:24.1	
Ha	Z	iP	10:21:15.9	d

16° N., 146° E., 10:11:39
Mariana Is.

Feb. 8

M	Z	iP	05:54:13.2	c
O	Z	iP	05:54:13.0	c
U	Z	iP	05:54:13.5	c
Hi	Z	iP	05:54:16.7	c
Ha	Z	iP	05:53:19.8	c

23° S., 180°, 05:46:15
South of Fiji
h = 600

Feb. 9

M	Z	eP	04:49:28.9
O	Z	eP	04:49:33.3
D	Z	e	04:49:34.3
U	Z	iP	04:49:33.2
Hi	Z	eP	04:49:28.0

50-1/2° N., 177-1/2° W., 04:42:33
Andreanof Is. Aleutian Is.

Feb. 9

M	Z	eP	21:22:55.9
O	Z	e	21:22:55.6
D	Z	e	21:22:55.5
U	PEZ	eR	21:38:37
Hi	Z	iP	21:22:57.6
Hi	Z	epP	21:23:18.1
Ha	Z	eP	21:22:53.5

5° S., 154° E., 21:13:18
Solomon Is.
h = 100

Table 5.--Distant earthquakes--Continued

Feb. 11

M Z iP 14:16:50.4 c

O Z iP 14:16:49.5 c

16° N., 97° W., 13:52:13
Coast of Oaxaca, Mexico
Magnitude 6

Feb. 11

U PEZ eR 21:53:39

15° S., 173-1/2° W., 21:36:46
Samoa Is. region

Feb. 15

U PEZ eR 04:59:12

59-1/2° S., 26° W., 04:42:35
Sandwich Is.
Magnitude 6-3/4

Feb. 17

M Z iP 12:09:52.1 c

O Z iP 12:09:53.0 c

D Z iP 12:09:53.1 c

U Z eP 12:09:52.7 d

U PEZ iS 12:15:21

U PEE iQ 12:16:59

U PEZ iR 12:17:08

51-1/2° N., 171° W., 12:03:05
Fox Is., Aleutian Is.
Magnitude 6 to 6-1/4

Feb. 23

U PEZ eR 02:26:05

5-1/2° S., 150° E., 01:58:38
New Britain

Feb. 23

M Z iP 10:39:53.6

53-1/2° N., 159° E., 10:31:14
Kamchatka
h = 100

Feb. 27

M Z eP 21:07:43.1

U PEZ eR 21:28:13

27-1/2° N., 129° E., 20:56:30
Ryukyu Is.

Mar. 1

M Z eP 17:00:33.6

U Z iP 17:00:35.2

U PEZ eP 17:00:38

U PEN eS 17:10:00

U PEN iQ 17:18:44

U PEZ iR 17:21:55

Hi Z iP 17:00:39.5

Ha Z iP 17:00:33.7

1/2° S., 134-1/2° E., 16:49:13
Coast of New Guinea
Magnitude 7
h = 100

Table 5.--Distant earthquakes--Continued

Mar. 3

Ha Z Tmax 00:09:41

37-1/2° N., 122° W., 23:27:15
Coast of California
Magnitude 4.9

Mar. 12

U PEZ eS 01:47:32

U PEN eQ 01:53:10

U PEZ iR 01:56:20

7° N., 145° E., 01:29:07
Caroline Is.
Magnitude 6

Mar. 17

M Z eP 08:36:27.8

O Z iP 08:36:26.2 d

D Z iP 08:36:25.5 d

U Z eP 08:36:26 d

U PEZ eP 08:36:27 d

U PEZ eR 09:01:37

Hi Z eP 08:36:27.4 c

27-1/2° N., 130° E., 08:25:22
Ryuku Is.
Magnitude 5-3/4 to 6

Mar. 19

U PEZ eR 09:13:20

35° N., 36° W., 08:25:32
North Atlantic
Magnitude 6-1/4

Mar. 23

U PEN eQ 07:26:43

40° N., 118° W., 07:10:22
Western Nevada
Magnitude 6-1/4

Mar. 24

U PEZ eR 17:45:17

34° N., 142° E., 17:18:24
Coast of Honshu, Japan

Mar. 28

Hi Z iP 19:54:40.2

20° S., 178-1/2° W., 19:47:07
Fiji Is.
Magnitude 5-3/4 to 6
h = 600

Mar. 31

U PEE eQ 07:38:45

15° S., 173° W., 07:20:45

Samoa Is.
Magnitude 6

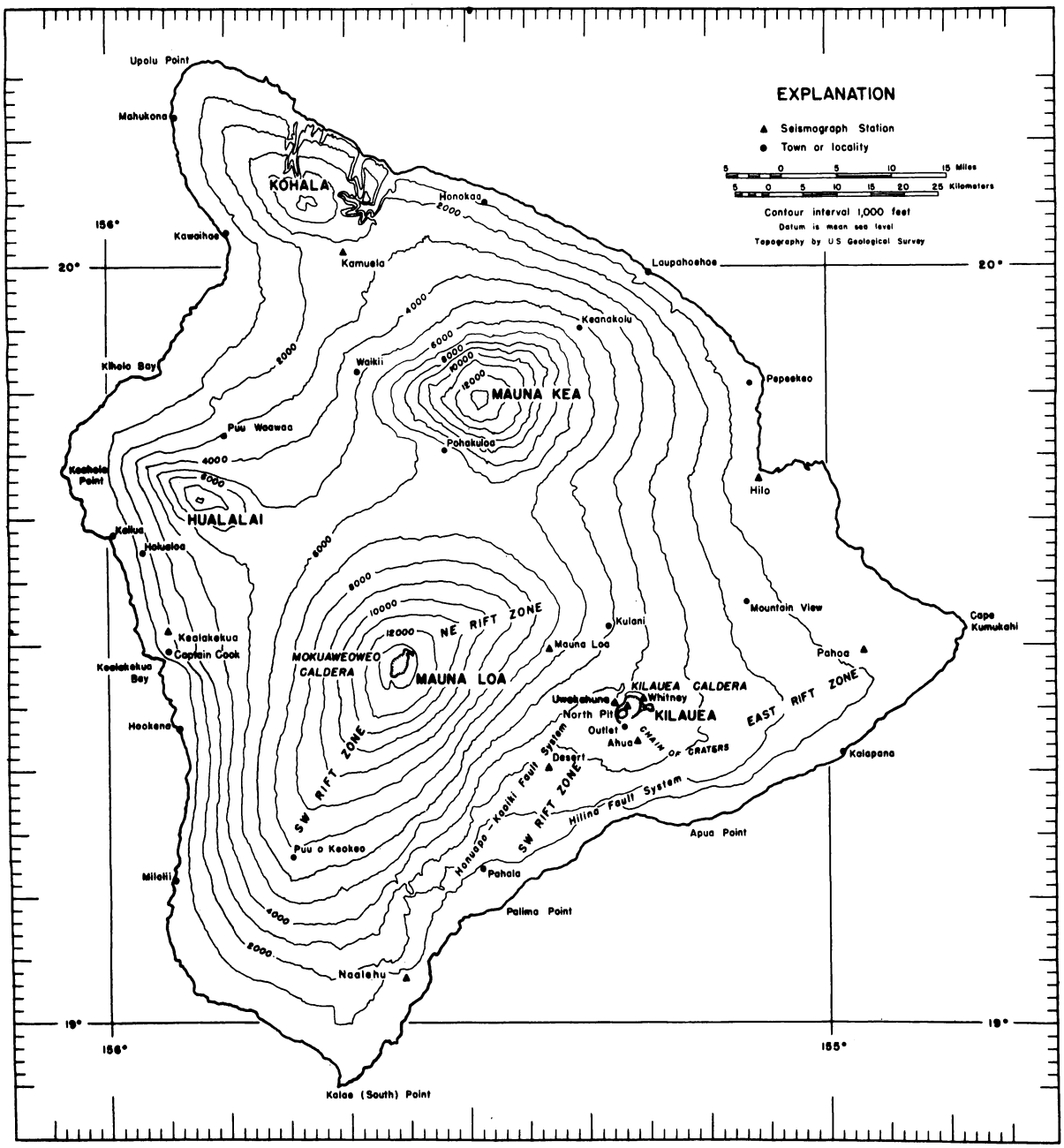

Figure 2.--Map of the Island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Uwekahuna (Hawaiian Volcano Observatory).	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z; (seismometer and galvanometer periods are 15 and 90 seconds, respectively). Short-period Sprengnether: E, Z. HVO-1: Z1/. Short-base liquid-level tiltmeter.
Mauna Loa----------	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z2/.
Outlet----------	O	19°23.4'	155°16.9'	1,080	Remote recording HVO-2: Z. Short-base liquid-level tiltmeter.
Desert----------	D	19°20.2'	155°23.3'	815	Remote recording HVO-2: Z.
North Pit----------	N	19°24.9'	155°17.0'	1,115	Remote recording HVO-2: Z.
Whitney----------	W	19°25.9'	155°15.7'	1,210	Bosch-Omori: N, E; (seismometer period 9 seconds). Short-base liquid-level tiltmeter.
Hilo----------	Hi	19°43.2'	155°05.3'	20	HVO-1: Z. Wood-Anderson: N, E. Operated by Sister Thecla at St. Joseph's School.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Naalehu----------	Na	19°03.8'	155°35.2'	205	Loucks-Omori: N, E; (seismometer period 3 seconds). Operated by Mr. Alfred Kahakua at Naalehu School.
Pahoa----------	Pa	19°29.7'	154°56.8'	205	Loucks-Omori: N, E; (seismometer period 3 seconds). Operated by Mr. Kongo Kimura at Pahoa School.
Kamuela----------	Ka	20°01.3'	155°40.3'	815	Loucks-Omori: N, E; (seismometer period 3 seconds). Operated by Mr. T. C. Mills at Waimea School.
Konawaena----------	Ko	19°30.8'	155°55.1'	495	Hawaiian-type seismograph: N, E; (seismometer period 9 seconds). Operated by Mr. Howard Tatsuno at Konawaena School.
Haleakala, Maui----	Ha	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Hawaii National Park at Haleakala, Maui.

1/ HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Overdamping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

2/ HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper. The response of this seismograph is similar to that of HVO-1. Records from these seismographs at the M, O, and D stations are recorded on a 3-component drum to permit an accurate comparison of arrival times at these stations.

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 14

April-June 1959

by

J. P. Eaton and H. L. Krivoy

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HAWAIIAN VOLCANO OBSERVATORY SUMMARY 14

By J. P. Eaton and H. L. Krivoy

Chronological summary

Releveling of tilt bases around Kilauea caldera in late April and early May disclosed that the pattern of tilting around the caldera during February, March, and April was somewhat more complicated than during the preceding few months. Tilting rates were moderate at all stations, averaging about 4 microradians per month, with a maximum of 10.3 at Sand Spit and a minimum of 1.1 at Uwekahuna. All stations except Uwekahuna and Tree Molds, both on the northwest rim of the caldera, tilted away from an east-northeast to west-southwest axis just southeast of the caldera. Moderate tumescence along this axis and a slight relative collapse along the northwest rim of the caldera are suggested by the tilt pattern.

During April, 138 earthquakes were recorded at Uwekahuna. Three of these, with magnitudes between 2 and 2.5, occurred beneath the summit of Kilauea at depths of 10 to 30 km.

The largest earthquake in the Hawaiian region during April came from a focus 35 km deep and 20 km east of the summit of Haleakala volcano on Maui at 17^h34^m on April 24. It has a magnitude of 3.5.

No earthquakes were reported felt during April.

Only 137 earthquakes were recorded at Uwekahuna during May, and none was reported felt.

On May 5 a small swarm of tiny, deep earthquakes accompanied by about 4 hours of very weak spasmodic tremor stemmed from a zone about 10 km north of Kilauea caldera and 65 km deep. The largest of these earthquakes occurred at 17^h51^m and had a magnitude of only 2.2. About 60 distinct earthquakes from this swarm appeared on the Mauna Loa seismograph.

At 14^h28^m on May 7 a magnitude 3.1 earthquake originated about 5 km southwest of Halemaumau at a depth of about 30 km. The largest earthquake in Hawaii during May originated about 3 km southwest of Halemaumau at a depth of about 30 km at 06^h35^m on the 20th. Although it had a magnitude of 3.5, it was not reported felt.

The number of earthquakes recorded at Uwekahuna declined to 95 during June. Five of these, with magnitudes between 2 and 2.5, occurred beneath the summit region of Kilauea at depths ranging from 15 to 30 km.

Four earthquakes were felt in Hawaii during June. The earthquake felt on Maui at 04^h31^m on June 3 originated beneath the sea about 5 km east of Huelo Point. Its magnitude was 3.3. A magnitude 2.8 earthquake that occurred about 5 km northwest of the Desert seismograph at 21^h26^m on June 9 was felt at Kilauea caldera. An earthquake from a focus 15 km deep beneath the southwest end of Mokuaweoweo caldera at 20^h01^m on June 24 was felt from Kilauea caldera to Capt. Cook. It had a magnitude of 3.7.

The largest earthquake in the Hawaiian region during June originated beneath the sea about 50 km west of Milolii at 12^h17^m on the 26th. It had a magnitude of 4.2 and was felt in Capt. Cook.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter (tables 1 and 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, that is, to a relative subsidence toward the north and east. A 1-unit change in coordinate corresponds to a 1 microradian (1 mm per km) tilt in the direction indicated.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of the Observatory, and distant earthquakes originating farther than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, weekly totals of earthquakes with magnitudes of 2.5 or greater, earthquakes with magnitudes less than 2.5, and minutes of continuous tremor, all recorded on the HVO-1 seismograph at Uwekahuna, are reported in table 3. Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 2; and essential data on the stations were given in Summary 13, table 6.

Table 1.--Tilt coordinates at Uwekahuna vault, April-June 1959

Date	N-S	E-W	Date	N-S	E-W
Apr. 5	512	464	May 24	515	470
12	512	466	31	515	469
19	513	468	June 7	515	466
26	513	469	14	515	470
May 3	513	471	21	515	474
10	515	469	28	518	474
17	514	471			

Table 2.--Tilt coordinates and changes at tilt bases around Kilauea caldera (see fig. 1)

Tilt base (location)	Date (1959)	Tilt coordinates		Rate and direction of tilting since last reading (10^{-6} rad/mo)		Date of last reading (1959)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Apr. 27	544.2	469.8	1.1	N. 84° W.	Feb. 2
Tree Molds (19°26.3' N., 155°17.3' W.)	Apr. 28	502.1	498.7	2.4	S. 2° W.	Feb. 5
Summer Camp (19°24.6' N., 155°15.6' W.)	May 4	517.7	528.0	3.3	N. 5° E.	Feb. 8
Sand Spit (19°24.1' N., 155°16.8' W.)	May 4	531.1	482.8	10.0	N. 23° W.	Feb. 8
Kalihipaa (19°21.4' N., 155°15.3' W.)	Apr. 28	487.3	502.4	3.4	S. 6° W.	Feb. 9
Keamoku (19°25.1' N., 155°19.0' W.)	May 12	512.8	498.6	5.4	N. 6° W.	Mar. 2
Kamokukolau (19°22.7' N., 155°16.6' W.)	May 5	489.2	506.5	6.1	S. 31° E.	Mar. 4

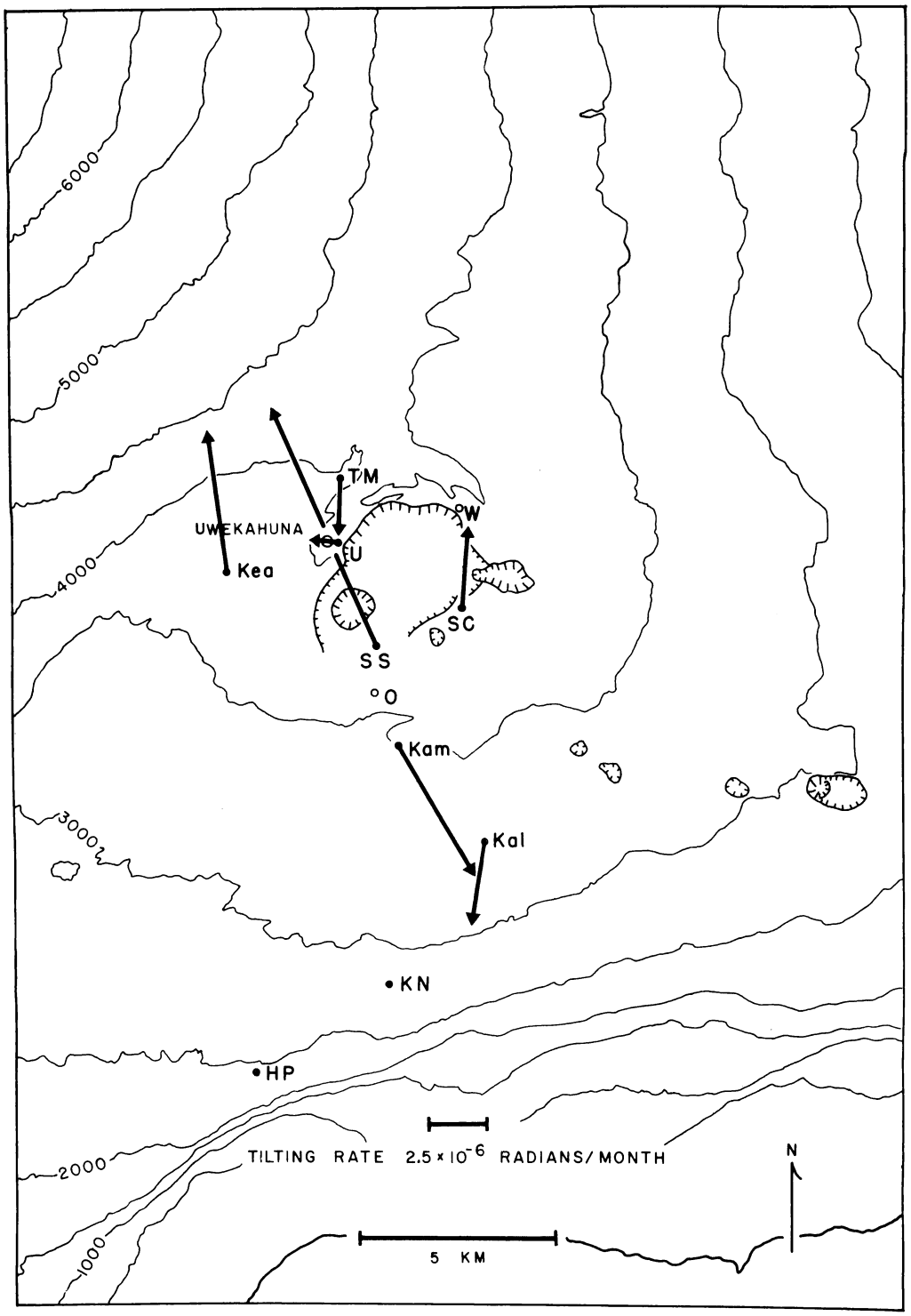

Figure 1.--Tilting of the ground around Kilauea caldera, Feb. 6, 1959, to May 5, 1959. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Table 3.--Local earthquakes and tremor recorded by the HVO-1 seismograph at Uwekahuna, April-June 1959

Week beginning	Number of earthquakes		Minutes of continuous tremor
	Magnitude $\geq$2.5	Magnitude $<$2.5	
April 5	1	30	0
12	2	21	0
19	2	37	0
26	1	29	9
May 3	2	35	240
10	0	24	0
17	2	31	10
24	4	27	0
31	2	20	4
June 7	3	17	0
14	1	24	10
21	4	20	0
28	1	14	25

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April-June 1959

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Time is Hawaiian standard]

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Apr. 4	07	23	18	2.8	19°26'	155°27'	10 km SW. of Mauna Loa seismograph.	Depth about 5 km.
Apr. 5	00	10	09	3.3	20°54'	154°57'	About 130 km N. of Hilo---	Depth about 15 km.
Apr. 12	23	49	28	2.8	19°20'	155°14'	8 km SE. of the Outlet seismograph.	Depth about 3 km.
Apr. 13	17	38	30	2.5	19°27'	155°26'	7 km SW. of Mauna Loa seismograph.	Depth about 8 km.
Apr. 20	10	31	42	2.7	19°59'	155°27'	12 km S. of Honokaa-------	Depth about 10 km.
Apr. 24	17	33	50	3.5	20°43'	156°03'	20 km E. of summit of Haleakala, Maui.	Depth about 35 km.
Apr. 28	15	19	55	3.1	20°02'	155°30'	8 km SSW. of Honokaa------	Depth about 10 km.
May 7	14	21	37	3.1	19°22'	155°18'	3 km SW. of the Outlet seismograph.	Depth about 30 km.
May 7	15	16	38	2.5	19°44;	155°23'	15 km E. of Pohakuloa-----	Depth about 15 km.
May 20	06	35	00	3.5	19°23'	155°19'	3 km SW. of Halemaumau----	30 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April-June 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
May 23	11	35	03	2.8	19°20'	155°50'	West flank of Mauna Loa about 25 km SW. of Mokuaweoweo.	Depth about 5 km.
May 24	15	28	27	3.0	19°10'	156°20'	About 45 km W. of Milolii-	Depth about 15 km.
May 24	19	59	25	2.7	19°21'	155°34'	13 km. S. of Mokuaweoweo--	Depth about 5 km.
May 26	08	41	03	3.0	19°59'	155°40'	5 km S. of Kamuela-------	Depth about 30 km.
May 26	08	41	02	2.6	20°11'	155°31'	20 km NE. of Kamuela------	Depth about 15 km.
June 3	04	31	29	3.3	20°55'	156°10'	5 km E. of Huelo Point, Maui. Felt on the island of Maui.	Depth about 15 km.
June 6	05	08	28	3.4	20°03'	155°40'	5 km N. of Kamuela beneath the summit region of Kohala Mountain.	35 km deep.
June 7	20	41	01	2.5	19°05'	155°24'	Beneath sea 20 km E. of Naalehu.	Depth about 10 km.
June 7	21	21	05	2.7	19°26'	155°28'	10 km SW. of Mauna Loa seismograph.	Depth about 5 km.
June 9	21	25	50	2.8	19°23'	155°25'	5 km NW. of Desert seismo- graph. Felt at Kilauea caldera.	Depth about 5 km.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April-June 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
June 16	09	06	15	3.3	19°24'	155°28'	10 km NW. of Desert seismograph.	Depth about 5 km.
June 22	14	28	09	3.0	19°19'	155°45'	10 km N. of Puu o Keokeo--	At shallow depth.
June 24	20	01	18	3.7	19°26'	155°36'	At SW. end of Mokuaweoweo caldera. Felt from Kilauea caldera to Capt. Cook.	Depth about 15 km.
June 25	16	11	30	2.6	19°15'	155°31'	7 km NW. of Pahala--------	Depth about 5 km.
June 26	12	16	34	4.2	19°13'	156°22'	50 km W. of Milolii. Felt in Capt. Cook.	Depth about 15 km.
June 28	02	52	57	2.6	19°29'	155°56'	Kealakekua fault at Kealakekua Bay.	At shallow depth.

Table 5.--Distant earthquakes

[Times are reported in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d," that it was a dilatation. Station symbols, locations, and instrumentation were presented in Summary 13, table 6. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determination of Epicenters published by the U.S. Coast and Geodetic Survey]

Apr. 1

Hi	Z	iP	14:57:29.0	

18-1/2° S., 169° W.
14:48:34.
New Hebrides Is.
h about 200 km.

Apr. 1

Hi	Z	iP	23:43:20.0	

6° S., 154° E.
23:33:45.
Solomon Is.
h about 100 km.

Apr. 5

M	Z	eP	21:14:44.1	
O	Z	eP	21:14:44.1	
U	Z	eP	21:14:43.4	

15-1/2° S., 167-1/2° E.
21:05:54.
New Hebrides Is.
h about 100 km.

Apr. 5

Hi	Z	iP	23:39:56.8	
U	PEN	eQ	23:54:30	
U	PEZ	eR	23:58:00	

5-1/2° S., 146° E.
23:29:25.
Near north coast of New Guinea.

Apr. 6

M	Z	iP	14:25:33.9	
O	Z	iP	14:25:33.7	
D	Z	iP	14:25:33.1	
U	Z	iP	14:25:32.5	
U	PEN	iS	14:36:14	
U	PEN	eSS	14:42:00	
U	PEN	eQ	14:48:40	
U	PEZ	eR	14:53:46	
Hi	Z	eP	14:25:35.1	
Ha	Z	iP	14:25:22.2	

10° S., 120-1/2° E.
14:12:36.
Sumba Is.
Magnitude 6-1/4.

Apr. 8

M	Z	iP	01:32:38.3	d
O	Z	iP	01:32:37.8	d
D	Z	eP	01:32:36.5	d
U	Z	iP	01:32:38.1	d
Hi	Z	iP	01:32:40.5	c
Ha	Z	eP	01:32:42.8	d

Table 5.--Distant earthquakes--Continued

Apr. 8--Continued

32-1/2° S., 179-1/2° E.
01:23:26.
Kermadec Is. region.
h about 400 km.
Magnitude 6 to 6-1/4.

Apr. 9

U	PEZ	eR	07:20:20	

36° S., 77° E.
06:18:34.
Kerguelen Is. region.

Apr. 9

U	PEN	eQ	18:06:18	
U	PEZ	eR	18:08:23	

7° N., 82° W.
17:36:10.
South of Panama.
Magnitude 6-1/4 to 6-1/2.

Apr. 10

M	Z	iP	05:55:53.1	d
O	Z	iP	05:55:53.0	d
D	Z	iP	05:55:52.1	d
U	Z	iP	05:55:53.1	d
Hi	Z	iP	05:55:56.6	d

25° S., 178-1/2° E.
05:47:34.
South of Fiji Is.
h about 600 km.

Apr. 11

M	Z	iP	11:40:51.4
O	Z	iP	11:40:51.4
D	Z	eP	11:40:50.5

1° S., 128° E.
11:28:50
Spice Is.

Apr. 12

M	Z	iP	10:04:30.9
U	Z	eP	10:04:28.6
U	PEZ	eS	10:12:56
U	PEZ	eR	10:20:30
Hi	Z	iP	10:04:28.2

17-1/2° N., 95° W.
09:54:51.
Mexico. Damage at Cordoba.
h about 100 km.
Magnitude 6-1/4.

Apr. 12

M	Z	iP	15:34:09.8
U	Z	eP	15:34:09.7
U	PEE	eS	15:44:26
U	PEZ	eR	15:56:38
Hi	Z	eP	15:34:10.5

4-1/2° S., 134° E.
15:22:33.
Near coast of New Guinea.
h about 100 km.

Table 5.--Distant earthquakes--Continued

Apr. 12

M	Z	eP	21:01:30.3
O	Z	eP	21:01:29.8
D	Z	eP	21:01:29.9
U	Z	iP	21:01:30.7
U	PEZ	eS	21:07:27
U	PEZ	iR	21:11:09
Hi	Z	iP	21:01:35.1

15-1/2° S., 173° W.
20:54:00.
Samoa Is. region. Felt at Apia.
Magnitude 6 to 6-1/4.

Apr. 14

U	PEZ	eR	03:12:07

24° N., 109-1/2° W.
02:53:04.
Gulf of California.
Magnitude 5-1/4 to 5-1/2.

Apr. 14

M	Z	iP	07:27:48.1
O	Z	iP	07:27:48.7
D	Z	iP	07:27:49.3
U	Z	iP	07:27:48.0
Hi	Z	iP	07:27:45.6

57-1/2° N., 155° W.
07:20:28.
Alaska Peninsula.
h about 60 km.

Apr. 15

U	PEZ	eR	00:40:52

41-1/2° N., 143° E.
00:15:21.
Near south coast of Hokkaido, Japan.

Apr. 16

M	Z	iP	07:35:36.1	d
O	Z	iP	07:35:35.8	d
D	Z	e	07:35:35.1	
U	Z	iP	07:35:35.9	d
Hi	Z	iP	07:35:38.4	d

23-1/2° S., 179° E.
07:27:27.
South of Fiji Is.
h about 550 km.

Apr. 16

M	Z	iP	16:23:53.9
O	Z	iP	16:23:54.2
D	Z	e	16:23:53.3
U	Z	eP	16:23:53.7
U	PEZ	eR	16:40:31
Hi	PEZ	eP	16:23:54.8

12-1/2° N., 143° E.
15:13:56.
Mariana Is. region.
h about 100 km.
Magnitude 6-1/2.

Table 5.--Distant earthquakes--Continued

Apr. 18

Hi	Z	iP	06:27:37.1

4-1/2° S., 153-1/2° E.
06:18:00.
New Ireland region. Felt at Londolovit and Rabaul.
h about 100 km.

Apr. 19

U	PEZ	eR	08:09:30

45° S., 82° W.
07:26:15.
Pacific Ocean.
Magnitude 6.

Apr. 19

M	Z	iP	15:10:52.8
O	Z	iP	15:10:52.9
D	Z	iP	15:10:53.7
U	Z	eP	15:10:52.3
U	PEZ	eR	15:20:59

58° N., 152-1/2° W.
15:03:26.
Near Kodiak Is., Alaska.
Magnitude 6-1/4.

Apr. 20

Hi		eP	03:28:02.4
U	PEE	eS	03:46:15
U	PEZ	eSS	03:50:25
U	PEN	eG	03:50:01
U	PEZ	eR	03:55:37

Apr. 20--Continued

6° S., 149-1/2° E.
03:27:52.
New Britain. Felt at Kandrian and Walindi.
h about 100 km.
Magnitude 6.

Apr. 21

M	Z	iP	12:50:00.8
D	Z	iP	12:50:02.0

56° N., 162-1/2° W.
12:42:50.
Bristol Bay.

Apr. 22

M	Z	iPn	11:03:21.1
O	Z	iPn	11:03:22.7
D	Z	iPn	11:03:23.1
U	Z	eP	11:02:06.3
U	Z	iPn	11:03:21.5
U	Z	Tmax	11:39:22
Hi	Z	e	11:02:19
Hi	Z	iPn	11:03:19.8
Hi	Z	Tmax	11:39:13
Ha	Z	iPn	11:03:02.2
Ha	Z	Tmax	11:37:29

54° N., 167° W.
10:55:05.
Fox Is., Aleutian Is.
Magnitude 6.

Table 5.--Distant earthquakes--Continued

Apr. 22

U	PEZ	eR	21:02:38	

36-1/2° S., 97-1/2° W.
20:26:46.
Pacific Ocean.
Magnitude 5-3/4 to 6.

Apr. 24

U	PEZ	eR	10:02:21	

11-1/2° N., 86-1/2° W.
09:31:33.
Near coast of Nicaragua.
Magnitude 6-1/4 to 6-1/2.

Apr. 24

M	Z	iP	18:07:39.3	d
O	Z	iP	18:07:38.6	d
D	Z	iP	18:07:37.5	d
U	Z	iP	18:07:38.2	c
U	PEZ	iP	18:07:38.5	c
U	PEN	iS	18:15:24.2	
U	PEZ	eSS	18:19:03	
U	PEZ	iR	18:29:05	
Hi	Z	eP	18:07:40.2	c
Ha	Z	eP	18:07:44.5	c

31° S., 178° W.
17:57:58.
Kermadec Is.
Magnitude 6-3/4 to 7.

Apr. 26

O	Z	iP	20:52:09.9	c
D	Z	iP	20:52:09.4	c
U	Z	iP	20:52:09.5	d
U	PEZ	iP	20:52:09.3	c
U	PEZ	ipP	20:52:37	
U	PEZ	isP	20:52:46	
U	PEZ	ePP	20:54:44	
U	PEZ	iS	21:01:44	
U	PEZ	iPS	21:02:22	
U	PEZ	eSS	21:06:02	
U	PEN	iG	21:09:40	
U	PEZ	iR	21:14:50	
Hi	Z	iP	20:52:09.8	c
Hi	N	eS	21:01:40	
Ha	Z	iP	20:52:03.0	c
Ha	N	eS	21:01:31	

25° N., 122-1/2° E.
20:40:38.
Near northeast coast of Formosa.
Two killed and minor damage at Taipei.
h about 150 km.
Magnitude 7-1/2 to 7-3/4.

Apr. 27

M	Z	eP	10:00:17.0	
O	Z	eP	10:00:17.5	

Table 5.--Distant earthquakes--Continued

Apr. 27--Continued

D	Z	eP	10:00:14.7	
U	Z	eP	10:00:17.4	
Hi	Z	eP	10:00:19.2	

7° S., 129° E.
09:48:09.
Banda Sea.

Apr. 27

M	Z	iP	12:59:29.7	
O	Z	iP	12:59:29.7	
U	Z	eP	12:59:26.9	

1/2° S., 124° E.
12:47:27.
Celebes region.
h about 200 km.

Apr. 28

M	Z	iP	11:19:39.0	d
O	Z	iP	11:19:38.1	d
D	Z	iP	11:19:38.7	d
U	Z	iP	11:19:38.3	d
U	PEZ	iP	11:19:37.5	c
U	PEZ	iS	11:27:52.0	
U	PEZ	eSS	11:31:46	
U	PEN	eG	11:34:24	
U	PEZ	iR	11:36:49	
Hi	Z	iP	11:19:36.8	d
Ha	Z	iP	11:19:47.9	d

Apr. 28--Continued

15° N., 93° W.
11:09:30.
Mexico-Guatemala border.
Magnitude 6-1/2 to 6-3/4.

May 1

Hi	Z	iP	15:06:57.4	

5° S., 154° E.
14:56:57.
Solomon Is. region. Felt at Londolovit and Rabaul.
h about 60 km.

May 3

U	PEZ	eR	05:11:33	

12-1/2° N., 87-1/2° W.
04:41:24.
Near coast of Nicaragua. Felt at San Vicente, El Salvador.
h about 100 km.

May 4

M	Z	iP	07:24:21.6	d
O	Z	iP	07:24:22.5	d
D	Z	iP	07:24:22.9	d
U	Z	iP	07:24:22.4	d
U	PEZ	iP	07:24:22.4	d
U	Z	ePn	07:27:01.1	
U	PEN	iS	07:31:15	
U	PEN	eSS	07:34:00	
U	PEZ	iSSS	07:34:56	
U	PEE	iQ	07:35:00	

Table 5.--Distant earthquakes--Continued

May 4--Continued

U	PEZ	iR	07:36:49	
U	Z	Tmax	08:17:24	
Hi	Z	iP	07:24:21.0	d
Hi	Z	ePn	07:27:07	
Hi	E	eS	07:31:26	
Hi	E	eQ	07:35:40	
Hi	N	iR	07:37:36	
Hi	Z	Tmax	08:16:42	
Ha	Z	iP	07:24:10.2	d
Ha	Z	iPP	07:26:09.6	
Ha	Z	ePn	07:26:43	
Ha	Z	ePPP	07:26:47	
Ha	N	eS	07:31:05	
Ha	E	eQ	07:35:12	
Ha	N	iR	07:36:51	
Ha	Z	Tmax	08:22:02	

52-1/2° N., 159-1/2° E.
07:15:42.
Near east coast of Kamchatka;
1 killed and 13 injured.
h about 60 km.
Magnitude 8.

May 5

M	Z	eP	19:13:04.4	
D	Z	eP	19:13:05.0	

May 5--Continued

U	Z	eP	19:13:07.2	
U	PEZ	eS	19:20:23	
U	PEZ	eR	19:26:14	

53° N., 159° E.
19:04:16.
Kamchatka aftershock.
Magnitude 6.

May 5

M	Z	iP	17:36:45.3	
O	Z	iP	17:36:44.7	
Hi	Z	iP	17:36:48.8	

18° S., 179° W.
17:29:26
Fiji Is.
h about 600 km.

May 7

U	PEZ	eS	00:21:50	
U	PEZ	iR	00:30:27	

3-1/2° S. 148-1/2° E.
00:03:24.
Bismarck Sea.
Magnitude 6 to 6-1/4.

May 7

U	PEZ	eR	11:44:15	

3-1/2° S., 150° E.
11:17:16.
Bismarck Sea.

Table 5.--Distant earthquakes--Continued

May 7

M	Z	iP	20:35:18.1

8-1/2° S., 123-1/2° E.
20:22:41.
Flores Is.

May 8

M	Z	eP	11:43:30.8
O	Z	eP	11:43:30.0
D	Z	eP	11:43:31.6
U	PEZ	eS	11:50:35
U	PEZ	iR	11:56:37

53-1/2° N., 160-1/2° E.
11:34:50.
Near east coast of Kamchatka.
h about 60 km.
Magnitude 6.

May 10

U	PEZ	eR	00:24:35

45° N., 149° E.
23:57:09 (May 9).
Kurile Is.

May 12

M	Z	eP	05:05:55.4
O	Z	eP	05:05:54.9
D	Z	eP	05:05:53.7
U	PEZ	eP	05:05:49
U	PEN	iS	05:12:36
U	PEE	iQ	05:15:51
U	PEZ	iR	05:17:56

May 12--Continued

Hi	N	eR	05:17:42

54-1/2° N., 168° E.
04:57:35.
Komandorskie Is.
Magnitude 6-1/2.

May 12

U	PEZ	eS	21:53:05
U	PEZ	iR	21:56:34
Ha	Z	Tmax	22:24:15

51-1/2° N., 177° W.
21:40:22.
Andreanof Is., Aleutian Is.

May 12

M	Z	eP	22:07:10.7
O	Z	eP	22:07:10.9
D	Z	eP	22:07:11.8
U	PEZ	iS	22:12:36
U	PEZ	iR	22:16:12
Ha	Z	Tmax	22:43:45

51-1/2° N., 177° W.
21:59:56.
Andreanof Is., Aleutian Is.
Magnitude 6.

May 14

U	PEZ	eR	07:39:06

35-1/2° N., 24-1/2° E.
06:36:57.
Crete.
Magnitude 6-1/2.

Table 5.--Distant earthquakes--Continued

May 14

U	PEZ	eS	09:49:52
U	PEZ	iR	09:56:46

19° S., 170° E.
09:33:22.
New Hebrides Is.

May 14

U	PEZ	eS	12:05:45
U	PEZ	iR	12:12:37

19° S., 170° E.
11:49:20.
New Hebrides Is.

May 14

U	PEZ	eS	13:35:51
U	PEZ	iR	13:42:47

19° S., 170° E.
13:19:32.
New Hebrides Is.

May 16

M	Z	eP	06:26:01.0
O	Z	eP	06:26:01.3
D	Z	eP	06:26:0018
U	PEZ	eP	06:25:58
U	PEE	iS	06:33:50
U	PEZ	eSS	06:37:11
U	PEN	iQ	06:39:46
U	PEZ	iSSS	06:40:11

May 16--Continued

U	PEZ	iR	06:41:35
U	Z	Tmax	07:25:37
Hi	Z	iP	06:26:01.5
Ha	Z	eP	06:26:00
Ha	Z	Tmax	07:25:26

4-1/2° S., 153-1/2° E.
06:16:23.
New Britain. Felt at Karoola, Taliligap and Rabaul.
h about 60 km.
Magnitude 6-3/4.

May 20

M	Z	eP	01:00:05.1
O	Z	eP	01:00:03.6

23° S., 114° W.
00:50:03.
South Pacific Ocean.

May 20

M	Z	iP	11:36:05.0	
O	Z	eP	11:36:05.8	
D	Z	iP	11:36:05.4	

32-1/2° N., 136-1/2° E.
11:26:28.
South of Honshu, Japan.
h about 450 km.

May 20

M	Z	iP	19:44:32.5	c
O	Z	iP	19:44:33.1	c

Table 5.--Distant earthquakes--Continued

May 20--Continued

D	Z	iP	19:44:32.7	c
U	Z	eP	19:44:33.0	c
U	PEZ	eR	19:59:07	
Hi	Z	iP	19:44:32.7	c

44-1/2° N., 149° E.
19:35:03.
Kurile Is.

May 21

U	PEZ	eR	07:07:42	

52-1/2° N., 170-1/2° W.
06:51:40.
Fox Is., Aleutian Is.

May 21

Hi	Z	eP	11:47:47.1	
U	PEZ	ePS	12:00:11	
U	PEZ	eSS	12:05:17	
U	PEZ	eR	12:17:23	

28° S., 69° W.
11:34:23.
Northern Chile - Argentina border.
h about 60 km.
Magnitude 6.

May 24

M	Z	iP	19:27:06.9	d
O	Z	iP	19:27:06.2	d
D	Z	iP	19:27:06.9	d

May 24--Continued

U	Z	iP	19:27:06.2	d
U	PEZ	iP	19:27:07	d
U	PEZ	ipP	19:27:35	
U	PEN	iS	19:34:48	
U	PEN	isS	19:35:24	
U	PEZ	eSS	19:38:28	
U	PEN	iG	19:40:35	
U	PEZ	iSSS	19:40:48	
U	PEZ	iR	19:42:57	
Hi	Z	iP	19:27:04.4	d
Ha	Z	eP	19:27:13.2	c

17-1/2° N., 97° W.
19:17:40.
Oaxaca, Mexico; 5 killed, 10 injured, and minor property damage. Felt also in Mexico City.
h about 100 km.
Magnitude 6-3/4 to 7.

May 26

U	Z	eP	04:24:10.2
U	PEZ	eR	04:44:48
Hi	Z	eP	04:24:09.9
Ha	Z	eP	04:24:01.7

27-1/2° N., 126-1/2° E.
04:13:01.
Ryukyu Is. region.
h about 100 km.
Magnitude 6-1/2 to 6-3/4.

Table 5.--Distant earthquakes--Continued

May 29

M	Z	iP	10:51:53.6	c
O	Z	iP	10:51:53.2	c
D	Z	eP	10:51:52.4	c
U	Z	iP	10:51:53.3	c
U	PEZ	iP	10:51:54.3	c
U	PEZ	ipP	10:52:16.8	
U	PEZ	iS	10:59:42	
U	PEN	eQ	11:03:26	
U	PEZ	iSSS	11:05:01	
U	PEZ	iR	11:07:40	
Hi	Z	iP	10:51:56.3	c
Ha	Z	iP	10:51:55.9	c
Ha	Z	epP	10:52:22	

19° S., 169-1/2° E.
10:42:48.
New Hebrides Is.
h about 60 km.
Magnitude 6-1/2.

May 31

O	Z	eP	09:37:39.7	
D	Z	eP	09:37:38.9	
U	PEZ	iP	09:37:41	
U	PEZ	iS	09:45:16	
U	PEZ	eSS	09:49:06	
U	PEZ	iR	09:52:37	
U	PEE	eQ	09:54:37	

May 31--Continued

6-1/2° S., 155° E.
09:28:09.
Solomon Is.
Magnitude 6-1/2.

June 1

U	PEZ	eP	17:16:45
U	PEZ	eS	17:24:25
U	PEZ	eSS	17:28:09
U	PEZ	iR	17:31:39

6-1/2° S., 155-1/2° E.
17:07:23.
Solomon Is.
h about 100 km.

June 2

U	PEZ	eR	01:17

31-1/2° N., 131-1/2° E.
00:47:17.
Near coast of Kyushu, Japan.

June 2

U	PEZ	eR	03:44:49

25° S., 176° W.
03:23:12.
Tongo Is. region.

June 2

U	PEZ	eR	05:19:29

21° N., 121-1/2° E.
04:57:18.
Baton Is. region.

Table 5.--Distant earthquakes--Continued

June 3

U	PEZ	eR	05:59:09	

52-1/2° N., 170° W.
05:43:28.
Fox Is., Aleutian Is.

June 5

U	PEZ	eR	21:07:35	

12° N., 86-1/2° W.
20:37:15.
Near coast of Nicaragua.
h about 100 km.

June 14

M	Z	iP	00:25:09.8	c
O	Z	iP	00:25:09.1	c
D	Z	iP	00:25:09.4	c
U	Z	iP	00:25:10.0	c
U	PEZ	iP	00:25:10	d
U	PEZ	ipP	00:25:38	
U	PEZ	iPP	00:28:34	
U	PEZ	iPPP	00:29:34	
U	PEE	iS	00:35:38	
U	PEE	isS	00:36:40	
U	PEZ	eSP	00:42:29	
U	PEN	eQ	00:48:59	
U	PEZ	iSSS	00:49:41	
U	PEZ	iR	00:54:36	

June 14--Continued

Hi	Z	iP	00:25:06.5	c
Hi	Z	ipP	00:25:38.4	
Hi	Z	Tmax	02:08:00	
Ha	Z	iP	00:25:17.4	d
Ha	Z	epP	00:25:49.9	
Ha	Z	Tmax	02:09:29	

20-1/2° S., 68° W.
00:11:57.
Southwestern Bolivia; 1 killed and minor property damage in northern Chile.
h about 100 km.
Magnitude 7-1/4 to 7-1/2.

June 14

M	Z	eP	21:10:57.1
O	Z	eP	21:10:56.6

23-1/2° S., 179-1/2° W.
21:02:32.
Tonga Is. region.
h about 300 km.

June 15

M	Z	iP	02:50:34.7
O	Z	iP	02:50:35.0
D	Z	iP	02:50:34.6

25° N., 122-1/2° E.
02:38:48.
Near northeast coast of Formosa.

Table 5.--Distant earthquakes--Continued

June 18

U PEZ eR 07:26:09

55° S., 129° W.
06:50:45.
Pacific Ocean.

June 18

M Z iP 15:40:10.9

O Z iP 15:40:11.8

D Z iP 15:40:11.7

U Z eP 15:40:11.0

U PEZ eP 15:40:12.5

U PEN ePcS 15:46:49

U PEZ iS 15:47:18

U PEE iQ 15:51:29

U PEZ iR 15:53:23

Hi Z iP 15:40:10.3

54° N., 161° E.
15:31:25.
Near east coast of Kamchatka.
Magnitude 6-1/4 to 6-1/2 (sic).

June 18

M Z iP 16:07:23.8

O Z iP 16:07:24.9

D Z iP 16:07:24.8

U PEZ iR 16:20:09

Hi Z eP 16:07:20.9

June 18--Continued

54° N., 161° E.
15:58:38.
Near east coast of Kamchatka.
Magnitude 6-1/2 to 6-3/4 (sic).

June 19

Hi Z eP 20:42:20.6

U PEZ eR 20:52:53

27-1/2° N., 111° W.
20:34:40.
Gulf of California.

June 21

U PEZ eR 22:34:08

11-1/2° S., 167° E.
22:11:51.
Santa Cruz Is.

June 22

Hi Z eP 14:15:04.1

17° S., 177° W.
14:06:50.
Fiji Is.

June 23

U PEN eQ 14:50:53

39° N., 119° W.
14:35:02.
Western Nevada. Felt in
Nevada and eastern California.
Magnitude 6-1/4.

Table 5.--Distant earthquakes--Continued

June 25

U	PEZ	eR	07:31:48	

62° N., 27-1/2° W.
06:46:55.
South of Iceland.

June 27

M	Z	iP	19:14:15.0	d
O	Z	iP	19:14:14.6	d
D	Z	iP	19:14:13.8	d
U	Z	iP	19:14:14.7	d
U	PEZ	iP	19:14:14.7	d
U	PEZ	epP	19:14:49	
U	PEZ	esP	19:15:11	
U	PEN	iS	19:22:04	
U	PEN	isS	19:23:04	
U	PEZ	eSS	19:25:52	
U	PEN	eQ	19:27:48	
U	PEZ	eR	19:30:48	
Hi	Z	iP	19:14:17.4	c
Ha	Z	iP	19:14:20.8	c

33° S., 179° W.
19:04:27.
South of Kermadec Is.
h about 100 km.
Magnitude 6-3/4.

June 28

M	Z	iP	19:56:07.4	
O	Z	iP	19:56:07.8	
D	Z	iP	19:56:07.2	
U	Z	iP	19:56:08.4	
U	PEZ	iS	20:06:27	
U	PEZ	eR	20:23:34	
Hi	Z	iP	19:56:09.3	
Ha	Z	iP	19:56:05.5	

9-1/2° S., 122-1/2° E.
19:43:22.
Sawoe Sea.

June 29

U	PEZ	eP	07:25:44	
U	PEE	eS	07:33:41	
U	PEZ	eR	07:41:20	

7° S., 155-1/2° E.
07:16:07.
Solomon Is.
Magnitude 6 to 6-1/4.

June 29

M	Z	iP	13:31:31.5	d
O	Z	iP	13:31:31.6	d
D	Z	iP	13:31:30.6	d
U	Z	iP	13:31:31.7	d

Table 5.--Distant earthquakes--Continued

June 29--Continued	June 30
6° N. 126-1/2° E. 13:19:47. Near south coast of Mindanao. Philippine Is. h about 150 km.	M Z eP 10:33:12.1 O Z iP 10:33:11.5 34° S., 179° W. 10:23:17 South of Kermadec Is.

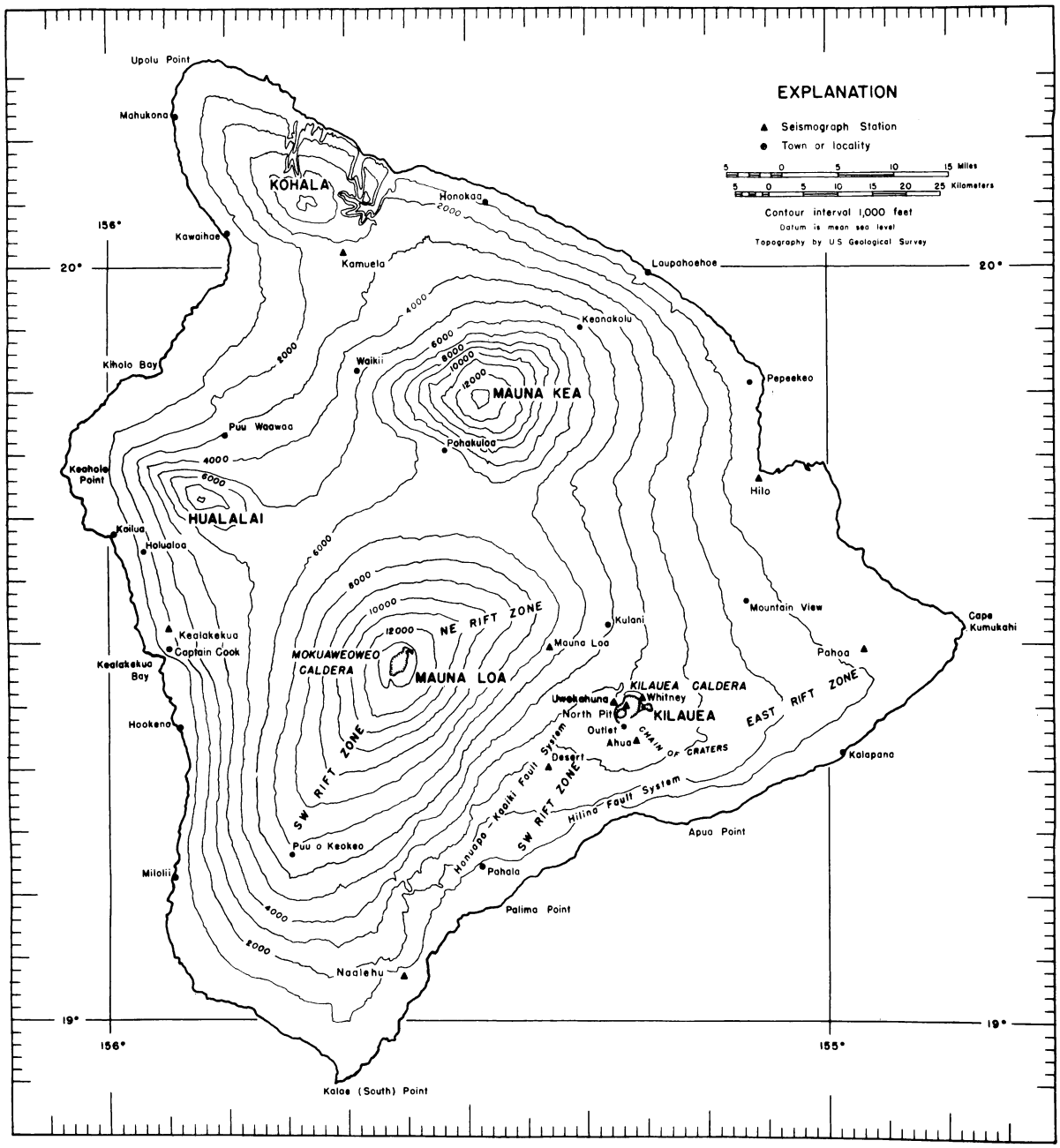

Figure 2.--Map of the Island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 15

July-September 1959

by

J. P. Eaton and H. L. Krivoy

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HAWAIIAN VOLCANO OBSERVATORY SUMMARY 15

By J. P. Eaton and H. L. Krivoy

Chronological summary

Tilt bases around the Kilauea summit tilted generally inward toward the south rim of Kilauea caldera between early May and mid-August. Rates of tilting were quite small at all stations, averaging slightly less than 1 microradian per month, with a maximum of 1.4 microradians per month at Sand Spit and Kamokukolau and a minimum of 0.5 microradian per month at Kalihipaa. Comparison of the present pattern of tilting (fig. 1) with that from October 1958 to February 1959 (Summary 13) reveals a striking contrast. The present tilt vectors are almost exactly reversed with respect to corresponding vectors of the earlier epoch; and present tilting rates average only about 1/3 those of the earlier epoch. Even Sand Spit, which appeared to be anomalous during the October to February epoch because it tilted toward the caldera while other stations tilted away, reversed. From May to August it tilted outward from the caldera while other stations tilted toward the caldera.

Gentle subsidence of the summit of Kilauea in response to a slow escape of magma from a reservoir beneath the south rim of the caldera is suggested by the present tilt pattern. Keamoku, a new tilt base, failed to conform to the pattern set by the rest of the stations and tilted northward away from the southwest rift zone adjacent to the caldera. Possibly, magma moving from the sub-summit reservoir into the southwest rift zone is responsible for this apparent anomaly.

Of the 107 earthquakes recorded at Uwekahuna during July, 3 were reported felt. The first of these occurred near Kealakekua at 02^h19^m on July 10 and was felt in Capt. Cook. Its magnitude was only 2.0. The second was somewhat larger, with a magnitude of 3.0, and it was also felt in Capt. Cook. It originated at a shallow depth near Hookena at 15^h27^m on July 29. The magnitude 3.5 earthquake which was felt at Kilauea caldera on July 31 at 18^h44^m was the largest Hawaiian earthquake of the month. It originated at a focus 5 km south of Mokuaweoweo caldera and 30 km deep.

An interesting group of moderately deep earthquakes with magnitudes of 2.6 to 3.5 occurred at scattered points on a broad ring around Kilauea volcano at an average distance of about 35 km from Kilauea caldera. In order of occurrence these earthquakes were:

July 7, $15^h41^m21^s$, 8 km south of Hilo and 40 km deep;
July 13, $09^h52^m01^s$, 27 km south of Cape Kumukahi and 15 km deep;
July 13, $22^h21^m00^s$, 22 km east of Naalehu and 25 km deep;
July 28, $16^h51^m01^s$, 10 km southeast of Kalapana and 10 km deep;
July 31, $18^h43^m55^s$, 5 km south of Mokuaweoweo and 30 km deep.

On June 30, 1959, D. H. Richter arrived from Denver to join the Observatory staff as Geologist to replace G. D. Fraser, who returned to Denver on July 26, 1959.

From August 14 to August 20 a great swarm of small earthquakes and many hours of accompanying spasmodic tremor emanated from a zone a few kilometers north of Kilauea caldera and about 52 km beneath the surface of the earth. About 2,400 distinct earthquakes were recorded on the Desert seismograph, which obtained the clearest record of the swarm. Spasmodic tremor was strong enough during the first day to mask many earthquakes. After about 40 hours tremor diminished markedly, and it died out altogether during the last half of the swarm.

Earthquakes of the swarm were divided into two families: (1) those for which the first arrival at Hilo followed that at Uwekahuna by less than 1.6 seconds and (2) those for which it followed by 1.6 seconds or more. An analysis of 26 of the largest earthquakes of the first family disclosed that the P wave reached Uwekahuna first, 7.5 seconds after the earthquake occurred. Arrival times of P at other stations minus its arrival time at Uwekahuna were as follows: Outlet, +0.1 sec.; Desert, +0.4 sec.; Mauna Loa, +0.4 sec.; Hilo, +1.3 sec.; Haleakala, +16.4 sec. These data fixed the focus of this group of quakes at 19°29' N., 155°18' W., at a depth of 54 km. A similar analysis of 28 earthquakes of the second family indicated that P reached Uwekahuna 6.9 seconds after the origin time. Additional times required for P to reach other stations were: Outlet, +0.1 sec.; Mauna Loa, +0.4 sec.; Desert, +0.5 sec.; Hilo, +1.8 sec.; Haleakala, +16.7 sec. These data placed the focus of the second family of earthquakes at 19°28' N., 155°19' W. at a depth of 49 km, about 5 km above and 2 km southwest of the focus of the first family of quakes.

In the computation of both foci the Mauna Loa arrival times were corrected by -0.3 sec. to allow for a delay at that station revealed by a study of distant earthquake P phases.

Actually, the two families graded into one another; and the two foci should serve only to indicate the apparent dimensions of the region from which they emanated. This region is clearly distinct from that which produced a similar swarm of deep earthquakes and spasmodic tremor in January 1959, however (Summary 13). It lies about 10 km above and 10 km west of the source of the January disturbance.

As a result of the swarm of deep earthquakes the number of earthquakes recorded at Uwekahuna during August rose to 2,314; but only three were felt. The first, which had a magnitude of 3.4 and was felt in Capt. Cook and Kealakekua, originated 20 km west of Keahole Point at 16^h13^m on August 12. The second, with a magnitude of 4.0 was the largest earthquake in Hawaii during August. It occurred 8 km south of Kalapana at a depth of about 45 km at 13^h55^m on August 18 and was felt at Kilauea caldera and Hilo. The third was reported felt

only in Hilo. It originated 4 km north of Keanakolu at 03^h06^m on August 25 and had a magnitude of 3.5.

During August, seven earthquakes with magnitudes of 1.8 to 2.8 occurred at depths ranging from 20 to 32 km beneath the summit of Kilauea; none of these was felt.

The number of earthquakes recorded at Uwekahuna during September fell to 146. The magnitude 4.0 earthquake from a shallow focus 3 km west of Kalalua Crater at 14^h50^m on September 18, which was felt at Kilauea caldera and Hilo, was both the largest earthquake and the only earthquake felt in Hawaii during the month.

Two magnitude 2.0 earthquakes originated at depths of about 30 km beneath the summit region of Kilauea in early September.

One earthquake in August and four in September augmented the group of moderately deep earthquakes which occurred around Kilauea during July at a distance of about 35 km from the caldera. These earthquakes were:

Aug. 18, $13^h54^m55^s$, 8 km south of Kalapana and 45 km deep;
Sept. 1, $21^h22^m16^s$, 15 km north of Hilo and 50 km deep;
Sept. 12, $07^h44^m21^s$, 14 km south of Hilo and 25 km deep;
Sept. 13, $18^h31^m25^s$, 10 km southeast of Naalehu and 35 km deep;
Sept. 18, $11^h05^m54^s$, 10 km west-southwest of Hilo and 40 km deep.

In mid-September the North Pit seismograph began to record a swarm of tiny, shallow earthquakes originating very near the northeast rim of Halemaumau. From its commencement about September 17 until September 24, the swarm averaged about 60 earthquakes per day. From September 24 until the end of the month it averaged about 85 earthquakes per day. Earthquakes of the swarm were so small and originated so near the North Pit seismograph that no more than one earthquake in 10 recorded at that station could be detected on the Outlet seismograph less than 3 km away. For the largest quakes, amplitudes recorded at Outlet were only about 1/100th of those recorded at North Pit.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter (tables 1 and 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface,

Table 1.--Tilt coordinates at Uwekahuna vault, July-September 1959

Date	N-S	E-W	Date	N-S	E-W
July 5	518	469	Aug. 23	519	466
12	518	469	30	520	471
19	518	471	Sept. 6	521	467
26	518	472	13	521	467
Aug. 2	519	474	20	521	469
9	520	464	27	521	467
16	519	465			

Table 2.--Tilt coordinates and changes at tilt bases around Kilauea caldera (see fig. 1)

Tilt base (location)	Date (1959)	Tilt coordinates		Rate and direction of tilting since last reading (10^{-6} rad/mo)		Date of last reading (1959)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Aug. 13	543.3	471.0	0.4	S. 54° E.	Apr. 27
Tree Molds (19°26.3' N., 155°17.3' W.)	Aug. 14	499.7	498.5	0.7	S. 5° W.	Apr. 28
Summer Camp (19°24.6' N., 155°15.6' W.)	Aug. 15	517.7	525.2	0.8	W.	May 4
Sand Spit (19°24.1' N., 155°16.8' W.)	Aug. 15	527.4	485.8	1.4	S. 38° E.	May 4
Kalihipaa (19°21.4' N., 155°15.3' W.)	Aug. 14	488.6	501.0	0.5	N. 44° W.	Apr. 28
Keamoku (19°25.1' N., 155°19.0' W.)	Aug. 17	516.1	497.5	1.1	N. 17° W.	May 12
Kamokukolau (19°22.7' N., 155°16.6' W.)	Aug. 16	493.9	506.1	1.4	N. 5° W.	May 12

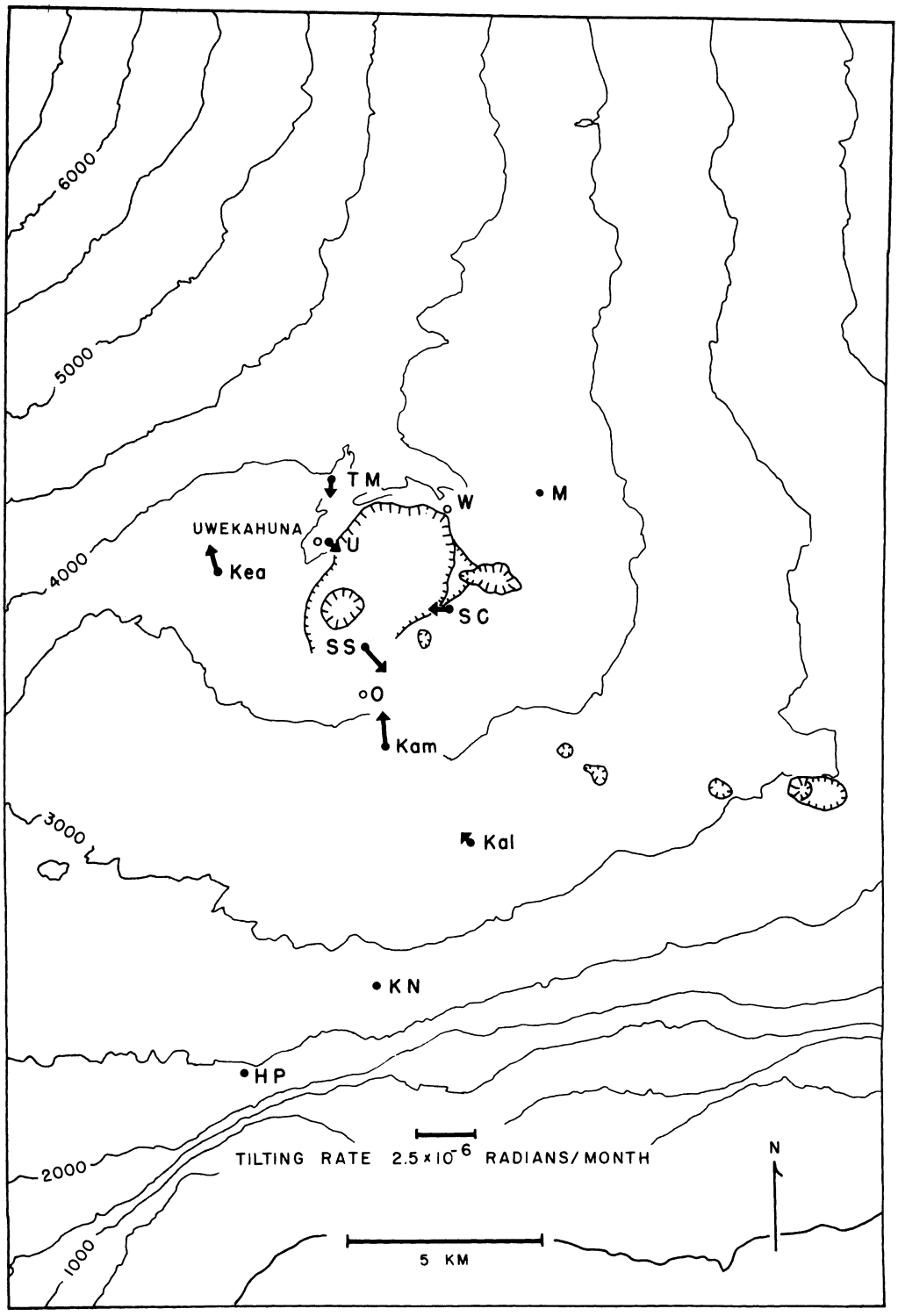

Figure 1.--Tilting of the ground around Kilauea caldera, May 5, 1959, to Aug. 15, 1959. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

that is, to a relative subsidence toward the north and east. A 1-unit change in coordinate corresponds to a 1-microradian (1 mm per km) tilt in the direction indicated.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating farther than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, weekly totals of earthquakes with magnitudes of 2.5 or greater, earthquakes with magnitudes less than 2.5, and minutes of continuous tremor, all recorded on the HVO-1 seismograph at Uwekahuna, are reported in table 3. Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 2; and essential data on the stations were given in Summary 13, table 6.

Table 3.--Local earthquakes and tremor recorded by the HVO-1 seismograph at Uwekahuna, July-September 1959

Week beginning	Number of earthquakes		Minutes of continuous tremor
	Magnitude ≥2.5	Magnitude <2.5	
July 5	3	29	56
12	3	21	8
19	1	20	0
26	3	24	29
Aug. 2	0	20	0
9	35	1,345	1,815
16	13	852	555
23	1	36	4
30	3	22	0
Sept. 6	2	29	0
13	5	37	0
20	1	35	0
27	1	35	34

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July-September 1959

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Time is Hawaiian standard]

Date		Time			Magnitude	Epicenter			Remarks
		h	m	s		Lat. N.	Long. W.	Description	
July	7	15	41	21	2.6	19°39'	155°04'	8 km S. of Hilo----------	40 km deep.
	8	12	40	55	2.5	19°22'	155°26'	7 km NW. of Desert seismograph.	Depth about 5 km.
	8	14	56	36	2.7	19°27'	155°24'	5 km S. of Mauna Loa seismograph.	Depth about 5 km.
	10	02	19	17	2.0			Near Kealakekua. Felt in Capt. Cook.	At shallow depth.
	12	11	37	16	2.9	19°15'	155°33'	10 km NW. of Pahala-------	Depth about 5 km.
	13	09	52	01	2.6	19°17'	154°47'	27 km S. of Cape Kumukahi-	Depth about 15 km.
	13	22	21	00	3.0	19°03'	155°23'	22 km E. of Naalehu-------	Depth about 25 km.
	19	21	00	49	2.5	20°03'	155°50'	Kawaihae----------	Depth about 15 km.
	28	16	51	01	3.0	19°17'	155°03'	10 km SW. of Kalapana-----	Depth about 10 km.
	29	15	27	29	3.0			West coast of Hawaii near Hookena. Felt in Capt. Cook.	At shallow depth.
	31	18	43	54	3.5	19°25'	155°36'	5 km S. of Mokuaweoweo caldera. Felt at Kilauea caldera.	Depth about 30 km.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July-September 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Aug. 9	04	08	30	2.5	19°21'	155°18'	5 km S. of Outlet seismograph.	32 km deep.
11	01	45	42	2.8	19°31'	155°29'	10 km NNE. of Mauna Loa seismograph.	Depth about 5 km.
12	16	12	51	3.4	19°44'	156°16'	20 km W. of Keahole Point. Felt in Capt. Cook and Kealakekua.	Depth about 15 km.
14	07	07	41	2.5	19°26'	155°17'	30 km deep beneath N. rim of Kilauea caldera.	
14	23	44	54	2.5	19°29'	155°18'	7 km N. of Uwekahuna. (This focus will be designated by KM 54 in rest of this list.)	54 km deep.
14	23	51	54	2.5			KM 54.	
15	00	55	00	3.1			KM 54.	
15	01	30	38	3.4	19°28'	155°19'	5 km NNW. of Uwekahuna. (This focus will be designated by KM 49 in rest of this list.)	Depth about 49 km.
15	01	49	55	2.8			KM 54.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July-September 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Aug. 15	02	04	14	2.9			KM 54.	
15	02	05	50	2.8			KM 54.	
15	03	18	10	2.7			KM 49.	
15	03	44	31	2.7			KM 49.	
15	05	09	38	2.7			KM 49.	
15	05	48	21	3.4			KM 54.	
15	06	05	56	3.0			KM 49.	
15	06	08	59	3.1			KM 54.	
15	06	11	11	3.1			KM 54.	
15	06	29	27	3.4			KM 49.	
15	06	42	17	2.5			KM 49.	
15	08	05	22	2.5			KM 49.	
15	08	38	36	2.7			KM 49	
15	08	41	52	2.7			KM 49.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July-September 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Aug. 15	09	08	39	2.5			KM 49.	
15	09	19	06	2.8			KM 54.	
15	17	01	56	2.5			KM 49.	
15	17	22	16	2.8			KM 49.	
15	19	31	52	3.0			KM 49.	
15	19	35	59	2.9			KM 54.	
15	19	58	14	2.8			KM 54.	
15	20	42	09	3.2			KM 49.	
15	20	48	56	2.8			KM 49.	
15	21	39	11	2.5			KM 49.	
15	22	25	38	2.5			KM 49.	
15	23	52	39	2.5			KM 49.	
16	01	34	31	2.8			KM 54.	
16	01	56	19	2.5			KM 54.	
16	03	34	41	2.5			KM 54.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July-September 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Aug. 16	07	05	42	2.5			KM 54.	
16	08	29	30	2.5			KM 49.	
16	10	47	46	2.6	19°22'	155°16'	5 km SE. of Outlet seismograph.	20 km deep.
17	00	46	39	2.5			KM 54.	
17	02	02	34	2.5			KM 54.	
17	02	13	56	2.7			KM 54.	
17	02	33	48	2.8			KM 54.	
17	22	04	45	2.9			KM 54.	
18	04	34	38	2.5			KM 49.	
18	13	54	50	4.0	19°17'	154°57'	8 km S. of Kalapana. Felt at Kilauea caldera and Hilo.	Depth about 45 km.
25	03	06	16	3.5	19°57'	155°21'	4 km N. of Keanakolu. Felt in Hilo.	Depth about 10 km.
Sept. 1	21	22	16	2.8	19°51'	155°04'	15 km N. of Hilo----------	50 km deep.
2	06	08	48	2.5	19°00'	155°41'	10 km N. of South Point on the Kahuku fault.	Depth about 5 km.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July-September 1959--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Sept. 5	23	33	51	2.5	19°18'	155°53'	10 km S. of Hookena-------	Depth about 10 km.
11	22	55	01	3.0	18°57'	156°43'	100 km W. of South Point--	Depth about 15 km.
12	07	44	21	2.5	19°36'	155°03'	14 km S. of Hilo----------	Depth about 25 km.
13	18	31	25	2.4	18°59'	155°32'	10 km SE. of Naalehu------	Depth about 35 km.
14	07	01	27	2.6	20°06'	155°50'	7 km N. of Kawaihae-------	Depth about 15 km.
14	23	57	15	3.3	19°45'	157°59'	170 km S. of Honolulu-----	Depth about 15 km.
16	10	50	22	2.9	19°49'	155°55'	5 km S. of Kiholo Bay-----	Depth about 10 km.
18	11	05	54	3.1	19°41'	155°10'	10 km WSW. of Hilo--------	Depth about 40 km.
18	14	50	04	4.0	19°24'	155°06'	3 km W. of Kalalua Crater. Felt at Kilauea caldera and Hilo.	At shallow depth.
20	16	11	07	2.5	19°28'	155°53'	5 km SW. of Capt. Cook on Kealakekua fault.	Depth about 10 km.

Table 5.--Distant earthquakes

[Times are reported in Greenwich civil time, which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates that the first motion was a compression; a "d," that it was a dilatation. Station symbols, locations, and instrumentation were presented in Summary 13, table 6. Locations of epicenters, origin times, focal depths, and magnitudes are from the notices of Preliminary Determination of Epicenters published by the U.S. Coast and Geodetic Survey]

July 2

M	Z	iP	11:41:50.7	c
O	Z	iP	11:41:49.8	c
U	Z	iP	11:41:49.7	d
Hi	Z	iP	11:41:52.5	c

20° S., 178-1/2° W.
11:34:20.
Fiji Islands.
h about 650 km.

July 3

U	PEZ	iP	18:03:51.4
U	PEZ	iS	18:10:47

16° S., 173° E.
17:55:10.
New Hebrides Islands region.
Magnitude 6-1/2.

July 3

M	Z	eP	18:04:30.6	d
O	Z	eP	18:04:29.6	d
U	Z	eP	18:04:31	
U	PEZ	iP	18:04:31.1	d
U	PEZ	iS	18:11:27	
U	PEZ	iSS	18:14:54	

July 3--Continued

U	PEE	iQ	18:15:38
U	PEZ	iR	18:16:44

16° S., 173° E.
17:55:53.
New Hebrides Islands region.
Magnitude 6-1/2.

July 6

U	PEZ	e	09:22:52
M	Z	epPP	09:29:27
U	PEZ	esPP	09:30:24
U	PEZ	eSP	09:35:24
U	PEZ	esSP	09:39:26
U	PEZ	esSS	09:44:28
Hi	Z	e	09:23:09

26-1/2° S., 61° W.
09:10:17.
Chuco Province, Argentina.
h about 600 km.
Magnitude 6-3/4.

July 6

U	PEE	ePS	09:48:38
U	PEE	esSP	09:52:30
U	PEZ	esSS	09:57:38

Table 5.--Distant earthquakes--Continued

July 6--Continued

26-1/2° S., 61-1/2° W.
09:23:21.
Chuco Province, Argentina.
h about 600 km.
Magnitude 6-3/4 to 7.

July 9

M	Z	eP	16:18:29.0	
M	Z	epP	16:19:05.0	
M	Z	esP	19:19:14.5	
O	Z	eP	16:18:29.5	
O	Z	esP	16:19:15.3	
D	Z	eP	16:18:29.7	
D	Z	esP	16:19:15.7	
U	Z	eP	16:18:30.6	
U	PEZ	eP	16:18:31	
U	PEZ	isP	16:19:11	
U	PEZ	esPP	16:22:50	
U	PEZ	eS	16:29:54	
U	PEZ	esPS	16:31:18	
U	PEZ	eSS	16:35:50	
U	PEZ	iR	16:48:20	
Hi	Z	eP	16:18:28.0	
Ha	Z	eP	16:18:38.0	

20-1/2° S., 68° W.
16:05:18.
Chile-Bolivia border.
h about 100 km.
Magnitude 6-3/4.

July 11

U	PEZ	eR	05:15:29	

July 11

U	PEZ	eR	13:02:19	

37° S., 79° E.
12:01:39.
Indian Ocean.
Magnitude 6-1/4 to 6-1/2.

July 12

M	Z	eP	00:32:04.5	
O	Z	eP	00:32:02.9	
Hi	Z	iP	00:32:05.7	

19-1/2° S., 177-1/2° W.
00:24:22.
Fiji Islands region.
h about 400 km.
Magnitude 6-1/4.

July 13

M	Z	iP	12:35:39.2	c
M	Z	ipP	12:35:49.5	
O	Z	iP	12:35:39.7	c
O	Z	ipP	12:35:50.4	
D	Z	iP	12:35:40.9	
D	Z	ipP	12:35:50.8	
U	Z	iP	12:35:39.0	c
U	Z	ipP	12:35:49.5	
U	Z	ePn	12:36:54.6	
U	Z	Tmax	13:13:12	
U	PEZ	eP	12:35:39.1	d

Table 5.--Distant earthquakes--Continued

July 13--Continued

U	PEZ	ePP	12:37:00	
U	PEZ	iS	12:41:12	
U	PEE	iQ	12:42:57	
U	PEZ	iR	12:44:30	
Hi	Z	eP	12:35:37.6	c
Hi	Z	ipP	12:35:48.3	
Hi	Z	ePn	12:36:52.8	
Ha	Z	eP	12:35:25.1	c
Ha	Z	ipP	12:35:34.1	
Ha	Z	Tmax	13:11:23	

52° N., 172-1/2° W.
12:28:45.
Andreanof Islands, Aleutian Islands.
Magnitude 6-1/2.

July 14

U	PEZ	eR	08:56:31	

51-1/2° N., 172° W.
08:40:48.
Fox Islands, Aleutian Islands.

July 14

U	PEZ	eS	13:15:53	
U	PEZ	eR	13:21:25	

16-1/2° S., 173° E.
13:00:24.
New Hebrides Islands region.
h about 100 km.

July 18

U	PEN	eL	12:35	

50-1/2° N., 130° W.

July 18--Continued

12:18:35.
Off coast of Vancouver, British Columbia.

July 18

M	Z	iP	19:37:38.9	c
O	Z	iP	19:37:38.4	c
U	Z	iP	19:37:38.1	d
Hi	Z	iP	19:37:40.9	c
Ha	Z	iP	19:37:42.8	c

19:29:22.
Fiji Islands region.

July 18

M	Z	iP	20:06:54.0	d
M	Z	ipP	20:07:33.7	
M	Z	isP	20:07:47.2	
O	Z	iP	20:06:54.8	d
O	Z	ipP	20:07:33.8	
O	Z	isP	20:07:47.7	
D	Z	iP	20:06:54.9	
D	Z	ipP	20:07:34.8	
D	Z	isP	20:07:47.0	
U	Z	iP	20:06:56.6	c
U	Z	ipP	20:07:33.5	
U	PEZ	iP	20:06:55.6	d
U	PEZ	ipP	20:07:31.6	
U	PEZ	iS	20:16:48	
U	PEN	isS	20:17:49	
U	PEZ	iSS	20:21:09	

Table 5.--Distant earthquakes--Continued

July 18--Continued

U	PEN	iSSS	20:25:14	
U	PEZ	iR	20:31:27	
Hi	Z	iP	20:06:56.6	d
Hi	Z	ipP	20:07:34.2	
Ha	Z	iP	20:06:49.5	d
Ha	Z	ipP	20:07:27.8	

15-1/2° N., 120-1/2° E.
19:54:45.
Luzon, Philippine Islands. Felt.
h about 150 km.
Magnitude 6-1/2 to 6-3/4.

July 19

U	Z	eP	15:18:51	
U	PEZ	iP	15:18:52.0	
U	PEZ	epP	15:19:54	
U	PEZ	esP	15:20:07	
U	PEZ	ePP	15:22:26	
U	PEZ	epPP	15:23:17	
U	PEN	iS	15:29:30	
U	PEN	isS	15:31:04	
U	PEN	eSS	15:35:28	
U	PEN	esSS	15:36:56	
U	PEN	iG	15:42:09	
U	PEZ	iR	15:49:09	
Hi	Z	iP	15:18:54.2	
Hi	Z	epP	15:19:47.5	

July 19--Continued

Ha	Z	iP	15:19:01.9	

15° S., 70-1/2° W.
15:06:10.
Peru. Felt in Northern Chile.
h about 200 km.
Magnitude 7.

July 20

M	Z	iP	17:01:41.6	
O	Z	iP	17:01:41.2	
D	Z	iP	17:01:40.1	
U	Z	iP	17:01:40.7	
Hi	Z	iP	17:01:43.9	
Ha	Z	eP	17:01:45.8	

23-1/2° S., 179° E.
16:53:38.
Fiji Islands region.
h about 600 km.

July 21

M	Z	iP	07:52:05.7	
O	Z	eP	07:52:05.5	
U	PEZ	eP	07:52:12	
U	PEZ	iS	07:59:26	
U	PEZ	iR	08:05:32	

14-1/2° S., 167-1/2° E.
07:43:13.
New Hebrides Islands.
Magnitude 6-1/4.

Table 5.--Distant earthquakes--Continued

July 22

M	Z	iP	11:27:39.0	
O	Z	iP	11:27:39.1	
U	Z	eP	11:27:39.3	

2° N., 126-1/2° E.
11:15:33.
Molucca Passage.

July 22

M	Z	iP	19:32:31.3	c
O	Z	iP	19:32:32.0	c
D	Z	iP	19:32:31.9	c
U	Z	iP	19:32:31.7	c
U	PEZ	iP	19:32:32.1	c
U	PEN	eS	19:39:12	
Hi	Z	iP	19:32:31.6	c
Ha	Z	iP	19:32:21.0	c

53° N., 153° E.
19:24:17.
Sea of Okhotsk.
h about 650 km.
Magnitude 6-1/4.

July 22

M	Z	eP	23:12:12.6
O	Z	eP	23:12:11.8
D	Z	iP	23:12:12.2
U	Z	eP	23:12:11.8
U	PEZ	iP	23:12:11.3

July 22--Continued

U	PEZ	iS	23:20:04
U	PEZ	eSS	23:24:09
U	PEN	eG	23:25:49
U	PEZ	eR	23:29:49
Hi	Z	eP	23:12:14.0
Ha	Z	eP	23:12:08.9

5° S., 152-1/2° E.
23:02:27.
New Britain. Felt.
h about 60 km.

July 23

M	Z	eP	15:05:28.6
D	Z	eP	15:05:28.3
U	Z	eP	15:05:27.1
U	PEZ	eP	15:05:26.8
U	PEZ	eS	15:12:27
U	PEZ	eR	15:18:44
Hi	Z	eP	15:05:19.5
Ha	Z	eP	15:05:32.9

24-1/2 S., 176° W.
14:56:45.
Tonga Islands region.
h about 60 km.
Magnitude 5-3/4.

July 24

U	Z	eP	01:29:51.7
U	PEZ	eP	01:29:52.8

Table 5.--Distant earthquakes--Continued

July 24--Continued

U	PEN	eS	01:35:13	
U	PEN	iQ	01:36:54	
U	PEZ	eR	01:38:09	
U	Z	Tmax	02:04	
Hi	Z	eP	01:29:48.2	
Hi	Z	eQ	01:37:06	
Hi	Z	Tmax	02:05:25	
Ha	Z	eP	01:29:51.7	
Ha	Z	eQ	01:36:59	
Ha	Z	Tmax	02:03:49	

41° N., 125-1/2° W.
01:23:09.
Off coast of Northern California.
Felt at Humboldt County.
Magnitude 5-3/4.

Aug. 4

M	Z	eP	08:09:52.1	
O	Z	eP	08:09:51.5	
U	Z	eP	08:09:51.1	

20-1/2° S., 178° W.
08:02:17.
Fiji Islands region.
h about 600 km.

Aug. 7

U	PEZ	eS	21:08:47	
U	PEZ	eR	22:02:31	
U	Z	Tmax	22:31:20	

Aug. 7--Continued

Hi	Z	Tmax	22:31:30	
Ha	Z	Tmax	22:30:15	

56-1/2° N., 154° W.
21:45:26.
Kodiak Island.
Magnitude 5.

Aug. 8

M	Z	iP	00:56:19.5	c
M	Z	ipP	00:56:29.4	
O	Z	eP	00:56:19.9	
O	Z	ipP	00:56:29.9	
D	Z	iP	00:56:20.0	c
D	Z	ipP	00:56:29.8	
U	Z	epP	00:56:29.5	
U	PEN	eS	01:03:07	
U	PEN	eQ	01:07:11	
U	PEZ	eR	01:08:41	
Hi	Z	iP	00:56:19.9	c
Ha	Z	eP	00:56:07.9	c

55° N., 162-1/2° E.
00:47:38.
Near east coast of Kamchatka.
Magnitude 6-1/2.

Aug. 8

U	PEZ	eS	09:56:47	
U	PEZ	eR	10:00:37	

Table 5.--Distant earthquakes--Continued

Aug. 9

M	Z	iP	20:38:36.2	
O	Z	iP	20:38:36.0	
D	Z	iP	20:38:35.1	
U	Z	eP	20:38:35.1	
U	PEZ	iS	20:46:15	
U	PEZ	eR	20:52:39	
Hi	Z	iP	20:38:38.9	

10° S., 161° E.
20:29:28.
Solomon Islands.
h about 100 km.

Aug. 12

U	Z	eP	10:06:22.2	
U	PEZ	eP	10:06:16	
U	PEN	iS	10:12:39.0	
U	PEE	eQ	10:15:11	
U	PEZ	eSS	10:15:56	
U	PEZ	iR	10:17:11	
Hi	Z	eP	10:06:16.8	
Ha	Z	eP	10:06:27.8	

16-1/2° S., 177-1/2° W.
09:58:22.
Fiji Islands region.
Magnitude 6-1/2.

Aug. 14

M	Z	iP	04:51:24.2	
O	Z	eP	04:51:24.4	

Aug. 14--Continued

0°, 125-1/2° E.
04:39:07.
Molucca Passage.

Aug. 15

M	Z	eP	09:09:00.4	c
O	Z	eP	09:09:00.6	c
D	Z	eP	09:09:00.0	c
U	Z	eP	09:09:00.2	d
U	PEZ	iP	09:08:59.5	c
U	PEE	iS	09:18:52	
U	PEE	iPPS	09:19:45	
U	PEN	iSS	09:23:25	
U	PEN	iQ	09:28:11	
U	PEZ	eR	09:32:31	
Hi	Z	iP	09:09:01.6	c
Ha	Z	iP	09:09:06.4	c

23° N., 121° E.
08:57:04.
Formosa; 16 killed, many injured and extensive property damage.
Magnitude 6-3/4 to 7.

Aug. 16

U	PEZ	eP	01:01:03.5	
U	PEZ	eS	01:08:44	
U	PEZ	eR	01:15:51	

21° S., 169° E.
00:51:40.
Loyalty Islands region.
Magnitude 6.

Table 5.--Distant earthquakes--Continued

Aug. 16

Hi	Z	iP	10:01:11.7	

18° S., 178° W.
09:53:52.
Fiji Islands.
h about 350 km.

Aug. 17

M	Z	eP	21:14:17.3	c
O	Z	eP	21:14:17.2	c
D	Z	eP	21:14:16.6	c
U	Z	iP	21:14:18.4	d
U	PEZ	iP	21:14:18.7	d
U	PEN	e	21:21:11	
U	PEE	iS	21:22:02	
U	PEZ	iSS	21:25:49	
U	PEN	iQ	21:26:58	
U	PEZ	iR	21:29:19	
Hi	Z	eP	21:14:19.1	c
Ha	Z	iP	21:14:16.1	c

7-1/2° S., 156° E.
21:04:40.
Solomon Islands.
Magnitude 7 to 7-1/4.

Aug. 18

M	Z	eP	00:45:33.8	
O	Z	eP	00:45:34.3	
D	Z	eP	00:45:33.8	

Aug. 18--Continued

22-1/2° N., 122° E.
00:34:03.
Near east coast of Formosa.
h about 200 km.

Aug. 18

M	Z	eP	06:45:31.3	
O	Z	iP	06:45:30.2	d
D	Z	iP	06:45:31.2	d
U	Z	iP	06:45:31.5	d
U	PEZ	iP	06:45:31.5	c (d)
U	PEZ	iS	06:52:13	
U	PEZ	iSS	06:55:43	
U	PEN	iG	06:56:11	
U	PEZ	iR	06:57:45	
Hi	Z	iP	06:45:29.8	d
Hi	E	eS	06:52:10	
Hi	N	eQ	06:55:16	
Ha	Z	iP	06:45:28.3	c
Ha	E	eS	06:52:06	
Ha	N	eQ	06:55:53	
Ha	N	eR	06:58:13	

44°55' N., 111°05' W.
06:37:15.0.
Hebgen Lake, Montana; many killed and injured; major property damage.
Magnitude 7.1.

Table 5.--Distant earthquakes--Continued

Aug. 18

M	Z	iP	15:34:23.0	c
O	Z	iP	15:34:23.0	c
D	Z	iP	15:34:24.1	c
U	Z	eP	15:34:22.2	d
U	PEZ	iP	15:34:22.8	d
U	PEN	iS	15:41:06	
U	PEN	iSS	15:44:21	
U	PEN	eQ	15:45:58	
U	PEZ	iR	15:46:58	
Hi	Z	eP	15:34:19.4	d
Ha	Z	iP	15:34:20.4	d

44°53' N., 110°44' W.
15:26:06.5.
Hebgen Lake aftershock.
Magnitude 6-1/2.

Aug. 19

U	PEZ	eR	04:23:51

44°54' N., 111°38' W.
04:04:03.0.
Hebgen Lake aftershock.
Magnitude 6.

Aug. 20

M	Z	eP	07:30:13.7
O	Z	eP	07:30:12.7
D	Z	eP	07:30:14.2
U	Z	eP	07:30:13.4

Aug. 20--Continued

7° S., 85° W.
07:18:34.
Off coast of Peru.

Aug. 21

U	PEN	ePPS	08:28:26
U	PEZ	eR	08:44:33

50-1/2° S., 139-1/2° E.
08:03:15.
Indian Ocean south of Australia.
Magnitude 5-3/4 to 6.

Aug. 21

U	PEZ	eR	10:19:18

50-1/2° S., 140° E.
09:37:49.
Indian Ocean south of Australia.

Aug. 24

M	Z	iP	15:50:54.8	d
O	Z	iP	15:50:54.6	d
D	Z	iP	15:50:53.8	d
U	Z	eP	15:50:54.0	c
U	PEZ	iP	15:50:54.0	c
U	PEZ	eS	15:58:29	
U	PEZ	eR	16:05:57	
Hi	Z	iP	15:50:57.2	c
Ha	Z	iP	15:50:54.6	c

10-1/2° S., 161-1/2° E.
15:41:40.
Solomon Islands foreshock.

Table 5.--Distant earthquakes--Continued

Aug. 24

M	Z	iP	21:40:01.0	c
O	Z	iP	21:40:00.7	c
D	Z	iP	21:39:59.2	
U	Z	eP	21:39:59.5	c
U	PEZ	eP	21:39:58	c
U	PEN	e	21:47:01	
U	PEN	iS	21:47:39	
U	PEZ	eSS	21:51:06	
U	PEZ	iR	21:53:59	
Hi	Z	iP	21:40:02.2	d
Ha	Z	iP	21:40:00.5	d

10-1/2° S., 161° E.
21:30:46.
Solomon Islands.
Magnitude 7.

Aug. 24

U	PEZ	eS	23:49:13	
U	PEZ	eR	23:55:19	

10-1/2° S., 161° E.
23:32:23.
Solomon Islands aftershock.

Aug. 26

M	Z	iP	08:35:23.9	c
M	Z	ipP	08:35:36.0	
O	Z	iP	08:35:23.3	c
O	Z	ipP	08:35:35.1	

Aug. 26--Continued

D	Z	iP	08:35:24.1	c
D	Z	ipP	08:35:35.1	
U	Z	iP	08:35:23.3	
U	Z	ipP	08:35:34.9	
U	PEZ	iP	08:35:23.7	c
U	PEZ	iS	08:43:23	
U	PEN	iG	08:50:00	
U	PEZ	iR	08:52:15	
Hi	Z	iP	08:35:21.5	c
Hi	Z	ipP	08:35:33.1	
Ha	Z	iP	08:35:28.4	d
Ha	Z	ipP	08:35:39.2	

18° N., 94-1/2° W.
08:25:30.
Vera Cruz, Mexico; 14 killed, many injured, and extensive property damage throughout Tehuantepec Isthmus.
Magnitude 6-3/4.

Aug. 26

U	PEZ	eP	10:34:45
U	PEZ	iS	10:40:43
U	PEN	iQ	10:42:41
U	PEZ	eR	10:44:18
U	Z	Tmax	11:13:31
Hi	Z	iQ	10:42:48
Hi	Z	Tmax	11:13:15

Table 5.--Distant earthquakes--Continued

Aug. 26--Continued

Ha	Z	eQ	10:42:38	
Ha	Z	Tmax	11:12:55	

51° N., 132° W.,
10:27:41.
Queen Charlotte Islands region.

Aug. 27

U	PEZ	eR	14:20:21	

45° S., 80-1/2° W.
13:36:50.
Off coast of southern Chile.

Aug. 28

U	PEZ	eR	03:01:41	

9° S., 158° E.
02:37:00
Solomon Islands.
h about 150 km.

Aug. 28

U	Z	iP	12:15:51.7	
Hi	Z	iP	12:15:49.4	

63-1/2° N., 149° W.
12:07:44.
Central Alaska. Felt at College and Fairbanks.

Aug. 28

U	Z	eP	16:01:44.3	
U	PEZ	eP	16:01:43	
U	PEZ	eS	16:09:01	
U	PEZ	eR	16:15:41	

Aug. 28--Continued

17° S., 167° E.
15:52:10.
New Hebrides Islands.

Aug. 29

U	PEZ	eR	03:45:11	

03:21:07.
Solomon Islands region.

Aug. 29

M	Z	iP	17:15:20.8	d
O	Z	iP	17:15:21.3	d
D	Z	iP	17:15:21.3	d
U	Z	iP	17:15:20.5	d
U	PEZ	iP	17:15:21.6	d
U	PEZ	iS	17:25:27	
U	PEZ	eSS	17:30:47	
U	PEN	eG	17:36:41	
U	PEZ	eR	17:40:11	
Hi	Z	iP	17:15:20.7	d
Ha	Z	iP	17:15:12.6	d

52° N., 106-1/2° E.
17:03:10.
Lake Baikal, USSR.
Magnitude 6-1/2 to 6-3/4.

Aug. 30

U	PEZ	eR	22:45:30	

36-1/2° S., 78-1/2° E.
21:45:07.
Indian Ocean.

Table 5.--Distant earthquakes--Continued

Sept. 3			
M	Z	iP	06:40:06.5
O	Z	iP	06:40:06.4
D	Z	eP	06:40:06.3
U	Z	eP	06:40:06.5
U	PEZ	iP	06:40:06.3
U	PEN	eS	06:50:37
U	PEZ	eSS	06:56:03
U	PEN	eG	07:01:35
U	PEZ	eR	07:05:31
4-1/2° S., 123° E. 06:27:30. Celebes Islands.			
Sept. 3			
U	PEZ	eSS	22:06:47
15° S., 175-1/2° W. 21:48:56. Fiji Islands region.			
Sept. 5			
M	Z	eP	06:19:34.3
O	Z	eP	06:19:34.7
U	PEN	ePPS	06:30:03
U	PEN	eQ	06:39:05
U	PEZ	eR	06:41:36
1° N., 129° E. 06:07:38. Halmahera Island region.			
Sept. 5			
U	PEZ	eR	16:08:43
1° N., 129° E. 15:34:44. Halmahera aftershock.			
Sept. 5			
U	PEZ	eR	21:45:45
Sept. 5			
M	Z	iP	23:12:22.7
O	Z	iP	23:12:21.7
D	Z	eP	23:12:20.8
U	Z	iP	23:12:21.4
Hi	Z	iP	23:12:24.6
Ha	Z	iP	23:12:26.7
18° S., 178-1/2° W. 23:04:00. Fiji Islands.			
Sept. 6			
M	Z	iP	00:39:57.3
O	Z	eP	00:39:57.2
U	Z	eP	00:39:57.2
5-1/2° N., 126-1/2° E. 00:27:59. Near south coast of Mindanao, Phillippine Islands.			
Sept. 8			
U	PEZ	eR	14:25:27

Table 5.--Distant earthquakes--Continued

Sept. 8--Continued

13:12:04.
South Atlantic Ocean about 700 miles east of Bouvet Island.

Sept. 8

U	PEZ	eR	19:44:39	

42-1/2° N., 142-1/2° E.
19:19:39.
Hokkaido, Japan; felt at Hiroo, Obihiro, Kushiro, and Urakawa.

Sept. 10

M	Z	iP	05:44:41.9	d
O	Z	iP	05:44:41.8	d
D	Z	iP	05:44:41.0	d
U	Z	eP	05:44:42.8	
U	PEZ	eS	05:52:56	
U	PEZ	eSSS	05:58:41	
U	PEZ	eR	06:00:21	
Hi	Z	iP	05:44:44.1	c
Ha	Z	iP	05:44:40.7	c

6-1/2° S., 154-1/2° E.
05:35:04.
Solomon Islands.

Sept. 10

M	Z	eP	23:05:42.0	
D	Z	eP	23:05:42.5	

47° N., 152° E.
22:56:34.
Kurile Islands.

Sept. 12

U	PEZ	eSKS	02:04:15	
U	PEZ	eSS	02:12:25	
U	PEZ	isSS	02:12:46	
U	PEZ	eSSS	02:16:11	
U	PEN	eQ	02:18:51	
U	PEZ	iR	02:21:51	

20° S., 68° W.
01:41:03.
Southern Bolivia.
h about 150 km.

Sept. 12

U	PEZ	eR	07:29:31	

3° S. 146-1/2° E.
07:01:45.
Bismarck Sea.

Sept. 12

U	PEE	iS	11:42:00	
U	PEZ	iR	11:49:39	

9-1/2° S., 156° E.
11:24:27.
Solomon Islands region.

Sept. 14

U	Z	eP	13:24:40.3	
U	PEZ	eS	13:31:35	
U	PEZ	eR	13:38:01	
Hi	Z	eP	13:24:36.7	

Table 5.--Distant earthquakes--Continued

Sept. 14--Continued

24° S., 176-1/2° W.
13:15:49.
Tonga Islands region.
Magnitude 5-3/4 to 6.

Sept. 14

M	Z	iP	14:18:56.7	d
M	Z	ipP	14:19:16.4	
O	Z	iP	14:18:56.1	d
O	Z	ipP	14:19:15.8	
D	Z	eP	14:18:55.1	d
D	Z	ipP	14:19:14.9	
U	Z	iP	14:18:56.0	d
U	Z	ipP	14:19:14.4	
U	PEZ	iP	14:18:52.9	d
U	PEZ	i	14:18:56.2	
U	PEZ	ipP	14:19:07	
U	PEN	iS	14:26:28	
U	PEE	eScS	14:28:47	
U	PEE	iG	14:30:41	
U	PEZ	iR	14:33:11	
Hi	Z	iP	14:18:58.2	c
Hi	Z	ipP	14:19:16.8	
Hi	N	eS	14:26:31	
Hi	E	eQ	14:31:35	
Hi	N	eR	14:38:45	

Sept. 14--Continued

Ha	Z	iP	14:19:02.0	c
Ha	Z	ipP	14:19:20.3	
Ha	N	eS	14:26:14	
Ha	E	eR	14:34:03	

28-1/2° S., 177° W.
14:09:39.
Kermadec Islands. Felt on Raoul.
Magnitude 7-3/4.

Sept. 14

M	Z	eP	17:15:29.8
O	Z	eP	17:15:29.4
D	Z	e	17:15:24.7
U	Z	eP	17:15:31.3
U	PEN	iS	17:23:00
U	PEZ	eR	17:30:01
Hi	Z	iP	17:15:32.9
Ha	Z	e	17:15:49.2

29° S., 176-1/2° W.
17:06:15.
Kermadec aftershock. Felt on Raoul.

Sept. 14

M	Z	eP	22:33:17.7
O	Z	eP	22:33:16.5
U	PEZ	eP	22:33:18
U	PEN	iS	22:40:39

Table 5.--Distant earthquakes--Continued

Sept. 14--Continued

U	PEZ	eR	22:47:27	

29° S., 177° W.
22:23:53.
Kermadec aftershock. Felt on Raoul.
Magnitude 6-1/2.

Sept. 15

M	Z	iP	06:08:58.3	
O	Z	iP	06:08:57.1	
U	Z	eP	06:08:53.4	
U	PEZ	iP	06:08:54.4	
U	PEE	iS	06:16:22	
U	PEE	iScS	06:18:53	
U	PEZ	iSS	06:19:55	
U	PEE	eQ	06:20:11	
U	PEZ	iR	06:23:45	
Hi	Z	eP	06:08:59.2	
Hi	E	eS	06:16:20	
Hi	E	eQ	06:24:39	
Hi	N	eR	06:28:03	
Ha	Z	iP	06:08:59.8	
Ha	N	eS	06:16:29	
Ha	N	eQ	06:22:35	

28-1/2° S., 177° W.
05:59:42.
Kermadec aftershock. Felt on Raoul.
Magnitude 6-1/2 to 6-3/4.

Sept. 15

M	Z	iP	11:13:20.2	c
M	Z	iScP	11:17:38.3	
O	Z	iP	11:13:19.6	c
O	Z	iScP	11:17:37.7	
D	Z	eP	11:13:20.1	c
U	Z	iP	11:13:19.1	c
U	PEE	iS	11:19:33	
U	PEE	iScS	11:22:18	
Hi	Z	iP	11:13:21.8	c
Ha	Z	iP	11:13:25.1	c

21-1/2° S., 179-1/2° W.
11:05:33.
Fiji Islands region.
h about 600 km.
Magnitude 6-1/2.

Sept. 16

U	PEN	iS	16:13:45	
U	PEZ	eR	16:21:11	

28-1/2° S., 176° W.
15:57:03.
Kermadec aftershock.
Magnitude 5-3/4 to 6.

Sept. 17

U	PEN	eS	14:52:47	
U	PEZ	eR	15:00:31	

28-1/2° S., 176° W.
14:36:11.
Kermadec aftershock.
Magnitude 5-3/4 to 6.

Table 5.--Distant earthquakes--Continued

Sept. 17

U	PEZ	eR	22:32:11	

30-1/2° S., 114° W.
22:14:40.
Gulf of California.
Magnitude 5-1/4.

Sept. 18

U	PEZ	eR	13:00:31	

57-1/2° S., 24° W.
12:01:11.
Sandwich Islands.

Sept. 20

U	PEZ	eS	06:25:15	
U	PEN	eQ	06:30:27	
U	PEZ	eR	06:32:35	
U	Z	Tmax	07:16:16	
Hi	E	eQ	06:32:49	

13-1/2° S., 11-1/2° W.
06:07:59.
Pacific Ocean north of Easter Island.

Sept. 21

U	PEZ	eR	02:37:11	

9-1/2° S., 149° E.,
02:08:28.
Near coast of New Guinea. Felt on Wanigella.

Sept. 25

M	Z	eP	02:48:45.6	d
O	Z	iP	02:48:46.1	d
D	Z	iP	02:48:45.1	d
U	Z	eP	02:48:45.3	d
U	PEZ	iP	02:48:45	c
U	PEE	eS	02:58:38	
U	PEZ	eSS	03:02:51	
U	PEZ	eR	03:11:28	

22° N., 122-1/2° E.
02:36:48.
Near east coast of Formosa.

Sept. 26

M	Z	eP	08:27:42.4	
M	Z	Tmax	09:02:35	
O	Z	iP	08:27:40.6	
O	Z	Tmax	09:02:31	
D	Z	Tmax	09:02:30	
U	PEN	eS	08:32:50	
U	PEN	eQ	08:34:30	
U	PEZ	iR	08:35:40	
U	Z	Tmax	09:02:45	
Hi	Z	eP	08:27:34.4	
Hi	N	eQ	08:35:35	
Hi	Z	Tmax	09:02:11	

Table 5.--Distant earthquakes--Continued

Sept. 26--Continued				
Ha	Z	iP	08:27:37.7	
Ha	Z	Tmax	09:02:08	
43-1/2° N., 128-1/2° W. 08:20:51. Off coast of Oregon.				
Sept. 29				
U	Z	eP	15:41:18.0	
U	PEZ	eP	15:41:16.0	
U	PEN	iS	15:48:44	
U	PEZ	eR	15:54:50	
29° S., 176-1/2° W. 15:31:57. Kermadec Islands. Magnitude 6-1/2 to 6-3/4.				
Sept. 30				
M	Z	iP	20:35:15.3	d
O	Z	iP	20:35:15.1	d
D	Z	iP	20:35:13.9	d
U	Z	iP	20:35:14.7	c
U	PEZ	eS	20:43:55	
U	PEZ	eR	20:50:30	
Hi	Z	eP	20:35:17.4	d
Ha	Z	eP	20:35:16.6	d
18° S., 168° E. 20:25:58. New Hebrides Islands. Felt at Port Vila and Vate. Magnitude 6-1/2.				

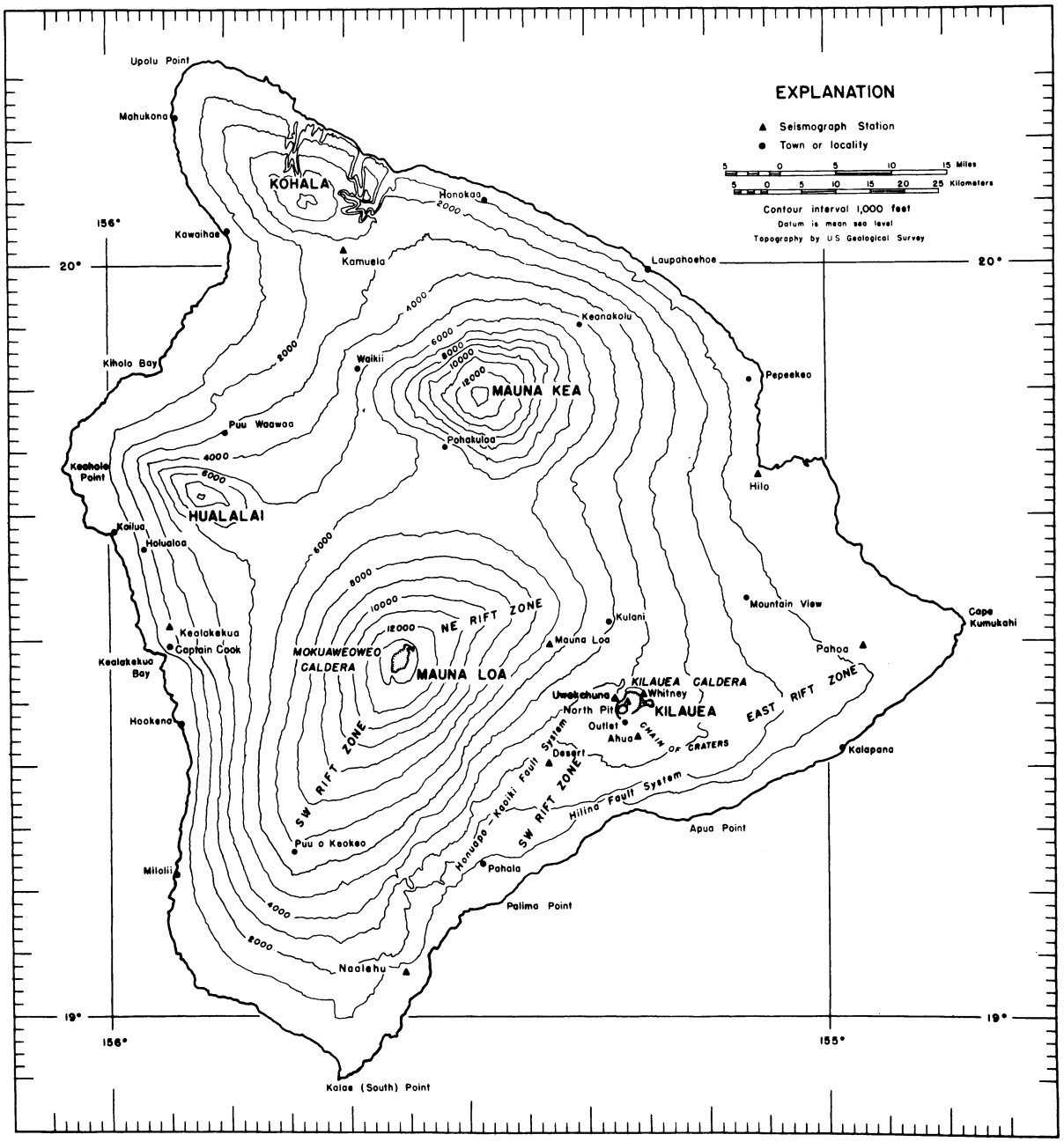

Figure 2.--Map of the Island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO SUMMARY

SUMMARY 16

October, November and December, 1959

by

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Issued ~~August~~, 1965

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#16 Kilauea summit

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Hawaiian Volcano Observatory
Summary 16

PRELIMINARY

Preface

It is important for the reader to notice that this Summary 16, for October, November and December of 1959, is actually being issued in 1965. All modern summaries, starting with 24, have been circulated or are in press; the gap between 16 and 24 is being filled now.

The gap in chronological sequence of this series was caused largely by the extreme activity of Hawaiian volcanoes which began in November, 1959 with the eruption of Kilauea-Iki. And there have been surface lava flows from Kilauea every year (excepting 1964) since then, as well as varied seismic storms and crises.

~~During~~ the seismic and volcanic events between 1959 and 1965, the staff of the Hawaiian Volcano Observatory grew in experience as well as in numbers. Also many changes and improvements in instrumentation took place in that period. It would be foolish to blind ourselves to this broader understanding and general amelioration. And so this Summary 16, and the others up to Summary 24, will certainly reflect this "armed" vision." It should, however, not be confused with prevision; in writing Summaries 16 through 23 we will be guided by our knowledge of eruptions and earthquakes "yet to come." But in mentioning these events in a context of earlier chronology, we mean to avoid giving any manifestation of a prescience we neither have, nor claim to possess.

In the present Summary we have attempted an hybrid reportage --- using formats, tables, etc. which were used in Summary 15 --- but also consciously starting a transition toward the style, format and content in vogue by the time of Summary 34. To complicate this attempt at evolution, we are confronted by the unique events of 1959/60 and by the need to utilize entirely new graphical and tabular methods for their complete and orderly representation.

If there is any confusion, therefore, in the continuity or interpretation of Summaries 16 through 23, the reader is urged to consult both Summaries 15 and 24; or he is invited to write for information to:

Hawaiian Volcano Observatory
Hawaii Volcanoes National Park
Hawaii

It would be possible to omit this "note." But there have been enough queries regarding the back-log, that we could easily justify such a statement.

Hawaiian Volcano Observatory

Summary 16

PREFATORY NOTE

It is important for the reader to notice that this Summary 16, for October, November and December of 1959, is actually being issued in 1966. All modern summaries, starting with 24, have been circulated or are in press; the gap between 16 and 24 is being filled now.

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Hawaiian Volcano Observatory

Hawaii Volcanoes National Park

Hawaii

Ratté has gone over this (re-written) page. I am sure he is still not happy with it, and I am not happy with his guide lines.

Chronological Summary

During this quarter workers at Hawaiian Volcano Observatory had the opportunity to study and to sample a very remarkable eruption in Kilauea-Iki, a collapse feature near the summit of Kilauea. Many useful accounts of the Kilauea-Iki eruption have already been published although the most definitive report is still being finalized. Thus we shall attempt to give a brief review of major events in a style and sequence which will not be too repetitive of earlier publications and also which will not detract from the forthcoming Professional Paper.

A partial list of references is as follows:

1. Ault, W. U., 1960, Geochemical research during the 1959-60 activity of Kilauea Volcano: Geochemical News, p. 1-5.

2. Eaton, J. P., 1962, Crustal structure and volcanism in Hawaii in Crust of the Pacific Basin: Geophys. Mon. 6, p. 13-29.

3. Eaton, J. P., and Murata, K. J., 1960, How volcanoes grow: Science, v. 132, no. 3432, p. 925-938.

4. Eaton, J. P., and Wentworth, C. K., 1962, The Hawaiian Volcano Observatory in Thrum's Annual "All About Hawaii" (1961 ed.): p. 35-44.

5. Macdonald, G. A., 1961, Volcanology: Science, v. 133, no. 3454, p. 673-679.

6. Richter, D. H., 1963, Volcano observations: Am. Geophys. Union Trans., v. 44, no. 2, p. 505-507.

7. Richter, Donald H., and Eaton, Jerry P., The 1959-60 eruption of Kilauea volcano: The New Scientist, v. 7, p. 994-997.

In the third quarter of 1959 (Summary 15) small, inward tilting was measured at Kilauea tilt bases. Thus measurements around October 16, 1959 (Fig. 2a) revealed a radical change in the pattern; gentle collapse was replaced by gentle re-inflation. Tilt measurements made before the eruption of 14 November (Fig. 26) showed about five times the previous rate of inflation-tilt. In the short article for The New Scientist* (reference 7, above) Richter and Eaton illustrate this tilt trend in their Figure 2. That illustration shows the same results depicted by Figures 2c and 2d in the following text. Figure 2c shows the collapse coincident with the Kilauea-Iki eruption; 2d shows the re-inflation of the summit storage zone which actually began early in the Kilauea Iki eruption.

* On Page 7 of Summary 24 are plotted 7-day averages of tilt recorded East-West and North-South by the short base, liquid-level tiltmeter in Uwekahuna Vault. This illustrates the history of tilt measurements at Uwekahuna; it starts in July of 1956 and is plotted till August, 1962. The deformation described above is shown and also its relationship to tilt cycles before and after Kilauea-Iki.

The daily tilt readings in Table I, if plotted, reveal a curve similar to that shown in the New Scientist article and one which might be more indicative of day-by-day deformation.

Thus, Kilauea before the eruption in Kilauea-Iki displayed an increasing rate of shallow lava storage. Seismically there was little of note except for a greater and greater number of events recorded at the North Pit seismometer. In Table 3 these events are counted under the heading "Kilauea caldera, shallow." It can be seen in Table 3 that this count reached a high of 800 quakes on October 24 and then the count decreased to reach 90 on November 1, 1959. Thereafter the count rose sharply; by November 8 the number could only be estimated, by November 12 it exceeded 2000 events in a 24-hour period.

This activity had not been previously observed in Hawaii -- probably because there had never been such a sensitive instrument so fortuitously located. In the present case it is noteworthy that similar instruments at Uwekahuna and Outlet -- within 3 km of North Pit failed to show more than 1% of the thousands of small, shallow events. These therefore are assumed to come from failure of the inflating floor of Kilauea caldera, from Halemaumau itself, and from the nearby 1954 rupture zone which lies at the head of the east rift and which leads to Kilauea-Iki and the "chain-of-craters."

The largest quake recorded in October was magnitude 4.4 on October 4, 1959. It was located beneath the offshore portion of Haleakala's east rift and was felt by residents of east Maui.

Three other quakes of magnitude 3.4 were recorded during the month but were not reported felt. Of these, the quake of 03-10-03.5 on 21 October was interesting in that it took place only 30 km south of Honolulu and seemed relatively deep.

Other unusual quakes in October were as follows:

A. 3 Oct., 15-36-08.0 M = 3.2 h = 50
This deeper event was located 25 km east of Pahoa in a region where shallow, east-rift quakes are more common.

B. 16 Oct., 03-37-37.0 M = 3.0 h ca 30
This event was located 35 km N. of the Haleakala seismograph.

C. 25 Oct., 01-43-14.2 M = 2.9 h ca 8
This quake was similar in location to the "felt" event of October 3 described above. Earthquakes from this offshore source are remote from the Kilauea seismic network and so their location is tentative. But the general region -- north of Kohala and east of Haleakala has produced many quakes since 1956.

During the first 13 days of November, 1959, the following large, unusual and/or felt quakes took place:

A. 6 Nov., 11-14-33.4 M = 3.1 h = 5
This event 4 km N. of the Desert station was in the Kaoiki Fault system which separates Mauna Loa and Kilauea.

B. 11 Nov., 07-22-52.3 M = 4.0 h = 13
This is an unusual quake from an offshore epicenter 200 km south of Oahu and 300 west of Mauna Loa station.

C. 12 Nov., 00-21-12.2 M = 3.2 h = 15
12 Nov., 00-31-22.5 M = 3.2 h = 15
These two events from an epicenter 11 km SE of Naalehu were almost replicas of each other; the exception lay in a reversal of first-motion direction at the Hilo seismometer.

D. 12 Nov., 18-04-36.7 M = 2.3 h = 3
13 Nov., 01-00-46.6 M = 1.4 h = 8
Both of these smaller quakes originated at shallow depth beneath Kilauea's summit and they were felt in the summit area.

It should be observed that many small events are listed in Table 4; magnitude 2.5 has hitherto been regarded as a cutoff point for use in this listing. Because of the Kilauea-Iki eruption, however, we have tried to locate and list all readable events which preceed 14 November. There seemed to be no seismic indication during October that an eruption was near except for the thousands of events recording at North Pit. These circumstances, together with tilt results, kept the staff of HVO and the interested public in a high state of expectation during October.

The state of public and official alert continued into November heightened by increased tilt and shallow seismic activity. The felt quakes during the afternoon of November 14 added to the general excitement, and by the time of the outbreak that evening, the Hawaiian Volcano Observatory and the Uwekahuna overlook were already crowded with U.S.G.S. staff members, National Park personnel and tourists -- all scanning and searching the dark vista.

Chronological Summary

Introduction

During this quarter, workers at Hawaiian Volcano Observatory had the unique opportunity to study and to sample a very remarkable eruption in Kilauea-Iki, a collapse feature near the summit of Kilauea. Many useful accounts of the Kilauea-Iki eruption have already been published, although the most definitive report is still being finalized. In this summary, therefore, major events will be reviewed in a style and sequence which will not be too repetitive of earlier publications, and also which will not detract from the forthcoming Professional Paper.

In the course of the seismic and volcanic events between 1959 and 1966, the staff of the Hawaiian Volcano Observatory grew in experience as well as in numbers. Also many changes and improvements in instrumentation took place in that period. And so this Summary 16 and the others up to Summary 24, will reflect a sort of "armed vision." It should, however, not be confused with prevision; in writing Summaries 16 through 23 we will be guided by our knowledge of eruptions and earthquakes "yet to come." But in mentioning these events in a context of earlier chronology, we mean to avoid giving any manifestation of a prescience we neither have, nor claim to possess.

This paragraph has been re-written often, without (I admit) changing the essential "arty" qualities. I think this page is important but perhaps not vital

Pre-eruption events

In the third quarter of 1959 (Summary 15), small inward tilting (collapse) was measured at Kilauea tilt bases. Thus, measurements around October 16, 1959 (fig. 2a, table 2a) revealed a change in the pattern; gentle collapse was replaced by gentle inflation. Tilt measurements made just prior to the eruption of November 14, 1959 (fig. 2b, table 2b) showed about five times the previous rate of inflationary tilt. Richter and Eaton (1960, fig.2) illustrated this tilt trend and showed the same results depicted by figures 2c and 2d of this Summary. The collapse coincident with the Kilauea-Iki eruption is shown on figure 2c, and the reinflation of the summit storage zone (which actually began early in the Kilauea-Iki eruption) is shown on figure 2d.

"The history of tilt measurements at Uwekahuna,"in HVO Summary 24 (Krivoy and others, 1961, p.7, fig.2) illustrated the deformation described above, and also its relationship to tilt cycles before and after Kilauea-Iki. The daily tilt readings in table 1, if plotted, reveal a curve similar to that shown by Richter and Eaton (1960), and one which is more indicative of day-by-day deformation.

In general, therefore, there was evidence to show an increasing rate of shallow lava storage beneath Kilauea prior to the eruption in Kilauea-Iki.

this page might benefit from simplification. Too many references to other publications and Summaries, But I'm too lazy to insert a tilt curve.

There was little to note seismically in this period except for an increasing number of events recorded at the North Pit seismometer. These events are recorded (table 3) under the heading "Kilauea Caldera, shallow." This count reached a high of 800 quakes on October 24 but decreased to 90 by November 1, 1959 (table 3). The count rose sharply thereafter: by November 8 the number could only be estimated, and by November 12 it exceeded 2,000 events per 24-hour period.

Such micro-earthquake activity had not been previously observed in Hawaii -- probably because there had never been such a sensitive instrument so fortuitously located. Seismometers located at Uwekahuna and Outlet, within 3 km of North Pit, failed to show more than 1 percent of the thousands of small shallow events. Therefore these events are assumed to come from failure of the inflating floor of Kilauea caldera, from Halemaumau itself, and from the nearby 1954 eruption fissure zone which lies at the head of the east rift leading to Kilauea-Iki and the "chain-of-craters."

The thousands of events recorded at North Pit and the tilt findings kept the staff of the Hawaiian Volcano Observatory and the interested public in a high state of expectation during October.

An earthquake of magnitude 4.4 occurred on October 4, 1959, beneath the offshore portion of Haleakala's east rift and was felt by residents of east Maui. This was the largest quake recorded for the month. Three events of magnitude 3.4 were also recorded but were not reported felt. Of these, the quake of 03:10:~~XX~~ 03.5 on October 21 was interesting in that it took place only 30 km south of Honolulu and seemed relatively deep.

nothing too controversial here

An unusually deep quake (h=50) was recorded at 15:36 on October 3 from an epicenter 25 km east of Pahoa. This magnitude 3.2 event came, therefore, from an epicentral location where shallow quakes are more common. On 16 October at 03:37, a magnitude 3.0 earthquake occured at a depth of about 30 km and a location about 35 km north of the station at Haleakala, Maui. At 01:43 on October 25, an earthquake of 8 km depth and 2.9 magnitude was located close to the felt event of 4 October described above. Earthquakes from this offshore source are remote from the Kilauea seismic network and so their location is tentative. But the general region --- north of Kohala and east of Haleakala --- has produced many quakes since 1956.

The above large and/or unusual earthquakes in October 1959 are not very different in either number or distribution from such seismic content of other quarters or months. They can certainly not be said to presage (in a regional sense) the eruptive activity in the months to come. Left to be interpreted! I agree to omit.

During the first 13 days of November, 1959, the following large, unusual and/or felt quakes took place; At 11:14:33.4 on November 6 a magnitude 3.1 quake occurred at a depth of 5 km about 4 km north of the Desert seismometer in the Kaoiki Fault system which separates Mauna Loa and Kilauea. At 01:22:52.3 on November 11, an unusual quake of magnitude 4.0 originated from an offshore epicenter 200 km south of Oahu and 300 km west of Mauna Loa station. A depth of 13 km is assumed for this event.

On November 12 at 00:21:12.2 and 00:31:22.5 two almost identical quakes originated at 15 km depth and 11 km southeast of Naalehu. Both quakes were measured as 3.2 magnitude: they were replicas of each other with the sole expeption of a reversal of first-motion direction at the Hilo seismometer. other at nothing otherwise

At 18:04:36.7 on November 12 and at 01:00:46.6 on the 13th. shallow earthquakes of magnitudes 2.3 and 1.4 respectively, originated beneath Kilauea's summit. These were remarkable because they were reported felt despite their small size. In this regard it should be observed that Table 4 --- once restricted to earthquakes of magnitude 2.5 or greater --- has been expanded in scope so as to list and describe all interpretable events regardless of size.

What was true of October, 1959 can also be said of the first 13 days of November --- there seemed to be no seismic indication that an eruption was near, except for the thousands of events recording at North Pit. [illegible]

These circumstances, however, caused the state of public and official alert to continue into November. The felt quakes during the afternoon of November 14 added to the general excitement, and by the time of the outbreak that evening, the Hawaiian Volcano Observatory and the Uwekahuna Overlook were already crowded with U.S.G._S. staff members, National Park personnel and tourists --- all scanning and searching the dark vista.

I don't think Rittè likes this hot climax. But I claim "Laissez faire" "dont de segueur" or one of those French dreams. Otherwise no hu-hu ??

Seismological tracking of the eruptive process

A three-component set of Press-Ewing seismometers (15-second seismometers and 90-second galvanometers) recording optically at 15 mm per minute, has been used continuously and with no change in physical characteristics since January 1958. These instruments have been vital to the study of distant earthquakes, and also have responded usefully to some local events and to barometric pressure changes.

The present evaluation of the 1959-60 records shows a correlation between certain features of volcanism and instability of the Press-Ewing traces. The author first observed a similar phenomenon during the eruptive events of 1961 -- and it was correctly interpreted as tilt-induced. This same sort of tilt "storm" has been recognized as a premonitory feature of lava movements both surficial and sub-surface for all such volcanic events since that time. In fact, the Press-Ewing "departures" would serve to give several hours of warning in the case of incipient volcanism. Such use of the data would require electronic development so that a visible recording was always available, and so that a warning signal might be generated to alert the Observatory staff outside of duty hours.

Many related events are listed in chronological order in Table A --- in general keyed to a qualitative appraisal of Press-Ewing behavior. Table A starts with November 14, 1959; but instability was first noted in the records of November 8. This instability took the form of wandering of the spot at periods of about 20 minutes. Most obvious on the east-west component, it continued through November 9, 10, 11 and 12 but was either small or else not present on the records of 13 November, 1959.

I think that this page contains useful info and is non-confidential.

By January of 1958 a three-component set of Press-Ewing seismometers ~~were~~ operational. ~~These have~~ been used continuously since then with no change in ~~their~~ physical characteristics; 90-second galvanometers and 15-second seismometers, recording optically at 15 mm/minute. These instruments have been vital to our study of distant earthquakes and have given useful responses to some local events and to barametric pressure charges.

During the eruptive events of 1961, the author observed important correlations between certain features of volcanism and instability of the Press-Ewing ~~spots~~ traces. These were correctly interpreted as tilt-induced departures and all Kilauea eruptive events (as well as some apparent sub-surface lava movements) have been indexed by the recorded long-period response of the Press-Ewings in the Uwekahuna vault. When the evaluation of the old 1959/60 records was resumed (in 1964) the same phenomena were noted. The following schedule, therefore, lists many related events in chronological order -- in general, keyed to a qualitative appraisal of Press-Ewing behaviour. Other sources of information were the original logs of the Hawaiian Volcano Observatory, a National Park report -- "Report of Eruption in Kilauea-Iki", the text of the forthcoming professional paper, "The 1959-60 eruption of Kilauea, and the ~~results of~~ author's personal notes, recollections and record-analyses.

The following review commences with 14 November, 1959. It should be noted in Table III, however, that Press-Ewing instability was first noted on November 8, 1959. This wandering of about 20-minute period was ~~not~~ MOST active on the east-west component; it continued through the 9th, 10th, 11th, and 12th of November; but was reduced in amplitude on 13 November 1959.

Table A.--Schedule of tilt-induced departures of the Press-Ewing horizontals at Uwekahuna Vault, and their correlation with other observations during the Kilauea-Iki eruption of 1959-60

Date (1959)	Time From	Time To	Press Ewing	Other sources[1/]
Nov. 14	14:15	14:20	Strong ~~southwest~~ SW. tilt records on horizontals. Summit collapse indicated.	
14	14:48	-----	----------	First of about ~~one~~ 1 dozen felt, Kilauea-Iki premonitory events.
14	20:02	-----	----------	Tremor increase indicates actual start of eruption.

This is the format developed by Tricia into which the following data need be inserted. You should check the following and feel free to change terminology, concepts etc. to conform better with your recent (quantitative) paper on the subject.

1/ Other sources include the original logs of the Hawaiian Volcano Observatory; a report by the Hawaii National Park, "Report of the Eruption in Kilauea-Iki;" the text of the forthcoming professional paper on the 1959-60 eruption of Kilauea-Iki; and the author's personal notes, recollections, and record analyses.

format suggested format

Jackie A. Jaca

Schedule of tilt-induced departures of the Press-Ewing horizontals at Uwekahuna Vault, and their correlation with other observations during the Kilauea-Iki eruption of 1959/60.

Date / Time	Press-Ewing Evidence	Other Sources
Nov. 14, 1959 14:15 to 14:20	Strong south-west tilt records on horizontals. Summit collapse indicated.	
14:48		first of about one dozen felt, Kilauea-Iki premonitory events.
20:02		tremor increase indicates actual start of eruption.
20:08		Kilauea-Iki eruption sighted.
Nov. 21, 1959 19:25	Moderate NNW tilt takes place.	End of tremor and also observed time for end of Phase I.
Nov. 26, 1959 16:34	Strong WNW tilt on horizontal P-E	
16:35		Reported by observers as "instant" end of fountain with immediate back-flow. End of II.
16:47		Tremor ends on most short-period instruments.
Nov. 29, 1959 21:47		Official end of Phase III
21:48	Strong WNW tilt (inflation) similar to II.	
Dec. 4, 1959 (start of Phase IV)		
01:00		Given as starting time in HVO reports.
02:57		Occasional spurts to 100' reported by Rangers.

Schedule of tilt-induced departures of the Press-Ewing horizontals at Uwekahuna Vault, and their correlation with other observations during the Kilauea-Iki eruption of 1959/60 (cont.)

	Press-Ewing Evidence	Other Sources
"all morning"	- -	50-100' reported by Rangers
(no special action near 9:00 a.m.)		
09:10	- - - Good indication of modest SE tilt (collapse of summit) on Press Ewings	
09:45 to 11:20	- -	"increased outpouring" reported by Rangers.
Dec. 5, 1959 09:26	- - - Slight N-tilt and large W-tilt. Seems gradual but persists for 2 hours of overwriting. Thus strong inflation indicated beneath north-central portion of Kilauea Caldera.	
09:27	- -	Official report -- "Dead calm settled over the vent" end of Phase IV.
Dec. 6, 1959	- - - Gratuitous tilt between phases IV and V.	Tremor on UZ 0613 ± → 06:50
06:14	- - - Start of two large north-tilts (on PE-N) lasting 1/2 hour. Important inflation beneath Halemaumau implied.	UZ - 1 to 2 MM O - 3/2 MM N - over-write (D, ML, not seen)
06:05	- - - Start of same process on the E-W; west-tilt in two distinct surges which lasts 1/2 hour.	NO VISIBLE SURFACE PHENOMENON AT THE TIME OF THIS TILT AND TREMOR.
Dec. 6, 1959	- - - Phase V start, indicated on PE-E/W by subtle, gradual east-tilt (collapse) shown as slight widening between adjacent lines.	
Dec. 7, 1959	- - - Strong west-tilt begins at 00:21 and persists (slightly north). Showing inflation of center of Kilauea Caldera	End of Phase V.

Schedule of tilt-induced departures of the Press-Ewing horizontals at Uwekahuna Vault, and their correlation with other observations during the Kilauea-Iki eruption of 1959/60 (cont.)

	Press-Ewing Evidence	Other Sources
00:24 00:32	- -	Listed on "official table" in Professional Paper ms. Probably in error.
Dec. 8, 1959 02:45	- - - Another big W-tilt starts at exactly 02:45, crosses over and covers the next hour-line.	
02:45	- -	Official end of Phase VI.
03:00, 04:00 05:00, 06:00	- - - Widening PE lines to indicate east tilt or deflation - - -	Tremor on Z and NP -- possible charge very clear on "O" starts at 05:03.
8 Dec. 1959 around 13:00	- -	Phase VII start reported.
16:53	- -	"Suddenly at 16:53 the fountain roared to 850 ft." (From P.P.)
16:53	- - - On E/W Press Ewing only, gentle but persistent E-tilt which widens spaces between lines for one hour.	
20:12	- - - Immediate demonstration of strong west-tilt (slightly north) i.e.: supposed inflation beneath north-central caldera.	
20:12	- -	End of Phase VII.
21:05 to 23:00	- - - PE-E/W wide spaces = east tilt - - - - - - - - - - - - - - -	"Fountain stopped abruptly" good "band" of tremor U, D, M, etc. 21:05→ 23:00 ±
Dec. 10, 1959	- - - Power outage in Uwe Vault 12:20 to 21:11	

Schedule of tilt-induced departures of the Press-Ewing horizontals at Uwekahuna Vault, and their correlation with other observations during the Kilauea-Iki eruption of 1959/60 (cont.)

	Press-Ewing Evidence	Other Sources
15:15	- -	Subtle start of VIII.
Dec. 11, 1959		
02:00	- -	Activity picks up - HNP
02:10 ±	- - - Widening of spaces begins and implies east-tilt and increased eruptivity.	
02:40	- -	Ftns. to 700 & 1000 ft. do.
03:30	- -	Spatter Ridge shower.
(Dec. 10,'59)	Starting around 21:20 only on PE-Z about one hour of ca.280-second waves (13 cycles in one hour)). Probably a barometric phenomenon due to testing?	
Dec. 11, 1959 10:48	- - - Strong west-tilt (slightly north) in the usual manner. Takes one hour to recover or "catch up."	
08:14 to 10:48	- -	"Official" slow death of Phase VIII.
Dec. 13, 1959		
05:08	- - - (No PE change) -	Feeble start of IX.
06:25	- -	Rolling boil of lava.
ca. 06:30	- - - Spacing increases in a direction to imply east-tilt, caldera collapse and increased outpouring. - - -	
by 07:00	- -	Ft. betw. 100 & 700 ft.
13:40	- - - Typical west-tilt deflection of Press-Ewing E/W - - - - - - -	Official end of Phase IX.
Dec. 14, 1959		
07:45 to 10:40	- -	Slow start of X.
11:00	- -	"Ftn. roared to life" (to 1100 ft. in 8 minutes).
11:01	- - - Strong east-tilt starts with spaces wider than ever at the "starts" so-far studied. - -	

Schedult of tilt-induced departures of the Press-Ewing horizontals at Uwekahuna Vault, and their correlation with other observations during the Kilauea-Iki eruption of 1959/60 (cont.)

	Press-Ewing Evidence	Other Sources
15:36	- - - Strong west-tilt in the usual manner for end of phase - - -	Also "official" end of Phase X.
Dec. 15, 1959		
06:11	- -	Gentle start of XI; but at 1000 ft. in minutes.
ca. 06:25	- - - Very strong east-tilt begins and seems to last 1/2 hour. Also around 07:00, south-tilt becomes apparent on the N-S instrument.	
10:25	- -	Official end of XI.
10:27 to 10:28	- - - Usual WNW tilt shows strongly. (Wide spacing in E-W immediately after 10:28 inflation shows collapse on the heels of the usual west-tilt). (This might be the start of storage in the east-rift).	
Dec. 15, 1959		
19:30	- -	First sighted & "within 30 min. jetting to 1000 ft."
(20:00)		
19:55	- - - Strong east-tilt on E/W pinpoints start of strong action. At the same time (roughly) there is subtle south tilting shown on N/S.	
21:28	- - - Start of strong west-tilt (north, too subtle to copy).	
21:30	- -	Official end of XII.
22:35	- - - Slight "bobble" on E/W, P-E coincides with end of noise and rapid backflow whirlpool.	
Dec. 16, 1959 (During phase XIII)		
13:35	- -	"Rapidly hit a peak outflow in a few minutes"
13:45	- - - Indicates east-tilt at ca. 13:45 which persists 1/2 hour. Also compression of lines shows slight south-tilt.	

Schedule of tilt-induced departures of the Press-Ewing horizontals at Uwekahuna Vault, and their correlation with other observations during the Kilauea-Iki eruption of 1959/60 (cont.)

	Press-Ewing Evidence	Other Sources
16:35		Fountain choked.
17:19		XIII appeared stopped by backflow.
17:19	Good, strong cross-over on E/W to show west-tilt.	
17:20	Weak indication of north-tilt.	
Dec. 17, 1959		
02:15		Approximate "official" start of Phase XIV.
02:32	Collapse shown on PE-E, only.	
04:01	Start of west-tilt on PE-E.	
04:02		Official end of Phase XIV
11:10		Spatter observed and small outflow for two hours.
13:53		Sudden pickup in output.
13:55	Large east tilt.	
14:05	(No special change)	1900 ft. fountain.
14:41		Surges begin.
15:18	Small west tilt.	
15:29	Start of large west tilt which persists 1/2 hour.	
15:32		Official end of Phase XV.
Dec. 19, 1959		
02:40		Gentle start of XVI which reached 1500 ft. during next 25 minutes (03:25?).
03:13	East tilt readily apparent on EW P-E, and faint south tilt implied on N/S.	
06:14 to 06:15	Strong west tilt on EW, P-E small, but visible on N-S.	
06:16		Abrupt end observed.

Schedule of tilt-induced departures of the Press-Ewing horizontals at Uwekahuna Vault, and their correlation with other observations during the Kilauea-Iki eruption of 1959/60 (cont.)

Phase XVII. Has no tilt ramifications on the Press-Ewings, although the record changed about 07:58 on 12/20 --- roughly the time of phase ending. Also no Z tremor seen during this Phase.

Up to, and including Jan. 8, Press-Ewing E/W has no overt or sudden departures. As of the records of Jan. 9, 10, 11, 12, and 13, as many as 10 departures daily showed east- or collapse-tilt. At this time N and Z did nothing observable.

Jan. 14, 1960. Either no suspicious tilt on P-E or too much earthquake noise to read it.

Jan. 30, 1960. West-stop reached on Press Ewing E/W...i.e., east-tilt has taken its toll.

Scientific Investigations during the Kilauea-Iki Eruption

As one outcome of international attention to active volcanism, there have been many attempts to codify and to regulate human behaviour under such circumstances. The interest is dual --- protection of the civilian populace, and conduct of the necessary scientific investigations. It seems valid, therefore, to add to this growing literature --- if only for the guidance and information of future workers at the Hawaiian Volcano Observatory.

A telegram sent by the HVO scientist-in-charge, K.J.Murata to our Branch Chief (Field Geochemistry and Petrology) in Washington D.C., William T. Pecora, will introduce the theme. "An eruption of Kilauea volcano started Saturday night, Nov. 14, in Kilauea-Iki, a pit crater immediately adjacent to the summit caldera. After first breaking out on a wide front, the lava is now issuing from a single large vent in a fiery fountain 700 feet high. It is an awesome sight, especially at night. We are so occupied that we must beg off giving a detailed account at this time."

The foregoing only vaguely suggests the great activity undertaken by workers at the U.S.G.S. Hawaiian Volcano Observatory and by the employees of the National Park Service; this was an activity scheduled completely by nature so that after a few weeks of dramatic eruption punctuated by equally dramatic quiet, life on the summit of Kilauea became a beautiful, sleepless blur of unreality.

A primary consideration was for the well-being and convenience of the thousands of visitors who came from Hawaii, from other islands of the State and from the mainland to witness this breath-taking natural wonder. During the first phase of the outbreak it became difficult to use the Crater-Rim Road where it passed behind the main Kilauea-Iki vent. For the early phases of the eruption the Hawaii National Park crew was able to free the road of ash once the phases subsided. But the job soon got to be too great for available road equipment (a small

road grader had to be rescued itself) and the fall-out hill now known as Puu Pauai was allowed to grow. It now covers parts of the old Crater Rim road with over 100 feet of ash and fire-fountain aglutinate. Also eventually covered was a pleasant picnic area called "Summer Camp." This area, which includes the water-tube tilt base listed by the same Name, now lies under twenty or thirty feet of ash and is part of the Devastation Trail area where a wooden cat-walk permits tourists to inspect tree-molds and other features of Kilauea-Iki volcanism.

Thus, the Kilauea-Iki eruption provided a serious traffic problem for the Park Service Ranger staff. Eventually this was handled by setting up a convoy pattern of traffic in which visiting vehicles were turned at Thurston Lava Tube (just west of BM 3918 at the eastern extremity of Kilaue Iki crater. See Figure C.) On the return trip (westward) toward Park Headquarters, they were permitted to park and to view the eruption from a railed overlook near BM 3874. This ~~latter~~, therefore, became the main viewing point for the thousands of tourists who visited the Park during the eruption. It was just about one kilometer from the main fountain; and thus it offered the visitors an un-blocked view of the fountains which at times soared to 2,000 feet; with the growing lava lake of Kilauea ~~And in the foreground rose the growing lava lake of Kilauea-Iki.~~ Pit in the foreground

At this main overlook, therefore, one of the National Park Naturalists was almost always on ~~continuous~~ duty. Their notes of fountain heights and their color film footage and still photography were to prove vital links in piecing together the complete story of the eruption.. As soon as the Kilauea-Iki fountain began to demonstrate a proclivity for unheard of heights, Park Service and Geological Survey officials consulted to set safety standards. It was decided to evacuate tourists from the main overlook whenever the measured fountain height exceeded 1000 ft. This was later raised to 1,200 feet when

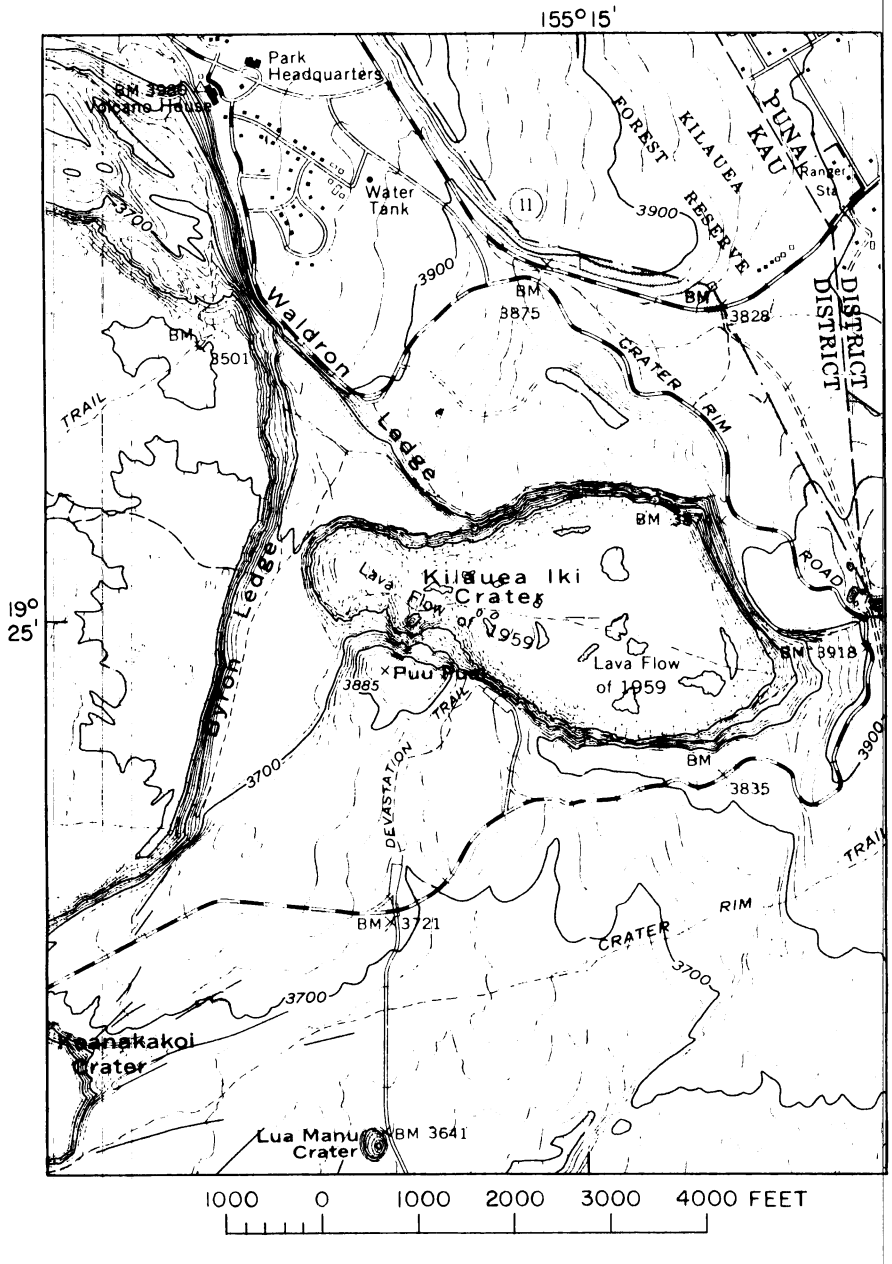

155°15'
19°
25'
Park Headquarters
BM 3987
Volcano House
Water Tank
11
FOREST
KILAUEA
PUNA
KAU
RESERVE
Ranger Sta.
DISTRICT
DISTRICT
3900
3700
BM 3875
BM 3828
BM 3501
Waldron Ledge
CRATER RIM
TRAIL
Byron Ledge
BM 3711
ROAD
Kilauea Iki Crater
Lava Flow of 1959
Puu Puai
3885
Lava Flow of 1959
BM 3918
TRAIL
DEVASTATION
BM 3835
BM 3721
CRATER RIM
Kaanakakoi Crater
Lua Manu Crater
BM 3641
1000 0 1000 2000 3000 4000 FEET

Fig C...?

we began to get more blase. Probably because trade widds persisted throughout the eruption ~~which~~ carried the bulk of the eruption debris over the Kau Desert to the south and southwest of the main vent, only minor ash fallout was ever experienced at the main visitor overlook. Nevertheless visitors ~~they~~ were evacuated at times according to the criteria of fountain height and also when the adjacent trees and shrubs were dried and ignited by the deepening lava lake.

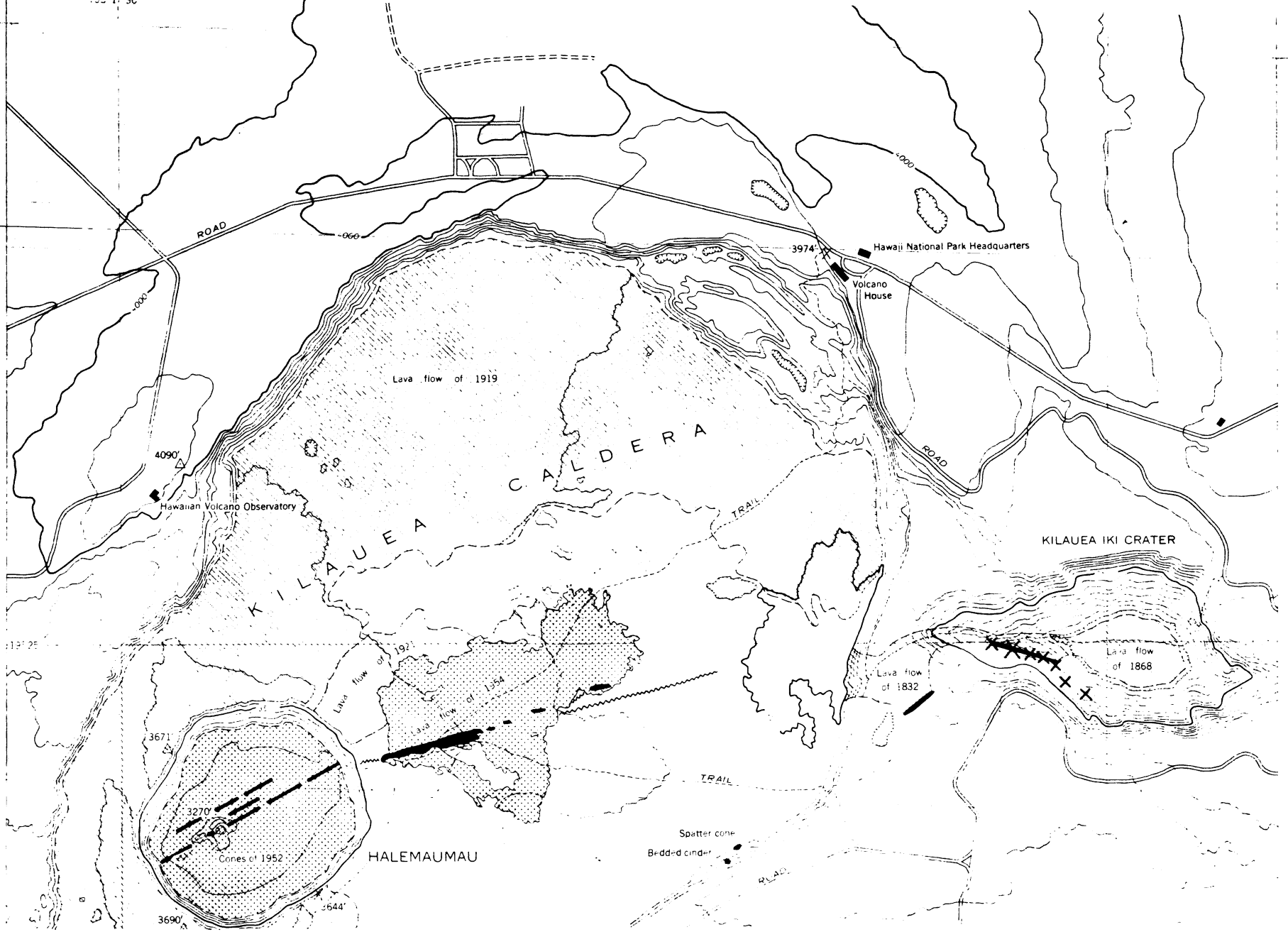
Just north of the main Kilauea-Iki vent, on the north rim of Kilauea-Iki crater, were other trails and possible overlooks. These were within 1,500 feet of the main vent. And it is a tribute to the vigilance of Park Rangers that no visitors were injured on the several occasions when the fountain deflected and plastered large areas of that north rim with ~~MMMM~~ bombs *and* molten spray. It is a tribute to some goddess of chance that no scientist ~~or~~ park official or official press observer ever suffered more than slight damage. Although we all had to run more than once, ~~away, on many occasions~~ from wind changes or from increased fountains.

A ~~Another~~ psychological hazard early in the eruption was caused by low-flying aircraft which flocked in from Oahu. ~~to view the eruption.~~ To those of us working within the crater, the noise of their engines suggested imminent, new volcanism right under our feet. To flight passengers the trip might have given a sensation of flying through the field of fire of an artillery piece. At any rate, such overflights were discontinued by FAA order after several instances of windshield breakage and other damage to participating aircraft.

The foregoing should suffice to show, in a brief and general way, the rather hectic and carnival atmosphere of a typical Hawaiian eruption. It is important to strees that many of the international guides to evacuation and protection of the populace simply do not apply in Hawaii where the problem is the reverse --- the inflow of large numbers of tourists.

From Tables 2a, 2b, 2c and 2d it can be reckoned that 24 bases were occupied using the water tube tiltmeter during the quarter. These are done after dark and require a team of four men. Each single occupation takes an average of two hours. Thus it can be seen that a great deal of time needed to be devoted to the basic material of this summary by people already working double shifts at both routine and emergency duties. The tilt crew always consisted of Eaton and Krivoy as readers. As notekeeper and valve-man, duty was rotated among other members of the staff. J.C.Forbes, Akira Yamamoto, W.H.Francis and B.J.Loucks were the most frequently tapped for this duty. ~~Although~~ D.H.Richter, W.U.Ault, K.J.Murata, G.Kojima and R.T.Okamura either joined the tilt party on occasions, or else took on some other task which freed some other staff member for the function.

The first task seriously undertaken after the outbreak in Kilauea-Iki was the attempt to colledt gases and vapours. Most of the people at HVO had a hand in that and we worked onder the direction of geochemist W.U.Ault. Figure B will give some idea of the number and location of the original outbreak vents. Where these lay paraleel to the Crater Rim Road, thick clouds of ~~gas and smoke~~ rose up the slopes of Kilauea-Iki Crater and swirled over the road. Most of the staff, therefore, spent considerable time going back and forth to this location with a variety of evacuated flasks supplied by Wayne Ault and George Kojima. The most obvious constituent of these gas clouds was SO_2 with some slight admixture


ROAD
Hawaii National Park Headquarters
3974'
Volcano House
Lava flow of 1919
4090'
Hawaiian Volcano Observatory
KILAUEA CALDERA
TRAIL
ROAD
KILAUEA IKI CRATER
Lava flow of 1868
Lava flow of 1832
Lava flow of 1954
Lava flow of 192
3671'
3270'
Cones of 1952
HALEMAUMAU
TRAIL
Spatter cone
Bedded cinder
ROAD
3690'

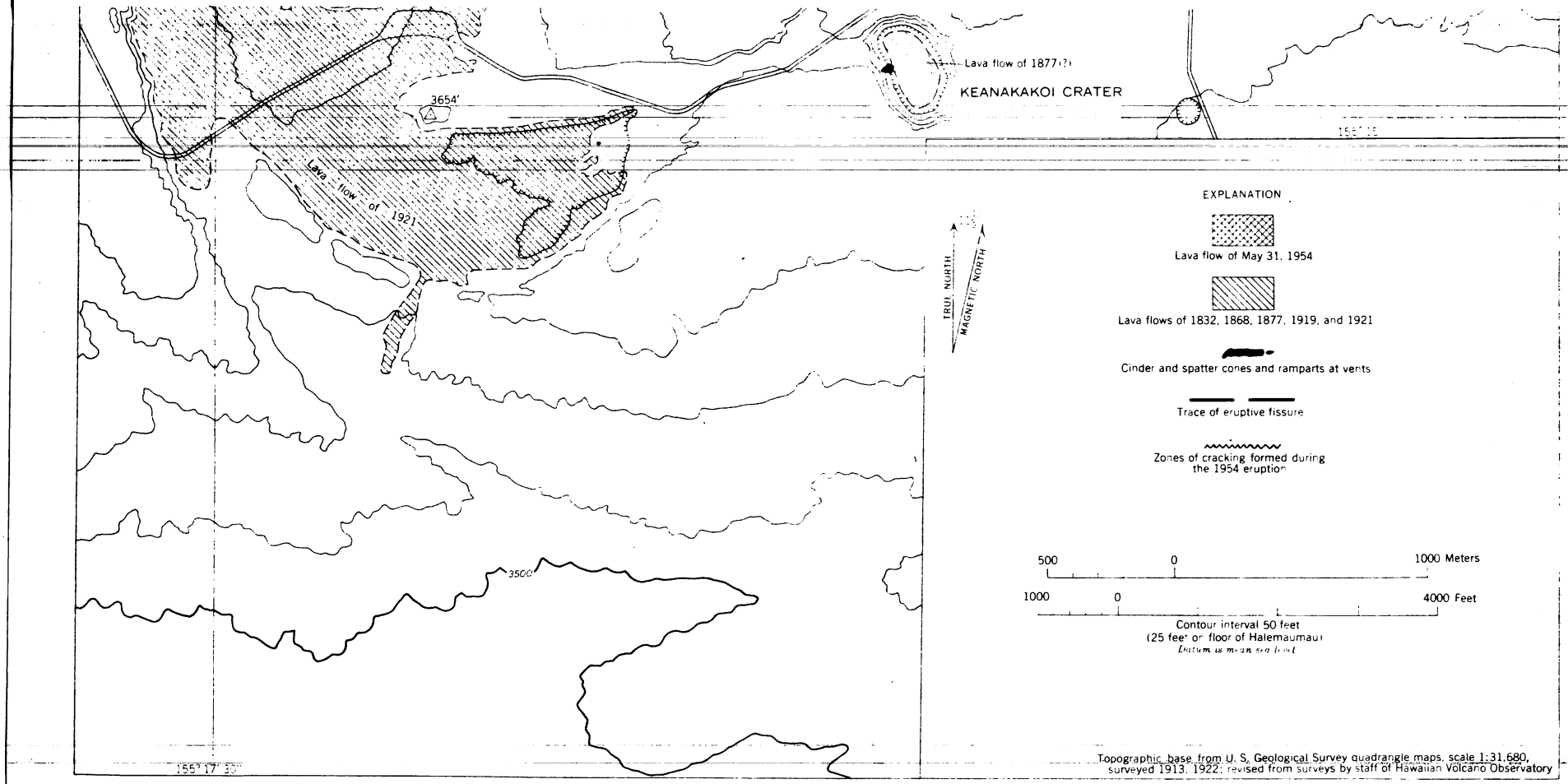

Lava flow of 1877(?)
KEANAKAKOI CRATER
3654'
Lava flow of 1921
3500
155° 17' 30"
TRUE NORTH
MAGNETIC NORTH
EXPLANATION
Lava flow of May 31, 1954
Lava flows of 1832, 1868, 1877, 1919, and 1921
Cinder and spatter cones and ramparts at vents
Trace of eruptive fissure
Zones of cracking formed during the 1954 eruption
500 0 1000 Meters
1000 0 4000 Feet
Contour interval 50 feet
(25 feet on floor of Halemaumau)
Datum is mean sea level
Topographic base from U. S. Geological Survey quadrangle maps, scale 1:31,680, surveyed 1913, 1922; revised from surveys by staff of Hawaiian Volcano Observatory

Fig B . . . ?

of H_2S. It was found to be too clumsy to use gas masks; wet handkerchiefs were preferred. The investigators were usually able to park on the side of the road away from the crater where they could work without protection and with only moderate discomfort. The practise then was to cover nose and mouth with a wet cloth and to dash over to the edge of the road which was also the edge of the crater, to plunge the collecting flask *into* the most obvious gas and vapour cloud, to break the vacuum seal and finally go re-seal the vessel and retreat for another flask.

Results of these studies of the gas phase will be discussed in the forthcoming Professional Paper. The techniques described above could be used only during the earliest hours and days of the eruption; once Kilauea-Iki settled down to a single roaring vent it imposed such a strong pattern of air circulation that no sampling was possible except over the orifice. In the course of the eruption a few gas samples were attempted by the expedient of flights through the rising vapour column. Some gas collections were made from the vent and from the growing cinder cone between phases of the eruption. Thought was given to the possibility of erecting a collecting tram although this was not carried out during the Kilauea-Iki eruption. Such a device was completed for sampling gasses in Halemaumau during 1960, and another was operated in 1961 which ran on wires above the main Halemaumau vent.

Jack Murata organized the laboratory facilities which permitted him to run rapid silica determinations. And during the Kilauea-Iki and Kapoho eruptions, the staff supplied him with freshly collected, timed and dated samples which represented what was probably the most complete chemical and mineralogical record of an eruption anywhere in the world. The persistence of single vents --- both at Kilauea-Iki and at Kapoho

made such samples more meaningful and easier to obtain. At Kilauea-Iki we were all armed with sample bags and could easily drive along Crater Rim Road, observe fresh samples falling on the road, and make collections with reasonable impunity. At night, freshness could be attested by glowing interiors; at times fingers were burned and sample bags were charred. To supplement this hourly sample suite, the fall-out cone and the lake surface were sampled whenever possible.

As often as was possible, temperature measurements were made using two Leeds and Northrup optical pyrometers. These were used by groups of two or three people who passed the pyrometers from man to man in order to get as much confirmation as possible of the lava temperature in any particular fountain and at any particular time. Other measurements involved the lava production of each phase. These data were obtained by Don Richter who made level and transit runs into Kilauea-Iki crater leaving monuments at known elevations and then recording the time it took for the rising lake to overcome these monuments.

Other eruption duties included dealings with the public, the press and with officials of both local and federal governments. Once the eruption broke out, the Observatory went on a 24-hour basis; one person was needed to change the smoked-paper seismograms which often became filled in three or four hours; another person was needed to answer the phones and keep a log of the activities and whereabouts of the staff. Many of these functions were ably handled by volunteers, Mrs.Chester Wentworth and Mrs. Burt Loucks. Observatory workers were very appreciative of emergency snacks which turned up out in the field thanks to some unknown Park Service, USGS or Volcano Community wife.

Thousands of feet of color 16mm. movie film were expended with most everyone taking a turn with the 1946 model Bell and Howell. Hundreds of 4x5 black and white photos were made of every conceivable scene and from every possible angle.

A portable tape-recorder was used to record eruption sounds: fountains roaring, a hornito hissing, splatter and ash falling, etc. Although we did not have synchronous recording of sound and film, the magnetic tapes were used with considerable effect by the film laboratories where actual recordings were dubbed into eruption footing for the movie 1959-60 Eruption of Kilauea.

We went through the motions of using a vertical Askania magnetometer soon after the eruption broke out. Although there was a magnetic traverse which crossed Kilauea and part of Mauna Loa, it was far from Kilauea Iki. Furthermore no one on the staff had had sufficient preparation in work on Kilauea to permit the establishment of a better traverse. As is typical in other igneous settings, slight changes in tripod level or location can cause excursions of thousands of gammas in the reading. Thus care, patience and experience are vital in any study of the absolute field or of transients in such an environment. It was found to be very hard to read the magnetometer near the vent due to mechanical agitation of the balance caused by earth tremor. After a few trials the magnetometer was put aside. In the six years since the Kilauea Iki eruption some scant use of magnetometers has been made --- usually to study the terrain effect of steep banks and/or the cooling and thickening of hot lava lakes such as Kilauea-Iki. The Hawaii Institute of Geophysics has flown crude preliminary magnetic traverses over the Hawaiian volcanoes. But no one has tried to use the magnetometer as an aid in outlining sub-surface lava pockets. Nor have they used magnetic transients as a clue to underground lava motion such as is hinted at by tremor, tilt and deformation in general.

Before the end of 1959, a portable World-Wide gravimeter was in use to compile a gravity map of Kilauea (Krivoy and Eaton, 1961). In

the intervening years, gravity maps have been completed for Hawaii, as well as for other major islands of the state. Some attempt has been made to repeat traverses using the drift-free LaCoste-Romberg. But it seems likely that in gravity, as well as in geo-magnetism, sensitive, low-drift, continuous-recording devices might prove the most instructive regarding volcano-dynamism in Hawaii.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter. The attitude of the ground surface a each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, i.e., to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault October, November, and December, 1959

[These data are usually reported on a basis of 7-day averages. Dates and coordinates in parentheses reflect added detail introduced because of rapid changes during this eruption period.]

Date	N-S	E-W	Date	N-S	E-W
Oct. (1)	(522)	(462)	Nov. 15	513	445
4	523	460	(18)	(511)	(449)
(7)	(523)	(461)	22	506	484
11	523	459	(25)	(506)	(480)
(14)	(522)	(461)	29	509	461
18	523	460	Dec. (2)	(510)	(453)
(21)	(524)	(459)	6	514	441
25	523	455	(9)	(517)	(432)
(28)	(524)	(454)	13	523	428
Nov. 1	523	451	(16)	(531)	(425)
(4)	(523)	(453)	20	538	428
8	520	449	(23)	(540)	(428)
(11)	(518)	(448)	27	542	430
			(30)	(546)	(432)

Table 2a.--Tilt coordinates and changes at bases around Kilauea caldera (See tilt diagram, fig. 2a).

Tilt base	Date	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1959)
		N-S	E-W			
Uwekahuna (19°25.5'N, 155°17.4'W)	Oct. 12	546.9	468.2	2.3	N38°W	Aug. 13
Tree Molds (19°26.3'N, 155°17.3'W)	13	501.5	498.1	0.9	N13°W	14
Summer Camp (19°24.6'N, 155°15.6'W)	16	519.8	529.5	2.3	N64°E	15
Sand Spit (19°24.1'N, 155°16.8'W)	16	525.3	483.7	1.4	S46°W	15
Kalihipaa (19°21.4'N, 155°15.3'W)	13	488.6	500.7	0.15	W	14
Keamoku (19°25.1'N, 155°19.0'W)	20	515.4	493.3	1.9	S81°W	17
Kamokukolau (19°22.7'N, 155°16.6'W)	19	488.6	505.8	2.5	S3°W	16

Table 2b.--Tilt coordinates and changes at bases around Kilauea caldera (See tilt diagram, fig. 2b).

Uwekahuna	Nov. 10	552.8	464.9	7.0	N29°W	Oct. 12
Tree Molds	12	509.5	496.4	8.2	N12°W	13
Summer Camp	13	531.0	538.6	15.5	N38°E	16
Sand Spit	13	527.5	473.9	11.8	N78°W	16
Kalihipaa	12	487.1	501.7	1.8	S34°E	13

Table 2c.--Tilt coordinates and changes at bases around Kilauea caldera (See tilt diagram, fig. 2c).

Tilt base	Date	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1959)
		N-S	E-W			
Uwekahuna	Dec. 1	535.7	464.1	23.3	S3°W	Nov. 10
Tree Molds	2	504.7	490.1	11.9	S53°W	12
Sand Spit	4	545.0	469.9	25.7	N13°W	13
Kalihipaa	2	486.7	501.8	0.5	S10°E	12
Keamoku	4	504.9	496.7	7.4	S17°E	Oct. 20
(AHUA) Kamokukolau	3	479.2	500.9	7.1	S28°W	19

Table 2d.--Tilt coordinates and changes at bases around Kilauea caldera (See tilt diagram, fig. 2d).

Uwekahuna	Dec. 28	570.5	447.1	42.7	N25°W	Dec. 1
Tree Molds	28	516.2	488.2	13.4	N9°W	2
Sand Spit	31	605.8	467.7	67.7	N2°W	4
Kalihipaa	29	471.3	509.0	19.0	S25°E	2
Keamoku	31	543.8	469.8	44.7	N42°W	4
(AHUA) Kamokukolau	30	414.1	535.6	81.9	S27°E	3

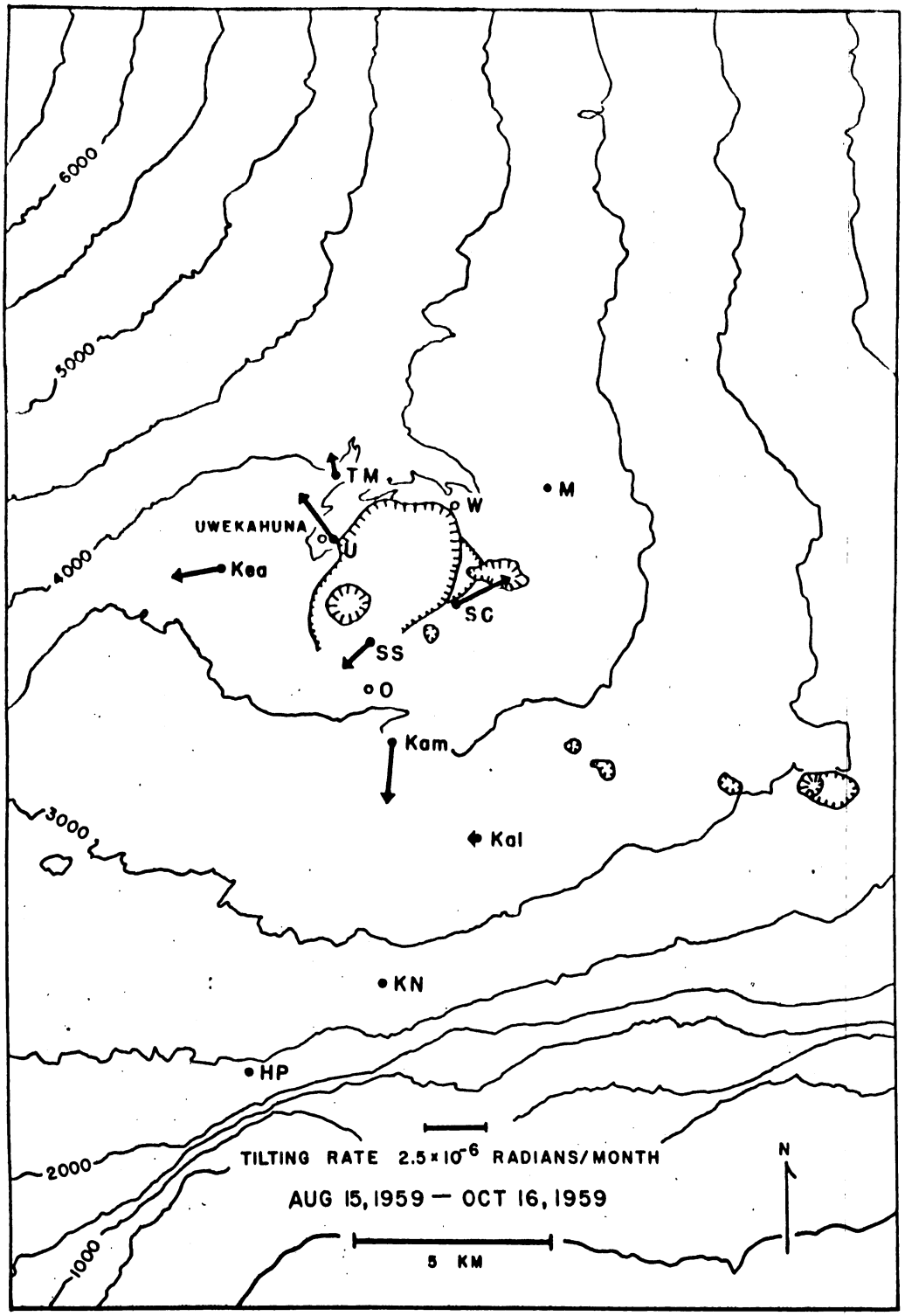


Figure 2a.-- Tilting of the ground around Kilauea caldera, August 15 to October 16, 1959. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

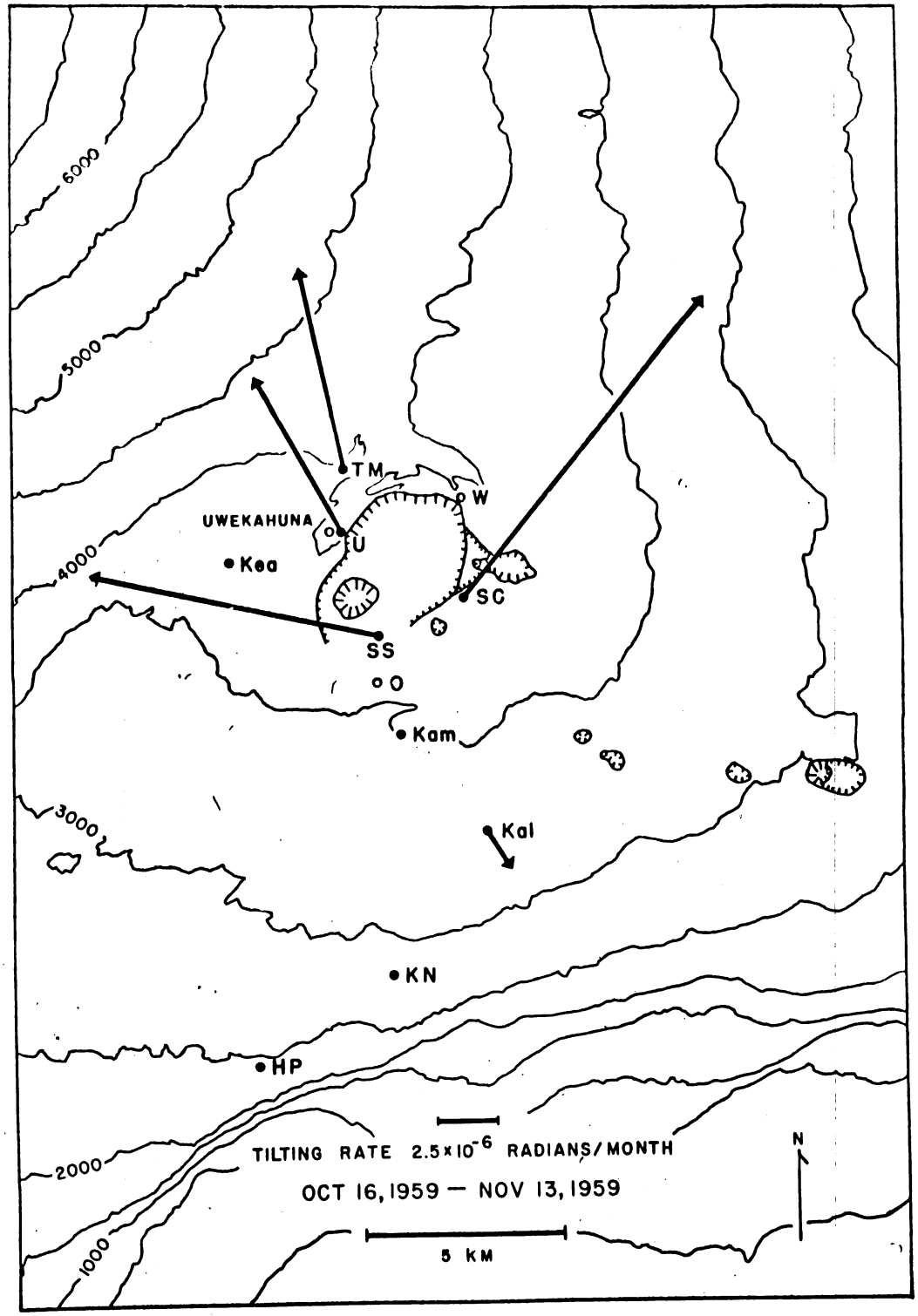


Figure 2b.-- Tilting of the ground around Kilauea caldera, October 16 to November 13, 1959. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. All field bases were not occupied because of the start of the 1959 eruption in Kilauea-Iki the evening of November 14, 1959.

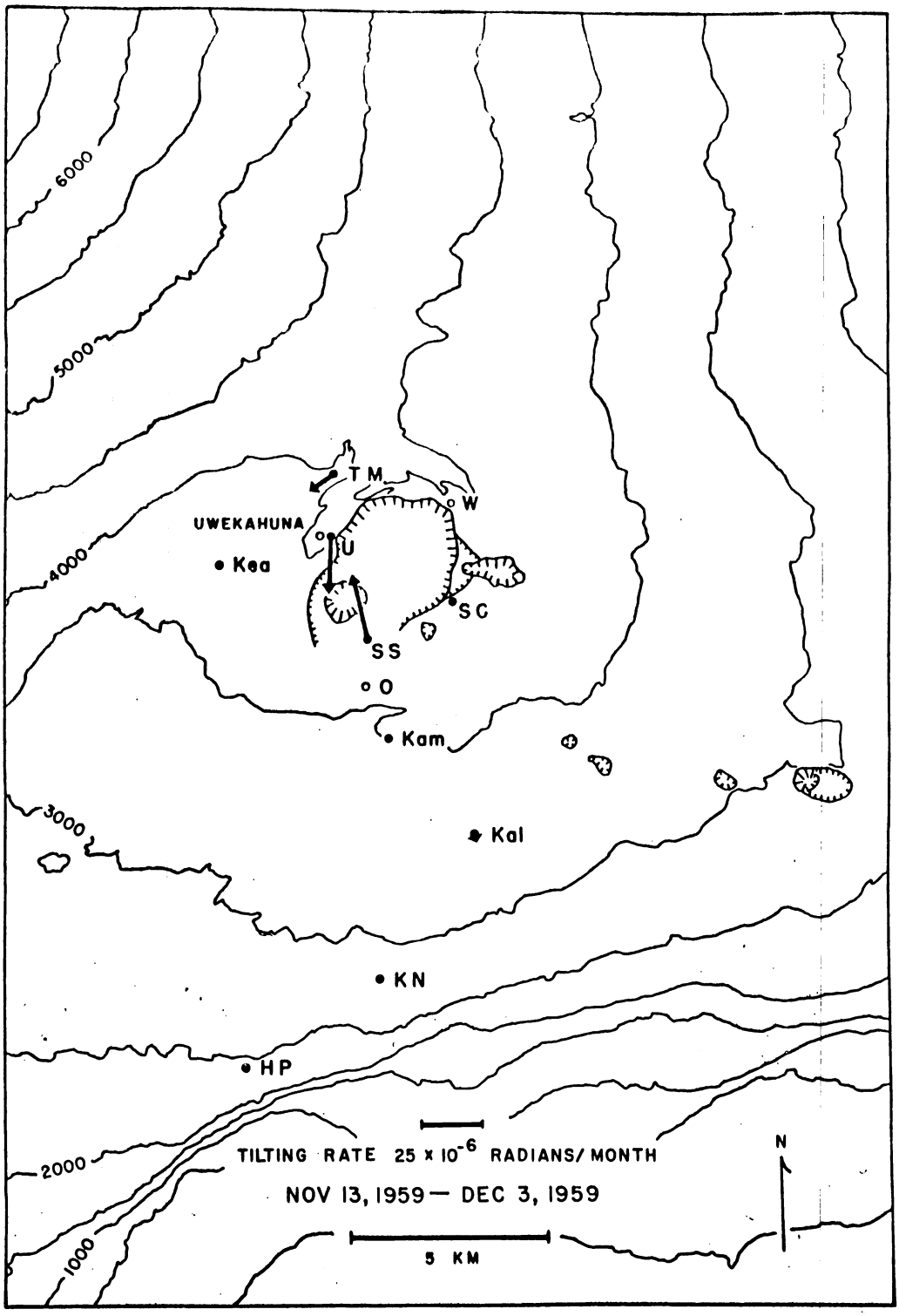


Figure 2c.-- Tilting of the ground around Kilauea caldera, November 13 to December 3, 1959. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. The tilt base at Summer Camp (SC) was occupied for the last time on October 16, 1959; in the course of the Kilauea-Iki eruption it was covered by about thirty feet of ash.

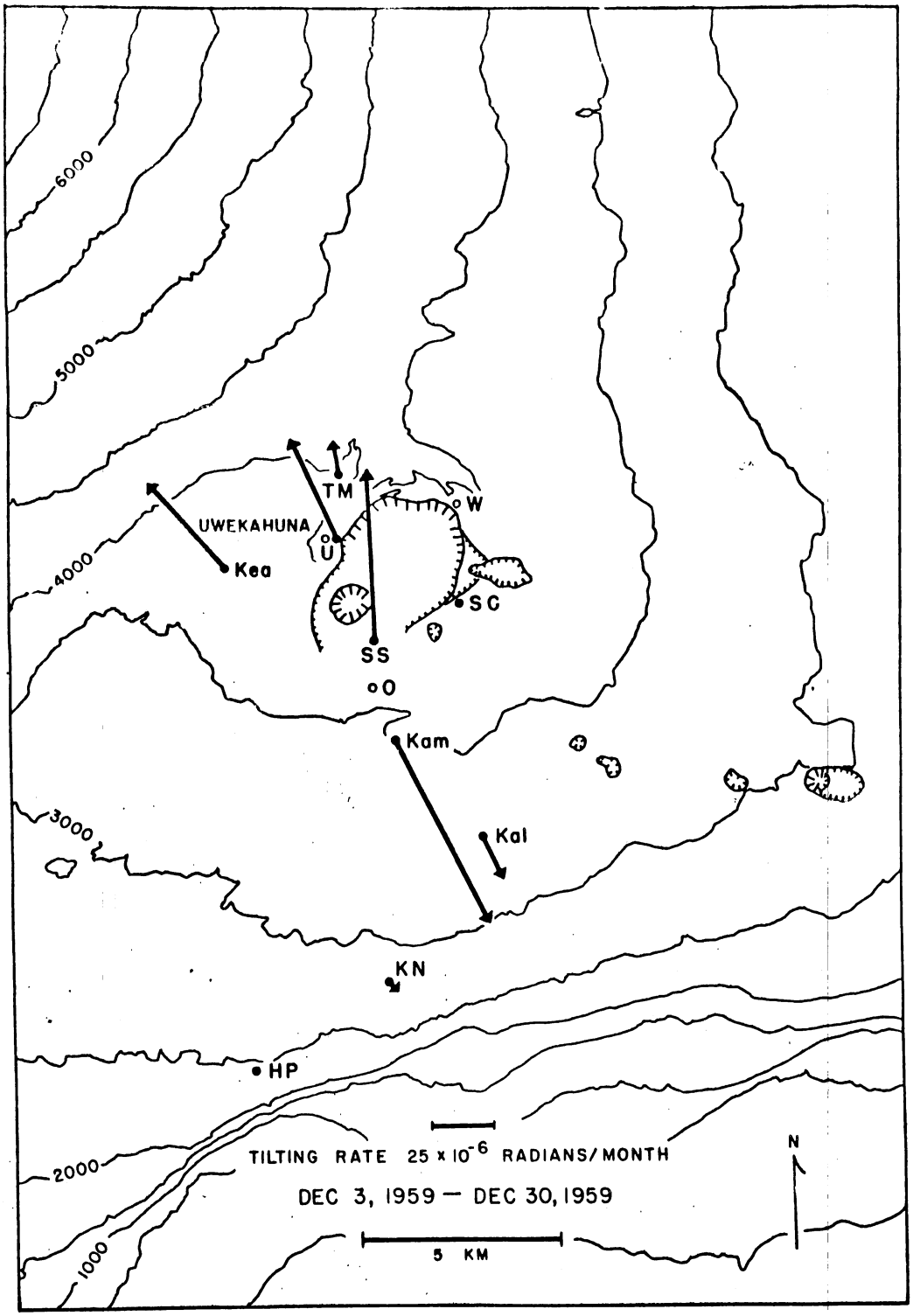


Figure 2d.-- Tilting of the ground around Kilauea caldera, December 3 to December 30, 1959. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Jerry

This paragraph has been worked on a little. It is not integrative but some of the textual matter is repeated in Table C which follows.

Table B is all factual and should be a good guide in other such cases --- where tremor obscures part of the data, and a generalization becomes necessary.

For the sake of brevity, we might combine the 3 paragraphs which deal with deep quakes;

The present dreams, history of,
and philosophy of.

Deep seismic storm. (SWARM)

A very large swarm of deep quakes with associated tremor began during the afternoon of December 11, 1959. This swarm ceased during the night of December 14 after a total of 4,500 separate events had been counted (or estimated conservatively,) on the Desert seismograms.

During the swarm, eruptive phases IX and X took place in Kilauea-Iki. And Thus, many events could only be counted and could not be timed, because of excess background "noise." Such noise was in the form of eruption tremor, deep tremor (with the first 2,000 recorded quakes) and/or confusion caused by quakes recording two or three per minute and interfering with each other and with events on adjacent traces.

In the Chronological Summary of HVO Summary 13 on page 2, there is a brief description of a deep swarm from a source 10 km northeast of Kilauea caldera at a depth of about 60 km. That swarm continued for two days (January 5 and 6, 1959) and added up to some 600 separate events. Of these, 29 were magnitude 2.5 or greater, although none was felt. The largest was magnitude 3.2.

Between August 14th and August 20, 1959, another deep swarm recorded on the USGS Kilauea summit network. This swarm consisted of about 2,400 individual events; 45 were greater than magnitude 2.5; none was felt although the largest was magnitude 3.4.

This seismic storm of August, 1959 seemed to represent two deep families which graded into one another and were recorded in no special order. One of these families best fits a depth of 54 km and an epicenter 7 km north of Uwekahuna; the second family fitted a location 5 km NNW of Uwekahuna and a depth of 49 km. The deep August swarm is reported in Summary 15 .

The first deep quake which could be timed on summit seismograms took place at 10h06m on 12 December, 1959. The following schedule is an attempt to oomplete the record by describing a chronology of deep ev ents which could not be read and/or timed.

TABLE B

ABSTRACTS FROM ORIGINAL READING SHEETS FOR THE DEEP SWARM BETWEEN December 11 and December 14

	DESERT (4,500 total)	MAUNA LOA (4,300 total)
Dec.11	Ca 14:00 = start of tremor and deep quakes P-travel-time (when discernible) 8.4 to 8.6 seconds.	Ca 16:00 faint tremor is seen Ca 17:00 1,700 quakes appear in tremor of increasing amplitude.
	Ca 21:00, p-travel-time decreases to 7.9 sec	P-travel time varies from 7.5 (7.5) to 6.7 sec; the smaller value at 22:00 record change.
	Ca 22:50, p-travel-time decreases to 7.5 sec or less.	22:50 to 06:45, where visible, first motion is down and p-travel-time is between 6.4 and 7.3 seconds.
	22:39 to 04:20 (2nd.record) p-travel-time 7.0 to 7.5 sec.	
Dec.12	some events of magnitude 3 & 4 Instances of both UP and DOWN first-motion	06:50 to 13:02, p-travel-time between 6.4 and 7.0 seconds.
	04:26 to 10:02, 6.7 to 7.0 sec Both UP and DOWN first-motion.	
	10:06 = first readable quake	
	10:08 to 13:32, 6.9 to 7.0 sec	13:07 to 18:49, 6.4 to 6.7 seconds
	13:36 to 18:52, 6.8 to 7.1 sec Both UP and DOWN first-motion.	
	18:58 to 03:55, 6.8 to 7.3 sec	18:54 to 04:07, 6.3 to 6.8 seconds
Dec.13	04:06 to 13:20, fewer deep events + eruption tremor.	04:17 to 15:06, 6.4 to 6.7 seconds, first-motion mixed, UP and DOWN.
	13:25 to 00:46, 6.6 to 7.0 sec	15:10 to 03:45, 6.4 to 6.7 seconds
Dec.14	p-travel-time. First-motion not easily seen.	and mixed UP and DOWN first-motion.
	00:51 to 12:52 deep quakes in eruption tremor noise. 6.8 to 7.1 sec. p-travel-time.	03:52 to 17:00, fewer deep events
	12:55 to 02:47, fewer deep	17:05 to 06:07, deep quakes decrease
Dec.15	events of 6.7 to 7.1 sec p-travel-time.	sharply in number.

ABSTRACTS FROM ORIGINAL READING SHEETS FOR
THE DEEP SWARM BETWEEN December 11 and 14th.

OUTLET

Dec.11 17:10 to 06:51 (12/12) ca 130 events counted. In the few cases where first-motion is seen, it is always UP. P travel-times are between 6.2 and 7.0 sec

Dec.12 06:57 to 21:32, first-motion UP, when readable. P-travel-time between 6.4 and 6.8 seconds.

21:45 to 07:07, deep events confused by eruption of phase IX

Dec.13 Tremor of Phase IX blocks all earthquake readings

Dec.14 Tremor from Phase IX, Phase X and bursts of tremor between these two phases + fewer deep events --- all factors reduce the value of Outlet record for this study.

UWEKAHUNA, etc.

Tremor and deep quakes begin ca 16:00 but spot is too active and faint to be read after 18:30

Maui: *Z becomes "active" after 20:00 but no time marks on record. However, S-P is measureable on 3 events and all are UP first-motion. 18.1 and 18.2 seconds S-P is about 24.8 or 24.9 seconds p-travel-time.

HMO (Oahu) does not show either deep quakes or tremor.

Uwekahuna: readings on deep events blocked by tremor of Phase IX.

Maui: *by the morning of December 13, NO further deep events seen on Maui record.

* a total of 21 deep events were large enough to record on the MAUI records; of these only three were clear enough to use for some idea of S-P time and for p-first-motion.

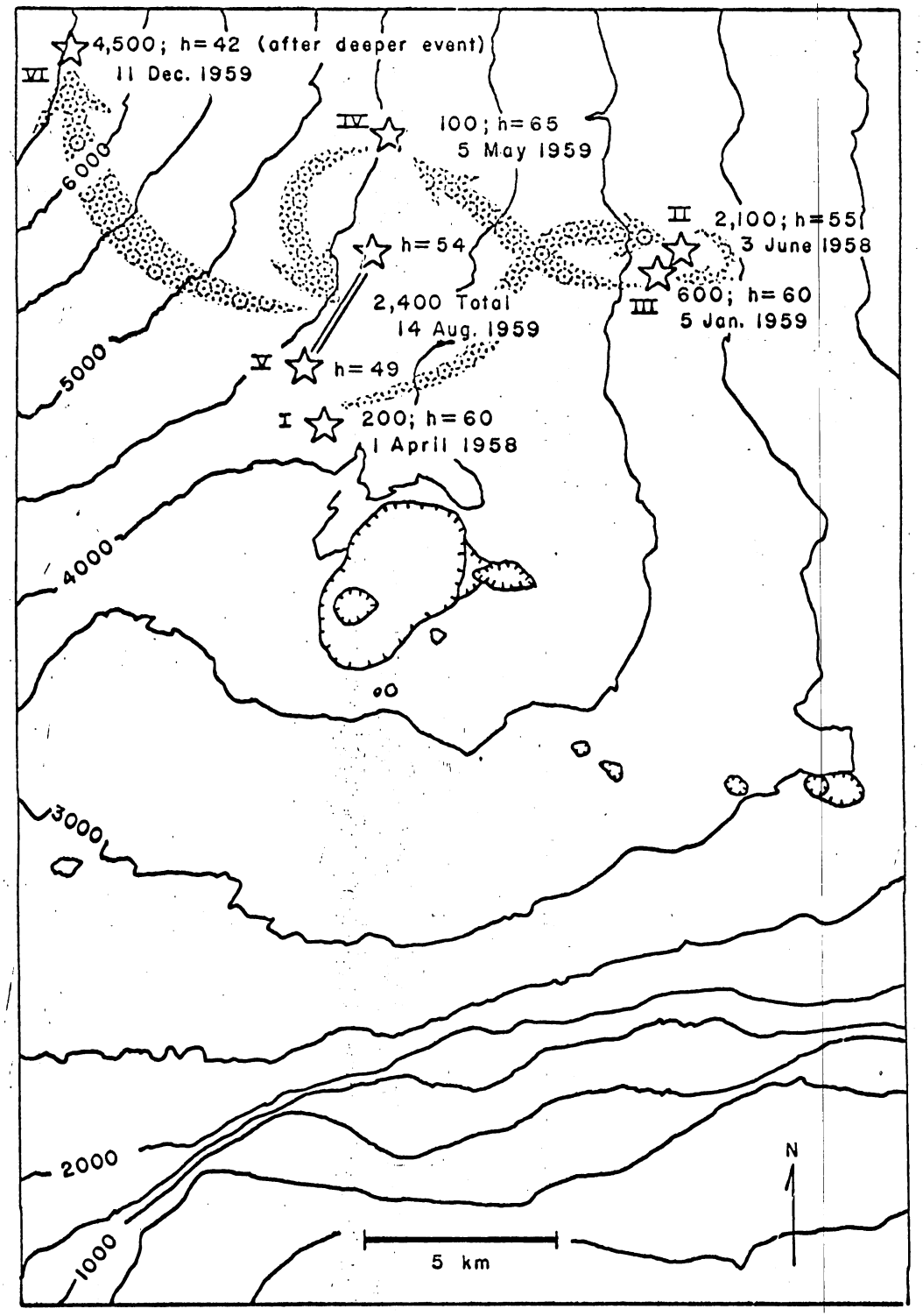


Figure A. -- Epicentral locations of six separate deep seismic swarms from 1958 to 1960. Arrows lead from one epicentral region to the next in chronological order. Data given are: number of events, depth and date. Base map used is standard Kilauea tilt plat as per Figure 2.

Instrumentation and earthquake-reporting

In the seven days from the 4th. of October, 1959 to the 11th. a number of earthquakes took place in Hawaii and were recorded with varying acuity at different sites and by different instruments of the Hawaiian Volcano Observatory network. This period of time is selected for convenience; also it represents "normal" background seismicity in that only a single seismic anomaly contributes to the background. The following schedule will list the features which we wish to illustrate.

Instrument Name	Number of Events Counted	Type of Installation
Uwekahuna - Z	60	hi-gain vertical
Mauna Loa - Z	57	hi-gain vertical
Outlet - - Z	61	hi-gain vertical
Desert - - Z	54	hi-gain vertical
North Pit - Z	2,680	hi-gain vertical
Naalehu, E & N	1	lo-gain mechanical horizontal pendulae
Kealakekua, E & N	2	" " "
Waimea, E & N	1	" " "
Pahoa, E & N	1	" " "
Hilo - - Z	10	hi-gain vertical

In the week reviewed above, 17 local earthquakes were chosen for study, location and analysis; these were judged to be well-enough recorded so as to permit accurate location. It can be seen that mechanical seismographs contributed little during this particular week. Perhaps a period could be found which portrayed mechanical recording in a more favourable light. But the opposite has usually been found to be true; the mechanical instruments provide poorly-timed and poorly-recorded data on about 10% of quakes large enough for location. And in extreme cases - by comparison with local swarms such as recorded on North Pit above, they record less than 1% of events countable on the records of more sensitive instruments located at more fortuitous sites.

Specifically, the low gain (magnification about 10x) drastically limited the amount of information contributed by mechanical horizontals. Low-gain, combined with horizontal polarization made first-motion "p" questionable in all but the largest quakes; a general rule-of-thumb was that "the mechanicals would not record quakes unless they were felt in the immediate town where the instrument was located; and if the quakes were felt near the instrument site, the instrument would perforce be dismantled." All of these problems were vastly more complicated at stations such as Konawaena, Waimea and Pahoa. The first two requires half a day for travel time alone. Thus periodic visits for care and cleaning were not frequent enough, and special trips at times of emergency were out of the question.

Early in the 1950's -- when experimental short-period, high-gain

vertical seismometers proved their practicality and acuity, the slow transition to electromagnetic dynamic recording was begun. Hilo and Maui were the first non-Kilauea station so converted. In December of this present quarter Konawaena was completely abandoned; the ancient mechanicals there had deteriorated beyond repair. Unfortunately, it was not till 1964 that a more modern system was installed at Kona.

Eventually all mechanical, horizontal pendulaa were replaced with high-gain instruments; such changes will be described in the appropriate summaries. In some cases (Pahoa and Naalehu) it was sufficient to block off windows, erect partitions, re-build piers and essentially to use the same building for electro-dynamic/optical-recording installations. In Waimea it was discovered that the low-gain side was adjacent to a heavily travelled vehicular roadway. This did not disturb the original seismograph, but it ruled out any simple conversion; the new instrument at Waimea was moved several miles away.

This is the painful and happy story of modernization at HVO. We hope it will always be in progress but wish to point out that it was most radical in the decades 1950 and 1960.

U. S. Geological Survey seismograph stations in Hawaii

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Uwekahuna	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing; N, E, Z. (seismometer and galvanometer periods are 15 and 90 sec. respectively) Short-period Sprengnether; E,Z. HVO-1: Z 1/
Mauna Loa	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z 2/.
Ahua	A	19°22.4	155°15.9'	1,070	Remote recording HVO-2:
Desert	D	19°20.2'	155°23.3'	835	Do.
North Pit	N	19°24.9'	155°17.0'	1,115	Do. 1.0 sec EV-17 transistorized
West Pit	WP	19°24.7'	155°17.5'	1,115	Do. 1.0 sec EV-17
Makaopuhi	MP	19°21.8'	155°10.7'	885	1.0 sec. Benioff all transistorized; Z. (Wired into HVO-2 recording system)
Hilo	Hi	19°43.2'	155°05.3'	20	HVO-1: Z. Wood-Anderson; N, E.
Kealakua	Ka	19°03.8'	155°35.2'	205	1.0 sec. EV-17 jug buried; Z.
Pahoa	Pa	19°29.7'	154°56.8'	205	HVO-1; Z.
Kamuela	Ka	20°01.9'	155°42.0'	740	HVO-1; Z.
Haleakala, Maui	Ha	20°46.0'	156°15.0'	2,090	HVO-1; Z. Wood-Anderson; N, E.

North Bay	NB	19°29.7'	155°34.8'	4,005	0.8 sec. EV-17; Z. with helicorder.
Kealakekua	Ke	19°31.2'	155°55.3'	505	1.0 sec. EV-17; ~~Z. with helicorder; H, E.~~ N-S 1.0 sec EV-17H, E-W, 1.0 sec, EV-17H
~~Pumi Pa~~	~~PP~~	~~19°58.8'~~	~~155°42.3'~~	790	Data made available for HVO through Geotech team #22.
Kipapa, Oahu	Kip	21°25.4'	158°00.9'	76	HVO-1; Z.

1/ HVO-1 is a moving coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Over-damping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

2/ HVO-2 is a moving coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper. The response of this seismograph is similar to that of HVO-1. Recordings of these seismographs at the N, A, D, N, and WP, stations are recorded on a 3-component drum to permit an accurate comparison of arrival times at these stations.

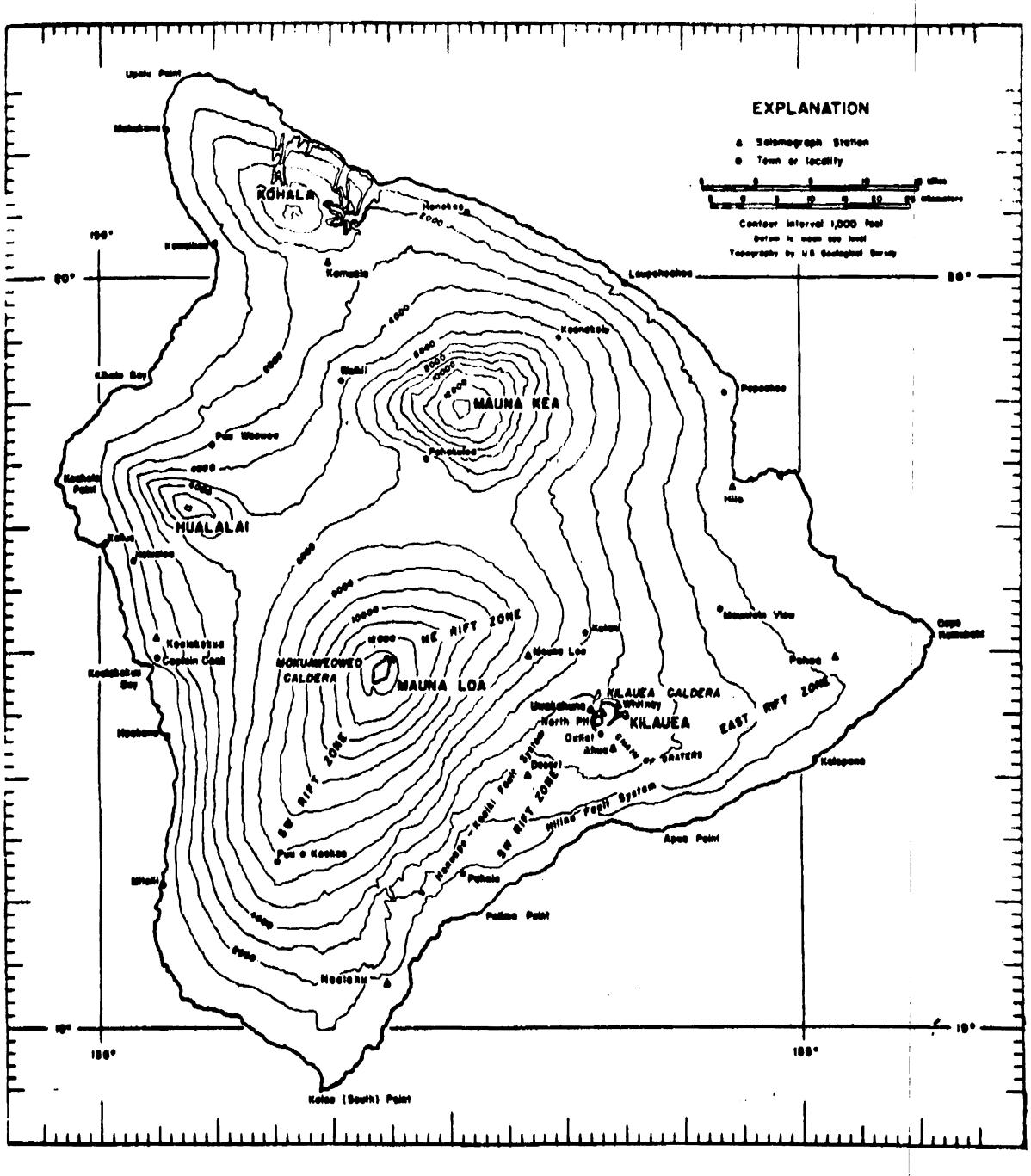


Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Table 3.--Numbers of earthquakes and minutes of tremor recorded mostly on seismographs

U, M, O, D, and N around Kilauea caldera

Categories: Halemaumau rock slides -- which are detected by the characteristic record they produce on the North Pit (N) seismograph; shallow earthquakes in the Kilauea caldera region -- again, seen and counted mostly on the North Pit record; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system - these are recorded most efficiently on the Desert (D) seismograph; earthquakes along the eastern half of Kilauea's east rift zone - detected by residents in Pahoa, or recorded by a seismograph at that town or by a portable meter in the neighborhood; earthquakes at depths between 15 and 30 km and roughly beneath Kilauea caldera - these are determined by character and by relative arrival time across the Kilauea seismic net; other notable seismic events -- such as tremor, teleseism or quakes local to other volcano systems (see Fig. 1) are briefly noted in this final column.

Data appearing in this table concern events which experienced seismologists can glean "at sight" from the ~~daily~~ records. Table 3, therefore, is an attempt at a daily record of the history of Hawaiian volcanoes; it presents more detailed statistics than 3A (which it will replace in Summary 17) and it is less exact and more general than Table 4.

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera shallow	SW. rift and Kaoiki	Lower east rift	Kilauea 15 to 30 km depth	Others
Oct. 1					75	2			T-phase
2			5		130	4			1-pressure pulse
3					165	5		1@KM30, 1@KM45	~~1-offshore N of Hawaii~~ 1-offshore E of Hawaii
4					260	3			~~Shallow~~ 1-[illegible] FELT [illegible]
5					410	1			1-S. FLANK M.LOA @ KM 45 1-teleseism

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera shallow	SW. rift and Kaoiki	Lower east rift	Kilauea 15 to 30 km depth	Others
Oct. 6					380	4		km 22 km 30 ?	1- km 45 1-Kona
7	32				340				1- M. Loa
8					380	5			
9					430		3 km 13		1-teleseism
10	36 + 39				480	2		1	2 periods deep tremor

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera shallow	SW. rift and Kaoiki	Lower east rift	Kilauea 15 to 50 km depth	Others
Oct. 11	—	—	—	—	380	4		1 - KM 22 1 - KM 45	1 - KONA 1 - M. LOA
OCT. 12	—	—	—	—	420	2	—	—	1 — NORTH HAWAII
OCT. 13	—	—	2 MIN.	—	350	3	—	—	1 — SOUTH M. LOA
OCT 14	—	—	—	—	390	3	—	—	1 - telesm 1 - M. Loa flank
OCT. 15	—	—	—	—	340	3	—	—	1 - telesm 2 - M. Loa flank
OCT. 16	—	—	—	—	430	—	—	—	1 - telesm 1 - offshore Maui
OCT. 17	—	—	—	—	600	5	—	—	1 - M. Loa flank
OCT. 18	—	—	—	—	540	6	—	1	3 - tele
OCT. 19	—	—	—	—	545	3	—	5	—
OCT. 20	—	—	—	—	520	5	—	7	—
OCT. 21	—	—	—	—	450	9	—	—	1 - OFFSHORE S. OF KAU
OCT. 22	32 MIN. + 30 MIN.	DEEP	—	—	480	2	—	1	BLUE FLAMES SEEN AT HALEMAUMAU 1 - OFFSHORE NORTH OF HILO
OCT. 23	—	—	—	—	6[illegible]	2	—	1	CONTINUED PLUME FROM N. WALL, HALEMAUMAU
OCT. 24	—	—	—	—	[illegible]	3	—	3	—

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera shallow	SW. rift and Kaoiki	Lower east rift	Kilauea 15 to 50 km depth	Others
OCT. 25					730	3			2 - [illegible] 1 - HALEMAUMAU E. RIFT
OCT. 26					490	3			1 - [illegible] 1 - M. LOA, S. [illegible]
OCT 27					350				1 - M. LOA, S. FLANK 1 - OFFSHORE [illegible]
OCT. 29					[illegible]	6			2 - [illegible]
OCT. 29					270	4		1 - 30 KM	1 - [illegible] 1 - PIEMAUMAU [illegible]
OCT. 30					280				1 - [illegible] 1 - M. [illegible]
OCT. 31					165	9		1	1 - SW. RIFT OF M. LOA
NOV. 1					90	1		1	[illegible]
NOV. 2					144	4	1		
NOV. 3					310	5			
NOV. 4					200	6			1 - [illegible]
NOV. 5					150	5			
NOV. 6					260	19		1 - 30 KM W. FLANK M.L.	1 @ M3.1 FROM [illegible] FAULT 1 @ M3.1 FROM W. M. LOA
NOV. 7					25	10			[illegible] N. [illegible]
NOV. 8			2 MIN, SHALLOW		ca 1200	2			BLUE [illegible] PUU [illegible] 2 MIN, [illegible]

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera shallow	SW. rift and Kaoiki	Lower east rift	Kilauea 15 to 50 km depth	Others
NOV. 9					ca. 1400	1			PRESS-EWING LONG-TERM WANDERING CONTINUES
NOV. 10					ca 1300	3			E.I. RISE ERROR CONTINUES TO FLUCTUATE
NOV. 11	24 MIN, DEEP & SPASMODIC PLUS 95 MIN, DITTO				CA 1300	6			DITTO ON PRESS-EWING
NOV. 12					CA 2200	10			DITTO ON PRESS-EWING
NOV. 13					CA 2200+	4		4	PRESS-EWING LESS UNSTABLE
NOV. 14					CA 650 1000 to 1700	3			
	KILAUEA IKI ERUPTED AT 20:08 HST. EARLY IN THE AFTERNOON QUAKES, TILT AND TREMOR* BEGAN. THESE PHENOMENA INCREASED IN TEMPO MAKING IT DIFFICULT TO ACCURATELY ASSIGN NUMBERS TO THE CATEGORIES LISTED IN THIS TABLE, ALTHOUGH 12 SHALLOW QUAKES WERE FELT PRIOR TO THE ERUPTION (see Table 4) (SEE TABLE A FOR RECORD OF PRESS-EWING BEHAVIOUR DURING KILAUEA IKI ERUPTION.)								
NOV. 15	CONTINUOUS, but gradually diminished eruption tremor				11 (@ reduced gain)	4	1		

* USUALLY TREMOR IS ASSOCIATED WITH SUB-SURFACE LAVA MOVEMENT MOST "TREMOR" DURING AN ERUPTION HOWEVER, SEEMS TO RELATE DIRECTLY TO VERY SHALLOW VENT GEOMETRY AND GAS EXPANSION AND RELEASE. THUS A FOURTH CATEGORY --- ERUPTION TREMOR --- IS LISTED IN THE FOLLOWING

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera shallow	SW. rift and Kaoiki	Lower east rift	Kilauea 15 to 50 km depth	Others
NOV. 16	CONTINUOUS ERUPTION TREMOR		—	—	12 (1/10 GAIN)	5	—		2 = KILAUEA-IKI VENT 1 = M. LOA, 1 = KOHALA
NOV. 17	CONTINUOUS ERUPTION TREMOR		—	—	4 (1/10 GAIN)	4	—		
NOV. 18	CONTINUOUS ERUPTION TREMOR		—	—	6 (1/10 GAIN)	3	—	1 = KM 25	NEW ZEALAND M = 7
NOV. 19	CONTINUOUS ERUPTION TREMOR		—	—	8 (1/10 GAIN)	1	—		1 = KAU COAST
NOV. 20	CONTINUOUS ERUPTION TREMOR		—		11 (1/10 GAIN)	1	—	—	
NOV. 21	@ 19:26 ERUPTION TREMOR ENDS. SHALLOW TREMOR CONTINUOUS @ N.P. AND UWE - 2.		—	—	13 (1/10 GAIN)	5	—	1 = KM 35	1 = SHALLOW & NORTH OF UPPER EAST RIFT
NOV. 22	CONTINUOUS SHALLOW TREMOR AT NORTH PIT ONLY AND AT FULL GAIN		—	—	12 (FULL GAIN)	—	—	1 = KM 23	
NOV. 23	CONTINUOUS SHALLOW TREMOR AT NORTH PIT ONLY. (AT FULL GAIN)		—	—	31	3	—	1 = KM 30	1 = NORTH OF KOHALA, FELT 1 = M. LOA FLANK

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera shallow	SW. rift and Kaoiki	Lower east rift	Kilauea 15 to 50 km depth	Others
NOV. 24	CONTINUOUS SHALLOW TREMOR ON NORTH PIT AND OUTLET RECORDS			—	32	1	—	—	—
NOV. 25	ERUPTION TREMOR FROM PHASE 2 builds gradually			—	5	2	—	—	1 = M.LOA'S' NE FLANK
NOV. 26	00:43 = START OF ERUPTION TREMOR FOR PHASE 2 16:45 = END OF ERUPTION TREMOR			—	19 (MINOR AFTER ERUPTION)	8	—	—	2 EVENTS M ≈ 2 FROM SW RIFT OF KILAUEA OR KAOIKI FAULT. DATA NOT SUFFICIENT TO LOCATE
NOV. 27				—	CA 125	1			MUCH WIND NOISE AT DESERT OBSCURES CONT OF SW RIFT QUAKES.
NOV. 28	17:20 = gradual start of eruption tremor FOR Phase 3			—	5 (AT 1/10 GAIN)	2	—		
NOV. 29	21:47 END OF ERUPTION-tremor DUE TO PHASE 3			—	NONE AT 1/10 GAIN	4	—	—	

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera shallow	SW. rift and Kaoiki	Lower east rift	Kilauea 15 to 50 km depth	Others
NOV. 30	CONTINUOUS shallow TREMOR [illegible] PIT			—	Ca 100	2	—		
DEC. 1	TREMOR REDUCED ON [illegible] GONE			—	Ca 140	10	—		1 = S. FLANK OF KILAUEA
2.	NO TREMOR				310	4			2 = NE RIFT OF MAUNA LOA. 1 = SW RIFT M. LOA 1 = N. FLANK OF MAUNA KEA. 1 = S. FLANK OF KILAUEA 1 - KONA
3	@ 00:49, 12/4/59 start of eruption tremor PHASE III				300 (before tremor)	12			1 = S. FLANK OF KILAUEA 1 = UPPER EAST RIFT OF KILAUEA
4	CONTINUOUS ERUPTION TREMOR				NONE @ 1/10 GAIN				
5	@09.27 end of Phase III and eruption tremor 23:20 to 23:35 = 15 min. shallow tremor				270 (after tremor)	7		6 = Km 30	

Date (1959)	Tremor (in minutes)			Earthquakes				
	Deep	Inter-mediate	Shallow	Halemaumau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
Dec 6	05:30 to 06:50 = shallow tremor including ca 200 quakes @ 14:35 eruption tremor starts (phase II) @ 00:20, 12/7/59 — eruption tremor ends					3			1 = offshore, 20 km E of Hi
7	@ about 14:00 = eruption tremor, phase VI @ 02:44 = phase VI eruption tremor ends				none at 1/10 gain	5			
8	@ 16:49 = start of phase VII tremor @ 20:13 = end of phase VII 21:00 to 01:00 = shallow tremor				lost, if present	2			
9.	10				ca 400	2			1 = Kohala mtn. 1 = SE flank of Kilauea

Date (1959)	Tremor (in minutes)			Hale mau mau slides	Earthquakes				
	Deep	Inter-mediate	Shallow		Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
10	CA 01:00, 12/11/59 = ~~SLOW START OF VIII~~ 10:49 on 12/11/59 = ABRUPT STOP IN VIII AND TREMOR				CA 90 BEFORE ERUPTION	8		2 = KM 30	1 = E. RIFT OF KILAUEA
11			13 Shallow		CA 40 (after VIII & before deeps)	1			1 = OFFSHORE, NE OF HAWAII
	CA 14:00, TREMOR AND DEEP QUAKES FIRST SEEN ON DESERT RECORD							CA 1700 @ KM 45	
12	SEVERE DEEP TREMOR DECREASING TOWARD END OF 12/12/59							CA 2200 @ Km 42	ALL OTHER EVENTS BLOCKED BY TREMOR AND/OR DEEP QUAKES - Average high rate = 3 QUAKES/MINUTE

Date (1959)	Tremor (in minutes)			Earthquakes					
	Deep	Inter-mediate	Shallow	Hale mau mau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
13	05:08 = START OF phase IX								
	13:40 = end of PHASE IX + TREMOR							CA 550 @ KM 42 (thru eruption)	
	14:57 to 15:05 = 8 MINUTES shallow								
	19:02 to 19:36 = 34 MINUTES Shallow								
	22:30 = START OF CONTINUOUS, shallow TREMOR (SMALL)								
14	CA 10:50 = START OF ERUPTION TREMOR PHASE X					5		CA 390 @ KM 42	
	15:37 = DRAMATIC END OF ERUPTION TREMOR, PHASE X								

Date (1959)	Tremor (in minutes)				Earthquakes				
	Deep	Inter-mediate	Shallow	Halemaumau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
Dec 15	06:30 = START OF TREMOR DUE PHASE XII 10:28 END OF PHASE XII ERUPTION TREMOR 11:26 to 12:25 = 59 MINUTES STRONG, SHALLOW TREMOR 12:53 to 13:34 = 41 MINUTES STRONG, SHALLOW TREMOR 19:53 = START OF PHASE XII ERUPTION TREMOR 21:30 = GRADUAL END OF PHASE XII ERUPTION TREMOR. 23:26 to 23:29 = 3-MINUTE BURST OF VERY STRONG, SHALLOW TREMOR.				CA 20	4		10 = KM 42	

Date (1959)	Tremor (in minutes)			Earthquakes				
	Deep	Inter-mediate	Shallow	Hale mau mau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
Dec 16	CA 02:00 = START OF CONTINUOUS, SHALLOW TREMOR 13:48 = START OF PHASE XIII ERUPTION TREMOR. 17:21 = DRAMATIC END OF XIII TREMOR				20	15		3 = Km 42	
Dec 17	02:30 to 04:04 = DURATION OF PHASE XIV ERUPTION TREMOR. 13:57 to 15:32 = DURATION OF PHASE XV ERUPTION TREMOR.				CA 20	7		1 = KM 42	

Date (1959)	Tremor (in minutes)				Earthquakes				
	Deep	Inter-mediate	Shallow	Hale mau mau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
DEC. 18	06:32 = START OF GROWING, SHALLOW TREMOR WHICH INCREASES AT 08:59 AND IS STILL EVIDENT BY 03:10 12-18-59				LOST IN TREMOR	5		Z=Km 42	1 = S. FLANK KILAUEA
19.	03:10 = GRADUAL START OF PHASE XVI ERUPTION TREMOR. 06:15 = 2-MINUTE REDUCTION IN TREMOR (END OF SURFACE ERUPTION) THEREAFTER RESUMED TREMOR CONTINUES TILL NEXT DAY.				11	2			

Date (1959)	Tremor (in minutes)			Earthquakes				
	Deep	Inter-mediate	Shallow	Hale mau mau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
Dec. 20	CONTINUOUS SHALLOW TREMOR				30 (IN TREMOR)				1 = OFFSHORE, SW RIFT OF KILAUEA. 1 = E. RIFT OF KILAUEA
21.	CONTINUOUS SHALLOW TREMOR ON SUMMIT RECORDS, O & N				5	3			1 = W. FLANK MAUNA LOA 1 = NE RIFT OF MAUNA LOA
22	CONTINUOUS, SHALLOW TREMOR.				27	1	2 (SMALL)		4 = SHALLOW, KALAPANA TRAIL 1 = S. FLANK KILAUEA 1 = SE. FLANK KILAUEA

These are the first, large examples of very-poorly-located, shallow-depth quakes which come from the "Pali" systems south of Kilauea's East Rift zone. These events were prominent in 1961 and 1962 and are thought to indicate failures of Kilauea's un-buttressed south flank. Such failures may be the result of excessive loading of the summit storage region --- as seems to be the present case --- or they may be the result of unknown, outside forces (perhaps gravity). When summit storage is at a high level, such slippage can enhance movement of lava from summit to the rift zone(s); when such slippage occurs (from outside causes) at times of low summit storage, only small amounts of lava move in the rift zone conduits, and there are either small, brief eruptions or none at all.

Date (1959)	Tremor (in minutes)			Earthquakes				
	Deep	Inter-mediate	Shallow	Hale mau mau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
Dec 23	CONTINUOUS, BUT DECREASING - SMALL, SHALLOW TREMOR				40	5	2 (SMALL)		1 = OFFSHORE KONA
24	SMALL, SHALLOW, CONTINUOUS TREMOR 14:25 to 15:15 = INTERMITTENT BURSTS OF DEEP TREMOR				130	6			1 = EAST RIFT OF HALEAKALA, MAUI
25.	SMALL, SHALLOW, CONTINUOUS TREMOR				105	22	2 (SMALL)		1 = S. FLANK MAUNA LOA 1 = KOHALA VOLCANO 1 = SE FLANK MAUNA LOA

Date (1959)	Tremor (in minutes)				Earthquakes				
	Deep	Inter-mediate	Shallow	Hale mau mau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
Dec 26	VERY SMALL TRACE OF CONTINUOUS, SHALLOW TREMOR.				120	25	9 (SMALL)		
27	SHALLOW TREMOR VERY WEAK OR QUESTIONABLE.				120	15	30 (SMALL)		1 = S. FLANK KILAUEA 2 = LOWER KAOIKI FAULT 1 = E. FLANK MAUNA KEA
28	NO TREMOR VISIBLE				125	25	1 (OFFSHORE) 40 (SMALL)		
29	NO TREMOR VISIBLE				100	25	2 (OFFSHORE) 45 (SMALL)		1 = SE FLANK MAUNA LOA 1 = KM 30, SUMMIT OF MAUNA KEA. 1 = KM 20, SUMMIT OF MAUNA KEA

Date (1959)	Tremor (in minutes)				Earthquakes				
	Deep	Inter-mediate	Shallow	Hale mau mau slides	Kilauea caldera shallow	SW. rift & Kaoiki	Lower east rift	Kilauea 15 to 50 km, depth	Others
Dec 30					115	40	3 (OFFSHORE)		
							12 (SMALL)		
31					110	35	1 (offshore)		1 = KONA COAST
							22 (SMALL)		

Table 3a*.--Local earthquakes and tremor recorded by the HVO-1 seismograph at Uwekahuna, in October, November, and December of 1959

Week beginning	Number of earthquakes		Minutes of continuous tremor
	Greater than magnitude 2.5	Greater than magnitude 2.5	
Oct. 4	8	52	32 (deep) 36 (deep) 39 (deep)
11	4	80	
18	3	155	
25	3	48	
Nov. 1	2	82	
8	7	350	4 (deep) 24 (deep) 35 (deep) 300 (shallow, pre-erup) Continuous tremor during Phase I.
15	4	50**	Continuous erution tremor until 11/21/59.
22	2	214**	Continuous shallow tremor except for eruption tremor, Phases II and II.
29	5	183**	Continuous shallow tremor except eruption tremor Phase IV.
Dec. 6	CA 150	CA 1150**	Continuous plus eruption tremor Phases V, VI, VII and VIII.
13	CA 13	CA 170**	Continuous shallow tremor plus eruption tremor Phases IX, X, XI, XII, XIII, XIV, XV and XVI.
20	8	90	Six days of light, shallow tremor, quiet on 11/26/59.
27-31	11	59	

* In future summaries the weekly statistical count (represented by 3a) will no longer be presented. It will be replaced by the daily counting schedule as per table 3, above.

** Conservative count; eruption tremor could mask many small events.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, ~~1960~~ 1959

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report or other comments. Usually the list consists of all events of magnitude 2.5 and larger; in this summary all clearly readable events are located and listed because of possible correlations between seismicity and surface volcanism starting 14 November 1959.

In the following list deep quakes belonging to a swarm will be listed by depth as "KM 45", "KM 47", etc. The first entry only will give epicentral data unless these change.

In Summary 24 "Kaoiki" was introduced as a symbol for listing any of a family of quakes with mean focus 19°24'N., 155°24'W., h = 3 to 8 km. This symbol is used in the following list.

The local events listed in Table 4 are ~~they~~ described ~~xxxxxxxxxxxxxxxxx~~ as carefully as possible according to size, depth and geographical coordinates. In addition there is included a verbal ~~xxxxxxxxxxxx~~ location related to prominent geographic features or to seismograph installations shown on the Map of Hawaii Island in Figure 1. cultural

use of CA rounded to nearest minute

Date 1969	ORIGIN Time h	m	s	Magnitude	Depth (km)	Epicenter Lat.N.	Long. W.	Description	Felt Report OR OTHER COMMENTS
1 Oct.	20	29	04.5	1.8	5	19°27.4'	155°27.5'	8 Km. NW of Desert Seis.	omit line here
3 Oct.	15	36	08.0	3.2	50	19°32.4'	154°43.0'	25 Km. east of Pahoa	
3 Oct.	23	40	31.2	2.5	45	19°20.3'	154°59.7'	3 Km. SW of [illegible]	
4 Oct.	05	37	08.5	4.4	15	20°44.1'	155°43.4'	80 Km North of Kamuela beneath east rift of Haleakala	KONA, OLINDA & KULA - Maui = felt
4 Oct.	17	00	25.0	2.8	40	19°14.1'	155°31.5'	20 Km SW of Desert seis.	
4 Oct.	17	17	02.5	1.7	8	19°25.6'	155°23.8'	11 Km W. of Uwekahuna	
6 Oct.	09	50	43.0	1.0	5	19°26.3'	155°23.5'	7 Km S. of ML seis of 1880 flow	
7 Oct.	00	41	46.0	3.4	15	19°49.7'	156°12.0'	offshore, 30 KM NW of Kailua	
7 Oct.	01	26	20.7	1.5	22	19°22.2'	155°18.2'	6 KM S. of UWEKAHUNA	
7 Oct.	04	32	44.0	1.2	8	19°27.5'	155°27.5	13 KM W. of MOKUAWEOWEO	
7 Oct.	08	00	58.7	2.4	13	19°13.0'	155°00.3	offshore, 45 KM SE of KULANI	
8 Oct	13	19	38.6	1.7	5	19°24.6'	155°24.5	7 Km. N. of Desert Seis.	NORTH OF KAOILI FAULT SYSTEM
8 Oct.	13	20	25.9	1.3	5	"	"	SIMILAR TO ABOVE	
9 Oct.	12	16	11.1	2.0	13	19°15.9N	155°10.3W	2Km E. of Apua Point	2 stations were lost in this quake
9 Oct.	13	32	23.6	2.1	13	"	"	SIMILAR TO ABOVE	
12 Oct.	16	14	33.1	3.4	8	20°03.0 N	155°33.0 W	14 Km E. of KAMUELA	NOT reported felt
14 Oct	06	36	06.5	3.5	3 to 5	19°20.3'	155°29.7'	14 KM NW. Desert seis.	NOT FELT: UNINHABITED
14 Oct	19	20	31.9	1.7	8	19°25.1'	155°25.3	M.Loa FLANK, 13 Km W. OF UWEKAHUNA	
15 Oct	15	15	46.7	2.5	42	19°18.3	155°01.7	39 Km E. of Desert Sta	
15 Oct	19	43	23.0	2.0	3	19°23.3	155°26.2	7 KM NW. OF DESERT SEIS	M. Loa Flank
16 Oct	03	37	37.0	3.0	~30	21°04.7	156°18.5	35 KM N. OF HALEAKALA	SEIS., MAUI
17 Oct	21	20	01.2	1.4	8	19°23.2	155°13.5	10 Km NW of Desert Seis	M.Loa FLANK
21 Oct	03	10	03.5	3.4	40	21°02'	157°16'	30 KM South of Honolulu - OAHU	NOT REPORTED FELT
23 Oct	00	11	37.5	2.5	13	20°47'	155°31'	80 KM EAST OF MAUI SEIS	beneath E. Rift of Haleakala
24 Oct	12	49	02.0	2.0	~10	19°26.5'	155°26.5'	9 KM SW OF M.LOA SEIS.	W. FLANK OF M.LOA
25 Oct	01	43	14.2	2.9	~8	20°54'	155°29'	offshore, 85 KM E of HALEAKALA SEIS	MAUI
26 Oct.	14	35	01.7	2.2	8	19°09.5	155°36.8	10 KM N. OF NAALEHU	S FLANK OF M.LOA
27 Oct	04	28	50.0	2.8	~22	19°17.6'	155°32.5	27 KM. SW OF M.LOA SEIS	S. FLANK OF M.LOA
27 Oct	06	56	01.5	2.7	8	19°50'	156°20'	offshore, 55 Km NW OF KEALAKEKUA SEIS	
27 Oct.	08	52	52.5	1.4	8	19°24.8	155°29.0'	13 KM SW. OF M.LOA SEIS	SE. FLANK OF M.LOA
29 Oct.	05	59	48.6	2.5	30	19°30.1	155°07.3	23 Km S. OF HILO	
29 OCT	20	28	36 I	—	SHALLOW	DEFORMATION NEAR	HALEMAUMAU	(DOWN, SOUTH & EAST 1ST MOTION P2)	
30 OCT	04	57	36.2	1.0	10	19°24.1	155°19.9	4 KM SW OF UWEKAHUNA	

Date 1959	Time h	Time m	Time s	Magnitude	Depth (km)	Epicenter Lat.N.	Epicenter Long. W.	Epicenter Description	Felt Report OR OTHER COMMENTS
31 Oct.	00	43	51.5?	2.1	~13	19°58'	W 155°32'	13 KM ESE OF KAMUELA	N FLANK OF M. KEA
31 Oct.	02	42	56.0	2.1	~5	19°22.0'	155°38.6	SW RIFT OF M. LOA	19 KM NE OF PUU O KEOKEO
31 Oct.	09	09	08.5	1.0	~10	19°24.1	155°19.8	SW RIFT OF KILAUEA	6 KM SW OF UWEKAHUNA
1 Nov.	18	38	13.2	1.6	~10	19°19'	155°15'	S. FLANK OF KILAUEA	13 KM SE OF UWEKAHUNA
2 Nov.	20	13	57.4	1.9	~5	19°19'	155°03	E. RIFT OF KILAUEA	43 Km. S. OF Hilo
4 Nov.	10	55	02	~1.1	~5	HALEMAUMAU - SUMMIT	OF KILAUEA	POOR FIT	Possible [illegible] ~5 KM
5 Nov	13	21	47.8	1.4	8	19°31.2	155°25.5	E. RIFT OF MAUNA LOA	5 KM NW OF M. LOA SEIS
5 Nov	13	28	05.5	1.9	8	19°35.7	155°30.6'	NE FLANK OF MAUNA LOA	
6 Nov.	03	07	54.5	1.8	10	19°22.8'	155°18.8'	7 KM SW OF UWEKAHUNA	
6 Nov.	11	14	33.4	3.1	5	19°22.7'	155°24.1	4 Km N. OF DESERT SEIS	PROBABLY FELT, NO REPORT KF.
6 Nov.	19	54	48.7	1.5	11	19°25.0'	155°20.7'	11 KM NE OF DESERT SEIS	
6 Nov	23	25	36	~3.1	~30	19°29'	155°48'	Ca 40 KM W. OF M. LOA SEIS	
7 Nov.	06	44	41.6	2.2	11	19°24.2	155°18.8'	11 KM NE OF DESERT SEIS.	
7 Nov.	07	11	14.6	1.8	11	19°24.2'	155°18.8'	ditto in all respects	
7 Nov.	07	40	46.0	2.0	11	19°24.2'	155°18.8'	SIMILAR TO PREVIOUS TWO	
7 Nov.	07	53	29.0	1.5	8	19°23.5	155°19.3	10 KM NE OF DESERT SEIS	FIRST-MOTION SIMILAR TO THREE PREVIOUS QUAKES
8 Nov.	02	12	02.6	2.4	50	19°35'	155°44'	45 KM NW OF DESERT SEIS	POOR LOCATION, 10 KM ERROR
9 Nov.	07	10	04.5	2.0	13	19°26.4	155°18.6'	2 KM NW OF UWEKAHUNA	
10 Nov.	00	02	20.3	2.3	35	19°15.7	155°01.4'	50 KM S. OF HILO SEIS.	
10 Nov.	00	11	18.4	2.2	10	19°22.3	155°25.0'	3 KM NW OF DESERT SEIS	
11 Nov.	07	22	52.3	4.0	~13	19°39	155°15'	OFFSHORE, 300 KM. W OF M. LOA SEIS. 210 KM S OF KAENA POINT, OAHU	
11 Nov.	08	42	27.1	2.1	25	19°32.5	155°14.5	20 KM N. OF OUTLET SEIS.	
11 Nov.	16	13	39.7	2.5	15	19°36.0	155°04.9	13 KM S OF HILO	NOT REPORTED FELT
12 Nov	00	21	12.2	3.2	15	19°01.2	155°30.2	11 Km SE OF NAALEHU	1: OFFSHORE
12 Nov	00	31	22.5	3.2	15	19°01.2	155°30.2	ditto in all respects except	reversed 1st motion at Hilo
12 Nov	18	04	36.7	2.3	3	19°23.3'	155°16.0	3 KM SE OF UWEKAHUNA	FELT, KILAUEA SUMMIT
13 Nov	01	00	46.6	1.2	14	19°24.5	155°17.3	beneath KILAUEA CALDERA	
13 Nov	03	01	59.5	2.8	ca 20	19°46.5'	155°54.0'	70 KM NW OF DESERT SEIS,	BENEATH HUALALAI
13 Nov	16	40	32.0	1.4	8	19°25.0'	155°16.2'	beneath KILAUEA CALDERA	FELT, KILAUEA SUMMIT
THE FOLLOWING ERUPTION BEGAN AT 20:08 HST ON 14				SIMILAR, INTER-RELATED EVENTS		APPEAR TO BE PREMONITORY; THE KILAUEA-IKI NOV. 1959.			

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter lat.N.	Long. W.	Description	Felt Report OR other comments
14-Nov.	12	09	13.5	0.5				NOT ON PRESS-EWING	
"	14	05	TREMOR STARTS ON OUTLET AND					PROBABLY NP	
"	14	09	43.1	1.5				NOT ON PRESS-EWING	PROBABLY FELT
"	14	48	46.6	1.4				SMALL PRESS-EWING DEFL.	PROBABLY FELT
"	14	54	53.1	1.5				NOT ON PRESS-EWING	PROBABLY FELT
"	15	14	36.8	1.0				NOT ON PRESS-EWING	
"	15	41	01.7	1.2				NOT ON PRESS-EWING	
"	16	05	21.2	1.8				SMALL PRESS-EWING DEFL.	FELT
"	16	26	30.7	1.1				NOT ON PRESS-EWING	
"	16	33	44.3	3.5				PRESS-EWING DEFLECTED	FELT AND/OR HEARD IN KILAUEA/SUMMIT REGION
"	16	37	56.5	1.2				NOT ON PRESS-EWING	
"	17	17	33.1	2.1				SMALL PRESS-EWING DEFL.	FELT
"	17	28	26.0	1.9				SMALL PRESS-EWING DEFLECTION	FELT
"	17	38	47.5	2.2				PRESS-EWING AFFECTED	FELT
"	18	02	45.5	1.1				NOT ON PRESS-EWING	FELT
"	18	39	13.7	2.3				PRESS-EWING AFFECTED	FELT
"	18	43	00.0	1.8				SMALL PRESS-EWING DEFLECTION	FELT
"	18	52	20.6	1.9				SMALL PRESS-EWING DEFLECTN	FELT
"	19	26	03.8	2.1				PRESS-EWING AFFECTED	FELT
"	20	09	39.5	2.1				PRESS-EWING AFFECTED	FELT
"	20	12	25.3	1.4				NOT ON PRESS EWING	

ALL OF THE QUAKES ON NOV. 14, 1959 (ABOVE) MADE UNIFORMLY POOR RECORDS. IT WAS POSSIBLE TO LOCATE THEM ONLY BY ASSUMING THAT THEY HAD A COMMON FOCUS AND THEN BY USING ALL AVAILABLE DATA IN A STATISTICAL MANNER. THE RESULTING LOCATION WAS COINCIDENT WITH THE MAIN VENT OF KILAUEA-IKI (SEE ILLUSTRATION.) A DEPTH OF 1.5 KM WAS INDICATED

IN ADDITION TO THE ABOVE, CLEARLY-RECORDED EVENTS, THE FOLLOWING, SMALLER QUAKES WERE REPORTED FELT. (SEE "UNITED STATES EARTHQUAKES, 1959, U.S. COAST AND GEODETIC SURVEY, pg. 61)

14 NOV 1959: 17:24 M=2.5 / 17:32 M=1.0 / 17:41 M=1.1 / 17:44 M=1.2 /
17:48 M=1.0 / 18:25 M=0.9 / 18:27 M=1.0 / 18:30 M=0.6

Date 1959	Time h	Time m	Time s	Magnitude	Depth (km)	Epicenter Lat.N.	Epicenter Long. W.	Epicenter Description	Felt Report OR OTHER COMMENTS
	14 NOV. 1959 (CONT'D.)					18:35 M=0.5 / 18:49 M=0.9		18:36 M=0.5 / 18:54 M=0.9	18:43 M=1.0
Nov. 16	02	40	14.0	1.8	0-3	19° 20.3'	155° 11.4'	South of Chain-of-Craters,	22 KM. EAST OF DESERT
16 Nov.	17	06	56.4	1.9	1.5	19°25'	155° 15'	Near KILAUEA-IKI VENT	PRESS-EWING DEFLECTED
17 Nov.	06	38	15.2	2.9	13	19°53.2'	155° 37.0'	NW FLANK OF MAUNA LOA.	
17 Nov.	11	51	35.3	2.7	13	20° 06.6'	155° 54.7'	W. FLANK OF KOHALA MTN.	
18 Nov.	12	07	29.1	2.2	25	19° 22.8'	155° 19.2'	BENEATH SW Flank OF KILAUEA	READABLE ONLY ON M & D
21 Nov.	14	11	38.2	2.8	25	19° 16.8'	155° 13.0'	S. FLANK OF KILAUEA	
21 Nov.	17	21	34.6	2.7	5	19° 19.2'	155° 09.3'	3 Km NORTH OF CHAIN-OF	CRATERS — NAPAU CRATER
22 Nov.	20	47	49.1	2.0	23	19° 30.9	155° 18.0'	9 KM NORTH OF UWEKAHUNA	(BENEATH KULANI CONE)
23 Nov.	07	02	15.0	2.5	CA 13	POOR FIT ON INSUFFICIENT DATA. PROBABLY NEAR			KAUAHAI.
23 Nov.	14	24	18.1	4.9	CA 28	19° 08.3	155° 26.6	Deep, beneath SW RIFT	OF KILAUEA.
23 Nov.	18	01	40.0	4.2	CA 25	20° 18'	155° 39'	30 KM NORTH OF KAMUELA	FELT NE COAST OF HAWAII
25 Nov.	14	53	17.5	2.1	20	19° 35.4'	155° 20.3	12 KM NE OF M. LOA SEIS.	NW FLANK OF M. LOA
27 Nov.	12	41	29.7	2.3	0-3	19° 22.4	155° 09.4	12 KM E. OF AHUA SEIS	ON UPPER EAST RIFT OF KILAUEA
27 Nov.	15	20	15.9	1.9	8	19° 21.9'	155° 25.9'	4 KM NW OF DESERT SEIS	~ KAOIKI FAULT SYS ~
1 Dec.	13	56	47.5	1.5	5	19° 17.5'	155° 15.5'	13 KM S. OF KILAUEA-IKI	S. FLANK OF KILAUEA
2	02	22	46.1	3.7	3	19° 10.5'	155° 43.3'	18 KM NW OF NAALEHU	FELT- CAPT. COOK AND KEALAKEKUA
								SW RIFT OF M. LOA	
2	12	46	17.7	2.2	8	19° 10.8'	155° 14.3	12 KM W OF NAALEHU	
2	13	43	23.4	<2.5	13	19° 40.1	155° 14.3	SIMILAR LOCATIONS BUT	OPPOSITE FIRST-MOTION
2	13	43	27.5	2.5	13	19° 40.1	155° 14.3	16 KM W OF HILO;	POSSIBLY RELATED TO
								NE RIFT OF M. LOA	
2	17	09	09.5	2.4	13	20° 03.2	155° 22.3	32 KM E. OF KAMUELA	N COAST OF HAWAII
2	19	46	01.5	1.4	5	19° 15'	155° 15'	20 KM S OF UWEKAHUNA	S FLANK OF KILAUEA
3	02	44	35.4	2.7	CA 10	19° 35'	155° 57'	8 KM NW OF KEALAKEKUA	KONA (POOR LOCATION)
3	07	35	45.5	2.1	10	19° 16.8'	155° 18.3	16 Km S OF UWEKAHUNA	S. FLANK OF KILAUEA
4	06	16	35.0	2.6	8	19° 24.3	155° 09.0	14 KM E OF UWEKAHUNA	NORTH OF EAST RIFT ZONE, KILAUEA

Date 1959	Time			Magnitude	Depth (km)	Epicenter			Felt Reports
	h	m	s			Lat.N.	Long. W.	Descrition	
6 Dec.	17	16	59.3	2.7	35	19° 42.1'	154° 54.2'	20 Km. E. OF HILO	
9	11	26	07.6	2.3	CA 8	20° 03'	155° 49'	NEAR KAWAIHAE, KOHALA MTN. POOR LOCATION	
9	23	18	31.6	1.6	8	19° 13.2	155° 12.2	28 KM SE. OF UWEKAHUNA, SE FLANK OF KILAUEA	
10	06	10	50.1	2.4	CA 10	19° 23'	155° 07'	18 KM E. OF UWEKAHUNA, E. RIFT OF KILAUEA	
11	12	26	01.4	2.4	CA 20	19° 54'	155° 49'	75 KM NW. OF UWEKAHUNA, POOR LOCATION	
11	15	28	21.8	2.1	8	19° 25.2'	155° 26.3	KAOIKI FAULT SYSTEM	
			deep	QUAKES	START	HERE	WITH	SPECIAL HILO SECTION	LISTED FIRST

Dec. 11 The deep swarm (h greater than 42 km) began to record at Hilo around 17:30. From 18:30 to 24:00, weak to moderate spasmodic tremor /1/ is seen. But at the same time, this tremor at summit stations was so large that identification of individual quakes was not possible. Therefore, the following origin times and magnitudes are the best possible estimates based on Hilo readings alone. Assuming that greater p-travel-times for these early events indicate greater depth, the following depth and magnitude estimates are based on measured p-travel times -- also listed. It is further assumed that p-travel-times, 7.8, 7.9, 8.0 and 8.1 are normal variations of the final class of these events from a depth of 42 km.

18	40	35.5	2.8	60	19°32.3'	155°20.7	7 KM NORTHEAST OF [illegible]	UP
ORIGIN TIME			MAG.	THIS FOCUS IS DESIGNATED BY KM h IN THE REST OF THIS LIST			SEISMOGRAM P-TRAVEL DEPTH	FELT REPORT
19	21	17.8	2.8	—	60 Km	—	KM 52 8.8 ~52 Km	DN
19	30	38.7	2.6	—	—	—	KM 52 "	DN
19	31	41.0	2.8	—	—	—	KM 52 "	DN
20	07	41.9	2.6	—	—	—	KM 52 "	UP
20	28	43.4	2.6	—	—	—	KM 52 "	DN
20	32	26.5	2.6	—	—	—	KM 52 "	UP
20	33	40.2	2.6	—	—	—	KM 52 "	DN
20	51	02.1	2.8	—	—	—	KM 52 "	DN
20	55	14.2	2.10	—	—	—	KM 52 "	UP
21	13	53.6	2.8	—	—	—	KM 52 "	UP
21	14	57.6	2.9	—	—	—	KM 52 "	UP
21	28	27.6	2.6	—	—	—	KM 52 "	DN
21	36	26.1	3.4	—	—	—	KM 52 "	UP
21	43	22.5	2.7	—	—	—	KM 52 "	DN
21	45	04.9	2.5	—	—	—	KM 52 "	DN
21	46	30.6	2.9	—	—	—	KM 52	DN
21	46	57.1	2.8	—	—	—	KM 52	DN
21	51	22.6	2.7	—	—	—	KM 52	DN
22	05	41.9	2.7	—	50 Km	—	KM 50 8.6 ~50 Km	UP
22	12	41.4	2.7	—	—	—	KM 50	DN
22	27	20.7	2.6	—	—	—	KM 50	DN
23	13	07.9	3.0	—	↓	—	KM 50	DN
23	31	04.2	2.7	—	—	—	KM 42 8.2 ~46	UP

SPECIAL SECTION OF TABLE IV, SHOWING ALL DEEP SWARM QUAKES WHICH CAN BE READ AT HILO. AT THE TIME OF THESE RECORDINGS, SUMMIT STATIONS WERE TOO DISTURBED BY TREMOR AND EARTHQUAKE NOISE TO PERMIT USE OF THEIR DATA; HILO READINGS ARE THE ONLY ONES AVAILABLE.

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat.N.	Long. W.	Description DEPTH	P-TRAVEL-TIME	~~Felt Report~~ FIRST MOTION OF P
DEC. 12	00	13	28.6	2.6	—	—	—	KM 42	8.2	UP
	00	21	34.5	2.5	—	—	—	KM 42		DN
	00	23	23.7	2.6	—	—	—	KM 42	8.3+	UP
	00	26	[illegible]	[illegible]	—	—	—	KM 42		UP
	00	31	[illegible]	[illegible]	—	—	—	KM 49	8.5 249 KM	DN
	00	[illegible]	[illegible]	[illegible]	—	—	—	KM 42		UP
	00	37	[illegible]	[illegible]	—	—	—	KM 42		DN
	00	[illegible]	18.8	2.5	—	—	—	KM 48	8.4-48	UP
	00	[illegible]	[illegible]	2.9	—	—	—	KM 42		UP
	00	54	[illegible]	2.6	—	—	—	KM 49	8.5 ~49	DN
	00	59	[illegible]	3.0	—	—	—	KM 42	8.2	DN
	01	02	[illegible]	[illegible]	—	—	—	KM 49	8.5 249	UP
	01	[illegible]	[illegible]	[illegible]	—	—	—	KM 42	[illegible]	UP
	01	12	[illegible]	2.6	—	—	—	KM 42		UP
	01	15	17.6	2.7	—	—	—	KM 42		UP
	01	25	[illegible]	2.5	—	—	—	KM 42		UP
	01	31	[illegible]	3.3	—	—	—	KM 42		UP
	02	00	[illegible]	3.6	—	—	—	KM 42	8.1	UP
	02	[illegible]	[illegible]	[illegible]	—	—	—	KM 42		UP
	02	15	23.3	[illegible]	—	—	—	KM 42		UP
	02	25	37.1	2.8	—	—	—	KM 42		UP
	02	28	41.0	2.5	—	—	—	KM 42	8.0	UP
	02	54	49.0	2.8	—	—	—	KM 42	8.2	UP
	02	55	38.9	2.6	—	—	—	KM 42		DN
	02	56	39.7	2.5	—	—	—	KM 42	8.1	UP
	03	02	38.5	2.8	—	—	—	KM 42		DN
	03	03	49.2	2.8	—	—	—	KM 42	8.2	UP
	03	16	48.9	3.0	—	—	—	KM 42	7.8	UP
	03	23	32.6	2.8	—	—	—	KM 42	8.1	UP
	03	24	26.6	2.7	—	—	—	KM 42	8.2	UP
	03	26	36.8	2.8	—	—	—	KM 42	7.9	UP
	03	34	47.6	2.0	—	—	—	KM 42	8.1	DN
	03	35	51.0	2.8	—	—	—	KM 42	8.2	DN

SPECIAL SECTION OF TABLE IV, SHOWING ALL DEEP SWARM QUAKES WHICH CAN BE READ AT HILO ONE (LISTED BELOW) WAS ALSO READABLE AT SUMMIT STATIONS; IT WILL BE REPEATED IN THE MAIN CHRONOLOGY OF EVENTS.

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat.N.	Long. W.	Description DEPTH	P TRAVEL TIME	~~Report~~ FIRST MOTION P
DEC. 12	03	42	57.3	2.5	—	—	—	KM 42	8.2	UP
	03	44	06.8	2.5	—	—	—	KM 42	8.4	UP
	03	46	33.7	2.9	—	—	—	KM 49	8.5 ~49	DN
	03	54	41.7	2.7	—	—	—	KM 42	8.2	UP
	03	54	59.1	2.7	—	—	—	KM 42	8.4	DN
	04	02	32.8	2.8	—	—	—	KM 42	8.1	UP
	04	03	19.8	2.7	—	—	—	KM 42	8.1	DN
	04	03	31.6	2.8	—	—	—	KM 42	7.9	UP
	04	04	29.1	2.8	—	—	—	KM 42	8.2	UP
	04	06	51.4	2.8	—	—	—	KM 42	8.2	DN
	04	08	28.5	3.0	—	—	—	KM 42	7.9	UP
	04	53	57.6	3.2	—	—	—	KM 42	7.9	UP
	05	46	19.4	2.6	—	—	—	KM 42	8.2	UP
	06	02	44.1	2.5	—	—	—	KM 52	8.8 ~52	UP
	06	33	00.5	2.7	—	—	—	KM 42	8.2	UP
	06	46	11.4	2.7	—	—	—	KM 42	8.1	UP
	07	46	51.0	2.5	—	—	—	KM 42	?	UP
	07	47	03	2.8	—	—	—	KM 42	? (LOST IN NOISE)	?
	07	58	37.8	2.7	—	—	—	KM 42	7.8	DN
	08	28	36.2	2.5	—	—	—	KM 42	8.2	UP
	08	49	52.4	2.8	—	—	—	KM 42	8.1	UP
	08	50	55.7	2.7	—	—	—	KM 42	8.1	UP?
	08	51	07.0	2.8	—	—	—	KM 42	8.1	UP?
	09	09	33.6	2.5				KM 42	7.5	UP
	09	16	01.0	2.5				KM 42	8.2	DN
	09	31	30.7	2.5				KM 42	8.1	UP
	09	32	16.0	2.5				KM 42	8.2	UP
	09	37	02.7	2.7				KM 42	8.2	UP
	09	38	22.5	2.6				KM 50	8.6 ~50	DN
	09	44	15.4	2.6				KM 42	8.1	DN
	(10	06	32.8	2.9 ★					8.1	UP)

(*) THESE ARE EVENTS FOR WHICH OTHER INSTRUMENTAL DATA ARE AVAILABLE; THEY WILL BE REPEATED IN THE NEXT SECTION OF THIS TABLE.

SPECIAL SECTION OF TABLE IV, SHOWING ALL DEEP SWARM QUAKES WHICH CAN BE READ AT HILO
A FEW OF THEM ALSO WERE READABLE AT THE SUMMIT:; AND THOSE WILL BE REPEATED.

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat.N.	Long. W.	Description DEPTH	TRAVEL TIME OF P	~~Edit Report~~ FIRST MOTION OF P
DEC 12	10	20	09.6	2.7 *				KM 42	8.0	UP
	10	36	39.1	2.7				KM 42	8.2	UP
	10	39	59.0	2.7				KM 42	8.0	UP
	10	48	05.8	2.6				KM 42	8.0	UP
	11	04	58.5	2.7				KM 42	8.0	UP
	11	07	13.7	2.7				KM 42	8.0	UP
	11	14	36.5	2.7				KM 42	8.3	DN
	11	23	08.2	2.6				KM 42	8.3	UP
	11	23	14.5	2.6				KM 42	8.1 ?	DN ?
	11	30	31.9	2.7 *				KM 42	7.8	UP
	11	31	14.0	2.6				KM 42	8.1	UP
	11	35	29.3	2.8 *				KM 42	7.9	UP
	11	36	46.0	2.6				KM 42	8.2	UP
	11	37	21.9	2.5				KM 42	8.2	UP
	11	38	59.0	2.5 *				KM 42	8.2	UP
	11	41	15.7	2.5				KM 42	8.2	UP
	11	43	00.4	2.8 *				KM 42	8.1	UP
	11	48	46.7	2.5				KM 42	8.1	UP
	11	51	27.9	3.0				KM 42	8.1	DN
	11	56	34.2	2.7				KM 42	8.1	UP
	11	57	44.6	2.7				KM 42	8.1	UP
	12	03	43.1	2.8				KM 42	8.1	UP
	12	04	11.7	2.5				KM 42	7.9	UP
	12	13	21.0	2.8				KM 42	8.2	UP
	12	13	37.8	2.5				KM 42	8.2	DN
	12	22	23.6	2.1				KM 42	8.2	DN
	12	24	28.5	2.7 *				KM 42	8.1	UP
	12	35	48.9	2.4				KM 42	8.4	UP
	12	47	21.6	2.8				KM 42	7.7	DN
	12	48	22.7	2.5				Km 42	8.0	DN
	12	48	46.2	2.5				KM 42	8.1	UP

(*) THESE ARE EVENTS FOR WHICH OTHER INSTRUMENTAL DATA ARE AVAILABLE; THEY WILL BE REPEATED IN THE NEXT SECTION OF THIS TABLE.

SPECIAL SECTION OF TABLE IV, SHOWING ALL DEEP SWARM QUAKES WHICH CAN BE READ AT HILO.

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat.N.	Long. W.	Description DEPTH	TRAVEL TIME OF P	~~Form Report~~ FIRST MOTION OF P
DEC. 12	12	52	33.5	2.5	—	—	—	Km 42	7.7	DN
	12	52	44.2	2.7				Km 42	8.1	?
	12	52	47.8	2.7				Km 42	8.1	DN
	12	55	29.1	2.7				Km 42	7.9	UP
	12	56	07.3	2.7				Km 42	7.3	?
	12	56	29.6	2.7				Km 42	8.1	UP
	12	57	15.4	3.1				Km 42	7.9	UP
	12	58	30.6	2.7				Km 42	7.9	?
	13	04	57.4	2.7				Km 42	7.9	UP
	13	06	51.4	2.7				Km 42	7.8	DN
	13	09	24.1	2.7				Km 42	7.8	UP
	13	10	12.9	2.5				Km 42	7.7	UP
	13	10	32.7	3.1				Km 42	7.8	UP
	13	12	25.7	2.8				Km 42	7.8	UP
	13	17	20.9	2.5				Km 42	7.9	DN
	13	18	48.4	2.5				Km 42	7.9	UP
	13	21	01.5	2.8				Km 42	7.9	UP
	13	41	58.1	2.8 *				Km 42	8.1	UP
	14	02	24.8	2.5				Km 42	7.9	DN
	14	30	04.3	2.6 *				Km 42	7.8	UP
	14	49	35.8	1.8				Km 42	7.8	UP
	14	52	39.2	1.8				Km 42	7.8	UP
	14	53	28.6	2.1				Km 42	7.8	DN
	15	01	26.5	2.0				Km 42	7.7	DN
	15	16	56.8	2.0				Km 42	7.7	UP
	15	18	07.4	1.8				Km 42	8.0	UP
	15	22	06.6	2.0				Km 42	8.0	UP
	15	24	49.9	2.8				Km 42	8.2	UP
	15	35	28.5	2.0				Km 42	7.8	DN
	15	36	55.2	1.8				Km 42	8.0	DN
	16	03	50.9	2.0				Km 42	8.1	UP
	16	04	34.0	2.0				Km 42	8.1	DN

(*) THESE ARE EVENTS FOR WHICH OTHER INSTRUMENTAL DATA ARE AVAILABLE: THEY WILL BE REPEATED IN THE NEXT SECTION OF THIS TABLE

SPECIAL SECTION OF TABLE IV, SHOWING ALL DEEP SWARM QUAKES WHICH CAN BE READ AT HILO. A FEW OF THEM WERE ALSO READABLE ON SUMMIT SEISMOGRAMS; THOSE WILL BE INDLUDED IN BOTH THIS LISTING AND IN THE REGULAR SCHEDULE OF TABLE IV, TO BELOW.

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat. N.	Long. W.	Description DEPTH	TRAVEL-TIME OF P	Report FIRST-MOTION OF P
DEC. 12	16	05	58.3	2.5 *	—	—	—	KM 42	8.0	?
	16	11	44.7	2.5 *	—	—	—	KM 42	7.8	DN
	16	16	56.1	2.7 *	—	—	—	KM 42	7.8	DN
	16	23	44.9	1.8	—	—	—	KM 42	8.1	DN
	16	27	37.7	2.7	—	—	—	KM 42	8.0	DN
	16	31	13.5	1.7	—	—	—	KM 42	8.1	UP
	16	36	34.1	1.7	—	—	—	KM 42	8.1	UP
	16	44	?	2.3	—	—	—	KM 42	?	?
	16	49	19.1	3.0 *	—	—	—	KM 42	8.1	UP
	16	53	37.9	2.4	—	—	—	KM 42	8.2	DN
	17	18	32.0	1.7	—	—	—	KM 42	7.8	DN
	18	03	49.4	2.5	—	—	—	KM 42	7.8	DN
	18	08	43.6	2.5	—	—	—	KM 42	7.9	DN
	18	17	01.5	2.0	—	—	—	K	7.9	DN
	18	21	51.9	2.0	—	—	—	KM 42	7.9	UP
	18	24	49.4	2.4 *	—	—	—	KM 42	8.2	UP
	18	27	41.1	2.0 *	—	—	—	KM 42	8.0	UP
	19	28	54.8	2.5 *	—	—	—	KM 42	8.0	UP
	19	34	53.2	2.8 *	—	—	—	KM 42	8.0	UP
	20	35	19.0	2.5	—	—	—	KM 42	7.7	UP
	20	50	36.1	2.5 *	—	—	—	KM 42	8.1	UP
	21	26	25.9	2.7 *	—	—	—	KM 42	8.0	UP
	21	36	02.6	2.8 *	—	—	—	KM 42	7.8	UP
	21	42	14.3	2.0				KM 42	7.8	UP
	21	54	03.6	2.0 *	—	—	—	KM 42	8.0	UP
	21	55	18.6	2.0	—	—	—	KM 42	8.0	UP
	22	56	16.8	1.7	—	—	—	KM 42	8.0	DN
	23	00	10.4	2.0	—	—	—	KM 42	7.9	UP
	23	19	29.7	2.4 *	—	—	—	KM 42	7.9	UP
	23	23	30.8	1.7 *	—	—	—	KM 42	8.0	UP
	23	42	36.4	2.4	—	—	—	KM 42	8.1	UP

(*) THESE ARE EVENTS FOR WHICH OTHER INSTRUMENTAL DATA ARE AVAILABLE; THEY WILL BE REPEATED IN THE NEXT SECTION OF THIS TABLE.

SPECIAL SECTION OF TABLE IV, SHOWING ALL DEEP SWARM QUAKES WHICH CAN BE READ AT HILO. A FEW OF THEM WERE ALSO READABLE ON SUMMIT SEISMOGRAMS; THOSE WILL BE INCLUDED IN BOTH THIS LISTING AND IN THE REGULAR SCHEDULE OF TABLE IV, TO FOLLOW.

Date 1960	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat. N.	Long. W.	Description DEPTH	TRAVEL TIME OF P	~~Felt Report~~ FIRST MOT P
DEC. 13	01	18	36.7	2.7 *	—	—	—	KM 42	8.5	UP
	01	35	13.5	2.6 *	—	—	—	KM 42	7.8	UP
	01	57	30.9	3.1 *	—	—	—	KM 42	7.8	DN
	01	58	37.2	2.7 *	—	—	—	KM 42	8.0	UP
	02	21	06.1	2.7 *	—	—	—	KM 42	8.0	UP
	03	11	07.6	2.7	—	—	—	KM 42	8.1	UP
	03	57	44.1	2.0	—	—	—	KM 42	7.8	UP
	03	58	37.9	3.0 *	—	—	—	KM 42	8.1	UP
	05	04	43.6	2.7 *	—	—	—	KM 42	8.0	UP
	05	49	21.7	2.5 *	—	—	—	KM 42	8.1	DN
	07	43	20.4	2.5	—	—	—	KM 42	8.1	UP
	08	30	04.1	2.8	—	—	—	KM 42	8.0	DN
	09	56	15.2	2.7	—	—	—	KM 42	8.1	UP
	10	59	51.3	1.7	—	—	—	KM 42	8.0	UP
	11	44	56.4	2.0	—	—	—	KM 42	8.1	UP
	11	49	23.9	1.7	—	—	—	KM 42	8.0	UP
	11	49	49.5	2.0	—	—	—	KM 42	8.0	UP
	12	23	28.9	1.3	—	—	—	KM 42	8.1	UP
	12	24	27.2	2.0	—	—	—	KM 42	8.0	UP
	14	26	21.4	2.4	—	—	—	KM 42	7.9	UP
	15	42	41.1	2.4	—	—	—	KM 42	8.2	DN
	18	00	40.8	1.7 *	—	—	—	KM 42	8.0	UP
	18	03	44.4	1.7	—	—	—	KM 42	8.1	UP
	19	02	43.8	2.4 *	—	—	—	KM 42	8.1	UP
	19	43	18.5	2.4 *	—	—	—	KM 42	8.1	UP
	20	42	47.3	2.4	—	—	—	KM 42	8.0	DN
	21	06	05.7	1.7	—	—	—	KM 42	8.1	UP
	21	58	47.9	1.6	—	—	—	KM 42	8.0	DN
	22	38	09.9	1.4	—	—	—	KM 42	8.1	UP
212	22	45	18.5	1.6 *	—	—	—	KM 42	8.0	UP
Dec. 14	05	05	28.5	2.4 *	—	—	—	KM 42	8.0	UP

(*) THESE ARE EVENTS FOR WHICH OTHER INSTRUMENTAL DATA ARE AVAILABLE; THEY WILL BE REPEATED IN THE NEXT SECTION OF THIS TABLE.

SPECIAL SECTION OF TABLE IV, SHOWING ALL DEEP SWARM QUAKES WHICH CAN BE READ AT HILO. A FEW OF THEM WERE ALSO READABLE ON SUMMIT SEISMOGRAMS; THOSE WILL BE INCLUDED IN BOTH THIS LISTING AND IN THE REGULAR SCHEDULE OF TABLE IV, TO FOLLOW.

Date 1969	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat.N.	Long. W.	Description DEPTH	TRAVEL TIME OF P	FIRST MOTION
DEC. 14	09	51	39.9	1.7 *	—	—	—	KM 42	8.0	UP
	11	56	47.5	2.0	—	—	—	KM 42	8.2	UP
	13	33	49.6	1.7	—	—	—	KM 42	8—	UP?
	15	45	09.6	1.7 *	—	—	—	KM 42	8—	UP
	17	23	09.7	1.4	—	—	—	KM 42	7.8	DN
	19	00	37.1	1.7 *	—	—	—	KM 42	8.1	UP
	21	47	29.8	2.0 *	—	—	—	KM 42	8.0	DN
	22	22	47.9	1.7 *	—	—	—	KM 42	8.1	DN
	22	34	09.3	2.4 *	—	—	—	KM 42	8.5	UP
	23	30	39.0	1.7	—	—	—	KM 42	8.1	UP
DEC. 15	0 03	40	20.5	2.4 *	—	—	—	KM 42	8.5	UP

(*) THESE ARE EVENTS FOR WHICH OTHER INSTRUMENTAL DATA ARE AVAILABLE; THEY WILL BE REPEATED IN THE NEXT SECTION OF THIS TABLE.

THIS IS THE CONCLUSION OF THE SPECIAL SECTION OF TABLE IV, SHOWING ALL DEEP SWARM QUAKES WHICH CAN BE READ AT HILO. THERE ARE ABOUT 220 OF THESE EVENTS OF MAGNITUDE 1.4 OR GREATER, WHEREAS ONLY ABOUT 80 EVENTS WERE READABLE BOTH ON HILO AND ON SUMMIT RECORDS. THIS SEEMING INCONSISTENCY IS DUE TO THE HIGH LEVEL OF TREMOR AND QUAKE ACTIVITY WHICH RECORDED AT SUMMIT STATIONS AND OBLITERATED MANY EVENTS FOR READING PURPOSES. IN GENERAL QUAKES OF MAGNITUDE 2.0 OR LARGER WERE EASILY FOUND ON THE HILO RECORD --- ALTHOUGH SPECIAL EFFORTS WERE MADE TO LOCATE AND TO READ SMALLER EVENTS FOR WHICH SUMMIT READINGS WERE GOOD.

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat.N.	Long. W.	Description	Felt Reports AND OTHER COMMENTS
Dec. 12	10	06	33.0	2.9	42	19°32.3'	155°20.7'	7 km northeast of Mauna Loa seismometer station	
						THIS FOCUS WILL BE DESIGNATED BY KM 42 IN REST OF THIS LIST			
12	10	20	09.5	2.7				KM 42	
	11	30	31.7	2.6				KM 42	
	11	35	29.3	2.9				KM 42	
	11	38	59.0	2.6				KM 42	
	11	43	00.4	2.8				KM 42	
	12	24	28.5	2.7				KM 42	
	13	41	58.2	2.7				KM 42	
	14	22	46.9	2.6				KM 42	
	14	30	04.3	2.6				KM 42	
	15	48	05.4	2.5				KM 42	
	15	50	23.6	2.6				KM 42	
	15	53	48.4	2.5				KM 42	
	16	05	58.1	2.5				KM 42	
	16	11	44.6	2.6				KM 42	
	16	17	56.1	2.7				KM 42	
	16	49	19.2	3.0				KM 42	
	17	33	06.7	2.6				KM 42	
	18	00	30.1	2.7				KM 42	
	18	24	49.7	2.6				KM 42	
	18	27	41.3	2.5				KM 42	
	18	55	14.3	2.5				KM 42	
	19	28	54.3	3.1				KM 42	REPORTED FELT
	19	34	53.3	2.7				KM 42	
	20	32	17.8	2.5				KM 42	
	20	42	32.6	2.6				KM 42	
	20	50	36.4	3.0				KM 42	
	21	26	26.3	2.6				KM 42	

CONTINUED ON NEXT SHEET

★ TOO SMALL TO READ ON HILO WWSSN; CONTAINS DATA ONLY FROM UWEKAHUNA, MAUNA LOA, OUTLET AND DESERT SEISMOGRAPHS.

Date 1969	Time h	Time m	Time s	Magnitude	Depth (km)	Epicenter Lat.N.	Epicenter Long. W.	Epicenter Description	Felt Reports AND OTHER COMMENTS
DEC 12	21	32	23.7	2.2 *	—			KM 42	
	21	36	02.5	2.8	—			KM 42	
	21	54	03.7	2.5	—			KM 42	
	22	22	33.8	2.3 *	—			KM 42	
	23	19	29.7	2.5	—			KM 42	
	23	23	30.8	2.3	—			KM 42	
DEC. 13	00	18	54.2	2.5 *	—			KM 42	
	00	24	13.8	2.2 *	—			KM 42	
	01	16	09.4	2.3 *	—			KM 42	
	01	35	13.8	2.4	—			KM 42	
	01	57	30.8	3.0	—			KM 42	
	01	58	37.4	2.6	—			KM 42	
	01	59	39.5	2.2 *	—			KM 42	
	02	00	57.4	2.3 *	—			KM 42	
	02	07	23.0	2.5 *	—			KM 42	
	02	10	56.4	2.4 *	—			KM 42	
	02	13	50.0	2.0 *	—			KM 42	
	02	14	27.1	2.5 *	—			KM 42	
	02	21	06.1	2.7	—			KM 42	
	02	43	15.9	2.5 *	—			KM 42	
	03	58	38.0	3.0	—			KM 42	
	05	04	44.2	2.7	—			KM 42	
	05	49	22.0	2.5	—			KM 42	
	18	00	41.1	2.1	—			KM 42	
	19	02	44.6	2.4	—			KM 42	
	19	43	19.6	2.5	—			KM 42	
	21	05	08.4	2.5 *	—			KM 42	
	22	45	19.3	2.2	—			KM 42	

* TOO SMALL TO READ ON HILO RECORD

65

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat. N.	Long. W.	Description	~~Data~~ Report
DEC 14	00	09	49.6	2.2*	—	—	—	KM 42	
	01	45	34.6	2.0*	—	—	—	KM 42	
	01	56	10.6	2.3*	—	—	—	KM 42	
	03	04	22.0	2.0*	—	—	—	KM 42	
	06	18	26.8	2.4	—	—	—	KM 42	
	06	48	28.5	2.5*	—	—	—	KM 42	
	09	51	40.1	2.4	—	—	—	KM 42	
	15	45	10.0	2.2	—	—	—	KM 42	
	16	35	53.2	2.2*	—	—	—	KM 42	
	19	00	37.5	2.1	—	—	—	KM 42	
	20	53	55.3	1.9*	—	—	—	KM 42	
	21	47	30.1	2.2	—	—	—	KM 42	
	22	22	48.3	2.1*	—	—	—	KM 42	
Dec. 16	23	22	13.0	1.5	8	19°23.2'	155°26.2	Kaoiki Fault System	
18	04	01	48.5	1.8	5	19°17.8'	155°16.0	15 KM S. OF HALEMAUMAU	S. FLANK OF KILAUEA
19	17	39	30.1	1.6	<3	19°03.4	155°28.3	3 Km N OF PAHALA	POSSIBLY KAOIKI FAULT
20	21	23	59.7	3.4	5	19°07.5'	155°04.0'	offshore 40 Km Southwest of Uwekahuna	E. RIFT OF KILAUEA
20	21	26	55.0	2.9	3	19°20.5	155°00.8'	40 Km East of Desert	NE RIFT OF M. LOA.
21	07	17	47.0	2.7	15	19°35.6'	155°20.8'	12 KM NE OF M.LOA SEIS	W. Flank of M. LOA
21	09	30	47.0	1.5	8	19°28.4'	155°25.3'	5 KM W OF M.LOA SEIS,	S. FLANK OF KILAUEA
23	00	20	40.0	3.6?	0-3	19°01'	155°04	50 Km SW OF UWEKAHUNA	
			(POOR LOCATION DUE TO QUESTIONABLE FIRST ARRIVALS)						
23	02	13	32.0	3.1	5	19°16.0'	155°07.9	23 KM SE OF UWEKAHUNA	SE FLANK OF KILAUEA
24	02	20	55.0	2.5	~10	19°33'	155°59'	70 Km W of M.LOA Seis	offshore KONA
25	04	14	40	2.6	~10	20°46'	155° 16'	OFFSHORE, 100 KM E OF MAUI	SEIS, EAST RIFT OF HALEAKALA
25	14	09	10.1	2.2	3	19° 12.2'	155°35.7'	15 KM NORTH OF NAALEHU	S FLANK OF M. LOA
25	17	44	47.1	3.5	30	20°03.8'	155°43.7'	8 KM NW OF KAMUELA	KOHALA VOLCANO
26	03	08	31.0	2.2	20	19°25'	155°30'	13 KM NW OF DESERT SEIS	SE FLANK OF M. LOA
26	17	04	08.8	1.5	8	19°18.0	155°22.5	4 KM SE OF DESERT SEIS	SW RIFT, KILAUEA

Date 1959	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat.N.	Long. W.	Description	~~Test~~ Report
DEC. 27	08	06	38.0	1.4	3	19°18'	155°12	4 KM N. OF APUA POINT	S. FLANK OF KILAUEA
27	18	40	42.0	2.4	8-9	19°12.4	155°25.3	2 KM NW OF DESERT SEIS,	LOWER RAOIKI FAULT
28	00	29	16.0	2.6	10	19°12.4	155°25.3	do	do
28	01	47	39.7	3.8	30	19°48.8	155°21.3	34 KM N OF M.LOA SEIS	EAST FLANK OF M.KEA
28	15	29	09.0	3.2	5	19°26.0	154°51.2	12 KM SE OF PAHOA KILAUEA OFFSHORE	EAST RIFT OF
29	08	19	06.0	2.1	8	19°25.0	155°27.6	17 KM W. OF UWEKAHUNA,	SE FLANK OF M.LOA
29	12	16	30.9	2.7	CA 30	19°49'	155°30'	beneath SUMMIT OF	MAUNA KEA
29	18	53	19.5	2.6	8	19°25.9	154°46.2	45 KM SE OF HILO KILAUEA OFFSHORE	EAST RIFT OF
29	23	38	58.7	3.6	CA 5	19°27'	154°48	50 KM E OF UWEKAHUNA KILAUEA OFFSHORE	EAST RIFT OF
30	01	55	34.1	3.7	20	19°53.3	155°32.7	55 KM NW OF UWEKAHUNA NEAR SUMMIT OF MAUNA KEA	
30	13	14	32.0	3.5	30	19°14'	155°14'	M.LOA, 120 KM E OF DESERT SEIS	
30	15	26	19.5	2.8	8	19°28.8	154°48.2	15 KM E OF PAHOA OF KILAUEA OFFSHORE	EAST RIFT
30	21	59	07.0	2.9	CA 10	19°29.0	154°47.2	17 KM E OF PAHOA, OF KILAUEA OFFSHORE	EAST RIFT
31	13	12	07.0	2.8	CA 20	19°30'	154°41'	27 KM E OF PAHOA	EAST RIFT-OFFSHORE
31	17	43	47.4	2.5	CA 8	19°16'	156°00	65 KM W. OF DESERT SEIS. OF HAWAII ISLAND	WEST COAST -OFFSHORE

Table 5.--Distant earthquakes

Times are reported in Greenwich Civil Time, which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation will be presented in table 6, Summary 17 (the first summary of 1960). Location of epicenter, origin times, focal depths, and magnitude reported by other institutions are taken from Seismological Bulletins MSI-226, MSI-227, and MSI-228 published by the U.S. Coast and Geodetic Survey to cover October, November, and December of 1959. Reference will also be made to United States Earthquakes, 1959, another publication of the U.S. Coast and Geodetic Survey.

October 2, 1959

M	Z	T-phase	13:43-13:46
O	Z	T-phase	13:43-13:46
D	Z	T-phase	13:43-13:46
N	Z	T-phase	13:43-13:46
U	Z	T-phase	13:43-13:46
Hi	Z	T-phase	13:44-13:45
Ha	Z	T-phase	13:43-13:45

Not listed in United States Earthquakes, 1959, or in MSI-226

October 2, 1959

U	PEZ	**Start** of the phenomena was about 23:22:30 (150-sec. period).
U	PEN	Start of the phenomena was about 23:22:30 (100-sec. period).
U	PEE	Start of the phenomena was about 23:22:30 (50-sec. period).

Pressure pulse due to weather or to atomospheric nuclear test.
No such events listed in United States Earthquakes, 1959, or in MSI-226.

October 6, 1959

M	Z	eP	05:56:48.5 c
O	Z	eP	05:56:48.3 c
N	Z	iP	05:56:49.0 c
U	Z	iP	05:56:48.5 c

United States Earthquakes, 1959

05:44:37
0.5° N., 122.5° E.
Celebes
h about 200 km.

Table 5.--Distant earthquakes--Continued

October 10, 1959

M	Z	iP	02:15:03.4 d
O	Z	eP	02:15:03.3 d

Not listed in United States Earthquakes, 1959 or in MSI-226.

October 15, 1959

M	Z	iP	06:28:12.5 c
O	Z	eP	06:28:12.8 c
U	PEZ	iP	06:28:18.0 c
U	PEZ	iP?	06:39:26
U	PEZ	eR	06:55:08
U	PEN	iG	06:50:39

MSI-226
06:15:32
0.5° N., 120.5° E.
Celebes
Magnitude 6.5.

October 16, 1959

M	Z	eP	16:27:35.0 c
O	Z	eP	16:27:35.2 c

MSI-226
16:14:53
6° N., 125° E.
Near south coast of Mindanao, Philippine Islands.

October 19, 1959

M	Z	eP	08:36:31.7 d
O	Z	eP	08:36:31.2 d
U	PEN	eS	08:43:50
U	PEZ	eR	08:50:48

MSI-226
08:27:21
27.5° S., 177° W.
Kermadec Islands
Magnitude 6.25.

October 19, 1959

M	Z	iP	14:00:27.3 d
O	Z	iP	26.9 d
D	Z	iP	27.2 d
U	Z	eP	26.9 d
Hi	Z	iP	29.4 c
Ha	Z	iP	32.1 c

MSI-226
13:52:40
22.0° S., 179.5° W.
Fiji Islands Region
h about 600 km.

October 19, 1959

M	Z	iP	16:14:41.7 d
O	Z	iP	41.2 d
D	Z	eP	40.8 d
U	Z	eP	41.1 d

MSI-226
15:55:30
54.5° S., 29.0° W.
Sandwich Islands Region.

October 26, 1959

M	Z	eP	07:44:51.2 d
O	Z	e?	51.8 c
D	Z	e?	51.6 c
U	Z	i?	53.2 c
U	PEZ	eP	52 d
U	PEZ	iS	52:42
U	PEZ	iR	59:59
U	PEN	eSS	58:39
U	PEE	eQ?	58:09
Hi	Z	iP	07:44:53.6 c

MSI-226
07:35:12
37.5° N., 142.5° E.
Near east coast of Honshu, Japan
h about 60 km
Magnitude 6.5.

Table 5.--Distant earthquakes--Continued

October 26, 1959

M	Z	iP	10:37:45.6 d
O	Z	e?	45.8 d
D	Z	eP	46.4 d
U	Z	i?	46.6 c
Hi	Z	iP	44.4 c

MSI-226

10:29:09
51.5° N., 157.5° E.
Near east coast of Kamchatka
h about 150 km.

October 27, 1959

M	Z	T-phase	06:53-06:55
O	Z	T-phase	06:53-06:55
D	Z	T-phase	06:53-06:55
N	Z	T-phase	06:53-06:55
U	Z	T-phase	06:53-06:55
Hi	Z	Tmax	06:53:22
Hi	N	eQ	06:26:17
Ha	Z	Tmax	06:53:55

MSI-226

06:12:17
42.5° N., 127.0° W.
Off coast of Oregon
Magnitude 5-5.25 (Brk).

October 27, 1959

M	Z	eP?	07:01:48.3 c
O	Z	eP?	48.4 c
D	Z	eP?	48.8 c
U	PEZ	eP?	58.0 c
U	PEZ	iS	07:09:04
U	PEZ	iR	07:15:36
U	PEN	iG?	07:12:49
U	Z	eP	07:01:43.5 d
Hi	Z	eP	07:01:55.8 c

MSI-226

06:52:50
45.5° N., 151.0° E.
Kurile Islands
h about 100 km
Magnitude 6.5.

October 29, 1959

M	Z	iP	14:29:07.8 d
M	Z	ipP	23.7 d
O	Z	iP	07.4 d
O	Z	ipP	23.7 d
D	Z	eP	06.5? d
N	Z	iP	07.5 d
N	Z	ipP	23.7 d
U	Z	iP	04.3 c
U	Z	ipP	23 c
U	PEZ	eR?	14:43:41
U	PEN	eS	14:36:45
U	PEN	eR	14:43:49
Hi	Z	iP	14:29:09.9 c

MSI-226

14:19:51
29.5° S., 176.5° W.
Kermadec Islands
Felt on Raoul
h about 60 km
Magnitude 5.75 (Brk).

October 29, 1959

M	Z	iP	14:40:15.1 c
O	Z	iP	15.7 c
D	Z	iP	15.4 c
N	Z	iP	15.2 c
U	Z	iP	14:40:15.3 c
Ha	Z	iP	14:41:06.3 c
Hi	Z	iP	14:40:15.4 c

MSI-226

14:30:24
43° N., 131.0° E.
China-Korea border
h about 550 km
Magnitude 6.25.

October 30, 1959

M	Z	iP	07:12:21.2 c
O	Z	eP	20.2 d
N	Z	iP	19.8 c
U	Z	eP	20.6 c
Hi	Z	iP	23.2 d

Table 5.--Distant earthquakes--Continued

October 30, 1959--Continued

MSI-226

07:04:48
19° S., 177.5° W.
Fiji Islands
h about 450 km.

October 31, 1959

M	Z	iP	04:34:28.7 c
O	Z	iP	28.0 c
D	Z	iP	28.0 c?
N	Z	iP	27.7 c
U	Z	iP	28.3 c
Ha	Z	iP	33.6 d
Hi	Z	iP	32.0 d

MSI-226

04:27:12
16.5° S., 178.0° W.
Fiji Islands (Felt at Apia)
h about 450 km
Magnitude 6.5-6.75.

November 2, 1959

M	Z	iP	20:13:26.6 d
O	Z	iP	26.6 d
D	Z	iP	26.2 d
N	Z	iP	27.0 d
U	Z	iP	27.0 d
U	PEZ--Records lost----------		
U	PEE--Records lost----------		
U	PEN--Records lost----------		

MSI-227

20:03:32
5.5° S., 151.5° E.
New Britain, felt at Pomio, Karlai, Rabaul, and Walindi.
h about 60 km
Magnitude 6.75.

November 5, 1959

M	Z	eP	11:59:04.5 c
O	Z	eP	03.4 c
D	Z	eP	03.6 c
N	Z	eP	04.6 c
U	Z	eP	05.9 c
U	PEZ	eS?	12:05:57
U	PEZ	eR?	12:45
U	PEN	eS?	10:52
U	PEN	eR?	12:19
Ha	Z	iP?	11:59:07 c
Hi	Z	eP	11:59:24.0 c

MSI-227

11:50:17
13.0° S., 166.5° E.
New Hebrides Islands
h about 100 km.

November 8, 1959

M	Z	iP	14:04:54.1 d
O	Z	iP	55.1 d
D	Z	iP	54.8 d
N	Z	iP?	52.6? ?
U	Z	iP	54.8 d
U	SpZ	iP	55.1 d
U	PEZ	iP	55.2 d
U	PEZ	eS?	14:12:59.2
U	PEN	eS?	14:13:01.2
Hi	Z	iP	14:04:55.0 c
Ha	Z	iP	14:04:44.8 d

MSI-227

13:54:55
44.0° N., 140.5° E.
Near west coast of Hokkaido, felt.
Magnitude 6.5.

November 17, 1959

Ha Z T-phase at 02:43±

Not recorded on other instruments. Unable to locate in MSI-227 or in table 2, United States Earthquakes, 1959.

Table 5.--Distant earthquakes--Continued

November 19, 1959

M	Z	iP	11:19:00.9	d
D	Z	iP	00.0	d
U	SpZ	eP	18:58.7	d
U	PEZ	eP?	18:59	?
U	PEN	iS	11:27:23	N
U	PEN	i?	11:34:33	S
U	PEE	iS	11:27:27	W
U	PEE	e?	11:34:35	E
Ha	Z	iP	11:18:59	d

MSI-227

11:08:41
5.5° S., 146.0° E.
Near north coast of New Guinea.
Slight damage at Lae and Madang.
h about 100 km
Magnitude 7.

November 20, 1959

Ha	Z	Tmax	00:35±

MSI-227

23:53:49
42.5° N., 126.5° W.
Off coast of Oregon
Not on other records.

November 22, 1959

M	Z	eP?	12:58:55.7	d
Hi	Z	eP	12:58:58.0	c

(not seen on other records)

MSI-227

12:47:56
3.0° S., 140.0° E.
Near north coast of New Guinea.

November 22, 1959

U	PEN	17:00±
U	PEE	17:00±

(Rayleigh (only) from due south)

MSI-227

16:26:34
54° S., 136° W.
South Pacific Ocean.

November 27, 1959

U	PEN, PEE	00:00±

(Rayleigh (only) from west)

MSI-227

23:09:23 (Nov. 26)
5.5° S., 103.0° E.
Near coast of Sumatra.
Magnitude 6.75.

December 2, 1959

M	Z	iP	09:46:29.9	c
O	Z	eP	30.0	c
D	Z	iP	29.2	c
N	Z	iP	29.6	c
U	Z	iP	31.0	c
U	PEZ	eP	31	c
U	PEZ	eR	10:12:11	
U	PEN	eS	09:56:31	N
U	PEN	iG	10:08:11	N

MSI-228

09:34:00
1° S., 123° E.
Celebes
Magnitude 6.5-6.75.

Table 5.--Distant earthquakes--Continued

December 5, 1959

Ha	Z	T-phase	08:55-08:56

MSI-228

08:13:36
40.5° N., 126.0° W.
Off coast of northern California.
Felt in Humbolt County.
Magnitude 5 (Brk).

December 14, 1959

M	Z	ipP	18:10:18.9 c
O	Z	ipP	16.2 c
D	Z	ipP	18.7 c
U	Z	ipP	19.0 c
Ha	Z	iP	14.1 c

MSI-228

17:58:33
5.5° N., 125.5° E.
Near south coast of Mindanao,
Philippine Islands.
Felt at Davao, General Santos
and Hinazuan.
h about 200 km.

December 14, 1959

U	PEZ	iS	22:13:10
U	PEZ	eR	22:16:10
U	PEZ	iQ	22:19:04
U	PEN	iR	22:16:00

(Short-period records do not show P, or it is lost in eruption tremor.)

MSI-228

22:00:50
52.5° N., 168.0° W.
Fox Islands
Magnitude 6.

December 14, 1959

Ha	Z	iP?	23:41:07.3 c
Ha	Z	ipP	13.7 d
M	Z	iP	23:41:06.2 c
M	Z	ipP	10.4 d
U	PEZ	i?	23:42:52
U	PEE	obscured by tilt drift.	

MSI-228

23:21:56
59.5° S., 31.0° W.
Sandwich Islands
Magnitude 7.

December 22, 1959

M	Z	T-phase	03:20-03:22
O	Z	T-phase	03:20-03:22
N	Z	lost in tremor	
U	Z	T-phase	03:20-03:22
Ha	Z	T-phase	03:19-03:21

MSI-228

02:39:02
40.5° N., 124.0° W.
California (felt in Humbolt Co.)
Magnitude 4.5° (Brk).

December 24, 1959

M	Z	i?	13:20:26.1 d
O	Z	eP?	26.2 c
D	Z	e?	28.3 d

MSI-228

13:08:34
9° N., 126.5° E.
Near north coast of Mindanao,
Philippines.

Table 5.--Distant earthquakes--Continued

December 27, 1959

M	Z	iP?	16:01:41.2 c
O	Z	iP?	42.0 c
D	Z	i?	40.7 c
U	Z	i?	47.5 d
U	PEZ	iP?	01-37 d
U	PEZ	i?	03-20
U	PEZ	iS?	08-39
U	PEZ	iR?	14-49
U	PEN	iS	08-20
U	PEE	iS	08-31
Ha	Z	T-phase	16:51-16:53

MSI-228

15:52:55
56° N., 162.5° E.
Near east coast of Kamchatka
Magnitude 6.75-7.

December 28, 1959

M	Z	iP	07:29:12.0 c
O	Z	eP	12.3 c
D	Z	iP?	14.3 c
N	Z	eP	12.3 c
U	Z	eP	13.2 d
U	PEZ	iS?	36:14
U	PEZ	iR	42:07
U	PEN	eS	36:05

MSI-228

07:20:32
52.5° N., 160° E.
Near southeast coast of Kamchatka
Magnitude 6.5.

12/7/66

[redacted]

I am sending you the last of the "chapters" in the Table of Contents, Summary 16. It is probably not vital to the period under discussion; a better place would be Summary 17 during which quarter several stations were improved. Also that would be a good time for the introduction of the enclosed table comparing SW rift seismicity with that on the east rift as represented on the L-O vs. the HVO-1.

The tables I have sent you provide the material for a final chapter of the Summary of Activities, that is: ~~Post~~-eruption events. That brief account could contain the SW vs. east data, tilting and deformation after 13 November, and significant quakes in Hawaii after 14 Nov. 1959.

I hope you have the time and interest to help finalize Summary 16. Its printing and distribution will certainly expedite completion of 17 and the rest of the back-log.

harold

H.

If you are missing any of the proposed text, tables or illustrations of #16, please let Ellen. Ticil is typing mats for Tables 4 & 5 (There are no modern MS. on hand

Pahoa (East Rift)

SW Rift	L-O	Z	
0	0	—	12/20/59
3	0	—	12/21
1	2	—	12/22
5	2	—	12/23
6	0	—	12/24
22	2	—	12/25
25	9	—	12/26
15	30	—	12/27
25	40	—	12/28
25	45	—	12/29
40	12	—	12/30
35	22	—	12/31
	15	—	1/1/60
	15	44	1/2/60
	8	57	1/3/60
	11	35	1/4/60
	10	38	1/5/60
	23	50	1/6/60
	5	25	1/7/60
	55	83	1/8/60
	50	108	1/9/60

Jerry --- the above is an abstract from the notes of 4th. quarter 1959, plus some data you had listed for the first 9 days of 1960. What you wanted to do was to compare L-O with the Pahoa HVO-1. I want to add the southwest rift dimension so as to show that (up to a point in time) both the east and the southwest rifts of Kilauea were equally seismic. In fact, southwest had more activity on some days. For the purpose of my hypothesis I am lumping all local events on Desert as southwest rifters; this is despite the strong probability that some of them are Kaoiki. I could use the table above and stop with 12/31; or I could refrain from mentioning it and let you make the complete analysis in Summary 17. Please advise. To fill in the blanks above, simply look up the daily HVO sheets and use the Desert totals labelled SW or Kaoiki Fault.

harold

This looks ok, Harold. If you go beyond 12/31 you should [illegible] numbers [illegible] again [illegible]

[illegible]

"Official" starting & finishing times of the 1959 Kilauea Iki eruption

1)	11-14-59	8:08 pm	2008	9)	12-13-59	5:08 am	
	11-21-59	7:25 pm	1925		12-13-59	1:40 pm	8 1/2
2)	11-26-59	1:00 am	15	10)	12-14-59	7:05 am	
	11-26-59	4:35 pm			12-14-59	10:40am*/	8 1/2
					12-14-59	3:36 pm	
3)	11-28-59	4:45 pm	3/				
	11-29-59	9:47 pm		11)	12-15-59	6:11 am	5
					12-15-59	10:25 am	
4)	12-4-59	1:00 am					
	12-5-59	9:27 am	32 1/2	12)	12-15-59	7:30 pm	2
					12-15-59	9:25 pm	
5)	12-6-59	2:48 pm					
	12-7-59	12:23 am	11 1/2	13)	12-16-59	1:35 pm	
					12-16-59	5:19 pm	3 1/2
6)	12-7-59	3:30 pm					
	12-8-59	2:45 am	11 1/2	14)	12-17-59	2:15 am	
					12-17-59	4:02 am	2
7)	12-8-59	1:00 pm					
	12-8-59	3:55 pm*/		15)	12-17-59	11:10 am	
	12-8-59	8:12 pm	7		12-17-59	1:50 pm*/	4 1/2
					12-17-59	3:32 pm	
8)	12-10-59	3:15 pm					
	12-11-59	2:30 am*/	31 1/2	16)	12-19-59	3:01 am	3
	12-11-59	10:48 pm			12-19-59	6:16 am	
			7 1/4				

*/ Beginning of discernible lava output.

Volumetric Progress of 1959 Kilauea eruption in Kilauea Iki

Date	Time	Duration (Hours)	Depth of lake (Feet)	Elevation of lake (Feet)	Area of lake (Acres)	Vol. increase or decrease ($Yds^3 \times 10^6$)	Total volume ($Yds^3 \times 10^6$)	Rate ($\frac{Yds^3}{Hour} \times 10^3$)
				1st phase				
Nov. 14	8:08 p.m.	0	0	3130	37	--	0	0
15	6:00 p.m.	22	15	3145	39	0.9	0.9	40
16	12:15 p.m.	18¼	25	3155	40	0.6	1.5	35
16	2:00 p.m.	1-3/4	27	3157	40½	0.1	1.6	60
17	10:45 a.m.	20-3/4	55	3185	45	1.9	3.5	90
17	2:00 p.m.	3¼	60	3190	46½	0.4	3.9	125
17	8:30 p.m.	6½	72	3202	48	0.9	4.8	140
18	12:00 noon	15½	112	3242	56	3.3	8.1	210
18	11:15 p.m.	11¼	150	3280	66	3.7	11.8	330
19	11:50 a.m.	12½	190	3320	78	4.6	16.4	370
19	9:15 p.m.	9½	225	3355	88	4.7	21.1	495
20	12:10 p.m.	15	270	3400	106	7.0	28.1	465
21	9:30 a.m.	21¼	320	3450	120	9.1	37.2	425
21	7:25 p.m.	10	335	3465	125	2.9	40.1	290

23	10:00 a.m.	38½ (1)	328	3458	123	-1.4	38.7	-35
				2nd phase				
26	1:00 a.m. to 4:35 p.m.	15½	351	3481	130	4.7	43.4	300
26	7:40 p.m.	10 ?	341	3471	127	-2.0	41.4	-200
27	12:30 p.m.	17	321 (2)	3451 (2)	121	-3.9	37.5	-230
				3rd phase				
28 to 29	4:45 p.m. to 3:00 p.m.	22	331	3461	124	2.0	39.5	90
29	9:47 p.m.	6-3/4	341	3471	126	2.0	41.5	300
Dec. 1	3:00 p.m.	41¼	329 (3)	3459 (3)	123	-2.4	39.1	-60
				4th phase				
4	1:00 a.m. to 11:25 p.m.	22½ (4)	375	3505	138	9.7	48.8	430
5	3:30 a.m.	4	385	3515	142	2.2	51.0	550
5	6:30 a.m.	3	395	3525	145	2.3	53.3	770
5	7:30 a.m.	1	387 (5)	3517 (5)	142	-1.9	51.4	-1900
5	9:27 a.m.	2	394	3524	145	1.6	53.0	800

5	11:55 a.m.	2½	379	3509	140	-3.3[6] 14.4	49.7[6]	-1320
5	12:30 p.m.	½	374	3504	137	-1.1 15.5	48.6	-2200
6	2:48 p.m.	26	361	3491	134	-2.7 18.2	45.9	-104
				5th phase				
6	2:48 p.m. to 11:00 p.m.	8	400	3530	147	8.6	54.5	1080
7	12:23 a.m.	1½	403	3533	148	0.7	55.2	470
7	3:30 p.m.	13	375	3505	138	-6.2 24.4	49.0	-480
				6th phase				
7 to 8	3:30 p.m. to 2:45 a.m.	11¼	413	3543	152	8.6	57.6	760
8	3:15 a.m.	½	411	3541	151	-0.5 24.9	57.1	-1000
8	12:00 noon	8½	389	3519	143	-4.9 29.8	52.2	-580
				7th phase				
8	1:00 p.m.[7] to 8:12 p.m.	7¼[7]	411	3541	151	4.9	57.1	1150
9	10:45 a.m.	14½	390	3520	143	-4.7 34.5	52.4	-320
10	3:15 p.m.	28½	378	3508	139	-2.6 37.1	49.8	-91

8th phase

10 3:15 p.m. to 11 10:48 a.m.	19½[8]	414	3544	153	8.1		57.9	980
11 11:30 a.m.	3/4	409	3539	150	-1.2	38.3	56.7	-1600
11 12:00 noon	1/2	407	3537	150	-0.5	38.8	56.2	-1000
12 10:00 a.m.	22	382	3512	141	-5.5	44.3	50.7	-250
13 7:20 a.m.	21½	379	3509	140	-.6	44.9	50.1	-28

9th phase

13 5:08 a.m. to 13 1:40 p.m.	8½	413	3543	152	7.5		57.6	880
13 3:45 p.m.	2	395	3525	145	-4.1	49.0	53.5	-2050
14 10:00 a.m.	18¼	369	3499	136	-5.0	54.0	48.5	-270

10th phase

14 7:05 a.m.[9] to 14 3:36 p.m.	8½[9]	409	3539	150	8.3		56.8	1380
14 4:05 p.m.	1/2	406	3536	149	-0.6[10]	54.6	56.2[10]	-3000
15 8:00 a.m.	16	379	3509	140	-5.8	60.4	50.4	-360

11th phase

15	6:11 a.m. to 8:00 a.m.	1-3/4	388	3518	143	1.7		52.1	970
15	10:25 a.m.	2½	405	3535	149	3.5		55.6	1400
15	11:15 a.m.	3/4	400	3530	147	-1.1	61.5	54.5	-1500
15	8:30 p.m.	9¼	382	3512	141	-3.4	64.9	51.1	-370

12th phase

15	7:30 p.m. to 8:30 p.m.	1	387	3517	142	1.0		52.1	1000
15	9:25 p.m.	1	396	3526	146	1.9		54.0	1900
16	10:15 a.m.	13	376	3506	138	-4.1	69.0	49.9	-315

13th phase

16	1:35 p.m. to 4:25 p.m.	3	392	3522	144	3.3		53.2	1100
16	4:50 p.m.	½	394	3524	143	0.5		53.7	1000
16	5:19 p.m.	½	396	3526	146	0.4		54.1	800
17	2:45 a.m. 12:45?	7½	381	3511	140	-3.2	72.2	50.9	-430

14th phase

17	2:15 a.m. to 4:02 a.m. 17	1-3/4	393(11)	3523	144	2.4		53.3	1350
17	11:00 a.m.	7	387	3517	142	-1.3	73.5	52.0	-190

15th phase

17	11:10 a.m. to 3:32 p.m.	4¼	398	3528	146	2.2		54.2	1250
17	6:00 p.m.	2½	395	3525	145	-0.6	74.1	53.6	-240
18	3:00 p.m.	21	378	3508	139	-3.6	77.7	50.0	-170

16th phase

19	3:01 a.m. to 6:16 a.m. 19	3¼	403	3533	148	5.4		55.4	1600
19	11:15 a.m.	5	392	3522	144	-2.2	79.9	53.2	-480
20	1:00 p.m.	25-3/4	382	3512	141	-2.1	82.0	51.1	-82
			367	3497	136	-3.0	85.0	48.1	

3130

367.

51.1 at 382

48.5 at 369

2.6

3

13

2.6

48
87
135

Footnotes:

(1) This subsidence probably occurred largely during the first few hours of the period.

(2) These figures are approximate. Total subsidence of east pond was 25-30 feet; smaller west pond subsided 35-45 feet.

(3) These figures are approximate. Subsidence of east pond was approximately 7 feet; smaller west pond subsided irregularly between 15-30 feet.

(4) Strong lava extrusion only during last half of this period.

(5) Visual estimate of subsidence in pond during eruption.

(6) Volume figures from end of 4th phase through the 16th phase, have taken into consideration the volume of the "Black Ledge".

(7) No appreciable lava output until 3:55 p.m., December 8, 1959.

(8) No appreciable lava output until 2:30 a.m., December 11, 1959.

(9) No appreciable lava output until 10:40 a.m., December 14, 1959.

(10) From 10th phase through 16th phase no appreciable lava flowed over small west pond.

(11) Estimated. Lava level never rose above "Black Ledge."

(12) No appreciable lava output until 1:50 p.m., December 17, 1959.

Table B: Eruption Statistics Compiled from Several National Park Information Releases

1959 Eruption Statistics (as of January 1, 1960)

Kilauea Iki Crater, the site of the 1959 eruption, is at the head of the SE rift zone of Kilauea Volcano and is less than a mile from the Kilauea summit crater. When this eruption began, lava fountains played along the rift outbreak about 1/2 mile long on the south wall of Kilauea Iki. Within 24 hours the activity was restricted to a single fountain playing at the west end of the crater. All further activity centered around this fountain. After each phase of the eruption the lake level lowered, as the crust cooled and as lava poured back into the vent.

Phase	Starting hour (HST)	Date	Finishing hour	Duration (hours)	Maximum Fountain Height (feet)	Maximum Lake Depth (feet)	Minimum Lake Depth (after this phase) (feet)
1	20:08	Nov. 14-21	19:25	168	1,250	335	328
2	01:00	Nov. 26	16:35	15-1/2	1,000	351	321
3	16:45	Nov. 28-29	21:47	29	1,700	341	329
4	01:00	Dec. 4-5	09:27	32-1/2	650	395	361
5	14:48	Dec. 6-7	12:23	9-1/2	1,250	403	375
6	15:20	Dec. 7-8	02:45	11-1/4	800	413	389
7	13:00	Dec. 8	20:12	7-1/4	1,400	411	378
8	15:15	Dec. 10-11	10:48	19-1/2	1,100	414	379
9	05:08	Dec. 13	13:40	8-1/2	800	413	369
10	07:05	Dec. 14	15:36	8-1/2	1,100	409	379
11	06:11	Dec. 15	10:25	4-1/4	1,200	405	382
12	19:30	Dec. 15	21:25	2	1,100	396	376
13	13:35	Dec. 16	17:19	3-3/4	1,150	396	381
14	14:15	Dec. 17	04:02	1-3/4	1,150	393	387
15	11:10	Dec. 17	15:32	4-1/4	1,900*	398	378
16	03:01	Dec. 19	06:16	3-1/4	1,500	403	382

* Highest measured in Hawaii.

Original to Jerry
Carbon to Chester

April 12, 1961

FOR USE IN SUMMARY 15 or 16

1956 Volcanic and Seismological Conditions, HVO summaries 1,2,3, and 4, 5 pages each. U.S. Geological Survey

1957 Volcanic and Seismological Conditions, HVO Summaries 5, 6, 7, and 8. 5 pages each. U.S. Geological Survey

Theory of the Electromagnetic Seismograph, J.P. Eaton, S.S.A. Bull., vol. 47, p. 37-75, Jan. 1957

Calibration of the Short-Period Sprengnether Seismograph, J.P. Eaton and Perry Byerly, S.S.A. Bull., vol. 47, p. 155-166, April 1957

Impact Scars at Kilauea, C. K. Wentworth, Pacific Science, vol. XI, n. 4, Oct. 1957

1958 Volcanic and Seismological Conditions, Summaries 9, 10, 11, and 12. 7 to 13 pages each. U.S. Geological Survey

1959

The tsunami of March 9, 1957, on the Island of Hawaii, G.D. Fraser, J.P. Eaton, C.K. Wentworth, S.S.A. Bull., vol. 49, p. 79-90, Jan. 1959

Seismological Interpretation of Earthquake-Induced Water-Level Fluctuations in Wells, J.P. Eaton and K.J. Takasaki, S.S.A. Bull., vol. 49, p. 227-245 July 1959

A Portable Water-Tube Tiltmeter, J.P. Eaton, S.S.A. Bull., vol. 49, p. 301-316, October 1959

1960

Kilauea Volcano, 1959, J.P. Eaton and D.H. Richter, Geotimes, Jan-Feb., 1960, p. 24-27 and 45.

The 1959-60 eruption of Kilauea Volcano, D.H. Richter and J.P. Eaton, The New Scientist, April 1960, p. 994-997

The xenolithic nodules of the 1800-1801 Kaupulehu lava flow of Hualalai Volcano and their implication, D.H. Richter, Proceedings of Hawaiian Academy of Science, May 28, 1960 (Abstract)

Pahala Ash, Prof. Paper 400-B, Geol. Survey Res. 1960, p. 354-355, 1960

How Volcanoes Grow, Eaton, J.P. and Murata, K.J., Science, Oct. 7, 1960, vol. 132, No. 3432, p. 925-938.

Geochemical Research during the 1959-60 activity of Kilauea Volcano, The Geochemical News, p. 1-12, Dec. 1960

1961 Occurrence of silicified woods in Hawaii, Am. Jour. Science, v. 259, n.3, p. 229-230, Mar. 1961 R.T. Okamura and J.C. Forbes,

HVO Contribution 162, 160.

November 1959 - Monthly Report

An eruption of Kilauea volcano started Saturday night, Nov. 14, in Kilauea Iki, a pit crater immediately adjacent to the summit caldera. After first breaking out on a wide front, the lava is now issuing from a single large vent in a fiery fountain 700 feet high. It is an awesome sight, especially at night. We are so occupied that we must beg off giving a detailed account at this time.

original sent to Ed Roedder
for his files + JT Pecora
12/7/60

9-1225 (Mar 1958)	Dept of Interior - Geological Survey Geochemistry & Petrology Branch PROJECT MONTHLY REPORT	For the period: From Sept. 21, 1959 To Oct. 17, 1959

Project Number and Title	Project Leader
910501 Hawaiian Volcano Observatory	K. J. Murata

REPORT WHEN APPROPRIATE ON THE FOLLOWING TOPICS:

I. Referred samples completed and on hand at the end of the month.
II. Manuscripts reviewed, memorandum and progress reports written, and status of manuscripts in active preparation.
III. Technical progress of project, significant results, problems encountered.
IV. Trips, visitors, conferences and committee tasks.

II, III.

Kilauea continues to show much subsurface activity. It apparently has reversed its trend of the past two months and seems to be bulging upward again. Much manpower (Eaton, Krivoy, Loucks, Forbes, Richter, and Francis) is being devoted to obtaining additional tiltmeter data needed to evaluate the new trend. Small, shallow earthquakes are also being recorded at a rate of several hundred per day at a single station on the edge of Halemaumau pit. The meaning of these highly localized earthquakes is, at present, conjectural. Eaton, Krivoy, and Yamamoto made a ground-microphone survey all around Halemaumau in an attempt to detect any sound from the shallow disturbances but found none.

Richter and Murata prepared illustrations and continued writing the paper entitled "Kinetics of eruption and composition of basaltic lavas".

Wentworth is organizing the Observatory file of photographs and incorporating into it the collection left to the Observatory by the late Harry O. Wood.

Ault and Kojima are studying the effects of amplifier stability, scanning rate, and sample pressure control on the sensitivity of the mass spectrometer. Using liquid air delivered from Honolulu, they have also started concentrating the minor constituents of the gas samples by freezing out the major constituents.

Okamura continued separating and analyzing olivines from Mauna Kea basalts.

IV. Visitors

G. Boudette) G. Taylor)	U.S.G.S. Enroute to Antarctica	Field examination of Hawaiian basalts
Rear Admiral F. D. Foley, USN, Honolulu) H. Sugiyama, Statistician, Osaka University) L. Bjerrum, Norwegian Geotechnical Institute)		General visit of Observatory

9-1225 (Mar 1958)	Dept of Interior - Geological Survey Geochemistry & Petrology Branch PROJECT MONTHLY REPORT	For the period: From Nov 17, 1959 To Dec 18, 1959

Project Number and Title	Project Leader
910501 Hawaiian Volcano Observatory	K. J. Murata

REPORT WHEN APPROPRIATE ON THE FOLLOWING TOPICS:

I. Referred samples completed and on hand at the end of the month.
II. Manuscripts reviewed, memorandum and progress reports written, and status of manuscripts in active preparation.
III. Technical progress of project, significant results, problems encountered.
IV. Trips, visitors, conferences and committee tasks.

II, III

The eruption at Kilauea Iki has developed a periodicity heretofore not recorded for Hawaiian volcanoes. The initial week-long phase deposited about 40 million cubic yards of lava in the pit crater. The pond of lava rose high enough to encroach upon the vent, situated half way up the side of the crater. In succeeding eruptions, when the lava fountain (max. height 1,900 ft) quit about 8 million cubic yards of the fresh lava poured back down the vent. This cycle of eruption and withdrawal of lava has happened 14 times to date.

Eaton and Krivoy by seismic prospecting have located the probable shallow magma chamber involved in this peculiar geyser-like activity. They took advantage of a prolonged series of deep earthquakes to outline an area in the summit region of Kilauea in which the deep quakes were detected very poorly or not at all.

Richter and Wentworth have been keeping track of volumes of lava discharged. Richter and Eaton are preparing a preliminary account of the eruption for Geotimes.

Ault and Kojima have been collecting and analyzing the gases. SO_2 is so strong in many gas vents that approach is impossible without masks. H_2S cannot be detected. After choking on SO_2 for a while one is convinced that SO_2, not H_2S, is the primary magmatic sulfur gas.

Murata and Okamura have been collecting lavas and determining precent SiO_2. After varying between 46.3 and 49.5 percent in the early stages, silica has more or less stabilized at around 46.8 percent.

9-1225 (Mar 1958)	Dept of Interior - Geological Survey Geochemistry & Petrology Branch PROJECT MONTHLY REPORT	For the period. From December 19, 1959 To January 20, 1960
Project Number and Title		Project Leader
0-910501 Hawaiian Volcano Observatory		K. J. Murata

REPORT WHEN APPROPRIATE ON THE FOLLOWING TOPICS:

I. Referred samples completed and on hand at the end of the month.
II. Manuscripts reviewed, memorandum and progress reports written, and status of manuscripts in active preparation.
III. Technical progress of project, significant results, problems encountered.
IV. Trips, visitors, conferences and committee tasks.

I, III.

After the eruption at the summit stopped on Dec. 19, Kilauea Volcano was relatively quiet for a couple of weeks. Then a rash of earthquakes were recorded in the East rift zone 30 miles down the volcano. Eaton and Krivoy installed a more sensitive seismograph in our Pahoa station and also reconnoitered the district with their portable seismograph. Many earthquakes were recorded by them at a rate of 3 a minute around the village of Kapoho in the rift zone.

On January 13, an old graben at Kapoho sank about 3 feet and Civil Defense called for voluntary evacuation of the village. Many strong quakes jarred us unpleasantly down there all day. At 7:35 that evening a rift 0.7 mile long suddenly opened in the middle of the graben and the typical line of fire fountains heralded the start of the current flank eruption. As to date, the graben has become completely filled with 20 to 50 feet of lava which is now filling out on both sides.

All project members are taking turns going down the mountain to make observation on the eruption. Jerry and Don are making daily flights in a National Guard plane to plot the movements of the lava. Wayne and Kojima are collecting and analyzing the gases while Okamura is determining silica in lava samples that Murata collects daily. The staff armed with the experience of the recent summit eruption is working effectively but the terrible destructiveness of the volcano in this one fertile valley is depressing.

9-1225 (Mar 1958)	Dept of Interior - Geological Survey Geochemistry & Petrology Branch PROJECT MONTHLY REPORT	For the Month: From Feb. 20, 1960 To Mar. 18, 1960
Project Number and Title 0-910501 Hawaiian Volcano Observatory		Project Leader R. T. Minkler

REPORT WHEN APPROPRIATE ON THE FOLLOWING TOPICS:

I. Referred samples completed and on hand at the end of the month.
II. Manuscripts reviewed, memorandum and progress reports written, and status of manuscripts in active preparation.
III. Technical progress of project, significant results, problems encountered.
IV. Trips, visitors, conferences and committee tasks.

II, III. The Kapoho cone stopped erupting on Feb. 19. Another portion of the floor of Halemaumau pit collapsed on March 11. The daily number of earthquakes at both places has dropped to normal levels. The 1959-60 eruption of Kilauea Volcano appears to be over finally.

Eaton and Krivoy were occupied with the continuing swarm of shallow earthquakes that were generated as the summit kept detumescing. There were so many quakes that the daily seismograms could only be given a preliminary scanning and then added to the big backlog awaiting systematic examination and measurement. Eaton kept close tab on the Pahoa seismograph for indications of possible resurgence of activity at Kapoho.

Krivoy finished the field work on the first phase of the gravimetry of Kilauea and returned the gravimeter to the Geophysics Branch. His progress report on this work has been reviewed by Joesting and Pakiser of that Branch.

Richter and Eaton completed a manuscript entitled "The 1959-60 eruption of Kilauea Volcano," for the New Scientist. Richter continued mapping the collapse features in Halemaumau and began a more detailed geologic mapping of the Kapoho area.

Wentworth studied bombs and other ejecta from the Kapoho cone.

Ault and Kojima continued sampling gases from the Kilauea Iki cone, Kapoho cone, and Sulfur Banks. They found widely different CO_2/SO_2 ratios from different localities, viz., Kapoho, 0.6 to 1.8; Sulfur Bank, 100; and Halemaumau, 2000.

Murata and Okamura continued determining silica in lavas and pumice from Kapoho. Murata started writing a paper entitled "Composition of Hawaiian olivines".

IV. Conferences

Chas. Anderson, James Balsley, and James Heroy met with the staff to discuss the program and staffing of the project.

Geo. Kennedy, UCLA, and G. Higgins, U. Calif. conferred with the staff on a project to drill into the molten pond of lava in Kilauea Iki.

E. J. Ellis, DSIR, New Zealand, lectured to staff on the geology and chemistry of geothermal power in New Zealand.

Monthly Report
March 14, 1960

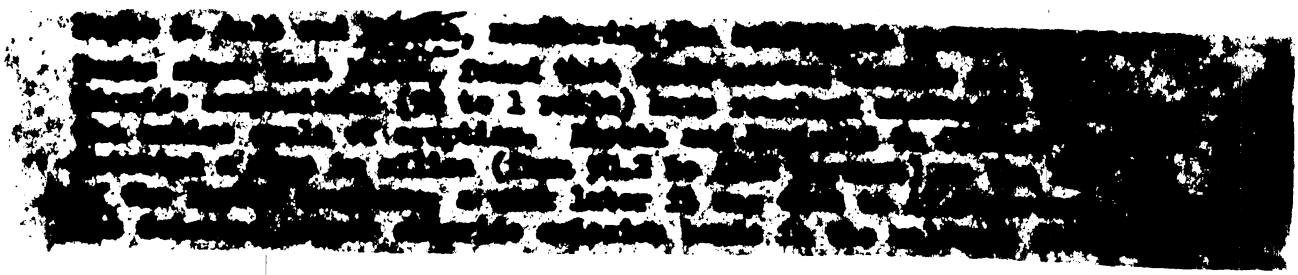
The first discovery of Eocene (=Tertiary b) and Oligocene (=Tertiary c) in the Fiji Islands has been made by W. Storrs Cole from a suite of small collections made by the Fiji Geological Survey in the course of their detailed mapping program. The assemblages of larger foraminifera are closely related to those from Guam, Saipan, and Eniwetok.

Geochemistry and Petrology Branch

Kiguma J. Murata, Scientist in Charge of the Hawaiian Volcano Observatory, reports that volcanic activity at Kilauea has diminished to a relatively feeble eruption at Kapoho, and that further outbursts are less likely. He writes: "The flank eruption of Kilauea within the Kapoho graben poured out over 160 million cubic yards of lava and, as yet, unmeasured amounts of pumice to fill the graben to overflowing and to make about 400 acres of new land around Cape Kumukahi. The villages of Kapoho and Koae were virtually destroyed. Plantations and forests of the region now lie under 10 to 100 feet of lava. All of the barriers erected by Hawaii Civil Defense to stop the flows were overwhelmed and buried. Since February 6, the vent system has stopped erupting lava and is putting out variable amounts of cinder and pumice which are forming a cone over 400 feet high.

"The rapid and voluminous outpouring of lava at Kapoho not only caused the usual deflation of the summit of the Volcano, but led to a sudden collapse of the floor of Halemaumau pit which fell 350 feet on February 7. The sequence starting with the summit eruption (Kilauea Iki), followed by the flank eruption (Kapoho), and finally (we hope) by the collapse at the summit represents a remarkably complete manifestation of the eruptive scheme of the Volcano."

Jerry P. Eaton and Harold L. Krivoy, assisted by Burton J. Loucks, John C. Forbes, William H. Francis, and Akira Yamamoto, worked night and day keeping track of the deflation of the summit seismologically and through tilt measurements. The intense earthquake activity that marked the original inflation of the Volcano reappeared during its deflation. Eaton and Krivoy also temporarily installed the portable seismograph in the Naalehu station in order to get better fixes on the deep earthquakes accompanying the deflation of the summit. Krivoy made extensive series of gravity measurements both in the summit region and around Kapoho. The results for the summit region show a remarkably well defined positive anomaly at the summit. Donald H. Richter bore the brunt of daily observation of the eruption at Kapoho both on the ground and from the air, and kept Civil Defense officials advised about the movements of the lava. He is preparing maps of the Halemaumau collapse and the Kilauea Iki eruption.



9-1225 (Mar 1958)	Dept of Interior - Geological Survey Geochemistry & Petrology Branch PROJECT MONTHLY REPORT	For the period: From Mar. 19, 1960 To April 19, 1960
Project Number and Title 0-910501 Hawaiian Volcano Observatory		Project Leader K. J. Murata

REPORT WHEN APPROPRIATE ON THE FOLLOWING TOPICS:

I. Referred samples completed and on hand at the end of the month.
II. Manuscripts reviewed, memorandum and progress reports written, and status of manuscripts in active preparation.
III. Technical progress of project, significant results, problems encountered.
IV. Trips, visitors, conferences and committee tasks.

Sitting practically in the backyard of the Observatory at Kilauea Iki is the slowly cooling pond of molten lava almost 2,500 ft. in diameter and 365 ft deep. The pond now has a firm crust about 10 ft. thick and can be walked over freely. It is a sort of thing rarely available for study anywhere in the world. We have plans for various geological, geophysical, and geochemical experiments on the pond, and the entire staff was involved in some exploratory work last month. A hole 7 1/2 feet deep was put down into the crust with a small electric drill and a carbide-tipped bit. Temperatures at various depths were as follows: 2 ft-260°C; 4 ft-505°C; 6 ft-675°C; and 7 1/2 ft-760°C; indicating a gradient of about 100°C per foot. The hot rock toward the bottom of the hole tended to yield plastically and had to be chilled with water before the bit would cut into it.

Eaton, Krivoy, Loucks, Forbes, Yamamoto, and Francis made another series of tilt measurements around the net of station. The subsidence of the summit in the vicinity of Halemaumau between Jan. 21 and April 1 attained the astonishing total of 5 ft. Eaton prepared the following documents (1) Critique of lava barriers, (2) Review memo of Survey involvement with barriers during the past decade, and (3) A review article (with Murata) entitled "Watching volcanoes grow" for publication in Science.

Krivoy computed and plotted transient gravity values determined during the eruption and started writing a second progress report on the gravity work. He also started working away on the big backlog of seismograms that has accumulated.

Richter laid out and leveled a baseline across the Kilauea Iki lava pond for orienting the various investigations to be carried out there. He also started organizing the available material for a comprehensive paper on the physical aspects of the 1959-60 Kilauea eruption.

Ault and Kojima experimented with methods of sampling gases which would maintain the relative amounts of the components at equilibrium at the higher temperatures. They discovered the important role of water in the kinetics of the reaction $2H_2S + SO_2 \rightarrow 3/2\ S_2 + 2H_2O$. In a wet sample the reaction proceeds rapidly to completion, but in a dry sample the reactants persist for about a day.

Hawaiian Volcano Observatory
1960 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Draft of
Summary 17
January, February, and March 1960
by Michael P. Lane

Open-File Report 2007-1320
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO ~~SUMMARY~~ OBSERVATORY

SUMMARY 17

January, Febuary, March, 1960

by
Michael P. Lane

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Geology:

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CHRONOLOGICAL SUMMARY--FLANK ERUPTION

During the last quarter of 1959, Kilauea Volcano ~~began the most complete sequence of eruptive activity in its history~~ entered the final dramatic stages of an unusually complete sequence of eruptive activity. Eruption events in that quarter consisted of inflation of the volcano, and a major outpouring of lava at the summit from November 14 to December 21, 1959.

Three major eruption events took place in the first quarter of 1960, the flank eruption along the East rift zone of Kilauea, the rapid deflation of the summit, and finally the collapse of the summit caldera. Two notable phases of seismic activity which began in the fourth quarter of 1959 continued into the first month of 1960; weak harmonic tremor continued on the North-Pit seismometer, and the swarm of small earthquakes which began the last week of December was recorded in ever-increasing number on the Pahoa seismographs.

On January 2, the Pahoa station was improved by the addition of a short-period, high-gain, optically-recording unit to the set of horizontal mechanical instruments already in the vault. This change resulted in more accurate daily earthquakes counts from the Pahoa station.

It is interesting to note on graph the comparison in activity along the east rift zone and SW rift zone during the last week in December.

Both zones were quite active with the SW zone generally having more events per day than the East rift zone. This led Observatory personnel to speculate that a flank eruption might occure along the SW rift. This feeling was tempered during the first week of January when activity along the SW rift decreased from 208 events per *week* to 93 events per week. At the same time, activity along the east rift zone also decreased as compared to the last week in December.

During the second week in January earthquakes activity sharply increased along the east rift zone. The number of earthquakes recorded on the Pahoa seismometer rose from 100 on January 8 to more than a 1000 on January 12. The sources of the east rift zone events were located by the use of a sensitive portable seismograph. At the beginning of the second week in January, the epicenter migrated down the rift zone toward the sea. On January 12, the source was traced to a small graben situated abrest the east rift zone just north of the village of Kapohoa and ten km east of Pahoa.

On January 13, at approximately 05h45m earthquakes from the vicinity of Kapoho sharply increased in both size and frequence while the hypocenter of these events moved upward to a very shallow depth.① During the afternoon, however, seismic activity along the east rift zone gradually diminished. The Kapoho graben began subsiding the morning of January 13 and continued to drop until mid-afternoon. Along the south side of the graben movement occured along

① Eight earthquakes with magnitude of 3.0 or above took place along the east rift zone east of Pahoa. This series began at 12:18 with a 3.0 magnitude event and continued until 20:12. The largest ~~event registered on the Seismic scale~~ quake had a magnitude of 3.5.

1.7 miles of the Kopoho fault, while on the north side of the graben (Koae fault) movement occured along a pre-existing fault scarp. Maximum vertical displacement was respectively : Kapoho fault 3½ feet, Koae fault 4 feet. Movement along both faults was confined to vertical displacement and no lateral slippage was either measured or observed. The cessation of subsidence was accompanied by a marked decrease in seismic activity, and after 15h00m only an occasional earthquake was recorded along the rift.

At 19h30m on January 13, harmonic tremor began recording on the Pahoa seismometer and the flank eruption broke out along a fissure one km in length which split the center of the graben. This eruptive fissure continued to expand toward the east with the nearly continous line of fountains attaining a maximum length of 3500 feet. Initial fountains were between 50 and100 feet high while fountain heights reached a maximum of 300 feet from the newer eruptive vents to the east.. In ½ hour after the eruption began, fountaining abated noticeable. On the west end of the initial outbreak fountaining became feeble and at 22h00m fountaining from the eastern vents of the fissure ceased abruptly. Although many fountains had nearly ceased, the rate of lava extrusion continued to rise. Lava from the western most vents flowed southward while lava from the eastern vents flowed in a northerly direction. When the lava from the eastern vents reached the north edge of the graben and its high fault scarp (20 to30 feet) it turned and

flowed in a north eastward direction along the fault scarp. Thus, on the north side of the graben, the lava was confined in a narrow trough between the Koae fault scarp and the northward tilted graben floor. In this trough, the lava formed a narrow flow and advanced rapidly toward the sea.

At 23h15m large quantites of brackish ground water gained access the the eruptive conduits with resulting loud roaring explosions and spewing of dark clouds from the vents.

Activity along the eruptive fissures continued into January 14. Fountains gradually dimished and brackish water continued to enter the lava conduits. This ground water provided the fuel for the erratic series of steam explosions which took place on January 14. The following briefly summarizes the steam and ash eruptions from different vents along the fissure for one period of observation.

01:00 -- Steam and ash emission lasting 50 minutes

02:00 -- Minor steam emission

04:15 -- Dense black clouds of steam and ash lasting for 2 minutes

05:50 -- Steam blast lasting for 2 minutes

06:00 -- Violet steam emission lasting more than an hour

07:40 -- Steam and ash emission lasting for 35 minutes

08:50 -- Steam and ash emission lasting for 2 hours

09:45 -- Steam emission lasting approximately 1 minute

09:50 -- Steam blast lasting approximately 1 minute

By 10:30 steam and ash emission had essentially stopped.

By 10h30m on January 14, fountaining was restricted to a 700 foot segment of the original fissure. Lava had advanced to within 0.3 miles of the sea by mid-afternoon. At 20h00m fountain heights had increased to 250-300 feet.

[((During the second week of January, seismic activity at the summit was relatively quiet with the exception of January 13. Twice as many events were recorded on this ~~date~~ day compared to either the previous day or the following day.))]

During the early hours of January 15, there was very little change in the fountaining. Lava continued to advance toward the sea and at 08h08m the main lava front reached the sea a few hundered feet south of Kaoko Point. Fountain activity slowly increased during the day. By 20h00m fountaining was restricted to a vent at the east end of the eruptive fissure. This fountain reached a maximum height of 400 feet. Because of the increased fountain height, pumice and cinder accumulations which began in the afternoon were accelerated and by 23h45m the pumice and cinder cone was estimated to be 80 feet heigh near the fountain base.

Fountain height continued to increase at the eastern vent through January 17. The following list indicates fountain heights and the time of their observation:

02:15 - 550-600 feet

03:45 - 600-700 feet with an occasional burst to 900 feet

21:30 - 800 feet

22:50 - Occasional burst to 1050 feet

During the day pahoehoe flows spread southward across the graben while an aa flow moved southward along the coast from the main front. Lava began filling Higashi pond at about 19h45m. Higashi pond is a long shallow inlet marking the seaward side of the Kapoho graben. It appeared during the 1924 collapse of this graben and was filled during the present eruption. Thus it appears neither on the old (1921) maps of Puna, nor in modern post-eruption mapping. The U.S.G.S. Professional Paper on the 1959-60 Eruption of Kilauea now in print does include accurate maps of this short-lived feature.

[On January 17 the summit of Kilauea began to subside. This subsidence was not however accompanied by an unusual number of earthquakes. Daily counts from the summit area indicated little change from the previous day, Although tilt readings clearly tracked the collapse.]

(9)

Although fountain heights had decreased during the night, lava and pumice output remained large. The cinder cone had attained a height of 100 feet by early morning, and by 17h15m the cone was 170 feet high. An increase in activity began at 06h35m and fountain heights of 1200 feet were measured with average heights remaining high (700-1000) throughout the day.

Although sometimes erratic, fountain heights continued to reach high levels between January 18 and January 21, with a spetacular burst on January 18 when the main fountain reached 1700 feet. During the morning of January 18, lava broke out of the graben on the north side and moved northward. By January 21, lava had nearly reached the village of Koae.

Cinder cone growth continued through the period and by 20h40m on January 20 the cone was 235 feet high.

(1) [((Earthquake activity at Kilauea caldera decreased steadly from 50 events on January 18 to 19 events on January 21. Kilauea caldera activity remained nearly the same during the next day, but on January 23 a notable increase in seismic activity from this region occured. This day marked the beginning of the shallow Kilauea caldera swarm which accompanied the collapse of the summit. (2) [The number of events recorded from the caldera increased by a factor of over 10 between January 23 (90 events) and January 28 (1080 events).)))]

Part in section on Mauna Loa collapse

From January 22 to Febuary 1, lava continued to pour out in great quantities. The following are estimates on the volume of lava extruded and the area of coverage.

January 24	60,000,000 cubic yards	1080 acres
January 28	85,000,000 cubic yards	1280 acres

Two eruption features were noted during the above period. A lava lake which was larger and higher than the earlier lake was still distinguishable in the middle of the lava field. This lake provided lava for a flow which curved eastward past Koae. The lake also fed lava tubes which radiated from the center of the lake. These tubes fed several small aa tongues and pahoehoe oozes and a lava stream which flowed around the west side of Kuhii. This flow breached the east end of the first Kuhii-Kapahoa barrier.

The steep sided parasitic cone which began January 21 continued to grow and by Janaary 22 was as high as the main cone. On January 24, the parasitic cone rose 65 feet above the main cone. Although the main cone did not grow in height between January 20 and January 24, its mass was greatly increased by compactiona and lateral spreading of pumice.

On January 27, the heaviest pumice fall of the entire eruption occured in a 7 hour period. A broad pumice loaf, nearly as high as the main cone, accumulated 3000 feet northeast of the fountain. This loaf was later dissected by a lava river.

At 21h45m on January 27, the eruption abruptly ceased and this cessation of activity lasted until 21h50m when the spatter vent roared back to like. This phenomenon was recorded on the seismic net. At Pahoa, harmonic tremor completed stopped for the 5 minute period and at the summit stations absolute quite prevailed during the period.

Activity along the eruption fissure remained unchanged until Febuary 6. On Febuary 6, lava extrusion essentialy ceased. After this date, and until activity ceased entirely on Febuary 19, there were only minor changes in activity. A lava flow which poured out of the splatter cone on Febuary 18 marked the end of the flank eruption. Minor intermittet gas and cinder emissios continued on Febuary 19, but by 14h00m this had ceased.

By the end of the eruption, approximately 160,000,000 cubic yards of lava covered an area of 2510 acres, 500 acres of which were added beyond the old coastline. Lava covered the Village of Kapoho, the Village of Koae, a U.S.Coast Guard station and several homes along the beach. Pumic covered 2750 acres to a depth of 0.1 feet or more. 820 acres had 1 foot of pumice overlay and 55 acres had 5 or more feet of pumice.

HALEMAUMAU COLLAPSE

During the last few days in January, subsidence of Kilauea caldera which began January 17 continued as lava from the summit moved out into the rift zone. Tilt measuments made between January 19 and January22 showed rapid settling of the summit. ① after Jan 23, Seismic activity increased daily as brittle surface rocks of the caldera fialed under the raped deformation caused by the subsidence. ② Weak harmonic tremor associated with the eruption of Kilauea Iki increased as the movement of lava from the summit intensified. Between January 28 and Febuary 1 over 10,000 shallow Kilauea caldera earthquakes were recorded at the summit stations. and hundreds of these earthquakes were felt.

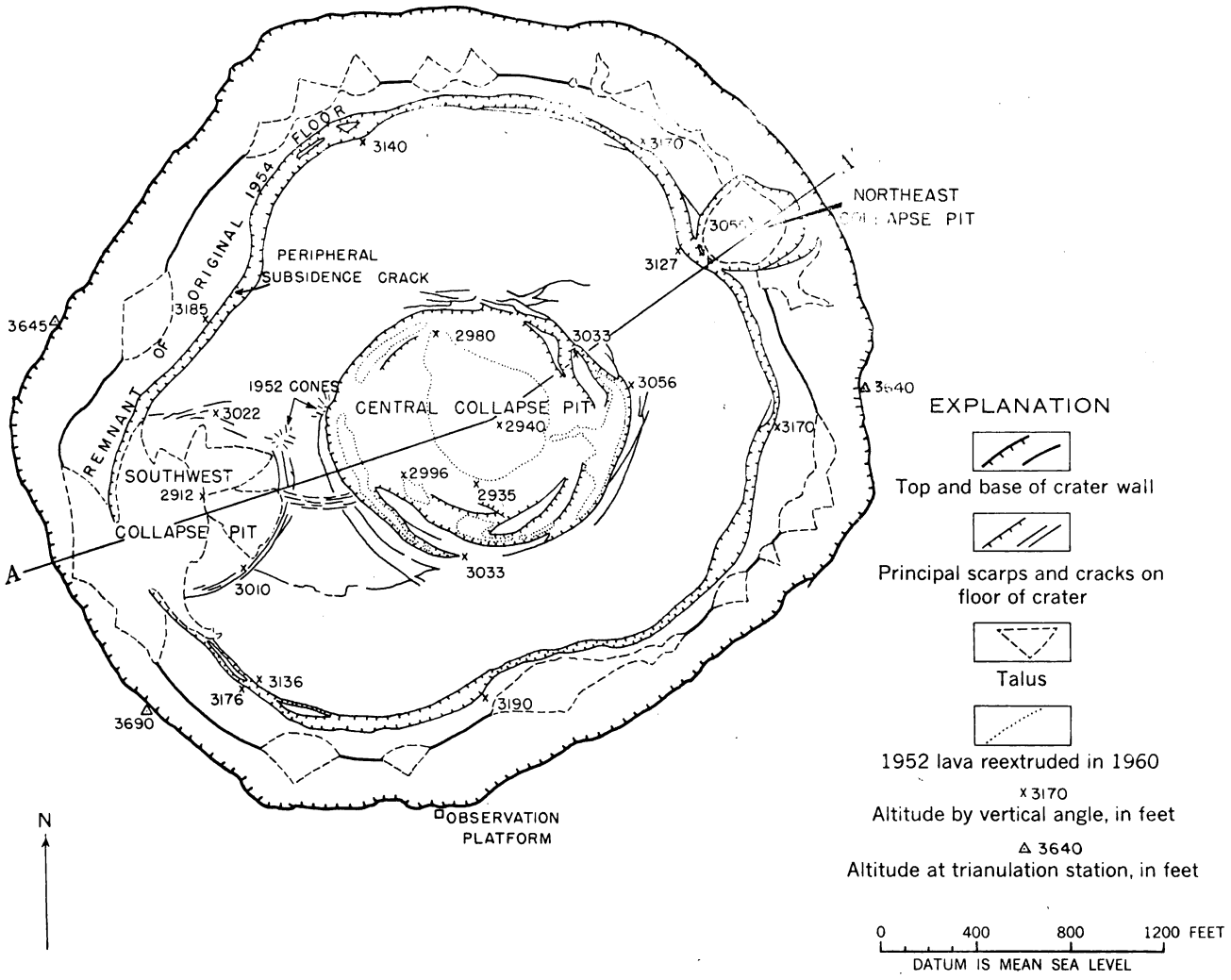
In the first few days of Febuary seismic activity at Kilauea caldera continued to increase and on Febuary 6 nearly 5000 Kilauea caldera events were recorded at the summit stations. New peripheral cracks developed around Halemaumau and Kilauea, and old cracks widened. Many landslides were recorded from Halemaumau.

The collapse began on Febuary 7 when a fissure broke through and drained the lava from beneath the floor of Halemaumau causing the floor to drop 150 feet. This feature is referred to as the Central Collapse Pit in Figure 1. after (Richter and others, The 1961 Eruption of Kilauea Volcano, Hawaii). Just before noon, an area 1000 feet in diameter in the center of the floor dropped an additional 200 feet. This cavity

partially refilled with highly viscous lava. During the afternoon the subsidence gradually ceased, but on Febuary 9 another small collapse (Southwest Collapse Pit) occured in the floor. This collapse was not accompied by refilling of lava.

Daily Kilauea caldera counts from the summit station remained high (generally over 1000 a day) for the entire month of Febuary. A sharp drop in Kilauea caldera earthquakes was recorded on March 1 and this decrease in activity lasted until March when daily counts suddenly quadrupuled. The increased seismic activity lasted until March 11. On March 11, the third and final collapse of Halemaumau took place. A pit, 100 feet deep and 300 by 400 feet in diameter formed at the northeast corner of the remaining 1954 lava ledge (Northeast Collapse Pit).Total volume of the Halemaumau collapse was approxiamtely 29,000,000 cubic yards.

Seismic activity gradually decreased during the rest of March. Kilauea caldera earthquakes associated with the collapse continued into April while a moderate subsidence of the summit continued into the summer of 1960.



~~FIGURE 2.—Map and section of Halemaumau crater, in the floor of Kilauea caldera, before the 1961 summit eruptions. All collapse features in the bottom of Halemaumau occurred during the summit subsidence of February–March 1960. (See fig. 20 for section A–A'.)~~

Figure x.-- After Richter and others (1961). Map and section showing 1960 Halemaumau collapse features.

Tilting of the ground around Kilauea caldera.-- Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordiantes correspond to northward and eastward tilting of the earth's surface;i.e.,to a relative subsidence toward the north and east. A one-unit change in coordinates corresponds to a tilting of 1 microradian (1mm per km) in the direction indicated.

(17)

Ti[illegible] ... a[illegible] ...

a. Tilt [illegible] ... fo[illegible] ...

Date	N-S	E-W	Date		N-S	E-W
[illegible] 3	545	433	Feb.		[illegible]	[illegible]
[illegible]	544	433			[illegible]	
10	544	43[illegible]	Jan.	2	[illegible]	
13	543	43[illegible]			[illegible]	[illegible]
17	543	43[illegible]			[illegible]	
20	[illegible]	45[illegible]				
24	[illegible]	4[illegible]4			395	
27	517	50[illegible]			[illegible]	
31	[illegible]	[illegible]			390	
Feb 3	[illegible]	[illegible]			[illegible]	
7	497	6[illegible]		[illegible]	3[illegible]	[illegible]
10	4[illegible]	63[illegible]				
14	433	649			[illegible]	
17	428	655				

b. Tilt coordinates and [illegible] ... caldera

Tilt Base (location)	Date	Tilt Coordinates N-S	Tilt Coordinates E-W	[illegible] of Tilting in micro-radians (microradians per month)	Direction	Last reading
[illegible] (19°2[illegible]5'N, 155°17.4'W)	Jan. 20, 1960	557.8	459.6	[illegible]6	S [illegible] E	D[illegible] 1959
[illegible] Mal[illegible] ([illegible]6.3'N, [illegible]°17.3'W)	Jan. 20, 1960	506.2	493.0	1[illegible].5	S 28° E	De[illegible] 1959
[illegible] ([illegible]°24.1'N, 155°16.8'W)	Jan. 22, 1960	604.9	488.1	27.8	S 88° E	De[illegible]
Kalihipaa (19°21.4'N, 155° 15.3'W)	Jan. 19, 1960	477.2	511.0	[illegible]	N 19° E	Dec. 29, 19[illegible]
[illegible] ([illegible], 155°19.0'W)	Jan. 21, 1960	530.4	484.1	[illegible]1.4	S 73° E	Dec. 31, 1959
Kam[illegible] (19°22.7'N, 155°[illegible]W)	Jan. 22, 1960	444.9	543.8	41.6	N 15° E	De[illegible] 1959
Kilauea Iki (19°24'N, 155°, 16.7'W)	Jan. 26, [illegible]	500.0	[illegible]00.0			
[illegible] P[illegible] (1[illegible].2'N, 155°18.6'W)	Jan. 19, [illegible]	500.0	[illegible]00.0			
[illegible] (1[illegible]'N, 155°15.7'W)	Jan. 21, 1960	561	492			
Outlet (19°23.4'N, 155°16.9'W)	Jan 21, 1960	388	570			

(17)

Uwekahuna	[illegible]	412.6	53			[illegible]
Tree Molds	Feb. 5, [illegible]	408.8	28			[illegible]
Sand Spit	Feb. 5, 1960	597.1	581.1	[illegible]	S 86° E	[illegible]
Kalihipaa	Feb. 4, 1960	508.1	504.3	59.1	N 12° W	[illegible]
Keamokuu	Feb. 4, 1960	483.3	508.1	284.1	S 69° E	[illegible]
Kamokuokolau	Feb. 5, 1960	634.1	494.[illegible]	119.0	N 15° W	[illegible]
Kipuka Nene	Feb. 6, 1960	504.9	497.5	14.9	N 27° [illegible]	[illegible]
Hilina Pali	Feb. 6, 1960	504.6	497.1	9.0	N 32° W	Jan. 19, [illegible]
[illegible]	Feb. 5, 1960	437	449	263	S 19° W	Jan. [illegible] 1960
[illegible]	Feb. 5, 1960	547	559	418	N 3° W	[illegible]

Uwekahuna	Mar. 28, 1960	272.0	646.5	95.5	S 33° E	Feb. [illegible], 1960
Tree Molds	Mar. 29, 1960	334.0	550.2	44.0	S 16° E	Feb. 5, 1960
Sand Spit	apr. 4, 1960	757.6	704.8	102.2	N 38° E	Feb. 5, 1960
Kalihipaa	Mar. 29, 1960	563.4	447.7	43.9	N 46° W	Feb. 4, 1960
Keamokuu	Mar. 30, 1960	425.0	739.1	78.2	S 66° E	Feb. 4, 1960
Kamokuokolau	apr. 5, 1960	817.2	456.9	93.4	N 12° W	Feb. 5, 1960
Kipuka Nene	Mar. 31, 1960	517.5	492.8	7.5	N 21° W	Feb. 6, 1960
Hilina Pali	apr. 4, 1960	516.0	490.4	6.8	N 30° W	Feb. 6, 1960
Whitney Outlet	apr. 3, 1960	320	380	73.8	S 30° W	Feb. [illegible], 1960
	apr. 1, 1960	842	568	131.0	N 2° E	Feb. [illegible] 1960

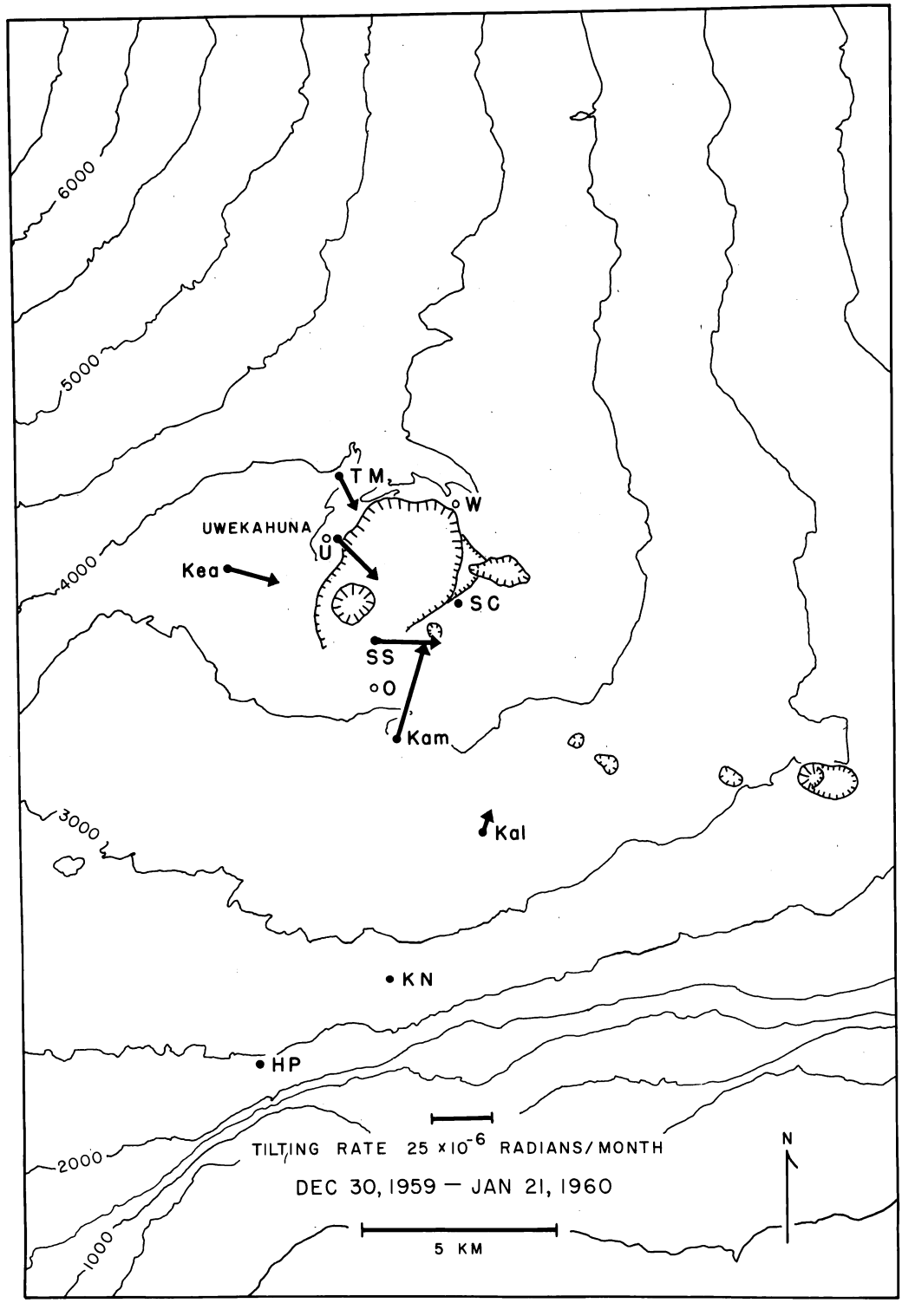


Figure 1.-- Tilting of the ground around Kilauea caldera, December 30, 1959 to January 21, 1960. The vector depciting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length. proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

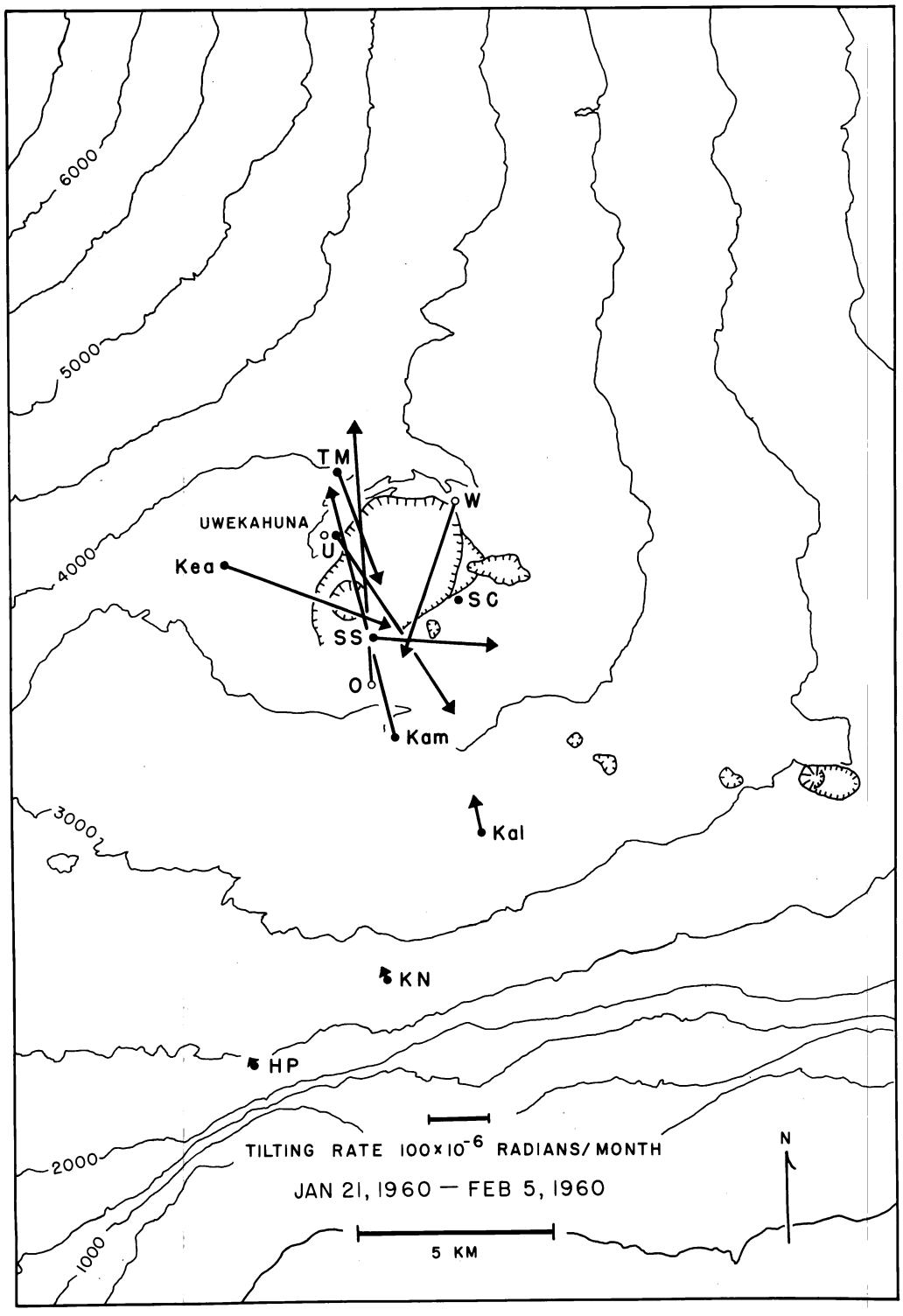


Figure 2.=-Tilting of the ground around Kilauea caldera, January 21, 1960 to Febuary 5, 1960. The vector depciting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

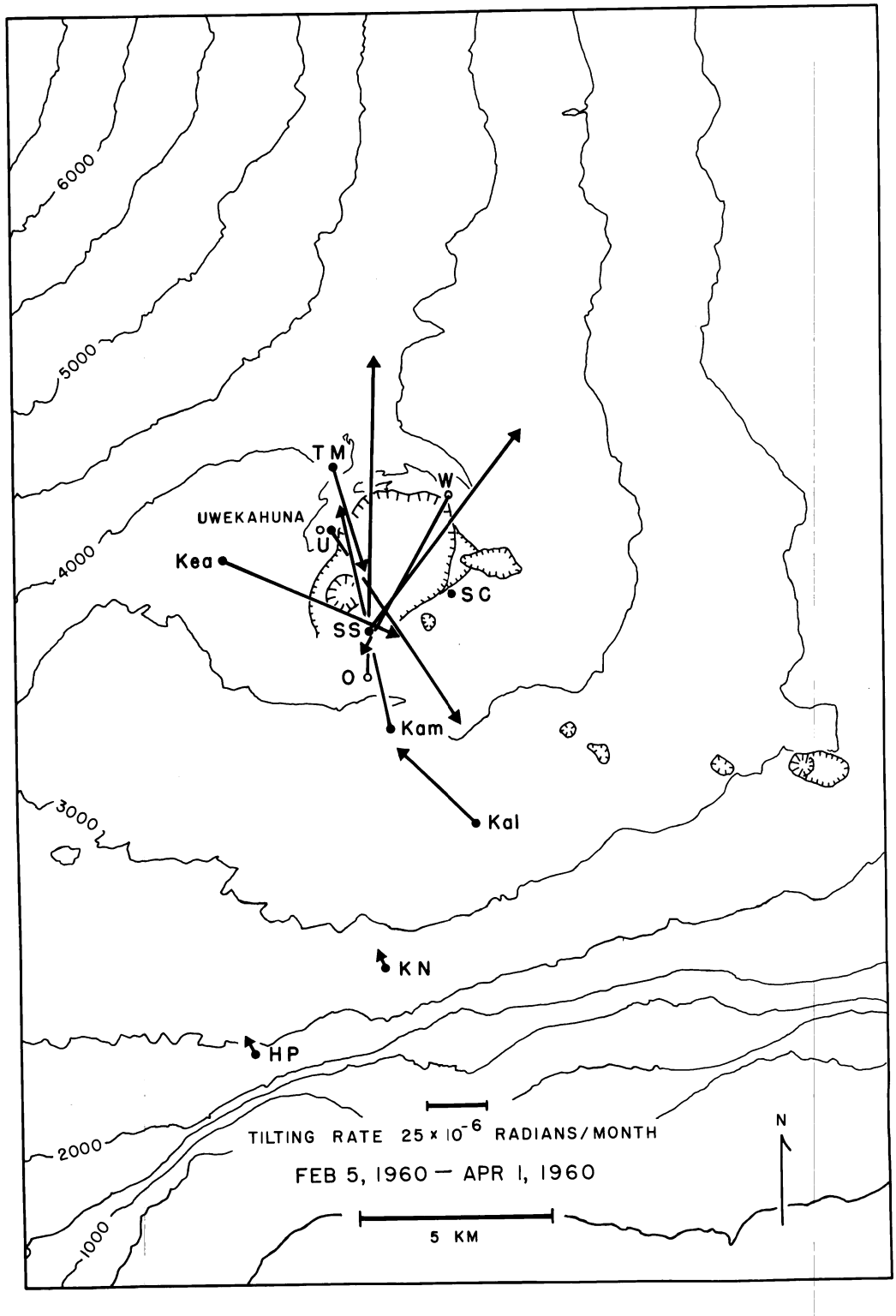


Figure 3.-- Tilting of the ground around Kilauea caldera, Febuary 5, 1960 to April 1, 1960. The vector depciting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, [illegible]). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1, and essential data on the stations were given in [illegible]. table 6.

October 13, 1965

Dear Jerry:

Here is the data. I hope it is in a form which will be usefull. I have been trying to gather my thoughts for the chronological summary. It looks like soom of the data would lend itself nicely to graphing. I have in mind the Pahoa quake count and Pahoa tremor. Table 3 points out the dramatic change in counts and I thought it might be worthwhile to graph it. I could also do this with the Kilauea summit count. Let me know how you feel about these brain storms.

Things are progressing at a rapid pace on the Alaskan adventure. It looks like we will leave Denver sometime around the 25th, and I probably will not have the chronological summary completed by then.

Sincerely

Mike

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs

U, M, A, D, and N around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone (from the Pahoa seismograph); ~~earthquakes from a source about 30 km beneath Halemaumau;~~ earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank, and earthquakes from other regions: Kona, Mauna Kea, etc. ~~? Obscured by the swarm of earthquakes near Puu Koae~~.

→ earthquakes from intermediate depths (15 - 30 km) beneath the summit of Kilauea

Table 3.-- Numbers of earthquakes and minutes of tremor on seismographs U, M, A, D, and N [redacted] around Kilauea caldera

Date (1960)	Tremor (in minutes)			Earthquakes							
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	S.W. rift and Kaoiki	Eastern east rift	Kilauea summit ~~30~~ 15-30 km	Upper east rift	Others
JAN 1	Continuous		shallow		75	20	15	1	—	—
2	"		"		100	23	59	3	1	—
3	"		"		80	22	44	—	—	1 Kamuela
										1 Naalehu
4	"		"		70	13	52	—	—	—
5	"		"		65	11	33	—	—	—
6	"		"		45	4	51	3	—	
7	"		"		45	13	39	2	-	2 off E coast
										of Hawaii
8	"		"		50	20	30	—	—	—
9	"		"		75	7	131	—	—	—
10	"		"		55	9	77	—	—	—
11	"		"		35-1/2 Day	8	420	—	—	
12	"		"		80	6	495	1	1	1 off W coast
										of Hawaii
13	"		"		167	5	1000+	—	—	1 of E coast of
										Hawaii
14	"		"		86	1	45	—	—	—
15	"		"		90	1	2	—	—	—
16	"		"		16	2	—	—	—	—
17	"		"		50	8	1	—	—	—
18	"		"		50	2	1	1	—	—
19	"		"		30	3	—	—	—	—
20	"		"		18	4	—	—	—	—

Table 3.-- Numbers of earthquakes and minutes of tremor on seismographs U,M, A, D, N, WP, and MP around Kilauea caldera

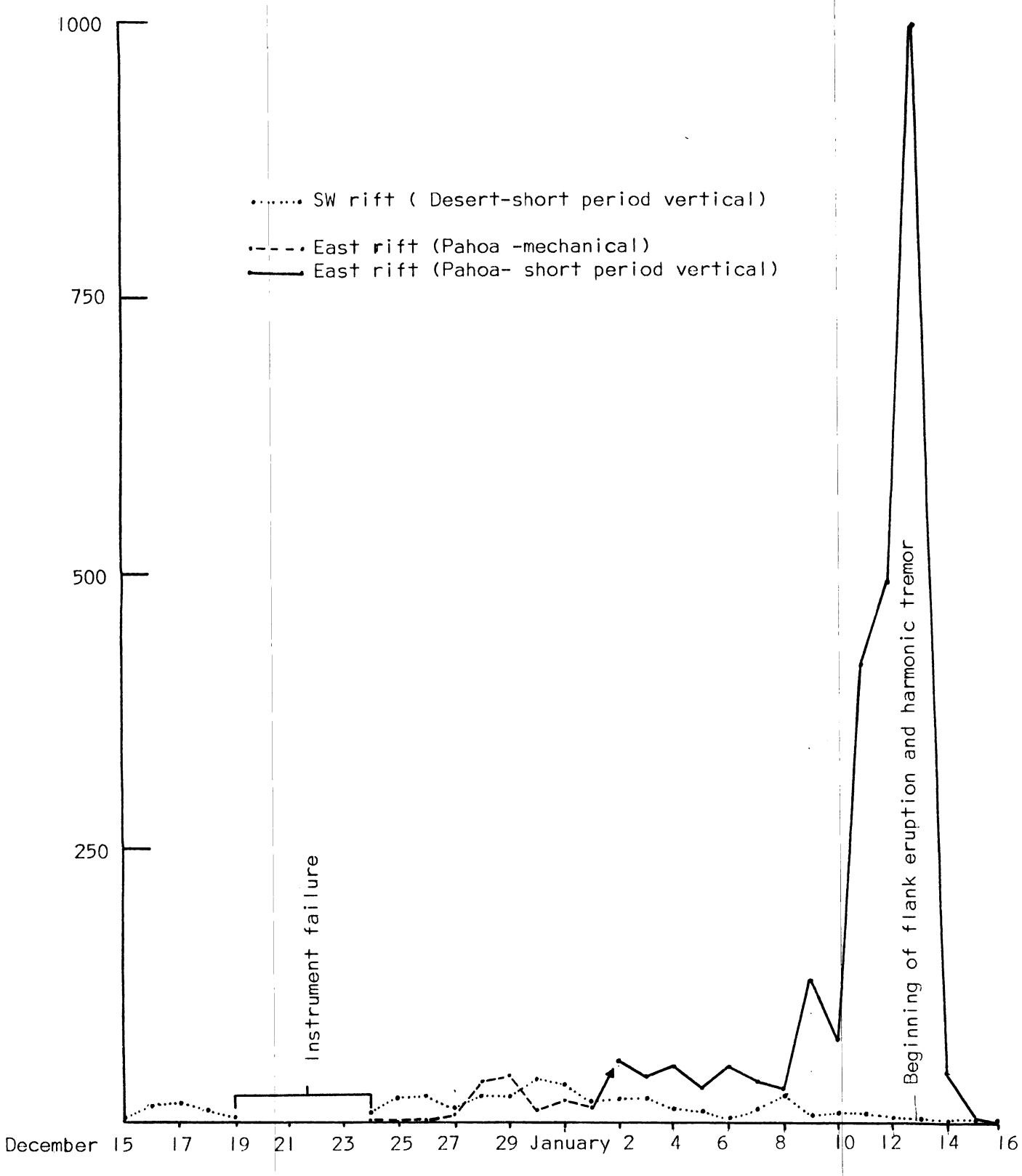
Date (1960)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	S.W. rift and Kaoiki	Eastern east rift	Kilauea summit 15-30 km	Upper east rift	Others
Jan 21	Continuous		shallow	—	19	8	2	2	—	—
22	〃		〃	—	26	13	1	2	—	—
23	〃		〃	—	90	12	—	3	—	—
24	〃		〃	—	165	13	1	2	—	—
25	〃		〃	—	195	12	—	—	—	—
26	〃		〃	—	340	11	1	—	—	—
27	〃		〃	—	535	5	—	—	—	1 Kailua
28	〃		〃	—	1090	—	1	—	—	—
29	〃		〃	—	1280	—	—	—	1	—
30	〃		〃	—	3845	—	—	—	4	
31	〃		〃	—	3000	—	—	3	—	—
Feb 1	〃		〃	—	1290 +	9	—	—	1	—
2	〃		〃	—	2450	11	1	21	1	—
3	〃		〃	—	3260	—	7	19	—	—
4	〃		〃	—	2025+	2	12	—	—	—
5	〃		〃	—	2200	—	14	—	—	—
6	〃		〃	—	4850++	—	26	—	—	—
7	Spasmodic		Shallow	—	2100 +	5	3	30	—	—
8	—	—	115	—	3100	—	2	2	1	—
9	—	—	91	—	1600 +	—	7	1	—	—
10	—	—	—	—	2025	2	4	3	1	—
11	—	—	—	—	1550	2	3	5	—	—
12	—	—	—	—	1200	2	1	1	—	—
13	—	—	—	—	575	4	1	1	—	1 off S coast of Hawaii

Table 3.-- Numbers of earthquakes and minutes of tremor on seismographs U,M, A, D, N, WP, and MP around Kilauea caldera

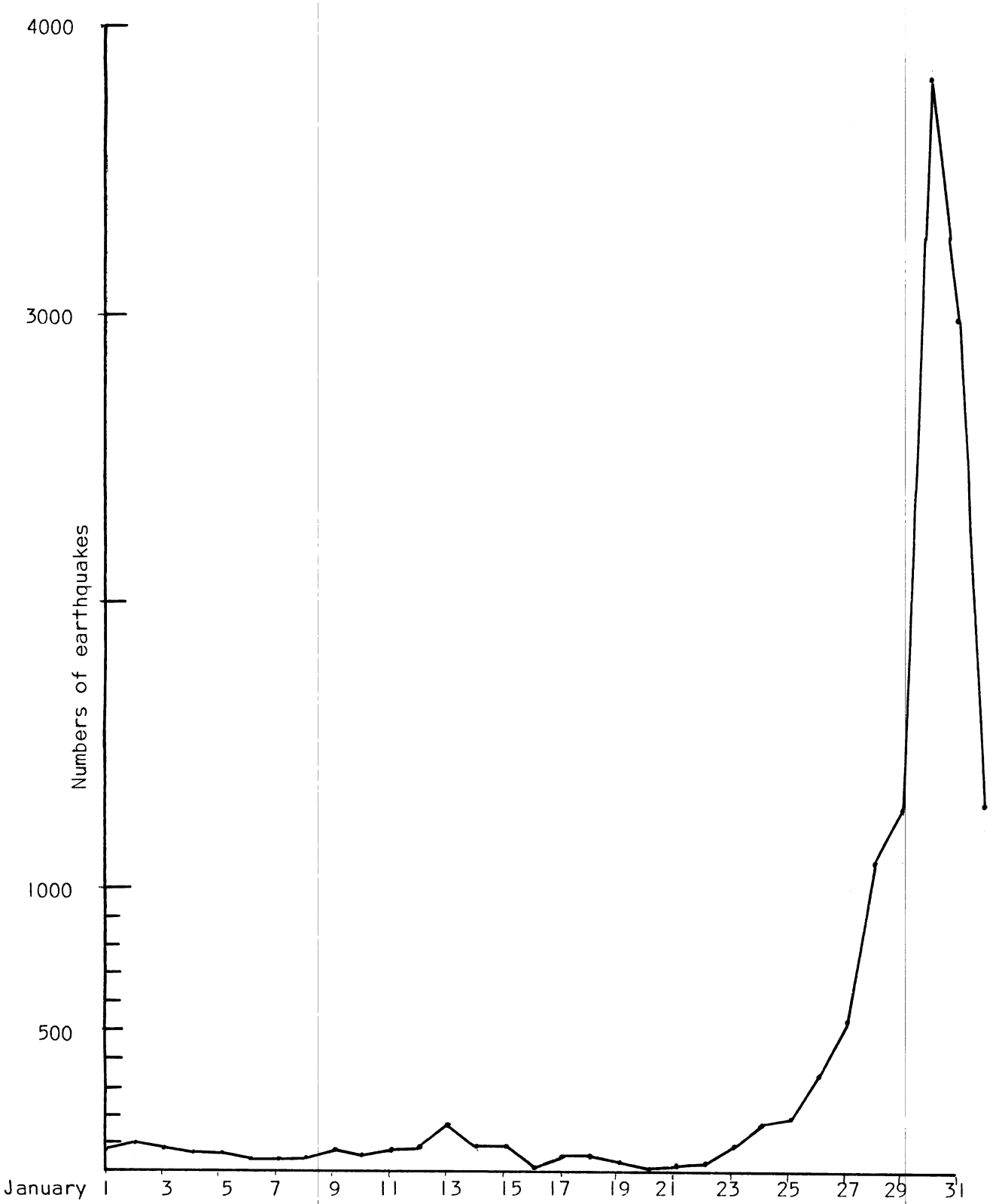
Date (1960)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	S.W. rift and Kaoiki	Eastern east rift	Kilauea summit ~~30~~ 15-30 km	Upper east rift	Others
Feb 14	—	—	245	—	755	1	1	—	—	—
15	—	—	75	—	1100	4	4	—		
16	—	—	—	—	405	2	1	2	—	1 off S coast of Hawaii
17	—	—	—	—	1205	3	2	3	—	2 of S coast of Hawaii
18	—	—	1348	—	1600	5	—	2	—	—
19				—	1185	2	3	—	—	—
20	—	—	—	—	1425	1	1	3	—	—
21	—	—	—	—	1145	2	2	2	1	1 off S coast of Hawaii
22	—	—	—	—	2100	4	17	1	1	—
23	—	—	—	—	1165	3	6	1	—	—
24	—	—	—	—	1550	3	5	2	—	—
25	—	—	—	—	1335	4	6	8	—	—
26	—	—	—	—	1500	3	4	6	—	—
27	—	—	—	—	1260	12	2	3	—	—
28				—	1100	9	2	2	—	—
29	—	—	—	—	1100	4	4	—	—	—
March 1	—	—	—	—	510	15	2	3	1	—
2	—	—	—	—	640	9	3	—	2	1 Mauna Kea
3	—	—	—	—	650	—	2	—	1	—
4	—	—	—	—	480	—	2	# 1	1	1 at Kealakekua Bay
5	—	—	—	—	370	5	4	2		1 off S coast of Hawaii
6	—	—	—	—	309	5	1	2	1	—

Table 3.-- Numbers of earthquakes and minutes of tremor on seismographs U,M, A, D, N, WP, and MP around Kilauea caldera

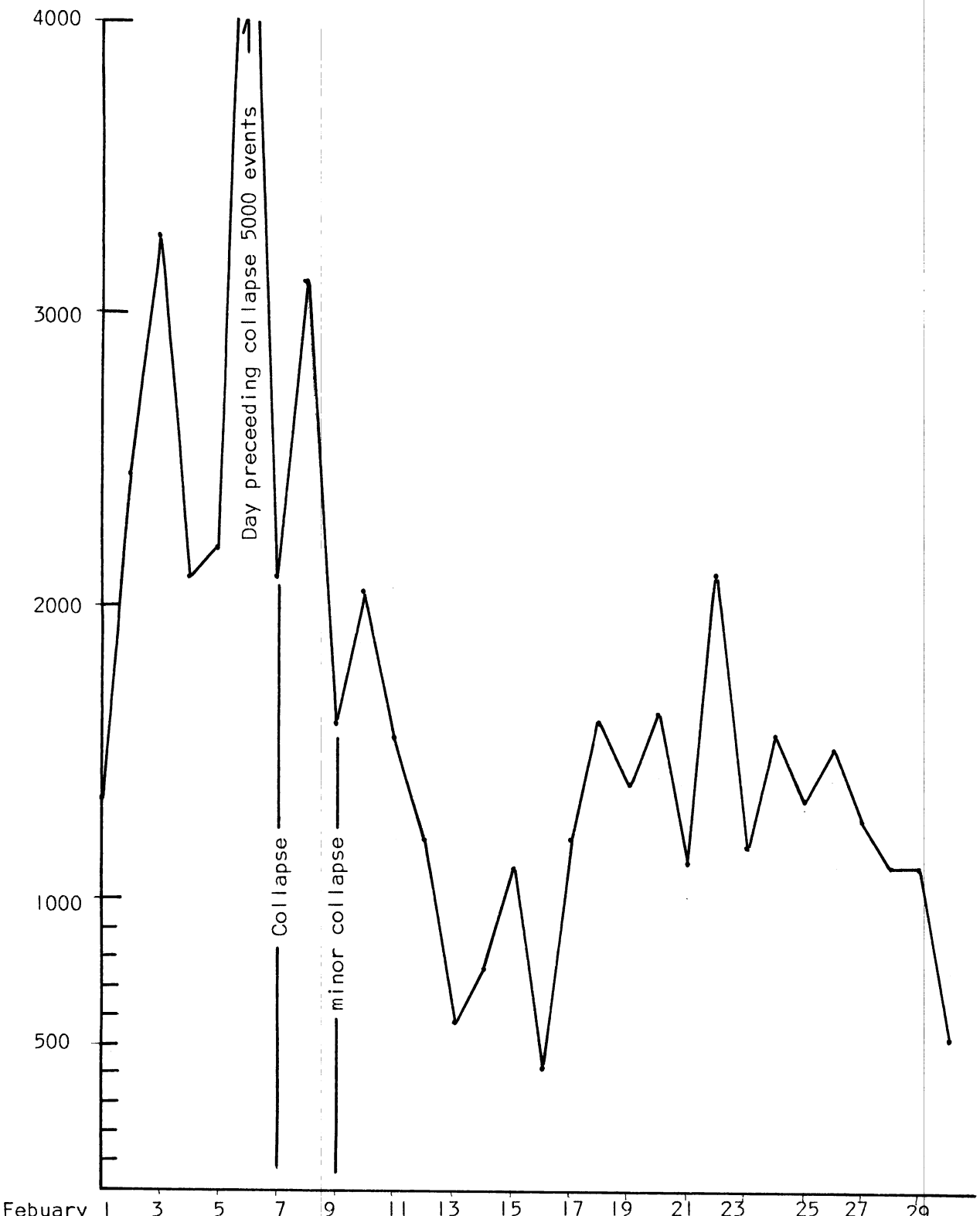
Date (1960)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	S.W. rift and Kaoiki	Eastern east rift	Kilauea summit ~~30~~ 15-30 km	Upper east rift	Others
March 7	—	—	—	—	1250	8	6	1	—	—
8	—	—	—	—	1320	3	2	2	1	—
9	—	—	—	—	1180	2	5	3	—	—
10	—	—	—	—	2000++	1	—	4	—	—
11	—	—	—	—	750	1	4	2	—	—
12	—	—	—	—	260	4	2	2	—	—
13	—	—	—	—	130	3	—	1	—	1 off NE coast of Hawaii
14	—	—	—	—	170	—	—	3	—	—
15	—	—	—	15	215	4	—	1	—	—
16	—	—	—	—	170	2	1	2	—	1 Kona
17	—	—	—	—	150	2	—	—	—	—
18	—	—	—	—	120	2	1	1	—	—
19	—	—	—	—	110	2	1	2	1	2 Kona
20	—	—	—	—	140	—	2	2	1	—
21	—	—	—	—	160	4	—	—	—	—
22	—	—	—	—	150	3	1	4	—	—
23	—	—	—	—	160	19	—	1	—	—
24	—	—	—	—	130	2	1	1	—	—
25	—	—	—	—	135	4	1	—	—	—
26	—	—	—	—	205	7	1	1	—	—
27	—	—	—	—	142	2	2	2	—	—
28	—	—	—	—	140	4	—	1	—	—
29	—	—	—	—	140	5	—	1	—	—
30	—	—	—	—	120	3	1	—	—	—



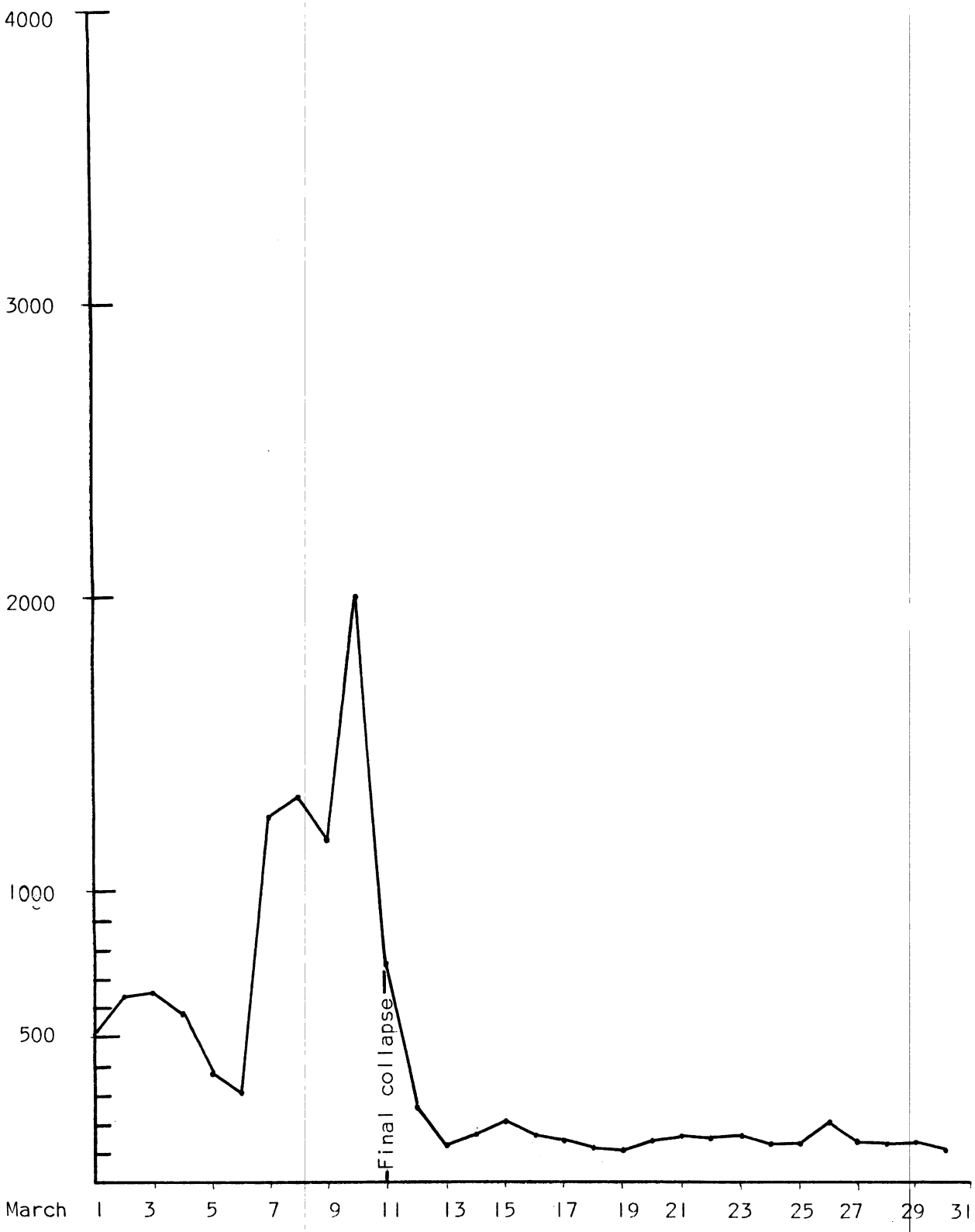
Graph .--Graph showing numbers of earthquakes along the SW rift zone and East rift zone during the period preceeding the flank eruption.



Graph 1.-- Numbers of Kilauea caldera earthquakes in month preceeding collapse.



Graph 2.--Numbers of Kilauea caldera earthquakes during month of collapse.



Graph 3.--Numbers of Kilauea caldera earthquakes during the month after the collapse of Halemaumau.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

April, May, and June 1963

[Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter and felt reports. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

In the following list, some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 kilometers (19°24.1' N., 155°17.1' W.).

In Summary 29, a persistent earthquake sequence was codified by the initials KT which referred to a "poor" location along the Kalapana Trail. This designation is retained for the purposes of this Summary but will be discontinued in the future unless Kalapana Trail quakes resume. The approximate epicenter for these quakes is 19°20' N., and 155°05' W., and shallow depth is assumed.

In Summary 24, "Kaoiki" was introduced as a symbol for listing any of a family of quakes with mean focus 19°24' N., 155°25' W., h=3 to 8 km. This symbol is used in the following list]

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

on all Lat & Long. correct " to '

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
JAN 1	20	14	12.6	3.2	<3	19°30"	154°51.7"	9km E of Pahoa seismometer	Felt in Puna
2	12	47	41.4	1.3	13	19°21.6"	155°13.1"	5km ESE of Ahua seismometer	
2	21	56	40.5	2.5	2	19°28.2"	154°53.1"	6 km ESE of Pahoa seismometer	
2	22	46	27.0	2.5	2	19°28.2"	154°53.1"	6 km ESE of Pahoa seismometer	
3	04	54	58.4	3.7	13	19°27.4"	155°20"	7 km SE of Mauna Loa seismometer	Felt in Hilo
3	15	53	06.9	1.1	3	19°24.2"	155°21.7"	10 km S of Mauna Loa seismometer	
3	16	03	46.0	2.9	13	20°03.8"	155°49.5"	15km W of Kamuela	
3	21	27	35.0	2.5	13	19°00.2"	155°37.9"	7 km SSW Naalehu	
4	17	21	28.0	1.4	3	19°23.4"	155°28.5"	10 km NE of Desert seismometer	
4	23	09	37.0	2.0	5	19°25.8"	155°28.2"	12 km NE of Desert seismometer	
5	05	56	35.4	2.0	<3	19°24.3"	155°01"	12.5 km SW of Pahoa seismometer	
5	11	32	00.3	2.2	8	19°25"	155°00.8"	3.5 km S of Hilo	
5	18	35	05.6	1.8	5	19°14.5"	155°31.8"	20km NNE of Naalehu	
5	22	35	08.0	2.3	8	19°22.5"	155°31"	18km SSW of Mauna Loa seismometer	
7	06	24	38.0	2.5	3	19°24"	154°49"	16 km SE of Pahoa seismometer - offshore	Felt in Puna
7	15	02	16.3	1.7	8	19°25.5"	155°11.7"	10km E of Uwekahuna seismometer	
7	16	56	33.4	2.2	3	19°25.6"	155°00.8"	10 km SW of Pahoa seismometer	
7	23	36	33.5	3.3	13	18°37.8"	154°38.7"	131 km SE of Hilo offshore	
9	12	59	47.0	2.7	3	19°20.2"	155°00.2"	~~4a [illegible] E of Desert seismometer~~ 3 km W of Pahoa	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
JAN 9	14	34	31.3	2.0	<3	19° 17.7"	155° 16.1"	13km SE of Desert seismometer	
11	01	58	54.3	2.6	<3	19° 23.2"	154° 53.5"	13.5 km SSE of Pahoa seismometer	
11	05	19	31.2	2.4	8	19° 26.2"	154° 51.9"	9.5km SE of Pahoa seismometer	
11	05	36	49.5	2.6	3	19° 28.4"	154° 49.0"	13 km ESE of Pahoa seismometer	
11	05	47	33.4	2.4	3	19° 29.3"	154° 46.7"	18 km E of Pahoa seismometer	
11	17	15	51.0	2.5	<3	19° 24.4"	154° 50.0"	15 km ESE of Pahoa seismometer	
11	17	41	31.5	3.5	8	19° 29.8"	154° 47.5"	16.5 km E of Pahoa seismometer - offshore	
12	00	37	09.0	2.3	<3	19° 19.5"	155° 03.2"	26 km SE of Ahua seismometer	
12	00	59	42.0	2.3	<3	19° 28.8"	154° 52.6"	8 km E of Pahoa seismometer	
12	04	09	57.3	2.5	<3	19° 29.2"	154° 52.5"	8 km E of Pahoa seismometer	
12	18	20	44.2	3.2	<3	19° 43.5"	156° 17.0	57km SW of Kawaihae offshore	
13	10	17	02.4	2.8	3	19° 27.4"	154° 55.9"	4km S of Pahoa seismometer	
13	11	02	08.4	2.6	3	19° 19.4"	155° 08.7"	26 km E of Desert seismometer	
13	11	42	23.0	2.4	<3	19° 27.9"	154° 51.1"	11 km SE of Pahoa seismometer	
13	12	18	25.0	3.0	<3	19° 29.6"	154° 52.4"	7.5 km E of Pahoa seismometer	
13	12	37	24.4	3.1	3	19° 20.4"	154° 53.6"	6km E of Pahoa seismometer	
13	13	03	24.1	3.3	<8	19° 31.2"	154° 51.8"	9 km E of Pahoa, seismometer	
13	13	42	16.3	3.1	<3	19° 29.3"	154° 53.4"	6 km E of Pahoa, seismometer	
13	16	00	25.1	3.2	13	19° 35.1"	154° 55.4"	15 km NE of Pahoa seismometer, offshore	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
JAN 13	16	12	50.2	2.9	<3	19° 28.3"	154° 51.8"	9.5km ESE of Pahoa seismometer	
13	16	29	38.6	3.5	8	19° 31.3"	154°46.3"	18 km ENE of Pahoa seismometer (offshore)	
13	18	02	01.3	3.4	<3	19°23.5"	154°53.5"	18 5 km SSE of Pahoa seismometer	
13	20	12	39.5	3.0	<3	19° 30.2"	154°52.9"	7km E of Pahoa seismometer	
14	16	03	25.2	1.7	<3	19° 21.0"	155° 09.0"	25km E of Desert seismometer	
16	11	42	36.7	2.0	<3	19° 25.9"	154 °53.8"	9km SE of Pahoa seismometer	
17	19	24	37.3	2.0	13	19° 23.3"	155 °18.4"	10 km NE of Desert seismometer	
18	13	31	14.6	0.8	3	19°24.9"	155°23.2"	7 km N of Desert seismometer	
18	18	26	52.6	2.4	3	19°23.3"	155 °26.1"	8 km NE of Desert seismometer	
21	17	05	03.9	1.9	3	19° 16.3"	155° 29.9"	14km SW of Desert seismometer	
22	20	21	55.4	2.2	3	19° 25.3"	155° 23.8"	9km NNW of Desert seismometer	
23	14	43	57.5	2.6	8	19° 20.1"	155° 24.5"	2.5 km NE of Desert seismometer	
23	19	55	59.0	1.9	3	19° 21.7"	155° 23.8"	2.5 km NW of Desert seismometer	
24	00	43	41.2	1.2	8	19° 24.5"	155° 14.2"	5km NE of Ahua seismometer	
24	12	18	57.8	2.2	25	19° 22.3"	155° 17.1"	2 km E of Ahua seismometer	
25	07	54	32.8	0.8	3	19°23.6"	155° 16.2"	2.5 km SW of Ahua seismometer	
25	12	41	15.7	1.2	8	19°24.3"	155°20.0"	6 km W of North Pit seismometer	
25	22	01	50.3	1.5	3	19° 20.8"	155° 23.3"	1 km NW of Desert seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Jan 26	02	11	23.4	3.0	3	19°22.0''	155°31.3''	14 Km NW of Desert seismometer	
26	04	43	05.8	2.9	20	19°20.3''	155°17.9''	9 km E of Desert seismometer	
26	10	07	21.2	1.6	<3	19°24.3''	155°17.8''	2 km S. of Uwekahuna seismometer	
26	12	34	35.0	2.2	<3	19°24.3''	155°18.3''	3km SE of North Pit seismometer	Felt in H.V.O
26	16	17	36.8	2.6	<3	19°24.5''	155°18.4''	3 km E of North Pit seismometer	
26	23	36	56.1	1.9	<3	19°23.7''	155°18.1''	3 km SW of North Pit seismometer	
27	03	15	02.2	1.6	<3	19°24.0''	155°18.2''	3 km SW of North Pit seismometer	
27	05	11	25.3	1.9	3	19°23.5''	155°16.4''	2km NNW of Ahua seismometer	
27	12	53	22.0	1.4	<3	19°24.5''	155°16.2''	1km E of North Pit seismometer	
27	13	36	24.4	3.0	20	19°36.6''	155°39.2''	3 km SE of Kilue	
27	15	54	08.3	1.6	3	19°26.4''	155°15.0''	5 km NE of Uwekahuna seismometer	
27	16	14	18.1	1.7	<3	19°26.3''	155°14.3''	5 km NE of North Pit seismometer	
27	17	12	39.0	1.3	<3	19°27.8''	155°17.4''	4 km N of Uwekahuna seismometer	
27	17	28	07.3	1.7	<3	19°23.4''	155°15.4''	2km NE of Ahua seismometer	
27	17	30	31.7	1.7	<3	19°23.5''	155°17.1''	2.8 km S of North Pit seismometer	
27	20	48	06.0	1.8	<3	19°28.3''	155°13.2''	9km NE of North Pit seismometer	
27	22	13	29.2	1.4	<3	19°24.8''	155°18.0''	2km N of North Pit seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Jan 27	22	36	39.2	1.6	<3	19°23.4''	155°13.8''	6km SE of North Pit seismometer	
27	23	04	15.0	1.4	<3	19°30.0''	155°14.9''	10 km NE of North Pit seismometer	
28	03	26	24.3	2.2	<3	19°23.2''	155°18.8''	5 km SW of North Pit seismometer	Felt H.V.O.
28	08	43	37.5	1.4	3	19°24.3''	155° 22.4'	7.5 km NE of Desert seismometer	
28	11	16	43.3	1.6	<3	19°24.3''	155°18.8''	3.5 W of North Pit seismometer	
28	18	07	59.3	1.2	<3	19°24.1''	155° 17.2'	2 km SW of North Pit seismometer	
28	18	39	25.0	1.3	<3	19°24.2''	155°18.2''	2.5 km WSW of North Pit seismometer	
29	00	56	14.6	1.8	<3	19°27.9''	155° 13.1''	8.5 km NE of North Pit seismometer	
29	09	10	18.5	3.1	13	19°19.2''	155°08.0''	19km SE of North Pit seismometer	Felt in Hilo, Pahoa Kuloa
29	13	05	15.9	1.3	8	19°24.4''	155°16.7''	1km S of North Pit seismometer	
29	14	48	12.5	1.7	8	19°24.4''	155°16.6''	1km S of North Pit seismometer	
29	20	44	58.6	1.7	8	19°26.4''	155°16.7''	2km NE of Uwekahuna seismometer	
29	22	21	03.7	1.3	<3	19°24.0''	155°18.2''	3km SSW of Uwekahuna seismometer	
30	00	33	37.0	1.3	3	19°25.9''	155° 15.3''	4km ENE of Uwekahuna seismometer	
30	04	49	43.8	2.1	3	19°27.9''	155° 12.8''	8km NE of Uwekahuna seismometer	
30	08	13	13.3	2.1	20	19° 23.9''	155° 10.7''	10km E of Ahua seismometer	
30	10	05	44.5	1.6	8	19°26.8''	155°13.1''	8km NE of Uwekahuna seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
JAN 30	11	06	19.2	1.7	13	19° 22.7'	155° 10.3'	10 Km E of Ahua seismometer	
30	11	43	13.4	1.0	8	19° 25.5'	155° 20.0'	4 Km W of Uwekahuna seismometer	
30	11	46	57.9	1.3	13	19° 25.2'	155° 14.9	3 Km E of North P.I seismometer	
30	17	57	11.8	1.4	<3	19° 24.1'	155° 18.0'	2.5 Km SE of North P.I seismometer	
30	19	10	15.1	1.4	<3	19° 25.5'	155° 49.0'	3.5 E of North P.I seismometer	
30	19	34	44.3	2.8	8	19° 23.7'	155° 01.3'	26 Km E of Ahua seismometer	
30	20	09	24.4	2.6	13	19° 23.3'	154° 59.6'	28 Km E of Ahua seismometer	
30	20	12	37.7	1.1	<3	19° 24.3'	155° 17.8'	2 Km SW of North P.I seismometer	
30	22	29	41.2	2.5	<3	19° 24.4'	155° 18.1'	2.5 Km SW of North P.I seismometer	
30	23	15	23.5	1.2	<3	19° 27.1'	155° 14.2'	7 Km NE of North P.I seismometer	
30	23	42	00.6	1.7	<3	19° 24.1'	155° 18.5'	3 Km SW of North P.I seismometer	
31	00	33	17.0	1.3	<3	19° 22.7'	155° 10.9'	11.5 Km NE of North P.I seismometer	
31	03	42	48.4	1.2	<3	19° 27.9'	155° 12.4'	10 Km NE of North P.I seismometer	
31	03	49	49.0	1.3	<3	19° 27.2'	155° 14.3'	6 Km NE of North P.I seismometer	
31	03	53	37.0	1.4	<3	19° 27.4'	155° 13.2'	8 Km NE of North P.I seismometer	
31	04	17	10.1	2.5	<3	19° 27.3'	155° 13.0'	7.5 Km NE of North P.I seismometer	Felt in H.N.P.
31	04	28	30.8	1.8	<3	19° 25.9'	155° 16.0'	2.5 Km NE of North P.I seismometer	Felt in H.N.P.

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
JAN 31	11	10	02.4	2.1	3	19° 26.2''	155 °15.2''	3.5 km NE of North P.T seismometer	Felt in H.V.N.P
31	11	37	48.1	1.6	3	19°28.6''	155° 11.4''	12 km NE of North P.T seismometer	
31	12	31	06.1	1.6	<3	19°24.3''	155°18.6''	3 km W of North P.T seismometer	
31	15	29	12.6	2.2	3	19°24.5''	155°16.6''	1 km SE of North P.T	Felt in H.V.N.P.
31	19	53	45.3	1.0	<3	19° 24.2''	155 °17.8''	2 km SW of North P.T seismometer	
31	20	01	56.5	2.4	<3	19° 24.1''	155° 16.0''	2 km SW of North P.T seismometer	
31	21	14	30.1	1.3	3	19°24.1''	155°17.3''	1.5 km SW of North P.T seismometer	
31	23	01	03.4	1.2	3	19°25.7''	155 °18.3''	1.5 km W of Uwekahuna seismometer	
31	23	36	16.1	2.0	<3	19°27.5 ''	155 °10.8''	12.5 km NE of North P.T seismometer	
31	23	52	10.2	1.4	<3	19°24.6''	155°17.8''	2 km W of North P.T seismometer	
Feb 1	01	17	44.6	1.8	3	19°26.2''	155°14.5''	5 km NE of North P.T seismometer	
1	01	40	16.5	2.8	13	19°19.2''	155°11.7''	9.5 km SE of Ahua seismometer	
1	01	59	52.7	1.4	<3	19° 23.9''	155° 14.1''	5 km ESE of N. P.T seismometer	
1	02	54	16.0	1.7	<3	19°23.8''	155°18.6''	4 km SW of North P.T seismometer	
1	02	59	45.0	1.9	<3	19°22.8''	155°10.1''	12 km ESE of North P.T seismometer	
1	05	24	11.4	1.7	<3	19°26.3''	155°14.7''	5 km NE of North P.T seismometer	
1	06	05	05.2	1.8	<3	19°24.3''	155°15.8''	2 km SE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 1	06	55	18.0	1.7	<3	19°27.0''	155°13.5''	7km NE of North P.T seismometer	
1	06	59	28.0	1.7	<3	19°26.9''	155°13.5''	7km NE of North P.T seismometer	
1	07	16	39.2	1.6	<3	19°24.4''	155°15.1''	3km ESE of North P.T seismometer	
1	08	55	34.0	1.2	<3	19°26.2''	155°15.1''	4km NE of North P.T seismometer	
1	08	59	58.3	2.2	<3	19°24.7''	155°16.8''	0.5km E of North P.T seismometer	
1	09	04	27.9	1.3	<3	19°23.8''	155°18.5''	3.5km SSW of Uwekahua seismometer	
1	09	21	12.4	0.5	<3	19°24.6''	155°18.4''	3km W of North P.T seismometer	
1	10	52	32.5	1.7	<3	19°24.1''	155°18.9''	4km SSW of North P.T seismometer	
1	11	03	25.2	0.6	<3	19°24.4''	155°18.5''	3km W. of North P.T seismometer	
1	11	32	34.8	1.2	<3	19°24.3''	155°18.9''	4km WSW of North P.T seismometer	
1	12	11	18.6	1.7	<3	19°25.6''	155°15.3''	3km NE of North P.T seismometer	
1	13	56	17.3	2.0	<3	19°27.4''	155°12.9''	8.5km NE of North P.T seismometer	
1	13	58	26.0	1.4	<3	19°20.9''	155°14.8''	4km NE of North P.T seismometer	
1	15	43	34.7	1.3	<3	19°26.2''	155°14.7''	4.5km NE of North P.T seismometer	
1	16	06	12.4	1.4	<3	19°26.9''	155°14.6''	5km NE of North P.T seismometer	
1	16	10	35.7	1.6	<3	19°26.5''	155°14.6''	4km NE of North P.T seismometer	
1	16	30	19.2	1.1	<3	19°25.5''	155°14.7''	4km NE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 1	17	42	47.4	2.1	<3	19° 23.9"	155°17.9"	2.9 km S of Uwekahuna seismometer	
1	19	05	30.5	2.0	<3	19°27.8"	155°12.5"	9km NE of North Pit seismometer	FELT in H.V.O
1	21	24	12.1	1.2	<3	19°24.2"	155°18.5"	3 km SW of Uwekahuna seismometer	
1	21	52	20.6	1.2	<3	19°22.9"	155°17.4"	4.5 km S of Uwekahuna seismometer	
1	22	03	10.4	1.8	<3	19°22.2"	155°14.2"	6 km NE of North Pit seismometer	
1	22	27	36.5	1.4	<3	19°24.7"	155°16.2"	1.5 km NE of North Pit seismometer	
1	23	27	45.5	1.9	<3	19°22.9"	155°15.1"	2 km NE of Ahua seismometers	
2	00	04	32.0	1.3	<3	19°24.7"	155°16.7"	0.5 km SE of North Pit seismometer	
2	00	30	49.3	0.9	<3	19°23.5"	155°18.0"	3 km SW of North Pit seismometer	
2	00	51	18.0	2.8	<3	19°22.4"	155°06.5"	17 km E of Ahua seismometer	
2	07	15	27.4	1.8	<3	19°24.0"	155° 13.9"	6.5 km E of North Pit seismometer	
2	07	16	29.1	1.5	<3	19°19.7"	155°16.2"	1.5 km ESE of North Pit seismometer	
2	07	24	25.8	1.7	<3	19°25.2"	155°15.5"	2.5 km E of North Pit seismometer	
2	08	12	10.7	1.4	<3	19°25.6"	155°15.5"	3 km E of North Pit seismometer	
2	08	52	50.2	1.0	<3	19°25.5"	155°16.1"	2 km NE of North Pit seismometer	
2	09	00	01.1	1.7	<3	19°25.2"	155°15.2"	3 km NE of North Pit seismometer	
2	10	15	24.0	2.4	<3	19°27.1"	155°14.4"	6 km NE of North Pit seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 2	10	41	26.1	1.5	<3	19° 24.0''	155° 18.9''	3.5 km SW of Uwekahuna seismometer	
2	13	16	47.5	1.6	<3	19° 25.4''	155° 15.2''	3.5 km NE of North P.T seismometer	
2	13	49	18.0	0.8	<3	19° 24.5''	155° 16.8''	0.75 km SE of North P.T seismometer	
2	14	47	34.1	1.7	<3	19° 25.5''	155° 15.2''	3 km NE of North P.T seismometer	
2	14	56	26.6	0.9	3	19° 25.2''	155° 16.8''	1 km N of North P.T seismometer	
2	18	55	13.0	1.9	<3	19° 25.8''	155° 16.3''	1.5 km NE of North P.T seismometer	Felt in H.V.P.
2	19	07	19.8	2.0	<3	19° 25.8''	155° 15.3''	3 km NE of North P.T seismometer	Felt in H.V.P.
2	20	13	01.0	1.2	<3	19° 24.9''	155° 16.1''	1.25 km E of North P.T seismometer	
2	20	18	47.4	1.6	<3	19° 25.7''	155° 15.9''	2.5 km E of North P.T seismometer	
2	21	15	43.5	1.4	<3	19° 24.6''	155° 16.1''	1.75 ESE of North P.T seismometer	
2	21	43	21.4	1.8	<3	19° 25.2''	155° 15.4''	3 km E of North P.T seismometer	
2	22	19	09.0	2.1	<3	19° 24.9''	155° 15.2''	4 km E of Uwekahuna seismometer	Felt in H.V.P.
2	22	45	47.0	1.0	<3	19° 25.5''	155° 16.6''	3 km E of Uwekahuna seismometer	
2	23	49	27.8	2.0	<3	19° 24.9''	155° 16.9''	1 km E of North P.T seismometer	Felt H.V.P.
3	00	06	16.4	1.0	<3	19° 25.4''	155° 16.1''	2.5 km E of Uwekahuna seismometer	
3	00	50	09.9	1.5	<3	19° 25.7''	155° 16.0''	3 km E of Uwekahuna seismometer	
3	01	38	39.2	2.0	<3	19° 28.0''	155° 12.2''	10 km NE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 3	04	16	20.2	1.9	<3	19° 24.0''	155° 17.6''	1Km S of Uwekahuna seismometer	Felt in HVP
3	04	45	20.0	2.2	<3	19° 25.8''	155° 16.1''	2Km NE of North P.T seismometer	Felt in HVP
3	06	26	51.5	1.4	<3	19° 25.5''	155° 15.5''	3.0 Km E of Uwekahuna seismometer	
3	07	19	38.8	1.4	<3	19° 25.0''	155° 15.5''	2.5 Km E of North P.T seismometer	
3	07	50	29.1	1.0	<3	19° 24.8''	155° 16.6''	0.5 Km E of North P.T seismometer	
3	10	25	11.2	1.5	<3	19° 25.0''	155° 16.0''	1.75 Km E of North P.T seismometer	
3	11	27	31.1	1.4	<3	19° 25.1''	155° 16.1''	2.75 Km E of Uwekahuna seismometer	
3	12	35	28.8	1.3	<3	19° 25.2''	155° 16.1''	2.5 Km E of Uwekahuna seismometer	
3	12	39	09.8	1.4	<3	19° 26.3''	155° 16.1''	2.75 Km NE of Uwekahuna seismometer	
3	12	53	04.6	1.3	<3	19° 24.1''	155° 16.6''	1.5 Km SE of North P.T seismometer	
3	12	55	31.0	1.5	<3	19° 24.4''	155° 15.0''	4.5Km E of Uwekahuna seismometer	
3	13	19	56.7	1.1	<3	19° 25.9''	155° 16.7''	1.75 Km NE of Uwekahuna seismometer	
3	13	28	14.1	1.3	<3	19° 24.5''	155° 16.5''	1.0Km SE of North P.T seismometer	
3	13	39	08.9	1.4	<3	19° 24.6''	155° 16.4''	1.0Km SE of North P.T seismometer	
3	15	29	39.7	1.6	<3	19° 25.1''	155° 15.5''	2.5 Km E of North P.T seismometer	
3	17	37	20.5	1.3	<3	19° 24.7''	155° 16.0''	1.7 Km E of North P.T seismometer	
3	18	12	28.8	1.2	<3	19° 25.1''	155° 16.5''	1.0 Km ENE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 3	18	30	24.1	1.2	8	19°24.6''	155°16.8''	1.0Km W of North P.T seismometer	
3	19	10	52.5	1.1	<3	19°23.9''	155°16.9''	1.75Km S of North P.T seismometer	
3	19	36	35.2	1.0	<3	19°23.9''	155°16.8''	2Km S of North P.T seismometer	
3	20	49	16.7	1.4	<3	19°24.9'	155°16.6''	2.25Km E of North P.T seismometer	
3	21	15	35.5	1.7	<3	19°25.4''	155°15.3''	4 Km E of Uwekahuna seismometer	
3	21	51	12.0	1.3	<3	19°25.0''	155°16.1''	1.25Km E of North P.T seismometer	
3	21	54	40.4	1.2	<3	19°23.9''	155°17.6''	2.25 Km SW of North P.T seismometer	
3	22	01	07.1	2.4	<3	19°26.3''	155°14.8''	4 Km NE of North P.T seismometer	Felt H.V.P.
3	22	51	12.2	0.6	<3	19°24.8''	155°16.5''	1Km SE of North P.T seismometer	
4	00	47	44.8	1.4	<3	19°25.3''	155°16.0''	2Km NE of North P.T seismometer	
4	07	29	33.4	2.4	<3	19°22.5''	155°15.4''	4Km E of Uwekahuna seismometer	Felt in H.V.P.
4	11	24	03.3	1.8	<3	19°24.8''	155°16.3	1.25 Km E of North P.T seismometer	
4	12	13	21.6	1.1	<3	19°24.6''	155°16.6''	0.8Km SE of North P.T seismometer	
4	12	18	00.0	1.4	<3	19°24.9''	155°16.0''	1.75 E of North P.T seismometer	
4	13	14	36.6	1.0	<3	19°24.5''	155°16.6''	0.8 Km SE of North P.T seismometer	
4	14	11	21.4	1.0	<3	19°25.2''	155°16.4''	1.25 Km E of North P.T seismometer	
4	14	46	31.9	2.0	<3	19°24.6''	155°16.5''	0.8 Km SE of North P.T seismometer.	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 4	15	46	21.3	1.2	<3	19° 24.6"	155° 15.0"	1 km SE of North P.T seismometer	
4	16	43	40.6	2.0	<3	19° 26.5"	155° 15.0"	6 km NE of North P.T seismometer	
4	16	46	12.6	2.1	<3	19° 26.9"	155° 15.2"	5 km NE of North P.T seismometer	
4	17	06	47.1	1.0	<3	19° 25.1"	155° 16.4"	1.25 km E of North P.T seismometer	
4	17	52	49.2	1.6	<3	19° 25.4"	155° 15.4"	4 km E of Uwekahuna seismometer	
4	18	34	25.3	1.4	<3	19° 24.9"	155° 16.4"	1.25 E of North P.T seismometer	
4	20	10	07.7	1.2	<3	19° 24.4"	155° 16.4"	1.0 km ESE of North P.T seismometer	
4	20	19	41.1	1.1	<3	19° 24.4"	155° 17.9"	2 km SSW of Uwekahuna seismometer	
4	23	37	07.0	1.2	<3	19° 25.5"	155° 16.5"	2 km E of Uwekahuna seismometer	
5	00	25	20.2	1.5	<3	19° 25.1"	155° 16.4"	1.25 km E of North P.T seismometer	
5	01	08	04.7	1.0	<3	19° 24.9"	155° 16.7"	0.5 km SE of North P.T seismometer	
5	01	28	49.3	1.2	<3	19° 24.6"	155° 16.4"	1.0 km SE of North P.T seismometer	
5	01	33	04.0	1.3	<3	19° 25.1"	155° 16.6"	2 km E of North P.T seismometer	
5	01	39	50.2	1.0	<3	19° 25.4"	155° 15.9"	3 km E of Uwekahuna seismometer	
5	05	27	48.2	1.2	<3	19° 25.2"	155° 16.4"	2 km E of Uwekahuna seismometer	
5	06	42	20.3	1.0	<3	19° 25.0"	155° 16.2	1.25 km E of North P.T seismometer	
5	07	16	12.2	1.5	<3	19° 25.0"	155° 16.4"	1.0 km E of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 5	08	16	07.5	1.4	<3	19° 25.3''	155°16.5''	2.8 Km E of Uwekahuna seismometer	
5	08	30	37.8	1.2	<3	19° 25.1''	155°16.5''	2 Km E of Uwekahuna seismometer	
5	10	14	32.8	1.7	<3	19°25.6''	155°15.6''	3.25 Km ENE of Uwekahuna seismometer	
5	12	53	15.9	1.6	<3	19°25.3''	155°15.6''	3.5 Km E of Uwekahuna seismometer	
5	13	02	36.9	1.4	<3	19°25.7''	155°16.6''	1.8 Km ENE of Uwekahuna	
5	13	11	21.0	1.1	<3	19°25.1''	155°16.6''	0.5 Km ENE of North P.T seismometer	
5	13	16	18.4	1.0	<3	19°24.9''	155°16.5''	1.0 Km E of North P.T seismometer	
5	14	15	28.8	1.2	<3	19°23.8''	155°18.2''	3 Km SW of Uwekahuna seismometer	
5	14	17	59.0	1.3	<3	19°23.8''	155°18.2''	3 Km SW of Uwekahuna seismometer	
5	15	16	07.3	1.2	<3	19°24.9''	155°15.4''	2.5 Km E of North P.T seismometer	
5	18	21	37.9	0.9	<3	19°24.9''	155°16.6''	0.5 Km E of North P.T seismometer	
5	18	52	54.8	0.8	<3	19°25.1''	155°16.7''	0.5 Km ENE of North P.T seismometer	
5	20	22	43.6	1.0	<3	19° 24.7''	155°16.7''	0 Km From North P.T seismometer	
5	20	31	36.4	1.0	<3	19°24.4''	155°16.6''	1.0 Km SE of North P.T seismometer	
6	00	56	49.4	1.0	<3	19°25.1''	155° 16.6''	0.75 Km ENE of North P.T seismometer	
6	12	34	55.0	1.5	3	19°23.4''	155°15.0''	2 Km NE of Ahua seismometer	
7	20	13	39.3	1.0	<3	19°25.2''	155°16.2''	1.25 Km NE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 7	21	34	25.2	3.1	3	19°20.9"	155°16.6"	0.75 SSW of Ahua seismometer	
7	22	17	18.5	0.9	<3	19°25.0"	155°16.5"	1.5 Km E of North P.T seismometer	
8	01	42	13.1	1.0	<3	19°24.8"	155°16.4"	1.0 Km ESE of North P.T seismometer	
8	04	56	21.1	0.9	<3	19° 25.0"	155°16.5"	1.0 Km E of North P.T seismometer	
8	05	34	05.0	1.2	<3	19°25.3"	155°16.2"	1.5 Km ENE of North P.T seismometer	
8	09	13	02.3	1.3	<3	19°25.1"	155°16.1"	1.5 Km E of North P.T seismometer	
8	18	05	38.0	1.7	3	19°21.9"	155°17.0"	2.5 Km WSW of Ahua seismometer	
8	20	52	26.2	3.3	<3	19°29.5"	154°57.0"	1.0 Km S of Pohoa seismometer	
9	03	26	14.3	1.3	<3	19°24.6"	155°15.9"	2 Km E of North P.T seismometer	
9	04	49	27.1	1.2	<3	19°23.9"	155°17.4"	2 Km SSW of North P.T seismometer	
9	09	13	24.8	1.0	<3	19°25.2"	155°15.3"	3 Km E of North P.T seismometer	
9	10	01	03.0	1.6	3	19°23.7"	155°20.5"	8 Km NE of Desert seismometer	
9	10	18	05.5	1.0	<3	19°25.3"	155°16.6"	0.75 Km NE of North P.T seismometer	
9	14	32	15.5	1.2	<3	19°24.9"	155°16.6"	0.25 Km E of North P.T seismometer	
9	15	36	15.6	1.1	<3	19°24.5"	155°17.5"	1.0 Km SW of North P.T seismometer	
9	21	20	29.4	1.5	<3	19°24.0"	155°18.0"	3 Km SW of Uwekahuna seismometer	
9	21	47	53.5	1.2	<3	19°24.8"	155°18.5"	2 Km WSW of Uwekahuna seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 9	22	35	21.4	1.7	<3	19°24.4''	155°19.9''	9km NE of Desert seismometer	
10	03	28	51.0	1.2	<3	19°25.4''	155°15.9''	2km NE of North P.T seismometer	
10	04	19	08.1	2.2	3	19°20.6''	155°16.9''	3 km SW of Ahua seismometer	
10	06	21	48.5	1.4	<3	19°25.2''	155°15.7''	2.25 NE of North P.T seismometer	
10	08	15	18.0	1.8	<3	19°26.4''	155°15.3''	4 Km E of North P.T seismometer	
10	10	57	19.2	2.2	3	19°25.0''	155°10.0''	12 km E of North P.T seismometer	
10	12	04	13.6	1.4	<3	19°25.3''	155°15.4''	3.7 km E of Uwekahuna seismometer	
10	12	39	14.7	1.7	<3	19°25.4''	155°15.1''	4.25 km E of Uwekahuna seismometer	
10	18	30	46.4	2.0	<3	19°25.1''	155°15.3''	4km E of Uwekahuna seismometer	
10	20	42	13.2	1.3	<3	19°25.4''	155°15.4''	3.75 km E of North P.T seismometer	
10	20	58	10.6	1.0	<3	19°25.0''	155°16.1''	1.5 km E of North P.T seismometer	
10	21	25	09.2	1.6	<3	19°25.1''	155°15.9''	2km E of North P.T seismometer	
10	21	53	52.7	2.1	3	19°22.6''	155°15.1''	1.4km E of Ahua seismometer	
11	01	09	08.0	0.9	<3	19°24.6''	155°17.4''	1.0 km SW of North P.T seismometer	
11	09	11	11.5	1.0	<3	19°24.0''	155°18.0''	1.75 km SW of North P.T seismometer	
11	11	39	35.4	2.8	<3	19°24.5''	155°13.5''	6 Km E of North P.T seismometer	
11	20	05	12.3	1.0	<3	19°25.1''	155°16.0''	1.75 km ENE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 11	22	54	01.2	2.1	<3	19°24.1''	155°14.9''	4 km SE of North P.T seismometer	
12	04	17	01.0	2.2	3	19°22.1''	155°16.2''	1 km W of Ahua seismometer	
12	04	55	08.3	2.2	<3	19°23.0''	155°16.8''	2 km NW of Ahua seismometer	
12	06	13	35.0	1.0	<3	19°25.2''	155°16.4''	1.4 km NE of North P.T seismometer	
12	08	43	14.6	1.6	<3	19°25.3''	155°15.6''	3 km E of Uwekahuna seismometer	
12	16	34	39.0	2.7	<3	19°23.3''	155°15.3''	1.75 km NE of Ahua seismometer	
12	16	40	14.7	1.5	3	19°22.0''	155°16.9''	1.0 km SW of Ahua seismometer	
12	16	50	45.6	2.8	<3	19°25.6''	155°15.5''	3.5 km E of Uwekahuna seismometer	
13	03	27	57.3	1.1	<3	19°25.5''	155°15.8''	3 km E of Uwekahuna seismometer	
13	14	15	48.8	2.5	3	19°11.3''	155°02.8''	17 km SW of Apua Point offshore	
14	00	24	49.1	2.0	<3	19°25.4''	155°15.4''	4 km E of Uwekahuna seismometer	
15	19	29	38.8	1.1	<3	19°25.4''	155°15.6''	3 km E of Uwekahuna seismometer	
15	20	52	40.0	1.0	<3	19°24.6''	155°16.4''	1.25 km SE of North P.T seismometer	
16	18	55	26.4	2.5	8	19°00.9''	155°14.0''	27.5 km S-SW of Apua Point offshore)	
17	11	38	50.0	4.5	3	19°09.6''	154°38.8''	41 km SE of Kalapana offshore	
17	17	20	03.4	2.5	3	19°17.0''	155°06.8''	9 km ENE of Apua Point offshore	
17	20	41	25.6	1.3	25	19°22.5''	155°18.1''	5 km SW of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 17	22	56	39.7	1.2	<3	19°25.4"	155°16.6"	3.25 km E of Uwekahuna seismometer	
18	00	07	06.2	1.1	<3	19°24.9"	155°16.1"	1.75 km E of North P.T seismometer	
18	04	50	54.0	1.6	<3	19°24.8"	155°15.5"	2.75 E of North P.T seismometer	
18	06	57	59.0	1.2	<3	19°25.1"	155°16.1"	1.5 km ENE of North P.T seismometer	
18	09	25	26.3	1.3	<3	19°25.1"	155° 16.0"	3 km E of Uwekahuna seismometer	
18	13	56	01.6	1.7	<3	19°24.0"	155°16.0"	2.5 km SE of North P.T seismometer	
18	20	05	46.4	1.2	<3	19°25.5"	155°15.4"	3.5 km E of Uwekahuna seismometer	
18	20	34	49.7	1.4	<3	19°22.8"	155°17.8"	5 km S of Uwekahuna seismometer	
20	01	53	57.4	1.0	<3	19°24.6"	155°15.5"	3 km E of North P.T seismometer	
20	13	40	35.3	1.0	<3	19°25.2"	155°15.1"	1.6 km NE of North P.T seismometer	
20	13	49	38.0	1.2	<3	19° 25.2"	155°16.7"	0.5 km NE of North P.T seismometer	
20	14	48	16.3	1.6	<3	19°25.5"	155°15.6"	3.25 km E of Uwekahuna seismometer	
20	14	56	00.4	1.2	3	19°24.5"	155°18.0"	2 km W of North P.T seismometer	
20	16	17	03.4	1.0	<3	19°25.0"	155°16.5"	1.0 km E of North P.T seismometer	
20	21	40	35.4	2.0	<3	19°25.8"	155°15.2"	4 km E of Uwekahuna seismometer	
21	01	11	59.0	1.1	<3	19°24.4"	155° 15.9"	3 km E of Uwekahuna seismometer	
21	04	32	18.1	1.4	<3	19°25.1"	155°16.7"	0.5 km NE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 21	07	24	49.8	2.4	<3	19°20.9''	155°15.5''	3km S-SE of Ahua seismometers	
21	07	46	06.2	1.2	<3	19°24.7''	155°16.8''	0.5 km SE of North P.T seismometer	
21	10	55	40.0	1.3	<3	19°24.5''	155°16.9''	0.75 km SSE of North P.T seismometer	
21	10	56	48.5	1.2	<3	19°25.3''	155°15.5''	2.75 km E of Uwekahuna seismometer	
21	13	14	46.6	1.0	3	19°15.6''	155°16.3''	12km S of Ahua seismometer (Offshore)	
21	13	20	27.7	1.0	<3	19°25.5''	155°16.1''	2.5km E of Uwekahuna seismometer	Felt at North Rim Kilauea caldera
21	13	25	06.2	1.3	<3	19°25.1''	155°15.9''	2km ENE of North P.T seismometer	Felt at North Rim Kilauea Caldera
21	15	40	14.7	1.3	<3	19°26.8''	155°15.0''	5Km NE of North P.T seismometer	Felt at North Rim Kilauea Caldera.
21	16	53	48.8	1.8	<3	19°26.2''	155°15.7''	3Km NE of North P.T seismometer	Felt at North Rim Kilauea Caldera
21	17	03	38.0	1.0	<3	19°26.2''	155°15.9''	3 Km NE of Uwekahuna seismometer	
21	18	17	09.4	1.6	<3	19°26.4''	155°15.0''	4 Km NE of North P.T seismometer	
21	21	37	08.3	1.4	<3	19°25.7''	155°15.0''	5 Km E of Uwekahuna seismometer	
21	22	39	03.6	1.4	<3	19°26.1''	155°15.8''	3 Km NE of North P.T seismometer	
21	22	50	34.7	1.0	<3	19°26.0''	155°15.9''	3Km NE of North P.T seismometer	
22	03	19	37.5	1.2	<3	19°26.3''	155°15.9''	3 Km NE of Uwekahuna seismometer	
22	05	33	00.5	1.0	<3	19°25.3''	155°15.9''	3 Km E of Uwekahuna seismometer	
22	05	53	22.8	1.5	<3	19°26.1''	155°15.9''	3 Km NE of North P.T seismometer	Felt at North Rim Kilauea Caldera

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 22	15	29	02.5	1.9	<3	19° 25.6''	155°14.9''	4.5 km E of Uwekahuna seismometer	
22	16	31	31.3	2.0	<3	19° 26.9''	155°14.6''	6 km NE of North P.T seismometer	
22	18	08	17.8	3.2	<3	19° 20.5''	155°15.2''	19 km ESE of Ahua seismometer	
23	09	15	15.4	2.2	<3	19° 26.8''	155°14.2''	6 km NE of Uwekahuna seismometer	
23	09	24	46.0	1.0	<3	19° 24.5''	155°16.9''	0.75 km S of North P.T seismometer	
23	11	53	27.8	2.2	<3	19° 26.1''	155°15.6''	5 km NE of Uwekahuna seismometer	
23	15	43	34.9	1.8	3	19° 26.2''	155° 15.2''	4 km NE of Uwekahuna seismometer	
23	17	17	38.0	1.4	<3	19° 25.6''	155°16.3''	3 km NE of Uwekahuna seismometer	
24	02	27	26.2	2.2	<3	19° 25.2''	155°14.3''	4 km ENE of North P.T seismometer	
24	03	23	55.1	1.1	<3	19° 25.0''	155°16.7''	0.5 km NE of North P.T seismometer	
24	04	36	34.7	1.9	<3	19° 26.4''	155°15.4''	3 km NE of North P.T seismometer	
24	09	45	23.0	1.3	<3	19° 26.2''	155°16.5''	2.75 km ENE of North P.T seismometer	
24	20	15	22.9	1.9	<3	19° 25.9''	155°15.0''	3 km NE of North P.T seismometer	
24	20	21	31.2	1.7	<3	19° 25.9''	155°15.4''	3 km NE of North P.T seismometer	
25	05	28	00.3	1.4	<3	19° 24.0''	155°18.2''	3 km SW of Uwekahuna seismometer	Felt at North Rim Kilauea Caldera
25	11	01	30.7	1.4	<3	19° 23.6''	155° 18.8''	4 km SW of Uwekahuna seismometer	
25	13	05	36.4	1.3	<3	19° 23.9''	155° 17.5''	3 km S of Uwekahuna seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 25	14	25	36.5	1.9	<3	19° 26.2'	155° 15.2	4Km NE of North P.T seismometer	
25	14	31	57.0	1.3	<3	19° 25.3"	155° 16.0"	2km ENE of North P.T seismometer	
25	14	33	08.0	1.3	<3	19° 25.3'	155° 15.8"	2km ENE of North P.T seismometer	
25	15	15	27.9	1.4	<3	19° 24.7"	155° 16.5"	1.0km E of North P.T seismometer	
25	18	35	14.3	1.7	25	19° 22.1"	155° 18.5"	4.5 km W of Ahua seismometer	
25	23	11	43.6	2.0	<3	19° 25.9"	155° 15.0"	4km NE of North P.T seismometer	
26	01	00	02.0	2.2	<3	19° 26.7"	155° 14.8"	5km NE of North P.T seismometer	
26	04	14	55.7	1.3	<3	19° 25.2"	155° 15.8"	2km ENE of North P.T seismometer	
26	04	40	50.1	1.3	<3	19° 24.7"	155° 16.5"	1.0 km E of North P.T seismometer	
26	10	35	45.9	3.0	<3	19° 25.7"	155° 16.1"	3 km E of Uwekahuna seismometer	
26	15	58	51.1	3.0	<3	19° 26.1"	155° 15.2'	3 km NE of North P.T seismometer	
26	20	01	35.5	1.9	<3	19° 27.2"	155° 15.2"	5km NE of North P.T seismometer	
26	20	32	31.9	1.7	<3	19° 22.9"	155° 18.9"	5 km SW of Uwekahuna seismometer	
27	10	04	13.3	1.5	8	19° 27.2"	155° 14.0"	6 km NE of North P.T seismometer	
27	11	34	19.8	2.3	<3	19° 25.6"	155° 16.1"	2km NE of North P.T seismometer	
27	13	11	38.0	2.9	<3	19° 27.0"	155° 14.7"	5.5km NE of North P.T seismometer	
27	13	50	59.1	2.6	<3	19° 25.9"	155° 16.0"	2.5 km NE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb 27	14	21	15.4	1.4	<3	19° 25.6''	155°16.0''	2 Km NE of North P.T seismometer	
27	14	42	32.6	1.6	<3	19°25.4''	155°15.7''	2 Km NE of North P.T seismometer	
27	22	57	33.0	1.8	<3	19°25.1''	155°16.5''	1.0 Km E NE of North P.T seismometer	Felt at North Rim Kilauea Caldera
27	23	23	01.8	2.0	<3	19°26.2''	155°15.9''	3 Km NE of North P.T seismometer	
27	23	41	20.7	1.2	<3	19°24.9''	155° 16.1''	1.5 Km E of North P.T seismometer	
28	00	45	58.9	1.0	<3	19° 25.2''	155°16.4''	1.0 Km NE of North P.T seismometer	
28	01	11	56.3	1.2	<3	19° 24.9''	155°16.4''	1.0 E of North P.T seismometer	
28	05	09	16.5	1.3	<3	19° 24.9''	155°16.1''	1.5 Km E of North P.T seismometer	
28	07	14	28.9	1.3	<3	19°25.0''	155°15.9''	2 Km E of North P.T seismometer	
28	12	24	43.0	1.7	<3	19°25.6''	155°15.3''	3 Km ENE of North P.T seismometer	
28	13	03	18.7	1.2	<3	19°25.2''	155°16.3''	1.0 Km NE of North P.T seismometer	
28	18	20	23.9	1.3	<3	19°25.8''	155°15.2''	3.75 Km NE of North P.T seismometer	
28	21	59	08.0	1.2	<3	19°24.9''	155°16.6''	0.5 Km E of North P.T seismometer	
28	22	15	28.8	1.4	<3	19°24.7''	155°16.2''	1.5 Km E of North P.T seismometer	Felt at North Rim Kilauea Caldera
28	23	12	35.2	2.3	<3	19°25.9''	155°15.5''	3 Km NE of North P.T seismometer	Felt at North Rim Kilauea Caldera.
29	09	35	29.9	1.5	<3	19° 25.5''	155°15.0''	3.5 Km NE of North P.T seismometer	
29	10	14	24.6	2.4	<3	19°26.7''	155°14.9''	5 Km NE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
Feb. 29	11	38	11.6	2.1	<3	19° 25.9''	155° 15.0''	4 km NE of North P.T seismometers	
29	13	47	28.8	2.3	<3	19°26.7''	155°15.0''	4km NE of North P.T seismometer	
29	16	59	39.9	2.0	<3	19°26.7''	155°16.2''	3 km NE of North P.T seismometer	
29	18	12	11.0	2.1	<3	19°26.2''	155°15.5''	4km NE of North P.T seismometer	Felt at North Rim Kilauea Caldera
29	19	17	36.8	2.1	<3	19°21.0''	155°17.0''	3.25 SW of Ahua seismometer	
29	19	26	47.3	3.1	3	19°21.1''	155°16.1''	2 km SW of Ahua seismometer	
29	21	15	57.8	2.7	3	19°20.8''	155°16.4''	3 km S of Ahua seismometer	
29	21	39	13.6	1.6	<3	19° 21.8''	155°16.8''	2 km SW of Ahua seismometer	
29	23	43	36.4	2.5	<3	19°20.7''	155°15.8''	3km S of Ahua seismometer	
March 1	01	07	59.8	1.0	<3	19°24.7''	155°16.7''	0.5 km ESE of North P.T seismometer	
1	03	48	28.2	2.1	<3	19° 19.2''	155° 07.8''	10km NE of Apua Point	
1	05	39	08.9	2.3	<3	19°21.6''	155°18.9''	5km WSW of Ahua seismometer	
1	10	37	46.5	1.7	<3	19° 23.2''	155°12.8''	6 km E of Ahua seismometer	
1	11	26	04.0	1.4	3	19°25.0''	155°14.5''	4 km E of North P.T seismometer	
1	12	07	41.2	2.0	<3	19°23.1''	155°12.6''	6 km E of Ahua seismometer	
1	12	14	36.4	2.0	<3	19°27.0''	155°14.0''	6km NE of North P.T seismometer	
1	14	48	36.4	0.8	<3	19°25.2''	155°16.1''	1.75 km NE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
March 1	15	29	55.8	1.6	<3	19°25.5''	155°15.5''	3 Km ENE of North Pit seismometer	
1	18	03	11.4	1.4	<3	19°25.5''	155°15.1''	3.5 Km ENE of North Pit seismometer	
1	19	23	39.5	1.7	<3	19°26.2''	155°15.1''	4 Km NE of North Pit seismometer	
1	21	05	47.6	1.3	<3	19°25.8''	155°14.8	4 Km NE of North Pit seismometer	
1	23	04	23.9	1.1	<3	19°25.6''	155°15.0''	3.5 Km NE of North Pit seismometer	
1	23	48	06.5	2.1	15	19°23.5''	155°18.4''	4 Km SW of North Pit seismometer	
2	00	11	15.0	1.3	3	19°25.9''	155°14.8°	4 Km NE of North Pit seismometer	
2	01	58	20.9	0.9	<3	19°25.3''	155°15.9''	2 Km NE of North Pit seismometer	
2	02	59	26.2	0.8	<3	19°24.8''	155°16.2''	1.0 Km E of North Pit seismometer	
2	04	28	15.7	1.4	<3	19°26.5''	155°14.2''	5 Km NE of North Pit seismometer	
2	04	41	04.6	1.2	<3	19°24.3''	155°11.9''	9 Km E of North Pit seismometer	
2	04	46	45.2	1.9	<3	19°26.8''	155°14.1''	7 Km NE of North Pit seismometer	
2	05	11	08.2	0.7	<3	19°24.9''	155°16.7''	0.5 Km E of North Pit seismometer	
2	06	15	04.0	1.2	<3	19°25.3''	155°15.7''	2 Km NE of North Pit seismometers	
2	06	26	27.4	3.2	25	19°19.8''	155°22.8''	18 Km NE of Pohakuloa	
2	06	29	45.7	1.5	<3	19°25.2''	155°15.0''	3.5 Km E of North Pit seismometer	
2	06	43	45.5	1.3	<3	19°25.3''	155°15.8''	2 Km ENE of North Pit seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
March 2	07	29	06.4	1.2	<3	19°25.6"	155°15.5"	3 km NE of North Pit seismometer	
2	13	10	59.3	1.8	<3	19°27.5"	155°13.4"	8 km NE of North Pit seismometer	
2	13	14	59.8	1.7	<3	19°25.2"	155°14.3"	4 km NE of North Pit seismometer	
2	13	49	52.2	1.8	<3	19°24.8"	155°16.2"	1.5 km E of North Pit seismometer	
2	14	52	24.8	1.5	<3	19°24.7"	155°15.4"	2.5 km E of North Pit seismometer	
2	15	08	02.6	2.0	<3	19°26.9"	155°16.2"	3 km NE of Uwekahuna seismometer	
2	15	13	01.0	1.6	<3	19°25.9"	155°16.2"	2.75 km NE of Uwekahuna seismometer	Felt at Kilauea summit
2	15	29	07.2	1.0	<3	19°25.4"	155°15.0"	3.5 km NE of North Pit seismometer	
2	15	32	20.8	1.5	<3	19°25.2"	155°15.2"	3 km NE of North Pit seismometer	
2	16	39	25.2	1.4	<3	19°25.6"	155°15.1"	3.5 km NE of North Pit seismometer	
2	16	52	06.2	2.3	<3	19°22.5"	155°13.5"	4 km E of Ahua seismometer	
2	18	40	23.4	1.2	3	19°25.8"	155°15.5"	2 km NE of North Pit seismometer	
2	19	38	36.2	2.9	3	19°21.8"	155°03.7"	22 km E of Ahua seismometer on E RIFT zone	
2	22	02	03.0	3.5	8	19°23.5"	155°58.3"	12 km SSW of Pahoa seismometer	Felt at Namawata
2	22	33	33.8	1.9	<3	19°22.2"	155°13.0"	10 km NE of North Pit seismometer	
2	23	22	13.4	1.0	<3	19°24.7"	155°17.0"	0.25 km S of North Pit seismometer	
2	23	24	15.3	1.8	<3	19°26.2"	155°13.9"	6 km NE of North Pit seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
March 3	02	40	00.2	1.3	<3	19°25.5"	155°16.4"	3 km NE of North P.T seismometer	
3	12	07	07.4	2.5	<3	19°26.2"	155°14.7"	5 km NE of North P.T seismometer	
3	12	48	32.6	1.5	<3	19°25.4"	155°15.7"	2.5 km NE of North P.T seismometer	
3	14	26	56.6	1.0	<3	19°25.5"	155°16.2"	2 km E of Uwekahuna seismometer	
3	14	30	42.7	1.4	<3	19°26.0"	155°17.0"	2 km NNE of North P.T seismometer	
3	19	22	12.4	2.8	<3	19°20.7"	155°20.0"	11 km ESE of Ahua seismometer	
3	23	59	14.9	2.0	<3	19°27.6"	155°15.0"	4.5 km NE of North P.T seismometer	
4	03	15	12.0	2.4	3	19°20.9"	155°23.7"	5 km SE of Ahua seismometer	
4	04	35	08.4	1.3	<3	19°25.4"	155°16.2"	3 km NE of North P.T seismometer	
4	05	04	35.0	2.3	<3	19°18.8"	155°07.2"	15 km ENE of Ahua seismometer	
4	06	04	25.5	3.6	13	19°26.5"	155°59.5"	10 km SW of Kealakekua Bay	Felt in Kona region
4	11	48	30.2	1.9	<3	19°25.4"	155°17.4"	0.5 km E of Uwekahuna seismometer	
4	18	35	38.6	1.6	25	19°20.9"	155°18.1"	4.5 km SW of Ahua seismometer	
4	20	28	05.1	0.8	<3	19°25.2"	155°16.1"	1.5 km NE of North P.T seismometer	
5	00	55	44.4	1.3	<3	19°25.5"	155°16.0"	2 km NE of North P.T seismometer	
5	01	21	38.1	1.3	<3	19°24.7"	155°16.6"	1.0 km SW of North P.T seismometer	
5	06	41	07.7	2.1	<3	19°26.3"	155°16.0"	3 km NE of North P.T seismometer	Felt Kilauea summit.

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
March 5	06	49	53.2	2.0	<3	19°26.0"	155°15.5"	3 km NE of North P.I seismometer	Felt Kilauea summit
5	11	52	38.7	1.6	<3	19°25.9"	155°14.9"	4 km NE of North P.I seismometer	
5	15	03	41.0	2.3	35	19°19.2"	155°15.6"	6 km S of Ahua seismometer	
5	18	01	33.1	2.5	8	19°21.8"	155°07.7"	16 km E of Ahua seismometer (upper RIFT)	
5	21	38	21.5	2.9	3	19°16.2"	155°00.5"	10 km SSW of Kalapana (offshore)	
5	21	51	18.5	1.3	25	19°21.0"	155°17.8"	3.5 km SW of Ahua seismometer	
5	23	57	19.0	1.4	<3	19°22.8"	155°16.0"	0.5 km N of Ahua seismometer	
6	09	52	16.5	1.1	<3	19°25.5"	155°15.5"	3 km NE of North P.I seismometer	
6	11	27	17.8	0.7	<3	19°25.0"	155°16.6"	0.5 km E of North P.I seismometer	
6	11	48	31.8	1.5	<3	19°24.0"	155°12.3"	6 km ENE of Ahua seismometer	
6	12	15	16.1	2.7	3	19°23.5"	155°29.5"	16 km SW of Mauna Loa seismometer	
6	13	51	07.7	1.0	<3	19°25.1"	155°14.9"	4.0 km ENE of North P.I seismometer	
6	14	38	17.1	1.8	<3	19°28.0"	155°12.0"	10 km NE of Uwekahuna seismometer	
6	16	27	15.7	0.9	<3	19°25.1"	155°16.3"	1.0 km NE of North P.I seismometer	
6	17	32	28.1	1.8	<3	19°22.4"	155°15.7"	2.25 km NE of Ahua seismometer	
6	20	13	04.7	0.6	<3	19°25.2"	155°16.2"	1.25 km NE of North P.I seismometer	
6	21	04	27.3	1.3	<3	19°25.3"	155°15.8"	2 km NE of North P.I seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
March 6	21	15	50.0	1.1	<3	19°25.6"	155°15.2"	3.5 Km NE of North P.T seismometer	
6	23	34	54.9	2.9	<3	19°23.4"	155°08.2"	16 Km NE of North P.T seismometer	Felt Kilauea summit
7	03	24	18.0	2.9	<3	19°25.9"	155°22.9"	7.5 Km NE of North P.T seismometer	Felt Kilauea summit
7	05	19	09.3	1.3	8	19°27.1"	155°13.0"	8 Km NE of North P.T seismometer	
7	05	22	06.1	1.2	<3	19°26.2"	155°15.0"	4 Km NE of North P.T seismometer	
7	09	24	13.9	0.8	<3	19°24.8"	155°14.7"	0.5 Km SE of North P.T seismometer	
7	11	57	00.9	0.6	<3	19°24.7"	155°16.5"	1.0 Km SE of North P.T seismometer	
7	14	08	28.0	1.1	<3	19°25.6"	155°15.6"	2.5 Km NE of North P.T seismometer	
7	16	32	31.6	3.6	<3	19°26.4"	155°13.8"	6 Km NE of North P.T seismometer	Felt Kilauea summit
8	01	41	35.6	2.0	3	19°21.8"	155°12.0"	7 Km E of Ahua seismometer	
8	02	02	34.6	1.1	<3	19°25.8"	155°15.7"	3 Km NE of North P.T seismometer	
8	02	24	12.8	1.0	<3	19°25.3"	155°16.3"	1.5 Km NE of North P.T seismometer	
8	05	42	44.0	1.7	<3	19°27.1"	155°16.0"	4 Km NE of Uwekahuna seismometer	
8	09	50	37.8	1.1	<3	19°25.3"	155°15.7"	2 Km NE of North P.T seismometer	
8	09	51	22.3	1.0	<3	19°26.0"	155°15.8"	3 Km E of North P.T seismometer	
9	00	25	57.8	1.0	<3	19°25.2"	155°16.2"	1.25 Km NE of North P.T seismometer	
9	03	46	17.0	1.4	<3	19° 25.4"	155°15.4"	3 Km NE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
March 9	10	15	45.1	0.8	<3	19° 24.8"	155° 16.3"	1.0 Km E of North P.T seismometer	
9	10	58	25.7	0.7	<3	19°25.1"	155°16.8"	0.5 km NE of North P.T seismometer.	
9	16	06	17.1	2.1	8	19°27.5"	154°59.9"	6 Km SW of Pahoa seismometer	
9	18	17	36.9	1.2	<3	19° 25.6"	155°15.2"	3 km NE of North P.T seismometer	
9	21	13	54.9	1.0	<3	19°26.1"	155°15.0"	4.5 km ENE of Uwekahuna seismometer	
9	21	14	52.1	1.1	<3	19°24.7"	155°16.5"	0.5 km SE of North P.T seismometer	
10	01	24	50.8	0.7	<3	19°25.0"	155°16.7"	0.5 km E of North P.T seismometer	
10	07	29	51.5	0.7	<3	19°24.9"	155°16.7"	0.5 km E of North P.T seismometer.	
10	11	46	17.2	2.2	<3	19°27.7"	155°11.8"	10 km NE of North P.T seismometer	
10	12	20	06.6	1.8	<3	19°26.6"	155° 12.8"	8 Km NE of North P.T seismometer	
10	12	57	52.8	0.6	<3	19°25.1"	155°16.3"	1.0 km ENE of North P.T seismometer	
10	13	59	18.3	0.7	<3	19°25.6"	155°15.7"	2.5 km NE of North P.T seismometer	
10	15	35	44.7	0.6	<3	19°25.0"	155°16.6"	0.5 km ENE of North P.T seismometer	
10	16	54	45.8	1.0	<3	19°25.1"	155°15.8"	2.5 km ENE of North P.T seismometer	
10	19	11	00.4	0.9	<3	19°25.3"	155°15.7"	2.5 km NE of North P.T seismometer	
10	19	39	34.7	1.2	<3	19° 25.6"	155°15.3"	3 km ESE of North P.T seismometer.	
10	22	17	58.8	0.5	<3	19°25.1"	155°16.4"	1 km ENE of North P.T seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
March 10	22	05	31.5	0.7	<3	19°25.4"	155°16.3"	1.5 km NE of North Pit seismometer	
10	22	43	51.9	1.0	<3	19°24.9"	155°16.5"	1.0 km E of North Pit seismometer	
11	00	44	49.6	0.6	<3	19°24.9"	155°16.5"	1.0 km E of North Pit seismometer	
11	01	32	36.8	1.0	<3	19°24.5"	155°15.9"	2.5 ESE of North Pit seismometer	
11	04	26	34.6	0.7	<3	19°25.4"	155°16.3"	1.5 km NE of North Pit seismometer	
11	15	43	31.9	1.6	3	19°24.5"	155°04.9"	17 km SW of Pahoa seismometer	
11	20	47	42.4	2.2	<3	19°24.0"	155°13.8"	5 km NE of Ahua seismometer	
12	22	05	35.4	1.0	<3	19°21.8"	155°15.0"	2 km SE of Ahua seismometer	
13	06	50	27.0	2.3	55	19°51.2"	155°05.5"	14 km N of Hilo	
13	07	27	19.2	1.0	<3	19°29.8"	155°23.4"	8 km S-SW of Mauna Loa seismometer	
13	10	45	21.4	0.7	<3	19°25.8"	155°14.9"	4 km NE of North Pit seismometer	
15	07	38	55.6	1.1	<3	19°23.5"	155°18.3"	3.5 km SW of North Pit seismometer	
16	07	17	33.4	2.7	15	19°19.8"	155°53.7"	6 km SSE of Hookena	
17	04	09	57.5	1.6	<3	19°26.4"	155°14.9"	4.5 km NE of North Pit seismometer	
17	04	13	47.8	0.9	<3	19°26.3"	155°17.2"	1.75 km NE of Uwekahuna seismometer	
19	00	08	22.2	2.5	8	19°28.5"	155°56.5"	Kealakekua Bay	
19	22	08	24.8	2.1	3	19°23.5"	155°11.5"	7.5 km E of Ahua seismometer	
19	22	28	13.7	3.1	20	19°25.7"	155°03.4"	17.5 km WNW of Hookena	Felt in Kona Region

Table 4.--Local earthquakes recorded by seismographs of the U.S.Geological Survey January, February, and March 1960.

Date (1960)	Time			Magnitude	Depth (km)	Epicenter			Felt report
	h	m	s			Lat. N.	Long. W.	Description	
March 20	14	41	47.7	3.3	8	19°24.8"	155°16.1"	16 Km ENE of Ahua seismometer	
21	20	41	25.8	1.4	8	19°26.0"	155°29.3"	12 Km SW of Mauna Loa seismometer	
23	11	58	31.5	2.2	15	19°24.3"	155°16.5"	1.0Km SE of North Pit seismometer	
23	17	48	25.4	3.7	8	19°25.1"	155°15.0"	3Km ESE of North Pit seismometer	Felt in Captain Cook, Kilauea summit
23	17	53	00.3	3.5	13	19°25.1"	155°17.9"	1.0 Km SW of Uwekahuna seismometer	Felt at Kilauea summit
23	17	55	19.4	2.5	13	19°25.2"	155°18.2"	1.5 Km SW of Uwekahuna seismometer	
23	18	42	03.6	1.9	13	19°24.9"	155°18.2"	2Km SE of Uwekahuna seismometer	
24	13	16	21.9	2.0	13	19°24.8"	155°22.2"	8 Km WSW of Uwekahuna seismometer	
24	23	34	50.7	2.1	8	19°23.9"	155°25.8"	11Km SSW of Mauna Loa seismometer	
26	20	20	15.6	2.4	15	19°25.9"	155°15.8"	3Km NE of North Pit seismometer	
31	10	10	48.0	2.4	13	19°24.2"	155°19.5"	4.Km SW of Uwekahuna seismometers	
31	12	25	29.9	1.6	8	19°25.8"	155°17.1"	10Km NE of Uwekahuna seismometer	

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation ~~were~~ are presented in ~~Summary 25~~ Table 6. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenters, origin times, focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey]

Harold,

Will you see that this table is put in standard format? Check summary 34 (?) for style. It seems that Mike did not get the picture on teleseism surface wave identification and nomenclature. No point in reporting Lg arrivals to 1/10 second. Also, the old Gutenberg Lg and Lr notation is passé for Pacific paths. Will you spot-check the records to make sure that you know what he was reading?

The c + d after S and surface waves should be struck out —

I'm afraid that you might have to reread a fair amount of the teleseismic material. I can find no signs that Mike computed HVO magnitudes, etc.

Table 5--Distant earthquakes

Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
1-1-[illegible]	M	eP	23-21-12.7c					C&GS [illegible]
	O	eP	13.2c					23-21-[illegible]
	D	iP	13.2c					[illegible]
								[illegible]
								of Kamchatka
1-[illegible]	M	iP	[illegible]-23.5c					C&GS card 1-[illegible]
	[illegible]	iP	[illegible]					06-57-36*
	NE	iP	24.2c					56½ N, 1[illegible]½ E
								[illegible] coast of Kamchatka
1-3-60	M	eP	21-29-20.3c					C&GS card 1-60
	D	iP	20.8c					21-20-13
								45°N, 148°E
								Kurile Islands
								h about 150 KM

Table 5.-- Distant earthquakes

	Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
	1-9-60		iP	07-59-22.2d					[illegible] read 4-60
		0	eP	22.0d					~7-41-07
									15-120 E.
									Epicenter
	1-12-60	PΣ-Z	iP	[illegible] .1d		1/10 sec time			[illegible] first
		"	"	56-52.1c		[illegible] PΣ more			
		"	"	16-03-42.1c		read to 1/10 sec			
		PΣ-N	iS	03-[illegible] .1d					
		"	"	09-41.1d					
		"	"	16-30.1c					
		CeGS and 1-60							
				15-40-24					
				16[illegible]-20-24					
				Southern Peru		about 200 Km.			
				Mag 7 1/2 (Pas.)		7 1/2-7 3/4 (Bo.)			Many casualties and extensive property damage Arequipa
	1-16-60	PΣ-E	iP	09-43-03.1dn					CeGS and 5-60
			iS	09-53-28.1dn					09-30-24
									15 S., 75.
									Near coast of southern Peru.
		PΣ-N	iP	10-07-12.1dn					Minor damage in Isla Puquerio.
									Felt in Lima area.
		PΣ-E	iP	10-09-44.1dn					About 150 KM.
									Mag. 7 (Pas.), 6 1/2 (Bo.)

Table 5.-- Distant earthquakes

Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
[illegible]	[illegible]	iP	[illegible]					[illegible]
		eP	27.4c					[illegible]
		iP	27.4c					63°N 15 1911.
		iS	[illegible]					[illegible]
			[illegible]					[illegible]
		iP	2[illegible]					
	SpE	eS	28.[illegible]c					
	SpZ	iP	27.5d					
1-22	M	iP	13-48-12.3c		Ts (no cond)			
	A	eP	12.[illegible]c					
	D	eP	11.7c					
	N							
	UZ	iP	12.8d					
1-22	M	iP	04-53-08.0d					Ca GS card 7-60
	A	iP	08.2d					04-40-56
	D	eP	07.3d					48. 127 1/2 E
	N	eP	07.8d					Corom T. Island region
	UZ	iP	08.5d					Mag 6 1/2 (Pas)
	SpE	eS	08.7d					
	SpZ	iP	08.5d					
	PΣ-Z	iP	09.0d					
	PΣ-Z	iP	05-18-13.0d					
		iS	20-27.0					
	PΣ-N	iS	17-31.0					
	PΣ-E	iS						

Table 5.-- Distant earthquakes

Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
1-23-60	M	iP	18-08-43.7d					Ce GS cmd 7-60
	A	iP	44.1d					17-56-30
	D	iP	44.3d					45°, 127½° E
	UZ	iP	44.2d					Ceram Rel. region
	SpE	iS?	48.1d					6½ - 6¾ (Pas)
	SpZ	iP	44.2d					
	PZZ	iP	18-33-26.7d					
1-24-60	M	iP	04-29-42.4c					Ce GS cmd 7-60
	A	iP	42.2c					04-21-42
	D	iP	41.5c					15½ S, 179 W
	UZ	iP	41.5c					Fiji Islands
	PZZ	iP	04-29-42.7d					Mag. 6¼ - 6½ Pas
	"	iS	04-36-11.7d					6 - 6¼ Rayleigh
	"	iP	40-55.7c					

Table 5.-- Distant earthquakes

Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
2-3-60	VSZ	iP	03-11-27.2					
		eG	04-24-[illegible]					
		eG?	04-10-20.8c					
		eLT?	04-11-[illegible]					
	VSN	eC	04-[illegible]					
		eG	04-10-[illegible]					
		eT	04-11-13.3c					
	VSE	eC	04-[illegible]					
		eG	04-10-[illegible]					
		eLT	04-11-[illegible]					
	Gs	iS	cord 9-60	Prec	Determination			
			03-46-30		1½ S, 153 ½ E			New Ireland Region.
2-24-60	M	iP	21-46-[illegible]?					
	A	iP?	[illegible]					
	D	iP?	54.5c					
	UZ	eP	54.3?					
	SpZ	iP	54.2d					
			Cs 6S cord	18-60				
			21-37-04		1½ S, 156 E			
					[illegible]			
			Felt, Rabaul,		[illegible]			
			Mag 6½-6¾					

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Table 5.-- Distant earthquakes

Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
3-5-[illegible]	M	eP	14-01 [illegible]c					
	A	iP	28.6c					
	D	i[illegible]	[illegible]					
	UZ	iP	[illegible]					
	PZ-Z	iP	22.[illegible]					
		iPP	22-52.0c					
		iPc	24-36.0c					
		eR	31-[illegible]					
	PZ-N	iS	11-15c					
		eSS	15-42c					
		iSSS	1[illegible]-32d					
		iG	21-1[illegible]					
	[illegible]	iPS	[illegible]					
	SpZ	iP	[illegible]					
					C-GS Card 20-60			
	Origin		Time 13-[illegible]		1°N; 12[illegible]E			
					H[illegible]	[illegible]		
					Mag [illegible] (Pas)			
		C-GS	Card 20-60					
3-6-60	PZ-Z	iP	02-57-20 c					
			C-GS card 20-60					
			02-22-06					
			1°N; 129°E					
			Halmahera at Ternabeck					
3-8-60	M	iP	16-42-32.5d		Ca GS Card 19-60			
	A	iP	32.5d		16-33-38			
	D	iP	31.4d		16½°S; 168½E			
	N	iP	33.2d		New Hebrides Islands			
	UZ	iP	32.7d		h about 300km			
	SpE	iS	34.0c		Mag 7-7¼(CGS)			
	SpZ	iP	32.7d		Felt at Port-Vila			
	PZ-Z	iP	42-25d					
	PZ-E	P	d					
	PZ-N	P	d					
		iS	49-31d					
		isS	51-04c					
		iG	53-59d					
		iSSS	55-14 c					

Table 5.-- Distant earthquakes

	Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
	[illegible]	M	[illegible]	[illegible]					
		A	eP	05.2c.					
		L	eP	05.2c.					
		U	eP	[illegible]					
		V	eP	05.2c.					
		[illegible]	eP	05.2c.					
				65 cord 21-40					
				51°N, 174½°W					
				Andreanof Islands, Aleutian Islands					
		M	eP	17-17-24.2					
		A	eP						
		D	eP	24.9c.					
		N	eP	25.5R					
		[illegible]	eP	25.6c.					
		PS-7	iP	17-24d					
			iS	25-14d					
			iSS	29-8d					
			eR	33-8d					
				C. 65 cord 22-60					
				40°N, 143½°E					
				off [illegible] coast of Honshu, Japan					
				FCIT: Northern Honshu and southern Hokkaido					
				5 foot seismic news of Miyako					
				h about 60 km					
				Mag 7 (Pas)					
				7-7 1/4 (Berk)					

Table 5.-- Distant earthquakes

	Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
	[illegible]	M	[illegible]	[illegible]					
				21.1					
				22.1					
		A		17.3					
				23.2					
				[illegible]					
		D		17.3					
				22.2					
				[illegible]					
		1Z		22.3					
		SPZ		32.5					
		PZ-Z		[illegible]					
				41 - 12					
				[illegible]					
				01 - 01 - 22					
		PZ-Z		47 - 44					
				C-65 cord 23-40					
				00 - 23 - 22					
				29½°N, 142°E					
				Near east coast of Honshu, Japan					
				h about 100 Km					
				Mag 6¾-7 (Berk);		Mag 5½-6¾ (Pas)			
	3-27-60	M		03 - 57 - 29					
		A		40					
		D		38.7					
		N		41.8					
		UZ		41.5					
		PZ-Z		04 - 05 - 10					
				12 - 08					
				C-65 cord 24-60					
				03 - 48 - 27					
				47N ; 152½ E					
				New Hebrides Islands					
				M 6.4 (Berk)					
				h about 25					

Table 5.-- Distant earthquakes

	Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
	3-27-6[illegible]	M	[illegible]	[illegible]					
		[illegible]	[illegible]	14 - 3[illegible]					
			[illegible]	2[illegible] -[illegible]					
			[illegible]	3[illegible] - [illegible]					
		[illegible] N	LR	1[illegible] - [illegible]					
				C-65 - [illegible]					
				09;5[illegible]					
				18 1/2 S [illegible]					
				New Hebrides	Is.				
				h about 25 Km					
				Mag 6 1/2 (Prob					
	3-27-60	M	P	23 - 38 - 52.8d					
		A	P	52.4d					
		D	P	51.7d					
		UZ	P	1Pd					
		SpZ	P	1Pd					
				C-65 card 26-60					
				23 - 28 - 04					
				38 1/2 S, 175 E					
				Near coast of	North Island, N.Z.				
				h about 250 Km					

Table 5.-- Distant earthquakes

	Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
	3-24-60	M	eP	06-40-17.5d					
			iP	20.8c					
			iP	25.8d					
		A	eP	17.0d					
			iP	20.5c					
			iP	25.3d					
		D	eP	17.5d					
			iP	19.4c					
			iP	24.3d					
		N	eP	17.2?					
			iP	20.4c					
			iP	25.4d					
		UZ	iP	18.0d					
			iP	20.4c					
			iP	24.2d					
		SpE	iP	?					
			iP	20.0?					
			iP	25.0?					
		SpZ	iP	18.0d					
			iP	20.7?c					
			iP	24.9c					
		PΣ-Z	iP	22d					
			iS	45-45d					
			iSS?	51-15d					
		PΣ-E	iG?	52-54c					
			iLR	55-03d					
				C-65 card 25-60					
				06:30:54					
				17°S, 167°E					
				New Hebrides Islands					
				about 250 km					
				Mag. 6¾ (Pas.)					
				6¼-6½ (Bark)					
	3-30-60	M	iP	15-28-55.2d					
		A	iP	54.6d					
		D	iP	53.8d					
		N	eP	54.9d					
				C-65 card 28-60					
				15:19:30					
				22½ S., 105°E					
				Loyalty Island Region					

Table 5.-- Distant earthquakes

	Date	Inst	Phase	Time	Δt	Corr. Time	S-P	Amp	Remarks
	3-30-[illegible]	M	cP	10-57-49.1c					
		A	cP	[illegible]					
				C-6 Scan [illegible]					
				17½ S, 166E					
				New Hebrides					
				Mag 6 (Book)					

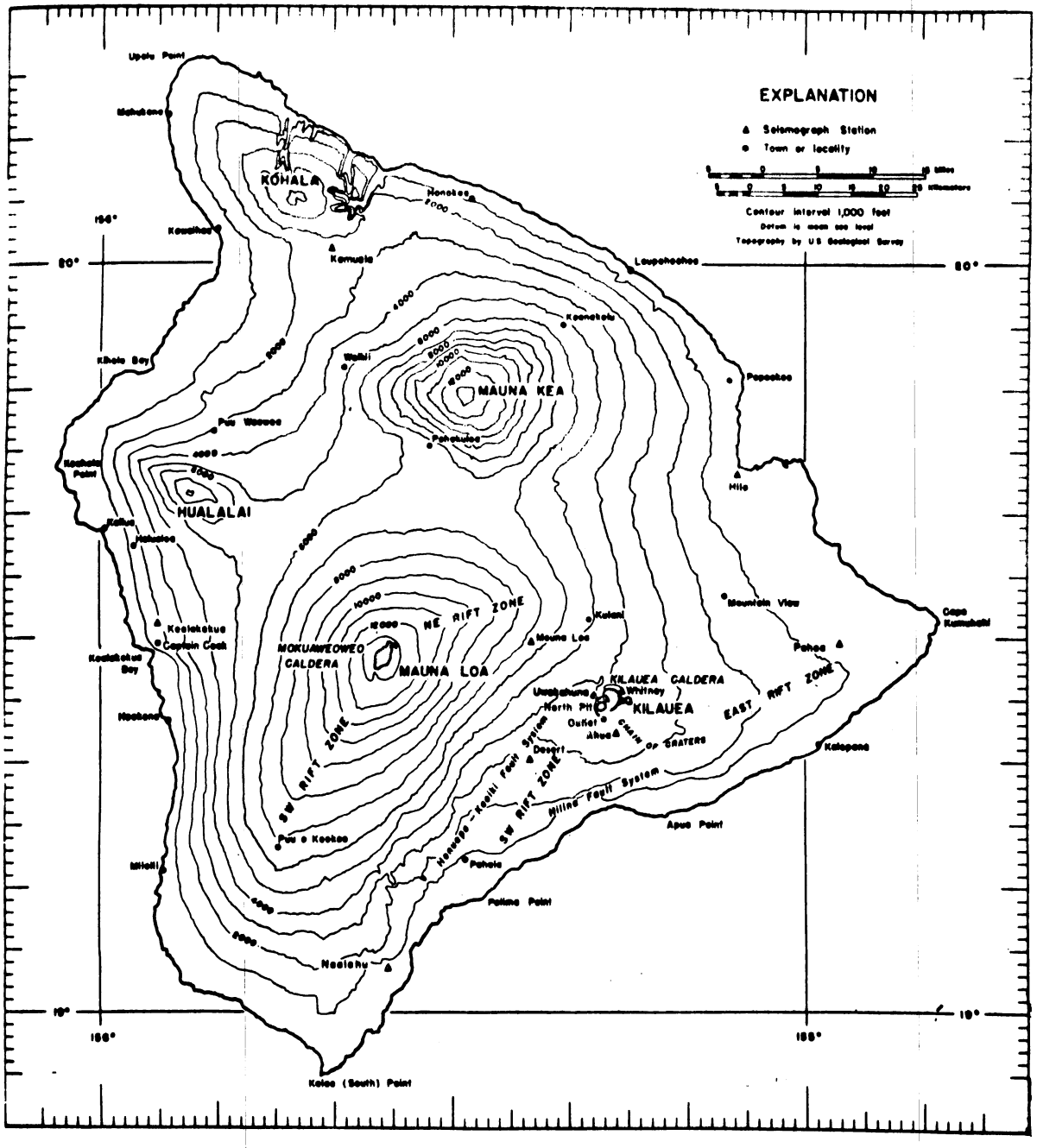

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Uwekahuna (Hawaiian Volcano Observatory).	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z; (seismometer and galvanometer periods are 15 and 90 seconds, respectively). Short-period Sprengnether: E, Z. HVO-1: Z1/. Short-base liquid-level tiltmeter.
Mauna Loa----------	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z2/.
Outlet----------	O	19°23.4'	155°16.9'	1,080	Remote recording HVO-2: Z. (Discontinued Jan 9, 1960)
Ahua ---	A	19°22.4"	155°15.9"	1,070	Short-base liquid-level tiltmeter. JAN 9, 1960 OUTLET INSTRUMENT moved TO AHUA
Desert----------	D	19°20.2'	155°23.3'	815	Remote recording HVO-2: Z.
North Pit----------	N	19°24.9'	155°17.0'	1,115	Remote recording HVO-2: Z.
Whitney----------	W	19°25.9'	155°15.7'	1,210	Bosch-Omori: N, E; (seismometer period 9 seconds). Short-base liquid-level tiltmeter.
Hilo----------	Hi	19°43.2'	155°05.3'	20	HVO-1: Z. Wood-Anderson: N, E. Operated by Sister Thecla at St. Joseph's School.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Naalehu----------	Na	19°03.8'	155°35.2'	205	Loucks-Omori: N, E; (seismometer period 3 seconds). Operated by Mr. Alfred Kahakua at Naalehu School.
Pahoa----------	Pa	19°29.7'	154°56.8'	205	Loucks-Omori: N, E; (seismometer period 3 seconds). Operated by Mr. Kongo Kimura at Pahoa School. (Discontinued Jan 2, 1960)
Kamuela----------	Ka	20°01.3'	155°40.3'	815	Jan 2, 1965 A HVO-1/ Z installed in place of L-Omori Loucks-Omori: N, E; (seismometer period 3 seconds). Operated by Mr. T. C. Mills at Waimea School.
Konawaena----------	Ko	19°30.8'	155°55.1'	495	Hawaiian-type seismograph: N, E; (seismometer period 9 seconds). Operated by Mr. Howard Tatsuno at Konawaena School.
Haleakala, Maui----	Ha	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Hawaii National Park at Haleakala, Maui.

1/ HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Overdamping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

2/ HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper. The response of this seismograph is similar to that of HVO-1. Records from these seismographs at the M, O, and D stations are recorded on a 3-component drum to permit an accurate comparison of arrival times at these stations.

(For Coast and Geodetic Survey
United States Earthquake, 1960)

H A W A I I A N I S L A N D S

(150th Meridian or Hawaiian Standard Time)

Note: Data on the following local disturbance were determined from seismograph stations on the islands of Hawaii and Maui by the Hawaiian Volcano Observatory of the U.S. Geological Survey. For additional information, see the Hawaiian Volcano Observatory Summary 17 through 20.

January 9: 05:26:41.8*. Epicenter 20°27' north, 155°24' west 8 km northwest of Honokaa at a depth of 12.5 km. Felt near Waipio Valley on Hamakua coast of Hawaii. Magnitude 2.9.

January 13: During the 14 hours preceding the outbreak of a flank eruption on the east rift zone of Kilauea at about 1900 hours about 1000 earthquakes were felt in the vicinity of the village of Kapoho. Contemporaneous with this seismic activity the Kapoho graben subsided about 4 feet. These quakes were of magnitude 2.0 or less and were felt at a maximum rate of two per minute during the early part of the 14 hour period. Because of their small size and great number no attempt was made to itemize them.

January 18: 18:26:46.0*. Epicenter 19°24' north, 155°45' west, 15 km east northeast of Hookena at a depth of 3 km. Felt Kilauea caldera area, Pohakuloa and Kona. Magnitude 4.5.

Accompanying the summit subsidence of Kilauea Volcano, during the early part of 1960, many earthquakes were felt in the vicinity of Kilauea Caldera. Dates, origin times (to the nearest minute) and approximate magnitudes for these earthquakes are listed below:

Date	Time	Magnitude	Date	Time	Magnitude
Jan. 26	16:17	2.3	Jan. 30	08:59	2.3
"	16:20	0.6	"	09:00	2.5
Jan. 28	03:26	1.8	"	09:02	2.2
Jan. 29	09:10 a/	4.4	"	09:02	1.8
Jan. 30	07:16	2.2	"	09:04	2.2
"	07:26	2.2	"	09:05	1.8
"	07:30	1.6	"	09:07	2.3
"	07:35	2.2	"	09:07	2.3
"	07:51	2.3	"	09:08	2.2
"	08:07	2.1	"	11:32	1.8
"	08:13	2.6	"	23:42	2.3
"	08:15	1.9	Jan. 31	04:17	2.5
"	08:27	2.8	"	04:28	2.3
"	08:28	2.8	"	11:10	2.5
"	08:29	2.6	"	11:37	2.2
"	08:41	2.0	"	15:29	2.6
"	08:43	2.2	"	20:00	2.3
"	08:53	2.4	Feb. 1	07:48	1.8
"	08:57	2.3	"	08:30	2.2
"	08:57	2.4	"	08:58	2.5
"	08:58	2.2	"	09:04	2.1
"	08:58	2.3	"	16:06	1.8
	08:59	2.3	"	16:51	2.6

a/ felt island-wide.
~~b/ felt in Hilo also.~~
~~c/ note on broken road etc.~~

Date	Time	Magnitude	Date	Time	Magnitude
Feb. 1	19:05	2.1	Feb. 3	12:39	2.3
"	22:27	2.2	"	12:55	1.8
"	23:41	2.2	"	13:18	2.3
Feb. 2	06:38	2.5	"	14:18	2.4
"	07:24	2.0	"	14:25	3.0
"	14:56	2.8	"	17:31	2.6
"	18:55	2.4	"	18:30	2.3
"	19:07	2.3	"	19:18	2.2
"	20:18	2.4	"	21:51	2.3
"	21:24	2.2	"	22:01	2.9
"	22:19	3.3	"	22:44	2.0
Feb. 3	01:10	2.0	Feb. 4	03:11	2.2
"	02:30	2.4	"	04:53	1.8
"	03:26	2.2	"	06:42	2.5
"	04:16	2.5	"	07:29	2.5
"	04:25	2.3	"	10:41	2.6
"	04:28	1.8	"	14:46	2.3
"	04:29	2.0	"	16:43	3.0
"	04:29	2.2	"	16:46	3.0
"	04:45	2.8	"	17:06	1.8
"	10:50	2.6	"	20:10	1.6
"	11:41	2.0	"	20:52	2.5
"	11:44	2.2	"	21:20	2.2

Date	Time	Magnitude
Feb. 4	21:29	2.5
"	21:33	2.7
"	21:48	2.6
"	22:00	1.8
"	22:01	2.0
"	22:03	2.2
"	22:04	2.2
"	22:07	2.3
"	22:09	2.5
"	23:01	2.2
"	23:02	2.8
"	23:09	2.3
"	23:12	2.2
Feb. 5	00:25	2.3
"	04:15	2.3
"	04:38	2.5
"	04:42	2.3
"	04:46	2.3
"	04:52	2.8
"	05:00	2.2
"	05:02	2.3
"	05:02	2.4
"	05:04	2.5
"	05:06	2.5
"	05:07	2.2

Date	Time	Magnitude
Feb. 5	05:08	2.3
"	05:12	2.8
"	05:51 ~~05:21~~	2.2
"	06:03	1.8
"	06:04	1.8
"	21:41	2.2
"	22:01	2.3
"	22:02	2.8
Feb. 6	02:02	2.6
"	03:10	2.3 ~~3.2~~
"	03:17	2.3
"	03:49	2.5
"	03:58	2.0
"	04:00	2.3
"	04:06	2.3
"	04:20	2.6
"	04:27	2.5
"	04:46	2.4
"	05:10	2.2
"	05:25	2.2
"	05:35	2.3
"	06:03	2.2
"	06:07	3.2
"	06:12	2.2
"	06:15	2.6

Date	Time	Magnitude
Feb. 6	10:44	2.8
"	11:14	2.5
"	16:44	2.3
"	17:13	2.3
"	18:44	1.4
"	19:54	2.8
"	22:08	2.2
"	23:29	2.6
"	23:55	2.2
Feb. 7	00:41	2.3
"	01:38	2.2
"	02:04	2.3
"	02:18	2.3
"	02:20	2.5
"	05:27	4.1
"	06:04	2.5
"	06:05	2.6
"	06:07	2.7
"	06:09	3.6
"	21:34	3.6
"	22:36*	3.8

Date	Time	Magnitude
Feb. 8	04:11	1.9
"	08:45	1.9
Feb. 9	03:25	2.5
"	06:19	2.3
"	15:29	3.7
"	17:27	2.0
"	17:27	2.2
"	17:28	3.1
"	17:29	2.9
"	17:29	2.8
"	17:30	2.3
"	17:31	2.5
"	17:32	2.9
"	21:20	2.2
"	21:47	2.5
"	22:35	2.2
Feb. 10	00:48	2.2
"	18:14	1.8
"	18:29	2.5
"	21:25	1.8
Feb. 11	00:41	2.3
"	01:09	2.0
"	01:53	1.8

Date	Time	Magnitude	Date	Time	Magnitude
Feb. 11	01:56	1.8	Feb. 20	12:40	2.4
"	02:09	2.3	"	14:48	2.2
"	02:11	1.8	"	14:56	2.3
"	03:26	3.3	"	21:40	2.3
"	03:33	1.9	"	22:51	2.2
"	04:43	1.8	Feb. 21	12:37	1.9
"	05:53	2.7	"	13:20	2.3
"	07:24	1.6	"	13:25	2.0
"	11:39	3.3	"	13:35	0.6
Feb. 12	04:17	2.8	"	15:40	1.9
"	04:55	3.5	"	16:54	2.3
"	08:43	2.3	"	17:03	2.3
"	09:27	2.2	"	17:20	3.0
"	10:17	3.2	"	17:37	3.3
"	16:34 b/	4.1	"	18:15	1.6
"	16:51	2.8	"	18:17	1.9
Feb. 15	20:19	1.3	"	21:37	2.1
Feb. 16	15:35	2.3	"	22:29	2.3
Feb. 18	09:25	2.0	"	22:33	2.0
"	20:06	1.9	"	22:39	2.0
"	20:07	1.5	"	22:52	1.8

b/ ~~believed to be~~ responsible for fault motion across Hilina Pali road and destruction of about fifty feet of that road. 19°21' north, 155°17' west.

Date	Time	Magnitude	Date	Time	Magnitude
Feb. 22	04:29	2.1	Feb. 24	03:55	2.5
"	05:29	3.3	"	04:36	2.6
"	05:40	2.0	"	05:20	0.8
"	05:53	2.2	"	06:47	0.8
"	10:11	1.8	"	20:15	2.0
"	13:08	2.3	"	20:21	2.3
"	14:25	2.6	"	20:25	1.9
"	15:29	2.6	Feb. 25	03:25	0.8
"	16:31	2.2	"	03:29	1.7
"	21:44	3.5	"	03:31	1.3
"	22:35	1.8	"	04:17	3.0
"	22:42	3.8	"	05:27	2.6
"	23:31	3.7	"	09:21	2.8
Feb. 23	08:24	2.6	"	14:25	2.6
"	09:05	2.0	"	14:32	2.2
"	09:15	3.6	"	15:15	2.2
"	11:50	2.0	"	23:11	2.3
"	11:53	2.3	Feb. 26	01:00	2.9
"	14:11	3.1	"	12:41	3.1
"	14:31	1.8	"	15:58	3.0
"	15:43	2.4	"	16:06	2.2
"	16:06	2.0	"	16:12	2.6
"	16:45	2.2	Feb. 27	04:42	2.2
"	17:17	2.5	"	05:36	2.3
"	18:58	3.4	"	10:48	1.0
"	19:02	2.2	"	10:54	1.8

Date	Time	Magnitude
Feb. 27	11:31	0.8
"	11:34	2.3
"	12:03	2.1
"	13:11	2.8
"	13:37	1.9
"	13:50	2.0
"	22:57	2.3
"	23:23	2.0
Feb. 28	00:19	2.2
"	02:17	1.8
"	12:24	2.2
"	22:15	2.2
"	23:12	2.3
"	23:15	1.8
Feb. 29	10:14	2.6
"	11:38	2.3
"	13:47	2.5
"	15:42	1.9
"	16:59	2.0
"	18:12	2.2
"	19:17	3.4
Mar. 1	06:42:~~32~~	1.8
"	21:06	1.6
"	22:07	1.9

Date	Time	Magnitude
Mar. 2	15:07	1.8
"	15:08	2.7
"	15:13	2.0
"	15:53	2.6
"	18:40	1.9
"	22:02	1.8
"	23:11	2.2
"	23:24	2.0
Mar. 3	02:00	2.3
"	12:07	2.8
"	13:24	2.2
"	14:26	2.2
"	14:30	2.2
Mar. 5	05:28	1.8
"	06:41	2.0
"	06:44	2.5
"	06:50	2.3
"	11:42	3.3
Mar. 6	21:04	0.5
"	21:16	0.7
"	23:34	3.0
Mar. 7	08:47	2.2
"	16:32	3.8
Mar. 8	07:05	1.8
Mar. 11	05:49	2.0
"	07:09	2.2

March 4: 06:04:26.0*. Epicenter 19°26' north, 155°57' west, 5 km east of Honaunau at a depth of 8 km. Felt at north and south Kona. Magnitude 3.0.

March 7: 03:24:17.5*. Epicenter 19°26' north, 155°13' west, 8 km northeast of Halemaumau at a depth of 5 km. Felt at Kilauea caldera area. Dishes broken in 4 homes, small objects overturned. Magnitude 3.3.

March 19: 22:28:13.4*. Epicenter 19°18' north, 155°57' west, 12 km south southwest of Hookena at a depth of 3 km. Felt at Capt. Cook, Kona. Magnitude 3.2.

March 23: 17:48:26.0*. Epicenter 19°25' north, 155°15' west, 5 km beneath Kilauea Iki crater. Felt east rim of Kilauea caldera. Magnitude 3.8.

March 23: 17:53:00.2*. Epicenter 19°25' north, 155°15' west, 5 km beneath Kilauea Iki crater. Felt east rim of Kilauea caldera. Magnitude 3.5.

March 24: 13:16:21.5*. Epicenter 19°24' north, 155°22' west, 10 km east southeast of Halemaumau at a depth of 8 km. Felt northwest rim of Kilauea caldera. Magnitude 3.2.

April 3: 15:41:03.8*. Epicenter 19°21' north, 155°15' west, 7 km southeast of Halemaumau at a depth of 3 km. Felt north and northwest rim of Kilauea caldera. Magnitude 2.8.

April 4: 04:34:11.7*. Epicenter 19°21' north, 155°16' west, 7 km south southeast of Halemaumau at a shallow depth. Felt north and northeast rim of Kilauea caldera. Magnitude 3.3.

April 5: 03:18:53.5*. Epicenter 19°25' north, 155°17' west, 8 km beneath Halemaumau. Felt at east rim of Kilauea caldera. Magnitude 3.2.

April 22: 07:20:26.6*. Epicenter 19°25' north, 155°17' west, 60 km beneath Halemaumau. Felt at east rim of Kilauea caldera. Magnitude 2.6.

April 26: 07:04:23.8*. Epicenter 19°25' north, 155°16' west, southeast sector of Kilauea caldera at a depth of 8 km. Felt at east rim of Kilauea caldera. Magnitude 2.3.

April 29: 06:13:09.3*. Epicenter 19°25' north, 155°26' west, 17 km west northwest of Halemaumau at a depth of 8 km. Felt from Hilo to Kona. Magnitude 3.9.

May 5: 09:46:34.0*. Epicenter 19°25' north, 155°17' west, shallow depth below Halemaumau. Felt at north rim of Kilauea caldera. Magnitude 2.6.

May 8: 06:28:39.0*. Epicenter 19°21' north, 155°19' west, 8 km southwest of Halemaumau at a depth of 25 km. Felt island-wide. Magnitude 4.0

May 11: 23:08:45.9*. Epicenter 19°24' north, 155°18' west, 2 km southwest of Halemaumau at a shallow depth, Felt at north rim of Kilauea caldera. Magnitude 2.6.

May 12: 11:18:09.9*. Epicenter 19°23' north, 155°20' west, 7 km southwest of Halemaumau at a depth of 15 km. Felt island-wide. Magnitude 3.9.

May 25: 10:45:33.0*. Epicenter eastern ~~portion~~ section of Kilauea caldera at a shallow depth. Felt at northwest rim of Kilauea caldera. Magnitude 1.6.

May 27: 05:49:08.0*. Epicenter 19°25' north, 155°17' west, northeast rim of Halemaumau at a depth of 12.5 km. Felt from Kilauea caldera area to Hilo. Magnitude 3.9.

May 27: 05:58:10.0*. Epicenter 19°25' north, 155°17' west, northeast rim of Halemaumau at a depth of 12.5 km. Felt from Kilauea caldera area to Hilo. Magnitude 3.4.

May 31: 14:12:43.2*. Epicenter 19°24' north, 155°19' west, 4 km southwest of ~~Uwekahuna~~ Halemaumau at a depth of 15 km. Felt at northwest rim of Kilauea caldera. Magnitude 2.8.

June 2: 20:47:22.8*. Epicenter 19°26' north, 155°27' west, 20 km east of ~~Uwekahuna~~ Halemaumau at a depth of 5km. Felt from Kilauea caldera area to Kona. Magnitude 3.5.

June 5: 23:40:30.6*/ Epicenter 19°21' north, 155°16' west, 8 km south southeast of Halemaumau at a depth of 8 km. Felt at east rim of Kilauea caldera. Magnitude 2.6.

June 7: 12:19:24.1*. Epicenter 19°10' north, 155°34' west, 10 km north of Naalehu at a depth of 5 km. Felt at Pahala and north and east rims of Kilauea caldera. Magnitude 4.1.

June 13: 17:53:59.4*. Epicenter 19°08' north, 155°27' west, 8 km south southwest of Pahala at a depth of 25 km. Felt at Kealakekua. Magnitude 3.6.

June 14: 23:15:34.3*. Epicenter 19°25' north, 155°17' west, 8 km below Halemaumau. Felt at Kilauea caldera region. Magnitude 3.3.

June 14: 23:53:36.3*. Epicenter 19°25' north, 155°17' west, 8 km below Halemaumau. Felt at Kilauea caldera region. Magnitude 2.8.

June 15: 07:11:40.0*. Epicenter 19°27' north, 155°17' west, 6 km north northwest of Halemaumau at a shallow depth. Felt at Kilauea caldera region. Magnitude 3.0.

June 18: 01:56:07.4*. Epicenter 19°18' north, 155°25' west, 18 km southwest of Halemaumau at a depth of 8 km. Felt at Kilauea caldera region. Magnitude 3.9.

June 18: 09:50:07.5*. Epicenter 19°19' north, 155°13' west, 14 km southeast of Halemaumau at a depth of 3 km. Felt at east rim of Kilauea caldera. Magnitude 3.4.

June 20: 12:58:23.5*. Epicenter 19°24' north, 155°21' west, 6 km west southwest of Halemaumau at a depth of 12.5 km. Felt island-wide. Magnitude 4.1.

June 20: 13:14:48.2*. Epicenter 19°22' north, 155°22' west, 8 km southwest of Halemaumau at a depth of 12.5 km. Felt from Kilauea caldera area to Kona. Magnitude 3.9.

June 20: 18:58:58.3*. Epicenter 19°24' north, 155°19' west, 4 km southwest of Halemaumau at a depth of 12.5 km. Felt at east rim of Kilauea caldera. Magnitude 3.1.

June 21: 01:00:18.3*. Epicenter 19°24' north, 155°21' west, 6 km wbst southwest of Halemaumau at a depth of 15 km. Felt at north rim of Kilauea caldera. Magnitude 3.2.

June 21: 10:56:49.2*. Epicenter 19°23' north, 155°16' west, 4 km south southeast of Halemaumau at a shallow depth. Felt at Kilauea caldera area. Magnitude 3.5.

June 26: 14:33:08.6*. Epicenter 19°25' north, 155°15' west, 8 km beneath northwest rim of Kilauea Iki. Felt at Kilauea caldera area. Magnitude 3.1.

July 7: 09:40:27.7*. Epicenter 19°27' north, 155°15' west, 3 km north of Volcano House at a depth of 52 km. Felt at east rim of Kilauea caldera. Magnitude 3.1.

July 7: 14:33:35.0*. Epicenter 19°27' north, 155°15' west, 3 km north of Volcano House at a depth of 52 km. Felt at east rim of Kilauea caldera. Magnitude 2.9.

July 19: 18:38:43.2*. Epicenter 19°27' north, 155°16' west, north rim of Kilauea, near Keauhou Ranch at a shallow depth. Felt along north and east rims of Kilauea caldera. Magnitude 1.8.

July 19: 18:40:16.9*. Epicenter 19°27' north, 155°16' west, north rim of Kilauea near Keauhou Ranch at a shallow depth. Felt along north and east rim of Kilauea caldera. Magnitude 1.6.

July 23: 13:20:24.0*. Epicenter 19°26' north, 155°16' west, north rim of Kilauea caldera at a depth of 5 km. Felt at northeast rim of Kilauea caldera. Magnitude 2.7.

August 7: 17:33:22.0*. Epicenter 19°26' north, 155°18' west, north rim of Kilauea caldera at a depth of 10 km. Magnitude 3.0. Felt at north and east rims of Kilauea caldera.

August 10: 23:16:55.1*. Epicenter 19°54' north, 155°36' west, 7 km northeast of Waikii at a depth of 10 km. Felt near Waipio valley on Hamakua coast of Hawaii. Magnitude 3.9.

August 11: 01:47:17.7*. Epicenter 19°52' north, 155°36' west, 5 km east of Waikii at a depth of 10 km. Felt at Honokaa. Magnitude 3.8.

August 11: 10:03:14.0*. Epicenter 19°25' north, 155°18' west, 5 km beneath Halemaumau. Felt at northwest rim of Kilauea caldera. Magnitude 1.9.

August 14: 04:20:23.9*. Epicenter 19°33' north, 155°41' west, northwest flank of Mauna Loa 25 km east of Capt. Cook at a depth of 5 km. Felt at Capt. Cook, Kona. Magnitude 2.5.

September 14: 04:19:39.0*. Epicenter 19°13' north, 155°52' west, 30 km south of Capt. Cook, at a depth of 15 km near Papa. Felt at Capt. Cook, Kona. Magnitude 3.6.

September 17: 12:33:25.0*. Epicenter 19°25' north, 155°17' west, Halemaumau at a depth of 5 km. Felt on north rim of Kilauea caldera. Magnitude 1.8.

September 18: 22:53:34.0*. Epicenter 19°24' north, 155°18' west, southeast Kilauea caldera, very shallow. Felt on north rim of Kilauea caldera. Magnitude 1.7.

September 19: 15:27:21.5*. Epicenter 19°25' north, 155°20' west, 5 km west of Halemaumau at a depth of 10 km. Felt on east rim of Kilauea caldera. Magnitude 1.8.

September 20: 07:29:43.2*. Epicenter 19°58' north, 155°34' west northwest flank of Mauna Kea 17 km south of Kukuihaele at a depth of 12.5 km. Widely felt; north rim of Kilauea, Kealakekua and Kukuihaele. Magnitude 3.7.

September 21: 20:08:41.0*. Epicenter 19°45' north, 156°15' west, 20 km west of Keahole Pt. at a depth of about 15 km. Widely felt in north Kona, reports from Kealakekua, Honokahau and Kainaliu. Magnitude 3.3.

September 29: 08:23:19.6*. Epicenter 19°24' north, 155°18' west, Halemaumau at a depth of 27 km. Felt at east rim of Kilauea caldera. Magnitude 2.7.

October 8: 17:27:15.1*. Epicenter 19°27' north, 155°24' west, about 20 km east of Mokuaweoweo at a depth of 8 km. Felt in Hilo, Pahoa and east rim of Kilauea caldera. Magnitude 3.7.

October 17: 13:43:25.5*. Epicenter 19°25' north, 155°17' west, Kilauea caldera at a depth of 5 km. Felt at east rim of Kilauea caldera. Magnitude 1.5.

October 18: 09:29:53.2*. Epicenter 19°25' north, 155°22' west, about 9 km west of Halemaumau at a depth of 48 km. Felt at east rim of Kilauea caldera. Magnitude 2.8.

October 25: 05:18:28.8*. Epicenter 19°27' north, 155°16' west, north rim of Kilauea caldera at a depth of 10 km. Felt east rim of Kilauea caldera. Magnitude 2.4.

October 25: 21:31:56.0*. Epicenter 19°26' north, 155°17' west, north rim of Kilauea caldera at a shallow depth. Felt all over Kilauea summit area. Cracked paths, roads and tennis courts at military rest camp on north rim of Kilauea caldera. Magnitude 3.2.

November 1: 06:32:50.5*. Epicenter 19°26' north, 155°17' west, Halemaumau at a depth of about 5 km. Felt on north and east rims of Kilauea caldera. Magnitude 2.7.

November 5: 10:35:35.5*. Epicenter 19°21' north, 155°05' west, at Puu Mana on the southeast Kilauea Pali system, 40 km south of Hilo at shallow depth. Felt in Hilo. Magnitude 3.0.

November 7: 09:36:29.0*. Epicenter 19°25' north, 155°18' west, east rim of Kilauea caldera at a depth of 7 km. Felt on northwest rim of Kilauea caldera. Magnitude 2.0.

November 7: 12:27:05.7*. Epicenter 19°25' north, 155°18' west, east rim of Kilauea caldera at a depth of 7 km. Felt on northwest rim of Kilauea caldera. Magnitude 2.3.

November 7: 20:21:32.1*. Epicenter 19°25' north, 155°18' west, east rim of Kilauea caldera at a depth of 7 km. Felt on north rim of Kilauea caldera. Magnitude 2.7.

November 10: 14:58:49.8*. Epicenter 19°25' north, 155°18' west, east rim of Kilauea caldera at a depth of 7 km. Felt on northwest rim of Kilauea caldera. Magnitude 2.1.

November 10: 15:45:10.5*. Epicenter 19°25' north, 155°18' west, east rim of Kilauea caldera at a depth of 7 km. Felt on northwest rim of Kilauea caldera. Magnitude 2.4.

November 15: 11:55:17.8*. Epicenter 19°24' north, 155°18' west, Kilauea southwest rift at a depth of 5 km. Felt at northwest rim of Kilauea caldera. Magnitude 2.1.

November 30: 13:30:58.0*. Epicenter 19°23' north, 155°19' west, Kilauea southwest rift at a depth of 30 km. Felt at Kilauea summit area. Magnitude 3.5.

November 30: 19:47:41.6*. Epicenter 19°23' north, 155°18' west, Cone Peak region at a depth of 30 km. Felt at Kilauea summit ~~&~~ area. Magnitude 3.3.

December 5: 17:54:32.7*. Epicenter 19°26' north, 155°20' west, northern Kaoiki system at a depth of 15 km. Felt at east rim of Kilauea caldera. Magnitude 1.9.

December 13: 12:06:51.0*. Epicenter Halemaumau at a depth of 30 km. Felt in Pohakuloa, along Kona coast and in Kilauea caldera region. Magnitude 4.0.

December 13: 12:08:16.4*. Epicenter Halemaumau at a depth of 30 km. Felt in Pohakuloa, Kilauea caldera region, and along Kona coast. Magnitude 4.0.

December 17: 20:57:16.1*. Epicenter 19°42' north, 155°45' west, 16 km northeast of Kealakekua at a depth of 3 km. Felt at Kealakekua. Magnitude 3.3.

December 21: 22:15:45.0*. Epicenter 19°21' north, 155° 17 west, 5 km south of Halemaumau at a depth of 10 km. Felt in Kilauea caldera region. Magnitude 2.5.

December 25: 02:56:28.0*. Epicenter 19°13' north, 155°38' west, south flank of Mauna Loa 15 km west of Pahala at a shallow depth. Felt in southern half of the island; Kilauea region to South Point to north Kona. Magnitude 4.5.

December 28: 23:27:41.5*. Epicenter 19°26' north, 155°21' west, 7 km west of Halemaumau at a depth of 5 km. Felt at north rim of Kilauea caldera. Magnitude 2.7.

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	1
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	JAN	1	0738	43.79	19	24.75	155	27.29	10.20	6	.08	1.3	3.8	KAO			256	11	
1960	JAN	1	2014	11.98	19	26.10	154	46.73	1.70	6	.17	10.8	7.3	SLE	F#	3.4X	306	45	
1960	JAN	2	1247	40.53	19	20.38	155	9.96	29.79	7	.05	3.6	3.1	DEP		2.3X	260	13	
1960	JAN	2	2156	38.12	19	24.07	154	31.79	6.87	7	.21	12.6	16.3	DIS	-	2.9X	324	68	
1960	JAN	2	2246	26.00	19	26.97	154	40.91	6.66	5	.00	6.5	5.6	LER		2.9X	315	52	
1960	JAN	3	0453	58.76	19	27.49	155	19.03	14.52	6	.07	1.3	.8	DML		3.7X	143		
1960	JAN	3	1553	6.94	19	23.78	155	25.90	7.61	6	.10	2.2	4.5	KAO		2.3X	237		
1960	JAN	3	1603	45.82	20	2.65	155	52.31	12.78	8	.10	8.4	11.9	KOH	-	2.8X	326	79	
1960	JAN	3	2127	35.56	18	57.95	155	28.03	16.89	7	.13	2.7	16.6	DLS	-		326	42	
1960	JAN	4	1721	27.55	19	21.78	155	31.02	10.40	5	.07	1.6	5.3	KAO		2.4X	300	14	
1960	JAN	4	2309	36.93	19	26.73	155	27.72	0.28	7	.06	2.3	.8	KAO		2.3X	265	10	
1960	JAN	5	0556	34.86	19	22.85	154	49.95	12.53	5	.06	7.1	9.9	LER	-	2.3X	301	46	
1960	JAN	5	1131	53.47	19	19.86	155	5.01	5.61	7	.12	2.2	11.6	SF5	-	2.6X	272	22	
1960	JAN	5	1835	6.33	19	11.49	155	27.43	12.21	8	.14	3.4	1.3	LSW		2.5X	333	18	
1960	JAN	5	2235	8.65	19	19.82	155	25.44	11.50	7	.05	1.6	.8	KAO		2.8X	292		
1960	JAN	7	0524	38.44	19	25.79	154	44.99	5.24	6	.05	3.0	1.6	LER		3.0X	309	48	
1960	JAN	7	0815	29.16	19	24.97	154	46.35	14.78	6	.06	6.8	10.0	LER	-	2.7X	307	47	
1960	JAN	7	1453	36.84	19	22.48	155	6.01	5.62	6	.21	2.2	15.2	SF4	-	3.3X	235	21	
1960	JAN	7	1502	16.03	19	21.61	155	10.83	14.36	8	.16	2.6	1.2	DEP		2.6X	206	11	
1960	JAN	7	1656	32.44	19	22.65	154	51.26	10.74	6	.13	4.2	2.0	LER		2.6X	302	16	
1960	JAN	7	2336	33.08	18	41.22	154	26.29	13.04	8	.13	9.4	13.6	DIS	-	3.3X	336	104	
1960	JAN	9	1259	50.79	19	24.16	155	7.81	8.24	7	.10	1.5	4.9	SF4		2.7X	193	16	
1960	JAN	9	1434	30.17	19	18.30	155	5.54	1.01	7	.14	3.3	15.9	SSF	-	2.8X	241	22	
1960	JAN	11	0157	54.27	19	28.06	154	43.56	8.91	8	.14	7.9	7.1	LER		3.1X	312	47	
1960	JAN	11	0519	29.26	19	24.53	154	40.70	5.82	7	.05	3.3	2.0	LER		3.1X	316	55	
1960	JAN	11	0536	51.00	19	30.81	154	54.09	0.16	5	.18	6.1	6.8	SLE	#	2.7X	338		
1960	JAN	11	0547	34.12	19	27.93	154	46.42	6.96	8	.15	2.4	1.8	LER		2.7X	307	43	
1960	JAN	11	1715	50.76	19	22.83	154	39.01	9.01	7	.09	8.3	11.3	DIS	-	3.1X	317	59	
1960	JAN	11	1741	30.98	19	20.45	154	45.05	0.76	7	.08	8.1	3.7	SLE		3.5X	310	54	
1960	JAN	12	0037	9.39	19	16.34	154	57.28	6.78	4	.01	3.3	9.6	LER	-	2.5X	340	34	
1960	JAN	12	0059	44.27	19	27.45	154	56.59	0.02	7	.09	4.3	.7	SLE	#	2.8X	260		
1960	JAN	12	0409	58.80	19	28.60	154	53.65	0.03	7	.16	1.7	2.0	SLE	#	3.0X	291		
1960	JAN	12	1819	42.50	19	57.91	156	28.82	6.97	4	.13	11.4	13.0	DIS	-	3.5X	353	126	
1960	JAN	13	1017	8.20	19	28.08	155	16.93	10.14	5	.02	1.1	1.8	GLN		2.7X	159		
1960	JAN	13	1100	23.78	19	29.48	154	53.21	6.90	6	.14	3.1	13.9	LER	-	2.8X	291	33	
1960	JAN	13	1102	11.76	19	22.67	155	16.90	6.32	4	.00	4.0	5.7	INT		3.0X	142		
1960	JAN	13	1106	7.41	19	35.68	154	58.81	6.90	4	.06	5.0	12.6	HIL	-	2.8X	270	18	
1960	JAN	13	1142	19.83	19	30.77	154	34.54	2.67	5	.06	10.3	6.4	DIS	-	3.2X	324	58	
1960	JAN	13	1218	24.70	19	28.37	154	40.59	10.74	5	.10	8.7	12.1	LER	-	3.3X	316	51	
1960	JAN	13	1237	20.74	19	32.11	154	33.20	2.91	5	.05	9.6	6.2	DIS	-	3.7X	326	60	
1960	JAN	13	1303	22.76	19	28.70	154	40.34	0.06	6	.09	3.7	.9	SLE	#	3.6X	317	51	
1960	JAN	13	1342	17.74	19	30.90	154	54.20	0.30	7	.14	82.9	31.6	SLE	X	2.9X	288	30	
1960	JAN	13	1441	32.45	19	26.88	154	39.81	3.03	5	.17	7.0	5.8	DIS		3.3X	316	54	
1960	JAN	13	1445	40.27	19	27.41	154	47.05	3.23	5	.20	8.9	11.9	SLE	-	3.1X	306	43	
1960	JAN	13	1506	42.72	19	30.91	154	39.85	0.67	4	.29	24.8	10.1	DIS	-	3.5X	323	50	

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	2
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	JAN	13	1600	24.78	19	26.39	154	46.07	7.83	7	.17	2.3	2.4	LER		3.5X	308	20	
1960	JAN	13	1611	48.74	19	25.60	154	41.87	0.02	8	.14	3.3	1.1	SLE	#	3.3X	314	52	
1960	JAN	13	1629	36.11	19	26.82	154	31.59	7.58	4	.11	14.2	15.0	DIS	-	4.1X	325	66	
1960	JAN	13	1720	11.46	19	26.00	154	42.82	6.08	6	.13	2.4	3.1	LER		3.2X	320	51	
1960	JAN	13	1802	1.21	19	35.72	154	42.05	4.74	8	.19	2.8	4.1	HIL		3.6X	319	43	
1960	JAN	13	2012	38.97	19	28.23	154	42.10	3.73	6	.12	2.5	3.4	SLE		3.3X	314	49	
1960	JAN	14	0206	29.23	18	59.37	154	23.27	6.84	4	.35	19.0	24.9	DIS	-	3.1X	333	81	
1960	JAN	14	1503	25.09	19	14.85	155	6.42	0.90	5	.10	13.7	6.0	SSF	-		333	22	
1960	JAN	16	1142	37.27	19	25.87	154	51.38	0.02	6	.19	10.0	2.7	SLE	#	2.5X	297	40	
1960	JAN	17	1924	36.86	19	24.62	155	13.92	19.80	7	.09	2.2	1.4	DEP		3.3X	198		
1960	JAN	18	1331	13.72	19	24.75	155	25.24	15.67	6	.01	1.3	2.5	DML			222		
1960	JAN	18	1826	47.32	19	20.94	155	47.27	7.04	6	.04	3.3	11.5	KON	-	4.7X	337	42	
1960	JAN	21	1705	3.57	19	14.57	155	33.51	2.46	5	.06	9.6	8.6	LSW	-		328	33	
1960	JAN	22	2021	54.57	19	25.57	155	24.87	0.05	6	.14	2.0	1.3	KAO	#	3.3X	215		
1960	JAN	23	1442	57.39	19	18.85	155	26.35	9.73	5	.11	2.0	2.7	LSW		2.6X	304		
1960	JAN	23	1954	58.65	19	20.59	155	24.92	12.19	5	.07	1.4	2.8	SWR		2.7X	265		
1960	JAN	24	0043	40.72	19	14.39	155	9.77	5.19	5	.13	3.8	13.3	SF3	-		329	18	
1960	JAN	24	1217	57.51	19	23.67	155	12.26	29.36	7	.14	3.3	1.9	DEP		2.8X	232		
1960	JAN	25	0754	33.16	19	24.24	155	17.30	1.96	5	.01	1.7	1.1	SSC		2.6X	157		
1960	JAN	25	1241	15.56	19	23.69	155	17.74	13.95	5	.02	1.6	1.4	DEP		2.2X	122		
1960	JAN	25	1907	8.25	19	26.38	155	24.14	6.45	4	.01	4.2	10.8	KAO	-	2.5X	234	11	
1960	JAN	25	2201	50.24	19	20.16	155	20.97	0.01	5	.03	2.3	1.0	SWR			207		
1960	JAN	26	0211	22.42	19	21.02	155	34.27	0.66	7	.08	10.1	4.3	MLO	-	2.6X	315	19	
1960	JAN	26	0443	5.62	19	22.85	155	15.67	26.66	8	.11	1.5	1.3	DEP		2.8X	137		
1960	JAN	26	1007	21.33	19	24.55	155	16.92	2.42	5	.03	1.7	.4	SNC		2.2X	191		
1960	JAN	26	1234	34.87	19	24.24	155	17.08	2.06	6	.06	1.9	.9	SSC		2.7X	142		
1960	JAN	26	1617	36.91	19	24.18	155	17.55	1.95	5	.03	1.6	1.4	SSC		3.0X	140		
1960	JAN	26	1916	12.26	19	23.71	155	17.86	0.93	5	.05	.7	1.5	SSC		2.2X	117		
1960	JAN	26	2146	14.40	19	24.39	155	16.51	3.22	5	.08	2.0	.7	SSC		2.8X	208		
1960	JAN	26	2336	56.00	19	23.63	155	17.70	1.13	6	.06	1.0	1.5	SSC		2.4X	113		
1960	JAN	27	0315	2.22	19	23.98	155	17.65	1.33	6	.03	1.3	1.5	SSC		3.0X	102		
1960	JAN	27	0511	25.72	19	25.19	155	15.59	3.33	5	.08	1.8	1.1	SNC		3.5X	244		
1960	JAN	27	1058	30.59	19	29.99	155	16.36	4.47	5	.18	2.6	17.4	GLN	-	3.3X	267		
1960	JAN	27	1253	20.57	19	27.13	155	15.09	0.86	4	.25	9.7	18.9	SNC	-	3.1X	261		
1960	JAN	27	1336	32.73	19	25.84	155	25.36	6.98	4	.23	5.9	18.6	KAO	-	3.0X	226		
1960	JAN	27	1554	8.43	19	24.50	155	16.14	0.04	6	.05	1.0	.4	SEC	#	3.0X	225		
1960	JAN	27	1614	18.54	19	26.60	155	16.25	0.03	5	.21	1.0	1.7	SNC	#	3.0X	239		
1960	JAN	27	1623	24.56	19	26.48	155	18.53	0.11	4	.13	15.7	1.5	SNC	-	2.5X	193		
1960	JAN	27	1712	38.84	19	29.51	155	15.17	4.67	6	.27	2.8	21.4	GLN	-	3.0X	273		
1960	JAN	27	1728	7.38	19	24.55	155	15.81	0.03	6	.27	1.6	1.0	SNC	#	3.2X	236		
1960	JAN	27	1730	31.28	19	23.79	155	16.91	0.03	5	.21	2.1	1.9	SSC	#	3.1X	167		
1960	JAN	27	2048	6.25	19	26.25	155	16.45	0.06	4	.13	5.4	8.2	SNC	#	2.8X	233		
1960	JAN	27	2213	28.90	19	23.86	155	17.70	0.01	4	.03	.5	31.6	SSC	-	2.8X	127		
1960	JAN	27	2236	39.35	19	25.60	155	15.13	0.03	6	.22	.8	1.5	SNC	#	3.0X	254		
1960	JAN	27	2304	16.12	19	26.29	155	19.00	9.15	5	.18	11.7	3.3	INT		3.2X	172		

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	3
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	JAN	28	0144	6.31	19	22.45	155	29.81	5.56	4	.22	2.0	20.7	KAO	-	2.5X	290	12	
1960	JAN	28	0326	25.33	19	24.26	155	17.72	1.47	4	.01	1.7	1.5	SSC		3.0X	187		
1960	JAN	28	0843	37.41	19	24.83	155	23.33	3.00	4	.06	1.1	31.6	KAO	-	2.9X	181		
1960	JAN	28	1013	47.22	19	24.87	155	16.46	1.00	5	.22	5.2	31.6	SNC	-	2.5X	230		
1960	JAN	28	1716	42.90	19	23.86	155	17.61	0.03	5	.26	1.2	2.4	SSC	#	2.7X	124		
1960	JAN	28	1738	48.36	19	24.26	155	17.06	1.23	5	.07	8.4	5.5	SSC	-	2.8X	231		
1960	JAN	28	1806	59.25	19	23.74	155	18.16	0.03	6	.07	.4	.9	SSC	#	2.6X	112		
1960	JAN	28	1839	24.18	19	25.67	155	14.55	0.50	5	.02	.6	.7	SNC		3.0X	265		
1960	JAN	29	0054	21.70	19	25.20	155	16.49	0.01	4	.29	3.3	31.6	SNC	-	2.4X	247		
1960	JAN	29	0056	15.93	19	24.38	155	16.23	0.01	5	.31	6.6	31.6	SEC	-	2.5X	222		
1960	JAN	29	0057	38.87	19	32.89	155	11.59	0.30	4	.84	69.0	31.6	GLN	-	3.2X	340	17	
1960	JAN	29	0319	21.23	19	24.62	155	15.56	0.02	4	.24	3.9	1.3	SNC	#	2.5X	307		
1960	JAN	29	0910	20.40	19	21.46	155	12.31	7.77	6	.05	2.3	2.0	SF2		4.2X	248		
1960	JAN	29	1305	16.52	19	24.43	155	16.73	2.92	6	.08	1.9	.6	SSC		2.9X	186		
1960	JAN	29	1448	12.53	19	24.55	155	15.16	1.45	5	.05	1.5	.9	SNC		3.1X	296		
1960	JAN	29	1825	27.23	19	24.51	155	17.57	0.03	5	.17	1.6	2.2	SSC	#	2.0X	89		
1960	JAN	29	1828	18.54	19	23.65	155	17.40	0.01	5	.26	1.0	31.6	SSC	-	3.0X	137		
1960	JAN	29	2043	58.39	19	27.62	155	13.17	8.00	4	.08	4.5	31.6	GLN	-	3.6X	284		
1960	JAN	29	2221	3.18	19	23.80	155	16.04	0.93	5	.02	1.9	.8	SEC		2.9X	282		
1960	JAN	30	0033	37.50	19	24.00	155	18.19	0.04	5	.07	.4	1.2	SSC	#	2.5X	106		
1960	JAN	30	0237	57.16	19	23.80	155	17.58	0.20	4	.01	.5	31.6	SSC	-	3.1X	131		
1960	JAN	30	0449	45.08	19	24.92	155	14.21	2.22	5	.02	1.1	1.3	SNC		3.4X	273		
1960	JAN	30	0619	48.20	19	25.37	155	15.92	0.20	4	.10	.7	31.6	SNC	-	2.3X	236		
1960	JAN	30	0813	13.28	19	24.10	155	7.62	16.06	5	.04	3.4	1.5	DEP		3.3X	324	15	
1960	JAN	30	1005	45.31	19	24.15	155	16.78	9.43	5	.02	1.7	1.0	INT		3.0X	185		
1960	JAN	30	1048	32.43	19	24.86	155	16.38	2.48	5	.09	1.9	.6	SNC			221		
1960	JAN	30	1106	21.44	19	24.22	155	17.01	2.72	4	.01	1.3	.7	SSC			174		
1960	JAN	30	1143	13.16	19	25.92	155	15.43	5.20	5	.04	2.0	1.2	INT		3.0X	250		
1960	JAN	30	1144	19.13	19	24.18	155	16.93	1.28	5	.01	1.7	.8	SSC			178		
1960	JAN	30	1145	59.20	19	25.07	155	17.03	2.12	4	.01	1.7	.3	SNC			209		
1960	JAN	30	1150	38.95	19	23.79	155	16.19	6.78	4	.01	3.1	3.4	INT			207		
1960	JAN	30	1757	11.65	19	24.04	155	16.90	2.53	6	.08	2.1	1.0	SSC		2.2X	156		
1960	JAN	30	1910	14.57	19	24.74	155	14.85	0.01	6	.13	.7	1.0	SNC	#	3.0X	261		
1960	JAN	30	1934	48.26	19	23.79	155	18.09	0.01	5	.10	1.4	3.4	SSC	#		112		
1960	JAN	30	2009	28.76	19	24.51	155	16.88	2.17	6	.04	1.8	.5	SSC		2.8X	172		
1960	JAN	30	2012	37.41	19	24.75	155	15.27	1.89	6	.10	1.3	.8	SNC		2.7X	251		
1960	JAN	30	2229	39.23	19	23.92	155	17.78	0.77	6	.12	1.1	1.8	SSC		2.4X	105		
1960	JAN	30	2315	23.28	19	24.50	155	17.29	0.73	4	.00	2.3	1.4	SSC		2.2X	166		
1960	JAN	30	2342	0.57	19	24.02	155	17.41	2.00	5	.07	1.9	1.5	SSC		2.8X	114		
1960	JAN	31	0033	18.41	19	24.17	155	17.95	0.01	4	.05	.5	31.6	SSC	-	2.3X	101		
1960	JAN	31	0342	49.52	19	25.36	155	13.92	6.11	4	.03	5.0	5.1	SF2		3.0X	276		
1960	JAN	31	0349	48.81	19	25.88	155	15.52	0.03	6	.13	.6	.8	SNC	#	2.8X	248		
1960	JAN	31	0353	37.50	19	25.54	155	14.86	0.88	6	.10	.7	1.0	SNC		2.9X	259		
1960	JAN	31	0417	10.97	19	23.57	155	18.36	0.01	7	.27	.8	31.6	SSC	-	2.4X	119		
1960	JAN	31	0428	29.88	19	25.67	155	15.12	0.01	5	.21	1.1	31.6	SNC	-	2.3X	254		

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	4
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	JAN	31	1110	2.83	19	25.35	155	16.05	3.45	6	.00	1.7	.4	SNC		2.9X	234		
1960	JAN	31	1137	49.05	19	24.02	155	18.26	0.03	7	.27	.7	.8	SSC	#	2.8X	196		
1960	JAN	31	1231	5.20	19	25.68	155	15.71	0.02	5	.04	.4	.6	SNC	#	2.8X	244		
1960	JAN	31	1249	28.23	19	23.75	155	18.37	0.55	5	.03	.6	1.6	SSC		2.7X	114		
1960	JAN	31	1529	12.64	19	23.89	155	17.70	1.11	7	.11	.6	.6	SSC		2.7X	105		
1960	JAN	31	1953	45.04	19	24.13	155	17.28	0.54	6	.02	1.1	1.1	SSC		2.5X	124		
1960	JAN	31	2000	56.78	19	24.19	155	17.78	0.16	7	.09	.4	.5	SSC		2.7X	98		
1960	JAN	31	2114	29.85	19	25.26	155	15.53	1.62	6	.08	1.0	.9	SNC		2.6X	245		
1960	JAN	31	2158	46.43	19	23.65	155	16.59	0.01	4	.36	3.0	31.6	SSC	-	2.7X	180		
1960	JAN	31	2301	1.80	19	28.27	155	14.03	0.11	5	.13	3.0	8.8	GLN	#	3.1X	277		
1960	JAN	31	2336	15.65	19	26.83	155	9.52	0.05	6	.29	4.8	31.6	GLN	-	3.0X	311	14	
1960	JAN	31	2352	10.11	19	24.74	155	15.29	2.90	5	.10	3.2	.9	SNC		2.9X	250		
1960	FEB	1	0117	44.76	19	25.79	155	14.31	3.28	4	.00	3.2	2.6	SNC		3.1X	269		
1960	FEB	1	0140	18.10	19	23.89	155	17.93	0.02	5	.05	.6	1.4	SSC	#	3.0X	108		
1960	FEB	1	0159	52.68	19	25.92	155	15.85	0.02	6	.24	.8	1.3	SNC	#	2.5X	242		
1960	FEB	1	0249	41.38	19	26.30	155	15.12	0.01	5	.29	1.2	1.6	SNC	#	2.7X	256		
1960	FEB	1	0254	13.88	19	28.01	155	13.53	0.13	5	.20	3.8	11.6	GLN	#	3.2X	281		
1960	FEB	1	0459	46.93	19	25.57	155	15.26	0.03	5	.04	.4	.6	SNC	#	2.7X	251		
1960	FEB	1	0524	11.78	19	24.70	155	15.56	2.31	6	.08	1.5	.7	SNC		2.8X	244		
1960	FEB	1	0605	5.24	19	23.63	155	16.08	0.54	6	.10	2.3	.6	SEC	#	3.0X	205		
1960	FEB	1	0655	18.31	19	25.93	155	14.96	0.01	6	.12	.7	.9	SNC	#	2.5X	258		
1960	FEB	1	0659	28.64	19	25.07	155	14.85	1.41	6	.10	.8	1.1	SNC		2.5X	260		
1960	FEB	1	0716	38.60	19	24.56	155	14.66	0.01	4	.10	.9	31.6	SNC	-	3.1X	266		
1960	FEB	1	0855	34.12	19	23.98	155	18.21	0.41	5	.19	.7	1.7	SSC		2.5X	107		
1960	FEB	1	0858	58.19	19	23.95	155	18.24	0.14	6	.04	.5	.3	SSC		2.8X	108		
1960	FEB	1	0904	27.69	19	23.72	155	18.00	0.96	5	.03	.6	1.4	SSC		2.7X	113		
1960	FEB	1	0921	12.41	19	24.17	155	16.09	4.88	5	.01	1.8	.9	SEC		2.6X	223		
1960	FEB	1	1052	31.91	19	24.49	155	15.02	7.40	6	.28	4.0	2.1	INT		3.3X	257		
1960	FEB	1	1103	25.02	19	24.97	155	15.82	2.82	6	.03	1.5	.5	SNC		2.5X	237		
1960	FEB	1	1132	34.65	19	24.85	155	16.38	2.88	6	.13	2.1	.6	SNC		2.9X	221		
1960	FEB	1	1204	40.07	19	25.63	155	14.38	0.02	6	.18	1.0	1.2	SNC	#	2.7X	268		
1960	FEB	1	1211	18.06	19	25.08	155	14.88	0.02	6	.17	.9	1.2	SNC	#	3.2X	259		
1960	FEB	1	1356	17.54	19	25.73	155	14.33	0.02	6	.18	1.1	1.1	SNC	#	3.0X	269		
1960	FEB	1	1358	26.37	19	23.44	155	14.94	5.96	5	.16	3.0	1.8	INT		2.8X	273		
1960	FEB	1	1543	34.84	19	23.69	155	17.82	0.01	6	.02	.4	.8	SSC	#	2.4X	112		
1960	FEB	1	1606	13.22	19	24.47	155	17.13	1.77	5	.04	1.8	.8	SSC		2.6X	134		
1960	FEB	1	1610	35.99	19	24.69	155	14.47	4.39	5	.19	2.1	3.9	SNC		2.9X	269		
1960	FEB	1	1630	18.94	19	25.48	155	14.75	0.01	5	.06	.7	31.6	SNC	-	2.2X	261		
1960	FEB	1	1701	37.59	19	24.45	155	16.98	1.41	5	.06	1.9	.7	SSC		2.8X	155		
1960	FEB	1	1742	47.56	19	23.82	155	17.75	1.98	6	.07	1.4	1.8	SSC		3.3X	108		
1960	FEB	1	1744	15.06	19	24.64	155	16.58	0.05	4	.09	2.0	31.6	SNC	-	3.1X	213		
1960	FEB	1	1905	31.47	19	25.82	155	12.70	4.56	6	.26	2.7	17.5	SER	-	3.0X	290		
1960	FEB	1	2124	11.71	19	23.73	155	18.20	0.41	6	.10	.5	1.2	SSC		2.6X	113		
1960	FEB	1	2152	20.01	19	22.68	155	13.27	6.22	5	.13	2.8	2.1	SF2		2.7X	309		
1960	FEB	1	2201	44.75	19	25.57	155	16.37	0.33	4	.08	8.3	9.0	SNC	-	2.8X	228		

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC	PREF	AZ	MIN	5
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS	MAG	GAP	DS	
1960	FEB	1	2203	11.03	19	24.98	155	15.72	2.37	6	.12	1.7	.7	SNC	2.8X	240		
1960	FEB	1	2227	36.46	19	23.86	155	17.49	0.50	6	.08	.5	.3	SSC	3.1X	104		
1960	FEB	1	2309	55.49	19	24.06	155	16.75	1.04	4	.07	11.6	7.6	SSC	- 3.0X	169		
1960	FEB	1	2327	45.72	19	21.90	155	16.69	0.01	4	.06	1.3	31.6	KOA	- 2.5X	229		
1960	FEB	2	0004	31.30	19	25.56	155	15.32	0.03	4	.08	.7	31.6	SNC	- 3.0X	250		
1960	FEB	2	0030	49.05	19	23.52	155	17.84	0.09	4	.11	3.5	9.2	SSC	2.2X	129		
1960	FEB	2	0051	20.95	19	24.05	155	16.99	0.00	4	.24	3.4	2.7	SSC	# 3.0X	170		
1960	FEB	2	0715	27.99	19	23.78	155	16.27	1.17	5	.02	2.1	.7	SEC	2.9X	202		
1960	FEB	2	0716	29.08	19	24.43	155	19.04	0.03	5	.23	.9	1.7	KAO	# 3.0X	100		
1960	FEB	2	0724	25.52	19	23.09	155	18.77	0.03	5	.21	.7	1.7	SSC	# 3.1X	133		
1960	FEB	2	0812	10.33	19	27.40	155	15.70	1.28	6	.13	1.0	1.6	SNC	2.8X	254		
1960	FEB	2	0849	47.25	19	25.87	155	15.82	0.03	6	.20	.7	1.1	SNC	# 2.7X	243		
1960	FEB	2	0852	49.97	19	24.90	155	15.98	0.03	6	.24	1.3	.8	SNC	# 2.6X	232		
1960	FEB	2	0900	1.38	19	24.88	155	15.70	1.68	6	.14	1.5	.8	SNC	3.0X	240		
1960	FEB	2	1015	23.46	19	25.18	155	18.19	0.58	5	.04	.7	.7	SNC	2.4X	169		
1960	FEB	2	1041	26.36	19	24.71	155	18.00	5.38	6	.09	1.5	1.3	INT	3.0X	90		
1960	FEB	2	1316	47.71	19	26.56	155	15.08	2.06	6	.13	.9	1.8	SNC	3.1X	258		
1960	FEB	2	1349	17.53	19	24.10	155	16.86	0.00	5	.29	3.9	3.3	SSC	# 2.6X	160		
1960	FEB	2	1447	34.88	19	24.17	155	16.81	3.38	5	.02	1.5	.7	SSC	3.0X	168		
1960	FEB	2	1456	26.56	19	24.16	155	18.43	1.34	8	.16	.6	.5	SSC	2.8X	104		
1960	FEB	2	1832	18.49	19	23.92	155	17.18	1.57	5	.00	1.9	1.5	SSC	2.6X	132		
1960	FEB	2	1855	12.50	19	23.74	155	17.72	0.12	7	.05	.4	.2	SSC	2.7X	110		
1960	FEB	2	1907	20.04	19	23.86	155	17.20	1.65	8	.13	.7	.4	SSC	3.2X	109		
1960	FEB	2	1928	52.70	19	24.37	155	17.47	0.00	5	.26	2.2	3.2	SSC	# 2.7X	103		
1960	FEB	2	2013	1.22	19	24.26	155	16.52	3.19	6	.17	2.7	.8	SSC	3.0X	197		
1960	FEB	2	2018	47.34	19	23.69	155	19.01	1.27	8	.15	.6	.6	SSC	2.7X	117		
1960	FEB	2	2115	43.91	19	23.76	155	17.36	2.22	5	.39	4.8	4.6	SSC	# 3.0X	141		
1960	FEB	2	2143	21.38	19	24.99	155	15.15	1.55	6	.14	1.2	1.1	SNC	2.8X	254		
1960	FEB	2	2219	9.20	19	24.18	155	17.42	1.30	7	.11	.5	.3	SSC	3.3X	109		
1960	FEB	2	2245	47.00	19	25.46	155	15.63	0.37	5	.07	.5	.8	SNC	2.6X	244		
1960	FEB	2	2349	27.28	19	24.03	155	16.89	0.00	4	.29	5.3	3.3	SSC	# 2.4X	164		
1960	FEB	3	0006	16.46	19	24.12	155	17.73	0.04	5	.08	1.4	2.5	SSC	# 2.5X	100		
1960	FEB	3	0050	9.68	19	23.74	155	18.10	1.11	8	.15	.6	.4	SSC	2.4X	113		
1960	FEB	3	0138	40.42	19	24.72	155	15.07	7.06	5	.16	2.9	1.5	INT	3.1X	255		
1960	FEB	3	0416	21.06	19	23.72	155	18.50	0.03	6	.39	.9	1.0	SSC	# 2.7X	115		
1960	FEB	3	0445	19.73	19	23.46	155	18.28	0.75	8	.19	.6	.5	SSC	3.1X	121		
1960	FEB	3	0547	14.63	19	19.24	155	16.82	1.40	7	.27	3.2	1.1	SSF	2.8X	306		
1960	FEB	3	0626	50.99	19	25.65	155	14.52	0.02	5	.21	1.0	1.4	SNC	# 3.1X	265		
1960	FEB	3	0719	38.73	19	23.74	155	17.93	0.13	6	.06	.4	.9	SSC	2.5X	112		
1960	FEB	3	0750	28.80	19	25.36	155	15.78	1.12	6	.14	1.0	1.0	SNC	2.7X	241		
1960	FEB	3	1025	11.10	19	23.60	155	18.26	0.79	6	.10	.5	1.3	SSC	2.9X	117		
1960	FEB	3	1127	30.95	19	23.83	155	18.16	0.12	6	.12	.4	1.1	SSC	# 2.8X	111		
1960	FEB	3	1144	9.36	19	24.25	155	17.28	0.02	5	.19	2.0	2.3	SSC	# 2.7X	122		
1960	FEB	3	1235	28.07	19	25.71	155	14.91	0.02	5	.09	.7	.9	SNC	# 3.0X	258		
1960	FEB	3	1239	9.84	19	22.34	155	19.14	0.01	4	.03	.6	31.6	KAO	- 3.2X	154		

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC	PREF	AZ	MIN	6
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS	MAG	GAP	DS	
1960	FEB	3	1253	4.60	19	23.69	155	17.38	1.23	6	.01	1.3	1.4	SSC	2.8X	116		
1960	FEB	3	1255	31.46	19	23.66	155	17.68	0.85	8	.13	.6	.4	SSC	2.7X	112		
1960	FEB	3	1318	56.13	19	25.91	155	15.91	0.05	6	.34	1.0	1.6	SNC	# 3.2X	239		
1960	FEB	3	1328	13.64	19	25.03	155	15.54	0.67	6	.15	.9	.8	SNC	2.8X	245		
1960	FEB	3	1339	8.92	19	23.86	155	17.81	0.85	6	.02	.8	1.2	SSC	2.9X	107		
1960	FEB	3	1529	39.73	19	25.09	155	15.57	1.03	5	.02	1.0	1.0	SNC	2.5X	244		
1960	FEB	3	1731	41.85	19	24.93	155	16.64	0.23	4	.03	9.6	5.1	SNC	- 2.7X	216		
1960	FEB	3	1737	20.63	19	24.50	155	15.99	2.52	6	.02	1.6	.6	SEC	2.9X	229		
1960	FEB	3	1739	32.23	19	24.10	155	17.29	0.02	5	.19	1.9	2.2	SSC	# 2.7X	124		
1960	FEB	3	1812	28.46	19	25.54	155	15.54	1.01	6	.13	.8	1.0	SNC	2.9X	246		
1960	FEB	3	1830	24.73	19	23.85	155	17.65	1.64	7	.11	.7	.4	SSC	2.8X	125		
1960	FEB	3	1910	51.79	19	24.54	155	15.66	0.01	6	.10	.9	.6	SNC	# 2.6X	241		
1960	FEB	3	1936	35.01	19	24.26	155	15.63	0.96	5	.06	1.5	.8	SEC	2.7X	293		
1960	FEB	3	2049	16.81	19	23.68	155	17.74	0.46	5	.01	.5	1.1	SSC	2.7X	122		
1960	FEB	3	2115	35.76	19	25.12	155	16.15	1.62	6	.05	1.3	.5	SNC	2.9X	229		
1960	FEB	3	2151	12.18	19	24.60	155	16.52	2.94	6	.10	2.0	.5	SNC	2.7X	216		
1960	FEB	3	2154	40.45	19	24.70	155	15.65	3.47	5	.01	1.7	.8	SNC	2.8X	240		
1960	FEB	3	2201	7.72	19	23.91	155	17.33	1.65	7	.10	.6	.4	SSC	2.8X	108		
1960	FEB	3	2242	18.25	19	24.28	155	16.92	0.00	4	.30	11.6	10.7	SSC	# 2.7X	158		
1960	FEB	3	2251	12.14	19	24.73	155	16.12	0.65	6	.10	1.3	.5	SNC	2.3X	227		
1960	FEB	4	0047	45.01	19	25.30	155	16.09	2.80	6	.06	1.5	.5	SNC	2.9X	232		
1960	FEB	4	0729	33.33	19	25.78	155	14.70	1.55	6	.12	.9	1.4	SNC	3.0X	262		
1960	FEB	4	1124	2.97	19	24.98	155	15.63	0.57	6	.10	.8	.7	SNC	3.0X	242		
1960	FEB	4	1213	21.37	19	23.83	155	17.63	0.03	6	.10	.7	1.3	SSC	# 3.0X	106		
1960	FEB	4	1217	59.87	19	24.90	155	15.54	1.56	6	.13	1.4	.9	SNC	2.9X	244		
1960	FEB	4	1314	35.90	19	25.10	155	15.15	0.02	6	.17	.7	.8	SNC	# 2.9X	253		
1960	FEB	4	1411	21.50	19	25.02	155	15.92	1.60	6	.14	1.5	.7	SNC	3.0X	234		
1960	FEB	4	1446	32.07	19	24.08	155	17.30	1.36	8	.14	.7	.4	SSC	2.9X	111		
1960	FEB	4	1546	21.22	19	24.04	155	17.67	0.08	6	.06	.6	1.0	SSC	2.6X	101		
1960	FEB	4	1643	41.32	19	24.90	155	16.68	3.06	7	.13	.8	.4	SNC	3.0X	133		
1960	FEB	4	1646	13.35	19	25.07	155	17.00	2.34	7	.14	.7	.3	SNC	2.9X	127		
1960	FEB	4	1706	46.24	19	26.68	155	14.72	1.95	7	.36	1.8	3.1	SNC	3.0X	167		
1960	FEB	4	1752	49.22	19	25.22	155	15.64	0.12	6	.02	.6	.8	SNC	2.9X	243		
1960	FEB	4	1834	24.96	19	25.05	155	15.76	0.04	6	.03	.5	.5	SNC	# 2.8X	239		
1960	FEB	4	2010	7.51	19	24.94	155	15.65	1.89	6	.12	1.5	.7	SNC	1.9X	242		
1960	FEB	4	2019	41.10	19	25.51	155	15.16	3.92	6	.08	1.6	1.3	SNC	3.1X	253		
1960	FEB	4	2337	6.62	19	25.79	155	15.83	0.02	5	.06	.5	.8	SNC	# 2.3X	242		
1960	FEB	5	0009	31.09	19	23.88	155	17.99	0.02	5	.05	.4	1.0	SSC	# 2.4X	113		
1960	FEB	5	0025	20.36	19	24.23	155	17.91	1.13	6	.10	1.2	1.6	SSC	2.5X	99		
1960	FEB	5	0108	4.01	19	25.35	155	15.33	0.02	6	.08	.5	.6	SNC	# 2.3X	250		
1960	FEB	5	0128	48.96	19	24.01	155	16.97	0.00	5	.28	3.4	3.1	SSC	# 2.7X	148		
1960	FEB	5	0133	4.20	19	24.02	155	17.44	1.73	7	.07	.6	.3	SSC	2.4X	107		
1960	FEB	5	0139	50.21	19	23.89	155	18.25	0.04	5	.08	.5	1.1	SSC	# 2.5X	110		
1960	FEB	5	0527	47.59	19	25.58	155	15.56	0.03	6	.18	.6	.9	SNC	# 2.7X	246		
1960	FEB	5	0642	20.06	19	25.00	155	15.89	0.18	5	.01	.6	.5	SNC	2.7X	236		

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC	PREF	AZ	MIN	7
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS	MAG	GAP	DS	
1960	FEB	5	0716	12.07	19	25.04	155	16.21	0.39	4	.06	8.9	7.6	SNC	- 2.4X	227		
1960	FEB	5	0806	7.20	19	25.33	155	15.73	0.02	6	.04	.4	.5	SNC	# 2.8X	242		
1960	FEB	5	0830	37.43	19	25.44	155	15.78	0.00	5	.09	.5	.7	SNC	# 2.8X	241		
1960	FEB	5	1014	32.50	19	25.55	155	15.65	0.01	5	.15	.7	31.6	SNC	- 2.9X	244		
1960	FEB	5	1253	17.35	19	24.27	155	16.71	3.25	5	.01	.8	.4	SSC	3.1X	128		
1960	FEB	5	1302	36.99	19	25.37	155	16.11	1.01	6	.18	1.3	1.0	SNC	3.0X	232		
1960	FEB	5	1311	20.55	19	25.52	155	15.82	0.03	5	.06	.4	.6	SNC	# 2.9X	240		
1960	FEB	5	1316	17.89	19	25.30	155	15.68	0.03	5	.08	.4	.6	SNC	# 2.6X	243		
1960	FEB	5	1415	28.17	19	25.25	155	15.84	0.04	6	.12	.6	.6	SNC	# 2.7X	239		
1960	FEB	5	1416	58.53	19	24.44	155	17.80	0.03	5	.13	.7	1.3	SSC	# 2.1X	127		
1960	FEB	5	1516	7.66	19	24.35	155	16.29	1.97	5	.05	1.8	.7	SEC	2.6X	218		
1960	FEB	5	1821	37.37	19	25.30	155	15.76	0.03	5	.09	.6	.7	SNC	# 2.7X	240		
1960	FEB	5	1852	54.29	19	25.42	155	15.86	0.02	5	.06	.5	.7	SNC	# 2.7X	239		
1960	FEB	5	2022	43.13	19	25.28	155	15.94	0.03	5	.02	.5	.6	SNC	# 2.8X	236		
1960	FEB	5	2031	36.35	19	24.95	155	16.07	0.79	5	.03	1.0	.6	SNC	2.5X	230		
1960	FEB	6	0056	48.91	19	25.27	155	15.52	0.01	6	.26	1.0	1.1	SNC	# 2.7X	246		
1960	FEB	6	1234	55.24	19	23.87	155	17.75	0.05	6	.11	.7	1.4	SSC	# 2.9X	107		
1960	FEB	7	2013	37.83	19	25.59	155	15.71	0.04	5	.05	.4	.6	SNC	# 2.7X	243		
1960	FEB	7	2134	25.21	19	21.59	155	15.66	3.31	8	.21	1.3	.7	KOA	3.8X	236		
1960	FEB	7	2217	18.39	19	23.88	155	17.96	0.12	6	.06	.4	.9	SSC	2.4X	107		
1960	FEB	8	0142	12.96	19	24.75	155	15.96	1.43	6	.12	1.6	.6	SNC	2.7X	232		
1960	FEB	8	0456	20.68	19	25.39	155	15.76	0.02	5	.05	.4	.6	SNC	# 2.7X	241		
1960	FEB	8	0534	4.53	19	25.24	155	15.73	0.03	6	.10	.5	.6	SNC	# 2.7X	241		
1960	FEB	8	0912	14.23	19	24.51	155	17.41	0.01	4	.11	1.0	31.6	SSC	- 2.5X	156		
1960	FEB	8	0913	1.88	19	25.29	155	15.62	0.21	6	.11	.6	.7	SNC	2.9X	244		
1960	FEB	8	1639	42.51	19	24.25	155	16.19	0.01	6	.10	1.6	.6	SEC	2.7X	220		
1960	FEB	8	1805	36.25	19	20.14	155	12.30	0.02	8	.16	1.8	.8	SSF	# 3.1X	215		
1960	FEB	8	2052	25.31	19	26.44	154	44.42	11.08	7	.12	8.8	11.5	LER	- 3.2X	310	48	
1960	FEB	9	0326	14.38	19	24.69	155	15.46	4.09	8	.09	.6	1.1	SNC	2.7X	117		
1960	FEB	9	0449	27.01	19	23.62	155	18.12	2.77	6	.02	1.5	2.1	SSC	3.0X	116		
1960	FEB	9	0540	9.26	19	25.11	155	15.61	0.79	6	.11	.9	.8	SNC	2.8X	243		
1960	FEB	9	0735	30.72	19	24.97	155	15.84	0.01	5	.09	.8	1.0	SNC	# 2.8X	237		
1960	FEB	9	0913	24.63	19	24.45	155	16.70	3.58	6	.05	1.8	.6	SSC	2.7X	191		
1960	FEB	9	1001	2.27	19	24.28	155	19.89	0.05	4	.14	.9	6.4	KAO	# 2.7X	111		
1960	FEB	9	1018	5.05	19	25.69	155	15.92	0.01	5	.05	.3	.6	SNC	# 2.8X	238		
1960	FEB	9	1218	41.75	19	24.96	155	17.01	0.23	4	.05	9.4	1.7	SNC	- 2.1X	207		
1960	FEB	9	1432	16.23	19	25.28	155	15.92	0.60	6	.13	.9	.8	SNC	3.0X	236		
1960	FEB	9	1536	15.42	19	25.02	155	15.93	1.03	6	.07	1.0	.6	SNC	2.8X	234		
1960	FEB	9	2120	29.57	19	24.43	155	16.35	3.04	6	.07	1.9	.6	SEC	3.0X	218		
1960	FEB	9	2147	53.19	19	25.34	155	16.19	1.87	6	.14	1.6	.8	SNC	3.0X	230		
1960	FEB	9	2235	21.98	19	26.13	155	16.53	6.01	7	.16	1.2	1.1	INT	3.2X	139		
1960	FEB	10	0328	51.11	19	24.15	155	18.10	0.52	6	.02	.5	1.0	SSC	2.7X	103		
1960	FEB	10	0419	8.29	19	15.45	155	10.76	3.01	5	.07	2.8	13.5	SSF	- 2.7X	250	21	
1960	FEB	10	0621	48.78	19	24.96	155	15.99	2.68	6	.08	1.7	.6	SNC	3.0X	233		
1960	FEB	10	0815	18.49	19	24.73	155	16.24	3.18	5	.08	1.9	.7	SNC	3.1X	224		

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC	PREF	AZ	MIN	8
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS	MAG	GAP	DS	
1960	FEB	10	1057	20.37	19	22.89	155	16.43	0.31	5	.08	.7	.6	SEC	2.6X	114		
1960	FEB	10	1204	13.71	19	25.19	155	15.32	2.08	6	.10	1.2	1.0	SNC	2.9X	250		
1960	FEB	10	1239	14.14	19	25.96	155	14.36	0.09	5	.06	.8	1.1	SNC	# 3.2X	268		
1960	FEB	10	1611	53.76	19	27.24	155	15.49	0.94	5	.04	.6	1.0	SNC	2.9X	255		
1960	FEB	10	1830	46.80	19	23.83	155	17.37	2.57	7	.11	.6	.4	SSC	2.9X	105		
1960	FEB	10	2042	13.33	19	25.31	155	15.38	1.73	6	.07	1.0	.9	SNC	2.8X	249		
1960	FEB	10	2058	20.60	19	23.82	155	17.65	0.02	6	.10	.6	1.0	SSC	# 2.7X	106		
1960	FEB	10	2125	8.93	19	25.14	155	15.59	0.45	6	.12	.8	.8	SNC	3.2X	244		
1960	FEB	10	2153	52.42	19	23.12	155	15.14	0.13	8	.13	.6	.6	SEC	2.8X	202		
1960	FEB	11	0109	7.18	19	25.74	155	15.10	0.01	6	.08	.6	31.6	SNC	- 2.9X	255		
1960	FEB	11	0911	11.81	19	24.22	155	17.55	2.49	5	.05	1.7	1.3	SSC	2.7X	141		
1960	FEB	11	1139	35.50	19	21.77	155	16.10	1.62	7	.05	.4	.7	KOA	3.5X	192		
1960	FEB	11	2005	12.05	19	23.86	155	18.19	0.03	6	.06	.4	.9	SSC	2.8X	109		
1960	FEB	11	2254	2.15	19	24.03	155	17.33	1.48	8	.13	.6	.4	SSC	2.5X	96		
1960	FEB	12	0417	0.58	19	21.69	155	14.86	1.37	7	.04	1.1	.8	KOA	3.1X	238		
1960	FEB	12	0455	5.98	19	21.41	155	8.92	0.01	5	.15	3.0	31.6	SER	- 3.7X	211	16	
1960	FEB	12	0613	34.76	19	24.59	155	16.18	0.43	6	.08	1.3	.5	SNC	2.9X	224		
1960	FEB	12	0843	14.75	19	25.21	155	15.94	3.33	6	.03	1.5	.5	SNC	3.0X	235		
1960	FEB	12	1634	38.35	19	20.28	155	14.57	4.48	8	.26	2.0	3.8	SSF	4.1X	250		
1960	FEB	12	1640	14.87	19	21.47	155	16.74	2.18	6	.20	13.5	10.0	KOA	- 2.9X	219		
1960	FEB	12	1650	45.59	19	25.86	155	15.24	1.69	6	.07	.7	1.1	SNC	3.4X	253		
1960	FEB	13	0326	57.66	19	23.91	155	18.32	0.03	5	.07	.5	1.0	SSC	# 2.7X	109		
1960	FEB	13	1415	54.15	19	21.22	155	14.13	4.99	4	.14	16.7	2.7	KOA	- 2.4X	300		
1960	FEB	14	0024	49.30	19	25.41	155	14.79	3.43	6	.05	1.2	1.3	SNC	3.3X	261		
1960	FEB	14	1103	30.96	19	17.53	155	11.76	3.86	5	.35	14.4	27.9	SSF	- 3.4X	318	12	
1960	FEB	15	1024	49.98	19	23.71	155	18.36	0.54	5	.27	.8	3.2	SSC	# 2.5X	115		
1960	FEB	15	1929	38.89	19	25.30	155	15.67	1.58	5	.03	.9	1.1	SNC	2.7X	243		
1960	FEB	15	2052	39.40	19	25.40	155	15.20	0.02	5	.15	.8	1.3	SNC	# 2.7X	253		
1960	FEB	16	1855	26.10	19	0.20	155	5.95	7.48	5	.07	4.6	2.4	LOI		343	48	
1960	FEB	17	1138	0.28	19	24.29	155	17.90	0.03	4	.03	2.4	7.6	SSC	# 3.0X	120		
1960	FEB	17	1720	3.80	19	18.97	155	2.44	6.91	5	.12	3.8	12.3	SF5	- 3.5X	335	28	
1960	FEB	17	2041	25.14	19	24.84	155	14.70	30.21	5	.07	3.5	2.0	DEP	3.1X	264		
1960	FEB	17	2256	39.57	19	25.18	155	15.78	0.91	6	.09	.9	.7	SNC	2.8X	240		
1960	FEB	18	0007	6.38	19	24.20	155	17.12	1.32	4	.00	1.8	1.1	SSC	2.4X	167		
1960	FEB	18	0450	54.20	19	24.15	155	15.44	3.28	6	.13	2.3	1.0	SEC	3.1X	246		
1960	FEB	18	0656	58.43	19	25.58	155	15.15	0.03	6	.20	.9	1.3	SNC	# 2.9X	254		
1960	FEB	18	0925	25.98	19	25.35	155	15.55	0.28	5	.02	.5	.7	SNC	3.1X	245		
1960	FEB	18	1356	1.07	19	24.00	155	16.05	0.02	6	.10	1.5	.8	SEC	# 3.2X	219		
1960	FEB	18	2005	46.79	19	23.97	155	16.41	3.11	6	.09	1.1	.7	SEC	2.8X	213		
1960	FEB	18	2034	46.69	19	23.70	155	2.11	5.59	6	.12	3.5	12.6	SF5	- 3.4X	334	24	
1960	FEB	20	0152	57.45	19	25.54	155	15.64	0.01	6	.09	.5	.7	SNC	# 2.4X	244		
1960	FEB	20	1340	34.96	19	25.34	155	15.73	0.32	5	.07	.7	1.0	SNC	2.7X	242		
1960	FEB	20	1349	37.58	19	25.55	155	15.67	0.03	6	.20	.7	1.0	SNC	# 2.9X	243		
1960	FEB	20	1448	16.90	19	24.32	155	17.44	2.26	6	.06	.6	.3	SSC	3.1X	111		
1960	FEB	20	1456	0.28	19	24.77	155	16.59	3.77	5	.01	1.6	.6	SNC	3.2X	215		

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	9
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	FEB	20	1617	3.64	19	24.76	155	16.80	1.08	4	.01	1.8	.6	SNC		2.7X	209		
1960	FEB	20	2140	35.66	19	24.10	155	17.17	0.95	8	.12	.6	.4	SSC		2.4X	114		
1960	FEB	21	0110	58.95	19	23.82	155	18.33	0.04	5	.11	.6	1.5	SSC	#	2.7X	112		
1960	FEB	21	0432	18.16	19	24.52	155	17.50	1.55	6	.01	1.6	1.0	SSC		2.8X	93		
1960	FEB	21	0724	50.06	19	21.91	155	15.51	1.10	8	.11	.8	.3	KOA		2.9X	191		
1960	FEB	21	0746	6.37	19	24.48	155	16.89	1.83	6	.08	1.9	.6	SSC		2.9X	169		
1960	FEB	21	1055	40.04	19	24.42	155	16.73	2.32	6	.07	1.9	.5	SSC		2.9X	186		
1960	FEB	21	1056	48.66	19	25.16	155	15.43	3.58	5	.02	1.6	1.0	SNC		2.9X	248		
1960	FEB	21	1314	46.30	19	15.98	155	8.78	9.00	4	.13	3.9	31.6	SF4	-		329	17	
1960	FEB	21	1320	26.44	19	23.95	155	10.72	16.19	4	.00	3.1	1.2	DEP		3.5X	316	10	
1960	FEB	21	1325	6.38	19	24.06	155	17.74	1.78	7	.13	.7	.5	SSC		3.0X	101		
1960	FEB	21	1540	15.46	19	25.36	155	15.79	1.82	6	.09	.7	.7	SNC		2.8X	154		
1960	FEB	21	1653	49.27	19	23.82	155	17.67	2.51	7	.15	.8	.6	SSC		2.8X	106		
1960	FEB	21	1703	37.95	19	25.33	155	15.95	1.11	5	.03	.7	.7	SNC			236		
1960	FEB	21	1817	10.00	19	24.23	155	17.37	1.61	8	.09	.6	.3	SSC		2.9X	111		
1960	FEB	21	2137	8.21	19	25.55	155	15.03	0.52	6	.10	.6	.9	SNC		2.8X	256		
1960	FEB	21	2239	3.81	19	24.13	155	17.42	1.72	8	.10	.6	.3	SSC		3.0X	109		
1960	FEB	21	2250	34.98	19	24.15	155	18.67	1.69	6	.08	.9	1.9	SSC		2.5X	106		
1960	FEB	22	0319	37.55	19	24.29	155	18.88	0.39	6	.05	.5	1.0	SSC		2.6X	103		
1960	FEB	22	0533	0.56	19	25.33	155	15.64	2.01	6	.08	1.2	.9	SNC		2.7X	243		
1960	FEB	22	0553	23.27	19	24.27	155	18.58	1.57	7	.17	.7	.5	SSC			102		
1960	FEB	22	1529	3.00	19	23.75	155	17.99	2.09	7	.14	.9	.5	SSC		3.3X	197		
1960	FEB	22	1631	32.05	19	23.98	155	17.67	1.46	7	.14	.7	.5	SSC		3.1X	102		
1960	FEB	22	1808	21.62	19	21.65	155	15.64	1.67	6	.23	5.9	.6	KOA		3.3X	276		
1960	FEB	23	0915	16.05	19	24.49	155	16.85	1.74	8	.13	.6	.2	SSC		3.4X	82		
1960	FEB	23	0924	45.65	19	24.90	155	15.89	0.62	6	.10	1.0	.6	SNC		3.0X	236		
1960	FEB	23	1153	28.09	19	24.10	155	18.16	0.42	8	.11	.4	.3	SSC		3.1X	104		
1960	FEB	23	1543	35.13	19	25.32	155	16.85	2.33	8	.11	.6	.4	SNC		2.6X	86		
1960	FEB	23	1717	37.43	19	23.34	155	16.69	0.32	7	.19	1.0	.6	SSC		3.2X	173		
1960	FEB	24	0227	26.45	19	24.67	155	15.84	0.01	6	.15	1.0	.6	SNC	#	2.3X	210		
1960	FEB	24	0323	54.87	19	24.08	155	18.14	0.07	6	.01	.4	.9	SSC		3.0X	104		
1960	FEB	24	0436	34.95	19	24.33	155	17.55	1.31	7	.10	.7	.3	SSC		2.8X	176		
1960	FEB	24	0945	23.03	19	24.97	155	15.35	1.61	6	.12	1.2	.9	SNC		2.6X	249		
1960	FEB	24	2015	21.78	19	25.15	155	9.51	4.86	4	.07	1.9	12.2	SER	-	3.5X	177	12	
1960	FEB	24	2021	30.61	19	25.02	155	15.18	0.01	5	.06	.7	31.6	SNC	-	2.5X	253		
1960	FEB	25	0417	34.75	19	25.32	155	17.31	0.02	6	.15	.9	.3	SNC	#	2.7X	113		
1960	FEB	25	0527	59.85	19	24.06	155	17.74	0.34	7	.08	.5	.4	SSC		2.7X	101		
1960	FEB	25	1101	31.04	19	24.31	155	18.20	4.43	5	.01	1.2	1.5	SSC		2.1X	99		
1960	FEB	25	1305	34.75	19	22.82	155	9.01	14.75	4	.09	12.5	5.3	DEP	-	3.5X	322	12	
1960	FEB	25	1425	36.51	19	24.29	155	17.55	0.78	7	.11	.7	.4	SSC		2.7X	109		
1960	FEB	25	1431	57.06	19	25.30	155	15.69	2.18	6	.11	1.4	.9	SNC		2.7X	242		
1960	FEB	25	1433	8.12	19	25.33	155	15.74	2.29	5	.09	1.5	1.2	SNC		2.9X	241		
1960	FEB	25	1515	27.52	19	23.47	155	18.48	0.03	7	.11	.5	.3	SSC	#	3.0X	122		
1960	FEB	25	1832	3.93	19	25.20	155	15.96	0.10	6	.11	.8	.7	SNC		2.9X	234		
1960	FEB	25	1835	12.91	19	23.76	155	16.05	40.26	6	.07	4.3	1.8	DEP		2.8X	211		

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	10
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	FEB	25	2311	44.00	19	23.38	155	17.38	1.81	8	.09	.5	.4	SSC		2.7X	117		
1960	FEB	26	0100	1.68	19	23.91	155	14.57	0.02	5	.12	1.1	.8	SEC	#	3.1X	222		
1960	FEB	26	0414	55.57	19	23.89	155	18.24	0.03	7	.11	.4	.9	SSC	#	2.8X	110		
1960	FEB	26	0440	50.06	19	24.33	155	17.37	0.79	5	.02	1.3	1.2	SSC		3.0X	155		
1960	FEB	26	1035	45.94	19	23.86	155	17.38	1.34	6	.10	1.0	.9	SSC		3.2X	164		
1960	FEB	26	1258	1.88	19	19.65	155	13.61	2.67	6	.31	5.1	2.1	SSF		3.1X	305		
1960	FEB	26	1558	50.89	19	24.56	155	16.86	0.01	8	.08	.6	.4	SNC	#	3.0X	83		
1960	FEB	26	2001	35.67	19	25.26	155	15.96	0.70	7	.14	.7	.9	SNC		2.9X	132		
1960	FEB	26	2035	30.97	19	20.73	155	15.96	1.04	7	.06	.7	.4	KOA		3.3X	203		
1960	FEB	26	2103	51.38	19	25.50	155	16.86	0.01	4	.10	.5	31.6	SNC	-	3.0X	175		
1960	FEB	27	1054	14.48	19	24.76	155	17.09	2.59	7	.09	.6	.3	SNC		2.6X	123		
1960	FEB	27	1134	19.66	19	24.09	155	17.88	0.44	8	.06	.4	.4	SSC		2.7X	102		
1960	FEB	27	1311	38.55	19	24.13	155	17.72	0.76	8	.06	.5	.3	SSC		3.3X	99		
1960	FEB	27	1349	58.99	19	24.00	155	17.22	0.50	8	.18	.7	.4	SSC		2.8X	112		
1960	FEB	27	1421	15.85	19	24.38	155	18.75	0.03	5	.50	1.7	3.3	SSC	#	2.8X	100		
1960	FEB	27	1442	32.64	19	25.47	155	15.58	1.70	6	.01	.9	.8	SNC		3.0X	245		
1960	FEB	27	2257	33.02	19	24.25	155	17.87	0.84	7	.06	.5	.4	SSC		2.9X	102		
1960	FEB	27	2323	2.24	19	24.06	155	16.37	4.49	6	.12	.9	1.2	SEC		3.2X	136		
1960	FEB	27	2341	20.96	19	24.75	155	16.24	2.70	6	.04	1.6	.5	SNC		2.6X	224		
1960	FEB	28	0045	59.02	19	24.06	155	17.39	0.02	6	.09	1.0	1.3	SSC	#	2.7X	116		
1960	FEB	28	0111	56.13	19	24.02	155	18.00	0.04	6	.00	.4	.9	SSC		3.0X	104		
1960	FEB	28	0519	16.28	19	23.45	155	18.43	0.04	7	.11	.4	.9	SSC	#	3.1X	122		
1960	FEB	28	0714	29.24	19	24.43	155	16.50	3.16	6	.04	1.5	.4	SEC		2.9X	209		
1960	FEB	28	1155	38.55	19	22.03	155	16.41	0.02	5	.16	2.0	1.6	SEC	#	1.9X	203		
1960	FEB	28	1224	43.10	19	24.00	155	18.26	0.19	7	.21	.7	.5	SSC		2.8X	107		
1960	FEB	28	1303	18.90	19	24.86	155	16.37	1.27	6	.07	1.4	.4	SNC		2.9X	222		
1960	FEB	28	1820	24.08	19	25.81	155	15.32	1.87	6	.11	.9	1.3	SNC		2.6X	252		
1960	FEB	28	2159	7.92	19	24.14	155	18.04	0.98	6	.03	.8	1.3	SSC		3.0X	102		
1960	FEB	28	2215	28.59	19	23.76	155	17.89	0.02	6	.04	.4	.8	SSC	#	2.9X	111		
1960	FEB	28	2312	35.43	19	24.10	155	17.28	1.41	8	.12	.6	.4	SSC		2.8X	112		
1960	FEB	29	0834	41.82	19	25.16	155	15.20	1.41	6	.11	.9	1.0	SNC		3.1X	252		
1960	FEB	29	0935	30.16	19	25.89	155	15.37	1.64	6	.09	.8	1.2	SNC		2.8X	251		
1960	FEB	29	1014	24.70	19	25.38	155	15.85	0.58	6	.07	.7	.7	SNC		2.8X	238		
1960	FEB	29	1138	12.03	19	24.00	155	17.24	1.33	9	.14	.6	.4	SSC		3.1X	96		
1960	FEB	29	1347	29.14	19	24.71	155	17.98	1.53	8	.17	.8	.3	SNC		2.8X	90		
1960	FEB	29	1355	3.09	19	18.75	155	11.64	4.75	5	.11	2.7	14.1	SSF	-	2.7X	317	15	
1960	FEB	29	1659	38.04	19	24.25	155	18.16	1.44	8	.16	.7	.4	SSC		2.9X	101		
1960	FEB	29	1812	11.16	19	24.29	155	17.32	0.93	8	.14	.6	.3	SSC		3.2X	113		
1960	FEB	29	1917	36.98	19	21.01	155	16.52	1.58	5	.07	12.1	6.6	KOA	-	3.2X	240		
1960	FEB	29	1926	46.23	19	19.98	155	16.06	0.01	8	.15	1.0	.5	SSF	#	3.0X	211		
1960	FEB	29	2114	57.36	19	20.43	155	16.41	0.36	9	.23	1.0	.5	SSF		3.0X	206		
1960	FEB	29	2139	13.58	19	20.05	155	13.93	5.06	5	.11	2.7	11.8	SF2	-	2.6X	302	10	
1960	FEB	29	2343	36.62	19	20.48	155	13.91	4.85	5	.04	2.2	10.8	SSF	-	3.6X	302	10	
1960	MAR	1	0127	0.09	19	24.40	155	15.38	4.19	4	.00	2.0	1.1	SEC		3.0X	248		
1960	MAR	1	0348	28.55	19	17.50	155	3.08	6.89	4	.12	4.0	13.5	SF5	-	2.7X	336	29	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC	PREF	AZ	MIN 11
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS	MAG	GAP	DS
1960	MAR	1	0418	32.81	19	24.63	155	17.28	0.00	5	.20	1.7	1.7	SNC #	2.7X	106	
1960	MAR	1	0539	8.26	19	20.96	155	17.93	0.00	5	.14	3.3	7.8	SWR #	3.6X	209	
1960	MAR	1	1037	47.71	19	24.19	155	16.75	0.01	4	.01	10.0	6.3	SSC -	2.4X	271	
1960	MAR	1	1126	4.45	19	24.27	155	15.27	3.91	5	.02	1.9	1.1	SEC	2.5X	252	
1960	MAR	1	1207	42.23	19	24.19	155	15.94	0.01	5	.05	1.5	31.6	SEC -	2.5X	292	
1960	MAR	1	1214	36.63	19	25.36	155	14.60	1.69	5	.07	.9	1.8	SNC	3.1X	264	
1960	MAR	1	1226	45.40	19	19.93	155	16.29	0.01	4	.24	18.4	31.6	SSF -	2.5X	265	
1960	MAR	1	1300	12.42	19	23.97	155	17.10	0.01	5	.04	.9	31.6	SSC -	2.3X	233	
1960	MAR	1	1426	36.00	19	25.07	155	15.97	0.03	5	.05	2.0	2.1	SNC #	2.4X	233	
1960	MAR	1	1428	19.15	19	26.33	155	16.05	0.54	4	.23	9.6	14.1	SNC -	2.4X	240	
1960	MAR	1	1448	34.07	19	25.43	155	15.32	0.03	6	.16	.6	.9	SNC #	2.6X	251	
1960	MAR	1	1529	55.97	19	25.44	155	15.36	2.23	6	.05	1.0	.9	SNC	3.0X	249	
1960	MAR	1	1627	27.44	19	25.12	155	16.27	0.10	4	.02	6.5	6.7	SNC -	2.1X	226	
1960	MAR	1	1803	11.82	19	25.12	155	15.60	3.03	6	.06	1.5	.6	SNC	2.6X	244	
1960	MAR	1	1923	40.07	19	24.34	155	18.34	1.20	7	.20	.9	1.5	SSC	2.8X	100	
1960	MAR	1	2105	48.07	19	25.31	155	15.45	2.39	6	.06	1.2	.9	SNC	2.7X	247	
1960	MAR	1	2304	23.95	19	24.54	155	16.09	0.30	6	.09	1.2	.6	SEC	2.2X	227	
1960	MAR	1	2348	6.64	19	25.14	155	15.31	16.07	7	.13	1.8	1.0	DEP	3.5X	133	
1960	MAR	2	0011	15.49	19	24.63	155	16.75	2.83	6	.05	1.7	.4	SNC	2.3X	201	
1960	MAR	2	0158	20.85	19	24.16	155	17.43	0.23	6	.19	1.3	1.6	SSC #	2.3X	112	
1960	MAR	2	0254	55.35	19	25.72	155	12.86	16.61	5	.12	3.4	1.6	DEP	2.3X	288	
1960	MAR	2	0256	32.04	19	24.12	155	16.74	0.01	4	.07	2.0	31.6	SSC -	2.5X	255	
1960	MAR	2	0259	25.42	19	24.73	155	17.05	0.76	5	.05	1.6	.6	SNC	2.2X	138	
1960	MAR	2	0412	22.23	19	24.71	155	15.84	0.01	4	.36	21.5	21.6	SNC -	2.5X	249	
1960	MAR	2	0428	17.60	19	25.49	155	14.64	0.00	6	.30	1.4	1.5	SNC #	2.5X	264	
1960	MAR	2	0441	5.06	19	23.89	155	11.23	4.79	5	.33	4.6	24.0	SER -	3.3X	315	10
1960	MAR	2	0446	45.12	19	26.01	155	11.23	4.57	5	.30	3.3	26.1	GLN -	2.9X	302	11
1960	MAR	2	0511	7.85	19	24.22	155	17.88	0.14	6	.08	.6	1.0	SSC	2.8X	98	
1960	MAR	2	0615	3.97	19	25.47	155	15.77	1.15	5	.01	.7	.9	SNC	2.7X	241	
1960	MAR	2	0626	26.91	19	46.00	155	7.31	43.26	8	.11	3.1	1.3	HIL	3.3X	294	
1960	MAR	2	0629	46.15	19	24.35	155	14.75	4.20	4	.01	3.8	1.5	SEC	3.1X	266	
1960	MAR	2	0643	45.92	19	24.28	155	16.54	0.07	5	.21	13.7	4.8	SSC #		197	
1960	MAR	2	0729	6.61	19	25.54	155	15.92	1.64	5	.02	1.0	1.1	SNC		237	
1960	MAR	2	0743	59.63	19	24.71	155	14.09	7.31	4	.00	2.3	1.1	INT		276	
1960	MAR	2	1310	0.47	19	24.70	155	16.23	3.93	6	.06	1.8	.7	SNC		224	
1960	MAR	2	1314	0.56	19	25.87	155	16.66	0.02	6	.22	.7	1.2	SNC #		225	
1960	MAR	2	1349	52.35	19	24.34	155	17.41	0.84	6	.08	1.5	1.3	SSC		108	
1960	MAR	2	1452	25.26	19	24.13	155	16.59	1.33	5	.03	2.1	.6	SSC		186	
1960	MAR	2	1507	34.10	19	24.65	155	16.75	0.37	5	.10	1.9	.4	SNC		277	
1960	MAR	2	1508	2.46	19	24.08	155	19.06	0.85	7	.17	.6	.4	KAO		108	
1960	MAR	2	1513	0.91	19	23.83	155	18.20	0.57	8	.08	.4	.4	SSC		111	
1960	MAR	2	1529	7.73	19	24.74	155	15.96	2.66	5	.05	2.4	.6	SNC		231	
1960	MAR	2	1532	20.92	19	24.55	155	16.55	0.03	6	.12	1.6	.4	SNC #	2.7X	213	
1960	MAR	2	1639	25.85	19	24.04	155	17.55	2.92	6	.12	2.1	1.8	SSC	2.7X	105	
1960	MAR	2	1652	6.42	19	22.15	155	14.80	0.55	6	.20	1.4	.8	SEC	3.3X	191	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC	PREF	AZ	MIN 12
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS	MAG	GAP	DS
1960	MAR	2	1840	23.75	19	24.28	155	17.34	5.15	5	.21	2.8	3.3	INT	2.9X	116	
1960	MAR	2	1938	39.93	19	22.70	155	16.60	2.55	6	.20	1.0	.7	SSC	2.9X	135	
1960	MAR	2	2202	7.59	19	24.68	155	19.93	0.76	5	.09	.9	3.5	KAO	2.6X	113	
1960	MAR	2	2233	35.29	19	24.49	155	17.01	1.30	6	.01	1.8	.7	SSC	2.4X	153	
1960	MAR	2	2241	47.73	19	24.89	155	18.55	1.34	6	.16	1.4	2.0	SNC	2.2X	102	
1960	MAR	2	2322	13.20	19	25.01	155	16.43	0.80	6	.07	1.2	.4	SNC	2.2X	222	
1960	MAR	2	2324	16.14	19	24.77	155	16.14	2.88	6	.19	2.7	.7	SNC	2.8X	227	
1960	MAR	3	0240	0.49	19	23.89	155	18.08	1.68	6	.11	1.4	2.0	SSC	2.4X	109	
1960	MAR	3	0400	38.61	19	17.06	155	19.52	4.31	4	.06	4.9	13.2	SWR -	2.5X	280	
1960	MAR	3	0449	29.90	19	25.86	155	16.64	0.02	5	.14	.8	1.1	SNC #	2.3X	258	
1960	MAR	3	0541	30.85	19	26.46	155	16.35	0.39	5	.05	.5	.9	SNC	2.2X	237	
1960	MAR	3	1207	7.92	19	24.04	155	17.12	1.21	7	.06	.5	.3	SSC	3.3X	93	
1960	MAR	3	1248	32.38	19	25.67	155	15.80	0.47	5	.02	2.1	2.5	SNC	3.0X	241	
1960	MAR	3	1425	56.25	19	24.22	155	17.49	0.00	8	.22	.6	.6	SSC #	2.8X	106	
1960	MAR	3	1430	42.18	19	24.28	155	18.10	0.10	6	.13	.7	1.5	SSC	3.1X	99	
1960	MAR	3	1802	10.13	19	25.39	155	14.68	5.87	5	.09	2.4	1.7	INT	3.7X	263	
1960	MAR	3	1922	14.28	19	21.79	155	17.21	0.03	6	.23	1.0	2.0	SWR #	3.0X	188	
1960	MAR	3	2359	15.36	19	24.96	155	16.81	1.53	6	.07	.7	.4	SNC	3.2X	126	
1960	MAR	4	0315	12.94	19	22.47	155	16.40	1.00	6	.07	.7	.4	SEC	3.0X	154	
1960	MAR	4	0435	8.79	19	24.98	155	16.37	1.37	6	.12	1.5	.5	SNC	2.6X	223	
1960	MAR	4	0504	38.80	19	24.84	155	16.66	2.16	7	.11	.9	.4	SNC	2.3X	126	
1960	MAR	4	0604	33.39	19	25.25	155	24.42	4.77	5	.25	1.6	23.5	KAO F-	2.8X	205	
1960	MAR	4	0648	6.27	19	24.25	155	17.22	0.40	6	.22	2.1	1.9	SSC	3.1X	128	
1960	MAR	4	1148	28.96	19	24.75	155	19.30	0.00	4	.18	2.2	3.4	KAO #	3.4X	208	
1960	MAR	4	1835	38.19	19	21.93	155	14.84	30.81	4	.00	3.2	1.2	DEP		295	
1960	MAR	4	1915	24.01	19	23.80	155	14.37	0.12	4	.33	9.4	11.9	SEC #	2.5X	281	
1960	MAR	4	2028	4.60	19	25.73	155	14.82	0.03	5	.22	4.1	7.8	SNC #	2.5X	261	
1960	MAR	5	0055	44.72	19	25.07	155	17.04	2.81	5	.02	1.5	.3	SNC	2.8X	208	
1960	MAR	5	0121	38.28	19	24.89	155	15.54	0.03	6	.23	1.1	.8	SNC #	2.9X	244	
1960	MAR	5	0641	1.78	19	24.36	155	17.96	1.24	8	.19	.7	.4	SSC F	2.8X	96	
1960	MAR	5	0644	8.08	19	23.88	155	17.80	0.68	5	.16	.8	1.4	SSC	2.4X	106	
1960	MAR	5	0649	53.51	19	24.10	155	17.41	1.51	7	.15	.7	.3	SSC	2.4X	109	
1960	MAR	5	1152	38.30	19	26.34	155	13.30	1.57	5	.09	1.2	2.2	GLN	3.0X	282	
1960	MAR	5	1503	42.97	19	22.92	155	18.63	23.50	5	.10	3.6	12.4	DEP -	2.5X	138	
1960	MAR	5	1748	12.44	19	25.16	155	15.40	0.02	6	.19	.8	.8	SNC #	2.7X	248	
1960	MAR	5	1801	35.95	19	25.65	155	15.56	0.09	6	.11	.5	.8	SNC	2.6X	246	
1960	MAR	5	2138	27.02	19	21.43	155	16.34	1.38	5	.03	11.2	5.7	KOA -		237	
1960	MAR	5	2151	18.70	19	21.58	155	15.11	25.86	7	.08	2.3	1.3	DEP	2.5X	196	
1960	MAR	5	2357	18.02	19	20.70	155	15.05	0.06	6	.21	1.8	4.2	KOA #	2.8X	205	
1960	MAR	6	0952	16.71	19	25.10	155	15.35	2.56	6	.10	1.5	.9	SNC	2.3X	249	
1960	MAR	6	1127	17.57	19	25.12	155	16.11	0.12	5	.02	1.9	1.8	SNC	2.1X	230	
1960	MAR	6	1148	32.70	19	23.39	155	16.87	0.11	4	.30	9.9	8.5	SSC #	2.3X	181	
1960	MAR	6	1215	17.20	19	26.60	155	28.01	4.56	7	.18	1.9	14.4	KAO -	3.0X	269	10
1960	MAR	6	1321	30.39	19	23.63	155	18.22	0.84	5	.01	.4	1.3	SSC	2.5X	116	
1960	MAR	6	1351	8.06	19	25.09	155	15.34	2.14	5	.14	1.5	1.6	SNC	2.3X	250	

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN 13
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS
1960	MAR	6	1438	17.24	19	26.90	155	9.83	5.07	5	.21	2.7	16.9	GLN	-	2.8X	310	13
1960	MAR	6	1627	15.77	19	23.94	155	17.83	0.02	5	.17	1.8	3.6	SSC	#	2.4X	106	
1960	MAR	6	1732	27.40	19	24.30	155	16.95	0.00	4	.37	4.7	3.3	SSC	#	2.7X	161	
1960	MAR	6	1926	46.72	19	24.39	155	17.11	0.72	5	.03	1.7	1.1	SSC		2.1X	138	
1960	MAR	6	2013	4.30	19	25.32	155	15.53	0.01	6	.26	.9	1.1	SNC	#	2.4X	245	
1960	MAR	6	2104	27.67	19	24.44	155	17.17	1.62	6	.08	2.0	.9	SSC		2.8X	130	
1960	MAR	6	2115	50.19	19	25.43	155	15.46	1.35	6	.04	.8	.9	SNC		2.7X	247	
1960	MAR	6	2218	33.83	19	24.88	155	17.17	0.01	5	.27	.7	31.6	SNC	-	2.3X	120	
1960	MAR	6	2333	57.25	19	24.24	155	13.08	6.95	7	.14	1.4	2.8	SF2	F	2.9X	166	
1960	MAR	7	0324	18.66	19	24.92	155	13.78	5.48	7	.13	1.2	2.9	SF2	F	3.9X	146	
1960	MAR	7	0519	10.52	19	25.44	155	15.80	3.55	5	.16	2.4	1.3	SNC		2.1X	240	
1960	MAR	7	0522	6.85	19	24.80	155	17.15	2.82	6	.12	2.0	.6	SNC		2.3X	99	
1960	MAR	7	0924	13.23	19	24.58	155	15.35	0.02	5	.21	1.2	1.6	SNC	#	2.7X	249	
1960	MAR	7	1053	17.15	19	25.25	155	16.35	0.01	4	.23	1.1	31.6	SNC	-	2.5X	226	
1960	MAR	7	1157	0.84	19	24.84	155	15.72	2.22	5	.07	1.5	.9	SNC		2.4X	240	
1960	MAR	7	1408	28.02	19	25.69	155	15.65	1.40	5	.11	.8	1.5	SNC		2.7X	245	
1960	MAR	7	1632	31.48	19	27.10	155	13.00	0.04	6	.05	1.1	31.6	GLN	F-	3.7X	285	
1960	MAR	8	0141	35.32	19	21.21	155	12.32	0.99	6	.13	1.8	1.0	SER		3.1X	315	
1960	MAR	8	0202	34.45	19	25.77	155	16.07	0.38	6	.05	.5	.8	SNC		2.4X	236	
1960	MAR	8	0224	12.98	19	25.20	155	17.07	2.24	5	.06	1.7	.3	SNC		3.0X	210	
1960	MAR	8	0434	53.81	19	25.13	155	15.78	1.53	5	.10	1.2	1.2	SNC		2.7X	239	
1960	MAR	8	0542	43.64	19	26.55	155	14.98	0.91	6	.12	.8	1.3	SNC		3.1X	259	
1960	MAR	8	0950	37.21	19	25.63	155	14.50	0.12	6	.23	1.1	1.6	SNC	#	2.8X	266	
1960	MAR	8	0951	22.23	19	23.74	155	17.96	0.06	5	.09	.5	1.3	SSC	#	2.6X	113	
1960	MAR	8	1155	42.00	19	25.03	155	15.37	1.04	5	.07	.7	1.2	SNC		2.8X	248	
1960	MAR	8	1452	38.69	19	24.76	155	16.86	0.85	5	.01	1.8	.3	SNC		2.6X	201	
1960	MAR	8	1901	40.92	19	24.68	155	15.29	0.03	5	.39	1.9	3.4	SNC	#	2.9X	251	
1960	MAR	9	0024	58.35	19	23.62	155	16.92	3.92	4	.00	1.9	1.6	SSC		2.9X	160	
1960	MAR	9	0346	16.76	19	25.58	155	15.24	0.67	5	.13	.9	1.5	SNC		3.0X	253	
1960	MAR	9	0528	56.17	19	24.76	155	16.19	0.29	4	.18	14.8	10.5	SNC	-	2.2X	226	
1960	MAR	9	1015	44.18	19	25.36	155	14.17	0.03	6	.33	1.6	1.8	SNC	#	2.7X	272	
1960	MAR	9	1058	25.46	19	24.63	155	17.06	0.00	5	.23	2.0	1.5	SNC	#	2.4X	142	
1960	MAR	9	1606	20.60	19	23.19	155	15.10	0.00	4	.24	8.8	6.8	SEC	#	2.3X	271	
1960	MAR	9	1817	36.06	19	26.06	155	9.76	4.82	6	.29	3.0	22.4	GLN	-	3.0X	311	13
1960	MAR	9	2113	54.58	19	26.07	155	14.62	0.35	5	.10	.9	1.3	SNC		2.4X	264	
1960	MAR	9	2114	52.15	19	24.23	155	17.10	0.63	5	.04	1.5	1.0	SSC		2.2X	141	
1960	MAR	10	0124	50.16	19	25.87	155	12.78	7.00	5	.64	23.3	11.4	SF2	#	2.7X	289	
1960	MAR	10	0728	57.93	19	25.36	155	15.16	0.10	5	.07	.7	1.0	SNC		2.6X	254	
1960	MAR	10	1129	32.10	19	24.77	155	16.45	2.57	4	.01	1.8	.6	SNC		2.8X	219	
1960	MAR	10	1146	17.51	19	25.57	155	13.29	0.00	4	.17	2.3	2.1	SER	#	3.1X	284	
1960	MAR	10	1220	7.23	19	25.17	155	14.63	0.01	5	.22	1.2	1.8	SNC	#	2.8X	264	
1960	MAR	10	1225	16.68	19	31.45	155	10.69	5.97	4	.05	1.7	10.1	GLN	-	3.1X	306	16
1960	MAR	10	1257	52.81	19	24.24	155	17.69	0.48	4	.00	1.6	1.9	SSC		2.0X	133	
1960	MAR	10	1359	17.66	19	25.80	155	15.24	0.08	5	.12	.8	1.2	SNC		2.4X	253	
1960	MAR	10	1446	36.32	19	25.45	155	16.05	0.02	6	.10	.5	.7	SNC	#	2.2X	234	

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN 14
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS
1960	MAR	10	1535	44.28	19	25.35	155	15.59	0.03	6	.15	.8	1.1	SNC	#	2.5X	244	
1960	MAR	10	1654	45.95	19	25.03	155	15.05	2.10	5	.01	1.3	1.0	SNC		2.6X	256	
1960	MAR	10	1911	0.95	19	23.87	155	16.55	4.81	4	.01	1.8	1.2	SSC		2.7X	190	
1960	MAR	10	1939	35.06	19	23.11	155	17.35	2.65	5	.01	2.2	2.6	SSC		2.7X	126	
1960	MAR	10	1941	23.44	19	24.78	155	17.67	4.30	4	.00	1.4	.8	SNC		2.4X	139	
1960	MAR	10	2205	31.73	19	25.05	155	16.79	1.19	4	.00	1.8	.5	SNC		2.4X	214	
1960	MAR	10	2216	58.20	19	25.33	155	14.89	0.02	5	.28	1.4	2.1	SNC	#	2.4X	259	
1960	MAR	10	2243	51.91	19	24.24	155	17.68	0.48	4	.00	1.6	1.9	SSC		2.8X	134	
1960	MAR	11	0044	49.15	19	25.41	155	15.70	0.03	5	.22	1.0	1.5	SNC	#	2.5X	242	
1960	MAR	11	0131	56.85	19	24.42	155	15.71	1.37	4	.01	2.5	.8	SEC		2.5X	238	
1960	MAR	11	0329	5.76	19	28.02	155	13.51	8.96	4	.01	2.7	2.3	GLN		3.1X	281	
1960	MAR	11	0426	24.24	19	25.63	155	15.79	0.14	5	.06	.6	1.0	SNC		2.8X	241	
1960	MAR	11	1543	32.59	19	24.88	155	4.62	5.41	6	.19	3.6	17.4	SF5	-	2.4X	200	16
1960	MAR	11	2016	30.53	19	23.41	155	17.22	0.00	4	.09	1.9	3.0	SSC	#	2.5X	138	
1960	MAR	11	2047	41.94	19	23.50	155	10.41	4.74	6	.39	5.1	27.9	SER	-	3.4X	317	10
1960	MAR	12	2205	33.88	19	22.77	155	13.50	0.09	5	.22	1.7	1.0	SER	#	2.4X	310	
1960	MAR	13	0650	27.07	19	50.81	155	3.91	44.60	7	.15	6.3	2.9	KEA		2.6X	328	14
1960	MAR	13	0727	19.04	19	26.16	155	26.14	7.19	4	.08	4.7	13.1	KAO	-	2.5X	241	
1960	MAR	13	1045	21.56	19	23.71	155	14.72	11.24	5	.15	2.9	1.1	INT		2.5X	274	
1960	MAR	15	0737	56.86	19	23.92	155	17.18	3.81	5	.01	1.7	1.3	SSC		2.8X	156	
1960	MAR	16	0717	32.65	19	19.78	155	53.34	2.37	5	.07	9.3	8.1	KON	-	2.8X	341	53
1960	MAR	17	0408	57.41	19	25.69	155	15.52	0.32	6	.24	.9	1.3	SNC		2.8X	247	
1960	MAR	17	0413	47.30	19	26.53	155	14.59	0.02	5	.24	1.1	1.6	SNC	#	3.0X	265	
1960	MAR	19	0008	20.64	19	25.09	156	7.29	7.13	6	.15	10.9	14.2	KON	-		347	77
1960	MAR	19	2208	24.28	19	20.03	155	12.18	0.55	7	.15	2.0	1.4	SSF		2.9X	256	
1960	MAR	19	2228	11.84	19	46.25	156	6.56	5.14	6	.19	12.7	15.6	HUA	-	3.3X	336	81
1960	MAR	20	1441	50.55	19	26.19	155	15.81	0.03	6	.05	.4	.7	SNC		3.0X	245	
1960	MAR	21	2041	25.42	19	25.62	155	33.66	9.85	6	.06	1.8	6.2	MLO			308	20
1960	MAR	23	1158	32.01	19	24.51	155	15.53	14.81	8	.03	1.4	.7	DEP		2.6X	163	
1960	MAR	23	1748	26.04	19	25.39	155	15.66	14.59	9	.18	1.4	1.1	DEP	F	3.8X	109	
1960	MAR	23	1752	59.95	19	23.75	155	15.58	21.68	8	.09	1.5	2.5	DEP		3.8X	122	
1960	MAR	23	1755	19.63	19	25.25	155	16.67	15.77	9	.08	1.1	.8	DEP		2.7X	89	
1960	MAR	23	1842	3.95	19	25.77	155	16.23	14.72	9	.13	1.3	1.0	DEP		2.4X	97	
1960	MAR	24	1316	21.68	19	24.91	155	22.72	11.03	9	.12	1.0	1.1	KAO	F	3.2X	167	
1960	MAR	24	2334	49.88	19	21.96	155	31.34	10.66	7	.10	1.8	1.1	KAO		3.0X	302	14
1960	MAR	26	2020	16.03	19	24.01	155	15.23	16.07	8	.15	2.2	1.2	DEP		2.5X	176	
1960	MAR	31	0152	25.59	19	20.06	155	20.25	30.29	4	.00	2.5	1.8	DEP			213	
1960	MAR	31	1010	48.29	19	24.15	155	17.47	14.23	8	.11	1.3	1.0	DEP		2.4X	96	
1960	MAR	31	1225	29.30	19	27.00	155	12.44	11.90	6	.01	2.3	1.3	GLN		2.8X	290	
1960	APR	1	1906	11.28	19	24.99	155	17.74	16.69	9	.10	1.2	1.0	DEP		3.0X	94	
1960	APR	1	1908	53.65	19	32.69	155	9.97	4.91	4	.01	2.2	12.5	GLN	-	2.3X	199	19
1960	APR	2	1816	45.20	19	12.32	155	37.59	0.75	5	.18	5.2	18.6	LSW	-	2.4X	232	16
1960	APR	3	1541	4.11	19	22.25	155	17.09	0.02	8	.15	.5	.3	SSC	#	2.8X	142	
1960	APR	4	0434	11.72	19	21.57	155	16.55	0.00	8	.12	.8	1.1	KOA	#	3.3X	189	
1960	APR	4	0936	42.84	19	21.67	155	17.04	0.03	8	.23	.9	.7	SWR	#	2.9X	169	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN 15
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS
1960	APR	5	0318	53.86	19	25.83	155	16.56	2.53	6	.02	.7	.4	SNC		3.2X	138	
1960	APR	5	0443	23.83	19	25.58	155	13.68	23.43	8	.02	2.2	1.4	DEP		2.2X	190	
1960	APR	17	1735	44.72	19	28.70	155	13.37	20.13	8	.14	1.5	3.4	DEP		2.9X	115	
1960	APR	18	1641	0.22	19	13.67	155	10.08	6.95	4	.12	1.916.1		SF3	-	1.7X	210	38
1960	APR	20	1655	34.85	19	26.59	155	16.21	47.96	5	.01	3.0	5.3	DEP		2.3X	96	
1960	APR	20	1808	18.98	19	35.26	155	24.03	65.20	9	.14	3.0	1.9	KEA		2.4X	248	10
1960	APR	20	1943	5.96	19	35.19	155	22.67	62.70	8	.15	4.3	2.0	KEA		2.4X	237	10
1960	APR	21	0438	4.03	19	36.54	155	26.57	59.46	7	.20	6.4	2.3	KEA			262	14
1960	APR	21	0521	18.94	19	33.52	155	22.53	58.10	9	.11	2.9	1.1	DML			216	
1960	APR	21	0554	14.87	19	32.40	155	24.07	61.70	8	.11	4.0	1.4	DML			254	
1960	APR	21	0630	15.12	19	31.77	155	24.87	58.69	9	.09	3.4	1.6	DML			254	
1960	APR	21	0631	21.65	19	24.31	155	18.24	6.51	5	.17	2.815.3		INT	-		155	12
1960	APR	21	0651	5.09	19	34.64	155	24.80	59.24	8	.08	2.3	1.6	DML		2.4X	251	
1960	APR	21	0815	29.87	19	31.90	155	21.54	0.03	4	.1513.9		2.4	MLO	-		236	
1960	APR	21	0815	52.81	19	25.13	155	12.23	6.99	4	.10	1.614.4		SF3	-	2.3X	154	28
1960	APR	21	0817	11.31	19	22.62	155	8.12	0.01	4	.10	2.8	.4	SER	#	2.1X	227	30
1960	APR	21	0854	29.98	19	48.32	155	34.98	37.82	5	.01	5.3	5.4	KEA		2.5X	279	40
1960	APR	21	0942	32.81	19	32.19	155	26.90	57.56	6	.06	3.1	1.7	DML			257	
1960	APR	21	1015	52.32	19	36.34	155	28.17	54.46	6	.08	3.1	1.9	KEA		2.4X	268	15
1960	APR	21	1025	45.36	19	25.87	155	13.97	6.93	4	.08	1.113.3		SF2	-	2.0X	162	18
1960	APR	21	1027	50.18	19	25.12	155	12.83	6.92	4	.25	1.822.7		SF2	-	2.0X	171	20
1960	APR	21	1028	47.79	19	34.67	155	16.01	45.00	4	.02	2.331.6		DEP	-		174	16
1960	APR	21	1031	2.92	19	27.12	155	16.61	25.70	6	.25	2.5	4.4	DEP		2.3X	100	
1960	APR	21	1126	30.38	19	25.24	155	13.37	6.93	4	.10	1.114.4		SF2	-	2.0X	168	19
1960	APR	21	1140	44.55	19	26.36	155	17.59	31.10	4	.09	4.4	9.9	DEP	-	2.3X	142	12
1960	APR	21	1758	52.08	19	25.44	155	13.37	6.94	4	.09	1.113.6		SF2	-	2.0X	167	19
1960	APR	21	1759	52.73	19	27.63	155	14.08	6.94	4	.23	1.722.5		INT	-	2.0X	202	17
1960	APR	21	1802	53.60	19	27.72	155	18.28	30.29	4	.06	4.7	9.4	DEP	-	2.1X	129	10
1960	APR	21	1826	35.07	19	35.69	155	21.90	55.06	7	.10	3.0	1.9	KEA		2.3X	231	11
1960	APR	21	1848	50.02	19	26.50	155	15.86	30.02	4	.08	3.910.5		DEP	-	2.5X	150	14
1960	APR	21	1852	51.04	19	26.61	155	13.97	6.95	4	.00	.911.4		GLN	-	2.0X	156	17
1960	APR	21	1854	22.16	19	37.11	155	19.93	44.15	7	.13	2.3	2.0	KEA		2.4X	222	15
1960	APR	21	1900	33.35	19	27.55	155	17.68	29.43	4	.06	4.6	9.9	DEP	-	2.2X	133	11
1960	APR	21	1903	45.01	19	34.69	155	22.35	54.74	8	.12	3.4	1.9	DML		2.8X	231	
1960	APR	21	1935	38.19	19	35.14	155	24.98	56.15	7	.15	5.0	1.9	KEA	#	2.4X	253	10
1960	APR	21	1959	42.25	19	23.65	155	4.37	7.00	5	.27	3.125.4		SF5	-	2.0X	262	34
1960	APR	21	2020	2.20	19	33.66	155	21.88	54.06	4	.01	3.7	1.4	DML		2.3X	218	
1960	APR	21	2023	5.58	19	38.44	155	26.72	54.41	6	.10	4.3	1.8	KEA		2.3X	277	17
1960	APR	21	2114	40.17	19	25.16	155	13.52	6.91	4	.16	1.417.2		SF2	-	2.1X	169	19
1960	APR	21	2118	53.41	19	31.71	155	21.30	64.34	5	.00	3.4	2.2	DML		2.4X	187	
1960	APR	21	2126	47.71	19	27.01	155	16.56	19.34	5	.05	1.5	3.4	DEP		2.4X	137	13
1960	APR	21	2227	41.50	19	27.11	155	17.14	28.73	4	.09	4.610.8		DEP	-	2.5X	139	12
1960	APR	21	2311	33.84	19	25.94	155	13.88	6.93	4	.16	1.417.0		SF2	-	2.0X	162	18
1960	APR	21	2353	19.97	19	27.25	155	17.44	28.68	4	.12	5.211.8		DEP	-	2.2X	137	11
1960	APR	22	0027	16.95	19	26.22	155	13.97	6.93	4	.04	1.011.9		GLN	-	2.0X	159	18

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN 16
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS
1960	APR	22	0116	7.13	19	26.79	155	14.74	6.91	4	.21	1.921.0		INT	-	2.0X	211	16
1960	APR	22	0129	40.57	19	26.39	155	14.26	6.94	4	.15	1.316.1		INT	-	2.0X	157	17
1960	APR	22	0142	48.91	19	26.82	155	14.82	13.28	5	.01	.9	1.3	DEP		2.5X	141	16
1960	APR	22	0151	17.38	19	29.69	155	17.88	25.97	5	.23	2.4	4.5	DEP		2.6X	129	
1960	APR	22	0205	17.32	19	27.78	155	17.50	30.04	4	.02	4.3	9.1	DEP	-	2.3X	132	11
1960	APR	22	0240	35.49	19	28.88	155	18.95	28.87	4	.06	5.5	9.6	DEP	-	2.5X	119	
1960	APR	22	0254	23.15	19	27.18	155	16.51	20.58	4	.00	2.4	3.9	DEP		2.3X	149	13
1960	APR	22	0302	43.04	19	36.54	155	20.30	30.77	6	.03	1.6	2.7	KEA		2.1X	220	14
1960	APR	22	0312	22.07	19	28.76	155	17.93	28.91	4	.08	5.410.6		DEP	-	2.4X	124	10
1960	APR	22	0318	50.89	19	28.56	155	17.06	25.59	5	.10	1.6	2.9	DEP		2.1X	115	11
1960	APR	22	0330	11.29	19	34.31	155	19.62	48.97	7	.04	1.5	1.7	DML		2.7X	198	11
1960	APR	22	0353	18.22	19	34.01	155	19.53	53.82	8	.12	1.6	2.0	DML		2.5X	194	10
1960	APR	22	0358	56.24	19	34.64	155	22.99	52.65	6	.13	3.1	2.2	DML		2.3X	238	
1960	APR	22	0416	37.69	19	26.15	155	14.58	6.93	4	.04	1.012.0		INT	-	2.2X	157	17
1960	APR	22	0441	36.93	19	32.72	155	25.94	45.20	5	.23	9.6	5.6	DML		2.6X	224	
1960	APR	22	0458	15.64	19	36.70	155	27.77	53.12	5	.06	4.3	2.7	KEA		2.3X	267	15
1960	APR	22	0503	24.14	19	23.92	155	13.23	6.85	4	.18	4.719.0		SF2	-	2.3X	206	21
1960	APR	22	0519	31.19	19	25.76	155	15.73	15.66	4	.00	1.4	1.7	DEP		2.8X	144	15
1960	APR	22	0554	21.41	19	38.20	155	23.62	58.32	5	.4913.7		6.6	KEA		3.0X	235	33
1960	APR	22	0600	42.03	19	36.13	155	22.42	5.74	5	.01	2.3	3.0	KEA		2.3X	225	33
1960	APR	22	0602	20.73	19	47.47	155	23.55	58.81	4	.01	4.9	2.5	KEA		2.9X	268	33
1960	APR	22	0831	53.53	19	31.23	155	22.40	50.99	5	.01	3.0	2.0	DML			242	
1960	APR	22	0903	23.05	19	25.29	155	15.53	6.81	4	.08	2.813.8		INT	-		146	16
1960	APR	22	0920	7.36	19	29.69	155	19.08	52.58	6	.03	2.8	1.7	DML			177	
1960	APR	22	1024	11.79	19	37.39	155	21.33	28.85	6	.06	1.5	1.5	KEA			266	14
1960	APR	22	1035	45.79	19	27.10	155	15.41	12.80	4	.01	1.6	1.3	INT			151	15
1960	APR	22	1045	54.87	19	23.20	155	12.52	0.03	6	.37	1.8	1.0	SER	#		163	20
1960	APR	22	1221	15.03	19	39.56	155	21.86	33.76	4	.00	3.7	2.4	KEA			272	18
1960	APR	22	1253	44.93	19	39.77	155	19.35	26.28	4	.00	2.7	3.2	KEA			272	20
1960	APR	22	2039	1.09	19	27.67	155	16.29	22.47	7	.27	2.5	3.6	DEP		2.4X	105	
1960	APR	22	2050	36.05	19	33.23	155	22.32	52.04	6	.09	2.8	2.3	DML		2.3X	222	
1960	APR	22	2310	41.26	19	31.95	155	19.65	52.38	8	.09	2.8	1.5	DML		2.7X	171	
1960	APR	23	0033	17.82	19	34.74	155	17.38	52.23	7	.08	2.6	1.5	DEP		2.4X	184	14
1960	APR	23	0044	25.96	19	34.87	155	26.90	48.92	9	.07	3.1	1.5	DML		2.6X	261	11
1960	APR	23	1332	10.45	19	33.65	155	22.37	52.62	5	.03	3.2	2.1	DML			266	
1960	APR	23	1342	56.28	19	23.59	155	19.04	1.90	5	.04	1.8	3.0	KAO		3.6X	176	
1960	APR	23	2020	18.91	19	23.03	155	14.92	2.23	7	.08	.7	.7	SEC		3.8X	168	
1960	APR	24	2233	19.61	19	18.35	155	5.75	7.45	4	.06	4.110.4		SF4	-	2.8X	241	24
1960	APR	25	1615	3.57	19	22.50	155	24.36	0.65	5	.04	2.0	1.2	KAO	#	3.3X	211	
1960	APR	25	1654	54.48	19	20.35	155	11.19	4.60	5	.19	3.418.6		SSF	-	2.9X	320	13
1960	APR	25	1919	57.24	19	24.88	155	25.13	4.49	6	.15	1.313.9		KAO	-	2.7X	220	
1960	APR	26	0701	50.93	19	17.93	155	7.08	4.46	5	.06	2.712.8		SSF	-	3.2X	331	22
1960	APR	26	0704	24.08	19	23.90	155	18.27	4.88	8	.13	.7	1.1	SSC		3.0X	110	
1960	APR	26	1325	41.12	19	20.97	155	16.24	5.80	4	.2315.9		15.2	SF1	-		252	
1960	APR	26	2254	32.36	20	0.94	155	19.72	0.37	5	.4728.3		15.3	KEA	-	3.9X	347	58

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN 17
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS
1960	APR	27	0952	54.42	19	40.43	155	6.44	45.85	6	.05	5.8	4.2	HIL		3.7X	330	34
1960	APR	29	0613	5.43	19	38.09	155	38.67	9.09	6	.06	10.4	4.4	KEA	-	4.4X	321	31
1960	APR	29	1200	42.56	19	28.99	155	33.02	26.01	5	.04	8.1	5.5	DML	-		311	17
1960	APR	30	0103	28.65	19	22.96	155	26.16	6.30	4	.12	5.9	12.1	KAO	-		246	
1960	APR	30	1322	18.08	19	24.12	155	17.37	0.69	6	.11	1.4	1.4	SSC		2.5X	116	
1960	APR	30	1335	21.30	19	24.20	155	18.09	0.02	4	.13	2.0	4.3	SSC	#	2.2X	102	
1960	APR	30	1840	54.04	19	24.21	155	16.94	1.76	5	.01	1.9	.9	SSC		2.4X	178	
1960	APR	30	2130	42.58	19	17.42	155	9.37	4.46	4	.11	13.8	15.1	SSF	-	2.7X	326	15
1960	MAY	3	0706	54.87	19	23.87	155	14.83	4.91	6	.05	2.0	1.5	SEC		2.6X	268	
1960	MAY	3	2042	35.04	19	25.29	155	14.91	0.02	6	.27	1.1	1.3	SNC	#	3.0X	259	
1960	MAY	5	0946	32.70	19	16.96	155	17.33	4.93	6	.17	3.3	8.3	SWR	#	2.9X	277	10
1960	MAY	8	0526	52.13	19	18.20	155	17.38	29.19	7	.10	2.9	1.7	DEP		2.7X	231	
1960	MAY	8	0628	38.44	19	22.14	155	19.46	32.22	8	.18	2.3	2.4	DML		3.8X	135	
1960	MAY	8	0630	15.59	19	20.86	155	20.74	36.54	6	.12	3.2	1.4	DEP		3.8X	187	
1960	MAY	9	1255	30.91	19	18.09	155	29.93	4.81	6	.02	1.5	2.5	LSW		2.8X	188	12
1960	MAY	9	2000	18.72	19	21.43	155	17.62	0.02	7	.13	.9	.9	SWR	#	2.8X	165	
1960	MAY	11	2308	45.48	19	25.41	155	15.21	0.04	6	.16	3.7	5.8	SNC	#	2.9X	253	
1960	MAY	12	1118	8.55	19	16.53	155	24.54	24.81	7	.25	3.2	4.6	DEP		3.9X	156	
1960	MAY	16	0526	53.32	19	22.59	155	26.23	12.12	6	.10	1.4	3.0	KAO		2.7X	251	
1960	MAY	17	0305	15.92	20	41.43	155	37.13	7.01	7	.09	8.9	11.2	DIS	-	3.8X	342	121
1960	MAY	19	1420	0.95	19	22.22	155	2.66	37.45	8	.04	1.8	3.7	DEP		2.8X	229	17
1960	MAY	20	0224	7.74	19	23.56	155	28.42	9.33	8	.14	1.3	1.1	KAO		3.4X	198	11
1960	MAY	21	0841	36.66	19	37.20	155	37.48	6.85	6	.09	3.5	10.6	KEA	-	3.0X	337	28
1960	MAY	25	0235	50.67	20	8.45	155	36.02	6.81	8	.08	8.6	10.7	KOH	-	2.7X	325	71
1960	MAY	25	1045	34.63	19	24.21	155	17.45	1.71	5	.03	1.6	1.3	SSC		2.8X	109	
1960	MAY	27	0549	8.93	19	27.08	155	14.24	6.44	8	.20	1.7	2.9	INT		3.5X	172	
1960	MAY	27	0558	10.95	19	27.36	155	15.03	8.43	7	.12	1.7	1.0	INT		3.3X	188	
1960	MAY	29	0442	25.98	19	25.04	155	15.81	1.04	4	.01	1.4	2.4	SNC		2.4X	238	
1960	MAY	31	0131	3.10	19	10.09	155	12.81	10.36	7	.12	4.2	1.6	SF2		3.6X	304	23
1960	MAY	31	1616	30.84	19	24.24	155	16.94	0.02	5	.04	1.7	1.0	SSC	#	2.0X	162	
1960	MAY	31	1728	19.21	19	24.50	155	17.46	1.15	5	.08	11.6	7.1	SSC	-	2.0X	170	
1960	MAY	31	1930	20.27	19	24.35	155	18.29	1.56	5	.01	1.1	1.5	SSC		2.5X	99	
1960	JUN	2	0202	56.55	19	18.29	155	59.46	6.95	5	.14	10.5	13.7	KON	-	2.9X	337	63
1960	JUN	2	0322	59.09	19	23.92	155	17.95	0.03	7	.11	.5	.4	SSC	#	2.3X	107	
1960	JUN	2	2047	23.49	19	23.77	155	26.37	4.15	9	.21	1.7	6.2	KAO		3.5X	202	
1960	JUN	4	1655	45.04	19	18.95	155	10.91	4.76	6	.32	4.5	26.0	SSF	-	2.9X	321	11
1960	JUN	5	1147	32.11	19	42.14	155	9.15	30.08	6	.10	6.0	4.7	KEA		2.8X	268	32
1960	JUN	5	1235	29.25	19	20.95	155	14.05	5.08	4	.03	2.5	9.4	SF2	-	2.8X	303	10
1960	JUN	5	2150	55.55	19	24.08	155	17.70	1.33	5	.01	1.2	1.5	SSC		2.7X	131	
1960	JUN	5	2340	31.05	19	21.21	155	15.98	1.02	6	.05	1.0	.3	KOA		3.1X	238	
1960	JUN	7	1219	24.81	19	14.38	155	35.62	6.99	5	.02	2.8	9.2	LSW	-	4.0X	220	20
1960	JUN	7	2041	40.16	19	24.59	155	16.96	8.24	6	.04	1.6	1.0	INT		2.8X	161	
1960	JUN	8	0613	55.97	19	24.33	155	14.42	6.95	4	.00	2.3	1.2	INT		3.3X	272	
1960	JUN	9	2002	55.06	19	21.77	155	17.57	7.20	5	.01	1.2	2.2	SWR		2.7X	186	
1960	JUN	10	1902	12.81	19	24.30	155	16.90	1.36	5	.02	.4	.2	SSC		2.7X	123	

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN 18
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS
1960	JUN	11	0402	2.94	19	25.71	155	15.36	1.73	4	.00	1.4	3.3	SNC		2.4X	250	
1960	JUN	13	1753	57.84	18	59.05	155	20.75	12.05	7	.12	1.8	1.5	LOI		3.7X	254	27
1960	JUN	14	2315	34.71	19	25.32	155	16.24	1.73	7	.06	.8	.4	SNC		3.1X	144	
1960	JUN	14	2353	36.66	19	25.84	155	16.35	2.02	8	.02	.5	.6	SNC		2.5X	94	
1960	JUN	15	0711	40.81	19	24.46	155	17.99	1.85	8	.10	.6	.3	SSC		3.1X	94	
1960	JUN	15	1216	50.85	19	24.90	155	18.81	0.86	5	.13	.7	1.6	SNC		3.0X	106	
1960	JUN	16	0321	34.73	19	24.29	155	17.41	1.24	6	.02	1.5	1.2	SSC		2.9X	110	
1960	JUN	16	1443	42.80	19	24.02	155	18.17	0.20	6	.04	.4	.9	SSC		2.6X	106	
1960	JUN	16	1605	14.08	19	24.78	155	16.61	2.25	5	.00	1.9	.3	SNC		2.7X	215	
1960	JUN	16	1653	19.61	19	24.75	155	16.74	1.33	5	.01	1.6	.5	SNC		2.7X	211	
1960	JUN	16	2024	38.92	19	24.45	155	16.88	1.40	6	.12	2.2	.7	SSC		2.5X	169	
1960	JUN	17	0244	43.71	19	25.34	155	16.03	0.58	6	.08	.8	.7	SNC		2.6X	234	
1960	JUN	17	0256	51.85	19	26.60	155	14.43	0.65	6	.08	.8	1.1	SNC		3.3X	268	
1960	JUN	18	0155	12.67	19	24.13	155	17.78	1.04	6	.02	1.0	1.3	SSC		2.7X	100	
1960	JUN	18	0156	7.55	19	19.24	155	11.34	17.95	4	.00	2.8	2.1	DEP		3.6X	223	10
1960	JUN	18	0428	33.20	19	25.05	155	17.39	1.77	5	.01	1.5	.4	SNC		2.5X	142	
1960	JUN	18	0838	13.61	19	24.38	155	16.68	1.92	6	.11	2.2	.5	SSC		2.4X	189	
1960	JUN	18	0842	52.88	19	24.27	155	17.47	1.85	5	.02	1.6	1.2	SSC		3.1X	106	
1960	JUN	18	0950	8.81	19	22.03	155	17.27	0.02	8	.09	.5	.3	SSC		3.5X	150	
1960	JUN	18	0959	39.64	19	26.07	155	14.31	0.02	6	.23	1.3	1.4	SNC	#	2.7X	269	
1960	JUN	18	1252	10.88	19	24.75	155	16.65	2.21	4	.00	1.8	.5	SNC			214	
1960	JUN	19	0354	34.91	19	24.33	155	17.71	1.42	5	.05	1.5	1.5	SSC		2.9X	95	
1960	JUN	19	0810	15.36	19	23.71	155	18.05	0.02	5	.08	1.4	3.3	SSC	#	3.0X	113	
1960	JUN	19	0829	25.93	19	24.89	155	14.12	2.12	5	.10	.9	1.4	SNC		2.9X	275	
1960	JUN	19	0925	58.80	19	23.30	155	17.27	1.02	8	.13	.6	.5	SSC		2.3X	118	
1960	JUN	19	1816	40.65	19	19.94	155	11.43	4.58	6	.11	2.8	13.8	SSF	-	2.6X	318	
1960	JUN	20	1111	24.77	19	20.32	155	12.18	4.95	5	.14	3.8	13.6	SSF	-	3.8X	315	12
1960	JUN	20	1258	24.32	19	22.74	155	21.19	30.20	9	.14	2.0	1.7	DML		4.5X	126	
1960	JUN	20	1314	48.15	19	23.24	155	20.77	21.35	6	.03	2.4	3.3	DML		4.0X	240	
1960	JUN	20	1358	54.01	19	19.47	155	20.18	3.67	7	.15	7.3	11.9	SWR	-	3.8X	315	11
1960	JUN	20	1529	4.76	19	22.37	155	16.25	30.00	8	.10	1.8	1.3	DEP		3.1X	235	
1960	JUN	20	1858	58.31	19	24.19	155	16.04	15.75	9	.04	1.4	.6	DEP		3.3X	147	
1960	JUN	21	0100	17.28	19	21.88	155	17.50	28.48	10	.09	2.9	1.3	DEP		3.1X	152	
1960	JUN	21	0329	12.59	19	23.93	155	18.09	13.93	9	.11	1.1	.4	DEP		3.3X	93	
1960	JUN	21	1056	45.68	19	23.41	155	17.82	0.04	5	.12	1.6	3.7	SSC	#	3.8X	120	
1960	JUN	22	0509	56.69	19	20.02	155	12.70	4.90	5	.04	2.2	10.9	SSF	-	3.2X	311	12
1960	JUN	22	1130	16.88	19	19.10	155	14.98	6.49	8	.07	1.2	2.0	SF1		2.7X	212	
1960	JUN	24	0302	36.84	19	25.06	155	16.74	1.29	4	.01	1.9	.3	SNC		2.7X	215	
1960	JUN	24	0412	42.71	19	19.07	155	27.33	7.99	5	.08	9.3	5.0	KAO	-	2.8X	306	
1960	JUN	26	0147	25.39	19	25.76	155	16.47	0.01	5	.33	.9	31.6	SNC	-	1.7X	228	
1960	JUN	26	1433	9.06	19	25.33	155	14.13	2.78	7	.18	1.1	2.4	SNC		3.2X	137	
1960	JUN	28	0001	7.13	19	24.99	155	16.32	0.44	4	.12	12.0	8.7	SNC	-	2.2X	224	
1960	JUN	30	1849	2.62	19	25.61	155	14.72	1.84	6	.10	.8	1.3	SNC		2.4X	262	
1960	JUL	3	1652	13.53	19	29.04	155	24.49	10.40	5	.06	1.7	2.5	KAO		2.5X	244	
1960	JUL	6	1850	50.04	19	27.26	155	15.59	29.87	4	.01	2.6	9.6	DEP	-		153	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF		AZ	MIN	19
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS		
1960	JUL	6	1902	40.87	19	25.52	155	19.45	7.00	4	.00	1.512.4	KAO	-			172			
1960	JUL	6	1911	23.96	19	27.37	155	16.54	28.53	4	.01	2.4	9.1	DEP	-		140			
1960	JUL	6	2003	3.09	19	10.81	155	11.94	7.03	4	.00	4.112.4	SF3	-			270	22		
1960	JUL	6	2147	15.81	19	31.63	155	13.63	60.49	10	.12	3.5	1.6	DEP		2.5X	135	13		
1960	JUL	6	2315	14.34	19	15.75	154	51.91	17.78	5	.11	4.115.5	DIS	-	2.0X		278	48		
1960	JUL	7	0022	26.50	19	25.78	155	18.24	14.49	4	.01	2.6	6.7	DEP			171			
1960	JUL	7	0057	1.56	19	25.56	155	18.80	6.99	4	.00	2.312.3	INT	-			183			
1960	JUL	7	0124	16.43	19	26.26	155	11.13	40.16	4	.04	5.111.8	DEP	-			212	11		
1960	JUL	7	0231	5.38	19	31.52	155	11.71	58.62	9	.12	3.3	1.5	DEP		2.3X	125	15		
1960	JUL	7	0336	12.10	19	19.45	154	46.63	5.71	4	.00	2.5	2.2	LER		2.0X	313	52		
1960	JUL	7	0352	32.13	19	29.90	155	9.51	39.56	4	.10	4.410.8	DEP	-			203	18		
1960	JUL	7	0432	23.27	19	31.35	155	13.25	59.75	7	.10	6.0	3.6	DEP		2.3X	164	13		
1960	JUL	7	0447	43.04	19	31.15	155	12.94	44.63	6	.07	2.5	9.3	DEP		2.0X	127	13		
1960	JUL	7	0453	51.84	19	29.41	155	11.46	50.02	5	.03	3.1	5.0	DEP		1.9X	124	15		
1960	JUL	7	0501	10.99	19	33.33	155	15.14	57.06	7	.08	3.8	2.3	DEP		2.4X	190	15		
1960	JUL	7	0517	1.16	19	15.23	154	50.24	17.13	5	.11	4.115.3	DIS	-	2.2X		283	51		
1960	JUL	7	0525	55.51	19	29.71	155	12.30	52.43	6	.04	3.2	4.6	DEP	#	1.8X	117	15		
1960	JUL	7	0607	54.61	19	31.04	155	10.11	48.68	5	.10	5.211.4	DEP	-	1.8X		193	17		
1960	JUL	7	0629	0.05	19	27.26	155	11.52	40.74	5	.03	2.2	5.8	DEP		1.8X	141	12		
1960	JUL	7	0634	27.50	19	33.69	155	6.26	7.05	4	.42	7.131.3	HIL	-			215	18		
1960	JUL	7	0650	17.06	19	24.08	155	18.54	13.01	7	.12	1.5	.7	DEP		2.6X	107			
1960	JUL	7	0825	31.94	19	32.91	155	15.68	48.39	6	.07	3.4	2.0	DEP		2.4X	193	14		
1960	JUL	7	0827	59.30	19	27.09	155	13.70	36.93	4	.00	3.2	7.7	DEP			153			
1960	JUL	7	0900	1.22	19	33.53	155	12.28	6.98	4	.14	2.315.6	GLN	-	2.5X		213	18		
1960	JUL	7	0903	23.78	19	27.53	155	15.18	42.94	4	.01	3.6	8.9	DEP	-		155	10		
1960	JUL	7	0940	27.77	19	32.58	155	17.42	48.91	8	.06	3.2	1.4	DEP		2.9X	196	13		
1960	JUL	7	1002	14.02	19	27.84	155	14.15	41.88	6	.06	2.6	5.6	DEP		2.0X	114			
1960	JUL	7	1003	9.25	19	32.10	155	15.19	48.21	6	.11	2.6	3.3	DEP		2.4X	146	13		
1960	JUL	7	1015	42.55	19	28.50	155	14.72	37.73	4	.01	3.211.7	DEP	-	2.1X		160			
1960	JUL	7	1026	38.09	19	29.62	155	14.72	61.67	6	.03	2.8	4.4	DEP		2.4X	121	13		
1960	JUL	7	1124	18.52	19	30.62	155	13.26	41.72	5	.04	2.3	9.3	DEP	-	2.0X	124	16		
1960	JUL	7	1127	10.21	19	29.30	155	11.01	49.29	4	.05	4.510.7	DEP	-	2.3X		193	15		
1960	JUL	7	1135	23.20	19	41.27	155	31.89	10.50	7	.06	1.1	2.3	KEA		2.6X	260	38		
1960	JUL	7	1143	8.78	19	28.49	155	13.02	37.47	5	.03	3.3	7.0	DEP		2.9X	167	10		
1960	JUL	7	1248	24.45	19	31.48	155	10.10	6.99	4	.42	5.027.6	GLN	-			195	20		
1960	JUL	7	1250	24.72	19	28.53	155	10.26	65.84	5	.04	5.9	5.1	DEP		2.5X	205	15		
1960	JUL	7	1257	40.27	19	29.79	155	13.74	39.75	5	.05	3.6	7.8	DEP		2.2X	179	11		
1960	JUL	7	1300	6.44	19	33.30	155	15.23	39.81	5	.26	4.317.5	DEP	-	2.3X		157	16		
1960	JUL	7	1302	2.96	19	29.99	155	12.14	49.72	8	.06	2.4	1.5	DEP		2.4X	116	13		
1960	JUL	7	1312	55.17	19	31.28	155	14.44	47.43	9	.16	3.2	1.8	DEP		2.6X	134	12		
1960	JUL	7	1324	31.46	19	29.56	155	12.48	49.67	9	.13	2.9	1.6	DEP		2.8X	116	12		
1960	JUL	7	1326	53.20	19	30.13	155	13.01	46.88	8	.08	2.4	1.5	DEP		2.8X	120	12		
1960	JUL	7	1329	3.88	19	23.80	155	21.38	4.23	5	.19	3.314.4	KAO	-	2.4X		239	10		
1960	JUL	7	1345	10.80	19	32.52	155	14.95	50.83	8	.19	3.8	2.1	DEP		2.8X	148	14		
1960	JUL	7	1409	37.29	19	31.96	155	16.69	50.84	8	.04	2.5	1.4	DEP		2.5X	152	12		

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF		AZ	MIN	20
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS		
1960	JUL	7	1415	34.41	19	31.58	155	12.10	19.69	5	.09	1.5	8.9	DEP		2.1X	127	15		
1960	JUL	7	1428	35.23	19	31.22	155	15.82	49.29	6	.10	3.2	2.8	DEP		2.4X	185	16		
1960	JUL	7	1431	27.44	19	22.98	155	11.10	45.79	7	.05	3.0	1.5	DEP		2.6X	168			
1960	JUL	7	1433	35.05	19	26.34	155	11.33	50.84	7	.04	3.3	1.4	DEP		2.6X	150	11		
1960	JUL	7	1510	8.82	19	26.18	155	15.79	24.89	4	.04	5.010.4	DEP	-			245			
1960	JUL	7	1513	8.35	19	19.52	155	13.38	49.49	5	.28	8.718.0	DEP	-	2.5X		218			
1960	JUL	7	1524	4.27	19	29.83	155	13.03	43.02	5	.10	2.710.9	DEP	-	2.2X		118	15		
1960	JUL	7	1544	36.80	19	27.26	155	16.40	23.36	4	.04	4.9	9.8	DEP	-		242			
1960	JUL	7	1600	55.85	19	29.88	155	14.93	35.08	5	.12	3.812.8	DEP	-	2.1X		153			
1960	JUL	7	1601	57.06	19	29.54	155	10.67	49.63	6	.07	4.8	3.3	DEP		2.4X	195	16		
1960	JUL	7	1605	37.59	19	41.69	155	31.00	2.98	7	.15	1.6	2.5	KEA		2.7X	259	38		
1960	JUL	7	1626	44.83	19	28.54	155	14.57	36.19	4	.07	3.512.7	DEP	-	2.3X		162	12		
1960	JUL	7	1637	56.99	19	27.52	155	11.31	32.18	4	.02	3.810.3	DEP	-	2.4X		202	12		
1960	JUL	7	1638	56.33	19	28.00	155	9.68	44.83	5	.06	4.0	4.2	DEP		2.3X	212	15		
1960	JUL	7	1639	41.72	19	27.78	155	9.21	45.66	7	.06	4.4	1.6	DEP		2.8X	217	15		
1960	JUL	7	1648	6.99	19	29.17	155	11.25	49.54	8	.12	4.9	2.5	DEP		3.0X	193	13		
1960	JUL	7	1700	26.63	19	28.07	155	13.36	30.47	4	.02	2.8	9.7	DEP	-	2.2X	178	11		
1960	JUL	7	1706	48.73	19	11.24	155	33.15	6.99	4	.15	3.917.9	LSW	-			331	37		
1960	JUL	7	1722	18.27	19	28.91	155	8.57	49.27	7	.09	4.4	2.6	DEP		3.0X	215	17		
1960	JUL	7	1724	4.78	19	27.96	155	13.48	32.50	6	.08	3.210.3	DEP	-	2.2X		177			
1960	JUL	7	1727	42.20	19	32.42	155	11.31	7.00	5	.13	2.113.0	GLN	-	2.1X		177	17		
1960	JUL	7	1735	6.33	19	29.22	155	9.80	50.47	7	.14	5.6	2.6	DEP		3.2X	205	15		
1960	JUL	7	1743	5.24	19	22.14	154	52.26	6.97	4	.21	4.721.5	LER	-	2.4X		301	41		
1960	JUL	7	1755	52.99	19	28.84	155	9.42	49.21	6	.05	4.6	1.8	DEP		2.5X	209	16		
1960	JUL	7	1759	59.37	19	30.69	155	12.69	49.69	7	.08	4.0	2.0	DEP		2.7X	172	13		
1960	JUL	7	1818	43.08	19	32.06	155	10.72	46.17	6	.10	4.9	1.9	DEP		2.2X	183	17		
1960	JUL	7	1827	23.81	19	27.84	155	12.03	32.89	4	.04	3.510.8	DEP	-	2.1X		193	12		
1960	JUL	7	1831	50.95	19	41.70	155	31.81	12.26	5	.01	1.6	1.7	KEA		2.4X	261	39		
1960	JUL	7	1835	24.25	19	28.06	155	9.11	48.31	6	.04	4.4	1.6	DEP		2.5X	216	16		
1960	JUL	7	1854	24.02	19	26.80	155	7.40	47.95	6	.09	5.0	1.8	DEP		2.7X	236	17		
1960	JUL	7	1916	23.62	19	27.58	155	7.02	63.61	6	.10	6.6	5.4	DEP		3.0X	224	18		
1960	JUL	7	1920	40.36	19	20.25	154	55.24	25.08	6	.14	4.812.5	LER	-	2.3X		292	36		
1960	JUL	7	1923	27.59	19	31.69	155	10.07	0.07	4	.11	2.113.4	GLN	-	2.2X		190	18		
1960	JUL	7	1926	20.96	19	30.32	155	11.81	52.36	5	.03	4.6	9.9	DEP	-	2.5X	182	14		
1960	JUL	7	2033	4.57	19	31.27	155	10.75	49.68	6	.03	4.4	3.0	DEP		2.1X	186	19		
1960	JUL	7	2039	38.82	19	31.38	155	10.52	6.98	4	.39	4.625.6	GLN	-	1.9X		188	19		
1960	JUL	7	2120	5.90	19	31.33	155	11.02	46.65	6	.04	4.2	1.9	DEP		2.7X	184	16		
1960	JUL	7	2136	34.43	19	39.97	155	30.91	12.68	6	.13	2.1	2.2	KEA		2.6X	255	36		
1960	JUL	7	2139	59.66	19	28.97	155	12.80	35.43	5	.04	3.310.4	DEP	-	1.9X		179	11		
1960	JUL	7	2146	3.97	19	41.13	155	30.95	17.37	6	.18	1.819.1	KEA	-	2.5X		258	37		
1960	JUL	7	2336	1.18	19	28.25	155	13.22	49.17	5	.07	5.4	3.1	DEP			284			
1960	JUL	8	0000	19.18	19	28.83	155	13.98	26.86	5	.01	2.4	6.4	DEP		2.0X	167			
1960	JUL	8	0017	9.01	19	28.32	155	13.28	28.80	4	.01	2.6	8.9	DEP	-	1.9X	177	12		
1960	JUL	8	0056	56.81	19	28.46	155	13.23	31.69	5	.06	3.0	9.3	DEP	-	1.9X	177			
1960	JUL	8	0108	1.20	19	29.64	155	10.94	49.65	6	.02	3.8	2.7	DEP		2.1X	193	14		

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	21
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	JUL	8	0110	25.91	19	18.03	154	54.47	20.74	6	.31	7.325.9		LER	-	2.4X	272	43	
1960	JUL	8	0113	13.03	19	30.39	155	9.96	53.01	7	.07	5.0	3.2	DEP		2.4X	198	16	
1960	JUL	8	0134	2.31	19	25.76	155	19.85	22.71	4	.09	2.611.8		DML	-		138		
1960	JUL	8	0314	46.12	19	42.54	155	31.66	9.35	7	.08	1.0	2.5	KEA		2.3X	263	40	
1960	JUL	8	0331	13.38	19	41.90	155	33.32	6.92	7	.30	2.626.1		KEA	-	2.1X	291	41	
1960	JUL	8	0343	30.20	19	29.17	155	14.48	29.35	4	.01	2.6	9.1	DEP	-	2.1X	161	13	
1960	JUL	8	0524	37.96	19	27.79	155	12.06	32.68	4	.13	4.112.6		DEP	-	1.9X	193	12	
1960	JUL	8	0813	46.59	19	28.33	155	14.42	29.25	4	.01	2.6	9.1	DEP	-	1.9X	164	11	
1960	JUL	8	1352	32.91	19	27.54	155	12.75	31.72	4	.03	2.910.3		DEP	-	1.9X	187	11	
1960	JUL	8	1540	46.44	19	31.65	155	11.01	6.99	4	.37	4.224.6		GLN	-	1.9X	182	19	
1960	JUL	8	1603	1.70	19	22.14	155	26.69	10.22	8	.08	1.3	.5	KAO		3.0X	178		
1960	JUL	8	1618	31.17	19	13.93	155	24.00	7.01	4	.07	2.213.6		SWR	-	2.7X	320	21	
1960	JUL	8	1716	44.19	19	29.91	155	10.52	48.31	5	.02	4.3	9.3	DEP	-	2.2X	195	15	
1960	JUL	8	1901	37.62	19	36.50	155	21.90	6.90	4	.03	2.510.7		KEA	-	1.8X	241	28	
1960	JUL	8	1911	15.45	19	29.03	155	10.97	39.61	6	.04	2.6	5.8	DEP		2.2X	129	15	
1960	JUL	8	2018	21.48	19	28.39	155	13.15	47.01	4	.05	4.210.2		DEP	-		166	12	
1960	JUL	8	2103	22.03	19	28.23	155	11.51	34.76	5	.11	3.9	8.1	DEP		2.3X	164	12	
1960	JUL	8	2111	2.78	19	31.72	155	12.53	51.43	8	.10	2.6	3.2	DEP		2.4X	130	15	
1960	JUL	8	2131	21.60	19	28.23	155	12.07	45.01	4	.04	4.0	9.8	DEP	-		165	13	
1960	JUL	8	2137	45.81	19	19.33	154	54.36	17.18	5	.23	5.022.2		LER	-	2.3X	272	42	
1960	JUL	8	2144	59.53	19	29.05	155	12.81	36.08	4	.00	3.2	7.9	DEP			172	13	
1960	JUL	8	2150	58.82	19	29.98	155	12.30	40.44	4	.03	3.6	9.0	DEP	-		181	15	
1960	JUL	8	2325	4.64	19	34.69	155	13.62	6.91	4	.26	3.919.1		GLN	-		224	19	
1960	JUL	8	2335	26.18	19	26.82	155	18.43	18.20	4	.01	3.4	8.3	DEP	-		207		
1960	JUL	9	0110	23.21	19	30.92	155	11.63	48.39	6	.04	2.0	3.1	DEP		2.0X	121	17	
1960	JUL	9	0150	5.29	19	30.79	155	13.26	44.70	7	.09	2.2	3.2	DEP		2.3X	126	16	
1960	JUL	9	0205	13.04	19	27.64	155	13.53	26.45	4	.01	2.410.1		DEP	-	1.9X	178		
1960	JUL	9	0231	6.55	19	30.41	155	12.85	44.99	8	.07	1.9	2.9	DEP		2.2X	122	12	
1960	JUL	9	0240	27.30	19	26.94	155	16.23	25.56	4	.14	6.213.6		DEP	-		242		
1960	JUL	9	0313	0.64	19	30.20	155	13.55	57.80	7	.09	3.0	4.7	DEP		2.6X	122	11	
1960	JUL	9	0537	3.06	19	27.24	155	12.11	36.54	6	.07	2.6	3.6	DEP		2.1X	156	10	
1960	JUL	9	0818	36.11	19	28.48	155	12.97	48.14	8	.07	2.6	1.5	DEP		2.4X	120	10	
1960	JUL	9	0828	50.44	19	38.47	155	32.76	17.08	6	.14	1.816.8		KEA	-	1.9X	255	36	
1960	JUL	9	1701	54.26	19	27.99	155	12.78	35.63	4	.00	3.1	7.7	DEP			162	12	
1960	JUL	9	1836	3.44	19	24.46	155	26.03	0.71	6	.03	1.9	.9	KAO		3.0X	237		
1960	JUL	9	1920	57.27	19	28.31	155	14.42	31.12	5	.03	1.4	4.4	DEP		2.2X	109	11	
1960	JUL	10	0808	43.28	19	25.69	155	23.64	1.50	6	.03	1.4	9.1	KAO	-	2.9X	188		
1960	JUL	11	1309	39.07	19	42.09	155	21.77	10.80	4	.06	5.911.3		KEA	-	2.3X	258	23	
1960	JUL	13	1731	6.53	19	27.33	155	28.21	2.26	8	.13	2.5	2.0	KAO		3.0X	267	10	
1960	JUL	13	2022	43.77	19	48.45	155	54.80	35.68	7	.09	5.2	8.1	HUA		2.6X	323	65	
1960	JUL	14	0322	12.09	19	24.88	155	21.79	10.40	6	.09	1.1	1.3	KAO		2.3X	146		
1960	JUL	14	1105	9.28	19	34.09	155	18.89	3.70	4	.08	7.113.9		GLN	-		301	11	
1960	JUL	15	0057	20.00	19	23.95	155	17.76	1.76	5	.04	1.4	1.7	SSC		3.0X	126		
1960	JUL	15	1741	24.93	18	44.57	155	6.43	7.02	6	.08	8.310.8		LOI	-	3.5X	325	72	
1960	JUL	19	1838	43.43	19	25.64	155	15.63	0.02	6	.23	.9	1.5	SNC	F#		245		

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	22
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	JUL	19	1840	16.95	19	25.66	155	15.43	0.03	6	.17	.7	1.3	SNC	F#	2.9X	248		
1960	JUL	23	1320	25.09	19	25.61	155	16.58	2.96	7	.09	.7	.5	SNC		2.8X	91		
1960	JUL	25	1921	24.50	19	22.80	155	20.66	20.18	7	.09	1.5	.9	DML		2.5X	246		
1960	JUL	26	1226	48.12	19	21.75	155	17.62	0.03	4	.09	2.1	2.5	SWR	#	2.1X	186		
1960	JUL	28	0559	55.69	19	19.28	155	16.50	13.57	6	.13	2.1	1.4	DEP		2.3X	219		
1960	AUG	1	1431	40.91	19	26.86	154	55.91	5.76	4	.05	3.912.8		LER	-	2.8X	340	36	
1960	AUG	2	1418	4.04	19	23.18	155	18.04	14.98	4	.00	3.0	7.4	DEP		2.3X	129		
1960	AUG	4	0532	58.79	19	19.68	156	10.95	2.54	11	.08	2.9	2.1	KON		3.9X	244	69	
1960	AUG	5	1344	25.60	19	24.60	155	16.90	13.40	7	.09	1.4	.9	DEP		3.2X	91		
1960	AUG	7	0505	28.03	19	24.75	155	42.80	7.00	4	.111	3.311.0		MLO	-		331	35	
1960	AUG	7	1733	23.01	19	25.73	155	17.50	5.05	7	.06	.6	.7	INT		2.9X	122		
1960	AUG	9	1436	46.79	19	25.18	155	24.47	4.39	5	.12	2.814.2		KAO	-	2.5X	265		
1960	AUG	10	2316	55.64	19	55.48	155	35.42	8.72	11	.06	.9	1.5	KOH		3.7X	163	52	
1960	AUG	11	0147	18.18	19	54.64	155	36.39	11.48	10	.12	1.3	3.1	KEA		3.8X	165	51	
1960	AUG	11	1003	14.64	19	24.60	155	16.76	2.94	6	.12	2.1	.5	SNC		3.0X	195		
1960	AUG	11	1932	32.61	19	12.43	155	27.51	0.03	6	.10	2.7	.6	LSW	#	2.6X	174	16	
1960	AUG	13	2200	36.70	19	23.72	155	28.39	2.23	7	.12	4.0	3.0	KAO		2.8X	272	11	
1960	AUG	14	0420	26.52	19	30.05	155	36.47	11.77	7	.10	6.8	1.8	MLO		2.7X	297	23	
1960	AUG	17	0418	31.19	19	24.24	155	18.38	13.78	9	.11	1.3	.4	DEP		2.7X	145		
1960	AUG	17	0431	40.82	19	25.08	155	17.79	13.20	8	.04	1.0	.5	DEP		2.5X	85		
1960	AUG	17	1315	43.86	19	48.16	155	35.12	5.59	7	.07	2.4	2.4	KEA		2.7X	301	52	
1960	AUG	18	0306	21.66	19	24.25	155	17.41	2.93	5	.06	1.8	1.2	SSC		2.6X	150		
1960	AUG	21	0302	26.75	19	22.08	155	25.75	10.36	4	.00	2.7	.9	KAO			248		
1960	AUG	25	0348	31.04	18	52.05	153	41.74	45.00	7	.27	8.231.6		DIS	-	3.7X	343	149	
1960	AUG	28	1314	55.10	19	47.18	155	30.69	23.99	4	.03	9.6	8.0	KEA	-	2.6X	294	35	
1960	AUG	28	1800	15.24	20	10.72	156	39.75	6.69	7	.05	7.8	7.4	DIS	-	4.2X	269	78	
1960	AUG	30	0431	59.64	19	19.88	155	15.73	30.59	5	.03	3.4	1.5	DEP		2.8X	276		
1960	SEP	4	1442	31.53	19	23.09	155	18.26	17.59	6	.07	1.7	1.3	DEP		2.7X	113		
1960	SEP	5	1718	46.06	19	27.87	155	28.92	10.57	8	.10	1.3	1.0	KAO		2.8X	270	10	
1960	SEP	11	0847	34.05	19	25.02	155	17.67	30.03	8	.14	2.1	1.5	DEP		2.5X	84		
1960	SEP	12	2302	40.86	19	21.14	155	13.74	35.33	6	.12	3.5	4.4	DEP		3.1X	246		
1960	SEP	14	0419	40.30	19	10.86	155	44.48	4.65	8	.15	4.1	2.6	KON		3.5X	339	41	
1960	SEP	16	0951	4.66	19	26.18	155	17.30	15.72	9	.08	1.2	.9	DEP		2.4X	90		
1960	SEP	17	1233	25.28	19	24.29	155	19.14	0.58	6	.08	.5	.5	KAO		2.3X	103		
1960	SEP	18	2001	7.42	19	25.13	155	28.64	19.41	6	.05	1.9	3.3	DML		2.3X	273	13	
1960	SEP	18	2253	34.23	19	23.98	155	17.61	0.96	8	.10	.5	.4	SSC		2.1X	102		
1960	SEP	19	1527	21.77	19	24.96	155	17.80	13.61	6	.03	1.2	.6	DEP	F	2.5X	112		
1960	SEP	20	0729	43.47	19	58.75	155	34.11	12.63	7	.07	7.911.0		KOH	-	3.7X	332	57	
1960	SEP	21	1500	27.51	19	22.53	155	25.50	10.43	6	.09	1.2	2.8	KAO			238		
1960	SEP	21	2008	41.45	19	26.83	156	14.26	19.75	6	.11	3.114.9		KON	-	3.5X	341	89	
1960	SEP	21	2208	3.58	19	14.69	155	21.79	14.23	9	.11	1.8	.7	DEP		3.0X	173	11	
1960	SEP	28	0633	8.10	19	20.87	155	22.54	14.40	7	.14	1.6	1.4	DEP		2.7X	140		
1960	SEP	29	0823	19.94	19	23.26	155	16.38	26.62	6	.05	3.2	4.2	DEP			171		
1960	OCT	5	0231	57.07	19	36.44	155	11.90	53.51	6	.04	2.8	2.5	KEA		2.1X	163	17	
1960	OCT	5	0250	15.33	19	32.18	155	17.77	51.48	6	.21	5.2	4.5	DEP	#	2.5X	160	11	

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	23
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	OCT	5	0255	58.93	19	25.87	155	17.20	27.76	6	.19	2.4	4.2	DEP		2.1X	140		
1960	OCT	5	0331	54.44	19	32.15	155	16.97	53.80	8	.21	3.4	1.9	DEP		2.5X	155	12	
1960	OCT	5	0344	4.23	19	27.64	155	13.80	29.03	5	.21	2.4	5.0	DEP		2.2X	119	10	
1960	OCT	5	0346	25.83	19	31.31	155	14.81	52.97	8	.14	3.4	1.8	DEP		2.6X	137	12	
1960	OCT	5	0434	35.53	19	38.12	155	15.36	53.40	5	.09	3.4	2.5	KEA		2.5X	198	20	
1960	OCT	5	0459	17.79	19	35.02	155	21.39	46.44	8	.05	3.3	1.3	KEA		2.3X	218	19	
1960	OCT	5	0500	1.57	19	31.69	155	17.59	50.85	9	.12	3.1	1.6	DEP		2.3X	154	11	
1960	OCT	5	0507	39.98	19	34.58	155	22.23	47.28	7	.18	5.4	3.5	DML	#	2.5X	219	19	
1960	OCT	5	0511	48.67	19	26.89	155	14.91	15.29	4	.01	1.1	1.4	DEP		2.0X	140	16	
1960	OCT	5	0516	27.71	19	34.53	155	11.86	6.99	4	.05	1.0	12.6	GLN	-	2.1X	148	20	
1960	OCT	5	0529	59.67	19	45.22	155	32.96	6.60	5	.16	3.0	3.6	KEA		2.2X	271	45	
1960	OCT	5	0536	37.93	19	36.77	155	22.51	51.03	6	.15	5.4	3.7	KEA		2.4X	227	23	
1960	OCT	5	0541	0.28	19	40.94	155	32.34	11.42	7	.30	2.9	3.5	KEA	#	2.2X	259	39	
1960	OCT	5	0550	57.51	19	32.66	155	14.37	48.97	5	.04	3.6	2.2	DEP		2.1X	150	15	
1960	OCT	5	0551	43.26	19	32.50	155	13.23	55.75	5	.26	9.7	6.1	DEP		2.5X	160	18	
1960	OCT	5	0655	55.83	19	39.19	155	19.77	57.12	6	.06	3.5	1.8	KEA		2.5X	233	18	
1960	OCT	5	0704	44.50	19	28.68	155	15.30	35.72	5	.05	2.2	5.1	DEP		2.5X	114		
1960	OCT	5	0911	13.39	19	25.88	155	19.67	2.13	4	.00	1.3	2.1	KAO		1.4X	144		
1960	OCT	5	0921	50.65	19	34.00	155	25.57	43.69	8	.06	3.5	1.4	DML		2.5X	227	21	
1960	OCT	5	1119	20.83	19	26.37	155	15.40	40.45	6	.01	2.6	3.5	DEP		2.2X	144		
1960	OCT	5	1120	29.68	19	27.41	155	17.08	43.17	6	.01	2.9	3.7	DEP		2.2X	150		
1960	OCT	5	1143	4.00	19	28.66	155	16.74	44.92	7	.12	3.7	1.6	DEP		2.5X	165		
1960	OCT	5	1311	39.53	19	9.99	155	7.00	7.08	5	.19	1.5	15.2	LOI	-	2.2X	232	28	
1960	OCT	5	1331	36.77	19	31.41	155	16.87	47.49	6	.13	4.1	1.8	DEP		2.5X	199	11	
1960	OCT	5	1332	41.77	19	38.99	155	14.68	29.78	5	.12	3.2	2.3	KEA		2.3X	256	23	
1960	OCT	5	1348	41.33	19	33.08	155	18.53	50.28	5	.23	5.8	5.3	DEP		2.3X	176	10	
1960	OCT	5	1352	0.54	19	34.65	155	21.13	49.56	6	.18	5.0	3.3	DML		2.8X	216	10	
1960	OCT	5	1359	30.38	19	29.63	155	15.63	46.76	6	.12	3.9	1.7	DEP		2.6X	177		
1960	OCT	5	1401	53.42	19	28.35	155	17.47	50.08	5	.02	3.3	1.3	DEP		2.5X	160		
1960	OCT	5	1437	56.68	19	28.13	155	17.34	47.05	7	.14	4.1	1.8	DEP		2.5X	158		
1960	OCT	5	1458	20.60	19	27.81	155	15.74	30.29	6	.05	2.2	2.4	DEP		2.1X	157		
1960	OCT	5	1537	58.30	19	30.47	155	17.63	37.19	7	.08	1.8	2.8	DEP		2.5X	139	10	
1960	OCT	5	1546	33.75	19	35.14	155	18.56	71.26	5	.10	8.0	6.9	KEA	-	2.7X	243	13	
1960	OCT	5	1557	41.96	19	28.08	155	17.68	24.17	4	.00	4.2	4.9	DEP		2.2X	235	10	
1960	OCT	5	1601	13.41	19	28.14	155	18.56	47.43	6	.09	3.1	1.3	DEP		2.5X	154		
1960	OCT	5	1607	25.89	19	22.88	155	24.28	12.84	7	.08	1.3	.8	KAO		2.6X	158		
1960	OCT	5	1702	36.44	19	33.86	155	20.24	39.57	5	.01	2.3	2.4	DML		2.4X	210	22	
1960	OCT	5	1720	21.83	19	36.50	155	28.73	32.38	6	.04	6.1	6.9	KEA	-	2.3X	242	28	
1960	OCT	5	1733	21.08	19	39.96	155	30.72	8.35	9	.22	1.4	4.1	KEA		2.3X	255	35	
1960	OCT	5	1744	42.43	19	26.18	155	15.54	47.00	7	.09	3.5	1.5	DEP		2.5X	141		
1960	OCT	5	1746	9.11	19	27.55	155	20.58	71.54	5	.18	8.5	7.3	DML		2.8X	132		
1960	OCT	5	1750	44.50	19	34.94	155	20.28	42.94	9	.18	4.2	1.9	DML		2.3X	214	18	
1960	OCT	5	1802	1.91	19	30.27	155	16.78	47.50	8	.10	2.9	1.1	DEP		2.5X	134		
1960	OCT	5	1832	1.96	19	28.59	155	14.84	45.60	8	.13	3.1	1.8	DEP		2.5X	112		
1960	OCT	5	1839	30.32	19	29.11	155	19.95	42.97	7	.23	5.2	2.3	DML		2.7X	165		

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	24
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1960	OCT	5	1908	43.22	19	24.65	155	13.54	30.00	5	.24	3.7	31.6	DEP	-	2.2X	153		
1960	OCT	5	1922	40.32	19	29.04	155	14.62	28.59	9	.36	3.0	7.8	DEP		2.3X	115		
1960	OCT	5	1947	37.93	19	30.76	155	12.16	13.29	4	.00	.9	6.1	DEP		1.7X	122	17	
1960	OCT	5	2029	39.50	19	26.07	155	18.49	21.54	5	.01	1.8	3.0	DEP		1.7X	92		
1960	OCT	5	2030	19.50	19	22.76	155	15.60	55.88	6	.12	3.9	6.5	DEP		2.5X	151		
1960	OCT	5	2147	52.71	19	34.22	155	18.56	42.94	8	.05	2.7	1.3	DEP		2.4X	216	16	
1960	OCT	5	2212	6.42	19	27.67	155	14.27	41.71	6	.19	4.4	5.9	DEP		2.8X	158		
1960	OCT	5	2254	8.44	19	25.95	155	13.19	47.66	5	.03	2.4	4.3	DEP		2.3X	144		
1960	OCT	5	2352	38.13	19	29.77	155	15.16	34.67	8	.06	1.6	2.9	DEP		2.0X	123		
1960	OCT	5	2354	10.43	19	29.23	155	17.21	46.76	7	.06	3.3	1.4	DEP		2.4X	172		
1960	OCT	6	0054	44.73	19	29.63	155	13.40	51.91	7	.05	3.4	1.5	DEP		2.2X	177	11	
1960	OCT	6	0106	36.64	19	31.53	155	20.16	42.51	6	.13	4.0	2.7	DML		1.9X	215	12	
1960	OCT	6	0120	12.17	19	29.91	155	13.04	50.15	7	.08	4.8	3.3	DEP		2.0X	172	12	
1960	OCT	6	0135	50.66	19	34.35	155	22.67	39.38	7	.22	5.0	3.1	DML		2.1X	219		
1960	OCT	6	0222	25.67	19	32.75	155	17.50	39.54	7	.19	3.4	2.4	DEP		1.9X	165	12	
1960	OCT	6	0351	49.68	19	28.45	155	14.27	27.31	5	.01	1.4	4.6	DEP		1.8X	110		
1960	OCT	6	0415	2.45	19	25.47	155	13.70	46.68	6	.06	2.9	4.7	DEP		1.8X	140		
1960	OCT	6	0430	0.71	19	27.88	155	14.05	52.06	5	.09	3.2	5.5	DEP		2.1X	160	11	
1960	OCT	6	0502	35.53	19	31.12	155	17.14	44.52	7	.11	2.1	2.7	DEP		2.0X	144	11	
1960	OCT	6	0521	45.23	19	32.42	155	18.72	49.63	7	.09	3.6	2.2	DEP		2.0X	200	19	
1960	OCT	6	0525	13.01	19	27.01	155	14.75	53.10	5	.08	3.5	6.2	DEP			151		
1960	OCT	6	0543	46.54	19	5.11	155	3.44	8.37	5	.27	11.0	19.1	LOI	-	1.9X	254	39	
1960	OCT	6	0554	33.70	19	27.50	155	16.15	49.96	7	.11	3.8	1.6	DEP		2.8X	154		
1960	OCT	6	0613	30.62	19	43.21	155	33.07	70.50	5	.04	8.5	5.4	KEA	-	2.3X	288	30	
1960	OCT	6	0632	4.19	19	29.76	155	14.10	54.29	8	.21	4.5	2.5	DEP		2.5X	120	10	
1960	OCT	6	0704	12.32	19	35.22	155	20.09	48.72	8	.10	3.7	1.5	KEA		2.1X	215	19	
1960	OCT	6	0734	36.74	19	31.33	155	15.80	36.43	5	.10	2.4	9.3	DEP		2.0X	141	13	
1960	OCT	6	0756	52.94	19	32.21	155	19.34	47.76	4	.01	3.1	3.0	DML	#	2.3X	202	32	
1960	OCT	6	1002	20.36	19	30.33	155	15.05	42.49	8	.10	2.4	1.6	DEP		2.0X	128	10	
1960	OCT	6	1133	16.04	19	29.05	155	15.40	53.56	8	.09	2.6	1.3	DEP		2.6X	118		
1960	OCT	6	1139	40.91	19	31.20	155	15.98	48.05	8	.27	5.2	6.3	DEP		2.3X	141	11	
1960	OCT	6	1146	48.96	19	33.40	155	17.04	50.38	8	.11	3.5	2.2	DEP		2.3X	169	13	
1960	OCT	6	1437	23.70	19	30.16	155	15.60	44.91	7	.09	2.7	2.7	DEP		2.3X	179		
1960	OCT	6	1616	14.71	19	29.92	155	15.01	25.47	6	.11	1.6	4.8	DEP		1.8X	124		
1960	OCT	6	1916	44.28	19	26.42	155	27.02	3.76	5	.08	2.2	3.7	KAO		2.2X	260	13	
1960	OCT	6	1942	25.68	19	29.65	155	12.79	47.65	7	.09	2.1	3.4	DEP		2.0X	116	12	
1960	OCT	6	2051	14.94	19	32.58	155	20.04	79.86	7	.14	6.3	4.8	DML		2.3X	183		
1960	OCT	6	2236	29.29	19	28.98	155	15.02	20.82	6	.13	1.6	4.1	DEP		2.0X	116		
1960	OCT	8	1727	15.13	19	28.37	155	24.37	12.16	10	.09	1.2	.9	KAO		4.3X	126		
1960	OCT	17	1343	25.40	19	23.66	155	13.81	8.05	7	.27	3.9	2.3	SF2	F	3.1X	293		
1960	OCT	17	1500	26.45	19	31.01	155	18.03	42.57	7	.06	2.4	1.6	DEP		2.6X	147		
1960	OCT	18	0929	54.51	19	27.39	155	18.03	37.00	6	.08	4.0	1.8	DEP	F	2.7X	121		
1960	OCT	18	1302	24.07	19	28.02	155	20.37	39.11	7	.17	2.7	4.2	DML		2.1X	103		
1960	OCT	19	0641	3.47	19	28.02	155	16.04	39.71	6	.06	2.8	2.3	DEP		2.1X	145		
1960	OCT	22	0226	12.73	19	23.80	155	16.30	13.60	6	.05	1.6	.9	DEP		2.4X	195		

```
---ORIGIN TIME (HST)-- -LAT N-- --LON W-- DEPTH  N RMS ERH ERZ LOC    PREF AZ MIN 25
YEAR MON DA HRMN  SEC  DEG MIN  DEG  MIN    KM  RD SEC  KM  KM REMKS  MAG  GAP DS

1960 OCT 22 0417 31.10 19 23.98 155 17.11 11.94  6 .03 1.4 1.0 INT    2.4X 137
1960 OCT 22 1223 23.24 19 22.80 155 18.39 27.47  7 .13 2.8 1.6 DEP    2.5X 142
1960 OCT 25 0518 30.21 19 25.44 155 16.12  2.00  6 .07  .7  .8 SNC    2.9X 146
1960 OCT 25 2131 56.28 19 26.04 155 16.85  0.89  5 .02  .7  .8 SNC    3.7X 134
1960 NOV  1 0632 49.42 19 25.99 155 15.20  0.03  5 .24 4.1 7.5 SNC  #      254

1960 NOV  5 1035 35.81 19 18.10 155  0.05  7.01  7 .11 1.511.6 SF5 F- 3.1X 287 29
1960 NOV  7 0936 29.13 19 25.94 155 17.64  4.63  5 .04 1.6  .5 SNC F  2.9X 208
1960 NOV  7 1227  5.88 19 24.93 155 18.67  3.52  7 .14  .9  .5 SNC F  3.1X  95
1960 NOV  7 2021 31.62 19 25.90 155 17.90  0.64  5 .02  .7  .9 SNC F# 2.6X 117
1960 NOV 10 1458 50.01 19 25.12 155 18.36  4.35  5 .08 1.4 1.1 SNC F  3.0X 113

1960 NOV 10 1545 10.72 19 25.22 155 17.96  4.06  6 .09  .6  .7 SNC F  2.8X  87
1960 NOV 15 1155 17.96 19 24.08 155 17.75  0.87  6 .03  .9 1.2 SSC F  3.0X 101
1960 NOV 30 1330 57.80 19 21.82 155 12.63 30.21 10 .08 3.3 2.0 DEP    3.5X 214
1960 NOV 30 1947 41.56 19 24.12 155 15.57 30.41 10 .07 2.9 1.5 DEP    3.3X 164
1960 DEC  5 1754 33.07 19 26.08 155 17.09 14.96  6 .05 2.0  .9 DEP F  2.6X 219

1960 DEC  9 0700 51.60 20 24.98 156  9.98  9.31  7 .04 4.9 4.5 KOH    3.4X 203 40
1960 DEC  9 0829  3.52 19 27.20 155 56.32  5.61  6 .03 4.5 1.1 KON    3.5X 343 58
1960 DEC 13 1206 51.12 19 27.03 155 16.49 29.35  8 .22 2.5 2.1 DEP    4.1X  99
1960 DEC 13 1208 16.07 19 24.07 155 17.25 33.01  9 .23 2.6 3.1 DEP    4.0X  79
1960 DEC 13 1232 16.09 19 23.54 155 17.30 32.96  9 .15 2.5 1.5 DEP    2.2X  91

1960 DEC 13 1252 27.53 19 22.92 155 16.83 30.92  9 .11 3.3 1.4 DEP    3.0X 103
1960 DEC 17 2057 17.38 19 39.58 155 58.47  4.58 10 .13 1.2 1.9 HUA    3.4X 199 64
1960 DEC 21 2215 45.49 19 21.33 155 15.18  8.52  7 .04  .8 1.2 SF1    3.6X 198
1960 DEC 25 0256 28.01 19 12.40 155 42.57  0.01  8 .18 5.0 1.4 LSW  # 4.6X 268 20
1960 DEC 28 2327 41.47 19 26.16 155 23.05  0.47 10 .13  .9  .6 KAO    3.3X 174

1960 DEC 30 0035  7.77 19 28.52 155 17.66 18.77  5 .08 5.6 8.8 DEP  - 2.8X 240
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Hawaiian Volcano Observatory
1961 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 24
October, November, and December 1961
By Harold L. Krivoy, Robert Y. Koyanagi,
and Arnold T. Okamura

Open-File Report 2007-1321
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 24

October, November, and December, 1961

By

H. L. Krivoy, R. Y. Koyanagi, and A. T. Okamura

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October 1963

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HAWAIIAN VOLCANO OBSERVATORY SUMMARY 24

By H. L. Krivoy, R. Y. Koyanagi, and A. T. Okamura

Chronological summary

Coincident with the injection of magma into a long section of Kilauea's east rift zone during the brief 1961 eruption (Sept. 21-25), the summit of the volcano subsided rapidly. Although the total subsidence during the 1961 eruption was only about one half as great as that associated with the 1960 flank eruption at Kapoho, the rate of subsidence in 1961 was far greater than in 1960. In contrast to the 1960 subsidence, which continued slowly for months after the eruption, the 1961 collapse terminated with the eruption, and the cycle of inflation at Kilauea which began late in 1960 resumed. Slow swelling of the volcano continued through the rest of the year.

The tilting diagram (fig. 1) showing the 1961 collapse is based on changes between July 23 and October 8, and it obscures the high rates of subsidence that occurred during the brief eruption. A more detailed, qualitative picture of swelling and subsidence at Kilauea is provided by a graph of the daily readings of the short-base liquid-level tiltmeter in Uwekahuna vault (fig. 2), which summarizes the history of tilting at that station from July 1956 to August 1962. For comparison, tilt coordinates and changes from December 1959 to October 1961 at the Uwekahuna field tilt-base are listed in table 3.

During the later stages of the 1960 collapse, a great swarm of shallow earthquakes originated in and around Kilauea caldera. During February and March 1960, about 350 earthquakes were reported felt, and thousands were recorded by the seismographs. No such swarm of earthquakes at the summit of Kilauea accompanied the 1961 collapse, although many earthquakes originated along the rift zone just before and during the eruption. Apparently the collapse in 1961, like the first week of collapse in 1960, did not strain rocks surrounding the shrinking reservoir beyond the elastic limit. The lower pre-eruption level of the Kilauea summit, the smaller total subsidence, and the earlier cessation of subsidence in 1961, as compared to 1960, might also have checked the development of a swarm of collapse earthquakes in 1961.

Feeble shallow earthquakes at Kilauea caldera averaged about 20 per day throughout the quarter. A sequence of earthquakes from Kilauea's southwest rift zone continued through the quarter; daily counts of these earthquakes ranged from 1 to 31 and averaged about 10.

The most important seismic activity of the quarter originated in a zone about 30 km beneath Halemaumau (southwest edge of Kilauea caldera). Earthquakes from this source became prominent when Kilauea

began to reinflate in the fall of 1960, following the 1960 collapse. During the last quarter of 1961 quakes of this family occurred in groups of 40 or 50 over periods of 2 or 3 hours. About 150 of them were large enough for study. Foci of these earthquakes seemed to follow no regular pattern of migration, but they showed a "normal" scatter which indicated a source region that was broader than it was high.

Daily counts of these earthquakes are shown in table 4. Only one earthquake of this group had a magnitude larger than 2.4 during October; but in November there were 34 such earthquakes, and in December there were 17. The largest earthquakes from this deep source occurred on November 21 (magnitude 3.8), November 23 (magnitude 3.8), November 25 (magnitude 3.7), December 2 (magnitude 3.9), and December 31 (magnitude 3.9). Earthquakes of magnitude 2.9 were at the threshold of sensibility, and nearly all larger ones were reported felt. Ten were reported felt during November and 5 during December.

Most of the other earthquakes felt in Hawaii during this quarter originated in Kona. They are listed in table 5.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna vault (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, that is, to a relative subsidence toward the north and east. A 1-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 4. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N). Earthquakes of magnitude 2.5 or

greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 5. Data on identifiable phases from distant earthquakes are listed in table 6.

Locations of the seismograph stations are shown on figure 3, and essential data on the stations are given in Summary 21.

Table 1.--Tilt coordinates at Uwekahuna vault, October, November, and December, 1961

Date	N-S	E-W	Date	N-S	E-W
Oct. 1	410	588	Nov. 19	412	562
8	410	584	26	414	556
15	411	577	Dec. 3	415	554
22	412	572	10	415	556
29	414	568	17	415	555
Nov. 5	408	569	24	415	554
12	409	566	31	416	552

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera (see fig. 1)

Tilt base (location)	Date (1961)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1961)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Oct. 6	358.9	565.2	54.8	S. 32° E.	Sept. 22
Tree Molds (19°26.3' N., 155°17.3' W.)	7	389.5	528.6	27.8	S. 16° E.	July 25
Sand Spit (19°24.1' N., 155°16.8' W.)	11	839.0	696.2	54.0	S. 15° E.	25
Kalihipaa (19°21.4' N., 155°15.3' W.)	8	580.4	421.3	16.4	N. 20° W.	22
	8	580.3	421.3	34.3	N. 29° W.	Sept. 22
Keamoku (19°25.1' N., 155°19.0' W.)	8	443.2	677.8	49.7	S. 58° E.	July 21
Kamokukolau (19°22.7' N., 155°16.6' W.)	7	769.4	469.4	90.0	N. 18° W.	21
Kipuka Nene (19°19.4' N., 155°16.7' W.)	9	516.3	495.4	3.0	N. 34° W.	24
Hilina Pali (19°18.2' N., 155°18.6' W.)	9	511.0	497.8	2.9	N. 32° W.	23
Mehana (19°26.2' N., 155°14.3' W.)	10	524.5	527.6	10.8	S. 47° W.	25
	Nov. 2	525.5	530.8	4.5	N. 72° E.	Oct. 10

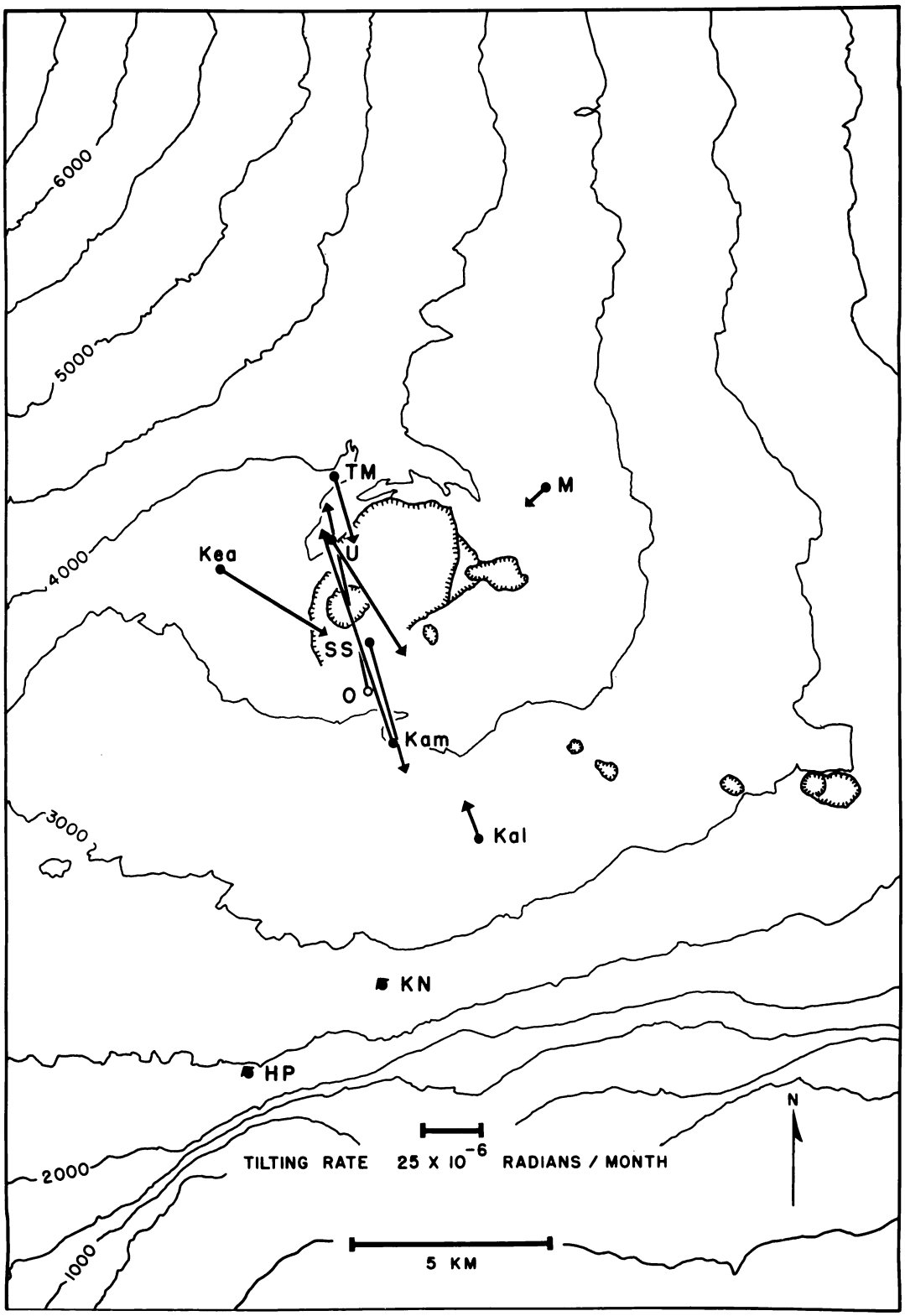

Figure 1.--Tilting of the ground around Kilauea caldera, July 23, 1961, to Oct. 8, 1961. The vector depciting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

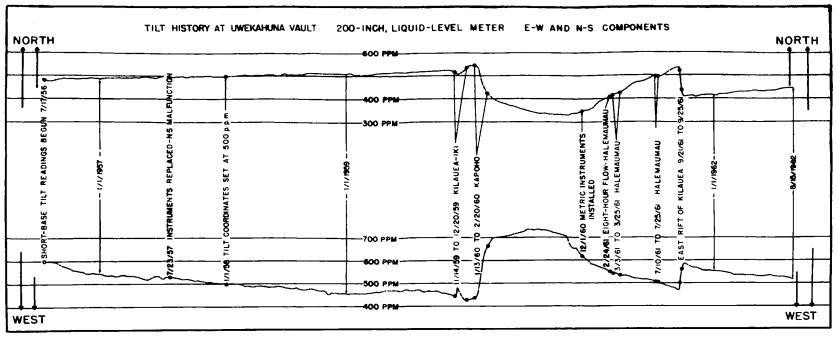

Figure 2.--East-west and north-south components of tilt revealed by daily readings at the short-base, liquid-level tiltmeter in Uwekahuna vault.

Data are plotted from July 17, 1956, when these readings began. The plots represent computed relative tilt based on 7-day averages and referred to an arbitrary base value of 500 parts per million on January 1, 1958. Departures from this base, therefore, represent changes of inclination at Uwekahuna in parts per million, or microradians. The curves are further keyed (along the date-line abscissa) to important periods of both geological and instrumental change.

Tilt variations toward the north and the west represent inflation of Kilauea centered approximately at Halemaumau. Important inflationary peaks were reached on January 12, 1960 and September 20, 1961 with a third cycle of swelling in progress on August 15, 1962--where the curve presently ends. Conversely, deflation such as Kilauea experienced on January 13, 1960 and September 20, 1961 is demonstrated by inclination of this tilt base toward the southeast.

Table 3.--Tilt coordinates and changes at the Uwekahuna field tilt-base from December 1959 to October 1961

[In general, tilting toward the northwest at Uwekahuna indicates swelling of Kilauea and tilting toward the southeast indicates subsidence]

Dates	Tilt coordinates		Rate (u-rad/mo)	Azimuth
	N-S	E-W		
12/28/59 to 3/28/60	518	480	118	S. 34° E.
3/28/60 to 7/5/60	219	679	19	S. 32° E.
7/5/60 to 9/16/60	216	678	1	S. 21° W.
9/16/60 to 11/29/60	283	609	39	N. 46° W.
11/29/60 to 2/23/61	375	548	38	N. 34° W.
2/23/61 to 5/8/61	444	514	31	N. 26° W.
5/8/61 to 6/26/61	468	503	16	N. 25° W.
6/26/61 to 7/22/61	477	492	16	N. 51° W.
7/22/61 to 9/22/61	404	546	44	S. 37° E.
9/22/61 to 10/6/61	360	565	55	S. 32° E.

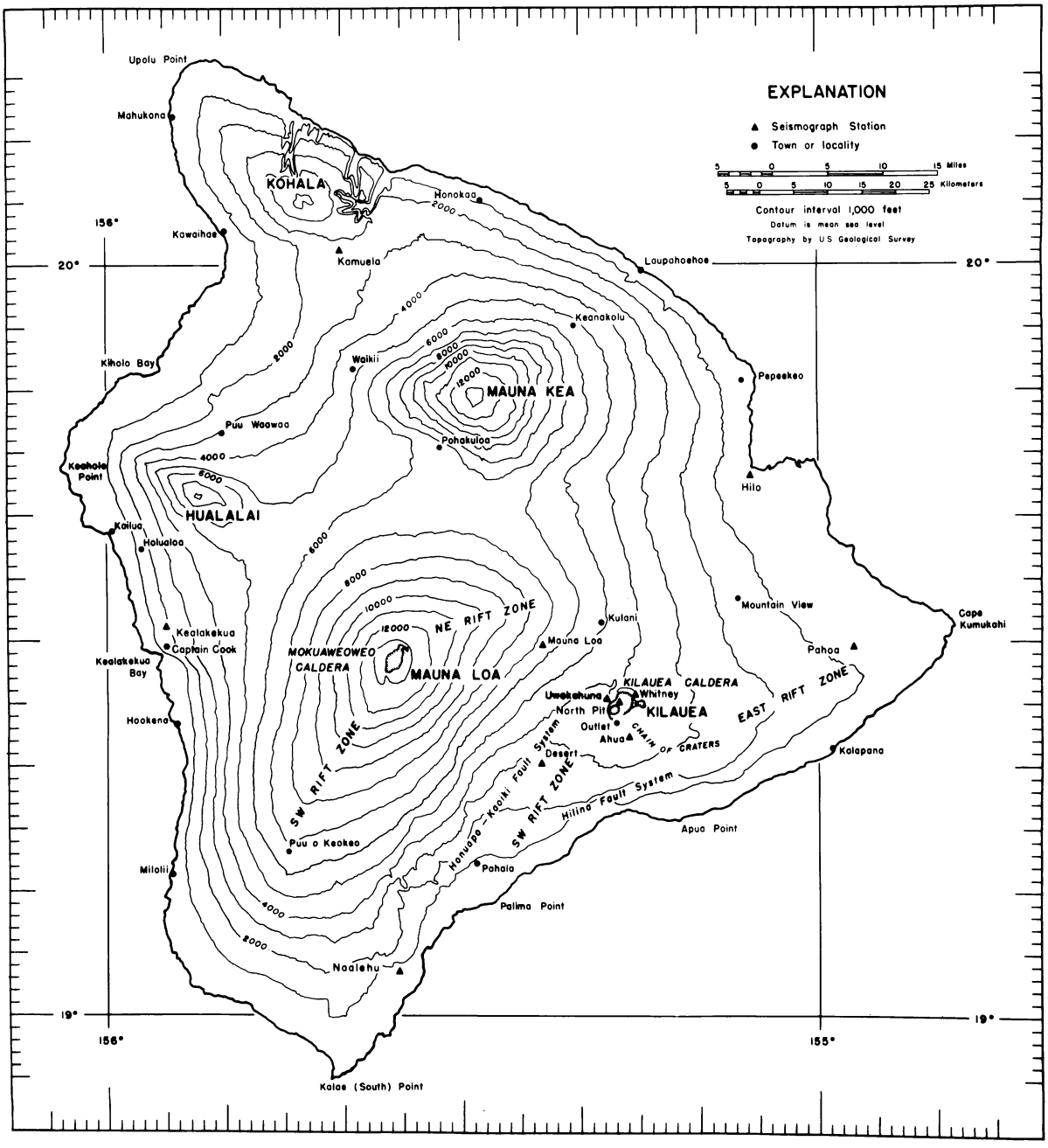

Figure 3.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Table 4.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea caldera (U, M, A, D, and N)

[Tremor is separated into three categories--(1) deep, (2) intermediate, and (3) shallow--on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Halemaumau rock slides (4) are detected by the characteristic record they produce on the North Pit seismograph.

Earthquake categories are: 5, shallow earthquakes in the Kilauea caldera region;
6, shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system;
7, earthquakes along the eastern half of Kilauea's east rift zone;
8, earthquakes from a source about 30 km beneath Halemaumau (SE. edge of Kilauea caldera);
9, earthquakes from other regions: Kona, Mauna Kea, etc.]

Date (1961)	Tremor (in minutes)			Halemaumau slides	Kilauea caldera	SW. rift	E. rift	30 km	Others
	Deep	Intermediate	Shallow						
	1	2	3	4	5	6	7	8	9
Oct. 1	----	----------	-------	3	36	10	1	5	----------
2	----	----------	-------	1	35	14	1	1	1
3	----	----------	-------	2	18	7	2	2	----------
4	----	----------	-------	1	25	1	----	2	2
5	----	----------	3	----------	21	19	----	--	----------
6	21	----------	-------	----------	22	8	----	1	----------
7	33	----------	-------	----------	28	12	----	5	----------
8	----	----------	-------	1	29	11	1	2	----------
9	----	----------	3	7	53	18	4	1	1
10	4	----------	5	16	54	9	1	3	----------
11	----	----------	12	----------	13	13	1	3	2
12	----	----------	5	2	9	6	----	1	----------
13	32	----------	-------	2	38	8	----	4	1 (60 km)

	14	----	----------	-------	----------	33	8	----	5	----------
	15	----	----------	-------	1	18	5	1	3	1 (60 km)
	16	----	----------	-------	----------	12	2	2	6	----------
	17	----	----------	-------	----------	23	7	1	2	----------
	18	----	----------	-------	----------	15	8	----	1	3 (Kona)
	19	----	----------	-------	----------	17	6	1	3	----------
	20	----	----------	-------	----------	21	2	----	4	1 (Kona)
	21	----	----------	-------	----------	24	7	----	5	1 (Kona)
	22	----	2	-------	----------	7	6	1	5	----------
	23	----	----------	-------	----------	27	2	1	5	----------
	24	----	----------	-------	----------	19	5	----	5	----------
	25	----	----------	-------	1	22	1	1	1	----------
	26	----	----------	-------	1	20	10	----	1	----------
	27	----	----------	-------	----------	16	9	----	2	----------
	28	----	----------	-------	----------	17	9	----	2	1 (Kona)
	29	----	3	-------	3	20	10	----	6	----------
	30	----	3	-------	----------	12	8	3	3	----------
	31	40	----------	-------	1	24	7	----	--	----------
Nov.	1	----	----------	-------	----------	40	2	----	2	4 (Mauna Loa)
	2	----	----------	-------	1	30	5	1	4	----------
	3	----	----------	-------	1	40	9	----	2	2
	4	----	----------	-------	----------	40	11	1	25	1 (Kamuela)
	5	----	----------	-------	----------	46	30	----	25	1
	6	----	----------	-------	----------	40	8	1	8	1
	7	----	----------	-------	----------	40	5	----	10	1 (Mauna Loa)
	8	----	----------	-------	2	17	12	1	5	1
	9	----	2	-------	----------	25	10	2	6	1 (Kohala)
	10	----	----------	-------	----------	30	16	----	3	1 (Kohala)
	11	----	----------	-------	----------	50	11	----	4	----------
	12	----	----------	-------	----------	30	8	----	16	----------
	13	----	----------	-------	----------	25	4	----	18	1 (Kona)
	14	----	4	-------	----------	23	15	1	12	----------
	15	----	----------	-------	----------	30	7	----	6	----------
	16	----	----------	-------	----------	24	13	1	19	2
	17	----	----------	-------	----------	35	37	----	42	2
	18	----	----------	-------	2	30	23	----	3	----------
	19	----	----------	-------	----------	26	13	1	54	----------
	20	----	----------	-------	----------	18	6	----	49	----------
	21	----	----------	-------	----------	56	6	----	150	1 (Kona)
	22	----	----------	-------	----------	20	11	----	61	2
	23	----	----------	8	1	19	5	----	55	----------

	24	----	----------	-------	----------	17	11	----	30	2
	25	----	----------	-------	----------	10	14	----	41	2
	26	----	----------	-------	----------	32	12	----	32	----------
	27	----	----------	-------	----------	29	11	2	28	----------
	28	----	----------	-------	----------	32	21	----	18	----------
	29	----	----------	-------	----------	16	12	----	5	1 (Kona)
	30	----	----------	-------	----------	11	16	----	19	2
Dec.	1	----	----------	2	----------	11	7	----	6	----------
	2	----	----------	-------	----------	8	7	----	63	----------
	3	----	----------	-------	1	10	6	----	35	----------
	4	----	----------	-------	----------	26	11	----	15	2 (Mauna Loa)
	5	----	----------	-------	----------	28	10	----	8	2 (Mauna Loa)
	6	----	----------	-------	19	21	5	----	13	1
	7	----	----------	-------	2	12	11	----	22	1
	8	3	----------	-------	----------	18	11	----	11	----------
	9	----	----------	-------	----------	40	7	1	12	1 (Kona)
	10	----	2	-------	4	17	7	----	5	1 (Kona)
	11	----	----------	-------	2	14	12	----	11	1 (Kona)
	12	----	----------	-------	----------	22	6	1	9	1
	13	----	1	-------	2	28	5	----	4	----------
	14	19	----------	-------	8	26	6	----	2	----------
	15	----	----------	-------	2	12	15	1	28	----------
	16	----	----------	-------	----------	6	15	----	22	2
	17	----	5	-------	5	14	10	----	13	2 (Kona)
	18	----	----------	-------	1	18	18	----	12	1 (Kona)
	19	----	----------	-------	----------	7	6	----	18	----------
	20	----	----------	2	----------	18	16	1	4	1
	21	----	----------	-------	2	23	25	----	13	1 (Kona)
	22	----	2	-------	----------	46	20	1	20	----------
	23	----	5	-------	----------	32	23	----	10	----------
	24	----	----------	-------	----------	70	31	----	15	1 (Kaoiki)
	25	----	5	-------	1	38	9	2	2	3
	26	----	5	-------	----------	50	12	----	7	1 (Kona)
	27	----	----------	2	----------	50	10	----	7	2
	28	16	----------	-------	----------	59	3	----	24	----------
	29	12	----------	-------	----------	51	14	----	12	----------
	30	----	----------	-------	----------	63	10	1	7	3
	31	2	----------	-------	6	34	12	1	55	1

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Origin time is Hawaiian standard.

In the following list some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted in other reports as well. They were especially predominant in this quarter and thus are listed in this abbreviated fashion. The most accurately located mean epicenter for this group is under Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W).]

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Oct. 1	22	10	25.0	2.5	19°15.5'	155°30.3'	6 km NNW. of Pahala------	At shallow depth.
2	00	17	46.5	2.3	19°18.8'	155°05.0'	45 km S. of Hilo, E. rift zone of Kilauea.	3 km deep.
4	06	01	25.7	2.3	19°22.7'	155°19.8'	6 km W. of Ahua seismometer.	25 km deep.
5	02	25	37.5	3.3	19°29.8'	155°43.5'	20 km ESE. of Kealakekua-	3 km deep.
6	12	46	22.5	2.7	19°09.1'	155°26.7'	6 km SE. of Pahala, SW. rift zone of Kilauea.	8 km deep.
15	19	05	22.3	2.5	19°37.1'	155°16.2'	22 km SW. of Hilo--------	55 km deep.
18	08	34	29.5	2.6	19°47.7'	155°39.8'	7.5 km S. of Waikii------	8 km deep.
18	17	15	32.5	2.6	19°46.4'	155°49.9'	Beneath Puu Waawaa. Felt in N. Kona and Kamuela.	At shallow depth.

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Oct. 22	09	49	45.5	2.8	19°11.7'	155°35.3'	14 km N. of Naalehu------	3 km deep.
23	05	04	49.0	2.6			KM 30.	
29	07	25	21.0	2.2	19°29.2'	155°51.2'	10 km SE. of Kealakekua. Felt near Kealakekua.	At shallow depth.
29	11	39	09.7	2.5	19°43.2'	155°13.6'	15 km W. of Hilo--------	30 km deep.
Nov. 3	09	13	14.5	2.6	19°53.0'	155°34.9'	18 km SE. of Kamuela-----	At shallow depth.
4	06	24	29.0	3.0	19°22.1'	155°29.4'	18 km NNW. of Pahala-----	8 km deep.
5	06	56	27.0	3.0	19°47.2'	155°34.8'	11 km SE. of Waikii. Felt near Puu Waawaa.	12.5 km deep.
5	07	20	52.3	2.5			KM 30.	
5	14	14	37.5	2.6	19°21.5'	155°32.4'	20 km NW. of Pahala------	12.5 km deep.
8	11	51	00.5	2.4	19°26.5'	155°18.5'	11 km SE. of Mauna Loa seismometer.	Do.
10	05	38	17.4	3.4	19°25.8'	155°18.8'	11 km SE. of Mauna Loa seismometer. Felt in Hilo and Kilauea caldera region.	Do.

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Nov. 12	15	45	22.0	2.7	19°20.5'	155°09.8'	29 km SW. of Pahoa, E. rift zone of Kilauea.	3 km deep.
14	04	51	27.0	3.3	19°25.4'	155°55.3'	11 km S. of Kealakekua. Felt in Honaunau.	Do.
16	06	17	12.4	2.5			KM 30.	
16	15	10	16.1	2.6			KM 30.	
16	16	50	41.9	2.7			KM 30.	
16	19	03	51.2	2.5	19°12.9'	155°21.2'	30 km NE. of Naalehu-------	35 km deep.
17	17	48	47.0	2.4			KM 30.	
17	19	33	26.0	2.5			KM 30.	
17	19	56	49.5	3.0	19°44.3'	155°57.6'	25 km NNW. of Kealakekua. Felt near Puu Waawaa.	At shallow depth.
17	23	22	37.4	2.8			KM 30.	
18	03	44	00.5	2.5			KM 30.	
18	08	09	14.5	3.0	19°26.3'	155°54.7'	9 km S. of Kealakekua. Felt throughout Kona.	At shallow depth.
18	09	41	01.5	2.7			KM 30.	

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Nov. 20	01	40	24.0	2.9			KM 30.	
20	03	14	07.1	2.6	19°21.7'	155°06.4'	8 km E. of Makaopuhi Crater, E. rift zone of Kilauea.	5 km deep.
20	19	40	27.2	2.5			KM 30.	
21	00	41	25.5	2.9			KM 30. Felt on E. rim of Kilauea caldera.	
21	02	42	56.9	2.4			KM 30.	
21	23	22	39.3	3.8			KM 30. Felt in Hilo, Kilauea caldera region, and N. Kona.	
21	23	25	56.8	2.4			KM 30.	
21	23	27	05.4	2.6			KM 30.	
21	23	46	01.9	3.0			KM 30. Felt on E. rim of Kilauea caldera.	
21	23	48	18.9	3.0			KM 30.	
22	00	09	20.7	2.7			KM 30.	
22	03	27	35.5	2.9			KM 30.	

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Nov. 22	05	44	48.1	3.1			KM 30.	
22	10	55	55.5	3.2			KM 30. Felt on N. rim of Kilauea caldera.	
22	16	32	41.8	2.6			KM 30.	
23	06	39	41.2	2.4			KM 30.	
23	07	24	54.5	2.7			KM 30.	
23	16	29	36.6	3.0			KM 30. Felt on NE. rim of Kilauea caldera.	
23	17	09	55.7	3.3			Do.	
23	17	14	30.6	3.8			KM 30. Felt throughout Kilauea caldera region.	
23	17	30	41.4	2.5			KM 30.	
24	05	35	40.7	2.9			KM 30. Felt on NE. rim of Kilauea caldera.	
24	10	31	11.8	2.7	19°18.1'	155°07.7'	17 km SE. of Ahua seismometer.	8 km deep.
24	20	46	55.5	2.4	19°21.2'	155°47.5'	23 km SE. of Kealakekua---	At shallow depth.

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Nov. 25	06	14	11.0	2.4	19°17.3'	155°11.6'	12.5 km SE. of Ahua seismometer.	12.5 km deep.
25	06	14	21.5	2.7	19°17.9'	155°08.5'	17 km SE. of Ahua seismometer.	3 km deep.
25	13	26	03.0	3.7			KM 30. Felt in N. Kona and Kilauea caldera area.	
25	20	22	55.5	2.3	19°44.0'	155°31.1'	47 km W. of Hilo---------	8 km deep.
27	01	32	35.8	2.8			KM 30.	
27	04	51	23.5	3.4			KM 30. Felt from Kilauea caldera region to Kona.	
27	09	44	45.5	2.5			KM 30.	
27	15	55	40.0	2.5			KM 30.	
30	14	30	49.5	2.6			KM 30.	
30	16	51	17.5	2.4			KM 30.	
30	18	58	46.5	2.6			KM 30.	
30	20	14	26.1	2.5			KM 30.	

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Dec. 1	06	37	43.6	2.8			KM 30.	
1	07	33	58.0	2.9	19°22.2'	155°42.0'	23 km E. of Hookena, SW. rift of Mauna Loa.	At shallow depth.
1	09	09	38.1	2.6			KM 30.	
2	18	57	59.8	3.9			KM 30. Felt throughout the island.	
2	20	28	45.0	2.3			KM 30.	
3	01	01	35.8	2.6	19°24.2'	155°25.3'	8 km NNW. of Desert seismometer.	5 km deep.
3	11	33	37.6	2.4			KM 30.	
4	01	06	50.3	2.3			KM 30.	
4	04	12	17.5	2.3			KM 30.	
4	14	08	03.5	3.1			KM 30.	
4	23	27	50.0	2.6	19°19.8'	155°44.6'	20 km SE. of Hookena, SW. rift of Mauna Loa.	At shallow depth.
5	01	54	19.0	2.5	19°18.7'	155°09.2'	30 km SW. of Pahoa------	3 km deep.

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Dec. 5	06	32	52.0	2.9	19°21.2'	155°47.3'	13 km ESE. of Hookena---	At shallow depth.
5	13	19	31.8	2.9			KM 30.	
5	17	11	13.8	2.4	19°21.2'	155°47.3'	13 km ESE. of Hookena---	At shallow depth.
5	20	41	28.0	3.3	19°10.0'	155°38.3'	13 km NW. of Naalehu. Felt in Pahala.	25 km deep.
6	03	08	05.5	2.6	19°13.6'	155°00.3'	21 km SSW. of Pahoa-----	35 km deep.
7	09	42	59.7	2.6			KM 30.	
9	16	59	19.8	2.9			KM 30. Felt on E. rim of Kilauea caldera.	
9	19	37	52.5	2.7	19°44.5'	155°57.4'	12 km NNE. of Kailua----	8 km deep.
10	20	47	34.0	2.6	19°59.7'	155°31.0'	10 km SW. of Honokaa----	Do.
11	17	03	18.3	3.0	19°24.3'	155°44.8'	17 km E. of Hookena-----	At shallow depth.
11	21	55	31.5	3.0			KM 30. Felt throughout Kilauea caldera region.	
13	01	36	32.5	2.6			KM 30.	

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Dec. 15	10	37	20.9	2.5	19°31.4'	154°50.3'	35 km SE. of Hilo, E. rift zone of Kilauea.	8 km deep.
15	11	17	57.4	3.2			KM 30. Felt on E. rim of Kilauea caldera.	
16	20	48	58.8	2.3	19°37.1'	155°16.2'	21 km WSW. of Hilo------	12.5 km deep.
17	05	46	15.0	2.2			KM 30.	
17	07	19	44.4	2.3			KM 30.	
17	07	50	52.5	3.4	19°37.7'	155°51.2'	10 km E. of Holualoa. Felt near Kealakekua.	12.5 km deep.
21	03	04	55.5	2.5	19°57.7'	155°19.6'	10 km SW. of Laupahoehoe	Do.
22	05	57	43.1	2.8	19°22.8'	155°48.7'	10 km E. of Hookena-----	3 km deep.
23	06	37	13.5	2.6	19°20.7'	155°30.6'	16 km NNW. of Pahala----	Do.
23	08	18	32.8	2.5			KM 30.	
24	10	54	40.6	3.0			KM 30.	
24	22	29	34.9	2.5	19°26.2'	155°26.1'	9 km SW. of Mauna Loa seismometer.	8 km deep.

Table 5.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1961--Continued

Date (1961)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Dec. 25	10	17	45.0	2.4	19°28.3'	155°28.3'	30 km N. of Pahala------	5 km deep.
26	19	48	04.3	2.9	19°29.2'	155°50.9'	8 km ESE. of Kealakekua-	3 km deep.
27	17	14	27.7	2.7	19°14.2'	155°35.0'	19 km N. of Naalehu-----	Do.
28	00	28	46.0	2.7	19°24.2'	155°06.1'	20 km SW. of Pahoa, E. rift zone of Kilauea.	Do.
28	22	42	57.6	3.1			KM 30.	
28	22	43	33.6	2.5			KM 30.	
30	12	09	30.0	2.6	19°46.7'	155°26.3'	37 km WNW. of Hilo------	8 km deep.
30	13	08	22.0	2.5			KM 30.	
31	06	03	23.2	3.0	19°47.0'	155°31.8'	5 km N. of Pohakuloa. Felt in Pohakuloa.	8 km deep.
31	07	43	44.8	2.9	19°20.8'	155°26.3'	35 km NW. of Naalehu----	3 km deep.
31	08	13	06.8	2.5	19°14.5'	155°12.8'	40 km SW. of Pahoa------	5 km deep.
31	08	52	09.9	3.9			KM 30. Felt on E. rim of Kilauea caldera.	
31	11	38	17.0	3.6	20°54'	154°46'	139 km NNE. of Hilo-----	12.5 km deep.
31	19	07	22.7	2.9			KM 30.	

Table 6.--Distant earthquakes

[Times are reported in Greenwich civil time which is 10 hours faster than Hawaiian standard time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in Summary 21. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey]

Oct. 2

M	Z	eP	07:12:34.2 c
A	Z	iP	07:12:33.5 c
D	Z	eP	07:12:34.0 c
U	PEZ	eR	07:29:07

From a southerly direction.

No preliminary C&GS listing.

Oct. 4

U	PEN	eS	02:39:11
U	PEZ	eS	02:39:35
U	PEZ	eR	02:46:47

C&GS card 81-61:
13.2° S., 166.5° E.
02:23:23.5.
New Hebrides region.
h about 66 km.

Oct. 5

Pa	Z	iP	18:17:52.8 c

No preliminary C&GS listing.

Oct. 8

M	Z	iP	23:52:22.3 d
A	Z	iP	23:52:23.8 d
D	Z	iP	23:52:23.4 d

Oct. 8--Continued

U	Z	iP	23:52:22.7 d

C&GS card 82-61:
1.6° N., 127.3° E.
23:41:32.2.
Halmahera.
h about 102 km.

Oct. 18

U	PEZ	ePP	17:15:54
U	PEZ	iPPP	17:17:58
U	PEZ	iS	17:23:28
U	PEZ	eR	17:35:32
M	Z	Tmax	18:51:05

Magnitude 6.8 (HVO).

C&GS card 84-61:
36.7° S., 72.6° W.
16:52:00.2.
Near coast of southern Chile.
h about 67 km.
Magnitude 6.5 (Pas).

Oct. 21

M	Z	iP	11:50:57.9 d
A	Z	iP	11:50:57.4 d
D	Z	eP	11:50:57.6 d
N	Z	eP	11:50:57.1 d
U	Z	iP	11:50:57.6 d

Table 6.--Distant earthquakes--Continued

Oct. 21--Continued

Ka	Z	eP	11:50:58.3	c
Na	Z	iP	11:50:54.0	c
Pa	Z	iP	11:50:59.8	c
Hi	Z	iP	11:50:59.9	d
Ha	Z	iP	11:51:02.7	c

C&GS card 84-61:
18.0° S., 178.5° W.
11:43:41.3.
Fiji Islands.
h about 618 km.

Oct. 21

M	Z	iP	17:43:01.8	c
A	Z	eP	17:43:02.1	d
D	Z	iP	17:43:00.6	c
Pa	Z	iP	17:43:02.8	d
Hi	Z	eP	17:43:04.6	c

C&GS card 85-61:
10.8° S., 166.0° E.
17:34:36.8.
Santa Cruz Islands.
h about 192 km.

Oct. 23

M	Z	iP	14:51:33.0	d
A	Z	iP	14:51:33.4	d
D	Z	iP	14:51:32.6	d
U	Z	iP	14:51:32.9	d
U	PEE	eS	15:02:20	

Oct. 23--Continued

U	PEE	eR	15:14:15	
U	PEN	eR	15:14:19	
U	PEZ	eR	15:14:27	

C&GS card 91-61:
3.5° N., 126.4° E.
14:39:33.5.
Molucca Passage.
h about 25 km.
Magnitude 6.5 (Pas) 6.25 (Berk).

Oct. 23

M	Z	iP	15:04:27.4	d
A	Z	iP	15:04:28.5	d
D	Z	iP	15:04:27.3	d
U	Z	iP	15:04:27.8	d

C&GS card 96-61:
3.5° N., 126.6° E.
14:52:28.2.
Molucca Passage.
h about 32 km.

Oct. 23

U	PEN		16:49:00

Start of pressure waves caused by Russian nuclear explosion. First waves had average period of 105 seconds.

Oct. 24

M	Z	iP	05:34:36.7	d
A	Z	iP	05:34:37.8	d
D	Z	iP	05:34:37.3	d

Table 6.--Distant earthquakes--Continued

Oct. 24--Continued

U	Z	iP	05:34:37.1	c

From a northerly direction.

No preliminary C&GS listing.

Oct. 26

M	Z	eP	00:48:35.6	c
A	Z	eP	00:48:35.8	c
D	Z	eP	00:48:35.2	c
U	PEZ	eP	00:48:35	c
U	PEZ	eSS	01:00:42	
U	PEZ	iR	01:05:40	
U	PEE	iS	00:56:45	
U	PEE	eG	01:03:20	
U	PEN	eG	01:03:25	

Magnitude 6.5 (HVO).

C&GS card 89-61:
3.1° S., 147.4° E.
00:38:20.3.
Bismarck Sea.
h about 14 km.
Magnitude 6.5 (Pas and Berk).

Oct. 28

U	PEZ	eS	23:00:53
U	PEZ	eR	23:07:16

C&GS card 88-61:
13.9° S., 166.0° E.
22:44:33.6.
New Hebrides Islands.
h about 89 km.

Oct. 29

U	PEN	eL	09:27:29
Hi	Z	eL	09:27:33
Ha	Z	eL	09:28:02
Ha	Z	Tmax	09:56:43
M	Z	Tmax	09:57:13
A	Z	Tmax	09:57:26
D	Z	Tmax	09:57:26
U	Z	Tmax	09:57:25
Pa	Z	Tmax	09:57:27

C&GS card 86-61:
49.0° N., 128.7° W.
09:12:15.7.
Vancouver Island region.
h about 16 km.

Oct. 29

Pa	Z	Tmax	10:47:22
Pa	Z	Tmax	11:55:19
Pa	Z	Tmax	12:01:53
Pa	Z	Tmax	14:45:07
Pa	Z	Tmax	17:01:29
Pa	Z	Tmax	19:12:18
Pa	Z	Tmax	20:13:43
Pa	Z	Tmax	23:09:51

These T-phases have no preliminary C&GS listing. They are assumed to have originated off the Vancouver Island-Oregon coasts.

Table 6.--Distant earthquakes--Continued

Oct. 29

U	PEN	eL	15:03:49
Ha	Z	Tmax	15:31:41
Pa	Z	Tmax	15:32:21
M	Z	Tmax	15:32:14
U	Z	Tmax	15:32:16

C&GS card 90-61:
48.7° N., 128.3° W.
14:47:18.3.
Vancouver Island region.
h about 73 km.

Oct. 30

Pa	Z	Tmax	02:25:50
Ha	Z	Tmax	02:25:55

No C&GS listing.

Oct. 30

U	PEN	eL	02:31:01
Ha	Z	Tmax	02:57:29
Ka	Z	Tmax	02:57:50
Pa	Z	Tmax	02:57:41
M	Z	Tmax	02:58:03
A	Z	Tmax	02:57:59
D	Z	Tmax	02:58:01
U	Z	Tmax	02:58:00

Oct. 30--Continued

C&GS card 86-61:
42.3° N., 126.7° W.
02:16:32.7.
Off coast of Oregon.
h about 36 km.

Oct. 30

U	PEN	17:01:00	

Start of pressure waves caused by Russian nuclear explosion. First waves had average period of 140 seconds.

Nov. 4

M	Z	eP	03:47:18.7 d
A	Z	eP	03:47:19.4 d

C&GS card 89-61:
50.0° N., 155.5° E.
03:38:30.1.
Kurile Islands.
h about 32 km.

Nov. 5

M	Z	iP	10:45:46.9 c
A	Z	iP	10:45:47.9 c
D	Z	iP	10:45:47.5 c
U	Z	iP	10:45:47.6 c
Pa	Z	iP	10:45:53.0 c
Hi	Z	eP	10:45:47.6 c
Na	Z	iP	10:45:47.8 c

Table 6.--Distant earthquakes--Continued

Nov. 5--Continued

C&GS card 89-61:
45.7° N., 147.9° E.
10:36:39.5.
Kurile Islands.
h about 142 km.

Nov. 10

M	Z	iP	18:08:06.7	c
A	Z	iP	18:08:06.0	c
D	Z	iP	18:08:06.1	c
U	Z	iP	18:08:06.1	c
Hi	Z	iP	18:08:09.5	c
Pa	Z	iP	18:08:08.3	c
Na	Z	iP	18:08:03.0	c
Ka	Z	iP	18:08:09.3	d
Ha	Z	iP	18:08:11.7	c

C&GS card 91-61:
17.5° S., 178.8° W.
18:00:49.6.
Fiji Islands.
h about 586 km.

Nov. 15

M	Z	eP	07:26:41.9	c
A	Z	eP	07:26:43.0	d
D	Z	eP	07:26:42.4	c
U	Z	eP	07:26:42.4	d
Hi	Z	iP	07:26:41.5	c
Pa	Z	eP	07:26:44.1	c
Ka	Z	iP	07:26:37.0	d

Nov. 15--Continued

Ha	Z	eP	07:26:33.1	d

Magnitude 7.0 (HVO).

C&GS card 91-61.
43.1° N., 145.1° E.
07:17:12.4.
Felt near coast of Hokkaido, Japan.
h about 43 km.

Nov. 19

M	Z	iP	23:33:54.9	d
A	Z	iP	23:33:55.2	d
D	Z	iP	23:33:54.4	d
U	Z	iP	23:33:55.0	d
Hi	Z	iP	23:33:55.8	d

C&GS card 96-61:
0.8° N., 124.3° E.
23:21:55.5.
Northern Celebes.
h about 157 km.

Nov. 20

U	PEZ	iS	12:01:19
U	PEZ	iSS	12:04:51
U	PEZ	iR	12:09:05

Magnitude 6.0 (HVO).

C&GS card 97-61:
21.8° S., 169.9° E.
11:44:19.4.
Loyalty Islands region.
h about 33 km.

Table 6.--Distant earthquakes--Continued

Nov. 21

M	Z	iP	11:19:15.4	c
U	Z	iP	11:19:15.2	c
N	Z	iP	11:19:15.6	c

C&GS card 94-61:
0.9° N., 122.5° E.
11:06:38.1.
Northern Celebes.
h about 85 km.

Nov. 27

M	Z	iP	17:22:39.2	d
A	Z	iP	17:22:38.8	c
U	Z	eP	17:22:39.5	d
U	PEN	eG	17:42:51	
U	PEZ	eR	17:46:29	

Magnitude 6.0 (HVO).

C&GS card 104-61:
0.6° S., 127.1° E.
17:10:33.3.
Halmahera region.
h about 25 km.
Magnitude 6.25 to 6.5 (Pas).

Dec. 1

M	Z	eP	21:24:12.1	d
A	Z	eP	21:24:12.7	d
D	Z	eP	21:24:12.4	d
U	PEE	eS	21:34:24	
U	PEZ	eG	21:46:08	

Dec. 1--Continued

C&GS card 100-61:
26.5° N., 124.9° E.
21:13:04.1.
East China Sea.
h about 206 km.

Dec. 5

M	Z	eP	13:11:16.2	c
A	Z	iP	13:11:16.6	c
D	Z	eP	13:11:15.8	c
U	Z	eP	13:11:17.3	c
Pa	Z	iP	13:11:19.9	c
Ha	Z	iP	13:11:19.4	c
U	PEN	iPs	13:23:56	
U	PEZ	iR	13:42:56	

C&GS card 102-61:
50.8° S., 139.8° E.
13:01:04.7.
Southwest of Tasmania.
h about 64 km.

Dec. 6

M	Z	eP	16:48:31	c
U	PEZ	iS	16:55:40	
U	PEZ	iR	17:02:04	

Magnitude 6.3 (HVO).

C&GS card 99-61:
49.4° N., 155.2°E.
16:39:31.5.
Kurile Islands.
h about 22 km.
Magnitude 6 to 6.25 (Pas),
6.25 (Berk).

Table 6.--Distant earthquakes--Continued

Dec. 9

U	PEN	eL	02:31:02
Ha	Z	Tmax	02:59:45.0
Hi	Z	Tmax	03:00:58.4
U	Z	Tmax	03:01:20.6
M	Z	Tmax	03:01:23.2
Pa	Z	Tmax	03:01:27.2
D	Z	Tmax	03:01:33.5
A	Z	Tmax	03:01:41.5

C&GS card 99-61:
56.3° N., 153.9° W.
02:15:22.0.
Kodiak Island, Alaska region.
h about 31 km.
Magnitude 5.5 to 5.75 (Berk), 5.5 (Pal).

Dec. 9

U	PEZ	ePS	11:44:20
U	PEZ	eSS	11:49:40
U	PEZ	iR	12:02:48

Magnitude 6.5 (HVO).

C&GS card 99-61:
43.7° S., 75.2° W.
11:18:08.9.
Near coast of southern Chile.
Magnitude 6.75 (Pas), 6.5 (Berk), 5.75 to 6.0 (Pal).
h about 34 km.

Dec. 9

M	Z	eP	19:57:26.8	d
U	Z	iP	19:57:26.9	d
A	Z	eP	19:57:27.1	d

Dec. 9--Continued

D	Z	eP	19:57:27.4	c
Ha	Z	iP	19:57:32.3	d
Ka	Z	eP	19:57:29.3	d
Hi	Z	iP	19:57:29.5	d
Pa	Z	iP	19:57:29.1	c
Na	Z	iP	19:57:23.4	c

C&GS card 99-61:
21.7° S., 179.9° E.
19:49:41.3.
Fiji Islands.
h about 620 km.

Dec. 20

M	Z	eP	13:37:20.8	d
M	Z	ipP	13:38:06.6	c
A	Z	eP	13:37:20.1	d
A	Z	ipP	13:38:06.5	c
D	Z	eP	13:37:21.0	d
D	Z	ipP	13:38:05.8	c
Pa	Z	eP	13:37:18.6	c
Hi	Z	iP	13:37:19.7	d
Hi	Z	ipP	13:38:09.2	c
Na	Z	eP	13:37:19.0	c
Ka	Z	eP	13:37:22.5	c
Ka	Z	epP	13:38:12.8	c
Ha	Z	eP	13:37:26.4	d
Ha	Z	ipP	13:38:15.4	c
U	PEZ	iP	13:37:20.1	d
U	PEZ	ipP	13:38:05.8	c

Table 6.--Distant earthquakes--Continued

Dec. 20--Continued

U	PEZ	eS	13:46:47
U	PEN	iG	13:58:20

C&GS card 102-61:
4.6° N., 75.6° W.
13:25:34.4.
West-central Colombia.
h about 176 km.
Magnitude 6.75 (Pas), 6.0 (Pal).

Dec. 22

M	Z	iP	22:55:48.0	c
A	Z	iP	22:55:48.5	c
D	Z	eP	22:55:47.3	c
N	Z	iP	22:55:48.1	c
U	Z	iP	22:55:48.3	c
Ka	Z	eP	22:55:50.8	d

C&GS card 104-61:
18.6° N., 145.6° E.
22:46:24.6.
Mariana Islands.
h about 155 km.

Dec. 24

M	Z	iP	02:51:03.4	
N	Z	eP	02:51:11.7	
U	Z	iP	02:51:19.3	
U	PEZ	eL	03:09:05	

C&GS card 104-61:
3.4° S., 140.3° E.
02:40:07.6.
New Guinea.
h about 29 km.

Dec. 25

U	PEZ	eL	00:27:49

Dec. 25--Continued

C&GS card 107-61:
3.4° S., 140.3° E.
00:01:52.1.
New Guniea.
h about 22 km.

Dec. 25

M	Z	iP	08:13:05.3	c

C&GS card 104-61:
3.7° S., 127.7° E.
08:00:59.3.
Ceram.
h about 47 km.

Dec. 25

M	Z	iP	08:25:13.1	d

C&GS card 106-61:
1.1° S., 126.7° E.
08:13:07.2.
Spice Islands.
h about 25 km.

Dec. 27

M	Z	eP	23:59:52.1	d
A	Z	eP	23:59:49.8	d
D	Z	eP	23:59:48.8	c
N	Z	eP	23:59:51.3	c
U	Z	eP	23:59:50.0	c
Ka	Z	eP	23:59:49.9	d
Ha	Z	eP	00:00:04.5	c
U	PEE	iS	00:07:44	
U	PEN	iSS	00:11:56	
U	PEN	iSSS	00:15:16	

Table 6.--Distant earthquakes--Continued

Dec. 27--Continued

Magnitude 6.5 (HVO).

C&GS card 105-61:
41.2° S., 175.7° E.
23:48:01.3.
North Island, New Zealand.
h about 57 km.
Magnitude 6.75 (Pas), 6 to 6.25 (Pal).

Dec. 29

U	PEE	eR	00:16:15	

C&GS card 105-61:
12.4° S., 166.3° E.
23:55:57.6 (Dec. 28).
Santa Cruz Islands.
h about 100 km.

Dec. 30

M	Z	eP	00:46:48.7	d
A	Z	eP	00:46:50.0	c
N	Z	eP	00:46:51.2	c
U	Z	eP	00:46:50.8	d
Pa	Z	iP	00:46:52.3	c
Hi	Z	eP	00:46:49.8	d
Na	Z	iP	00:46:52.5	c
Ha	Z	eP	00:46:36.8	c
U	PEZ	iP	00:46:50.2	d
U	PEZ	iS	00:52:52	
U	PEZ	iR	00:57:02	
Ha	Z	Tmax	01:27:35.0	

Dec. 30--Continued

Magnitude 6.8 (HVO).

C&GS card 105-61:
52.3° N., 177.7° E.
00:39:24.1.
Rat Islands.
h about 52 km.
Magnitude 6.75 (Pas), 6.5 (Berk), 7 (Pal).

Dec. 30

M	Z	eP	11:46:59.5	d
A	Z	eP	11:47:00.4	d
D	Z	eP	11:46:59.9	c
N	Z	eP	11:46:59.6	c
Hi	Z	eP	11:46:57.4	d
Ha	Z	Tmax	12:21:53.6	

Off Oregon coast.

No preliminary C&GS listing.

Dec. 30

M	Z	eP	11:48:19.5	c
A	Z	eP	11:48:21.4	d
D	Z	eP	11:48:22.2	c
N	Z	eP	11:48:21.2	c
Hi	Z	eP	11:48:17.4	d

From northeast source.

No preliminary C&GS listing.

Table 6.--Distant earthquakes--Continued

Dec. 30				Dec. 31			
M	Z	eP	16:49:21.0 c	M	Z	eP	13:57:44.4
M	Z	Tmax	17:27:42	A	Z	eP	13:57:44.6
A	Z	Tmax	17:27:46	N	Z	eP	13:57:44.6
D	Z	Tmax	17:27:58	U	Z	eP	13:57:44.5
N	Z	Tmax	17:27:45	C&GS card 107-61:			
U	Z	Tmax	17:27:46	1.6° N., 127.3° E.			
Off coast of Oregon.				13:46:01.8.			
No preliminary C&GS listing.				Halmahera.			
				h about 140 km.			

The following bibliography is furnished to provide references to recent publications by the staff at the Hawaiian Volcano Observatory. Many of the publications are either based upon, or supplementary to, data presented in these Summaries.

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---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF		AZ	MIN	1
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG		GAP	DS	
1961	JAN	2	2030	15.49	21	12.60	155	19.10	11.18	10	.16	9.3	10.5	DIS	-	4.1X		287	109	
1961	JAN	4	0008	57.74	19	26.47	155	21.74	15.89	5	.06	1.8	8.7	DML				143	7	
1961	JAN	4	0903	42.19	19	10.33	155	42.67	6.48	6	.09	5.6	12.3	LSW	-			271	18	
1961	JAN	4	1132	46.08	19	24.01	155	24.87	6.96	4	.01	3.2	9.9	KAO	-			216	8	
1961	JAN	4	1137	52.14	19	25.56	155	40.36	7.00	4	.14	13.8	10.5	MLO	-			327	31	
1961	JAN	4	1802	6.58	19	29.49	155	22.89	6.99	4	.06	8.1	10.3	KAO	-			180	1	
1961	JAN	4	1839	29.01	19	27.01	155	29.26	5.16	5	.03	3.8	12.2	KAO	-			283	12	
1961	JAN	7	0357	47.51	19	43.32	156	23.76	7.41	8	.17	10.7	11.8	DIS	F-	3.9X		319	109	
1961	JAN	7	1550	22.63	18	48.80	155	10.90	7.18	6	.08	8.6	11.1	LOI	-	3.3X		348	62	
1961	JAN	7	1705	34.68	19	46.46	155	24.45	17.57	9	.13	2.7	13.4	KEA	-	2.7X		266	31	
1961	JAN	8	0930	37.16	19	24.15	155	14.56	30.53	10	.21	2.7	1.7	DEP		2.5X		146	4	
1961	JAN	9	0042	32.73	19	21.53	154	53.39	4.54	6	.32	7.4	25.4	SLE	-	2.6X		289	16	
1961	JAN	11	1419	40.13	19	20.11	155	19.20	24.94	6	.07	2.3	2.0	DEP				171	7	
1961	JAN	12	1218	44.70	19	25.58	155	17.06	30.57	7	.04	2.7	1.5	DEP		2.6X		128	1	
1961	JAN	14	1539	0.17	20	2.46	155	20.96	14.92	6	.08	7.1	11.4	KEA	-	3.1X		318	45	
1961	JAN	15	0044	42.20	19	52.98	155	37.21	12.94	8	.09	1.5	4.1	KEA	F	4.2X		169	59	
1961	JAN	16	0554	34.43	19	11.18	156	3.32	9.83	6	.16	10.6	14.6	KON	F-	3.4X		343	72	
1961	JAN	16	1021	17.83	19	20.69	155	10.89	41.22	5	.18	9.1	11.0	DEP	-	2.9X		286	9	
1961	JAN	19	0314	4.12	19	16.62	155	12.89	7.57	7	.08	1.0	4.2	SF2		2.6X		190	17	
1961	JAN	21	0139	36.88	19	13.40	155	39.62	9.93	8	.07	3.0	1.1	LSW	F	4.8X		247	19	
1961	JAN	21	1930	0.91	19	20.96	155	31.78	13.33	5	.24	10.8	1.7	DML		2.8X		307	15	
1961	JAN	22	0547	7.23	19	20.41	155	17.35	30.92	6	.05	3.2	1.9	DEP				192	4	
1961	JAN	22	2145	10.49	19	59.73	155	27.84	3.44	8	.19	3.3	4.4	KEA		2.4X		314	50	
1961	JAN	23	2227	46.92	19	30.67	155	10.56	43.76	6	.04	4.1	3.8	DEP		2.3X		191	16	
1961	JAN	24	1330	42.00	19	58.16	155	28.98	5.75	10	.16	1.2	1.5	KEA	F	3.3X		165	50	
1961	JAN	24	1727	22.55	19	37.21	156	12.81	6.87	8	.08	8.4	10.7	KON	-			323	88	
1961	JAN	26	0941	49.81	19	23.70	155	18.29	0.03	5	.14	1.2	3.3	SSC	#	2.8X		115	3	
1961	JAN	26	2016	1.02	20	0.96	155	23.82	6.91	6	.03	2.3	1.5	KEA		2.3X		316	46	
1961	JAN	27	0643	34.57	19	26.16	155	24.66	5.08	6	.07	1.2	11.1	KAO	-	2.6X		212	7	
1961	JAN	28	1642	50.17	19	22.02	155	15.86	29.94	6	.07	3.2	1.7	DEP				231	1	
1961	JAN	29	0917	20.40	19	19.04	155	14.44	2.73	5	.02	1.5	2.6	SSF	#	2.9X		214	13	
1961	JAN	31	2007	26.00	19	27.76	155	22.21	12.72	5	.07	1.6	2.0	KAO				146	4	
1961	FEB	1	1951	30.21	19	20.25	155	21.10	26.83	6	.09	2.3	2.5	DEP				154	4	
1961	FEB	4	0445	16.84	19	24.87	155	28.50	6.45	4	.10	5.8	12.8	KAO	-			271	13	
1961	FEB	8	1717	28.34	19	21.95	155	14.40	31.92	5	.01	3.6	1.6	DEP				300	3	
1961	FEB	9	0946	26.67	19	22.20	155	28.64	7.55	5	.04	1.2	4.6	KAO				282	10	
1961	FEB	12	2034	39.26	19	25.25	155	35.23	12.46	6	.10	3.0	1.9	MLO	F	2.5X		238	23	
1961	FEB	13	0522	53.19	19	28.51	154	55.50	0.59	6	.10	1.6	.6	SLE	F	2.6X		285	3	
1961	FEB	13	1832	0.91	19	29.18	154	44.91	13.41	6	.03	7.1	9.5	LER	F-	2.2X		310	44	
1961	FEB	14	0911	39.98	19	31.99	154	53.08	6.99	5	.21	4.5	17.9	HIL	-	2.7X		292	30	
1961	FEB	15	0427	32.32	19	26.92	155	22.15	29.78	7	.17	3.1	1.7	DML		3.0X		131	6	
1961	FEB	15	0524	37.67	19	10.34	155	43.71	7.02	6	.03	1.9	10.4	KON	-	3.0X		276	19	
1961	FEB	18	1026	13.34	19	24.70	155	26.66	0.22	8	.16	1.4	.7	KAO		2.8X		190	10	
1961	FEB	19	1157	9.72	19	31.62	155	44.70	7.15	4	.04	2.7	12.8	KON	-			336	38	
1961	FEB	20	1734	20.37	19	18.48	155	38.53	7.00	5	.04	3.0	10.1	LSW	-	3.4X		244	27	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF		AZ	MIN	2
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG		GAP	DS	
1961	FEB	24	0640	7.88	20	3.65	156	8.52	6.73	5	.19	12.1	15.6	KOH	-	2.9X		333	101	
1961	FEB	26	0649	54.49	19	26.33	155	14.62	3.56	6	.08	1.0	2.1	SNC		3.0X		265	5	
1961	MAR	3	0431	26.79	19	55.11	155	44.52	8.33	8	.07	7.6	9.9	KOH	-	3.7X		317	60	
1961	MAR	4	0457	45.14	19	24.75	155	13.72	0.01	4	.19	2.5	31.6	SER	-	2.3X		282	6	
1961	MAR	5	1109	40.18	19	25.75	155	15.36	6.75	4	.01	1.8	.8	INT	F	2.8X		250	4	
1961	MAR	8	1555	57.34	19	31.71	156	4.80	6.88	5	.14	10.5	13.7	KON	-			346	73	
1961	MAR	9	0116	55.71	19	22.91	155	14.37	28.86	4	.01	2.5	5.3	DEP				184	3	
1961	MAR	9	1855	51.08	19	25.27	155	22.88	26.60	5	.06	2.5	2.9	DML		2.8X		146	8	
1961	MAR	10	1158	3.49	19	20.40	155	0.16	52.74	7	.16	4.0	4.2	DEP		2.7X		252	18	
1961	MAR	11	2330	28.75	19	34.48	154	40.17	4.25	5	.20	7.5	7.2	HIL	#	3.0X		320	47	
1961	MAR	12	2208	56.40	19	25.69	155	25.52	7.34	4	.01	3.7	3.5	KAO		2.5X		229	9	
1961	MAR	13	0336	12.11	19	30.32	155	17.40	45.88	6	.09	2.5	4.2	DEP		2.7X		136	10	
1961	MAR	13	1706	0.90	19	21.54	155	15.53	34.15	7	.08	2.1	1.2	DEP		3.1X		162	2	
1961	MAR	13	2123	46.75	19	24.02	155	17.01	0.00	5	.09	2.9	.8	SSC	#	2.7X		169	3	
1961	MAR	14	0502	9.34	19	13.94	155	11.99	20.47	5	.07	1.7	4.1	DEP		2.7X		204	17	
1961	MAR	15	0632	32.90	19	24.27	155	26.64	6.81	4	.07	4.3	10.9	KAO	-			247	10	
1961	MAR	20	1258	27.83	19	22.54	155	34.63	6.53	6	.12	2.0	1.3	MLO		3.0X		311	20	
1961	MAR	20	2329	56.35	19	15.60	155	17.84	32.53	4	.00	3.3	5.5	DEP				220	13	
1961	MAR	21	0904	25.45	19	27.43	155	14.66	14.18	4	.00	1.3	.9	DEP				155	10	
1961	MAR	21	0937	40.14	19	55.59	155	33.35	8.51	5	.04	2.9	1.9	KEA		3.0X		310	51	
1961	MAR	22	2141	54.96	19	23.29	155	31.11	7.19	7	.04	1.1	1.3	KAO		2.8X		296	15	
1961	MAR	23	0223	0.27	19	24.85	155	15.31	31.02	6	.05	2.8	1.5	DEP		2.9X		130	4	
1961	MAR	27	1324	30.67	19	25.25	155	24.31	7.03	4	.18	3.1	14.4	KAO	-			202	9	
1961	MAR	29	0321	36.32	19	48.06	155	31.17	6.81	7	.09	2.7	2.3	KEA		2.7X		297	46	
1961	MAR	29	1007	9.56	19	23.35	155	26.43	7.66	6	.09	1.2	4.0	KAO		2.5X		248	8	
1961	MAR	29	1841	14.41	19	35.57	155	16.91	22.73	9	.10	2.2	1.4	KEA		3.2X		206	19	
1961	MAR	29	2159	45.25	19	54.97	155	41.68	14.22	10	.10	1.1	2.3	KEA		3.5X		156	56	
1961	MAR	31	0119	25.06	19	25.89	155	13.70	33.27	8	.11	3.5	1.8	DEP		2.3X		187	6	
1961	MAR	31	0159	7.06	19	49.03	155	29.88	9.19	8	.16	1.3	2.9	KEA		2.6X		277	44	
1961	APR	1	1006	36.39	19	24.37	155	17.89	1.03	5	.03	1.3	1.5	SSC		2.9X		181	2	
1961	APR	2	0604	16.38	19	59.20	155	24.26	8.90	9	.09	2.1	1.9	KEA		3.1X		313	44	
1961	APR	3	0035	46.37	19	26.42	155	42.94	2.22	4	.15	4.6	12.9	MLO	-	3.3X		263	44	
1961	APR	6	0505	42.37	19	45.96	155	42.19	10.52	7	.09	3.8	1.4	KEA		2.7X		309	44	
1961	APR	6	1428	51.22	19	19.26	155	25.78	5.37	9	.08	1.1	2.0	KAO		2.8X		161	5	
1961	APR	7	1735	39.06	19	24.05	155	11.68	32.58	6	.09	3.3	5.7	DEP				180	8	
1961	APR	9	0813	53.56	19	9.81	155	35.61	7.02	5	.03	2.7	12.4	LSW	-			214	11	
1961	APR	9	0916	13.48	19	25.42	155	29.30	8.94	8	.07	1.0	1.1	KAO		2.9X		217	13	
1961	APR	9	1810	23.37	19	23.74	155	16.12	31.53	9	.15	2.2	1.5	DEP	F	3.7X		100	3	
1961	APR	12	0101	44.68	19	22.91	155	16.08	27.27	8	.07	2.1	1.2	DEP		3.1X		92	1	
1961	APR	12	0404	6.90	19	23.01	155	23.46	10.10	4	.07	3.1	9.3	KAO	-			185	5	
1961	APR	12	1352	30.96	18	54.56	155	14.96	9.44	8	.06	2.0	1.2	LOI		3.5X		286	39	
1961	APR	15	2211	35.52	19	16.68	155	11.84	1.31	9	.06	.9	.9	SSF		2.8X		193	13	
1961	APR	16	0026	53.69	19	21.11	155	15.19	35.21	7	.07	2.2	3.3	DEP				165	3	
1961	APR	16	1531	13.28	19	18.40	155	11.91	0.02	10	.17	1.4	.4	SSF	#	3.0X		223	10	
1961	APR	16	1631	18.33	19	13.90	155	16.76	14.38	8	.19	2.3	.9	DEP		2.6X		191	16	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	3
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1961	APR	16	2053	30.40	19	27.47	155	2.53	21.90	5	.04	5.4	10.2	DEP	-	2.0X	258	25	
1961	APR	17	0641	12.09	19	22.67	155	17.94	19.06	4	.02	3.6	8.9	DEP	-		148	4	
1961	APR	17	0642	25.09	19	25.95	155	10.88	32.43	9	.18	4.6	1.9	DEP		2.6X	210	11	
1961	APR	18	2304	45.03	19	54.23	155	17.69	11.24	5	.01	2.5	1.8	KEA		2.5X	300	30	
1961	APR	20	1654	34.29	19	22.53	155	25.32	11.57	7	.03	1.6	.8	KAO		2.2X	234	6	
1961	APR	21	1131	4.37	19	19.26	155	25.24	7.41	7	.05	1.1	1.4	KAO		3.7X	157	4	
1961	APR	22	1048	57.94	19	25.84	155	16.72	17.83	10	.13	1.2	1.0	DEP		2.6X	89	2	
1961	APR	22	1730	46.33	19	32.35	155	15.33	24.95	5	.07	2.4	10.3	DEP	-		149	13	
1961	APR	23	0930	12.10	19	27.53	155	27.14	1.47	8	.07	1.0	.7	KAO	F	3.0X	214	8	
1961	APR	23	1041	7.14	19	9.69	155	35.97	0.00	7	.28	6.3	1.3	LSW	#	2.6X	218	11	
1961	APR	25	1141	56.46	19	13.84	155	33.16	3.53	4	.07	2.3	13.6	LSW	-		199	19	
1961	APR	25	1346	29.68	19	26.43	155	22.28	0.58	5	.02	1.0	.7	KAO		2.4X	156	6	
1961	APR	26	2244	48.83	19	23.74	155	29.59	8.65	8	.13	1.5	1.5	KAO		2.5X	284	13	
1961	APR	27	0631	32.32	19	23.59	155	24.04	7.31	10	.10	.8	1.6	KAO		3.3X	157	6	
1961	MAY	3	0025	46.38	19	25.21	155	25.06	8.37	4	.05	3.0	9.6	KAO	-		218	9	
1961	MAY	5	1806	13.14	19	42.37	155	20.16	21.79	8	.17	2.2	3.6	KEA		2.8X	252	24	
1961	MAY	6	1057	39.69	19	23.74	155	18.71	16.81	5	.03	1.3	1.8	DEP			115	4	
1961	MAY	7	0823	50.31	19	21.56	155	13.68	38.49	6	.05	3.7	2.9	DEP		2.8X	210	4	
1961	MAY	9	1846	15.74	19	27.57	155	46.72	6.86	5	.19	9.8	18.4	KON	-		289	41	
1961	MAY	10	2340	15.16	19	25.35	155	16.57	30.81	8	.18	2.7	1.6	DEP		2.7X	91	2	
1961	MAY	10	2343	21.49	19	22.19	155	15.45	33.05	6	.21	3.9	2.1	DEP		2.6X	160	1	
1961	MAY	13	1721	47.96	19	34.03	155	15.04	28.34	7	.10	3.0	1.8	DEP		1.9X	163	16	
1961	MAY	14	1301	30.05	19	22.91	155	17.56	32.82	8	.21	3.2	1.8	DEP		2.7X	114	3	
1961	MAY	14	1355	40.56	19	23.94	155	25.87	5.51	6	.08	1.0	3.7	KAO		3.0X	178	8	
1961	MAY	14	1829	11.78	19	22.02	155	5.10	3.90	4	.10	3.5	15.1	SSF	-		220	19	
1961	MAY	16	1627	31.65	19	27.53	155	19.25	31.27	8	.09	2.8	1.5	DML		2.9X	192	5	
1961	MAY	16	1706	55.27	19	26.91	155	16.43	30.87	8	.08	2.4	1.4	DEP		2.2X	167	3	
1961	MAY	16	1810	58.68	19	26.44	155	17.31	40.03	7	.08	2.5	4.0	DEP		3.1X	171	2	
1961	MAY	16	2140	35.63	19	23.73	155	13.91	30.57	9	.09	1.8	2.3	DEP		3.0X	166	4	
1961	MAY	17	0433	39.36	19	29.11	155	21.32	30.52	8	.11	2.3	1.4	DML		2.6X	116	4	
1961	MAY	19	0031	51.00	19	5.05	155	16.78	16.19	7	.10	2.2	13.7	LOI	-	4.1X	229	30	
1961	MAY	20	0247	23.20	19	23.60	155	28.01	7.21	7	.12	1.4	3.8	KAO		2.5X	268	10	
1961	MAY	20	0355	26.53	19	24.72	155	15.52	24.66	6	.06	1.3	3.0	DEP			115	4	
1961	MAY	22	2221	43.34	19	6.59	156	12.47	12.29	7	.14	9.4	13.0	KON	-	3.3X	325	66	
1961	MAY	22	2232	18.63	19	25.01	155	23.37	13.96	9	.11	1.3	.5	DML		2.8X	152	9	
1961	MAY	26	0512	54.40	19	27.15	155	24.74	11.88	9	.07	1.2	.7	KAO		3.0X	183	6	
1961	MAY	26	1941	19.91	20	5.54	156	59.03	0.09	8	.42	18.6	3.3	DIS	#	3.2X	278	107	
1961	MAY	26	2212	45.42	19	27.11	155	27.03	6.77	9	.09	1.0	2.1	KAO	F	4.0X	132	8	
1961	MAY	26	2255	12.93	19	26.95	155	27.89	7.58	6	.05	1.5	2.3	KAO		2.2X	265	10	
1961	MAY	28	1348	31.90	19	18.69	155	13.84	11.42	6	.06	1.8	1.3	SF2		2.2X	225	8	
1961	MAY	30	0316	1.08	19	24.91	155	15.52	1.01	6	.13	1.0	.8	SNC	F	3.0X	245	3	
1961	JUN	1	0019	25.43	19	24.53	155	12.87	28.97	9	.09	1.7	1.0	DEP		2.7X	155	7	
1961	JUN	2	1343	54.82	19	14.19	155	16.65	69.42	6	.11	4.6	5.6	DEP		2.5X	190	15	
1961	JUN	4	1310	55.86	19	18.97	155	21.85	2.13	9	.19	1.0	1.3	SWR		2.4X	155	3	
1961	JUN	7	0848	34.18	19	30.58	155	20.88	51.58	4	.08	5.4	10.5	DML	-		257	4	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	4
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1961	JUN	7	1434	6.86	19	21.39	155	14.78	29.58	7	.08	1.6	2.1	DEP		2.2X	165	3	
1961	JUN	8	1600	21.59	19	20.57	155	26.08	10.68	9	.13	1.7	.7	KAO		2.8X	167	5	
1961	JUN	10	2252	24.23	19	22.12	155	16.76	29.55	7	.09	2.3	1.3	DEP			153	2	
1961	JUN	10	2313	59.53	19	19.32	155	17.29	31.15	8	.08	2.1	2.1	DEP		2.8X	167	6	
1961	JUN	10	2327	26.00	19	27.91	155	13.29	16.22	6	.07	1.8	1.3	DEP			179	9	
1961	JUN	11	1214	1.40	19	18.36	155	21.94	2.56	7	.06	1.0	1.5	SWR		2.3X	167	4	
1961	JUN	11	1748	19.64	19	27.92	155	29.14	7.12	10	.13	1.1	2.9	KAO		2.7X	221	11	
1961	JUN	12	0529	58.95	19	19.55	155	22.42	3.42	7	.05	.6	.7	SWR			105	2	
1961	JUN	14	0114	37.08	19	18.48	155	22.16	3.17	8	.08	.6	1.2	SWR			123	4	
1961	JUN	14	1050	45.24	19	22.61	155	22.82	6.96	4	.01	1.9	4.9	KAO			166	5	
1961	JUN	17	0628	29.61	19	18.88	155	20.64	4.80	6	.09	2.5	5.9	SWR			232	4	
1961	JUN	17	1055	6.42	19	25.32	155	17.45	4.09	7	.10	1.1	.7	SNC		3.6X	164	1	
1961	JUN	17	1102	58.50	19	17.18	155	23.44	2.03	7	.11	2.2	1.3	SWR			280	6	
1961	JUN	17	1652	34.65	19	24.75	155	15.13	24.54	7	.04	1.8	3.1	DEP			130	3	
1961	JUN	17	1741	44.29	19	20.97	155	16.96	23.68	6	.16	5.9	13.4	DEP	-		173	3	
1961	JUN	18	0715	52.65	19	25.87	155	16.49	29.93	9	.14	1.9	1.3	DEP		3.1X	92	2	
1961	JUN	18	0717	13.26	19	30.46	155	13.18	8.29	6	.15	1.3	7.1	GLN		1.7X	123	12	
1961	JUN	18	0726	1.36	19	28.01	155	19.08	30.84	10	.13	2.9	1.5	DML		2.7X	187	5	
1961	JUN	18	0729	9.19	19	24.18	155	12.46	37.63	8	.10	3.4	4.5	DEP			205	7	
1961	JUN	18	1150	3.68	19	23.68	155	17.03	18.28	5	.01	4.0	7.9	DEP	-		138	2	
1961	JUN	18	2043	20.26	19	21.23	155	18.28	38.56	8	.09	2.0	3.2	DEP		2.2X	119	5	
1961	JUN	19	0453	36.20	19	21.02	155	20.14	0.17	7	.05	.5	3.5	SWR			101	6	
1961	JUN	19	1701	31.65	19	18.45	155	22.28	0.03	9	.38	1.3	.8	SWR	#	2.4X	122	4	
1961	JUN	20	0020	17.63	19	19.06	155	23.20	3.14	6	.12	3.1	.7	SWR			252	2	
1961	JUN	20	2207	47.90	19	20.82	155	0.24	6.93	4	.04	3.6	10.7	SF5	-	2.0X	249	17	
1961	JUN	20	2330	6.92	19	17.47	155	19.30	6.81	6	.10	8.7	8.5	SWR	-		254	1	
1961	JUN	21	1320	36.45	19	10.91	155	32.85	2.05	9	.11	3.3	.9	LSW		3.3X	200	14	
1961	JUN	21	2126	31.44	19	18.28	155	23.43	3.85	9	.14	.9	1.7	SWR			142	4	
1961	JUN	22	0435	0.72	19	17.39	155	22.74	1.07	7	.10	2.3	1.0	SWR		2.7X	269	5	
1961	JUN	22	0443	54.16	19	18.52	155	23.24	2.93	6	.14	4.4	1.2	SWR			261	3	
1961	JUN	23	1416	20.55	19	23.44	155	18.35	0.55	6	.19	1.2	4.6	SSC		2.7X	88	5	
1961	JUN	23	1706	3.46	19	13.66	155	19.54	4.43	5	.05	9.5	10.6	SWR	-		311	8	
1961	JUN	23	1706	58.33	19	14.95	155	19.16	9.96	8	.13	2.3	1.0	SWR		3.2X	300	6	
1961	JUN	24	0239	32.84	19	17.88	155	24.41	2.65	7	.08	3.9	2.1	SWR			276	5	
1961	JUN	25	0446	38.08	19	24.89	155	16.87	32.44	8	.11	2.2	2.8	DEP		2.3X	84	0	
1961	JUN	25	0726	5.89	19	20.91	155	21.58	0.03	5	.08	1.3	3.6	SWR	#		178	3	
1961	JUN	25	1944	57.39	19	16.78	155	24.12	4.60	7	.18	2.0	13.6	SWR	-	3.0X	286	10	
1961	JUN	26	0837	5.13	19	19.80	154	59.40	41.10	9	.17	1.8	2.0	LER		3.5X	252	19	
1961	JUN	27	0111	1.35	19	22.41	155	18.90	28.22	8	.09	2.0	1.0	DEP		2.4X	88	5	
1961	JUN	27	1859	54.60	19	19.38	155	23.52	3.94	7	.13	1.6	.9	SWR		2.6X	149	2	
1961	JUN	28	0028	19.77	19	21.51	155	16.65	29.58	9	.12	2.3	1.5	DEP		2.8X	142	2	
1961	JUN	28	0224	22.22	19	28.83	155	20.25	31.01	9	.15	3.5	1.9	DML		2.6X	205	8	
1961	JUN	28	0607	32.22	19	19.59	155	17.91	34.85	8	.13	2.1	3.3	DEP		2.7X	140	3	
1961	JUN	29	0247	59.94	19	23.07	155	15.14	30.04	9	.08	1.6	1.2	DEP		2.6X	159	2	
1961	JUN	29	0409	29.77	19	20.84	155	17.58	32.02	9	.12	1.2	1.8	DEP		4.4X	160	4	

1961 JUN 29 0415 16.78 19 22.09 155 15.90 30.51 9 .10 1.9 2.3 DEP 3.4X 188 1
1961 JUN 29 0452 0.34 19 21.05 155 16.96 34.89 7 .08 1.9 2.5 DEP 2.8X 161 3
1961 JUN 29 0546 15.70 19 20.73 155 13.49 32.34 6 .06 2.5 1.9 DEP 2.7X 212 5
1961 JUN 29 0642 16.22 19 23.55 155 15.98 29.43 9 .07 1.6 1.1 DEP 2.6X 105 2
1961 JUN 29 0801 36.64 19 22.07 155 15.70 27.05 7 .02 2.5 1.1 DEP # 2.9X 202 1

1961 JUN 29 0935 45.67 19 20.86 155 16.83 28.36 5 .00 1.6 2.5 DEP 2.2X 161 3
1961 JUN 29 1123 21.96 19 25.31 155 16.47 32.31 6 .07 1.9 2.4 DEP 2.5X 158 5
1961 JUN 29 1534 23.03 19 21.59 155 18.18 36.66 7 .10 2.6 3.5 DEP 154 4
1961 JUN 29 2342 21.58 19 23.55 155 15.75 28.83 9 .12 2.9 1.7 DEP 2.4X 162 2
1961 JUN 30 0223 12.41 19 23.36 155 17.79 33.27 10 .16 2.3 1.7 DEP 2.8X 103 3

1961 JUN 30 0223 55.63 19 24.65 155 17.13 28.60 9 .09 1.7 2.2 DEP 3.0X 81 1
1961 JUN 30 0225 56.85 19 23.25 155 16.56 33.96 9 .12 1.7 2.4 DEP 3.1X 80 2
1961 JUN 30 0245 17.51 19 22.82 155 15.90 29.60 9 .05 1.6 2.0 DEP 2.7X 112 1
1961 JUN 30 0321 12.91 19 21.83 155 16.04 31.28 10 .06 1.8 1.1 DEP 2.7X 160 1
1961 JUL 1 0219 29.50 19 27.74 155 18.47 29.88 8 .09 2.0 1.6 DEP 3.3X 186 5

1961 JUL 2 0036 6.26 19 24.50 155 15.41 27.62 11 .11 1.3 2.0 DEP F 3.4X 76 3
1961 JUL 2 1200 8.28 19 16.49 155 10.77 1.37 6 .0912.3 6.5 SSF - 3.2X 309 14
1961 JUL 2 1326 52.07 19 21.36 155 16.94 29.96 7 .12 3.5 2.2 DEP 182 3
1961 JUL 3 0441 0.83 19 17.60 155 22.69 5.41 9 .11 1.0 2.3 SWR 2.7X 158 5
1961 JUL 3 1048 47.94 19 19.03 155 13.46 2.54 9 .10 1.2 1.3 SSF 2.7X 223 8

1961 JUL 5 0633 58.64 19 10.52 155 28.86 31.40 9 .11 2.5 2.3 DLS 2.9X 165 17
1961 JUL 5 1458 7.72 19 23.91 155 16.09 4.24 6 .08 .6 1.2 SEC 2.4X 83 3
1961 JUL 5 2152 12.07 19 20.87 155 6.01 43.03 8 .13 3.0 2.9 DEP 238 7
1961 JUL 5 2258 6.20 19 18.39 155 16.20 38.35 5 .00 3.4 6.4 DEP 228 7
1961 JUL 7 0232 33.26 19 25.36 155 17.45 1.82 8 .06 .6 .2 SNC 2.9X 83 0

1961 JUL 7 0251 16.52 19 24.06 155 17.26 1.65 6 .12 1.0 .7 SSC F 3.4X 95 2
1961 JUL 9 1118 54.70 19 18.01 155 15.56 14.56 6 .14 2.9 2.5 DEP 237 8
1961 JUL 9 1229 12.94 19 20.56 155 26.18 36.76 8 .19 4.2 2.4 DML 168 5
1961 JUL 10 0144 9.60 19 26.45 155 6.30 56.07 6 .09 8.5 5.0 DEP 273 18
1961 JUL 10 1943 14.05 19 25.34 155 16.74 1.49 4 .01 1.7 .8 SNC 3.1X 218 2

1961 JUL 11 1156 26.17 19 18.96 155 22.30 1.68 5 .12 1.2 1.4 SWR 2.8X 159 3
1961 JUL 12 0758 17.78 19 16.59 155 3.69 5.48 5 .06 1.7 2.1 SF5 3.2X 221 24
1961 JUL 12 1737 13.90 19 25.35 155 26.16 14.40 5 .10 1.5 1.7 DML F 2.8X 189 10
1961 JUL 13 0910 1.33 19 21.79 155 16.49 29.58 7 .05 1.2 1.0 DEP 3.0X 158 2
1961 JUL 13 1430 30.54 19 18.43 155 26.16 15.00 4 .03 2.031.6 DLS F- 3.8X 306 6

1961 JUL 14 0336 54.34 19 23.88 155 19.67 6.98 4 .00 1.912.3 KAO - 142 7
1961 JUL 14 0414 49.09 19 20.66 155 18.73 43.39 7 .10 1.4 3.0 DEP # 2.1X 157 6
1961 JUL 14 0415 38.14 19 20.64 155 14.82 28.74 8 .34 2.9 2.5 DEP 2.7X 168 4
1961 JUL 14 0418 43.23 19 17.49 155 11.86 49.10 6 .06 3.2 3.2 DEP 226 11
1961 JUL 14 0423 43.54 19 20.77 155 17.33 42.06 5 .13 4.8 4.1 DEP 2.1X 187 4

1961 JUL 19 1749 0.52 20 10.14 156 14.59 13.00 5 .0510.213.1 KOH - 2.9X 225 66
1961 JUL 22 1940 57.24 19 32.40 155 40.42 6.98 4 .1013.710.7 MLO - 333 30
1961 JUL 23 0524 15.49 19 22.58 155 16.82 26.13 8 .04 1.0 1.5 DEP F 4.1X 122 2
1961 JUL 23 0528 23.36 19 23.76 155 17.84 23.42 7 .13 1.4 2.3 DEP F 4.0X 147 12
1961 JUL 23 0536 50.43 19 21.10 155 17.10 31.77 5 .05 1.9 3.0 DEP F 3.2X 160 3

1961 JUL 23 0605 25.81 19 23.13 155 15.12 36.46 9 .08 2.3 2.2 DEP 201 2
1961 JUL 23 0650 54.96 19 22.23 155 14.01 31.24 7 .15 1.6 2.7 DEP F 2.1X 163 3
1961 JUL 23 0757 5.65 19 20.29 155 16.71 26.37 6 .05 1.5 2.2 DEP 151 4
1961 JUL 23 0758 9.27 19 20.91 155 12.78 28.75 6 .07 1.3 2.1 DEP 166 6
1961 JUL 23 0816 10.03 19 21.64 155 13.74 30.43 7 .11 1.3 2.1 DEP 2.1X 142 4

1961 JUL 23 0820 18.74 19 23.64 155 15.89 23.07 5 .06 2.4 3.2 DEP 110 2
1961 JUL 23 0930 30.65 19 23.31 155 15.99 29.43 10 .14 1.3 1.1 DEP 2.6X 70 2
1961 JUL 23 0940 3.37 19 20.92 155 15.13 32.37 6 .07 4.5 3.0 DEP 255 3
1961 JUL 23 0958 10.96 19 23.36 155 14.54 37.00 7 .07 3.0 2.3 DEP 203 3
1961 JUL 23 1042 47.14 19 22.64 155 17.51 29.14 10 .05 1.3 .8 DEP 2.6X 123 3

1961 JUL 23 1048 11.39 19 24.46 155 14.55 27.73 10 .13 1.2 1.4 DEP 2.5X 91 4
1961 JUL 23 1050 3.76 19 22.85 155 17.64 30.79 10 .08 1.0 1.1 DEP F 2.7X 139 3
1961 JUL 23 1419 11.01 19 20.73 155 16.58 28.67 6 .06 3.0 1.7 DEP 206 3
1961 JUL 23 1550 31.85 19 24.86 155 16.51 28.06 9 .10 1.1 1.1 DEP 2.3X 91 2
1961 JUL 23 2029 12.58 19 22.64 155 17.37 34.78 9 .19 2.9 1.7 DEP 124 3

1961 JUL 23 2136 12.59 19 22.46 155 16.27 32.40 7 .11 2.7 1.5 DEP 124 1
1961 JUL 23 2329 56.65 19 10.15 155 15.16 5.28 6 .03 3.1 2.2 SF1 2.1X 237 23
1961 JUL 24 0114 48.45 19 22.53 155 15.88 28.33 9 .23 1.7 2.0 DEP 3.0X 123 0
1961 JUL 24 0238 54.01 19 22.32 155 17.02 28.64 8 .08 1.3 1.0 DEP 139 2
1961 JUL 24 0259 57.31 19 22.66 155 13.22 31.33 9 .14 2.5 1.5 DEP 2.7X 208 5

1961 JUL 24 0322 42.23 19 23.82 155 16.58 30.42 10 .19 1.8 1.4 DEP F 3.0X 83 3
1961 JUL 24 0512 28.28 19 9.46 155 38.92 1.31 6 .07 4.0 1.9 LSW 3.3X 249 12
1961 JUL 24 0750 18.41 19 21.52 155 15.58 27.18 7 .09 3.3 1.0 DEP 2.7X 246 2
1961 JUL 24 1659 46.17 19 25.01 155 16.82 30.70 11 .22 1.8 1.4 DEP F# 3.3X 85 0
1961 JUL 24 1903 9.37 19 19.40 155 17.10 31.11 9 .12 1.6 1.3 DEP 167 6

1961 JUL 25 1659 35.81 19 22.51 155 17.68 29.83 8 .09 2.8 1.4 DEP 2.8X 129 3
1961 JUL 25 2010 8.73 19 18.41 155 15.77 33.14 8 .08 3.1 1.1 DEP 233 7
1961 JUL 25 2306 12.24 19 23.92 155 41.16 7.00 4 .3023.318.3 MLO F- 328 32
1961 JUL 26 2318 22.82 19 20.75 155 14.08 35.24 7 .04 3.2 1.4 DEP 206 4
1961 JUL 27 0539 34.45 19 20.98 155 16.02 27.82 6 .10 2.8 4.2 DEP 200 3

1961 JUL 27 2121 3.60 19 25.71 155 17.14 31.21 9 .11 1.8 1.3 DEP 2.8X 86 1
1961 JUL 27 2319 21.24 20 3.24 155 19.02 3.00 8 .11 3.4 2.6 KEA F 3.0X 312 44
1961 JUL 28 1251 9.47 19 19.36 155 14.37 41.36 6 .12 2.8 4.2 DEP 2.5X 174 6
1961 JUL 29 0357 59.32 19 29.02 155 17.21 12.25 7 .09 1.1 1.9 GLN F 2.9X 131 7
1961 JUL 29 1621 28.79 19 24.46 155 18.06 0.55 7 .12 .5 .6 SSC F 2.4X 95 2

1961 AUG 2 0344 0.49 19 12.45 155 32.99 2.28 8 .07 1.1 .8 LSW 2.8X 158 16
1961 AUG 2 1608 25.25 19 21.70 155 42.75 33.63 5 .02 4.4 8.2 DML 268 34
1961 AUG 3 1336 29.81 19 22.96 155 17.98 0.03 6 .09 .4 .9 SSC # 2.3X 137 4
1961 AUG 3 1336 37.34 19 23.88 155 14.52 8.34 6 .11 2.5 1.4 INT F 3.6X 276 4
1961 AUG 4 0001 26.61 19 27.53 155 37.07 4.92 5 .07 9.612.6 MLO - 321 24

1961 AUG 7 0141 32.42 19 56.42 155 47.68 18.05 8 .09 3.0 4.4 KOH 3.2X 186 16
1961 AUG 9 1933 29.62 19 21.44 155 17.32 32.06 8 .13 2.7 2.1 DEP 2.6X 192 3
1961 AUG 9 1950 13.71 19 25.57 155 16.48 31.82 9 .08 1.1 .9 DEP 3.1X 109 2
1961 AUG 9 2110 51.79 19 22.03 155 13.37 42.61 7 .06 5.4 4.0 DEP 261 4
1961 AUG 12 0217 38.54 19 48.84 155 37.12 11.40 8 .09 1.4 1.5 KEA 2.5X 192 24

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC	PREF		AZ	MIN	7
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS	MAG	GAP	DS		
1961	AUG	12	1942	19.09	19	23.15	155	18.47	31.04	10	.13	1.3	.8	DEP F	3.1X	113	4		
1961	AUG	14	1617	10.99	19	28.34	155	49.36	9.88	4	.07	13.0	3.6	KON -		338	46		
1961	AUG	15	1240	47.83	19	21.96	155	30.00	0.01	7	.09	6.7	2.4	KAO F#	2.9X	294	12		
1961	AUG	15	1757	30.37	19	23.06	155	17.86	0.08	7	.15	.4	.3	SSC F	2.6X	133	4		
1961	AUG	15	1814	30.12	19	28.65	155	41.49	7.01	4	.15	14.9	11.8	MLO -		330	32		
1961	AUG	16	1157	7.04	19	21.82	155	17.16	31.92	7	.10	2.3	2.9	DEP		157	2		
1961	AUG	16	1733	15.28	20	6.97	155	31.10	10.59	6	.15	3.9	2.8	KEA		184	19		
1961	AUG	17	1446	58.15	19	17.38	155	12.59	25.60	9	.18	1.6	1.8	DEP	2.7X	188	11		
1961	AUG	20	1040	7.50	19	16.39	155	35.57	3.58	4	.07	13.1	13.9	LSW -	2.7X	329	23		
1961	AUG	20	1943	19.76	19	23.12	155	13.11	28.37	9	.11	1.2	1.0	DEP	2.7X	188	8		
1961	AUG	20	2344	45.62	19	22.00	155	14.76	31.28	10	.12	1.3	1.5	DEP	3.1X	162	7		
1961	AUG	21	0648	19.95	19	25.00	155	17.08	3.80	4	.09	14.4	.7	SNC -	3.1X	192	0		
1961	AUG	21	0655	11.36	19	24.54	155	14.64	0.23	6	.21	1.3	4.9	SNC F#	2.7X	152	5		
1961	AUG	21	0943	31.05	19	23.44	155	17.87	0.46	7	.06	.4	.3	SSC	2.4X	119	3		
1961	AUG	22	0756	53.41	19	23.20	155	17.26	0.02	6	.17	.7	1.1	SSC F#	2.4X	122	3		
1961	AUG	22	1239	57.73	19	24.69	155	17.32	1.46	6	.08	1.8	.8	SNC F	2.9X	93	1		
1961	AUG	22	1503	15.20	19	23.15	155	16.44	3.68	6	.05	2.5	1.7	SEC F	3.1X	162	2		
1961	AUG	22	1609	50.78	19	23.07	155	18.07	0.91	5	.08	1.4	3.4	SSC F	2.7X	132	4		
1961	AUG	25	0631	55.69	19	23.58	155	17.06	2.33	9	.15	.6	.6	SSC	2.4X	86	2		
1961	AUG	25	0845	34.93	19	49.79	155	5.28	43.60	9	.15	2.6	1.3	KEA F	4.5X	228	12		
1961	AUG	25	1231	3.63	19	53.18	155	32.50	0.26	7	.06	1.7	.8	KEA	2.5X	153	20		
1961	AUG	26	2209	46.86	19	22.51	155	4.50	43.08	10	.11	2.1	2.0	DEP	2.6X	193	19		
1961	AUG	28	0305	28.12	19	26.11	156	17.68	1.30	9	.11	3.6	1.8	KON	2.7X	243	85		
1961	AUG	28	2211	24.98	19	28.38	155	14.76	20.11	7	.08	.9	1.5	DEP	2.4X	127	7		
1961	AUG	31	0107	28.34	18	58.22	155	46.40	35.66	7	.18	3.8	8.9	DIS		309	57		
1961	SEP	1	0954	52.92	19	22.60	155	16.11	24.88	4	.01	2.1	4.2	DEP		117	1		
1961	SEP	1	1734	48.69	19	27.05	155	13.53	18.64	6	.11	1.5	2.1	DEP		126	8		
1961	SEP	2	0605	51.50	19	23.65	155	17.08	3.09	5	.04	1.9	1.5	SSC	3.1X	153	3		
1961	SEP	3	0424	29.82	19	49.53	155	20.67	31.23	10	.13	1.3	3.5	KEA F	3.6X	155	29		
1961	SEP	3	1914	14.20	19	37.43	155	40.89	3.54	9	.18	1.6	3.5	KEA	2.5X	200	34		
1961	SEP	5	2257	45.58	19	22.68	155	16.11	26.08	7	.06	1.8	2.0	DEP		88	1		
1961	SEP	8	0335	17.48	19	23.12	155	4.67	6.70	7	.07	1.8	7.8	SF5	2.3X	213	18		
1961	SEP	8	2234	11.58	19	23.53	155	15.98	2.49	8	.17	.7	.6	SEC F	2.6X	105	2		
1961	SEP	9	0825	54.26	19	27.63	155	28.41	28.06	6	.14	3.2	3.6	DML	3.3X	279	10		
1961	SEP	9	1331	20.99	19	24.34	155	27.44	6.10	10	.14	2.5	5.8	KAO	2.9X	142	11		
1961	SEP	9	2004	45.91	19	25.76	155	15.72	0.43	8	.06	.5	.6	SNC F	2.3X	154	3		
1961	SEP	12	1347	12.74	19	23.00	155	17.73	1.29	7	.04	.5	1.0	SSC F	3.1X	134	3		
1961	SEP	13	1910	59.16	19	18.07	156	16.33	6.78	7	.19	11.5	15.8	KON F-		311	93		
1961	SEP	13	2200	2.30	19	12.25	155	33.04	2.76	7	.02	1.1	2.4	LSW	2.6X	159	16		
1961	SEP	15	1506	14.42	19	26.40	155	8.24	39.49	8	.05	1.8	1.6	DEP	2.7X	169	15		
1961	SEP	15	2024	29.96	20	1.34	156	19.97	5.73	10	.11	2.3	5.6	KOH F	3.7X	222	69		
1961	SEP	16	0638	58.15	19	22.64	155	24.25	0.02	11	.19	.9	.5	KAO #	3.1X	130	5		
1961	SEP	17	0249	22.76	19	32.72	155	48.60	20.98	6	.12	5.7	14.1	KON -		339	45		
1961	SEP	17	2214	57.87	19	23.07	155	16.56	30.85	7	.05	2.3	2.0	DEP	2.8X	109	2		
1961	SEP	17	2320	21.53	19	22.74	155	16.04	28.90	7	.08	2.3	2.0	DEP		93	1		

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC	PREF		AZ	MIN	8
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS	MAG	GAP	DS		
1961	SEP	18	0020	38.19	19	16.29	155	27.08	27.93	7	.07	2.7	1.8	DLS	2.6X	314	10		
1961	SEP	21	1317	3.31	19	21.33	155	12.24	0.71	6	.09	.9	.9	SER	3.2X	172	12		
1961	SEP	21	1353	55.48	19	18.68	155	13.07	4.90	5	.04	2.4	12.6	SSF -	3.2X	274	15		
1961	SEP	21	1419	38.04	19	17.63	155	12.62	3.94	4	.16	5.2	14.0	SSF -	3.2X	278	17		
1961	SEP	21	1433	8.03	19	17.90	155	13.37	1.86	4	.00	4.5	3.6	SSF	3.2X	279	16		
1961	SEP	21	1441	56.99	19	30.50	155	26.76	7.14	4	.10	2.8	11.6	MLO -	2.7X	220	19		
1961	SEP	21	1454	21.61	19	18.76	155	13.70	4.86	5	.09	2.8	14.3	SSF -	3.3X	276	14		
1961	SEP	22	1701	33.91	19	23.32	155	9.42	7.75	6	.07	2.1	2.6	SF3	4.4X	221	11		
1961	SEP	23	1919	53.57	19	27.29	155	5.80	4.64	7	.11	1.6	3.0	GLN	2.9X	242	20		
1961	SEP	24	0108	18.24	19	20.86	154	58.93	12.06	8	.07	2.0	1.5	LER	2.9X	284	30		
1961	SEP	24	0349	51.49	19	20.55	155	8.31	17.51	4	.21	20.2	5.9	DEP -	3.7X	325	14		
1961	SEP	24	1841	0.95	19	20.93	154	54.28	13.65	8	.12	3.9	2.8	LER	3.5X	272	38		
1961	SEP	24	1909	39.88	19	23.09	155	15.39	29.97	12	.14	1.4	1.1	DEP F	3.3X	147	2		
1961	SEP	24	1925	7.01	19	12.87	154	58.64	38.76	4	.03	9.8	8.0	DIS F-	4.4X	312	35		
1961	SEP	24	1928	53.40	19	17.64	154	59.75	7.69	8	.12	2.0	1.5	LER F	4.3X	235	23		
1961	SEP	24	1935	39.81	19	21.06	155	0.52	1.95	6	.09	1.8	1.9	SSF	3.2X	221	17		
1961	SEP	24	1938	34.05	19	13.07	154	45.53	17.39	7	.07	5.5	12.9	DIS -	4.0X	291	36		
1961	SEP	24	1944	59.03	19	18.68	154	59.51	16.97	6	.22	7.2	16.3	LER -	3.0X	261	21		
1961	SEP	24	1948	42.10	19	8.34	154	56.92	19.45	6	.09	2.9	11.7	DIS -	3.1X	311	39		
1961	SEP	24	1950	14.57	19	23.57	155	3.76	11.24	7	.06	1.5	1.0	SF5	3.8X	190	17		
1961	SEP	24	2001	24.14	19	14.44	154	54.34	7.00	5	.08	1.9	13.1	DIS -	3.5X	290	28		
1961	SEP	24	2029	22.26	19	18.45	155	1.46	9.17	7	.09	2.0	1.2	SF5 F	4.3X	225	22		
1961	SEP	24	2038	27.39	19	18.21	154	57.24	9.89	8	.14	1.6	1.8	LER	3.6X	247	21		
1961	SEP	24	2050	33.76	19	25.24	154	54.62	13.10	7	.14	3.6	1.3	LER	2.8X	284	9		
1961	SEP	24	2114	6.86	19	23.77	155	6.85	12.42	6	.05	2.5	1.4	SF4 F	3.0X	230	16		
1961	SEP	24	2116	38.23	19	18.86	154	56.49	14.79	8	.07	4.5	4.6	LER	2.9X	249	20		
1961	SEP	24	2136	37.75	19	14.92	154	55.94	7.03	5	.06	1.8	13.3	DIS -	3.0X	285	27		
1961	SEP	24	2139	25.88	19	16.13	154	59.48	1.69	8	.17	2.4	2.0	SLE #	3.0X	241	25		
1961	SEP	24	2253	13.48	19	16.41	154	57.01	5.26	7	.12	2.8	2.3	LER	3.5X	251	25		
1961	SEP	25	0119	13.70	19	21.27	155	16.77	32.26	8	.10	3.2	1.4	DEP	3.1X	190	3		
1961	SEP	25	1302	30.73	19	19.13	154	58.51	12.39	8	.09	1.6	.8	LER F	3.5X	239	20		
1961	SEP	26	1712	19.11	19	16.90	154	59.10	7.06	7	.17	1.8	14.1	LER -	2.3X	291	31		
1961	SEP	26	2208	46.54	19	23.55	155	3.14	9.76	6	.05	1.7	4.2	SF5	2.7X	217	16		
1961	SEP	27	0250	10.58	19	13.04	155	2.01	5.76	7	.14	1.9	12.7	SF5 -		295	30		
1961	SEP	27	2124	38.52	19	15.65	154	57.14	10.41	10	.13	1.5	.9	DIS F	3.7X	280	26		
1961	SEP	27	2129	41.49	19	16.24	154	57.42	12.54	10	.18	1.8	1.0	LER F	3.7X	278	25		
1961	SEP	28	1807	27.15	20	1.93	157	34.52	16.43	9	.08	1.5	12.3	DIS -	3.9X	232	151		
1961	OCT	1	2210	23.81	19	10.76	155	36.88	0.70	10	.19	1.9	.7	LSW	2.6X	190	13		
1961	OCT	2	0017	47.71	19	19.28	155	4.22	8.72	10	.13	1.2	1.9	SF5	2.4X	239	21		
1961	OCT	2	0706	58.18	19	24.74	155	14.97	22.87	6	.07	1.3	3.5	DEP		128	5		
1961	OCT	4	0601	25.42	19	23.12	155	16.22	28.80	11	.14	1.5	1.3	DEP	2.0X	87	1		
1961	OCT	4	1357	39.63	19	28.78	155	22.10	34.47	8	.15	3.4	1.5	DML	2.4X	200	10		
1961	OCT	5	0825	41.88	19	24.60	155	35.94	8.87	8	.13	1.7	2.3	MLO	3.1X	239	24		
1961	OCT	6	0147	13.28	19	18.93	155	17.74	0.44	7	.11	1.2	.8	SWR	2.2X	223	7		
1961	OCT	6	1246	23.18	19	12.16	155	31.33	0.50	9	.13	2.6	.4	LSW	2.7X	179	17		

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	9
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1961	OCT	15	1905	22.46	19	40.53	155	17.10	50.95	10	.09	3.1	1.5	KEA		2.4X	227	21	
1961	OCT	18	0834	28.72	19	50.32	155	40.93	1.67	8	.05	2.2	1.5	KEA		2.7X	288	61	
1961	OCT	18	1715	32.09	19	49.23	156	2.14	6.44	7	.13	10.3	11.9	HUA	F-	3.1X	291	44	
1961	OCT	20	0501	45.39	19	22.46	155	19.75	2.17	6	.11	.9	3.4	KAO		2.0X	129	7	
1961	OCT	21	2051	56.26	19	21.58	155	15.61	27.53	8	.07	2.2	1.4	DEP	#		162	2	
1961	OCT	22	0949	46.13	19	8.47	155	38.62	10.02	6	.05	2.8	6.7	LSW		3.0X	249	10	
1961	OCT	23	0504	49.31	19	25.68	155	14.77	29.01	9	.16	2.2	1.4	DEP		2.5X	123	5	
1961	OCT	29	0725	21.53	19	31.40	155	58.93	7.06	6	.08	8.9	10.9	KON	F-		344	62	
1961	OCT	29	1139	10.40	19	41.94	155	12.67	20.96	8	.13	3.5	4.8	KEA		2.5X	219	13	
1961	NOV	1	1148	19.45	19	24.25	155	14.58	30.67	8	.08	2.1	1.6	DEP		2.0X	142	4	
1961	NOV	3	0913	14.50	20	4.43	155	39.88	29.06	9	.13	2.0	2.1	KOH		2.8X	160	6	
1961	NOV	4	0624	29.60	19	23.44	155	30.06	8.37	10	.18	1.2	1.5	KAO		3.1X	152	13	
1961	NOV	5	0656	27.39	19	49.01	155	31.16	12.82	10	.12	1.4	1.7	KEA		2.6X	140	28	
1961	NOV	5	0720	52.73	19	24.29	155	15.37	29.79	10	.19	1.6	1.4	DEP		2.6X	123	3	
1961	NOV	5	1337	25.42	19	23.97	155	18.28	14.75	5	.00	2.5	6.8	DEP			108	3	
1961	NOV	5	1414	37.95	19	22.71	155	32.39	14.61	8	.12	1.3	1.2	DML		2.1X	161	17	
1961	NOV	5	1602	22.10	19	23.45	155	19.01	8.37	5	.06	1.6	4.7	INT			123	4	
1961	NOV	5	1651	19.39	19	23.17	155	16.91	23.73	5	.03	4.3	10.2	DEP	-		130	2	
1961	NOV	5	1702	45.43	19	21.91	155	16.86	35.13	9	.13	1.8	2.4	DEP	#	2.0X	157	2	
1961	NOV	8	1151	0.89	19	26.86	155	18.38	15.06	9	.10	1.0	.3	DEP		2.6X	109	3	
1961	NOV	10	0538	17.64	19	26.49	155	16.94	17.58	9	.11	1.1	1.4	DEP	F	3.3X	133	2	
1961	NOV	10	0928	13.28	19	28.71	155	14.82	25.07	7	.06	1.5	1.6	DEP		2.5X	113	8	
1961	NOV	12	1545	23.11	19	20.75	155	9.82	9.22	8	.07	1.3	1.8	SF3		2.9X	181	11	
1961	NOV	14	0451	27.53	19	27.36	156	0.81	10.55	10	.12	5.6	7.5	KON	F	3.3X	299	62	
1961	NOV	16	0617	12.54	19	24.15	155	15.82	28.14	9	.14	1.8	2.5	DEP		2.7X	111	2	
1961	NOV	16	0659	16.47	19	22.80	155	15.40	27.68	8	.08	2.2	1.3	DEP			157	1	
1961	NOV	16	1510	16.26	19	25.59	155	17.62	28.08	8	.06	1.2	.8	DEP		3.0X	108	0	
1961	NOV	16	1650	40.00	19	18.81	155	11.38	41.63	6	.07	6.0	7.9	DEP	-	2.6X	278	10	
1961	NOV	16	1903	50.18	19	17.23	155	26.31	45.60	9	.15	4.8	2.0	DLS		2.4X	184	8	
1961	NOV	17	1719	42.94	19	22.68	155	16.65	31.61	7	.10	1.5	1.0	DEP		2.6X	113	1	
1961	NOV	17	1748	46.98	19	24.05	155	14.84	30.76	8	.10	2.0	1.2	DEP		2.7X	141	4	
1961	NOV	17	1933	26.24	19	25.16	155	15.91	28.99	9	.10	1.7	1.2	DEP		2.7X	104	2	
1961	NOV	17	1956	49.09	19	45.63	156	9.94	6.72	8	.08	8.3	10.3	HUA	F-	3.1X	301	59	
1961	NOV	17	2247	39.32	19	21.15	155	17.17	26.45	7	.06	2.5	1.5	DEP			181	3	
1961	NOV	17	2322	38.30	19	25.51	155	14.44	26.66	10	.17	1.3	1.5	DEP		2.6X	130	5	
1961	NOV	17	2327	53.00	19	21.05	155	16.08	28.98	8	.07	2.2	1.5	DEP			163	3	
1961	NOV	18	0344	1.00	19	24.25	155	15.07	29.09	11	.16	1.6	1.3	DEP		3.2X	131	4	
1961	NOV	18	0809	14.08	19	22.10	156	7.10	6.91	8	.13	8.6	12.0	KON	F-	3.3X	300	77	
1961	NOV	18	0941	1.63	19	25.55	155	17.96	30.75	9	.10	2.3	1.2	DEP	#	2.7X	170	1	
1961	NOV	20	0140	24.48	19	25.59	155	18.08	27.89	9	.09	2.4	1.2	DEP		2.5X	171	1	
1961	NOV	20	0313	17.12	19	21.59	155	16.24	26.05	7	.12	2.8	1.5	DEP			193	2	
1961	NOV	20	0314	6.27	19	21.61	155	6.54	0.02	9	.06	1.2	.6	SSF	#	2.7X	189	16	
1961	NOV	20	0338	26.81	19	21.91	155	16.96	26.66	7	.07	2.5	1.3	DEP			188	2	
1961	NOV	20	1325	23.39	19	24.22	155	14.52	28.50	6	.07	3.5	1.7	DEP		2.5X	272	4	
1961	NOV	20	1400	57.83	19	23.53	155	16.14	28.96	7	.03	2.5	1.3	DEP		2.6X	101	2	

---ORIGIN TIME (HST)--				-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	10
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1961	NOV	20	1611	1.91	19	22.65	155	15.39	28.54	7	.06	2.6	1.4	DEP			176	1	
1961	NOV	20	1940	27.75	19	25.26	155	15.23	28.90	10	.12	1.1	1.2	DEP		3.0X	118	3	
1961	NOV	21	0041	26.00	19	18.05	155	14.41	26.56	8	.06	3.9	3.9	DEP	F	2.5X	180	8	
1961	NOV	21	0242	57.08	19	20.82	155	15.67	29.21	9	.07	1.3	1.1	DEP		2.7X	165	3	
1961	NOV	21	0342	23.13	19	23.59	155	15.97	29.62	7	.05	2.6	1.4	DEP			107	2	
1961	NOV	21	2322	39.78	19	23.18	155	13.24	23.67	8	.10	1.6	2.4	DEP	F	4.1X	186	5	
1961	NOV	21	2325	56.89	19	19.94	155	14.13	27.26	9	.07	1.1	.8	DEP		2.7X	173	5	
1961	NOV	21	2327	6.05	19	17.95	155	11.82	21.40	8	.07	1.2	1.6	DEP		2.9X	188	11	
1961	NOV	21	2346	2.06	19	22.84	155	15.39	28.36	9	.09	1.8	1.1	DEP	F	3.2X	157	1	
1961	NOV	21	2348	19.26	19	24.32	155	16.58	28.36	9	.12	2.0	1.3	DEP		2.8X	88	1	
1961	NOV	22	0009	21.03	19	17.49	155	13.34	21.32	8	.10	1.3	1.7	DEP		3.0X	185	10	
1961	NOV	22	0327	30.06	19	22.11	155	14.19	28.29	9	.09	1.7	1.2	DEP		2.9X	163	3	
1961	NOV	22	0434	39.44	19	18.82	155	13.50	22.59	8	.22	1.9	2.4	DEP		2.5X	179	8	
1961	NOV	22	0536	36.58	19	25.88	155	14.30	19.26	6	.06	1.4	1.3	DEP		2.7X	141	5	
1961	NOV	22	0544	48.43	19	23.95	155	15.66	29.95	9	.06	1.7	1.0	DEP		3.2X	117	3	
1961	NOV	22	0735	58.57	19	23.14	155	15.65	30.59	6	.05	3.3	1.6	DEP		2.6X	235	1	
1961	NOV	22	0816	17.02	19	23.46	155	12.06	29.77	8	.11	2.4	1.5	DEP		2.7X	163	7	
1961	NOV	22	1055	55.86	19	23.39	155	16.03	27.07	9	.09	1.7	1.1	DEP	F	3.3X	102	2	
1961	NOV	22	1128	59.33	19	23.18	155	15.42	27.82	5	.02	3.2	1.5	DEP			253	2	
1961	NOV	22	1631	57.70	19	21.97	155	15.11	29.00	8	.05	2.1	1.4	DEP		2.7X	162	2	
1961	NOV	22	1632	41.91	19	19.94	155	14.81	27.35	9	.13	1.6	1.0	DEP		3.1X	171	5	
1961	NOV	22	1932	17.67	19	21.30	155	16.24	29.35	8	.09	2.4	1.5	DEP		2.6X	161	2	
1961	NOV	23	0205	45.27	19	22.35	155	16.01	28.70	8	.11	2.5	1.4	DEP		2.6X	158	0	
1961	NOV	23	0447	32.81	19	21.71	155	16.19	26.45	8	.09	2.2	1.4	DEP			160	1	
1961	NOV	23	0451	14.15	19	22.01	155	16.69	26.10	8	.08	2.1	1.3	DEP			158	2	
1961	NOV	23	0639	41.16	19	22.49	155	16.70	28.71	8	.10	2.4	1.3	DEP		2.8X	128	1	
1961	NOV	23	0724	54.87	19	20.79	155	15.74	26.70	8	.12	1.5	1.1	DEP		3.1X	165	8	
1961	NOV	23	1042	36.94	19	28.21	155	13.86	14.69	6	.06	1.5	.9	DEP			163	8	
1961	NOV	23	1629	36.40	19	22.75	155	15.74	29.62	8	.16	1.9	1.2	DEP	F	2.7X	157	6	
1961	NOV	23	1709	55.93	19	25.48	155	18.89	29.68	8	.15	1.4	1.0	DEP	F	3.5X	123	2	
1961	NOV	23	1714	31.01	19	23.80	155	15.48	26.81	10	.11	1.1	1.1	DEP	F	3.7X	126	3	
1961	NOV	23	1730	42.08	19	21.84	155	17.75	26.13	7	.05	1.3	1.6	DEP		2.7X	151	3	
1961	NOV	24	0535	41.23	19	21.67	155	15.05	27.96	10	.13	1.5	1.4	DEP	F	2.7X	163	2	
1961	NOV	24	0806	16.18	19	22.64	155	14.19	27.95	6	.04	3.2	1.6	DEP			304	3	
1961	NOV	24	1031	11.01	19	17.74	154	58.98	7.05	8	.20	1.8	15.8	LER	-	2.8X	290	31	
1961	NOV	24	1557	46.86	19	21.88	155	15.60	28.19	6	.08	3.2	1.6	DEP			281	1	
1961	NOV	24	1715	42.97	19	23.58	155	15.56	27.48	7	.09	2.7	1.5	DEP			126	2	
1961	NOV	24	2046	58.64	19	17.56	155	40.69	1.05	7	.12	4.0	13.6	LSW	-		254	27	
1961	NOV	25	0614	6.70	19	5.94	154	55.65	6.98	6	.13	5.5	1.7	DIS		2.6X	345	47	
1961	NOV	25	0614	22.04	19	16.64	155	7.64	12.90	9	.22	2.1	1.4	SF4		2.8X	246	18	
1961	NOV	25	1326	3.22	19	23.92	155	16.57	28.30	9	.09	1.7	1.3	DEP	F	3.9X	85	2	
1961	NOV	25	1914	58.98	19	21.53	155	16.85	29.37	8	.05	2.2	1.3	DEP		2.6X	159	2	
1961	NOV	25	2022	55.05	19	47.28	155	34.22	6.95	7	.09	1.9	11.3	KEA	-	2.5X	299	37	
1961	NOV	26	0910	40.99	19	20.85	155	15.15	25.93	8	.06	2.0	1.5	DEP		2.5X	167	3	
1961	NOV	26	2043	25.74	19	21.72	155	15.99	28.98	8	.06	2.2	1.4	DEP			160	1	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	11
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1961	NOV	27	0035	5.58	19	19.65	155	15.55	30.02	8	.12	3.5	2.5	DEP	#	2.6X	170	5	
1961	NOV	27	0132	34.78	19	27.01	155	19.84	37.70	7	.08	2.7	1.9	DML		3.0X	187	5	
1961	NOV	27	0215	53.97	19	19.47	155	26.69	13.72	6	.03	1.5	2.3	DML			300	6	
1961	NOV	27	0451	22.88	19	21.64	155	13.83	33.68	10	.13	2.1	1.2	DEP	F	3.4X	209	4	
1961	NOV	27	0943	56.40	19	21.18	155	15.31	29.90	8	.06	2.2	1.5	DEP		2.8X	164	2	
1961	NOV	27	1555	40.25	19	19.27	155	15.96	27.11	7	.07	1.9	1.6	DEP		2.8X	170	6	
1961	NOV	28	0449	16.59	19	20.58	155	13.22	39.09	6	.05	4.2	1.7	DEP			307	6	
1961	NOV	29	2105	8.37	19	21.84	155	58.80	6.85	6	.15	10.3	12.7	KON	-		344	62	
1961	NOV	30	0646	10.03	19	21.98	155	16.71	25.63	6	.06	2.7	1.4	DEP			194	2	
1961	NOV	30	1430	49.81	19	22.88	155	11.71	27.47	9	.10	1.3	1.8	DEP		2.8X	193	7	
1961	NOV	30	1651	17.65	19	22.49	155	14.43	27.89	9	.07	2.0	1.1	DEP		2.7X	233	3	
1961	NOV	30	1858	46.81	19	20.87	155	16.71	27.27	8	.12	2.4	1.6	DEP		3.0X	162	3	
1961	NOV	30	1932	17.36	18	59.28	155	28.60	7.25	5	.09	3.7	13.8	LSW	-		283	14	
1961	NOV	30	2014	26.41	19	21.67	155	15.78	28.01	8	.09	2.3	1.5	DEP		2.8X	161	1	
1961	DEC	1	0637	43.97	19	23.64	155	15.01	28.16	9	.07	1.9	1.0	DEP		2.5X	190	3	
1961	DEC	1	0733	59.17	19	23.76	155	40.12	0.86	8	.09	1.1	11.2	MLO	-	2.9X	194	30	
1961	DEC	1	0909	38.28	19	21.98	155	14.43	29.95	8	.07	3.0	.9	DEP		3.0X	259	3	
1961	DEC	2	0441	36.51	19	22.47	155	15.41	28.57	7	.04	2.8	1.6	DEP		2.8X	257	1	
1961	DEC	2	1857	59.39	19	21.68	155	16.84	35.69	10	.08	1.1	1.8	DEP	F	4.2X	158	2	
1961	DEC	2	1940	2.86	19	21.65	155	16.24	31.20	8	.02	2.2	1.3	DEP			160	2	
1961	DEC	2	2028	45.08	19	21.97	155	15.29	29.98	10	.07	1.2	1.0	DEP		2.4X	161	1	
1961	DEC	3	0101	35.96	19	23.67	155	25.53	6.41	9	.11	1.0	2.5	KAO		2.4X	174	7	
1961	DEC	3	1016	40.77	19	20.29	155	15.64	27.01	8	.12	2.4	1.9	DEP			167	4	
1961	DEC	3	1021	16.02	19	22.77	155	16.22	27.55	8	.07	2.1	1.2	DEP			88	1	
1961	DEC	3	1049	53.54	19	25.11	155	24.70	0.02	7	.11	1.6	.8	KAO	#	2.2X	211	9	
1961	DEC	3	1133	38.02	19	22.24	155	13.42	29.28	8	.06	2.7	2.2	DEP		2.6X	238	4	
1961	DEC	3	1658	33.77	19	13.85	155	26.09	8.26	5	.02	2.6	1.3	LSW		2.2X	173	13	
1961	DEC	4	0106	49.77	19	22.60	155	16.62	32.24	8	.09	1.1	1.7	DEP		2.7X	118	1	
1961	DEC	4	0412	17.44	19	24.72	155	16.43	30.48	10	.14	1.3	1.2	DEP		2.3X	93	1	
1961	DEC	4	0821	56.46	19	4.35	155	23.23	30.82	7	.07	4.2	3.1	LOI			247	21	
1961	DEC	4	1408	3.29	19	24.16	155	17.31	31.10	10	.18	1.6	1.3	DEP		2.7X	79	1	
1961	DEC	4	2008	58.04	19	21.06	155	16.81	30.98	8	.12	2.7	1.7	DEP		2.6X	161	3	
1961	DEC	4	2327	50.25	19	20.66	155	52.30	3.63	7	.15	7.2	10.6	KON	-	2.8X	295	43	
1961	DEC	5	0154	20.38	19	20.41	155	9.98	11.23	9	.12	1.4	.9	SF3		2.7X	183	11	
1961	DEC	5	0632	49.23	19	6.20	156	5.38	6.28	7	.13	8.8	12.6	KON	-	3.6X	313	78	
1961	DEC	5	1319	31.01	19	19.75	155	12.92	37.29	8	.06	3.3	2.5	DEP		3.1X	217	7	
1961	DEC	5	1711	15.20	19	20.81	155	51.92	6.87	7	.09	2.2	1.4	KON			295	43	
1961	DEC	5	2041	26.46	19	2.00	155	35.54	41.51	8	.14	5.5	7.1	DLS	F	3.3X	318	3	
1961	DEC	6	0308	5.91	19	20.47	155	1.30	39.90	8	.11	1.8	3.0	DEP		2.6X	246	19	
1961	DEC	6	1857	41.85	19	22.79	155	15.09	30.69	7	.08	2.8	2.5	DEP			176	2	
1961	DEC	6	2121	24.62	19	24.43	155	23.16	0.41	8	.12	.9	.6	KAO		2.2X	177	8	
1961	DEC	7	0942	59.76	19	25.43	155	18.13	29.36	6	.06	3.2	1.2	DEP		3.0X	123	1	
1961	DEC	7	1956	38.94	19	21.83	155	15.92	27.74	7	.04	2.3	2.0	DEP		2.5X	191	1	
1961	DEC	7	2004	6.48	19	20.63	155	16.22	26.91	6	.06	2.8	1.4	DEP			258	3	
1961	DEC	7	2040	55.78	19	21.22	155	16.28	28.26	6	.03	2.6	2.5	DEP			209	2	

---ORIGIN TIME (HST)--					-LAT N--		--LON W--		DEPTH	N	RMS	ERH	ERZ	LOC		PREF	AZ	MIN	12
YEAR	MON	DA	HRMN	SEC	DEG	MIN	DEG	MIN	KM	RD	SEC	KM	KM	REMKS		MAG	GAP	DS	
1961	DEC	7	2048	11.26	19	22.30	155	15.77	29.47	8	.09	2.3	1.4	DEP			158	0	
1961	DEC	8	0444	47.71	19	22.34	155	16.88	30.02	7	.06	2.7	1.3	DEP			165	2	
1961	DEC	9	1659	19.78	19	24.26	155	15.21	31.13	9	.12	2.4	1.5	DEP	F	2.5X	128	3	
1961	DEC	9	1937	52.97	19	37.75	156	0.72	7.15	8	.13	8.8	11.4	KON	-		313	67	
1961	DEC	10	2047	34.24	20	2.27	155	33.23	27.29	11	.13	1.6	2.3	KEA		2.7X	166	12	
1961	DEC	11	1703	17.12	19	18.58	155	54.02	0.25	9	.14	6.1	1.5	KON	#	3.3X	290	54	
1961	DEC	11	2155	31.96	19	25.80	155	14.40	26.85	10	.12	1.6	2.1	DEP	F	2.4X	127	5	
1961	DEC	12	1919	10.97	19	18.75	155	17.42	26.79	8	.11	2.4	2.0	DEP			169	7	
1961	DEC	13	0136	32.39	19	29.49	155	24.78	28.55	8	.11	1.1	1.7	DML		3.1X	134	15	
1961	DEC	14	0328	42.31	19	18.41	155	16.54	34.72	7	.04	2.0	3.2	DEP		2.7X	173	7	
1961	DEC	14	1756	10.06	19	6.31	155	26.44	34.24	5	.05	3.1	2.5	DLS			336	26	
1961	DEC	15	1037	21.36	19	30.15	154	48.37	9.68	6	.06	5.5	2.4	LER			344	50	
1961	DEC	15	1117	58.95	19	23.59	155	16.96	19.64	8	.07	1.5	1.8	DEP	F	3.2X	110	2	
1961	DEC	16	2048	59.82	19	36.01	155	18.36	0.52	9	.11	1.7	.5	KEA		2.3X	201	14	
1961	DEC	17	0522	18.83	19	16.54	155	18.31	28.66	7	.13	2.5	2.4	DEP		2.2X	175	11	
1961	DEC	17	0546	15.53	19	21.16	155	16.74	25.70	8	.04	1.7	1.5	DEP		2.5X	161	3	
1961	DEC	17	0719	44.37	19	26.60	155	18.90	32.25	8	.07	2.6	1.4	DEP		2.8X	183	3	
1961	DEC	17	0750	52.44	19	40.95	155	52.45	19.37	9	.16	3.3	16.3	HUA	F-	3.3X	216	55	
1961	DEC	20	0659	41.44	19	27.32	155	14.64	23.80	7	.20	2.7	1.4	DEP			154	6	
1961	DEC	21	0030	6.95	19	21.19	155	15.28	31.80	7	.18	3.4	2.2	DEP			164	2	
1961	DEC	21	0304	55.65	19	57.36	155	18.52	12.48	11	.11	2.3	1.3	KEA		2.3X	217	35	
1961	DEC	22	0557	46.21	19	18.43	155	38.26	0.52	7	.09	2.5	11.2	LSW	-	2.5X	243	26	
1961	DEC	23	0140	31.92	19	22.87	155	15.50	26.58	7	.05	2.4	1.4	DEP			151	1	
1961	DEC	23	0501	11.80	19	21.92	155	15.92	28.87	7	.05	3.0	1.2	DEP			255	1	
1961	DEC	23	0637	14.10	19	20.76	155	31.90	6.89	7	.09	2.0	1.1	KAO		2.7X	319	22	
1961	DEC	23	0818	32.88	19	22.56	155	16.74	29.39	8	.07	2.0	1.4	DEP		2.7X	149	1	
1961	DEC	23	1129	0.06	19	23.05	155	16.23	30.43	8	.08	2.3	1.2	DEP			91	1	
1961	DEC	24	0741	21.23	19	18.49	155	15.44	3.03	7	.06	1.4	1.0	SSF			262	7	
1961	DEC	24	1053	11.68	19	20.10	155	17.55	32.71	8	.09	2.3	2.2	DEP		2.6X	163	5	
1961	DEC	24	1054	41.25	19	25.03	155	15.48	27.37	9	.09	1.0	1.1	DEP		3.1X	114	3	
1961	DEC	24	2134	25.65	19	24.19	155	25.90	5.36	7	.12	1.2	6.4	KAO		2.0X	235	9	
1961	DEC	24	2229	35.51	19	26.56	155	25.61	3.69	9	.13	1.6	4.0	KAO		2.4X	234	7	
1961	DEC	25	1017	45.61	19	27.11	155	24.80	1.29	8	.12	1.8	.7	KAO		2.3X	219	6	
1961	DEC	25	1959	24.24	19	19.19	155	5.97	12.48	6	.14	3.5	4.8	SF4		2.7X	331	18	
1961	DEC	26	1948	4.19	19	31.01	156	3.22	7.00	6	.19	12.4	16.3	KON	-	3.2X	346	70	
1961	DEC	27	1714	28.23	19	13.74	155	38.45	5.90	9	.10	1.8	1.3	LSW		2.8X	239	19	
1961	DEC	28	0028	44.22	19	16.80	154	58.01	5.28	7	.09	4.9	10.5	LER	-	2.9X	274	24	
1961	DEC	28	2242	57.42	19	23.67	155	13.28	30.91	9	.07	2.0	1.7	DEP		2.5X	222	5	
1961	DEC	28	2243	33.96	19	23.22	155	15.71	28.08	9	.10	1.8	2.2	DEP		2.8X	123	2	
1961	DEC	28	2251	2.05	19	22.03	155	16.68	27.62	7	.04	2.4	1.2	DEP			187	2	
1961	DEC	28	2339	25.14	19	20.05	155	12.62	10.88	4	.00	3.2	3.0	SF2			214	7	
1961	DEC	28	2344	7.13	19	22.35	155	15.67	29.63	7	.03	2.6	1.3	DEP			187	0	
1961	DEC	28	2346	9.48	19	5.40	155	27.85	44.27	9	.06	2.7	2.1	DLS			208	13	
1961	DEC	28	2350	0.53	19	1.88	155	25.55	53.52	6	.12	5.0	5.4	DLS			258	17	
1961	DEC	29	0001	16.36	19	22.15	155	16.90	27.36	7	.08	2.6	1.3	DEP			178	2	

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---ORIGIN TIME (HST)-- -LAT N-- --LON W-- DEPTH  N RMS ERH ERZ LOC    PREF AZ MIN  13
YEAR MON DA HRMN  SEC  DEG MIN  DEG  MIN    KM  RD SEC  KM  KM REMKS  MAG  GAP DS

1961 DEC 29 0100 13.95 19 23.08 155 16.16 29.34  6 .01 3.0 1.5 DEP         183  1
1961 DEC 29 0223 41.95 19 23.78 155 17.77 28.48  7 .07 2.6 1.3 DEP         109  2
1961 DEC 29 0245 14.24 19 22.17 155 14.52 30.12  6 .03 3.2 1.6 DEP         297  2
1961 DEC 29 1114 53.95 19 23.15 155 15.97 25.94  7 .09 2.6 1.5 DEP    2.6X 105  1
1961 DEC 29 1122  3.87 19 23.03 155 15.19 27.45  7 .08 2.7 1.5 DEP         159  2

1961 DEC 29 1356 11.95 19 23.69 155 14.63 28.65  7 .03 2.5 1.4 DEP         154  3
1961 DEC 29 1609  7.85 18 59.24 155 15.77 11.38  7 .22 2.0 1.7 LOI         284 35
1961 DEC 29 2014 13.47 19 23.53 155 15.43 25.23  7 .07 2.4 1.4 DEP         132  2
1961 DEC 29 2307 50.99 19 22.11 155 15.43 29.28  7 .05 2.6 1.4 DEP         190  1
1961 DEC 30 0334 56.83 19 24.75 155 16.98 30.83  9 .11 1.9 1.4 DEP    2.0X  81  0

1961 DEC 30 1209 30.16 19 48.43 155 27.20  6.95  7 .08 1.311.8 KEA  - 2.5X 292 39
1961 DEC 30 1308 22.38 19 22.72 155 16.64 27.28  7 .04 1.7 1.6 DEP    2.9X 135  1
1961 DEC 31 0603 23.85 19 47.70 155 32.69 13.26  9 .10 1.4 1.7 KEA F  2.8X 171 28
1961 DEC 31 0743 45.15 19 22.89 155 27.36  2.20  9 .10 1.0 1.4 KAO    3.1X 187  9
1961 DEC 31 0813  6.95 19 15.77 155 13.07 10.97  9 .13 1.3  .9 SF2    2.3X 248 13

1961 DEC 31 0852 10.16 19 21.49 155 14.65 28.34 10 .15 1.8 2.3 DEP F  4.1X 198  3
1961 DEC 31 0901 39.43 19 22.79 155 15.27 27.68  7 .04 2.5 1.4 DEP         169  1
1961 DEC 31 0914  7.93 19 24.67 155 14.24 29.96  7 .08 3.0 1.7 DEP         142  5
1961 DEC 31 0937 42.90 19 22.67 155 15.42 30.70  7 .13 3.5 1.8 DEP         172  1
1961 DEC 31 0954 35.42 19 22.45 155 13.88 30.32  7 .07 2.9 1.6 DEP         191  4

1961 DEC 31 1103 55.55 19 21.81 155 13.86 29.75  9 .12 1.9 1.5 DEP    2.6X 166  4
1961 DEC 31 1136 27.98 19 23.77 155 14.62 25.96  9 .13 1.6 1.5 DEP    1.9X 152  3
1961 DEC 31 1138 19.14 20 47.30 154 49.31 15.09 11 .11 3.8 7.4 DIS    3.5X 276121
1961 DEC 31 1342 40.21 19 23.38 155 13.42 26.49  8 .08 1.2 1.5 DEP    2.3X 180  5
1961 DEC 31 1907 23.08 19 23.09 155 16.62 28.07 11 .12 1.5 1.3 DEP    2.7X 111  2

1961 DEC 31 2320 36.37 19 24.43 155 17.08 29.85  8 .04 1.7 1.2 DEP    2.7X 161  1
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Hawaiian Volcano Observatory

1962 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 25

January, February, and March 1962

By Robert Y. Koyanagi, Harold L. Krivoy, and Arnold T. Okamura

with an introduction By Chester K. Wentworth

Summary 26

April, May, and June 1962

By Arnold T. Okamura, Robert Y. Koyanagi, and Harold L. Krivoy

and

Report on the International Symposium on Volcanology, Tokyo, 1962, By Howard. A. Powers

Summary 27

July, August, and September 1962

By Arnold T. Okamura, George Kojima, and Akira Yamamoto

and

Direction of First Motion from Four Earthquakes from a Single Focus By Harold L. Krivoy

Summary 28

October, November, and December 1962

By Harold L. Krivoy, Robert Y. Koyanagi, Arnold T. Okamura, and George Kojima

and

The 1962 Flank Eruption of Kīlauea By James G. Moore

Open-File Report 2007-1322

U.S. Department of the Interior

U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 25

January, February, and March, 1962

By

R. Y. Koyanagi, H. L. Krivoy, and A. T. Okamura

with an introduction by C. K. Wentworth

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HAWAIIAN VOLCANO OBSERVATORY SUMMARY 25

By R. Y. Koyanagi, H. L. Krivoy, and A. T. Okamura

Introduction

Of interest to students of Hawaiian volcanism are the various approaches to the natural history of this region. Dr. Chester K. Wentworth of the HVO staff very kindly prepared the following short summary of his more detailed work on the subject of the history of the Hawaiian Volcano Observatory. We are very pleased to present this abstract, therefore, as a guide to historical researches in Hawaiian volcanism. Scientists, as well as the agencies which support them, are quite incidental to the ageless volcanic process. Dr. Wentworth describes the painful--often penurious--circumstances under which workers in Hawaii have labored to examine a minuscule sample of the countless events that have built the volcanoes.

History of the Hawaiian Volcano Observatory

By Chester K. Wentworth

The earliest recording of events and history at Kilauea Volcano was the work of certain individuals among the Protestant missionaries, who first arrived in Hawaii in 1820. There were legends among the Polynesians for the preceding centuries, which were recorded by the missionaries, and also a few notes from the voyages of Cook and Vancouver.

The condition and history of Kilauea first became known to the world through the journals and diaries of certain members of the missionary company who speculated about volcanic behavior at the time when valid accounts were just beginning to be formulated in the rest of the world. There were also the visits of naval expeditions coming to Hawaii with various missions in the first half of the 19th century; these usually visited Kilauea as a favored "world wonder." Several of these expeditions left printed accounts or maps. Later there were specific scientific missions that issued reports.

From the arrival of the missionaries, there were individuals among them who made repeated visits to the volcanoes and developed a comparative narrative. There was a growing facility and permanence of communication. Among the recurrent visitors were those who emphasized the need for a permanent agency and station for observation and analysis of Kilauea. Such suggestions were made for 50

years before the first effective steps were taken by Thomas A. Jaggar to organize local interest by means of the Hawaiian Volcano Research Association and to gain the support of the Massachusetts Institute of Technology. The first continued observations were made by F. A. Perret, in 1911, from temporary buildings on the floor of Kilauea caldera, near the edge of the Halemaumau pit. In early 1912, a permanent observatory building was built, largely with labor and materials donated by the citizens of Hilo, and T. A. Jaggar arrived to take resident charge, with the continued cooperation of H.V.R.A. and M.I.T.

Publication of the Bulletins of the Hawaiian Volcano Observatory was commenced. During the first decade of the Observatory, Perret, and H. O. Wood were observers. Later, in 1919, the sponsorship of the Observatory, with the same staff and facilities, was transferred to the U.S. Weather Bureau. At that time R. H. Finch, who had been with the latter bureau, came out as assistant to Jaggar.

In 1924 came the spectacular steam-blast eruption by which Halemaumau was enlarged to 3,000 feet in diameter and more than 1,300 feet deep. In July 1924 the Observatory control was assumed by the U.S. Geological Survey. After the 1924 explosion, Halemaumau was filled slowly, mostly by small flows coming into the bottom of the shallowing pit. Different techniques continued to be devised for studying the underground activity. In 1935 the Volcano Observatory became a part of the Hawaii National Park with the same objectives as before but with a closer participation in the work of the Park Service.

Dr. Jaggar retired in 1940. During the ensuing several years of the war, Finch, who had succeeded Jaggar as volcanologist, managed to keep active a minimum program of observations. He also preserved intact essential property of the Observatory which otherwise might have been lost in the course of moves made necessary by the burning of the Volcano House hotel and by growth of Park Service activities. Late in 1947, the station was transferred back to the U.S. Geological Survey. Since that time there has been a continued growth of the staff in numbers and skills. The facilities and support have been greatly increased.

The 1950's and early 1960's were marked by several types of activity, adding greatly to the experience of observers of this generation. However, Kilauea being a prodigious uncontrolled phenomenon of irregular habits, it is increasingly evident that only observing and recording events over many human generations, or thousands of years, can build a picture of total activity that will support any presumption to generalize or predict.

Chronological summary

The summit of Kilauea Volcano continued to swell throughout the last quarter of 1961 and the first quarter of 1962. Outward tilting of the ground at the inner ring of tilt-bases (U, TM, Kea, and Kam) averaged about 12 microradians per month from October 8, 1961 to January 5, 1962 (fig. 1) and about 6 microradians per month from January 5, 1962 to March 29, 1962 (fig. 2). The most distant tilt-base, HP, tilted gently toward the caldera during both quarters, while gentle tilting at Kal and KN showed no consistent tilting pattern.

The frequency of feeble shallow earthquakes from the vicinity of Kilauea caldera increased steadily throughout the quarter. From about 20 per day during the last 3 months of 1961, the average daily count of these earthquakes increased to 46, 53, and 83 during January, February, and March, respectively. Earthquakes from the source about 30 km beneath Halemaumau were prominent again during this quarter, averaging nearly 10 per day; the largest number--113--occurred on March 23. In late February another persistent source of earthquakes developed along the southeastern flank of Kilauea. The seismograms of these earthquakes are very difficult to interpret: normal phases, such as S, are very poorly developed, and recorded amplitudes diminish rapidly between the nearest stations (A, N, and U) and the next closest ones (Pa, D, ML, Hi).

Five earthquakes were reported felt during January; all of them were associated with Kilauea Volcano. The largest, of magnitude 4.0, originated 14 km southwest of Pahoa on January 7 and was felt throughout the island. The three earthquakes felt during February all originated about 30 km beneath Kilauea caldera on February 7. The largest earthquake of the month was not felt. It occurred beneath the sea about 35 km southeast of Cape Kumukahi on February 10.

Eight earthquakes were reported felt during March, and all but one of them originated beneath Kilauea. The one exception occurred at a depth of about 15 km beneath Puu Waawaa on March 9. It has a magnitude of about 4.0 and was felt over half of the island. The two largest earthquakes of the month both originated about 30 km beneath Halemaumau and were felt over the entire island. The first, with a magnitude of 4.4, occurred on March 23; the second, with a magnitude of 4.5, occurred on March 30.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna vault (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter

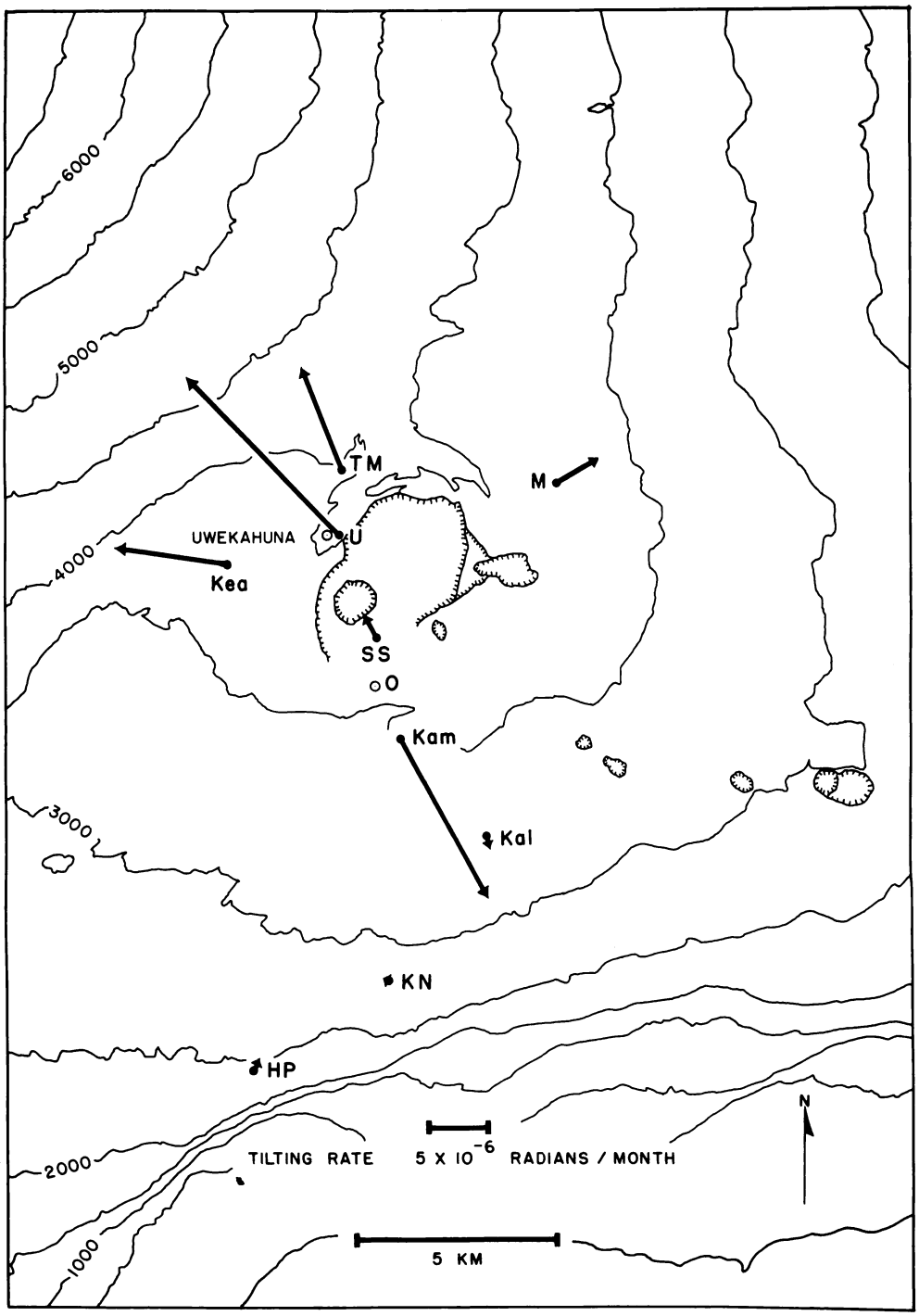

Figure 1.--Tilting of the ground around Kilauea caldera, October 8, 1961, to January 5, 1962. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

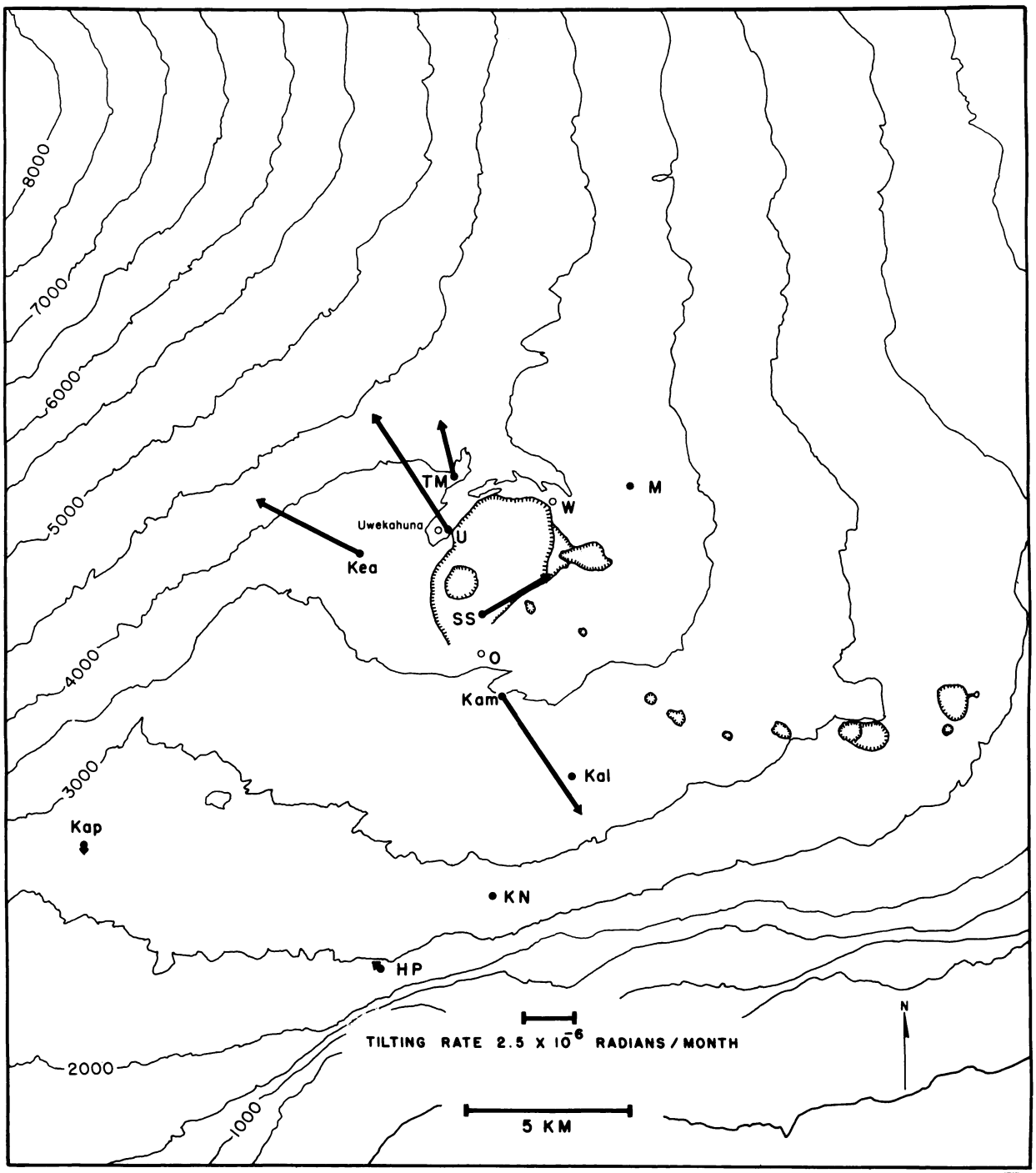

Figure 2.--Tilting of the ground around Kilauea caldera, January 5, 1962, to March 29, 1962. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. The area covered by this diagram has been increased to include the new tilt base at Kapapala (Kap).

Table 1.--Tilt coordinates at Uwekahuna vault, January, February, and March, 1962

Date	N-S	E-W	Date	N-S	E-W
Jan. 7	411	553	Feb. 18	423	543
14	418	551	25	426	537
21	418	552	Mar. 4	427	536
28	419	550	11	438	537
Feb. 4	419	546	18	429	535
11	421	546	25	429	536

(table 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, that is, to a relative subsidence toward the north and east. A 1-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating farther than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 3, and essential data on the stations are given in table 6.

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera (see figs. 1 and 2)

Tilt base (location)	Date (1962)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1961)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Jan. 2	394.1	531.1	17.3	N. 44° W.	Oct. 6
Tree Molds (19°26.3' N., 155°17.3' W.)	4	412.9	519.4	8.7	N. 22° W.	7
Sand Spit (19°24.1' N., 155°16.8' W.)	9	844.1	693.4	2.0	N. 29° W.	11
Kalihipaa (19°21.4' N., 155°15.3' W.)	5	583.4	422.3	1.1	S. 18° E.	8
Keamoku (19°25.1' N., 155°19.0' W.)	5	447.0	651.0	9.0	N. 82° W.	8
Kamokukolau (19°22.7' N., 155°16.6' W.)	3	733.6	489.0	14.4	S. 29° E.	7
Kipuka Nene (19°19.4' N., 155°16.7' W.)	4	516.7	494.4	0.4	N. 66° W.	9
Hilina Pali (19°18.2' N., 155°18.6' W.)	8	513.7	499.2	1.0	N. 28° E.	9
Mehana (19°26.2' N., 155°14.3' W.)	2	525.7	536.6	3.3	N. 83° E.	10
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	9	501.0	501.4	0.8	N. 55° E.	10

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera (see figs. 1 and 2)

Tilt base (location)	Date (1962)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1962)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Mar. 27	409.2	521.3	6.4	N. 33° W.	Jan. 2
Tree Molds (19°26.3' N., 155°17.3' W.)	27	420.5	517.5	2.8	N. 14° W.	4
Sand Spit (19°24.1' N., 155°16.8' W.)	29	849.2	701.9	3.7	N. 59° E.	9
Kalihipaa (19°21.4' N., 155°15.3' W.)	28	583.2	422.1	0.1	S. 56° W.	5
Keamoku (19°25.1' N., 155°19.0' W.)	29	453.8	637.6	5.4	N. 63° W.	5
Kamokukolau (19°22.7' N., 155°16.6' W.)	28	717.6	499.6	6.8	S. 34° E.	3
Kipuka Nene (19°19.4' N., 155°16.7' W.)	Apr. 5	516.4	494.6	0.1	S. 34° E.	4
Hilina Pali (19°18.2' N., 155°18.6' W.)	4	515.0	498.2	0.6	N. 50° W.	8
Mehana (19°26.2' N., 155°14.3' W.)	-------	------	------	-----	---------	---------
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	Mar. 30	500.0	501.4	0.4	Due south	9

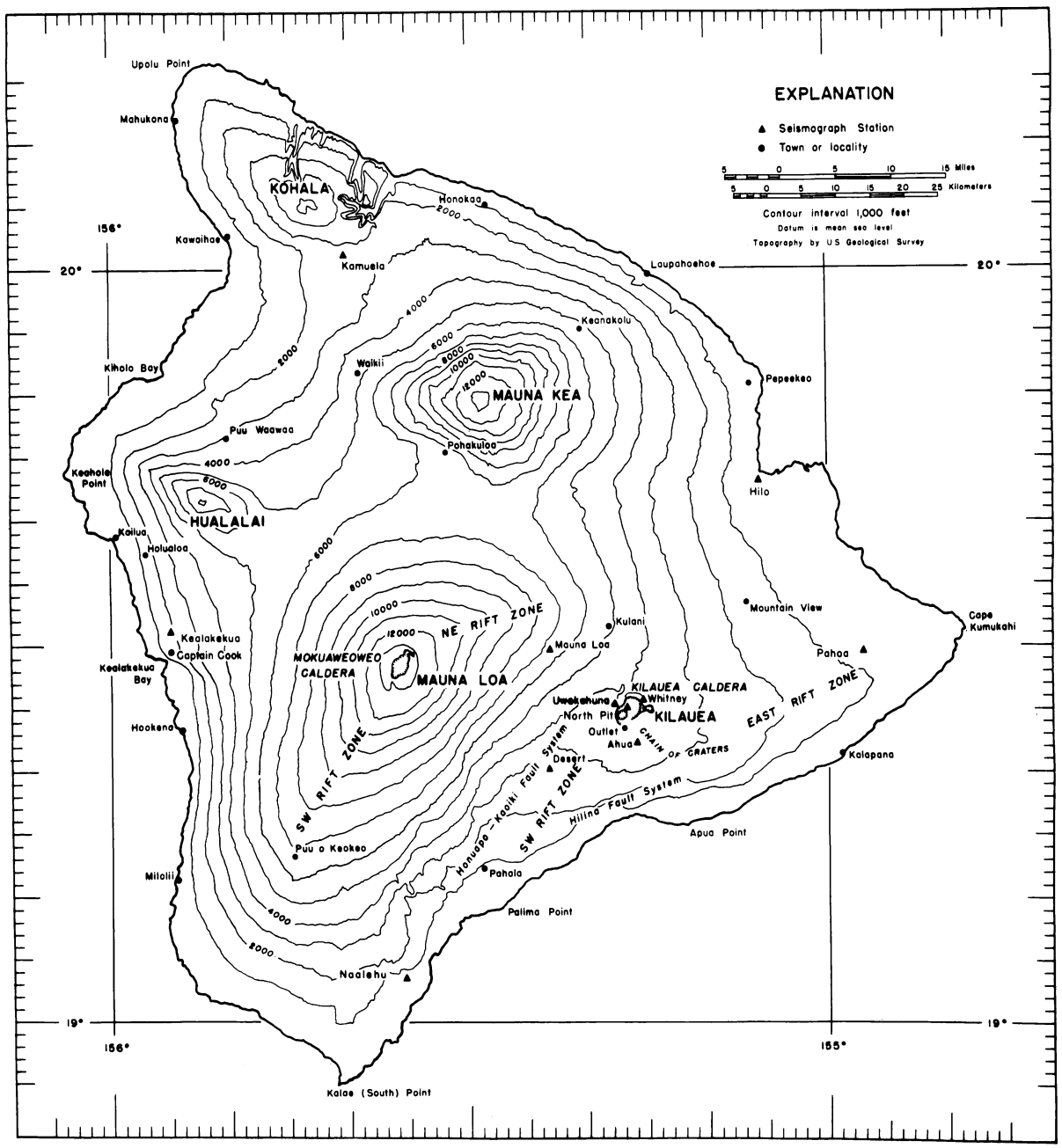

Figure 3.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea caldera (U, M, A, D, and N)

[Tremor is separated into three categories--(1) deep, (2) intermediate, and (3) shallow--on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Halemaumau rock slides (4) are detected by the characteristic record they produce on the North Pit seismograph.

Earthquake categories are: 5, shallow earthquakes in the Kilauea caldera region;
6, shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system;
7, earthquakes along the eastern half of Kilauea's east rift zone;
8, earthquakes from a source about 30 km beneath Halemaumau;
9, shallow earthquakes along the Kalapana Trail (SE. flank of Kilauea 10 to 15 km W. of Kalapana);
10, earthquakes from other regions: Kona, Mauna Kea, etc.]

Date (1962)	Tremor (in minutes)			Halemaumau slides	Kilauea caldera	SW. rift	E. rift	30 km	Kalapana Trail	Others
	Deep	Intermediate	Shallow							
	1	2	3	4	5	6	7	8	9	10
Jan. 1	----	----------	-------	1	82	10	----	9	--------	----------
2	----	5	-------	----------	88	5	----	18	--------	1
3	----	----------	-------	8	76	20	3	9	--------	----------
4	----	3	-------	8	118	5	4	2	--------	----------
5	----	----------	-------	----------	27	10	13	7	--------	----------
6	----	----------	-------	----------	30	6	8	10	--------	2
7	----	----------	-------	----------	53	6	3	2	--------	----------
8	----	----------	-------	1	41	3	----	5	--------	----------
9	----	----------	-------	----------	33	6	1	7	--------	----------
10	----	----------	-------	----------	40	4	1	6	--------	1
11	----	----------	5	3	41	5	3	7	--------	----------
12	----	----------	-------	2	61	15	----	2	--------	----------

	13	4	----------	-------	----------	51	5	1	3	--------	1 (Kona)
	14	----	3	9	1	95	7	----	6	--------	3
	15	----	----------	6	----------	81	7	----	3	--------	3
	16	----	----------	-------	----------	35	10	----	3	--------	----------
	17	----	----------	-------	----------	70	8	----	6	--------	1
	18	----	3	-------	----------	4	3	----	2	--------	3 (15 km)
	19	----	----------	8	----------	44	4	2	2	--------	1 (Kona)
	20	----	----------	2	----------	31	8	2	---	--------	----------
	21	----	----------	-------	1	22	8	----	8	--------	----------
	22	----	7	-------	----------	36	4	----	2	--------	1 (Kona)
	23	----	----------	-------	----------	23	10	1	4	--------	1 (Mauna Loa)
	24	----	5	-------	2	30	8	1	17	--------	----------
	25	----	5	-------	----------	45	5	2	3	--------	----------
	26	----	12	-------	----------	22	14	----	16	--------	----------
	27	----	2	-------	----------	27	11	----	4	--------	----------
	28	----	----------	-------	----------	33	8	2	6	--------	1 (Kona)
	29	----	----------	7	----------	31	5	1	5	--------	----------
	30	----	----------	-------	----------	29	6	1	3	--------	----------
	31	----	----------	-------	----------	33	22	----	3	--------	1
Feb.	1	15	----------	-------	2	25	5	4	2	--------	1 (Kona)
	2	----	----------	-------	----------	60	8	4	4	--------	1 (S. Point)
	3	----	----------	-------	1	47	9	----	7	--------	1 (Kona)
	4	----	----------	-------	----------	51	10	----	12	--------	----------
	5	----	4	-------	----------	60	13	1	5	--------	----------
	6	----	2	-------	----------	74	18	1	13	--------	6
	7	----	----------	-------	----------	40	8	1	70	--------	----------
	8	----	----------	-------	----------	35	14	3	3	--------	1 (Kona)
	9	----	----------	3	----------	30	7	----	3	--------	----------
	10	----	2	-------	1	58	3	2	4	--------	3
	11	----	----------	-------	2	59	7	----	7	--------	1 (Kona)
	12	----	3	-------	3	40	10	1	3	--------	----------
	13	----	6	-------	7	45	6	1	3	--------	----------
	14	----	----------	-------	5	44	16	1	3	--------	----------
	15	----	----------	-------	----------	40	14	3	2	--------	3 (Kohala, Kona)
	16	----	----------	-------	1	25	8	----	5	--------	2
	17	----	----------	-------	----------	52	10	1	---	--------	2
	18	----	----------	-------	----------	27	13	----	3	--------	----------
	19	----	----------	-------	----------	33	17	1	3	--------	1 (Kona)
	20	----	----------	-------	----------	52	7	1	3	--------	1 (Mauna Loa)
	21	----	----------	-------	3	70	8	1	4	--------	----------
	22	----	----------	-------	----------	38	----	----	11	2	----------

	23	----	----------	-------	----------	55	11	2	9	1	1 (Maui)
	24	----	----------	-------	----------	70	12	----	3	--------	----------
	25	----	----------	-------	----------	65	8	2	15	1	2
	26	----	----------	-------	----------	66	5	1	5	3	----------
	27	----	----------	-------	1	66	13	----	4	3	----------
	28	----	----------	20	----------	70	8	1	6	1	1 (Kona)
Mar.	1	----	----------	-------	2	73	15	5	4	--------	----------
	2	----	----------	-------	----------	100	9	2	7	1	2 (Pahala)
	3	----	----------	-------	3	67	13	3	23	5	----------
	4	----	----------	-------	1	82	20	2	4	4	----------
	5	----	----------	-------	----------	81	16	3	3	2	1 (Kona)
	6	----	----------	-------	----------	150	9	2	7	--------	----------
	7	----	----------	5	----------	155	13	1	6	2	----------
	8	35	----------	-------	----------	96	21	----	6	4	1 (Naalehu)
	9	----	----------	-------	----------	95	35	3	7	6	2 (Mauna Loa)
	10	----	----------	-------	----------	103	33	1	1	3	1 (Olaa)
	11	----	----------	-------	----------	96	26	1	12	--------	----------
	12	----	----------	6	1	70	11	2	1	1	----------
	13	----	----------	-------	----------	70	5	----	3	1	5
	14	----	----------	-------	3	57	8	----	5	1	----------
	15	----	----------	-------	1	64	10	1	---	1	----------
	16	----	----------	-------	----------	60	7	2	2	--------	----------
	17	----	----------	-------	1	50	14	----	5	1	----------
	18	39	----------	-------	----------	55	9	5	3	--------	----------
	19	----	----------	-------	----------	51	6	----	9	--------	----------
	20	----	----------	8	----------	65	9	2	8	5	----------
	21	----	----------	-------	----------	62	11	2	25	2	----------
	22	----	----------	-------	1	58	12	2	5	2	----------
	23	----	----------	-------	----------	50	5	2	113	--------	1 (S. Point)
	24	----	----------	-------	----------	72	27	1	24	--------	2 (S. Point)
	25	----	----------	-------	----------	74	30	6	17	3	3
	26	----	----------	-------	----------	59	7	2	5	3	----------
	27	----	----------	-------	----------	61	30	2	14	1	----------
	28	----	----------	-------	----------	120	17	8	8	--------	1
	29	----	----------	-------	----------	146	24	3	4	--------	----------
	30	----	----------	-------	----------	85	14	3	20	--------	----------
	31	----	----------	3	----------	160	19	4	10	--------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1962

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Origin time is Hawaiian standard.

In the following list some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted in other summaries. They were prominent in this quarter and so are listed in this abbreviated fashion. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

In the Chronological summary another recurrent earthquake type was described. The table of daily events in this quarter has been expanded to include earthquakes of this type, which are listed in column 9 (table 3). In the following list, origin times of these quakes are followed by "KT" (Kalapana Trail). The tentative epicenter for these quakes is 19°20' N., 155°05' W. This location is remote from habitation and traffic, and these quakes are generally not felt. Because they originate at very shallow depths and far from our seismometer concentrations, these quakes are poorly recorded, and the epicenter given above is only approximate]

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Jan. 3	11	51	41.8	3.1	19°27.0'	155°11.7'	12 km ENE. of Uwekahuna seismograph. Felt at Volcano.	25 km deep.
3	18	16	41.6	3.1	19°26.6'	155°12.5'	10 km ENE. of Uwekahuna seismograph. Felt at Volcano.	Do.
4	06	39	55.1	2.8	19°56.5'	155°05.5'	12 km NNE. of Pepeekeo--	12.5 km deep.
5	01	23	35.4	2.8	19°18.8'	155°07.0'	11 km NE. of Apua Point-	3 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Jan. 5	11	57	04.6	3.0	19°23.5'	155°23.2'	7 km N. of Desert seismograph.	3 km deep.
6	05	36	46.3	2.7			KM 30.	
7	01	40	55.1	2.3	19°12.1'	155°13.8'	7 km SW. of Apua Point---	15 km deep.
7	02	57	53.4	4.0	19°24.5'	155°03.1'	14 km SW. of Pahoa. Felt throughout the island.	5 km deep.
7	09	17	27.6	2.7	19°31.1'	155°36.0'	5 km NNW. of Mokuaweoweo caldera.	3 km deep.
7	12	29	29.4	2.9			KM 30.	
8	15	18	17.7	2.5			KM 30.	
9	17	44	22.4	3.0	19°13.2'	155°32.8'	8 km WNW. of Pahala------	12.5 km deep.
10	02	57	50.8	3.0			KM 30.	
10	16	59	52.1	2.9	21°16.0'	155°25.0'	125 km NE of Upolu Point-	----do--------
14	08	10	49.9	2.9	19°30.0'	155°42.2'	22 km ESE. of Kealakekua-	3 km deep.
17	18	58	45.5	2.3	19°20.2'	155°13.3'	7 km SE. of Ahua seismograph.	8 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Jan. 18	17	07	06.5	2.4			KM 30.	
20	03	01	20.3	2.6	19°31.8'	155°42.9'	23 km E. of Kealakekua---	3 km deep.
21	04	05	36.5	3.1	19°23.0'	155°02.0'	7 km NW. of Kalapana-----	50 km deep.
21	16	31	08.9	2.8			KM 30. Felt at Volcano.	
25	07	55	45.9	2.3	19°06.2'	155°45.5'	20 km WNW. of Naalehu----	8 km deep.
26	14	04	23.2	3.3	19°15.8'	155°12.8'	2 km W. of Apua Point. Felt from Hilo to Volcano.	15 km deep.
28	08	21	51.5	3.0	19°35.8'	155°49.8'	13 km NE. of Kealakekua--	3 km deep.
Feb. 1	19	30	08.3	2.5	19°31.0'	154°35.0'	25 km E. of Cape Kumukahi.	12.5 km deep.
3	23	41	25.7	2.0	19°22.8'	155°26.2'	8 km NW. of Desert seismograph.	8 km deep.
4	07	33	26.2	3.0	19°42.2'	155°56.0'	21 km NNW. of Kealakekua-	8 km deep.
6	19	27	26.1	2.2	19°20.7'	155°04.3'	22 km SW. of Pahoa-------	5 km deep.
6	20	49	42.1	2.8	19°22.1'	154°51.7'	17 km SE. of Pahoa-------	8 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Feb. 6	22	49	00.0	2.8	19°50.4'	155°34.4'	30 km SSW. of Honokaa----	3 km deep.
7	01	30	25.2	2.9			KM 30.	
7	06	09	20.3	2.9			KM 30.	
7	10	06	35.2	3.5			KM 30. Felt at Volcano.	
7	10	10	43.0	3.5			KM 30. Felt at Volcano.	
7	10	49	18.3	2.7			KM 30.	
7	11	13	40.9	2.4			KM 30.	
7	11	57	07.4	3.1			KM 30.	
7	15	26	39.3	2.9			KM 30. Felt at Volcano.	
7	15	29	45.0	2.5			KM 30.	
7	20	39	46.5	2.7			KM 30.	
8	16	15	51.8	2.5	19°40.0'	156°32.0'	50 km WSW. of Keahole Point.	8 km deep.
8	16	34	44.6	2.5	19°10.1'	155°22.2'	13 km ESE. of Pahala-----	3 km deep.
10	16	00	46.6	4.0	19°18.2'	154°33.0'	35 km SE. of Cape Kumukahi	Do.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Feb. 11	06	04	32.0	3.0	19°42.7'	156°05.0'	12 km NW. of Kailua------	8 km deep.
11	14	21	52.8	2.8	19°31.3'	155°51.4'	7 km ENE. of Kealakekua--	3 km deep.
14	00	58	25.2	2.5	19°35.2'	155°49.0'	13 km NE. of Kealakekua---	Do.
14	06	31	55.0	2.3	19°24.5'	155°27.6'	12 km SW. of Mauna Loa seismograph.	5 km deep.
15	09	01	21.7	2.9	19°31.6'	155°50.5'	8 km ENE. of Kealakekua--	3 km deep.
15	20	33	44.2	2.6	20°05.1'	155°50.1'	5 km N. of Kawaihae------	12.5 km deep.
15	22	40	44.3	2.7	20°01.5'	155°50.0'	2 km S. of Kawaihae------	8 km deep.
16	07	52	27.5	2.7	19°52.2'	156°00.0'	17 km NE. of Keahole Point.	12.5 km deep.
17	02	47	34.9	2.8			KM 30.	
23	05	01	54.8	2.7			KM 30.	
23	05	51	18.6	2.9	19°12.7'	155°40.7'	19 km NW. of Naalehu-----	8 km deep.
23	16	44	48.1	2.0	19°25.7'	155°29.1'	13 km SW. of Mauna Loa seismograph.	Do.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1962--Continued

Date	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Feb. 23	19	03	59.3	2.8	21°09.0'	155°38.0'	102 km NNE. of Upolu Point	12.5 km deep.
25	12	54	33.0	3.2	19°06.9'	155°37.8'	7 km NW. of Naalehu-------	Do.
25	18	55	10.4	2.7			KT.	
26	22	24	38.7	3.0			KT.	
Mar. 3	02	29	28.0	2.0	19°06.5'	155°21.4'	17 km SE. of Pahala-------	15 km deep.
4	01	32	13.7	2.5			KT.	
4	03	37	58.3	2.7	19°39.2'	154°56.1'	18 km NNE. of Pahoa-------	Do.
6	02	50	33.0	2.7	19°32.0'	155°51.0'	7 km ENE. of Kealakekua---	3 km deep.
8	21	14	43.1	2.6	19°09.6'	155°37.7'	11 km NW. of Naalehu------	12.5 km deep.
9	21	39	02.2	3.3			KT. Felt at Volcano.	
9	23	46	19.0	4.0	19°47.8'	155°50.3'	2 km NNE. of Puu Waawaa. Felt in half the island.	15 km deep.
10	00	24	38.0	2.7			KT.	
10	00	34	56.9	2.3			KT.	
10	21	37	04.4	2.3	19°32.7'	155°07.9'	3 km SW. of Mountain View-	3 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Mar. 12	05	17	06.0	2.7			KM 30.	
15	05	23	45.1	2.7			KT.	
16	23	28	09.9	2.7	19°14.1'	155°37.2'	19 km NNW. of Naalehu----	3 km deep.
18	00	33	45.0	2.4	19°46.0'	156°09.0'	11 km WNW. of Keahole Point.	At shallow depth.
18	04	13	13.7	2.7			KT.	
20	05	55	10.0	2.5			KM 30.	
21	10	04	28.2	2.9			KT.	
21	12	26	52.0	2.7	18°55.2'	155°27.2'	22 km SE. of Naalehu-----	8 km deep.
22	09	30	12.3	2.8			KT.	
22	16	35	42.1	3.4	19°14.3'	154°57.8'	13 km SSE. of Kalapana. Felt at Volcano.	45 km deep.
23	14	56	46.6	4.4			KM 30. Felt throughout the island.	
23	18	47	03.8	3.0			KM 30. Felt at Volcano.	
24	04	16	34.8	2.0	18°57.2'	155°15.6'	38 km ESE. of Naalehu----	12.5 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1962--Continued

Date (1962	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Mar. 24	11	13	27.4	2.5			KM 30.	
24	19	47	53.3	2.9			KM 30. Felt at Volcano.	
27	15	36	10.2	2.5			KT.	
28	15	52	40.0	3.4	19°16.9'	155°13.4'	5 km NW. of Apua Point. Felt at Volcano.	5 km deep.
30	06	42	16.6	2.3	19°21.7'	155°25.7'	5 km NW. of Desert seismograph.	Do.
30	18	15	55.1	4.5			KM 30. Felt throughout the island.	

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in Summary 25. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey]

Jan. 1

M	Z	eP	02:48:44.3 c
A	Z	eP	02:48:44.0 d
D	Z	eP	02:48:45.2 d
U	Z	eP	02:48:45.7 d

Magnitude 5.7 (HVO).

C&GS card 1-62:
52.3° N., 177.9° E.
02:41:06.0
Rat Islands, Aleutian Islands.
h about 26 km.

Jan. 1

M	Z	eP	23:47:48.0 c
N	Z	eP	23:47:48.3 c
U	Z	eP	23:47:50.3 c
U	PEZ	eR	23:58:02

C&GS card 1-62:
52.4° N., 177.7° E.
23:40:20.3.
Rat Islands, Aleutain Islands.
h about 27 km.

Jan. 4

A	Z	eP	04:46:05.2 c
N	Z	eP	04:46:03.8 c
D	Z	eP	04:46:05.2 c

Jan. 4--Continued

U	Z	eP	04:46:05.2 d
Pa	Z	eP	04:46:06.3 c
Hi	Z	iP	04:46:05.2 d
Na	Z	eP	04:46:03.8 d
Ka	Z	eP	04:46:01.5 d
Ha	Z	eP	04:45:56.2 c
U	PEE	eS	04:55:00
U	PEN	eG	05:01:24
U	PEZ	iR	05:04:00

Magnitude 6.5 (HVO).

C&GS card 1-62:
33.9° N., 135.2° E.
04:35:42.6.
Near Shikoku, Japan.
h about 56 km.
Magnitude 6.0 (Berk).

Jan. 5

U	PEZ	eP	00:31:18
U	PEZ	eS	00:37:38
U	PEN	eL	00:40:33

Magnitude 6.7 (HVO).

Table 5.--Distant earthquakes--Continued

Jan. 5--Continued

C&GS card 4-62:
15.5° S., 177.7° W.
00:23:32.1.
Fiji Islands.
h about 24 km.
Magnitude 6.25 (Pas), 6.25 to 6.5 (Berk).

Jan. 5

U	PEZ	eL	08:24:10.

C&GS card 3-62:
15.5° S., 172.5° W.
08:08:07.5.
Tonga Islands region.
h about 60 km.

Jan. 8

M	Z	eP	01:12:27.5 c
A	Z	eP	01:12:26.2 c
D	Z	eP	01:12:29.0 c
Pa	Z	eP	01:12:26.6 d
Hi	Z	eP	01:12:27.9 c
Ka	Z	eP	01:12:27.8 c
U	PEN	e	01:34:06
U	PEZ	eR	01:36:54

Magnitude 6.5 (HVO).

C&GS card 1-62:
18.5° N., 70.5° W.
01:00:24.2.
Near south coast of Dominican Republic.
h about 63 km.
Magnitude 7.0 to 7.5 (Pas), 6.25 to 6.5 (Berk), 6.5 (Pal).

Jan. 9

M	Z	eP	12:52:17.1 d
A	Z	eP	12:52:17.7 d
D	Z	eP	12:52:17.4 d
U	PEZ	eScS	13:01:47
U	PEZ	eR	13:04:53

Magnitude 6.2 (HVO).

C&GS card 2-62:
42.9° N., 144.8° E.
12:40:49.3.
Near coast of Hokkaido, Japan.
h about 78 km.

Jan. 10

N	Z	Tmax	06:46:21
Pa	Z	Tmax	06:46:31

Off coast of Oregon.

No preliminary C&GS listing.

Jan. 10

N	Z	Tmax	07:08:28
Pa	Z	Tmax	07:08:24
Hi	Z	Tmax	07:08:00

C&GS card 3-62:
44.3° N., 128.8° W.
06:27:45.2.
Off coast of Oregon.
h about 25 km.

Table 5.--Distant earthquakes--Continued

Jan. 10

N	Z	Tmax	07:09:40
Pa	Z	Tmax	07:09:13
Ha	Z	Tmax	07:09:19

C&GS card 5-62:
44.3° N., 128.7° W.
06:28:40.5.
Off coast of Oregon.
h about 61 km.
Magnitude 4.75 (Pal).

Jan. 10

N	Z	Tmax	07:14:28
Pa	Z	Tmax	07:14:31
Hi	Z	Tmax	07:14:20
Ha	Z	Tmax	07:14:07

C&GS card 3-62:
44.3° N., 128.8° W.
06:33:56.5.
Off coast of Oregon.
h about 25 km.

Jan. 10

N	Z	Tmax	07:16:47
Pa	Z	Tmax	07:16:25
Hi	Z	Tmax	07:16:01
Ha	Z	Tmax	07:16:07

Off coast of Oregon.

No preliminary C&GS listing.

Jan. 10

N	Z	Tmax	07:48:45
Pa	Z	Tmax	07:48:40
Ha	Z	Tmax	07:48:14

Off coast of Oregon.

No preliminary C&GS listing.

Jan. 11

U	PEN	ePP	06:57:49	
U	PEZ	eR	07:05:53	
Ha	Z	Tmax	07:33:11	

C&GS card 9-62:
51.9° N., 179.3° W.
06:49:07.6.
Andreanof Islands, Aleutian Islands.
h about 60 km.

Jan. 16

M	Z	eP	11:45:07.5	c
A	Z	eP	11:45:07.0	c
D	Z	eP	11:45:05.5	c
Pa	Z	eP	11:45:10.7	d
Hi	Z	eP	11:45:11.9	d
Ka	Z	eP	11:45:10.7	d
Ha	Z	eP	11:45:29.9	c
U	PEZ	iP	11:45:08	c
U	PEZ	iS	11:52:52	
U	PEN	eG	11:59:10	

Table 5.--Distant earthquakes--Continued

Jan. 16--Continued

Magnitude 6.0 (HVO).

C&GS card 6-62:
30.5° S., 177.9° W.
11:35:41.3.
Kermadec Islands.
h about 39 km.
Magnitude 6.5 (Pas).

Jan. 28

M	Z	eP	05:47:43.1 d
A	Z	eP	05:47:43.0 d
D	Z	eP	05:41:41.6 d
N	Z	eP	05:47:43.1 d
Hi	Z	eP	05:47:44.4 d
Ka	Z	eP	05:47:46.5 c
U	PEZ	eR	05:58:17

C&GS card 11-62:
17.2° S., 172.0° W.
05:40:08.2.
Tonga Islands.
h about 25 km.
Magnitude 6.25 (Pas).

Jan. 30

M	Z	eP	08:45:01.8 d
A	Z	iP	08:45:00.6 d
D	Z	eP	08:45:00.8 d
Pa	Z	eP	08:44:59.4 d
Hi	Z	eP	08:44:59.1 d

Jan. 30--Continued

C&GS card 9-62:
12.7° N. 87.7° W.
08:34:26.8.
Near coast of Nicaragua.
h about 101 km.

Jan. 30

M	Z	eP	15:32:12.5 d
A	Z	eP	15:32:13.6 d
D	Z	eP	15:32:12.5 d
Hi	Z	eP	15:32:15.5 d

C&GS card 8-62:
20.7° N., 144.5° E.
15:22:49.4.
Mariana Islands region.
h about 187 km.

Feb. 2

U	PEN	e	21:26:00

Single acoustic pulse - 70 sec period.

C&GS card 9-62:
49.9° N., 78.2° E.
07:59:58.5.
Kazakh, U.S.S.R.
h about 0 km.

Feb. 3

M	Z	eP	00:49:02.3 c
A	Z	eP	00:49:02.8 c
D	Z	eP	00:49:02.9 c
N	Z	eP	00:49:03.2 c
U	Z	eP	00:49:06.4 c

Table 5.--Distant earthquakes--Continued

Feb. 3--Continued

Hi	Z	eP	00:49:07.3 c
Na	Z	eP	00:49:02.6 c
U	PEZ	iS	00:58:04
U	PEZ	iR	01:09:43
U	PEN	iSSS	01:05:47

Magnitude 6.5 (HVO).

C&GS card 10-62:
1.2° S., 137.8° E.
00:37:53.6.
North of New Guinea.
h about 17 km.

Feb. 4

M	Z	eP	03:07:28.8 d
A	Z	eP	03:07:28.4 d
D	Z	eP	03:07:28.4 d
N	Z	eP	03:07:29.1 d

C&GS card 11-62:
4.6° S., 119.0° E.
02:54:42.1.
Celebes.
h about 89 km.

Feb. 5

M	Z	eP	23:05:42.3 d
A	Z	eP	23:05:43.1 d
D	Z	eP	23:05:42.6 d
Pa	Z	eP	23:05:43.9 c

Feb. 5--Continued

C&GS card 9-62:
35.9° N., 138.8° E.
22:55:49.6.
Central Honshu.
h about 151 km.

Feb. 8

M	Z	iP	12:00:01.0 d
A	Z	eP	12:00:00.1 d
U	Z	eP	12:00:00.3 d
Pa	Z	eP	12:00:03.5 d
Hi	Z	eP	12:00:03.6 d
Na	Z	eP	11:59:58.8 d
Ka	Z	iP	12:00:07.0 d
Ha	Z	eP	12:00:07.1 d
U	PEZ	eR	12:19:10
U	PEN	iG	12:16:18

Magnitude 6.1 (HVO).

C&GS card 14-62:
3.2° S., 141.3° E.
11:49:13.9.
New Guinea.
h about 87 km.

Feb. 9

M	Z	iP	22:03:29.8 c
A	Z	iP	22:03:29.8 c
D	Z	eP	22:03:28.4 c
N	Z	iP	22:03:29.6 c

Table 5.--Distant earthquakes--Continued

Feb. 9--Continued

U	Z	iP	22:03:29.3	c

C&GS card 11-62:
0.6° N., 123.9° E.
21:51:13.2.
Celebes.
h about 50 km.

Feb. 11

M	Z	iP	02:52:03.5	c
A	Z	iP	02:52:05.0	c
D	Z	eP	02:52:03.5	c
Pa	Z	iP	02:52:05.3	c
Ha	Z	iP	02:51:55.7	c
Na	Z	iP	02:52:03.5	c

C&GS card 11-62:
29.6° N., 139.0° E.
02:42:36.1.
South of Honshu, Japan.
h about 400 km.
Magnitude 6.25 (Pas).

Feb. 11

M	Z	iP	19:05:00.7	d
M	Z	ePcP	19:05:29.7	
A	Z	iP	19:05:00.7	d
A	Z	ePcP	19:05:33.4	
D	Z	eP	19:05:00.0	d
D	Z	ePcP	19:05:30.9	
Pa	Z	eP	19:05:03.1	c
Hi	Z	iP	19:05:03.8	c

Feb. 11--Continued

Hi	Z	ePcP	19:05:34.2	
Na	Z	iP	19:04:58.5	c
Ha	Z	iP	19:05:08.4	c
Ha	Z	iPcP	19:05:35.1	
U	PEZ	eP	19:05:00.9	c
U	PEZ	iG	19:18:46	
U	PEN	iS	19:12:52	

Magnitude 6.4 (HVO).

C&GS card 11-62:
4.5° S., 153.5° E.
18:55:32.0.
New Ireland region.
h about 100 km.
Magnitude 6 (Berk).

Feb. 14

U	PEZ	iP	06:49:35	d
U	PEZ	iPP	06:53:33	
U	PEZ	iPPP	06:55:38	
U	PEZ	iPS	07:02:09	
U	PEZ	iSS	07:07:22	
U	PEZ	iR	07:20:03	
U	PEE	iS	07:00:05	
U	PEE	iSSS	07:11:23	
U	PEN	iL	07:15:09	
U	PEN	iG	07:16:03	
M	Z	Tmax	08:36:13	

Table 5.--Distant earthquakes--Continued

Feb. 14--Continued

A	Z	Tmax	08:35:58
D	Z	Tmax	08:36:02
N	Z	Tmax	08:36:04
U	Z	Tmax	08:36:06
Pa	Z	Tmax	08:35:42
Na	Z	Tmax	08:35:56

Magnitude 7.5 (HVO).

C&GS card 11-62:
38.1° S., 73.1° W.
06:36:01.3.
Near coast of Chile.
h about 44 km.
Magnitude 7.25 (Pas), 7.5 (Berk).

Feb. 18

M	Z	iP	17:37:14.1 c
A	Z	iP	17:37:14.7 c
N	Z	iP	17:37:14.5 c
Pa	Z	eP	17:37:10.1 c
Ka	Z	eP	17:37:15.6 c
U	PEZ	eR	18:01:44

Magnitude 6.1 (HVO).

C&GS card 14-62:
8.1° N., 74.6° W.
17:25:17.3.
Northern Colombia
h about 70 km.

Feb. 19

M	Z	iP	11:12:46.8 c
A	Z	iP	11:12:45.9 c
D	Z	eP	11:12:45.5 c
Pa	Z	eP	11:12:48.0 d
Hi	Z	iP	11:12:49.3 c

C&GS card 14-62:
20.2° S., 175.1° W.
11:04:46.6.

Feb. 19--Continued

C&GS card 14-62--Continued
Tonga Islands.
h about 95 km.

Feb. 20

M	Z	iP	10:15:40.0 c
A	Z	iP	10:15:39.0 c
D	Z	eP	10:15:38.4 c
N	Z	iP	10:15:38.6 d
U	Z	iP	10:15:38.9 d
Pa	Z	iP	10:15:40.2 c
Hi	Z	iP	10:15:41.3 c
Ka	Z	iP	10:15:41.4 c

C&GS card 14-62:
25.9° S., 178.4° E.
10:07:26.6.
South of Fiji Islands region.
h about 655 km.

Feb. 20

M	Z	iP	16:15:26.5 c
A	Z	iP	16:15:27.4 c
D	Z	eP	16:15:27.0 c
U	Z	iP	16:15:26.1 c
Pa	Z	iP	16:15:28.6 c
Hi	Z	iP	16:15:26.9 c
Na	Z	iP	16:15:31.4 c
Ha	Z	iP	16:15:16.5 c
U	PEZ	iR	16:30:36

Magnitude 6.2 (HVO).

C&GS card 14-62:
43.0° N., 144.9° E.
16:05:44.6
Near coast of Hokkaido, Japan.
h about 55 km.

Table 5.--Distant earthquakes--Continued

Feb. 23

Hi	Z	eP	11:51:07.6	c

C&GS card 15-62:
6.3° S., 147.0° E.
11:40:52.8.
North coast of New Guinea.
h about 80 km.

Feb. 23

M	Z	eP	20:31:15.4	c
A	Z	eP	20:31:16.7	c
U	PEZ	eR	20:47:24	

C&GS card 17-62:
3.8° S., 152.0° E.
20:21:28.6.
New Britain.
h about 25 km.

Feb. 26

M	Z	iP	08:57:14.8	c
N	Z	eP	08:57:18.2	c

C&GS card 15-62:
0.1° S., 122.3° E.
08:44:48.8.
Northern Celebes.
h about 25 km.

Feb. 27

U	PEZ	eP	13:06:51	c
U	PEZ	iPKS	13:12:15	
U	PEZ	iSKS	13:16:47	
U	PEZ	iPSPS	13:24:43	

Magnitude 6.3 (HVO).

C&GS card 15-62:
37.4° S., 73.2° W.
12:40:48.9.
Near coast of central Chile.
h about 40 km.
Magnitude 6.25 to 6.5 (Pas), 6 (Berk).

Mar. 1

Pa	Z	eP	23:49:35.6	d
Hi	Z	iP	23:49:37.2	c
U	PEZ	iP	23:49:34	d
U	PEZ	iSS	23:56:30	
U	PEZ	eP	00:01:42	
U	PEN	eScS	23:59:42	

Magnitude 5.7 (HVO).

C&GS card 16-62:
14.0° S., 172.5° E.
23:41:14.5.
Samoa.
h about 73 km.
Magnitude 6 (Pas).

Mar. 2

M	Z	iP	13:14:54.0	d
A	Z	eP	13:14:55.4	d
D	Z	eP	13:14:53.6	d
N	Z	eP	13:14:54.5	d
U	Z	iP	13:14:55.0	d
Ha	Z	eP	13:15:05.4	d

C&GS card 16-62:
5.4 N., 126.5° E.
13:02:59.0.
Off south coast of Mindanao, P.I.
h about 30 km.

Table 5.--Distant earthquakes--Continued

Mar. 3				
M	Z	iP	12:26:39.0	c
A	Z	iP	12:26:39.4	c
D	Z	iP	12:26:38.5	c
N	Z	iP	12:26:39.0	c
U	Z	iP	12:26:39.7	c
Pa	Z	eP	12:26:41.2	c
U	PEZ	eR	12:49:42.2	
C&GS card 16-62: 7.4° N., 126.5° E. 12:14:52.1. Near east coast of Mindanao, P.I. h about 90 km.				
Mar. 4				
Ha	Z	Tmax	12:21:35	
Pa	Z	Tmax	12:21:40	
No preliminary C&GS listing.				
Mar. 5				
Ha	Z	Tmax	08:26:03	
C&GS card 19-62: 34.6° N., 121.6° W. 07:44:00.0. Off coast of California. h about 25 km. Magnitude 4.25 (Pas), 4.25 (Berk).				
Mar. 5				
M	Z	Tmax	21:39:11	
A	Z	Tmax	21:39:12	
D	Z	Tmax	21:39:11	
Mar. 5--Continued				
N	Z	Tmax	21:39:12	
U	Z	Tmax	21:39:12	
Pa	Z	Tmax	21:39:07	
Ha	Z	Tmax	21:38:52	
C&GS card 20-62: 40.3° N., 125.1° W. 20:57:52.1. Off coast of California. h about 25 km.				
Mar. 7				
M	Z	iP	11:09:44.0	c
M	Z	iPcP	11:10:29.3	
M	Z	isPP	11:14:53.6	
A	Z	iP	11:09:44.8	c
A	Z	iPcP	11:10:30.4	
A	Z	iPP	11:12:06.8	
A	Z	isPP	11:14:49.1	
D	Z	iP	11:09:43.9	c
D	Z	iPcP	11:10:29.1	
D	Z	iPP	11:12:05.3	
N	Z	iP	11:09:44.4	c
N	Z	iPcP	11:10:31.9	
N	Z	ePP	11:12:06.0	
Pa	Z	iP	11:09:47.8	d
Pa	Z	iPcP	11:10:34.1	
Hi	Z	iP	11:09:46.7	d

Table 5.--Distant earthquakes--Continued

Mar. 7--Continued

Na	Z	iP	11:09:43.6 d
Ka	Z	eP	11:09:41.1 d
Ha	Z	iP	11:09:38.1 c
U	PEZ	isP	11:12:41
U	PEZ	isPP	11:14:49
U	PEZ	iS	11:16:41
U	PEZ	iG	11:23:46
U	PEE	eScS	11:18:01
U	PEN	eSS	11:20:25

Magnitude 6.6 (HVO).

C&GS card 20-62:
19.3° N., 145.3° E.
11:01:00.4.
Mariana Islands.
h about 680 km.
Magnitude 6 (Berk), 7 (Pas).

Mar. 8

M	Z	eP	10:43:41.7 d
A	Z	eP	10:43:42.9 d
N	Z	eP	10:43:42.8 d
Ka	Z	eP	10:43:46.4 d

C&GS card 21-62:
35.1° S., 179.7° W.
10:33:41.9.
Off northeast coast of North Island, N.Z.
h about 25 km.

Mar. 11

M	Z	eP	15:30:56.3 d
A	Z	eP	15:30:58.9 d
D	Z	eP	15:30:58.5 d
N	Z	eP	15:30:58.3 d
Pa	Z	eP	15:30:58.4 d
Hi	Z	iP	15:30:56.8 c
Ka	Z	eP	15:30:52.2 c

C&GS card 18-62:
52.3° N., 178.0° E.
15:23:40.7.
Rat Islands, Aleutian Islands.
h about 135 km.

Mar. 11

M	Z	iP	19:30:54.4
A	Z	iP	19:30:56.1
A	Z	iPcP	19:31:13.5
D	Z	eP	19:30:53.8
N	Z	iP	19:30:54.5
Pa	Z	eP	19:31:01.7
U	PEZ	iS	19:40:50
U	PEZ	eSS	19:45:40
U	PEZ	eSSS	19:48:46
U	PEZ	iR	19:53:40

Magnitude 6.3 (HVO).

Table 5.--Distant earthquakes--Continued

Mar. 11--Continued

C&GS card 19-62:
9.0° N., 126.7° E.
19:19:05.6.
Near east coast of Mindanao, P.I.
h about 25 km.

Mar. 12

M	Z	iP	09:52:55.1 c
A	Z	iP	09:52:52.3 c
D	Z	eP	09:52:52.8 c
Pa	Z	eP	09:52:49.5 c
Hi	Z	eP	09:52:55.0 d

C&GS card 18-62:
9.0° N., 83.0° W.
09:41:45.7.
Costa Rica.
h about 113 km.

Mar. 12

M	Z	iP	11:51:36.1 d
A	Z	eP	11:51:33.1 d
A	Z	ePcP	11:52:26.6
D	Z	iP	11:51:36.1 d
D	Z	ePcP	11:52:30.4
N	Z	eP	11:51:33.6 d
N	Z	ePcP	11:52:31.7
Pa	Z	iP	11:51:35.5 d
Hi	Z	eP	11:51:34.1 d
Na	Z	eP	11:51:37.2 d

Mar. 12--Continued

Ka	Z	eP	11:51:37.4 c
Ha	Z	iP	11:51:45.1 c
U	PEZ	iS	12:01:24
U	PEZ	eG	12:11:20
U	PEZ	eR	12:14:24

Magnitude 6.7 (HVO).

C&GS card 19-62:
8.1° N., 83.0° W.
11:40:12.8
Near south coasts of Panama and Costa Rica.
h about 58 km.
Magnitude 6.75 (Pas), 6.25 to 6.5 (Pal).

Mar. 16

M	Z	iP	19:51:25.8 d
A	Z	iP	19:51:25.9 d
D	Z	iP	19:51:24.9 d
N	Z	iP	19:51:25.9 d
U	Z	iP	19:51:25.9 d
Pa	Z	iP	19:51:26.4 d
Na	Z	iP	19:51:22.0 c
Ha	Z	iP	19:51:26.8 d
U	PEZ	eS	19:58:36
U	PEZ	iR	20:05:00

Magnitude 5.8 (HVO).

Table 5.--Distant earthquakes--Continued

Mar. 16--Continued

C&GS card 22-62:
10.8° S., 165.7° E.
19:42:39.2.
Santa Cruz Islands region.
h about 25 km.

Mar. 17

U	PEZ	iPP	21:06:19	
U	PEZ	iPS	21:15:40	
U	PEZ	iSS	21:21:27	
U	PEE	iG	21:32:12	

Magnitude 6.8 (HVO).

C&GS card 24-62:
10.6° N., 43.7° W.
20:47:31.7.
North Atlantic Ocean.
h about 25 km.

Mar. 18

U	PEZ	eR	03:28:39	

C&GS card 23-62:
16.1° S., 167.2° E.
03:06:39.4.
New Hebrides Islands region.
h about 200 km.

Mar. 19

M	Z	iP	06:06:42.0	c
A	Z	iP	06:06:42.4	c
D	Z	eP	06:06:41.7	c
U	Z	iP	06:06:42.2	c
Pa	Z	iP	06:06:44.2	c
Hi	Z	iP	06:06:43.3	c

Mar. 19--Continued

C&GS card 23-62:
0.3° N., 123.5° E.
05:54:24.4.
Near south coast of Minahossa Peninsula, Celebes Islands.
h about 53 km.

Mar. 20

M	Z	Tmax	17:17:34	
A	Z	Tmax	17:17:44	
N	Z	Tmax	17:17:50	
U	Z	Tmax	17:17:37	
Pa	Z	Tmax	17:17:42	
Ha	Z	Tmax	17:17:00	

C&GS card 23-62:
50.8° N., 129.7° W.
16:31:48.3.
Queen Charlotte Sound area.
h about 25 km.

Mar. 22

U	PEZ	iP	15:23:56	c
U	PEZ	iG	15:40:07	
U	PEZ	iR	15:43:02	
U	PEE	iS	15:32:33	

Magnitude 6.7 (HVO).

C&GS card 23-62:
3.2° S., 142.3° E.
15:13:03.9.
Near north coast of New Guinea.
h about 25 km.
Magnitude 5.75 (Berk).

Table 5.--Distant earthquakes--Continued

Mar. 23

Ha	Z	eP	14:16:55.0 d

No preliminary C&GS listing.

Mar. 24

A	Z	eP	01:59:31.3 d
D	Z	eP	01:59:31.5 d

Deep.

No preliminary C&GS listing.

Mar. 24

M	Z	iP	13:09:56.7 c
A	Z	eP	13:09:56.7 c
D	Z	iP	13:09:56.1 c
U	Z	eP	13:09:56.1 c
Pa	Z	eP	13:09:58.6 d
Hi	Z	eP	13:09:58.8 c
Ka	Z	eP	13:09:59.0 c
U	PEE	iS	13:18:26
U	PEZ	eSS	13:22:47
U	PEZ	iR	13:28:55
U	PEN	iQ	13:25:45

Magnitude 6.1 (HVO).

C&GS card 24-62:
5.7° S., 145.0° E.
12:59:30.9.
Near north coast of New Guinea.
h about 111 km.

Mar. 26

U	PEZ	eR	17:17:04

C&GS card 24-62:
40.6° S., 73.3° W.
16:32:43.6.
Near coast of Southern Chile.
h about 32 km.

Mar. 29

M	Z	iP	02:00:57.9 c
D	Z	eP	02:00:58.6 c
N	Z	eP	02:00:58.7 c
U	Z	eP	02:00:58.1 c

C&GS card 25-62:
51.8° N., 157.2° E.
01:52:25.4.
Near south coast of Kamchatka.
h about 155 km.

Mar. 29

M	Z	iP	20:21:02.3 c
A	Z	eP	20:21:02.8 c
N	Z	eP	20:21:02.6 c
U	Z	iP	20:21:02.7 c
Hi	Z	iP	20:21:03.5 c

C&GS card 28-62:
0.5° S., 127.4° E.
20:09:01.9.
Halmahera region.
h about 25 km.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Uwekahuna (Hawaiian Volcano Observatory).	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z. (Seismometer and galvanometer periods are 15 and 90 seconds, respectively.) Short-period Sprengnether: E, Z. HVO-1: Z[1/]. Short-base liquid-level tiltmeter.
Mauna Loa----------	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z[2/].
Ahua----------	A	19°22.4'	155°15.9'	1,070	Remote recording HVO-2: Z.
Desert----------	D	19°20.2'	155°23.3'	815	Do.
North Pit----------	N	19°24.9'	155°17.0'	1,115	Do.
Whitney----------	W	19°25.9'	155°15.7'	1,210	Bosch-Omori: N, E. (Seismometer period 9 seconds.) Short-base liquid-level tiltmeter.
Hilo----------	Hi	19°43.2'	155°05.3'	20	HVO-1: Z. Wood-Anderson: N, E. Operated by Sister Thecla at St. Joseph's School.
Naalehu----------	Na	19°03.8'	155°35.2'	205	HVO-1: Z. Operated by Rev. H. Hanson at Naalehu School.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Pahoa----------	Pa	19°29.7'	154°56.8'	205	HVO-1: Z. Operated by Mr. Kongo Kimura at Pahoa School.
Kamuela----------	Ka	20°01.9'	155°42.0'	740	HVO-1: Z. Operated by Mr. Edward Van Gorder, Preparatory Academy, Kamuela.
Konawaena----------	Ko	19°30.8'	155°55.1'	495	Not operated in 1962.
Haleakala, Maui----	Ha	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Hawaii National Park at Haleakala, Maui.

1/ HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Over-damping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

2/ HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper. The response of this seismograph is similar to that of HVO-1. Records from these seismographs at the M, O, and D stations are recorded on a 3-component drum to permit an accurate comparison of arrival times at these stations.

Visitors to the Hawaiian Volcano Observatory during the first quarter, 1962, included the following:

E. J. Walter, John Carroll University.
Robert E. Houtz, Lamont Observatory.
T. A. Eastland, Bendix Radio Corp.
A. F. Ellman, Bendix Radio Corp.
Tokuji Utsu, Japan Meteorological Agency.
Warren Hastings, Howard Leak, Stan Lord, Swede Miller, Dan Davis--U.S. Geological Survey, Ground Water Division.
Masatusugi Suzuki, Nihon University.
Ryutaro Takahasi, University of Tokyo.
Senator and Mrs. Hubert Humphrey and son Robert.
A. Furumoto, Institute of Geophysics, University of Hawaii.
M. Vitousek, Institute of Geophysics, University of Hawaii.
Richard Sykes, Magabor Co., Kansas.
Tom Bastien, University of Minnesota.
John Aaron, U.S. Geological Survey, Washington D.C.
Masashi Honma, University of Tokyo.

During the quarter "felt reports" were either phoned or mailed in by the following people to whom we wish to express our gratitude for these and other instances of cooperation.

From North Hawaii: Mrs. Christensen, Mr. Paiva, Honokaa Police station.
From Kau: Mrs. Walters.
From Central Hawaii: Mr. Walker, Mr. Hansen, Mrs. Lindsey.
From the Hilo area: Mr. Chang, Mr. Pierce, Mrs. Shaeffer, Mr. Blackwood, Mr. Baldwin, Mr. Kumukahi, Mrs. Elalauli, Mr. Ho, U.S. Weather Bureau.
From the Kilauea Volcano summit district: Mr. Mist, Mrs. Francis, Mrs. Hansen, Mrs. Duncan, Miss Cruz, Miss English, Mrs. Moore, Mrs. Correa, Mrs. Sumner, Mrs. Wentworth, Mr. Hamilton, and Dr. D'Avanzo.

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 26

April, May, and June, 1962

By

A. T. Okamura, R. Y. Koyanagi, and H. L. Krivoy

and

Report on the International Symposium on Volcanology, Tokyo, 1962, by H. A. Powers

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October 1963

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HAWAIIAN VOLCANO OBSERVATORY SUMMARY 26

By A. T. Okamura, R. Y. Koyanagi, and H. L. Krivoy

Introduction

Dr. Powers, who has written the following report, has worked on or with volcanoes for a large part of his professional career. He was first employed at the Volcano Observatory from 1929 through 1930. From 1932 through 1941 he worked on ground-water problems in Maui and also served the Hawaii National Park at Haleakala. Dr. Powers worked at the Hawaiian Volcano Observatory again from 1946 through 1948. Since 1949 he has been stationed at Denver and concerned with geological problems in northern California, the Aleutian Islands, and in Hawaii.

Report on the International Symposium on Volcanology, Tokyo, 1962

By Howard A. Powers

Scientists from 22 countries attended the International Symposium on Volcanology that was convened on May 9, 1962, in the Nihon Toshi Center, Tokyo. Included were 140 representatives from 40 centers of learning in Japan, and about 80 representatives from 23 other countries located on every continent of the globe. Fourteen wives and daughters were among the foreign delegation. The entire group met socially at two delightful evening receptions, hosted by the Science Council of Japan and by the Ministry of Education. The ladies of the group were entertained at many varied functions during the course of the conference.

The 2-week scientific program was ingeniously arranged to intersperse auditorium sessions with field observation trips. Altogether, 4 days were allotted to auditorium meetings and a total of 50 papers were presented. Six papers were directed toward problems of prediction of volcanic eruptions and of minimizing their hazards to the local populace. Twenty papers dealt with the characteristics, either general or specific, of a number of volcanic regions; ignimbrites or pyroclastic flows and calderas are the prominent features of 11 of the areas discussed. The ubiquitous subject of terminology of the process and products of pyroclastic eruption was discussed informally in a special half-day session. Seven reports were concerned with some aspect of igneous volatile constituents or volcanic sublimate deposits. Results of current expanded research at the Hawaiian Volcano Observatory were discussed in three papers, and certain aspects of continuing laboratory experimental

investigations of silicate liquids with the composition of, or approaching, natural basalts were summarized in three reports. Three papers appraised geophysical knowledge of the crust and upper mantle in terms of hypotheses of origin and behavior of magmas. Several papers discussed specialized subjects, for example: geomagnetic changes at Volcano Mihara, potassium-argon dating of rocks, mechanics of volcanic earthquakes, and special conditions of possible lunar volcanism.

Field sessions of the conference were held at the active volcano Asama and in the inactive Hakone caldera complex. At the Asama Volcano Observatory we were briefed on the instrumentation and the types of geophysical observations now being made as a result of 30 years of operational experience. We examined in detail the products and results of different phases of activity during the eruption of 1783. At Hakone the emphasis was centered on the major changes in eruptive activity and in rock composition during the long evolution of the Hakone center.

Three post-conference field trips were run concurrently, one northward to Hokkaido, one southward to Kyushu, and to Ito and Ō shima in central Japan. Both the Hokkaido and Kyushu trips featured explosive activity and caldera formation involving magma of intermediate to silicic composition; the Ito and Ō shima trip featured basaltic to andesitic lavas and their pertinent type of eruption. The trips had been planned with meticulous care; each stop was at a magnificent "textbook" example of volcanism, and together they presented a clear picture of the array of volcanism for which Japan is famous.

Chronological summary

Inflation of the summit region of Kilauea Volcano continued at nearly the same rate during the second quarter of 1962 as during the first quarter. The average rate of tilting, outward from the caldera, at the inner ring of tilt bases (U, TM, Kam and Kea) was about 5 microradians per month (fig. 2).

Very small shallow earthquakes at Kilauea caldera continued unabated throughout the second quarter. Average daily counts during April, May, and June were 56, 38, and 56, respectively. Twenty-one earthquakes, 6 of which were larger than magnitude 2.5, originated along the Kalapana Trail beneath the southeast flank of Kilauea between April 5 and April 8. This source was responsible for occasional earthquakes throughout the rest of the second quarter. An earthquake from this region at 4:04 a.m. on June 7 was reported felt in Hilo.

During most of April the number of earthquakes emanating from the eastern half of the east rift zone of Kilauea averaged less than 2 per day. Earthquakes from this region increased moderately in frequency on April 29, and during May the average daily count was 5. The east rift zone was relatively quiet during June, when the average daily count was again less than 2 per day. One earthquake from this region was felt at Pahoa on May 26 at 1:14 p.m.; two others were felt at Kapoho on June 11 at 9:05 p.m. and 9:41 p.m.

The zone about 30 km beneath Halemaumau was again a source of frequent earthquakes during the second quarter. Average daily earthquake counts from this source were 6, 7, and 4 during April, May, and June, respectively. Intervals of relative inactivity (less than 5 earthquakes per day) were interrupted every few weeks by flurries of heightened activity lasting several days. A magnitude 4.3 earthquake from this 30 km deep source was felt throughout the island of Hawaii at 5:56 a.m. on May 10. Another, with a magnitude of 3.7, was felt over the eastern half of the island at 6:37 a.m. on May 11. A second magnitude 4.3 earthquake from this zone, at 4:35 p.m. on June 14, was felt over the entire island. A magnitude 2.7 earthquake from the same source was felt near Kilauea caldera at 8:31 p.m. on June 14.

The southwest rift zone of Kilauea and the adjacent portion of the Kaoiki fault system near the Desert seismometer yielded an average of about 15 earthquakes per day during April, May, and most of June. At 3:05 a.m. on April 24 a magnitude 4.0 earthquake from this region was felt over the entire island of Hawaii. A magnitude 3.5 earthquake from the same region was felt in Pahala and Hilo at 9:43 p.m. on June 8.

On June 27 a magnitude 6.1 earthquake from an epicenter along the Kaoiki fault system (19°24' N., 155°25' W., focal depth 3 to 8 km, origin time 6:27:14.3 HST) was felt over the entire island of Hawaii and on the islands of Maui and Oahu. It was the largest earthquake in the Hawaiian Islands since March 30, 1954, when two earthquakes of comparable size originated near the south shore of Hawaii west of Kalapana. As the epicenter lay in the very thinly populated Kau District of Hawaii, no serious damage was done, although there was widespread minor damage to loose objects which were overturned or dislodged.

Aftershocks of this earthquake were very numerous. Hourly aftershock counts for the first 60 hours following the main earthquake are shown on figure 1. More than 500 were recorded during the first 6 hours. The largest aftershock (magnitude 3.7) occurred at 3:37 a.m. on June 28; it was felt in Hilo.

In addition to earthquakes belonging to the groups discussed above, seven others were felt in Hawaii during the second quarter. The first of these originated about 7 km northwest of Hilo at a depth

of about 20 km at 11:19 p.m. on April 11. Its magnitude was 3.0 and it was reported felt in Hilo. An earthquake felt in Pahoa at 9:26 p.m. on May 16 had a magnitude of only 2.4 and emanated from a shallow focus about 9 km southeast of the Ahua seismometer.

A magnitude 3.5 earthquake from a focus about 12 km deep and 3 km north of Kealakekua was felt near its epicenter at 11:17 a.m. on May 23.

The earthquake felt over the entire island of Hawaii at 10:58 p.m. on May 23 had a magnitude of 3.7 and originated about 10 km south of the Desert seismometer at a depth of about 45 km. A magnitude 3.6 earthquake from a focus about 8 km deep and 14 km northwest of the Desert seismometer was felt in Mountain View at 9:11 p.m. on May 29. An earthquake felt in Honokaa at 11:02 p.m. on May 31 originated about 22 km east of Honokaa at a depth of about 12 km. Its magnitude was 2.9.

On June 4 at 11:58 p.m. a magnitude 3.9 earthquake from a focus about 5 km deep and 20 km south-southeast of the Ahua seismometer was felt over the southern half of the island of Hawaii. The earthquake felt at Pahala at 10:03 a.m. on June 7 originated about 5 km south of the Desert seismometer at a depth of about 45 km. Its magnitude was 3.4.

The field tilt-base network was reoccupied immediately after the large Kaoiki fault earthquake of June 27 to ascertain whether the summit region of Kilauea had been deformed at the time of the earthquake. The pattern of tilt changes spanning the occurrence of the earthquake (fig. 2) is very similar to that during the previous several months (Summary 25). However, it does appear that tilt changes at Keamoku (Kea) and Kapapola Ranch (Kap) were abnormally large during the second quarter. Both stations are on the downthrown side of the Kaoiki fault system. Keamoku tilted toward the fault, and Kapapala tilted away from it.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna vault (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter (table 3). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, that is, to a relative subsidence toward the north and east. A 1-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

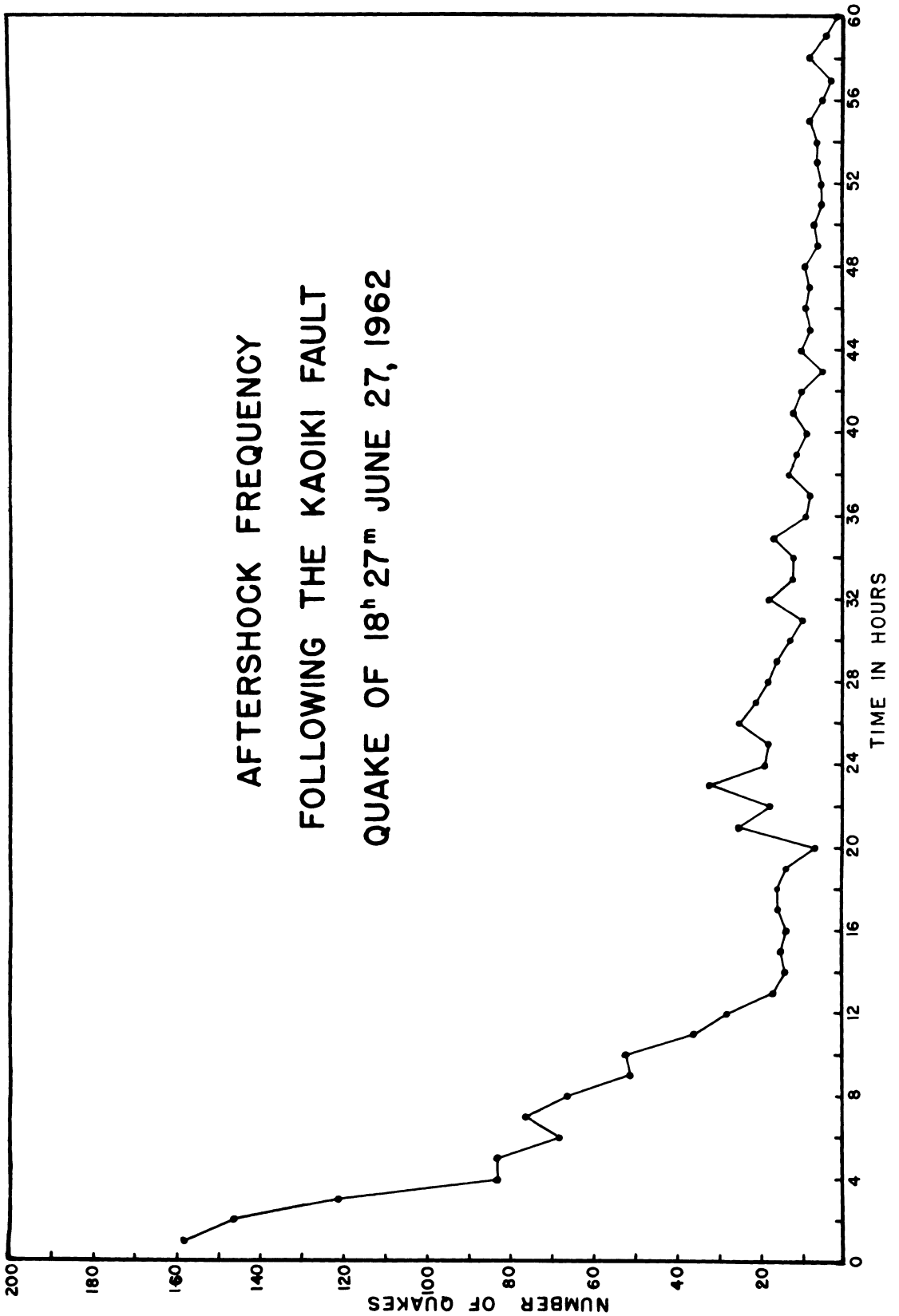

Figure 1.--Hourly count of aftershocks following the Kaoiki fault earthquake of 6:27 p.m., June 27, 1962.

Table 1.--Tilt coordinates at Uwekahuna vault, April, May, and June, 1961

Date	N-S	E-W	Date	N-S	E-W
Apr. 1	430	535	May 13	433	531
8	431	536	20	433	531
15	432	535	June 3	434	533
22	433	535	10	435	534
29	435	535	17	436	532
May 6	436	532	24	435	529

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera (see fig. 2)

Tilt base (location)	Date (1962)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1962)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	June 29	422.2	510.1	5.5	N. 40° W.	Mar. 27
Tree Molds (19°26.3' N., 155°17.3' W.)	29	427.1	514.7	2.3	N. 24° W.	27
Sand Spit (19°24.1' N., 155°16.8' W.)	Not occupied this epoch.					29
Kalihipaa (19°21.4' N., 155°15.3' W.)	July 5	583.2	422.3	Change negligible, direction random.		28
Keamoku (19°25.1' N., 155°19.0' W.)	June 30	466.1	623.2	6.3	N. 50° W.	29
Ahua Kamokukolau (19°22.7" N., 155°16.6' W.)	July 1	704.7	509.5	5.2	S. 38° E.	28
Kipuka Nene (19°19.4' N., 155°16.7' W.)	Not occupied this epoch.					Apr. 5
Hilina Pali (19°18.2' N., 155°18.6' W.)	Not occupied this epoch.					4
Mehana (19°26.2' N., 155°14.3' W.)	Not occupied this epoch.					Mar. 26
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	June 30	496.8	503.6	1.3	S. 34° E.	30

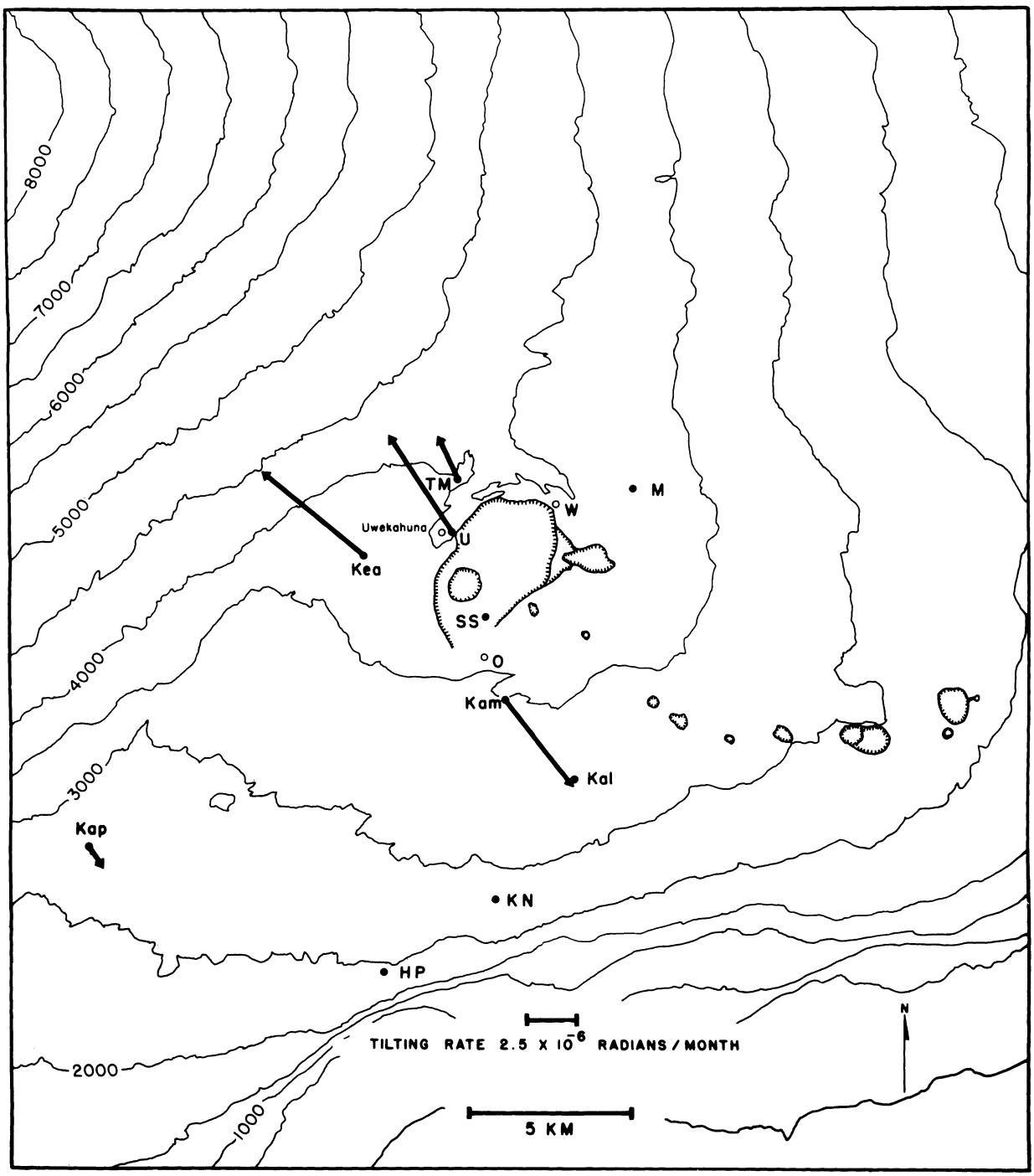

Figure 2.--Tilting of the ground around Kilauea caldera, March 29, 1962, to June 30, 1962. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 3, and essential data on the stations were given in Summary 25.

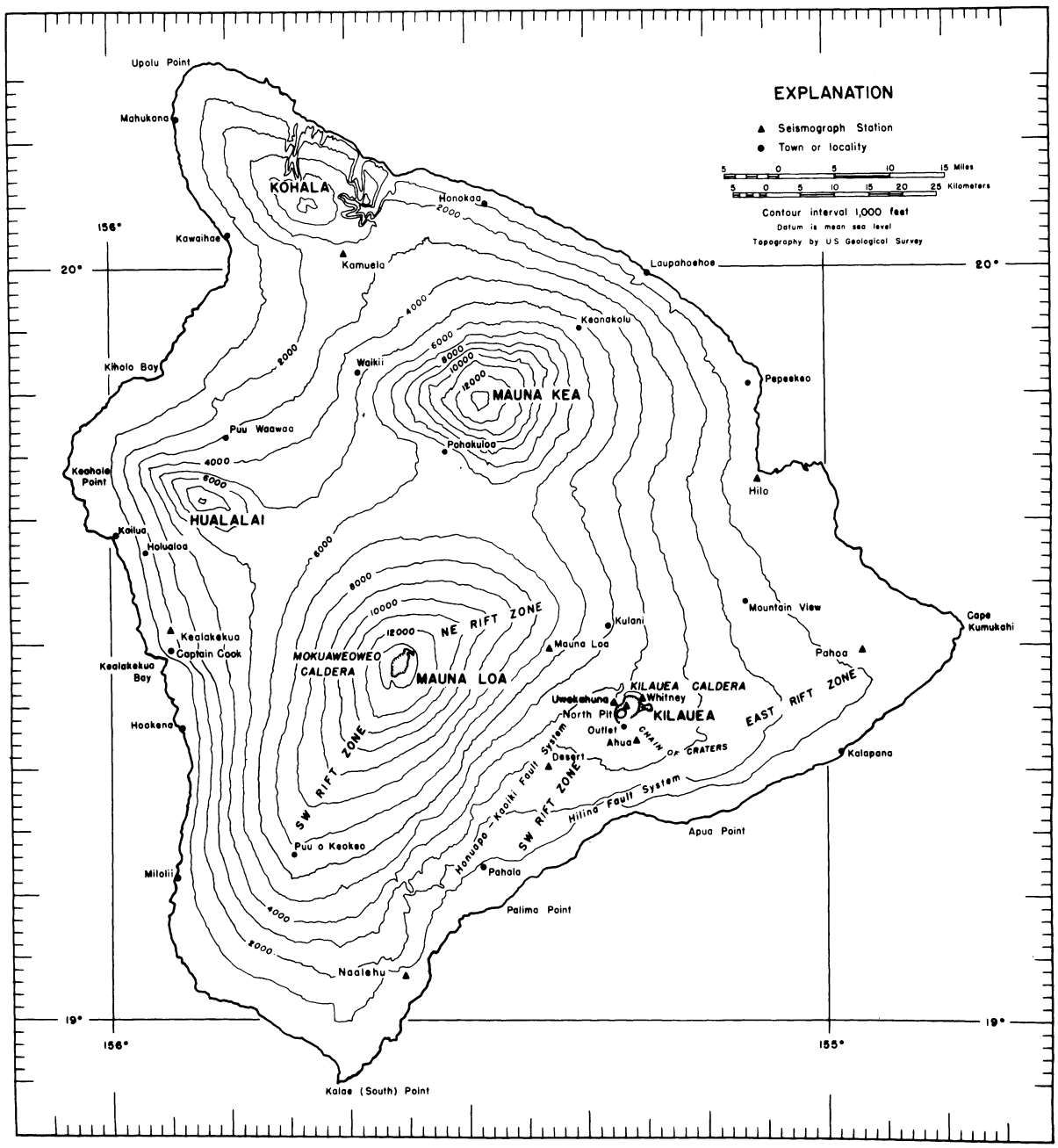

Figure 3.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea caldera (U, M, A, D, and N)

[Tremor is separated into three categories--(1) deep, (2) intermediate, and (3) shallow--on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Halemaumau rock slides (4) are detected by the characteristic record they produce on the North Pit seismograph.

Earthquake categories are: 5, shallow earthquakes in the Kilauea caldera region;
6, shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system;
7, earthquakes along the eastern half of Kilauea's east rift zone;
8, earthquakes from a source about 30 km beneath Halemaumau;
9, shallow earthquakes along the Kalapana Trail (SE. flank of Kilauea 10 to 15 km W. of Kalapana);
10, earthquakes from other regions: Kona, Mauna Kea, etc.]

Date (1962)	Tremor (in minutes)			Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	E. rift	30 km	Kalapana Trail	Others
	Deep	Intermediate	Shallow							
	1	2	3	4	5	6	7	8	9	10
Apr. 1	----	----------	--------	----------	245	14	----	6	--------	----------
2	----	----------	--------	----------	71	9	----	11	--------	1 (Kawaihae)
3	----	18	--------	----------	42	12	1	10	--------	1 (Puu ou)
4	----	2	--------	----------	71	15	2	6	--------	1 (Kona)
5	----	----------	--------	----------	30	3	----	7	5	1 (Kona)
6	----	----------	--------	----------	40	11	----	---	13	----------
7	----	----------	--------	----------	40	8	1	5	2	1 (Kona)
8	33	----------	--------	----------	45	11	1	5	1	2 (offshore)
9	----	----------	--------	----------	63	9	1	14	--------	1 (Kona)
10	6	----------	--------	----------	37	12	1	11	--------	1 (Kona)
11	----	----------	--------	----------	55	12	1	12	--------	1 (Hilo)
12	----	----------	--------	----------	47	7	2	11	--------	----------

	13	----	----------	--------	----------	40	13	5	9	--------	8 (Scripps tests)
	14	----	----------	--------	----------	44	25	----	4	--------	3 (Mt. View)
	15	----	----------	--------	----------	52	10	----	3	--------	1 (Mt. View)
	16	----	----------	--------	----------	60	16	1	2	--------	2 (Mt. View)
	17	----	3	--------	----------	37	19	1	5	--------	1 (Kona)
	18	----	----------	--------	----------	44	10	----	5	--------	1 (Mauna Kea)
	19	----	----------	--------	----------	57	11	2	8	--------	----------
	20	----	5	--------	----------	60	10	3	2	--------	----------
	21	24	----------	--------	----------	45	7	----	3	--------	----------
	22	----	----------	--------	----------	70	14	2	3	--------	----------
	23	----	----------	--------	----------	63	33	2	11	--------	----------
	24	----	----------	--------	----------	39	57	----	3	--------	----------
	25	----	----------	--------	----------	56	14	----	3	--------	2
	26	----	3	--------	----------	44	36	1	3	--------	2 (offshore)
	27	----	22	62	----------	37	22	3	2	--------	----------
	28	----	----------	7	----------	60	5	1	8	--------	----------
	29	----	----------	2	----------	45	11	13	4	--------	----------
	30	----	5	--------	----------	37	9	4	8	1	----------
May	1	----	9	--------	----------	37	7	1	14	--------	1 (offshore)
	2	----	2	--------	----------	38	24	----	2	1	----------
	3	----	12	2	----------	41	7	----	7	--------	2
	4	----	----------	--------	----------	26	4	1	3	--------	----------
	5	3	3	--------	----------	30	9	8	3	--------	----------
	6	----	----------	--------	----------	25	7	9	3	1	1 (S. Point)
	7	----	----------	--------	----------	38	10	8	3	--------	2
	8	----	----------	--------	----------	50	11	9	20	--------	----------
	9	----	----------	--------	----------	40	8	1	26	--------	----------
	10	----	----------	--------	----------	34	28	1	46	--------	----------
	11	15	----------	7	----------	50	15	2	20	--------	1 (S. Pali)
	12	----	14	--------	----------	45	20	5	6	--------	1 (S. Pali)
	13	----	----------	80	----------	33	10	3	4	1	----------
	14	----	----------	--------	----------	26	33	23	4	5	----------
	15	----	----------	6	----------	25	27	9	5	--------	----------
	16	----	4	3	----------	35	9	3	4	--------	----------
	17	----	----------	--------	----------	30	5	4	3	5	----------
	18	----	----------	--------	----------	30	9	4	3	--------	1 (Ainapo)
	19	----	----------	--------	----------	30	12	4	7	1	1 (Mauna Loa)
	20	----	25	--------	----------	38	14	11	5	--------	1 (Mauna Kea)
	21	----	----------	3	----------	60	21	----	4	--------	1 (Honokaa)
	22	----	2	--------	----------	36	4	5	1	--------	----------
	23	----	----------	--------	----------	39	26	3	--	--------	2

	24	----	----------	25	----------	52	19	2	2	--------	----------
	25	----	4	--------	----------	35	14	----	--	--------	----------
	26	----	----------	--------	----------	33	5	8	1	--------	----------
	27	----	----------	--------	----------	39	5	2	1	--------	1 (Kaena Point)
	28	----	----------	--------	----------	21	8	2	3	--------	----------
	29	2	----------	--------	----------	32	18	----	1	--------	1 (offshore)
	30	----	----------	--------	----------	32	10	4	1	--------	----------
	31	----	----------	--------	----------	49	29	6	--	--------	2 (Pahala, Honokaa)
June	1	----	----------	6	----------	39	6	----	3	1	2 (Kau)
	2	----	----------	--------	----------	35	22	2	2	--------	----------
	3	----	----------	--------	----------	31	16	----	2	--------	----------
	4	----	----------	--------	----------	43	10	1	3	--------	----------
	5	----	----------	--------	----------	34	11	1	2	--------	----------
	6	3	----------	7	----------	57	20	----	1	2	1 (Kona)
	7	----	2	--------	----------	35	14	----	2	--------	----------
	8	4	----------	--------	----------	31	30	----	1	8	1 (Hilo)
	9	----	----------	3	----------	50	14	----	--	--------	----------
	10	----	----------	--------	----------	51	12	3	--	--------	----------
	11	----	----------	--------	1	64	25	----	6	--------	5 (Pahala, Kohala)
	12	----	----------	--------	----------	78	22	----	10	--------	----------
	13	6	----------	--------	----------	44	25	----	30	--------	----------
	14	----	----------	--------	----------	40	15	----	7	--------	----------
	15	----	4	--------	----------	39	10	----	3	1	----------
	16	----	----------	--------	----------	42	25	5	5	--------	2 (Mauna Kea, Kona)
	17	----	----------	--------	----------	93	27	2	4	--------	1 (Kona)
	18	----	2	5	----------	95	15	2	7	--------	2
	19	----	----------	4	----------	102	16	----	10	--------	2
	20	----	6	--------	----------	95	9	----	1	--------	----------
	21	----	----------	5	----------	95	24	1	1	--------	1 (Mauna Kea)
	22	----	----------	--------	----------	71	10	7	2	--------	1
	23	----	2	10	----------	69	18	2	--	1	2 (Kona)
	24	----	2	--------	----------	54	13	5	7	--------	1 (Kohala)
	25	----	----------	--------	----------	57	16	----	9	--------	4
	26	----	----------	--------	----------	69	19	1	5	--------	1 (Kona)
	27	----	----------	--------	7	29	500	2	--	--------	----------
	28	----	----------	--------	8	37	410	----	--	--------	----------
	29	----	----------	--------	----------	42	111	3	4	--------	2 (Maui)
	30	----	----------	--------	----------	65	126	3	6	--------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Origin time is Hawaiian standard.

In the following list some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

Origin times of members of a second persistent sequence of earthquakes are followed by "KT" (Kalapana Trail). These earthquakes originate at very shallow depths in a remote region along the Kalapana Trail west of Kalapana, and they generally are not felt. Seismograms of these earthquakes are poorly recorded and difficult to interpret; so only an approximate epicenter, 19°20' N., 155°05' W., can be assigned to them.

The mean focus of the magnitude 6.1 Kaoiki fault system earthquake of June 27 and its aftershocks is 19°24' N., 155°25' W., at a depth of 3 to 8 km. This focus has been abbreviated "Kaoiki"]

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Apr. 2	12	21	51.0	2.1	19°24.9'	155°04.1'	13 km NW. of Kalapana---	8 km deep.
2	23	22	24.5	2.9	19°59.0'	155°49.8'	12 km S. of Kawaihae----	5 km deep.
4	07	32	04.0	2.0	19°30.5'	155°43.5'	21 km E. of Kealakekua--	3 km deep.
5	01	35	01.9	2.4	19°15.9'	155°12.2'	2 km NW. of Apua Point--	12.5 km deep.
5	08	33	57.0	2.2	19°24.0'	155°42.8'	15 km NNE. of Puu o Keokeo.	5 km deep.
5	10	33	25.9	2.3	19°24.9'	155°16.2'	Kilauea caldera---------	50 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Apr. 5	22	19	12.6	3.4			KT.	
5	22	46	20.9	2.7			KT.	
6	17	38	02.7	3.8			KT.	
6	19	58	46.5	3.2			KT.	
6	23	46	10.8	3.5			KT.	
7	05	29	03.0	3.0			KT.	
8	07	08	15.4	2.8	19°16.0'	156°33.0'	70 km WSW. of Kealakekua-	8 km deep.
8	23	57	53.1	2.4	19°06.8'	154°55.2'	34 km SE. of Apua Point--	12.5 km deep.
9	10	55	26.2	2.4	19°22.1'	155°51.9'	5 km SE. of Hookena------	5 km deep.
10	02	54	25.3	2.5			KT.	
10	20	53	14.5	2.2	19°13.7'	155°49.2'	11 km NE. of Mililii-----	Do.
11	03	26	06.0	2.4	19°19.1'	155°11.4'	10 km SE. of Ahua seismometer.	3 km deep.
11	14	33	17.6	2.7			KT.	
11	23	19	16.5	3.0	19°44.5'	155°08.5'	7 km NW. of Hilo. Felt in Hilo.	20 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Apr. 13	15	30	34.7	2.5	19°29.2'	155°46.4'	15 km ESE. of Kealakekua	3 km deep.
14	05	42	05.3	2.9	19°38'	156°19'	53 km WSW. of Keahole Point.	8 km deep.
14	07	46	58.8	2.7			KT.	
16	16	38	40.1	2.1	19°38.8'	155°10.8'	13 km SW. of Hilo-------	45 km deep.
16	17	50	48.3	2.1	19°26.7'	155°09.7'	32 km SSW. of Hilo------	25 km deep.
17	19	40	55.6	2.3	19°28.6'	155°16.8'	6 km NNE. of Uwekahuna seismometer.	12.5 km deep.
18	23	24	18.2	2.0	19°44.9'	155°29.6'	3 km ESE. of Pohakuloa--	5 km deep.
20	17	32	24.1	2.3			Kaoiki.	
23	18	23	16.9	2.4			KM 30.	
24	03	04	50.1	4.0			Kaoiki. Felt island-wide.	
26	04	54	20.5	2.5	19°07.3'	155°04.0'	66 km S. of Hilo--------	8 km deep.
26	09	21	58.8	3.4	20°05'	156°08'	50 km WNW. of Kamuela---	12.5 km deep.
27	12	47	07.3	2.7			KT.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
Apr. 27	22	08	27.2	2.6			Kaoiki.	
28	20	03	02.8	2.4	19°26.5'	155°21.4'	6 km SE. of Mauna Loa seismometer.	8 km deep.
29	17	51	39.0	2.5	19°20.0'	155°07.7'	16 km SE. of Ahua seismometer.	12.5 km deep.
30	16	38	36.5	3.0			KT.	
May 1	18	58	13.4	3.7	18°40'	156°40'	117 km SW. of Kealakekua	12.5 km deep.
2	01	25	29.7	2.5	19°13.0'	155°17.5'	16 km SE. of Desert seismometer.	40 km deep.
2	13	31	47.7	2.1	19°25.1'	155°04.0'	34 km SSE. of Hilo------	3 km deep.
3	13	11	45.5	2.3	19°09.8'	155°38.6'	13 km NW. of Naalehu----	Do.
3	16	22	57.0	2.1	19°37.8'	155°06.8'	9 km N. of Mt. View-----	Do.
6	03	38	57.7	2.3			KT.	
6	05	20	23.1	2.1			Kaoiki.	
6	15	18	31.5	2.3	19°03.1'	155°17.8'	34 km SSE. of Desert seismometer.	12.5 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
May 7	00	58	38.4	3.1	19°14.3'	155°05.7'	53 km S. of Hilo--------	45 km deep.
8	03	24	28.0	2.2	19°02.8'	155°31.7'	6 km ESE. of Naalehu----	12.5 km deep.
8	14	49	01.5	2.5			KM 30.	
8	21	04	14.0	2.5	19°13.0'	155°17.5'	16 km SE. of Desert seismometer.	40 km deep.
8	12	04	46.0	2.3	19°18.8'	155°23.9'	4 km SSW. of Desert seismometer.	Do.
9	22	19	19.0	2.6			KM 30.	
10	00	37	01.6	2.6			KM 30.	
10	05	56	04.9	4.3			KM 30. Felt island-wide.	
10	06	15	46.6	2.5			KM 30.	
10	07	43	26.4	3.4			KM 30.	
10	07	44	47.1	2.5			KM 30.	
10	15	02	28.6	2.7			KM 30.	
10	16	28	23.5	2.5			KM 30.	
10	20	19	30.8	2.4			KM 30.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
May 11	00	47	34.3	2.4	19°16.7'	155°08.5'	18 km SE. of Ahua seismometer.	8 km deep.
11	01	55	47.3	2.3			KM 30.	
11	02	51	39.8	2.3			KM 30.	
11	05	00	23.0	2.3	19°08.5'	155°00.4'	13 km SW. of Pahoa------	3 km deep.
11	06	37	23.4	3.7			KM 30. Felt in eastern half of island.	
11	06	40	50.2	2.7			KM 30.	
11	10	38	02.5	2.6	19°18.8'	155°13.9'	9 km SSE. of Ahua seismometer.	3 km deep.
11	15	04	20.2	2.3			KM 30.	
12	16	16	56.3	2.4	19°18.4'	155°05.2'	45 km S. of Hilo--------	3 km deep.
12	22	27	23.5	2.5	19°15.1'	155°12.9'	14 km SSE. of Ahua seismometer.	45 km deep.
13	06	36	55.9	2.3			KM 30.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
May 13	07	57	14.7	3.3			Kaoiki.	
14	04	00	54.0	2.5			KT.	
14	16	59	52.0	3.1	19°14.0'	154°59.8'	34 km SE. of Ahua seismometer.	At shallow depth.
16	21	25	44.1	2.4	19°27.9'	154°52.7'	9 km SE. of Ahua seismometer. Felt at Pahoa.	Do.
17	14	24	45.7	2.7			KT.	
17	17	13	12.2	2.9			KT.	
18	09	24	37.2	2.6	19°22.0'	155°30.0'	19 km SW. of Mauna Loa seismometer.	3 km deep.
18	23	21	38.1	2.4			KT.	
20	13	43	18.6	2.1	19°52.9'	155°26.1'	11 km SW. of Keanakolu--	8 km deep.
20	19	05	15.3	2.5	19°23.2'	155°30.0'	18 km SW. of Mauna Loa seismometer.	3 km deep.
21	02	11	41.4	2.4	19°16.0'	155°12.1'	14 km SE. of Ahua seismometer.	8 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
May 21	15	19	29.6	2.4	19°24.8'	155°18.4'	2 km SW. of Uwekahuna seismometer.	8 km deep.
21	15	43	23.0	2.4	19°27.5'	155°11.4'	11 km ENE. of Uwekahuna seismometer.	12.5 km deep.
21	23	16	30.2	2.9	20°11.7'	155°23.6'	15 km NE. of Honokaa----	3 km deep.
22	02	41	45.0	2.6	19°11.2'	155°28.0'	2 km SE. of Pahala------	5 km deep.
23	11	17	05.5	3.5	19°32.5'	155°55.5'	3 km N. of Kealakekua. Felt at Kona.	12.5 km deep.
23	22	58	09.9	3.7	19°15.1'	155°23.1'	10 km S. of Desert seismometer. Felt island-wide.	45 km deep.
26	13	13	45.8	2.9	19°26.0'	154°55.3'	8 km SSE. of Pahoa. Felt at Pahoa.	5 km deep.
29	21	11	08.3	3.6	19°23.3'	155°30.0'	14 km NW. of Desert seismometer. Felt at Mt. View.	8 km deep.
29	21	27	27.5	2.2	19°04.8'	155°19.6'	30 km SSE. of Desert seismometer.	Do.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
May 31	13	44	29.1	2.7	19°13.1'	155°30.9'	5 km NW. of Pahala------	8 km deep.
31	23	02	03.8	2.9	20°03.3'	155°17.5'	22 km E. of Honokaa. Felt at Honokaa.	12.5 km deep.
June 1	18	59	01.8	2.2	18°50.1'	155°30.5'	20 km SE. of Kalae Pt.--	8 km deep.
1	23	37	40.4	2.0	19°12.3'	155°23.9'	8 km E. of Pahala-------	45 km deep.
2	07	33	05.8	2.3			KM 30.	
2	12	20	46.3	2.4	19°22.4'	155°03.2'	18 km SW. of Pahoa------	5 km deep.
3	11	30	11.5	2.5	19°19.0'	155°02.5'	22 km SW. of Pahoa------	45 km deep.
4	23	35	21.3	3.9	19°13'	155°13'	20 km SSE. of Ahua seismometer. Felt in Hilo, Pohakuloa, Puna, Pahala, and Volcano.	5 km deep.
7	01	33	19.2	2.4	19°25.0'	155°42.9'	25 km SE. of Kealakekua-	3 km deep.
7	04	03	37.0	2.7			KT. Felt at Hilo.	
7	10	02	58.8	3.4	19°17.7'	155°23.1'	5 km S. of Desert seismometer. Felt at Pahala.	45 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
June 8	10	10	54.1	2.4			Kaoiki.	
8	11	21	55.9	2.5	19°39.2'	155°12.6'	15 km SW. of Desert seismometer.	45 km deep.
8	11	24	58.9	2.5			KT.	
8	17	38	31.0	2.6			KT.	
8	21	43	16.5	3.5			Kaoiki. Felt at Pahala and Hilo.	
9	00	47	52.0	2.9			KT.	
9	04	32	38.8	3.2			KT.	
10	00	15	04.4	2.7	19°09.4'	154°59.7'	11 km SW. of Pahoa------	8 km deep.
10	01	09	45.4	3.0			KM 30.	
10	02	24	15.4	2.5	19°14.0'	155°03.7'	53 km S. of Hilo--------	8 km deep.
10	05	28	46.0	2.7			Kaoiki.	
10	17	09	17.0	2.5	19°21.5'	155°03.4'	40 km SSE. of Hilo------	8 km deep.
11	02	55	57.0	2.7	20°06.1'	155°42.3'	10 km NW. of Kamuela----	3 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
June 11	08	11	29.2	2.5	20°06.1'	155°42.3'	10 km NW. of Kamuela----	3 km deep.
11	09	41	58.0	2.6	19°20.5'	155°30.6'	17 km NNW. of Pahala----	8 km deep.
11	10	53	28.7	2.8	20°06.1'	155°42.3'	10 km NW. of Kamuela----	3 km deep.
11	19	46	35.5	2.6	19°17.3'	155°30.1'	10 km NNW. of Pahala----	Do.
11	21	04	54.1	2.8	19°25.5'	155°00.4'	10 km SW. of Pahoa. Felt at Kapoho.	8 km deep.
11	21	41	18.3	1.9	---do---	---do----	-------do----------	Do.
12	06	15	35.4	2.5	19°12.5'	155°10.2'	21 km SE. of Ahua seismometer.	Do.
13	16	34	55.3	4.3			KM 30. Felt island-wide.	
13	19	16	18.9	3.2			KM 30.	
13	19	27	52.7	2.4			KM 30.	
14	20	31	18.9	2.7			KM 30. Felt at Volcano region.	
15	01	10	00.5	2.6	19°18.7'	155°16.8'	13 km S. of Uwekahuna seismograph.	8 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
June 16	13	41	00.5	2.5			KM 30.	
16	13	50	05.6	2.1	19°45.2'	155°28.7'	5 km E. of Pohakuloa----	12.5 km deep.
16	20	11	23.8	2.5	19°13.7'	155°36.6'	18 km NNW. of Naalehu---	3 km deep.
17	07	02	49.9	2.5	19°20.5'	155°49.4'	20 km SE. of Kealakekua-	Do.
18	04	38	11.1	2.5			Kaoiki.	
18	05	40	47.2	2.5	19°21.9'	155°05.2'	40 km S. of Hilo--------	8 km deep.
18	15	21	38.3	2.5	19°56.2'	155°31.5'	20 km SE. of Kamuela----	3 km deep.
19	04	09	22.7	2.7			Kaoiki.	
19	21	37	02.3	2.8	20°06'	156°19'	67 km WNW. of Kamuela---	12.5 km deep.
21	11	13	25.5	2.3	19°55.0'	155°31.5'	20 km SW. of Kamuela----	3 km deep.
21	12	57	45.4	2.9	19°16.5'	155°07.1'	20 km SE. of Ahua seismometer.	8 km deep.
22	00	11	45.3	3.2			KT.	
22	00	21	59.1	2.9	20°58'	155°01'	128 km NE. of Kamuela---	12.5 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
June 22	00	57	40.1	2.5			KT.	
22	01	05	43.7	2.5	19°21.8'	155°03.4'	19 km SW. of Pahoa------	12.5 km deep.
22	02	15	28.2	2.8	---do---	---do----	----------do----------	Do.
23	00	08	49.3	2.3	19°21.5'	155°05.6'	40 km S. of Hilo--------	8 km deep.
23	17	00	34.2	2.8			KT.	
24	02	33	17.1	2.5			KM 30.	
24	04	22	27.0	2.5	19°32.2'	155°53.1'	3 km NE. of Kealakekua--	3 km deep.
24	09	53	37.0	2.5	---do---	---do----	----------do----------	Do.
25	10	00	46.4	3.0	18°33'	154°40'	115 km SE. of Ahua seismometer.	12.5 km deep.
25	22	06	36.0	2.7	19°52.2'	155°33.7'	20 km SE. of Kamuela----	8 km deep.
26	18	48	18.3	2.3	19°24.1'	155°47.9'	18 km SE. of Kealakekua-	At shallow depth.
27	04	31	33.5	2.5			KM 30.	
27	18	27	14.3	6.1	19°24'	155°25'	Kaoiki. Felt on Hawaii, Maui, and Oahu.	3 to 8 km deep.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
June 27	19	15	30.4	3.2			Kaoiki.	
27	19	40	27.0	2.3			Kaoiki.	
27	19	48	03.7	2.5			Kaoiki.	
27	20	14	10.7	2.9			Koaiki.	
27	21	30	38.5	2.8			Kaoiki.	
27	21	50	52.4	2.5			Kaoiki.	
27	22	42	05.8	2.5			Kaoiki.	
27	22	47	49.0	2.5			Kaoiki.	
27	23	09	27.0	2.5			Kaoiki.	
27	23	51	27.9	2.5			Kaoiki.	
28	00	05	42.0	2.4			Kaoiki.	
28	00	46	29.4	2.4			Kaoiki.	
28	01	57	09.4	2.8			Kaoiki.	
28	02	22	02.4	2.7			Kaoiki.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
June 28	02	25	21.2	2.4			Kaoiki.	
28	02	46	47.0	3.0			Kaoiki.	
28	02	58	06.2	2.9			Kaoiki.	
28	03	35	18.9	2.8			Kaoiki.	
28	03	36	56.7	3.7			Kaoiki.	Felt at Hilo.
28	04	17	11.1	2.3			Kaoiki.	
28	04	55	16.0	2.4			Kaoiki.	
28	07	28	03.3	2.7			Kaoiki.	
28	08	00	11.4	2.6			Kaoiki.	
28	08	44	08.8	2.6			Kaoiki.	
28	10	30	19.4	2.3			Kaoiki.	
28	10	37	06.0	2.3			Kaoiki.	
28	12	55	12.5	2.6			Kaoiki.	
28	14	59	12.8	2.3			Kaoiki.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1962--Continued

Date (1962)	Time			Magnitude	Epicenter			Remarks
	h	m	s		Lat. N.	Long. W.	Description	
June 28	15	17	38.9	2.3			Kaoiki.	
28	15	20	14.3	2.3			Kaoiki.	
28	15	23	02.5	2.3			Kaoiki.	
28	15	29	25.7	2.6			Kaoiki.	
28	17	13	00.3	2.5			Kaoiki.	
29	01	19	30.3	2.3			Kaoiki.	
29	03	23	09.8	2.4			Kaoiki.	
29	08	30	37.6	3.2			Kaoiki.	
29	08	39	52.8	2.6			Kaoiki.	
29	14	41	53.0	3.0	20°52'	155°22'	95 km NE. of Haleakala--	12.5 km deep.
29	16	59	00.0	3.5			Kaoiki.	
29	17	41	56.2	3.1			Kaoiki.	
29	17	47	53.3	2.4			KM 30.	
29	21	13	33.0	2.7	20°06'	156°39'	87 km SW. of Haleakala--	12.5 km deep.
29	23	43	16.2	2.5			Kaoiki.	
30	07	10	56.5	2.3	19°23.1'	155°03.6'	17 km SW. of Pahoa------	3 km deep.
30	20	39	15.1	2.5			Kaoiki.	

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in Summary 25. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

It is unusual to record clear, identifiable phases from the Atlantic or the Caribbean on seismographs in Hawaii. Such a quake is listed on April 20.

Although many seismic phenomena from distant sources are recorded, few such events are felt in Hawaii. Such an uncommon event was recorded on May 11th in the form of T-phase arrivals from an underwater nuclear test (these data are being prepared for special publication). In this case the T-phase was reported felt by residents of the coastal towns and cities of the Big Island]

Apr. 1

M	Z	eP	12:22:05.4 c
Hi	Z	eP	12:22:07.9 d
U	PEN	eG	12:37:36
U	PEE	eR	12:40:44

C&GS card 25-62:
4.2° S., 143.6° E.
12:11:09.2.
Near north coast of New Guinea.
h about 80 km.

Apr. 2

M	Z	iP	00:24:08.3 c
A	Z	iP	00:24:09.0 c
D	Z	eP	00:24:07.9 c
U	Z	iP	00:24:08.8 c
Pa	Z	iP	00:24:10.9 c
Hi	Z	eP	00:24:09.8 c

Apr. 2--Continued

C&GS card 25-62:
18.6° N., 145.5° E.
00:14:50.4.
Mariana Islands.
h about 205 km.

Apr. 3

M	Z	eP	16:33:59.1 d
Pa	Z	eP	16:34:00.5 d
Hi	Z	eP	16:33:59.7 d
Ha	Z	iP	16:33:58.0 c
U	PEN	iG	16:45:12
U	PEZ	eR	16:46:56

Magnitude 5.9 (HVO).

C&GS card 26-62:
10.6° S., 164.9° E.
16:24:55.6.
Santa Cruz Islands region.
h about 36 km.
Magnitude 5.5 (Pal).

Table 5.--Distant earthquakes--Continued

Apr. 6

M	Z	eP	17:00:29.4 d
D	Z	eP	17:00:27.5 d
N	Z	eP	17:00:32.1 d
U	Z	eP	17:00:32.4 d

C&GS card 26-62:
26.7° S., 113.2° W.
16:50:14.2.
Easter Island region.
h about 33 km.

Apr. 7

D	Z	eP	06:31:34.1 c
N	Z	eP	06:31:33.1 d
U	PEZ	eR	06:40:35

C&GS card 28-62:
10.0° N., 144.4° E.
06:21:38.4.
Caroline Islands region.
h about 50 km.
Magnitude 6 (Pas).

Apr. 12

M	Z	iP	01:02:24.2 c
A	Z	eP	01:02:25.5 c
D	Z	eP	01:02:25.1 c
N	Z	eP	01:02:25.2 c
Ha	Z	iP	01:02:15.3 c
Na	Z	eP	01:02:24.4 d
Hi	Z	eP	01:02:25.6 c
Pa	Z	eP	01:02:26.1 d

Apr. 12--Continued

U	PEZ	iS	01:10:19
U	PEZ	iSS	01:14:18
U	PEZ	iR	01:18:15
U	PEE	iL	01:15:32
U	PEN	iG	01:16:04

Magnitude 7.4 (HVO).

C&GS card 28-62:
38.2° N., 142.3° E.
00:52:47.0
Near east coast of Honshu, Japan.
h about 68 km.
Magnitude 7 to 7.25 (Pas), 6.75 to 7.0 (Pal).

Apr. 16

M	Z	iP	13:29:55.0 d
A	Z	iP	13:29:56.0 d
D	Z	eP	13:29:55.2 d
N	Z	iP	13:29:55.4 d
Ha	Z	iP	13:29:47.0 d
Na	Z	iP	13:29:54.6 d
Hi	Z	eP	13:29:56.2 d
Pa	Z	eP	13:29:57.8 d
U	PEE	eS	13:37:38
U	PEZ	iR	13:46:22

Magnitude 6.0 (HVO).

Table 5.--Distant earthquakes--Continued

Apr. 16--Continued

C&GS card 28-62:
30.6° N., 140.6° E.
13:20:15.1.
South of Honshu, Japan.
h about 176 km.

Apr. 18

M	Z	eP	19:26:51.3	d
A	Z	iP	19:26:49.5	d
D	Z	eP	19:26:49.8	d
N	Z	iP	19:26:49.6	d
U	Z	iP	19:26:50.1	d
Pa	Z	iP	19:26:50.5	d
Hi	Z	eP	19:26:49.4	d
Ha	Z	iP	19:26:58.5	d
U	PEZ	iP	19:26:51	c
U	PEZ	iR	19:50:34	
U	PEN	iS	19:37:00	
U	PEN	eSS	19:43:19	

Magnitude 6.6 (HVO).

C&GS card 29-62:
10.0° S., 79.0° W.
19:14:37.2.
Off coast of Peru. Felt at Casma, Peru.
h about 39 km.
Magnitude 6.75 (Pas).

Apr. 19

M	Z	eP	23:26:39.9	d
A	Z	eP	23:26:40.9	d
D	Z	eP	23:26:40.4	d
N	Z	eP	23:26:40.3	d
Ha	Z	eP	23:26:33.1	d
Hi	Z	eP	23:26:39.2	d
Pa	Z	eP	23:26:40.6	d
Na	Z	iP	23:26:41.5	d

Deep, northwest source.

Apr. 20

M	Z	iP	05:59:50.7	c
A	Z	iP	05:59:49.7	c
D	Z	eP	05:59:50.1	c
N	Z	iP	05:50:49.8	c
Ha	Z	iP	05:59	c
Hi	Z	iP	05:59	c
Pa	Z	iP	05:59	c
Na	Z	iP	05:59	d
U	PEZ	iP	05:59:50	c
U	PEN	eS	06:10:34	
U	PEN	eSS	06:15:58	
U	PEN	iG	06:21:10	

Table 5.--Distant earthquakes--Continued

Apr. 20--Continued

Magnitude 6.6 (HVO).

C&GS card 31-62:
20.6° N., 72.2° W.
05:47:55.3.
Near north coast of Haiti,
minor damage at Port-au-Prince.
Felt at San Juan, Puerto Rico.
h about 25 km.
Magnitude 6.5 to 6.75 (Pas),
6.75 to 7.0 (Berk), 6.0 (Pal).

Apr. 22

M	Z	eP	02:18:52.4	c
A	Z	eP	02:18:51.8	c
D	Z	eP	02:18:51.5	c
N	Z	eP	02:18:51.8	c
U	Z	eP	02:18:52.3	d
Pa	Z	eP	02:18:54.2	c
Hi	Z	iP	02:18:55.9	d
Ha	Z	eP	02:18:56.1	c

C&GS card 31-62:
18.9° S., 169.5° E.
02:10:12.1.
New Hebrides Islands region.
h about 288 km.

Apr. 22

M	Z	iP	04:55:17.1	d
A	Z	iP	04:55:16.6	d
D	Z	iP	04:55:17.2	d
N	Z	iP	04:55:16.6	d
U	Z	iP	04:55:16.8	d

Apr. 22--Continued

Pa	Z	iP	04:55:14.4	c
Hi	Z	iP	04:55:14.9	c
U	PEN	eSKS	05:03:58	
U	PEZ	eG	05:10:50	

C&GS card 30-62:
15.5° N., 93.1° W.
04:45:20.3.
Near coast of Chiapas, Mexico.
h about 69 km.
Magnitude 5.25 to 5.5 (Pal).

Apr. 23

M	Z	eP	06:07:45.3	d
A	Z	eP	06:07:45.8	d
D	Z	iP	06:07:45.6	d
N	Z	eP	06:07:45.3	d
U	Z	iP	06:07:51.3	c
Ha	Z	iP	06:07:40.7	d
Hi	Z	eP	06:07:49.2	c
Pa	Z	eP	06:07:47.1	c
Na	Z	eP	06:07:48.9	d
U	PEZ	iP	06:07:52	c
U	PEZ	ipP	06:08:14	
U	PEZ	iPP	06:09:52	
U	PEZ	eSS	06:19:20	
U	PEZ	iR	06:23:55	
U	PEN	iS	06:15:36	
U	PEN	iL	06:20:55	

Table 5.--Distant earthquakes--Continued

Apr. 23--Continued

U	PEN	iG	06:21:19	

Magnitude 6.8 (HVO).

C&GS card 30-62:
42.9° N., 143.4° E.
05:58:04.9.
Hokkaido, Japan.
h about 25 km.
Magnitude 7 to 7.25 (Pas),
7 (Pal).

Apr. 25

U	PEE	iS	16:05:00	
U	PEZ	eSS	16:08:27	
U	PEZ	iR	16:13:06	
U	PEN	eL	16:10:16	

C&GS card 32-62:
38.4° N., 142.5° E.
15:47:29.2.
Honshu, Japan.
h about 56 km.

Apr. 26

M	Z	iP	07:33:41.1	d
A	Z	iP	07:33:40.6	d
D	Z	eP	07:33:40.1	d
N	Z	iP	07:33:40.6	d
U	Z	eP	07:33:40.9	d
Na	Z	iP	07:33:38.4	c
Pa	Z	iP	07:33:43.7	d
Hi	Z	iP	07:33:44.8	c

Apr. 26--Continued

Ha	Z	iP	07:33:46.3	c

C&GS card 32-62:
17.8° S., 179.1° W.
07:26:31.3.
Fiji Islands.
h about 689 km.

Apr. 30

M	Z	iP	02:36:16.6	c
A	Z	eP	02:36:17.5	c
D	Z	eP	02:36:16.9	c
N	Z	eP	02:36:16.5	c
U	Z	eP	02:36:16.2	c
Hi	Z	eP	02:36:16.5	c
U	PEE	iP	02:36:18	c
U	PEE	iPP	02:38:29	
U	PEE	eSS	02:48:16	
U	PEE	iR	02:52:33	
U	PEE	iS	02:44:13	
U	PEE	iG	02:50:42	

C&GS card 33-62:
38.8° N., 140.9° E.
02:26:30.0.
Honshu, Japan.
h about 104 km.

Apr. 30

M	Z	eP	16:24:41.8	c
N	Z	eP	16:24:40.3	c

Table 5.--Distant earthquakes--Continued

Apr. 30--Continued

U	PEE	iS	16:31:12
U	PEE	iG	16:33:58

C&GS card 34-62:
17.9° S., 176.1° W.
16:16:47.8.
Tonga Islands region.
h about 26 km.

Apr. 30

U	PEE	eS	18:45:19
U	PEE	eG	18:48:25
U	PEZ	eR	18:49:48

C&GS card 34-62:
18.0° S., 176.4° W.
18:31:06.6
Fiji Islands region.
h about 135 km.

Apr. 30

M	Z	iP	20:51:52.9 d
A	Z	eP	20:51:53.4 d
N	Z	iP	20:51:52.8 d

C&GS card 34-62:
6.4° N., 124.0° E.
20:39:45.1.
Banda Sea.
h about 28 km.

May 2

M	Z	Tmax	03:28:53
A	Z	Tmax	03:28:50
D	Z	Tmax	03:29:00

May 2--Continued

N	Z	Tmax	03:28:52
U	Z	Tmax	03:28:58
Pa	Z	Tmax	03:28:44
Na	Z	Tmax	03:28:29
Hi	Z	Tmax	03:28:27
Ha	Z	Tmax	03:28:51

C&GS card 33-62:
55.9° N., 156.1° W.
02:43:25.9.
Kodiak Island, Alaska region.
h about 25 km.

May 2

U	PEN		19:49:00

Start of pressure wave from Christmas Island nuclear blast; 5 mm max. seismogram amplitude, 75 second period--lasts till 20:04:00.

May 6

U	PEZ	ePP	19:20:42
U	PEZ	ePS	19:30:38
U	PEZ	eR	19:56:10
U	PEN	eSS	19:37:34
U	PEN	eSSS	19:41:54
U	PEN	eG	19:50:49

Magnitude 6.8 (HVO).

Table 5.--Distant earthquakes--Continued

May 6--Continued

C&GS card 35-62:
60.0° S., 32.8° W.
19:00:10.2.
Sandwich Islands region.
h about 25 km.
Magnitude 7.0 (Pas), 6.75 to 7 (Berk), 7.0 (Pal).

May 7

M	Z	iP	17:49:15.1	c
A	Z	iP	17:49:15.9	c
D	Z	iP	17:49:15.0	c
N	Z	iP	17:49:15.5	c
Ha	Z	iP	17:49:04.0	c
Ka	Z	eP	17:49:09.5	c
Hi	Z	eP	17:49:12.6	d
Pa	Z	eP	17:49:16.7	c
Na	Z	eP	17:49:17.4	c
U	PEZ	iP	17:49:14	c
U	PEZ	eS	17:57:02	
U	PEZ	eSS	18:00:46	
U	PEZ	iR	18:03:34	

C&GS card 38-62:
45.3° N., 146.7° E.
17:39:50.3.
Kurile Islands
h about 25 km.
Magnitude 6.75 (Pas), 7.0 (Berk), 6.0 to 6.25 (Pal).

May 10

M	Z	iP	00:11:30.9	d
M	Z	epP	00:11:50.0	
A	Z	iP	00:11:31.9	d
A	Z	epP	00:11:50.3	
D	Z	iP	00:11:31.9	d
D	Z	epP	00:11:50.1	
Ha	Z	eP	00:11:21.5	d
Ka	Z	eP	00:11:27.5	d
Hi	Z	iP	00:11:29.5	c
Pa	Z	eP	00:11:29.5	d

C&GS card 35-62:
62.0° N., 150.1° W.
00:03:40.2.
Alaska.
h about 72 km.
Magnitude 6.0 (Berk), 4.75 to 5.0 (Pal).

May 10

U	PEZ	eR	01:00:46

C&GS card 38-62:
41.8° S., 171.6° E.
00:27:17.5.
South Island, N.Z.
h about 54 km.

May 10

M	Z	iP	05:19:07.5	c
M	Z	ePP	05:20:20.6	
A	Z	iP	05:19:13.7	c

Table 5.--Distant earthquakes--Continued

May 10--Continued

A	Z	ePP	05:20:24.2	
N	Z	iP	05:19:07.7	c
N	Z	ePP	05:20:22.7	
Ha	Z	eP	05:19:02.6	c
Hi	Z	ePP	05:20:23.7	
U	PEZ	iS	05:24:42	
U	PEZ	iR	05:28:10	
U	PEE	iL	05:26:50	
M	Z	Tmax	05:56:20	
A	Z	Tmax	05:56:49	
D	Z	Tmax	05:56:52	
N	Z	Tmax	05:56:45	
U	Z	Tmax	05:56:43	
Ha	Z	Tmax	05:54:20	
Hi	Z	Tmax	05:56:08	
Pa	Z	Tmax	05:56:28	

C&GS card 36-62:
52.4° N., 170.9° W.
05:12:15.9.
Fox Islands, Aleutians.
h about 43 km.
Magnitude 6.0 (Berk), 5.5 (Pal).

May 11

M	Z	iP	12:14:25.9	c
A	Z	eP	12:14:25.4	d
D	Z	eP	12:14:24.6	c

May 11--Continued

N	Z	iP	12:14:25.6	c
U	Z	eP	12:14:25.6	c
Na	Z	eP	12:14:22.1	d
Pa	Z	iP	12:14:27.9	c
Hi	Z	iP	12:14:28.5	c
Ka	Z	iP	12:14:27.1	c
Ha	Z	eP	12:14:28.0	c

C&GS card 39-62:
14.3° S., 170.4° E.
12:06:42.1.
New Hebrides Islands region.
h about 623 km.

May 11

M	Z	eP	14:21:05.7	c
A	Z	eP	14:21:05.1	c
D	Z	iP	14:21:05.9	d
N	Z	eP	14:21:03.6	c
U	Z	eP	14:21:05.0	c
Pa	Z	eP	14:21:07.5	c
Hi	Z	iP	14:21:08.7	c
Ka	Z	eP	14:21:08.6	c
Na	Z	eP	14:21:12.4	d
U	PEZ	eS	14:28:38	
U	PEZ	eSS	14:32:22	
U	PEZ	eG	14:34:04	
U	PEZ	iR	14:36:04	

Table 5.--Distant earthquakes--Continued

May 11--Continued

Magnitude 6.6 (HVO).

C&GS card 35-62:
17.0° N., 99.7° W.
14:11:51.9.
Near coast of Mexico.
h about 25 km.
Magnitude 7.0 (Pas), 7.0 to 7.25 (Berk).

May 11

M	Z	Tmax	20:39:56
A	Z	Tmax	20:39:53
D	Z	Tmax	20:39:54
N	Z	Tmax	20:39:54
U	Z	Tmax	20:39:54
Pa	Z	Tmax	20:39:45
Hi	Z	Tmax	20:39:43
Ha	Z	Tmax	20:49:17

Artificial T-phase--probably caused by nuclear explosion; felt on northeast coast of Hawaii Island, Hawaii.

No preliminary C&GS listing.

May 15

M	Z	iP	05:35:54.4	c
A	Z	eP	05:35:55.0	c
D	Z	eP	05:35:54.0	c
N	Z	eP	05:35:55.7	c
Hi	Z	iP	05:36:01.2	c

May 15--Continued

Ha	Z	eP	05:36:02.2	d
U	PEZ	iP	05:35:54	c
U	PEZ	ipP	05:36:45	
U	PEZ	ipP	05:39:19	
U	PEZ	eR	06:01:10	
U	PEN	iS	05:46:08	
U	PEN	iSS	05:50:43	
U	PEN	iSSS	05:54:26	
U	PEN	iG	05:56:49	

C&GS card 38-62:
7.3° S., 128.3° E.
05:23:45.9.
Banda Sea.
h about 34 km.
Magnitude 7.0 to 7.25 (Pas), 7.5 (Berk).

May 16

U	PEZ	eR	17:55:48

C&GS card 40-62:
13.4° S., 167.3° E.
17:33:05.5.
New Hebrides Islands.
h about 35 km.

May 19

M	Z	iP	15:07:31.2	d
A	Z	iP	15:07:29.9	d
D	Z	iP	15:07:31.1	d
N	Z	iP	15:07:30.1	d
U	Z	iP	15:07:32.5	d

Table 5.--Distant earthquakes--Continued

May 19--Continued

Pa	Z	iP	15:07:31.3	c
Hi	Z	eP	15:07:31.4	c
Ka	Z	eP	15:07:29.9	c
Ha	Z	iP	15:07:40.2	d
U	PEZ	iP	15:07:34	d
U	PEZ	iS	15:15:01	
U	PEZ	iR	15:22:42	
U	PEN	iScS	15:17:20	
U	PEN	iSS	15:18:34	
U	PEN	eG	15:19:45	

Magnitude 6.8 (HVO).

C&GS card 38-62:
17.2° N., 99.5° W.
14:58:13.3.
Near coast of Mexico.
h about 20 km.
Magnitude 7.0 to 7.25 (Pas).

May 21

M	Z	iP	12:16:06.4	d
A	Z	iP	12:16:09.7	d
D	Z	eP	12:16:04.7	d
N	Z	eP	12:16:01.9	d
U	Z	eP	12:16:09.2	d
Ha	Z	eP	12:15:59.4	c
Ka	Z	eP	12:15:58.7	d

May 21--Continued

Hi	Z	eP	12:16:02.5	c
Pa	Z	iP	12:16:09.0	d
U	PEZ	iP	12:16:10	d
U	PEZ	iPP	12:19:46	
U	PEZ	eS	12:26:52	
U	PEZ	ePS	12:28:34	
U	PEZ	eSS	12:33:34	
U	PEZ	eG	12:40:50	
U	PEZ	eR	12:45:22	

Magnitude 6.6 (HVO).

C&GS card 39-62:
37.3° N., 96.0° E.
12:02:50.6.
Chinghai Province, China.
h about 25 km.
Magnitude 7.0 to 7.25 (Pas),
6.5 to 6.75 (Pal).

May 21

M	Z	eP	21:23:12.5	c
A	Z	eP	21:23:12.5	c
D	Z	iP	21:23:12.1	c
N	Z	eP	21:23:12.5	c
U	Z	iP	21:23:12.4	
Pa	Z	iP	21:23:14.3	d
Hi	Z	iP	21:23:15.3	c
Ka	Z	eP	21:23:15.5	c

Table 5.--Distant earthquakes--Continued

May 21--Continued

Ha	Z	iP	21:23:18.5	d
U	PEZ	iP	21:23:14	c
U	PEZ	ipP	21:24:43	
U	PEZ	isP	21:25:24	
U	PEE	iS	21:29:24	
U	PEE	isS	21:31:38	
U	PEE	iSS	21:32:42	
U	PEN	iG	21:34:22	

Magnitude 7.1 (HVO).

C&GS card 39-62:
20.0° S., 177.5° W.
21:15:31.0.
Fiji Island region.
h about 379 km.
Magnitude 6.75 to 7.0 (Pas).

May 22

M	Z	iP	08:15:13.2	d
M	Z	ipP	08:15:44.1	
A	Z	eP	08:15:13.2	c
A	Z	ipP	08:15:44.0	
D	Z	eP	08:15:13.3	c
D	Z	ipP	08:15:42.8	
N	Z	eP	08:15:13.4	c
N	Z	ipP	08:15:43.8	
U	Z	eP	08:15:13.7	c

May 22--Continued

U	Z	ipP	08:15:44.3	
Pa	Z	iP	08:15:15.7	d
Pa	Z	ipP	08:15:46.3	
Hi	Z	eP	08:15:17.3	c
Hi	Z	ipP	08:15:45.5	
Ka	Z	eP	08:15:16.4	d
Ha	Z	iP	08:15:15.8	d
Ha	Z	ipP	08:15:34.3	
U	PEZ	iP	08:15:14	c
U	PEZ	ipP	08:15:45	
U	PEZ	isS	08:23:06	
U	PEZ	iSSS	08:27:43	
U	PEZ	eR	08:28:48	
U	PEE	iS	08:22:13	
U	PEN	isSS	08:26:42	

C&GS card 39-62:
12.3° S., 166.6° E.
08:06:38.7.
Santa Cruz Islands.
h about 151 km.
Magnitude 6.5 to 6.75 (Pas),
5.75 to 6.0 (Pal).

May 22

U	PEZ	eS	22:22:56
U	PEZ	eSSS	22:29:29

Table 5.--Distant earthquakes--Continued

May 22--Continued

U	PEN	eG	22:29:00	

C&GS card 43-62:
5.5° S., 152.0° E.
22:03:36.0.
New Britain.
h about 100 km.

May 24

U	PEZ	eP	04:31:08	d
U	PEZ	ePP	04:32:43	
U	PEN	eS	04:36:52	
U	PEN	eL	04:39:29	
U	PEN	iR	04:41:08	
M	Z	Tmax	05:09:49	
A	Z	Tmax	05:09:45	
D	Z	Tmax	05:09:53	
N	Z	Tmax	05:09:41	
U	Z	Tmax	05:09:59	
Ha	Z	Tmax	05:09:06	
Hi	Z	Tmax	05:09:28	
Pa	Z	Tmax	05:09:38	

C&GS card 41-62:
49.1° N., 129.4° W.
04:24:49.8.
Vancouver Island region.
h about 25 km.

May 25

U	PEZ	eP	04:27:56	c
U	PEZ	eS	04:34:11	
U	PEE	eScS	04:37:26	
U	PEE	ePKS	04:42:21	

C&GS card 42-62:
20.7° S., 174.3° W.
04:19:57.0.
Tonga Islands.
h about 281 km.

May 29

Ha	Z	Tmax	21:43:54

C&GS card 42-62:
51.8° N., 177.1° W.
21:00:16.4.
Andreanof Islands, Aleutian Islands.
h about 25 km.

May 29

U	PEZ	iR	22:22:52

C&GS card 44-62:
26.3° S., 113.7° W.
21:52:50.0.
Easter Island region.
h about 25 km.

May 30

Ha	Z	Tmax	05:40:03

C&GS card 42-62:
44.6° N., 129.5° W.
04:57:46.2.
Off northern coast of California.
h about 25 km.

Table 5.--Distant earthquakes--Continued

May 31

M	Z	iP	06:37:52.4	d
M	Z	isP	06:38:56.4	
A	Z	iP	06:37:52.9	d
D	Z	iP	06:37:52.4	d
D	Z	isP	06:38:56.7	
N	Z	iP	06:37:52.6	d
U	Z	iP	06:37:52.8	d
Ha	Z	iP	06:37:44.7	c
Ka	Z	iP	06:37:49.5	d
Hi	Z	iP	06:37:53.9	d
Pa	Z	iP	06:37:54.3	d
Na	Z	eP	06:37:52.8	d
U	PEZ	iP	06:37:52	c
U	PEZ	iPP	06:40:07	
U	PEE	iS	06:45:33	
U	PEN	iG	06:52:07	

C&GS card 41-62:
22.1° N., 142.6° E.
06:28:26.2.
Volcano Islands region.
h about 257 km.
Magnitude 6.5 (Pas).

May 31

M	Z	iP	06:42:18.4	d
A	Z	iP	06:42:18.6	d
D	Z	iP	06:42:18.0	c

May 31--Continued

N	Z	iP	06:42:18.6	d
U	Z	iP	06:42:18.7	d
Pa	Z	iP	06:42:19.8	d
Hi	Z	iP	06:42:19.4	d
Ka	Z	iP	06:42:17.2	c

Deep, northwest source.

June 2

U	PEE	eL	12:41:05
M	Z	Tmax	13:11:17
A	Z	Tmax	13:11:29
D	Z	Tmax	13:11:28
N	Z	Tmax	13:11:40
U	Z	Tmax	13:11:34
Ha	Z	Tmax	13:10:52
Hi	Z	Tmax	13:11:06
Pa	Z	Tmax	13:11:30

C&GS card 45-62:
49.9° N., 129.8° W.
12:26:09.6.
Vancouver Island region.
h about 25 km.
Magnitude 5.75 (Pal).

June 2

U	PEZ	eR	17:45:49

C&GS card 44-62:
29.8° N., 130.6° E.
17:15:08.7.
Kyushu, Japan.
h about 15 km.

Table 5.--Distant earthquakes--Continued

June 6

U	PEN	eL	18:04:13	
Ha	Z	Tmax	18:32:02	
Pa	Z	Tmax	18:32:03	

C&GS card 44-62:
39.1° N., 123.1° W.
17:50:08.6.
California.
h about 23 km.
Magnitude 5.25 (Pas).

June 8

M	Z	iP	01:39:13.7	d
N	Z	eP	01:39:13.3	d
U	Z	iP	01:39:13.3	d
Hi	Z	iP	01:39:16.3	d
Ha	Z	iP	01:39:18.6	d

C&GS card 45-62:
18.1° S., 178.4° W.
01:31:59.9.
Fiji Islands.
h about 603 km.

June 11

U	PEN	eL	01:08:17	
Pa	Z	Tmax	01:37:53	

C&GS card 47-62:
49.7° N., 129.3° W.
00:52:47.3.
Vancouver Island region.
h about 25 km.

June 11

M	Z	eP	04:42:43.0	c
A	Z	eP	04:42:43.5	c
N	Z	iP	04:42:43.6	c
Pa	Z	eP	04:42:41.5	c
Hi	Z	iP	04:42:41.3	c
Ha	Z	iP	04:42:44.9	c

C&GS card 46-62:
19.6° S., 177.7° W.
04:35:00.6.
Fiji Islands.
h about 370 km.

June 14

M	Z	iP	08:00:01.2	d
A	Z	eP	08:00:02.0	d
D	Z	eP	08:00:01.8	d
N	Z	iP	08:00:01.6	d
U	Z	eP	08:00:01.4	c
Ha	Z	iP	07:59:49.5	c
Hi	Z	iP	07:59:55.0	c
Pa	Z	eP	08:00:01.7	d
U	PEZ	iP	08:00:01	d
U	PEZ	iS	08:06:43	
U	PEZ	iR	08:12:05	
U	PEE	iG	08:09:57	

Table 5.--Distant earthquakes--Continued

June 14--Continued

C&GS card 45-62:
54.3° N., 169.1° E.
07:51:51.0.
Aleutian Is., Near Islands.
h about 34 km.
Magnitude 6.0 to 6.25 (Pas), 5.75 (Berk).

June 14

M	Z	iP	08:03:55.9	c
A	Z	iP	08:03:56.4	c
D	Z	eP	08:03:56.6	d
N	Z	eP	08:03:56.3	c
U	Z	iP	08:03:56.0	d
Ha	Z	iP	08:03:43.5	c
Hi	Z	iP	08:03:54.9	c
Pa	Z	eP	08:03:56.0	c
U	PEZ	iP	08:03:56	c
U	PEZ	iS	08:10:36	
U	PEE	iG	08:14:11	

C&GS card 45-62:
54.2° N., 169.3° E.
07:55:48.9.
Aleutain Is., Near Islands.
h about 56 km.
Magnitude 6.0 (Pas).

June 16

M	Z	iP	06:39:39.8	d

C&GS card 46-62:
0.2° S., 122.8° E.
06:27:29.8.
Celebes region.
h about 177 km.

June 17

M	Z	eP	22:35:44.3	d
A	Z	eP	22:35:45.0	d
D	Z	eP	22:35:44.7	d
U	Z	eP	22:35:45.7	d
Hi	Z	iP	22:35:35.6	c
Ka	Z	eP	22:35:31.0	c

C&GS card 46-62:
51.7° N., 177.0° E.
22:28:04.1.
Andreanof Islands, Aleutian Islands.
h about 22 km.

June 18

M	Z	iP	23:52:17.6	d
Hi	Z	eP	23:52:20.5	d
Ha	Z	iP	23:52:15.7	d
U	PEE	iS	00:00:09	
U	PEN	eG	00:07:01	
U	PEZ	eR	00:08:33	

C&GS card 48-62:
4.8° S., 151.8° E.
23:42:31.3.
New Britain region.
h about 47 km.
Magnitude 6.75 (Pas).

June 23

M	Z	iP	09:55:50.6	d
A	Z	iP	09:55:51.0	d
D	Z	eP	09:55:50.9	d

Table 5.--Distant earthquakes--Continued

June 23--Continued

N	Z	eP	09:55:50.5	d
U	Z	iP	09:55:50.8	d
Ha	Z	iP	09:55:43.2	d
Ka	Z	iP	09:55:47.0	d
Hi	Z	iP	09:55:52.1	d
Pa	Z	iP	09:55:52.9	d
U	PEZ	iP	09:55:51	d
U	PEZ	iR	10:16:33	
U	PEE	ePP	09:57:36	
U	PEE	eS	10:05:05	

C&GS card 48-62:
25.7° N., 128.5° E.
09:44:37.7.
Ryukyu Islands.
h about 36 km.
Magnitude 5.75 (Berk).

June 23

M	Z	eP	10:10:25.8	d
A	Z	eP	10:10:25.4	d
D	Z	eP	10:10:24.9	d
N	Z	eP	10:10:24.8	d
U	Z	eP	10:10:24.8	c
U	PEZ	eP	10:10:25.3	d
Hi	Z	eP	10:10:23.8	c

June 23--Continued

C&GS card 49-62:
19.1° N., 121.4° E.
09:58:26.0.
Near coast of Luzon, Philippine Islands.
h about 40 km.

June 25

M	Z	eP	11:22:12.9	c
A	Z	eP	11:22:11.9	c
N	Z	eP	11:22:10.9	c
Pa	Z	eP	11:22:13.3	d
U	PEZ	iP	11:22:09	c
U	PEZ	eR	11:44:33	
U	PEN	iS	11:31:55	

C&GS card 49-62:
24.3° N., 122.6° E.
11:10:23.3.
Off coast of Formosa.
h about 33 km.
Magnitude 5.75 (Pas), 5.5 (Berk).

June 30

M	Z	eP	19:41:51.3	c
D	Z	eP	19:41:51.1	c
N	Z	eP	19:41:51.4	c
U	PEZ	eR	20:06:15	

Magnitude 5.9 (HVO).

C&GS card 50-62:
16.5° N., 122.0° E.
19:29:51.0.
Coast of Luzon, Philippine Islands.
h about 40 km.

The following persons or agencies reported "felt" earthquakes during the second quarter, 1962. Their assistance is gratefully acknowledged.

North Hawaii

Mr. Pawa
Mrs. Lindsey
Mrs. Walker
Miss Tully
Dr. Tabrah
Honokaa Police
Mrs. C. Hansen
Mrs. Eklund
Mrs. Stewart
Mr. Ferguson
Mrs. Christianson

Hilo region

Miss Yamaguchi
Mr. MacDonald
Mr. Donohoe
Mr. Williamson
Mrs. Wong
Mrs. Kuntz
Mr. Sadamoto
Miss Bergsten
Mr. Kumuhaki
Mr. Vaughn
Miss Phirite
Mrs. Kaneshiro
Miss Ah Sing
Mr. Martin
Mrs. Breyton
Mrs. Pierce

Kau region

Mr. Schattauer
Mrs. Walters
Mrs. Schattauer
Mrs. Street
Mrs. Billings
Miss Cataluna
Mr. Coram
Mrs. Elarianoff
Mr. Araujo
Mrs. Isbell

Kilauea summit region

Mrs. Hongo
Miss Cruz
Mrs. Hagnauer
Mrs. Fraser
Mrs. Hansen
Miss English
Mrs. Wentworth
Mrs. Yong
Mr. Ayres
Mr. Mist
Mrs. Mist
Mrs. Duncan
Dr. Eaton
Mr. Yamamoto
Mrs. Ault.

Kona coast

Mr. Ladd
Mr. Sutherland
Mr. Glass
Miss Greenwell
Mr. Tanaka
Miss. Wallace
Mr. Yeaman
Mr. Paris

Puna

Mr. Edwards
Mr. R. Ho
Mr. Vaughn
Mr. Warner
Mrs. Green

Central Hawaii

Mr. Haa
Mr. Kowahara
Mr. Machado
Mrs. Lindsey
Mr. Hansen
Mr. Walker

An unusually large number of persons visited the Observatory during the second quarter, 1962. Many of them were going to or returning from the International Symposium on Volcanology in Tokyo. These visitors were:

Dan A. Davis, Milton Hackett, G. F. Worts, Jack Rosenau, U.S. Geological Survey, Ground Water Division.
Thomas E. Chase, U.S. Bureau of Commercial Fisheries.
Stuart M. Smith, Dept. of Earth Science, Scripps Institution.
Donald Wise, Dept. of Geology, Franklin and Marshall College.
Victor Vacquier, Scripps Institution.
George Shor, Jr., Scripps Institution.
L. Radley Squier, Shannon and Wilson, Inc., Seattle.
Robert Eppley, U.S. Coast and Geodetic Survey, Honolulu Observatory.
Keichi Kasahara, Earth Research Institute, University of Tokyo.
Robert A. Stonely, U.S. Coast and Geodetic Survey, Washington, D.C.
A. S. Furumoto, Institute of Geophysics, University of Hawaii.
M. Bordner, Hawaii State Economic Research and Development Commission.
Hatten Yoder, Jr., Geophysical Laboratory.
C. E. Tilley, Cambridge, England.
J. F. Schairer, Geophysical Laboratory.
A. R. McBirney, Scripps Institution.
C. R. Robson, Seismic Research Unit, U.C.W.I., Trinidad.
Jerry McLaughlin, Donald J. Murray, Eugene E. Moe, Harry Carles, Mell Baker, U.S. Geological Survey, Topographic Division.
E. F. Osborn, Penn. State University.
Ann Palm, University of California, Berkeley.
W. T. Cronenwett, Electro-Mechanics Co., Austin, Texas.
Bernard Geze, Institut National Agronomique, Paris.
J. Noetzlin, CNRS de France, Geneva, Switzerland.
J. L. Kulp, Lamont Observatory.
Robert Decker, Dartmouth College, N.H.
Pierre Evrard, Universite de Liege.
Jerry P. Eaton, U.S. Geological Survey, Crustal Studies Branch.
Howard A. Powers, U.S. Geological Survey, Denver, Colorado.
Allan Wilson, University of Queensland, Brisbane.
K. J. Murata, U.S. Geological Survey, Menlo Park.
Irving Friedman, U.S. Geological Survey, Washington and Denver.
Roland VonHuene, Naval Ordnance, China Lake.
Kumizi Iida, Institute of Earth Sciences, Nagoya University.
Allen Loomis, Jet Propulsion Lab., Pasadena.
Harry Smedes, Robert Fournier, U.S. Geological Survey, Washington.
Willard H. Parsons, Wayne State University.
Robert L. Smith, Branch of Field Geochemisty and Petrology, U.S. Geological Survey, Washington.
Roy A. Bailey, U.S. Geological Survey, Washington.
George M. Brownell, University of Manitoba, Winnipeg.
Hans A. Bomke, USASRDA, Fort Monmouth, N. J.
I. A. Balton, USASRDA, Fort Monmouth, N. J.
Charles F. Sebastian, Western Geophysical Co., Los Angeles.
Thomas L. Slaven, Western Geophysical Co., Los Angeles.
Michael N. West, Alfred University, Alfred, N.Y.
Heinz H. Grote, USASRDA, Fort Monmouth, N.J.

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 27

July, August, and September, 1962

By
Arnold T. Okamura, George Kojima
and Akira Yamamoto

and

Direction of First Motion from Four Earthquakes
from a Single Focus
By Harold L. Krivoy

Issued August 1964

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HAWAIIAN VOLCANO OBSERVATORY SUMMARY 27

By A. T. Okamura, George Kojima, and Akira Yamamoto

Direction of First Motion from Four Earthquakes from a Single Focus

By Harold L. Krivoy

Table A presents data on four earthquakes: epicenter, focal depth, origin times, compressional wave travel times, first-motion directions, and magnitudes. The first two quakes were felt weakly only in the community of "Volcano." The second two were felt island-wide. This size difference is also reflected in the questionable timing of the first arrival at such distant stations as Maui. In quakes I and II, the Maui instruments evidently failed to record the earliest compressional arrival.

Thanks are due to the following Hawaii residents who reported feeling the four quakes:

1st quake--Miss English (Volcano)
2nd quake--Miss English, Mrs. Duncan (Volcano)
3rd and 4th quakes--Miss English, Mrs. Duncan, Mrs. Fraser, Mrs. Hansen, Mr. Mist, Mr. Francis, Mr. Ayers, Mrs. Wehrsig, Dr. Wentworth, Mr. Koyanagi, Mr. Yamamoto, Dr. Moore, Mr. Krivoy (Volcano or National Park); Mr. and Mrs. Baldwin, Mr. Zuprick, Mr. Wilson, Mr. Elliot, Mrs. Ingledue, Miss Nitta, Mr. Ho (Hilo area); Mr. Hansen (Central Hawaii); Kulani Honor Camp personnel; Mrs. Linsey (North Kona); Mrs. Walters, Mrs. Kiva (Kau region); Honokaa Police, Mrs. Christensen (North Hawaii).

With only one exception, residents who reported the third quake also reported the smaller fourth quake. These quakes originated about 25 km beneath the community of Volcano, which probably accounts for the numerous reports from Volcano, Hilo, National Park and Kulani Honor Camp. Of special interest is the report from Mrs. Lindsey of Puu Anahula--a small community near Puu Waawaa where deep Kilauea quakes are surprisingly well-felt. In this case (as in others) Mrs. Lindsey reported quakes not felt by equally perceptive observers in parts of Kona and Kau much closer to the epicenter.

The pattern of first-motion direction is identical for the first three quakes, and is reversed for the last quake of the group. The third and fourth quakes come within 3 minutes of each other from essentially the same focus; they suggest complex strains in the focal region because every discernible first-motion of IV is opposite to its counterpart in I, II, and III.

Table A.

	First motion of P				P-O, compressional wave travel time				Magnitudes (? magnitude = motion too great for recording system)			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Mauna Loa	-	-	-	+	4.8	4.8	4.8	4.8	2.9	2.9	?	?
Ahua	-	-	-	+	4.4	4.1	4.2	4.3	?	2.9	?	?
Desert	-	-	-	+	5.2	5.1	5.1	4.9	?	?	?	?
North Pit	-	-	-	+	4.0	4.0	4.1	3.9	?	?	?	?
Uwekahuna	-	-	-	+	4.1	3.9	4.1	3.9	3.1	3.1	3.7	3.5
Hilo	+	+	?	-?	6.2	6.2	6.1	6.3	3.0	3.0	3.9	3.8
Pahoa	+?	+	+?	?	6.1	5.9	6.0	5.9	3.0	3.0	?	?
Naalehu	-	?	-?	+?	9.4	9.1	9.6	9.4	2.8	2.7	?	?
Kamuela	?	?	?	?	11.6?	13.1?	11.9	11.6	2.8	3.1	?	?
Maui	?	?	-?	-	28.0?	28.7?	24.0	24.0	3.1	2.9	3.6	3.4

I = 11:51:41.9 HST, Jan. 3, 1962
II = 18:16:41.8 HST, Jan. 3, 1962
III = 07:22:49.7 HST, Sept. 11, 1962
IV = 07:25:27.7 HST, Sept. 11, 1962

Epicenter: 19°28.6' N., 155°14.0' W.
Depth: 25 km

First-motions plotted on the station location map do not fall into the quadrant pattern typical of strike-slip faults; the region of compression can be separated from that of rarefaction by a single line through the epicenter with an azimuth between about N. 35° W. and N. 80° W. The uncertainty could be materially reduced by additional stations at such sites as Puu Waawaa, Makaopuhi or Kalapana. Apparently the fault movement was predominantly dip-slip in all four quakes, the southwest side being downthrown during the first three and upthrown during the fourth.

Because of its small size, this group of four similar quakes has proven convenient as an illustration of the needs and possibilities in analysis of first-motion data provided by the Volcano Observatory seismic net. In 6 years of modern recording we have observed about six distinctive earthquake families. Some of these appear to be endemic and are still being recorded; others, once prolific, seem now to have ceased. Some of these families consist of swarms of thousands of quakes; some come by the hundreds. We hope to be able to review and to analyze each such group in an effort to learn more about the dynamics of Hawaiian volcanism.

Chronological summary

Inflation of the summit region of Kilauea appears to have been somewhat more rapid during the third quarter of 1962 than during the previous 6 months. Tilting at Uwekahuna Vault (table 2) averaged 12 urad/month toward N. 50° W. during the third quarter as compared with 7 urad/month and 3 urad/month in the same direction during the first and second quarters, respectively.

Small shallow earthquakes at Kilauea caldera (table 3) continued through the third quarter; the average daily counts were 52, 64, and 62 for July, August, and September, respectively.

Average daily counts of earthquakes from the source about 30 km beneath Halemaumau were 6 for July, 3 for August, and 2 for September. Earthquakes of this group were felt in the region of Kilauea caldera and elsewhere on Hawaii on July 6, July 14, July 27, and September 27.

The frequency of aftershocks of the magnitude 6.1 Kaoiki earthquake of June 27 and of small earthquakes from the adjacent part of Kilauea's southwest rift zone decreased steadily during July from 112 on the 1st to 15 on the 31st. The average daily count of these earthquakes decreased from 37 for July to 12 for August and to 8 for September. Earthquakes from this source were felt in Hilo on July 15 and in Hilo, Pahoa, and Naalehu on July 27.

An unusual variety of large local quakes from scattered sources was recorded during July, and many of them were felt (table 4). The largest, from a shallow focus 14 km west-northwest of Kealakekua, had a magnitude of 4.9 and was felt over the entire island at 23^h53^m on July 23. Loose objects were overturned and there was alarm in Kona; but no serious damage was reported. A magnitude 4.5 shock from

a shallow focus 8 km west-southwest of Kealakekua was felt in Kona at 23^h53^m on July 23. The earthquake felt over the entire island at 7^h38^m on July 14 had a magnitude of 4.0 and originated 18 km south-southwest of Waikii at a depth of about 10 km.

The largest earthquake during August occurred about 8 km deep and 11 km southeast of the Ahua seismometer at 16^h59^m on the 18th. It had a magnitude of 4.6 and was felt over the entire island. A magnitude 4.0 earthquake from a focus 14 km northeast of Naalehu and about 8 km deep was felt from Hilo to Kona at 23^h30^m on August 17.

The largest earthquake during September (magnitude 4.1) originated 25 km south-southeast of Apua Point and was felt in Hilo and the Kilauea caldera region at 3^h59^m on September 8. Two earthquakes from a focus 9 km northeast of Uwekahuna and 25 km deep were felt over the entire island on September 11. The first, at 7^h23^m, had a magnitude of 3.7; the second, at 07^h25^m, had a magnitude of 3.6.

Minutes of deep tremor recorded during September greatly exceeded that recorded during any other month since October 1961.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault (table 2), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, that is, to a relative subsidence toward the north and east. A 1-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

The field tilt-bases were not occupied during this third quarter, 1962.

Table 1.--Tilt coordinates at Uwekahuna Vault, July, August, and September, 1962

Date	N-S	E-W	Date	N-S	E-W
July 1	440	529	Sept. 2	449	516
8	440	527	9	452	513
15	442	530	16	454	511
22	444	526	23	456	505
29	444	525	30	457	505
Aug. 5	446	523			
12	446	520			
19	446	522			
26	447	520			

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1, and essential data on the stations were given in Summary 25.

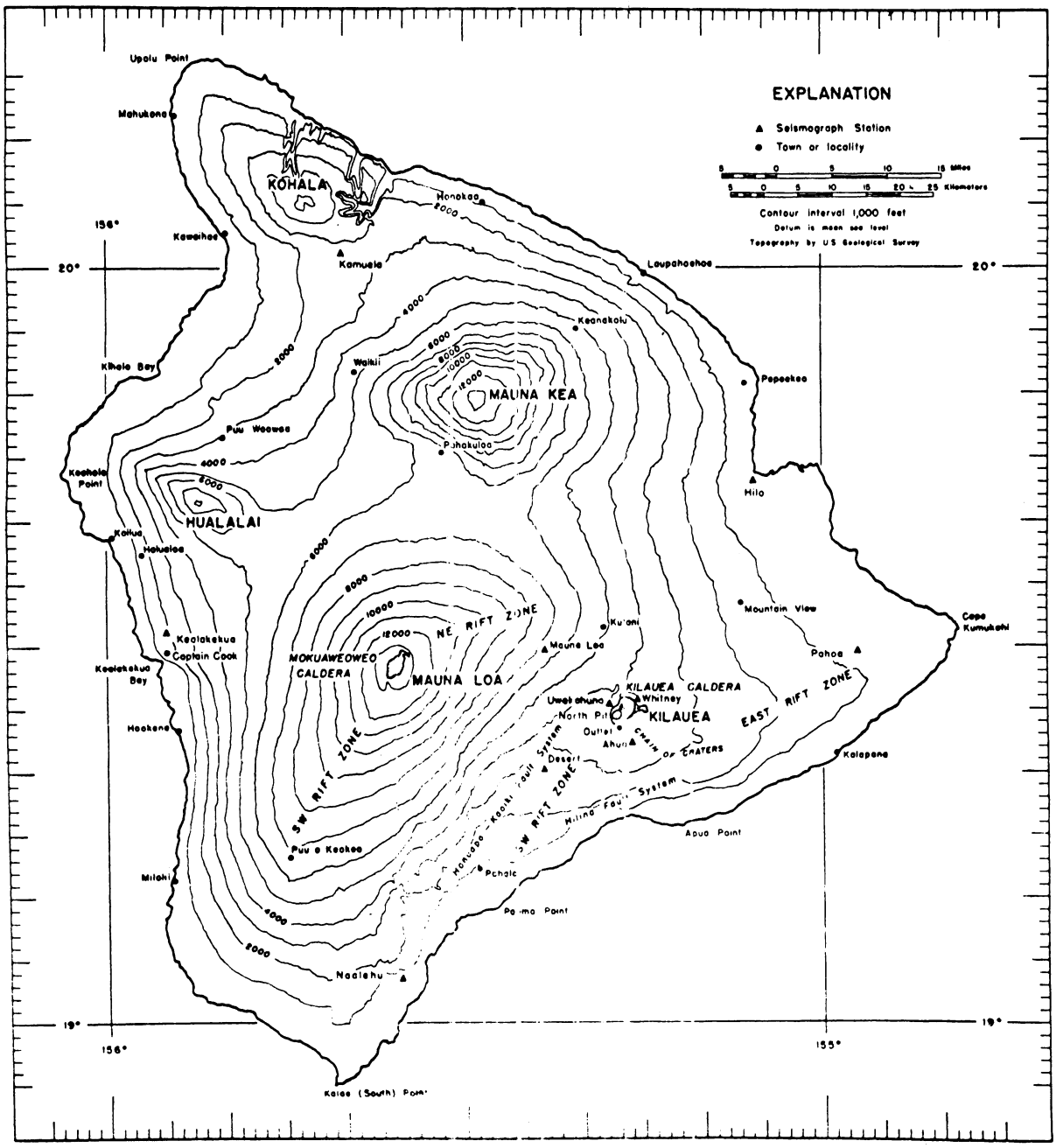

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magna within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone; earthquakes from a source about 30 km beneath Halemaumau; shallow earthquakes along the Kalapana Trail (SE. flank of Kilauea 10 to 15 km W. of Kalapana); and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
July 1	-------	-------	-------	1	83	112	2	9	1	1 Offshore Kalapana
2	-------	-------	4	9	105	86	2	4	-------	-------
3	-------	2	-------	2	36	53	-------	4	1	1 Mt. View 1 SW. rift Mauna Loa
4	-------	-------	-------	-------	89	90	22	7	-------	-------
5	-------	-------	-------	2	86	77	1	6	-------	-------
6	-------	2	-------	-------	48	37	4	12	-------	-------
7	-------	-------	-------	-------	37	33	3	17	-------	2 Apua Pt.
8	-------	-------	-------	-------	42	29	3	5	-------	1 Offshore Apua Pt.
9	37	-------	-------	1	37	33	-------	9	-------	1 Offshore Naalehu
10	-------	-------	-------	-------	33	26	3	5	-------	-------
11	3	-------	-------	-------	58	26	2	7	2	-------
12	-------	8	-------	-------	51	38	1	3	-------	-------
13	-------	-------	-------	-------	41	26	4	4	-------	-------
14	-------	3	-------	-------	41	31	12	2	-------	1 Mauna Kea

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera--Continued

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Kala-pana Trail	Others
July 15	-----	-------	--------	1	69	37	2	13	-------	1 Offshore Naalehu
16	-----	-------	--------	------	68	34	3	3	-------	1 Offshore Apua Pt.
17	3	-------	--------	------	30	15	3	5	-------	1 Kona
18	-----	-------	--------	------	36	26	1	8	-------	1 Offshore Naalehu
19	-----	-------	--------	------	38	20	1	1	-------	----------
20	-----	3	--------	------	22	22	3	1	-------	1 Hilina Pali
21	-----	-------	--------	------	38	23	2	3	-------	1 Offshore Kawaihae
22	-----	-------	--------	------	66	17	----	6	2	1 Offshore Apua Pt.
23	-----	-------	--------	1	83	39	----	1	-------	1 Kona
24	-----	-------	--------	------	56	23	----	4	-------	1 Kona
25	-----	-------	--------	------	37	32	1	1	1	1 Mauna Kea
26	-----	-------	--------	------	60	46	----	1	-------	----------
27	-----	-------	--------	------	43	33	16	22	1	----------
28	-----	-------	--------	1	38	22	5	4	-------	----------
29	-----	-------	--------	------	49	28	2	3	-------	1 N. Kona
30	-----	6	--------	------	24	20	10	3	1	1 Mauna Kea
31	2	3	--------	1	68	15	2	1	1	----------
Aug. 1	-----	------	--------	------	53	22	1	------	-------	1 Offshore Hamakua
2	3	------	2	------	34	18	5	5	-------	----------
3	-----	5	2	------	50	15	1	------	-------	1 Offshore Naalehu
4	-----	2	--------	1	45	19	4	6	2	----------
5	-----	------	--------	------	38	15	3	4	-------	----------
6	-----	------	--------	1	50	8	-----	9	-------	----------
7	-----	------	2	1	63	9	-----	4	-------	----------
8	-----	------	--------	------	75	16	-----	5	-------	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera--Continued

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Aug. 9	------	------	------	------	94	22	------	1	------	----------
10	------	------	------	------	56	18	1	2	------	1 Kona 2 Hilina Pali
11	------	------	------	1	95	18	------	1	------	1 Kona
12	37	4	------	------	62	14	------	2	------	1 N. Kona
13	------	------	------	------	60	9	------	3	1	1 N. of Naalehu 1 Cape Kumukahi
14	------	4	------	------	83	14	5	1	------	1 Offshore Kona
15	------	------	------	------	65	11	------	2	------	1 Hilina Pali 2 Kona
16	14	------	------	------	50	8	3	----	2	----------
17	------	------	------	------	43	9	------	----	------	1 NE of Naalehu
18	------	9	------	4	61	7	------	1	------	1 Hilina Pali
19	------	------	------	------	52	10	3	8	------	1 Laupahoehoe 1 Kamuela
20	------	------	------	------	55	6	6	----	9	1 Offshore Kona 1 Offshore Hilo
21	------	------	------	1	70	11	1	1	------	2 Offshore Kona 2 SW. rift Mauna Loa
22	------	------	------	1	66	7	1	1	3	1 Offshore Kona
23	3	------	------	------	69	10	------	8	------	----------
24	------	------	------	------	79	3	3	2	------	1 N. Kona
25	------	------	------	3	80	4	6	3	------	1 Offshore Kona
26	------	------	------	------	74	11	4	2	------	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea Caldera--Continued

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Aug. 27	------	-------	-------	------	80	5	2	3	-------	1 Central Kona 1 Offshore Kona
28	------	3	-------	1	76	6	1	1	-------	1 N. Kona
29	------	-------	-------	1	47	30	1	-----	-------	1 Offshore Kona
30	------	-------	-------	-------	86	17	2	3	1	----------
31	------	-------	-------	-------	65	6	-----	-----	-------	----------
Sept. 1	7	-------	-------	-------	73	7	4	-----	1	----------
2	------	-------	-------	-------	57	11	-----	-----	-------	1 Kulani 1 Offshore Kona
3	------	-------	-------	-------	40	4	-----	-----	-------	----------
4	------	-------	-------	-------	37	5	-----	1	-------	----------
5	------	-------	-------	-------	90	2	1	6	-------	----------
6	------	-------	-------	-------	73	6	-----	2	-------	1 Offshore Kawaihae.
7	------	-------	-------	-------	110	6	1	6	-------	----------
8	------	-------	-------	-------	60	9	1	3	-------	1 Offshore Apua Pt.
9	------	-------	-------	2	80	8	5	------	-------	1 S. Kona
10	------	-------	-------	1	52	13	------	2	-------	1 Offshore Kona
11	25	-------	-------	-------	53	8	------	2	-------	2 Kulani 1 Offshore Kona
12	21	-------	-------	-------	60	8	------	2	-------	1 Central Kona
13	------	-------	-------	-------	64	12	------	2	3	----------
14	------	-------	-------	-------	62	7	------	2	2	2 Kona
15	------	-------	-------	-------	82	6	------	2	-------	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea Caldera--Continued

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Sept. 16	3	------	------	------	72	15	1	------	------	1 Offshore Kona
17	3	------	------	------	51	21	1	------	2	----------
18	-----	------	------	------	50	7	------	3	------	1 Mauna Kea 2 Kona
19	-----	------	------	------	36	5	1	1	------	1 Offshore Maui 2 Mauna Kea
20	-----	------	------	------	45	14	1	1	2	1 Offshore Maui
21	-----	------	------	1	54	7	------	3	------	1 Offshore Naalehu
22	-----	------	------	------	38	7	3	1	------	1 Offshore Naalehu 2 Offshore Kona
23	-----	------	------	1	73	9	1	------	------	1 Kohala
24	-----	------	------	2	64	4	1	1	------	----------
25	-----	------	------	------	50	12	3	------	------	1 S. Flank Mauna Loa 1 Mt. View
26	-----	------	------	------	75	10	------	1	------	----------
27	21	------	------	------	78	7	2	8	------	1 Offshore Laupahoehoe.
28	55	------	------	------	55	12	1	3	------	1 Offshore Naalehu 1 Offshore Molokai
29	-----	------	------	------	55	4	5	2	------	2 Kona
30	-----	------	------	1	75	8	29	------	------	1 Kona 1 Offshore Naalehu

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Origin time is Hawaiian standard.

In the following list some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

Origin times of members of a second persistent sequence of earthquakes are followed by "KT" (Kalapana Trail). These earthquakes originate at very shallow depths in a remote region along the Kalapana Trail west of Kalapana, and they generally are not felt. Seismograms of these earthquakes are poorly recorded and difficult to interpret; so only an approximate epicenter, 19°20' N., 155°05' W., can be assigned to them.

The mean focus of the magnitude 6.1 Kaoiki fault system earthquake of June 27 and its aftershocks is 19°24'N., 155°25' W., at a depth of 3 to 8 km. This focus has been abbreviated "Kaoiki"]

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 1	09	18	53.5	3.1	13	19°10.2'	154°58.2'	20 km south of Kalapana	----------
1	10	17	38.1	2.1	5	19°17.9'	155°38.8'	27 km north-northwest of Naalehu.	----------
3	02	07	13.2	2.7	13	19°34.8'	155°11.6'	8 km west-northwest of Mountain View.	Felt in Mountain View.
3	18	40	41.3	3.5	5	19°15.0'	155°37.7'	21 km north-northwest of Naalehu.	Felt in Pahala

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 4	00	08	37.6	2.7	---	------	--------	KT----------	----------
4	01	17	21.5	2.0	8	19° 20.2'	155°23.2'	Near Desert seismometer	----------
4	06	21	45.0	2.7	35	19°22.1'	155°16.8'	Near Ahua seismometer--	----------
5	01	05	12.6	2.3	---	------	--------	Kaoiki----------	----------
6	00	58	42.3	3.0	---	------	--------	Kaoiki----------	----------
6	06	41	52.9	2.5	---	------	--------	KM 30----------	Felt in Kilauea caldera region.
6	16	41	25.0	2.3	---	------	--------	Kaoiki----------	----------
7	05	53	50.5	2.1	3	19°14.9'	155°07.1'	8 km east-southeast of Apua Point.	----------
7	05	55	12.5	2.7	5	19°13.0'	155°06.8'	10 km southeast of Apua Point.	----------
7	17	28	10.6	2.7	---	------	--------	KM 30	----------
8	22	24	12.7	2.9	8	18°48'	155°08'	50 km south-southeast of Apua Point.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 9	21	52	08.0	2.5	---	------	--------	KM 30----------	----------
9	01	45	28.4	2.6	8	18°58.1'	155°21.5'	27 km east-southeast of Naalehu.	----------
12	04	18	47.2	2.7	---	------	--------	KT----------	----------
12	15	35	42.4	2.6	---	------	--------	KM 30----------	----------
13	03	06	28.5	2.3	---	------	--------	KM 30----------	----------
14	05	48	33.6	2.9	---	------	--------	KM 30----------	Felt in Kilauea caldera region.
14	07	37	53.1	4.0	10	19°44.4'	155°38.2'	18 km south-southeast of Waikii.	Felt island-wide
15	02	35	22.6	3.2	---	------	--------	Kaoiki----------	Felt in Hilo
15	17	11	12.5	3.1	3	19°01.3'	155°27.5'	15 km east-southeast of Naalehu.	----------
16	04	28	47.2	2.7	---	------	--------	KM 30----------	----------
16	04	30	45.7	2.0	---	------	--------	KM 30----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 16	13	03	53.6	2.8	13	18°14'	155°01'	62 km south-southeast of Apua Point.	----------
16	19	12	59.0	2.5	45	19°39.8'	155°21.0'	19 km north-northeast of Mauna Loa seismometer.	----------
17	23	26	18.4	2.3	--	-------	--------	Kaoiki----------	----------
18	04	44	23.0	2.0	3	19°03.4'	155°25.3'	17 km east of Naalehu	----------
19	11	39	40.0	2.5	--	-------	--------	Kaoiki----------	----------
19	12	45	04.7	2.5	--	-------	--------	Kaoiki----------	----------
19	19	14	52.2	2.4	--	-------	--------	KM 30----------	----------
21	16	50	36.5	3.5	3	19°58'	156°16'	45 km west-southwest of Kawaihae.	----------
22	11	55	20.6	2.7	3	18°54.2'	155°08.2	40 km south-southeast of Apua Point.	----------
22	14	08	55.5	3.1	--	-------	--------	KT----------	----------
22	22	16	37.3	2.5	--	-------	--------	KM 30----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 23	04	19	26.3	2.3	---	------	--------	KT----------	----------
23	23	52	41.1	4.5	shallow	19°28.9'	155°59.2'	8 km west-southwest of Kealakekua.	Felt along west coast of Hawaii
24	09	18	44.8	2.5	---	------	--------	Kaoiki----------	----------
24	13	15	53.0	2.2	3	19°25.2'	154°52.8'	12 km southeast of Pahoa.	----------
24	17	48	13.9	4.9	3	19°34.0'	156°01.9'	14 km west-northwest of Kealakekua.	Felt island-wide.
25	00	32	06.5	2.5	13	19°56.1'	155°25.8'	10 km west-northwest of Keanakolu.	----------
25	08	28	00.1	2.5	---	-------	--------	KT----------	----------
25	15	21	52.1	2.4	---	-------	--------	KT----------	----------
27	00	04	44.2	3.0	---	-------	--------	Kaoiki----------	Felt in Hilo, Pahala, and Naalehu.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 27	20	57	48.5	2.5	---	-------	-------	Kaoiki----------	----------
27	22	06	41.7	3.4	---	-------	-------	KM 30----------	Felt in Pahala, and Kilauea caldera region.
27	22	16	49.1	2.8	---	-------	-------	KM 30----------	----------
28	05	44	36.8	2.1	---	-------	-------	KT----------	Felt in Kapoho (Cape Kumukahi)
29	06	51	16.0	2.9	13	19°46.2'	155°54.9'	10 km west of Puu Waawaa	----------
30	22	58	56.3	2.7	8	19°52.5'	155°19.3'	5 km south-southeast of Keanakolu.	Felt in Paauilo (northern coast of Hawaii).

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 31	02	46	48.0	3.5	shallow	19°25.5'	155°.00.0'	8 km southwest of Pahoa	Felt in Kapoho
31	03	24	15.8	3.7	----	-------	--------	KT----------	Felt in Hilo
Aug. 1	09	57	39.2	3.0	13	20°57'	155°08'	105 km north-northeast of Laupahoehoe.	----------
1	16	06	28.4	3.0	----	-------	--------	Kaoiki----------	----------
1	16	28	37.6	2.3	----	-------	--------	KT----------	----------
1	21	58	51.2	2.4	----	-------	--------	KT----------	----------
2	04	38	13.1	1.9	8	19°28.8'	155°01.7'	8 km west-southwest of Pahoa.	Felt in Pahoa
3	05	50	41.7	2.5	8	19°24.0'	154°57.7'	13 km south-southwest of Pahoa.	----------
3	05	57	44.0	2.5	3	19°24.1'	155°01.1'	13 km southwest of Pahoa.	----------
3	08	31	59.0	2.3	8	19°04.9'	155°31.8'	7 km east-northeast of Naalehu.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 5	02	18	06.3	2.1	----	-------	-------	KM 30----------	----------
5	02	58	29.0	2.4	3	19°27'	154°54'	8 km SE of Pahoa----------	----------
8	11	46	29.0	2.3	----	-------	-------	KM 30----------	----------
9	00	27	11.2	2.3	----	-------	-------	KM 30----------	----------
9	06	44	53.9	2.7	----	-------	-------	KT----------	----------
9	15	50	07.0	2.7	----	-------	-------	Kaoiki----------	----------
9	21	16	54.2	2.5	----	-------	-------	Kaoiki----------	----------
9	23	12	19.0	2.0	----	-------	-------	KT----------	----------
10	02	17	55.0	2.0	----	-------	-------	KT----------	----------
10	15	37	20.1	2.2	----	-------	-------	KM 30----------	----------
11	01	39	26.2	2.6	50	19°10.6'	155°20.2'	20 km SSE of Desert seismometer.	----------
11	22	46	57.2	2.5	----	-------	-------	KM 30----------	----------
12	02	07	18.2	2.5	13	19°45.0'	155°46.5'	7 km ESE of Puu Waawaa	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 13	16	28	01.5	2.2	8	19°13.4'	155°35.0'	18 km north of Naalehu	----------
13	22	32	06.0	2.4	5	19°14'	154°34'	40 km southeast of Cape Kumukahi.	----------
14	19	28	25.4	2.6	3	19°22'	156°16'	40 km southwest of Kealakekua.	----------
14	21	11	39.0	2.5	shallow	19°28.2'	154°58.7'	5 km southwest of Pahoa.	----------
14	23	37	50.0	2.7	----	--------	--------	KT----------	----------
16	17	15	07.5	2.6	1 1/2	19°23.2'	154°53.6'	14 km south-southeast of Pahoa.	Felt in Kapoho (Cape Kumakahi)
16	18	31	39.5	2.7	1 1/2	19°23.2'	154°53.6'	14 km south-southeast of Pahoa.	Felt in Kapoho (Cape Kumakahi)

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 17	23	30	06.5	4.0	8	19°10.8'	155°32.0'	14 km northeast of Naalehu.	Felt in the southern half of Hawaii.
18	16	58	41.8	4.6	8	19°18.2'	155°11.7'	11 km southeast of Ahua seismometer.	Felt island-wide.
18	18	21	49.8	2.7	8	19°17.7'	155°24.4'	13 km northeast of Pahala.	----------
18	18	47	21.0	2.0	3	19°22.8'	155°09.7	11 km east of Ahua seismometer.	----------
19	00	19	02.4	2.2	8	19°52.7'	155°16.8'	15 km south-southeast of Laupahoehoe.	----------
19	00	53	11.0	3.0	8	19°22.0'	155°29.0'	18 km north of Pahala	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 19	20	23	50.0	2.5	8	19°50.5'	155°31.4'	28 km southeast of Kamuela.	----------
20	01	39	07.3	3.0	8	19°10'	156°13'	50 km southwest of Kealakekua.	----------
20	03	44	25.9	2.2	8	19°48.9'	155°15.9'	23 km northwest of Hilo.	----------
20	05	31	39.1	3.0	---	-------	--------	KT----------	----------
20	06	24	37.1	2.7	---	-------	--------	KT----------	----------
20	13	40	23.9	2.9	---	-------	--------	KT----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 20	14	41	51.9	2.6	---	--------	--------	KT----------	----------
20	14	58	29.2	2.8	---	--------	--------	KT----------	----------
21	04	26	34.5	2.8	8	19°10'	156°13'	50 km southwest of Kealakekua.	----------
21	13	29	31.8	2.9	8	19°10'	156°13'	50 km southwest of Kealakekua.	----------
21	13	39	58.8	2.6	3	19°29.2'	155°42.6'	13 km west-northwest of Mokuaweoweo caldera.	---------- ----------
21	13	52	22.5	2.4	3	19°27.9'	155°42.1'	12 km west of Mokuaweoweo caldera.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 22	14	24	41.7	2.8	8	19°10'	156°13'	50 km southwest of Kealakekua.	----------
22	22	52	44.9	2.7	---	--------	--------	KM 30----------	----------
22	23	22	34.9	3.3	---	--------	--------	KT----------	Felt in Kilauea caldera region.
23	18	39	20.8	2.5	---	--------	--------	KM 30----------	----------
23	18	39	38.9	2.9	---	--------	--------	KM 30----------	----------
25	13	20	44.5	2.2	---	--------	--------	KM 30----------	----------
25	17	54	00.5	2.4	---	--------	--------	Kaoiki----------	----------
25	21	41	14.3	2.1	8	19°20.5'	155°01.5'	19 km southwest of Pahoa.	----------
25	22	22	19.0	3.4	13	19°09'	156°10'	50 km southwest of Kealakekua.	----------
27	03	23	19.9	2.8	13	19°07'	156°10'	53 km southwest of Kealakekua.	----------
27	12	31	53.7	2.5	8	19°32.2'	155°55.5'	3 km north-northwest of Kealakekua.	----------
29	20	30	40.2	2.6	13	18°57'	156°15 '	70 km southwest of Kealakekua.	----------
30	03	27	13.4	2.5	8	19°21.1'	155°23.2'	1 1/2 km north of Desert seismometer.	----------
30	15	53	43.1	2.3	---	--------	--------	KM 30----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 30	16	16	33.2	3.1	---	-------	--------	KT----------	----------
30	16	44	28.9	2.5	3	19°22.1'	155°29.3'	17 km southwest of Mauna Loa seismometer.	----------
31	09	42	31.0	3.0	8	19°28.0'	155°25.5'	5 km southwest of Mauna Loa seismometer.	----------
Sept. 2	13	16	00.4	2.6	30	19°25.7'	155°18.1'	1 km northwest of Uwekahuna seismometer.	----------
2	14	11	07.3	2.2	30	19°25.7'	155°18.1'	1 km northwest of Uwekahuna seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 2	15	34	40.0	2.5	---	--------	--------	Kaoiki----------	----------
2	17	17	05.2	3.1	30	19°28.5'	155°15.0'	7 km northeast of Uwekahuna seismometer.	Felt in Kilauea caldera region
2	21	49	20.0	3.5	13	19°08'	156°11'	50 km southwest of Kealakekua.	----------
3	07	28	02.8	2.4	---	--------	--------	Kaoiki----------	----------
3	13	34	50.3	2.5	---	--------	--------	Kaoiki----------	----------
4	04	27	54.0	2.4	10	19°18.6'	155°15.8'	7 km south of Ahua seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 4	04	36	48.0	2.4	10	19°18.6'	155°15.8'	7 km south of Ahua seismometer.	----------
6	02	47	23.9	3.3	13	19°59.8'	156°00.0'	19 km west-southwest of Kawaihae.	----------
8	01	42	12.8	2.8	3	19°27.3'	154°50.1'	13 km southeast of Pahoa.	Felt in Pahoa
8	03	58	58.0	4.1	8	19°02.3'	155°08.5'	25 km south-southeast of Apua Point.	Felt in Hilo and Kilauea caldera region.
9	07	17	32.7	2.6	3	19°20.7'	155°06.6'	17 km east-southeast of Ahua seismometer.	----------
9	10	05	26.1	2.5	3	19°23.8'	155°00.6'	13 km southwest of Pahoa.	----------
9	17	57	57.0	2.7	8	19°18.0'	155°50.3'	12 km southeast of Hookena.	----------
10	19	11	15.0	3.6	3	19°20.0'	155°06.3'	18 km east-southeast of Ahua seismometer.	Felt in eastern Hawaii.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 10	22	36	44.6	2.9	13	19°05.5	156°10.0'	55 km southwest of Kealakekua.	----------
11	07	22	49.8	3.7	25	19°28.6'	155°14.0'	9 km northeast of Uwekahuna seismometer.	Felt island-wide.
11	07	25	27.5	3.6	25	19°28.6'	155°14.0'	9 km northeast of Uwekahuna seismometer.	Felt island-wide.
11	17	39	51.7	2.9	13	19°05.5'	156°10.0'	55 km southwest of Kealakekua.	----------
12	17	46	05.7	2.8	8	19°34.5'	155°55.4'	7 km north of Kealakekua.	----------
12	00	30	54.9	2.2	8	19°16.0'	155°12.1'	14 km southeast of Ahua seismometer.	----------
12	16	08	26.6	2.0	3	19°18.1'	155°27.6'	9 km southwest of Desert seismometer.	----------
13	12	41	59.9	2.2	---	-------	--------	KT----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 13	13	09	38.3	2.5	----	--------	--------	KT----------	----------
14	16	32	11.7	3.6	----	--------	--------	KT----------	----------
15	02	22	14.3	3.1	----	--------	--------	KT----------	----------
16	11	27	26.0	2.7	3	19°16.2'	155°02.9'	27 km southwest of Pahoa.	----------
17	11	17	55.3	3.1	----	--------	--------	Kaoiki----------	----------
18	03	30	03.1	2.8	----	--------	--------	Kaoiki----------	----------
18	03	46	32.2	3.0	8	19°50.4'	155°43.8'	21 km south-southwest of Kamuela.	----------
18	06	55	08.1	2.6	5	19°22.6'	155°05.1'	37 km south of Hilo	----------
19	03	29	45.1	2.8	13	20°46'	155°49'	40 km east of Haleakala, Maui seismograph.	---------- ----------
19	04	27	08.7	2.5	8	20°00.8'	155°20.8'	11 km west-northwest of Laupahoehoe.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 19	16	02	37.3	3.7	13	19°18.5'	155°04.7'	45 km south of Hilo.	Felt in Hilo
19	17	54	18.0	2.8	8	19°53.5'	155°37.7'	16 km southeast of Kamuela.	----------
20	22	46	05.9	3.7	13	20°46'	155°01'	109 km northeast of Kamuela.	----------
21	15	28	08.0	2.7	13	19°02.8'	155°25.3'	18 km east-southeast of Naalehu.	----------
21	18	52	10.6	2.1	--	-------	-------	KM 30----------	----------
22	13	27	29.2	3.0	13	19°46.'	156°32'	70 km northwest of Kealakekua.	----------
22	13	33	42.0	2.6	8	19°22.1'	155°56.9'	16 km south-southwest of Kealakekua.	----------
22	19	34	11.2	2.2	8	19°06.6'	155°22.8'	23 km east-northeast of Naalehu.	----------
23	10	38	47.4	2.9	13	20°13.2'	155°49.0'	25 km northwest of Kamuela.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 23	14	50	26.0	2.4	30	19°26.3'	155°07.9'	16 km northeast of Ahua seismometer.	----------
24	13	34	47.4	2.3	10	19°18.6'	155°12.5'	6 km southeast of Ahua seismometer.	----------
24	19	05	21.3	2.8	--	--------	--------	Kaoiki----------	----------
25	09	03	48.5	2.6	3	19°25.8'	155°02.5'	25 km east-northeast of Ahua seismometer.	----------
25	13	22	50.4	3.5	8	19°15.1'	155°30.2'	8 km northwest of Pahala.	Felt in Hilo and Pahala.
26	13	09	51.9	2.4	--	-------	--------	Kaoiki----------	----------
27	00	52	02.6	.2	15	20°03.3'	155°05.2'	38 km north of Hilo	----------
27	18	04	17.7	3.2	--	-------	--------	KM 30----------	Felt in north Hawaii, and Kilauea caldera region.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 27	20	11	42.7	2.6	--	-------	--------	KM 30----------	----------
28	09	44	49.0	2.5	8	18°56.8'	155°18.1'	35 km southeast of Naalehu.	----------
28	12	44	43.7	3.3	13	21°27'	156°47'	96 km northwest of Haleakala seismometer.	----------
28	22	50	05.0	2.5	30	19°21.2'	155°19.6'	7 km east-northeast of Desert seismometer.	----------
29	09	50	53.9	2.3	8	19°33.7'	155°41.5'	25 km east-northeast of Kealakekua.	----------
29	10	13	50.0	3.2	8	19°21.0'	155°54.9'	5 km south-southwest of Hookena.	----------
30	12	45	10.5	2.5	--	-------	--------	Kaoiki----------	----------
30	13	05	42.0	2.5	3	19°25.7'	154°56.8'	8 km south of Pahoa	----------
30	20	22	12.0	2.9	3	19°02.8'	155°25.2'	18 km east of Naalehu	----------

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in Summary 25. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

A major disaster recorded this quarter was the Iranian quake of September 1, 1962. By comparison, the Agadir earthquake of February 29, 1960, caused roughly equivalent casualties and damage, but it failed to record any recognizable phases on the HVO network]

July 2, 1962

M	Z	iP	08:41:16.7	c
A	Z	iP	08:41:16.7	
D	Z	eP	08:41:16.2	d
U	Z	iP	08:41:16.5	c
Pa	Z	iP	08:41:18.6	c
Na	Z	iP	08:41:13.7	d
Hi	Z	iP	08:41:19.4	c
Ha	Z	iP	08:41:18.2	d
U	PEZ	iP	08:41:17	c
		iR	08:54:57	
U	PEN	eS	08:48:18	
U	PEE	eL	08:52:29	

C&GS card 54-62:
08:32:37.9
10.3° S., 165.9° E.
Santa Cruz Island
h about 50 km
Magnitude 6.3 (Berk).

July 3

U	PEN	eS	18:44:17
U	PEZ	iR	18:56:53

C&GS card 59-62:
18:22:06.3
54.6° S., 132.3° W.
South Pacific Ocean
h about 25 km.

July 5

U	PEZ	eR	18:06:30

C&GS card 52-62:
17:40:55.3
30.9° N., 141.4° E.
South of Honshu
h about 23 km.

Table 5.--Distant earthquakes--Continued

July 6, 1962

M	Z	eP	23:23:50.1	c
A	Z	eP	23:23:50.1	c
N	Z	eP	23:23:49.1	c
U	PEZ	iP	23:24:10	c
U	PEN	eSKS	23:33:52	
U	PEZ	eG	23:58:30	

C&GS card 54-62:
23:05:32.2
36.6° N., 70.4° E.
Hindu Kush
h about 203 km.

July 7

M	Z	iP	06:20:11.3	c
A	Z	eP	06:20:13.0	c
D	Z	eP	06:20:12.4	c
N	Z	eP	06:20:12.3	c
U	PEZ	iP	06:20:13	c
U	PEN	eS	06:25:55	
U	PEN	iR	06:29:35	
Ha	Z	Tmax	06:58:05.6	

C&GS card 54-62:
06:12:48.9
51.3° N., 178.6° E.
Rat Islands, Aleutian Islands
h about 60 km.

July 8

M	Z	eP	03:29:15.2	d
A	Z	eP	03:29:16.2	d
N	Z	eP	03:29:16.7	d
U	PEZ	eR	03:39:11.2	

C&GS card 54-62:
03:22:03.8
51.5° N., 178.5° E.
Aleutian Islands, Rat Islands
h about 60 km.

July 11

M	Z	eP	12:52:47.5	c
A	Z	eP	12:52:48.0	c
D	Z	eP	12:52:47.4	c
N	Z	eP	12:52:47.8	c
U	PEN	eG	13:13:41	
U	PEZ	eR	13:17:05	

C&GS card 53-62:
12:40:30.7
11.9° N., 122.1° E.
Panay, Philippine Islands
h about 25 km.

July 13

M	Z	eP	03:44:02	c
U	PEZ	eR	04:08:22	

C&GS card 53-62:
03:32:00.5
10.4° N., 122.6° E.
Panay, Philippine Islands
h about 66 km.

Table 5.--Distant earthquakes--Continued

July 15, 1962

M	Z	iP	06:57:04.6 d
A	Z	iP	06:57:05.2 d
D	Z	iP	06:57:04.4 d
N	Z	iP	06:57:05.0 d
U	Z	iP	06:57:04.4 c
Pa	Z	eP	06:57:05.8 c
Hi	Z	eP	06:57:05.4 d
Ha	Z	eP	06:57:18.2 d
U	PEZ	eG	07:13:43

C&GS card 53-62:
06:47:22.5
39.8° N., 140.9° E.
Honshu, Japan
h about 103 km.

July 16

M	Z	iP	13:02:36.7 d
A	Z	iP	13:02:37.9 d
D	Z	eP	13:02:37.7 d
N	Z	iP	13:02:36.7 d
U	Z	eP	13:02:37.4 c
Hi	Z	iP	13:02:34.4 d
Ha	Z	eP	13:02:27.5 d
U	PEZ	eP	13:02:37.2 c
U	PEZ	eR	13:14:55
U	PEE	eS	13:10:27

July 16--Continued

C&GS card 53-62:
12:54:40.6
62.3° N., 153.1° W.
Alaska
h about 39 km.

July 17

M	Z	iP	17:30:05 d
Hi	Z	eP	17:30:06 c
U	PEN	eS	17:37:43
U	PEE	eL	17:42:55
U	PEZ	iR	17:45:17

C&GS card 56-62:
17:20:22.9
43.1° N., 144.5° E.
Hokkaido, Japan
h about 30 km.

July 22

M	Z	iP	13:46:01 d
D	Z	eP	13:46:08
N	Z	eP	13:46:01 d

C&GS card 57-62:
13:36:49.7
8.4° S., 158.8° E.
Solomon Islands
h about 107 km.

Table 5.--Distant earthquakes--Continued

July 24, 1962

M	Z	iP	21:18:15.3	d
A	Z	ip	21:18:15.0	d
D	Z	eP	21:18:15	
N	Z	eP	21:18:14.3	d
Pa	Z	iP	21:18:12.1	c
Hi	Z	iP	21:18:13.8	c
Ka	Z	iP	21:18:15.8	d
U	PEZ	eP	21:18:18	d
M	Z	ipP	21:18:42.5	
A	Z	ipP	21:18:41	
N	Z	epP	21:18:41.4	
U	PEZ	epP	21:18:41	
U	Z	eS	21:26:43	

C&GS card 57-62:
21:08:22.6
15.5°N., 92.5° W.
Mexico
h about 129 km
Magnitude 5.6 (Berk)
5.5 (Pal)

July 25

U	PEZ	eP	04:48:19	c
Hi	Z	eP	04:48:58	d
Ka	Z	eP	04:48:57	c
U	PEZ	eS	04:58:21	
U	PEZ	eSS	05:02:27	
U	PEZ	eR	05:09:59	

July 25--Continued

C&GS card 60-62:
04:37:50.7
18.9° N., 81.1° W.
West of Jamaica
h about 64 km
Magnitude 6 (Pas), 6.2 (HVO),
5.5 (Berk),
6 (Pal).

July 26

M	Z	iP	08:26:05.4	c
A	Z	iP	08:26:04.8	c
D	Z	iP	08:26:05.0	c
N	Z	iP	08:26:04.6	c
U	PEZ	iP	08:26:05	c
Pa	Z	iP	08:26:03.1	c
Na	Z	eP	08:26:07.5	c
Hi	Z	iP	08:26:03.8	c
Ka	Z	iP	08:26:06.4	c
Ha	Z	iP	08:26:09.8	c
A	Z	ePP	08:28:53	
U	PEZ	iS	08:35:23	
U	PEZ	iSS	08:40:07	
U	PEN	iL	08:43:55	
U	PEZ	iR	08:47:25	

C&GS card 58-62:
08:14:41.8
7.5° N., 82.7° W.
South of Panama
h about 21 km
Magnitude 6.8 (Pas)
7 (Berk)
7.5 (HVO)

Table 5.--Distant earthquakes--Continued

July 28, 1962

M	Z	iP	00:12:44.0 c
A	Z	iP	00:12:43.8 c
D	Z	eP	00:12:42.7
N	Z	eP	00:12:44.0 c
Hi	Z	iP	00:12:44.7 c
Ha	Z	iP	00:12:49.3 c
U	PEZ	iP	00:12:55
U	PEZ	eS	00:18:47
U	PEZ	eG	00:22:11

C&GS card 61-62:
00:05:10.8
16.2° S., 173.2° W.
Samoa Islands
h about 40 km.
Felt: Apia

July 30

M	Z	iP	17:27:21.3 c
A	Z	eP	17:27:21.7 c
D	Z	eP	17:27:21.4 c
U	Z	eP	17:27:21.9 c
U	PEZ	iP	17:27:21.1 c
Hi	Z	iP	17:27:22.8 d
U	PEZ	ePP	17:29:51
U	PEE	iS	17:36:11
U	PEE	iSS	17:40:25
U	PEN	iG	17:43:21
U	PEZ	iR	17:45:56

July 30--Continued

C&GS card 60-62:
17:16:44.4
3.3° S., 143.9° E.
North Coast of New Guinea
h about 25 km
Magnitude 6.8 - 7 (Pas)
7 (Berk)
7 (Pal)

July 30

M	Z	iP	20:30:44.6 d
A	Z	iP	20:30:41.8 d
D	Z	eP	20:30:44.9
N	Z	eP	20:30:44.3 d
Hi	Z	eP	20:30:47.0 c
Ha	Z	eP	20:30:53.2 c
U	PEZ	iP	20:31:19 c
U	PEZ	ePP	20:34:11
U	PEE	iS	20:41:05
U	PEE	iSS	20:45:21
U	PEE	iL	20:51:10
U	PEE	iG	20:51:41

C&GS card 58-62:
20:18:49.3
5.0° N., 76.3° W.
Western Colombia
h about 45 km
Magnitude 7.0 (HVO)
6.8 (Pas)
6.8 (Berk)
6 (Pal).
47 killed in Caldas Province; property damage over 400,000 sq. miles.

Table 5.--Distant earthquakes--Continued

July 31, 1962

M	Z	iP	05:25:05.8 d
A	Z	iP	05:25:06.5 d
D	Z	iP	05:25:05.6 d
N	Z	iP	05:25:06.1 d
U	PEZ	eR	05:50:13

C&GS card 60-62:
05:13:04.1
18.8° N., 120.8° E.
Near north coast of Luzon, Philippines
h about 39 km.

Aug. 1

M	Z	iP	04:47:34.9 c
Pa	Z	iP	04:47:39.6 d
Hi	Z	iP	04:47:34.5 c
Ha	Z	iP	04:47:32.0 c
U	Z	eP	04:47:37.7
U	PEZ	iP	04:47:37
U	PEZ	iPcP	04:48:15
U	PEZ	iPP	04:49:57
U	PEZ	iPPP	04:51:32
U	PEE	iS	04:56:16
U	PEN	iSS	05:00:23
U	PEN	iG	05:03:29
U	PEZ	iR	05:06:09

August 1--Continued

C&GS card 62-62:
04:36:57.6
3.2° S., 143.7° E.
North coast of New Guinea
h about 33 km
Magnitude 6.5-6.8 (Pas)
7 (Berk)
6.5 (Pal)

Aug. 3

M	Z	iP	09:09:31.4 c
A	Z	iP	09:09:29.9 d
U	Z	iP	09:09:30.6 d
U	PEZ	iP	09:09:31 d
Pa	Z	iP	09:09:28.9 d
Hi	Z	iP	09:09:30.4 d
Ha	Z	iP	09:09:36.7 d
U	PEZ	iPP	09:13:23
U	PEZ	iPPP	09:15:25
U	PEE	eSKS	09:19:58
U	PEE	eS	09:21:01
U	PEE	iPPS	09:22:39
U	PEN	eG	09:35:09
U	PEZ	iR	09:39:27
Pa	Z	Tmax	10:53:13.9
Ha	Z	Tmax	10:55:17.7
M	Z	Tmax	10:53:51

Aug. 3, 1962--Continued

A	Z	Tmax	10:53:45
D	Z	Tmax	10:53:47
U	Z	Tmax	10:53:45

C&GS card 62-62:
08:56:12.1
23.2° S., 67.5° W.
Northern Chile-
Argentina border
h about 71 km
Magnitude 7-7.3 (Pas)
6.8 (Berk)

Aug. 6

M	Z	iP	21:00:53.3 d
A	Z	iP	21:00:53.0 d
N	Z	eP	21:00:54.3 d
U	PEZ	eP	21:00:53
Hi	Z	iP	21:00:56.3 d
U	PEZ	iS	21:08:09
U	PEZ	iSS	21:11:39
U	PEZ	eL	21:12:27
U	PEE	iR	21:14:49

C&GS card 66-62:
20:51:56.8
26.9° S., 177.1° W.
h about 50 km
Kermadec Island region
Magnitude 6 (Berk)
5.5 (Pal)

Aug. 11

M	Z	eP	01:55:04.8 d
A	Z	eP	01:55:05.6 d
D	Z	eP	01:55:04.8 d

Aug. 11--Continued

N	Z	eP	01:55:04.5 d
Pa	Z	iP	01:55:06.3 d
Hi	Z	iP	01:55:07.5 d
Ka	Z	iP	01:55:07.2 d
Ha	Z	iP	01:55:10.0 d
U	PEN	eS	02:01:06

C&GS card 64-62:
01:47:39.6
20.0° S., 178.8° W.
Fiji Islands
h about 638 km.

Aug. 11

M	Z	iP	08:27:09.7 c
A	Z	iP	08:27:10.5 c
D	Z	iP	08:27:09.7 c
N	Z	eP	08:27:09.9 c
U	PEZ	iP	08:27:10 c
Pa	Z	iP	08:27:11.4 c
Hi	Z	iP	08:27:10.6 c
Ka	Z	iP	08:27:07.1 d
Ha	Z	iP	08:27:02.8 c
U	PEZ	isP	08:27:44
U	PEE	iS	08:36:38
U	PEE	eG	08:47:22

C&GS card 69-62:
08:15:43.7
25.2° N., 123.3° E.
Off NE coast of Formosa.
h about 140 km
Magnitude 6 (Pas)
5-5.5 (Pal)

Aug. 13, 1962

A	Z	eP	06:47:25.1 c
N	Z	eP	06:47:24.8 c
U	PEZ	eS	06:56:46
U	PEZ	eL	07:06:16

C&GS card 65-62:
06:35:56.0
2.1°N., 83.5° W.
About 300 miles NW of Ecuador
h about 33 km
Magnitude 6.5-6.8 (Pas)
5.4 (Berk)
5.5-5.8 (Pal)

Aug. 15

M	Z	eP	08:28:12.4 c
U	PEZ	eR	08:42:04

C&GS card 63-62:
08:19:37.8
54.6° N., 161.5° E.
East coast of Kamchatka
h about 52 km.

Aug. 17

M	Z	iP	05:16:41.6 c
A	Z	iP	05:16:42.8 c
D	Z	eP	05:16:42.3 c
N	Z	eP	05:16:42.6 c
U	PEZ	iP	05:16:44 c
Hi	Z	eP	05:16:44.7 c
U	PEZ	eSKS	05:27:40
U	PEZ	ePPS	05:29:42
U	PEZ	eG	05:41:22

August 17,--Continued

C&GS card 67-62:
05:04:31.5
10.6° N., 121.6° E.
Panay region, Philippine Islands
h about 33 km.

Aug. 18

M	Z	iP	16:51:50.1 d
A	Z	iP	16:51:51.1 d
D	Z	iP	16:51:51.0 d
N	Z	eP	16:51:50.2 d
Pa	Z	iP	16:51:50.0 d
Hi	Z	iP	16:51:48.8 d
U	PEZ	eR	17:04:49

C&GS card 67-62:
16:43:54.3
62.3° N., 152.5° W.
Central Alaska. Felt.
h about 32 km
Magnitude 6-6.3 (Pas)
5.3-5.5 (Pal)
5.3 (HVO)

Aug. 18

M	Z	iP	17:54:10.4 d
A	Z	eP	17:54:11.0 d
D	Z	eP	17:54:11.2 d
N	Z	eP	17:54:10.4 d
Pa	Z	iP	17:54:08.2 c
Hi	Z	iP	17:54:09.0 d
U	PEZ	eS	18:00:53
U	PEZ	eR	18:06:25

Table 5.--Distant earthquakes--Continued

Aug. 18--Continued

C&GS card 65-62:
17:46:14.9
62.3° N., 152.5° W.
Central Alaska. Felt.
Magnitude 6-6.3 (Pas)
5.3-5.5 (Pal)
5.3 (HVO)

Aug. 22

M	Z	iP	21:20:28.6 c
D	Z	eP	21:20:28.8 c
N	Z	eP	21:20:28.6 c
Hi	Z	iP	21:20:25.3 c
U	PEN	ePP	21:22:41
U	PEE	iS	21:29:05
U	PEZ	eSS	21:33:17
U	PEE	iG	21:36:21

C&GS card 67-62:
21:08:22.9
8.3° N., 123.8° E.
Mindanao, Philippine Islands
h about 125 km.

Aug. 23

U	PEZ	eR	19:43:06
M	Z	Tmax	20:12:33
A	Z	Tmax	20:12:36
D	Z	Tmax	20:12:29
U	Z	Tmax	20:12:30
Pa	Z	Tmax	20:12:07
Hi	Z	Tmax	20:12:02

Aug. 23--Continued

Ka	Z	Tmax	20:12:17
Ha	Z	Tmax	20:11:59

C&GS card 69-62:
19:17:26.6
15.6° S., 172.2° W.
Samoa Islands Region
h about 33 km.

Aug. 24

M	Z	eP	09:11:49.7 c
A	Z	eP	09:11:47.9 c
D	Z	eP	09:11:49.7 c
Hi	Z	eP	09:11:50.4 d
U	PEE	eS	09:17:47
U	PEE	eG	09:19:49

C&GS card 69-62:
09:04:22.9
15.0° S., 173.3° W.
Samoa Islands region
h about 33 km
Magnitude 5.3-5.5 (Pal)

Aug. 25

M	Z	iP	08:39:22.4 d
A	Z	iP	08:39:21.8 d
D	Z	eP	08:39:21.2 d
U	Z	iP	08:39:21.3 c
Pa	Z	iP	08:39:23.3 c
Hi	Z	iP	08:39:24.6 c
Ka	Z	iP	08:39:24.3
Ha	Z	iP	08:39:27.0
U	PEZ	esP	08:42:07

Table 5.--Distant earthquakes--Continued

Aug. 25--Continued

U	PEZ	iS	08:45:29
U	PEE	eScS	08:48:23

C&GS card 67-62:
08:31:48.7
20.5° S., 178.5° W.
Fiji Islands
h about 561 km.

Aug. 26

M	Z	eP	06:58:51.2 d
A	Z	eP	06:58:49.3 d
D	Z	eP	06:58:50.8 d
U	PEN	eG	07:13:04
U	PEZ	eR	07:16:44

C&GS card 67-62:
06:48:57.1
34.0° N., 139.2° E.
East coast of Honshu, Japan
Felt: Tokyo
h about 38 km.

Aug. 26

M	Z	eP	23:41:31.7 d
A	Z	eP	23:41:31.4 d
D	Z	eP	23:41:26.8
N	Z	eP	23:41:31.4 d
Hi	Z	eP	23:41:33.4 d
U	PEZ	eR	00:01:24

C&GS card 68-62:
23:30:38.0
3.7° S., 140.1° E.
New Guinea
h about 50 km.

Aug. 27

M	Z	iP	02:28:39.7 c
A	Z	iP	02:28:45.9 c
D	Z	eP	02:28:36.0 c
Hi	Z	iP	02:28:40.4 d

C&GS card 67-62:
02:18:58.8
40.2° N., 137.8° E.
Sea of Japan
h about 274 km.

Aug. 27

M	Z	eP	16:29:44.3 c

C&GS card 68-62:
16:20:04.7
38.3° N., 142.4° E.
Off east coast of Honshu, Japan
h about 40 km.

Aug. 28

M	Z	iP	11:18:44.0 d
A	Z	iP	11:18:44.3 d
D	Z	iP	11:18:45.1 d
U	Z	iP	11:18:43.8 d
Hi	Z	iP	11:18:43.1 d
Ka	Z	iP	11:18:58.1 d

C&GS card 68-62:
10:59:58.5
38.0° N., 23.1° E.
Greece
h about 120 km
Magnitude 6.8 (Pas) one death
Felt: Italy, Sicily, Crete, Malta, and Yugoslvia.

Table 5.--Distant earthquakes--Continued

Aug. 29, 1962

M	Z	eP	22:46:49.5 c
A	Z	eP	22:46:48.7 c
N	Z	eP	22:46:49.2
U	PEN	eG	23:01:08
U	PEZ	eR	23:03:40

C&GS card 70-62:
22:36:53.9
34.1° N., 139.1° E.
Near east coast of Honshu, Japan
h about 33 km
Magnitude 5.7 (HVO)

Aug. 30

M	Z	eP	13:43:28.6 d
A	Z	eP	13:43:29.8 d
D	Z	iP	13:43:31.4 d
U	Z	eP	13:43:29.3 c
U	PEN	eG	13:53:40
U	PEZ	eR	13:55:48

C&GS card 66-62:
13:35:28.9
41.9° N., 111.4° W.
Utah-Idaho border
h about 33 km
Magnitude 5.8 (Pas)
5.8 (Pal)

Minor damage in Logan, Utah
Felt in four states.

Aug. 30

M	Z	eP	17:25:59.0 c
A	Z	eP	17:26:02.3 c
D	Z	eP	17:26:01.5 c

Aug. 30--Continued

Hi	Z	eP	17:26:06.1 c

C&GS card 71-62:
17:17:51.9
21.2° S., 174.4° W.
Tonga Islands
h about 33 km
Magnitude 5.5 (Berk)

Aug. 31

M	Z	iP	17:09:53.9 c
A	Z	eP	17:09:55.4 c
D	Z	iP	17:09:54.7 c
N	Z	eP	17:09:53.9 c
U	PEZ	iP	17:09:55 d
Pa	Z	eP	17:09:54.1 c
Na	Z	eP	17:09:55.9 c
Hi	Z	eP	17:09:53.2 c
Ka	Z	eP	17:09:48.9 c
U	PEZ	iS	17:15:40
U	PEZ	iR	17:19:40

C&GS card 72-62:
17:02:43.4
51.3° N., 179.7° W.
Rat Islands, Aleutian Islands
h about 26 km
Magnitude 6.8 (Pas)
6-6.3 (Pal)

Sept. 1

M	Z	iP	03:53:31.9 c
A	Z	eP	03:53:31.0 c
N	Z	eP	03:53:31.1 c
U	PEZ	iS	03:59:04

Sept. 1, 1962--Continued

U	PEE	eG	04:01:26
U	PEZ	iR	04:03:16
Ha	Z	Tmax	04:30:38

C&GS card 70-62:
03:46:05.0
51.3° N., 179.7° W.
Rat Islands, Aleutian Islands
h about 25 km
Magnitude 6.5 (Pas)
6 (Pal)

Sept. 1

M	Z	iP	05:00:47.9 c
A	Z	iP	05:00:47.6 c
D	Z	iP	05:00:46.6 c
N	Z	iP	05:00:47.6 c
Pa	Z	iP	05:00:49.9 c
Na	Z	iP	05:00:44.5 c
Hi	Z	iP	05:00:50.4 c
Ka	Z	iP	05:00:48.4 c
Ha	Z	iP	05:00:49.5 c
U	PEE	eScS	05:10:10
U	PEZ	eSSS	05:13:40

C&GS card 70-62:
04:52:14.5
15.9° S., 168.2° E.
h about 244 km.
New Hebrides Islands.

Sept. 1

M	Z	eP	07:58:16.2 c
A	Z	eP	07:58:17.3 c
D	Z	eP	07:58:18.7 c
N	Z	eP	07:58:18.0 c
Hi	Z	eP	07:58:14.6 d
U	PEN	iS	08:04:08
U	PEE	eG	08:06:20
U	PEZ	iR	08:07:56
Ha	Z	Tmax	08:35:34

C&GS card 70-62:
07:51:08.2
51.3° N., 179.9° W.
Rat Islands, Aleutian Islands
h about 42 km
Magnitude 6.5 (Pas)
6 (Pal)

Sept. 1

M	Z	eP	19:39:47.4 c
A	Z	eP	19:39:47.4 c
Hi	Z	eP	19:39:28.6 c
U	PEZ	iPP	19:41:00
U	PEN	iPS	19:50:56
U	PEN	iSS	19:57:51
U	PEN	eSSS	20:02:36
U	PEN	iR	20:17:48

C&GS card 70-62:
19:20:38.5
35.6° N.
50.0° E.

Table 5.--Distant earthquakes--Continued

Sept. 1, 1962--Continued

C&GS card 70-62--Continued
Northwest Iran
h about 21 km
Magnitude 7.3 (Pas), 7.8 (Berk)
7 (Pal)
Over 10,000 killed, many injured, extensive property damage.

Sept. 7

M	Z	iP	23:46:42.8 d
A	Z	iP	23:46:42.1 d
U	Z	iP	23:46:42.1 d

C&GS card 75-62:
23:37:27.5
26.3° S., 178.0° W.
Kermadec Islands region
h about 50 km.

Sept. 10

M	Z	iP	15:51:34.3 c
A	Z	iP	15:51:33.8 c
D	Z	eP	15:51:32.6 c
N	Z	eP	15:51:33.8 c
U	PEZ	iP	15:51:35 d
Pa	Z	iP	15:51:34.5 d
Na	Z	iP	15:51:30.7 d
Hi	Z	iP	15:51:30.7 d
Ka	Z	iP	15:51:36.5 c
Ha	Z	iP	15:51:38.9 d
U	PEZ	ePPP	15:54:25
U	PEN	iS	15:57:39
U	PEZ	iSS	16:01:11

C&GS card 73-62:
15:43:59.4
21.1° S., 179.2° W.
Fiji Islands
h about 640 km
Magnitude 6.5 (Pas), 6.0 (HVO).

Sept. 14

M	Z	iP	18:25:34.0 c
A	Z	iP	18:25:33.5 c
D	Z	eP	18:25:33.5 c
U	Z	iP	18:25:34.0 c
Na	Z	eP	18:25:31.0 d
Hi	Z	iP	18:25:36.6 d
Ha	Z	iP	18:25:39.2 c

C&GS card 75-62:
18:17:52.1
19.9° S., 177.6° W.
Fiji Islands
h about 350 km.

Sept. 15

M	Z	eP	22:59:25.2 c
A	Z	eP	22:59:25.7 c
D	Z	eP	22:59:25.7 c
UU	Z	eP	22:59:26.6 c
Pa	Z	eP	22:59:27.8 c
Hi	Z	eP	22:59:26.0 c
Ka	Z	eP	22:59:25.2 d
Ha	Z	eP	22:59:18.1 c
U	PEN	iS	23:06:30
U	PEE	eG	23:10:38
U	PEZ	eR	23:12:59

Table 5.--Distant earthquakes--Continued

Sept. 15, 1962--Continued

C&GS card 73-62:
22:50:46.3
48.5° N., 156.8° E.
Kurile Islands
h about 33 km
Magnitude 6.5 (Pas), 6 (Pal)

Sept. 16

M	Z	iP	03:14:12.7	c
A	Z	iP	03:14:11.9	d
D	Z	iP	03:14:12.6	c
N	Z	iP	03:14:11.2	c
M	Z	ipP	03:14:31.6	
A	Z	ipP	03:14:28.7	
U	Z	epP	03:14:30.2	

C&GS card 75-62:
03:05:33.0
19.3° N., 103.1° W.
Jalisco, Mexico
h about 100 km
Magnitude 4.8-5 (Pal).

Sept. 17

M	Z	iP	18:03:21.7	d
A	Z	iP	18:03:21.3	d
D	Z	eP	18:03:21.5	d
U	Z	eP	18:03:21.4	d
Ka	Z	iP	18:03:24.0	d
Ha	Z	iP	18:03:27.1	d

C&GS card 75-62:
17:55:45.4
21.0° S., 179.1° W.
Fiji Islands
h about 601 km.

Sept. 18

M	Z	iP	00:40:29	d
A	Z	iP	00:40:28.4	d
D	Z	eP	00:40:28.7	d
U	Z	eP	00:40:25.2	d
U	PEZ	iP	00:40:28	c
Na	Z	eP	00:40:30.7	c
Hi	Z	iP	00:40:24.2	d
U	PEN	iS	00:49:50	
U	PEZ	iSS	00:54:11	
U	PEN	iG	00:57:54	
U	PEZ	iR	01:01:04	

C&GS card 75-62:
00:29:05.2
7.5° N., 82.3° W.
South of Panama
h about 33 km
Magnitude 7 (Pas)
7 (Berk)
6.5-6.8 (Pal)
Felt: Chiriqui Province.

Sept. 18

M	Z	eP	06:22:26.1	c
U	Z	eP	06:22:29.9	c

C&GS card 77-62:
06:10:26.3
2.3° N., 126.9° E.
Molucca Passage
h about 33 km.

Table 5.--Distant earthquakes--Continued

Sept. 30, 1962

M	Z	eP	22:09:22.1 d
A	Z	iP	22:09:23.9 d
D	Z	iP	22:09:23.3 d
U	Z	iP	22:09:23.3 d
Pa	Z	iP	22:09:25.1 d
Na	Z	eP	22:09:22.6 d
Hi	Z	eP	22:09:24.7 d

C&GS card 78-62:
21:57:24.8
18.6° N., 120.9° E.
Near north coast of Luzon, Philippine Islands
h about 51 km.

The following persons or agencies reported "felt" earthquakes during the third quarter, 1962. Their assistance is gratefully acknowledged.

North Hawaii

Mr. McKay
Mrs. Eklund
Honokaa Police
Mrs. Christianson

Kilauea Summit region

Mr. and Mrs. Francis
Mrs. Hansen
Dr. Wentworth
Mr. Richter
Mr. Yamamoto
Mr. Yong
Mr. Forbes
Mrs. Fraser
Miss English
Mr. Koyanagi
Mrs. Duncan
Dr. Moore
Mr. Wehrsig
Mr. and Mrs. Mist
Mrs. Ferry
Mr. Ayres

Kona coast

Miss Wallace
Mr. Sutherland
Miss Greenwell
Mr. Mitchell
Mr. Paris
Mr. Ackerman
Mr. Greenwell
Mrs. Higashihara
Mr. Tanaka
Mr. Glass
Mr. Hayashi
Mr. Chong
Mr. Baldwin
Mr. Vredenberg
Kealakekua Police
Mr. Vanderbrook
Mr. Johnston

Kona coast--Continued

Mr. Apple
Mr. Lind
Mr. Mitchell
Mrs. Higashi
Mr. Toy
Mr. Yoshina
Mr. Harai
Mrs. Hahn
Mr. S. Greenwell
Mr. Schattauer

Central Hawaii

Kulani Honor Camp
Mrs. Lindsey

Hilo region

Mrs. Elliott
Mrs. Zsupnik
Miss Nitta
Mrs. Duncan
Mrs. Hansen
Mr. Williamson
Mrs. Ingledue
Mrs. Schaeffer
Dr. Hinds
Mrs. Weight
Mr. Ho
Mr. and Mrs. Baldwin
Mr. Wilson
Mr. Chong
Mr. Northwood
Mr. Donahoe

Kau region

Mrs. Elarionoff
Mr. Billings
Mrs. Walters
Mr. Coram
Mrs. Akana

Kau region--Cont.

Mrs. Kiva
Mr. Meinecke
Mr. Godfrey

Puna

Mr. Warner
Mr. Edwards
Mr. Ho

NOTE: The Kona coast is Hawaii's western coast, Kau is the district south of Mauna Loa summit, southwest of Kilauea and on the flanks of both volcanoes. Puna is the cultural/political district which lies on the East Rift of Kilauea.

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 28

October, November, and December, 1962

By

Harold L. Krivoy, Robert Y. Koyanagi,

Arnold Okamura, and George Kojima

and

The 1962 Flank Eruption of Kilauea

by James G. Moore

Issued August 1964

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HAWAIIAN VOLCANO OBSERVATORY SUMMARY 28

By Harold L. Krivoy, Robert Y. Koyanagi, Arnold Okamura, and

George Kojima

The 1962 Flank Eruption of Kilauea, by James G. Moore

On December 7-9, 1962, a small flank eruption occurred on the upper part of the east rift zone of Kilauea Volcano in and east of Aloi Crater. This outbreak occurred 15 months after the last previous eruption of the volcano which occurred on the lower (eastern) part of the same rift.

The first indication of the possibility of an imminent eruption was the onset of sporadic tremor and local shallow earthquakes at 19^h30^m December 6. The harmonic tremor rapidly became continuous and was accompanied by small shallow earthquakes averaging about one per minute. A few of these earthquakes were large enough to be felt, particularly in the community of Volcano, 3 miles northeast of the center of the caldera.

At 01^h10^m December 7, a glow, described as white at first, changing to red, was observed from both the south side of the caldera and from the Volcano Observatory, toward the direction of the upper part of the east rift zone. From each observation point, the glow was seen to grow from virtually nothing to a prominent light visible for many miles. Hence it is believed that the first actual outbreak occurred only slightly before it was first sighted. At 01^h20^m an Observatory party arrived at Aloi Crater on the upper east rift zone of Kilauea Volcano and found a nearly continuous line of fountains extending in a line completely across the wooded floor of the pit crater (fig. 2). The fissure was about 500 feet long and was slightly modified by right-offset en echelon arrangement. The lava fountains were playing to heights of about 30 feet with spurts up to 60 or 80 feet. Almost the entire floor of the crater was covered by approximately 10 feet of new lava, but trees were still standing in many places on the crater floor even within a few feet of the lava fountains themselves.

The fountains continued at about the same height until 02^h20^m and gradually filled up the bottom of the pit crater. By 03^h00^m the fountains had become thicker and increased in volume, and occasional bursts threw spatter above the opposite rim, or more than 250 feet high. These large bursts were accompanied by loud booming sounds.

By 03^h05^m the lava lake was approximately 40 feet deep and the line of fountains had consolidated to three areas of fountaining, one near each end of the original fissure and a large fountain in the middle of the pit crater. The rim of the pit crater was perceptibly shaking in rhythm with the activity of the fountains. Shortly after 03^h05^m the lava lake began to drown the fountain on the west.

By 03^h08^m the fountains died down and rapid drainback into the vents commenced. By 03^h10^m the fountains were almost quiet, drainback (especially into the west vent) having lowered the entire lava lake approximately 10 feet. The crust of the lake was, in general, no longer incandescent, being perhaps 6 inches or a foot thick. However, cracks through the crust showed the bright red of the molten lava below. Several groups of cracks concentric to the small bubbling west fountain indicated the process of drainback operating there.

By 03^h33^m all the fountains had stopped and drainback into the eruptive vents continued to lower the lake surface. At 03^h49^m a large part of the south rim of the crater broke off and crashed down into the lava lake which by then was entirely black on its surface except for a few incandescent cracks. The landslide broke through the lake crust and splashed incandescent lava 20 or 30 feet into the air. The appearance of the boulders as they plunged into the lava lake suggested that its depth was 10 to 20 feet.

At 04^h20^m two new lava fountains broke out northwest of Makaopuhi Crater on the west slope of Kane Nui o Hamo (no. 2, fig. A). While lava was still playing from these fissures a third outbreak occurred at 04^h45^m one-quarter mile to the southwest (no. 3, fig. A). These fountains played only for about one hour, and by 07^h00^m they were not active except for strong degassing, though booming and roaring noises were heard from their direction for several hours more.

At 11^h02^m a new vent (no. 4, fig. A) on the north side of Alae Crater (called Alea Lea Crater on some maps) began liberating fume. At 11^h25^m this vent developed a small lava fountain. Incandescent spatter was erupted from this vent until 11^h33^m, at which time the faint roaring sound died and erupting spatter was no longer visible from the road near Alae Crater.

At 07^h03^m, December 8, a ball of brown-yellow smoke was seen, from the Observatory, rising about 100 feet above the eruptive area east of Aloi Crater. The smoking which lasted about 20 minutes is believed to

have been caused by outbreak number 5 less than one-quarter mile northeast of Aloi Crater (fig. A). This vent was visited at 11^h00^m and the small lava flow was still hot and incandescent in cracks at that time.

A sixth and final outbreak occurred between 08^h30^m and 09^h15^m December 9, about midway between Aloi and Alae Craters (no. 6, fig. A). The active vent was observed from the air at 08^h40^m. At that time a thin line of fountains 300 to 400 feet long played to heights of 60 feet, but averaged less than 30 feet. A rumbling noise was heard during this period for about 20 minutes in the community of Volcano, 5 miles north of the eruptive area. The lava flow from this fissure started a small forest fire which swept to the summit of the cinder cone, Puu Huluhulu.

Minor falls of Pele's hair were reported on the road near Aloi Crater at 11^h45^m and about 14^h00^m on December 9. Presumably this originated from vent number 6 and was blown south at that time by winds.

Total volume of lava conducted to the surface during the entire eruption was 436,000 cubic yards (table A). However, 280,000 cubic yards drained back down the eruptive fissure in Aloi Crater leaving a total of 156,000 cubic yards on the surface.

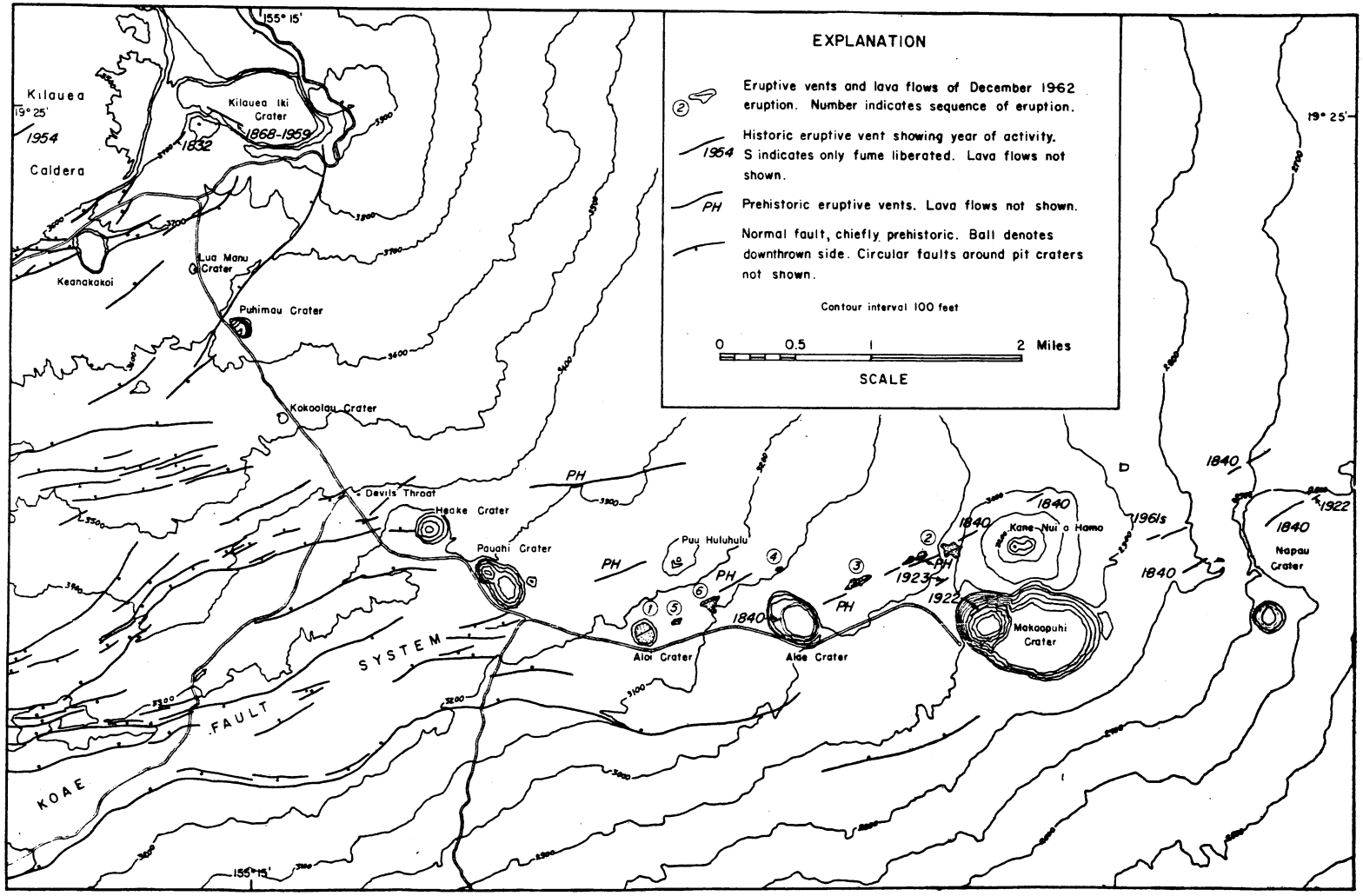

Figure A.--Map of the upper east rift zone of Kilauea showing vents and flows of the 1962 eruption.

Table A.--Area and volume of lava erupted in December 1962

Lava flow	Area Sq. yds. x 10^3	Thickness yds.	Volume cu. yds. x 10^3
1 (remaining on surface)	27	3	82
1 (drained back)	(27)	10	(280)
2 (east flow)	23	1	23
2 (double west flow)	12	1	12
3	16	1	16
4	1	1	1
5	4	1	4
6	18	1	18
Total remaining on surface	101	-----	156
Total erupted	---	-----	436

Chronological summary

The most interesting event of the fourth quarter was the brief eruption of Kilauea in and near Aloi Crater in December. This summary reviews the geophysical manifestations that preceded and accompanied the eruption for comparison with Moore's just-presented description of the eruption.

After the sharp collapse during the September 1961, east rift zone eruption (Summary 24), swelling of Kilauea volcano resumed and continued at a moderate, but diminishing, rate until the end of June 1962. At the inner ring of tilt bases (Uwe, T M, Kea, Kam) the average rate of outward tilting declined from 12 μrad/month (Oct. 8, 1961, to Jan 5, 1962, Summary 25) to 5 μrad/month (March 29, 1962, to June 30, 1962, Summary 26). Between June 30, 1962, and October 30, 1962, (fig. 2-a and table 2-a) the average rate of outward tilting at these stations increased again to 8 μrad/month. From the record of the short-base tiltmeter in Uwekahuna Vault (table 1), it appears that this increased rate of swelling continued until the December eruption.

Subsidence of the caldera region in response to withdrawal of magma from the central reservoir during the eruption is revealed in the pattern of tilting between October 30 and December 12 (fig. 2-b and table 2-b). The amount of subsidence is best indicated by the change at Uwekahuna Vault (table 1), where a tilting of about 16 μradians toward the caldera occurred during the eruption. Comparison of this figure with that which accompanied the collapse of the Kilauea summit following the 1960 east rift zone eruption suggests that 5-10 million cubic yards of magma escaped from the reservoir during the December eruption.

By the end of December swelling of the Kilauea summit was again in progress.

The daily count of small shallow earthquakes at Kilauea caldera averaged 63 during the first two weeks of October. On October 16 this number jumped to 90, and by October 31 it had reached 155. The count climbed to 460 on November 7, then decreased slowly to 208 on November 18. These earthquakes averaged only 54 per day during the rest of November. From an eleven month low of 20 on December 1, the daily count rose to 110 on December 5, just before the eruption. Following the eruption, the average daily number of earthquakes from the caldera was 38 for December 10-18, but rose to 133 for the rest of the month.

Possibly indicative of a rapid flow of magma at depth, episodes of continuous tremor originating beneath the Kilauea summit totaled 177 minutes during October and 101 minutes during November.

Harmonic tremor beginning at 19^h30^m on December 6 (Introduction) testified to the escape of magma from the summit reservoir, and the concurrent swarm of small shallow earthquakes from the vicinity of Aloi Crater heralded the opening of fissures along the rift zone for about 5 hours before lava appeared at the surface early on December 7. These earthquakes were all smaller than magnitude 2.7, and only the largest were felt in the nearby community of Volcano.

Earthquakes from the source about 30 km beneath Halemaumau averaged about 2 per day during October and November and 5 per day during December. Only one was felt: it had a magnitude of 3.7 and was felt over the entire island at 21^h36^m on December 13.

The largest earthquake during October originated at 13^h31^m on the 31st about 15 km north-northeast of Naalehu and 3 km deep. It had a magnitude of 3.7 and was felt in Naalehu. The largest earthquake during November had a magnitude of 4.1 and originated at 05^h18^m on November 22 at about 19°20' N., 155°05' W. (Kalapana Trail). It was felt from Volcano to Hilo.

An earthquake from a focus 13 km east-northeast of Apua Point and 8 km deep was felt over half of the island at 01^h06^m on December 28. It had a magnitude of 4.1 and was the largest earthquake of the month. A magnitude 4.0 earthquake from a focus 18 km north of Naalehu and about 3 km deep was felt over half the island at 17^h47^m on December 30.

Other earthquakes felt in Hawaii during the fourth quarter (23 in addition to those associated with the outbreak of the December eruption) are included in Table 4.

Starting with the eruption, small shallow quakes have become frequent all along the Koae fault system just south of Kilauea caldera. Such earthquakes have not been frequent in recent years, except at times of major collapse such as the spring of 1960.

During this quarter, George Keller, U.S. Geological Survey, visited Hawaii Island and carried out assorted electromagnetic and electrical experiments. He found, among other things, that the electrical resistivity of Hawaiian rocks was very uniform and that three classifications were possible:

1). very recent flows had resistivities between 5,000 and 10,000 ohm-meters,

2). the bulk of Hawaii Island above sea-level had resistivities between 500 and 1,000 ohm-meters,

3). at or below the water table, resistivity was less than 5 ohm-meters.

Electromagnetic studies by Frank Frischknecht and Leonard Anderson in April 1962 revealed a resistivity of 1.2 ohm-meters for the still-molten portions of the 1959 Kilauea-Iki lava lake.

During the quarter a Scripps Institution experiment in noise analysis was completed and equipment removed from HVO. This gear included a short-period installation and a three-component long-period set established in the old West Pit tilt cellar. At the time of their departure there were extra tele-recording channels available at HVO, and so the abandoned data-lines were put to use and recordings made from West Pit. These have proven to be very useful in clarification of small seismic events near Halemaumau. The new instrument (West Pit = WP) is located between the western edge of Halemaumau and the western rim of Kilauea caldera. It is not convenient to plot this new installation at the scale of Figure 1.

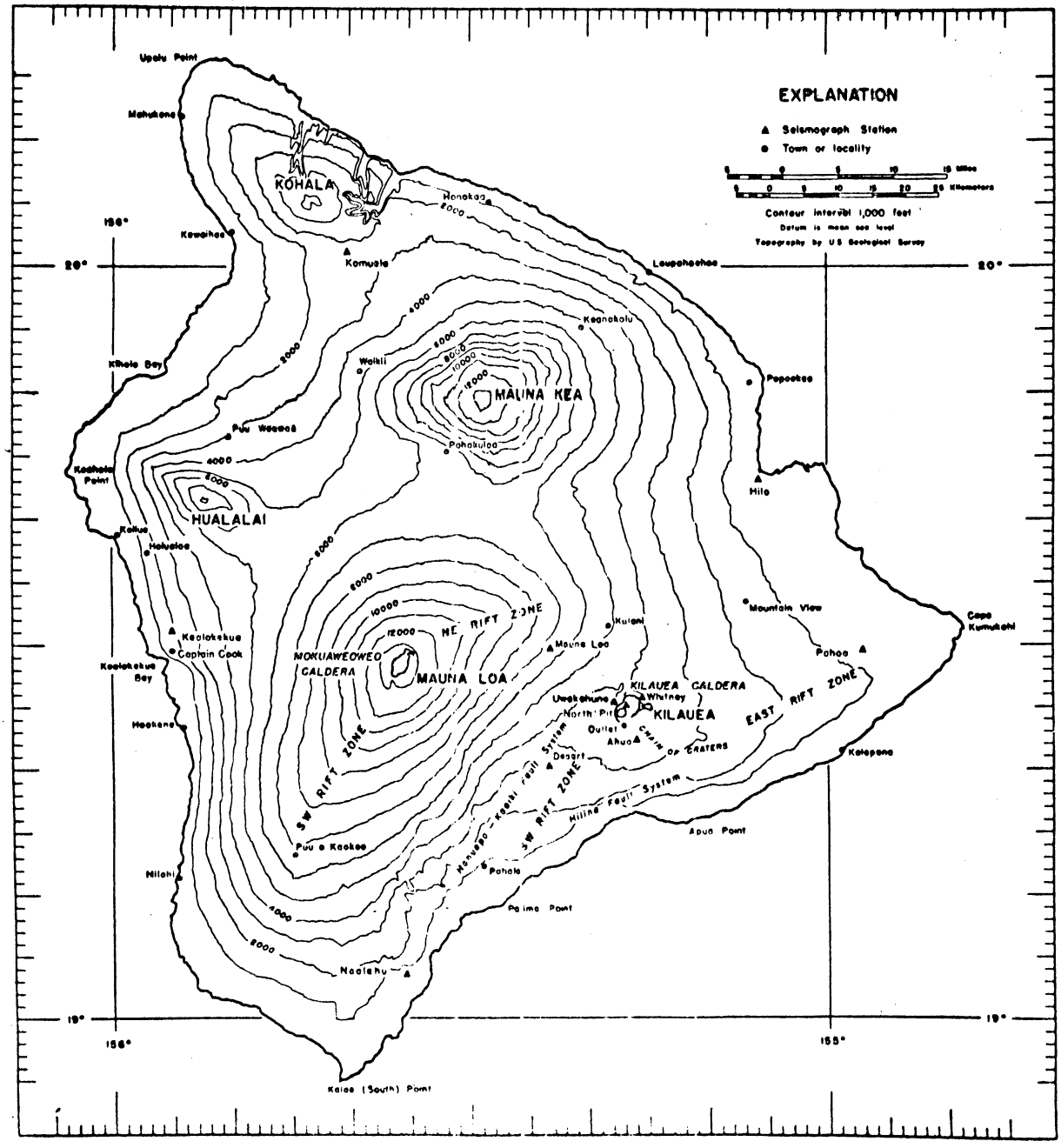

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault (table 1) and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, that is, to a relative subsidence toward the north and east. A 1-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault, October, November, and December, 1962

Date	N-S	E-W	Date	N-S	E-W
Sept. 30	457	505	Dec. 2	472	487
Oct. 7	459	504	9	462	499
14	461	503	16	467	502
21	463	500	23	467	497
28	465	497	30	462	496
Nov. 4	467	497			
11	468	496			
18	469	495			
25	470	490			

Table 2a.--Tilt coordinates and changes at bases around Kilauea caldera (see fig. 2a)

Tilt base (location)	Date (1962)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1962)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Oct. 30	447.0	496.3	7.1	N. 29° W.	June 29
Tree Molds (19°26.3' N., 155°17.3' W.)	31	438.5	512.8	2.9	N. 9.3° W.	29
Sand Spit (19°24.1' N., 155°16.8' W.)	Nov. 1	895.1	707.7	6.7	N. 7.3° E.	Mar. 29
Kalihipaa (19°21.4' N., 155°15.3' W.)	Oct. 30	574.4	427.1	2.6	S. 28.5° E.	July 5
Keamoku (19°25.1' N., 155°19.0' W.)	31	481.3	598.3	7.4	N. 58.5° W.	June 30
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	26	652.6	522.0	14.0	S. 13.5° E.	July 1
Kipuka Nene (19°19.4' N., 155°16.7' W.)	25	514.7	495.2	.26	S. 18° E.	Apr. 5
Hilina Pali (19°18.2' N., 155°18.6' W.)	24	512.0	496.1	.5	S. 35° W.	4
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	23	497.6	504.4	.6	S. 51.3° E.	Mar. 30

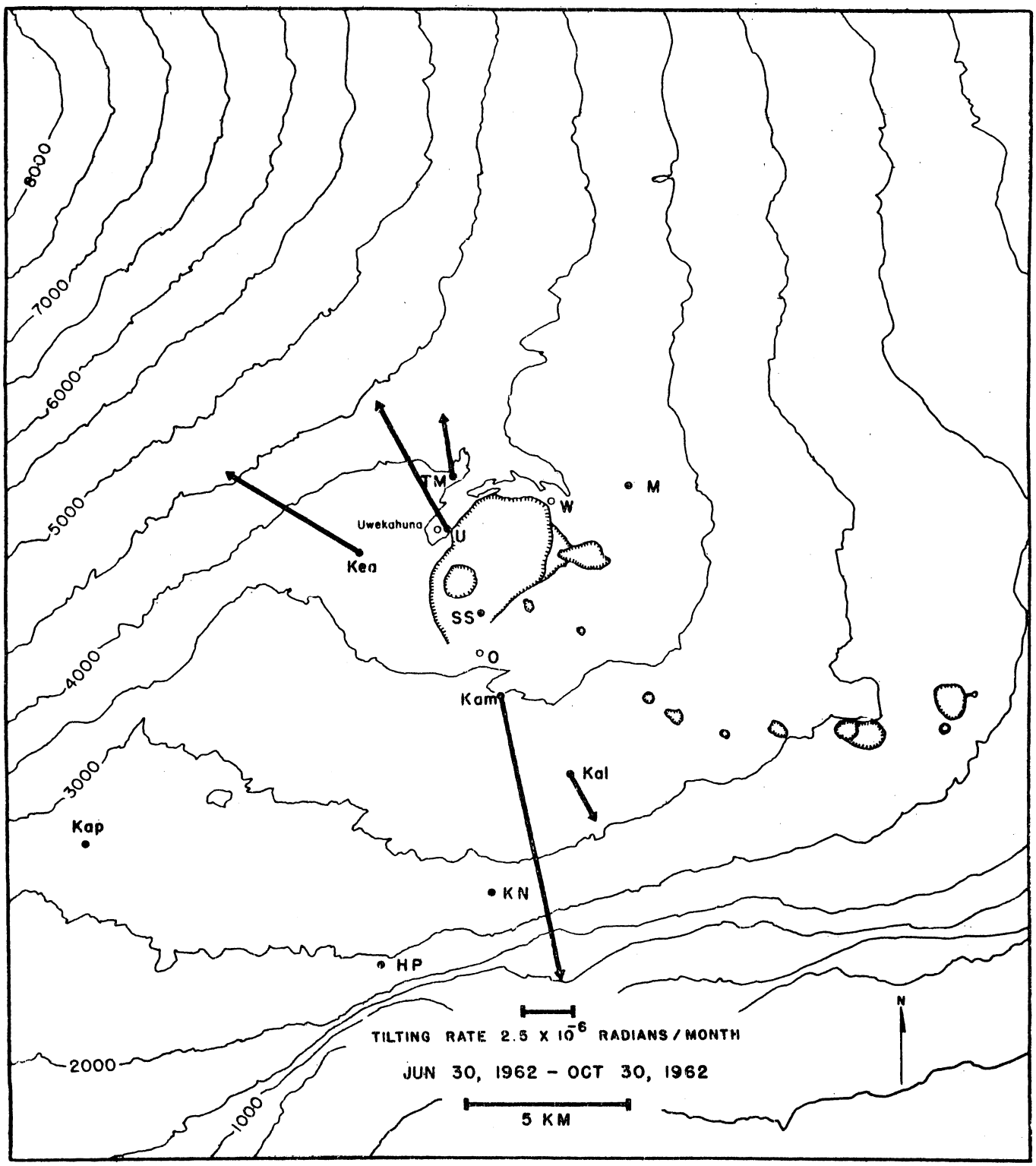

Figure 2a.--Tilting of the ground around Kilauea caldera between June 30 and October 30.

Table 2b.--Tilt coordinates and changes at bases around Kilauea caldera (see fig. 2b)

Tilt base (location)	Date (1962)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1962)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Dec. 10	437.3	499.6	7.7	S. 18.7° E.	Oct. 30
Tree Molds (19°26.3' N., 155°17.3' W.)	12	435.8	512.5	2.0	S. 9.5° W.	31
Sand Spit (19°24.1' N., 155°16.8' W.)	12	891.4	702.5	4.7	S. 54.8° W.	Nov. 1
Kalihipaa (19°21.4' N., 155°15.3' W.)	11	575.4	423.8	2.5	N. 72.4° W.	Oct. 30
Keamoku (19°25.1' N., 155°19.0' W.)	11	474.4	605.4	7.3	S. 46.2° E.	31
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	10	658.1	521.7	3.7	N. 2.5° W.	26
Kipuka Nene (19°19.4' W., 155°16.7' W.)	13	510.4	496.4	2.8	S. 15° E.	25
Hilina Pali (19°18.2' N., 155°18.6' W.)	Not occupied this epoch.					24
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	Dec. 19	497.6	504.9	.3	due East	23

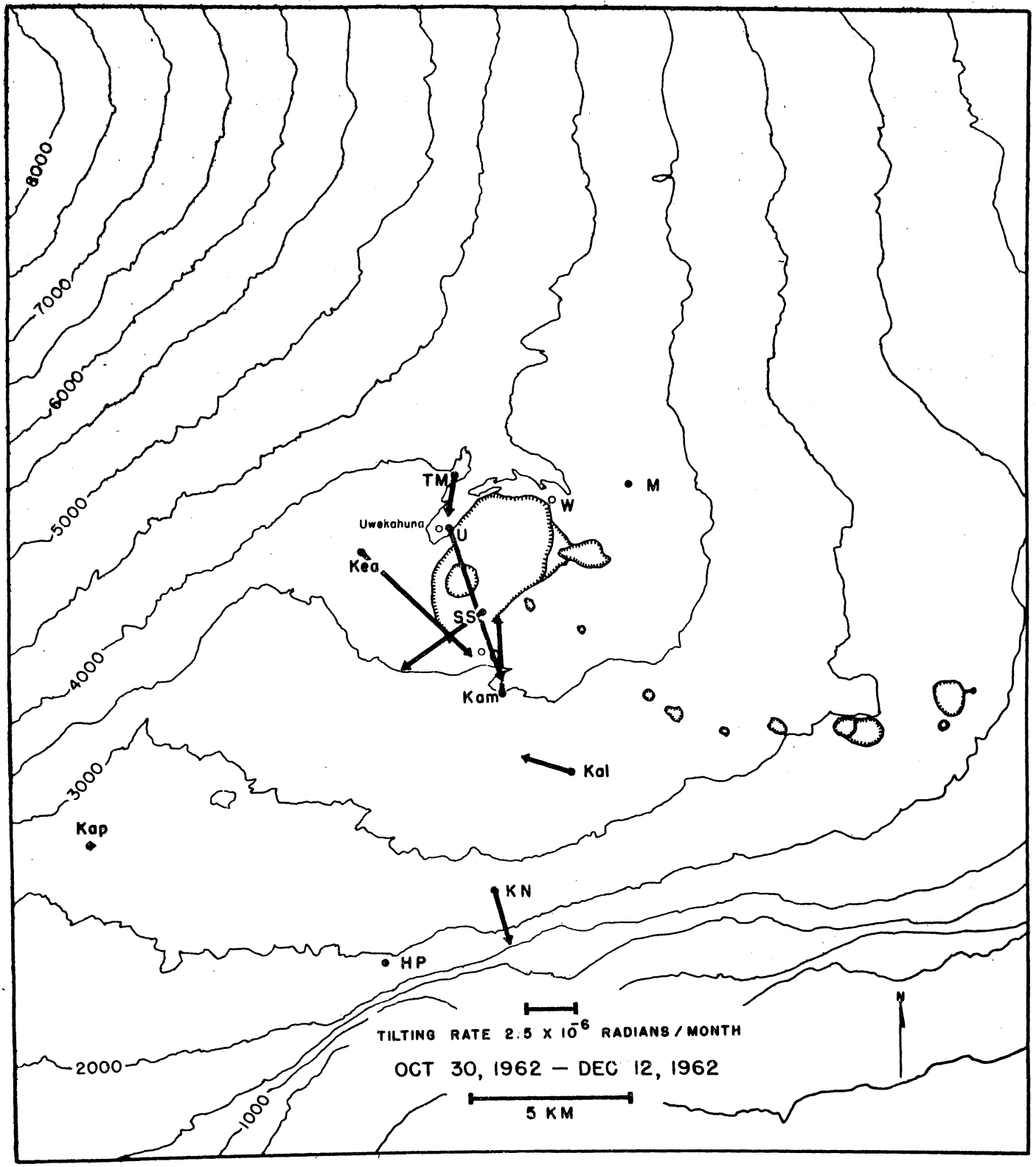

Figure 2b.--Tilting of the ground around Kilauea caldera between October 30 and December 12.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on indentifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1, and essential data on the stations were given in Summary 25.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone; earthquakes from a source about 30 km beneath Halemaumau; shallow earthquakes along the Kalapana Trail (SE. flank of Kilauea 10 to 15 km W. of Kalapana); and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea Caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Oct. 1	------	3	-------	------	81	7	7	------	------	1 Kona
2	------	-------	-------	------	68	13	------	1	11	----------
3	------	-------	-------	------	42	11	------	5	9	1 Kona
4	21	-------	-------	------	?	7	------	1	------	1 Kona
5	------	-------	-------	------	81	7	1	------	------	1 Kona
6	------	-------	-------	1	?	3	6	2	4	1 Kona
7	------	-------	-------	------	90	3	4	1	3	----------
8	------	5	-------	------	7	1	2	6	------	----------
9	45	-------	-------	------	75	10	------	5	------	1 Honokaa
10	------	-------	-------	------	59	8	------	1	------	----------
11	------	-------	-------	------	65	7	------	3	------	1 Mauna Kea

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera--Continued

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea Caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Oct. 12	-----	-------	-------	------	60	8	------	4	-----	----------
13	-----	-------	-------	------	63	13	3	------	-----	----------
14	-----	-------	-------	------	63	18	1	3	-----	2 Kona
15	-----	-------	-------	------	65	7	5	1	-----	2 Kawaihae
16	10	-------	-------	------	90	3	------	6	-----	1 Kona
17	-----	28	-------	------	111	12	1	9	-----	1 Mauna Kea
18	-----	-------	-------	------	96	6	1	2	-----	1 Kona
19	-----	-------	7	------	98	9	1	------	-----	1 Mauna Loa 1 Kona
20	-----	-------	-------	1	120	7	1	2	1	----------
21	-----	-------	-------	------	135	7	1	5	-----	1 Kona
22	-----	-------	-------	------	116	9	1	3	-----	----------
23	-----	-------	-------	------	96	15	1	2	-----	----------
24	-----	-------	-------	------	106	7	3	2	5	1 Kona
25	-----	-------	10	------	95	7	1	2	-----	1 Kulani
26	35	5	-------	------	126	6	------	2	-----	----------
27	-----	-------	-------	------	137	9	1	2	-----	1 Kona
28	-----	1	-------	------	130	11	19	2	-----	----------
29	-----	4	-------	------	135	8	10	2	-----	1 Pahala
30	2	1	-------	1	140	15	1	5	-----	----------
31	-----	-------	-------	------	155	8	1	------	-----	1 Mauna Loa
Nov. 1	-----	-------	-------	------	178	4	1	6	1	----------
2	-----	-------	-------	------	160	4	2	3	-----	1 Mauna Loa 2 Kona

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera--Continued

Date (1962)	Tremor (In minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea Caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Kala-pana Trail	Others
Nov. 3	20	-------	------	------	157	5	------	------	------	1 Mauna Kea
4	-----	3	14	------	187	8	1	------	------	----------
5	-----	-------	------	------	250	7	3	1	2	----------
6	-----	-------	8	2	180	3	2	2	1	1 Pahala
7	2	-------	------	------	460	10	2	------	1	----------
8	-----	-------	------	------	300	8	12	4	6	1 Offshore Naalehu
9	-----	-------	------	------	226	11	1	1	------	1 Mauna Loa
10	-----	-------	------	1	288	4	------	1	------	2 Kona
11	-----	-------	------	------	87	26	1	3	------	1 Kona
12	-----	-------	------	------	145	6	------	4	------	----------
13	-----	-------	------	------	235	9	------	3	2	----------
14	-----	-------	------	------	256	6	1	------	------	----------
15	-----	-------	------	------	228	10	9	------	------	1 Kona
16	-----	-------	------	------	220	8	2	1	------	2 Kona 1 Mt. View
17	-----	-------	------	------	220	11	4	------	------	2 Mauna Kea
18	-----	-------	------	------	208	3	3	2	------	1 Mauna Kea 1 Kona
19	-----	6	------	------	143	8	3	1	------	1 Kona
20	-----	-------	------	------	86	5	2	3	7	1 Kawaihae
21	-----	-------	------	------	52	6	-------	------	------	----------
22	-----	6	------	------	53	2	4	3	------	----------
23	-----	-------	------	1	48	4	-------	------	4	----------
24	-----	-------	------	------	65	11	3	1	------	----------
25	42	-------	------	------	45	3	1	------	------	1 Offshore Naalehu

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera --Continued

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea Caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Nov. 26	------	-------	-------	------	37	7	6	------	------	----------
27	------	-------	-------	------	25	2	2	------	------	----------
28	------	-------	-------	------	24	2	2	------	------	----------
29	------	-------	-------	------	32	5	-------	1	------	----------
30	------	-------	-------	------	41	4	3	8	------	----------
Dec. 1	------	-------	-------	------	20	2	4	30	------	----------
2	------	-------	-------	------	45	5	2	5	1	1 Kohala
3	------	-------	-------	6	48	12	1	1	------	1 Mauna Loa 1 Kona
4	------	-------	-------	2	97	10	-------	2	------	----------
5	------	-------	-------	-------	110	16	3	5	------	1 Kona
6	Aloi eruption			-------	?	13	1	4	------	1 Hilina Pali
7	Aloi eruption			-------	?	11	2	15	------	1 Laupahoehoe 2 Apua Pt.
8	Aloi eruption			1	?	10	-------	15	------	----------
9	Aloi eruption			2	?	23	-------	2	------	1 Mauna Kea
10	------	-------	-------	-------	24	15	-------	4	------	1 Mauna Kea
11	------	-------	-------	1	19	10	-------	4	------	1 Apua Pt.
12	------	-------	-------	-------	40	13	-------	1	3	1 Mauna Kea 1 Mauna Loa
13	------	-------	-------	-------	45	22	-------	12	1	2 Mauna Loa

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A D, and N around Kilauea caldera--Continued

Date (1962)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea Caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Dec. 14	----	2	-------	------	30	15	1	-----	------	1 Hilina Pali
15	----	-------	-------	------	70	16	1	9	------	----------
16	----	-------	-------	------	47	22	2	2	------	1 Hilina Pali 2 Offshore Naalehu
17	----	-------	-------	------	39	5	-----	4	------	----------
18	----	2	-------	------	30	14	-----	4	------	1 Hakalau 1 Pohakuloa
19	10	------	-------	------	76	21	-----	3	------	1 Keahole Pt.
20	----	------	-------	------	69	8	-----	1	------	1 Mauna Loa
21	----	------	-------	------	85	15	-----	3	------	1 Maui 2 Kona
22	----	------	-------	------	82	14	-----	2	------	----------
23	26	------	-------	------	90	19	-----	4	------	----------
24	----	30	-------	1	74	17	-----	-----	------	1 Kona
25	23	------	-------	------	116	9	2	2	------	1 Kona
26	----	------	-------	------	94	20	3	10	------	1 Kona
27	----	------	-------	------	124	14	-----	2	------	1 Kona
28	----	------	-------	------	97	8	2	3	------	1 Kona 1 Apua Pt.
29	----	------	-------	2	89	9	-----	5	------	1 Mauna Loa
30	19	------	-------	------	96	11	-----	1	------	1 Kona 1 Mauna Loa
31	6	------	-------	------	103	10	-----	2	------	1 Mauna Loa 1 Kona

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Origin time is Hawaiian standard.

In the following list some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

Origin times of members of a second persistent sequence of earthquakes are followed by "KT" (Kalapana Trail). These earthquakes originate at very shallow depths in a remote region along the Kalapana Trail west of Kalapana, and they generally are not felt. Seismograms of these earthquakes are poorly recorded and difficult to interpret; so only an approximate epicenter, 19°20' N., 155°05' W., can be assigned to them.

The mean focus of the magnitude 6.1 Kaoiki fault system earthquake of June 27 and its aftershocks is 19°24' N., 155°25' W., at a depth of 3 to 8 km. This focus has been abbreviated "Kaoiki".

In the following list a number of quakes are described as "Upper east rift". These were generally so small and shallow as to make exact location impossible at this time. Statistical treatment of the "family", which began just before the December eruption, gives a near-surface focus within one km, to the south, of Aloi Crater]

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 1	06	52	03.6	3.0	13	19°32.7'	155°56.0'	3 km NW of Kealakekua	----------
3	06	13	04.5	2.5	8	19°24.0'	155°04.9'	36 km south of Hilo	----------
3	09	47	39.5	2.2	---	--------	---------	Kaoiki----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 3	12	55	34.5	2.1	3	19°23.5'	155°05.4'	36 km south of Hilo	----------
3	13	19	32.3	2.2	3	19°21.4'	155°04.6'	40 km south of Hilo	----------
3	15	46	02.5	2.2	3	19°19.8'	155°04.0'	43 km south of Hilo	----------
3	22	31	26.8	2.8	---	-------	--------	KT----------	----------
4	03	07	29.5	2.7	3	19°26.8'	155°44.2'	21 km ESE of Kealakekua.	----------
4	03	11	20.5	2.4	5	19°19.1'	155°04.0'	44 km south of Hilo	----------
5	14	56	23.3	2.8	13	19°34.2'	155°53.4'	7 km NNE of Kealakekua.	----------
6	14	02	41.2	2.5	---	-------	--------	KT----------	----------
6	15	15	01.2	3.5	8	19°22.8'	155°03.0'	17 km SW of Pahoa	----------
6	15	21	38.0	3.0	8	19°21.2'	155°03.4'	20 km SW of Pahoa	----------
6	21	57	19.6	2.2	3	19°22.7'	155°08.5'	14 km east of Ahua seismometer.	----------
6	22	16	08.9	2.2	8	19°21.0'	155°08.5'	14 km ESE of Ahua seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 7	02	11	37.7	2.9	8	19°28.6'	155°50.5'	10 km SE of Kealakekua	----------
7	13	32	29.6	2.2	10	19°18.9'	155°11.5'	10 km SE of Ahua seismometer.	----------
7	13	33	25.0	2.3	10	19°18.9'	155°11.5'	10 km SE of Ahua seismometer.	----------
7	18	47	46.3	3.1	8	19°18.8'	155°03.0'	24 km SW of Pahoa	----------
7	21	54	35.7	2.2	---	--------	---------	KT----------	----------
8	03	32	27.5	2.3	---	--------	---------	KM 30----------	----------
8	07	40	44.9	2.5	13	19°19.5'	155°05.9'	20 km SE of Ahua seismometer.	----------
8	21	12	28.6	2.3	---	-------	---------	KM 30----------	----------
9	09	21	38.6	3.3	13	20°13.6'	155°31.0'	16 km NNW of Honokaa	----------
10	21	35	34.7	2.4	---	--------	---------	KM 30----------	----------
11	11	03	16.0	2.4	8	19°52.2'	155°29.1'	28 km SE of Kamuela	----------
13	04	12	47.7	2.3	50	19°29.0'	155°21.0'	5 km ESE of Mauna Loa seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 14	16	48	43.0	2.2	8	19°13.8'	155°09.8'	20 km SE of Ahua seismometer	----------
14	18	56	28.2	2.1	13	19°22.6'	155°08.1'	15 km east of Ahua seismometer.	----------
15	00	35	26.0	3.3	8	19°37'	156°09'	28 km WNW of Kealakekua-----	----------
15	02	08	48.3	3.2	---	-------	--------	Km 30----------	----------
15	04	23	15.7	3.3	13	19°40'	156°20'	46 km NW of Kealakekua------	----------
15	15	37	28.7	2.7	8	20°01.2'	155°53.1'	20 km west of Kamuela-------	----------
15	16	47	00.7	2.6	8	20°01.2'	155°53.1'	20 km west of Kamuela-------	----------
15	22	23	43.5	2.3	8	19°07.7'	154°57.0'	41 km SSW of Pahoa----------	----------
16	03	15	26.7	2.3	5	19°30.1'	155°40.6'	25 km east of Kealakekua----	----------
17	03	12	56.8	2.8	13	19°48.0'	155°42.7'	26 km south of Kamuela------	----------
17	21	59	01.0	3.0	12 1/2	20°05'	156°59'	112 km SW of Haleakala seismometer.	----------
18	03	07	37.5	2.6	3	19°23.5'	154°54.4'	12 km SSE of Pahoa----------	----------
18	03	19	32.4	2.6	---	-------	--------	KM 30----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 18	05	10	16.6	2.6	---	-------	--------	KM 30----------	----------
18	08	48	49.1	2.5	35	19°19.1'	154°59.5'	20 km SW of Pahoa--------	----------
18	16	29	08.7	2.0	---	--------	---------	KM 30----------	----------
19	06	43	29.0	3.6	13	19°40.1'	156°06.0'	25 km NW of Kealakekua---	Felt at Kealakekua.
20	02	30	25.7	2.5	---	--------	---------	Kaoiki----------	----------
21	06	52	05.4	2.5	8	19°21.9'	155°03.1'	18 km SW of Pahoa--------	----------
21	10	04	53.4	2.9	3	19°24.2'	155°57.5'	15 km SW of Kealakekua---	----------
21	16	09	17.1	2.1	3	19°16.1'	155°34'	23 km north of Naalehu---	----------
24	02	00	26.6	3.0	10	19°17.6'	155°27.3'	10 km SW of Desert seismometer.	Felt in Pahala and Hilo.
24	05	43	37.6	2.1	---	--------	---------	Kaoiki----------	----------
24	07	02	47.5	2.3	---	--------	---------	KM 30----------	----------
25	02	49	12.3	2.3	---	--------	---------	KT----------	----------
25	03	32	01.9	3.5	---	--------	---------	KT----------	----------
26	03	36	04.4	2.3	---	--------	---------	Kaoiki----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 27	10	27	53.0	2.7	3	19°22.8'	155°30.5'	15 km WNW of Desert seismometer	----------
28	06	37	28.0	2.2	10	19°12.0'	155°15.7'	14 km SE of Ahua seismometer	----------
28	15	13	59.0	2.7	---	--------	---------	KM 30----------	----------
28	23	02	33.1	2.3	---	--------	---------	Kaoiki----------	----------
29	00	34	40.8	2.1	5	19°25.8'	154°57.6'	7 km SSW of Pahoa----------	----------
29	04	27	11.0	2.2	35	19°13.3'	155°29.1'	4 km NNW of Pahala----------	----------
30	11	55	40.9	2.1	---	--------	---------	KM 30----------	----------
31	13	30	50.0	3.7	3	19°11.8'	155°33.2'	15 km NNE of Naalehu----------	Felt in Naalehu.
Nov. 2	04	51	40.6	2.7	---	-------	---------	KT----------	----------
2	09	02	37.7	2.4	10	19°18.7'	155°13.3'	9 km SE of Ahua seismometer	----------
2	22	30	39.3	2.8	8	19°32.2'	155°53.0'	5 km NW of Kealakekua--------	----------
2	22	50	28.9	2.6	8	19°09.8'	155°34.6'	11 km north of Naalehu-------	Felt in Naalehu.
3	03	55	31.2	2.5	13	19°46.3'	155°34.8'	13 km SE of Waikii----------	----------
3	06	32	20.9	2.4	8	19°19.1'	155°01.1'	20 km SW of Pahoa----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Nov. 6	00	16	26.4	2.7	13	19°18.6'	155°05.5'	45 km south of Hilo----	Felt in Hilo
6	05	56	13.5	2.8	3	19°11.8'	155°28.7'	1 km south of Pahala---	Felt in Pahala
6	07	15	54.3	3.1	---	--------	---------	KT----------	----------
6	21	55	31.9	3.0	3	19°24.1'	155°00.6'	12 km SW of Pahoa------	Felt in Pahoa
7	08	07	38.6	3.0	3	19°09.9'	154°59.1'	37 km SSW of Pahoa-----	----------
8	00	06	52.3	2.7	3	19°27.9'	154°56.7'	4 km south of Pahoa----	Felt in Pahoa
8	00	08	27.0	2.7	3	19°27.9'	154°56.7'	4 km south of Pahoa----	Felt in Pahoa
8	00	09	21.5	2.5	3	19°27.9'	154°56.7'	4 km south of Pahoa----	Felt in Pahoa
8	06	43	36.2	2.8	---	--------	---------	KT----------	----------
8	10	27	39.0	2.6	3	19°21.8'	155°04.5'	40 km south of Hilo----	----------
8	14	24	55.0	3.0	13	19°01.3'	155°15.8'	35 km ESE of Naalehu---	----------
10	05	07	12.9	2.1	---	--------	---------	KM 30----------	----------
11	06	26	30.0	2.6	8	19°24.4'	155°30.5'	15 km NW of Desert seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Nov. 14	03	10	36.3	2.4	3	19°24.1'	155°01.5'	14 km SW of Pahoa----------	----------
14	20	28	27.9	2.3	20	19°26.5'	155°18.6'	2 km NW of Uwekahuna seismometer.	----------
15	13	15	42.8	2.4	3	19°23.4'	155°05.6'	36 km south of Hilo--------	----------
16	22	19	16.0	2.7	8	19°49.7'	156°01.8'	37 km NNW of Kealakekua----	----------
17	00	31	16.0	2.5	15	19°52.8'	155°14.8'	25 km NW of Hilo----------	----------
17	10	06	28.0	2.4	13	19°47.8'	155°40.2'	7 km SSW of Waikii---------	----------
17	10	07	34.0	2.3	---	--------	---------	Kaoiki---------------------	----------
18	13	49	18.5	2.5	8	19°28.0'	155°51.9'	8 km SE of Kealakekua------	----------
18	17	53	45.0	2.3	12 1/2	19°47.3'	155°43.5'	10 km SW of Waikii---------	----------
19	03	23	04.6	2.3	13	19°21.5'	155°56.4'	18 km SSW of Kealakekua----	----------
19	21	01	28.0	2.2	---	--------	---------	Kaoiki---------------------	----------
20	01	56	55.2	3.7	13	20°00.1'	155°53.4'	8 km SW of Kawaihae--------	Felt in Kamuela, Kohala.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Nov. 20	04	33	34.5	2.0	---	--------	--------	Kaoiki----------	----------
20	16	54	30.5	2.7	---	--------	--------	KT----------	----------
20	20	38	11.4	2.9	---	--------	--------	KT----------	----------
21	06	45	31.1	2.9	---	--------	--------	KT----------	----------
22	03	05	55.6	2.6	---	--------	--------	KT----------	----------
22	04	26	10.0	3.9	---	--------	--------	KT----------	----------
22	05	18	21.7	4.1	---	--------	--------	KT----------	Felt from Kilauea summit to Hilo
22	19	32	26.5	2.0	---	--------	--------	KM 30----------	----------
23	09	57	50.0	2.5	---	--------	--------	KT----------	----------
23	11	52	54.5	2.7	---	--------	--------	KT----------	----------
23	12	04	57.3	2.2	---	--------	--------	KT----------	----------
23	16	47	37.5	2.0	3	19°19.7'	155°03.5'	10 km WSW of Kalapana-------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Nov. 24	17	54	57.0	2.4	3	19°23.0'	154°57.7'	14 km SSW of Pahoa----------	----------
25	09	45	31.5	2.2	3	19°04.1'	155°26.1'	17 km east of Naalehu---------	----------
26	06	56	04.3	3.2	3	19°27.0'	154°58.0'	6 km SSW of Pahoa----------	Felt in Pahoa and along the SE coast of Hawaii.
30	02	02	56.0	2.5	----	--------	---------	Kaoiki----------	----------
Dec. 1	03	22	14.5	2.4	----	--------	---------	KM 30----------	----------
1	09	41	54.4	2.2	----	--------	---------	KM 30----------	----------
2	02	13	15.6	2.1	----	--------	---------	KM 30----------	----------
2	02	21	45.5	2.8	13	20°17.2'	155°38.9'	28 km NNE of Kamuela seismograph station.	----------
2	11	50	03.2	2.5	----	--------	---------	KT----------	----------
3	03	28	17.0	2.9	8	19°17.0'	155°47.0'	17 km NE of Milolii----------	----------
3	03	34	50.0	2.5	8	19°11.0'	155°36.9'	14 km NNE of Naalehu----------	----------
3	07	30	55.0	2.3	13	19°23.5'	155°18.5'	6 km WNW of Ahua seismometer	Felt in the summit region of Kilauea.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 4	10	52	20.0	2.0	25	19°18.0'	155°17.2'	9 km SSW of Ahua seismometer.	----------
5	06	28	05.2	2.8	8	19°36.5'	156°10.1'	28 km WNW of Kealakekua	----------
5	12	32	42.5	2.1	---	--------	---------	Kaoiki----------	----------
6	19	01	36.0	2.2	13	19°03.4'	155°16.5'	37 km SSE of Desert seismometer.	----------
6	19	59	53.0	2.6	---	--------	---------	Upper east rift----------	Felt just NE of Kilauea Iki.
6	20	31	39.1	2.4	---	--------	---------	Upper east rift----------	Do.
6	20	40	25.0	2.4	---	--------	---------	Upper east rift----------	Do.
6	21	26	26.9	2.7	---	--------	---------	Upper east rift----------	Do.
7	08	05	43.0	2.4	---	--------	---------	Upper east rift----------	----------
7	13	42	57.8	2.0	---	--------	---------	Upper east rift----------	----------
7	23	37	38.5	2.6	13	19°59.3'	155°19.8'	10 km west of Laupahoehoe.	Felt between Honakaa and Laupahoehoe.
7	23	57	28.0	2.0	13	19°16.9'	155°13.1'	4 km NW of Apua Point.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 8	22	42	15.6	2.3	10	19°25.9'	155°17.8'	NW rim of Kilauea caldera	----------
8	23	59	00.5	2.4	10	19°23.2'	155°19.6'	6 km SW of Uwekahuna seismograph station.	----------
9	00	08	00.5	3.0	45	19°51.2'	155°23.0'	20 km SW of Laupahoehoe-------	Felt near Puu Waawaa.
9	03	05	42.3	2.1	8	19°25.1'	155°16.5'	Kilauea caldera----------	----------
10	20	15	39.0	2.3	3	19°58.5'	155°20.5'	12 km WSW of Laupahoehoe------	Felt in Honokaa
11	00	16	34.8	2.8	3	18°50'	155°07'	47 km SSE of Apua Point	----------
11	08	49	55.2	2.6	8	19°17.5'	154°47.8'	30 km SE of Pahoa----------	----------
12	00	08	23.4	1.5	8	19°12.2'	155°21.1'	17 km SSE of Desert seismometer	----------
12	02	36	10.0	2.8	3	19°12.9'	155°21.5'	12 km ENE of Pahala----------	Felt at Volcano
12	16	30	00.5	2.4	3	19°54.2'	155°28.5'	26 km SE of Kamuela seismograph station.	----------
12	23	18	34.5	2.2	---	--------	---------	KT----------	----------
13	00	20	11.1	2.7	---	--------	---------	Kaoiki----------	----------
13	02	02	32.0	2.2	5	19°11.8'	155°39.1'	16 km NW of Naalehu----------	----------
13	20	21	31.7	3.5	3	19°13.3'	155°21.2'	13 km ENE of Pahala----------	Felt near Pahala

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 13	20	24	58.3	2.0	3	19°12.2'	155°21.3'	16 km SSE of Desert seismometer	----------
13	21	36	18.7	3.7	---	--------	---------	KM 30----------	Felt island-wide.
14	13	04	51.5	2.8	---	--------	---------	Kaoiki----------	----------
14	13	47	27.6	2.5	---	--------	---------	KT----------	----------
14	23	49	47.5	2.0	8	19°07.5'	155°18.0'	27 km SSE of Desert seismometer	----------
15	11	05	54.0	3.0	---	--------	---------	Kaoiki----------	----------
16	04	39	33.0	2.3	25	19°08.1'	155°25.1'	21 km ENE of Naalehu----------	----------
16	06	23	44.8	2.2	8	19°03.3'	155°19.6'	28 km east of Naalehu----------	----------
16	06	47	35.9	1.8	8	19°15.5'	155°22.0'	10 km SSE of Desert seismometer	----------
16	08	38	37.7	2.5	<3	19°11.8'	155°19.8'	17 km SSE of Desert seismometer	----------
17	19	39	23.7	2.1	---	--------	---------	KM 30----------	----------
18	23	28	28.5	2.4	8	19°54.1'	155°10.1'	5 km west of Hakalau----------	----------
18	23	30	09.4	2.3	13	19°47.3'	155°33.8'	7 km NW of Pohakuloa----------	----------
19	04	52	57.5	2.3	3	19°09.5'	155°25.7'	7 km SE of Pahala----------	----------
19	20	08	11.5	2.2	---	--------	---------	Kaoiki----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 20	05	15	50.5	2.8	8	19°47'	156°12'	45 km NE of Kealakekua-----	----------
21	05	08	03.3	2.3	3	19°12.0'	155°41.0'	18 km NW of Naalehu--------	----------
21	07	00	56.5	3.3	8	19°06.4'	155°21.8'	16 km SW of Pahala---------	----------
21	16	20	08.0	2.8	8	20°40'	154°38'	140 km ENE of Upolu Point--	----------
21	17	21	44.5	2.6	3	19°24.1'	155°43.1'	25 km SE of Kealakekua-----	----------
21	21	47	10.3	2.8	13	20°48'	155°25'	75 km NE of Upolu Point----	----------
23	15	27	19.9	2.0	8	19°19.8'	155°25.8'	5 km WSW of Desert seismometer.	----------
24	08	12	30.5	2.0	---	-------	--------	Kaoiki----------	----------
25	12	19	35.3	2.7	8	19°40.8'	156°07.8'	29 km NW of Kealakekua------	----------
26	20	24	38.5	2.6	3	19°25.2'	155°58.2'	13 km SW of Kealakekua------	----------
27	04	59	06.4	2.8	---	--------	--------	KM 30----------	----------
27	05	20	23.0	2.3	---	--------	--------	KM 30----------	----------
27	12	14	18.0	2.7	---	--------	--------	Kaoiki----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1962--Continued

Date (1962)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 28	01	06	10.1	4.1	8	19°18.5'	155°05.0'	13 km ENE of Apua Point------	Felt over the eastern half of the island.
28	03	49	36.0	3.4	8	19°14.2'	155°48.8'	33 km SSE of Kealakekua-----	----------
29	14	09	38.1	3.0	8	19°08.8'	155°41.5'	14 km NW of Naalehu---------	----------
29	18	41	27.5	3.0	---	--------	---------	KM 30----------	----------
29	18	48	25.5	2.4	---	--------	---------	KM 30----------	----------
30	17	47	19.0	4.0	3	19°14.0'	155°35.8'	18 km north of Naalehu------	Felt over half the island.
31	06	02	03.5	3.0	<3	19°24.1	155°45.5'	21 km SE of Kealakekua------	Felt on the western half of the island.
31	07	11	10.1	2.9	<3	19°12.0'	155°38.0'	16 km NNW of Naalehu---------	----------

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in Summary 25. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

During the quarter, no exceptionally large or disastrous quakes were recorded from distant sources. The period was notable, however, for the number of deeper quakes which took place. Also, both long-period and short-period energy was recorded from U.S. atmospheric tests about 800 miles from Hawaii. Some of these were even felt or sensed in the State; the largest (which took place during the day and so was not visible) alarmed many people in Honolulu. During this quarter large Russian nuclear tests recorded at HVO as long period barometric pulsations on the Press-Ewing set at Uwekahuna]

Oct. 1, 1962

M	Z	iP	04:04:08.1 d
A	Z	iP	04:04:07.7 d
D	Z	eP	04:04:08.0 d
U	Z	iP	04:04:07.8 d
Pa	Z	iP	04:04:09.3 c
Na	Z	iP	04:04:04.4 c
Ka	Z	eP	04:04:11.0 d
Ha	Z	iP	04:04:12.9 c
Hi	Z	iP	04:04:10.7 c

C&GS card 78-62:
03:56:52.0
17.5° S., 178.9° W.
Fiji Islands
h about 550 km.

Oct. 1

M	Z	iP	10:02:24.7 c
A	Z	eP	10:02:25.8 d
D	Z	eP	10:02:25.4 d
U	Z	eP	10:02:25.2 d
Pa	Z	iP	10:02:26.3 c
Hi	Z	eP	10:02:24.5 c

C&GS card 78-62:
09:53:32.9
47.3° N., 151.5° E.
Kurile Islands
h about 127 km.

Oct. 6

M	Z	eP	04:32:37.6 c
A	Z	eP	04:32:37.4 c
Pa	Z	eP	04:32:39.0 c
Hi	Z	eP	04:32:42.2 d
Ha	Z	eP	04:32:43.4 d
U	PEZ	iS	04:40:00
		iSS	04:43:37
		iR	04:46:57
U	PEN	eG	04:44:29

C&GS card 81-62:
04:23:24.1
17.4° S., 167.7° E.
New Hebrides Islands
h about 33 km
Felt: Port Vila
Magnitude 6.6 (HVO).

Table 5.--Distant earthquakes--Continued

Oct. 6, 1962

U	PEZ	eS	08:12:47
		iR	08:20:16

C&GS card 81-62:
07:56:20.4
17.4° S., 167.9° E.
New Hebrides Islands
h about 33 km
Felt.

Oct. 6

U	PEZ	eS	23:48:11
		iR	23:54:51

C&GS card 87-62:
23:31:27.7
17.5° S., 167.6° E.
New Hebrides Islands
h about 42 km.

Oct. 8

M	Z	eP	22:08:08.9 c
U	PEZ	iP	22:08:09 c
		eR	22:31:21
U	PEN	iS	22:18:03

C&GS card 82-62:
21:56:22.2
24.3° N., 121.7° E.
Near east coast of Formosa
h about 29 km
Magnitude 6.0 (Pas)
6.3 (Pal).

Oct. 9

U	PEE	iS	20:32:57
U	PEZ	iR	20:41:33

C&GS card 84-62:
20:14:38.3
3.2° S., 148.2° E.
Bismarck Sea
h about 33 km
Magnitude 6.3 (Pas)
6.6 (HVO).

Oct. 13

U	PEZ	eR	19:10:23

C&GS card 84-62:
18:47:44.5
12.6° S., 166.6° E.
Santa Cruz Islands region
h about 33 km.

Oct. 14

M	Z	eP	00:39:41.5 c
A	Z	eP	00:39:40.6 c
N	Z	eP	00:39:41.2 c

C&GS card 84-62:
00:29:56.0
33.4° S., 179.3° W.
Kermadec Islands region
h about 33 km.

Oct. 14

M	Z	Tmax	10:22:41.3
A	Z	Tmax	10:22:49.3
D	Z	Tmax	10:23:04.0
U	Z	Tmax	10:22:48.8
Pa	Z	Tmax	10:22:30.1
Ha	Z	Tmax	10:22:30.1
Ka	Z	Tmax	10:22:40.1
Hi	Z	Tmax	10:22:36.1

Oct. 14, 1962--Continued

C&GS card 84-62:
09:41:09.6
38.8° N., 123.5° W.
Off coast of northern Calif.
h about 33 km.

Oct. 14

M	Z	Tmax	10:56:01.3
A	Z	Tmax	10:56:05.1
D	Z	Tmax	10:56:01.4
U	Z	Tmax	10:55:58.8
Pa	Z	Tmax	10:56:57.6
Ha	Z	Tmax	10:55:54.6
Ka	Z	Tmax	10:56:07.4
Hi	Z	Tmax	10:55:54.2

C&GS card 83-62:
10:14:32.4
38.7° N., 124.0° W.
Off coast of northern Calif.
h about 33 km.

Oct. 14

M	Z	Tmax	11:52:00.5
A	Z	Tmax	11:52:03.0
U	Z	Tmax	11:51:59.6
Pa	Z	Tmax	11:52:46.2
Ha	Z	Tmax	11:51:45.4
Ka	Z	Tmax	11:51:42.7
Hi	Z	Tmax	11:51:53.8

No C&GS preliminary listing.

Oct. 16

M	Z	iP	18:09:33.5 d
A	Z	iP	18:09:35.1 c
D	Z	eP	18:09:34.3 d
U	Z	eP	18:09:34.4 d
Ka	Z	eP	18:09:27.3 c

C&GS card 84-62:
18:02:32.9
51.6° N., 175.8° W.
Near Islands, Aleutian Islands
h about 27 km
Magnitude 5.3 (Pal).

Oct. 17

M	Z	iP	12:48:51.2 d
D	Z	iP	12:48:51.5 d
Na	Z	iP	12:48:50.9 d

C&GS card 86-62:
12:39:12.0
33.3° N., 137.7° E.
South of Honsu, Japan
h about 335 km.

Oct. 18

M	Z	iP	08:49:53.1 c
A	Z	eP	08:49:53.7 c
	Z	ePcP	08:50:56.1
D	Z	iP	08:49:53.5 c
	Z	ePcP	08:50:53.9
U	Z	eP	08:49:53.8 d
Pa	Z	iP	08:49:55.1 d
Hi	Z	iP	08:49:53.6 d
Ka	Z	eP	08:49:48.3 d

Table 5.--Distant earthquakes--Continued

Oct. 18, 1962--Continued

C&GS card 85-62:
08:40:55.5
46.5° N., 149.6° E.
Kurile Islands
h about 140 km.

Oct. 18

U	PEZ	eR	16:07:53
U	PEN		17:22:37

Probably due to U.S. nuclear testing in Pacific--pressure waves start about 17:22:37 with 64 sec. period and amplitude of 17 mm. Pressure waves "sensed" on island of Hawaii.

Oct. 18

M	Z	eP	19:59:42.2 c
A	Z	iP	19:59:41.3 c
D	Z	eP	19:59:42.2 c
U	Z	eP	19:59:41.5 c

C&GS card 84-62:
19:49:59.2
16.2° N., 93.5° W.
Chiapas, Mexico
h about 179 km.

Oct. 19

M	Z	iP	23:54:12.6 d
A	Z	iP	23:54:12.4 d
U	Z	eP	23:54:12.4 d

C&GS card 86-62:
23:42:34.9
5.7° S., 130.3° E.
Banda Sea
h about 177 km.

Oct. 21

M	Z	eP	02:13:18.2 c
	Z	ipP	02:13:34.9
A	Z	iP	02:13:18.7 c
	Z	ipP	02:13:35.2
U	Z	eP	02:13:18.2 c
Pa	Z	eP	02:13:24.0 c
Na	Z	eP	02:13:27.5 d
Hi	Z	eP	02:13:17.2 d
Ka	Z	iP	02:13:15.3 c

C&GS card 85-62:
02:05:22.7
61.1° N., 149.7° W.
Vicinity Anchorage, Alaska. Felt.
h about 80 km.

Oct.22

U	PEZ	eR	05:03:29

C&GS card 84-62:
04:34:38.9
3.4° S., 145.3° E.
Bismarck Sea
h about 36 km.

Oct. 22

U	PEZ	eR	15:45:37

C&GS card 85-62:
15:23:32.9
49.8° N., 155.8° E.
Northern Kurile Islands
h about 19 km.

Table 5.--Distant earthquakes--Continued

Oct. 22, 1962

U	PEN		17:36:57

C&GS card 84-62:
09:06:10.1
73.4° N., 54.9° E.
Novaya Zemlya
h=0
Magnitude 5.3 (Pal)

Pressure waves from nuclear blast start about 17:36:57 with period of 80 sec. and amplitude of 2 mm.

Oct. 25

M	Z	iP	09:46:08.9 c
A	Z	iP	09:46:09.0 c
D	Z	iP	09:46:08.2 c
U	Z	iP	09:46:09.0 c
Pa	Z	iP	09:46:10.3 c
Na	Z	iP	09:46:07.2 c
Ka	Z	iP	09:46:11.7 c
Hi	Z	iP	09:46:10.5 c

C&GS card 85-62:
09:34:14.6
3.0° N., 126.7° E.
Molucca Passage
h about 33 km.

Oct. 27

M	Z	eP	08:20:35.4 d
	Z	ipP	08:20:50.1
A	Z	iP	08:20:34.8 d
	Z	epP	08:20:48.4
D	Z	iP	08:20:35.5 d
	Z	ipP	08:20:49.8
Hi	Z	eP	08:20:34.0 d

C&GS card 86-62:
08:10:24.5
14.0° N., 90.4° W.
Guatemala--El Salvador border
Felt: western El Salvador
h about 107 km.

Oct. 27

U	PEZ		17:09:57

Pressure waves from nuclear blast start about 17:09:57 with a period of 40 sec. and an amplitude of 8 mm.

Oct. 28

M	Z	iP	15:12:31.9 c
A	Z	iP	15:12:31.9 c
D	Z	eP	15:12:31.4 c
U	Z	iP	15:12:31.8 c
Hi	Z	eP	15:12:33.3 d

C&GS card 86-62:
15:00:17.0
0.1° N., 123.6° E.
Northern Celebes
h about 61 km.

Oct. 28

M	Z	eP	23:02:46.8 d
A	Z	iP	23:02:46.1 d
D	Z	eP	23:02:46.7 d
U	Z	eP	23:02:45.7 d
Pa	Z	iP	23:02:44.0 c

C&GS card 86-62:
22:53:01.3
16.0° N., 93.6° W.
Chiapas, Mexico
h about 110 km.

Oct. 30

A	Z	eP	08:42:24.0 d
D	Z	eP	08:42:25.0 d
U	Z	eP	08:42:25.0 d
Hi	Z	eP	08:42:26.1 d
Ka	Z	eP	08:42:27.6 c

C&GS card 89-62:
08:31:51.8
12.5° N., 88.0° W.

Table 5.--Distant earthquakes--Continued

Oct. 30--Continued

C&GS card--Continued
Off west coast of Nicaragua
h about 80 km.

Oct. 30

U	PEN		17:45:58

Pressure waves from nuclear blast start at 17:45:58 with a period of 120 sec. and amplitude of 11 mm.

Oct. 31

M	Z	eP	11:43:51.3 d
A	Z	eP	11:43:50.8 d
D	Z	eP	11:43:51.1 d
U	Z	eP	11:43:50.8 d
Pa	Z	eP	11:43:51.0 d
M	Z	Tmax	13:02:10
A	Z	Tmax	13:01:59
D	Z	Tmax	13:02:00
U	Z	Tmax	13:02:09
Pa	Z	Tmax	13:01:56
Na	Z	Tmax	13:01:48
Hi	Z	Tmax	13:02:06

C&GS card 86-62:
11:32:29.0
5.6° N., 82.6° W.
South of Panama
h about 33 km
Magnitude 6.5 (Pas)
5.5 (Pal).

Nov. 1

M	Z	eP	15:44:50.2 d
U	Z	eP	15:44:50.0 d

Nov. 1--Continued

C&GS card 88-62:
15:33:22.6
1.9° N., 133.0° E.
Off coast of Western New Guinea
h about 56 km.

Nov. 2

M	Z	eP	14:59:42.9 d
A	Z	eP	14:59:42.7 d
D	Z	eP	14:59:42.1 d
Ka	Z	eP	14:59:43.2 d

C&GS card 90-62:
14:46:39.2
10.0° S., 117.8° E.
South of Sumbawa
h about 33 km.

Nov. 4

U	PEZ	eR	23:38:20

C&GS card 90-62:
22:53:34.2
43.2° S., 75.6° W.
Off coast of southern Chile
h about 33 km
Magnitude 5.8-6 (Pas)
5.5 (Pal).

Nov. 8

U	PEZ	eR	00:43:02

C&GS card 90-62:
00:02:08.6
15.1° S., 75.6° W.
near coast of southern Peru
h about 33 km.

Table 5.--Distant earthquakes--Continued

Nov. 10, 1962

M	Z	iP	01:42:34.1 d
A	Z	iP	01:42:35.3 d
D	Z	iP	01:42:34.7 d
U	Z	iP	01:42:34.9 d
Pa	Z	iP	01:42:37.0 d
Hi	Z	eP	01:42:34.7 d
U	PEZ	eR	01:57:25

C&GS card 92-62:
01:33:15.0
43.7° N., 147.7° E.
Kurile Islands region
h about 24 km
Magnitude 6.0 (HVO).

Nov. 11

M	Z	eP	16:19:03.7 c
D	Z	eP	16:19:01.2 c
Pa	Z	iP	16:19:04.0 c
Ha	Z	eP	16:19:06.0 c
Hi	Z	eP	06:19:03.9 d
U	PEZ	iS	06:26:32
		eR	06:33:37

C&GS card 92-62:
16:09:57.6
12.9° S., 166.5° E.
Santa Cruz Islands
h about 77 km
Felt: Port Vila
Magnitude 6-6.3 (Pas)
6.1 (HVO).

Nov. 11

Ha	Z	Tmax	22:30:02
Pa	Z	Tmax	22:30:18

C&GS card 92-62:
21:45:20.5
48.9° N., 128.8° W.
Vancouver Island region
h about 33 km.

Nov. 11

U	PEZ	eR	22:58:29

C&GS card 91-62:
22:14:18.7
43.2° S., 76.0° W.
Off coast of southern Chile
h about 33 km
Magnitude 6.5-6.8 (Pas).

Nov. 14

M	Z	iP	22:11:31.1 d
	Z	ipP	22:11:52.8
A	Z	ipP	22:11:53.1
N	Z	eP	22:11:29.0 d
	Z	epP	22:11:53.3

C&GS card 96-62:
21:59:16.1
0.3° S., 123.0° E.
northern Celebes
h about 92 km.

Nov. 15

M	Z	eP	23:37:17.9 c
A	Z	eP	23:37:18.8 c
D	Z	iP	23:37:19.3 d
Pa	Z	iP	23:37:17.6 c
Hi	Z	iP	23:37:18.6 c
Ka	Z	eP	23:37:21.3 c
Ha	Z	iP	23:37:25.9 c
U	PEZ	eR	00:01:53

C&GS card 93-62:
23:25:15.7
8.7° S., 79.8° W.
near coast of northern Peru
h about 45 km
Magnitude 6 (Pas).

Table 5.--Distant earthquakes--Continued

Nov. 16, 1962

D	Z	eP	07:29:28.1 c
Pa	Z	eP	07:29:28.2 c
U	PEE	iS	07:38:25
U	PEN	iG	07:45:57
	PEN	iR	07:48:13

C&GS card 93-62:
07:18:37.3
32.3° S., 111.1° W.
Easter Island region
h about 43 km
Magnitude 6.5-6.8 (Pas)
6 (Pal)
6.6 (HVO).

Nov. 17

M	Z	iP	14:32:53.9 d
A	Z	eP	14:32:54.1 d
D	Z	eP	14:32:53.4 d

C&GS card 94-62:
14:21:30.6
2.8° N., 121.7° E.
Celebes Sea
h about 609 km.

Nov. 23

M	Z	eP	23:13:27.7 c
A	Z	eP	23:13:26.9 c
N	Z	eP	23:13:26.9 c
Pa	Z	eP	23:13:28.2 d
Hi	Z	iP	23:13.29.8 c
Ha	Z	iP	23:13:32.1 d

C&GS card 96-62:
23:05:47.4
21.5° S., 179.3° W.
Fiji Islands
h about 609 km.

Nov. 27

M	Z	iP	07:04:24.8 d
A	Z	iP	07:04:25.5 d
D	Z	iP	07:04:24.9 d

Nov. 27--Continued

Pa	Z	iP	07:04:26.5 d
Hi	Z	iP	07:04:25.6 c

C&GS card 95-62:
06:52:57.8
25.1° N., 122.9° E.
Ryukyu Islands
h about 148 km.

Nov. 29

Hi	Z	eP	19:15:45.4 c
U	PEZ	iS	19:23:03
	PEZ	iR	19:29:31

C&GS card 96-62:
19:06:37.6
17.3° S., 168.5° E.
New Hebrides Islands
Felt: Port Vila and Tongoa
h about 33 km
Magnitude 6.1 (HVO).

Dec. 1

M	Z	iP	01:57:10.0 d
	Z	iPP	01:58:23.6
A	Z	iP	01:57:11.1 d
	Z	iPP	01:58:27.8
D	Z	eP	01:57:11.1 d
	Z	iPP	01:58:28.7
U	Z	eP	01:57:10.6 d
	Z	iPP	01:58:24.9
U	PEZ	eR	02:06:25

C&GS card 96-62:
01:50:20.4
52.4° N., 170.1° W.
Fox Islands, Aleutian Islands
h about 38 km
Magnitude 5.5 (HVO).

Table 5.--Distant earthquakes--Continued

Dec. 1, 1962

M	Z	iP	04:26:15.9 d
A	Z	iP	04:26:15.2 d
U	Z	iP	04:26:15.4 d
Pa	Z	iP	04:26:16.5 d
Hi	Z	eP	04:26:18.4 c

C&GS card 100-62:
04:16:59.6
29.7° S., 177.7° W.
Kermadec Islands
h about 52 km.

Dec. 1

M	Z	iP	21:10:03.9 d
A	Z	iP	21:10:03.5 d
D	Z	eP	21:10:02.8 d
U	Z	iP	21:10:03.4 d
Pa	Z	iP	21:10:05.2 d
Hi	Z	iP	21:10:06.2 c
Ka	Z	iP	21:10:06.0 c
Ha	Z	iP	21:10:08.7 c

C&GS card 98-62:
21:02:51.8
17.7° S., 178.7° W.
Fiji Islands region
h about 620 km.

Dec. 4

U	PEZ	eR	03:52:16

C&GS card 101-62:
03:29:40.8
10.1° N., 103.6° W.
Off coast of Guerrero, Mexico
h about 33 km.

Dec. 4

U	PEE	eL	16:56:17

C&GS card 99-62:
16:40:06.0
16.5° S., 172.8° W.
Samoa Island region
h about 33 km

Dec. 4--Continued

C&GS card--Continued
Magnitude 5-5.3 (Pal).

Dec. 7

M	Z	eP	14:13:03.8 d
D	Z	eP	14:13:03.6 d
U	Z	eP	14:13:04.4 c
Pa	Z	iP	14:13:06.1 c
Na	Z	iP	14:13:04.1 c
Hi	Z	iP	14:13:05.1 c
	Z	ipP	14:14:37
Ka	Z	iP	14:13:02.3 c
U	PEZ	iP	14:13:03 c
	PEZ	ipP	14:14:38
	PEZ	iPP	14:15:18
U	PEN	iS	14:20:46
	PEN	iG	14:28:02

C&GS card 96-62:
14:03:37.0
29.2° N., 139.2° E.
Bonin Islands region
h about 411 km
Magnitude 6.8-7 (Brk).

Dec. 8

Na	Z	eP	18:25:49.5 d
Hi	Z	iP	18:25:54.5 d
Ka	Z	eP	18:25:55.4 d
Ha	Z	iP	18:26:00.8 c
U	PEZ	iP	18:25:52 d
	PEZ	iPP	18:27:28
	PEZ	eS	18:32:14
	PEZ	iL	18:35:50

C&GS card 99-62:
18:18:29.1
15.2° S., 173.7° W.
Tonga Island region
h about 33 km
Magnitude 6.1 (HVO).

Table 5.--Distant earthquakes--Continued

Dec. 8, 1962

Hi	Z	eP	21:40:05.2	c
	Z	epP	21:42:14.3	
Pa	Z	eP	21:40:06.0	c
U	PEZ	iP	21:40:10	c
	PEZ	epP	21:42:23	
	PEZ	iPP	21:44:22	
	PEZ	iSKS	21:49:50	
	PEZ	iSP	21:52:30	
	PEZ	eSS	21:58:16	
	PEZ	eSSS	22:01:50	
	PEZ	iG	22:08:30	
U	PEN	eS	21:50:51	
U	PEE	iPS	21:53:52	
	PEE	isSP		
	PEE	isPS	21:56:18	

C&GS card 99-62:
21:27:22.2
25.8° S., 63.4° W.
Salta-Santiago
Del Estero Provinces
border, Argentina
h about 620 km.

Dec. 8

M	Z	iP	23:01:56.1	d
D	Z	eP	23:01:56.7	d
U	Z	iP	23:01:56.6	d
Pa	Z	iP	23:01:57.1	d
Hi	Z	iP	23:01:33.2	c
Ka	Z	eP	23:01:49.6	d
Ha	Z	iP	23:01:43.2	c
U	PEZ	eR	13:11:06	

C&GS card 99-62:
22:55:01.2
50.5° N., 176.8° W.
Andreanof Islands,
Aleutian Islands
h about 33 km.

Dec. 10

M	Z	iP	05:15:53.4	c
D	Z	iP	05:15:52.9	c
U	Z	iP	05:15:53.4	c
Hi	Z	eP	05:15:53.9	c

No C&GS preliminary listing.

Dec. 12

M	Z	eP	10:18:20.5	c
M		epP	10:18:41	
M		ePcP	10:19:03	
A	Z	eP	10:18:20.5	c
D	Z	eP	10:18:19.8	c
	Z	epP	10:18:40	
	Z	ePcP	10:19:02	
Pa	Z	eP	10:18:22.3	d
Na	Z	eP	10:18:16.9	d
Hi	Z	eP	10:18:22.2	c
Ha	Z	eP	10:18:37.3	c
U	PEE	iS	10:26:09	
U	PEZ	eG	10:32:55	

C&GS card 103-62:
10:08:48.5
4.8° S., 153.8° E.
New Britain
h about 94 km.

Dec. 13

M	Z	eP	04:29:25.0	d
D	Z	eP	04:29:26.0	d
Hi	Z	eP	04:29:25.6	c

C&GS card 99-62:
04:21:21.2
63.3° N., 149.7° W.
South central Alaska.
h about 47 km.

Table 5.--Distant earthquakes--Continued

Dec. 17, 1962

M	Z	eP	11:11:54.1 c
A	Z	eP	11:11:54.3 c
D	Z	eP	11:11:53.6 c
U	Z	eP	11:11:54.0 c
Hi	Z	eP	11:11:55.4 c

C&GS card 102-62:
11:00:16.0
2.1° N., 122.9° E.
Celebes Sea
h about 393 km.

Dec. 18

M	Z	eP	10:42:50.3 d
A	Z	eP	10:42:49.8 d
Pa	Z	iP	10:42:51.5 d

C&GS card 104-62:
10:33:58.4
28.3° S., 178.2° W.
Kermadec Islands
h about 214 km.

Dec. 20

M	Z	iP	08:55:27.2 d
A	Z	eP	08:55:26.7 d
D	Z	eP	08:55:26.2 d
U	Z	eP	08:55:27.0 d
Pa	Z	eP	08:55:28.4 c
Hi	Z	eP	08:55:30.1 d
Ha	Z	iP	08:55:31.8 d

C&GS card 105-62:
08:47:23.3
23.4° S., 179.3° E.
Fiji Islands region
h about 512 km.

Dec. 21

M	Z	eP	08:49:33 d
A	Z	eP	08:49:35 d
D	Z	eP	08:49:34 d
N	Z	eP	08:49:34 d
		ePP	08:50:45
		ePP	08:50:45
Pa	Z	eP	08:49:35 d
Hi	Z	eP	08:49:34 c
U	PEZ	iP	08:49:30 d
	PEZ	iPP	08:50.54
	PEZ	iS	08:55:06
	PEZ	eG	08:57:54
	PEZ	eR	09:00:54

C&GS card 102-62:
08:42:48.1
52.4° N., 168.5° W.
Fox Islands, Aleutian Islands
h about 33 km
Magnitude 6.3 (Brk)
6.5 (Pas)
6.8 (Pal)
6.8 (HVO).

Dec. 21

M	Z	iP	09:07:26.3 c
A	Z	iP	09:07:27.3 c
	Z	ePP	09:08:41
D	Z	eP	09:07:28 c
N	Z	iP	09:07:26.4 c

C&GS card 102-62:
09:00:41.4
52.4° N., 168.5° W.
Fox Islands, Aleutian Islands
h about 33 km.

Dec. 21

M	Z	eP	09:16:46 c
A	Z	eP	09:16:49 c
	Z	ePP	09:17:58
D	Z	eP	09:16:49 c
	Z	ePP	09:17:58
N	Z	eP	09:16:48 c

Dec. 21, 1962--Continued

C&GS card 102-62:
09:10:01.6
52.5° N., 168.5° W.
Fox Islands, Aleutian Islands
h about 33 km.

Dec. 21

M	Z	iP	09:42:58.7 d
A	Z	iP	09:42:59.9 c
D	Z	iP	09:42:59.1 d
N	Z	iP	09:42:59.5 c
Pa	Z	iP	09:43:00.2 d
Na	Z	eP	09:43:00.5 d
Hi	Z	iP	09:43:00.0 d

C&GS card 104-62:
09:33:15.5
42.4° N., 142.3° E.
Near south coast of
Hokkaido, Japan
h about 27 km.

Dec. 22

M	Z	iP	01:01:40.4 c
D	Z	iP	01:01:40.5 c
U	Z	iP	01:01:40.6 c
Hi	Z	iP	01:01:44.5 c
U	PEZ	iS	01:09:19
		iSS	01:13:07
		iR	01:17:09

C&GS card 106-62:
00:52:23.4
22.0° S., 170.1° E.
Loyalty Island region
h about 33 km
Magnitude 6.5-6.8 (Pas)
6.2 (HVO)

Dec. 22

M	Z	iP	15:27:16.8 c
A	Z	iP	15:27:17.6 c
D	Z	iP	15:27:18.1 c
U	Z	eP	15:27:16.9 c
Pa	Z	iP	15:27:17.3 c
		iPP	15:28:28.5
Na	Z	eP	15:27:19.0 d
Hi	Z	eP	15:27:13.6 c
U	PEZ	iS	15:32:52
		eR	15:35:40

Dec. 22--Continued

C&GS card 102-62:
15:20:31.0
52.5° N., 168.8° W.
Fox Islands, Aleutian Islands
h about 47 km
Magnitude 6.3 (Pas)
6.4 (HVO).

Dec. 26

M	Z	eP	22:33:22.3 c
A	Z	eP	22:33:23.6 c
D	Z	eP	22:33:23.5 c
U	Z	iP	22:33:23.0 c
Pa	Z	eP	22:33:23.1 c
Na	Z	eP	22:33:24.3 c
Hi	Z	eP	22:33:22.1 c
Ka	Z	eP	22:33:17.9 c
Ha	Z	iP	22:33:11.5 c
U	PEZ	iP	22:33:22
	PEZ	iR	22:45:18
U	PEN	iS	22:40:06
U	PEE	iG	22:43:22

C&GS card 104-62:
22:25:15.5
53.9° N., 168.7° E.
Komandorskie Islands
h about 33 km
Magnitude 6.5 (Pas)
6.4 (HVO)

Dec. 26

M	Z	iP	23:54:21.0 c
A	Z	eP	23:54:22.2 c
D	Z	iP	23:54:21.7 c
U	Z	eP	23:54:21.5 d
Ha	Z	iP	23:54:13.9 c
Ka	Z	iP	23:54:15.2 c
Hi	Z	iP	23:54:21.5 c
Na	Z	eP	23:54:22.7 c

C&GS card 104-62:
23:46:14.7
54.0° N., 168.8° E.
Kormandorskie Islands
h about 33 km.

Table 5.--Distant earthquakes--Continued

Dec. 29, 1962

M	Z	iP	04:24:04.7 d
A	Z	eP	04:24:04.6 c
D	Z	eP	04:24:04.1 c
U	Z	iP	04:24:04.6 c
Hi	Z	iP	04:24:06.0 d

C&GS card 104-62:
04:12:09.0
2.4° N., 127.1° E.
Halmahera region
h about 33 km.

Dec. 29

U	PEZ	eS	11:06:25
	PEZ	eR	11:23:13
M	Z	Tmax	12:36:38
A	Z	Tmax	12:36:25
D	Z	Tmax	12:36:28
U	Z	Tmax	12:36:39
Pa	Z	Tmax	12:36:03
Na	Z	Tmax	12:36:41
Hi	Z	Tmax	12:36:22
Ha	Z	Tmax	12:38:02

C&GS card 104-62:
10:41:04.1
20.0° S., 69.9° W.
northern Chile
Felt: Arequipa, Peru
h about 46 km
Magnitude 6.8 (Pas)
6.5 (Brk)
6 (Pal).

Dec. 29

M	Z	eP	14:57:11.5 c
A	Z	eP	14:57:11.7 c
N	Z	eP	14:57:11.7 c
U	PEN	eS	15:04:57
U	PEZ	eR	15:14:57

Dec. 29--Continued

C&GS card 106-62:
14:47:41.4
31.2° S., 177.9° W.
Kermadec Island region
h about 43 km
Magnitude 6-6.3 (Pas).

During this last quarter of 1962 "felt" reports were received from the following people to whom we express our continued mahalo:

North Hawaii

Dr. Tabrah
Mr. Godfrey

Kilauea Summit Region

Miss English
Mr. Cruz
Mrs. Hansen
Mrs. Mist
Mrs. Fraser
Mr. Ferry
Mr. Soriano
Mr. English
Mr. Moriwaki
Mr. Walter
Mr. Yamamoto
Mr. Ayres
Mr. Lake
Mrs. Yong
Mr. Moore
Mr. Loucks

Central Hawaii

Mr. Greenwell
Mrs. Lindsey
Mr. Eklund
Hawaii Prep. Academy students
Kulani Honor Camp

Kau District

Mrs. Billings
Mrs. Schattauer
Naalehu Police
Mr. Thompson

Hilo Region

Mrs. Bryan
Mr. Paiva
Mr. Ho
Mrs. Baldwin
Mrs. Brayton
Mrs. Schaffer
Mrs. Pacheco
Mr. Okamura
Mrs. Ingledue

Puna

Mr. Isbell
Mr. Warner
Mr. Williamson
Mrs. Kimura
Mr. R. Ho
Mr. Thompson
Mr. Green
Mrs. Hoopai
Mr. Schattauer
Mr. Edwards
Mr. Albright

Kona Coast

Miss Greenwell
Mrs. Conley
Miss Wallace
Mr. McKinkle
Mr. Johnson
Mrs. Hahn
Mr. Glass

Northwest Coast

Mr. McKay

Publications of special interest and

HVO numbered contributions, 1962

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_____1963, Volcanoes and geophysical lineaments [abs.]: Am. Geophys. Union Trans., v. 44, no. 1, p. 114.

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Hawaiian Volcano Observatory
1963 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 29
January, February, and March 1963
By Robert Y. Koyanagi, Arnold T. Okamura,
Harold L. Krivoy, and Akira Yamamoto

Summary 30
April, May, and June 1963
By Harold L. Krivoy, Willie T. Kinoshita,
Arnold T. Okamura, and Robert Y. Koyanagi

Summary 31
July, August, and September 1963
By Robert Y. Koyanagi, Arnold T. Okamura,
Willie T. Kinoshita, James G. Moore, and Howard A. Powers

Summary 32
October, November, and December 1963
By Arnold T. Okamura, Robert Y. Koyanagi, Willie T. Kinoshita,
James G. Moore, Dallas L. Peck, and Howard A. Powers

Open-File Report 2007-1323
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 29

January, February, and March, 1963

By

Robert Y. Koyanagi, Arnold T. Okamura,

Harold L. Krivoy, and Akira Yamamoto

Issued September 1964

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Chronological summary

Following its small, sharp subsidence during the December 1962 Aloi eruption, the summit region of Kilauea promptly resumed the cycle of swelling that began in the summer of 1960. A moderate rate of inflation during the first quarter of 1963 is indicated by the average rate of outward tilting at the inner ring of tilt bases (Uwe, TM, Kea, and Kam), which was 11 microradians per month between December 18, 1962, and March 18, 1963. As was true throughout 1962, tilting at Kamokukolau was more rapid than at any other base during this interval.

The average daily count of shallow Kilauea caldera earthquakes diminished from 113 during the first half of January, to 62 during the second half, and to 50 during the first half of February. A moderate resurgence of these earthquakes during the second half of February sent the average daily count to 138. The level of this activity remained moderately high throughout March, with an average of 92 per day.

The frequency of earthquakes from the southwest rift zone of Kilauea and the nearby Kaoiki fault system rose from an average of 6 per day during January to 15 per day during February and March.

The number of earthquakes from the upper part of the east rift zone of Kilauea (near Aloi Crater) also increased during the quarter, from a total of 20 in January, to 49 in February, and to 92 in March. These quakes were particularly frequent late in March, when 83 occurred between the 19th and 27th.

Deep tremor was quite prominent during the quarter with totals of 82 minutes during January, 75 minutes during February, and 119 minutes during March.

Excluding January 8 and 9, the frequency of earthquakes from the source about 30 km beneath Halemaumau was about 5 per day during the entire quarter. A flurry of activity from this source on January 8 and 9, however, produced 154 earthquakes. Four of these were felt (table 4, p. 14 and 15).

The first of these earthquakes--which occurred on January 8, at $09^h39^m44.9^s$, magnitude 4.3, was the largest earthquake in Hawaii during January and was felt throughout Hawaii and on Maui and Oahu.

The lower part of Kilauea's east rift zone near Pahoa was the source of occasional earthquakes throughout the quarter and of a mild swarm of 55 earthquakes during the first week in March. Five earthquakes from this region were felt in Pahoa (table 4, p. 16, 17, and 18).

The largest earthquake in the Hawaiian region during February was not felt. It originated 83 km west of Keahole Point at 09^h08^m on the 17th and had a magnitude of 4.1.

During March, 6 earthquakes in the Hawaiian Islands had magnitudes of 3.5 or greater (table 4, p. 18 and 19).

The largest earthquake in March, with a magnitude of 4.5, originated 14 km southeast of Waikii at a depth of about 13 km at 22^h32^m on the 24th. It was felt over all of the island of Hawaii and on Maui.

A very interesting earthquake was felt throughout Maui at 07^h19^m on March 25. It had a magnitude of 3.9 and originated 35 km beneath Haleakala National Park headquarters. There were neither foreshocks nor aftershocks.

Other earthquakes felt during the quarter are listed in table 4.

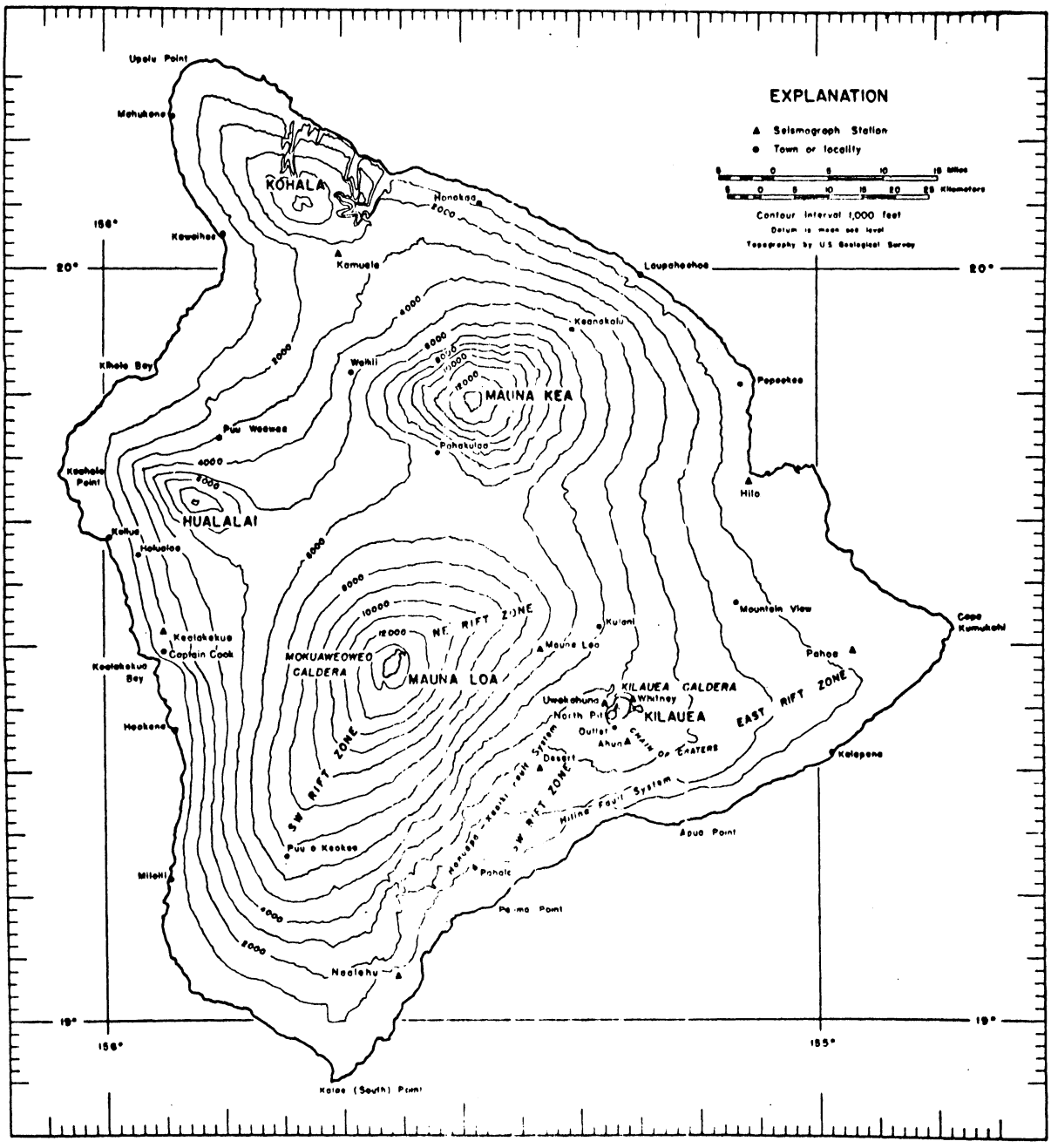

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, i.e., to a relative subsidence toward the north and east. A one-unit change in coordinate cooresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates Uwekahuna Vault, January, February, and March, 1963

Date	N-S	E-W	Date	N-S	E-W
Jan. 6	460	492	Mar. 3	470	486
13	465	492	10	476	482
20	467	490	17	485	482
27	467	490	24	488	482
Feb. 3	467	490	31	489	483
10	468	491			
17	470	487			
24	469	488			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera, 1st Quarter, 1963 (see fig. 2)

Tilt base (location)	Date (1963)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date last reading (1962)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Mar. 20	471.2	481.2	11.6	N. 28.5° W.	Dec. 10
Tree Molds (19°26.3' N., 155°17.3' W.)	Mar. 19	448.7	511.0	4.0	N. 6.9° W.	Dec. 12
Sand Spit (19°24.1' N., 155°16.8' W.)	Mar. 21	938.5	707.5	13.9	N. 6.0° E.	Dec. 12
Kalihipaa (19°21.4' N., 155°15.3' W.)	Mar. 18	568.5	428.3	2.6	S. 33.0° E.	Dec. 11
Keamoku (19°25.1' N., 155°19.0' W.)	Mar. 18	494.5	577.6	10.7	N. 54.1° W.	Dec. 11
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	Mar. 19	599.3	539.3	18.5	S. 16.7° E.	Dec. 10
Kipuka Nene (19°19.4' W., 155°16.7' W.)	Mar. 15	507.1	496.7	1.1	S. 5° E.	Dec. 13
Hilina Pali (19°18.2' N., 155°18.6' W.)	Mar. 13	509.6	497.4	0.6	S. 27.6° E.	Oct. 24
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	Mar. 14	497.4	505.0	0.1	S. 27° E.	Dec. 19

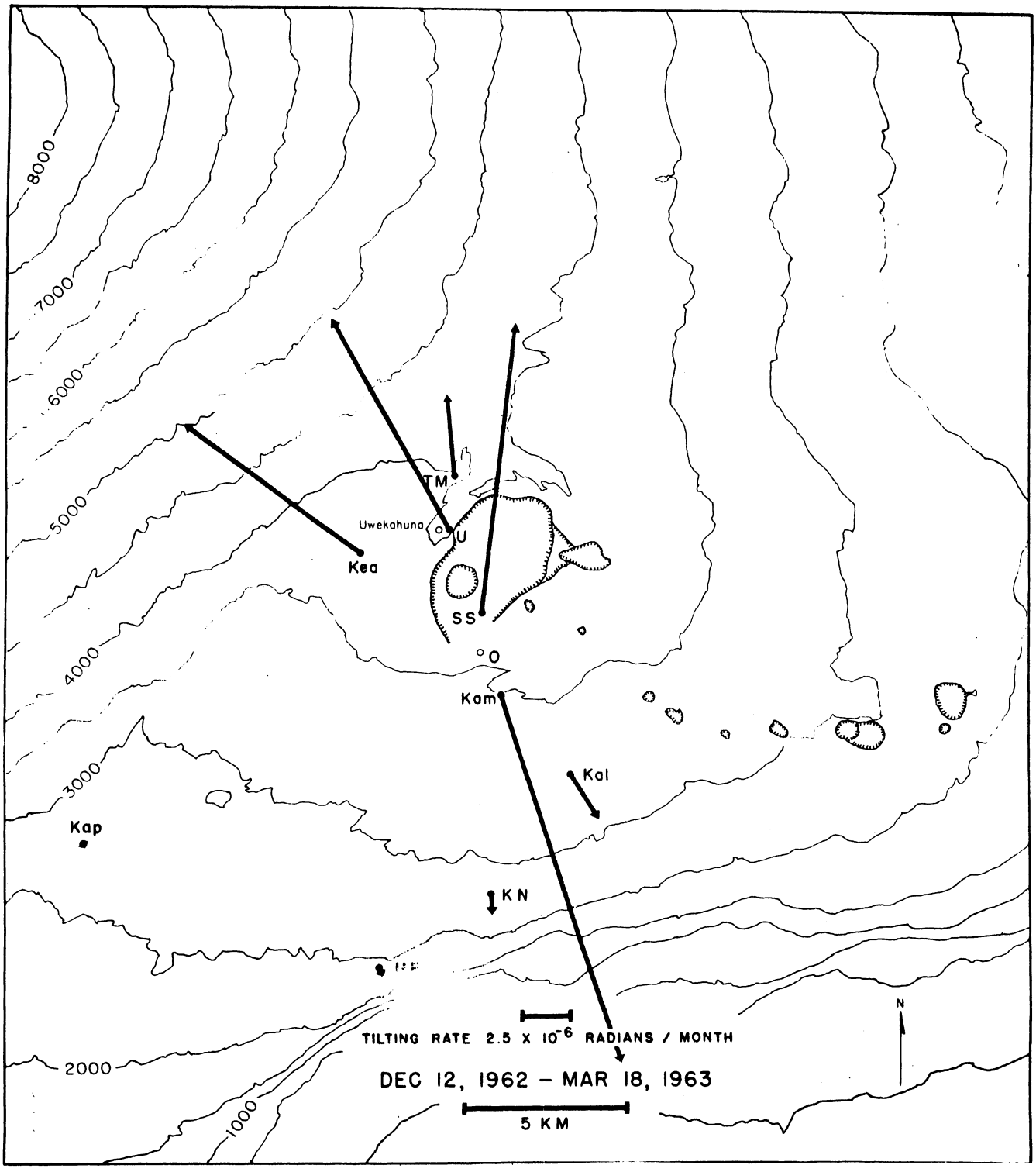

Figure 2.--Tilting of the ground around Kilauea caldera. The vector depicting tilting at a given base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined primarily by analysis of records obtained daily at the Observatory (U, M, A, D, N). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1. Essential data on the stations are given in table 6.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone (from the Pahoa seismograph); earthquakes from a source about 30 km beneath Halemaumau; earthquakes from the upper east rift zone and the adjacent fault systems on Kilauea's south flank, and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea Caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Jan. 1	-----	-------	-------	------	105	9	------	2	3	1 South Point
2	27	-------	-------	------	110	12	------	1	1	----------
3	-----	-------	-------	------	115	3	------	3	------	----------
4	-----	-------	-------	------	110	3	------	2	------	1 South Point
5	-----	-------	-------	------	110	4	------	5	------	1 Mauna Kea
6	3	-------	-------	------	127	7	------	4	------	----------
7	-----	-------	7	------	75	3	------	6	------	----------
8	-----	-------	-------	------	82	6	------	112	2	1 Kona
9	-----	-------	-------	1	160	4	------	42	1	1 Mauna Kea
10	-----	-------	-------	------	115	5	------	5	------	----------
11	24	-------	-------	------	80	5	1	2	1	1 Kona
12	-----	-------	-------	------	110	8	------	5	1	1 Apua Pt.
13	-----	-------	-------	------	107	5	------	2	------	1 Kona
14	-----	-------	-------	------	170	5	------	4	10	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Jan. 15	-----	-------	------	1	89	5	------	2	------	----------
16	Instruments turned off--extreme weather									
17	-----	-------	------	-------	66	5	------	2	------	----------
18	-----	-------	------	-------	50	5	------	4	------	1 Kona 1 Kohala
19	-----	-------	------	-------	40	6	------	5	------	----------
20	-----	4	------	-------	61	6	------	5	------	2 Puako
21	-----	1	------	-------	50	5	------	4	------	1 Kona
22	10	-------	------	-------	75	14	------	2	------	----------
23	-----	-------	------	3	66	7	1	6	------	----------
24	-----	-------	------	1	52	7	------	3	------	----------
25	28	40	------	3	60	4	------	1	------	----------
26	-----	-------	------	2	90	10	------	5	------	----------
27	-----	-------	------	7	100	13	------	10	------	----------
28	-----	-------	------	1	47	9	------	4	------	1 Kona
29	-----	-------	------	2	49	6	------	3	------	----------
30	-----	-------	------	-------	45	7	------	7	1	1 Kona
31	Poor records--extreme weather									
Feb. 1	-----	-------	------	-------	30	15	------	3	------	----------
2	-----	-------	------	-------	58	17	------	6	------	3 Kona
3	-----	-------	------	-------	69	27	------	5	1	2 Kona
4	-----	-------	------	-------	26	31	------	6	------	1 Kohala
5	-----	-------	------	-------	40	23	------	3	------	1 Kona 1 Kohala
6	-----	4	------	-------	28	18	------	10	1	5 Kona
7	-----	-------	------	1	35	25	------	9	13	----------
8	-----	-------	------	-------	55	22	------	11	------	2 Kona
9	-----	-------	------	1	60	36	------	7	5	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Feb. 10	-----	-------	-------	------	50	18	------	4	------	----------
11	4	-------	-------	------	53	13	------	2	------	3 Kona
12	-----	-------	-------	------	74	7	------	------	------	1 Kona
13	-----	-------	-------	------	34	7	------	2	------	1 Kona
14	-----	-------	-------	------	40	6	------	2	------	----------
15	29	-------	-------	1	80	10	1	3	------	----------
16	29	-------	-------	------	240	11	------	3	1	1 Maui
17	-----	-------	-------	------	350	10	------	3	------	1 Kona
18	-----	-------	-------	------	300	12	1	13	------	4 Kona
19	-----	-------	-------	------	60	15	------	12	------	1 Kona
20	13	-------	-------	------	100	16	------	7	1	1 Kona
21	-----	-------	-------	------	100	8	------	3	------	----------
22	-----	-------	-------	------	45	5	------	5	------	----------
23	-----	-------	3	------	70	15	------	7	1	----------
24	-----	-------	-------	------	120	20	------	5	------	----------
25	-----	4	-------	------	115	14	------	1	1	1 Kona
26	-----	-------	-------	------	150	15	1	2	------	----------
27	-----	-------	-------	------	80	15	------	3	18	1 Kohala
28	-----	-------	-------	------	65	17	1	1	7	1 Kona

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Mar. 1	-----	-----	-----	-----	50	12	-----	2	-----	-----
2	-----	-----	-----	-----	70	17	2	2	-----	-----
3	-----	-----	-----	-----	65	11	9	-----	-----	-----
4	-----	-----	-----	-----	166	12	8	3	1	4 Kona
5	-----	-----	-----	-----	100	13	12	3	-----	1 Mauna Kea
6	-----	-----	-----	-----	80	14	21	1	-----	-----
7	-----	-----	-----	-----	120	20	3	2	-----	1 Maui
8	-----	-----	-----	-----	100	7	-----	-----	-----	-----
9	-----	-----	3	-----	70	16	-----	2	-----	1 Maui
10	-----	25	-----	-----	60	15	4	6	-----	1 Kona
11	-----	-----	2	-----	80	30	-----	2	3	1 Mauna Kea
12	-----	-----	-----	-----	80	22	1	-----	-----	1 Kona 1 Mauna Kea
13	40	-----	-----	-----	90	27	-----	3	-----	3 Kona 1 Mauna Kea
14	-----	-----	-----	-----	75	6	-----	9	-----	-----
15	-----	-----	-----	-----	100	17	1	3	1	-----
16	15	-----	-----	-----	90	20	1	7	1	1 Kona
17	-----	-----	-----	1	75	20	-----	1	-----	2 Kona
18	59	-----	-----	-----	79	32	-----	6	1	3 Kona 2 Mauna Kea
19	-----	-----	-----	-----	76	18	-----	5	5	-----
20	-----	-----	-----	-----	96	15	-----	12	40	2 Kona
21	-----	-----	-----	-----	90	15	-----	10	1	1 Kona
22	-----	-----	-----	-----	90	10	-----	7	3	2 Kona 1 Mauna Loa

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, and N around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Kalapana Trail	Others
Mar. 23	------	-------	------	-------	80	16	------	10	------	----------
24	3	-------	------	-------	115	11	------	6	10	1 Pohakuloa 1 Maui
25	------	-------	------	-------	176	28	1	9	16	----------
26	------	19	------	-------	120	8	2	5	------	----------
27	12	-------	------	5	153	19	------	5	9	3 Kona 1 Mauna Kea
28	------	-------	------	-------	100	9	------	4	------	1 Mauna Kea
29	------	-------	------	-------	120	8	-------	1	1	----------
30	------	-------	------	2	100	7	------	------	------	----------
31	------	-------	------	-------	3	3	2	4	------	1 Mauna Kea

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

January, February, and March, 1963

[Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are listed. Origin time is Hawaiian standard.

In the following list some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

Origin times of members of a second persistent sequence of earthquakes are followed by "KT" (Kalapana Trail). These earthquakes originate at very shallow depths in a remote region along the Kalapana Trail west of Kalapana, and they generally are not felt. Seismograms of these earthquakes are poorly recorded and difficult to interpret; so only an approximate epicenter, 19°20' N., 155°05' W., can be assigned to them.

The mean focus of the magnitude 6.1 Kaoiki fault system earthquake of June 27 and its aftershocks is 19°24' N., 155°25' W., at a depth of 3 to 8 km. This focus has been abbreviated "Kaoiki."

Since the flank eruption near Aloi Crater (Summary 28) numerous earthquakes have been recorded from the Aloi region and the Koae fault system southwest of Aloi. These are described as "upper east rift" earthquakes in this table]

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 2	03	41	54.4	2.5	8	19°11.2'	155°37.9'	15 km NNW of Naalehu	
2	08	03	00.4	2.9	3	19°13.8'	155°35.2'	19 km north of Naalehu	
5	17	33	57.2	2.2	---	---	---	Kaoiki	
5	22	27	59.4	2.2	3	19°48.8'	155°20.2'	28 km WNW of Hilo	
8	07	56	00.6	2.5	---	---	---	KM 30	
8	09	39	44.9	4.3	---	---	---	KM 30	Felt island-wide, Maui and Oahu.
8	09	46	25.3	2.4	---	---	---	KM 30	
8	09	48	44.0	2.2	---	---	---	KM 30	
8	09	49	25.1	2.3	---	---	---	KM 30	
8	09	50	49.2	2.4	---	---	---	KM 30	
8	10	02	08.5	2.1	---	---	---	KM 30	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1963 --Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 8	10	08	37.2	2.4	----	----------	----------	KM 30----------	----------
8	10	57	14.8	2.8	----	----------	----------	KM 30----------	----------
8	11	14	44.4	2.3	----	----------	----------	KM 30----------	----------
8	12	00	40.1	3.0	----	----------	----------	KM 30----------	----------
8	15	41	06.2	4.2	----	----------	----------	KM 30----------	Felt widely on Hawaii.
8	15	45	15.0	3.4	----	----------	----------	KM 30----------	----------
8	18	06	23.9	2.3	----	----------	----------	KM 30----------	----------
8	18	18	23.9	2.8	----	----------	----------	KM 30----------	----------
8	19	21	06.9	2.1	----	----------	----------	KM 30----------	----------
8	20	00	59.5	2.5	5	19°20.8'	155°04.8'	21 km SW of Pahoa--------	----------
9	00	39	48.0	2.2	----	----------	----------	Kaoiki----------	----------
9	04	36	12.7	2.6	----	----------	----------	KM 30----------	----------
9	04	36	24.0	3.2	----	----------	----------	KM 30----------	Felt on Hawaii
9	05	19	29.9	2.8	----	----------	----------	KM 30----------	----------
9	05	24	42.7	2.5	<3	19°21.5'	155°43.3'	28 km SE of Kealakekua	----------
9	06	45	21.5	2.3	----	----------	----------	KM 30----------	----------
9	08	57	45.4	2.4	----	----------	----------	KM 30----------	----------
9	09	23	08.9	3.1	----	----------	----------	KM 30----------	Felt from Naalehu to Kulani.
9	10	54	07.8	3.2	----	----------	----------	KM 30----------	----------
10	04	05	49.1	2.4	8	19°57.7'	155°21.5'	13 km WSW of Laupahoehoe	----------
10	07	37	28.4	2.2	----	----------	----------	KT----------	----------
10	15	31	35.0	2.1	----	----------	----------	KM 30----------	----------
11	01	52	42.0	2.7	----	----------	----------	KM 30----------	----------
11	14	06	44.3	2.7	----	----------	----------	KM 30----------	----------
12	01	49	58.3	2.4	8	18°56.0'	155°19.8'	32 km SE of Naalehu------	----------
12	23	44	01.4	3.5	----	----------	----------	KT----------	----------
13	20	54	55.0	3.1	8	19°32.2'	156°12.3'	32 km WNW of Kealakekua--	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S Geological Survey, January, February, and March, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 14	13	50	21.0	2.5	3	19°21.9'	155°08.2'	14 km east of Ahua seismometer	
15	03	21	20.0	3.2	----	--------	--------	KM 30	
18	05	58	50.2	2.2	----	--------	--------	KM 30	
18	10	51	06.0	2.3	5	19°11.5'	155°37.5'	15 km NNW of Naalehu	
18	20	59	57.0	2.7	13	20°04.9'	155°48.9'	12 km WNW of Kamuela seismograph.	
20	10	26	35.0	3.1	13	20°13'	156°15'	40 km WSW of Upolu Point	
20	17	42	32.8	2.2	----	--------	--------	KM 30	
23	06	12	41.0	2.8	8	19°27.0'	154°52.8'	10 km SE of Pahoa	Felt in Hilo and Pahoa.
26	22	12	04.4	2.2	3	19°24.8'	155°15.7'	SE edge of Kilauea Caldera	
26	23	14	01.8	2.3	3	19°24.8'	155°15.7'	SE edge of Kilauea Caldera	
26	23	29	59.3	2.2	----	--------	--------	Kaoiki	
27	13	58	05.5	3.4	----	--------	--------	KM 30	
28	02	08	18.7	2.5	8	19°11.2'	155°34.0'	14 km NNE of Naalehu	
29	12	53	19.0	2.3	----	--------	--------	KM 30	
29	14	08	02.9	3.2	----	--------	--------	Kaoiki	
30	23	08	10.8	2.2	5	19°13.3'	155°42.6'	23 km NW of Naalehu	
31	14	25	05.6	2.8	8	19°18.5'	155°09.5'	13 km SE of Ahua seismometer	
Feb. 2	03	24	23.3	2.1	8	19°14.7'	155°02.0'	14 km SSW of Kalapana	
4	12	48	44.0	2.1	13	20°19'	155°30'	34 km NE of Kamuela seismograph.	
5	13	36	47.8	2.3	----	--------	--------	Kaoiki	
5	20	39	44.3	2.7	13	19°57.1'	155°44.8'	10 km SW of Kamuela seismograph.	
5	22	47	25.5	2.2	5	19°13.9'	155°38.2'	19 km NNW of Naalehu	
7	19	05	10.9	2.3	----	--------	--------	KT	
9	04	25	53.5	2.5	8	19°35.7'	156°00.8'	13 km NW of Kealakekua	
9	10	19	53.4	2.0	----	--------	--------	KT	
9	04	24	53.0	2.9	8	19°35.7'	156°00.8'	13 km NW of Kealakekua	
10	18	49	48.5	2.7	----	--------	--------	Kaoiki	
12	02	28	28.5	2.5	8	19°29.0'	155°58.2'	7 km WSW of Kealakekua	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Feb. 12	16	58	02.5	2.4	----	--------	--------	Kaoiki----------	----------
13	08	47	48.5	2.7	8	19°32.8'	155°55.7'	3 km NNW of Kealakekua--------	----------
14	09	17	30.0	3.1	8	19°05.0'	156°12.5'	35 km WSW of Milolii----------	----------
15	02	36	43.8	2.1	----	--------	--------	KM 30----------	----------
16	07	01	13.5	2.5	8	19°16.2'	155°04.2'	23 km ESE of Ahua seismometer--	----------
16	09	31	22.6	2.4	----	--------	--------	Upper east rift----------	----------
16	13	56	20.1	2.5	30	19°29.4'	155°09.5'	10 km SW of Mountain View------	----------
17	01	32	23.7	2.5	13	18°57.3'	155°08.1'	50 km ESE of Naalehu----------	----------
17	09	07	44.5	4.1	13	19°43'	156°52'	83 km west of Keahole Point----	----------
17	11	47	26.6	2.3	5	19°30.0'	155°41.8'	25 km east of Kealakekua-------	----------
17	23	10	35.7	2.3	10	19°19.5'	155°21.2'	6 km SW of Uwekahuna seismometer.	----------
19	01	52	43.3	2.3	----	--------	--------	KM 30----------	----------
19	04	00	13.4	2.4	8	19°30.1'	155°46.7'	15 km east of Kealakekua-------	----------
19	21	25	51.1	2.2	3	19°10.8'	155°35.0'	13 km north of Naalehu--------	----------
21	05	41	28.2	2.8	13	19°03'	156°16'	65 km SW of Kealakekua--------	----------
22	21	24	33.5	2.3	8	19°21.9'	155°56.6'	5 km SW of Hookena----------	----------
23	21	59	24.4	2.3	3	19°21.8'	155°05.6'	40 km south of Hilo----------	----------
24	19	24	26.5	3.1	13	21°30'	156°40'	38 km north of Halawa Cape, Molokai.	----------
25	11	38	28.5	2.4	3	19°20.9'	155°47.1'	13 km SE of Hookena----------	----------
25	13	11	21.9	2.8	5	19°30.7'	155°26.2'	5 km WNW of Mauna Loa seismometer.	----------
26	01	21	42.0	2.0	8	19°24.4'	154°52.2'	13 km SE of Pahoa----------	----------
27	15	44	28.5	2.9	13	20°08.4'	155°50.6'	18 km NW of Kamuela----------	Felt in Kamuela---
27	21	42	19.3	2.6	----	--------	--------	Upper east rift----------	----------
27	22	22	10.1	3.0	----	--------	--------	Upper east rift----------	----------
28	11	03	20.3	2.4	8	19°47.4'	155°31.4'	5 km north of Pohakuloa--------	----------
28	11	10	20.6	2.4	8	19°47.4'	155°31.4'	5 km north of Pohakuloa--------	----------
28	11	21	50.8	2.1	8	19°26.8'	155°00.1'	8 km SW of Pahoa----------	Felt in Pahoa-----

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Mar. 1	01	48	26.6	3.2	3	19°19.8'	155°45.0'	17 km SE of Hookena----------	Felt along southwestern shore of Hawaii Island.
1	02	43	00.7	2.7	13	18°57.3'	155°38.3'	5 km NE of Kalae Point--------	----------
3	06	14	38.0	2.3	---	--------	---------	KM 30-------------------------	----------
5	17	11	16.4	2.5	5	19°28.5'	154°54.9'	5 km SE of Pahoa--------------	----------
5	20	04	19.8	2.4	5	19°28.5'	154°54.9'	5 km SE of Pahoa--------------	----------
5	20	44	02.3	2.6	8	19°59.0'	155°24.1'	14 km SE of Honokaa-----------	----------
6	02	23	55.1	2.8	5	19°28.5'	154°54.9'	5 km SE of Pahoa--------------	Felt in Pahoa---
6	05	46	14.3	2.9	5	19°28.5'	154°54.9'	5 km SE of Pahoa--------------	Felt in Pahoa---
7	16	08	34.7	2.4	8	19°30.8'	156°04.8'	18 km west of Kealakekua------	----------
8	14	25	23.3	2.3	8	19°17.9'	155°11.8'	11 km SE of Ahua seismometer--	----------
8	15	45	27.0	2.3	8	19°17.9'	155°11.8'	11 km SE of Ahua seismometer--	----------
8	17	22	17.8	2.7	8	19°53.0'	155°31.8'	23 km SE of Kamuela-----------	----------
9	12	47	50.5	2.4	3	19°38.1'	156°04.2'	21 km NW of Kealakekua--------	----------
10	11	51	52.0	2.3	8	19°14.9'	155°04.1'	54 km south of Hilo-----------	----------
11	10	06	25.0	2.6	8	19°57.0'	155°21.9'	15 km WSW of Laupahoehoe------	Felt in Hilo----
11	17	45	28.3	3.0	13	21°08'	156°07'	43 km NNE of Haleakala seismometer (Maui).	----------
11	21	33	22.6	2.4	8	19°05.5'	155°21.9'	39 km south of Hilo-----------	----------
12	22	08	05.2	2.7	3	19°53.1'	155°22.8'	6 km SW of Keanakolu----------	----------
13	01	37	33.5	3.0	8	19°40.1'	155°50.4'	19 km NE of Kealakekua--------	----------
13	03	22	52.7	2.3	3	19°51.0'	155°23.3'	10 km SW of Keanakolu---------	----------
13	10	57	26.9	3.5	5	19°24.2'	155°30.0'	15 km SW of Mauna Loa seismometer.	Felt in Pahala, Hilo, and Kilauea Caldera area.
13	22	28	18.9	2.5	3	19°51.0'	155°23.3'	10 km SW of Keanakolu---------	----------
14	00	18	35.7	3.3	13	19°29'	157°14'	138 km west of Kealakekua-----	----------
14	01	23	26.0	2.1	---	--------	---------	KM 30-------------------------	----------
14	08	23	20.5	3.0	8	20°12.7'	155°55.8'	31 km NW of Kamuela-----------	----------
15	18	10	07.0	2.7	8	19°31.0'	155°03.3'	11 km NW of Pahoa-------------	Felt in Pahoa---

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Mar. 17	23	32	57.8	2.5	<3	19°29.0'	155°44.6'	20 km ESE of Kealakekua	
17	23	44	52.0	2.5	<3	19°29.0'	155°44.6'	20 km ESE of Kealakekua	
18	14	44	13.2	2.9	---			KM 30	
18	15	50	43.7	2.3	3	19°53.1'	155°46.0'	13 km WNW of Waikii	
18	22	02	36.9	2.4	8	19°49.2'	155°32.6'	8 km NNW of Pohakuloa	
19	02	35	01.5	2.4	5	19°24.2'	155°46.6'	20 km SE of Kealakekua	
19	17	56	36.6	2.7	8	19°41.9'	156°06.2'	5 km SW of Keahole Point	
20	14	17	03.0	2.2	8	19°18.6'	155°05.5'	45 km south of Hilo	
20	20	42	15.7	2.6	---			KM 30	
20	21	15	38.2	2.2	---			Upper east rift	
21	19	57	31.4	2.3	<3	19°26.8'	155°46.0'	18 km SE of Kealakekua	
22	10	59	40.5	3.8	13	19°32.6'	155°49.9'	10 km ENE of Kealakekua	Felt in Hilo, Kamuela, and Kealakekua.
22	17	38	16.3	3.0	3	19°53.8'	155°16.3'	28 km NW of Hilo	
22	18	01	16.9	2.8	8	19°44.3'	155°45.6'	30 km NE of Kealakekua	
22	20	59	43.0	2.4	---			Upper east rift	
22	21	07	56.0	2.7	---			Upper east rift	
22	21	09	02.3	2.6	---			Upper east rift	
22	21	11	16.5	2.8	8	19°48.5'	156°01.4'	35 km NNW of Kealakekua	
23	04	48	13.4	3.5	13	19°53.2'	155°20.8'	5 km SW of Keanakolu	
24	10	03	34.5	2.9	---			KM 30	
24	11	31	08.2	2.2	---			KM 30	
24	20	30	35.9	2.6	---			Kaoiki	
24	22	31	51.8	4.5	13	19°47.0'	155°33.8'	14 km SE of Waikii	Felt in Hawaii and Maui.
24	23	43	06.3	2.0	---			KM 30	
25	06	41	50.2	2.5	<3	19°20.2'	155°42.3'	22 km ESE of Hookena	
25	06	57	05.6	2.7	<3	19°28.7'	155°48.5'	13 km ESE of Kealakekua	Felt in Kealakekua
25	07	18	35.0	3.9	35	20°47'	156°14'	3 km NE of Haleakala seismometer (Maui).	Felt throughout Maui.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Mar. 25	23	30	20.0	2.5	13	19°05.4'	155°25.2'	18 km ENE of Naalehu	
26	20	56	19.2	2.5	----	--------	---------	Kaoiki	
27	04	55	50.6	2.2	----	--------	---------	KM 30	
27	11	12	57.0	2.9	8	19°55.7'	155°32.1'	20 km SE of Kamuela	
27	17	24	25.9	2.4	8	19°21.4'	155°45.4'	16 km ESE of Hookena	
28	00	26	22.9	2.3	8	19°26.1'	155°36.8'	5 km SW of Mokuaweoweo Caldera	
28	02	37	45.2	2.1	-----	--------	---------	KM 30	
28	13	08	27.1	2.6	8	19°47.9'	155°34.6'	8 km NW of Pohakuloa	
28	19	47	02.5	2.8	----	--------	---------	Kaoiki	
29	08	50	08.8	2.1	----	--------	---------	Upper east rift	
30	20	49	01.9	2.8	35	19°09.5'	155°30.0'	14 km NE of Naalehu	
31	16	35	57.5	3.7	8	20°01.0'	155°52.9'	6 km SW of Kawaihae	Felt in Kamuela

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in table 6. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey]

Jan. 1, 1963

M	Z	iP	12:26:51.6 d
A	Z	eP	12:26:50.1 d
D	Z	iP	12:26:49.8 d
N	Z	eP	12:26:51.2 d
WP	Z	iP	12:26:51.1 d
Na	Z	iP	12:26:48.0
Pa	Z	iP	12:26:52.0 c
Hi	Z	eP	12:26:53.3 d
Ka	Z	eP	12:26:54.5 d

C&GS card 1-63:
12:17:38.6
6.8° S., 155.9° E.
Solomon Islands
h about 165 km.

Jan. 1

M	Z	eP	23:46:13.6 d
A	Z	eP	23:46:14.4 d
D	Z	iP	23:46:14.5 d
N	Z	eP	23:46:13.9 d
WP	Z	eP	23:46:13.9 d
U	Z	iP	23:46:13.7 d
Ha	Z	iP	23:46:03.4 c
		epP	23:46:19.7
Ka	Z	eP	23:46:08.6 d
Hi	Z	iP	23:46:11.4 d
Pa	Z	iP	23:46:13.5 d
Na	Z	iP	23:46:16.8 d
U	PEZ	iP	23:46:14 d
		iS	23:51:57
		iSS	23:55:03
U	PEE	isS	23:52:27
		eL	23:54:41
U	PEN	i	23:52:52
		i	23:56:16
M	Z	Tmax	00:24:45
A	Z	Tmax	00:24:48
D	Z	Tmax	00:24:40
N	Z	Tmax	00:24:48
WP	Z	Tmax	00:24:44
U	Z	Tmax	00:24:45
Ha	Z	Tmax	00:23:07
Ka	Z	Tmax	00:24:01
Hi	Z	Tmax	00:24:11

Jan. 1--Continued

Pa	Z	Tmax	00:24:43

C&GS card 1-63:
23:39:05.6
56.6° N., 157.7° W.
Alaska Peninsula
h about 50 km
Magnitude 6.5 (Pas)
5.75(Pal)
6.5 (HVO)

Jan. 2

M	Z	iP	15:07:35.8 c
N	Z	eP	15:07:35.5 c

C&GS card 4-63:
14:56:05.4
4.1° S., 132.2° E.
Near south coast of western New Guinea.
h about 33 km.

Jan. 2

U	PEZ	eR	16:32:21

C&GS card 3-63:
15:55:47.9
52.9° S., 118.2° W.
South Pacific Ocean
h about 33 km.

Jan. 3

U	PEZ	eR	10:06:20

C&GS card 3-63:
09:39:46.8
5.3° S., 151.5° E.
New Britain
h about 74 km
Magnitude 5.3 (Pal).

Jan. 4, 1963

U	PEZ	iS	12:33:51
U	PEZ	iR	12:41:46

C&GS card 2-63:
12:16:38.0
4.7° S., 154.0° E.
Solomon Islands region
h about 69 km.

Jan. 5

M	Z	iP	00:31:16.7 c
	Z	ipP	00:32:08.2 c
A	Z	eP	00:31:15.7 c
	Z	epP	00:32:07.3 c
D	Z	eP	00:31:15.6 c
	Z	epP	00:32:07.2 c

C&GS card 1-63:
00:20:11.6
3.2° N., 127.0° E.
Halmahera region
h about 33 km.

Jan. 5

M	Z	iP	13:29:19.1 d
A	Z	eP	13:29:18.5 d
D	Z	eP	13:29:18.1 d

C&GS card 2-63:
13:16:38.0
10.0° S., 124.0° E.
Timor
h about 33 km.

Jan. 7

M	Z	eP	12:00:27.6 d
WP	Z	eP	12:00:27.0 d
U	Z	eP	12:00:27.2 d
Ka	Z	eP	12:00:28.8 d
U	PEZ	eR	12:25:12

C&GS card 3-63:
11:48:22.7
0.6° N., 126.7° E.
Halmahera region
h about 42 km

Jan. 7--Continued

C&GS card--Continued
Magnitude 5.5-5.8 (Pal)
6.0 (HVO).

Jan. 9

Pa	Z	eP	03:22:47.9 c

C&GS card 4-63:
03:13:26.4
18.6° N., 145.4° E.
Mariana Islands
h about 192 km.

Jan. 15

M	Z	eP	02:42:23.2 d
A	Z	eP	02:42:23.7 d
N	Z	eP	02:42:23.7 d
WP	Z	eP	02:42:23.3 d

C&GS card 4-63:
02:32:39.9
13.4° N., 145.3° E.
Mariana Islands
h about 38 km.

Jan. 24

Na	Z	iP	12:16:32.5 c
Hi	Z	eP	12:16:40 d

C&GS card 9-63:
12:09:01.2
15.2° S., 173.6° W.
Tonga Islands region
Felt: Apia
h about 33 km.

Jan. 25

A	Z	eP	12:59:54.1 c

C&GS card 7-63:
12:49:42.0
21.8° N., 143.8° E.
Mariana Islands region
h about 190 km.

Table 5.--Distant earthquakes--Continued

Jan. 28, 1963

M	Z	eP	12:22:12.8 d
A	Z	eP	12:22:11.9 d
D	Z	eP	12:22:11.9 d
U	Z	eP	12:22:12.7 d
Na	Z	eP	12:22:11.5 c
Pa	Z	eP	12:22:13.7 c
Hi	Z	iP	12:22:16.2 c
Ha	Z	iP	12:22:16.5 c
U	PEE	iS	22:30:25
U	PEZ	eSS	22:34:10
		iR	22:38:37

C&GS card 10-63:
12:12:19.8
2.6° S., 149.9° E.
New Britain
h about 33 km
Magnitude 6.5 (Pas)
6.7 (HVO).

Jan. 28

M	Z	iP	13:07:44.8 d
A	Z	eP	13:07:45.7 d
D	Z	iP	13:07:45.9 d
		i	13:08:54.1 c
N	Z	eP	13:07:45.5 d
WP	Z	eP	13:07:45.4 d
U	Z	eP	13:07:45.6 d
		ePP	13:09:10.7 c
		iPcP	13:10:06.9 c
Ha	Z	eP	13:07:40.5 c
Hi	Z	eP	13:07:43.7 c
Pa	Z	eP	13:07:44.1 d
Na	Z	eP	13:07:49.1 c
U	PEZ	iS	13:13:21
		iR	13:16:49
M	Z	Tmax	13:45:33
A	Z	Tmax	13:45:28
D	Z	Tmax	13:45:30
N	Z	Tmax	13:45:11
WP	Z	Tmax	13:45:24
U	Z	Tmax	13:45:21
HA	Z	Tmax	13:43:33
Hi	Z	Tmax	13:44:55
Pa	Z	Tmax	13:45:08
Na	Z	Tmax	13:45:15

Jan. 28--Continued

C&GS card 7-63:
13:00:50.7
54.7° N., 161.6° E.
Alaska Peninsula
h about 33 km
Magnitude 6.0-6.5 (Pas)
6.7 (HVO).

Jan. 29

M	Z	iP	09:29:54.6 d
A	Z	eP	09:29:55.4 d
D	Z	eP	09:29:54.8 d
N	Z	eP	09:29:55.0 d
U	Z	eP	09:29:55.1 d
Ka	Z	iP	09:29:49.4 d
Hi	Z	iP	09:29:54.0 d
Pa	Z	iP	09:29:55.6 d
Na	Z	iP	09:29:56.7 d

C&GS card 8-63:
09:21:14.3
49.7° N., 154.9° E.
Kurile Islands
h about 126 km.

Jan. 30

M	Z	eP	10:29:10.9 c
U	PEN	eSKSP	10:41:26
		iSS	10:48:36
		iG	11:02:36

C&GS card 10-63:
10:10:04.1
55.6° S., 28.3° W.
Sandwich Islands region
h about 33 km
Magnitude 6.5 (Pas)
7.5 (HVO).

Jan. 31

Hi	Z	eP	05:18:03.6 d
Pa	Z	eP	05:18:04.3 d

C&GS card 9-63:
05:06:46.0
27.9° N., 126.3° E.

Jan. 31, 1963--Continued

C&GS card--Continued
Ryukyu Islands
h about 33 km.

Feb. 4

M	Z	iP	23:29:50.5 d
A	Z	eP	23:29:51.5 d
D	Z	eP	23:29:51.0 d
N	Z	eP	23:29:51.3 c
WP	Z	eP	23:29:51.4 d
Hi	Z	iP	23:29:49.5 d
U	Z	eP	23:29:50.8 d
Pa	Z	iP	23:29:52.0 d

C&GS card 10-63:
23:21:09.0
48.5° N., 154.9° E.
Kurile Islands
h about 85 km.

Feb. 5

U	PEZ	eSS	21:10:35
		eR	21:22:35

C&GS card 10-63:
20:39:21.6
38.4° S., 73.2° W.
Near coast of central Chile
h about 41 km
Magnitude 6.3-6.5 (Pas)
6.0-6.3 (Brk)
5.8-6.0 (Pal)

Feb. 12

M	Z	iP	23:14:45.2 d
A	Z	iP	23:14:44.3 d
D	Z	iP	23:14:43.6 d
N	Z	iP	23:14:44.5 d
WP	Z	iP	23:14:44.3 d
U	Z	iP	23:14:44.4 d
Na	Z	iP	23:14:40.5 d
Pa	Z	eP	23:14:45.4 d
Hi	Z	iP	23:14:50.0 d
Ha	Z	iP	23:14:54.3 d

Feb. 12--Continued

C&GS card 13-63:
23:07:28.9
17.8° S., 178.6° W.
Fiji Islands
h about 583 km
Magnitude 5.5 (CGS)

Feb. 13

M	Z	eP	09:01:47.8 c
A	Z	iP	09:01:48.4 c
D	Z	iP	09:01:47.5 c
N	Z	iP	09:01:48.1 c
WP	Z	iP	09:01:48.0 c
U	Z	eP	09:01:48.3 c
Ha	Z	iP	09:01:46.3 c
Ka	Z	eP	09:01:44.2 c
Hi	Z	iP	09:01:48.7 c
Pa	Z	eP	09:01:49.4 c
Na	Z	iP	09:01:47.0 c
U	PEZ	iP	09:01:48.0 c
		eR	09:25:34
U	PEE	iS	09:11:32
		iSS	09:16:41
U	PEN	eSSS	09:19:46

C&GS card 13-63:
08:50:02.2
24.5° N., 121.8° E.
Northern Formosa
3 deaths and widespread damage
h about 33 km
Magnitude 7.3 (Pas)
7.3 (Brk)
7.0-7.3 (Pal)
7.5 (HVO)

Feb. 13

M	Z	iP	18:23:05.5 c
A	Z	iP	18:23:04.8 d
D	Z	iP	18:23:03.9 d
N	Z	iP	18:23:05.0 d
WP	Z	iP	18:23:04.9 d
Na	Z	iP	18:23:02.8 d
Pa	Z	iP	18:23:06.3 d

Feb. 13, 1963--Continued

Hi	Z	eP	18:23:07.5	d
Ka	Z	eP	18:23:06.8	c
Ha	Z	iP	18:23:05.8	c
U	PEZ	iP	18:23:06	c
		eR	18:37:34	
U	PEE	iS	18:30:42	
U	PEN	eG	18:35:00	

C&GS card 16-63:
18:13:55.1
9.9° S., 160.8° E.
Solomon Islands
h about 29 km
Magnitude 6.0-6.3 (Pal)
6.5 (Pas)
6.5 (Brk)
5.8 (CGS)
6.6 (HVO).

Feb. 14

M	Z	iP	07:16:32.8	c
D	Z	eP	07:16:31.3	c
N	Z	eP	07:16:32.3	c
WP	Z	eP	07:16:32.1	c
U	Z	iP	07:16:32.0	c
Na	Z	iP	07:16:30.4	c
Pa	Z	iP	07:16:33.9	d
Hi	Z	iP	07:16:34.6	c
Ka	Z	iP	07:16:34.0	c
Ha	Z	iP	07:16:34.2	c

C&GS card 15-63:
07:04:40.8
7.2° S., 128.2° E.
Banda Sea
h about 197 km
Magnitude 6.5 (Pas)
5.8 (CGS)
Felt: Darwin, Australia.

Feb. 14

M	Z	iP	22:18:22.3	c
D	Z	eP	22:18:21.5	d
N	Z	eP	22:18:21.8	d
U	Z	eP	22:18:21.8	d
Hi	Z	eP	22:18:24.3	c
U	PEN	eG	22:34:28	

Feb. 14--Continued

U	PEZ	iR	22:37:14	

C&GS card 16-63:
22:07:54.3
5.0° S., 144.6° E.
Eastern New Guinea
h about 80 km
Magnitude 6.5 (Pas)
6.0 (Pal)
6.2 (HVO)
6.0 (CGS)

Feb. 21

M	Z	iP	02:43:22.7	c
A	Z	eP	02:43:23.6	c
D	Z	eP	02:43:23.0	c
WP	Z	iP	02:43:23.4	c
U	Z	eP	02:43:23.3	c
Ha	Z	eP	02:43:13.3	c
Na	Z	iP	02:43:22.3	c

C&GS card 14-63:
02:33:35.9
33.4° N., 139.2° E.
South of Honshu, Japan
h about 168 km
Magnitude 4.4 (CGS)

Feb. 21

Ha	Tmax		12:42:14	

C&GS card 17-63:
12:01:19.4
40.4° N., 125.0° W.
Near coast of northern California
h about 33 km.

Feb. 21

M	Z	eP	13:24:14.6	d
A	Z	eP	13:24:14.0	d
N	Z	eP	13:24:14.5	d
WP	Z	iP	13:24:14.4	d
U	Z	eP	13:24:14.0	d
Hi	Z	iP	13:24:15.8	c
Ka	Z	eP	13:24:16.6	c
Ha	Z	eP	13:24:18.9	d

Feb. 21, 1963--Continued

C&GS card 15-63:
13:16:05.6
20.6° S., 175.1° W.
Tonga Islands region
h about 33 km
Magnitude 5.2 (CGS).

Feb. 22

M	Z	eP	08:06:14.2	c
A	Z	eP	08:06:13.5	c
N	Z	iP	08:06:14.1	c
WP	Z	iP	08:06:14.1	c
U	Z	eP	08:06:13.9	c
Na	Z	iP	08:06:10.7	c
Pa	Z	iP	08:06:15.8	c
Hi	Z	iP	08:06:16.8	c
Ka	Z	iP	08:06:17.1	c
Ha	Z	iP	08:06:19.8	c

C&GS card 16-63:
07:58:57.0
17.8° S., 178.8° W.
Fiji Islands region
h about 550 km
Magnitude 5.0 (CGS).

Feb. 24

M	Z	eP	13:44:18.2	d
A	Z	eP	13:44:17.4	d
D	Z	eP	13:44:17.9	d
N	Z	eP	13:44:17.5	d
WP	Z	eP	13:44:17.5	d
U	Z	eP	13:44:17.4	d
Hi	Z	iP	13:44:15.5	d
Pa	Z	iP	13:44:14.8	d
Ka	Z	eP	13:44:20.9	d

C&GS card 17-63:
13:34:15.7
14.6° N., 91.4° W.
Central Guatemala
h about 135 km
Magnitude 5.7 (CGS).

Feb. 26

M	Z	iP	20:24:22.2	d
A	Z	eP	20:24:20.7	d
U	Z	iP	20:24:22.0	d
Na	Z	iP	20:24:20.4	d
		isP	20:25:20.5	c
Pa	Z	iP	20:24:24.3	d
Hi	Z	iP	20:24:24.8	d
		ipP	20:25:03.0	d
Ka	Z	iP	20:24:25.6	d
Ha	Z	iP	20:24:26.5	d
		isP	20:25:17.9	c
U	PEZ	iP	20:24:22	d
		ipP	20:25:05	d
		isP	20:25:25	c
U	PEZ	ipPP	20:27:31	dn
		ipPPP	20:28:46	dn
		iPKKP	20:42:41	
U	PEE	iPP	20:26:47	
		iS	20:32:46	
		iScS	20:33:21	
		isS	20:34:00	
U	PEN	iG	20:40:05	
M	Z	Tmax	21:32:24	
A	Z	Tmax	21:32:16	
WP	Z	Tmax	21:32:16	
Ha	Z	Tmax	21:32:11	

C&GS card 16-63:
20:14:08.7
7.5° S., 146.2° E.
Eastern New Guinea
h about 171 km
Magnitude 7.3-7.5 (Pas)
7.0-7.3 (Brk)
6.8-7.0 (Pal)
7.1 (CGS)
7.0 (HVO).

Feb. 27

M	Z	eP	04:40:17	d
U	PEZ	eP	04:40:15	d
		iS	04:48:27	
		iSS	04:52:39	
		eR	04:57:55	
U	PEE	iG	04:55:15	

Table 5.--Distant earthquakes--Continued

Feb. 27, 1963--Continued

C&GS card 19-63:
04:30:00.8
6.0° S., 149.4° E.
New Britain region
h about 52 km
Magnitude 6.5-6.8 (Pal)
5.2 (CGS)
6.8 (HVO).

Feb. 27

Ha	Tmax	28:00:18:56	

C&GS card 16-63:
23:36:20.4
54.8° N., 161.6° W.
Alaska Peninsula
h about 33 km
Magnitude 5.3 (CGS).

Mar. 4

M	Z	eP	15:54:52.8	d
D	Z	eP	15:54:52.3	c
WP	Z	eP	15:54:52.0	d
U	Z	iP	15:54:52.2	d

C&GS card 19-63:
15:43:04.0
4.5° S., 81.6° W.
Off coast of northern Peru
h about 33 km
Magnitude 5.6 (CGS).

Mar. 5

M	Z	iP	07:16:51.7	d
A	Z	iP	07:16:50.7	d
D	Z	eP	07:16:51.0	d
N	Z	eP	07:16:50.8	d
WP	Z	iP	07:16:50.8	d
U	Z	iP	07:16:50.8	d
Pa	Z	iP	07:16:58.3	c
Hi	Z	eP	07:16:50.0	d
Ha	Z	iP	07:16:50.0	d

C&GS card 19-63:
07:05:01.7
4.5° S., 81.5° W.

Mar. 5--Continued

C&GS card--Continued
Off coast of northern Peru
h about 31 km
Magnitude 5.6 (CGS).

Mar. 7

M	Z	iP	05:32:18.0	c
A	Z	eP	05:32:17.4	c
D	Z	eP	05:32:17.7	c
N	Z	eP	05:32:17.8	c
WP	Z	eP	05:32:17.8	c
U	Z	eP	05:32:18.0	c
Pa	Z	eP	05:32:14.8	c
Hi	Z	iP	05:32:18.1	c
U	PEZ	iP	05:32:19	d
		iSS	05:44:39	
		eR	05:50:05	
U	PEE	iS	05:40:41	
		iG	05:47:43	
M	Z	Tmax	06:38:56	
A	Z	Tmax	06:38:49	
D	Z	Tmax	06:38:55	
N	Z	Tmax	06:38:57	
WP	Z	Tmax	06:38:56	
U	Z	Tmax	06:38:57	
Pa	Z	Tmax	06:38:49	
Na	Z	Tmax	06:38:41	

C&GS card 18-63:
05:22:01.1
27.0° S., 113.5° W.
500 km west of Easter Island
h about 33 km
Magnitude 6.8 (Pas)
6.8 (Brk)
5.6 (CGS)
6.8 (HVO).

Mar. 7

U	PEZ	ePS	12:42:35
		eSS	12:47:51
		eR	13:00:55

C&GS card 20-63:
12:16:28.5
44.3° S., 75.3° W.

Mar. 7, 1963--Continued

C&GS card--Continued
Near coast of southern Chile
h about 45 km
Magnitude 5.6 (CGS).

Mar. 8

U	PEZ	eR	03:08:07

C&GS card 22-63:
02:44:31.5
19.2° S., 169.7° E.
New Hebrides Islands
h about 33 km
Magnitude 5.3 (CGS).

Mar. 8

U	PEZ	eR	03:48:27

C&GS card 22-63:
03:24:57.2
19.2° S., 169.6° E.
New Hebrides Islands
h about 49 km
Magnitude 4.8 (CGS).

Mar. 10

M	Z	Tmax	02:12:18
A	Z	Tmax	02:12:26
D	Z	Tmax	02:12:08
N	Z	Tmax	02:12:20
WP	Z	Tmax	02:12:18
U	Z	Tmax	02:12:23
Pa	Z	Tmax	02:11:56
Hi	Z	Tmax	02:11:40
Ka	Z	Tmax	02:12:35
Ha	Z	Tmax	02:10:50

C&GS card 20-63:
01:26:04.1
56.2° N., 153.8° W.
Kodiak Island, Alaska
h about 33 km
Magnitude 5.1 (CGS).

Mar. 10

M	Z	Tmax	12:50:12
A	Z	Tmax	12:50:02
D	Z	Tmax	12:50:07
N	Z	Tmax	12:50:06
Na	Z	Tmax	12:50:06

C&GS card 20-63:

Mar. 10--Continued

C&GS card 20-63:
10:51:48.1
29.9° S., 71.2° W.
Near coast of central Chile
h about 70 km
Magnitude 6.0-6.3 (Pas)
5.5 (CGS).

Mar. 10

M	Z	iP	14:03:01.9
A	Z	eP	14:03:01.7
N	Z	eP	14:03:01.4
WP	Z	eP	14:03:01.3
U	Z	iP	14:03:01.4

C&GS card 20-63:
13:51:04.3
2.4° N., 126.6° E.
Celebes Sea
h about 41 km.

Mar. 15

M	Z	iP	00:27:41.0 c
		iPcP	00:27:54.1 d
A	Z	iP	00:27:42.7 c
		iPcP	00:27:54.4 d
D	Z	iP	00:27:41.7 c
		ePcP	00:27:54.8 d
N	Z	eP	00:27:42.2 c
		iPcP	00:27:55.0 d
WP	Z	iP	00:27:42.0 c
		ePcP	00:27:53.9 d
U	PEZ	iP	00:27:42.3 c
U	PEZ	iPcP	00:27:53.2 d

C&GS card 21-63:
00:16:01.3
8.4° N., 126.4° E.
Mindanao, Philippine Islands
h about 117 km
Magnitude 5.0 CGS).

Mar. 16, 1963

M	Z	iP	08:53:36.1	c
A	Z	iP	08:53:37.0	c
D	Z	iP	08:53:36.7	c
N	Z	iP	08:53:36.5	c
U	Z	eP	08:53:36.4	c
Pa	Z	eP	08:53:37.0	d
Na	Z	iP	08:53:38.2	d
Hi	Z	iP	08:53:36.0	d
Ka	Z	iP	08:53:34.1	c
Ha	Z	iP	08:53:26.7	c
U	PEZ	iP	08:53:37.2	c
U	PEZ	i	08:53:57	d
		i	08:54:13	c
		iPP	08:55:45	d
		iS	09:00:39	
		iSS	09:04:14	
		eR	09:07:51	
U	PEE	iG	09:05:13	
Ha	Z	Tmax	09:45:44	

C&GS card 21-63:
08:44:48.3
46.5° N., 154.7° E.
Kurile Islands region
h about 26 km
Magnitude 7.0 (Pas)
7.8 (Brk)
6.8 (Pal)
6.2 (CGS)
7.3 (HVO).

Mar. 20

M	Z	eP	04:50:37.6	d
A	Z	eP	04:50:36.2	d
D	Z	eP	04:50:36.5	d
N	Z	iP	04:50:37.2	d
Pa	Z	iP	04:50:38.7	c
Hi	Z	eP	04:50:39.4	d
Ka	Z	iP	04:50:39.6	c
Ha	Z	iP	04:50:42.2	c

C&GS card 24-63:
04:43:13.5
19.9° S., 179.1° W.
Fiji Islands region
h about 680 km
Magnitude 5.2 (CGS).

Mar. 20

M	Z	eP	04:53:12.0	d
D	Z	eP	04:53:10.9	d
N	Z	eP	04:53:11.6	d
WP	Z	iP	04:53:11.6	d
U	Z	eP	04:53:11.8	c
Pa	Z	iP	04:53:13.0	c
Na	Z	iP	04:53:09.5	c
Hi	Z	eP	04:53:14.8	c
Ka	Z	iP	04:53:14.9	c
Ha	Z	iP	04:53:17.5	c

C&GS card 24-63:
04:45:49.5
19.6° S., 179.3° W.
Fiji Islands region
h about 680 km
Magnitude 5.2 (CGS).

Mar. 20

M	Z	iP	16:49:57.1	d

C&GS card 23-63:
16:38:55.8
2.4° S., 138.4° E.
Western New Guinea
Magnitude 5.5 (CGS)
h about 40 km.

Mar. 24

M	Z	iP	02:20:03.5	c
A	Z	iP	02:20:03.0	c
D	Z	eP	02:20:02.4	c
Na	Z	iP	02:20:01.9	c
Ha	Z	iP	02:20:08.6	c
U	PEN	iL	02:43:22	

C&GS card 26-63:
02:07:12.8
9.7° S., 120.4° E.
Sumba Island region
Magnitude 6.3 (Pas)
6.0 (Pal)
5.4 (CGS)
h about 57 km.

Mar. 24, 1963

M	Z	iP	09:55:10.7 c
A	Z	iP	09:55:11.2 c
D	Z	iP	09:55:10.3 c
Pa	Z	iP	09:55:12.8 c

C&GS card 25-63:
09:43:20.2
9.0° N., 125.6° E.
Mindanao region,
Philippine Islands
Magnitude 5.2 (CGS)
h about 51 km.

Mar. 24

M	Z	iP	21:42:38.1 d
A	Z	eP	21:42:39.8 d
D	Z	iP	21:42:40.5 d
N	Z	eP	21:42:39.7 d
WP	Z	eP	21:42:39.7 d
U	Z	eP	21:42:40.0 c
Pa	Z	iP	21:42:40.1 c
Ha	Z	eP	21:42:28.8 c
U	PEZ	eR	21:52:03
M	Z	Tmax	22:21:23
D	Z	Tmax	22:22:05
N	Z	Tmax	22:21:34
WP	Z	Tmax	22:21:24
U	Z	Tmax	22:21:34
Pa	Z	Tmax	22:21:32
Ha	Z	Tmax	22:19:37

C&GS card 24-63:
21:35:24.4
51.8° N., 178.1° W.
Andreanof Islands,
Aleutian Islands
h about 57 km
Magnitude 6.0 (Pas)
5.0 (Pal)
5.5 (CGS)
5.4 (HVO).

Mar. 26

M	Z	iP	09:57:39.4 d
A	Z	iP	09:57:38.0 d
D	Z	iP	09:57:37.2 c
N	Z	eP	09:57:37.7 d
WP	Z	eP	09:57:37.6 d
U	Z	eP	09:57:37.3 d

Mar. 26--Continued

Pa	Z	iP	09:57:40.8 c
Na	Z	eP	09:57:34.7 d
Hi	Z	eP	09:57:41.5 d
Ka	Z	eP	09:57:43.6 c
Ha	Z	eP	09:57:46.4 c
U	PEZ	iP	09:57:38 c
		iS	10:05:15
		iSS	10:08:51
	PEE	iG	10:09:49
		iR	10:12:23

C&GS card 26-63:
09:48:19.7
29.7° S., 177.8° W.
Kermadec Islands
h about 45 km
Magnitude 6.8-7.0 (Pas)
7.0 (Brk)
7.0 (Pal)
7.1 (HVO).

Mar. 26

M	Z	iP	13:34:24.2 d
A	Z	iP	13:34:22.9 d
D	Z	eP	13:34:22.6 d
N	Z	eP	13:34:23.2 d
WP		eP	13:34:23.2 d
U	Z	eP	13:34:22.8 c
Pa	Z	eP	13:34:24.9 d
Na	Z	eP	13:34:21.4 d
Hi	Z	eP	13:34:26.4 d
Ka	Z	eP	13:34:28.2 d
Ha	Z	eP	13:34:31.5 c
U	PEZ	iP	13:34:23
		iSS	13:45:33
		iR	13:49:23
U	PEN	iS	13:41:55

C&GS card 27-63:
13:25:02.6
29.8° S., 177.9° W.
Kermadec Islands
h about 42 km
Magnitude 7.3 (Pas)
6.5 (Pal)
5.9 (CGS)
6.4 (HVO).

Table 5.--Distant earthquakes--Continued

Mar. 26, 1963

M	Z	iP	19:56:56.2 c
A	Z	eP	19:56:57.0 c
D	Z	iP	19:56:56.4 c
N	Z	iP	19:56:56.7 c
WP	Z	iP	19:56:56.6 c
U	Z	iP	19:56:56.5 c
Pa	Z	eP	19:56:57.2 c
Na	Z	eP	19:56:57.3 c

C&GS card 25-63:
19:47:46.0
44.4° N., 146.7° E.
Kurile Islands
h about 110 km
Magnitude 5.6 (CGS)

Mar. 26

M	Z	iP	21:45:00.9 d
A	Z	iP	21:45:01.7 d
D	Z	iP	21:45:01.1 d
N	Z	iP	21:45:01.4 d
WP	Z	iP	21:45:01.4 d
U	Z	iP	21:45:01.2 d
Pa	Z	iP	21:45:03.1 d
Na	Z	iP	21:45:01.4 d
Hi	Z	eP	21:45:00.5 c
Ha	Z	iP	21:44:52.3 d
U	PEZ	iP	21:45:01
		iG	22:03:05
U	PEE	iS	21:53:55
U	PEN	eSSS	22:00:31

C&GS card 24-63:
21:34:41.1
36.0° N., 135.7° E.
Near east coast of Honshu, Japan
Magnitude 6.0-6.3 (Pal)
6.5 (Pas)
6.5 (Brk)
5.9 (CGS)
6.5 (HVO)

Mar. 28

U	PEE	iS	00:39:31
		iL	00:52:23
U	PEN	iPS	00:40:36

Mar. 28--Continued

U	PEZ	iSS	00:45:33
		iSSS	00:49:15
		iR	00:56:59

C&GS card 27-63:
00:15:47.5
66.3° N., 19.6° W.
Iceland
Magnitude 7.0-7.3 (Pas)
6.5 (Bks)
6.5-6.8 (Pal)
7.0 (HVO)
h about 15 km.

Mar. 28

M	Z	eP	11:21:52.9 c
A	Z	eP	11:21:52.5 c
WP	Z	eP	11:21:52.3 c
Hi	Z	eP	11:21:55.2 c

C&GS card 27-63:
11:12:31.3
30.2° S., 177.8° W.
Kermadec Islands
h about 38 km.

Mar. 30

M	Z	iP	02:02:21.9 c
A	Z	eP	02:02:21.6 c
D	Z	eP	02:02:20.5 c
N	Z	eP	02:02:21.6 c
WP	Z	eP	02:02:21.6 c
U	Z	iP	02:02:21.4 c
Na	Z	eP	02:02:18.5 c
Hi	Z	iP	02:02:24.1 d
Ka	Z	eP	02:02:24.8 c
Ha	Z	iP	02:02:25.1 c

C&GS card 29-63:
01:53:28.8
19.1° S., 169.1° E.
New Hebrides Islands
Magnitude 6.1 (CGS).
h about 160 km.

Mar. 30

M	Z	iP	17:01:11.4 d

Mar. 30, 1963--Continued

D	Z	iP	17:01:11.7 d
N	Z	eP	17:01:11.7 d
WP	Z	eP	17:01:11.9 d
U	Z	eP	17:01:11.6 c
Pa	Z	iP	17:01:13.6 d
Na	Z	eP	17:01:12.5 d
Hi	Z	iP	17:01:11.2 d

C&GS card 27-63:
16:51:56.6
44.2° N., 148.0° E.
Kurile Islands
h about 33 km
Magnitude 5.3-5.5 (Pal)
6.3 (CGS)

Mar. 30

M	Z	Tmax	22:20:44
A	Z	Tmax	22:20:33
D	Z	Tmax	22:20:32
N	Z	Tmax	22:20:30
U	Z	Tmax	22:20:31
Pa	Z	Tmax	22:20:01
Na	Z	Tmax	22:20:29

C&GS card 28-63:
21:13:54.1
8.7° S., 109.2° W.
About 2,000 km southwest of
Galapagos Islands
h about 33 km
Magnitude 4.6 (CGS).

Mar. 31

M	Z	iP	05:40:05.6 d
A	Z	eP	05:40:02.2 d
N	Z	eP	05:40:02.7 d
U	Z	eP	05:40:03.4 d
Pa	Z	eP	05:40:07.3 c
U	PEN	iS	05:47:36
U	PEZ	eR	05:54:44

C&GS card 27-63:
05:30:49.3
29.9° S., 177.7° W.
Kermadec Islands
h about 48 km.

Mar. 31--Continued

C&GS card--Continued
Magnitude 6.3-6.5 (Pas)
6.5 (Bks)
6.0-6.3 (Pal)
5.7 (CGS)
6.3 (HVO)

Mar. 31

D	Z	iP	07:18:13.7 d
U	PEN	iG	07:32:48
U	PEE	eR	07:35:32

C&GS card 27-63:
07:07:36.3
6.1° S., 149.0° E., New Britain
Magnitude 6.3 (Pas)
6.0 (Pal)
5.7 (CGS).

Mar. 31

M	Z	iP	19:32:13.9 d
A	Z	eP	19:32:12.9 d
D	Z	eP	19:32:12.2 d
N	Z	iP	19:32:13.4 d
WP	Z	iP	19:32:13.4 d
U	Z	iP	19:32:13.4 d
Hi	Z	eP	19:32:14.9 d

C&GS card 27-63:
19:22:53.3
30.0° S., 178.0° W.
Kermadec Islands
h about 50 km
Magnitude 6.3-6.5 (Pas)
6.5 (Bks)
5.8 (CGS).

Table 6.--U.S. Geological Survey seismograph stations in Hawaii

Station	Symbol	Location		Altitude (M) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Uwekahuna (Hawaiian Volcano Observatory).	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z. (Seismometer and galvanometer periods are 15 and 90 seconds, respectively.) Short-period Sprengnether: E, Z. HVO-1: Z[1]. Short-base liquid-level tiltmeter. April 9, 1963 to May 27, 1963 a Wood-Anderson (NS) replaced Sp-Z on an experimental, temporary basis. Operated by John Forbes, Akira Yamamoto and other HVO staff members.
Mauna Loa----------	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z[2].
Ahua----------	A	19°22.4'	155°15.9'	1,070	Remote recording HVO-2: Z.
Desert----------	D	19°20.2'	155°23.3'	815	Do.
North Pit----------	N	19°24.9'	155°17.0'	1,115	Do.
West Pit----------	WP	19°24.7'	155°17.5'	1,110	Do. Installed October 31, 1962.
Whitney Vault--------	W	19°25.9'	155°15.7'	1,210	Bosch-Omori: N, E. (Seismometer period 9 seconds.) Discontinued February 1, 1963.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

Station	Symbol	Location		Altitude (M) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Hilo----------	Hi	19°43.2'	155°05.3'	20	HVO-1: Z Wood-Anderson: N, E. Operated by Sister Thecla at St. Joseph's School.
Naalehu----------	Na	19°03.8'	155°35.2'	205	HVO-1: Z. Operated by Rev. H. Hanson till September 1, 1962, when new operator, Rev. D. Thompson, took over duties at Naalehu School. HVO-1, buried July 17, 1962.
Pahoa----------	Pa	19°29.7'	154°56.8'	205	HVO-1: Z. Operated by Mr. Kongo Kimura at Pahoa School.
Kamuela----------	Ka	20°01.9'	155°42.0'	740	HVO-1: Z. Operated by Mr. Edward Van Gorder, Preparatory Academy, Kamuela.
Konawaena----------	Ko	19°30.8'	155°55.1'	495	Not operated in 1963.
Haleakala, Maui----	Ha	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Hawaii National Park at Haleakala, Maui.

See footnotes at end of table, p. 35.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

1/ HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Over-damping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

2/ HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper. The response of this seismograph is similar to that of HVO-1. Records from these seismographs at the M, A, and D stations are recorded on a 3-component drum to permit an accurate comparison of arrival times at these stations.

The following persons or agencies reported "felt" earthquakes during the first quarter, 1963. Their assistance is gratefully acknowledged.

North Hawaii

Honokaa School
Mrs. Hunter
Mr. Van Gorder
Mrs. Lindsey
Miss Tulley
Mrs. Thwine
Mrs. Richards, Jr.
Mrs. Christensen
Mrs. Walker
Hawaii Preparatory Academy
Mr. McCabe
Mrs. Weight
Mrs. Eklund
Miss Wallace
Mr. Stewart

Kilauea summit region

Mrs. Loucks
Keakelani School
Mrs. Hansen
National Park Headquarters
Volcano House Hotel
Mrs. Mist
Mr. Koyanagi
Shipman Ranch (Keaau)
Mrs. Wentworth
Mrs. Duncan
Kilauea Military Camp
Miss English
Mrs. Fraser
Mrs. Yamamoto

Kona coast

Mr. Johnson, Jr.
Mr. Sutherland
Miss Greenwell
Mr. Paris
Mrs. Mitchell
Mr. S. Greenwell
Mrs. Rice
Mr. Sleightholm
Mr. Yeoman
Mrs. Higashihara
Mrs. Cherry
Mrs. Miyatake
Mrs. Hayashi
Mrs. Yamasaki
Mrs. Korenaga

Puna

Mr. Edwards
Mr. Hay
Miss Takemoto
Mrs. Isbell
Mr. Warner
Mrs. Walker

Hilo region

Mr. Sadamoto
Mr. McMurray
Mr. Pierce
Miss Perriera
Mrs. Schaeffer
Mrs. Duncan
Mr. Elliot
Mrs. Ingledue
Mr. Okamura
Mr. Warner
Mrs. Baldwin
Mr. Ho
Mr. Onuma
Mrs. Veriato
Mrs. Breyton

Kau region

Mr. Godfrey
Mrs. Schattauer
Mrs. Billings
Mrs. Yamamoto
Kau Police Dept.
Mr. Manierre
Mr. Edwards

Central Hawaii

Kulani Honor Camp
Lt. Carvalho
Mr. Kamiko
Puu Anahulu School

Maui Island

Mrs. Boyum
Mr. Griffiths
Mr. Ching
Dr. Leekrick
Ulupalakua Ranch
Hana-Maui Hotel
Haleakala National Park
Mr. Hupp
Mrs. Lindsay
Kahului Airport

Oahu Island

Mr. Johnson

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 30

April, May, and June 1963

By

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Arnold T. Okamura and Robert Y. Koyanagi

Issued March 1965

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Chronological summary

Slight inflation of Kilauea volcano during early April was indicated by northwestward tilting at Uwekahuna. Very heavy rainfall (26 inches in one week) was followed by moderate but persistent southward tilting between April 17-30. Part of the apparent collapse may have been caused by cooling and shrinking of near-surface lava storage, but most of it is best attributed to rainfall-induced deformation in the immediate vicinity of Uwekahuna Vault.

April was not an unusual month seismically: shallow caldera quakes were slightly more numerous but activity elsewhere was similar to that during March (table 3). Three earthquakes were felt in Hawaii during the month (table 4).

Strong northward tilting at Uwekahuna characterized the first 8 days of May. Except for slightly increased activity along the Kaoiki fault, including a magnitude 3.4 "felt" earthquake on March 4, the statistics of shallow and deep seismic activity continued unchanged from April.

At 21^h50^m on May 9, an episode of unusual seismic activity consisting of frequent earthquakes in a background of continuous harmonic tremor began. Early in this crisis, which lasted 4 days, about a dozen earthquakes were felt lightly in the Kilauea summit region. Only two of these could be identified individually (table 4). Otherwise, earthquakes were not felt, although they occurred at rates as high as five per minute. The appearance of harmonic tremor on instruments of the Kilauea summit network suggested that lava was moving at a shallow depth beneath the summit region. Earthquakes that could be read through the tremor background originated along the Koae fault system in the vicinity of Puu Koae on Kilauea's southwest flank (fig. 2). Fresh cracks up to 2 feet in width were eventually found in this region in a zone several miles long. The cracks were all tensional. The tilt diagram for March 18 to May 12 (fig 2) very clearly shows tumescence of an elongate zone along the southwest rift zone. Movement of lava into this region from the summit reservoir is believed to have caused the seismic activity and extensive cracking.

While the southwest rift zone was swelling and cracking, a remarkable collapse of the Kilauea summit region was recorded by the short-base tiltmeter at Uwekahuna. Although the summit collapse is shown in a gross manner (7-day averages) in table 1, a more detailed record of this event is provided by the unaveraged tilt coordinates at Uwekahuna Vault derived from a stepped-up reading schedule during the collapse (table A). On May 12 summit collapse ceased and rapid reinflation began, as indicated by rapid northwestward tilting at Uwekahuna. A remarkably similar episode of summit collapse accompanied by earthquakes and ground cracking south of the caldera occurred in December 1950 (Volcano Letter 510).

The frequency of earthquakes in and near Kilauea caldera decreased sharply after the May 9-12 crisis. Three additional earthquakes were felt on Hawaii during the rest of the month.

During June, seismic activity in the vicinity of Kilauea caldera and along the upper part of Kilauea's east rift zone increased slightly. Tilting at Uwekahuna declined about the end of May and showed little change during June.

Four earthquakes were felt on Hawaii during June. The largest was of magnitude 4.2 and occurred beneath the south flank of Mauna Loa on June 6.

Note on instrumentation.--Early in April an HVO-2 seismometer was installed at Makaopuhi Crater. Its signal is transmitted over a telephone line to the Observatory, where recording of data from the new station (MP) was begun on April 18.

Table A.--Tilt coordinates and cumulative changes at Uwekahuna Vault during the May 9-12 summit collapse

Date	Time	Tilt coordinates and cumulative changes N-S	S(N-S) urad	E-W	S(E-W) urad
May 8	08^h30^m	505	0	482	0
9	08^h30^m	505	0	482	0
10	00^h15^m	509	+4	494	+12
10	03^h15^m	503	-2	499	+17
10	06^h30^m	496	-9	505	+23
10	08^h30^m	493	-12	506	+24
10	11^h30^m	494	-11	505	+23
10	14^h30^m	493	-12	508	+26
10	18^h30^m	490	-15	508	+26
11	08^h00^m	491	-14	505	+23
12	09^h30^m	484	-21	510	+28
12	12^h30^m	489	-16	508	+26
13	08^h30^m	486	-19	510	+28

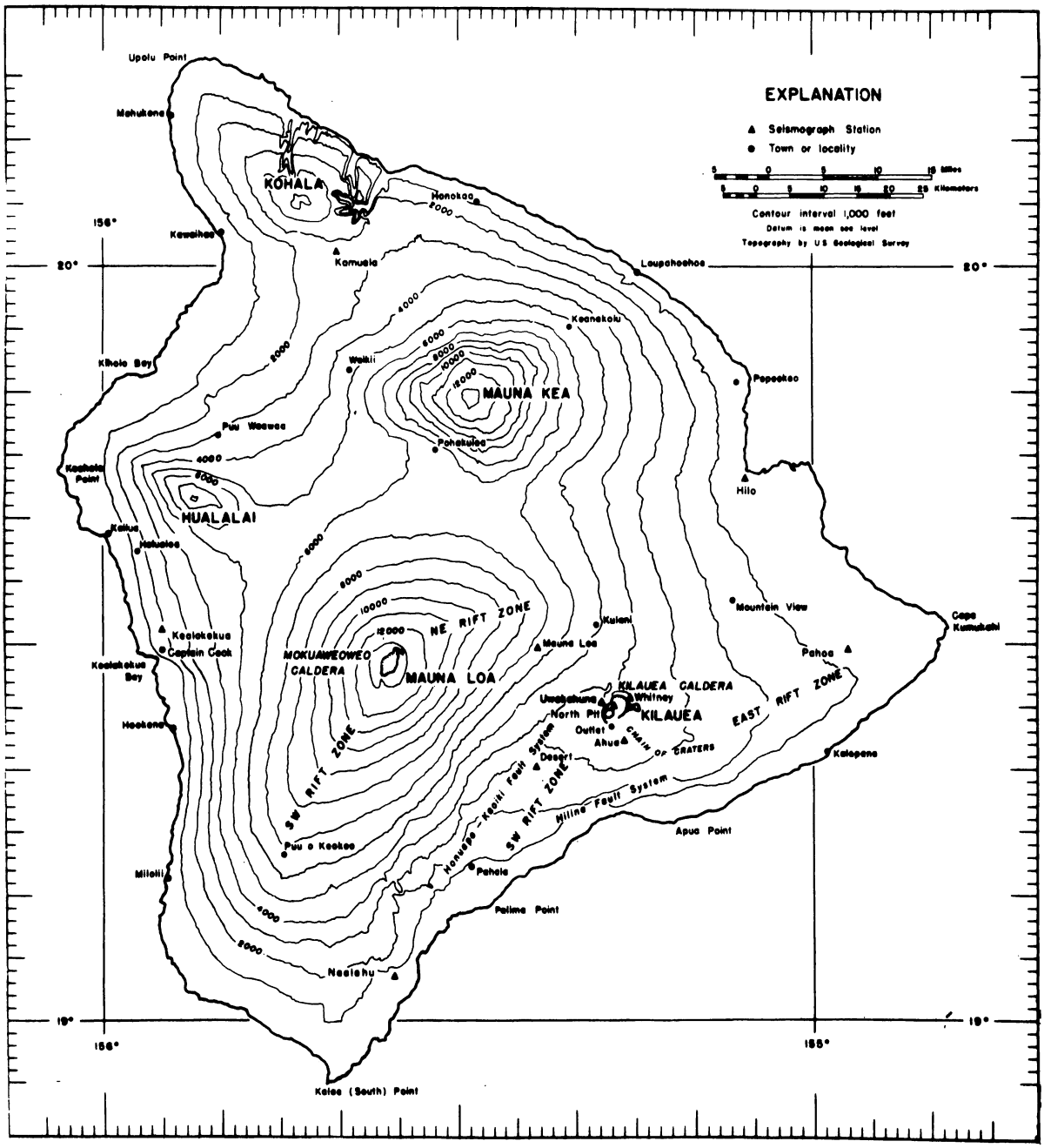

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; i.e., to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault, April, May, and June 1963

Date	N-S	E-W	Date	N-S	E-W
April 7	495	482	June 2	504	496
14	496	481	9	507	494
21	490	483	16	507	493
28	491	483	23	507	493
May 5	501	483	30	505	497
12	491	504			
19	494	502			
26	501	497			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera (see fig. 2)

Tilt Base (location)	Date (1963)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1963)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	May 10	471.6	494.6	8.0	East	March 20
Tree Molds (19°26.3' N., 155°17.3' W.)	14	453.6	512.4	2.8	N. 15.9° E.	19
Sand Spit (19°24.1' N., 155°16.8' W.)	14	829.9	709.9	4.2	S. 15.4° E.	21
Kalihipaa (19°21.4' N., 155°15.3' W.)	11	559.5	451.0	13.8	S. 68.5° E.	18
Keamoku (19°25.1' N., 155°19.0' W.)	10	519.1	564.1	15.9	N. 28.9° W.	18
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	10	607.9	583.2	26.0	N. 79.0° E.	19
Kipuka Nene (19°19.4' N., 155°16.7' W.)	13	497.9	507.7	7.4	S. 51.1° E.	15
Hilina Pali (19°18.2' N., 155°18.6' W.)	13	501.4	501.9	4.7	S. 28.8° E.	13
Kapapala Ranch (19°20.5' N., 155°23.8' W.	11	497.8	503.1	1.0	N. 78° W.	14

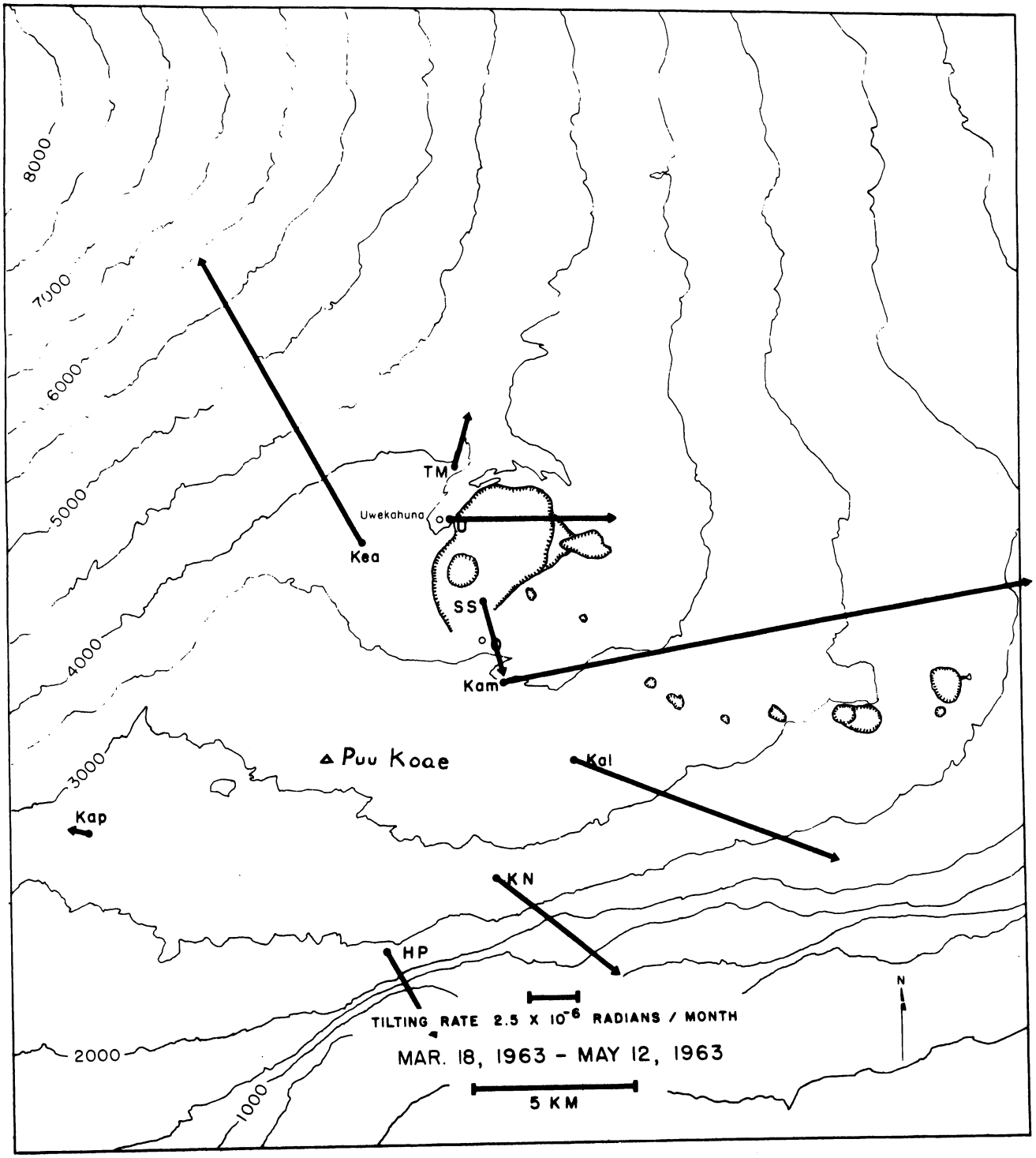

Figure 2.--Tilting of the ground around Kilauea caldera, March 18 to May 12, 1963. The vector depicting tilting at a given tilt-base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt-bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, MP). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1, and essential data on the stations were given in Summary 29.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone (from the Pahoa seismograph); earthquakes from a source about 30 km beneath Halemaumau; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank, and earthquakes from other regions: Kona, Mauna Kea, etc. ?=Obscured by the swarm of earthquakes near Puu Koae.

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
April 1	3	8	------	2	170	11	------	4	13	----------
2	11	------	------	------	90	5	------	5	10	----------
3	34	------	------	------	90	13	------	4	2	----------
4	------	------	------	------	137	11	------	2	-------	----------
5	------	------	------	------	150	15	------	3	-------	----------
6	------	3	------	------	130	10	------	1	-------	----------
7	------	------	------	2	160	13	------	3	6	----------
8	------	------	------	------	197	25	------	5	1	1 offshore Kona
9	------	------	6	------	195	10	1	------	5	----------
10	------	------	------	------	179	10	------	6	3	----------
11	------	------	------	------	196	18	------	2	6	1 Naalehu region
12	------	------	------	------	150	16	------	2	------	----------
13	32	------	2	1	115	5	------	2	2	2 Hilina Pali
14	------	------	------	------	102	27	------	4	6	1 offshore Kona
15	------	------	------	------	70	29	1	3	------	----------
16	------	------	6	2	100	12	------	2	------	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and MP around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
Apr. 17	-----	------	5	------	100	7	------	2	9	----------
18	-----	------	-------	------	55	7	------	5	2	----------
19	-----	------	-------	1	90	9	------	6	-------	----------
20	5	------	-------	------	80	9	------	1	-------	----------
21	-----	------	-------	------	59	20	------	3	-------	----------
22	-----	------	-------	------	70	12	------	3	-------	----------
23	-----	------	-------	------	120	6	------	6	3	1 offshore Kona
24	-----	5	-------	------	110	5	------	3	10	----------
25	-----	------	-------	1	110	11	------	5	-------	----------
26	-----	------	-------	------	100	9	------	5	15	----------
27	18	------	-------	------	110	12	------	4	10	1 Kulani
28	-----	------	-------	------	130	20	3	------	6	1 Kona
29	-----	------	-------	------	113	5	------	1	-------	1 Pohakuloa
30	2	------	-------	------	120	12	------	7	2	1 Pohakuloa
May 1	-----	------	-------	------	100	16	------	2	-------	----------
2	-----	------	-------	------	95	12	------	4	2	----------
3	4	------	-------	------	120	7	------	4	-------	----------
4	-----	------	-------	------	160	27	------	9	1	1 offshore Puna 1 Pahala
5	-----	------	-------	------	130	16	------	2	2	----------
6	-----	------	-------	------	75	8	------	1	1	----------
7	-----	------	-------	------	80	20	------	1	-------	----------
8	-----	------	3	------	100	17	------	1	-------	----------
9	?	?	190	?	?	?	?	?	?	ca 600 } about
10	?	?	1440	?	?	?	?	?	?	ca 2000 } 5 km SSW
11	?	?	960	?	?	?	?	?	?	ca 400 } of
12	?	?	-------	?	?	?	?	?	?	ca 250 } Halemauma-
13	-----	------	5	-------	69	?	------	3	------	ca 50 } near Puu Koae.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and MP around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
May 14	----	45	------	------	43	12	------	4	-----	1 Kona
15	----	-----	------	------	40	6	------	3	1	----------
16	----	-----	------	------	36	15	------	3	2	1 Pohakuloa
17	----	-----	------	------	33	9	------	1	2	1 offshore Kona
18	----	-----	------	------	36	18	------	6	3	----------
19	12	-----	------	------	80	14	------	-----	3	2 Pahala 1 Kona
20	----	-----	------	------	70	25	------	1	1	1 Pahala
21	----	-----	------	------	45	7	------	2	3	1 Honokaa 1 offshore Kona
22	----	-----	------	------	25	10	------	5	1	1 Waikii
23	10	-----	------	------	16	8	------	2	-----	----------
24	15	-----	------	------	40	36	------	3	2	----------
25	----	-----	------	------	37	26	------	1	-----	----------
26	----	-----	5	------	42	16	1	4	2	----------
27	----	-----	------	------	61	12	------	2	3	1 offshore Hilina-Pali.
28	----	5	------	------	43	10	------	3	1	1 offshore Hilina-Pali.
29	----	-----	------	1	47	15	------	3	1	----------
30	----	-----	------	------	52	8	------	2	1	1 Kamuela
31	----	-----	------	------	30	20	------	5	------	----------
June 1	----	-----	------	------	37	16	1	11	3	1 Kona----------
2	----	-----	------	------	35	10	1	3	2	1 Kona
3	----	-----	------	------	29	8	------	-----	4	----------
4	----	-----	------	------	42	9	------	-----	3	1 Naalehu
5	----	-----	------	------	47	12	------	8	7	----------
6	----	-----	------	------	45	18	------	3	6	1 Naalehu

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and MP around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
June 7	----	10	-----	-----	60	12	------	9	5	----------
8	----	4	-----	-----	65	13	------	3	10	----------
9	----	------	-----	-----	65	10	1	3	10	1 Kona----------
10	----	------	-----	-----	75	21	1	3	15	----------
11	----	4	-----	-----	51	8	------	2	21	----------
12	3	2	-----	-----	65	15	------	12	20	1 Kona----------
13	----	------	-----	-----	68	18	------	8	27	----------
14	6	11	-----	-----	48	12	------	20	17	----------
15	6	------	-----	-----	66	15	3	2	18	----------
16	----	5	-----	-----	68	10	------	7	11	1 Kona----------
17	----	------	-----	-----	40	10	------	5	15	1 Kona----------
18	----	------	-----	-----	31	8	------	3	8	----------
19	43	------	-----	-----	42	3	------	1	18	----------
20	----	------	-----	-----	35	7	------	2	11	----------
21	----	------	-----	-----	34	8	------	6	9	1 Mauna Kea----------
22	----	------	-----	-----	43	8	------	8	7	----------
23	3	------	-----	-----	48	11	------	15	6	1 Maui----------
24	----	------	-----	-----	60	14	------	7	6	----------
25	----	------	-----	-----	46	9	------	6	9	----------
26	----	------	-----	-----	43	10	------	4	25	----------
27	----	------	-----	-----	26	3	------	2	2	----------
28	----	------	-----	-----	52	6	------	1	-----	1 Kamuela----------
										1 Molokai----------
29	----	------	-----	-----	87	8	------	3	45	1 Kona----------
30	10	------	-----	-----	77	8	------	3	21	1 Kamuela----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

April, May, and June 1963

[Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt reports. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

In the following list, some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 kilometers (19°24.1' N., 155°17.1' W.).

In Summary 29, a persistent earthquake sequence was codified by the initials KT which referred to a "poor" location along the Kalapana Trail. This designation is retained for the purposes of this Summary but will be discontinued in the future unless Kalapana Trail quakes resume. The approximate epicenter for these quakes is 19°20' N., and 155°05' W., and shallow depth is assumed.

In Summary 24, "Kaoiki" was introduced as a symbol for listing any of a family of quakes with mean focus 19°24' N., 155°25' W., h=3 to 8 km. This symbol is used in the following list]

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Apr. 2	09	12	06.0	3.1	-----	--------	---------	KT----------	----------
2	10	00	11.7	2.5	-----	--------	---------	KT----------	----------
2	15	37	14.2	2.8	-----	--------	---------	KM 30----------	----------
3	06	10	09.5	2.0	3	19°17.8'	155°12.7'	12 km southeast of Ahua seismometer.	----------
7	06	00	55.7	2.0	8	19°26.2'	155°25.0'	7 km south-southwest of Mauna Loa seismometer.	----------
7	07	38	39.8	2.1	3	19°27.9'	155°23.2'	2 km south of Mauna Loa seismometer.	----------
7	08	24	14.8	3.3	-----	--------	--------	Kaoiki----------	Felt in Hilo and Pahala.
7	23	04	47.7	2.2	10	19°21.1'	155°16.5'	5 km south-southwest of Ahua seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

April, May, and June 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Apr. 8	09	02	51.5	3.2	8	19°26.5'	155°27.4'	10 km southwest of Mauna Loa seismometer.	----------
8	19	58	21.3	3.7	13	19°13'	156°27'	60 km southwest of Kealakekua.	----------
10	21	28	13.2	2.2	-----	--------	---------	KM 30----------	----------
11	07	11	30.9	2.0	-----	--------	---------	KM 30----------	----------
11	07	31	23.5	2.5	8	19°11.7'	155°39.8'	16 km north-northwest of Naalehu.	----------
11	13	01	40.5	2.7	-----	--------	---------	Kaoiki----------	----------
11	22	01	19.8	2.0	15	19°19.3'	155°12.1'	9 km southeast of Ahua seismometer.	----------
12	00	19	06.0	2.6	25	19°23.7'	155°20.4'	6 km southwest of Uwekahuna seismometer.	----------
13	19	19	02.9	2.5	5	19°14.3'	155°14.6'	6 km west-southwest of Apua Point.	----------
13	19	20	11.5	2.2	3	19°15.3'	155°13.3'	3 km west-southwest of Apua Point.	----------
13	22	52	16.0	3.2	-----	--------	---------	Kaoiki----------	----------
14	05	22	18.8	3.3	13	19°29'	156°17'	37 km west of Kealakekua	----------
17	17	23	40.1	2.3	-----	--------	---------	KM 30----------	----------
18	07	12	40.6	2.0	10	19°20.1'	155°16.1'	4 km south of Ahua seismometer.	----------
19	07	19	14.7	2.2	10	19°19.5'	155°16.1'	5 km south of Ahua seismometer.	----------
19	17	24	10.8	2.1	35	19°21.4'	155°10.5'	2 km south of Makaopuhi seismometer.	----------
20	03	12	29.2	2.0	-----	--------	---------	KM 30----------	----------
22	04	01	29.2	3.2	-----	--------	---------	KM 30----------	Felt in Kilauea summit area.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Apr. 23	03	44	35.6	3.0	13	19°41'	156°17'	25 km WSW of Keahole Point	----------
25	07	18	33.3	2.9	8	19°21.8'	155°14.9'	2 km SE of Ahua seismometer	----------
26	23	46	33.2	2.3	----	--------	---------	KM 30----------	----------
27	01	49	38.4	3.4	15	19°32.8'	155°14.8'	15 km NNE of Uwekahuna seismometer.	Felt-in-Kilauea summit area, Hilo, Glenwood, and Pahoa.
27	01	53	43.0	2.6	3	19°26.8'	155°41.3'	27 km ESE of Kealakekua	----------
28	20	20	46.9	2.0	< 3	19°21.2'	155°16.0'	3 km S of Ahua seismometer	----------
28	13	43	56.4	3.0	----	--------	---------	Kaoiki----------	----------
29	02	43	03.7	2.7	10	19°20.9'	155°24.2'	2 km NW of Desert seismometer.	----------
29	02	52	47.1	2.2	----	--------	---------	Kaoiki----------	----------
29	19	15	40.0	2.7	5	19°51.2'	155°30.2'	12 km NNW of Pohakuloa	----------
30	01	25	29.0	2.7	8	19°47.5'	155°35.8'	10 km ENE of Pohakuloa	----------
May 1	17	30	40.7	2.9	----	--------	---------	Kaoiki----------	----------
4	15	22	55.0	2.2	38	19°19.6'	155°05.5	43 km S of Hilo----------	----------
4	16	11	25.0	3.4	----	--------	---------	Kaoiki----------	Felt in Kilauea summit area, Hilo, Kapapala, Pahala, and Honaunau.
4	18	22	59.0	3.0	8	19°10.3'	155°30.6'	5 km SW of Pahala--------	----------
9	20	51	43.5	2.9	3	19°22.3'	155°17.4'	Koae fault system near Puu Koae.	Felt Volcano----
9	20	54	07.1	3.1	3	19°22.9'	155°19.0'	----do----------	Felt Volcano----
9	20	54	51.1	2.7	< 3	19°21.9'	155°18.9'	----do----------	----------
9	20	56	02.7	2.7	< 3	19°21.3'	155°19.1'	----do----------	----------
9	20	58	50.1	2.5	< 3	19°22.0'	155°19.5'	----do----------	----------
9	21	00	42.6	2.0	< 3	19°22.3'	155°18.4'	----do----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
May 9	21	02	17.0	2.8	< 3	19°20.5'	155°19.8'	Koae fault system near Puu Koae	----------
9	21	04	38.3	2.5	< 3	19°20.5'	155°19.8'	----do----------	----------
9	21	08	06.1	2.3	< 3	19°22.3'	155°18.6'	----do----------	----------
9	21	38	01.6	2.4	< 3	19°21.1'	155°19.2'	----do----------	----------
9	22	48	37.4	2.3	< 3	19°22.0'	155°20.2'	----do----------	----------
9	22	56	13.6	2.4	< 3	19°20.6'	155°18.2'	----do----------	----------
10	00	16	50.2	2.4	< 3	19°22.5'	155°16.8'	----do----------	----------
10	00	42	42.0	2.1	< 3	19°21.2'	155°17.8'	----do----------	----------
10	03	59	24.7	2.1	< 3	19°20.9'	155°19.3'	----do----------	----------
10	04	05	43.1	2.0	< 3	19°22.0'	155°19.1'	----do----------	----------
10	04	31	11.9	2.2	< 3	19°21.1'	155°19.3'	----do----------	----------
10	04	57	00.9	2.5	< 3	19°20.5'	155°16.0'	----do----------	----------
10	05	22	13.7	2.0	< 3	19°21.5'	155°18.9'	----do----------	----------
10	07	01	17.9	2.1	< 3	19°21.5'	155°19.0'	----do----------	----------
10	07	28	29.3	2.5	< 3	19°21.6'	155°18.9'	----do----------	----------
10	08	12	54.4	2.3	< 3	19°19.8'	155°21.2'	----do----------	----------
10	09	05	04.9	2.3	< 3	19°20.7'	155°19.1'	----do----------	----------
10	09	30	55.3	2.4	< 3	19°20.9'	155°18.4'	----do----------	----------
10	14	14	36.1	2.5	< 3	19°20.6'	155°19.6'	----do----------	----------
10	14	20	30.9	2.2	< 3	19°21.8'	155°18.6'	----do----------	----------
10	19	10	41.0	2.9	10	19°16.5'	155°14.6'	5 km WNW of Apua Point----------	----------
11	06	15	42.1	2.1	< 3	19°22.2'	155°19.0'	Koae fault system near Puu Koae	----------
12	09	01	07.7	2.2	< 3	19°20.3'	155°19.2'	----do----------	----------
14	06	48	27.0	2.6	8	19°31.2'	155°55.0'	1 km N of Kealakekua----------	----------
14	09	31	45.8	2.0	8	19°23.9'	155°17.2'	3 km SSE of Uwekahuna seismometer.	----------
14	16	20	19.2	2.7	-----	--------	---------	KM 30----------	----------
16	08	37	21.2	2.1	8	19°19.0'	155°15.0'	6 km SSE of Ahua seismometer---	----------
16	15	24	42.3	2.1	8	19°21.2'	155°17.2'	3 km SW of Ahua seismometer ---	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
May 16	21	22	41.5	2.1	5	19°46.5'	155°36.6'	10 km WNW of Pohakuloa	
17	01	31	19.0	2.8	8	19°36'	156°26'	57 km WNW of Kealakekua	
17	09	19	07.0	2.5	20	19°23.5'	155°17.5'	3 km NW of Ahua seismometer	
17	04	54	16.9	2.2	25	19°12.3'	155°32.2'	4 km west of Pahala	
19	01	54	59.4	3.4	5	19°12.4'	155°21.3'	14 km east of Pahala	
19	02	21	25.5	3.9	8	19°14.7'	155°31.1'	6 km NW of Pahala	Felt in Kilauea summit area, Hilo, Pahala, and Waiohinu.
19	03	01	37.7	2.2	----	--------	--------	Kaoiki	
19	17	20	08.6	3.3	----	--------	--------	Kaoiki	
19	19	37	36.2	2.0	----	--------	--------	Kaoiki	
19	19	56	10.1	2.9	----	--------	--------	Kaoiki	
19	22	06	23.9	2.4	8	19°41'	156°08'	10 km SW of Keahole Point	
20	03	09	52.1	2.2	----	--------	--------	Kaoiki	
20	04	11	16.0	2.8	8	19°14.3'	155°31.6'	7 km NW of Pahala	Felt in Pahala
20	10	31	27.3	3.1	----	--------	--------	Kaoiki	
20	10	31	54.6	3.9	----	--------	--------	Kaoiki	
20	10	39	28.7	2.1	----	--------	--------	Kaoiki	
20	12	15	01.0	2.8	----	--------	--------	Kaoiki	
21	06	19	26.4	2.4	3	19°17.2'	155°06.1'	12 km SE of Makaopuhi seismometer.	
21	09	25	59.2	2.0	----	--------	--------	Kaoiki	
21	14	26	55.3	2.6	8	19°54.2'	155°29.0'	18 km S of Honokaa	
21	19	27	09.7	2.3	3	19°08.0'	155°16.8'	16 km SE of Desert seismometer.	
21	20	15	19.1	2.5	13	19°39'	156°27'	42 km WSW of Keahole Point	
22	06	07	57.7	2.8	45	19°16.9'	155°01.5'	25 km SW of Pahoa	
22	23	01	20.5	2.6	3	19°52.8'	155°40.6'	3 km NW of Waikii	
23	10	34	32.5	2.5	5	19°14.2'	155°22.1'	12 km SSE of Desert seismometer.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
May 25	01	49	00.2	2.8	----	--------	---------	Kaoiki----------	----------
25	04	32	56.0	2.4	10	19°17.1'	155°13.1'	10 km SW of Makaopuhi seismometer.	----------
27	02	23	09.8	2.6	----	--------	---------	Kaoiki----------	----------
27	16	19	52.5	2.6	13	18°56.2'	155°14.9'	50 km S of Ahua seismometer	----------
28	09	52	05.0	2.1	3	19°15.6'	155°18.1'	18 km S of Uwekahuna seismometer.	----------
28	23	56	53.2	2.2	13	18°56.9'	155°16.0'	48 km S of Ahua seismometer	----------
30	18	54	47.1	2.2	10	19°31.0'	155°03.4'	23 km SSE of Hilo----------	----------
30	19	55	04.8	2.3	----	--------	---------	KM 30----------	----------
30	23	32	14.5	2.9	8	19°58.5'	155°37.8'	10 km SE of Kamuela--------	----------
31	00	09	40.2	3.3	8	19°26.5'	155°26.5'	9 km SW of Mauna Loa seismometer.	Felt in Kilauea summit area and Pahala.
31	22	19	05.7	2.0	8	19°21.8'	155°14.9'	3 km SE of Ahua seismometer	----------
June 1	02	45	04.8	2.7	3	19°33.6'	155°55.7'	5 km N of Kealakekua-------	Felt in Kealakekua.
1	12	07	12.2	2.3	----	--------	--------	KM 30----------	----------
2	01	30	44.5	2.4	3	19°37.6'	156°03.4'	20 km NW of Kealakekua-----	----------
3	03	53	48.6	3.0	----	--------	--------	Kaoiki----------	----------
3	09	18	49.8	2.3	6	19°23.8'	155°17.3'	4 km SSE of Uwekahuna seismometer.	----------
4	07	28	42.4	2.7	8	19°13.9'	155°38.1'	20 km NNW of Naalehu-------	----------
4	19	59	20.7	2.3	10	19°18.3'	155°14.1'	9 km SSE of Ahua seismometer.	----------
6	09	01	23.3	2.4	----	--------	---------	Kaoiki----------	----------
6	19	19	40.8	2.8	----	--------	---------	Kaoiki----------	Felt on north rim of Kilauea caldera.
6	22	25	38.8	4.2	3	19°11.9'	155°33.1'	15 km NNE of Naalehu-------	Felt in Hilo, Pahala, Naalehu Waiohinu, and

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
June 7	12	52	25.6	2.4	15	19°23.4'	155°59.5'	13 km SW of Pahoa	----------
7	22	04	05.7	2.2	40	19°18.8'	155°08.4'	7 km SW of Makaopuhi seismometer.	----------
8	03	49	06.1	2.9	----	--------	--------	Kaciki	----------
9	05	03	28.7	2.6	< 3	19°25.3'	155°45.5'	15 km ENE of Hookena	----------
10	20	49	51.8	2.4	8	19°22.8'	155°15.1'	1 km NE of Ahua seismometer	----------
10	21	00	15.5	2.6	8	19°22.6'	155°14.5'	3 km ENE of Ahua seismometer.	----------
12	03	50	01.7	2.2	8	19°20.1'	155°09.0'	4 km SE of Makaopuhi seismometer.	----------
12	07	58	32.0	2.4	<3	19°28.7'	155°46.8'	15 km ESE of Kealakekua	----------
12	11	49	56.6	2.0	8	19°20.4'	155°08.3'	5 km SE of Makaopuhi seismometer.	----------
13	07	28	15.7	2.4	----	--------	--------	KM 30	----------
13	07	32	50.3	2.4	----	--------	--------	KM 30	----------
14	11	17	57.0	3.7	30	19°26.2'	155°16.7'	2 km NE of Uwekahuna seismometer.	Felt in Kilauea summit area, Kulani, and north Kona.
14	11	43	57.8	2.4	25	19°26.1'	155°17.3'	1 km NE of Uwekahuna seismometer.	----------
14	11	45	37.0	2.3	25	19°26.1'	155°17.1'	1 km NE of Uwekahuna seismometer.	----------
14	12	46	38.4	2.4	25	19°25.9'	155°16.4'	2 km NE of Uwekahuna seismometer.	----------
16	06	31	35.6	2.2	3	19°20.5'	155°49.3'	10 km SE of Hookena	----------
17	04	14	35.2	2.4	< 3	19°34.2'	155°53.3'	7 km NNE of Kealakekua	----------
17	04	36	19.0	2.4	13	19°21.7'	155°06.2'	9 km E of Makaopuhi seismometer.	----------
17	14	48	42.9	2.0	5	19°18.6'	155°14.4'	8 km SSE of Ahua seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
June 17	22	42	42.9	2.7	5	19°22.0'	155°14.8'	3 km SE of Ahua seismometer	----------
20	21	30	16.4	2.6	----	-------	---------	KM 30----------	----------
21	17	54	33.9	2.6	3	19°50.7'	155°22.1'	8 km SW of Keanakolu-------	----------
23	03	35	11.6	3.2	13	20°48'	155°58'	30 km ENE of Haleakala seismometer.	----------
24	04	39	25.3	2.1	-----	--------	---------	KM 30----------	----------
24	08	36	33.8	2.3	-----	--------	---------	KM 30----------	----------
24	13	20	42.8	2.2	-----	--------	---------	KM 30----------	----------
26	11	42	05.3	2.2	40	19°15.8'	155°08.8'	12 km SSE of Makaopuhi seismometer.	----------
28	00	13	04.3	2.8	40	19°13.1'	155°06.8'	19 km SSE of Makaopuhi seismometer.	----------
28	03	56	30.3	2.3	3	19°53.2'	155°44.8'	16 km SSE of Kamuela	----------
28	22	50	50.1	3.4	13	21°20'	157°05'	19 km NW of Kalaupapa, Molokai.	----------
29	05	14	47.7	2.5	3	19°24.3'	155°52.5'	5 km NE of Hookena	----------
29	18	43	26.5	2.1	8	19°22.0'	155°14.7'	3 km SE of Ahua seismometer.	----------
30	04	59	59.6	2.1	10	19°22.0'	155°15.0'	3 km SE of Ahua seismometer.	----------
30	11	13	22.7	3.1	8	19°51.2'	155°42.1'	20 km S of Kamuela	----------

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation were presented in summary 29. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenters, origin times, focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey]

April 2, 1963

M	Z	iP	16:25:43.5 d
A	Z	iP	44.5 d
U	Z	iP	43.8 d
Ha	Z	iP	31.1 c
Ka	Z	iP	35.8 d
Hi	Z	iP	42.7 d
Na	Z	iP	46.7 c

C&GS card 25-63:
16:18:55.6
53.2° N., 171.7° W.
Andreanof Islands, Aleutian Islands
h about 142 km
Magnitude 6.25-6.5 (Pas)
5.5 (Brk)
5.7 (CGS).

April 3

U	PEZ	eR	15:23:49
Pa	Z	Tmax	16:32:32

C&GS card 35-63:
14:47:55.5
55.4° S., 128.2° W.
South Pacific Ocean
h about 33 km
Magnitude 5.8 (CGS).

April 6

M	Z	iP	07:10:24.9 d
A	Z	iP	24.3 d
D	Z	eP	23.2 d
U	Z	iP	24.7 d
Pa	Z	iP	25.3 c
Hi	Z	iP	26.7 c
Ka	Z	iP	27.2 c
Ha	Z	iP	29.5 d

April 6--Continued

C&GS card 30-63:
07:03:06.5
17.5° S., 178.9° W.
Fiji Islands region
h about 526 km
Magnitude 5.1 (CGS).

April 6

M	Z	iP	11:27:28.7 d
A	Z	iP	29.0 d
D	Z	iP	29.3 d
U	Z	eP	28.5 c

C&GS card 27-63:
11:19:23.3
63.4° N., 149.5° W.
Central Alaska
h about 39 km
Magnitude 5.5 (CGS).

April 9

M	Z	iP	02:09:43.3 d
A	Z	eP	42.8 d
U	Z	iP	43.0 d
Na	Z	iP	39.0 c
Pa	Z	eP	43.3 c
Hi	Z	iP	44.1 c
Ha	Z	iP	47.8 c

C&GS card 30-63:
02:02:25.1
17.7° S., 178.7° W.
Fiji Islands region
h about 538 km
Magnitude 4.9 (CGS).

April 10, 1963

M	Z	iP	08:02:57.6 c
A	Z	iP	57.4 d
D	Z	eP	56.1 c
U	Z	iP	57.3 d
Na	Z	eP	55.4 c
Ha	Z	iP	08:03:00.6 c

C&GS card 31-63:
07:50:30.2
9.2° S., 125.0° E.
Timor
h about 33 km
Magnitude 5.2 (CGS).

April 13

M	Z	eP	02:33:04.3 d
A	Z	iP	03.7 d
A	Z	ipP	33.9 c
D	Z	eP	03.9 d
U	Z	eP	03.8 d
U	Z	epP	33.9 c
Na	Z	eP	04.6 d
Pa	Z	eP	02.1 d
Hi	Z	iP	03.2 d
Ka	Z	eP	05.9 d
Ha	Z	iP	10.8 c
U	PEZ	iP	04 d
U	PEZ	ipP	36 c
U	PEZ	iPS	02:44:26
U	PEN	iS	02:43:08
		iSS	02:48:40
		iG	02:54:54

C&GS card 31-63:
02:20:57.5
6.2° S., 76.5° W.
Central Peru
h about 125 km
Magnitude 6.75-7 (Pas),
6.3 (CGS).

April 13

M	Z	iP	14:42:43.0 d
A	Z	iP	43.2 d
D	Z	eP	42.1 d
U	Z	eP	42.9 d
Na	Z	iP	40.8 d
Pa	Z	eP	45.0 d

April 13--Continued

Hi	Z	iP	45.0 d

C&GS card 30-63:
14:31:21.0
3.4° S., 135.4° E.
Near north coast of New Guinea
h about 31 km
Magnitude 5.6 (CGS).

April 16

M	Z	eP	01:41:19.5 d
A	Z	iP	18.7 d
D	Z	iP	18.0 d
U	Z	iP	19.4 c
Pa	Z	eP	20.6 d
Ha	Z	eP	23.4 d
U	PEZ	iP	19 d
U	PEZ	iSS	01:56:15
U	PEZ	iR	02:04:51
U	PEE	iS	01:51:17
U	PEE	iPPS	01:52:00
U	PEN	iSSS	01:59:24
		iG	02:01:21

C&GS card 31-63:
01:29:19.4
0.8° S., 128.0° E.
Halmahera region
h about 33 km
Magnitude 7 (Pas), 6.1 (CGS),
7.5 (HVO).

April 16

M	Z	iP	01:48:55.2 c
A	Z	iP	54.6 c
D	Z	iP	53.5 c
Pa	Z	eP	56.1 d
Ha	Z	eP	59.1 c
U	PEZ	iS	01:59:01
U	PEZ	iR	02:12:29
U	PEN	iSS	02:04:17

C&GS card 31-63:
01:36:59.4
1.2° S., 128.4° E.
Halmahera region
h about 33 km
Magnitude 6.3 (CGS), 7.5 (HVO).

April 16, 1963

A	Z	iP	02:07:13.9 c
D	Z	eP	12.6 c
U	Z	iP	14.3 c
Ha	Z	eP	18.0 c
U	PEE	iSS	02:22:01
U	PEN	iSSS	02:25:28
U	PEN	iG	02:27:11
U	PEZ	iR	02:31:04

C&GS card 31-63:
01:55:10.9
0.7° S., 128.0° E.
Halmahera region
h about 32 km
Magnitude 6.0 (CGS),
7.25 (HVO).

April 16

M	Z	iP	02:17:51.0 c
A	Z	eP	50.3 c
D	Z	eP	49.3 c
U	Z	eP	51.1 c

C&GS card 31-63:
02:05:42
1.3° S., 126.9° E.
Halmahera region
Magnitude 5.8 (CGS).

April 17

Pa	Z	iP	02:19:58.0 d
A	Z	iP	57.0 d
N	Z	iP	57.5 d
U	PEZ	iS	02:26:43
U	PEZ	iR	02:32:53
U	PEN	iG	02:30:27

C&GS card 31-63:
02:11:26.1
19.6° S., 178.6° E.
Fiji Islands
h about 33 km
Magnitude 6.5-6.75 (Pas),
6.0 (Brk),
5.9 (CGS),
5.9 (HVO).

April 19

U	PEN	iS	07:59:22
U	PEN	iG	08:14:16
U	PEZ	iPS	08:00:53
U	PEZ	iSS	08:05:44
U	PEZ	iL	08:13:16
U	PEZ	iR	08:18:06

C&GS card 32-63:
07:35:23.7
35.8° N., 96.9° E.
Tsinghai Province, China
h about 33 km
Magnitude 7 (Pas), 6.75-7 (Brk),
6.1 (CGS), 7 (HVO).

April 24

M	Z	iP	21:50:23.7 c
A	Z	eP	23.1 c
N	Z	iP	23.2 c
MP	Z	iP	23.0 c
Ha	Z	iP	28.3 c

C&GS card 33-63:
21:42:49.0
20.8° S., 179.1° W.
Fiji Islands region
h about 603 km
Magnitude 5.1 (CGS).

April 25

M	Z	iP	08:24:14.1 d
A	Z	iP	14.3 d
D	Z	iP	13.6 d
MP	Z	iP	14.5 d
U	Z	iP	13.9 d
Ha	Z	iP	09.3 d

C&GS card 33-63:
08:12:57.2
4.7° N., 122.4° E.
Celebes Sea
h about 610 km
Magnitude 5.5 (CGS).

Table 5.--Distant earthquakes--Continued

April 25, 1963

M	Z	eP	16:47:52.4

C&GS card 34-63:
16:35:56.2
1.3° S., 128.7° E.
Halmahera region
h about 33 km.

April 29

Hi	Z	eP	21:51:43.0	d
U	PEN	iS	21:57:25	
U	PEZ	iR	22:01:25	
Ha	Z	Tmax	22:29:33	

C&GS card 34-63:
21:44:17.1
51.4° N., 178.6° E.
Andreanof Islands,
Aleutian Islands
h about 60 km.

April 30

M	Z	iP	01:10:17.4	c
Hi	Z	eP	23.6	c
U	PEE	iS	01:20:41	
U	PEN	iG	01:29:59	
U	PEZ	iR	01:33:13	

C&GS card 36-63:
00:58:18.3
0.7° S., 129.0° E.
Halmahera region
h about 33 km
Magnitude 6.75 (Pas),
6.5 (Pal), 5.6 (CGS),
7.0 (HVO).

May 1

M	Z	iP	10:12:15.8	d
A	Z	iP	15.7	d
D	Z	eP	14.6	d
MP	Z	eP	15.8	d
U	Z	eP	15.9	d
Na	Z	iP	13.1	c
Pa	Z	eP	17.2	c
Hi	Z	iP	18.0	d

May 1--Continued

Ka	Z	iP	19.0	d
Ha	Z	iP	20.3	c
U	PEZ	iP	16	c
U	PEZ	i ?	10:13:05	d
U	PEZ	isS	10:20:10	
U	PEE	iS	10:19:25	
U	PEN	i ?	10:20:29	
U	PEN	iG	10:24:06	

C&GS card 36-63:
10:03:20.0
19.0° S., 169.0° E.
New Hebrides Islands
h about 140 km
Felt.
Magnitude 7 (Pas), 6.75-7 (Brk),
6.2 (CGS).

May 4

M	Z	eP	06:02:58.7	d
A	Z	iP	06:03:01.0	d
U	Z	iP	59.2	d
Hi	Z	eP	57.9	c

C&GS card 35-63:
05:56:04.1
51.8° N., 175.4° W.
Andreanof Islands, Aleutian
Islands
h about 69 km
Magnitude 5.5 (CGS).

May 5

Na	Z	Tmax	17:14:18

C&GS card 37-63:
15:17:01.9
24.7° S., 69.5° W.
Northern Chile
Felt: Antafagasta
h about 50 km
Magnitude 5.1 (CGS).

Table 5.--Distant earthquakes--Continued

May 8, 1963

M	Z	iP	08:57:48.6	c
M	Z	iPP	08:59:16.2	c
A	Z	iP	08:57:49.4	c
A	Z	ePP	08:59:17.5	c
D	Z	iP	08:57:50.4	c
D	Z	iPP	08:59:17.2	c
MP	Z	iP	08:57:49.7	c
MP	Z	ePP	08:59:17.8	d
U	Z	iP	08:57:49.1	c
U	Z	iPP	08:59:16.7	c
Hi	Z	iP	08:57:47.5	c
Hi	Z	iPP	08:59:13.8	c
Pa	Z	iP	08:57:49.0	c
Pa	Z	ePP	08:59:16.0	c
Ha	Z	iPP	08:58:56.0	d
M	Z	Tmax	09:35:41	
A	Z	Tmax	33	
D	Z	Tmax	28	
MP	Z	Tmax	26	
U	Z	Tmax	24	
Pa	Z	Tmax	28	
Ka	Z	Tmax	09:34:36	
Ha	Z	Tmax	09:33:46	

C&GS card 35-63:
08:50:56.0
54.9° N., 163.9° W.
Unimak Island,
Aleutian Islands region
h about 89 km
Magnitude 5.6 (CGS).

May 8

M	Z	eP	10:31:54.6	c
U	PEE	iS	10:40:00	
U	PEE	iG	10:46:34	
U	PEZ	eR	10:49:20	

C&GS card 35-63:
10:22:11.2
36.6° N., 141.0° E.
Honshu, Japan
h about 53 km
Magnitude 6.1 (CGS).

May 8

M	Z	iP	15:35:55.4	d
A	Z	iP	55.5	d
N	Z	iP	55.6	d

C&GS card 40-63:
15:24:00.3
5.3° N., 125.7° E.
Off coast of Mindanao,
Philippine Islands
h about 70 km
Magnitude 5.6 (CGS).

May 12

A	Z	iP	20:15:53.5	d
D	Z	iP	53.7	d
MP	Z	iP	53.7	d
U	Z	iP	53.4	d
Ha	Z	iP	47.6	d
Hi	Z	iP	51.2	d
Na	Z	iP	57.1	c
U	PEZ	iP	54	d
U	PEZ	eS	20:21:43	
U	PEZ	iR	20:25:52	
Ha	Z	Tmax	20:53:44	

C&GS card 37-63:
20:08:43.0
57.4° N., 153.9° W.
Kodiak Island, Alaska
h about 80 km
Magnitude 5.9 (CGS),
5.8 (HVO).

May 14

M	Z	iP	15:20:13.2	c
A	Z	eP	13.0	c
N	Z	eP	13.1	c
MP	Z	iP	13.5	c

C&GS card 42-63:
15:08:46.1
5.6° S., 127.8° E.
Banda Sea
h about 405 km
Magnitude 5.3 (CGS).

May 17, 1963

M	Z	iP	07:42:18.2 c
A	Z	iP	18.0 c
D	Z	eP	17.0 c
MP	Z	eP	17.6 c
U	Z	iP	18.1 c
Ka	Z	eP	20.8 c

C&GS card 40-63:
07:33:17.5
31.0° S., 179.8° W.
Kermadec Islands region
h about 358 km
Magnitude 4.7 (CGS).

May 17

M	Z	iP	22:48:46.3 c
A	Z	eP	45.7 c
D	Z	eP	44.8 c
U	Z	iP	45.9 c
Hi	Z	iP	47.3 c
Ka	Z	iP	48.8 c
Ha	Z	iP	51.8 c

C&GS card 41-63:
22:40:06.7
24.4° S., 177.2° W.
Tonga Islands region
h about 70 km
Magnitude 5.9 (CGS).

May 19

U	PEZ	ePP	01:20:37
U	PEZ	iSS	01:35:01
U	PEZ	iR	01:47:57
U	PEE	iPS	01:29:31
U	PEE	iPPS	01:30:07
U	PEN	iS	01:27:26
U	PEN	eL	01:42:29
U	PEN	eG	01:43:30
M	Z	Tmax	03:04:35
A	Z	Tmax	31
D	Z	Tmax	33
MP	Z	Tmax	26
U	Z	Tmax	34
Pa	Z	Tmax	15
Na	Z	Tmax	23
Hi	Z	Tmax	27

May 19--Continued

C&GS card 39-63:
01:03:04.1
46.5° S., 75.1° W.
Coast of southern Chile
h about 33 km
Magnitude 6.75 (Pas), 6.5 (CGS), 7 (HVO).

May 20

M	Z	iP	11:47:27.8 d
A	Z	iP	27.4 d
MP	Z	iP	27.3 d
U	Z	iP	27.5 d
Na	Z	eP	24.7 d
Pa	Z	iP	28.7 d
Hi	Z	eP	29.4 d
Ka	Z	iP	30.2 d
Ha	Z	iP	33.8 d
U	PEZ	iP	27.6 c
U	PEZ	iS	11:55:09
U	PEZ	iSS	11:58:48
U	PEZ	iR	12:02:41
U	PEE	iG	12:00:21

C&GS card 40-63:
11:38:00.9
30.7° S., 178.3° W.
Kermadec Islands region
h about 34 km
Magnitude 6.75-7 (Pas), 6.5 (Brk), 6.2 (CGS), 6.5 (HVO).

May 21

U	PEZ	eR	01:34:22

C&GS card 45-63:
00:58:07.4
56.0° S., 123.9° W.
South Pacific Ocean
h about 33 km.

May 21

U	PEZ	iS	17:46:48
U	PEZ	iR	17:53:22
U	PEN	iL	17:50:58

Table 5.--Distant earthquakes--Continued

May 21--Continued

C&GS card 45-63:
17:30:15.4
11.1° S., 163.3° E.
Solomon Islands region
h about 33 km
Magnitude 5.75-6 (Pal),
5.4 (CGS).

May 22

M	Z	eP	14:05:31.6 c
A	Z	eP	32.8 c
MP	Z	eP	32.6 c
U	Z	eP	32.1 c
Ka	Z	eP	28.4 c
Hi	Z	iP	31.3 c
Na	Z	iP	35.3 c
U	PEE	iS	14:12:40
U	PEZ	iSS	14:16:04
U	PEZ	iR	14:18:56
Ha	Z	Tmax	14:56:51

C&GS card 39-63:
13:56:43.0
48.6° N., 154.7° E.
Kurile Islands region
h about 22 km
Magnitude 6.5 (Pas),
6 (Brk),
6.3 (CGS), 6.3 (HVO).

May 22

M	Z	eP	15:54:33.6 c
A	Z	eP	34.1 c
N	Z	iP	33.9 c
MP	Z	eP	34.3 c

C&GS card 42-63:
15:42:48.6
4.3° N., 127.9° E.
Molucca Passage
h about 58 km
Magnitude 5.0 (CGS).

May 22

M	Z	iP	16:32:15.1 c

May 22--Continued

C&GS card 39-63:
16:25:36.8
52.2° N., 165.3° W.
Fox Islands, Aleutian Islands
h about 33 km
Magnitude 4.2 (CGS).

May 22

M	Z	iP	22:06:09.3 c

C&GS card 41-63:
21:53:02.5
8.2° S., 115.7° E.
Java Sea
h about 33 km
Magnitude 5.6 (CGS).

May 23

M	Z	eP	01:03:40.7 d

C&GS card 42-63:
00:51:40.3
1.6° N., 126.4° E.
h about 33 km
Molucca Passage
Magnitude 4.8 (CGS).

May 23

M	Z	iP	03:40:30.6 c
MP	Z	eP	29.9 c
U	Z	eP	30.1 c
Na	Z	iP	27.9 d
Hi	Z	iP	31.6 d
Ka	Z	eP	32.1 d
Ha	Z	iP	35.3 d

C&GS card 40-63:
03:33:19.1
15.0° S., 176.7° W.
Fiji Islands region
h about 279 km
Magnitude 5.4 (CGS).

May 23

U	PEZ	iS	03:52:06
U	PEZ	iR	03:58:32

Table 5.--Distant earthquakes--Continued

May 23, 1963--Continued

C&GS card 48-63:
03:35:34.7
10.9° S., 163.3° E.
Solomon Islands region
h about 33 km
Magnitude 5.5 (CGS).

May 23

M	Z	iP	15:23:53.7 c
A	Z	eP	54.0 c
MP	Z	iP	54.7 c
U	Z	eP	53.9 c

C&GS card 43-63:
15:12:05.7
6.0° N., 126.1° E.
Near east coast of Mindanao,
Philippine Islands.
h about 88 km
Magnitude 5.5 (CGS).

May 26

M	Z	iP	23:15:38.4 c
A	Z	eP	40.1 c
N	Z	iP	39.0 c
Pa	Z	eP	40.0 c
U	PEZ	iR	23:29:15

C&GS card 41-63:
23:06:55.0
55.2° N., 159.9° E.
Near east coast of Kamchatka
h about 47 km
Magnitude 4.25 (Pal),
5.3 (CGS).

May 27

M	Z	iP	04:07:30.0 d
D	Z	iP	30.7 c
Pa	Z	eP	32.1 d
U	PEE	iG	04:19:17
U	PEZ	iR	04:21:07

C&GS card 42-63:
03:58:47.9
55.3° N., 160.1° E.

May 27--Continued

C&GS card--Continued
Near east coast of Kamchatka
h about 54 km
Magnitude 5.25 (Pal), 5.7 (CGS).

May 29

M	Z	Tmax	19:39:44
A	Z	Tmax	50
MP	Z	Tmax	25
Pa	Z	Tmax	20
Na	Z	Tmax	34

C&GS card 46-63:
18:27:19.1
22.6° S., 114.4° W.
Easter Island region
h about 33 km
Magnitude 4.7 (CGS).

May 29

M	Z	Tmax	19:42:57
A	Z	Tmax	52
D	Z	Tmax	51
MP	Z	Tmax	44

C&GS card 49-63:
18:30:25
24.4° S., 114.7° W.
Easter Island region
h about 33 km
Magnitude 4.5 (CGS).

May 30

U	PEZ	iR	07:37:56

C&GS card 46-63:
06:56:09.3
54.2° S., 143.7° E.
South of Australia
h about 33 km
Magnitude 5.25-5.5 (Pal).

June 2, 1963

U	PEZ	eR	22:05:29

C&GS card 46-63:
21:04:24.2
58.5° S., 15.6° W.
Sandwich Islands region
h about 50 km
Magnitude 6-6.25 (Pal),
5.9 (CGS).

June 3

M	Z	eP	07:45:56.6 c
U	PEZ	eR	08:03:01

C&GS card 44-63:
07:35:54.3
34.2° N., 138.7° E.
Honshu, Japan
h about 43 km
Magnitude 5.3 (CGS).

June 4

M	Z	iP	21:16:45.5 d
A	Z	eP	45.6 d
MP	Z	iP	45.8 d
U	Z	eP	45.7 c
Hi	Z	eP	46.3 c
U	PEN	eL	21:37:02
U	PEZ	eR	21:41:10

C&GS card 46-63:
21:04:42.3
1.2° S., 127.3° E.
Halmahera region
h about 31 km
Magnitude 5.2 (CGS).

June 6

M	Z	iP	05:30:56.9 d
A	Z	eP	56.0 d
D	Z	eP	56.1 d

C&GS card 46-63:
05:18:55.1
19.9° N., 120.2° E.
Off north coast of Luzon,
Philippine Islands.
h about 33 km

June 6--Continued

C&GS card--Continued
Magnitude 5.8 (CGS).

June 7

U	PEZ	iS	19:47:15
U	PEZ	eR	19:53:53

C&GS card 49-63:
19:30:35.6
8.5° N., 103.1° W.
Clipperton Island region
h about 33 km
Magnitude 5.5-5.75 (Brk),
5.25-5.5 (Pal),
4.9 (CGS).

June 7

U	PEE	iL	22:53:31

C&GS card 51-63:
22:37:30.0
15.3° S., 173.2° W.
Samoa Islands region
h about 33 km
Magnitude 5.0 (CGS).

June 10

M	Z	iP	04:29:34.4 d
A	Z	iP	32.4 d
D	Z	eP	32.3 c
U	Z	eP	33.2 d
U	PEE	eG	04:53:58
U	PEZ	iR	04:58:14

C&GS card 47-63:
04:16:37.7
55.4° S., 146.4° E.
800 km west of Macquarie Islands
h about 33 km
Magnitude 6.25 (Pas), 5.75-6 (Pal),
6.1 (CGS), 6.7 (HVO).

June 10, 1963

M	Z	iP	06:52:06.5 d
A	Z	iP	04.9 d
U	Z	eP	05.3 d
U	PEN	eSS	07:08:54
U	PEN	eG	07:16:32
U	PEZ	iR	07:20:21

C&GS card 48-63:
06:39:04.0
55.3° S., 146.1° E.
800 km west of Macquarie Islands
h about 18 km
Magnitude 6.25-6.5 (Pas),
6.25-6.5 (Pal),
6.0 (CGS),
6.6 (HVO).

June 16

M	Z	Tmax	10:05:34
A	Z	Tmax	10:06:02
D	Z	Tmax	10:05:58
MP	Z	Tmax	10:05:48
U	Z	Tmax	10:05:55
Pa	Z	Tmax	10:05:51
Hi	Z	Tmax	10:05:23
Ha	Z	Tmax	10:04:58

C&GS card 49-63:
09:19:54.8
50.8° N., 129.5° W.
Vancouver Island region
h about 33 km
Magnitude 4.4 (CGS).

June 17

M	Z	iP	18:40:05.7 c
D	Z	iP	06.8 c
MP	Z	eP	08.2 c
U	Z	eP	06.2 c
Hi	Z	eP	04.5 c
Ha	Z	iP	18:39:58.7 c
U	PEE	eL	18:49:57
U	PEZ	eR	18:51:53

C&GS card 49-63:
18:32:14.5
60.4° N., 140.8° W.

June 17--Continued

C&GS card--Continued

Southwestern Yukon
h about 33 km
Magnitude 5.25-5.5 (Pal)
5.1 (CGS).

June 19

M	Z	iP	09:20:53.9 d
A	Z	iP	55.3 d
U	Z	eP	54.2 d
U	PEZ	eR	09:44:06

C&GS card 49-63:
09:09:04.0
4.7° N., 126.5° E.
Talaud Islands region
h about 83 km
Magnitude 5.25-5.5 (Pal),
6.2 (CGS),
6.0 (HVO).

June 19

Ha	Z	iP	18:31:19.4 d
Na	Z	iP	15.4 c
Hi	Z	eP	17.4 d

C&GS card 49-63:
18:22:09.6
3.5° S., 153.4° E.
New Ireland region
Felt: Rabaul
Magnitude 5.1 (CGS).
h about 279 km.

June 24, 1963

M	Z	iP	04:34:12.0	d
A	Z	iP	13.5	d
D	Z	iP	13.8	d
MP	Z	eP	13.6	d
U	Z	iP	13.1	d
Pa	Z	eP	10.0	c
Na	Z	iP	16.8	c
Hi	Z	iP	11.1	c
Ha	Z	iP	01.6	d
U	PEZ	iP	13	d
U	PEZ	iPP	04:35:41	d
U	PEZ	iPPP	04:36:25	d
U	PEZ	iR	04:44:54	
U	PEE	iS	04:40:20	
U	PEE	iL	04:43:04	
Ha	Z	Tmax	05:12:41	

C&GS card 46-63:
04:26:37.9
59.5° N., 151.7° W.
Cook Inlet
h about 52 km
Magnitude 6.75 (Pas),
5.7 (CGS),
6.5 (HVO).

June 24

M	Z	Tmax	11:04:19
A	Z	Tmax	10
D	Z	Tmax	30
MP	Z	Tmax	17
U	Z	Tmax	12
Pa	Z	Tmax	12
Hi	Z	Tmax	11:03:53
Ha	Z	Tmax	11:03:23

C&GS card 52-63:
10:17:02.5
52.8° N., 131.9° W.
Queen Charlotte Islands region
h about 38 km
Magnitude 3.9 (CGS).

June 24

M	Z	iP	15:08:51.9	d
A	Z	iP	51.7	d
N	Z	iP	52.1	c
MP	Z	eP	51.0	c
Na	Z	iP	47.8	d
Hi	Z	iP	53.9	c
Ha	Z	iP	56.7	c

C&GS card 53-63:
15:01:44.2
15.5° S., 177.5° W.
Fiji Islands region
h about 412 km
Magnitude 5.0 (CGS).

June 24

M	Z	iP	16:24:08.4	d
M	Z	iPP	16:25:21.0	d
A	Z	eP	16:24:08.7	d
U	Z	ePP	22.7	d
U	PEZ	iS	16:29:39	
U	PEZ	iR	16:33:13	
Ha	Z	Tmax	16:59:36	

C&GS card 49-63:
16:17:15.4
52.3° N., 171.2° W.
Fox Islands region
Aleutian Islands
h about 33 km
Magnitude 5.4 (CGS), 5.5 (HVO).

June 25

Ha	Z	Tmax	09:06:41

C&GS card 52-63:
08:26:21.9
44.3° N., 129.1° W.
off coast of Oregon
h about 31 km
Magnitude 4.5 (CGS).

June 25, 1963

Ha	Z	Tmax	10:19:36

C&GS card 50-63:
09:39:28.4
44.3° N., 129.1° W.
off coast of Oregon
h about 32 km
Magnitude 4.5 (CGS).

June 26

A	Z	eP	17:54:03.2	c
D	Z	eP	02.2	c
U	Z	iP	03.7	d
Pa	Z	eP	05.9	d
U	PEN	iS	18:03:27	
U	PEN	iG	18:12:45	
U	PEZ	iR	18:15:39	

C&GS card 50-63:
17:42:40.6
7.1° N., 82.3° W.
near south coast of Panama
h about 20 km
Magnitude 6.25-6.5 (Pas),
5.5-5.75 (Pal),
6.0 (CGS), 6.2 (HVO).

June 27

U	PEZ	eR	07:28:08	
Ha	Z	Tmax	07:59:00	

C&GS card 50-63:
07:08:01.7
60.5° N., 140.7° W.
Yukon territory
h about 29 km
Magnitude 4.6 (CGS).

June 28

U	Z	eP	22:04:22.6	c
Pa	Z	iP	22.6	c
Hi	Z	iP	22.7	c
Ha	Z	eP	21.3	c
U	PEZ	iP	23	d
U	PEZ	iPPP	22:06:44	
U	PEZ	iSSS	22:17:56	
U	PEE	iS	22:11:44	
U	PEE	isSS	22:16:16	

June 28--Continued

C&GS card 50-63:
21:55:38.8
46.5° N., 153.2° E.
Kurile Islands region
h about 33 km
Magnitude 6.75 (Pas),
6.1 (CGS),
7.0 (HVO).

June 29

M	Z	iP	12:53:54.5	d
U	Z	eP	54.6	c
Pa	Z	iP	56.7	d

C&GS card 54-63:
12:43:47.5
11.6° N., 142.7° E.
Mariana Islands region
h about 30 km
Magnitude 5.2 (CGS).

The following persons or agencies reported "felt" earthquakes during the second quarter, 1963. Their assistance is gratefully acknowledged.

North Hawaii

Mrs. Eklund
Mrs. Lindsey
Puuanahulu School
Miss Wallace

Kilauea summit region

Mrs. Hansen
Mrs. Mist
Mrs. Wentworth
Mrs. Cuskelly
KMC residents
Mr. Ryall
Mrs. Yong
Mrs. Hirano
Miss English

Kona coast

Mr. B. Berman
Mr. Ladd

Puna

Mr. Edwards

Central Hawaii

Kulani Honor Camp

Hilo region

Mrs. Shoemaker
Mr. S. Ho
Mr. Baldwin
Miss Patten
Mrs. Carter

Kau region

Mr. Mizuba
Kau Police station
Kahuku Ranch
Lt. C. Araujo
Mr. Godfrey
Kapapala Ranch residents
Mrs. Billings
Mrs. Walters
Mr. Meinecke
Mrs. Schattauer

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 31

July, August, and September, 1963

By

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Willie T. Kinoshita, J. G. Moore, and Howard A. Powers

Issued December 1964

Observatory Staff

Geology

J. G. Moore (Scientist-in-charge)
D. L. Peck, geologist, arrived 7-5-63
C. K. Wentworth

Geophysics:

W. T. Kinoshita, geophysicist, arrived 6-17-63
G. Kojima
R. Y. Koyanagi
H. L. Krivoy
A. T. Okamura
A. S. Ryall
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Geochemistry:

R. T. Okamura

Support:

E. T. Endo
J. G. Forbes
W. H. Francis
B. J. Loucks
A. Yamamoto

Visiting Japanese scientists

(Arrived 6-29-63 for 6 months' cooperative program)

T. Minakami (Group leader), D. Shimozuru, S. Aramaki, T. Miyazaki, C. Kurihara, and S. Hiraga

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U.S.-Japan cooperative study of Kilauea Volcano

For 6 months, beginning in the summer of 1963, a team of Japanese scientists lived and worked at Kilauea Volcano in close cooperation with the staff of the Volcano Observatory. This study was part of a program of scientific cooperation between the United States and Japan; the program originated in talks between President Kennedy and Prime Minister Ikeda in June 1961. The United States' participation is financed by the National Science Foundation and Japan's participation by the Japanese Ministry of Education.

The main group of Japanese scientists which arrived in Hawaii June 29, included Takeshi Minakami, Professor of Geophysics, University of Tokyo, leader; Daisuke Shimozuru, Assistant Professor of Geophysics, University of Kyushu; and Shigeo Aramaki, Assistant in Geology, University of Tokyo. Kosuke Kamo, Geophysicist, University of Kyoto, joined the team later. Several technicians accompanied the group.

The principal program of the Japanese scientists was the monitoring of seismic activity in the Kilauea summit area. To do this, a net of about 16 short-period seismometers (mainly vertical instruments) was placed in and near Kilauea caldera in the summit region of the volcano (fig. A). The instruments telerecorded at the Observatory. Six instruments recorded continuously on smoked paper drums and the others recorded a few hours per day (or longer during periods of exceptional activity) on photographic paper.

While the team was in Hawaii, seismic recordings were made of several noteworthy events: earthquakes and tremors associated with the eruptions of August and October; the collapses of July and August; several other large earthquakes and earthquake swarms; and explosions set off as part of the Geological Survey's program of refraction seismology.

The Observatory staff joined with the Japanese team in an offshore investigation of the south flank of Kilauea Volcano. The Kagoshima Maru, a 1,000-ton fisheries research vessel from Kagoshima University, which was on a training voyage in Hawaiian waters, was utilized in a 4-day echo-sounding program in August. The ship made about 400 km of depth-profiling traverses over a submarine part of Kilauea Volcano directly south of the summit region. Observatory members sailed on the ship and aided in the operation of the echo-sounder, and members of the Japanese team joined the Observatory staff in fixing the position of the ship from three transit stations on land.

The first data-gathering stage of the U.S.-Japan cooperative program was completed in early 1964 when the Japanese team left Hawaii. The second stage--analysis of the data--will continue for 2 years. Results will be compared and data integrated at future meetings, terminating in the fall of 1965.

J. G. M.

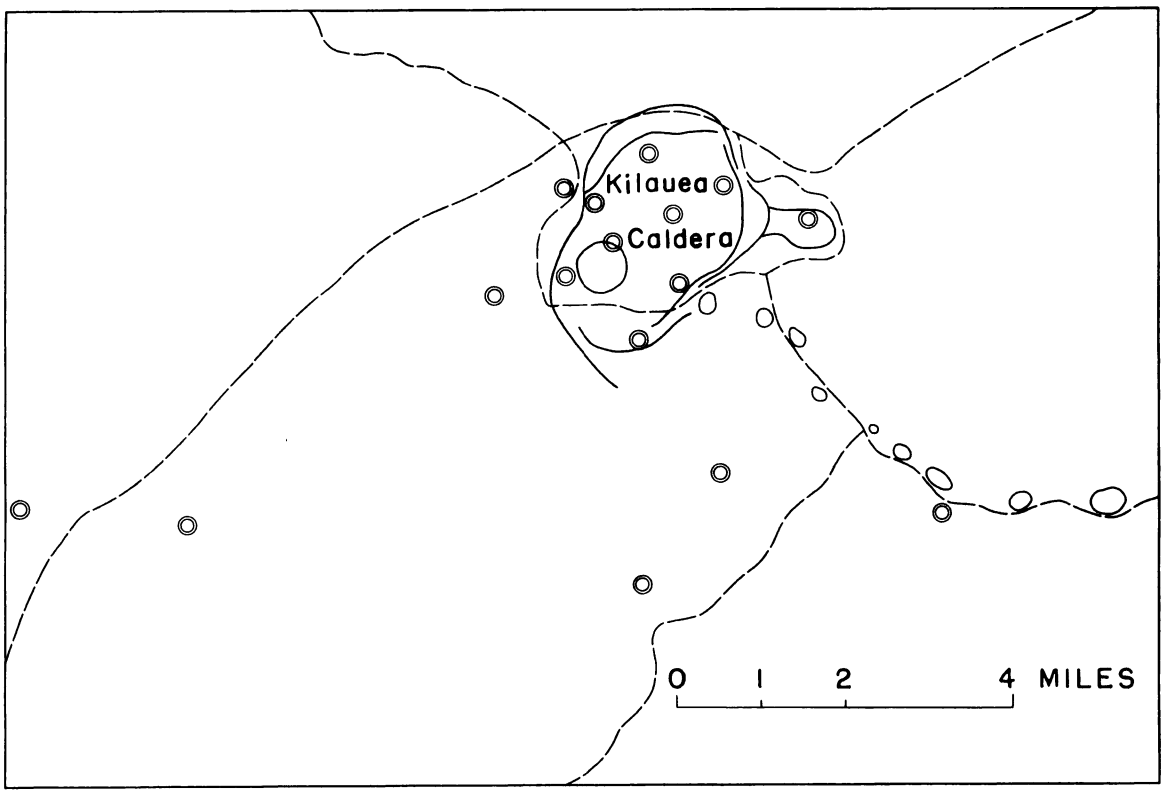

Figure A.--Map of the Kilauea caldera region at the summit of Kilauea Volcano. Locations of seismometers operated by visiting Japanese team are shown by double circles.

Chronological summary

The month preceding the opening of this quarter was exceedingly quiet in terms of any kind of seismic activity, and no clear trend of tilting was indicated by the short-base tiltmeter. However, during this quarter there were two episodes of summit collapse, two swarms of Kaoiki quakes, and two surface eruptions of lava (if we include the first week of October in the period of generalization).

A sharp spasm of seismic activity that began at 9:50 p.m. July 1, 1963, included a great many felt earthquakes, a countless swarm of small quakes, and probably intermittent tremor. Rapid collapse tilting began at Uwekahuna shortly before midnight, and at about the same time cracks opened and pavement buckled in the road at Devil's Throat (fig. B). This structural crisis was over by July 5 and no lava had appeared at the surface. However, the Kilauea summit showed about the same amount of tilt collapse as it had shown during the December 1962 eruption along the upper Puna rift. Also upward swelling in part of this rift, as determined by precise leveling of the bench marks along the Chain of Craters road, was as much as 3 feet in the center of the disturbed zone. From these observations it is inferred that strong structural disturbance along the Puna rift and its junction with the Koae fault system permitted the movement of perhaps 10 million cubic yards of magma from under the summit region into the Puna rift system.

During the rest of July, tilting at Uwekahuna was moderately strong westerly, a direction associated with tumescence, but there was no noteworthy seismic activity.

On August 3, shallow tremor began at 9:25 p.m. and continued, accompanied by a swarm of shallow earthquakes centered near Aloi that began 15 minutes later. The quakes were felt only feebly in the Kilauea summit area 6 miles northwest, but their intensity caused concern at Ainahou Ranch 2 miles south of Aloi. The seismic crisis lasted only about 2 hours, but several new cracks intersected the Chain of Craters road, and leveling revealed surface subsidence of a 2-mile section of the road, greatest (.4 ft) in the zone of cracking. A swarm of 30-km-deep quakes under the Kilauea summit followed the surface crisis by a few hours (fig. C).

There was comparative inactivity, both seismically and tiltwise, until August 21. On that day lava appeared, at about 6:00 p.m., from fissures across the floor and up the northeast wall of Alae Crater. The eruption lasted about 38 hours and formed a lake in the crater bottom containing almost a million cubic yards of tholeiitic basalt. Careful study of this lava lake was started immediately for the purpose of observing all aspects of the cooling history of the lava.

On August 26 at 8:49 a.m., an earthquake of magnitude 4.9 took place in the Kaoiki fault zone. The shock was felt strongly throughout the island of Hawaii. Aftershocks numbered about 50 per day for several weeks to follow. Two of the earliest of these were felt in the Kilauea summit area: one of magnitude 3.1 at 09:48, August 26, and one of magnitude 3.3 at 21:35, August 26.

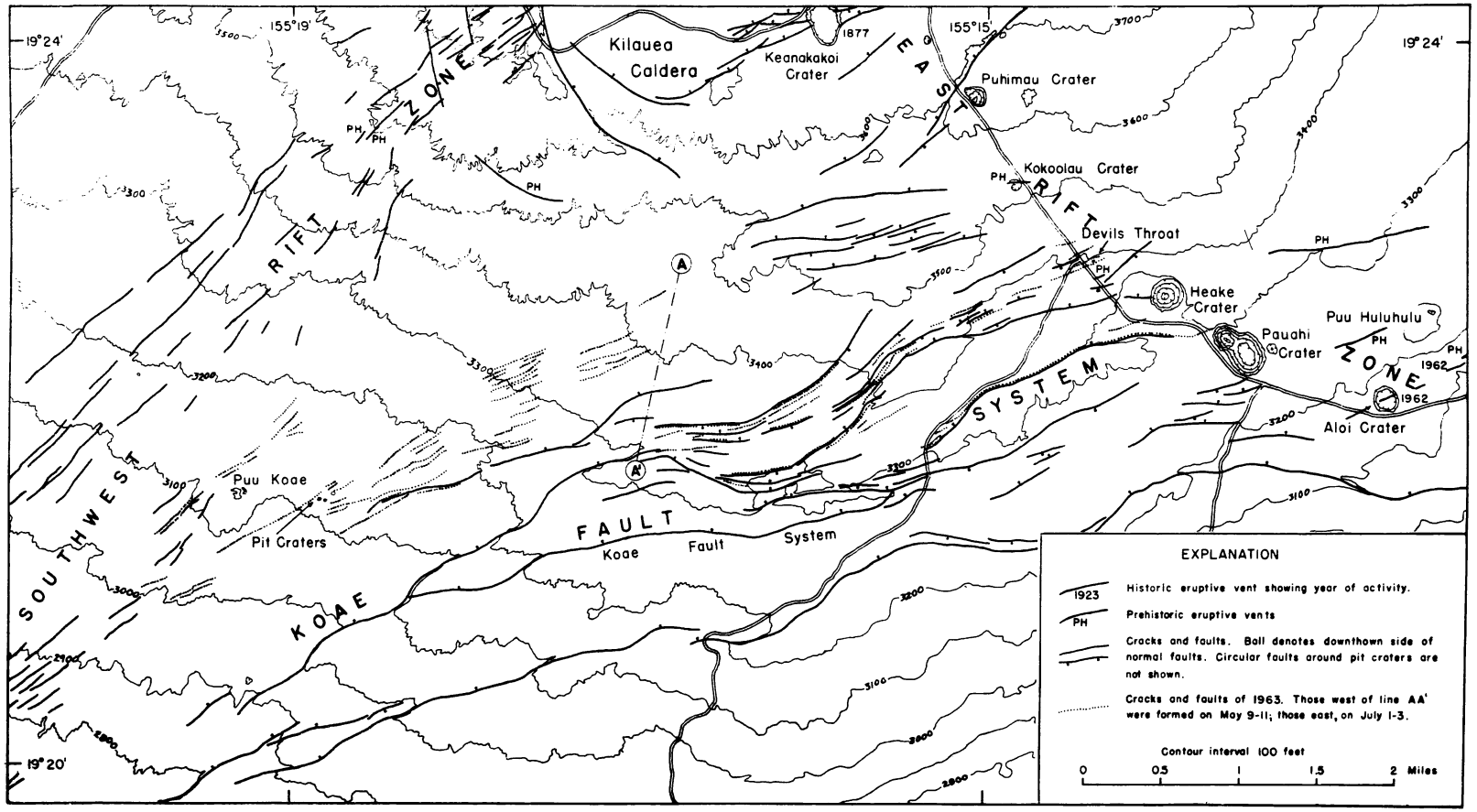

Figure B.--1963 faults and cracks along the Koae fault system on Kilauea's south flank mapped by James G. Moore (see also Summary 30).

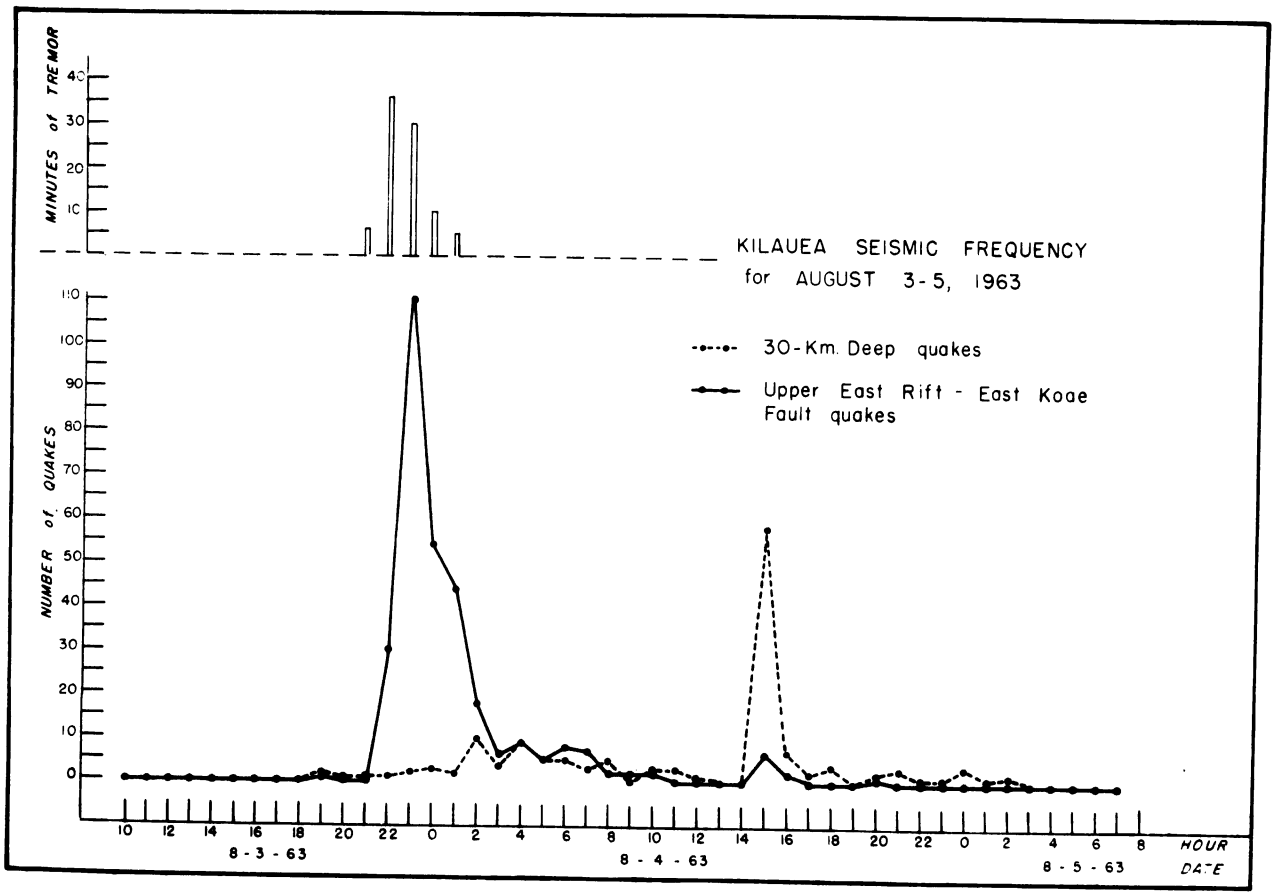

Figure C.--Hourly frequency plot of Kilauea seismic events during August 3-5, 1963.

A second swarm of Kaoiki quakes was initiated by an earthquake of magnitude 4.8 that took place at 6:24 a.m. on September 21. This quake also was felt throughout the island. Two of the many aftershocks were felt throughout the southern half of the island: one of magnitude 3.5 at 06:26, Sept. 22, and a second of the same magnitude one minute later at 06:27.

Large numbers of small quakes centered under Kilauea summit accompanied the numerous aftershocks from the Kaoiki fault zone until the end of the quarter, in fact until the beginning of a flank eruption at Napau Crater on October 4, which will be reported in the next quarterly summary.

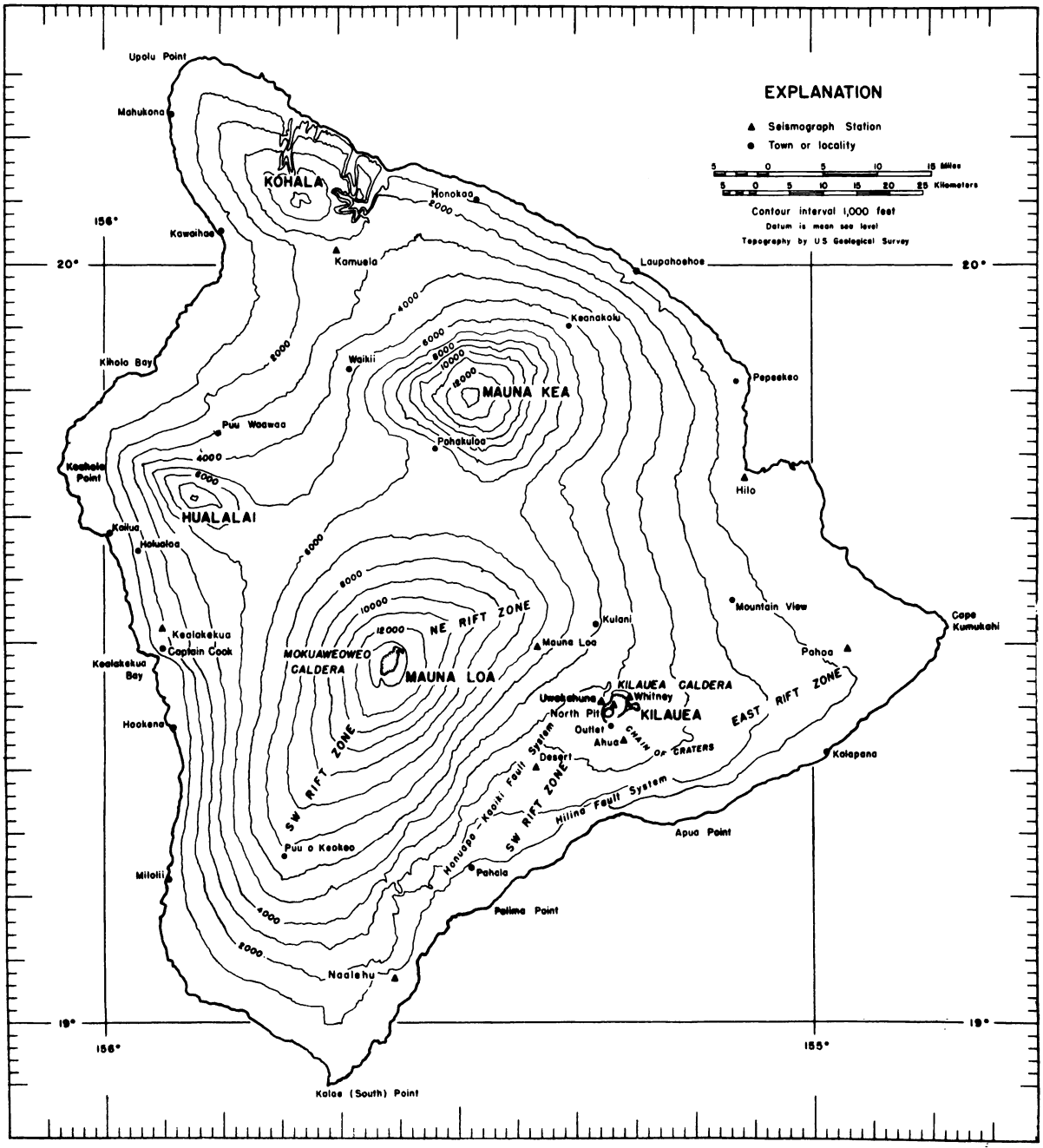

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, i.e., to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault, July, August, and September, 1963

Date	N-S	E-W	Date	N-S	E-W
June 30	505	497	Sept. 1	503	491
July 7	498	504	8	504	494
14	499	504	15	505	490
21	502	499	22	505	482
28	502	495	29	505	476
Aug. 4	502	492			
11	501	492			
18	503	488			
25	501	494			

Table 2a.--Tilt coordinates and changes at bases around Kilauea caldera (see fig. 2a)

Tilt base (location)	Date (1963)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1963)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	July 6	478.6	488.2	5.0	N. 42.5° W.	May 10
Tree Molds (19°26.3' N., 155°17.3' W.)	4	452.6	512.9	0.67	S. 24.3° E.	14
Sand Spit (19°24.1' N., 155°16.8' W.)	6	824.3	725.5	9.6	S. 70.2° E.	14
Kalihipaa (19°21.4' N., 155°15.3' W.)	3	349.2	387.5	127.8	S. 18.3° W.	11
Keamoku (19°25.1' N., 155°19.0' W.)	4	531.2	552.4	9.5	N. 44.9° W.	10
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	3	521.1	548.3	52.9	N. 22.1° W.	10
Kipuka Nene (19°19.4' N., 155°16.7' W.)	5	486.8	510.3	6.5	S. 16.0° E.	13
Hilina Pali (19°18.2' N., 155°18.6' W.	not occupied this epoch					
Kapapala Ranch (19°20.5' N., 155°23.8' W.	not occupied this epoch					

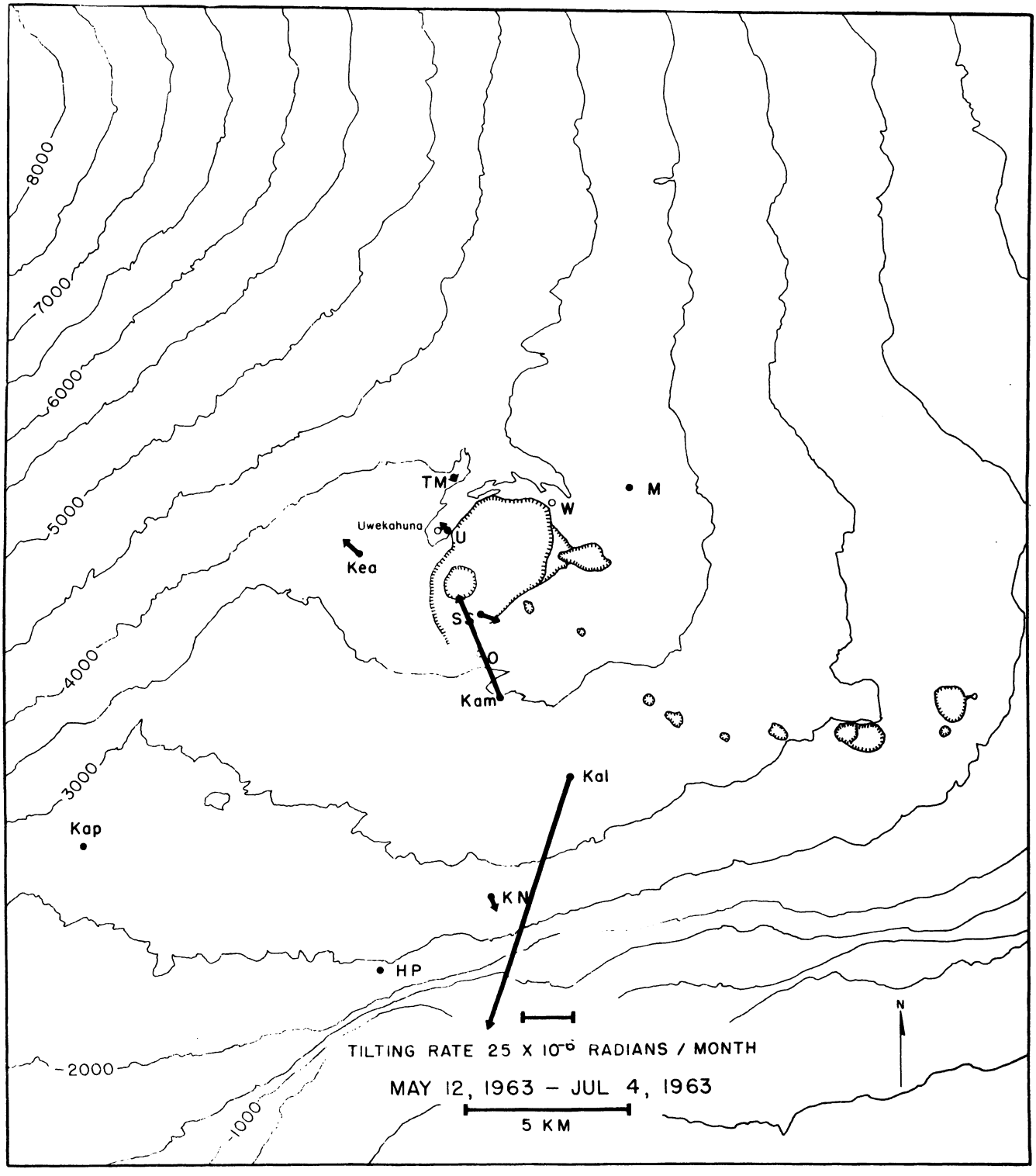

Figure 2a.--Tilting of the ground around Kilauea caldera, May 12 to July 4, 1963. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Table 2b.--Tilt coordinates and changes at bases around Kilauea caldera (see fig. 2b)

Tilt Base (location)	Date (1963)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1963)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Aug. 6	486.8	480.5	11.3	N. 43° W.	July 6
Tree Molds (19°26.3' N., 155°17.3' W.)	6	457.0	515.8	4.8	N. 33° W.	4
Sand Spit (19°24.1' N., 155°16.8' W.)	12	821.4	727.0	2.6	S. 26° E.	6
Kalihipaa (19°21.4' N., 155°15.3' W.)	5	336.1	377.8	14.8	S. 37° W.	3
Keamoku (19°25.1' N., 155°19.0' W.)	12	536.9	544.7	6.8	N. 54° W.	4
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	5	528.1	555.7	9.3	N. 47° E.	3
Kipuka Nene (19°19.4' N., 155°16.7' W.)	9	484.8	510.1	1.7	S. 06° W.	5
Hilina Pali (19°18.2' N., 155°18.6' W.)	8	497.5	500.7	1.4	S. 17° W.	May 13
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	8	496.9	503.5	0.3	S. 24° E.	11

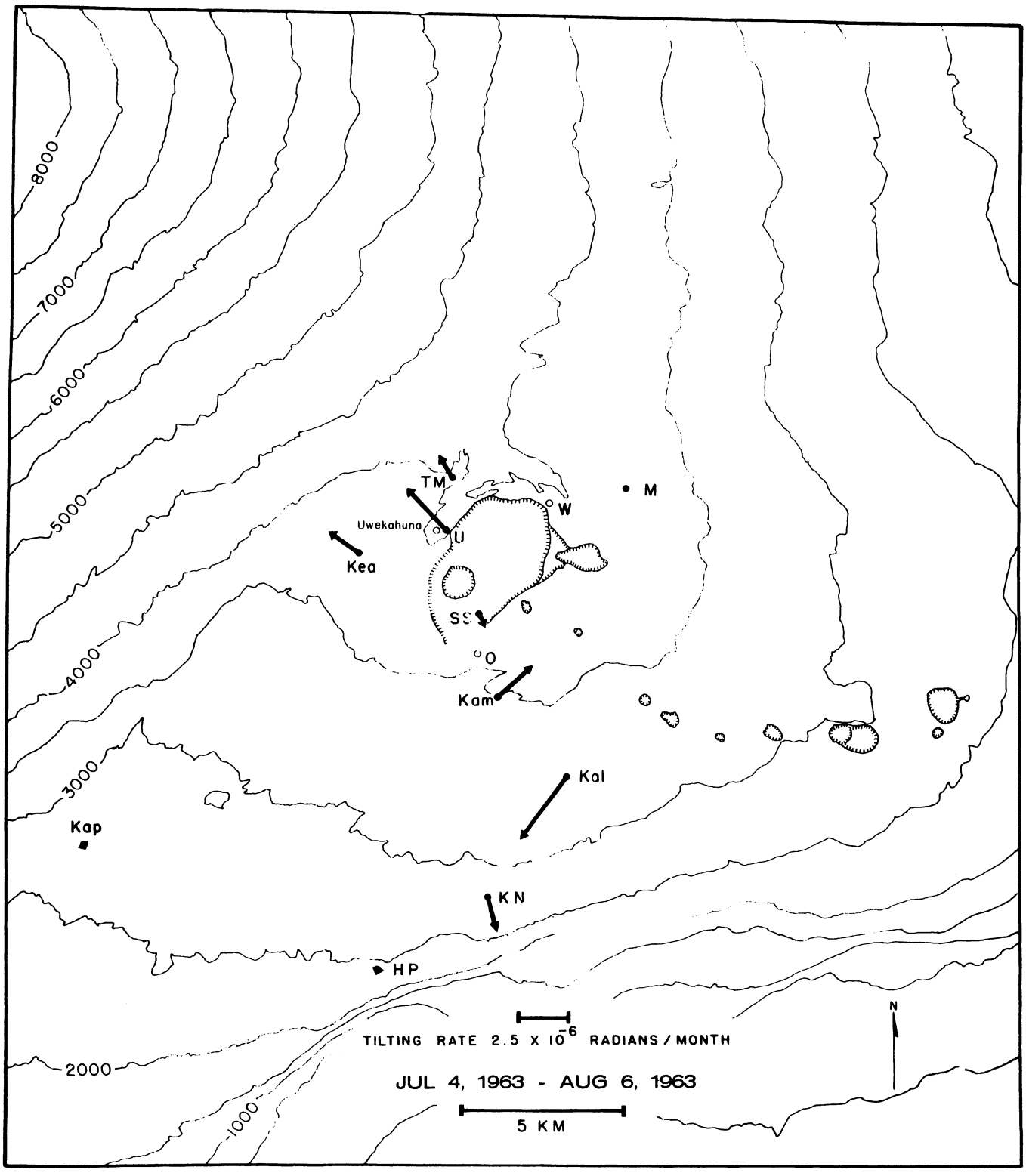

Figure 2b.--Tilting of the ground around Kilauea caldera, July 4 to August 6, 1963. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, MP). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision: they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1, and essential data on the stations were given in Summaries 25 and 30.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system: earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa short-period vertical; earthquakes from a source about 30 km beneath Halemaumau; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank (these are usually first arrivals at Ahua or Makaopuhi); and earthquakes from other regions: Kona, Mauna Kea, etc.

"Kalapana Trail" quakes formerly listed as column 9, have essentially ceased and are thus no longer listed.

A question mark (?) in the column indicates questionable interpretation of the records due to high concentration of seismic activity or an instrumental problem.

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
July 1	----	------	------	-----	25	10	-----	6	?	----------
2	?	?	?	?	?	?	-----	1	900+	----------
3	?	?	?	?	?	?	-----	------	600+	1 S. Pali
4	----	------	------	-----	34	?	-----	5	275+	2 Kona
5	----	------	------	-----	30	------	1	2	65+	----------
6	----	------	------	-----	29	------	1	1	38	1 Offshore
7	----	------	------	-----	31	8	-----	1	33	----------
8	----	------	------	1	32	11	-----	1	12	----------
9	----	------	------	3	49	19	-----	6	13	----------
10	----	------	------	-----	35	3	-----	14	16	1 Mauna Kea
11	----	------	------	-----	23	20	-----	6	10	----------
12	----	------	------	-----	32	5	-----	3	5	----------
13	12	------	------	-----	30	9	-----	11	2	----------
14	----	------	------	-----	60	11	2	6	8	----------
15	----	------	------	-----	80	8	-----	11	-----	----------
16	----	------	------	-----	37	30	-----	2	1	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and EE around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Other
July 17	42	-----	-----	-----	60	3	-----	1	3	----------
18	----	-----	-----	-----	50	10	-----	5	7	1 Kona
19	----	-----	-----	-----	50	17	-----	21	3	----------
20	----	-----	-----	-----	45	5	-----	3	3	1 Kohala 1 Mauna Loa
21	----	-----	-----	-----	60	10	-----	3	10	1 Honokaa
22	----	-----	-----	1	41	11	-----	5	8	----------
23	----	-----	-----	-----	46	21	-----	3	3	1 Offshore 1 Mauna Kea
24	----	-----	-----	1	70	5	-----	2	6	2 Offshore
25	----	-----	-----	-----	46	11	-----	2	3	----------
26	----	-----	-----	-----	45	6	1	7	4	----------
27	----	-----	-----	-----	50	8	-----	4	3	----------
28	----	-----	-----	-----	64	16	-----	8	1	1 Mauna Kea
29	----	-----	-----	-----	90	30	-----	2	----	----------
30	----	-----	-----	-----	60	18	-----	5	----	1 Mauna Loa
31	----	-----	-----	-----	100	25	-----	11	----	----------
Aug. 1	----	-----	8	-----	65	9	-----	9	1	----------
2	----	37	-----	-----	70	8	1	9	----	----------
3	----	50+	-----	2	50	13	-----	53	200+	1 Offshore
4	----	-----	?	-----	37	12	-----	71	3	1 S. Pali 1 Mauna Kea
5	13	-----	-----	-----	48	12	-----	9	5	----------
6	----	-----	-----	-----	44	14	-----	4	2	----------
7	46	-----	-----	-----	94	18	-----	8	7	1 Hualalai
8	3	-----	-----	-----	40	9	-----	21	1	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and EE around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
Aug. 9	----	-----	------	-----	50	7	----	2	4	----------
10	----	-----	------	-----	75	5	----	2	4	----------
11	----	-----	------	-----	60	11	----	3	7	----------
12	----	-----	3	-----	81	11	----	5	5	----------
13	----	-----	------	-----	73	7	----	1	17	----------
14	----	-----	------	-----	85	5	----	1	-----	1 Oahu
15	----	-----	------	-----	80	6	----	2	6	1 Offshore
16	----	-----	------	1	80	6	----	1	4	----------
17	----	-----	------	-----	88	6	----	4	-----	----------
18	----	-----	------	-----	91	6	----	4	6	----------
19	2	-----	------	-----	96	6	----	2	8	----------
20	3	-----	------	-----	105	8	----	1	7	----------
21	Eruption starts at 18:00, continuous tremor. Eruption ends 08:10.				50+	13+	----	----	675+	----------
22					12+	5+	----	?	?	----------
23					30+	2+	1	3	?	----------
24	----	-----	------	-----	35	5	----	2	4	1 Hualalai
25	----	-----	------	-----	42	14	----	5	3	1 Kawaihae 1 Offshore Maui
26	----	-----	------	1	70	375+	----	1	-----	----------
27	38	-----	------	4	63	85	----	5	2	1 Mauna Loa
28	----	-----	------	1	92	83	----	4	-----	1 Kona 1 Offshore
29	----	-----	------	-----	60	23	----	8	-----	----------
30	4	-----	------	-----	50	31	----	5	1	----------
31	----	-----	------	-----	75	32	2	15	-----	1 Kona

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and EE around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
Sept. 1	14	-----	-----	-----	70	35	1	9	1	1 Mauna Loa 1 S. Pali
2	----	-----	-----	-----	80	35	----	5	8	----------
3	----	-----	-----	-----	102	77	----	3	2	----------
4	----	-----	-----	-----	53	20	----	9	----	----------
5	----	-----	-----	-----	65	30	----	2	1	----------
6	----	-----	-----	1	50	30	----	2	2	2 S. Pali 3 Kona
7	----	-----	-----	1	60	30	----	7	2	1 Offshore Maui
8	----	-----	-----	-----	60	42	----	1	3	2 Kona 1 Mauna Loa
9	----	-----	9	-----	69	35	----	7	2	1 S. Pali
10	15	-----	-----	-----	120	24	1	19	-----	----------
11	----	-----	-----	-----	71	22	----	4	-----	----------
12	4	-----	-----	1	60	24	----	2	5	----------
13	30	-----	-----	-----	85	8	----	1	5	1 S. Pali
14	----	-----	-----	-----	110	28	----	2	1	----------
15	----	-----	-----	-----	75	27	----	7	2	1 S. Pali
16	----	-----	-----	-----	120	32	-----	4	2	1 S. Pali 1 Offshore
17	32	-----	-----	1	150	33	----	7	6	1 Offshore
18	----	-----	-----	-----	115	44	1	5	4	2 Mauna Kea
19	----	-----	-----	1	170	48	-----	7	5	1 Kona
20	----	-----	-----	-----	85+	75	1	2	-----	----------
21	26	-----	-----	2	155+	1960	3	----	2	1 Offshore 1 Mauna Kea
22	----	-----	-----	2	120	1300	2	1	2	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, and EE around Kilauea caldera --Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Sept. 23	----	-----	-----	1	130	740	5	4	4	----------
24	----	-----	-----	-----	190	580	7	8	12	1 Kona 1 Mauna Kea
25	----	-----	-----	-----	200	305	----	1	9	1 Offshore
26	----	-----	-----	-----	200	160	7	3	10	----------
27	20	-----	-----	-----	170	120	7	4	11	----------
28	----	-----	-----	-----	160	135	4	-----	----	----------
29	72	-----	-----	1	185	130	----	-----	5	1 Offshore
30	----	-----	-----	-----	185	95	----	2	9	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey
July, August, and September, 1963

Entries for a given quake are: date, origin time (Hawaiian Standard Time), epicenter, depth, magnitude and felt report. Except for smaller earthquakes of special interest, only earthquakes with magnitudes of 2.5 or greater are included in the list.

In the following list, some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 kilometers (19°24.1' N., 155°17.1' W.).

In the following list a number of quakes are described as "Upper east rift" (see Summary 28). Further statistical study of this group which occurs in the swarm periods during July 1 to 6 and August 3 to 4 gives a mean epicenter 19°21.5' N., 155°14' W., about 2 km south of Aloi Crater at near-surface depth.

In Summary 24, "Kaoiki" was introduced as a symbol for listing any of a family of quakes with mean focus 19°24' N., 155°25' W., h=3 to 8 km. This symbol is used in the following list.

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 1	08	39	20.7	2.4	---	--------	---------	Upper east rift-------	----------
1	08	40	54.4	2.6	---	--------	---------	----do----------	Felt at Volcano
2	06	06	54.1	3.0	---	--------	---------	----do----------	----------
2	06	18	22.9	2.9	---	--------	---------	----do----------	----------
2	06	41	05.7	3.0	---	--------	---------	----do----------	----------
2	06	47	43.4	3.2	---	--------	---------	----do----------	----------
2	07	15	23.4	2.7	---	--------	---------	----do----------	----------
2	07	37	30.1	2.9	---	--------	---------	----do----------	----------
2	07	41	23.4	2.8	---	--------	---------	----do----------	----------
2	07	54	07.5	2.9	---	--------	---------	----do----------	----------
2	08	08	28.9	2.7	---	--------	---------	----do----------	----------
2	08	22	09.4	2.7	---	--------	---------	----do----------	----------
2	08	45	30.6	2.5	---	--------	---------	----do----------	----------
2	09	37	37.1	3.1	---	--------	---------	----do----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 2	09	46	11.0	3.3	---	--------	---------	Upper east rift---------	----------
2	10	00	25.3	3.5	---	--------	---------	---do----------	----------
2	10	17	10.4	3.0	---	--------	---------	---do----------	----------
2	11	18	38.8	2.0	---	--------	---------	---do----------	----------
2	11	23	55.8	2.4	---	--------	---------	---do----------	----------
2	11	36	01.8	2.0	---	--------	---------	---do----------	----------
2	11	49	51.7	2.8	---	--------	---------	---do----------	----------
2	11	55	51.1	2.0	---	--------	---------	---do----------	----------
2	13	16	24.3	3.0	---	--------	---------	---do----------	----------
2	13	19	17.8	2.9	---	--------	---------	---do----------	----------
2	13	23	51.7	2.7	---	--------	---------	---do----------	----------
2	14	29	42.3	3.1	---	--------	---------	---do----------	----------
2	15	36	55.7	2.8	---	--------	---------	---do----------	----------
2	15	49	32.2	2.8	---	--------	---------	---do----------	----------
2	15	52	32.9	2.6	---	--------	---------	---do----------	----------
2	15	57	12.8	2.3	---	--------	---------	---do----------	----------
2	16	24	11.4	2.3	---	--------	---------	---do----------	----------
2	17	51	13.4	2.1	5	19°19.0'	155°09'	8 km NE of Apua Point---	----------
2	18	16	00.8	2.1	---	--------	---------	Upper east rift---------	----------
2	18	35	34.7	2.4	---	--------	---------	---do----------	----------
2	18	59	18.6	3.0	---	--------	---------	---do----------	----------
2	19	38	45.7	3.1	---	--------	---------	---do----------	----------
2	19	45	39.7	2.4	---	--------	---------	---do----------	----------
2	21	55	17.1	2.8	---	--------	---------	---do----------	----------
3	00	04	25.7	2.3	---	--------	---------	---do----------	----------
3	01	06	44.8	2.2	---	--------	---------	---do----------	----------
3	02	56	19.4	2.7	---	--------	---------	---do----------	----------
3	03	58	23.2	2.1	---	--------	---------	---do----------	----------
3	04	54	55.1	2.0	---	--------	---------	---do----------	----------
3	05	41	28.3	2.6	---	--------	---------	---do----------	----------
3	06	16	27.2	2.7	---	--------	---------	---do----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 3	06	30	15.7	3.1	---	--------	---------	Upper east rift----------	Felt at Volcano
3	06	37	31.7	2.0	---	--------	---------	---do----------	----------
3	10	11	36.4	2.3	---	--------	---------	---do----------	----------
3	16	01	08.4	2.7	---	--------	---------	---do----------	----------
3	16	28	53.4	2.0	---	--------	---------	---do----------	----------
3	19	30	34.8	2.6	---	--------	---------	---do----------	----------
3	20	31	51.5	2.5	---	--------	---------	---do----------	----------
4	00	12	50.9	3.3	---	--------	---------	---do----------	Felt at Volcano
4	05	03	40.4	2.3	---	--------	---------	---do----------	----------
4	06	45	18.0	2.8	13	19°22.3'	155°55.6'	16 km SSW of Kealakekua	----------
4	07	38	31.4	2.9	13	19°25.3'	155°59.0'	13 km SW of Kealakekua---	----------
4	08	04	11.1	2.9	---	--------	---------	Upper east rift----------	Felt at Volcano
4	08	39	09.9	2.6	---	--------	---------	---do----------	----------
4	10	52	12.7	2.4	---	--------	---------	---do----------	----------
4	12	05	04.4	2.8	---	--------	---------	---do----------	----------
4	17	01	02.7	2.6	---	--------	---------	---do----------	----------
4	17	55	57.4	2.8	---	--------	---------	---do----------	----------
4	17	58	13.9	2.5	---	--------	---------	---do----------	----------
4	20	06	26.7	2.0	---	--------	---------	---do----------	----------
4	20	07	13.0	3.0	---	--------	---------	---do----------	Felt at Volcano
5	03	19	27.2	2.5	---	--------	---------	KM 30----------	----------
5	15	14	34.5	2.5	---	--------	---------	Upper east rift----------	----------
6	16	34	43.2	2.2	---	--------	---------	---do----------	----------
6	17	12	01.1	2.4	3	19°16.8'	155°04.0'	13 km SW of Kalapana-----	----------
7	01	42	19.0	2.8	---	--------	---------	KM 30----------	Felt at Volcano
10	16	32	44.0	3.4	13	19°55.5'	155°28.8'	18 km SSW of Honokaa-----	Felt at Kamuela
11	01	39	26.0	3.3	8	19°16.5'	155°16.2'	12 km S of Ahua seismometer.	Felt at Volcano
11	02	43	57.5	3.8	3	19°15.2'	155°10.1'	3 km ESE of Apua Point---	Felt at Volcano to Hilo.
11	03	10	14.7	3.5	---	-------	--------	Upper east rift----------	Felt at Volcano to Hilo.
11	11	29	19.8	2.5	---	-------	--------	KM 30----------	----------
12	21	36	11.5	2.2	---	-------	--------	Upper east rift----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 14	08	10	16.0	2.6	---	--------	--------	Kaoiki----------	----------
14	22	54	54.7	2.6	---	--------	--------	---do----------	----------
15	22	44	10.3	2.6	---	--------	--------	Upper east rift----------	----------
17	18	43	36.0	2.3	---	--------	--------	KM 30----------	----------
18	11	27	46.0	3.3	8	19°22.0'	155°52.3'	18 km SSE of Kealakekua	Felt at Honaunau.
18	16	28	51.7	2.4	---	--------	--------	KM 30----------	----------
19	20	12	36.5	2.5	---	--------	--------	Upper east rift----------	----------
20	00	03	21.2	2.7	13	20°04.0'	155°37.2'	10 km ENE of Kamuela seismograph station.	----------
20	11	26	43.5	2.3	---	--------	--------	Kaoiki----------	----------
20	12	31	31.5	3.2	13	19°10.8'	155°36.9'	12 km NNW of Naalehu------	----------
21	17	24	02.0	3.2	13	19°59.0'	155°24.2'	13 km SE of Honokaa-------	----------
23	01	37	01.0	2.8	3	18°59.0'	155°13.5'	32 km SSW of Apua Point---	----------
23	03	52	10.8	3.2	---	--------	--------	KM 30----------	----------
23	07	38	12.6	2.7	13	19°50.9'	155°32.1'	13 km ESE of Waikii-------	----------
24	19	18	03.5	2.7	3	19°36.9'	155°25.8'	14 km NNW of Mauna Loa seismometer.	----------
25	16	18	15.5	2.8	13	18°57.5'	154°58.2'	41 km SSE of Apua Point	----------
25	18	19	36.1	2.7	13	19°45.0'	155°58.9'	27 km NNW of Kealakekua	----------
26	03	21	19.7	2.3	---	--------	--------	Kaoiki----------	----------
28	03	32	10.5	2.4	13	19°51.5'	155°38.2'	2 km ESE of Waikii--------	----------
29	08	39	12.5	2.7	---	--------	--------	Kaoiki----------	----------
30	04	32	54.0	2.4	8	19°47.5'	155°26.5'	34 km NNW of Mauna Loa seismometer.	----------
Aug. 1	01	10	52.4	2.9	---	--------	--------	KM 30----------	Felt at Glenwood and Volcano.
2	10	06	29.3	2.1	---	--------	--------	KM 30----------	----------
2	14	53	03.1	2.8	---	--------	--------	KM 30----------	----------
2	17	55	00.4	2.0	---	--------	--------	Upper east rift----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 3	06	41	22.0	2.6	8	18°44'	154°57'	64 km SSE of Apua Point	----------
3	23	21	02.5	2.0	---	--------	--------	Upper east rift--------	----------
3	23	47	35.0	2.0	---	--------	--------	----do----------	----------
4	00	10	49.5	2.7	---	--------	--------	----do----------	----------
4	00	54	11.7	2.3	---	--------	--------	----do----------	----------
4	01	13	48.1	2.3	---	--------	--------	KM 30----------	----------
4	01	39	54.9	2.0	---	--------	--------	Upper east rift--------	----------
4	02	57	06.5	2.0	---	--------	--------	----do----------	----------
4	03	45	53.0	2.3	3	19°18.8'	155°0.5'	14 km WSW of Kalapana	----------
4	07	17	40.5	2.0	---	--------	--------	Upper east rift--------	----------
4	07	54	58.6	2.3	---	--------	--------	KM 30----------	----------
4	08	53	35.3	3.4	13	20°02.3'	155°18.8'	9 km NW of Laupahoehoe	Felt at Kamuela
5	08	15	22.1	2.5	---	--------	--------	Upper east rift--------	----------
7	07	54	23.0	2.9	13	19°45.9'	156°00.8'	7 km NE of Keahole Point	----------
8	16	13	55.2	2.2	---	--------	--------	KM 30----------	----------
8	16	14	20.0	3.3	---	--------	--------	KM 30----------	Felt at Volcano
8	22	04	14.1	2.1	---	--------	--------	Upper east rift--------	----------
9	18	41	43.0	2.4	---	--------	--------	Kaoiki----------	----------
10	04	10	08.0	2.5	---	--------	--------	KM 30----------	----------
12	11	09	42.6	2.2	---	--------	--------	Upper east rift--------	----------
14	05	25	38.1	3.5	30	21°28'	158°06'	Waianae Mountains near Kolekole Pass, Oahu.	Felt in Oahu
15	10	31	38.4	3.4	shallow	19°35.7'	155°58.8'	11 km NW of Kealakekua	----------
15	11	01	19.0	2.3	---	--------	--------	Upper east rift--------	----------
18	16	40	41.3	2.2	---	--------	--------	----do----------	----------
19	02	03	00.1	2.8	---	--------	--------	KM 30----------	----------
24	03	02	20.5	2.9	13	19°40.2'	156°02.9'	8 km SSE of Keahole Point.	----------
25	06	55	05.0	2.3	13	20°00.7'	155°49.8'	4 km SSE of Kawaihae---	----------
25	22	41	43.0	3.1	13	21°23'	156°29'	74 km NNW of Haleakala, Maui.	----------
25	23	35	45.0	2.3	---	--------	--------	KM 30----------	----------
26	08	49	17.6	4.9	---	--------	--------	Kaoiki----------	Felt island-wide.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 26	09	48	23.3	3.1	----	--------	---------	Kaoiki----------	Felt in Kapapala and Kilauea summit area.
26	15	24	38.2	2.2	----	--------	---------	Kaoiki----------	----------
26	18	17	05.9	2.0	----	--------	---------	----do----------	----------
26	18	42	15.4	2.0	----	--------	---------	----do----------	----------
26	19	28	24.5	2.0	----	--------	---------	----do----------	----------
26	19	34	12.7	2.0	----	--------	---------	----do----------	----------
26	19	44	19.7	2.6	----	--------	---------	----do----------	----------
26	21	35	00.0	3.3	----	--------	---------	----do----------	Felt in Kapapala and Naalehu.
26	22	17	31.4	2.0	----	--------	---------	----do----------	----------
27	02	20	04.2	2.2	----	--------	---------	----do----------	----------
27	13	13	37.5	2.9	----	--------	---------	----do----------	----------
27	14	10	27.7	2.3	----	--------	---------	----do----------	----------
27	19	07	30.6	2.9	8	19°23.4'	155°36.4'	24 km west-northwest of Desert seismometer.	----------
28	05	14	03.8	2.7	<3	19°29.8'	155°56.0'	3 km southwest of Kealakekua.	Felt in Kealakekua.
28	05	51	59.8	3.6	13	18°59.7'	155°18.2'	31 km east-southeast of Naalehu.	----------
29	01	06	43.4	2.9	----	--------	--------	KM 30----------	----------
29	21	10	40.4	2.7	----	--------	--------	KM 30----------	----------
30	10	58	48.6	2.0	10	19°19.2'	155°12.8'	6 km southwest of Makaopuhi seismometer.	----------
31	20	24	05.5	2.5	8	19°35.1'	155°53.9'	8 km north-northwest of Kealakekua	----------
Sept. 1	01	24	17.7	2.3	----	--------	--------	KM 30----------	----------
1	11	31	15.1	3.3	3	19°11.9'	155°39.3'	17 km NW of Naalehu----	Felt in Pahala
1	21	43	59.3	2.6	30	19°14.3'	155°21.8'	11 km south-southeast of Desert seismometer.	----------
2	10	05	38.4	2.2	----	--------	--------	Upper east rift--------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 3	12	54	30.6	3.6	---	--------	---------	Kaoiki----------	Felt in Kapapala.
3	13	51	57.2	3.0	---	--------	---------	---do----------	----Do----------
3	17	17	39.7	2.1	---	--------	---------	---do----------	----------
3	18	25	04.5	2.9	---	--------	---------	---do----------	Felt in Kapapala
4	21	58	37.4	3.1	---	--------	---------	KM 30----------	Felt in Kilauea summit area.
6	00	54	45.4	2.5	8	19°29.0'	155°53.5'	5 km SE of Kealakekua---	----------
6	02	41	37.6	2.3	10	19°16.0'	155°13.2'	13 km SSE of Ahua seismometer.	----------
6	03	30	01.6	3.6	3	19°29.1'	156°02.9'	15 km WSW of Kealakekua	Felt in Kealakekua and Captain Cook.
6	09	10	48.8	2.1	8	19°17.4'	155°14.3'	10 km SW of Ahua seismometer.	----------
6	22	47	53.0	2.6	5	19°28.3'	155°52.2'	8 km SE of Kealakekua	----------
7	05	07	40.0	2.2	---	--------	--------	Kaoiki----------	----------
7	05	32	11.2	2.1	10	19°19.8'	155°11.8'	5 km SW of Makaopuhi seismometer.	----------
7	12	01	18.6	2.9	13	20°48'	155°12'	100 km NE of Kamuela----	----------
7	18	04	17.4	2.1	---	---------	--------	Upper east rift---------	----------
8	04	48	04.9	2.4	8	19°40.2'	156°05.8'	11 km west of Kailua---	----------
8	12	09	36.8	3.0	3	19°12.3'	155°34.8'	16 km north of Naalehu-	----------
8	12	43	43.9	3.0	3	19°22.6'	155°54.1'	1 km south of Hookena--	----------
8	23	37	06.0	2.3	---	---------	---------	Kaoiki----------	----------
9	01	33	43.4	2.3	10	19°17.1'	155°09.3'	9 km SSE of Ahua seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 10	00	21	23.8	2.0	10	19°20.7'	155°17.0'	4 km SW of Ahua seismometer	----------
11	08	00	39.5	3.2	----	--------	---------	KM 30----------	Felt in Kapapala
13	23	58	09.5	2.3	8	19°16.1'	155°13.7'	5 km WNW of Apua Point-----	----------
15	02	22	58.3	2.9	5	19°16.5'	155°12.6'	3 km NW of Apua Point------	Felt in Kilauea summit area.
15	02	50	48.6	2.7	----	--------	---------	KM 30----------	----------
15	02	53	56.0	2.3	----	--------	---------	KM 30----------	----------
16	00	24	07.9	2.0	8	19°14.8'	155°21.4'	11 km SSW of Desert seismometer.	----------
16	20	34	11.5	3.8	13	18°48'	156°39'	100 km SW of Hookena-------	----------
17	13	25	25.8	2.8	5	19°21.3'	155°17.2'	3 km SW of Ahua seismometer	----------
17	14	12	17.4	2.8	13	19°21'	156°34'	73 km WSW of Kealakekua----	----------
18	07	54	43.5	2.1	< 3	19°48.2'	155°31.7'	6 km north of Pohakuloa----	----------
18	08	07	57.5	3.5	13	19°50.9'	155°32.2'	11 km north of Pohakuloa---	Felt in Pohakuloa
18	21	31	45.2	2.6	----	--------	--------	Kaoiki----------	----------
18	21	33	44.7	2.3	----	--------	--------	---do----------	----------
18	21	50	33.2	2.2	----	--------	--------	----do----------	----------
19	06	23	23.7	3.4	3	19°28.3'	155°54.5'	5 km SSE of Kealakekua----	Felt in Kealakekua, Captain Cook, and Hilo.
21	00	17	48.0	3.1	13	20°27'	156°25'	40 km SW of Heleakala seismometer.	----------
21	00	19	05.7	2.5	13	19°53.1'	155°24.0'	8 km SW of Keanakolu	----------
21	06	24	26.5	4.8	----	--------	---------	Kaoiki----------	Felt island-wide

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.,	Long. W.	Description	
Sept. 21	06	33	24.0	2.3	----	--------	--------	Kaoiki----------	----------
21	06	49	59.4	2.8	----	--------	--------	---do----------	----------
21	07	04	28.8	2.4	----	--------	--------	---do----------	----------
21	07	40	27.4	2.2	----	--------	--------	---do----------	----------
21	08	38	23.3	2.3	----	--------	--------	---do----------	----------
21	08	46	16.5	2.4	----	--------	--------	---do----------	----------
21	10	02	59.1	2.2	----	--------	--------	---do----------	----------
21	18	49	43.7	2.3	----	--------	--------	---do----------	----------
21	20	18	15.0	2.2	----	--------	--------	---do----------	----------
21	23	19	11.0	2.3	----	--------	--------	---do----------	----------
22	06	26	17.4	3.5	----	--------	--------	---do----------	Felt in Hilo, Kapapala, and Kilauea summit area.
22	06	27	24.4	3.5	---	--------	--------	Kaoiki----------	Felt in Hilo, Kapapala, and Kilauea summit area.
22	07	33	23.2	2.3	----	--------	--------	Kaoiki----------	----------
22	17	16	33.4	2.2	----	--------	--------	---do----------	----------
22	19	23	34.3	2.3	----	--------	--------	---do----------	----------
23	21	44	11.4	2.6	----	--------	--------	---do----------	----------
24	01	48	04.9	3.4	5	19°26.6'	154°57.1'	6 km south-southwest of Pahoa.	Felt in Pahoa and Kapoho.
24	05	58	22.3	2.7	5	19°36.0'	155°21.3'	4 km northwest of Keanakolu.	----------
24	08	18	02.2	3.3	8	19°16.5'	155°53.3'	13 km south-southeast of Hookena.	----------
24	09	36	16.0	2.1	25	19°30.1'	155°05.3'	24 km south of Hilo	----------
24	23	54	58.0	2.3	13	19°09.9'	154°59.1'	37 km south-southwest of Pahoa.	----------
25	20	02	11.5	2.6	35	18°58.7'	155°25.1'	21 km southeast of Naalehu.	----------
26	05	01	27.6	2.1	8	19°26.8'	154°57.0'	5 km south of Pahoa-------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 27	17	09	24.7	2.9	3	19°25.8'	154°57.3'	7 km south-southwest of Pahoa.	Felt in Pahoa
27	20	04	20.0	2.3	---	--------	---------	Kaoiki----------	----------
28	02	45	33.9	3.0	3	19°26.8'	154°56.1'	6 km south of Pahoa---	Felt in Kapoho---
29	10	18	10.6	2.4	8	18°58.2'	155°18.0'	51 km south of Uwekahuna seismometer.	----------
30	08	28	10.0	2.4	5	19°26.9'	154°54.6'	7 km southeast of Pahoa	----------

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in Summary 28. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey]

July 4, 1963

M	Z	eP	11:06:56.7	d
A	Z	eP	56.4	d
D	Z	eP	55.4	d
MP	Z	eP	56.4	d
U	Z	iP	56.6	d
Pa	Z	iP	58.1	d
Na	Z	iP	53.3	d
Ka	Z	iP	59.1	d
Hi	Z	iP	59.1	d
Ha	Z	iP	11:07:03.1	d
U	PEZ	iP	11:06:56	d
U	PEN	iS	11:13:59	

C&GS card 54-63:
10:58:13.2
26.3° S., 177.7° W.
Tonga Islands region
h about 158 km
Magnitude 6.75 (Pas)
6.75 to 7 (Brk)
6.5 (CGS).

July 9

U	PEZ	eR	09:57:02

C&GS card 55-63:
09:24:33.3
8.5° N., 83.0° W.
Costa Rica
Panama Border
h about 31 km
Magnitude 5.1 (CGS).

July 10

M	Z	iP	05:31:49.4	d
N	Z	eP	50.2	d
Pa	Z	eP	49.7	d

July 10--Continued

U	PEZ	iP	49	d
U	PEZ	iR	05:45:31	
U	PEE	iS	05:39:02	
U	PEN	iL	05:43:26	

C&GS card 55-63:
05:22:57.1
46.3° N., 152.9° E.
Kurile Islands region
h about 33 km
Magnitude 5.6 (CGS)
6.1 (HVO).

July 14

M	Z	iP	17:16:58.6	d
A	Z	iP	58.1	d
D	Z	iP	57.3	d
MP	Z	iP	58.1	d
U	Z	iP	58.3	d

C&GS card 57-63:
17:06:38.6
39.4° S., 174.9° E.
North Island, New Zealand
h about 189 km
Magnitude 6.0 (CGS).

July 15

Ha	Z	Tmax	07:11:51

C&GS card 57-63:
06:28:21.7
51.8° N., 176.8° W.
Andreanof Islands, Aleutian Islands
h about 33 km
Magnitude 4.6 (CGS).

Table 5.--Distant earthquakes--Continued

July 15

M	Z	iP	08:49:43.3 d
A	Z	eP	45.0 d
D	Z	iP	44.3 d
U	Z	eP	44.1 d
Pa	Z	iP	44.3 d
Ha	Z	Tmax	09:39:39

C&GS card 56-63:
08:41:07.5
55.6° N., 162.0° E.
Kamchatka
h about 60 km
Magnitude 5.2 (CGS).

July 16

U	PEN	eS	18:56:45
U	PEN	eL	19:16:33
U	PEZ	eR	19:22:11

C&GS card 57-63:
18:27:18.4
43.1° N., 41.5° E.
Georgia S.S.R.
h about 33 km
Magnitude 5.8 (CGS).

July 18

Ha	Z	Tmax	00:48:23
Pa	Z	Tmax	00:49:02

C&GS card 57-63:
00:04:05.3
49.1° N., 128.9° W.
Vancouver Islands region
h about 33 km
Magnitude 4.8 (CGS).

July 19

M	Z	Tmax	13:28:16
A	Z	Tmax	13:28:00
D	Z	Tmax	13:28:18
MP	Z	Tmax	13:27:59
Ha	Z	Tmax	13:28:05

No coast and Geodetic Survey preliminary listing.

July 24

U	PEZ	eR	12:07:51

C&GS card 59-63:
11:32:17.7
24.6° N., 122.0° E.
Near east coast of Formosa

July 24--Continued

h about 33 km
Magnitude 5.3 (CGS).

July 29

U	PEZ	iP	20:23:30 d
U	PEZ	iR	20:38:20
U	PEE	iS	20:31:00
U	PEN	iG	20:35:56

C&GS card 61-63:
20:14:07.3
30.2° S., 177.3° W.
Kermadec Islands
h about 39 km
Magnitude 6.5 -6.75 (Bks)
5.7 (CGS)
6.5 (HVO).

July 30

M	Z	iP	05:55:16.0 d
A	Z	iP	15.5 d
D	Z	eP	14.9 d
U	PEZ	iP	16 d
U	PEZ	iR	06:10:28
U	PEN	iS	06:02:52
U	PEN	eG	06:07:40

C&GS card 59-63:
05:45:53.3
29.6° S., 177.3° W.
Kermadec Islands region
h about 33 km
Magnitude 5.3 (CGS)
6.1 (HVO).

Aug. 2

M	Z	iP	19:38:19.5 d

C&GS card 62-63:
19:26:26.0
6.0° N., 125.1° E.
Mindanao, Philippine Islands
h about 118 km
Magnitude 5.0 (CGS).

August 3

Pa	Z	Tmax	02:17:26

C&GS card 67-63:
01:09:56
8.8° S., 108.3° W.
Southwest of Galapagos Islands
h about 33 km
Magnitude 4.4 (CGS).

August 3

U	PEZ	ePP	10:41:26	
U	PEZ	iSS	10:56:45	
U	PEE	iPS	10:50:53	
U	PEE	iL	11:07:53	

C&GS card 61-63:
10:21:36.6
7.7° N., 35.8° W.
Mid-Atlantic Ocean
h about 33 km
Magnitude 6.1 (CGS)
6.3 (HVO).

August 3

M	Z	iP	20:35:30.5	d
A	Z	eP	30.3	d
D	Z	eP	29.0	d
Hi	Z	eP	33.1	d

C&GS card 62-63:
20:26:04.1
30.7° S., 178.3° W.
Kermadec Islands
h about 37 km
Magnitude 5.2 (CGS).

August 4-5

M	Z	iP	00:01:33.9	c
A	Z	iP	33.8	c
D	Z	eP	33.6	c
MP	Z	iP	33.8	c

August 4-5--Continued

U	Z	iP	33.7	c
Pa	Z	eP	34.8	d
Na	Z	iP	30.5	c
Ka	Z	iP	36.0	c
Hi	Z	iP	35.4	d
Ha	Z	iP	38.5	d

C&GS card 62-63:
23:54:14.0
17.5° S., 179.1° W.
Fiji Islands region
h about 515 km
Magnitude 5.2 (CGS).

August 8

M	Z	eP	02:23:04.6	c
D	Z	iP	05.2	c
U	Z	iP	05.0	c
Pa	Z	iP	06.0	c
Hi	Z	eP	03.7	c
U	PEN	eS	02:29:40	
U	PEE	eL	02:33:04	
U	PEZ	iR	02:35:11	

C&GS card 63-63:
02:14:54.4
54.2° N., 168.1° E.
Fox Islands, Aleutian Islands
h about 33 km
Magnitude 5.5 (CGS)
5.8 (HVO).

August 8

M	Z	eP	11:26:04.9	d
A	Z	eP	05.0	d
D	Z	iP	04.4	d
U	Z	eP	05.0	c
Na	Z	eP	02.1	c
Hi	Z	iP	07.0	c
Ha	Z	iP	08.1	d
U	PEZ	eP	05	c
U	PEZ	iR	11:43:04	
U	PEE	eS	11:34:09	
U	PEN	eL	11:40:04	

Table 5.--Distant earthquakes--Continued

August 8, 1963--Continued

C&GS card 65-63:
11:16:11.2
5.8° S., 151.0° E.,
New Britain
h about 48 km
Felt: Palmalmal, Pomio
Magnitude 5 (Bks)
5.6 (CGS).
6.0 (HVO).

Aug. 9

U	PEZ	eP	14:44:14	c
U	PEZ	iS	14:50:34	
U	PEZ	iR	14:54:39	
U	PEE	iL	14:52:56	

C&GS card 64-63:
14:36:45.9
15.3° S., 175.7° W.
Fiji Islands region
h about 33 km
Magnitude 5.5 (CGS)
5.7 (HVO).

Aug. 14

M	Z	iP	18:55:18.8	d
A	Z	iP	18.0	d
Hi	Z	eP	19.6	c

C&GS card 64-63:
18:43:55.5
3.4° S., 135.4° E.
West Iran
h about 33 km
Magnitude 6.4 (CGS).

Aug. 15

M	Z	eP	06:21:17.2	c
A	Z	eP	20.0	d
D	Z	eP	17.5	c
Pa	Z	eP	19.3	c
Hi	Z	iP	18.3	c
Ha	Z	eP	15.0	d
U	PEZ	iP	18	d
U	PEZ	iR	06:37:54	
U	PEE	iS	06:29:15	

August 15--Continued

C&GS card 64-63:
06:11:34.6
37.9° N., 141.6° E.
Near east coast of Honshu, Japan
h about 59 km
Magnitude 6.6 (HVO).

Aug. 15

A	Z	iP	17:37:14.5	d
D	Z	eP	14.9	d
N	Z	iP	15.0	d
Pa	Z	eP	12.9	c
Hi	Z	eP	14.9	c
U	PEZ	eP	15	d
U	PEZ	ipP	17:39:21	d
U	PEZ	iPP	17:41:12	
U	PEZ	ipPP	17:43:00	
U	PEZ	iPPP	17:43:27	
U	PEZ	iSKS	17:47:04	
U	PEZ	iS	17:47:44	
U	PEZ	iSP	17:48:38	
U	PEZ	i	17:52:37	
U	PEZ	iSS	17:54:04	
U	PEZ	isSS	17:57:02	
U	PEZ	i	18:08:26	
U	PEN	isP	17:39:53	
U	PEN	esS	17:50:59	
U	PEN	e	18:00:27	
U	PEN	iG	18:02:57	
U	PEN	i	18:14:28	

C&GS card 65-63:
17:25:05.9
13.8° S., 69.3° W.
Peru-Bolivia border
h about 543 km
Magnitude 7.75 (Pas)
8 (Bks).

Aug. 17

M	Z	eP	11:23:20.9	d
A	Z	eP	21.8	c
D	Z	eP	21.5	c
Pa	Z	eP	23.3	c
Hi	Z	eP	21.0	d
U	PEZ	iP	21	d
U	PEZ	iR	11:42:33	

Table 5.--Distant earthquakes--Continued

August 17, 1963--Continued

U	PEE	iS	11:32:17
U	PEN	iG	11:39:49

C&GS card 66-63:
11:12:41.2
30.6° N., 130.9° E.
Ryukyu Islands region
h about 33 km
Magnitude 5.6 (CGS)
6.5 (HVO).

Aug. 17

M	Z	iP	11:43:48.3 c
A	Z	iP	47.4 c
D	Z	iP	48.3 c
U	Z	iP	47.8 c
Pa	Z	iP	44.8 c

C&GS card 67-63:
11:34:23.4
17.7° N., 94.3° W.
Veracruz, Mexico
h about 163 km
Magnitude 4.9 (CGS).

Aug. 18

M	Z	eP	18:50:10.2 c
A	Z	iP	12.2 c
U	Z	eP	11.3 c
Hi	Z	iP	10.4 c
U	PEE	eL	18:58:00
U	PEZ	eR	18:59:33

C&GS card 65-63:
18:43:16.1
50.3° N., 176.9° W.
Andreanof Islands, Aleutian Islands
h about 33 km
Magnitude 5.5 (CGS).

Aug. 20

U	PEZ	eR	16:13:59

Aug. 20--Continued

C&GS card 65-63:
15:48:12.2
41.2° N., 142.7° E.
Off east coast of Honshu, Japan
h about 50 km
Magnitude 4.5 (CGS).

Aug. 22

Ha	Z	Tmax	10:09:25

C&GS card 68-63:
09:27:09.3
42.0° N., 126.2° W.
Off coast of Oregon
h about 33 km
Magnitude 5.6 (CGS).

Aug. 22

M	Z	iP	20:01:47.4	c
D	Z	iP	46.9	c
U	Z	eP	47.2	c
Pa	Z	eP	50.2	c
Na	Z	eP	45.1	c
Hi	Z	iP	50.5	c
Ha	Z	eP	51.1	c
U	PEZ	eP	50	d
U	PEZ	iR	20:16:46	
U	PEE	iS	20:09:26	

C&GS card 69-63:
19:52:25.0
9.4° S., 158.0° E.
Solomon Islands
Felt
h about 33 km
Magnitude 6.75-7 (Pas)
6.1 (CGS)
6.6 (HVO)
6-6.25 (Brk).

August 25, 1963

M	Z	eP	12:25:27.3 c
A	Z	eP	27.0 c
D	Z	eP	25.8 c
MP	Z	eP	27.7 c
U	Z	eP	27.3 c
Pa	Z	eP	29.1 c
Hi	Z	iP	29.7 c
Ka	Z	iP	31.0 c
Ha	Z	iP	32.3 c
U	PEZ	iP	27 c
U	PEZ	ipP	12:27:06
U	PEZ	iPP	12:27:18
U	PEZ	iSS	12:35:52
U	PEE	isP	12:28:10
U	PEE	iS	12:31:18
U	PEE	isS	12:34:32

C&GS card 67-63:
12:18:12.5
17.5° S., 178.8° W.
Fiji Islands region
h about 565 km
Magnitude 6.5 (Pas)
6-6.25 (Brk)
6.1 (CGS)
6.5 (HVO).

Aug. 29

M	Z	iP	15:42:27.3 d
A	Z	eP	26.7 d
D	Z	eP	26.7 d
U	Z	iP	26.8 d
Pa	Z	iP	25.1 d
Na	Z	iP	23.8 d
Hi	Z	eP	27.7 c
Ha	Z	eP	33.5 d
U	PEZ	iP	27 d
U	PEZ	iS	15:52:58
U	PEZ	iSSS	16:02:50
U	PEZ	iG	16:06:02

C&GS card 68-63:
15:30:31.4
7.1° S., 81.6° W.
Off coast of Peru
h about 23 km
Magnitude 6.5 (Pas)
6.1 (CGS)
6.8 (HVO).

September 4

M	Z	iP	13:43:19.0 c
A	Z	iP	19.3 c
D	Z	iP	19.6 c
MP	Z	eP	20.1 c
U	Z	eP	19.0 c
Hi	Z	eP	16.6 c
U	PEZ	eSS	13:57:40
U	PEZ	iR	14:04:54
U	PEN	eL	14:01:00
U	PEE	eG	14:01:52

C&GS card 71-63:
13:32:12.3
71.4° N., 73.3° W.
Near east coast of Baffin Island. Felt: Clyde River.
h about 33 km
Magnitude 6.25-6.5 (Pas)
6 (Bks)
5.9 (CGS)
6.2 (HVO).

Sept. 6

M	Z	eP	21:03:51.9 d
M	Z	Tmax	21:41:02
MP	Z	Tmax	14
U	Z	Tmax	12
Pa	Z	Tmax	21:41:15
Hi	Z	Tmax	21:40:53
Ha	Z	Tmax	21:39:27

C&GS card 72-63:
20:56:59.9
53.9° N., 165.6° W.
Fox Islands, Aleutian Islands
h about 33 km
Magnitude 5.0 (CGS).

Sept. 8

M	Z	eP	19:58:28.5 c
A	Z	eP	28.2 c
MP	Z	eP	28.3 c
U	Z	iP	28.3 c
Pa	Z	iP	29.9 c
Ka	Z	iP	31.9 c
Hi	Z	iP	31.1 c
Ha	Z	iP	33.9 c

September 8, 1963--Continued

C&GS card 72-63:
19:50:29.8
23.6° S., 179.8° E.
Fiji Islands region
h about 550 km
Magnitude 5.7 (CGS).

Sept. 9

M	Z	eP	02:55:29.1	c
Hi	Z	eP	29.3	c
Ha	Z	eP	31.2	c
U	PEZ	iP	28	c
U	PEZ	eG	03:03:34	
U	PEZ	eR	03:11:52	
U	PEE	eS	03:03:17	
M	Z	Tmax	03:55:51	
A	Z	Tmax	38	
D	Z	Tmax	48	
U	Z	Tmax	48	
Ka	Z	Tmax	03:56:02	
Ha	Z	Tmax	03:56:27	

C&GS card 72-63:
02:45:45.5
4.4° S., 152.7° E.
New Britain;
felt, Rabaul
h about 3 km
Magnitude 5.6 (CGS)
6.3 (HVO).

Sept. 11

M	Z	eP	09:11:23.4	c

C&GS card 75-63:
08:59:37.6
3.5° S., 131.2° E.
Ceram
h about 33 km
Magnitude 5.7 (CGS).

Sept. 13

M	Z	eP	17:07:25.4	c
A	Z	eP	24.8	c
D	Z	eP	26.3	c

Sept. 13--Continued

MP	Z	eP	24.3	c
U	Z	eP	25.1	c
Pa	Z	eP	22.4	c
Na	Z	eP	29.6	d
Hi	Z	eP	21.9	c
Ha	Z	eP	24.2	d

No C&GS preliminary listing.

Sept. 14

M	Z	iP	04:01:53.8	d
A	Z	eP	53.3	d
MP	Z	eP	52.9	d
U	PEZ	iR	04:17:16	

C&GS card 77-63:
03:52:16.9
31.4° S., 179.0° W.
Kermadec Islands
h about 33 km
Magnitude 4.9 (CGS)
5.9 (HVO).

Sept. 15

M	Z	iP	00:55:35.5	d
A	Z	iP	35.4	d
D	Z	iP	34.4	d
U	Z	iP	35.3	d
Pa	Z	iP	37.3	d
Na	Z	iP	31.5	d
Ka	Z	eP	39.6	d
Hi	Z	iP	38.4	d
Ha	Z	iP	40.8	
U	PEZ	iP	35	d
U	PEZ	iS	01:02:42	
U	PEZ	iR	01:08:57	
U	PEN	iG	01:06:28	
M	Z	Tmax	01:47:23	
A	Z	Tmax	19	
D	Z	Tmax	22	
U	Z	Tmax	21	
Ha	Z	Tmax	01:47:51	

C&GS card 75-63:
00:46:54.1
10.3° S., 165.6° E.
Santa Cruz Islands. Felt, Vanikoro.
h about 33 km
Magnitude 7.25-7.5 (Pas)
6.3 (CGS)
6.75-7 (Pal)
7.5 (HVO).

September 16, 1963

U	PEZ	eR	20:28:10

C&GS card 76-63:
20:05:21.9
13.4° S., 166.5° E.
Santa Cruz Islands
h about 28 km
Magnitude 5.0 (CGS).

Sept. 17

D	Z	eP	06:07:08.0	c
Pa	Z	eP	08.5	c
U	PEZ	eP	06:31:52	
M	Z	Tmax	07:36:04	
A	Z	Tmax	34	
D	Z	Tmax	36	
MP	Z	Tmax	16	
U	z	Tmax	22	
Pa	Z	Tmax	07:35:43	
Na	Z	Tmax	07:36:23	

C&GS card 75-63:
05:54:33.7
10.6° S., 78.2° W.
Central Peru
h about 61 km
Magnitude 6.75 (Pas)
5.5 (CGS)
6.0 (HVO).

Sept. 17

M	Z	iP	19:28:54.2	d
A	Z	eP	53.4	d
D	Z	eP	53.1	d
U	Z	iP	54.0	d
Pa	Z	iP	54.6	c
Na	Z	iP	51.5	d
Hi	Z	iP	54.9	c
Ha	Z	iP	56.5	c
U	PEZ	iP	54	d
U	PEZ	iS	19:36:00	
U	PEZ	iR	19:42:09	
U	PEN	iG	19:39:47	
M	Z	Tmax	20:20:44	
U	Z	Tmax	23	

Sept. 17--Continued

C&GS card 76-63:
19:20:08.2
10.1° S., 165.3° E.
Santa Cruz Islands
Felt: Eastern Solomon Islands
h about 17 km
Magnitude 7.25 (Pas)
7.5 (Brk)
7 (Pal)
6.1 (CGS)
7.5 (HVO).

Sept. 22

M	Z	iP	02:55:57.4	c
N	Z	eP	58.0	c

C&GS card 76-63:
02:49:03.4
52.5° N., 174.9° W.
Andreanof Islands, Aleutian Islands.
h about 105 km
Magnitude 4.8 (CGS).

Sept. 22

M	Z	eP	03:05:01.7	d
A	Z	eP	00.6	d
D	Z	eP	00.4	d
Pa	Z	eP	02.7	d
Hi	Z	eP	03.3	d
Ha	Z	eP	05.3	c
U	PEZ	iP	01	d
U	PEZ	eR	03:18:10	
U	PEN	iS	03:12:12	

C&GS card 82-63:
02:56:24.3
19.3° S., 175.9° E.
Fiji Islands region
h about 28 km
Magnitude 5.8 (CGS).

Sept. 22

M	Z	iP	19:30:33.7	c
A	Z	iP	33.4	c
N	Z	iP	33.6	c

September 22, 1963--Continued

MP	Z	iP	33.3 c
Pa	Z	eP	34.6 d
Na	Z	eP	30.1 d
Ka	Z	eP	35.9 c
Hi	Z	eP	37.3 c

C&GS card 76-63:
19:21:57.1
19.2° S., 175.9° E.
Tonga Islands region
h about 24 km.

Sept. 23

M	Z	eP	17:09:51.0 c

C&GS card 76-63:
17:02:36.6
51.3° N., 179.2° W.
Andreanof Islands, Aleutian Islands.
h about 33 km
Magnitude 5.2 (CGS).

Sept. 24

M	Z	iP	16:42:28.8 c
A	Z	iP	28.2 c
D	Z	iP	28.3 c
N	Z	iP	28.3 c
MP	Z	iP	27.4 c
Pa	Z	iP	29.0 c
Na	Z	iP	29.5 c
Ka	Z	iP	31.6 c
Ha	Z	iP	32.5 c
U	PEZ	iP	28 c
U	PEZ	ipP	16:43:04
U	PEZ	iPP	16:45:42
U	PEZ	ePS	16:53:37
U	PEZ	eSS	16:58:13
U	PEZ	eR	17:07:28
U	PEN	iS	16:52:38
U	PEN	eSSS	17:01:52
U	PEN	iG	17:04:20
U	PEE	esS	16:53:18
U	PEE	isPS/ sSP	16:54:09

Sept. 24--Continued

C&GS card 76-63:
16:30:16.0
10.6° S., 78.0° W.
Near coast of Peru
h about 80 km
Magnitude 7 (Pas)
6.5 (Brk)
6.0 (CGS)
6.6 (HVO).

Sept. 25

M	Z	eP	14:59:06.3 d

C&GS card 77-63:
14:50:18.2
10.1° S., 164.5° E.
Solomon Islands region
h about 33 km
Magnitude 5.1 (CGS).

Sept. 26

Pa	Z	Tmax	05:06:18
Ha	Z	Tmax	05:05:01

C&GS card 77-63:
04:20:21.5
56.5° N., 153.4° W.
Kodiak Island region
h about 33 km
Magnitude 4.8 (CGS).

Sept. 26

M	Z	eP	05:35:00.4 c
U	PEZ	eS	05:40:42
U	PEZ	eR	05:44:14
U	PEE	eL	05:42:28

C&GS card 76-63:
05:28:07.3
50.4° N., 176.9° W.
Andreanof Islands, Aleutian Islands.
h about 33 km
Magnitude 5.3 (CGS).

September 26, 1963

M	Z	Tmax	07:26:51
A	Z	Tmax	07:27:16
D	Z	Tmax	07:27:20
MP	Z	Tmax	07:27:20
U	Z	Tmax	07:27:09
Pa	Z	Tmax	07:27:04
Ha	Z	Tmax	07:25:31

C&GS card 77-63:
06:40:43.5
56.6° N., 153.2° W.
Kodiak Island region
h about 33 km
Magnitude 4.8 (CGS).

Sept. 27

U	PEN	eS	11:41:24
U	PEN	eG	11:44:49
U	PEZ	eR	11:46:53

C&GS card 79-63:
11:25:53.6
17.2° S., 174.7° E.
Fiji Islands region
h about 33 km
Magnitude 5.0 (CGS).

Sept. 28

M	Z	iP	07:07:09.4 d
A	Z	iP	08.9 d
D	Z	iP	08.0 d
MP	Z	iP	08.9 d
U	Z	iP	09.2 d
Hi	Z	eP	10.4 d
Na	Z	eP	06.1 d
Ka	Z	iP	11.6 d

C&GS card 79-63:
06:58:12.7
31.5° S., 179.6° E.
Kermadec Islands
h about 457 km
Magnitude 5.0 (CGS).

During the quarter "felt reports" were either phoned or mailed in by the following people to whom we wish to express our gratitude for these and other instances of cooperation.

North Hawaii

Mrs. Lindsey
Mrs. Ecklund
Mrs. Van Gorder
Dr. Heather
Mr. Hea
Mrs. Calles

Kau

Mrs. Billings
Mrs. Paiva
Mr. Meinecke

Hilo region

Mrs. Shoemaker
Mrs. Ingledue
Mrs. Shaffer
Mr. Baldwin
Mrs. Baldwin
Mr. Donahoe
Mr. Ho
Mr. Wessel
Mr. Potlock
Mr. Usagawa
Mr. Kumuhaki
Mr. Reeves
Mr. Guerimo

Puna

Mrs. Isbell
Mrs. Kimura
Miss Takemoto

Kona coast

Mr. Johnston
Mr. Glass
Mrs. Fujino
Mr. Sutherland
Miss Greenwell
Miss Wallace
Mr. Apple
Mrs. Apple
Mr. Ladd

Kilauea summit area

Mrs. Mist
Mr. Koyanagi
Mrs. Forbes
Dr. Wentworth
Dr. Moore
Mr. Francis
Mr. Young
Mr. Yamamoto
Miss English
Mr. Shipman
Mr. Correa
Mr. Cuskelly
Mrs. Hansen

Central Hawaii

Kulani Honor Camp

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 32

October, November, and December 1963

By

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(Cooperative program ended Dec. 31, 1963)

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Chronological summary

A flank eruption lasting less than 30 hours occurred on the central part of the east rift zone of Kilauea Volcano (fig. A) on October 5 and 6, 1963, just 43 days after the last previous eruption in Alae Crater.

The eruption was preceded by a marked deflation of the summit of Kilauea, which began at 03^h06^m October 5, as indicated by a deflection of the long-period seismographs at Uwekahuna. Ten minutes later seismographs at the summit and upper east rift zone began to record strong harmonic tremor and local shallow earthquakes. Harmonic tremor increased markedly after 05^h25^m, which may have marked the beginning of the eruption in Napau Crater.

A pilot who flew over Napau Crater at 06^h05^m on a flight to Naalehu observed lava fountaining from a fissure extending across the floor of the crater. When an Observatory party arrived at Makaopuhi Crater at 06^h08^m they observed a billowing fume cloud and heard a faint roar to the northeast. At 08^h50^m when they reached the southwest rim of Napau Crater an active line of lava fountains up to 50 feet high extended across the floor of the pit crater slightly north of the 1840 spatter ridge, and 80 percent of the floor of the crater was flooded with 20 feet of lava. Spatter and a small pad of lava across the trail northwest of Napau was still fuming when first seen at 09^h05^m.

Beginning at 09^h30^m regular aerial observation of the eruption was begun. At that time a line of vents extended from the west side of Napau Crater 4 miles to the northeast along the rift zone. At about 14^h00^m a quarter-mile line of 150-foot-high fountains broke out farther down the rift zone near Kalalua Crater. These fed two lava flows that were moving side by side down the rift zone. By 20^h30^m the flows had reached slightly more than a mile from the source fountains and were moving at less than 1/4 mile per hour; by 04^h00^m the next morning the glow of fountains had ceased and the flows, now 1 1/2 miles long, had stopped. The final outbreak of the eruption occurred at 09^h40^m on a fissure about 3 miles northeast of Napau Crater. Lava fountained briefly to heights of 25 feet, but by 09^h50^m the vent spattered weakly and presumably it soon died.

The site of the eruption, an inaccessible area of rain forest, severely hampered observations both during and after the eruption. However, the upper half of the area was examined on foot in October and December, and the lower part was sampled and mapped by helicopter in January. These studies, together with aerial photographs of the area taken by the Navy in November, show that an almost continuous line of active vents extended 7-3/4 miles northeastward along the rift zone from a point 1/3 mile west of Napau Crater. The vents are on the extreme north side of the rift zone, and are arranged in a right offset en echelon pattern. In addition to the small areas of spatter the eruption produced a shallow lava lake in Napau Crater and two major flows: a mile-long flow 2 to 3 miles northeast of Napau, and a double flow

($2\frac{1}{2}$ miles long and as much as $\frac{1}{2}$ mile wide) north of Kalalua Crater. The flows contain from less than 1 percent to 15 percent olivine, probably cover about 1-1/3 square miles, and contain about 10 million cubic yards of lava. Occupation of the network of long-base tilt stations around the summit of Kilauea showed a marked deflation of the summit area between August 6 and October 10, and the short-base tilt instruments at Uwekahuna indicated that the detumescence associated with the October eruption was equivalent to the removal of approximately 30 million cubic yards of magma from the summit reservoir.

J. G. M. and D. L. P.

During the eruption, readings of the short-base tiltmeter (table 1) showed strong collapse along the direction E. 28° S., and for a week following the eruption showed moderate collapse to the south. For about a month, from October 15 to November 15, the tilt indicated slow tumescence along the direction W. 28° N. This was accompanied by a sporadic, moderate increase in the daily number of local caldera quakes. From mid-November to the year-end, tilt recovered slightly in a due west direction. Total recovery of tilt from the end of the eruption to the end of the year was less than 1/2 to the west and 1/5 to the north of that lost in the collapse. The daily number of small local quakes again showed sporadic and moderate increase during the last six weeks, and there was a slight peak of 30 deep small quakes on December 26.

Mid-October to early November was a period of high earthquake activity along the Kaoiki fault system. On October 23 a Kaoiki quake of magnitude 5.3 occurred and was followed by several hundred smaller shocks. Several of these were felt.

Two distant earthquakes originating in the Kurile Islands were large enough to alert coastal residents of Hawaii of possible sea wave activity. These occurred on October 12 and 20 (H.S.T.) with magnitudes of 8.1 and 7.6, respectively. No damaging sea wave occurred in Hawaii.

H. A. P.

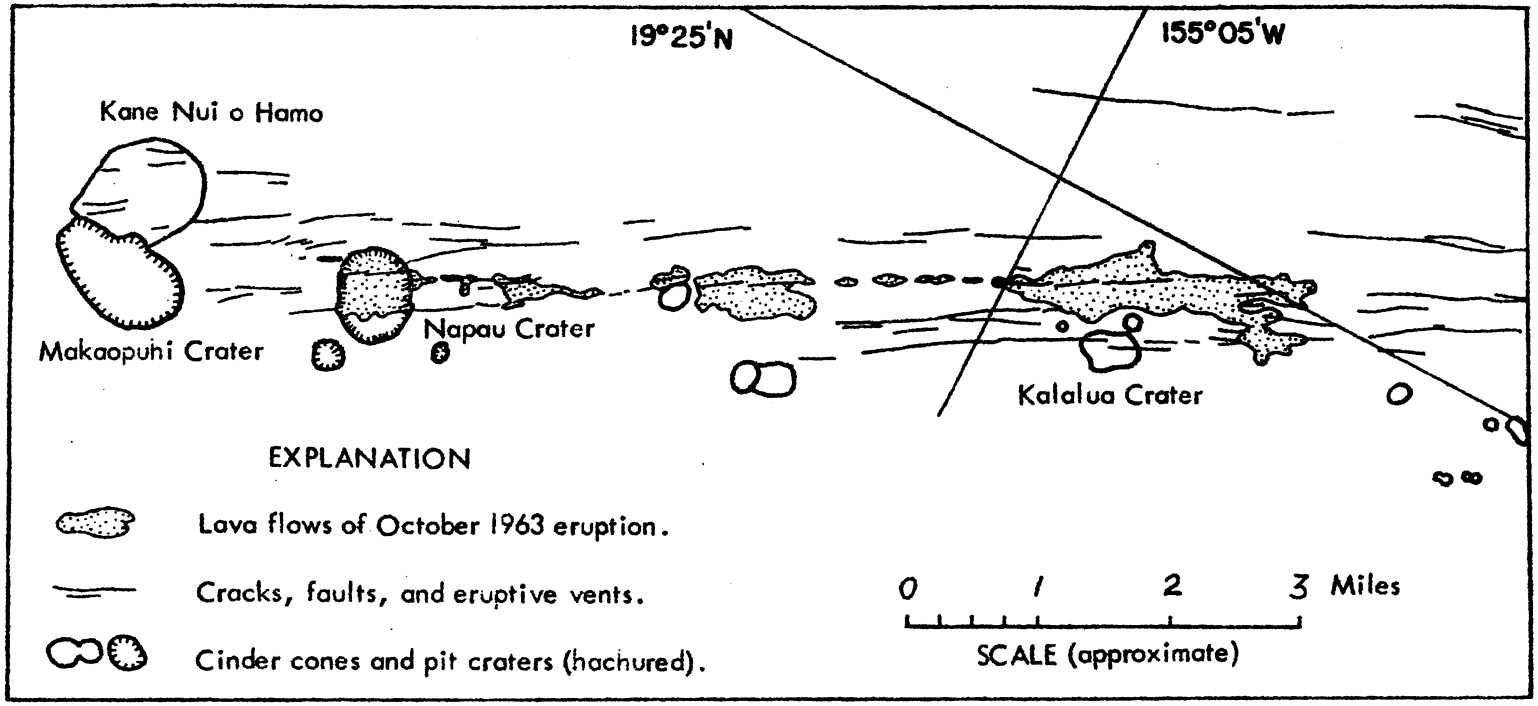

Figure A. Preliminary map showing area of lava erupted October 5-6, 1963.

(East Rift Zone)

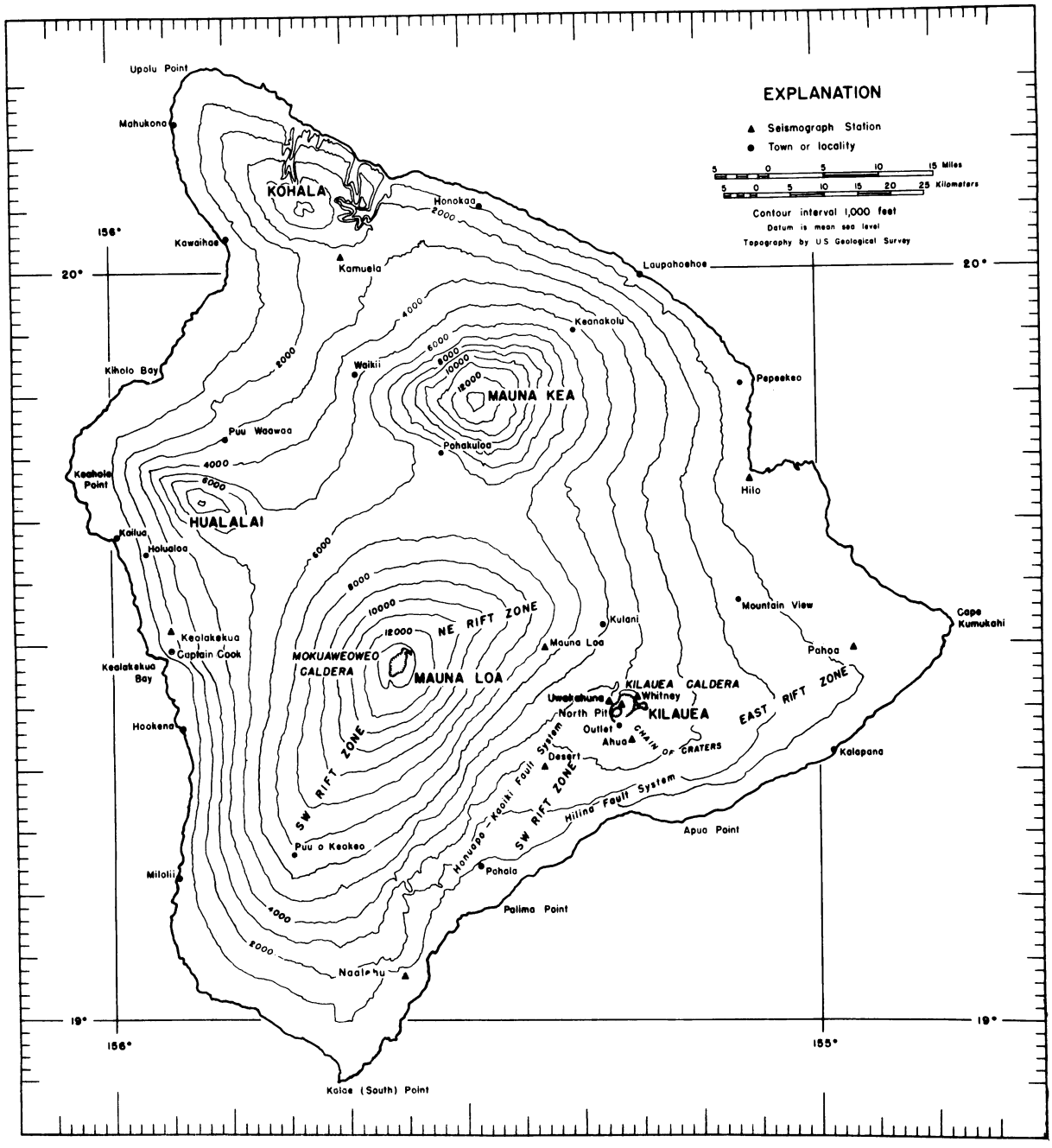

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, i.e., to a relative subsidence toward the north and east. A one unit-change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault, October, November, and December, 1963

Date	N-S	E-W	Date	N-S	E-W
Oct. 6	480	516	Dec. 1	467	511
13	461	538	8	467	510
20	461	535	15	467	510
27	462	530	22	467	506
Nov. 3	465	522	29	468	505
10	466	519			
17	467	514			
24	467	513			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera (see fig. 2)

Tilt base (location)	Date (1963)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1963)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Oct. 10	420.8	527.5	37.3	S. 36° E.	Aug. 6
Tree Molds (19°26.3' N., 155°17.3' W.)	9	422.7	527.3	17.0	S. 19° E.	6
Sand Spit (19°24.1' N., 155°16.8' W.)	11	860.2	797.9	40.4	N. 61° E.	12
Kalihipaa (19°21.4' N., 155°15.3' W.)	7	363.8	351.8	18.1	N. 43° W.	5
Keamoku (19°25.1' N., 155°19.0' W.)	7	501.6	605.9	34.2	S. 57° E.	12
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	10	628.2	529.8	47.0	N. 14° W.	5
Kipuka Nene (19°19.4' N., 155°16.7' W.)	14	486.2	510.8	0.7	N. 27° E.	9
Hilina Pali (19°18.2' N., 155°18.6' W.)	14	497.4	501.5	0.3	S. 83° E.	6
Kapapala Ranch (19°20.5' N., 155°23.8' W°)	11	495.5	501.4	1.2	S. 56° W.	8

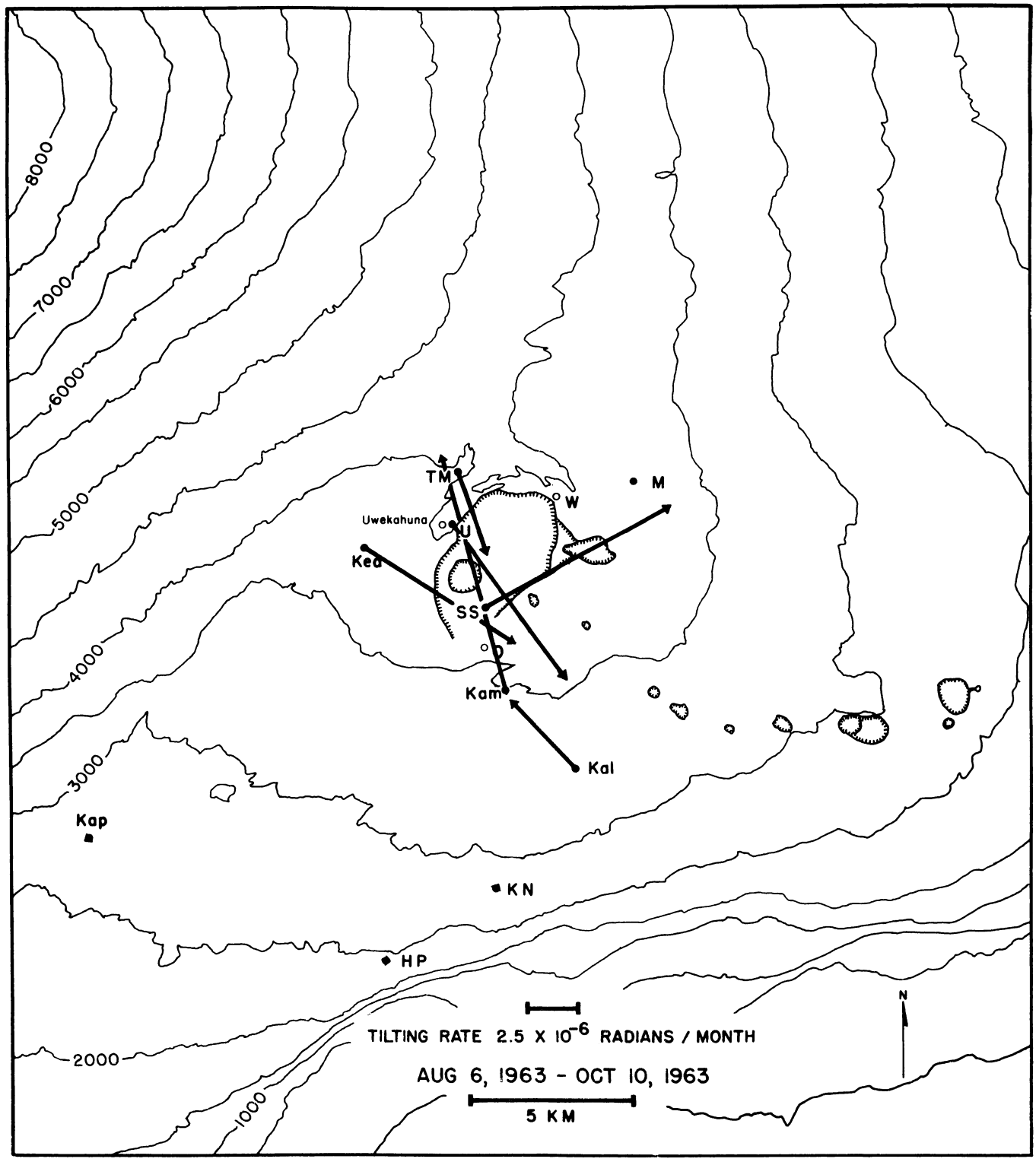

Figure 2.--Tilting of the ground around Kilauea caldera, August 6 to October 10, 1963. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

GPO 846-800

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, MP). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown in Figure 1, and essential data on the stations were given in Summaries 25 and 29.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa short-period vertical; earthquakes from a source about 30 km beneath Halemaumau; earthquakes from the upper east rift zone ahd the adjacent fault systems of Kilauea's south flank (these are usually first arrivals at the Ahua meter or at the new experimental geophone near Makaopuhi Crater (MP)); and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Oct. 1	----	------	------	------	145	65	2	5	6	----------
2	3	------	------	------	140	59	6	2	5	----------
3	----	------	------	------	115	57	5	4	8	----------
4	Although many hundreds of earthquakes were recorded during this									
5	period (eruption), their arrival times were obscured by strong									
6	continuous harmonic tremor; therefore, few epicenters were located.									
7	----	------	------	------	20+	14+	2	5	200+	3 Offshore
8	----	------	------	------	40+	34+	-----	3+	165+	----------
9	----	------	------	------	40+	20	-----	10	50+	2 Offshore
10	----	------	------	1	40+	29	1	3	25	1 Offshore 1 Mauna Loa
11	----	------	------	------	40+	11	-----	7	30	4 Offshore 1 Offshore-Maui

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Oct. 12	----	6	------	-----	25+	85+	-----	3	10	1 Offshore
13	----	-----	------	-----	30+	40	-----	-----	9	1 Kona 1 Offshore
14	----	-----	------	1	40	21	1	-----	8	1 Offshore 1 Kona
15	----	-----	2	1	15	14	1	3	7	----------
16	----	-----	5	-----	30+	23	1	1	-----	----------
17	----	-----	------	1	20	21	-----	2	17	----------
18	----	-----	------	-----	17	10	-----	5	5	1 S. Pali
19	----	5	5	-----	25	19	-----	------	4	1 Offshore
20	----	-----	3	1	25+	12	-----	------	17	2 Offshore
21	----	2	------	-----	50+	14	-----	------	10	----------
22	----	-----	------	1	30	17	-----	------	5	1 Offshore-Maui 1 Kona
23	----	-----	------	-----	43	425+	-----	------	4	----------
24	----	-----	------	-----	40	76	-----	------	5	----------
25	----	-----	------	3	60	115	-----	------	8	----------
26	----	-----	------	1	35	73	-----	------	8	1 Mauna Loa
27	----	-----	------	1	70	64	-----	------	4	1 Mauna Loa
28	----	-----	3	-----	90	40	-----	------	4	1 Mauna Loa
29	----	-----	------	-----	70	34	-----	------	5	----------
30	----	-----	------	-----	80	98	-----	8	40	1 Offshore-Maui 1 Offshore
31	----	-----	------	-----	80	70	-----	6	26	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Nov. 1	----	-----	-----	------	80	70	----	8	23	----------
2	----	3	-----	------	70	80	----	-----	11	1 Mauna Loa
3	----	-----	-----	------	90	123	----	6	7	1 Mauna Loa 1 Mauna Kea
4	----	-----	-----	------	60	54	----	2	6	1 Mauna Kea
5	12	-----	-----	------	40	27	----	1	14	----------
6	----	-----	-----	------	20	18	2	-----	12	1 Offshore
7	----	-----	-----	------	40	26	----	-----	8	----------
8	----	-----	-----	1	50	16	----	-----	2	----------
9	----	-----	-----	------	100	88	----	-----	9	----------
10	----	3	-----	------	60	50	----	-----	10	----------
11	----	-----	-----	------	100	49	----	-----	12	----------
12	----	-----	-----	------	70	58	----	4	13	1 Kohala
13	----	-----	-----	------	35	41	----	-----	17	----------
14	33	-----	-----	------	55	15	----	6	15	1 Offshore 1 Mauna Kea
15	----	-----	-----	------	50	25	----	17	2	1 Offshore
16	----	-----	-----	------	51	34	----	10	8	----------
17	----	-----	-----	------	45	42	----	-----	13	1 Offshore
18	----	-----	-----	------	45	28	----	5	28	----------
19	----	-----	-----	------	40	42	----	4	13	----------
20	----	-----	-----	------	20+	25	----	4	18	----------
21	----	-----	-----	------	26+	25	----	-----	6	----------
22	----	-----	-----	------	47	49	----	-----	17	----------
23	----	-----	-----	------	34	17	----	8	7	1 Offshore
24	----	-----	-----	------	41	19	----	3	6	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
Nov. 25	7	-----	------	1	26	19	----	4	10	----------
26	----	-----	------	------	33	8	----	1	15	----------
27	----	12	------	------	35	13	----	8	8	----------
28	----	4	------	------	35	13	----	-----	5	----------
29	----	-----	------	------	50	30	----	18	6	1 Mauna Kea
30	----	-----	------	------	60	31	----	-----	9	----------
Dec. 1	----	-----	------	------	78+	15+	----	3+	7	----------
2	----	-----	------	------	50	11	----	2	9	----------
3	----	-----	------	------	57	12	----	4	15	----------
4	----	-----	------	------	60	14	----	11	7	1 S. Pali
5	----	-----	------	------	52	31	----	11	9	----------
6	----	-----	------	------	95	36	----	7	6	----------
7	----	-----	------	------	100	31	----	8	6	----------
8	----	-----	3	------	90+	35+	----	1	6	1 Kona 1 Mauna Loa
9	----	-----	------	------	105+	43	----	7	11	1 Mauna Kea
10	36	2	------	------	120+	10	----	2+	10	----------
11	4	-----	------	------	115	40	----	3	13	----------
12	64	-----	------	------	55	14	----	2	13	----------
13	31	-----	------	------	65	36	----	6	7	----------
14	----	-----	------	------	65	25	----	6	15	1 Mauna Loa 1 Kawaihae
15	----	-----	------	------	78	12	----	----	6	----------
16	----	-----	------	------	75	10	2	6	7	1 Mauna Loa
17	----	-----	------	2	83	18	----	2	3	----------
18	----	------	------	------	85	25	----	14	2	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1963)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Dec. 19	----	------	------	------	85+	14	-----	2	6	1 Mauna Kea
20	----	------	------	------	80	18	-----	7	8	----------
21	----	------	------	------	160	40	-----	9	20	----------
22	----	------	------	------	180+	34	-----	6	13	----------
23	----	------	------	------	39	7	-----	2	3	1 Offshore
24	----	------	------	------	90	30	-----	6	4	----------
25	----	------	------	------	190	30	-----	15	6	----------
26	----	------	------	------	170	18	-----	30	10	----------
27	----	------	------	------	150	25	-----	5	7	1 Kawaihae
28	----	------	------	------	170+	28	-----	10	10	----------
29	----	------	------	------	180+	35	-----	1	12	----------
30	----	------	4	------	175+	18	-----	12	9	----------
31	----	3	------	------	60+	16	-----	4	6	1 Offshore

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963

[Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

In the following list, some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

In the following list a number of quakes are described as "Upper east rift" (see Summary 28). Further statistical study of this group which occurred in the swarm periods during July 1 to 6 and August 3 to 4 gives a mean epicenter 19°21.5' N., 155°14' W. about 2 km south of Aloi Crater at near-surface depth.

In Summary 24, "Kaoiki" was introduced as a symbol for listing any of a family of quakes with mean focus 19°24' N., 155°24' W., h=3 to 8 km. This symbol is used in the following list]

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 1	00	06	04.2	2.4	30	19°08.5'	155°26.6'	7 km SE of Pahala	
1	11	04	04.3	2.2	10	19°17.1'	155°05.4'	48 km S. of Hilo	
4	06	39	04.1	2.0	----	--------	---------	KM 30	
4	07	04	33.3	2.0	----	--------	---------	KM 30	
5	Shallow harmonic tremor and earthquakes start at 03:16. Although hundreds of earthquakes were recorded during the eruption, their wave arrivals were obscured by strong harmonic tremor and few epicenters could be located precisely. These shocks originated mainly along or south of the upper and middle sections of the east rift of Kilauea.								
5	03	32	23.0	3.1	3	19°22.6'	155°08.1'	5 km ENE of Makaopuhi seismometer.	
5	03	40	17.0	3.4	3	19°22.6'	155°09.1'	4 km NE of Makaopuhi seismometer.	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 5	03	56	14.5	2.9	3	19°22.0'	155°08.0'	5 km E of Makaopuhi seismometer.	----------
5	03	58	08.6	3.1	3	19°22.6'	155°08.9'	4 km ENE of Makaopuhi seismometer.	----------
5	04	14	04.2	3.3	3	19°22.2'	155°09.0'	3 km ENE of Makaopuhi seismometer.	----------
5	04	20	41.4	2.6	3	19°22.6'	155°08.9'	4 km ENE of Makaopuhi seismometer.	----------
5	04	24	59.5	3.5	3	19°22.0'	155°08.0'	5 km E of Makaopuhi seismometer.	----------
5	04	51	07.5	2.7	3	19°22.8'	155°08.5'	4 km ENE of Makaopuhi seismometer.	----------
5	05	44	41.7	2.6	3	19°22.8'	155°06.2'	8 km ENE of Makaopuhi seismometer.	----------
5	10	25	57.9	3.0	3	19°20.7'	155°15.0'	4 km SE. of Ahua seismometer.	----------
5	10	41	22.5	3.1	<3	19°20.4'	155°17.5'	5 km SW. of Ahua seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 5	18	10	14.5	2.7	5	19°21.7'	155°15.6'	1 km SE. of Ahua seismometer.	----------
5	19	26	51.9	3.1	<3	19°20.9'	155°16.5'	3 km SSW. of Ahua seismometer.	----------
5	20	42	35.7	2.8	3	19°20.3'	155°15.2'	4 km SSE. of Ahua seismometer.	----------
5	20	54	00.2	3.4	3	19°20.6'	155°14.8'	5 km SE. of Ahua seismometer.	----------
5	21	39	53.6	2.9	5	19°21.9'	155°16.7'	1 km SW. of Ahua seismometer.	----------
5	21	45	25.2	2.4	5	19°21.5'	155°15.8'	1 km S. of Ahua seismometer.	----------
6	00	38	28.2	2.6	8	19°17.9'	155°02.6'	17 km SE. of Makaopuhi seismometer.	----------
6	04	05	43.0	2.5	10	19°21.1'	155°05.8'	10 km E. of Makaopuhi seismometer.	----------
6	06	19	21.9	3.0	13	19°22.8'	155°07.5'	6 km ENE. of Makaopuhi seismometer.	----------
6	08	09	49.6	2.5	10	19°20.2'	155°01.0'	5 km WSW. of Kalapana	----------
6	09	28	48.4	2.4	10	19°24.2'	155°05.9'	11 km NE. of Makaopuhi seismometer.	----------
6	10	07	26.9	2.7	8	19°17.1'	155°00.6'	8 km SW. of Kalapana	----------
6	12	26	28.8	3.4	10	19°21.8'	155°09.5'	3 km E. of Makaopuhi seismometer.	Felt in Hilo, Kapapala, and Kilauea district.
6	21	04	41.5	2.6	10	19°16.8'	155°03.1'	49 km SSE. of Hilo	----------
7	04	08	07.9	2.7	13	19°20.2'	155°06.7'	8 km ESE. of Makaopuhi seismometer.	----------
7	06	34	11.0	3.0	10	19°12.1'	155°07.5'	10 km SE. of Apua Point.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 7	17	05	15.3	2.5	8	19°19.8'	155°03.7'	45 km SSE. of Hilo	----------
7	20	14	48.8	2.5	10	19°18.8'	155°05.8'	45 km S. of Hilo	----------
7	21	40	28.4	2.6	5	19°12.4'	155°10.8'	7 km SSE. of Apua Point	----------
7	22	20	33.7	3.7	5	19°12.5'	155°10.5'	7 km SSE. of Apua Point	Felt in Kilaua district.
8	06	10	52.0	2.0	---	-------	--------	KM 30----------	----------
8	11	44	35.3	3.3	8	19°18.6'	155°05.1'	45 km S. of Hilo-------	Felt in Kilauea district.
9	03	15	04.1	2.6	10	19°17.9'	155°13.3'	5 km NW. of Apua Point	----------
9	18	45	24.0	2.0	3	19°06.0'	155°08.2'	18 km SE. of Apua Point	----------
9	19	05	27.0	2.2	3	19°06.0'	155°08.2'	18 km SE. of Apua Point	----------
10	00	07	05.6	2.5	8	19°15.7'	155°01.2'	5 km SW. of Kalapana	----------
10	21	34	29.6	2.8	8	19°08.1'	155°44.0	18 km NW. of Naalehu---	----------
10	20	02	18.2	2.3	35	19°11.2'	155°28.1'	2 km SE. of Pahala-----	Felt in Pahala----
11	11	04	35.7	2.0	8	19°05.8'	155°23.7'	21 km ENE. of Naalehu--	----------
11	13	40	11.2	2.4	3	19°15.4'	155°20.1'	11 km SE. of Desert seismometer.	----------
11	13	40	48.9	2.6	3	19°15.4'	155°20.1'	11 km SE. of Desert seismometer.	Felt in Kapapala
11	16	52	47.8	3.8	8	19°08.3'	155°05.0'	64 km S. of Hilo	Felt in Kilauea district.
11	17	37	34.4	2.2	8	19°08.3'	155°05.0'	64 km S. of Hilo	----------
11	17	38	16.3	2.3	10	19°14.8'	155°07.7'	7 km ESE. of Apua Point.	----------
11	22	44	22.4	2.2	8	19°12.0	155°21.1'	16 km SSE. of Desert seismometer.	----------
11	23	46	01.3	3.2	13	21°10'	155°20'	106 km NE. of Haleakala seismometer.	----------
12	16	39	39.2	2.8	8	19°06.6'	155°06.4'	67 km S. of Hilo-------	----------
12	18	14	25.6	2.8	8	19°14.5'	155°22.0	11 km S. of Desert seismometer.	----------
12	21	16	30.3	3.3	8	19°14.5'	155°22.3'	11 km S. of Desert seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 13	01	45	04.2	2.2	----	-------	--------	Kaoiki----------	----------
13	06	37	08.0	2.8	3	19°25.3'	155°46.1'	20 km SE. of Kealakekua	----------
13	09	59	16.2	2.0	8	19°09.9'	155°11.5'	10 km S. of Apua Point	----------
13	12	06	13.3	2.6	5	19°17.8'	155°27.2'	9 km SW. of Desert seismometer.	----------
14	07	58	35.9	2.4	3	19°05.0'	155°15.0'	20 km SSW. of Apua Point	----------
14	23	36	03.1	2.7	<3	19°29.0'	155°53.0'	6 km SE. of Kealakekua	----------
15	13	57	01.2	2.8	---	--------	---------	KM 30----------	Felt in Kapapala
17	04	26	10.6	2.5	8	19°17.1'	155°14.9'	11 km SSE. of Ahua seismometer.	----------
17	09	27	56.4	2.0	8	19°18.0'	155°21.5'	5 km SE. of Desert seismometer.	----------
18	14	19	51.0	2.9	8	19°12.5'	155°20.9'	13 km E. of Pahala	Felt in Pahala
18	17	53	42.7	2.6	10	19°17.2'	155°08.7'	9 km SE. of Makaopuhi seismometer.	----------
19	16	34	34.9	2.9	3	19°03.1'	155°17.8'	31 km E. of Naalehu	----------
20	02	31	42.8	2.7	8	19°08.5'	155°15.8'	15 km SW. of Apua Point	----------
20	18	29	55.5	2.4	8	19°05.5'	155°16.3'	35 km E. of Naalehu	----------
20	11	20	36.2	2.4	---	--------	---------	Kaoiki----------	----------
21	14	49	17.2	2.0	13	19°18.2'	155°14.7'	8 km SSE. of Ahua seismometer.	----------
22	03	16	41.6	2.1	8	19°15.0'	155°13.7'	5 km WSW. of Apua Point	----------
22	03	54	23.6	2.0	10	19°19.5'	155°13.1'	6 km SW. of Makaopuhi seismometer.	----------
22	07	35	45.2	3.3	13	20°23'	156°14'	40 km S. of Haleakala seismometer.	----------
22	19	08	11.7	3.2	---	--------	--------	Kaoiki----------	Felt in Kilauea district.
22	21	01	19.0	2.7	3	19°28.0'	155°43.3'	21 km ESE. of Kealakekua	----------
23	10	24	06.4	5.3	---	--------	--------	Kaoiki----------	Felt island-wide
23	10	35	58.5	2.7	---	--------	--------	Kaoiki----------	----------
23	10	48	00.7	2.6	---	--------	--------	Kaoiki----------	----------
23	11	24	47.0	3.8	---	--------	--------	Kaoiki----------	Felt in Hilo, Pahala, and Kapapala.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 23	11	33	31.4	2.1	---	--------	-------	Kaoiki	----------
23	12	36	16.9	2.9	---	--------	-------	Kaoiki	Felt in Kapapala
23	12	53	56.0	2.0	---	--------	-------	Kaoiki	----------
23	13	02	48.8	2.0	---	--------	-------	Kaoiki	----------
23	13	28	10.1	2.7	---	--------	-------	Kaoiki	Felt in Kapapala and Kilauea district.
23	13	37	07.0	2.2	---	--------	-------	Kaoiki	Kaoiki
23	17	31	08.3	2.2	---	--------	-------	Kaoiki	----------
23	18	25	28.6	3.5	---	--------	-------	Kaoiki	Felt in Kapapala, Pahala, and Kilauea district.
23	20	52	57.6	2.8	---	--------	-------	Kaoiki	Felt in Kapapala
24	08	53	57.8	2.3	---	--------	-------	Kaoiki	----------
24	16	07	53.7	2.7	---	--------	-------	Kaoiki	Felt at Kapapala
25	15	29	34.0	3.8	---	--------	-------	Kaoiki	Felt in Kapapala, Pahala, and Kilauea district.
26	00	03	54.7	3.5	---	-------	-------	Kaoiki	Felt in Kilauea district.
26	02	29	04.8	3.3	---	-------	-------	Kaoiki	Felt in Kilauea district.
26	06	57	53.9	3.2	---	-------	-------	Kaoiki	Felt in Kilauea district.
26	13	09	28.4	2.4	8	19°11.3'	155°38.8'	15 km NW. of Naalehu	----------
26	22	46	40.6	2.2	---	-------	-------	Kaoiki	----------
27	00	46	59.0	2.1	8	19°14.2'	155°32.3'	8 km NW. of Pahala	----------
28	01	08	56.9	2.2	---	-------	-------	Kaoiki	----------
28	04	45	33.7	2.1	8	19°17.8'	155°32.6'	13 km NW. of Pahala	----------
29	13	01	45.3	3.3	30	19°17.5'	155°23.3'	6 km S. of Desert seismometer.	Felt in Kapapala

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 29	23	53	42.5	2.3	25	19°14.7'	155°13.9'	5 km WSW. of Apua Point	----------
30	02	08	46.2	2.2	13	20°31'	155°53'	46 km SE. of Haleakala seismometer.	----------
30	05	40	29.0	2.0	---	--------	--------	Kaoiki----------	----------
30	07	15	19.9	2.4	---	--------	--------	Kaoiki----------	----------
30	07	20	26.2	2.2	---	--------	--------	Kaoiki----------	----------
30	12	57	04.2	2.7	---	--------	--------	KM 30----------	Felt in Kapapala
30	14	02	22.7	3.0	35	18°56.8'	155°22.8'	26 km SE. of Naalehu-----	Felt in Pahala
Nov. 1	13	48	05.2	2.7	---	--------	--------	KM 30----------	----------
2	12	46	04.5	2.6	---	--------	--------	Kaoiki----------	----------
2	22	09	42.6	2.7	---	--------	--------	Kaoiki----------	----------
2	03	22	32.9	2.7	8	19°12.4'	155°34.5'	17 km NNE. of Naalehu----	----------
3	10	35	56.4	3.4	5	19°12.1'	155°34.9'	15 km N. of Naalehu------	----------
3	21	23	25.4	3.7	13	20°09.3'	155°27.0'	8 km NNE. of Honokaa-----	Felt 1/2 of island
4	00	25	45.3	2.3	13	19°52.1'	155°29.6'	13 km NNE. of Pohakuloa	----------
5	06	45	27.0	3.4	---	--------	---------	Kaoiki----------	Felt Kapapala and Volcano.
5	22	01	02.5	3.1	5	19°12.2'	155°31.3'	5 km WNW. of Pahala------	----------
6	02	38	15.5	2.3	13	19°13.4'	154°58.2'	15 km S. of Kalapana-----	----------
7	08	43	03.7	2.2	---	--------	---------	Kaoiki----------	----------
8	22	18	32.5	3.1	---	--------	---------	Kaoiki----------	----------
8	22	36	51.6	2.5	---	--------	---------	Kaoiki----------	----------
12	01	50	15.0	2.6	8	19°16.4'	155°10.2'	3 km NE. of Apua Point--	----------
12	18	48	15.5	2.3	8	19°13.2'	155°07.1'	10 km SE. of Apua Point--	----------
12	23	12	27.0	2.0	13	20°11.9'	155°38.2'	21 km NNE. of Kamuela seismometer.	----------
13	02	42	15.3	2.1	---	-------	---------	KM 30----------	----------
14	01	37	12.0	3.2	---	-------	---------	Kaoiki----------	Felt Kapapala and Volcano.
14	09	33	31.5	2.6	---	-------	---------	Kaoiki----------	Felt at Kapapala
14	21	50	16.0	2.9	13	19°46'	157°01'	120 km WNW. of Kealakekua	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Nov. 14	23	38	50.5	2.6	3	19°54.0'	155°32.5'	23 km SE. of Kamuela seismometer.	----------
15	04	02	09.0	3.5	13	19°26'	156°09'	25 km WSW. of Kealakekua.	----------
15	07	18	34.0	2.1	----	-------	--------	Kaoiki----------	----------
15	09	01	26.5	3.8	----	-------	--------	KM 30----------	Felt in half of island.
15	10	11	33.2	2.2	----	-------	--------	KM 30----------	----------
16	06	55	51.5	2.3	----	-------	--------	KM 30----------	----------
16	12	26	39.1	2.9	----	-------	--------	KM 30----------	----------
16	16	07	00.2	2.1	----	-------	--------	KM 30----------	----------
17	08	23	27.0	2.4	13	18°56'	155°09'	37 km SSE. of Apua Point	----------
17	11	16	14.0	2.5	----	-------	--------	Kaoiki----------	Felt at Kapapala
17	17	07	47.5	2.3	----	-------	--------	Kaoiki----------	----------
18	19	51	25.7	2.4	----	-------	--------	Kaoiki----------	----------
20	14	16	58.7	2.2	----	-------	--------	KM 30----------	----------
23	02	29	41.3	2.7	13	19°38'	156°35'	52 km WSW. of Keahole Point.	----------
26	00	13	18.5	2.4	----	-------	---------	Kaoiki----------	----------
26	11	21	18.5	3.3	3	19°21.8'	155°07.1'	13 km NE of Apua Point--	----------
27	02	14	52.5	2.0	----	-------	---------	Kaoiki----------	----------
29	18	02	58.0	3.6	8	19°20.1'	155°07.8'	12 km NE. of Apua Point	Felt in Volcano, Puna, and Kulani.
29	19	51	25.3	2.2	13	19°56.2'	155°21.5'	13 km SW. of Laupahoehoe	----------
Dec. 2	03	11	22.6	2.3	----	--------	---------	KM 30----------	----------
3	09	51	26.5	2.9	8	19°16.2'	155°13.0'	3 km WNW. of Apua Point	----------
4	14	02	05.7	2.5	8	19°14.8'	155°15.8'	15 km S. of Ahua seismometer.	----------
8	01	34	07.0	2.2	8	19°33.8'	155°54.8'	6 km N. of Kealakekua	----------
8	20	49	50.8	2.0	8	19°12.2'	155°41.4'	18 km NW. of Naalehu	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 9	18	47	55.5	3.4	8	19°53.1'	155°31.3'	26 km SE. of Kamuela---	Felt in half of island.
9	18	50	07.0	2.5	8	19°56.7'	155°30.6'	23 km ESE. of Kamuela--	----------
11	22	22	24.0	2.6	----	--------	---------	Kaoiki----------	----------
12	17	29	19.0	2.3	8	19°18.8'	155°10.4'	8 km NNE. of Apua Point	----------
13	21	19	24.0	2.4	8	19°17.8'	155°17.5'	12 km ESE. of Desert seismometer.	----------
14	03	32	34.0	2.2	---	-------	--------	KM 30----------	----------
14	22	16	04.7	2.2	8	19°14.1'	155°36.7'	19 km NNW. of Naalehu---	----------
14	23	59	22.1	2.3	13	19°59.2'	155°59.2'	18 km WSW. of Kawaihae--	----------
16	10	57	39.8	2.6	8	19°13.1'	155°34.8'	17 km N. of Naalehu-----	----------
19	21	17	30.0	2.3	13	19°57.0'	155°22.2'	15 km WSW. of Laupahoehoe	----------
21	00	30	58.4	2.1	----	--------	---------	KM 30----------	----------
21	06	06	11.1	2.8	----	--------	---------	KM 30----------	----------
23	16	49	19.4	2.2	----	--------	---------	Kaoiki----------	----------
23	17	44	55.5	2.6	8	19°19.2'	155°12.7'	10 km SE. of Ahua seismometer.	----------
24	04	33	37.0	2.0	3	19°18.1'	155°05.8'	12 km ENE. of Apua Point	----------
24	20	04	55.5	2.3	8	19°14.9'	155°11.3'	2 km SSE. of Apua Point	----------
25	04	20	04.0	2.3	8	19°14.5'	155°25.9'	12 km SSW. of Desert seismometer.	----------
26	12	11	21.0	2.7	----	-------	--------	Kaoiki----------	----------
27	15	39	31.1	2.7	13	20°01.2'	155°53.0'	7 km WSW. of Kawaihae---	----------
27	02	12	30.6	2.0	----	-------	--------	KM 30----------	----------
27	03	03	23.3	2.0	----	-------	---------	KM 30----------	----------
27	17	33	15.0	2.4	----	-------	--------	KM 30----------	----------
28	11	14	55.5	2.4	----	-------	--------	Kaoiki----------	----------
29	04	02	02.1	2.4	25	19°19.8'	155°12.8'	8 km SE. of Ahua seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1963--Continued

Date (1963)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 29	16	22	19.0	2.4	----	---------	---------	Kaoiki----------	----------
29	22	14	50.3	2.7	----	---------	---------	Kaoiki----------	----------
31	03	18	07.0	2.3	10	19°12.7'	155°11.0'	6 km SSE. of Apua Point.	----------
31	09	24	56.3	3.1	----	---------	---------	KM 30----------	----------

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in summary 29. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey]

Oct. 2, 1963

M	Z	eP	05:55:15.6 d
U	PEE	eS	06:02:14
U	PEE	eSS	06:05:35
U	PEE	eL	06:06:43
U	PEZ	eR	06:08:53

C&GS card 83-63:
05:47:05.5
20.8° S., 174.1° W.
Tonga Islands
h about 33 km
Magnitude 5.3 (CGS)
5.7 (HVO).

Oct. 3

U	PEZ	eR	16:48:07

C&GS card 80-63:
15:48:17.2
58.5° S., 25.1° W.
Sandwich Islands
h about 54 km.

Oct. 3

M	Z	eP	23:35:19.9 c
U	PEZ	iP	21 c
U	PEZ	eR	23:54:49
U	PEE	iS	23:44:09

C&GS card 80-63:
23:24:34.7
32.2° N., 131.6° E.
Kyushu, Japan
h about 33 km
Magnitude 6.5 (Pas)
6 (Pal)
5.7 (CGS).

Oct. 7

M	Z	iP	13:22:24.9 d
A	Z	iP	24.4 d
D	Z	iP	23.1 d
N	Z	iP	24.4 d
MP	Z	iP	24.7 d
Na	Z	iP	20.9 d
Ka	Z	iP	27.6 c
Hi	Z	iP	27.3 d
Ha	Z	iP	29.1 c

C&GS card 81-63:
13:14:24.6
23.6° S., 179.9° E.
Fiji Islands region.
h about 550 km
Magnitude 5.7 (CGS).

Oct. 8

M	Z	iP	00:24:25.3 c
A	Z	iP	23.9 c
D	Z	iP	23.2 c
N	Z	iP	24.8 c
MP	Z	iP	25.2 c
Na	Z	iP	21.0 c
Hi	Z	iP	27.6 c
Ha	Z	iP	31.1 c

C&GS card 81-63:
00:17:01.1
15.1° S., 173.2° W.
Samoa Islands region
h about 33 km
Magnitude 6 (Pas)
5.75 (Bks)
5.7 (CGS).

Oct. 12, 1963

M	Z	iP	11:36:09.4	c
D	Z	iP	10.1	c
N	Z	eP	10.3	c
Pa	Z	eP	10.6	d
Na	Z	eP	14.7	d
Ka	Z	eP	05.2	c
Hi	Z	eP	10.0	c
Ha	Z	eP	11:35:57.5	c
U	PEZ	iP	11:36:10	d
U	PEZ	iS	11:43:31	
U	PEZ	iR	11:50:30	

C&GS card 85-63:
11:26:57.9
44.8° N., 149.0° E.
Kurile Islands
h about 40 km
Magnitude 6.75-7 (Pas)
7 (Bks)
6.75-7 (Pal)
7.5 (HVO).

Oct. 13

M	Z	iP	05:27:03.6	d
A	Z	eP	04.7	d
D	Z	eP	04.2	d
U	Z	eP	03.9	d
Na	Z	iP	06.0	c
Hi	Z	eP	01.3	d
Ha	Z	eP	05:26:52.7	d
U	PEZ	iP	05:27:04	d
U	PEZ	iS	05:34:26	
Ha	Z	Tmax	06:21:20	

C&GS card 84-63:
05:17:57.1
44.8° N., 149.5° E.
Kurile Islands
h about 60 km
Felt: Hokkaido and Honshu, Japan. Seismic sea waves: 4.0 ft. Hokkaido; 2.5 ft. Oahu, Hawaii; 2.2 ft. Crescent City, California; 1.5 ft. Attu, Aleutians.
Magnitude 8.25 (Pas)
7.75-8 (Pal)
8.1 (HVO)
Small tsunami in Hilo Bay.

Oct. 13

M	Z	iP	13:07:24.9	d
A	Z	iP	26.1	d
D	Z	iP	25.1	d
E	Z	iP	26.2	d
U	Z	iP	25.2	d
Hi	Z	iP	24.8	d

C&GS card 84-63:
12:58:21.6
45.0° N., 150.1° E.
Kurile Islands
h about 50 km
Magnitude 5.4 (CGS).

Oct. 13

M	Z	iP	16:08:56.7	c
WP	Z	iP	57.2	c
MP	Z	iP	57.9	c
Hi	Z	eP	56.3	c
U	PEN	iS	16:16:24	
U	PEE	iL	16:21:14	
U	PEZ	iR	16:23:22	

C&GS card 84-63:
15:59:52.9
45.6° N., 150.5° E.
Kurile Islands
h about 35 km
Magnitude 6.1 (CGS).

Oct. 13 (14)

U	PEZ	eR	00:17:50

C&GS card 84-63:
23:52:22.8
44.5° N., 150.1° E.
Kurile Islands
h about 50 km
Magnitude 5.5 (CGS).

Oct. 14

D	Z	eP	04:20:15.5	d
U	PEZ	eR	04:35:06	

Oct. 14, 1963--Continued

C&GS card 84-63:
04:11:14.0
44.7° N., 150.6° E.
Kurile Islands
h about 45 km
Magnitude 5.3 (CGS)
6.0 (HVO).

Oct. 14

M	Z	iP	13:30:41.7 d
A	Z	eP	43.0 d
D	Z	iP	42.7 d
MP	Z	eP	43.7 d
U	Z	iP	42.8 d
Pa	Z	iP	44.1 d
Na	Z	iP	43.0 d
Hi	Z	iP	42.2 d
Ha	Z	iP	31.3 d
U	PEN	iG	13:42:51
U	PEZ	eR	13:44:51

C&GS card 84-63:
13:21:45.2
44.8° N., 151.0° E.
Kurile Islands
h about 60 km
Magnitude 5.75 (Bks)
5.9 (CGS)
6.0 (HVO).

Oct. 15

U	PEZ	eR	07:13:23

C&GS card 90-63:
06:49:37.8
42.2° N., 152.3° E.
Kurile Islands
h about 40 km
Magnitude 4.2 (CGS)
5.8 (HVO).

Oct. 17

M	Z	iP	23:33:57.8 d
A	Z	iP	59.4 d
D	Z	iP	58.7 d
Pa	Z	eP	23:34:00.8 d
U	PEN	iS	23:41:17

Oct. 17--Continued

U	PEN	iG	23:46:09
U	PEZ	iR	23:48:23

C&GS card 84-63:
23:24:34.4
44.6° N., 149.0° E.
Kurile Islands
h about 45 km
Magnitude 5.4 (CGS)
6.6 (HVO).

Oct. 20

M	Z	iP	01:02:20.6 d
A	Z	eP	22.0 d
D	Z	iP	21.3 d
Ha	Z	eP	14.4 c
Na	Z	eP	22.8 c
Hi	Z	eP	20.3 d
U	PEZ	iP	22 d
U	PEZ	iS	01:09:36
U	PEZ	iR	01:16:10
U	PEN	iG	01:14:00

C&GS card 85-63:
00:53:07.2
44.7° N., 150.7° E.
Kurile Islands
h about 25 km
Seismic sea waves: 1.0 ft. LaJolla, California; 0.5 ft. Oahu, Hawaii.
Magnitude 6.75-7 (Pas)
7.25-7.5 (Pal)
7.6 (HVO).

Oct. 20

M	Z	iP	09:19:48.7 c
A	Z	iP	49.7 c
D	Z	iP	49.3 c
MP	Z	iP	50.1 c
U	Z	iP	49.3 c
Pa	Z	iP	50.5 c
Na	Z	iP	49.4 c
Hi	Z	iP	48.9 c

C&GS card 87-63:
09:10:43.9
44.4° N., 150.0° E.

Oct. 20, 1963--Continued

C&GS card--Continued:
Kurile Islands
h about 40 km
Magnitude 5.5 (CGS).

Oct. 20

U	PEZ	eR	12:16:01

C&GS card 87-63:
11:52:20.7
44.7° N., 150.2° E.
Kurile Islands
h about 45 km
Magnitude 4.2 (CGS)

Oct. 22

Pa	Z	Tmax	05:16:20
Ha	Z	Tmax	05:14:14

C&GS card 85-63:
04:29:11.7
51.0° N., 179.4° E.
h about 55 km
Rat Islands, Aleutian Islands
Magnitude 4.9 (CGS)

Oct. 22

U	PEZ	eR	03:49:26

C&GS card 87-63:
03:25:38.8
43.9° N., 150.3° E.
Kurile Islands
h about 50 km
Magnitude 4.9 (CGS).

Oct. 25

M	Z	iP	20:09:05.2	c
A	Z	iP	05.4	c
D	Z	iP	04.8	c
MP	Z	eP	06.9	c
U	Z	iP	05.2	c
Ha	Z	eP	20:08:59.1	c

Oct. 25--Continued

C&GS card 89-63:
19:58:58.3
12.3° N., 144.5° E.
Mariana Islands
h about 29 km
Magnitude 5.4 (CGS).

Oct. 29

Ha	Z	Tmax	07:43:07

C&GS card 88-63:
07:01:42.7
40.4° N., 124.7° W.
Near coast of Humbolt County, California
h about 38 km
Magnitude 4.7 (CGS)

Oct. 31

M	Z	eP	03:26:00.6	c
A	Z	eP	03:25:58.0	c
MP	Z	eP	57.2	c
U	Z	eP	58.1	c
Pa	Z	eP	59.7	c
Na	Z	eP	56.7	d
Ka	Z	eP	03:26:03.1	c
Ke	Z	eP	00.1	C
Hi	Z	eP	02.1	c
U	PEE	eS	03:32:41	
U	PEE	eG	03:36:00	

C&GS card 89-63:
03:17:42.0
21.8° S., 175.0° W.
Tonga Islands
h about 33 km
Magnitude 6.25 (Pas)
5.5 (Bks)
6.25-6.5 (Pal)
5.2 (CGS)
5.9 (HVO).

Oct. 31, 1963

M	Z	iP	08:58:53.2	d
D	Z	eP	52.0	d
U	Z	iP	52.1	d
Pa	Z	iP	54.1	d
Ka	Z	iP	56.7	c
Ke	Z	iP	52.7	c
Hi	Z	iP	55.3	c
Ha	Z	iP	57.9	c

C&GS card 89-63:
08:51:42
17.9° S., 178.8° W.
Fiji Islands region
h about 637 km
Magnitude 4.3 (CGS).

Nov. 3

M	Z	iP	03:22:20.9	d
A	Z	iP	19.8	d
D	Z	iP	20.0	d
MP	Z	iP	19.5	d
U	Z	iP	20.2	d
Pa	Z	iP	18.8	d
Na	Z	iP	20.1	d
Ka	Z	iP	22.4	d
Ke	Z	iP	21.7	d
Hi	Z	iP	20.5	d
Ha	Z	iP	25.0	d
U	PEN	iS	03:32:32	
U	PEN	iG	03:42:56	
U	PEZ	iR	03:46:10	

C&GS card 90-63:
03:10:12.7
3.5° S., 77.8° W.
Peru-Ecuador border
h about 33 km
Magnitude 6.75 (Pas)
6-6.25 (Bks)
6.0 (Pal)
6.0 (CGS).
6.3 (HVO).

Nov. 4

M	Z	iP	01:23:14.1	c
Pa	Z	eP	15.4	c
Na	Z	iP	11.9	c
Ke	Z	iP	12.7	c

Nov. 4--Continued

Ha	Z	iP	19.8	c

C&GS card 91-63:
01:14:32.8
15.1° S., 167.3° E.
New Hebrides Islands
h about 154 km
Magnitude 6.75-7 (Pas)
5.8 (CGS).

Nov. 4

M	Z	eP	01:29:03.6	d
A	Z	eP	04.9	d
D	Z	iP	03.6	d
MP	Z	eP	04.5	d
U	Z	iP	04.8	d
Pa	Z	iP	06.4	d
Na	Z	iP	02.0	d
Ke	Z	iP	01.6	d
Hi	Z	eP	06.7	d
U	PEZ	iP	01:29:05	c
U	PEZ	iPcP	01:29:17	
U	PEZ	ipP	01:29:34	
U	PEZ	isP	01:29:50	
U	PEZ	i	01:32:42	
U	PEZ	i	01:35:00	
U	PEE	iS	01:38:53	
U	PEE	iSS	01:44:05	
U	PEN	iSSS	01:47:42	
U	PEN	iG	01:49:51	

C&GS card 91-63:
01:17:08.9
6.8° S., 129.6° E.
Banda Sea
h about 80 km
Felt throughout Australia, northern Tasmania and Papua
Magnitude 7.5 (HVO).

Table 5.--Distant earthquakes--Continued

Nov. 6, 1963

M	Z	iP	02:24:25.1 c
U	Z	eP	24.5 c
U	PEE	iS	02:33:19
U	PEN	eL	02:40:35
U	PEZ	iR	02:44:43

C&GS card 93-63:
02:13:16.8
138.4° E., 2.6° S.
Western New Guinea
h about 33 km
Magnitude 6.3 (HVO).

Nov. 8

M	Z	iP	16:25:05.6 d
MP	Z	iP	06.0 d

C&GS card 91-63:
16:13:36.2
128.4° E., 2.7° N.
Molucca Passage
h about 216 km
Magnitude 5.7 (CGS).

Nov. 9

M	Z	eP	21:27:17.4 c
A	Z	eP	16.5 c
MP	Z	eP	15.9 c
Pa	Z	eP	15.0 c
Ka	Z	eP	18.1 c
Hi	Z	eP	15.9 c
Ha	Z	iP	21.8 c
U	PEZ	iP	17 c
U	PEZ	ipP	21:29:25
U	PEZ	esP	21:30:31
U	PEZ	iPP	21:31:09
U	PEZ	ipPP	21:32:55
U	PEZ	iPPP	21:33:43
U	PEZ	i	21:39:35
U	PEE	iSKS	21:36:51
U	PEE	iSP	21:38:19
U	PEE	isP	21:41:01
U	PEN	iS	21:37:15
U	PEN	i	21:42:19
U	PEN	iSS	21:43:31
U	PEN	iSSS	21:46:47
U	PEN	i	21:49:55
U	PEN	eG	21:52:13

Nov. 9--Continued

C&GS card 93-63:
21:15:30.4
9.0° S., 71.5° W.
Western Brazil
h about 600 km
Magnitude 6.75-7 (Pas)
6.75-7 (Bks)
5.9 (CGS)
7 (HVO).

Nov. 10

M	Z	eP	01:12:26.8 c
A	Z	eP	26.3 c
MP	Z	eP	25.8 c
Pa	Z	iP	25.0 c
Hi	Z	iP	25.8 c
Ha	Z	eP	32.0 c
U	PEE	iS	01:22:19
U	PEE	iSP	01:23:34
U	PEE	i	01:26:58

C&GS card 93-63:
01:00:38.8
9.2° S., 71.5° W.
Western Brazil
h about 600 km
Magnitude 6.5-6.75 (Pas)
6.25 (BKS)
5.6 (CGS).

Nov. 10

M	Z	eP	17:27:05.0 c
D	Z	eP	05.5 c
U	Z	eP	05.2 c
U	PEN	iS	17:34:45
U	PEN	eL	17:39:19
U	PEZ	iR	17:41:43

C&GS card 93-63:
17:17:42.7
44.4° N., 149.0° E.
Kurile Islands
h about 40 km
Magnitude 5.5 (CGS)
6.4 (HVO).

Nov. 15

M	Z	eP	21:15:40.6 c
A	Z	eP	42.7 c
D	Z	iP	42.6 c

Table 5.--Distant earthquakes--Continued

Nov. 15, 1963--Continued

MP	Z	eP		43.3 c
U	Z	iP		42.0 c
Pa	Z	iP		44.3 c
Na	Z	eP		44.3 c
Hi	Z	iP	21:15:43.0	c
U	PEZ	iP		42.4 c
U	PEZ	iR	21:30:40	
U	PEN	iS	21:23:02	
U	PEN	iG	21:27:40	

C&GS card 93-63:
21:06:34.0
44.3° N., 149.0° E.
Kurile Islands
h about 50 km
Magnitude 6.0 (Bks)
6.25-6.5 (Pal)
6.0 (CGS)
6.5 (HVO).

Nov. 18

M	Z	iP	14:45:58.7	d
A	Z	eP	58.3	d
D	Z	eP	59.3	d
MP	Z	iP	57.9	d
U	Z	iP	58.1	d
Pa	Z	iP	56.8	c
Na	Z	iP	14:46:03.1	c
Hi	Z	eP	14:45:56	d
Ke	Z	iP	14:46:02.7	c
Ha	Z	eP	14:46:02.7	c
U	PEZ	iS	14:51:56	
U	PEZ	iR	14:56:06	
U	Z	Tmax	15:25:50	
Pa	Z	Tmax	41	
Ha	Z	Tmax	15:26:15	

C&GS card 93-63:
14:38:28.9
29.9° N., 113.6° W.
Gulf of California
h about 14 km
Magnitude 6.5 (Pas)
6.5-6.75 (Pal)
5.7 (CGS)
6.5 (HVO).

Nov. 23

M	Z	iP	07:58:08.6	c
U	Z	eP	08.2	c
U	PEZ	eR	08:08:04	
M	Z	Tmax	08:37:41	
U	Z	Tmax	49	

C&GS card 96-63:
07:50:46.3
30.1° N., 114.0° W.
Gulf of California
h about 14 km
Magnitude 6 (Pas)
6 (Bks)
5.1 (CGS)
6.0 (HVO).

Nov. 23

M	Z	Tmax	09:19:16
U	Z	Tmax	12
Ha	Z	Tmax	15

C&GS card 102-63:
08:32.31
29.9° N., 114.0° W.
Gulf of California
h about 14 km
Magnitude 5.3 (CGS).

Nov. 28

Ha	Z	Tmax	16:02:06

C&GS card 96-63:
15:13:11.0
52.2° N., 174.2° E.
Near Islands,
Aleutian Islands
h about 33 km
Magnitude 5.4 (CGS).

Nov. 30

M	Z	iP	09:59:46.9	d
A	Z	eP	47.0	d
D	Z	eP	46.2	d
U	Z	iP	47.0	d

C&GS card 96-63:
09:47:59.0
1.6° N., 128.4° E.

Table 5.--Distant earthquakes--Continued

Nov. 30, 1963--Continued

C&GS card--Continued
Halmahera region
h about 61 km
Magnitude 5.5 (CGS).

Dec. 2

M	Z	Tmax	07:40:15
A	Z	Tmax	20
MP	Z	Tmax	22
U	Z	Tmax	21
Pa	Z	Tmax	17
Hi	Z	Tmax	02
Ha	Z	Tmax	07:39:24

C&GS card 97-63:
06:52:20
54.1° N., 134.2° W.
Queen Charlotte Islands
h about 33 km
Magnitude 3.9 (CGS).

Dec. 3 (4)

M	Z	Tmax	01:00:14
A	Z	Tmax	02
D	Z	Tmax	11
U	Z	Tmax	07
Pa	Z	Tmax	00:59:43
Ha	Z	Tmax	01:02:48

C&GS card 97-63:
23:03:41.6
22.4° S., 69.3° W.
Northern Chile
h about 18 km
Magnitude 6.25 (Pas)
6.1 (CGS).

Dec. 4

Ha	Z	Tmax	02:43:11

C&GS card 103-63:
01:35:24.5
45.3° N., 153.4° E.
Kurile Islands
h about 60 km
Magnitude 4.1 (CGS).

Dec. 7

M	Z	iP	04:15:40.9	c
A	Z	iP	40.1	d
U	Z	iP	40.4	c
Pa	Z	iP	41.9	d
Hi	Z	eP	42.8	d
Ke	Z	iP	38.6	d

C&GS card 99-63:
04:07:52.8
22.1° S., 179.4° W.
Fiji Islands region
h about 546 km
Magnitude 5.5 (CGS).

Dec. 7

M	Z	iP	04:55:36.0	d
A	Z	iP	36.2	c
U	Z	eP	36.0	c
Pa	Z	iP	38.0	d
Hi	Z	eP	38.4	d

C&GS card 102-63:
04:46:52.2
18.8° S., 169.2° E.
New Hebrides Islands
h about 227 km
Magnitude 4.7 (CGS).

Dec. 9

M	Z	Tmax	06:22:49
A	Z	Tmax	47
D	Z	Tmax	43
MP	Z	Tmax	47
U	Z	Tmax	43
Pa	Z	Tmax	48
Hi	Z	Tmax	19

C&GS card 99-63:
05:38:29.5
54.9° N., 159.4° W.
Alaska Peninsula
h about 45 km
Magnitude 5.1 (CGS).

Table 5.--Distant earthquakes--Continued

Dec. 10, 1963

M	Z	iP	03:42:52.6 c
A	Z	iP	52.3 c
MP	Z	iP	52.6 c

C&GS card 100-63:
03:31:21.1
6.2° S., 128.1° E.
Banda Sea
Felt: Darwin
h about 366 km
Magnitude 5.6 (CGS).

Dec. 11

A	Z	eP	00:55:10.3 d
Na	Z	iP	09.7 d
Hi	Z	eP	15.9 c
Ke	Z	eP	11.2 c
U	PEZ	eR	01:05:17

C&GS card 101-63:
00:47:48.3
15.1° S., 173.6° W.
Tonga Islands region
Magnitude 5.6 (CGS)
h about 33 km.

Dec. 11

M	Z	iP	02:38:37.4 c
A	Z	eP	36.4 c
D	Z	iP	35.8 c
MP	Z	iP	36.4 c
U	Z	iP	36.8 c
Na	Z	iP	33.7 c
Ka	Z	iP	39.9 c
Ke	Z	iP	35.5 c
Hi	Z	iP	39.3 c
Ha	Z	iP	41.7 c

C&GS card 103-63:
02:31:19.4
17.8° S., 178.6° W.
Fiji Islands
h about 537 km
Magnitude 4.9 (CGS).

Dec. 12

M	Z	iP	23:33:35.0 d
D	Z	iP	35.4 d

Dec. 12--Continued

C&GS card 99-63:
23:24:36.6
46.3° N., 150.5° E.
Kurile Islands
h about 90 km
Magnitude 5.2 (CGS).

Dec. 14

M	Z	iP	07:59:19.8 c
A	Z	iP	20.4 c
D	Z	iP	20.7 c
MP	Z	iP	20.5 c
Ke	Z	iP	19.4 c

C&GS card 101-63:
07:51:07.9
62.7° N., 149.5° W.
Central Alaska
h about 95 km
Magnitude 5.1 (CGS).

Dec. 15

M	Z	Tmax	16:30:12
A	Z	Tmax	14
D	Z	Tmax	15
MP	Z	Tmax	07
U	Z	Tmax	12
Pa	Z	Tmax	18
Hi	Z	Tmax	00
Ha	Z	Tmax	16:29:31

C&GS card 102-63:
15:44:22.3
51.0° N., 128.8° W.
Vancouver Island region
h about 33 km
Magnitude 4.0 (CGS).

Dec. 15

M	Z	eP	19:47:17.5 d
A	Z	eP	17.9 d
U	PEZ	iS	19:57:58

C&GS card 103-63:
19:34:45.5
4.8° S., 108.0° E.
Java Sea

Dec. 15, 1963--Continued

C&GS card--Continued
h about 650 km
Felt: Djakarta
Magnitude 6.4 (CGS).

Dec. 18

M	Z	iP	00:38:43.4	d
Pa	Z	iP	44.7	c
Na	Z	iP	40.5	c
Ka	Z	eP	47.8	d
Hi	Z	eP	45.7	d
Ha	Z	iP	50.1	c
U	PEZ	iP	43	d
U	PEZ	iR	00:52:12	
U	PEE	iS	00:45:47	
U	PEE	iSS	00:49:22	
U	PEN	iG	00:50:00	

C&GS card 107-63:
00:30:02.6
24.8° S., 176.6° W.
Tonga Islands
Felt: Tonga, Fiji & Kermadec Islands.
h about 46 km
Magnitude 6.5 (CGS).

Dec. 20

M	Z	iP	09:09:12.4	c
MP	Z	eP	13.1	c
Hi	Z	eP	14.0	c

C&GS card 103-63:
08:57:17.8
7.0° S., 129.3° E.
Banda Sea
h about 103 km
Magnitude 5.5 (CGS).

Dec. 21

M	Z	eP	12:42:49	d
Na	Z	iP	47.9	d
Hi	Z	eP	53	d

C&GS card 104-63:
12:34:22.7

Dec. 21--Continued

C&GS card--Continued:
21.2° S., 175.8° W.
Tonga Islands
h about 90 km
Magnitude 5.1 (CGS).

Dec. 21

M	Z	iP	13:21:18.4	c
A	Z	eP	19.1	c
D	Z	iP	18.4	c
MP	Z	iP	19.7	c
U	Z	eP	18.9	c
Pa	Z	iP	20.4	c
Na	Z	iP	17.8	c
Ka	Z	eP	17.8	c
Hi	Z	iP	20.0	c

C&GS card 105-63:
13:09:09.6
16.1° N., 119.7° E.
Near west coast of Luzon, P.I.
h about 49 km
Felt: Manila
Magnitude 5.6 (CGS).

Dec. 24

M	Z	eP	11:27:17.6	c
U	Z	iP	17.2	c

C&GS card 105-63:
11:18:15.2
13.1° S., 166.7° E.
Santa Cruz Islands region
h about 61 km
Magnitude 5.5 (CGS).

Table 5.--Distant earthquakes--Continued

Dec. 28, 1963

M	**Z**	eP	05:54:53.0 c
D	Z	eP	51.9 c
Na	Z	iP	50.4 d
Hi	Z	iP	55.7 c
Ha	Z	eP	57.8 c

C&GS card 105-63:
05:45:20.2
5.1° S., 153.5° E.
New Ireland region
h about 70 km
Magnitude 5.5 (CGS).

Dec. 28

M	Z	iP	09:13:35.0 c
A	Z	iP	34.3 c
D	Z	iP	33.6 c
MP	Z	iP	34.6 c
U	Z	iP	34.5 c
Pa	Z	iP	35.7 c
Na	Z	iP	31.2 c
Ka	Z	iP	37.4 c
Hi	Z	iP	37.3 c

C&GS card 106-63:
09:03:52.9
32.7° S., 178.9° W.
Kermadec Islands
h about 33 km
Magnitude 5.5-5.75 (Pal)
5.8 (CGS).

The following persons or agencies reported "felt" earthquakes during the fourth quarter, 1963. Their assistance is gratefully acknowledged.

North Kona

Mr. Ready
Dr. Heather
Mr. Sherwood
Dr. Tabrah
Mrs. Tabrah
Mrs. Christensen
Mrs. Van Gorder

Hilo region

Mrs. Shaffer
Mr. Isherwood
Mrs. Lewis
Mrs. Chiquita
Sister Thecla
Mr. Okamura
Mrs. Okamura
Mrs. Potlock
Mr. Shoemaker
Mr. Baldwin
Mr. Blackwood

Kau region

Mrs. Paiva
Mrs. Ashton
Mr. Meinecke
Mrs. Billing
Miss Yamamoto
Mrs. Walters

Puna

Mr. Warner
Mr. Williamson
Miss Takemoto

Kilauea summit region

Mr. Smith
Mr. Bush
Mr. Forbes
Mrs. Yong
Mr. Yong
Mrs. Mist
Mrs. Wentworth
Mrs. Yamamoto
Miss English
Mrs. Hansen
Mrs. Duncan

Kona coast

Mrs. Glass
Mrs. Higashihara
Mr. Ladd
Miss Greenwell
Mr. Johnston
Mr. Apple
Mr. Yeaman
Mr. Wallace
Mr. Sutherland
Mr. Sleightholm
Mrs. Gray

Central Hawaii

Mrs. Vredenburg
Mrs. Lindsey

Publications of special interest and HVO

numbered contributions, 1963

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Hawaiian Volcano Observatory
1964 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 33
January, February, and March 1964
By Robert Y. Koyanagi, Arnold T. Okamura,
and Howard A. Powers

Summary 34
April, May, and June 1964
By Arnold T. Okamura, Robert Y. Koyanagi,
and Willie T. Kinoshita

Summary 35
July, August, and September 1964
By Willie T. Kinoshita, Arnold T. Okamura,
and Robert Y. Koyanagi

Summary 36
October, November, and December 1964
By Robert Y. Koyanagi, Arnold T. Okamura,
Willie T. Kinoshita, and Howard A. Powers

Open-File Report 2007-1324
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

Summary 33

January, February, and March 1964

By

Robert Y. Koyanagi, Arnold T. Okamura

and Howard A. Powers

Issued February 1965

Observatory Staff

Geology

J. G. Moore (Transferred to Menlo Park 2/4/64)
H. A. Powers (Scientist in charge--Arrived from Denver 1/10/64)
D. L. Peck

Geophysics

D. P. Hill (Arrived from Denver 2/18/64)
W. T. Kinoshita
George Kojima
R. Y. Koyanagi
H. L. Krivoy (Transferred to Denver 1/27/64)
A. T. Okamura

Geochemistry

R. T. Okamura
T. L. Wright (Arrived from Washington 2/5/64)

Support

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Chronological Summary

The first quarter of 1964 showed less activity associated with the volcanoes than has been experienced for several years. Mauna Loa continues to appear calm, and Kilauea has shown no restlessness, although the density of sulfurous fumes and the amount of sulfur stain on the lava crusts have increased.

January 7, about 01^h00^m--some residents of the Hilo and Puna Districts were awakened by a quake of magnitude 3.7 and about 8 km deep along the Poliokeawe fault system, southeast of Makaopuhi, near the coast; 44 small aftershocks were recorded.

January 29-February 6--a cluster of seismic events included: a felt quake on the east flank of Mauna Loa, a felt quake 30 km deep of magnitude 3.3 with 15 aftershocks, 2 half-hour spells of deep tremor, and more than 100 small shallow local Kilauea quakes in 5 consecutive days.

February 20 at 22^h32^m--residents of Maui and northern parts of Hawaii felt a quake of magnitude 4.3. The epicenter was located at about 13 km depth off the southwest shore of Maui.

March was ushered in by 3 days of more than a hundred shallow local Kilauea caldera quakes each, and ended with Alaska's Good Friday earthquake, its tsunami and aftershocks.

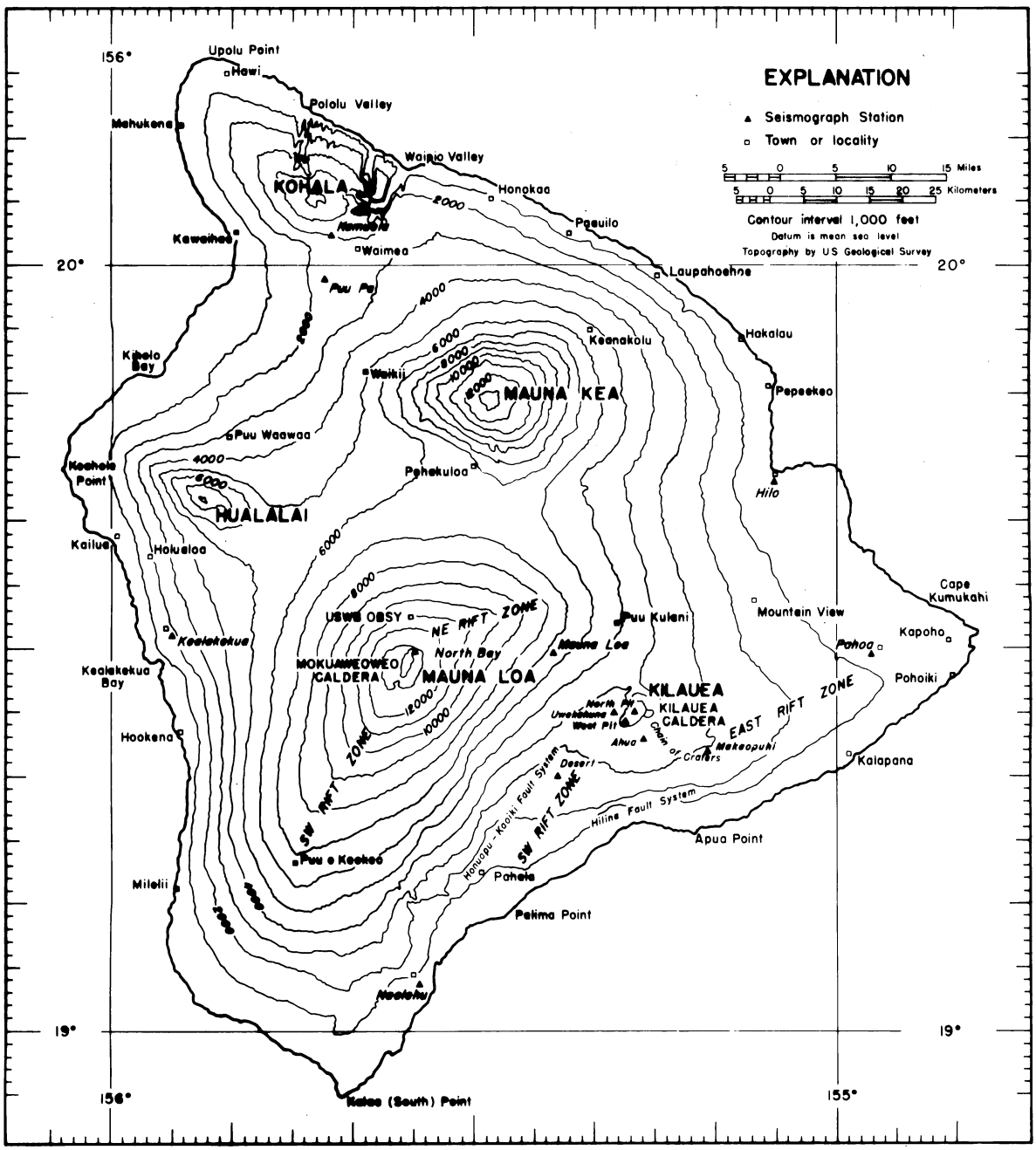

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, i.e., to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault, January, February, and March 1964

Date	N-S	E-W	Date	N-S	E-W
Jan. 5	467	504	Mar. 1	462	505
12	463	507	8	461	507
19	462	507	15	461	507
26	459	509	22	462	504
Feb. 2	462	508	29	460	504
9	461	508			
16	462	504			
23	461	506			

First quarter, 1964

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera. (See tilt diagram, fig. 2.)

Tilt Base (location)	Date (1964)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1963)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	Jan. 22	440.6	503.1	9.1	N. 51° W.	Oct. 10
Tree Molds (19°26.3' N., 155°17.3' W.)	21	436.3	508.5	4.5	N. 28° W.	9
Sand Spit (19°24.1' N., 155°16.8' W.)	23	850.4	769.3	10.0	S. 55° W.	11
Kalihipaa (19°21.4' N., 155°15.3' W.)	20	340.4	386.0	1.4	N. 18° W.	7
Keamoku (19°25.1' N., 155°19.0' W.)	23	492.3	599.4	2.9	S. 35° W.	7
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	22	631.2	536.6	2.1	S. 66° E.	10
Kipuka Nene (19°19.4' N., 155°16.7' W.)	20	485.4	509.6	0.4	S. 73° W.	14
Hilina Pali (19°18.2' N., 155°18.6' W.)	Not occupied this epoch					14
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	21	495.2	503.3	0.6	S. 82° E.	11

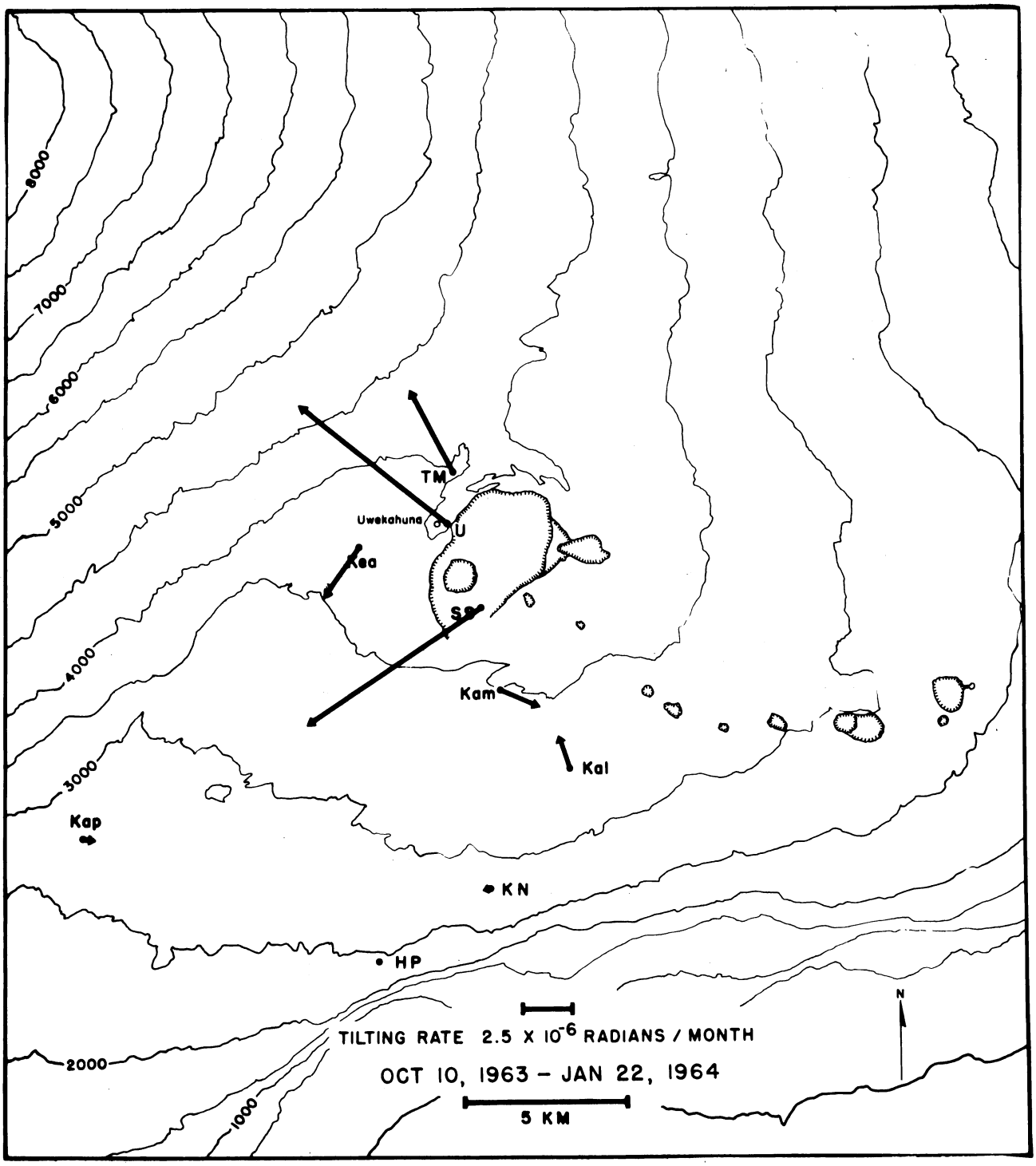

Figure 2.--Tilting of the ground around Kilauea caldera, Oct. 10, 1963 to Jan. 22, 1964. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, WP, MP). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1, and essential data on the stations are listed in table 6.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa short-period vertical; earthquakes from a source about 30 km beneath Halemaumau; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank (these are usually first arrivals at the Ahua meter or at the new experimental geophone near Makaopuhi Crater (MP)); and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
Jan. 1	----	----	----	----	65	9	----	1	6	----------
2	----	----	----	----	44	20	----	4	7	----------
3	----	----	----	----	50	21	1	1	2	----------
4	----	----	----	----	83	13	----	----	6	2 Kona
5	----	----	----	----	121	20	----	1	6	1 Mauna Loa
6	----	6	----	----	115	14	----	----	35	1 off south shore 1 Mauna Kea
7	----	----	----	1	125	17	----	7	9	2 Kohala Mt. region 1 off south shore
8	----	----	----	----	160	9	----	----	15	1 off west coast 1 Kohala Mt. 1 Mauna Loa
9	----	----	4	----	105	18	1	7	22	1 off north shore 1 off south shore
10	----	----	----	----	105	13	1	8	10	----------
11	----	----	----	1	120	10	----	5	4	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, AND MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Jan. 12	----	-----	-----	-----	60	9	-----	-----	7	----------
13	----	-----	-----	1	64	18	-----	3	6	1 Mauna Loa
14	----	-----	-----	-----	26	12	-----	1	3	----------
15	----	-----	-----	-----	50	3	-----	-----	3	1 Kohala
16	----	-----	-----	-----	15	2	-----	1	5	1 Waimea region
17	----	-----	-----	-----	35	8	-----	1	2	----------
18	----	-----	-----	-----	52	10	-----	-----	7	----------
19	----	-----	-----	-----	58	21	-----	2	7	----------
20	----	-----	-----	-----	50	6	-----	-----	7	----------
21	----	-----	-----	-----	60	5	-----	1	1	----------
22	----	-----	-----	-----	80	14	-----	-----	7	----------
23	----	-----	-----	-----	80	6	-----	-----	8	2 Offshore
24	----	-----	-----	-----	70	6	-----	5	7	----------
25	----	-----	-----	-----	55	5	-----	2	11	----------
26	----	-----	-----	-----	60	7	-----	-----	5	1 Kona 1 Hilina Pali System
27	----	-----	-----	-----	35	6	-----	-----	----	----------
28	----	-----	-----	-----	60	7	1	-----	5	----------
29	----	-----	-----	-----	75	3	-----	2	4	1 Mauna Loa
30	----	-----	-----	-----	55	------	-----	16	3	----------
31	30	-----	-----	-----	43	17	-----	2	8	1 off west coast
Feb. 1	----	-----	-----	-----	50	13	-----	6	11	1 Kona 1 Mauna Kea
2	45	-----	-----	-----	51	6	-----	-----	6	1 Mauna Kea
3	----	-----	-----	-----	100	11	-----	3	4	1 off west coast
4	----	-----	-----	-----	130	5	-----	-----	4	----------
5	7	-----	-----	1	120	12	-----	4	5	----------
6	----	-----	-----	-----	50	9	-----	6	7	----------
7	----	-----	-----	-----	65	5	-----	4	3	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
Feb. 8	----	-----	-----	-----	30	10	1	3	6	2 off south shore
9	----	-----	-----	-----	30	7	2	4	7	1 Kona
10	----	-----	-----	-----	40	4	----	2	5	----------
11	----	-----	-----	-----	85	3	----	4	3	----------
12	----	-----	-----	-----	80	5	----	3	3	----------
13	----	-----	-----	-----	50	6	----	2	3	----------
14	----	-----	-----	-----	46	3	----	1	4	1 off north shore
15	----	-----	-----	-----	68	6	----	1	----	----------
16	25	-----	5	-----	60	13	----	2	5	----------
17	32	-----	-----	-----	60	11	----	1	----	----------
18	38	-----	-----	-----	80	9	----	8	----	1 Kona 1 Mauna Loa
19	----	-----	-----	-----	88	17	----	6	4	1 Kona 1 Mauna Kea
20	----	-----	-----	-----	52	14	----	3	3	1 offshore-Maui
21	----	-----	-----	-----	49	10	----	9	9	1 Kona
22	22	10	-----	-----	50	6	----	4	4	1 Kona
23	21	-----	-----	-----	50	4	----	4	6	----------
24	----	-----	-----	1	66	22	1	3	5	1 Kona 1 off south shore
25	----	22	-----	-----	50	16	----	6	3	----------
26	----	-----	-----	-----	45	7	1	3	3	----------
27	----	-----	-----	-----	20	5	----	3	5	----------
28	----	-----	-----	-----	75	5	----	3	6	----------
29	----	-----	-----	-----	50	7	1	2	14	1 Mauna Loa
Mar. 1	----	-----	-----	-----	50	6	----	2	5	----------
2	30	-----	-----	1	150	12	----	5	15	----------
3	----	2	-----	-----	150	10	----	-----	1	----------
4	----	-----	-----	-----	170	14	----	-----	12	----------
5	----	-----	-----	-----	88	7	----	-----	7	1 Mauna Kea

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Mar. 6	----	-----	-----	-----	75	10	----	1	6	1 Kona
7	----	-----	-----	-----	88	10	----	1	10	2 offshore-Kona
8	----	-----	-----	-----	65	12	----	4	----	----------
9	----	-----	-----	-----	60	4	----	1	4	----------
10	----	-----	-----	-----	70	4	1	3	3	----------
11	----	-----	-----	1	107	9	----	4	2	1 Kohala
12	----	-----	-----	-----	75	6	----	-----	4	----------
13	----	-----	-----	-----	105	8	----	1	2	2 Mauna Loa
14	----	-----	-----	-----	76	12	----	3	3	----------
15	----	-----	-----	-----	88	9	----	-----	5	2 Kona
16	----	-----	-----	-----	100	24	----	3	3	1 off west coast
17	20	-----	-----	-----	75	10	----	6	7	----------
18	----	-----	-----	1	127	13	----	12	7	----------
19	Severe electrical storm--instruments turned off									
20	--do-	-do--	-do--	-do--	--do--	-do--	-do-	--do--	-do-	do.
21	----	-----	-----	1	60	3	----	------	6	----------
22	----	-----	4	9	53	6	2	2	6	----------
23	----	-----	4	11	63	5	----	6	6	----------
24	7	-----	-----	-----	48	9	1	4	4	----------
25	----	-----	-----	-----	76	6	----	2	10	----------
26	----	-----	-----	-----	59	10	----	5	14	1 Mauna Kea 1 Mauna Loa
27	----	-----	-----	-----	101	5	1	1	----	----------
28	----	-----	-----	-----	71	20	----	5	6	----------
29	----	-----	-----	-----	60	7	----	5	7	----------
30	----	-----	-----	-----	73	7	----	5	6	----------
31	----	-----	-----	-----	80	6	----	3	12	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March 1964

[Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

In the following list some origin times are followed by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

In the following list a number of quakes are described as "Upper east rift" (see Summary 28). Their average epicenter is approximately 19°21.5' N., 155°14' W. about 2 km south of Aloi Crater at near-surface depth.

The mean focus of the magnitude 6.1 Kaoiki fault system earthquake of June 27, 1962, and its aftershocks is 19°24' N., 155°25' W., at a depth of 3-8 km. This focus has been abbreviated "Kaoiki"].

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 1	20	52	22.4	2.3	-----	--------	--------	Kaoiki----------	----------
2	06	20	27.4	2.5	-----	--------	--------	--do----------	----------
3	06	18	33.9	2.6	-----	--------	--------	KM 30----------	----------
3	13	47	04.0	3.1	-----	--------	--------	Kaoiki----------	----------
6	05	24	22.4	2.6	8	19°08.3'	155°24.5'	22 km SSW of Desert seismometer.	----------
6	17	11	45.3	3.0	13	19°49.1'	155°31.8'	8 km N. of Pohakuloa------	Felt in Honokaa
7	01	06	25.0	3.7	8	19°18.0'	155°13.5'	9 km SSW of Makaopuhi-----	Felt over half the island of Hawaii.
7	01	27	39.5	2.2	8	19°16.2'	155°13.4'	12 km SSW of Makaopuhi----	----------
7	02	04	17.9	3.6	5	19°16.3'	155°11.8'	2 km N. of Apua Pt--------	----------
7	08	14	43.0	2.7	8	19°14.8'	155°13.2'	3 km SW of Apua Pt--------	----------
7	18	11	01.6	2.4	13	19°51.6'	155°31.5'	12 km N. of Pohakuloa-----	----------
7	22	54	52.5	2.3	-----	-------	--------	Kaoiki----------	----------
8	01	10	14.0	2.8	13	19°57'	156°53'	112 km WNW of Kealakekua	----------
8	03	14	55.0	2.9	13	20°05.6'	155°39.7'	8 km NNE of Kamuela	Felt in Kamuela

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 8	11	08	19.5	2.3	8	19°09.8'	155°41.9'	17 km NW of Naalehua	
9	09	47	44.5	3.1	13	20°20'	156°02'	20 km WNW of Upolu Pt	
9	15	01	12.4	2.2	< 3	19°22.1'	155°05.7'	9 km E. of Makaopuhi	
9	18	32	31.3	2.4	3	19°14.8'	155°12.0'	2 km SSW of Apua Pt	
10	01	58	14.5	2.2	----	--------	---------	Kaoiki	
10	19	13	15.4	2.5	8	19°16.5'	155°13.2'	4 km NW of Apua Pt	
15	04	59	33.9	2.0	8	19°16.6'	155°14.3'	6 km NW of Apua Pt	
16	15	40	57.0	3.0	13	20°06.4'	155°49.8'	16 km WNW of Kamuela	Felt in Waimea
18	20	46	49.9	2.3	----	--------	---------	Kaoiki	
23	15	43	49.5	2.0	3	19°24.8'	155°08.2'	7 km NE of Makaopuhi	
23	17	43	07.5	3.0	13	19°42'	156°08'	32 km NW of Kealakekua	
23	19	04	47.0	2.7	13	18°50'	155°19'	40 km SE of Naalehu	
25	23	58	23.0	2.5	8	19°15.6'	155°13.2'	3 km W. of Apua Pt	
26	20	40	44.0	2.5	45	19°13.3'	155°03.8'	16 km ESE of Apua Pt	
30	05	38	43.3	3.2	----	--------	---------	Kaoiki	Felt in the Kilauea summit region.
31	00	29	00.1	3.3	----	--------	---------	KM 30	Felt in the Kilauea summit region.
31	05	44	36.0	2.2	----	--------	--------	KM 30	
31	18	31	41.0	2.6	8	19°33.4'	155°59.8'	10 km WNW of Kealakekua	
Feb. 1	19	44	16.5	2.4	8	19°48.1'	155°34.5'	8 km NW of Pohakuloa	
2	13	48	40.0	2.3	3	19°17.1'	155°12.8'	12 km SSE of Ahua seismometer	
2	22	12	48.0	2.2	----	--------	---------	Kaoiki	
3	09	27	20.0	2.0	8	19°13.7'	155°29.3'	3 km NNW of Pahala	
3	11	06	34.0	2.8	8	19°35.5'	156°07.5'	24 km WNW of Kealakekua	
4	11	29	41.6	2.5	13	19°26.8'	155°16.9'	3 km NNE of Uwekahuna	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Feb. 5	15	57	09.5	2.2	----	--------	---------	Kaoiki----------	----------
6	01	18	08.6	2.2	----	--------	---------	KM 30----------	----------
7	01	35	46.5	2.7	3	19°16.3'	155°07.5'	8 km ENE of Apua Pt--------	----------
7	08	06	02.0	2.8	3	19°18.0'	155°03.0'	16 km ESE of Makaopuhi-----	----------
8	14	22	35.0	3.4	13	18°40'	156°56'	137 km WSW of South Point	----------
8	20	05	24.0	2.0	8	19°01.5'	155°20.5'	27 km ESE of Naalehu------	----------
9	12	09	32.5	2.5	8	19°18.9'	155°48.2'	27 km SSE of Kealakekua----	----------
9	21	06	34.0	2.9	----	--------	---------	KM 30----------	Felt near the Kilauea summit region
10	12	57	50.2	2.5	----	--------	---------	Kaoiki----------	----------
13	21	21	27.0	2.8	----	--------	---------	Kaoiki----------	----------
14	21	50	11.0	3.1	13	20°34'	155°49'	33 km NNE of Upolu Pt------	----------
16	03	10	37.5	3.0	----	--------	---------	Kaoiki----------	Felt in the Kilauea summit region
18	02	59	48.3	2.4	8	19°07.8'	155°43.3'	16 km WNW of Naalehu-------	----------
19	23	56	15.0	2.5	8	19°49.4'	155°35.8'	8 km SE of Waikii----------	----------
20	22	31	44.5	4.3	13	20°42'	155°50'	41 km ESE of Haleakala-----	Felt in east Maui, Kohala, Honokaa, Kamuela, and the Kilauea summit region
21	00	39	54.0	2.4	8	19°42.8'	155°47.2'	27 km NE of Kealakekua-----	----------
21	17	14	30.8	2.1	----	--------	---------	Kaoiki----------	----------
21	23	45	53.0	2.3	3	19°18.2'	155°07.5'	10 km SE of Makaopuhi------	----------
22	14	45	57.5	2.5	8	19°15.9'	155°52.2'	10 km NNE of Milolii-------	----------
23	18	22	48.9	2.0	13	19°24.9'	155°14.5'	5 km NNE of Ahua seismometer	----------
24	05	42	52.0	2.3	8	19°17.2'	154°50.9'	16 km SE of Kalapana-------	----------
25	00	51	37.0	2.1	3	19°20.3'	155°05.9'	9 km ESE of Makaopuhi------	----------
25	23	51	28.0	2.4	8	19°18.1'	155°09.0'	8 km SSE of Makaopuhi------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Feb. 26	09	29	27.3	2.5	----	--------	---------	KM 30----------	----------
26	16	55	59.8	2.2	----	--------	---------	KM 30----------	----------
29	22	46	49.5	3.1	5	19°19.0'	155°07.0'	8 km ESE of Makaopuhi-----	----------
29	23	49	36.2	2.6	8	19°14.8'	155°34.8'	20 km N. of Naalehu-------	----------
Mar. 1	12	33	55.7	2.1	3	19°17.2'	155°11.8'	3 km N. of Apua Pt--------	----------
1	15	42	56.0	2.5	----	--------	---------	KM 30----------	----------
1	19	22	27.0	2.7	----	--------	---------	Kaoiki----------	Felt near Pahala
2	11	12	49.2	2.8	----	--------	---------	Kaoiki----------	Felt near Pahala
5	22	19	12.3	3.0	13	19°52.2'	155°36.5'	19 km SSE of Kamuela------	Felt in Honokaa, Kamuela, and near Pohakuloa.
7	01	05	01.0	2.7	13	19°18.8'	155°53.5'	23 km SSE of Kealakekua---	----------
7	19	01	46.5	3.0	13	19°12'	156°28'	67 km WSW of Kealakekau---	----------
7	20	15	07.0	2.0	----	--------	---------	Kaoiki----------	----------
10	00	54	38.0	3.6	8	19°16.5'	155°10.9'	2 km NE of Apua Pt--------	Felt over east half of island of Hawaii.
10	15	00	03.3	2.0	8	19°11.5'	155°26.8'	3 km ESE of Pahala--------	----------
10	22	09	08.4	2.0	----	--------	---------	Kaoiki----------	----------
11	19	08	14.5	2.6	8	20°04.6'	155°49.3'	13 km WNW of Kamuela------	----------
11	19	30	56.4	3.7	10	19°17.5'	155°05.8'	12 km SE of Makaopuhi-----	Felt in the Hilo region.
13	11	55	09.0	2.8	3	19°30.8'	155°36.0'	3 km NW of North Bay seismometer.	----------
13	21	20	20.5	2.4	8	19°09.1'	155°40.0'	14 km NW of Naalehu-------	----------
14	05	44	42.0	2.5	----	--------	---------	Kaoiki----------	----------
14	15	58	15.5	2.3	3	19°23.2'	155°47.1'	21 km SE of Kealakekua----	----------
15	12	56	36.9	3.2	3	19°21.1'	155°07.1'	7 km ESE of Makaopuhi-----	----------
15	19	55	37.0	2.4	8	19°22.8'	155°56.3'	4 km WSW of Hookena-------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Mar. 15	19	55	37.0	2.4	8	19°22.8'	155°56.3'	4 km WSW of Hookena	----------
16	09	09	56.7	3.1	13	19°15'	156°25'	62 km WSW of Kealakekua	----------
16	12	17	36.5	2.4	----	--------	--------	Kaoiki----------	----------
16	23	06	46.0	2.8	----	--------	--------	Kaoiki----------	Felt near Pahala
17	21	13	12.9	2.1	3	19°18.8'	155°05.8'	12 km ESE of Makaopuhi	----------
18	13	25	35.5	2.3	25	19°18.0'	155°15.5'	8 km S. of Ahua seismometer.	----------
19	21	14	20.0	2.3	8	19°08.3'	155°02.0'	30 km SSE of Makaopuhi	----------
20	07	52	13.5	2.5	----	--------	--------	KM 30----------	----------
23	03	08	50.0	2.0	----	--------	--------	KM 30----------	----------
24	02	05	12.7	2.0	3	19°15.9'	155°12.3'	2 km NW of Apua Pt------	----------
24	02	43	14.0	2.0	8	19°22.8'	155°02.9'	15 km ENE of Makaopuhi	----------
24	12	57	07.5	3.0	3	19°22.1'	155°05.2'	11 km E. of Makaopuhi	Felt in Hilo
24	16	12	35.5	2.0	8	19°15.5'	155°29.4'	16 km SW of Desert seismometer.	----------
25	17	32	42.7	2.9	----	--------	--------	Kaoiki----------	----------
26	00	54	49.0	2.4	8	19°52.5'	155°10.0'	19 km NNW of Hilo------	----------
26	17	11	30.0	2.6	8	19°11.3'	155°25.9'	22 km NE of Naalehu----	----------
27	02	10	22.5	2.4	3	19°21.8'	154°54.8'	15 km SSE of Pahoa-----	----------
28	12	03	46.2	2.5	----	--------	--------	KM 30----------	----------
29	16	16	15.0	2.2	8	19°16.2'	155°13.8'	4 km WNW of Apua Pt----	----------
30	11	22	47.0	2.6	----	--------	--------	Kaoiki----------	----------
30	12	15	35.0	2.6	3	19°17.4'	155°10.7'	10 km S of Makaopuhi	Felt near Hilo

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in table 6. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin time, focal depth, and magnitude are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

The great number of aftershocks following the March 28 Alaskan earthquake necessitated a separate listing of these events (end of this table). Many Alaskan aftershocks continued to occur after the end of the quarter, and these will again be listed separately as "Alaskan aftershocks" in HVO Summary 34]

Jan. 5, 1964

M	Z	eP	18:46:51.8 c
D	Z	eP	50.6 c
MP	Z	iP	49.8 c
U	Z	iP	50.7 c
Pa	Z	iP	49.6 c
Ke	Z	eP	52.8 c

C&GS card 1-64:
18:33:54.7
8.0° S., 74.5° W.
Central Peru
h about 150 km
Magnitude 5.2 (CGS).

Jan. 5-6

M	Z	eP'	00:05:52.0 d
D	Z	eP'	50.8 d
Na	Z	eP'	49.7 d
Ke	Z	eP'	52.3 d
Ha	Z	eP'	00:06:01.8 d
U	PEN	iSS	00:29:25
U	PEE	eL	00:47:05
U	PEN	eG	00:48:32
U	PEZ	eR	00:55:17

C&GS card 3-64:
23:46:10.7
52.3° S., 28.6° E.
Prince Edward Islands region
h about 33 km
Magnitude 6.5 (HVO).

Jan. 6

M	Z	eP	23:54:05.5 c
U	PEE	eS	00:01:07
U	PEN	iG	00:05:27
U	PEZ	iR	00:07:31

C&GS card 1-64:
23:45:23.4
50.9° N., 157.3° E.
Southern Kamchatka
h about 33 km
Magnitude 5.6 (CGS)
5.9 (HVO).

Jan. 7

M	Z	iP	08:54:56.0 c
A	Z	eP	57.5 c
D	Z	iP	57.8 c
MP	Z	eP	58.0 c
U	Z	eP	57.0 c
Pa	Z	eP	56.9 c

C&GS card 1-64:
08:46:48.0
54.0° N., 165.5° W.
Fox Islands, Aleutian Islands
h about 80 km
Magnitude 4.7 (CGS).

Jan. 8

M	Z	iP	22:43:30.1 c

C&GS card 1-64:
22:30:52.5
3.8° S., 119.3° E.
Celebes
h about 112 km
Magnitude 5.3 (CGS).

Jan. 10, 1964

M	Z	iP	05:00:34.5 c
D	Z	eP	35.0 c
U	PEE	iS	05:08:30
U	PEZ	eR	05:16:32

C&GS card 1-64:
04:50:53.4
42.0° N., 142.6° E.
Near south coast of Hokkaido, Japan
h about 33 km
Magnitude 5.75-6 (Brk), 5.5 (CGS), 6.2 (HVO).

Jan. 10

M	Z	iP	17:06:44.2 c

C&GS card 2-64:
16:57:26.5
45.4° N., 150.0° E.
Kurile Islands
h about 50 km
Magnitude 5.4 (CGS).

Jan. 12

M	Z	iP	06:07:02.1 d
A	Z	iP	03.1 d
D	Z	iP	03.2 d
U	Z	iP	02.6 d
Pa	Z	iP	02.5 d
Hi	Z	iP	00.6 d
Na	Z	iP	05.0 d
Ha	Z	iP	06:06:50.2 d
U	PEZ	eR	06:16:07
M	Z	Tmax	06:44:30
A	Z	Tmax	06:44:57
D	Z	Tmax	06:44:35
U	Z	Tmax	06:44:26
Pa	Z	Tmax	06:44:36
Ha	Z	Tmax	06:42:41
Hi	Z	Tmax	06:44:08

C&GS card 4-64:
06:00:13.2
53.2° N., 166.3° W.
Fox Islands, Aleutian Islands
h about 33 km
Magnitude 5.5 (CGS), 5.8 (HVO).

Jan. 13

M	Z	Tmax	08:57:57
A	Z	Tmax	56
D	Z	Tmax	54
MP	Z	Tmax	52
U	Z	Tmax	53
Pa	Z	Tmax	54
Hi	Z	Tmax	57
Na	Z	Tmax	52

No C&GS preliminary listing.

Jan. 15

M	Z	eP	21:45:55.9 d
A	Z	iP	57.2 d
D	Z	iP	56.0 d
U	Z	iP	57.0 d
Pa	Z	iP	59.1 d
Hi	Z	iP	57.7 d
Na	Z	iP	56.2 d
Ke	Z	iP	50.8 d
Ha	Z	iP	47.6 d
U	PEZ	iR	22:08:34

C&GS card 3-64:
21:36:05.0
29.1° N., 140.8° E.
South of Honshu, Japan
h about 70 km
Magnitude 6.75 (Pas)
6.4 (CGS).

Jan. 18

M	Z	iP	12:16:38.6 c
D	Z	eP	38.7 c
U	Z	iP	39.3 c
Ke	Z	iP	32.3 c
Na	Z	iP	37.2 c
Hi	Z	iP	40.0 c
Pa	Z	iP	41.2 c
U	PEE	iS	12:27:24
U	PEN	iL	12:36:26
U	PEZ	eR	12:40:26

C&GS card 4-64:
12:04:40.0
23.1°N., 120.5°E.
Taiwan
110 dead, 479 injured
h about 33 km
Magnitude 6.75 (Pas), 6.75-7 (Brk), 6.5-6.75 (Pal), 6.1 (CGS), 6.5 (HVO).

Jan. 20, 1964

M	Z	eP	17:17:37.4	c
A	Z	eP	37.1	c
U	Z	eP	37.2	c
Na	Z	eP	33.9	c
Hi	Z	eP	40.0	c
U	PEZ	i	17:18:16	d
U	PEE	iS	17:24:56	
U	PEN	eSS	17:28:57	
U	PEN	eG	17:30:18	

C&GS card 7-64:
17:08:37.4
20.7° S., 169.9° E.
Loyalty Islands region
h about 141 km
Magnitude 6.75 (Pas), 6.1 (CGS), 6.0 (HVO).

Jan. 22, 23

M	Z	eP	00:08:52 d
U	PEN	eS	00:15:58
U	PEN	eG	00:20:22
U	PEZ	eR	00:22:46

C&GS card 9-64:
23:59:43.6
13.7° S., 165.9° W.
New Hebrides Islands
h about 33 km
Magnitude 6.0 (CGS), 6.1 (HVO).

Jan. 24

M	Z	iP	17:27:44.3	c
A	Z	eP	45.1	c
D	Z	iP	44.5	c
MP	Z	iP	45.4	c
U	Z	eP	44.7	c
Ha	Z	iP	35.7	c
Ke	Z	iP	41.0	c
Na	Z	iP	44.4	c
Hi	Z	iP	44.8	c
Pa	Z	iP	45.9	c

C&GS card 7-64:
17:17:45.5
38.7° N., 129.4° E.
Near East Coast of Korea
h about 54.2 km
Magnitude 5.3 (CGS).

Jan. 26

A	Z	iP	09:22:20.4	c
D	Z	iP	20.7	c
MP	Z	iP	20.1	c
U	Z	iP	20.6	c
Pa	Z	iP	19.4	c
Hi	Z	iP	20.6	c
Ke	Z	iP	24.6	c

C&GS card 9-64:
09:09:33.9
16.3° S., 71.7° W.
Southern Peru
6 injured, slight damage at Arequipa
h about 116 km
Magnitude 6.1 (CGS).

Feb. 5, 1964

Hi	Z	eP	11:40:08	d
U	PEE	eS	11:48:04	
U	PEZ	eR	11:56:16	
M	Z	Tmax	12:43:02	
A	Z	Tmax	12:42:55	
MP	Z	Tmax	12:42:57	
U	Z	Tmax	12:42:53	
Pa	Z	Tmax	12:43:04	

C&GS card 12-64:
11:30:15.7
36.5° N., 141.0° E.
Central Honshu, Japan
Felt: Tokyo
h about 46 km
Magnitude 6.25 (Pas), 5.4 (CGS), 5.8 (HVO).

Feb. 5

D	Z	eP	11:43:01.4	c
U	Z	eP	02.6	c
Na	Z	eP	11:42:59.3	c
Pa	Z	iP	11:43:03.8	d
Hi	Z	iP	05.1	c
Ha	Z	eP	07.3	d

C&GS card 12-64:
11:35:18.6
19.7° S., 179.8° W.
Fiji Islands region
h about 414 km
Magnitude 5.5 (CGS)

Table 5.--Distant earthquakes--Continued

Feb. 6, 1964

M	Z	iP	13:14:26.1 c
A	Z	eP	27.1 c
D	Z	eP	27.4 c
U	Z	eP	26.4 c
Ha	Z	eP	18.3 c
Pa	Z	eP	25.7 c
Na	Z	iP	30.2 c
Ke	Z	iP	25.8 c
U	PEN	iS	13:20:12
U	PEZ	iR	13:24:02
M	Z	Tmax	13:52:57
A	Z	Tmax	50
D	Z	Tmax	44
MP	Z	Tmax	13:52:48
U	Z	Tmax	59
Pa	Z	Tmax	55
Ke	Z	Tmax	40
Ha	Z	Tmax	13:51:05

C&GS card 14-64:
13:07:25.2
55.7° N., 155.8° W.
Kodiak Island region
h about 33 km
Magnitude 6.75-7 (Pas), 6.5-6.75 (Brk), 6.75-7 (Pal), 6.5 (HVO).

Feb. 6

M	Z	iP	13:20:45.9 c
P	Z	iP	47.0 c
U	Z	eP	46.3 c
Pa	Z	iP	45.2 c
Na	Z	iP	49.5 c
M	Z	Tmax	13:59:04
A	Z	Tmax	04
D	Z	Tmax	13:58:57
MP	Z	Tmax	13:59:00
U	Z	Tmax	07
Pa	Z	Tmax	13:58:55
Ha	Z	Tmax	13:57:34
Ke	Z	Tmax	13:58:44

Feb. 6--Continued

C&GS card 14-64:
13:13:45.2
55.8° N., 155.9° W.
Kodiak Island region
h about 33 km
Magnitude 5.4 (CGS).

Feb. 6

M	Z	eP	15:32:28.5 d

C&GS card 12-64:
15:19:38.1
10.5° S., 120.7° E.
Sumba Island region
h about 43 km
Magnitude 4.9 (CGS).

Feb. 6

M	Z	Tmax	15:45:46
U	Z	Tmax	44
Pa	Z	Tmax	35
Ha	Z	Tmax	15:43:54

C&GS card 17-64:
15:00:32.6
56.1° N., 154.3° W.
Kodiak Island region
h about 33 km
Magnitude 4.4 (CGS).

Feb. 8

M	Z	iP	11:25:15.7 c

Feb. 8, 1964--Continued

A	Z	iP	17.1 d
U	Z	eP	16.2 c
Ha	Z	iP	08.9 d
Pa	Z	iP	17.5 d
Hi	Z	iP	15.3 d
Na	Z	iP	18.2 d
Ha	Z	Tmax	12:05:08

C&GS card 12-64:
11:17:46.5
52.3° N., 175.6° E.
Rat Islands, Aleutian Islands
h about 60 km
Magnitude 5.4 (CGS).

Feb. 9

M	Z	iP	02:07:23.4 c
A	Z	eP	23.0 c
U	Z	iP	23.2 c
Na	Z	iP	19.2 c
Hi	Z	iP	25.7 c
Ha	Z	iP	28.0 c

C&GS card 12-64:
02:00:07.3
16.5° S., 179.2° W.
Fiji Islands region
h about 480 km
Magnitude 5.3 (CGS).

Feb. 12

U	PEZ	iR	22:51:31
M	Z	Tmax	23:23:08
Ke	Z	Tmax	23:22:55

C&GS card 16-64:
22:33:59.2
15.3° S., 174.4° W.
Samoa Islands region
h about 33 km
Magnitude 5.75 (Brk), 5.0 (CGS).

Feb. 14

A	Z	eP	16:39:32.0 c
Na	Z	iP	28.2 c
U	PEE	eS	16:47:35
U	PEN	eG	16:53:43
U	PEZ	eR	16:56:07

Feb. 14--Continued

C&GS card 15-64:
16:29:45.0
5.1° S., 151.7° E.
New Britain
h about 55 km
Magnitude 6.75 (Pas), 6.0 (CGS), 6.4 (HVO).

Feb. 20

M	Z	iP	10:02:53.6 d
D	Z	eP	54.3 d

C&GS card 15-64:
09:53:51.1
44.6° N., 150.0° E.
Kurile Islands
h about 50 km
Magnitude 5.2 (CGS).

Feb. 26

M	Z	Tmax	21:14:56
A	Z	Tmax	56
U	Z	Tmax	56
Pa	Z	Tmax	34
Ka	Z	Tmax	56
Ha	Z	Tmax	37

C&GS card 16-64:
20:32:53.6
40.2° N., 124.6° W.
Near coast of Humboldt County, California
h about 27 km
Magnitude 4.6 (CGS)

Mar. 2

M	Z	iP	19:40:30.8 c
A	Z	iP	30.5 c
U	Z	iP	30.7 c
Pa	Z	iP	32.4 c
Ha	Z	iP	36.3 c

C&GS card 24-64:
19:32:41.7
18.9° S., 174.8° W.
Tonga Islands
h about 105 km
Magnitude 5.3 (CGS).

Mar. 3, 1964

M	Z	Tmax	20:44:04
Ha	Z	Tmax	20:43:42

C&GS card 18-64:
20:02:33.1
40.3° N., 125.1° W.
Near coast of Northern California
h about 33 km
Magnitude 4.8 (CGS).

Mar. 8

A	Z	iP	01:47:09.3	d
Pa	Z	iP	01:47:10.6	d

C&GS card 31-64:
01:35:48.1
44.0° S., 168.4° E.
South Island, New Zealand
h about 33 km
Magnitude 5.6 (CGS).

Mar. 10

M	Z	eP	14:11:41.2	c

C&GS card 20-64:
13:59:54.8
1.9° N., 127.5° E.
Molucca Passage
h about 117 km
Magnitude 5.6 (CGS).

Mar. 11

M	Z	iP	01:17:55.1	d

C&GS card 20-64:
01:06:00.4
1.8° N., 127.1° E.
Molucca Passage
h about 58 km
Magnitude 5.6 (CGS).

Mar. 14

M	Z	iP	15:13:24.8	d
NB	Z	iP	24.0	d
Pa	Z	iP	26.9	d
Na	Z	iP	21.0	d

Mar. 14--Continued

Ha	Z	eP	27.1	d

C&GS card 27-64:
15:05:54.4
13.7° S., 172.3° E.
New Hebrides Islands region
h about 611 km
Magnitude 5.1 (CGS).

Mar. 15

U	PEZ	ePP	22:50:18	c
U	PEN	iPS	23:00:12	
U	PEZ	iSS	23:06:46	
U	PEE	eSSS	23:09:44	
U	PEE	eL	23:18:52	
U	PEZ	iR	23:25:04	

C&GS card 20-64:
22:30:26.0
36.2° N., 7.6° W.
West of Strait of Gibraltar
Felt: Portugal, Spain, Morocco
h about 27 km
Magnitude 6.75-7 (Pas), 7-7.25 (Bks), 6.25-6.5 (Pal), 6.2 (CGS), 6.8 (HVO).

Mar. 18

M	Z	iP	04:45:49.6	d
D	Z	iP	50.9	d
U	Z	iP	50.8	d
NB	Z	iP	49.0	d
Pa	Z	iP	51.1	d
Na	Z	iP	51.5	d
Hi	Z	iP	49.4	d
Ke	Z	iP	47.0	d
Ha	Z	iP	39.7	d
U	PEN	iS	04:52:40	
U	PEN	esS	04:55:00	

C&GS card 23-63:
04:37:26.9
52.5° N., 153.6° E.
Sea of Okhotsk
h about 440 km
Magnitude 5.6 (CGS).

Mar. 19, 1964

Na	Z	eP	21:51:21.4 d
Ke	Z	eP	26.5 d
U	PEN	eS	21:57:28
U	PEZ	eR	22:01:00

C&GS card 24-64:
21:44:03.8
15.1° S., 172.6° W.
Samoa Islands region
h about 33 km
Magnitude 5.6 (CGS).

Mar. 21

U	Z	iP	03:53:51.4 c
Pa	Z	iP	53.3 c
Na	Z	iP	49.6 c
Hi	Z	iP	53.5 c
Ke	Z	iP	48.6 c
U	PEN	iS	04:03:26
U	PEN	iSS	04:08:40

C&GS card 25-64:
03:42:19
6.4° S., 127.9° E.
Banda Sea
Felt: Darwin, Australia
h about 367 km.

Mar. 21

U	Z	iP	16:36:14.9 d
Hi	Z	iP	17.9 d
Ke	Z	iP	14.9 d
Ha	Z	iP	20.9 c

C&GS card 25-64:
16:27:11.7
27.6° S., 177.2° W.
Kermadec Islands region
h about 33 km
Magnitude 5.6 (CGS).

Mar. 22

M	Z	iP	05:44:17.6 d

C&GS card 26-64:
05:32:07.7
2.7° S., 126.4° E.

Mar. 22--Continued

C&GS card--Continued

Ceram Sea
h about 33 km
Magnitude 5.1 (CGS).

Mar. 24

Pa	Z	Tmax	10:23:53
Ha	Z	Tmax	10:23:03

C&GS card 25-64:
09:37:56.2
51.1° N., 129.6° W.
Vancouver Island region
h about 22 km
Magnitude 4.2 (CGS).

Mar. 25

Pa	Z	Tmax	09:28:04
Ha	Z	Tmax	09:28:02

C&GS card 26-64
08:46:13.0
40.4° N., 124.8° W.
Near Coast of Northern California
h about 33 km
Magnitude 4.5 (CGS).

Mar. 26

WP	Z	iP	02:14:45.8 d
U	PEZ	eR	02:32:01

C&GS card 27-64:
02:04:20.2
11.3° N., 142.0° E.
Mariana Islands
h about 33 km
Magnitude 4.9 (CGS).

Mar. 26

M	Z	eP	13:39:28.1 d
U	PEZ	eS	13:47:23
U	PEN	eG	13:52:37
U	PEZ	eR	13:54:55
M	Z	Tmax	14:39:05
A	Z	Tmax	14:39:08
D	Z	Tmax	14:39:04
MP	Z	Tmax	14:38:52
U	Z	Tmax	14:39:03
Pa	Z	Tmax	14:38:22
Na	Z	Tmax	14:38:58
Hi	Z	Tmax	14:38:37
NB	Z	Tmax	14:38:30
Ha	Z	Tmax	14:40:19

C&GS card 25-64:
13:29:56.2
4.4° S., 104.7° W.
1500 km southwest of Galapagos Islands
h about 33 km
Magnitude 4.9 (CGS)

Mar. 27

M	Z	eP	20:30:12.6 c
A	Z	eP	12.2 c
U	Z	eP	12.6 c
Ke	Z	iP	11.2 c
Hi	Z	eP	13.8 c
Ka	Z	eP	14.7 c
Ha	Z	eP	18.7 c

C&GS card 25-64:
20:22:10.6
23.7° S., 179.9° E.
South of Fiji Islands
h about 520 km
Magnitude 5.0 (CGS).

Mar. 27

M	Z	eP	20:30:12.6 c
A	Z	eP	12.2 c
U	Z	eP	12.9 c
Ke	Z	iP	10.2 c
Ha	Z	eP	18.7 c

Mar. 27--Continued

C&GS card 25-64:
20:22:10.6
23.7° S., 179.9° E.
South of Fiji Islands
h about 520 km
Magnitude 5.0 (CGS).

Major Alaskan Earthquake and its aftershocks are listed separately.

Mar. 28

M	Z	iP	11:42:22.3 d
A	Z	eP	22.2 d
D	Z	iP	21.4 d
U	Z	iP	22.5 d
Pa	Z	iP	23.9 d
Na	Z	iP	19.0 d
Hi	Z	eP	24.3 d
Ke	Z	iP	19.1 d

C&GS card 31-64:
11:30:09.8
0.5° N., 122.3° E..
Northern Celebes
h about 140 km
Magnitude 5.8 (CGS).

Mar. 29

M	Z	iP	21:50:15.6 c
D	Z	iP	14.8 c
Pa	Z	eP	18.0 c
Na	Z	iP	11.3 c
Ke	Z	iP	12.3 c
U	PEZ	eR	22:05:26

C&GS CARD 31-64:
21:40:32.7
6.7° S., 155.1° E.
Solomon Islands
Felt: Rabaul
h about 68 km
Magnitude 6 (Pal), 5.3 (CGS).

Mar. 31, 1964

M	Z	eP	00:23:24 c
Hi	Z	iP	00:23:23.4 c
U	PEE	eS	00:30:50
U	PEN	eG	00:35:10
U	PEZ	eR	00:37:18

C&GS card 31-64:
00:14:11.7
45.3° N., 151.0° E.
Kurile Islands
h about 60 km
Magnitude 5.5-5.75 (Pal),
5.3 (CGS).

Mar. 31

Ke	Z	iP	09:08:48.0 c
NB	Z	eP	09:08:43.5 c
U	PEE	eS	09:14:38
U	PEN	i	09:17:02
U	PEZ	eR	09:18:06
M		Tmax	09:47:16
A		Tmax	36
D		Tmax	27
U		Tmax	39
Pa		Tmax	29
Hi		Tmax	09
Ha		Tmax	09:46:43

C&GS card 31-64:
09:01:30.2
50.8° N., 130.2° W.
Vancouver Island region
h about 15 km
Magnitude 6 (Pas), 6-6.25 (Brk),
6.5-6.75 (Pal), 5.6 (CGS).

The Good Friday Alaskan Earthquake and its aftershocks

Mar. 28, 1964

A	Z	iP	03:44:05.3 d
D	Z	iP	05.4 d
U	Z	iP	04.6 d
Ke	Z	iP	03.9 d
Pa	Z	eP	03.8 d
Hi	Z	eP	01.6 d
Na	Z	iP	07.9 d
Ha	Z	eP	03:43:54.1 d

C&GS card 28-64:
03:36:12.7
61.1° N., 147.6° W.
Prince William Sound, Alaska
114 dead or missing, many injured and major property damage in Alaska. Extensive damage from seismic sea waves throughout the Gulf of Alaska, along the West Coast of North America, and in Hawaii.
h about 20 km
Magnitude 8.4 (Pas), 8.5-8.75 (Brk), 8.6 (Pal), (8.5 (CGS).

Mar. 28

M	Z	Tmax	06:22:30
Pa	Z	Tmax	29
Hi	Z	Tmax	07
Ha	Z	Tmax	06:20:59

C&GS card 28-64:
05:31:05.4
58.1° N., 150.1° W.
h about 33 km
Magnitude 5.3 (CGS).

Mar. 28

U	Z	Tmax	06:25:08
Pa	Z	Tmax	08

C&GS card 28-64:
05:33:52.6
60.2° N., 146.2° W.
h about 20 km
Magnitude 5.6 (CGS).

Mar. 28

U	Z	Tmax	06:35:50
Pa	Z	Tmax	39
Hi	Z	Tmax	27
Ha	Z	Tmax	06:34:15

C&GS card 28-64:
05:44:54.9
60.1° N., 148.4° W.
h about 33 km
Magnitude 4.9.

Mar. 28

M	Z	iP	06:16:26.9 d
D	Z	iP	28.2 d

C&GS card 28-64:
06:08:44.2
60.1° N., 148.6° W.
h about 20 km
Magnitude 4.25-4.5 (Brk), 5.6 (CGS).

Mar. 28

U	Z	eP	06:40:19.3 d
M	Z	iP	18.9 d
D	Z	iP	19.9 d
A	Z	iP	19.5 d

C&GS card 28-64:
06:32:38.6
60.1° N., 147.6° W.
h about 33 km
Magnitude 4.5-4.75 (Brk), 5.5 (CGS).

Mar. 28

M	Z	iP	06:49:09.9
U	Z	eP	10.1
Hi	Z	iP	07.4
U	Z	Tmax	07:31:16
Hi	Z	Tmax	01
Pa	Z	Tmax	33
Ha	Z	Tmax	07:30:05

Mar. 28--Continued

C&GS card 28-64:
06:41:28.0
59.9° N., 147.8° W.
h about 15 km
Magnitude 4.75-5 (Brk),
5.5 (CGS).

Mar. 28

U	Z	iP	06:51:22.8	d
Pa	Z	eP	06:51:21.1	d
Hi	Z	eP	20.0	d

C&GS card 28-64:
06:43:57.4
58.3° N., 151.3° W.
h about 25 km
Magnitude 5.5-5.75 (Brk),
6.1 (CGS).

Mar. 28

U	Z	eP	06:58:12.0	d
Hi	Z	iP	09.1	d

C&GS card 28-64:
06:50:48.9
57.1° N., 152.3° W.
h about 33 km
Magnitude 5.0 (CGS).

Mar. 28

U	Z	iP	07:01:07.0	c
Hi	Z	iP	04.3	c

C&GS card 28-64:
06:53:35.6
58.8° N., 149.5° W.
h about 20 km.

Mar. 28

U	Z	iP	07:17:52.5	d
Pa	Z	eP	50.9	d
Hi	Z	eP	49.9	d
Ha	Z	iP	42.4	d
Pa	Z	Tmax	07:59:22	

C&GS card 28-64:
07:10:21.4
58.8° N., 149.5° W.
h about 20 km
Magnitude 6.2 (Pas), 5.75-6
(Brk), 6.1 (CGS).

Mar. 28

U	Z	Tmax	08:15:33
Pa	Z	Tmax	52
Hi	Z	Tmax	31
Ha	Z	Tmax	08:14:23

C&GS card 28-64:
07:24:21.7
59.3° N., 149.8° W.
h about 20 km
Magnitude 5.0 (CGS).

Mar. 28

U	Z	Tmax	08:17:22
Pa	Z	Tmax	45
Hi	Z	Tmax	27
Ha	Z	Tmax	08:16:01

C&GS card 28-64:
07:28:20.5
57.9° N., 150.4° W.
h about 20 km
Magnitude 5.0 (CGS).

Mar. 28

M	Z	iP	07:37:49.5	d
Pa	Z	Tmax	08:19:38	

C&GS card 28-64:
07:30:29.6
57.4° N., 151.7° W.
h about 15 km
Magnitude 5.25-5.5 (Brk),
5.7 (CGS).

Mar. 28

U	Z	Tmax	08:37:19
Pa	Z	Tmax	37

Mar. 28--Continued

C&GS card 28-64:
07:47:47.1
58.3° N., 150.2° W.
h 33 km
Magnitude 4.8 (CGS).

Mar. 28

Pa Z Tmax 08:38:26

C&GS card 28-64:
07:48:47.8
57.0° N., 153.3° W.
h about 15 km
Magnitude 5.0 (CGS).

Mar. 28

Pa Z Tmax 08:47:20

C&GS card 28-64:
07:59:40.7
57.9° N., 150.3° W.
h about 25 km
Magnitude 4.4 (CGS).

Mar. 28

U Z iP 08:41:10.7 c
Pa Z iP 09.4 c

C&CS card 28-64:
08:33:47.0
58.1° N., 151.1° W.
h about 25 km
Magnitude 5.25-5.5 (Brk),
5.6 (CGS).

Mar. 28

M Z iP 08:47:14.0 c
U Z Tmax 09:27:27
Pa Z Tmax 27
Ha Z Tmax 09:25:53

C&GS card 28-64:
08:39:54.9
57.5° N., 151.6° W.
h about 20 km
Magnitude 5.4 (CGS).

Mar. 28

U Z Tmax 09:42:07
Pa Z Tmax 09:41:47
Ha Z Tmax 09:40:27

C&GS card 28-64:
08:55:22.8
56.7° N., 151.9° W.
h about 25 km
Magnitude 5.1 (CGS).

Mar. 28

U Z eP 09:08:10.7 d
Hi Z eP 07.6 d
U Z Tmax 09:47:32
Pa Z Tmax 31
Ha Z Tmax 09:46:02

C&GS card 28-64:
09:01:00.5
56.5° N., 152.0° W.
h about 20 km
Magnitude 6.2 (Pas), 5.5-5.75
(Brk), 6.0 (CGS).

Mar. 28

U Z Tmax 09:52:17
Pa Z Tmax 09:52:16
Hi Z Tmax 09:51:56
Ha Z Tmax 09:50:49

C&GS card 28-64:
09:05:56.4
56.6° N., 153.2° W.
h about 25 km
Magnitude 5.3.

Table 5. Distant earthquakes--Continued
The Good Friday Alaskan Earthquake and its aftershocks

Mar. 28

U	Z	Tmax	10:20:21
Pa	Z	Tmax	10:20:19
Hi	Z	Tmax	10:20:00
Ha	Z	Tmax	10:18:47

C&GS card 28-64:
09:34:01.5
56.8° N., 152.3° W.
h about 20 km
Magnitude 5.0 (CGS).

March 28

M	Z	eP	10:00:34.7	c
Pa	Z	eP	33.6	c
Hi	Z	eP	32.0	c
Pa	Z	Tmax	10:43:41	
Hi	Z	Tmax	10:43:17	
Ha	Z	Tmax	10:42:20	

C&GS card 28-64:
09:52:55.7
59.7° N., 146.6° W.
h about 30 km
Magnitude 6.2 (Pas), 5-5.25 (Brk), 5.5 (CGS).

March 28

U	Z	Tmax	11:04:20
Pa	Z	Tmax	11:04:15
Ha	Z	Tmax	11:02:42

C&GS card 28-64:
10:17:48.5
56.6 N., 152.2 W.
h about 15 km
Magnitude 5.1 (CGS).

Mar. 28

U	Z	eP	10:40:19.1	c
Hi	Z	eP	16.0	c

C&GS card 28-64:
10:33:00.2
57.7° N., 152.2° W.
h about 35 km
Magnitude 5.2 (CGS).

Mar. 28

U	Z	Tmax	11:27:30
Hi	Z	Tmax	11:27:15
Ha	Z	Tmax	11:26:17

C&GS card 28-64:
10:35:31.2
60.9° N., 143.7° W.
h about 25 km
Magnitude 5.1 (CGS).

Mar. 28

U	Z	eP	10:42:52.6	d
Pa	Z	iP	52.1	d
U	Z	Tmax	11:22:43	
Pa	Z	Tmax	11:22:29	
Hi	Z	Tmax	11:22:07	
Ha	Z	Tmax	11:21:05	

C&GS card 28-64:
10:35:38.9
57.2° N., 152.4° W.
h about 33 km
Magnitude 6.3 (Pas), 5.75-6 (Brk), 6.0 (CGS).

Mar. 28

Pa	Z	Tmax	11:48:45

C&GS card 28-64:
10:57:18.1
60.6° N., 144.7° W.
h about 33 km
Magnitude 4.7.

Mar. 28

Pa	Z	Tmax	11:46:25

C&GS card 28-64:
10:59:16.3
57.4° N., 151.6° W.
h about 30 km
Magnitude 5.2(CGS).

Mar. 28

U Z iP 11:16:15.1 d
Pa Z 13.6 d
Hi Z 12.0 d
Pa Z Tmax 11:59:38

C&GS card 28-64:
11:08:26.0
60.1° N., 148.4° W.
h about 15 km
Magnitude 5.6 (Pas), 5.25-5.5 (Brk), 5.7 (CGS).

Mar. 28

M Z iP 11:39:50.3 d

C&GS card 28-64:
11:32:19.0
59.0° N., 149.5° W.
h about 20 km
Magnitude 4.9 (CGS).

Mar. 28

U Z eP 12:11:03.6 d
Hi Z iP 01.1 d
U Z Tmax 12:56:50
Pa Z Tmax 12:56:46
Hi Z Tmax 12:56:24
Ha Z Tmax 12:55:01

C&GS card 28-64:
12:03:16.5
60.3° N., 146.6° W.
h about 15 km
Magnitude 5.1 (Pas), 5.4 (CGS).

Mar. 28

U Z iP 12:27:59.4 c
Pa Z iP 58.2 c
Hi Z iP 56.8 c
U Z Tmax 13:07:07
Pa Z Tmax 13:07:08
Hi Z Tmax 13:06:42
Ha Z Tmax 13:05:38

Mar. 28--Continued

C&GS card 28-64:
12:20:49.8
56.5° N., 154.0° W.
h about 25 km
Magnitude 6.5 (Pas), 5.25-5.75 (Brk), 6.1 (CGS).

Mar. 28

U Z Tmax 13:20:21
Pa Z Tmax 13:20:18
Ha Z Tmax 13:18:46

C&GS card 28-64:
12:31:29.8
59.1° N., 149.6° W.
h about 20 km
Magnitude 4.7 (CGS).

Mar. 28

U Z eP 13:08:57.7 c
Pa Z eP 56.6 c
Hi Z eP 55.4 c
U Z Tmax 13:52:22
Pa Z Tmax 13:52:13
Hi Z Tmax 13:51:58
Ha Z Tmax 13:50:46

C&GS card 28-64:
13:01:14.2
60.1° N., 147.0° W.
h about 20 km
Magnitude 5.1 (CGS).

Mar. 28

M Z iP 14:02:15.4 c
U Z Tmax 14:48:17
Pa Z Tmax 14:48:09
Hi Z Tmax 14:47:48
Ha Z Tmax 14:46:24

C&GS card 28-64:
13:54:19.9
62.1° N., 147.1° W.
h about 15 km
Magnitude 4.6 (CGS).

Table 5.--Distant earthquakes--Continued
The Good Friday Alaskan Earthquake and its aftershocks

Mar. 28

U	Z	Tmax	15:32:42
Pa	Z	Tmax	15:32:47
Hi	Z	Tmax	15:32:21
Ha	Z	Tmax	15:30:55

C&GS card 31-64:
14:46:33.6
56.7° N., 153.6° W.
h about 33 km
Magnitude 4.9 (CGS).

Mar. 28

U	Z	iP	14:55:25.0	c
Pa	Z	iP	24.3	c
Hi	Z	iP	22.3	c
U	Z	Tmax	15:39:14	
Pa	Z	Tmax	15:39:11	
Hi	Z	Tmax	15:38:32	
Ha	Z	Tmax	15:37:20	

C&GS card 28-64:
14:47:37.1
60.4° N., 146.5° W.
h about 10 km
Magnitude 6.3 (Pas), 5.75-6 (Brk), 6.5-6.75 (Pal), 5.7 (CGS).

Mar. 28

U	Z	iP	14:57:00.9	d
Pa	Z	iP	14:56:59.7	d
Hi	Z	eP	14:56:58.2	d
U	Z	Tmax	15:40:50	
Pa	Z	Tmax	15:40:56	
Hi	Z	Tmax	15:40:27	
Ha	Z	Tmax	15:39:30	

C&GS card 28-64:
14:49:13.7
60.4° N., 147.1° W.
h about 10 km
Magnitude 6.5 (Pas), 5.5-5.75 (Brk), 5.8 (CGS).

Mar. 28

U	Z	Tmax	17:13:46
Pa	Z	Tmax	17:13:38
Ha	Z	Tmax	17:12:21

C&GS card 28-64:
16:26:16.9
57.5° N., 150.9° W.
h about 30 km
Magnitude 5.0 (CGS).

Mar. 28

U	Z	eP	16:52:12.1	c
U	Z	Tmax	17:35:14	
Pa	Z	Tmax	17:34:47	
Hi	Z	Tmax	17:34:32	
Ha	Z	Tmax	17:33:22	

C&GS card 28-64:
16:44:35.9
59.3° N., 147.8° W.
h about 25 km
Magnitude 4.75-5 (Brk), 5.3 (CGS).

Mar. 28

Pa	Z	Tmax	18:52:45

C&GS card 28-64:
18:02:54.9
59.5° N., 149.3° W.
h about 33 km
Magnitude 4.6.

Mar. 28

U	Z	iP	20:36:45.5	d
Pa	Z	iP	44.7	d
Hi	Z	iP	42.3	d
Ha	Z	eP	37.6	d
U	PEZ	iS	20:42:57	
U	PEE	eG	20:45:45	
U	PEZ	iR	20:47:39	
U	Z	Tmax	21:20:22	
Pa	Z	Tmax	21:20:18	
Hi	Z	Tmax	21:19:59	
Ha	Z	Tmax	21:19:02	

Table 5.--Distant earthquakes--Continued
The Good Friday Alaskan Earthquake and its aftershocks

Mar. 28--Continued

C&GS card 28-64:
20:29:08.6
59.8° N., 148.7° W.
h about 40 km
Magnitude 6.6 (Pas), 6.5-6.75 (Brk, Pal), 5.8 (CGS), 6.6 (HVO).

Mar. 28

U	Z	Tmax 00:34:09
Pa	Z	Tmax 00:33:55
Hi	Z	Tmax 00:33:31
Ha	Z	Tmax 00:32:21

C&GS card 28-64:
23:46:22.0
57.5° N., 151.1° W.
h about 33 km
Magnitude 5.0 (Pas), 5.5-5.75 (Brk), 5.2 (CGS).

Mar. 29

Pa	Z	Tmax 00:59:09

C&GS card 29-64
00:12:32.3
56.8° N., 153.4° W.
h about 33 km
Magnitude 4.5 (CGS).

Mar. 29

M	Z	eP	01:17:16.4 c

C&GS card 29-64:
01:09:36.4
59.8° N., 149.2° W.
h about 20 km
Magnitude 5.2 (Pas), 5.25-5.5 (Brk), 5.5 (Pal), 5.5 (CGS).

Mar. 29

U	Z	Tmax 02:17:05
Pa	Z	Tmax 02:17:05
Hi	Z	Tmax 02:16:42
Ha	Z	Tmax 02:15:42

Mar. 29--Continued

C&GS card 29-64:
01:29:33.7
57.5° N., 151.3° W.
h about 20 km
Magnitude 4.6 (Pas), 5.75-6 (Brk), 5.6 (CGS).

Mar. 29

U	Z	Tmax 02:34:31
Pa	Z	Tmax 02:34:22
Hi	Z	Tmax 02:34:06
Ha	Z	Tmax 02:32:52

C&GS card 29-64:
01:48:18.5
56.3° N., 153.7° W.
h about 20 km
Magnitude 4.8 (CGS).

Mar. 29

U	Z	Tmax 02:54:09
Pa	Z	Tmax 02:54:09
Hi	Z	Tmax 02:53:43
Ha	Z	Tmax 02:52:38

C&GS card 29-64:
02:07:41.6
56.5° N., 152.6° W.
h about 20 km
Magnitude 4.5 (CGS).

Mar. 29

U	Z	Tmax 03:12:25
Pa	Z	Tmax 03:12:21

C&GS card 29-64:
02:25:25.1
57.0° N., 151.7° W.
h about 20 km
Magnitude 5.2 (CGS).

Mar. 29

U	Z	iP	04:20:01.9 c
U	Z	Tmax	05:03:45
Pa	Z	Tmax	05:03:42
Hi	Z	Tmax	05:03:23

Table 5.--Distant earthquakes--continued
The Good Friday Alaskan Earthquake and its aftershocks

Mar. 29--Continued

Ha Z Tmax 05:02:18

C&GS card 29-64:
04:12:15.7
60.2° N., 145.5° W.
h about 15 km
Magnitude 5.2 (Pas),
4.75-5 (Brk),
5.3 (CGS).

Mar. 29

U Z Tmax 05:38:29
Pa Z Tmax 05:38:35
Hi Z Tmax 05:38:05
Ha Z Tmax 05:36:56

C&GS card 29-64:
04:51:53.3
56.8° N., 152.4° W.
h about 40 km
Magnitude 4.8.

Mar. 29

Pa Z Tmax 05:54:50

C&GS card 29-64:
05:08:25.8
56.7° N., 152.7° W.
h about 20 km
Magnitude 4.6 (CGS).

Mar. 29

Pa Z Tmax 06:04:21

C&GS card 29-64:
05:13:42.4
59.5° N., 147.4° W.
h about 33 km
Magnitude 3.9 (CGS).

Mar. 29

Pa Z Tmax 06:08:24

C&GS card 29-64:
05:21:09.8
57.1° N., 150.4° W.

Mar. 29

C&GS card--Continued

h about 20 km
Magnitude 4.4 (CGS).

Mar. 29

Pa Z Tmax 06:24:21

C&GS card 29-64:
05:37:47.4
56.9° N., 153.3° W.
h about 25 km
Magnitude 4.8.

Mar. 29

U Z eP 06:11:48.7 c
U PEZ iS 06:17:34
U PEE iG 06:20:10
U PEZ iR 06:21:50
U Z Tmax 06:50:49
Pa Z Tmax 06:50:46
Hi Z Tmax 06:50:22
Ha Z Tmax 06:48:58

C&GS card 29-64:
06:04:44.5
56.1° N., 154.3° W.
h about 30 km
Magnitude 5.8 (Pas), 5.25-5.5
(Brk), 6-6.25 (Pal),
5.6 (CGS).

Mar. 29

U Z Tmax 07:39:23
Pa Z Tmax 07:39:20
Ha Z Tmax 07:38:00

C&GS card 29-64:
06:53:19.5
56.1° N., 154.5° W.
h about 25 km
Magnitude 4.8 (CGS).

Mar. 29, 1964

Pa Z Tmax 08:04:51

C&GS card 29-64:
07:18:08.0
57.0° N., 151.8° W.
h about 25 km
Magnitude 4.8 (CGS).

Mar. 29

M Z eP 08:00:00.2 d
U Z Tmax 08:38:59
Pa Z Tmax 08:38:32
Hi Z Tmax 08:38:37
Ha Z Tmax 08:37:13

C&GS card 29-64:
07:52:46.4
56.1° N., 154.2° W.
h about 25 km
Magnitude 4.9 (Pas), 4.8 (CGS).

Mar. 29

Pa Z Tmax 08:52:21

C&GS card 29-64:
08:06:03.7
56.6° N., 152.4° W.
h about 25 km
Magnitude 4.5 (CGS).

Mar. 29

U Z Tmax 08:54:08
Pa Z Tmax 08:54:05
Ha Z Tmax 08:52:38

C&GS card 29-64:
08:07:52.3
56.5° N., 152.6° W.
h about 20 km
Magnitude 4.9 (CGS).

Mar. 29

Pa Z Tmax 09:36:25

C&GS card 29-64:
08:50:03.6

Mar. 29--Continued

C&GS card 29-64--Continued

56.7° N., 152.1° W.
h about 33 km
Magnitude 4.3 (CGS).

Mar. 29

Pa Z Tmax 09:53:09

C&GS card 29-64:
09:06:44.8
56.6° N., 152.2° W.
h about 15 km
Magnitude 4.8.

Mar. 29

M Z eP 09:23:29.2 d

C&GS card 31-64:
09:15:55.4
58.4° N., 150.5° W.
h about 15 km
Magnitude 4.6 (CGS).

Mar. 29

U Z iP 10:15:44.2 d

C&GS card 29-64:
10:08:02.4
60.0° N., 148.6° W.
h about 20 km
Magnitude 5.0 (Pas), 5.25-5.5 (Brk), 5.3 (CGS).

Mar. 29

M Z eP 10:57:05.2 c
Pa Z Tmax 11:37:39

C&GS card 29-64:
10:49:40.3
58.2° N., 150.4° W.
h about 25 km
Magnitude 5.2 (CGS).

Table 5.--Distant earthquakes--Continued
The Good Friday Alaskan Earthquake and its aftershocks

Mar. 29, 1964

M Z eP 12:03:56.5 c

C&GS card 29-64:
11:56:33.0
58.0° N., 151.6° W.
h about 20 km
Magnitude 5.1 (CGS).

Mar. 29

U Z Tmax 13:39:22
Pa Z Tmax 13:39:19
Hi Z Tmax 13:38:59
Ha Z Tmax 13:37:59

C&GS card 29-64:
12:48:05.9
59.9° N., 145.6° W.
h about 25 km
Magnitude 4.5 (CGS).

Mar. 29

Pa Z Tmax 16:25:17

C&GS card 29-64:
15:39:28.6
56.1° N., 154.4° W.
h about 25 km
Magnitude 4.2 (CGS).

Mar. 29

U Z eP 16:17:02.8 d

C&GS card 29-64:
16:09:15.3
60.3° N., 146.6° W.
h about 15 km
Magnitude 4.8 (CGS).

Mar. 29

U Z Tmax 17:10:05
Pa Z Tmax 17:09:59
Hi Z Tmax 17:09:39

C&GS card 29-64:
16:18:29.3
60.4° N., 146.0° W.

Mar. 29--Continued

h about 15 km
Magnitude 4.9 (Pas), 5.0 (CGS).

Mar. 29

U Z eP 16:48:41.8 c
Pa Z eP 41.2 c
Hi Z eP 39.0 c
Ha Z eP 33.8 c
U PEZ eS 16:55:06
U PEE eG 16:58:08
U PEZ iR 16:59:50
U Z Tmax 17:31:47
Pa Z Tmax 17:31:52
Hi Z Tmax 17:31:33

C&GS card 31-64:
16:40:57.9
59.7° N., 147.0° W.
h about 15 km
Magnitude 5.8 (Pas), 5.5-5.75 (Brk), 5.6 (CGS).

Mar. 29

U Z eP 16:53:15.4 d
U Z Tmax 17:36:26
Pa Z Tmax 17:36:29
Hi Z Tmax 17:36:01

C&GS card 31-64:
16:45:33.6
59.8° N., 146.9° W.
h about 20 km
Magnitude 4.75-5 (Pas), 6.25 (Pal), 5.3 (CGS).

Mar. 29

U Z iP 17:01:14.3 c
Hi Z iP 11.5 c
U Z Tmax 17:44:58
Pa Z Tmax 17:45:10
Hi Z Tmax 17:44:40
Ha Z Tmax 17:43:46

C&GS card 29-64:
16:53:26.6
60.3° N., 146.1° W.
h about 15 km
Magnitude 4.75-5 (Brk), 5.2 (CGS).

Table 5.--Distant earthquakes--Continued

The Good Friday Alaskan Earthquake and its aftershocks

Mar. 29, 1964

Pa	Z	Tmax	18:12:18

C&GS card 29-64:
17:26:00.2
56.4° N., 153.3° W.
h about 33 km
Magnitude 4.1 (CGS).

Mar. 29

Pa	Z	Tmax	20:00:26
Hi	Z	Tmax	20:00:08
Ha	Z	Tmax	19:58:57

C&GS card 29-64:
19:09:03.3
60.1° N., 146.0° W.
h about 15 km
Magnitude 4.6 (CGS).

Mar. 29

M	Z	iP	23:57:10.7	d
Hi	Z	Tmax	00:39:45	
Ha	Z	Tmax	00:38:55	

C&GS card 29-64:
23:49:28.6
59.9° N., 147.1° W.
h about 20 km
Magnitude 4.8 (CGS).

Mar. 30

U	Z	eP	02:25:18.2	c
Pa	Z	eP	17.0	c
Hi	Z	eP	15.4	c
Ha	Z	iP	11.0	c
U	PEN	iS	02:31:16	
U	PEZ	iR	02:35:00	
U	Z	Tmax	03:04:25	
Pa	Z	Tmax	03:04:31	
Hi	Z	Tmax	03:04:04	
Ha	Z	Tmax	03:03:05	

Mar. 29--Continued

C&GS card 30-64:
02:18:06.3
56.6° N., 152.9° W.
h about 25 km
Magnitude 6.6 (Pas), 6.5-6.75 (Brk), 6.75 (Pal), 5.8 (CGS).

Mar. 30

U	Z	Tmax	03:28:20
Pa	Z	Tmax	03:28:15
Hi	Z	Tmax	03:28:01
Ha	Z	Tmax	03:26:52

C&GS CARD 30-64:
02:41:59.6
56.5° N., 153.0° W.
h about 30 km
Magnitude 4.9.

Mar. 30

U	Z	Tmax	05:13:29
Pa	Z	Tmax	05:13:17
Hi	Z	Tmax	05:12:57
Ha	Z	Tmax	05:11:54

C&GS card 30-64:
04:22:43.1
59.5° N., 146.3° W.
h about 15 km
Magnitude 4.5 (CGS).

Mar. 30

U	Z	eP	07:17:18.2	c
Pa	Z	iP	17.4	c
Ha	Z	iP	08.8	c
U	PEZ	iS	07:23:32	
U	PEN	i	07:26:58	
U	PEZ	iR	07:28:12	
U	Z	Tmax	08:00:49	
Pa	Z	Tmax	08:00:52	
Hi	Z	Tmax	08:00:27	
Ha	Z	Tmax	07:59:31	

Table 5.--Distant earthquakes--Continued

The Good Friday Alaskan Earthquake and its aftershocks

Mar. 30--Continued

C&GS card 30-64:
07:09:34.0
59.9° N., 145.7° W.
h about 15 km
Magnitude 6.2 (Pas), 5.75-6 (Brk)
6.25-6.5 (Pal),
5.6 (CGS).

Mar. 30

Pa Z Tmax 08:42:34
Ha Z Tmax 08:41:40

C&GS card 30-64:
07:56:29.1
56.3° N., 154.4° W.
h about 20 km
Magnitude 5.0 (CGS).

Mar. 30

Pa Z Tmax 09:26:32
Ha Z Tmax 09:24:56

C&GS card 30-64:
08:40:10.7
56.5° N., 153.0° W.
h about 20 km
Magnitude 4.3 (CGS).

Mar. 30

U Z Tmax 10:14:14
Pa Z Tmax 10:14:21
Hi Z Tmax 10:13:55
Ha Z Tmax 10:12:55

C&GS card 30-64:
09:23:05.0
59.9° N., 145.6° W.
h about 33 km
Magnitude 4.5 (CGS).

Mar. 30

Ha Z Tmax 11:46:17

Mar. 30--Continued

C&GS card 30-64:
10:59:27.6
58.4° N., 149.2° W.
h about 25 km
Magnitude 5.0 (CGS).

Mar. 30

M Z eP 11:55:51.2 c
U Z Tmax 02:35:10
Pa Z Tmax 02:35:01
Hi Z Tmax 02:34:44
Ha Z Tmax 02:33:27

C&GS card 30-64:
11:48:40.4
56.4° N., 152.5° W.
h about 20 km
Magnitude 5.2 (CGS).

Mar. 30

M Z eP 12:13:27.0 c
U Z Tmax 12:56:51
Pa Z Tmax 12:56:43
Hi Z Tmax 12:56:33
Ha Z Tmax 12:55:29

C&GS card 30-64:
12:05:43.5
60.1° N., 147.0° W.
h about 25 km
Magnitude 5.0 (Pas), 5.0 (CGS).

Mar. 30

M Z eP 12:21:41.1 c

C&GS card 30-64:
12:14:28.4
58.0° N., 151.6° W.
h about 25 km
Magnitude 5.0 (CGS).

Mar. 30, 1964--Continued

U Z Tmax 13;29:07
Pa Z Tmax 13:29:06
Hi Z Tmax 13:28:39
Ha Z Tmax 13:27:41

C&GS card 30-64:
12:38:16.0
59.7° N., 146.9° W.
h about 30 km
Magnitude 5.0 (CGS).

Mar. 30

U Z Tmax 13:45:54
Pa Z Tmax 13:45:59
Hi Z Tmax 13:45:37
Ha Z Tmax 13:44:41

C&GS card 30-64:
12:55:12.5
59.7° N., 147.0° W.
h about 30 km
Magnitude 4.6 (CGS).

Mar. 30

M Z eP 13:10:45.7
U Z Tmax 13:50:08
Pa Z Tmax 13:49:55
Hi Z Tmax 13:49:47
Ha Z Tmax 13:48:35

C&GS card 31-64:
13:03:34.9
56.5° N., 152.7° W.
h about 20 km
Magnitude 5.3 (CGS), 4.75-5 (Brk), 5.5-5.75 (Pal), 5.3 (CGS).

Mar. 30

U Z Tmax 14:18:45
Pa Z Tmax 14:18:35
Hi Z Tmax 14:18:20
Ha Z Tmax 14:17:11

Mar. 30--Continued

C&GS card 30-64:
13:32:18.5
56.4° N., 152.6° W.
h about 15 km
Magnitude 4.8 (CGS).

Mar. 30

M Z eP 15:15:27.1 d

C&GS card 30-64:
15:07:49.3
58.7° N., 149.6° W.
h about 25 km
Magnitude 5.3 (CGS).

Mar. 30

Hi Z iP 16:16:36.5 c
U Z Tmax 16:56:02
Pa Z Tmax 16:55:55
Hi Z Tmax 16:55:34
Ha Z Tmax 16:54:35

C&GS card 30-64:
16:09:28.4
56.6° N., 152.1° W.
h about 25 km
Magnitude 5.5 (Pas), 5.5-5.75 (Brk), 5.75-6 (Pal), 5.5 (CGS).

Mar. 30

U Z Tmax 17:30:51
Pa Z Tmax 17:30:35
Hi Z Tmax 17:30:11
Ha Z Tmax 17:29:16

C&GS card 30-64:
16:38:26.5
60.1° N., 150.7° W.
h about 15 km
Magnitude 4.4 (CGS).

Mar. 30

U Z Tmax 17:39:48

Table 5.--Distant earthquakes--Continued
The Good Friday Alaskan Earthquake and its aftershocks

Mar. 30--Continued

Pa Z Tmax 17:39:35
Hi Z Tmax 17:39:18
Ha Z Tmax 17:38:11

C&GS card 30-64:
16:53:07.7
56.6° N., 152.2° W.
h about 15 km
Magnitude 5.0 (CGS).

Mar. 30

Pa Z Tmax 17:50:47
Ha Z Tmax 17:49:19

C&GS card 31-64:
17:04:21
56.7° N., 152.5° W.
h about 33 km
Magnitude 4.3 (CGS).

Mar. 30

Ha Z Tmax 18:05:18

C&GS card 30-64:
17:16:06.7
59.6° N., 146.5° W.
h about 33 km
Magnitude 4.3 (CGS).

Mar. 31

Ha Z Tmax 02:44:17

C&GS card 30-64:
01:57:54.3
57.6° N., 150.1° W.
h about 20 km
Magnitude 4.8 (CGS).

Mar. 31

Pa Z Tmax 03:29:49
Ha Z Tmax 03:27:56

C&GS card 30-64:
02:43:35.6
56.7° N., 154.0° W.

Mar. 31--Continued

h about 20 km
Magnitude 4.7 (CGS).

Mar. 31

Pa Z Tmax 05:33:44
Hi Z Tmax 05:33:21
Ha Z Tmax 05:32:12

C&GS card 30-64:
04:46:06.1
57.6° N., 151.2° W.
h about 33 km
Magnitude 4.7 (CGS).

Mar. 31

U Z iP 11:11:06.2 c
Pa Z eP 04.6 c

C&GS card 30-64:
11:03:35.4
58.9° N., 149.9° W.
h about 20 km
Magnitude 5.0 (CGS).

Mar. 31

U Z Tmax 12:39:50
Pa Z Tmax 12:40:07
Hi Z Tmax 12:39:37
Ha Z Tmax 12:38:33

C&GS card 34-64:
11:53:14.4
56.5° N., 152.3° W.
h about 25 km
Magnitude 4.8 (CGS).

Mar. 31

Pa Z Tmax 13:40:07
Ha Z Tmax 13:38:39

C&GS card 31-64:
12:53:43.6
56.7° N., 152.2° W.
h about 33 km
Magnitude 4.3 (CGS).

Table 5.--Distant earthquakes--Continued

The Good Friday Alaskan Earthquake and its aftershocks

Mar. 31, 1964 M Z iP 21:11:27.7 c C&GS card 30-64: 21:04:01.1 58.2° N., 150.3° W. h about 20 km Magnitude 5.2 (CGS).	

Table 6.--U.S. Geological Survey seismograph stations in Hawaii

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Uwekahuna (Hawaiian Volcano Observatory)	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z. (Seismometer and galvanometer periods are 15 and 90 seconds, respectively.) Short-period Sprengnether: E, Z. HVO-1: Z [1] Short-base liquid-level tiltmeter.
Mauna Loa	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z [2].
Ahua	A	19°22.4'	155°15.9'	1,070	Do.
Desert	D	19°20.2'	155°23.3'	815	Do.
North Pit	N	19°24.9'	155°17.0'	1,115	Do.
West Pit	WP	19°24.7'	155°17.5'	1,115	Do.
Makaopuhi	MP	19°21.8'	155°10.7'	885	1.0 sec. Benioff with transistorized pre-amplifier: Z. Wired into HVO-2 recording system.
Hilo	Hi	19°43.2'	155°05.3'	20	HVO-1: Z. Wood-Anderson: N, E. Operated by Sister Thecla at St. Joseph's School.
Kipapa Oahu	Kip	21°25.4'	158°00.9'	76	HVO-1: Z. Operated by U.S. Coast and Geodetic Survey.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Latitude N.	Longitude W.		
Naalehu	Na	19°03.8'	155°35.2'	205	1.0 sec. EV-17 seismometer, 0.5 sec. galvanometer: Z. Operated by Rev. D. Thompson at Naalehu School.
Pahoa	Pa	19°29.7'	154°56.8'	205	HVO-1: Z. Operated by Mr. K. Kimura at Pahoa School.
Kamuela	Ka	20°01.9'	155°42.0'	740	HVO-1: Z. Operated by Mr. Ed. Van Gorder, Preparatory Academy, Kamuela.
Haleakala, Maui	Ha	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Haleakala National Park, Maui.
North Bay Installed 3/12/64	NB	19°29.7'	155°34.8'	4,005	0.8 sec. EV-17: Z. with helicorder. Operated by U.S. Weather Bureau.
Kealakekua Installed 1/28/64	Ke	19°31.2'	155°55.3'	505	1.0 sec. EV-17, 0.2 sec. galvanometer: Z. Wood-Anderson: N, E. Operated by Mr. H. Nelson at Kona County Hospital.

See footnotes at end of table, p.43 .

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

1/ HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Over-damping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

2/ HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper. The response of this seismograph is similar to that of HVO-1. Records from these seismographs at M, A, and D, and at N, WP, and MP (Benioff) are recorded on two 3-component drums to permit more accurate comparison of arrival times at these stations.

The following persons or agencies reported "felt" earthquakes during the first quarter, 1964. Their assistance is gratefully acknowledged.

Kilauea summit area

Mr. and Mrs. G. Yong
Mrs. W. Mist
Mr. H. Powers
Mrs. C. Wentworth
Mrs. V. Hansen
Miss M. English
Mr. W. Cuskelly
Mr. R. Koyanagi
Mr. A. Yamamoto
Mrs. O. Duncan
Mr. J. Forbes

North Hawaii

Honokaa Police Dept.
Mrs. R. Eklund
Mrs. P. Christensen
Mrs. P. Richards
Mrs. A. Walker
Mr. E. Van Gorder
Mrs. E. Lindsey

Hilo region

Mr. R. Baldwin
Mr. C. Shoemaker
Mr. J. Bryan
Mr. H. Pierce
Mrs. B. Shaffer
Mr. W. Southward
Mrs. C. Guerin o
Miss E. Patten
Mrs. H. Lewis
Mrs. C. Hubbard
Miss R. Chiquita

Puna

Mr. R. Williamson
Mrs. D. Isbell
Mr. H. Warner
Mr. K. Kimura

Kau

Mrs. P. Billings
Mrs. A. Paiva

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 34

April, May, and June 1964

by

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and Willie T. Kinoshita

Issued February 1965

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Chronological summary

Hawaiian volcanoes were exceptionally quiet during the second quarter of 1964. From April 1 to May 15 no measurable tilting was indicated by the short-base tiltmeter that is read daily. During this span of time there were a few bursts of tremor (April 16 to April 22) and six scattered earthquakes barely large enough to be felt. On May 23, in the Kaoiki fault system, an earthquake of magnitude 3 was followed by 27 aftershocks in less than 2 hours. A Kohala-centered quake of 3.5 magnitude was felt on May 28. Two quakes were felt on June 4, the first at about 08^h30^m from 45 km depth under Kilauea, and the second at about 13^h30^m, from a shallow quake on the southeast flank of Mauna Loa. Other quakes were felt on June 8, 17, and 18.

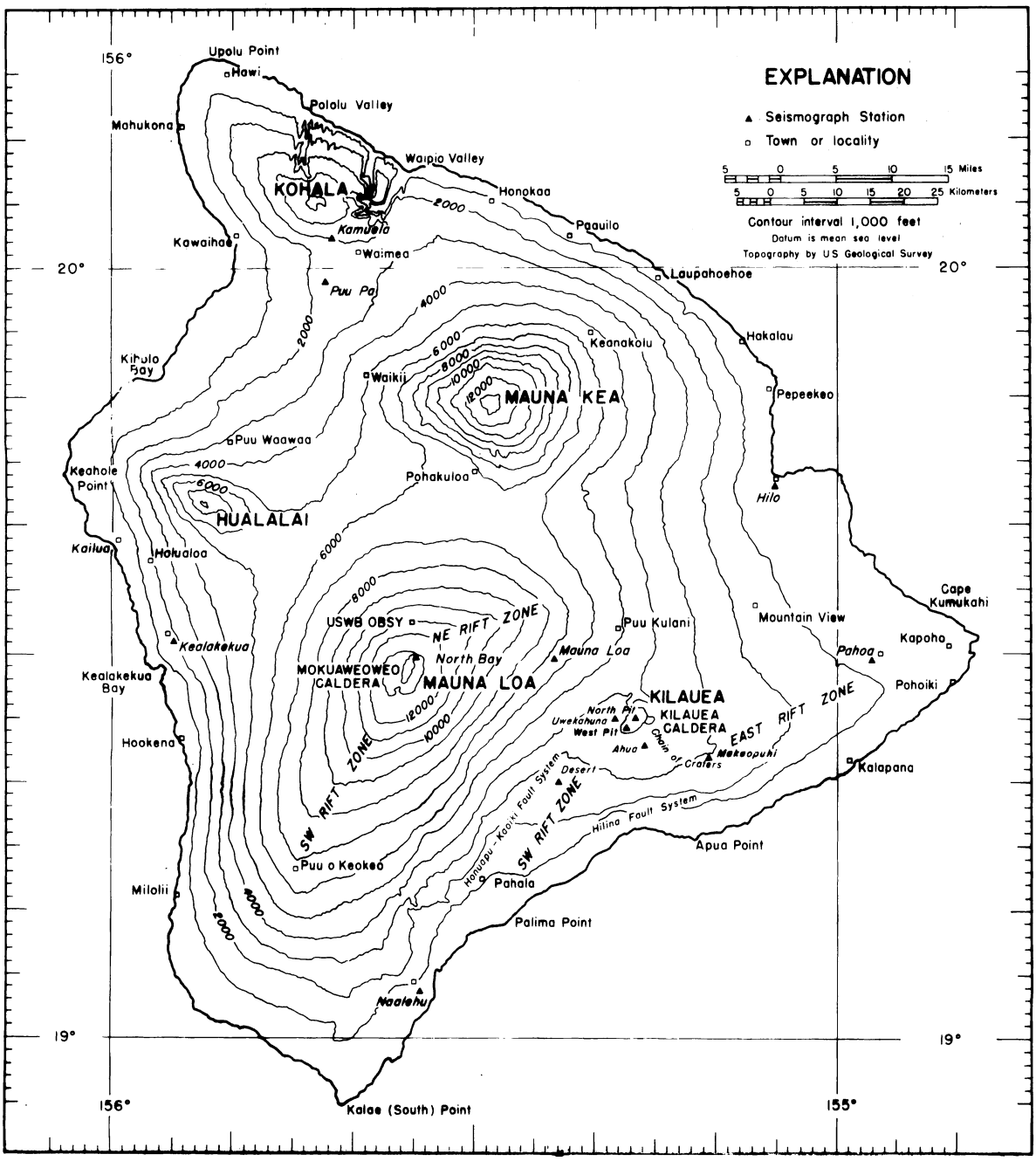

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface, i.e., to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault, April, May, and June 1964

Date	N-S	E-W	Date	N-S	E-W
Mar. 5	460	506	June 7	465	506
12	461	506	14	466	505
19	461	506	21	466	507
26	462	503	28	467	502
May 3	463	502			
10	462	503			
17	464	501			
24	464	501			
31	464	500			

Second quarter, 1964

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera (See tilt diagram, fig. 2.)

Tilt base (location)	Date (1964)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1964)
		N-S	E-W			
Uwekahuna (19°25.5' N., 155°17.4' W.)	April 29	452.5	491.9	5.0	N. 43.3° W.	Jan. 22
Tree Molds (19°26.3' N., 155°17.3' W.)	May 1	433.2	510.9	2.2	N. 19.3° W.	21
Sand Spit (19°24.1' N., 155°16.8' W.)	May 1	848.5	768.5	0.6	S. 25.7° E.	23
Kalihipaa (19°21.4' N., 155°15.3' W.)	April 27	338.6	383.8	1.0	S. 45.0° W.	20
Keamoku (19°25.1' N., 155°19.0' W.)	April 28	495.8	591.9	2.7	N. 65.0° W.	23
Ahua Kamokukolau (19°22.7' N., 155°16.6' W.)	May 1	620.3	532.3	3.5	S. 21.5° W.	22
Kipuka Nene (19°19.4' N., 155°16.7' W.)	April 27	485.3	511.0	0.4	S. 84.3° E.	20
Hilina Pali (19°18.2' N., 155°18.6' W.)	April 30	498.1	497.8	0.6	N. 79.8° W.	Oct. 14, 1963
Kapapala Ranch (19°20.5' N., 155°23.8' W.)	April 28	495.3	502.3	0.3	N. 83.5° W.	Jan. 21, 1964

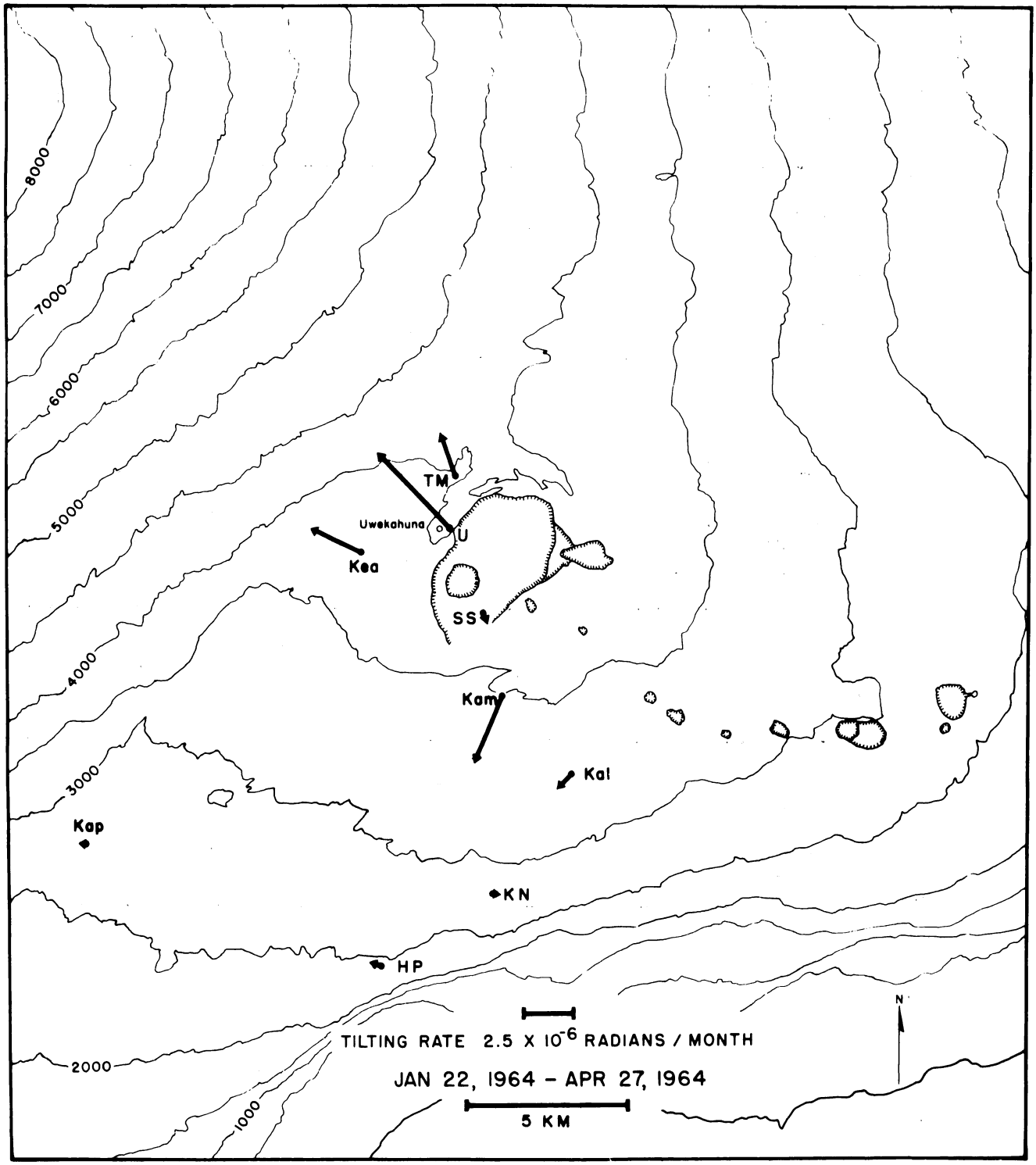

Figure 2.--Tilting of the ground around Kilauea caldera, January 22 to April 27, 1964. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands, usually within 100 km of at least one seismograph, and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, WV, MP). Earthquakes of magnitude 2.5 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations and essential data on the stations are listed in table 6, of summary 33.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismopgraph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa short-period vertical; earthquakes from a source about 30 km beneath Halemaumau; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank (these are usually first arrivals at the Ahua meter or at the new experimental seismometer near Makaopuhi Crater (MP)); and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Apr. 1	-----	-------	-------	------	70	8	----	8	7	----------
2	19	-------	-------	------	82	6	1	1	9	1 Kilauea south flank.
3	-----	-------	-------	1	85	6	1	1	3	1 off shore of Kona.
4	-----	-------	-------	-------	64	22	----	11	9	1 Mauna Kea region.
5	-----	-------	-------	-------	58	12	----	6	3	----------
6	-----	-------	-------	-------	73	12	----	2	3	----------
7	-----	-------	-------	-------	52	16	----	13	2	1 Mauna Kea region.
8	----	-------	-------	-------	39 ?	5	-----	5	5	1 Kohala region 1 Mauna Loa region.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
Apr. 9	----	-----	------	-----	44	3	------	2	5	----------
10	----	-----	------	-----	56	15	------	1	3	----------
11	----	-----	------	1	39	9	------	3	1	----------
12	----	-----	------	-----	37	15	1	3	1	1 Mauna Kea region
13	----	-----	------	-----	51+	30	1	3	4	----------
14	----	-----	------	-----	48	19	3	8	1	2 Kona---------- 1 near Kalapana.
15	----	-----	------	1	48	4	------	3	3	----------
16	----	-----	------	-----	45	12	------	3	?	----------
17	----	-----	------	-----	35	11	------	-----	2	----------
18	75	-----	------	-----	40	16	------	4	6	----------
19	----	-----	------	-----	44	13	1	14	1	1 near Kalapana--------
20	40	-----	------	-----	66	12	------	3	3	2 Kona
21	----	-----	------	-----	59	16	------	4	2	2 Mauna Loa----------
22	27	-----	------	-----	76	12	1	8	2	1 Mauna Loa----------
23	----	-----	------	-----	46	12	------	4	3	----------
24	----	-----	------	-----	58	4	------	1	-----	----------
25	----	-----	------	-----	48	18	------	-----	14?	----------
26	----	-----	------	-----	49	5	------	5	6	----------
27	----	-----	------	-----	48	8	------	3	2	----------
28	56	-----	------	-----	64	4	------	2	4	----------
29	----	-----	------	-----	52	9	------	2	1	2 Kona----------
30	----	-----	------	-----	40	8	------	1	2	1 Kona----------
May 1	----	-----	------	-----	40+	4	------	-----	3	----------
2	----	-----	------	-----	40	9	------	4	6	----------
3	----	-----	------	-----	39	13	1	8	2	----------
4	----	-----	------	-----	32	6	------	2	5	1 Kona----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
May 5	-----	-----	-----	-----	46	10	-----	10	2	1 Mauna Kea
6	-----	-----	-----	-----	48	5	-----	8	3	-----
7	-----	-----	-----	-----	46	10	-----	2	2	-----
8	-----	-----	-----	-----	40	5	-----	3	4	1 off south shore of Hawaii.
9	-----	-----	-----	-----	54	10	-----	6	3+	-----
10	-----	-----	-----	-----	39	7	-----	3	3	1 Kona-----
11	-----	-----	-----	-----	42	20	-----	10	3	1 Near Apua Point
12	-----	-----	-----	-----	35	12	-----	4	1	-----
13	-----	-----	-----	-----	46+	11	1	3	2	-----
14	-----	-----	60	-----	58	13	-----	3	3	-----
15	-----	-----	60	-----	50	14	-----	3	4	-----
16	-----	-----	-----	-----	67	22	-----	2	2+	1 Kona
17	-----	-----	-----	-----	43	12	-----	9	1+	-----
18	-----	-----	-----	-----	52	37	-----	5	?	2 Mauna Kea, 1 Kona
19	-----	-----	-----	-----	40	15	-----	4	?	-----
20	-----	-----	-----	-----	40+	8	-----	3	----	-----
21	-----	-----	-----	-----	39	40	-----	1	----	-----
22	-----	3	-----	-----	33	5	-----	----	5	1 Mauna Loa 1 offshore Kona
23	-----	5	-----	-----	30	32	4	2	----	1 Mauna Kea-----
24	-----	-----	-----	-----	30	8	1	2	?	-----
25	6	-----	-----	-----	40	7	-----	6	5	1 Kona-----
26	37	-----	-----	-----	42	9	-----	2	----	-----
27	-----	3	-----	-----	85	10	-----	3	2	3 Kohala region----
28	-----	-----	-----	-----	62	7	-----	2	2	-----
29	-----	-----	3	-----	58	8	1	8	5	2 Kona-----
30	-----	-----	-----	-----	57	8	-----	3	1	1 Near Kapoho------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Halemaumau 30 km	Upper East rift	Others
May 31	----	32	-----	-----	60	8	----	2	----	1 Mauna Kea---------- 1 near Apua Point------
June 1	----	-----	2	-----	53	8	----	3	----	1 Kona, 1 Kohala--------
2	15	-----	6	-----	65	9	----	3	3	1 Mauna Kea region-----
3	----	-----	-----	-----	60	8	----	3	2	----------
4	----	-----	-----	-----	60	4	----	2	2?	----------
5	----	-----	-----	-----	53	12	----	3	5?	----------
6	----	-----	-----	1	54	8	----	3	2	1 Kona, 1 Mauna Kea
7	38	-----	-----	-----	51	6	----	10	----	1 Mauna Loa----------
8	9	-----	-----	-----	52	5	----	3	3	1 Mauna Loa---------- 1 off south shore of Hawaii.
9	10	-----	-----	-----	54	7	----	5	2	----------
10	----	-----	-----	-----	71	7	1	1	17	----------
11	----	5	-----	-----	58	9	----	1	----	2 Mauna Loa----------
12	4	-----	-----	-----	57	4	----	1	2	1 Kona----------
13	----	-----	-----	-----	40	4	1	1	2	----------
14	31	-----	-----	-----	35	6	1	1	13	1 Mauna Loa----------
15	----	-----	-----	-----	53	8	----	1	3	----------
16	----	-----	-----	-----	36	10	----	------	----	----------
17	----	-----	-----	-----	37	4	----	4	1	2 Kona, 1 Mauna Kea region.
18	----	-----	-----	-----	62	11	----	1	1	----------
19	----	-----	-----	-----	60	7	----	2	2	----------
20	----	-----	-----	-----	65	9	----	2	5	----------
21	----	-----	-----	-----	65	8	2	2	1	1 Kona----------
22	----	-----	-----	-----	60	7	----	3	1	----------
23	----	-----	6	-----	53	8	----	1	----	----------
24	----	-----	-----	-----	72	16	----	3	3	1 Kohala region--------
25	----	-----	-----	-----	70	21	----	------	2	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern East rift	Hale-maumau 30 km	Upper East rift	Others
June 26	----	------	-------	-----	67	17	-----	2	11	1 Kona 1 near Apua Point
27	35	13	-------	-----	49	10	-----	11	6	----------
28	----	------	15	-----	70	9	-----	6	5	----------
29	----	9	-------	-----	46	6	-----	2	4	1 Mauna Kea
30	----	------	-------	-----	67	11	-----	3	-----	1 Kona----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1964

[Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

In the following list, some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

In the following list a number of quakes are described as "Upper east rift" (see Summary 28). Their average epicenter is approximately 19°21.5' N., 155°14' W. about 2 km south of Aloi Crater at near-surface depth.

The mean focus of the magnitude 6.1 Kaoiki fault system earthquake of June 27, 1962, and its aftershocks is 19°24' N., 155°25' W., at a depth of 3-8 km. This focus has bee abbreviated "Kaoiki"]

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long W.	Description	
April 1	02	28	53.0	3.9	----	---------	----------	Kaoiki----------	Felt over half of island of Hawaii.
2	00	47	08.0	2.4	8	19°16.1'	155°13.8'	4 km WNW of Apua Point	----------
2	05	41	57.4	2.0	----	---------	----------	KM 30----------	----------
2	22	18	51.0	2.9	----	---------	----------	Kaoiki----------	Felt in Pahala
3	10	07	25.5	2.7	8	19°48'	156°09'	40 km NW of Kealakekua	----------
3	18	04	54.5	2.0	3	19°21.7'	155°08.0'	5 km E. of Makaopuhi	----------
4	17	39	08.5	2.5	3	19°54.0'	155°54.0'	17 km NNE of Pohakuloa	----------
5	01	00	00.2	2.0	----	--------	---------	KM 30----------	----------
6	04	19	22.0	2.3	3	19°19.0'	155°10.2'	6 km S. of Makaopuhi--	----------
7	11	45	57.5	2.3	8	19°45.8'	155°22.2'	32 km WNW of Hilo-----	----------
7	19	03	24.5	2.3	----	--------	---------	KM 30----------	----------
8	07	39	49.5	2.5	13	19°32.1'	155°37.1'	7 km NW of North Bay seismometer.	----------
9	08	02	40.1	2.1	3	19°17.7'	155°11.9'	9 km SSW of Makaopuhi	----------
10	19	13	09.5	2.7	----	--------	---------	KM 30----------	----------
10	21	50	32.7	2.1	3	19°18.5'	155°09.3'	8 km SSE of Makaopuhi	----------
11	03	29	53.3	2.5	----	--------	---------	Kaoiki----------	----------
11	19	51	01.5	2.4	13	19°13.7'	155°29.8'	3 km NW of Pahala----	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
April 12	05	43	58.5	2.0	13	19°44.5'	155°26.3'	9 km ESE of Pohakuloa	Felt in Naalehu
12	19	29	08.8	2.0	8	19°17.8'	155°10.6'	8 km S. of Makaopuhi	----------
14	02	45	20.4	2.2	3	19°26.5'	155°52.9'	9 km SSE of Kealakekua	----------
14	05	41	54.0	2.1	8	19°19.5'	155°02.5'	7 km WSW of Kalapana	----------
14	13	08	31.9	3.0	----	--------	---------	KM 30----------	Felt at Volcano
14	13	23	04.3	2.4	----	--------	---------	KM 30----------	----------
14	14	02	44.0	2.6	13	19°33'	155°58'	7 km NW of Kealakekua	Felt in Kona
18	09	22	19.5	2.6	----	--------	---------	KM 30----------	----------
19	00	48	32.5	2.5	3	19°20.8'	155°03.1'	8 km WSW of Kalapana	----------
19	03	51	51.0	2.0	3	19°19.7'	155°05.9'	10 km ESE of Makaopuhi	----------
19	21	39	10.0	2.2	3	19°18.8'	155°04.3'	14 km ESE of Makaopuhi	----------
20	06	04	04.0	2.8	3	19°40.8'	155°53.9'	18 km NNE of Kealakekua	Felt in Kona-----
20	14	07	13.0	3.4	< 3	19°25'	156°01'	17 km SW of Kealakekua	Felt in Kona-----
21	09	58	35.5	2.2	13	19°07.5'	155°29.7'	12 km NE of Naalehu---	----------
21	20	49	32.3	2.7	3	19°12.8'	155°35.0'	17 km N. of Naalehu---	----------
22	14	08	13.5	2.5	3	19°13.6'	155°33.3'	18 km NNE of Naalehu	----------
26	00	44	50.0	2.9	3	19°18.9'	155°11.8'	8 km SSW of Makaopuhi	Felt at Volcano
26	10	20	39.6	2.9	3	19°21.8'	155°04.9'	12 km E. of Makaopuhi	Felt in Hilo
28	05	32	16.7	2.5	----	--------	---------	KM 30----------	----------
28	06	27	15.9	3.2	----	--------	---------	Kaoiki----------	Felt near Pahala
28	15	33	53.0	2.5	3	19°17.8'	155°06.1'	12 km SE of Makaopuhi	----------
30	01	26	42.3	2.5	3	19°19.4'	155°08.0'	8 km SE of Makaopuhi	----------
30	04	23	08.0	2.8	3	19°27.4'	155°57.8'	8 km SW of Kealakekua	----------
May 2	17	55	33.5	2.4	8	19°16.8'	155°11.8'	10 km SSW of Makaopuhi	----------
3	02	40	58.5	3.1	8	19°20.2'	155°05.2'	10 km ESE of Makaopuhi	----------
4	01	41	23.0	2.9	3	19°27.0'	155°58.2'	9 km SW of Kealakekua	----------
7	22	58	54.0	2.3	5	19°18.0'	155°15.5'	9 km S. of Ahua seismometer.	----------
8	03	44	42.0	2.2	3	19°13.2'	155°15.2'	18 km S. of Ahua seismometer.	----------
8	13	36	20.0	2.7	13	18°54'	155°30'	22 km SSE of Naalehu	----------
9	07	56	32.5	2.6	----	--------	--------	Kaoiki----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
May 9	15	53	23.0	2.6	----	--------	--------	KM 30----------	----------
9	18	40	13.3	2.6	30	19°22.2'	155°19.8'	7 km NE of Desert seismometer.	----------
10	11	03	48.0	2.7	35	19°26.8'	156°02.2'	15 km SW of Kealakekua	----------
11	03	45	51.3	2.5	----	--------	---------	KM 30----------	----------
11	06	39	25.5	2.1	----	--------	---------	KM 30----------	----------
11	11	46	39.5	2.6	----	--------	---------	Kaoiki----------	----------
11	16	19	06.2	2.1	----	--------	---------	KM 30----------	----------
11	21	00	11.0	2.4	8	19°16.3'	155°09.2'	5 km ENE of Apua Point	----------
11	22	42	01.7	2.6	----	--------	---------	Kaoiki----------	----------
12	20	14	56.0	2.2	----	--------	---------	Kaoiki----------	----------
14	02	28	51.1	2.3	5	19°19.0'	155°09.6'	7 km SSE of Makaopuhi	----------
14	10	13	12.5	2.0	----	--------	---------	KM 30----------	----------
14	16	05	02.9	2.3	10	19°23.9'	155°15.8'	2 km N. of Ahua seismometer.	----------
15	05	49	17.5	2.4	3	19°19.0'	155°06.9'	10 km SE of Makaopuhi	----------
16	09	48	46.3	3.0	----	--------	---------	Kaoiki----------	Felt in the Kilauea Summit region.
16	18	18	22.7	2.5	3	19°21.6'	155°08.0'	6 km E. of Makaopuhi	----------
18	03	47	19.0	2.7	3	19°22.8'	155°45.5'	23 km SE of Kealakekua	----------
18	07	32	56.5	2.9	----	--------	---------	KM 30----------	Felt near Pahala
18	11	00	11.5	2.8	13	20°03.5'	155°32.1'	15 km ENE of Kamuela seismograph.	----------
18	11	02	34.3	2.6	13	20°03.5'	155°32.1'	15 km ENE of Kamuela seismograph.	----------
20	23	43	59.0	2.0	----	--------	---------	KM 30----------	----------
22	11	51	23.3	3.0	8	19°32.2'	155°37.2'	7 km NW of North Bay seismometer.	----------
22	14	21	29.2	2.7	13	19°29'	156°17'	40 km WSW of Kealakekua	----------
23	21	23	19.0	2.8	13	20°07.0'	155°50.4'	18 km NW of Kamuela seismograph.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
May 24	05	05	56.0	3.2	3	19°15.0'	155°24.4'	11 km SSW of Desert seismometer.	Felt----------
24	05	28	00.5	2.6	3	19°10.9'	155°22.9'	18 km SSW of Desert seismometer.	----------
24	07	15	27.7	2.2	3	19°15.1'	155°23.1'	12 km S. of Desert seismometer.	----------
27	15	01	45.5	2.4	13	19°53.8'	155°29.0'	28 km SE of Kamuela seismograph.	Felt in Kamuela
28	04	06	01.5	3.4	13	20°05.9'	155°50.3'	18 km WNW of Kamuela seismograph.	Felt in Kamuela and Kohala.
29	05	04	56.6	2.3	3	--------	--------	Kaoiki----------	----------
30	20	57	56.5	2.2	5	19°32.0'	154°52.9'	5 km NW of Kapoho---	Felt in Kapoho----
31	03	20	26.3	2.5	10	19°15.8'	155°06.5'	10 km E. of Apua Point.	----------
June 1	03	14	43.0	2.7	10	20°05.8'	155°50.8'	17 km WNW of Kamuela	----------
2	00	16	06.0	2.4	----	--------	---------	KM 30----------	----------
2	21	05	37.2	2.5	40	19°54.3'	155°10.1'	10 km NW of Pepeekeo	----------
4	08	34	31.9	4.0	45	19°26.8'	155°16.8'	4 km NE of Uwekahuna seismometer.	Felt Island-wide
4	12	52	16.7	2.5	----	--------	---------	Kaoiki----------	----------
4	13	22	30.0	3.8	8	19°19.2'	155°05.2'	12 km ESE of Makaopuhi seismometer.	Felt in Hilo------
6	19	31	24.3	2.8	8	19°51.9'	155°44.8'	10 km W. of Waikii----	----------
6	20	04	03.3	2.4	----	--------	---------	Kaoiki----------	----------
8	03	36	14.4	2.5	8	19°02.8'	155°27.6'	14 km E. of Naalehu	----------
8	12	00	50.5	4.1	8	19°37.8'	155°25.1'	15 km NNW of Mauna Loa seismometer.	Felt Island-wide
9	02	15	07.1	2.8	8	19°22.6'	155°06.2'	9 km E. of Makaopuhi seismometer.	----------
10	05	04	28.5	2.5	13	19°20.2'	155°06.7'	5 km SE of Maiaopuhi seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
June 10	07	13	32.4	2.6	----	--------	---------	KM 30----------	----------
10	09	05	16.5	2.7	8	19°17.4'	155°11.4'	9 km S. of Makaopuhi seismometer.	----------
10	22	45	34.9	2.0	10	19°24.5'	155°05.6'	11 km NE of Makaopuhi seismometer.	----------
11	14	10	37.7	2.3	35	19°12.7'	155°31.9'	6 km WNW of Pahala	----------
14	05	05	38.5	2.2	----	--------	---------	KM 30----------	----------
14	10	58	22.0	2.4	8	19°10.8'	155°31.9'	14 km NNW of Naalehu	----------
14	11	23	14.4	2.7	----	--------	---------	Kaoiki----------	----------
14	16	38	15.2	2.6	8	19°18.9'	155°11.6'	5 km SSW of Makaopuhi seismometer.	----------
15	03	25	31.6	2.7	10	19°16.7'	155°08.1'	11 km SSE of Makaopuhi seismometer.	----------
16	12	04	40.7	3.1	13	18°54.0'	155°35.6'	18 km S. of Naalehu	----------
17	00	48	20.0	2.0	3	19°27.1'	155°46.2'	17 km SE of Kealakekua	----------
17	14	13	31.3	3.0	3	19°28.0'	155°50.6'	10 km SE of Kealakekua	Felt in Kona-----
18	05	07	58.8	3.2	50	19°45.0'	155°05.2'	4 km N. of Hilo-------	----------
19	04	14	43.6	2.5	25	19°12.2'	155°18.6'	18 km SE of Desert seismometer.	----------
20	18	14	28.7	2.6	----	--------	---------	Kaoiki----------	----------
21	05	23	10.3	2.1	10	19°19.0'	155°07.0'	10 km SE of Makaopuhi seismometer.	----------
21	11	23	34.3	2.6	8	19°43'	156°10'	12 km E. of Keahole Point.	----------
22	17	30	32.8	2.9	----	--------	---------	Kaoiki----------	Felt in Pahala----
26	14	34	36.0	2.6	3	19°43.0'	155°41.9'	33 km NE of Kealakekua	----------
26	15	36	33.5	2.9	3	19°15.5'	155°11.4'	1 km SE of Apua Point	----------
26	18	56	08.1	2.1	10	19°18.1'	155°10.9'	7 km S. of Makaopuhi seismometer.	----------
26	20	52	54.1	2.7	10	19°18.7'	155°11.4'	6 km SSW of Makaopuhi seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
June 27	07	02	50.0	2.3	8	19°19.8'	155°05.8'	10 km SE of Makaopuhi seismometer.	----------
27	13	07	10.3	2.3	---	--------	--------	KM 30----------	----------
28	00	44	43.9	2.0	10	19°17.8'	155°06.9'	10 km SE of Makaopuhi seismometer.	----------
28	07	02	42.2	2.4	---	--------	--------	KM 30----------	----------
29	08	56	44.3	2.3	---	--------	--------	KM 30----------	----------
30	09	04	04.0	3.4	10	19°30.4'	155°50.9'	7 km E. of Kealakekua----	----------

Table 5.--Distant earthquakes

[Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in summary 33. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depth, and magnitude reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

The high concentration of aftershock activity following the March 28, 1964, Alaskan earthquake necessitated a separate listing of these events; and such is listed in the end of this table, as continued from summary 33]

April 2, 1964

U	PEZ	ePS	01:39:38
U	PEN	eSS	01:45:18
U	PEN	eG	01:55:38

C&GS card 32-64:
01:11:55
5.9° N., 95.7° W.
Near coast of Northern Sumatra
h about 132 km
Magnitude 5.2 (CGS).

April 2

M	Z	eP	16:08:34.6 c
A	Z	eP	34.9 c
D	Z	eP	34.3 c
U	Z	iP	37.4 c
Pa	Z	eP	39.2 c
NB	Z	iP	34.1 c
Hi	Z	iP	38.5 c
Ke	Z	eP	33.6 c

C&GS card 32-64:
15:56:52.6
5.8° N., 125° W.
Mindanao, Philippine Islands
h about 179 km
Magnitude 5.7 (CGS).

April 5

M	Z	iP	01:54:36.0 c

C&GS card 36-64:
01:44:50.3
36.4° N., 139.9° E.
Central Honshu, Japan
h about 67 km
Magnitude 4.7 (CGS).

April 7

M	Z	eP	13:30:25.9 c
A	Z	eP	26.3 c
D	Z	eP	25.3 c
MP	Z	eP	26.5 c
U	Z	iP	26.1 c
Pa	Z	eP	27.1 c
NB	Z	iP	25.1 c
Hi	Z	eP	27.3 c
Na	Z	eP	23.9 c
Ke	Z	iP	22.4 c

C&GS card 33-64:
13:18:18.9
0.1° N., 123.2° E.
Northern Celebes
h about 150 km
magnitude 5.9 (CGS).

April 8

M	Z	eP	11:07:23 c
U	PEE	eS	11:14:37
U	PEZ	iSS	11:18:15
U	PEE	eG	11:19:10
U	PEZ	iR	11:21:30

C&GS card 34-64:
10:58:09.1
45.8° N., 150.8° E.
Kurile Islands
h about 40 km
Magnitude 5.5-5.75 (Brk), 6.25-6.5 (Pal), 5.5 (CGS), 6.1 (HVO).

Table 5.--Distant earthquakes--Continued

April 11

M	Z	iP	01:13:19.7 c
A	Z	iP	19.5 c
U	Z	iP	19.6 c
Pa	Z	iP	20.9 c
NB	Z	eP	20.0 c
Hi	Z	eP	22.4 c

C&GS card 33-64:
01:04:30.2
29.0° S., 178.9° W.
Kermadec Islands
h about 302 km
Magnitude 5.3 (CGS).

April 12

M	Z	iP	11:20:40.8 c
A	Z	iP	40.3 c
D	Z	iP	11:20:39.6 c
MP	Z	eP	40.1 c
U	Z	eP	40.3 c
Pa	Z	eP	42 c
NB	Z	iP	40.3 c
Hi	Z	iP	42.9 c
Ke	Z	iP	39.5 c
Ha	Z	iP	46.7 c

C&GS card 36-64:
11:10:54.8
33.9° S., 179.8° W.
Kermadec Islands
h about 89 km
Magnitude 5.4 (CGS).

April 13

M	Z	eP	08:54:49.3 d
A	Z	eP	50.0 d
D	Z	eP	49.3 d

C&GS card 33-64:
08:45:24.6
22.3° N., 142.1° E.
Bonin Islands region
h about 309 km
Magnitude 5.1 (CGS).

April 13

M	Z	iP	11:38:34.0 d
A	Z	iP	34.3 d

C&GS card 33-64:
11:26:52.1

April 13--Continued

C&GS card--Continued
6.9° N., 126.6° E.
Near east coast of Mindanao,
Philippine Islands
h about 110 km.

April 14

M	Z	iP	16:31:53.6 d

C&GS card 35-64:
16:18:54
8.6° S., 117.3° E.
Sumbawa Island region
h about 58 km
Magnitude 5.3 (CGS).

April 16

M	Z	eP	01:14:23.8 c

C&GS card 35-64:
01:04:34.5
37.0° N., 142.7° E.
Off East coast of Honshu, Japan
h about 38 km
Magnitude 5.1 (CGS).

April 16

U	PEZ	eR	14:00:46

C&GS card 35-64:
13:43:08.9
52.1° N., 169.4° W.
Fox Islands, Aleutian Islands
h about 33 km
Magnitude 4.9 (CGS).

April 16

M	Z	eP	14:14:59.4 d
D	Z	eP	58.4 d
Na	Z	eP	56.3 d

C&GS card 35-64:
14:05:14.9
7.0° S., 155.7° E.
Solomon Islands
Felt: Kieta & Omori
h about 78 km
Magnitude 5.4 (CGS).

April 17, 1964

M	Z	iP	06:09:27.4 d
D	Z	iP	26.6 d
Pa	Z	eP	29.4 d
NB	Z	iP	26.9 d
Hi	Z	iP	29.7 d
Na	Z	eP	24.5 d
Ke	Z	iP	24.7 d
Ke	**Z**	**Tmax**	**07:08:08**

C&GS card 35-64:
06:00:00.2
6.6° S., 154.9° E.
Solomon Islands
Felt: Buin & Omori
h about 85 km
Magnitude 5.4 (CGS),
6.4 (HVO).

April 19

U	PEZ	ePS	14:41:10
U	PEZ	eSS	14:47:24
U	PEZ	eR	14:03:18

C&GS card 35-64:
14:12:21.9
60.5° S., 58.3° S.
Near South Shetland Islands
h about 33 km
Magnitude 5.4 (CGS).

April 22

M	Z	iP	20:09:09.9 d
A	Z	eP	09.5 d
NB	Z	iP	08.7 d
Ha	Z	iP	12.3 d

C&GS card 36-64:
20:00:22.8
15.5° S., 167.5° E.
New Hebrides Islands
h about 123 km
Magnitude 5.0 (CGS).

April 23

M	Z	iP	03:44:26.8 c
A	Z	iP	26.6 c
D	Z	iP	25.7 c
U	Z	iP	26.5 c
Pa	Z	eP	28.5 c
NB	Z	iP	25.6 c
Hi	Z	iP	28.5 c

April 23--Continued

Ke	Z	iP	23.3 c
U	PEZ	iPP	03:47:33
U	PEZ	iPPP	03:49:28
U	PEZ	iS	03:54:11
U	PEZ	iSS	03:59:08
U	PEZ	iSSS	04:02:38
U	PEN	iG	04:04:19
U	PEZ	iR	04:07:16

C&GS card 36-64:
03:32:50.3
5.3° S., 134.0° E.
Aru Islands region
h about 33 km
Felt: Darwin, Australia
Magnitude 6.4 (CGS),
6.8 (HVO).

April 24

M	Z	eP	06:06:36.2 d
D	Z	eP	35.5 d
Pa	Z	eP	39.2 d
NB	Z	iP	36.1 d
Hi	Z	iP	38.7 d
Na	Z	iP	34.9 d
Ke	Z	eP	33.0 d
U	PEZ	i	06:07:06
U	PEN	iS	06:15:14
U	PEE	iG	06:22:26
U	PEZ	iR	06:25:14

C&GS card 39-64:
05:56:10.1
5.1° S., 144.2° E.
North-East New Guinea
h about 106 km
Slight damage at Hagne
Felt widely
Magnitude 6.5-6.75 (Brk),
6.3 (CGS), 7 (HVO).

Table 5.--Distant earthquakes--Continued

April 24, 1964

M	Z	eP	14:50:50.1 c
A	Z	iP	49.6 c
D	Z	iP	50.0 c
U	Z	iP	49.9 c
NB	Z	iP	52.9 c
Hi	Z	eP	49.3 c

C&GS card 38-64:
14:40:28.3
13.3° N., 88.8° W.
Near coast of El Salvador
h about 158 km
Magnitude 6 (Pal), 5.1 (CGS).

April 27

U	PEN	ePS	07:09:38
U	PEE	eG	07:21:26
U	PEZ	eR	07:25:26

C&GS card 39-64:
06:44:25.1
60.1° S., 151.0° E.
Balleny Islands region
h about 33 km
Magnitude 5.0 (CGS), 6.0 (HVO).

April 28

M	Z	Tmax	13:12:50
A	Z	Tmax	51
D	Z	Tmax	51
U	Z	Tmax	35
Pa	Z	Tmax	25
NB	Z	Tmax	50
Hi	Z	Tmax	09

C&GS card 38-64:
12:21:25.6
59.0° N., 138.7° W.
Near coast of southeastern Alaska
h about 33 km
Magnitude 4.6 (CGS).

April 30

M	Z	eP	16:13:06.0 d
U	PEN	eS	16:21:11
U	PEN	eG	16:26:53
U	PEZ	eR	16:29:09
NB	Z	Tmax	17:14:09

C&GS card 42-64:
16:03:31.4
4.6° S., 153.2° E.
New Ireland region
h about 78 km
Felt: Londolovit, Rabaul
Magnitude 5.2 (CGS), 5.8 (HVO).

May 2

M	Z	iP	16:20:04.0 d
U	Z	eP	04.8 d
U	PEN	iS	16:27:25
U	PEN	iG	16:32:15
U	PEZ	iR	16:34:31

C&GS card 38-64:
16:11:00.2
45.5° N., 150.3° E.
Kurile Islands
h about 35 km
Magnitude 5.7 (CGS), 6.6 (HVO).

May 6

U	PEZ	eS	08:27:27
U	PEN	eG	08:31:51
U	PEZ	eR	08:33:59

C&GS card 38-64:
08:10:47.5
11.1° S., 162.2° E.
Solomon Islands
h about 40 km
Magnitude 5.1 (CGS), 5.6 (HVO).

May 7

M	Z	iP	08:08:15.7 c
A	Z	eP	17.6 c
D	Z	eP	15.9 c
U	Z	iP	16.5 d
Pa	Z	eP	17.0 c
NB	Z	iP	14.1 c
Hi	Z	eP	16.1 c
Na	Z	eP	15.6 d
Ke	Z	eP	12.0 c
Ha	Z	eP	08:08:07.3 c
U	PEE	iS	08:16:31
U	PEN	iG	08:22:47
U	PEZ	iR	08:24:51

C&GS card 40-64:
07:58:14.3
40.4° N., 139.0° E.
Off coast of northern Honshu, Japan.
Felt: Northern Honshu and Hokkaido.
h about 33 km
Magnitude 7 (Pas), 7 (Brk), 6.5-6.75 (Pal), 6.2 (CGS), 7.1 (HVO).

Table 5.--Distant earthquakes--Continued

May 7

Ke	Z	iP	11:20:30.3 c

C&GS card 40-64:
11:11:04.9
30.6° N., 137.7° E.
Off south coast of Honshu, Japan
h about 469 km
Magnitude 5.1 (CGS).

May 7

M	Z	eP	20:22:50.0 d
U	PEN	iS	20:31:07
U	PEZ	eSS	20:35:03
U	PEN	iG	20:37:09
U	PEZ	iR	20:39:23

C&GS card 38-64:
20:12:49.3
40.5° N., 139.0° E.
Off west coast of Honshu, Japan
Minor damage in Akita Province
h about 33 km
Magnitude 5.9 (CGS), 6.5 (HVO).

May 8

U	PEZ	eS	23:52:59
U	PEZ	eR	23:56:17

C&GS card 38-64:
23:40:44.1
52.2° N., 169.5° W.
Adreanof Islands, Aleutian Islands
h about 20 km
Magnitude 5.2 (CGS).

May 9

M	Z	eP	02:09:16.3 c
U	PEZ	eR	02:17:59

C&GS card 40-64:
02:02:28.8
52.2° N., 169.6° W.
Adreanof Islands, Aleutian Islands
h about 25 km
Magnitude 5.1 (CGS).

May 10

M	Z	iP	05:49:29.6 c
D	Z	iP	29.8 c
U	Z	eP	30.1 c
NB	Z	iP	28.4 c
Hi	Z	eP	30.7 c
Ke	Z	iP	25.7 c

C&GS card 42-64:
05:39:42.6
29.0° N., 141.5° E.
Bonin Islands region
h about 62 km
Magnitude 4.75-5 (Brk), 5.3 (CGS).

May 10

Pa	Z	Tmax	14:29:53

C&GS card 42-64:
13:44:03
51.4° N., 129.2° W.
Vancouver Island region
h about 33 km
Magnitude 4.1 (CGS).

May 13

M	Z	eP	05:35:08.7 c
A	Z	iP	08.6 c
U	Z	eP	08.8 c
Ke	Z	eP	05.0 c
U	PEN	iS	05:43:05
U	PEZ	iR	05:52:27

C&GS card 44-64:
05:25:26.1
32.8° S., 178.3° W.
Kermadec Islands region
h about 33 km
Magnitude 5.3 (CGS), 6.6 (HVO).

May 15

U	PEE	iS	11:08:44
U	PEN	eG	11:15:37
U	PEZ	iR	11:17:33

C&GS card 43-64:
10:50:21
3.5° S., 149.1° E.
Bismark Sea
h about 44 km
Magnitude 4.7 (CGS), 5.9 (HVO).

May 16,

A	Z	eP	16:17:28.5 c
U	PEE	iS	16:25:27
U	PEZ	eR	16:34:29

C&GS card 44-64:
16:07:46.2
32.8° S., 178.3° W.
Kermadec Islands region
h about 33 km
Magnitude 6.0 (Pas), 5.4 (CGS), 6 (HVO).

May 17

U	PEZ	ePS	19:53:59
U	PEZ	eSS	19:58:51
U	PEN	eG	20:08:07
U	PEZ	eR	20:13:33

C&GS card 45-64:
19:26:20.6
35.2° N., 35.9° W.
North Atlantic Ocean
h about 33 km
Magnitude 6.5 (Pas), 5.75-6 (Brk), 6-6.25 (Pal), 5.6 (CGS), 6.4 (HVO).

May 18

M	Z	eP	14:20:26.3 c

C&GS card 43-64:
14:12:10.1
21.2° S., 174.5° W.
Tonga Islands region
h about 33 km
Magnitude 4.5 (Brk), 5.6 (CGS).

May 19

A	Z	eP	23:15:34.5 c
U	PEE	iS	23:25:15
U	PEZ	eSS	23:30:07
U	PEN	eG	23:35:39
U	PEZ	eR	23:38:39

C&GS card 43-64:
23:03:41.8
0.7° S., 80.2° W.
Near coast of Ecuador
h about 54 km
Magnitude 5.5 (Pal), 5.25-5.5 (Brk), 5.4 (CGS), 6.1 (HVO).

May 20

M	Z	eP	06:12:09.9 c
D	Z	eP	08.9 c
U	Z	iP	09.8 c
Hi	Z	eP	12.6 c
Ke	Z	eP	06.2 c

C&GS card 43-64:
06:01:14.8
2.7° S., 139.3° E.
Near north coast of western New Guinea
h about 61 km
Magnitude 5.8 (CGS).

May 23

M	Z	iP	11:31:58.1 c
D	Z	iP	58.0 c
U	Z	eP	58.3 c
Pa	Z	eP	59.8 c
NB	Z	iP	56.9 c
Ke	Z	iP	54.5 c

C&GS card 43-64:
11:22:33.3
28.6° N., 139.4° E.
Bonin Islands region
h about 409 km
Magnitude 5.1 (CGS).

May 24

U	PEZ	eR	10:57:15

C&GS card 43-64:
10:31:24.1
34.3° N., 141.1° E.
Near east coast of Honshu, Japan
h about 33 km
Magnitude 5.2 (CGS).

May 26

M	Z	iP	09:50:27.3 c
A	Z	iP	27.8 c
D	Z	iP	26.8 c
MP	Z	iP	28.3 c
U	Z	iP	27.5 c

C&GS card 43-64:
09:40:57.9
16.5° N., 145.9° E.
Mariana Islands region
h about 94 km
Magnitude 5.5 (CGS).

Table 5.--Distant earthquakes--Continued

May 26, 1964

M	Z	iP'	11:18:06.0	d
A	Z	eP'	05.4	d
D	Z	eP'	05.6	d
MP	Z	iP'	04.9	d
U	Z	eP'	05.5	d
Na	Z	iP'	04.9	d
Ha	Z	iP'	07.7	d
U	PEZ	eP	11:14:53	c
U	PEZ	ipP	11:15:21	c
U	PEZ	iP'	11:18:09	
U	PEZ	ipP'	11:18:38	
U	PEZ	iPP	11:20:06	
U	PEZ	isPP	11:20:48	
U	PEZ	i	11:21:58	
U	PEZ	ePPP	11:22:56	
U	PEN	eSKKS	11:25:54	
U	PEN	eS	11:27:46	
U	PEN	i	11:29:36	
U	PEZ	iPS	11:30:18	
U	PEN	ipPS	11:30:42	
U	PEZ	isPS	11:30:54	
U	PEE	i	11:31:04	
U	PEE	iSPP	11:31:18	
U	PEZ	iSKKP	11:31:43	
U	PEZ	i	11:32:18	
U	PEZ	i	11:33:26	
U	PEE	i	11:34:48	
U	PEZ	i	11:35:23	
U	PEN	iSS	11:36:54	
U	PEN	isSS	11:37:46	
U	PEN	i	11:39:48	
U	PEE	i	11:40:38	
U	PEE	iSSS	11:42:00	
U	PEE	i	11:45:14	
U	PEZ	i	11:46:21	
U	PEZ	i	11:48:24	
U	PEZ	i	11:49:26	
U	PEN	iG	11:51:30	
U	PEN	i	11:54:48	
U	PEN	i	11:56:54	
U	PEZ	i	11:57:56	
U	PEZ	i	12:02:38	
U	PEN	i	12:04:23	
U	PEN	i	12:06:43	
U	PEN	i	12:10:48	
U	PEZ	i	12:13:00	

C&GS card 46-64:
10:59:12.3
56.2° S., 27.8° W.
Sandwich Islands

May 26--Continued

C&GS card--Continued

h about 120 km
Magnitude 7.5-7.75 (Pas),
7.5-7.75 (Brk),
7-7.25 (Pal), 7.6 (HVO).

May 29

M	Z	iP	19:10:13.3	c
A	Z	iP	12.7	c
MP	Z	iP	12.6	c
U	Z	iP	12.8	c

C&GS card 46-64:
19:01:57.0
26.1° S., 178.3° E.
Fiji Islands region
h about 613 km
Magnitude 4.1 (CGS).

May 30

M	Z	iP	14:40:33.0	c
U	Z	eP	33.6	c
NB	Z	eP	32.3	c
Hi	Z	eP	34.1	c
Na	Z	eP	33.7	c
Ha	Z	eP	24.0	c
U	PEE	iS	14:48:34	
U	PEZ	eSS	14:52:28	
U	PEZ	iR	14:57:04	

C&GS card 43-64:
14:30:45.3
36.2° N., 141.1° E.
Near east coast of Honshu,
Japan.
h about 49 km
Magnitude 5.5-5.75 (Pal),
5.4 (CGS), 6.0 (HVO).

May 31

M	Z	eP	00:49:55.5	d
A	Z	eP	56.8	d
D	Z	eP	55.8	d
U	Z	eP	56.3	d
Pa	Z	eP	57.3	d
NB	Z	eP	54.3	d
Hi	Z	eP	55.9	d
Na	Z	eP	56.8	d
Ke	Z	eP	52.0	d
Ha	Z	iP	44.9	d

May 31, 1964--Continued

U	PEE	iS	00:57:27
U	PEZ	iSS	01:01:10
U	PEE	eG	01:02:38
U	PEZ	iR	01:04:50
Ha	Z	Tmax	01:46:07

C&GS card 43-64:
00:40:36.4
43.5° N., 146.8° E.
Kurile Islands
h about 48 km
Magnitude 6.5-6.75 (Pal), 6.3 (CGS), 7.2 (HVO).

June 6

M	Z	iP	19:18:02.2 c
A	Z	iP	00.4 c
D	Z	iP	00.6 c
U	Z	eP	00.7 c
Pa	Z	eP	19:17:59.5 c
NB	Z	iP	19:18:03.5 c
Hi	Z	eP	01.8 c
Na	Z	eP	01.7 c
Ha	Z	iP	11.1 c
M	Z	Tmax	20:23:56
A	Z	Tmax	57
D	Z	Tmax	56
U	Z	Tmax	54
Pa	Z	Tmax	35
NB	Z	Tmax	20:24:02
Na	Z	Tmax	20:23:44

C&GS card 46-64:
19:07:51.4
26.6° S., 114.4° W.
Easter Island region
h about 33 km
Magnitude 5.8 (CGS).

June 8

M	Z	iP	23:02:42.1 d
A	Z	eP	42.8 d
D	Z	iP	42.1 d
MP	Z	iP	23:02:43.3 d
U	Z	iP	42.5 d
Pa	Z	iP	44.6 d
NB	Z	iP	40.2 d
Hi	Z	eP	43.5 d
Na	Z	iP	40.7 d
Ke	Z	iP	37.8 d

June 8--Continued

C&GS card 46-64:
22:53:21.7
17.7° N., 145.7° E.
Mariana Islands
h about 163 km
Magnitude 5.4 (CGS).

June 10

M	Z	iP	18:39:56.5 d

C&GS card 50-64:
18:26:54.5
9.4° S., 117.6° E.
Sumbawa region
h about 33 km
Magnitude 5.0 (CGS).

June 10

M	Z	iP	22:28:21.9 d
A	Z	iP	22.1 d
D	Z	eP	21.4 d
MP	Z	iP	23.0 d
U	Z	eP	22.0 d
NB	Z	iP	20.7 d
Hi	Z	eP	23.9 d
Ke	Z	eP	19.9 d
Ha	Z	eP	16.7 d
U	PEZ	ipP	22:28:45
U	PEZ	isP	22:29:06
U	PEZ	i	22:51:38

C&GS card 49-64:
22:16:44.8
5.0° N., 127.4° E.
Talaud Islands region
Felt: Gen. Santos & Hinatuan, Philippines
h about 146 km
Magnitude 5.5 (CGS), 6.0 (HVO).

June 11

M	Z	iP	17:12:40.3 c

C&GS card 47-64:
17:01:48.5
2.0° S., 140.8° E.
Near north coast of New Guinea
h about 18 km.

June 11, 1964

M	Z	iP	18:41:57.4

C&GS card 47-64:
18:32:17.9
33.1° N., 137.6° E.
Near south coast of Honshu, Japan
h about 330 km
Magnitude 4.8 (CGS).

June 11

A	Z	Tmax	22:58:36
U	Z	Tmax	34
NB	Z	Tmax	53
Ha	Z	Tmax	22:57:59

C&GS card 50-64:
22:18:19.8
40.3° N., 126.5° W.
Off coast of northern California
h about 33 km
Magnitude 5.4 (CGS).

June 12

M	Z	iP	16:07:57.8 d
A	Z	iP	58.1 d
D	Z	eP	57.3 d
U	Z	eP	58.0 d

C&GS card 48-64:
15:56:21.3
11.4° N., 124.9° E.
Cebu, Philippine Islands
h about 183 km.
Magnitude 5.5 (CGS).

June 12

M	Z	iP	18:20:36.0 c
A	Z	iP	35.0 c
MP	Z	iP	35.1 c
U	Z	iP	35.1 c
Pa	Z	iP	36.1 c
NB	Z	iP	34.8 c
Ke	Z	iP	33.6 c
Ha	Z	iP	40.3 c

C&GS card 50-64:
18:12:20.5
26.5° S., 178.3° E.
South of Fiji Islands
h about 648 km
Magnitude 5.3 (CGS).

June 16

M	Z	iP	04:11:41.3 d
A	Z	iP	42.0 d
D	Z	iP	41.6 d
MP	Z	eP	42.4 d
U	Z	eP	41.9 d
Pa	Z	eP	43.0 d
NB	Z	iP	40.6 d
Hi	Z	eP	42.2 d
Ke	Z	eP	39.9 d
Ha	Z	iP	33.4 d
U	PEE	iS	04:19:45
U	PEZ	iSS	04:23:44
U	PEE	iG	04:26:06
U	PEZ	iR	04:28:22

C&GS card 51-64:
04:01:44.3
38.3° N., 139.1° E.
Near west coast of Honshu, Japan
h about 57 km
25 killed, many injured, and extensive property damage at Niigata. 7 foot tsunami along coastal areas
Magnitude 7.25-7.5 (Pas),
7.25 (Pal),
6.1 (CGS), 7.5 (HVO).

June 16

M	Z	iP	07:03:08.5 d
A	Z	eP	09.5 d
D	Z	iP	08.6 d
NB	Z	eP	07.8 d
Hi	Z	eP	09.7 d

C&GS card 51-64:
06:53:05.0
38.7° N., 139.0° E.
Near west coast of Honshu, Japan
h about 15 km
Magnitude 5.6 (CGS).

June 16

M	Z	iP	07:24:59.6 d
A	Z	iP	07:25:00.6 d
D	Z	iP	07:24:59.9 d
U	Z	iP	07:25:00.4 d
Pa	Z	eP	07:25:01.7 d
NB	Z	iP	07:24:59.2 d

C&GS card 51-64:
07:14:57.1
38.5° N., 139.2° E.

June 16, 1964--Continued

C&GS card--Continued
Near west coast of Honshu, Japan.
h about 16 km
Magnitude 5.9 (CGS).

June 22

M	Z	iP	03:12:42.4 d
A	Z	eP	43.3 d
D	Z	iP	42.3 d
U	Z	eP	43.0 d
NB	Z	eP	42.0 d
Ha	Z	iP	49.5 d
U	PEE	iS	03:20:04
U	PEZ	iR	03:27:22
Ke	Z	Tmax	04:07:55
NB	Z	Tmax	04:08:13
Ha	Z	Tmax	04:08:19

C&GS card 53-64:
03:03:37.9
10.4° S., 161.1° E.
Solomon Islands
h about 70 km
Magnitude 5.4 (CGS), 5.8 (HVO).

June 23

M	Z	iP	01:35:59.0 c
MP	Z	iP	59.7 c
U	Z	eP	59.3 c
Na	Z	iP	59.4 c
Hi	Z	iP	59.1 c
Ke	Z	iP	55.8 c
NB	Z	iP	58.7 c
Ha	Z	iP	49.1 c
U	PEN	iS	01:43:34
U	PEZ	iSS	01:47:23
U	PEN	iL	01:48:15
U	PEE	iG	01:48:30
U	PEZ	iR	01:50:50

C&GS card 53-64:
01:26:37.0
43.3° N., 146.1° E.
Kurile Islands
h about 77 km
Magnitude 7 (Pas), 6.75-7 (Brk), 6.75 (Pal), 6.2 (CGS), 7.0 (HVO).

June 28

Hi	Z	eP	13:01:31.9 d
Ke	Z	eP	27.1 d
U	PEN	iS	13:09:35
U	PEZ	eSS	13:13:29
U	PEN	iG	13:14:53
U	PEZ	iR	13:17:47
M	Z	Tmax	14:03:43
A	Z	Tmax	35
D	Z	Tmax	43
U	Z	Tmax	44
Ke	Z	Tmax	17
NB	Z	Tmax	46

C&GS card 53-64:
12:51:34.6
1.7° S., 149.6° E.
New Ireland region
h about 7 km
Magnitude 5.75-6 (Brk), 6.4 (CGS).

June 29

M	Z	iP	07:29:33.2 c
A	Z	iP	33.8 c
D	Z	iP	34.3 c
U	Z	eP	33.4 c
Pa	Z	iP	33.0 c
NB	Z	iP	34.1 c
Hi	Z	iP	31.5 c
Ke	Z	iP	33.5 c

C&GS card 53-64:
07:21:32.8
62.7° N., 152.0° W.
Southern Alaska
Felt: College, Alaska
h about 33 km
Magnitude 5.6 (CGS).

June 30

M	Z	iP	13:58:43.3 c
A	Z	eP	43.8 c
D	Z	eP	43.2 c
U	Z	eP	43.4 d
NB	Z	eP	40.9 c
Ke	Z	eP	40.1 c
Ha	Z	eP	48.8 c
U	PEE	epP	14:01:59
U	PEE	iS	14:09:03
U	PEE	iPPS	14:10:09

June 30, 1964--Continued

U	PEN	eSS	14:14:17
U	PEE	eSSS	14:18:09
U	PEN	iG	14:20:29
U	PEZ	iR	14:24:01

C&GS card 54-64:
13:46:21.6
0.8° S., 122.5° E.
Northern Celebes
h about 36 km
Magnitude 6.3 (CGS),
6.7 (HVO).

June 30

M	Z	iP	19:59:44.6 c
U	Z	eP	44.7 c

C&GS card 52-64:
19:47:22.5
0.0° N., 122.9° E.
Northern Celebes
h about 33 km
Magnitude 4.9 (CGS).

June 30

M	Z	iP	20:17:27.8 c
A	Z	iP	28.6 c
D	Z	iP	28.4 c
U	Z	eP	28.5 c
Pa	Z	eP	29.7 c
NB	Z	eP	26.9 c
Hi	Z	eP	28.2 c
Na	Z	eP	28.8 c
Ke	Z	eP	24.7 c

C&GS card 52-64:
20:08:28.5
46.6° N., 144.6° E.
Sea of Okhotsk
h about 383 km
Magnitude 5.5 (CGS).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 1, 1964

U	Z	eP	00:08:58.6 c
Ke	Z	iP	58.8 c

C&GS card 32-64:
00:01:10.6
60.4° N., 146.4° W.
h about 10 km
Magnitude 4.9 (CGS).

April 1

U	Z	Tmax	04:10:47
Pa	Z	Tmax	40
Hi	Z	Tmax	11
Ha	Z	Tmax	04:09:02

C&GS card 34-64:
03:23:17.2
57.2° N., 151.3° W.
h about 25 km
Magnitude 5.25 (Pal), 5.1 (CGS).

April 1

Pa	Z	Tmax	05:36:20
Ha	Z	Tmax	05:34:45

C&GS card 32-64:
04:49:26
57.2° N., 151.4° W.
h about 20 km
Magnitude 4.8 (CGS).

April 1

U	Z	Tmax	06:24:22
Pa	Z	Tmax	23
Hi	Z	Tmax	03
Ha	Z	Tmax	06:22:56

C&GS card 32-64:
05:33:02.9
59.9° N., 146.0° W.
h about 15 km
Magnitude 4.5 (CGS).

April 1

Pa	Z	Tmax	14:42:01
Ha	Z	Tmax	14:40:29

C&GS card 32-64:
13:54:31.9
57.5° N., 151.3° W.
h about 20 km
Magnitude 4.9 (CGS).

April 1

NB	Z	Tmax	17:19:48
Ha	Z	Tmax	17:18:39

C&GS card 32-64:
16:29:09.0
59.7° N., 146.5° W.
h about 15 km
Magnitude 4.7 (CGS).

April 1

Pa	Z	Tmax	20:53:38
Ha	Z	Tmax	20:51:57

C&GS card 32-64:
20:07:24
56.6° N., 153.0° W.
h about 33 km
Magnitude 4.4 (CGS).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 2, 1964

Pa	Z	Tmax	09:14:11

C&GS card 32-64:
08:27:13.5
56.6° N., 152.4° W.
h about 33 km
Magnitude 4.3 (CGS).

April 2

U	Z	Tmax	10:44:16
Pa	Z	Tmax	10:44:16
NB	Z	Tmax	10:44:03
Hi	Z	Tmax	10:43:48
Ha	Z	Tmax	10:42:46

C&GS card 32-64:
09:57:54.5
56.5° N., 152.8° W.
h about 20 km
Magnitude 4.9 (CGS).

April 2

Pa	Z	Tmax	10:56:07
Ha	Z	Tmax	10:54:41

C&GS card 32-64:
10:09:47.0
56.7° N., 152.6° W.
h about 33 km
Magnitude 4.2 (CGS).

April 2

M	Z	eP	11:48:49.1 c
Na	Z	eP	51.0 c
Ke	Z	iP	49.2 c
Pa	Z	Tmax	12:40:37
Hi	Z	Tmax	12:40:05

C&GS card 32-64:
11:41:10.7
58.8° N., 149.6° W.
h about 20 km
Magnitude 5.4 (CGS).

April 2

Pa	Z	Tmax	13:06:12
Ha	Z	Tmax	13:04:47

C&GS card 32-64:
12:19:09
56.3° N., 152.2° W.
h about 33 km
Magnitude 4.3 (CGS).

April 2

Pa	Z	Tmax	20:31:29
Ha	Z	Tmax	20:30:00

C&GS card 32-64:
19:40:19.9
59.6° N., 144.8° W.
h about 20 km
Magnitude 4.7 (CGS).

April 2

Pa	Z	Tmax	21:00:38
Ha	Z	Tmax	20:58:59

C&GS card 32-64:
20:09:42.0
59.8° N., 147.0° W.
h about 10 km
Magnitude 5.0 (CGS).

April 2

U	Z	Tmax	23:25:59
Pa	Z	Tmax	53
NB	Z	Tmax	52
Ke	Z	Tmax	42
Hi	Z	Tmax	29
Ha	Z	Tmax	23:24:23

C&GS card 34-64:
22:34:31.7
59.8° N., 144.3° W.
h about 20 km
Magnitude 4.75-5 (Brk), 5.75-6 (Pal), 5.0 (CGS).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 3

U	Z	Tmax	09:30:10
Pa	Z	Tmax	09:29:56
NB	Z	Tmax	09:30:23
Hi	Z	Tmax	09:29:23
Ha	Z	Tmax	09:28:28

C&GS card 32-64:
08:38:42.8
59.6° N., 144.7° W.
h about 10 km
Magnitude 5.4 (CGS).

April 3

U	Z	Tmax	09:37:50
Pa	Z	Tmax	33
NB	Z	Tmax	54
Hi	Z	Tmax	17
Ha	Z	Tmax	09:36:36

C&GS card 34-64:
08:46:27
57.9° N., 150.5° W.
h about 15 km
Magnitude 5.5 (CGS).

April 3

M	Z	iP	22:41:35.6 d
U	Z	iP	36.0 d
Pa	Z	eP	35.0 d
NB	Z	iP	36.4 d
Ke	Z	iP	35.9 d
Ha	Z	eP	26.5 d
U	PEN	eS	22:48:14
U	PEE	eG	22:51:14
U	PEZ	eR	22:52:58
Pa	Z	Tmax	23:26:04
Ha	Z	Tmax	23:24:35

C&GS card 32-64:
22:33:42.2
61.6° N., 147.6° W.
h about 40 km
Magnitude 6 (Pas), 6.25-6.5 (Pal)
5.25 (Brk), 5.7 (CGS)
5.8 (HVO).

April 4

M	Z	iP	04:42:45.3 c
Pa	Z	eP	45.8 c
Hi	Z	eP	43.1 c

C&GS card 32-64:
04:34:56.9
60.3° N., 146.5° W.
h about 5 km
Magnitude 5.0 (CGS).

April 4

M	Z	iP	05:01:45.3 c
Pa	Z	eP	45.4 c
Hi	Z	eP	43.0 c
Na	Z	eP	49.1 c
Ke	Z	iP	45.6 c
Ha	Z	iP	35.5 c
U	PEZ	eS	05:08:02
U	PEZ	iR	05:12:36
M	Z	Tmax	05:44:48
U	Z	Tmax	05:45:13
Pa	Z	Tmax	05:44:44
NB	Z	Tmax	05:45:19
Hi	Z	Tmax	05:44:32
Ha	Z	Tmax	05:43:32

C&GS card 32-64:
04:54:01.7
60.1° N., 146.7° W.
h about 40 km
Magnitude 5.6 (CGS), 6.0 (HVO).

April 4

Pa	Z	Tmax	07:45:03
Ha	Z	Tmax	07:43:48

C&GS card 32-64:
06:53:25.9
60.4° N., 146.0° W.
h about 15 km
Magnitude 4.8 (CGS).

Tabel 5.--Distant earthquake--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 4, 1964

M	Z	eP	08:47:45.4 d
U	Z	eP	45.9 d
Na	Z	eP	48.1 d
U	PEN	eS	08:53:38
U	PEZ	iR	08:57:38
M	Z	Tmax	09:27:00
U	Z	Tmax	09:27:00
Pa	Z	Tmax	09:26:47
NB	Z	Tmax	09:26:53
Hi	Z	Tmax	09:26:27
Ha	Z	Tmax	09:25:28

C&GS card 32-64:
08:40:29.8
56.5° N., 152.6° W.
h about 15 km
Magnitude 6.0 (Pal), 5.3 (CGS).

April 4

M	Z	iP	09:18:08.6 d
U	Z	iP	09.2 d
NB	Z	eP	09.1 d
Hi	Z	iP	06.0 d
Na	Z	iP	13.1 d
Ke	Z	iP	09.0 d
Ha	Z	eP	58.2 d
M	Z	Tmax	09:57:37
U	Z	Tmax	33
Pa	Z	Tmax	34
NB	Z	Tmax	44
Hi	Z	Tmax	14
Ha	Z	Tmax	09:56:06

C&GS card 32-64:
09:10:55.1
56.9° N., 152.7° W.
h about 15 km
Magnitude 5.75-6 (Pal), 5.9 (CGS).

April 4

M	Z	Tmax	15:58:50
Pa	Z	Tmax	58
NB	Z	Tmax	15:59:29
Ha	Z	Tmax	15:57:39

C&GS card 32-64:
15:08:12.3
59.6° N., 146.9° W.
h about 15 km
Magnitude 4.7 (CGS).

April 4--Continued

C&GS card--Continued

April 4

U	Z	eP	17:53:15.8 c
Na	Z	eP	18.7 c
Hi	Z	eP	13.0 c
U	PEZ	iS	17:59:02
U	PEN	eG	18:01:22
U	PEZ	eR	18:02:50
M	Z	Tmax	18:32:28
U	Z	Tmax	23
Pa	Z	Tmax	22
NB	Z	Tmax	31
Hi	Z	Tmax	18:31:58
Ke	Z	Tmax	18:32:39
Ha	Z	Tmax	18:30:42

C&GS card 32-64:
17:46:08.6
56.3° N., 154.4° W.
h about 25 km
Magnitude 6.5 (Pas), 5.75-6 (Brk), 6.5-6.75 (Pal), 5.7 (CGS), 6.5 (HVO).

April 4, 1964

Hi	Z	iP	18:06:49.7 c
M	Z	Tmax	18:46:00
U	Z	Tmax	18:45:57
Pa	Z	Tmax	18:45:53
NB	Z	Tmax	18:46:00
Hi	Z	Tmax	18:45:40
Ha	Z	Tmax	18:44:37

C&GS card 34-64:
17:59:43.3
56.4° N., 154.5° W.
h about 25 km
Magnitude 5.25 (Brk), 6.5-6.75 (Pal), 5.5 (CGS).

Table 5.--Distant earthquake--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 4, 1964

Pa	Z	Tmax	23:08:00
Ha	Z	Tmax	23:06:47

C&GS card 32-64:
22:16:54.5
59.4° N., 145.2° W.
h about 10 km
Magnitude 5.5-5.75 (Pal), 5.1 (CGS).

April 5

M	Z	eP	01:29:20.6
U	PEZ	iS	01:35:14
U	PEZ	eR	01:38:42
M	Z	Tmax	02:08:08
U	Z	Tmax	02:08:24
Pa	Z	Tmax	09
NB	Z	Tmax	30
Hi	Z	Tmax	02:07:53
Ha	Z	Tmax	02:07:18

C&GS card 33-64:
01:22:13.3
56.2° N., 153.5° W.
h about 25 km
Magnitude 6-6.25 (Pal), 5.4 (CGS), 6.2 (HVO).

April 5

M	Z	Tmax	02:27:34
U	Z	Tmax	44
Pa	Z	Tmax	39
NB	Z	Tmax	02:28:02
Hi	Z	Tmax	02:27:13
Ha	Z	Tmax	02:26:05

C&GS card 33-64:
01:41:45.0
56.2° N., 153.3° W.
h about 35 km
Magnitude 5.75-6 (Pal), 5.2 (CGS).

April 5, 1964

M	Z	Tmax	08:36:13
U	Z	Tmax	06
Pa	Z	Tmax	05
NB	Z	Tmax	11
Hi	Z	Tmax	08:35:46
Ha	Z	Tmax	08:34:44

C&GS card 34-64:
07:44:51
60.0° N., 144.8° W.
h about 15 km
Magnitude 4.2 (CGS).

April 5

Pa	Z	Tmax	08:59:15
Ha	Z	Tmax	08:57:44

C&GS card 34-64:
08:13:12.4
56.9° N., 152.0° W.
h about 15 km
Magnitude 4.5 (CGS).

April 5

Pa	Z	Tmax	09:45:07
Ha	Z	Tmax	09:43:26

C&GS card 33-64:
08:59:02
56.2° N., 154.5° W.
h about 15 km
Magnitude 4.7 (CGS).

April 5

M	Z	Tmax	18:27:12
U	Z	Tmax	18:27:00
Pa	Z	Tmax	18:26:57
NB	Z	Tmax	18:27:09
Hi	Z	Tmax	18:26:40
Ha	Z	Tmax	18:25:32

C&GS card 33-64:
17:40:43.1
56.3° N., 152.9° W.
h about 10 km
Magnitude 4.9 (CGS).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 5, 1964

M	Z	Tmax	18:33:26
U	Z	Tmax	25
Pa	Z	Tmax	20
NB	Z	Tmax	27
Hi	Z	Tmax	18:32:52
Ha	Z	Tmax	18:31:57

C&GS card 34-64:
17:42:07.4
59.6° N., 144.9° W.
h about 15 km
Magnitude 5.1 (CGS).

April 5

M	Z	iP	19:36:04.3 d
U	Z	iP	04.6 d
NB	Z	eP	04.4 d
Hi	Z	eP	02.0 d
Ke	Z	eP	04.2 d
M	Z	Tmax	20:19:31
U	Z	Tmax	20
Pa	Z	Tmax	12
Hi	Z	Tmax	20:18:58
Ha	Z	Tmax	20:18:13

C&GS card 33-64:
19:28:18.1
60.2° N., 146.7° W.
h about 15 km
Magnitude 5-5.25 (Brk),
5.5 (Pal),
5.8 (CGS).

April 6

M	Z	Tmax	02:42:34
U	Z	Tmax	02:42:34
Ha	Z	Tmax	02:41:08

C&GS card 33-64:
01:51:49
59.4° N., 146.8° W.
h about 15 km
Magnitude 4.3 (CGS).

April 6

Pa	Z	Tmax	09:54:24

C&GS card 34-64:
09:03:12.9
59.5° N., 145.3° W.
h about 15 km
Magnitude 4.4 (CGS).

April 6

M	Z	Tmax	11:33:48
U	Z	Tmax	57
Pa	Z	Tmax	54
NB	Z	Tmax	11:34:08
Hi	Z	Tmax	11:33:39
Ha	Z	Tmax	11:32:29

C&GS card 34-64:
10:42:36.3
59.9° N., 145.6° W.
h about 15 km
Magnitude 4.8 (CGS).

April 6

Pa	Z	Tmax	11:47:52

C&GS card 34-64:
10:56:29
59.8° N., 147.9° W.
h about 33 km
Magnitude 4.0 (CGS).

April 7

M	Z	eP	01:50:54.8 c
NB	Z	iP	54.7 c
Ke	Z	iP	54.3 c

C&GS card 33-64:
01:43:28.7
58.5° N., 154.5° W.
h about 30 km
Magnitude 5.1 (CGS).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 7

M	Z	Tmax	06:53:00
U	Z	Tmax	17
Pa	Z	Tmax	10
NB	Z	Tmax	13
Hi	Z	Tmax	06:52:57

C&GS card 33-64:
06:02:00
60.0° N., 145.7° W.
h about 33 km
Magnitude 4.0 (CGS).

April 7

Pa	Z	Tmax	18:49:44
Hi	Z	Tmax	18:49:32
Ha	Z	Tmax	18:48:18

C&GS card 33-64:
18:02:24.7
57.3° N., 151.1° W.
Magnitude 4.8 (CGS).
h about 20 km.

April 8

M	Z	Tmax	20:24:03
U	Z	Tmax	16
Pa	Z	Tmax	03
NB	Z	Tmax	10
Hi	Z	Tmax	20:23:41
Ha	Z	Tmax	20:22:42

C&GS card 33-64:
19:33:19.0
59.6° N., 147.0° W.
h about 15 km
Magnitude 5.1 (CGS).

April 8

M	Z	eP	19:58:04.9 c
NB	Z	eP	05.3 c
Ke	Z	iP	05.2 c

C&GS card 34-64:
19:50:16.8
60.4° N., 145.9° W.
h about 10 km
Magnitude 5.25-5.5 (Pal), 5.3 (CGS).

April 9

Pa	z	eP	13:14:05.8 d
NB	Z	eP	07.7 d
Hi	Z	eP	04.5 d
Na	Z	eP	10.9 d
Ke	Z	eP	07.7 d
M	Z	Tmax	13:57:30
U	Z	Tmax	38
Pa	Z	Tmax	29
NB	Z	Tmax	32
Hi	Z	Tmax	15
Ha	Z	Tmax	13:56:15

C&GS card 34-64:
13:06:15.2
59.6° N., 146.1° W.
h about 15 km
Magnitude 5.5-5.75 (Pal),
5.1 (CGS).

April 9

Pa	Z	Tmax	14:08:51

C&GS card 34-64:
13:22:29.6
56.8° N., 152.0° W.
h about 33 km
Magnitude 4.7 (CGS).

April 9

Pa	Z	Tmax	15:05:59

C&GS card 34-64:
14:14:36.5
59.8° N., 146.0° W.
h about 10 km
Magnitude 4.3 (CGS).

April 10

M	Z	iP	01:15:27.7 c
A	Z	iP	28.4 c
U	Z	eP	27.9 c
NB	Z	eP	28.1 c
Hi	Z	eP	23.4 c
Ke	Z	iP	27.5 c
Ha	Z	iP	19.3 c

April 10, 1964--Continued

C&GS card 33-64:
01:08:00.2
58.4° N., 150.6° W.
h about 15 km
Magnitude 5-5.25 (Pal), 5.5 (CGS).

April 10

M	Z	eP	21:51:49.8 d
NB	Z	eP	49.9 d
Hi	Z	eP	47.5 d
Ke	Z	eP	49.9 d

C&GS card 34-64:
21:44:06.7
60.1° N., 153.7° W.
h about 10 km
Magnitude 5.5-5.75 (Pal),
5.6 (CGS).

April 11

Pa	Z	Tmax	08:24:49

C&GS card 35-64:
07:33:52
59.6° N., 144.8° W.
h about 33 km
Magnitude 4.4 (CGS).

April 11

Pa	Z	Tmax	10:10:06

C&GS card 35-64:
09:23:51.5
56.4° N., 152.2° W.
h about 33 km
Magnitude 4.6 (CGS).

April 11

Pa	Z	Tmax	12:27:31

C&GS card 35-64:
11:36:00.5
60.4° N., 146.4° W.
Magnitude 4.8 (CGS).
h about 15 km.

April 12

M	Z	eP	01:31:40.5 d
A	Z	eP	41.0 d
Hi	Z	iP	38.0 d
Ke	Z	eP	41.2
U	PEN	eS	01:37:34
U	PEE	eG	01:39:38
U	PEZ	iR	01:41:34
M	Z	Tmax	02:10:57
A	Z	Tmax	02:11:14
U	Z	Tmax	02:11:04
Pa	Z	Tmax	02:11:01
NB	Z	Tmax	02:10:59
Hi	Z	Tmax	02:10:45
Ha	Z	Tmax	02:08:30

C&GS card 35-64:
01:24:31.2
56.6° N., 152.2° W.
h about 22 km
Magnitude 5.6 (CGS),
6.1 (HVO).

April 12

M	Z	Tmax	10:21:11
A	Z	Tmax	17
U	Z	Tmax	10:20:55
Pa	Z	Tmax	10:21:06
NB	Z	Tmax	10:21:12
Ha	Z	Tmax	10:19:46

C&GS card 35-64:
09:34:44.1
56.6° N., 152.1° W.
h about 20 km
Magnitude 5.1 (CGS).

April 12

M	Z	Tmax	13:23:48
A	Z	Tmax	52
U	Z	Tmax	45
Pa	Z	Tmax	43
NB	Z	Tmax	49
Ha	Z	Tmax	13:22:20

C&GS card 37-64:
12:36:23
56.4° N., 151.4° W.
h about 30 km
Magnitude 5.0 (CGS).

Table 5.--Distant earthquake--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 12, 1964

M	Z	Tmax	18:13:33
A	Z	Tmax	40
U	Z	Tmax	28
Pa	Z	Tmax	26
NB	Z	Tmax	13
Ha	Z	Tmax	18:12:08

C&GS card 35-64:
17:22:02.2
60.2° N., 145.6° W.
h about 20 km
Magnitude 5.0 (CGS).

April 13

M	Z	eP	12:33:24 c
U	PEZ	eS	12:39:52
U	PEE	eG	12:42:34
U	PEZ	iR	12:44:22
M	Z	Tmax	13:17:10
A	Z	Tmax	13:17:05
U	Z	Tmax	13:17:04
Pa	Z	Tmax	13:16:47
NB	Z	Tmax	13:17:15
Hi	Z	Tmax	13:17:05
Ha	Z	Tmax	13:15:28

C&GS card 44-64:
12:25:36
59.4° N., 143.9° W.
h about 40 km
Magnitude 4.9 (CGS).

April 13

M	Z	eP	14:12:17.3 d
M	Z	Tmax	14:52:40
A	Z	Tmax	39
D	Z	Tmax	44
U	Z	Tmax	38
Pa	Z	Tmax	30
NB	Z	Tmax	13
Hi	Z	Tmax	14
Ha	Z	Tmax	14:51:08

C&GS card 36-64:
14:05:00.0
57.6° N., 151.2° W.
h about 25 km
Magnitude 4.75 (Brk), 5-5.25 (Pal), 5.5 (CGS).

April 13

M	Z	Tmax	17:00:37
A	Z	Tmax	39
U	Z	Tmax	35
Pa	Z	Tmax	28
NB	Z	Tmax	38
Hi	Z	Tmax	07
Ha	Z	Tmax	16:58:48

C&GS card 35-64:
16:14:06.3
56.6° N., 152.1° W.
h about 33 km
Magnitude 5.1 (CGS).

April 13

M	Z	iP	21:32:49.9 c
A	Z	iP	50.2 c
D	Z	iP	50.5 c
U	Z	iP	49.8 c
NB	Z	iP	49.7 c
Ke	Z	eP	49.3 c

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 13, 1964--Continued

C&GS card 35-64:
21:25:33.0
57.5° N., 153.9° W.
h about 30 km
Felt: Kodiak
Magnitude 5.5 (CGS).

April 13

M	Z	Tmax	22:34:43
A	Z	Tmax	47
U	Z	Tmax	46
Pa	Z	Tmax	31
Ha	Z	Tmax	22:33:21

C&GS card 35-64:
21:43:16.5
59.4° N., 143.1° W.
h about 33 km
Magnitude 5.1 (CGS).

April 14

M	Z	Tmax	23:20:52
A	Z	Tmax	50
D	Z	Tmax	49
U	Z	Tmax	51
NB	Z	Tmax	33
Ha	Z	Tmax	23:19:27

C&GS card 35-64:
22:29:31.1
59.9° N., 145.6° W.
h about 23 km
Magnitude 4.5 (CGS).

April 14

M	Z	eP	23:02:51.9 c
A	Z	eP	52.4 c
D	Z	iP	53.0 c
U	Z	iP	52.8 c
NB	Z	iP	52.5 c
Hi	Z	eP	49.3 c
Na	Z	iP	55.8 c
Ha	Z	eP	42.2 c
U	PEZ	eS	23:08:38
U	PEE	eG	23:11:22
U	PEZ	eR	23:12:58

C&GS card 35-64:
22:55:31.3
58.0° N., 152.6° W.
h about 30 km
Magnitude 5.4 (CGS),
5.5 (HVO).

April 15

M	Z	eP	15:37:54.9 c
D	Z	eP	56.1 c
U	Z	eP	55.4 c
Ke	Z	eP	54.4 c
U	PEZ	eS	15:43:46
U	PEE	eG	15:46:02
U	PEZ	iR	15:47:34
M	Z	Tmax	16:17:09
A	Z	Tmax	16
D	Z	Tmax	07
U	Z	Tmax	05
Pa	Z	Tmax	16:16:58
NB	Z	Tmax	16:17:35
Hi	Z	Tmax	16:16:39
Ke	Z	Tmax	16:17:20
Ha	Z	Tmax	16:15:12

C&GS card 35-64:
15:30:47.1
56.5° N., 154.4° W.
h about 35 km
Magnitude 5.5 (CGS), 5.9 (HVO).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 16, 1964

M	Z	Tmax	08:28:17
U	Z	Tmax	23
Ha	Z	Tmax	08:27:00

C&GS card 35-64:
07:37:35.8
59.6° N., 146.9° W.
h about 33 km
Magnitude 4.3 (CGS).

April 16

M	Z	iP	19:34:04.9 c
A	Z	iP	05.8 c
D	Z	iP	05.9 c
U	Z	iP	05.1 c
Pa	Z	iP	04.1 c
NB	Z	eP	04.2 c
Hi	Z	eP	02.5 c
Na	Z	iP	09.9 c
Ke	Z	eP	04.5 c
Ha	Z	eP	19:33:56.1 c
U	PEZ	ePP	19:35:26
U	PEZ	iS	19:39:50
U	PEE	iG	19:41:58
U	PEZ	iR	19:43:38
M	Z	Tmax	20:13:06
A	Z	Tmax	20
D	Z	Tmax	30
U	Z	Tmax	20:13:20
Pa	Z	Tmax	12
NB	Z	Tmax	38
Hi	Z	Tmax	20:12:55
Ke	Z	Tmax	20:12:59
Ha	Z	Tmax	20:11:31

C&GS card 35-64:
19:26:57.4
56.4° N., 152.9° W.
h about 30 km
Magnitude 5.5 (CGS), 6.2 (HVO).

April 17

Pa	Z	Tmax	04:55:08
Ha	Z	Tmax	04:53:54

C&GS card 35-64:
04:03:55.9
59.6° N., 144.7° W.
h about 20 km
Magnitude 4.9 (CGS).

April 17

Pa	Z	Tmax	05:08:04
Ha	Z	Tmax	05:06:52

C&GS card 35-64:
04:16:59.4
59.6° N., 144.7° W.
h about 33 km
Magnitude 4.9 (CGS).

April 17

M	Z	eP	04:56:40.1 c
D	Z	eP	41.2 c
Ke	Z	eP	39.7 c
U	PEZ	eS	04:02:26
U	PEE	eG	04:04:34
U	PEZ	iR	04:06:26
M	Z	Tmax	05:35:42
A	Z	Tmax	05:36:00
D	Z	Tmax	05:35:48
U	Z	Tmax	05:35:46
Pa	Z	Tmax	05:35:46
NB	Z	Tmax	05:36:11
Hi	Z	Tmax	05:35:30
Ha	Z	Tmax	05:34:19

C&GS card 35-64:
04:49:30.5
56.4° N., 152.9° W.
h about 25 km
Magnitude 5.3 (CGS), 5.7 (HVO).

April 17

M	Z	iP	09:16:28.6 c
D	Z	iP	29.7 c
Ke	Z	eP	28.3 c
M	Z	Tmax	09:56:52
A	Z	Tmax	09:56:53
D	Z	Tmax	59
U	Z	Tmax	51
Pa	Z	Tmax	50
NB	Z	Tmax	24
Hi	Z	Tmax	34
Ha	Z	Tmax	09:55:30

C&GS card 35-64:
09:09:07.8
57.7° N., 151.4° W.
h about 20 km
Magnitude 5.4 (CGS).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 17, 1964

M	Z	Tmax	12:39:58
A	Z	Tmax	12:40:04
D	Z	Tmax	12:40:03
U	Z	Tmax	12:39:49
Pa	Z	Tmax	55
NB	Z	Tmax	58
Hi	Z	Tmax	29
Ha	Z	Tmax	12:38:35

C&GS card 35-64:
11:48:44.7
60.0° N., 145.5° W.
h about 33 km
Magnitude 4.4 (CGS).

April 18

M	Z	Tmax	20:54:30
A	Z	Tmax	24
U	Z	Tmax	34
Pa	Z	Tmax	12
Hi	Z	Tmax	20:53:46
Ha	Z	Tmax	20:52:34

C&GS card 35-64:
20:08:19.7
56.1° N., 153.7° W.
h about 15 km
Magnitude 4.9 (CGS).

April 18

M	Z	Tmax	21:01:54
A	Z	Tmax	21:02:12
U	Z	Tmax	21:01:59
Pa	Z	Tmax	21:02:00
NB	Z	Tmax	21:01:28
Hi	Z	Tmax	21:01:39
Ha	Z	Tmax	21:00:31

C&GS card 35-64:
20:16:16.3
56.1° N., 153.7° W.
h about 30 km
Magnitude 4.9 (CGS).

April 20

M	Z	Tmax	04:26:02
A	Z	Tmax	00
U	Z	Tmax	03
Pa	Z	Tmax	04:25:54
NB	Z	Tmax	04:26:26

April 20--Continued

Hi	Z	Tmax	04:25:40

C&GS card 35-64:
03:34:45.1
59.7° N., 144.6° W.
h about 30 km
Magnitude 4.7 (CGS).

April 20

M	Z	eP	12:04:34.3 c
A	Z	eP	35.0 c
U	Z	eP	34.5 c
Pa	Z	eP	34.2 c
NB	Z	eP	34.7 c
Na	Z	eP	37.0 c
Ke	Z	eP	34.1 c
U	PEZ	eS	12:10:54
U	PEE	iG	12:14:14
U	PEZ	eR	12:15:56
M	Z	Tmax	12:48:56
U	Z	Tmax	47
Pa	Z	Tmax	55
NB	Z	Tmax	46

C&GS card 37-64:
11:56:41.6
61.4° N., 147.3° W.
h about 30 km
Magnitude 6.5 (Pas), 6.75 (Brk), 6-6.25 (Pal), 5.7 (CGS), 5.8 (HVO).

April 21

M	Z	iP	05:09:27.4 c
A	Z	iP	28.0 c
D	Z	iP	28.3 c
U	Z	eP	27.5 c
NB	Z	eP	27.6 c
Ke	Z	iP	27.5 c
U	PEZ	eR	05:20:58

C&GS card 36-64:
05:01:35.7
61.5° N., 147.4° W.
h about 40 km
Felt: Anchorage
Magnitude 6 (Pas), 4.75-5 (Brk), 5.4 (CGS), 5.5 (HVO).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

April 24, 1964

M	Z	Tmax	04:42:07
A	Z	Tmax	07
U	Z	Tmax	04
NB	Z	Tmax	31

C&GS card 38-64:
03:51:05.0
59.5° N., 144.5° W.
h about 33 km
Magnitude 5.2 (CGS).

April 25

M	Z	Tmax	07:52:26
A	Z	Tmax	29
U	Z	Tmax	25
NB	Z	Tmax	39

C&GS card 41-64:
07:01:20
59.8° N., 145.3° W.
h about 33 km
Magnitude 3.8 (CGS).

April 25

M	Z	Tmax	10:34:37
A	Z	Tmax	45
D	Z	Tmax	30
U	Z	Tmax	36
Pa	Z	Tmax	30
NB	Z	Tmax	57
Hi	Z	Tmax	16
Ke	Z	Tmax	21
Ha	Z	Tmax	10:33:04

C&GS card 38-64:
09:43:30.7
59.9° N., 144.9° W.
h about 30 km
Magnitude 5.0 (CGS).

May 1

M	Z	Tmax	04:32:09
A	Z	Tmax	11
D	Z	Tmax	14
U	Z	Tmax	09
Pa	Z	Tmax	03
NB	Z	Tmax	20
Hi	Z	Tmax	04:31:47
Ha	Z	Tmax	04:30:43

May 1--Continued

C&GS card 46-64:
03:40:36.2
59.7° N., 144.1° W.
h about 20 km
Magnitude 4.4 (CGS).

May 1

M	Z	iP	06:09:41.6
U	PEZ	eR	06:21:09

C&GS card 38-64:
06:01:55.4
60.5° N., 145.6° W.
h about 20 km
Magnitude 5.4 (CGS).

May 2

M	Z	Tmax	10:53:05
A	Z	Tmax	04
U	Z	Tmax	12
NB	Z	Tmax	08
Ha	Z	Tmax	10:51:45

C&GS card 41-64:
10:02:42
59.4° N., 146.5° W.
h about 33 km
Magnitude 4.3 (CGS).

May 6

D	Z	eP	15:33:48.6 d
U	Z	eP	48.4 d
U	PEN	eS	15:39:43
U	PEE	eG	15:42:15
U	PEZ	eR	15:43:54
M	Z	Tmax	16:13:09
A	Z	Tmax	16
D	Z	Tmax	29
U	Z	Tmax	16:12:59
Pa	Z	Tmax	16:13:04
NB	Z	Tmax	16:13:21
Hi	Z	Tmax	16:12:44
Ha	Z	Tmax	16:11:39

C&GS card 38-64:
15:26:35.5
56.7° N., 152.1° W.
h about 15 km
Magnitude 5.4 (CGS), 5.4 (HVO).

Table 5.--Distant earthquakes--Continued
Aftershocks of the Alaskan earthquake of March 28, 1964

May 8

Ha	Z	Tmax	10:13:20

C&GS card 38-64:
09:23:33.1
59.4° N., 145.4° W.
h about 20 km
Magnitude 4.5 (CGS).

May 8

M	Z	eP	16:28:59.1 c
U	PEE	eS	16:34:47
U	PEZ	iR	16:38:51
M	Z	Tmax	17:07:59
A	Z	Tmax	17:08:15
D	Z	Tmax	17:08:21
U	Z	Tmax	17:08:21
Pa	Z	Tmax	17:07:59
NB	Z	Tmax	17:08:15
Hi	Z	Tmax	17:07:42

C&GS card 38-64:
16:21:49.8
56.7° N., 154.0° W.
h about 25 km
Magnitude 5.3 (CGS), 5.7 (HVO).

May 8

M	Z	eP	21:42:31.5 d
U	PEZ	eR	21:53:23
M	Z	Tmax	22:26:54
U	Z	Tmax	22:26:53

C&GS card 38-64:
21:34:40.6
60.8° N., 143.6° W.
h about 35 km
Magnitude 5.4 (CGS).

May 12

M	Z	iP	18:23:54.8 c
A	Z	iP	57.1 c
Ke	Z	iP	56.5 c
U	PEZ	eS	18:29:43
U	PEE	iG	18:32:09
U	PEZ	iR	18:33:47
M	Z	Tmax	19:03:20
A	Z	Tmax	23
U	Z	Tmax	10
Pa	Z	Tmax	19:03:14
NB	Z	Tmax	23
Hi	Z	Tmax	19:02:56

May 12--Continued

Ha	Z	Tmax	19:01:51

C&GS card 42-64:
18:16:41.9
56.6° N., 152.4° W.
h about 10 km
Magnitude 5.5-5.75 (Brk),
6-6.25 (Pal),
5.3 (CGS), 6.0 (HVO).

May 14

M	Z	Tmax	15:10:25
A	Z	Tmax	31
U	Z	Tmax	22
Pa	Z	Tmax	19
NB	Z	Tmax	32
Hi	Z	Tmax	07
Ha	Z	Tmax	15:09:15

C&GS card 42-64:
14:19:05
59.7° N., 144.4° W.
h about 33 km
Magnitude 4.5 (CGS).

May 16

M	Z	Tmax	15:32:36
A	Z	Tmax	15:32:37
U	Z	Tmax	35
Ha	Z	Tmax	15:30:59

C&GS CARD 40-64:
14:44:54
57.6° N., 151.0° W.
h about 33 km
Magnitude 5.4 (CGS).

May 17

M	Z	eP	00:57:57.3 c
U	PEN	eS	01:04:19
U	PEN	eG	01:07:29
M	Z	Tmax	01:41:49
A	Z	Tmax	01:42:04
D	Z	Tmax	01:41:59
U	Z	Tmax	01:41:55
Ha	Z	Tmax	01:40:20

C&GS card 43-64:
00:50:17.9
59.4° N., 142.7° W.

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

May 17 --Continued

C&GS card--Continued
h about 35 km
Magnitude 5.75 (Pas), 6-6.25 (Brk), 6.25-6.5 (Pal), 5.1 (CGS).

May 18

M	Z	Tmax	14:38:19
A	Z	Tmax	31
D	Z	Tmax	25
U	Z	Tmax	19
Pa	Z	Tmax	20
NB	Z	Tmax	40
Ha	Z	Tmax	14:36:31

C&GS card 43-64:
13:47:22.7
59.6° N., 145.0° W.
h about 20 km
Magnitude 4.6 (CGS).

May 19

M	Z	eP	15:44:45 c
M	Z	Tmax	16:24:23
A	Z	Tmax	31
U	Z	Tmax	23
NB	Z	Tmax	28
Hi	Z	Tmax	16:23:54

C&GS card 43-64:
15:37:35.9
57.0° N., 152.8° W.
h about 25 km
Magnitude 4.9 (CGS).

May 21

M	Z	eP	15:43:34.0 d
A	Z	eP	34.5 d
U	Z	eP	34.1 d
NB	Z	eP	33.5 d
U	PEN	eG	15:52:33
U	PEZ	eR	15:54:18

C&GS card 45-64:
15:36:01.5
59.0° N., 153.5° W.
h about 15 km
Magnitude 5.75-6 (Brk), 5.3 (CGS).

May 28

M	Z	iP	16:25:29.7 c
A	Z	iP	30.2 c
D	Z	iP	30.7 c
MP	Z	iP	30.1 c
U	Z	iP	29.7 c
Ke	Z	eP	29.5 c

C&GS card 43-64:
16:18:04.2
58.3° N., 156.0° W.
h about 25 km
Magnitude 5.4 (CGS).

May 29

M	Z	iP	10:25:21.2 d
A	Z	iP	21.7 d
D	Z	iP	22.1 d
MP	Z	iP	21.8 d
U	Z	iP	21.5 d
NB	Z	eP	21.7 d
Hi	Z	iP	18.4 d
Ke	Z	eP	20.9 d
Ha	Z	iP	11.5 d
U	PEZ	iR	10:36:19
M	Z	Tmax	11:08:48
A	Z	Tmax	48
D	Z	Tmax	54
MP	Z	Tmax	35
U	Z	Tmax	54
Pa	Z	Tmax	51
NB	Z	Tmax	50
Hi	Z	Tmax	17
Ha	Z	Tmax	11:07:19

C&GS card 43-64:
10:17:34.5
60.2° N., 146.3° W.
h about 5 km
Magnitude 5.5 (Pal), 5.6 (CGS), 5.8 (HVO).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

May 30

M	Z	eP	03:25:46.0 c
A	Z	eP	46.6 c
D	Z	eP	47.0 c

C&GS card 43-64:
03:18:08.3
59.5° N., 148.5° W.
Magnitude 4.25-4.5 (Pal), 5.5 (CGS).

May 30

Ha	Z	Tmax	23:19:31

C&GS card 43-64:
22:34:33.3
56.6° N., 152.3° W.
h about 15 km
Magnitude 4.7 (CGS).

June 2

M	Z	eP	16:17:05.7 c
A	Z	eP	06.2 c
M	Z	Tmax	17:00:44
A	Z	Tmax	50
U	Z	Tmax	36
Pa	Z	Tmax	25
NB	Z	Tmax	53
Hi	Z	Tmax	16
Ha	Z	Tmax	16:59:10

C&GS card 45-64:
16:09:23.5
59.7° N., 144.4° W.
h about 15 km
Magnitude 4.75 (Brk), 5.1 (CGS).

June 2

M	Z	Tmax	17:20:59
A	Z	Tmax	17:21:02
D	Z	Tmax	17:21:02
U	Z	Tmax	17:20:56
Pa	Z	Tmax	17:20:51
NB	Z	Tmax	17:21:00
Hi	Z	Tmax	17:20:29
Ha	Z	Tmax	17:19:30

C&GS card 45-64:
16:29:41.5
59.7° N., 144.2° W.
h about 10 km
Magnitude 4.8 (CGS).

June 3

M	Z	Tmax	14:54:53
A	Z	Tmax	14:54:57
D	Z	Tmax	14:55:09
MP	Z	Tmax	14:54:55
U	Z	Tmax	14:55:01
Pa	Z	Tmax	14:54:49
NB	Z	Tmax	14:55:11
Hi	Z	Tmax	14:54:33
Ha	Z	Tmax	14:53:38

C&GS card 43-64:
14:03:42.4
59.9° N., 143.9° W.
h about 20 km
Magnitude 5.1 (CGS).

June 5

M	Z	iP	09:58:22.5 c
D	Z	eP	23.4 c
U	Z	eP	22.6 c
Ke	Z	iP	22.6 c

C&GS card 45-64:
09:50:35.0
60.4° N., 146.0° W.
h about 15 km
Magnitude 5.2 (CGS).

June 5

M	Z	iP	22:14:17.9 c
A	Z	iP	18.5 c
D	Z	iP	19.0 c
U	Z	iP	18.1 c
Pa	Z	iP	17.2 c
NB	Z	iP	18.2 c
Hi	Z	iP	15.3 c
Na	Z	iP	21.6 c
Ke	Z	iP	17.5 c
Ha	Z	eP	07.7 c

C&GS card 45-64:
22:06:53.0
58.1° N., 152.1° W.
h about 15 km
Magnitude 5.0 (CGS).

Table 5.--Distant earthquakes--Continued

Aftershocks of the Alaskan earthquake of March 28, 1964

June 10, 1964

M	Z	eP	23:32:37.6 c

C&GS card 47-64:
23:25:09.1
59.1° N., 153.8° W.
h about 33 km
Magnitude 5.1 (CGS).

June 28

M	Z	iP	19:16:29.5 c
A	Z	iP	30.4 c
D	Z	iP	30.7 c
U	Z	iP	29.8 c
Pa	Z	eP	28.6 c
NB	Z	eP	30.1 c
Hi	Z	eP	27.3 c
Ke	Z	iP	29.4 c

C&GS card 52-64:
19:09:05.4
58.3° N., 150.2° W.
h about 23 km
Magnitude 5.5 (CGS).

During the quarter "felt reports" were either phoned or mailed in by the following people to whom we wish to express our gratitude for these and other instances of cooperation.

Kilauea summit area

Mrs. V. Hanson
Mrs. W. Gorder
Mr. and Mrs. C. Wentworth
Mrs. W. Mist
Mr. G. Kojima
Mr. R. Koyanagi
Miss M. English
Miss L. Yong
Mrs. O. Duncan
Mr. and Mrs. A. Yamamoto
Mrs. K. Okamoto

North Hawaii

Mrs. E. Lindsey
Mrs. P. Richards
Mrs. R. Edlund
Kohala Police Station
Mrs. A. Paiva
Dr. F. Tabrah

Hilo region

Mrs. T. Crabb
Mrs. H. Lewis
Mr. and Mrs. R. Baldwin
Mr. C, Shoemaker
Mr. Y. Kojima
Miss E. Patten
Mr. C. Okamura
Mrs. T. Indledue
Mr. J. Bryan

Puna

Mr. H. Warner
Mrs. D. Isbell
Mrs. C. Guerino
Keaau Police Station

Kau

Mrs. A. Paiva
Rev. D. Thompson

Kona region

Mr. H. Nelson
Miss A. Greenwell
Mr. M. Sutherland
Mrs. R. Apple
Miss N. Wallace

Central Hawaii

Pohakuloa Military trainees

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 35

July August, and September, 1964

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Chronological summary

Most conspicuous during the third quarter of 1964 were the increase in sulfurous fuming from Halemaumau and the step-up in rate of inflation of Kilauea summit which was indicated by both the short-base tiltmeter and the net of long-base tiltmeters. The number of felt earthquakes increased (43 during the quarter), but the total daily counts of quakes remained very low.

During July the short-base tiltmeter indicated slight but erratic inflation of Kilauea. A flurry of small earthquakes from the Kaciki fault on July 16 lasted 3 hours. Two relatively large quakes were felt during July: one magnitude 4.5 earthquake from a shallow focus beneath the southeast flank of Kilauea was felt throughout eastern Hawaii on the 1st, and another magnitude 4.5 quake, offshore, west of Mauna Loa, was felt islandwide on the 17th.

In the first half of August the summit tilting accelerated to a rate sufficient to increase the elevation of Uwekahuna a tenth of an inch per day. The number of shallow quakes originating in the Kilauea caldera area increased to more than 100 per day, and tremor was conspicuous by its absence. On August 26 one deep magnitude 4.5 quake under Kilauea and another of the same magnitude off the northwest coast of Hawaii were felt islandwide. The daily count of local caldera quakes decreased on August 16 and remained low for the remainder of the quarter.

There was increased seismic activity near Pahoa on the lower east rift of Kilauea during the first half of September. An average of 25 small shallow earthquakes per day was recorded by the Pahoa seismograph. Several larger quakes with magnitudes of from 3.5 to 4 were felt strongly in the Puna region; a dozen smaller ones were felt only near Pahoa. This local activity was monitored on several occasions by a portable seismograph.

Inflation of the summit area continued at a lower rate during September, and no evidence suggesting movement of magma into the lower east rift zone was recorded.

An earthquake of magnitude 4.9 was felt throughout the island just after midnight on the morning of September 18. It originated at about 5-km depth on the southeast flank of Kilauea and was followed by about 50 smaller quakes, 2 of which were felt locally, during the next 24 hours.

Seismic profiles.--During August, Observatory personnel participated with the Branch of Crustal Studies in recording seismic-refraction profiles along the northeast, southeast, and west coasts of the triangular-shaped island of Hawaii. Shots were fired at 10-km intervals from the U.S. Coast Guard Cutter Cape Small, Lt. Lloyd commanding, and were recorded along each coast by five refraction units spaced approximately at 25-km intervals.

Interpretation of the seismograms by D. P. Hill indicates that the crust is about 16 km thick under the west flanks of Mauna Loa and Hualalai, and 11 km thick under the northeast and southeast flanks of Kilauea. The crust has an intermediate thickness along the northeast

flanks of Mauna Kea and the Kohala Mountains. The velocity of P waves in the upper crust increases with depth from 2.0 to as much as 6.0 km per sec.; velocities in the upper crust are generally lower on the flanks of Kilauea than on the flanks of the other volcanoes. Clearly recorded arrivals indicate that a layer with velocities of from 6.9 to 7.3 km per sec. forms the lowermost 4-8 km of the crust under each of the coasts. The velocity of P_n under each of the coasts is about 8.2 km per sec. Anomalously high crustal velocities are associated with the major rift zones extending from the five volcanoes that form the island.

Crustal Studies participants in the Hawaii refraction program were Wayne Jackson, David Stuart, Benton Tibbetts, and Jack Clark.

Puna leveling.--A 50-mile-long network of bench marks established in 1958 across part of the active east rift zone of Kilauea volcano in the Puna area was releveled during the second half of 1964. The level lines, which follow the road network, form one large triangle which encompasses a smaller triangle, thus affording three loop closures. These were at 0.075, 0.060, and 0.015 foot, and the survey was well within 3d-order allowable error. The rift zone is crossed in three places and paralleled roughly for several miles by the level lines. Spur lines were run to the Kupapau tide gage and to the Kokoolau triangulation station along the Honolulu Landing road.

Uplift of 0.3 foot has taken place across the rift zone along the Pahoa-Kaimu line. The zone of uplift is 7 miles wide, its apex asymmetric to the north. A small graben half a mile wide and 0.3 foot deep indents the apex. The swelling is probably related to the east rift eruption of September 1961, during which much more magma moved from beneath the summit region into the rift zone than was erupted along the rift.

The Pahoa-Pohoiki crossing of the rift shows a broad region of subsidence having a maximum depression of 0.2 foot. The line paralleling the rift zone near Kapoho shows a collapse of 0.2-0.4 foot, and the road along the shore between Kapoho and Pohoiki appears to have subsided about 0.1 foot. This general area of collapse along the rift zone east of Pahoa probably was formed during the 1960 Kapoho eruption.

Three stations north of the Kapoho graben along the Honolulu Landing road show a sharp uplift of 0.5 foot, which decreases rapidly to less than 0.1 foot within a distance of $1\frac{1}{2}$ miles. This uplift suggests that some vertical movement took place on the north side of the Koae fault immediately preceding and during the Kapoho eruption in 1960. The disturbed zone in the Honolulu Landing-Pohoiki region of the rift zone is about 6 miles wide.

New bench marks set in areas covered by the 1960 flows can be compared roughly with nearby but buried 1958 bench marks. This comparison provides a thickness profile for the 1960 flows which fill the Kapoho graben beneath the present Pohoiki-Honolulu Landing road. The maximum thickness exceeds 70 feet 0.7 mile north of the Kapoho road intersection without allowing for subsidence of the graben during the eruption.

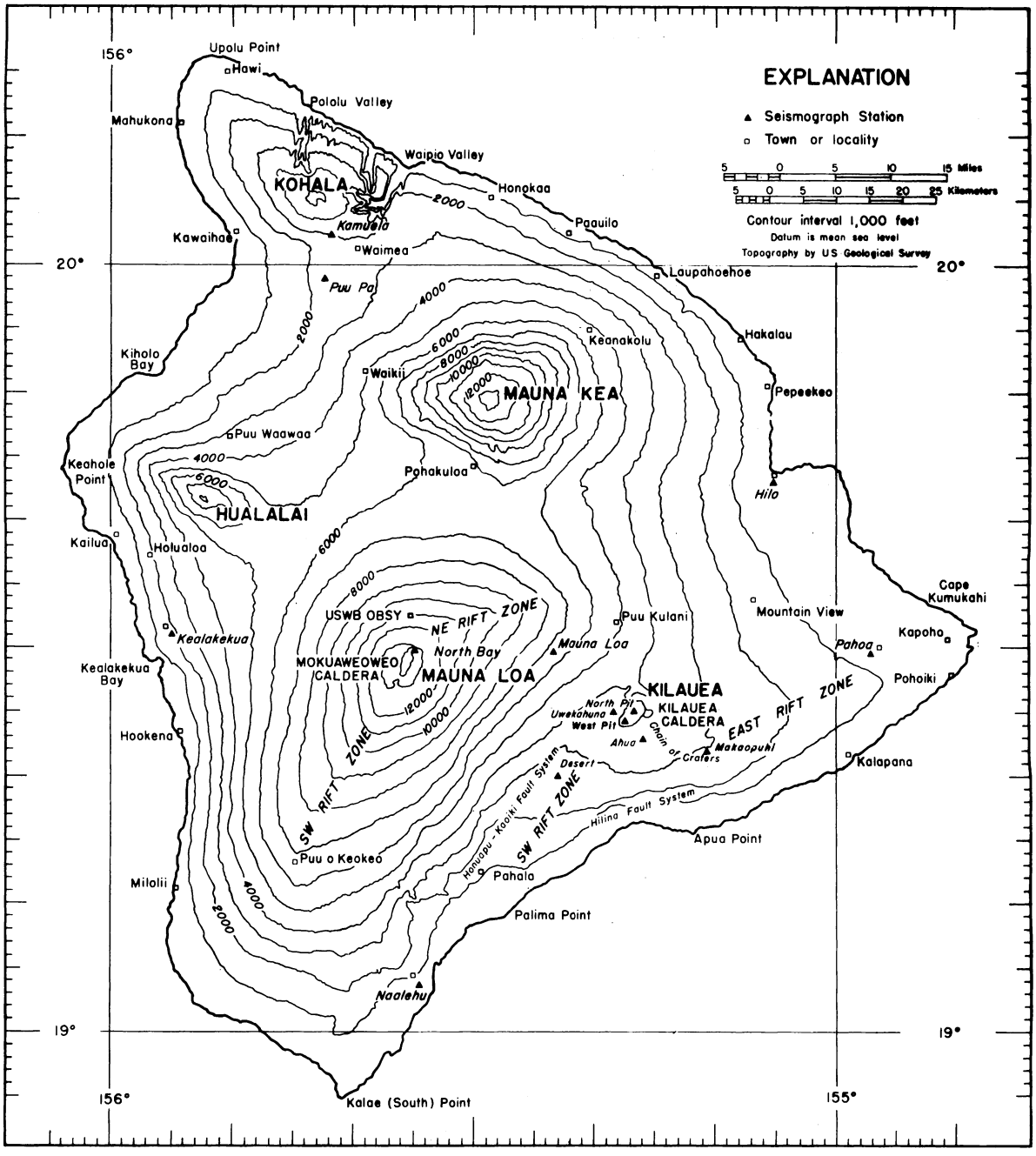

Figure 1.--Map of the island of Hawaii showing localities mentioned in the text and seismograph stations operated by the U.S. Geological Survey. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Organization of the leveling fieldwork and analysis of the results were done by R. W. Decker, who was on sabbatical leave from Dartmouth College.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault, July, August, and September, 1964

Date	N-S	E-W	Date	N-S	E-W
July 5	468	504	Sept. 6	477	488
12	469	504	13	478	486
19	470	502	20	480	482
26	472	502	27	480	479
Aug. 2	471	501			
9	471	499			
16	473	495			
23	474	495			
30	476	490			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 2)

Tilt Base	Date (1964)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1964)
		N-S	E-W			
Uwekahuna	Aug. 27	469.6	477.2	5.7	N. 40.7° W.	Apr. 29
Tree Molds	28	441.0	508.1	2.1	N. 19.7° W.	May 1
Sand Spit	Sept. 1	872.6	742.9	8.5	N. 46.7° W.	1
Kalihipaa	Aug. 27	330.6	383.9	1.9	S. 00.8° E.	Apr. 27
Keamoku	28	505.6	577.3	4.3	N. 56.2° W.	28
Ahua Kamokukolau	26	584.3	528.5	9.5	S. 6.0° W.	May 1
Kipuka Nene	Sept. 1	482.6	508.3	0.8	S. 32.3° W.	Apr. 27
Hilina Pali	Not occupied this epoch					
Kapapala Ranch	Aug. 24	493.9	504.0	0.4	S. 25.1° E.	Apr. 28

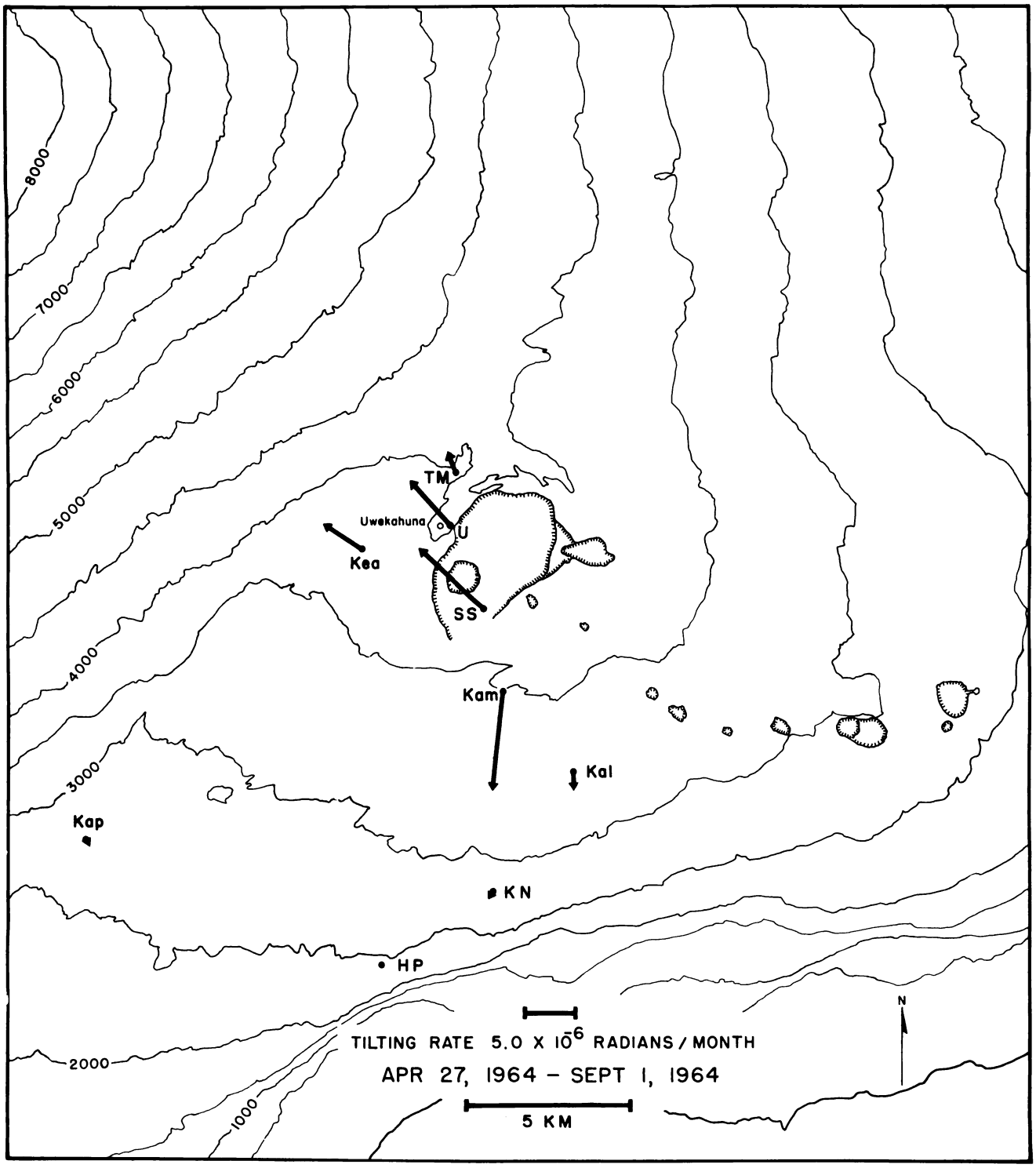

Figure 2.--Tilting of the ground around Kilauea caldera, April 27 to September 1, 1964. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, WP, MP). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1, and essential data pertaining to the stations were given in Summaries 25, 29, and 33.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes recorded by seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone (from the Pahoa seismograph); earthquakes from a source about 30 km beneath the Kilauea summit region; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank, and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern east rift	Kilauea summit 30 km	Upper east rift	Others
July 1	10	------	------	------	30	10	-----	2	21	----------
2	-----	------	------	------	33	6	-----	3	2	----------
3	-----	2	------	1	49	10	-----	4	----	----------
4	-----	------	------	------	32	7	-----	1	2	1 Mauna Kea region
5	-----	------	------	1	38	13	2	1	?	----------
6	-----	------	------	------	62+	12	-----	4	3+	1 Offshore Maui 1 Mauna Kea region
7	34	------	------	------	48	12	-----	3	-----	----------
8	-----	8	------	------	56	13	-----	4	4+	1 Kona----------
9	-----	------	------	------	33	18	-----	------	4?	----------
10	-----	------	------	------	43	12	-----	5	6	----------
11	-----	------	------	------	38	22	1	10	6	1 Mauna Kea region
12	-----	6	------	------	66	15	-----	2	4+	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern east rift	Kilauea summit 30 km	Upper east rift	Others
July 13		5			38	13		11	5	
14		3			42	6		5	3	
15	32				47	34		2	3?	
16					49	43			2	
17	4				43	11		2	1	1 Hualalai region
18					50	14		4	6	1 Mauna Kea region 1 Kohala region
19					53+	7		1	7	1 Mauna Kea region
20					47	6		9	3	
21					45	10		6	2	
22					43	24			2	
23		3		2	100	21		1		
24		4			95+	28		3	4+	
25					70	13		3	?	
26					60	34		14	2+	1 Mauna Loa region
27	5				37	10		6		2 Hualalai region
28					25+	20		4		1 Kona
29		5			25	12		9		1 Mauna Kea region
30					36	17		1	2	1 Hualalai region
31		5			40	12	9	4	1	
Aug. 1	8				33	16		3	4	1 Kona 1 Hualalai region
2	13				32	9		2	2	
3					20	5		3	1	1 Mauna Loa region
4					57	5?		1	?	1 Kona
5					53	4		1		1 Mauna Loa region
6					55	12		3	2	

Aug. 7	39	-----	-----	-----	100	5	------	-----	5	1 Kona 1 Offshore Maui
8	-----	-----	-----	-----	85	10	------	1	-----	----------
9	-----	-----	-----	-----	100	3	------	------	3	----------
10	4	-----	-----	-----	65	3	------	1	1	----------
11	-----	-----	-----	-----	85	7	------	4	4	----------
12	-----	5	-----	-----	116	16	------	3	3	----------
13	-----	-----	-----	-----	111	6	------	1	6	----------
14	-----	-----	-----	1	90	6	------	------	5	----------
15	-----	-----	9	-----	104	8	------	3	3	----------
16	-----	13	-----	1	80	8	------	------	4	----------
17	-----	-----	-----	-----	60	4	------	------	4	----------
18	-----	-----	-----	-----	50	5	------	2	-----	----------
19	-----	-----	-----	-----	28	6	------	2	12	1 Kawaihae
20	-----	2	-----	-----	30	9	------	1	5	----------
21	-----	-----	-----	-----	29	6	------	4	6	----------
22	-----	-----	-----	-----	30	6	------	1	3	----------
23	48	-----	-----	-----	37	6	1	2	2	----------
24	-----	-----	-----	-----	45	10	------	1	-----	----------
25	12	-----	-----	-----	47	6	------	3	-----	1 Mauna Kea region
26	-----	-----	-----	-----	58	2	------	3	7	1 Maui 1 Kohala region 1 Mauna Kea region
27	-----	-----	-----	-----	80	4	2	------	2	1 Mauna Kea region
28	-----	9	-----	-----	61	11	4	2	2	1 Mauna Loa region
29	-----	-----	-----	-----	83	13	26	1	3	1 Kona
30	-----	-----	-----	-----	65	7	63	2	5	----------
31	-----	-----	-----	-----	60	17	23	------	5	1 Mauna Kea region
Sept. 1	-----	-----	-----	-----	80+	8	23	4	-----	----------
2	-----	-----	-----	-----	65	9	16	------	3	----------
3	-----	5	-----	-----	60	12	10	2	3+	1 Kona 1 Mauna Loa
4	7	-----	-----	-----	39	19	15	1	13	----------
5	-----	-----	-----	-----	56	19	11	10	10	----------
6	-----	-----	-----	-----	66	16	24	4	13	----------
7	11	-----	-----	-----	30	24	34	4	2+	1 Mauna Loa 2 Kona
8	16	-----	-----	-----	74	17	9	8	5	----------
9	11	-----	-----	-----	?	22	11	6	?	----------
10	4	-----	-----	-----	51	6	11	2	3	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern east rift	Kilauea summit 30 km	Upper east rift	Others
Sept. 11					45	7	18	4		
12					47	21	92	2	12	
13					65+	9	43	2	2	
14					50	25	37	2	5	1 Kona
15		4			62	9	25	5	2	1 Kona
16					54	10	27	3	3	
17					45+	10	34	4	85+	
18			2		62	15	7	3	12+	1 Offshore Puna
19					62	11	8	3	10	1 Mauna Kea region
20					68	6	8	2	4	1 Mauna Kea region
21					63	6	2		3	
22					54	12	4	2	3	1 Mauna Kea region
23					48	8		1	1	
24					58	9	5	3	12	
25	2				88	4+	4	16	2	
26					98	14		9	6	
27					90	6			2	
28					49	4		2	4	
29					63	4			2	
30					48	4			6	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1964

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

In the following list, some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

In the following list a number of quakes are described as "Upper east rift" (see Summary 28). Further statistical study of this group which occurred in the swarm periods during July 1 to 6 and August 3 to 4 gives a mean epicenter 19°21.5' N., 155°14' W. about 2 km south of Aloi Crater at near-surface depth.

In Summary 24, "Kaoiki" was introduced as a symbol for listing any of a family of quakes with mean focus 19°24' N., 155°24' W., h=3 to 8 km. This symbol is used in the following list.

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 1	10	43	09.5	4.5	5	19°18.8'	155°06.9'	10 km SE. of Makaopuhi seismometer.	Felt in Hilo, Kilauea summit, and Puna regions.
1	10	46	49.0	2.8	5	19°18.8'	155°06.9'	10 km SE. of Makaopuhi seismometer.	----------
1	13	44	55.2	2.3	30	19°23.7'	155°18.8'	4 km SW. of Uwekahuna seismometer.	----------
2	04	19	31.0	2.4	30	19°23.8'	155°17.7'	4 km S. of Uwekahuna seismometer.	----------
3	15	03	13.0	2.2	5	19°18.2'	155°05.5'	13 km SE. of Makaopuhi seismometer.	----------
4	06	39	19.5	2.3	8	19°57.2'	155°21.9'	15 km WSW. of Laupahoehoe	----------
5	05	25	10.4	2.7	30	19°22.3'	155°19.2'	6 km W. of Ahua seismometer.	----------
7	05	40	18.0	2.3	13	20°01.5'	155°19.2'	8 km ESE. of Paauilo	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 8	08	56	48.0	2.3	8	19°36.0'	155°45.8'	20 km NE. of Kealakekua	
11	11	45	53.6	2.3	8	19°58.9'	155°10.1'	8 km ESE. of Laupahoehoe	
12	13	26	23.7	2.3	5	19°18.8'	155°07.8'	9 km SE. of Makaopuhi seismometer.	
15	18	48	03.0	3.2	10	19°19.0'	155°07.2'	9 km SE. of Makaopuhi seismometer.	Felt at Kilauea summit.
17	13	10	56.4	4.5	13	19°53.5'	155°59.2'	43 km NNW. of Kealakekua	Felt islandwide
18	14	31	10.1	2.9	13	19°50.8'	155°34.2'	24 km SSE. of Kamuela	Felt in Waikii
18	18	51	22.3	2.7	13	20°14.6'	155°38.8'	25 km N. of Kamuela	
19	04	36	31.0	2.4	13	19°53.3'	155°33.2'	21 km SE. of Kamuela	
19	09	26	11.4	2.9	45	19°12.2'	155°12.7'	20 km SSE. of Ahua seismometer.	
19	23	55	45.5	2.0	---	-------	-------	Kaoiki	
25	01	28	38.1	2.4	8	19°17.2'	155°07.9'	12 km SSE. of Makaopuhi seismometer.	
26	16	56	52.1	2.5	3	19°14.7'	155°37.9'	20 km NNW. of Naalehu	
27	07	04	22.0	2.7	3	19°40.2'	155°41.8'	31 km NE. of Kealakekua	
27	19	41	08.5	2.3	8	19°57.3'	155°49.1'	7 km SW. of Kamuela	
27	23	47	59.0	2.3	---	-------	-------	Kaoiki	
28	04	39	52.4	2.9	8	19°22.0'	155°59.0'	18 km SSW. of Kealakekua	
28	18	05	50.2	3.5	25	19°25.5'	155°15.6'	3 km E. of Uwekahuna seismometer.	Felt Kilauea summit.
28	18	06	50.5	2.6	25	19°23.8'	155°17.5'	2 km S. of Uwekahuna seismometer.	
29	07	49	03.1	2.7	8	19°51.8'	155°36.8'	20 km SSE. of Kamuela	
29	14	33	40.3	2.1	---	-------	-------	KM 30	
30	07	55	03.4	2.5	---	-------	-------	KM 30	
30	17	31	11.0	2.6	8	19°57.3'	155°51.6'	20 km SW. of Kamuela	
31	11	33	45.0	2.4	3	19°27.3'	154°55.5'	6 km SSE. of Pahoa	
Aug. 1	03	46	27.8	2.8	8	19°41.7'	155°52.8'	21 km NNE. of Kealakekua	
1	11	07	32.6	3.0	8	19°18.9'	155°54.9'	23 km S. of Kealakekua	
1	15	35	10.0	2.5	---	-------	-------	Kaoiki	
1	15	36	15.0	2.0	---	-------	-------	Kaoiki	
3	10	36	08.7	3.5	8	19°11.9'	155°33.5'	15 km NNE. of Naalehu	Felt in Pahala, Naalehu, and Kealakekua.

Aug.	3	15	39	28.4	2.4	---	-------	--------	KM 30----------	Felt at Kilauea summit.
	4	01	38	50.0	2.5	3	19°31.7'	155°48.8'	12 km ENE. of Kealakekua	----------
	4	20	14	29.4	2.1	---	--------	---------	KM 30----------	----------
	5	03	12	19.5	2.4	8	19°11.4'	155°35.5'	14 km N. of Naalehu-----	----------
	6	16	51	43.5	2.1	---	--------	---------	Kaoiki----------	----------
	7	04	56	15.0	2.7	< 3	19°26.8'	155°46.2'	18 km ESE. of Kealakekua	----------
	7	10	56	24.0	2.5	---	--------	---------	Kaoiki----------	Felt in Pahala
	7	20	45	09.0	2.9	13	21°01'	155°15'	105 km ENE. of Haleakala Maui.	----------
	9	10	17	15.5	2.2	3	19°13.8'	155°13.2'	5 km SSW. of Apua Point	----------
	9	10	20	06.1	2.2	13	19°16.2'	155°11.7'	11 km SSW. of Makaopuhi seismometer.	----------
	11	15	09	20.5	2.2	---	--------	--------	KM 30----------	Felt in Pahala
	11	15	14	05.9	2.5	30	19°21.4'	155°18.7'	6 km WSW. of Ahua seismometer.	Felt in Pahala
	13	06	27	38.9	4.5	30	19°30.0'	155°16.2'	8 km NNE. of Uwekahuna seismometer.	Felt islandwide
	14	10	51	08.5	2.8	8	19°23.2'	155°29.1'	12 km WNW. of Desert seismometer.	Felt in Pahala
	15	18	15	55.5	2.4	8	19°20.0'	154°48.0'	25 km SE. of Pahoa	----------
	16	14	09	05.0	2.1	5	19°20.5'	155°04.2'	13 km ESE. of Makaopuhi seismometer.	----------
	16	15	58	34.1	2.9	5	19°22.8'	155°30.7'	14 km WNW. of Desert seismometer.	Felt at Kilauea summit.
	19	04	50	15.5	3.3	12	20°03.8'	155°55.2'	10 km WNW. of Kawaihae	----------
	20	23	09	45.4	2.4	---	--------	---------	KM 30----------	----------
	23	09	24	53.0	2.7	3	19°15.2'	155°14.8'	14 km S. of Ahua seismometer.	----------
	24	17	30	33.0	2.0	---	--------	---------	Kaoiki----------	----------
	25	03	02	09.0	2.5	3	19°55.5'	155°34.5'	18 km SE. of Kamuela	----------
	25	21	31	01.0	2.7	43	19°13.3'	155°18.8'	15 km SSE. of Desert seismometer.	----------
	26	08	30	45.5	4.4	12	20°14'	156°09'	33 km WSW. of Upolu Point.	Felt in Hilo, Kamuela, Kealakekua Honokaa, and Kohala.
	26	19	35	29.7	2.7	8	20°00.0'	155°26.5'	10 km SSE. of Honokaa	----------
	27	14	22	10.8	2.8	5	19°26.5'	154°52.8'	9 km SE. of Pahoa	Felt in Kapoho
	27	17	42	56.5	2.6	8	19°59.5'	155°49.8'	16 km WSW. of Kamuela	----------
	27	21	26	07.9	2.4	8	19°15.3'	155°08.8'	13 km SSE. of Makaopuhi	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Aug. 28	21	10	16.5	2.2	8	19°14.2'	155°29.2'	4 km NNW. of Pahala	Felt in Pahala
29	11	07	55.7	2.4	13	19°38'	156°15'	38 km WNW. of Kealakekua	----------
30	12	20	05.1	2.8	8	19°25.8'	154°59.0'	8 km SSW. of Pahoa------	Felt in Pahoa
30	12	22	55.2	2.1	8	19°25.8'	154°59.0'	8 km SSW. of Pahoa------	Felt in Pahoa
31	07	57	47.0	3.2	5	19°27.1'	154°56.1'	5 km SSE. of Pahoa------	Felt in Pahoa, Kapoho.
31	13	25	27.5	3.3	---	--------	--------	Kaoiki----------	Felt in Pahala
31	21	57	34.0	2.6	8	20°01.6'	155°32.1'	18 km E. of Kamuela-----	Felt in Kamuela
Sept. 1	06	39	13.5	3.7	5	19°27.1'	154°56.1'	5 km SSE. of Pahoa------	Felt in Pahoa, Kilauea summit, Kapoho.
1	21	57	29.0	2.0	5	19°27.1'	154°56.1'	5 km SSE. of Pahoa------	----------
2	02	11	49.0	2.0	5	19°27.1'	154°56.1'	5 km SSE. of Pahoa------	Felt in Pahoa----
2	02	58	03.0	2.4	3	19°26.9'	154.56.0'	7 km SSE. of Pahoa------	----------
2	04	03	20.0	2.6	3	19°26.8'	154.56.0'	7 km SSE. of Pahoa------	----------
2	06	14	55.0	2.2	8	19°14.8'	155°30.0'	17 km SW. of Desert seismometer.	----------
3	00	57	59.8	2.5	3	19°32.3'	155°40.3'	12 km WNW. of North Bay seismometer.	----------
3	01	43	32.5	2.5	8	19°28.5'	155°52.0'	7 km SE. of Kealakekua	----------
3	05	46	19.5	2.7	5	19°28.2'	154°54.8'	5 km SE. of Pahoa------	Felt in Kapoho, Pahoa.
3	18	36	22.9	2.0	8	19°18.9'	155°07.3'	9 km SE. of Makaopuhi seismometer.	----------
3	19	50	58.0	2.0	---	--------	--------	Kaoiki----------	----------
5	01	26	00.0	2.6	10	19°19.0'	155°10.6'	5 km S. of Makaopuhi seismometer.	----------
6	03	09	48.5	2.5	5	19°27.2'	154°54.7'	5 km SE. of Pahoa------	----------
6	07	39	46.6	2.0	8	19°20.0'	155°03.4'	14 km ESE. of Makaopuhi seismometer.	----------
6	08	33	17.7	2.4	3	19°27.0'	154°52.9'	9 km SE. of Pahoa -----	Felt in Pahoa
7	03	35	24.7	2.7	8	19°26.2'	155°36.2'	7 km SSW. of North Bay seismometer.	----------
7	06	10	39.9	2.8	3	19°26.7'	154°53.8'	8 km SE. of Pahoa------	Felt in Pahoa
7	06	13	01.7	3.0	3	19°26.7'	154°53.8'	8 km SE. of Pahoa------	Felt in Pahoa

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 7	14	19	26.1	2.5	8	19°30.0'	155°48.6'	12 km ESE. of Kealakekua	----------
7	17	17	34.3	2.3	3	19°30.0'	155°43.0'	22 km E. of Kealakekua	----------
7	19	42	27.6	2.7	---	--------	--------	Kaoiki----------	Felt at Kilauea summit.
8	08	26	40.4	2.5	---	--------	--------	Kaoiki----------	Felt in Pahala
8	14	19	16.0	2.2	---	--------	--------	Kaoiki----------	Felt in Pahala
9	17	42	49.5	2.8	30	19°22.5'	155°20.0'	8 km NE. of Desert seismometer.	----------
9	22	17	31.8	2.4	---	--------	--------	Kaoiki----------	Felt in Pahala
10	11	09	24.4	2.4	5	19°27.7'	154°55.5'	5 km SSE. of Pahoa------	Felt in Pahoa
12	21	27	34.0	2.7	< 3	19°27.7'	154°55.7'	5 km SSE. of Pahoa------	Felt in Kapoho
13	03	39	24.0	2.7	< 3	19°26.8'	154°55.9'	7 km SSE. of Pahoa------	----------
14	06	02	12.0	3.8	3	19°26.5'	154°56.2'	7 km SSE. of Pahoa------	Felt at Kilauea summit, Hilo, Pahoa.
14	19	21	42.5	2.5	3	19°27.5'	154°54.8'	6 km SE. of Pahoa-------	----------
15	04	18	34.0	2.1	---	--------	--------	Kaoiki----------	----------
16	06	04	41.8	3.3	8	19°20.1'	155°04.8'	13 km ESE. of Makaopuhi seismometer.	Felt in Hilo, Pahoa, Kalapana.
16	18	34	03.3	2.4	3	19°25.9'	154°55.8'	8 km SSE. of Pahoa------	----------
18	00	25	29.1	4.9	5	19°18.9'	155°06.9'	9 km SE. of Makaopuhi seismometer.	Felt islandwide
18	02	07	56.8	3.6	5	19°17.9'	155°07.3'	10 km SE. of Makaopuhi seismometer.	Felt in Hilo, Kilauea summit.
18	02	21	40.0	2.5	3	19°19.1'	155°06.8'	10 km SE. of Makaopuhi seismometer.	----------
18	08	01	27.2	3.2	3	19°18.2'	155°07.5'	3 km SE. of Makaopuhi seismometer.	Felt in Pahala, Kilauea summit, Pahoa.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, and September, 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Sept. 18	06	56	50.3	2.3	8	19°08.0'	154°56.5'	30 km SE. of Apua Point	----------
19	09	54	12.4	2.3	----	----------	----------	KM 30----------	----------
19	12	06	40.2	2.1	5	19°27.2'	154°56.2'	5 km SSE. of Pahoa-----	----------
19	23	07	50.3	2.2	13	19°54.5'	155°22.1'	17 km SW. of Laupahoehoe	----------
20	02	17	36.0	2.3	13	19°52.5'	155°22.7'	18 km SW. of Laupahoehoe	----------
21	15	34	00.1	2.0	----	----------	----------	Kaoiki----------	----------
21	15	58	34.0	2.0	----	----------	----------	Kaoiki----------	----------
22	06	34	28.5	2.7	13	19°55.9'	155°34.5'	15 km SE. of Kamuela----	Felt in Kamuela
22	11	50	43.6	2.3	8	19°17.8'	155°06.9'	12 km SE. of Makaopuhi seismometer.	----------
24	16	47	42.0	2.6	3	19°21.2'	155°02.0'	17 km E. of Makaopuhi seismometer.	----------
26	00	36	27.5	3.4	25	19°22.1'	155°19.0'	9 km NE. of Desert seismometer.	Felt at Kilauea summit, Pahala, Hilo.
26	17	15	08.3	2.2	5	19°22.2'	155°25.0'	5 km NW. of Desert seismometer.	----------

Table 5.--Distant earthquakes

Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in Summary 33 . Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

July 1, 1964

M	Z	eP	13:45:05.9 c
A	Z	eP	05.8 c
N	Z	eP	06.4 c
MP	Z	eP	07.4 c

C&GS card 56-64:
13:33:10
1.8° N., 127.1° E.
Molucca Passage
h about 33 km
Magnitude 4.5 (CGS).

July 2

M	Z	Tmax	07:19:09
A	Z	Tmax	23
D	Z	Tmax	23
N	Z	Tmax	21
MP	Z	Tmax	14
U	Z	Tmax	08
Hi	Z	Tmax	07:18:50
NB	Z	Tmax	07:19:12
Ha	Z	Tmax	07:17:10

C&GS card 54-64:
06:35:18
53.4° N., 167.8° W.
Fox Islands, Aleutian Islands
h about 45 km
Magnitude 4.75-5 (Pal)
4.8 (CGS).

July 4

M	Z	iP	10:59:22.2 c
D	Z	iP	22.4 c
WP	Z	iP	23.0 c
MP	Z	eP	23.5 c
U	Z	iP	23.1 c
Pa	Z	eP	24.4 c

July 4--Continued

Hi	Z	eP	24.4 c
Ke	Z	iP	18.6 c
Ha	Z	eP	16.8 d
NB	Z	iP	21.2 c

C&GS card 53-64:
10:49:28.8
11.7° N., 144.5° E.
Mariana Islands
h about 33 km
Magnitude 6.0 (CGS).

July 5

U	PEZ	eP	19:15:47 c
Na	Z	iP	50.0 c
NB	Z	eP	49.9 c
U	PEZ	iS	19:22:03
U	PEE	eG	19:25:27
U	PEZ	eR	19:26:59

C&GS card 53-64:
19:07:57.8
26.2° N., 110.2° W.
Gulf of California
h about 29 km
Magnitude 5.75-6 (Brk),
6-6.25 (Pal), 6.0 (CGS),
6.4 (HVO).

July 5

M	Z	eP	23:45:07.1 d
NB	Z	eP	06.1 d
U	PEE	iS	23:52:31
U	PEN	eG	23:57:23
U	PEZ	eR	23:59:39

C&GS card 53-64:
23:36:01.5

Table 5.--Distant earthquakes--Continued

July 5, 1964--Continued
C&GS card 53-64:--Continued
44.8° N., 149.6° E.
Kurile Islands
h about 54 km
Magnitude 6.25 (Pas), 6-6.25 (Pal), 5.5 (CGS), 6.5 (HVO).

July 6

U	PEZ	eP	02:22:23	c
Hi	Z	eP	21.5	c
NB	Z	eP	24.3	c
U	PEZ	iS	02:28:47	
U	PEN	eG	02:32:05	
U	PEZ	iR	02:33:15	

C&GS card 55-64:
02:14:36.0
26.2° N., 110.4° W.
Gulf of California
h about 33 km
Magnitude 6-6.25 (Brk), 6-6.25 (Pal), 5.4 (CGS), and 6.8 (HVO).

July 6

M	Z	eP	07:31:11.8	d
A	Z	eP	10.8	d
D	Z	eP	11.7	d
MP	Z	eP	10.5	d
Pa	Z	iP	07.8	d
Na	Z	iP	13.4	d
Hi	Z	iP	09.4	d
Ke	Z	eP	14.6	d
Ha	Z	iP	16.7	c
NB	Z	iP	13.5	d
U	PEZ	iS	07:38:36	
U	PEN	iG	07:44:11	

C&GS card 53-64:
07:22:11.7
18.3° N., 100.4° W.
Guerrero, Mex.
More than 30 killed, many injured and considerable property damage in Guerrero.
h about 100 km
Magnitude 6.75-7 (Pas), 6.75-7 (Brk), 7.25-7.5 (Pal), 6.3 (CGS), 7.2 (HVO).

July 6

U	PEZ	eR	20:13:55

C&GS card 57-64:
19:50:42.1
21.2° S., 173.8° E.
New Hebrides Islands region
h about 22 km
Magnitude 4.8 (CGS).

July 7

M	Z	iP	07:47:10.6	d
A	Z	iP	10.0	d
D	Z	eP	09.4	d

C&GS card 54-64:
07:39:04.2
23.6° S., 179.9° W.
Fiji Islands region
h about 462 km
Magnitude 5.5 (CGS).

July 7

M	Z	Tmax	14:26:40
A	Z	Tmax	19
U	Z	Tmax	35
Pa	Z	Tmax	11
Hi	Z	Tmax	04
Ha	Z	Tmax	14:25:59

C&GS card 53-64:
13:44:40
43.4° N., 127.2° W.
Off coast of Oregon
h about 7 km
Magnitude 5.7 (CGS).

July 8, 1964

M	Z	eP	07:57:35.0 d
A	Z	eP	36.0 d
D	Z	eP	34.8 d
U	Z	iP	35.9 d
Ke	Z	iP	32.3 d

C&GS card 54-64:
07:45:48.6
3.2° N., 128.4° E.
Molucca Passage
h about 50 km
Magnitude 5.5 (CGS).

July 8

M	Z	eP	12:07:19.7 c
A	Z	eP	19.9 c
D	Z	eP	19.1 c
Pa	Z	eP	21.7 c
Na	Z	iP	18.2 c
Hi	Z	eP	21.7 d
NB	Z	iP	19.5 c
U	PEN	iS	12:17:01
U	PEN	iG	12:27:39

C&GS card 53-64:
11:55:39
5.5° S., 129.8° E.
Banda Sea
h about 165 km
Magnitude 6.5 (CGS).

July 9

U	Z	iP	11:30:34.1 d
Pa	Z	eP	35.5 d
Na	Z	iP	31.8 d
Hi	Z	iP	36.3 d
Ka	Z	eP	36.0 d
Ke	Z	iP	32.9 d
Ha	Z	eP	40.8 c
U	PEZ	iS	11:37:24
U	PEE	iSS	11:40:53
U	PEN	iG	11:41:23
U	PEZ	iR	11:43:29

C&GS card 58-64:
11:22:05.4
23.3° S., 175.7° W.

July 9--Continued

C&GS card--Continued

Tonga Islands
h about 43 km
Magnitude 5.5-5.75 (Brk), 5.7 (CGS), 6.1 (HVO).

July 9

M	Z	iP	16:48:36.0 d
A	Z	iP	35.9 d
D	Z	iP	35.2 d
U	Z	iP	35.9 d
Na	Z	eP	33.6 d
Ka	Z	eP	37.0 d
Ke	Z	iP	34.4 c
NB	Z	eP	35.3 d
U	PEZ	ipP	16:49:01 d
U	PEZ	isP	16:49:18 d
U	PEZ	iPP	16:50:32
U	PEZ	iPPP	16:51:35
U	PEE	iS	16:55:42
U	PEE	isS	16:56:35
U	PEE	eScS	16:58:00
U	PEE	iSS	16:59:21
U	PEN	iG	17:00:25
U	PEZ	i	17:03:01
Ke	Z	Tmax	17:42:47

C&GS card 57-64:
16:39:49.3
15.5° S., 167.6° E.
New Hebrides Islands
h about 121 km
Magnitude 7.5 (Pas), 7.5-7.75 (Brk), 6.6 (CGS), 7.1 (HVO).

July 11

M	Z	Tmax	10:35:11
A	Z	Tmax	13
D	Z	Tmax	25
MP	Z	Tmax	07
U	Z	Tmax	06
Pa	Z	Tmax	07
Ka	Z	Tmax	10:34:36
Ha	Z	Tmax	10:33:57

July 11--Continued

C&GS card 56-64:
09:44:18.7
59.7° N., 146.1° W.
Alaska aftershock
h about 33 km
Magnitude 5 (Pal), 5.3 (CGS).

July 11

M	Z	iP	20:33:19.3 d
D	Z	iP	20.5 d
U	Z	eP	19.5 d
Ke	Z	iP	19.3 d
U	PEZ	eS	20:39:39
U	PEZ	eR	20:44:07
M	Z	Tmax	21:17:00
D	Z	Tmax	21:17:07
MP	Z	Tmax	21:16:57
U	Z	Tmax	21:16:52
Pa	Z	Tmax	21:16:35
Hi	Z	Tmax	21:16:39
Ka	Z	Tmax	21:16:09
Ha	Z	Tmax	21:15:13
NB	Z	Tmax	21:17:00

C&GS card 56-64:
20:25:40.3
59.7° N., 146.2° W.
Alaska aftershock
h about 40 km
Magnitude 5-5.25 (Brk), 5.5-5.75 (Pal), 5.6 (CGS), 5.7 (HVO).

July 12

M	Z	eP	01:55:28.8 c
D	Z	eP	29.3 c
Pa	Z	eP	30.6 c
Na	Z	iP	29.2 c
Hi	Z	eP	28.7 c
Ke	Z	iP	25.2 c
Ha	Z	iP	18.9 c
NB	Z	eP	28.2 c
U	PEE	eS	02:03:47
U	PEE	eL	02:10:19
U	PEZ	eR	02:12:09

C&GS card 55-64:

July 12--Continued

C&GS card--Continued
01:45:25.6
38.6° N., 139.2° E.
Near west coast of Honshu, Japan
h about 13 km
Magnitude 5.25-5.5 (Pal), 6.0 (CGS).

July 13

Pa	Z	Tmax	07:28:36
NB	Z	Tmax	07:28:45

C&GS card 56-64:
06:47:54
44.7° N., 129.9° W.
Off coast of Oregon
h about 33 km
Magnitude 5.5 (CGS).

July 18

M	Z	iP	12:57:58.7 c
A	Z	iP	58.7 c
D	Z	eP	58.2 c
U	Z	eP	58.8 c
Na	Z	eP	57.5 c
Hi	Z	eP	12:58:00.5 c
Ke	Z	eP	57:55.8 c
NB	Z	eP	57:58.0 c

C&GS card 61-64:
12:45:47.7
0.2° N., 123.5° E.
Northern Celebes
h about 97 km
Magnitude 5.8 (CGS).

July 20

U	PEZ	eR	19:09:18

C&GS card 59-64:
18:49:43.5
19.8° N., 109.0° W.
Revilla Gigedo Islands region
h about 33 km
Magnitude 4.5-4.75 (Brk), 5 (Pal), 5.1 (CGS).

July 21, 1964

U	PEZ	eR	01:28:45

C&GS card 59-64:
01:09:25.8
19.8° N., 108.8° W.
Off coast of Jalisco, Mex.
h about 31 km
Magnitude 4.75-5 (Brk), 4.9 (CGS).

July 21

M	Z	iP	03:57:34.3 c
MP	Z	eP	33.7 c
Hi	Z	eP	36.5 c
Ke	Z	eP	32.0 c
U	PEE	iS	04:04:34

C&GS card 59-64:
03:48:59.1
26.0° S., 178.0° W.
Fiji Islands region
h about 222 km
Magnitude 6.5 (Pas), 5.25-5.5 (Brk), 5.8 (CGS).

July 21

A	Z	iP	13:25:08.2 c
D	Z	eP	07.7 c
MP	Z	eP	08.6 c

C&GS card 59-64:
13:13:00.2
11.5° N., 121.9° E.
Panay, Philippine Islands
h about 34 km

July 24

M	Z	iP	06:59:42.0 d
A	Z	eP	43.4 d
U	PEZ	iPP	07:01:41
U	PEE	iS	07:06:53
U	PEN	eG	07:11:13
U	PEZ	iR	07:13:13

C&GS card 60-64:
06:50:52.8
46.9° N., 153.9° E.

July 24--Continued

C&GS card--Continued
Kurile Islands
h about 33 km
Magnitude 6 (Pas), 6 (Brk), 5.9 (CGS), 6.3 (HVO).

July 24

M	Z	iP	08:21:30.3
A	Z	eP	31.4
D	Z	eP	30.6
U	PEZ	iPP	08:23:23
U	PEE	iS	08:28:39
U	PEZ	iSS	08:32:17
U	PEN	iG	08:33:08
U	PEZ	iR	08:34:48

C&GS card 59-64:
08:12:40.0
47.2° N., 153.8° E.
Kurile Islands
h about 33 km
Magnitude 6.5 (Pas), 5.9 (CGS), 6.9 (HVO).

July 24

M	Z	eP	11:04:41.5 d

C&GS card 59-64:
10:54:52.5
13.1° N., 145.0° E.
Mariana Islands
Felt: Guam
h about 43 km
Magnitude 5.6 (CGS).

July 24

M	Z	eP	13:34:26.5 d
A	Z	iP	27.4 d
U	PEE	eS	13:41:21
U	PEE	eL	13:45:41
U	PEN	eR	13:47:52

C&GS card 59-64:
13:25:18.3
47.0° N., 153.7° E.
Kurile Islands

Table 5.--Distant earthquakes--Continued

July 24--Continued

C&GS card--Continued
h about 33 km
Magnitude 5.75-6 (Brk),
5.7 (CGS), 5.7 (HVO).

July 24

M	Z	iP	13:57:19.9 d
A	Z	eP	19.6 d
D	Z	eP	18.8 d
U	Z	eP	19.7 d
Na	Z	iP	16.8 d
U	PEZ	eR	14:11:23

C&GS card 59-64:
13:47:48.6
6.6° S., 154.8° E.
Solomon Islands
h about 62 km
Magnitude 5.6 (CGS).

July 24

M	Z	iP	17:11:49.4 c
U	PEE	iS	17:18:53
U	PEE	eSS	17:22:19
U	PEN	iG	17:23:17
U	PEZ	iR	17:25:21

C&GS card 59-64:
17:02:49.2
47.1° N., 153.6° E.
Kurile Islands
h about 33 km
Magnitude 6.5 (Pas), 6 (Brk),
5.8 (CGS), 6.4 (HVO).

July 25

Hi	Z	eP	19:44:29.1 d
U	PEZ	eS	19:54:51
U	PEZ	eSS	20:01:59
U	PEZ	eR	20:14:15
M	Z	Tmax	21:29:05
A	Z	Tmax	21:28:55
D	Z	Tmax	21:29:04
Pa	Z	Tmax	21:28:38
Na	Z	Tmax	21:29:03

C&GS card 59-64:
19:31:07.0

July 25--Continued

C&GS card--Continued
27.9° S., 70.9° W.
Northern Chile
Felt: Copiapo and Vallenar
h about 26 km
Magnitude 6.5 (Pas), 6 (Brk),
6.1 (CGS).

July 25

M	Z	iP	21:41:23.2 d
U	Z	eP	24.0 d

C&GS card 59-64:
21:29:33.2
2.9° N., 128.2° E.
North of Halmahera
h about 22 km
Magnitude 5.1 (CGS).

July 28

U	PEZ	eR	19:21:40

C&GS card 59-64:
18:40:04.3
51.2° S., 139.0° E.
About 1000 km. SW. of
of Tasmania.
h about 33 km
Magnitude 5.3 (CGS).

July 30

A	Z	eP	05:26:54.5 d
D	Z	eP	55.1 d
MP	Z	iP	53.9 d
U	Z	iP	54.6 d
U	PEZ	eS	05:35:51
U	PEZ	eR	05:46:59

C&GS card 59-64:
05:16:03.3
11.1° N., 86.2° W.
Near west coast of Costa Rica
Felt: Balboa Heights C. Z.
h about 42 km
Magnitude 5.75-6 (Pal), 5.7
(CGS), 5.7 (HVO).

Table 5.--Distant earthquakes--Continued

July 31, 1964

U	PEZ	iP	06:02:22 c
Hi	Z	eP	25.2 c
U	PEE	eS	06:10:28
U	PEN	iG	06:17:12
U	PEZ	eR	06:19:40

C&GS card 61-64:
05:52:18.8
6.1° S., 149.4° E.
New Britain
h about 63 km
Magnitude 5.9 (CGS),
6.9 (HVO).

August 2

M	Z	Tmax	03:49:44
A	Z	Tmax	47
D	Z	Tmax	48
MP	Z	Tmax	43
U	Z	Tmax	40
Pa	Z	Tmax	43
Hi	Z	Tmax	22

C&GS card 61-64:
03:04:16.9
56.1° N., 156.1° W.
Alaska aftershock
h about 33 km
Magnitude 5.6 (CGS).

August 2

M	Z	eP	08:43:24.9 c
Ke	Z	eP	24.9 c
U	PEE	iG	08:51:34

C&GS card 60-64:
08:36:16.9
56.2° N., 149.9° W.
Alaska aftershock
h about 31 km
Magnitude 6 (Pas), 4.75-5 (Brk),
5.25 (Pal), 5.4 (CGS).

August 4

M	Z	eP	17:33:23.7 c
A	Z	eP	24.9 c
D	Z	eP	24.4 c
Pa	Z	iP	25.6 c
Ke	Z	eP	20.4 c
NB	Z	eP	23.0 c
U	PEZ	eR	17:47:20

C&GS card 60-64:
17:24:29.2
46.5° N., 151.1° E.
Kurile Islands
h about 101 km
Magnitude 5.5-5.75 (Brk),
5.9 (CGS), 5.7 (HVO).

August 5

M	Z	iP	11:15:21.8 c
A	Z	iP	21.1 c
D	Z	iP	21.1 c
MP	Z	iP	21.2 c
U	Z	eP	21.4 c
Pa	Z	eP	21.3 c
Hi	Z	iP	24.9 c
NB	Z	eP	21.8 c

C&GS card 63-64:
11:06:02.6
32.1° S., 179.8° E.
S. of Kermadec Islands
h about 235 km
Magnitude 6.75 (Pas), 5.5
(Brk), 5.8 (CGS).

August 5

U	PEZ	eS	22:47:30
U	PEZ	ePS	22:49:14
U	PEZ	iSS	22:54:28
U	PEZ	iR	23:07:17

C&GS card 62-64:
22:23:13.0
41.1° S., 74.9° W.
Off coast of southern Chile
h about 33 km
Magnitude 6.75 (Pas), 6.5 (Brk),
6.1 (CGS).

Table 5.--Distant earthquakes--Continued

August 6

M	Z	eP	18:31:58.0 d
A	Z	eP	58.5 d
D	Z	iP	59.0 d
M		Tmax	19:11:15
A		Tmax	11
D		Tmax	22
MP		Tmax	19
U		Tmax	20
Hi		Tmax	19:10:48
Ha		Tmax	19:09:43
NB		Tmax	19:11:19

C&GS card 60-64:
18:24:50.5
56.9° N., 152.1° W.
Alaska aftershock
h about 39 km
Magnitude 5.6 (CGS).

August 7

M	Z	Tmax	06:23:47
A	Z	Tmax	51
MP	Z	Tmax	42
U	Z	Tmax	48
Pa	Z	Tmax	50
Hi	Z	Tmax	22
Ka	Z	Tmax	01
Ha	Z	Tmax	06:22:24
NB	Z	Tmax	06:24:02

C&GS card 60-64:
05:37:25.1
56.8° N., 152.3° W.
Alaska aftershock
h about 33 km
Magnitude 5.2 (CGS).

August 7

Ha	Z	Tmax	07:50:38

C&GS card 63-64:
07:08:07
54.4° N., 164.4° W.
Unimak Island region
h about 33 km
Magnitude 4.6 (CGS).

August 7

M	Z	Tmax	09:22:56
A	Z	Tmax	54
D	Z	Tmax	52
MP	Z	Tmax	48
U	Z	Tmax	46
Pa	Z	Tmax	16
Ke	Z	Tmax	46
NB	Z	Tmax	38

No C&GS preliminary listing

August 8

M	Z	eP	15:09:29.1 c
A	Z	eP	30.5 c
D	Z	eP	29.3 c
U	Z	eP	30.0 c
Hi	Z	iP	30.8 c
NB	Z	eP	28.3 c

C&GS card 60-64:
14:59:41.2
31.7° N., 140.2° E.
South of Honshu, Japan
h about 110 km
Magnitude 5.7 (CGS).

August 8

M	Z	eP	15:55:47.0 c
A	Z	iP	46.3 c
D	Z	eP	47.0 c
U	Z	eP	46.5 c
Hi	Z	eP	45.1 c

C&GS card 61-64:
15:45:10.9
12.5° N., 87.8° W.
Off west coast of Nicaragua
Felt: San Salvador
h about 63 km
Magnitude 5.8 (CGS).

Table 5.--Distant earthquakes--Continued

August 12

M	Z	eP	07:00:33.0 c
D	Z	eP	34.6 c
MP	Z	iP	35.2 c
Hi	Z	eP	33.7 c
Ke	Z	eP	30.3 c
NB	Z	eP	33.0 c

C&GS card 63-64:
06:51:49.9
48.9° N., 153.7° E.
Kurile Islands
h about 127 km
Magnitude 5.6 (CGS).

August 13

M	Z	eP	00:40:13.7 d
D	Z	eP	12.7 d
MP	Z	eP	13.3 d
U	Z	eP	13.8 d
Na	Z	eP	09.3 d
Ke	Z	eP	09.8 d
NB	Z	iP	12.9 d
U	PEZ	iPcP	00:41:31
U	PEE	eS	00:47:24
U	PEZ	esS	00:49:32

C&GS card 65-64:
00:31:14.1
5.4° S., 154.3° E.
Solomon Islands
h about 383 km
Magnitude 6.0 (CGS).

August 18

U	PEZ	eP	04:58:09 c
U	PEE	eS	05:09:25
U	PEZ	ePS	05:10:27
U	PEZ	eSS	05:15:33
U	PEZ	eR	05:27:17

C&GS card 64-64:
04:44:58.0
26.4° S., 71.5° W.
Off coast of northern Chile
h about 8 km
Magnitude 6 (Brk), 6.4 (CGS), 6.4 (HVO).

August 24

M	Z	iP	17:38:23.1 d
A	Z	iP	23.2 d
MP	Z	iP	23.9 d
U	Z	iP	23.2 d

C&GS card 66-64:
17:26:15.1
0.2° N., 123.8° E.
Northern Celebes
h about 127 km
Magnitude 5.4 (CGS).

August 24

M	Z	eP	22:04:21.6 c
A	Z	eP	22.1 c
D	Z	eP	23.1 c
MP	Z	eP	22.1 c
NB	Z	eP	21.3 c
U	PEZ	eR	22:14:41

C&GS card 67-64:
21:56:54.2
58.4° N., 150.3° W.
Gulf of Alaska
h about 22 km
Magnitude 5.8 (CGS), 5.4 (HVO).

August 25

M	Z	iP	13:58:21.0 d
A	Z	eP	21.6 d
D	Z	eP	21.6 d
U	Z	eP	21.1 d
Pa	Z	eP	21.1 d
Na	Z	eP	23.1 d
Hi	Z	eP	19.8 d
Ka	Z	eP	17.9 d
Ke	Z	iP	19.8 d
Ha	Z	iP	12.6 c
NB	Z	eP	22.0 d
U	PEN	iS	14:07:33
U	PEE	iG	14:15:11
U	PEZ	eR	14:18:41

Table 5.--Distant earthquakes--Continued

August 25--Continued

C&GS card 66-64:
13:47:20.6
78.2° N., 126.6° E.
East of Severnaya Zemlya
h about 50 km
Magnitude 6.25-6.5 (Pas), 6.5 (Brk), 6.1 (CGS), 6.8 (HVO).

September 4

M	Z	eP	10:45:58.4 d
A	Z	eP	58.4 d
D	Z	eP	57.9 d
Ke	Z	eP	56.2 d
U	PEZ	eS	10:55:41
U	PEZ	eR	11:08:29

C&GS card 70-64:
10:34:13.1
4.0° S., 131.4° E.
West New Guinea region
h about 33 km
Magnitude 5.5-5.75 (Brk), 5.9 (CGS), 6.1 (HVO).

September 5

M	Z	iP	02:26:20.2 c
A	Z	iP	19.5 c
U	Z	iP	19.8 c
Ke	Z	iP	18.6 c
NB	Z	iP	19.3 c

C&GS card 70-64:
02:17:14.4
32.2° S., 179.5° E.
South of Kermadec Islands
h about 397 km
Magnitude 4.6 (CGS).

September 5

M	Z	eP	03:03:25.6 d
A	Z	eP	24.8 d
D	Z	eP	23.9 d
U	Z	eP	25.4 d
Na	Z	iP	22.2 d
Hi	Z	eP	28.1 d

September 5 --Continued

U	PEZ	eS	03:11:14
U	PEZ	iSS	03:15:17
U	PEN	eG	03:16:53
U	PEZ	iR	03:19:01
Ke	Z	Tmax	04:02:26
Ha	Z	Tmax	26
NB	Z	Tmax	58

C&GS card 69-64:
02:53:50.6
5.8° S., 154.0° E.
Solomon Islands
h about 69 km
Magnitude 6.4 (CGS), 6.3 (HVO).

September 6

M	Z	eP	18:51:29
U	PEN	eG	19:06:41
U	PEZ	eR	19:09:41

C&GS card 73-64:
18:41:01.8
10.0° N., 140.2° E.
West Caroline Islands
h about 33 km
Magnitude 5.1 (CGS), 5.7 (HVO).

September 12

M	Z	eP	12:53:43.4 c
A	Z	eP	43.9 c
D	Z	eP	42.9 c
Pa	Z	iP	45.6 c
Na	Z	iP	41.0 c
Hi	Z	iP	45.7 c
Ka	Z	iP	42.5 c
Ke	Z	iP	40.2 c
Ha	Z	iP	40.9 c
NB	Z	eP	42.3 c
U	PEE	eS	13:02:21
U	PEN	eG	13:09:41
U	PEZ	eR	13:12:23

C&GS card 72-64:
12:43:19.0
4.4° S., 144.0° E.
Near north coast of New Guinea

September 12--Continued

C&GS card--Continued
h about 120 km
Magnitude 6.5 (Pas), 6.25-6.5 (Brk), 6.3 (CGS), 6.1 (HVO).

September 12

M	Z	eP	15:26:42.4	d
A	Z	iP	42.2	d
Na	Z	iP	39.1	d
Hi	Z	iP	44.6	d
Ka	Z	eP	45.1	d
Ke	Z	eP	40.2	d
Ha	Z	eP	46.8	d
NB	Z	iP	41.9	d

C&GS card 71-64:
15:19:22.3
17.4° S., 179.9° W.
Fiji Islands region
h about 561 km
Magnitude 4.25-4.5 (Brk), 5.8 (CGS).

September 12

M	Z	eP	22:18:56.4	c
A	Z	iP	55.4	c
D	Z	iP	55.0	c
U	Z	iP	55.6	c
Hi	Z	eP	56.8	c
Ke	Z	eP	53.7	c
NB	Z	eP	22:18:50.0	c
U	PEZ	ePP	22:22:05	
U	PEE	iS	22:28:55	
U	PEN	iPPS	22:29:59	
U	PEZ	iSS	22:33:54	
U	PEZ	eSS	22:37:19	
U	PEN	iG	22:39:21	
U	PEZ	iR	22:42:36	

C&GS card 72-64:
22:07:03.2
49.1° S., 164.2° E.
Auckland Islands region
h about 33 km
Magnitude 7.5 (Pas), 7.5 (Brk), 6.9 (CGS), 6.7 (HVO).

September 14

A	Z	iP	10:24:54.2	c
MP	Z	iP	54.2	c
Hi	Z	iP	**51.1**	**c**
Ka	Z	eP	48.3	c
Ke	Z	eP	52.8	c
NB	Z	iP	53.6	c

C&GS card 72-64:
10:17:46.6
56.7° N., 157.4° W.
Alaska Peninsula
h about 61 km
Magnitude 5.7 (CGS).

September 14

M	Z	eP	13:43:31.6	c
A	Z	eP	29.1	c
D	Z	eP	30.7	c
U	Z	eP	30.1	c

C&GS card 72-64:
13:33:33.7
15.0° N., 93.2° W.
Near coast of Chiapas, Mex.
Felt: Western El Salvador
h about 64 km
Magnitude 4.9 (CGS).

September 15

M	Z	iP	05:49:58.7	d
A	Z	eP	58.7	d
U	Z	iP	58.9	d

C&GS card 72-64:
05:37:45.4
0.1° S., 124.6° E.
Molucca Sea
h about 33 km
Magnitude 5.3 (CGS).

September 15

U	PEZ	iPP	15:48:11	d
U	PEZ	ePS	15:57:24	
U	PEE	eSS	16:03:50	
U	PEN	iG	16:14:05	

Table 5.--Distant earthquakes--Continued

September 15, 1964--Continued

U	PEZ	eR	16:19:06

C&GS card 73-64:
15:29:32.2
8.9° N., 93.1° E.
Nicobar Islands region
h about 37 km
Magnitude 5.5 (Pal),
6.2 (CGS).

September 16

M	Z	iP	01:58:17.4 d
A	Z	eP	18.1 d
D	Z	iP	18.4 d
Ha	Z	eP	10.5 d
U	PEZ	eS	02:04:21
U	PEZ	eR	02:09:13
M	Z	Tmax	02:41:36
A	Z	Tmax	35
D	Z	Tmax	37
U	Z	Tmax	33
Pa	Z	Tmax	34
Ha	Z	Tmax	02:40:11
NB	Z	Tmax	02:41:39

C&GS card 74-64:
01:50:33.9
60.0° N., 147.1° W.
Gulf of Alaska
h about 29 km
Magnitude 5.75 (Pas),
5.75-6 (Pal),
5.5 (CGS),
5.8 (HVO).

September 21

M	Z	eP	04:31:01.9 d
A	Z	eP	01.1 d
U	Z	iP	01.5 d
Hi	Z	iP	04.9 d
Ke	Z	iP	00.3 d
Ha	Z	iP	07.2 d
NB	Z	iP	01.6 d

C&GS card 74-64:
04:23:19.7
21.8° S., 179.6° W.
Fiji Islands region

September 21--Continued

C&GS card--Continued

h about 609 km
Magnitude 5.4 (CGS).

September 23

M	Z	eP	05:06:36.5 c
A	Z	eP	37.3 c
D	Z	eP	37.6 c
U	Z	eP	37.0 c

C&GS card 76-64:
04:59:47.4
53.6° N., 163.9° W.
Unimak Island region
h about 29 km
Magnitude 5-5.5 (Brk),
5.5 (CGS).

September 24

M	Z	Tmax	14:41:29
A	Z	Tmax	17
MP	Z	Tmax	16
U	Z	Tmax	17
Pa	Z	Tmax	01
Ha	Z	Tmax	14:40:47

C&GS card 76-64:
13:59:36.8
43.5° N., 127.5° W.
Off coast of Oregon
h about 14 km.

September 27

U	Z	eP	15:58:09.7
U	PEZ	eR	16:07:53
M	Z	Tmax	16:37:41
A	Z	Tmax	31
MP	Z	Tmax	30
U	Z	Tmax	31
Pa	Z	Tmax	22
Ka	Z	Tmax	16:36:50
Ha	Z	Tmax	16:35:56
NB	Z	Tmax	16:37:31

Table 5.--Distant earthquakes--Continued

September 27, 1964--Continued

C&GS card 76-64:
15:50:54.7
56.6° N., 152.0° W.
Kodiak Island region
h about 27 km
Magnitude 5.25 (Brk),
5.4 (CGS),
5.5 (HVO).

September 28

M	Z	Tmax	16:25:00
A	Z	Tmax	16:24:51
MP	Z	Tmax	53
U	Z	Tmax	53
Pa	Z	Tmax	39
Hi	Z	Tmax	23
Ha	Z	Tmax	20
NB	Z	Tmax	16:25:12

C&GS card 76-64:
15:43:13.6
43.5° N., 127.1° W.
Off coast of Oregon
h about 33 km
Magnitude 4.8 (CGS).

During the quarter "felt reports" were either phoned or mailed in by the following persons and agencies, to whom we wish to express our gratitude for these and other instances of cooperation:

Kilauea summit area

Mrs. V. Hansen
Mrs. M. Gorder
Mr. B. Loucks
Mr. and Mrs. C. Wentworth
Mr. and Mrs. W. Mist
Mr. R. Koyanagi
Miss M. English
Mr. and Mrs. G. Yong
Mr. and Mrs. A. Yamamoto

North Hawaii

Mrs. E. Lindsey
Mrs. P. Richards
Mrs. R. Eklund
Mrs. A. Paiva
Dr. F. Tabrah
Geotech seismic station
Mr. Yuen
Mrs. E. Christianson
Mrs. E. Fergustrom
Mrs. Vredenburg,
Mrs. A. Walker

Hilo region

Mrs. T. Crabb
Mrs. H. Lewis
Mr. and Mrs. R. Baldwin
Mr. C. Shoemaker
Miss E. Patten
Mr. C. Okamura
Mrs. T. Ingledue
Mrs. M. Shaeffer
Mrs. M. Veriato
Mr. B. B. Blackwood
Mr. E. Endo
Mr. S. Ho
Civil Defense Office
Mr. H. Pierce
Mr. J. Bryan
Miss M. Tulley
Mrs. A. Elliot
Mr. A. Green

Puna

Mr. H. Warner
Mrs. C. Guerino
Mrs. Ruthven
Miss Y. Kimura
Mr. G. Hay
Mrs. H. Hoopai
Mr. Edwards
Mrs. Kongo Kimura
Mrs. Kimiko Kimura
Mr. and Mrs. Takahashi
Mr. R. Williamson

Kau

Mrs. A. Paiva
Rev. D. Thompson
Mrs. Billings
Mr. Hunter
Mrs. Ashton
Mrs. Carvalho

Kona region

Miss A. Greenwell
Mr. M. Sutherland
Mr. R. Apple
Miss N. Wallace
Mr. E. Glass
Mr. Johnston

Central Hawaii

Pohakuloa Military Camp
Mauna Loa Observatory
Kulani Honor Camp

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 36

October, November, and December, 1964

By

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Willie T. Kinoshita, and Howard A. Powers

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Chronological summary

Relative quiet reigned throughout the fourth quarter of 1964. Modest net inflation was registered for the period.

A few felt quakes were scattered through October, including one of magnitude 5.5 located offshore 83 km southwest of Milolii in South Kona. A spurt of inflationary tilt between October 17 and November 6 was indicated on the short-base tiltmeter. Total seismicity was very low.

October 20 marked the beginning of a month of increase in tremor; several minutes of short bursts and a few spasms of half-hour duration were recorded almost daily. A swarm of deep Kilauea quakes occurred on October 28-29; about 60 shocks were recorded, the largest of magnitude 3.5. Tilt drifted erratically during this time and until December 27. During November 11 through 14 a flurry of small shallow earthquakes took place along the lower east rift of Kilauea. More than 50 shocks were recorded at Pahoa, 3 of which were mildly felt near Kapoho.

An earthquake of magnitude near 5 occurred on December 2 at 22:29. It was reported felt on Oahu and Maui, as well as throughout Hawaii. It originated from a seismically active zone 30 km beneath Kilauea summit. An aftershock from the same source with magnitude 4 was felt on Hawaii on December 3 at 07:56 and a swarm of more than 300 smaller shocks from the same source, ranging in magnitude from 0.5 to 2.5, continued during the week following. Eight other felt quakes from various source areas were scattered through December. Scattered bursts of tremor continued and totaled nearly 700 minutes during December.

The lava lake in Alae Crater solidified completely by early October, as indicated by temperature gradient and releveling. All level stations on the lake showed subsidence after the end of September for the first time; stations above the liquid rose during each relevel period so long as any liquid remained. Twelve core holes were completed, and the drilling equipment was removed from the crater on December 16.

A level line and a loop of closure were established on the upper 5 miles of slope to the north edge of Mokuaweoweo caldera on Mauna Loa. Releveling of this line and loop will yield a measure of summit inflation and deflation. It is logistically impossible to operate the water-level tiltmeter surveys around the remote summit of the big volcano.

R. W. Decker returned to Dartmouth College in December after completing 6 months of special studies of a program for monitoring structural events at Kilauea.

Mr. Rodrigo Saenz R., a scientist from the government of Costa Rica, has joined the staff at the Hawaiian Volcano Observatory to learn methods of study that have proved useful here. Mr. Saenz will conduct monitoring studies of Cost Rican volcanoes when he returns to Costa Rica.

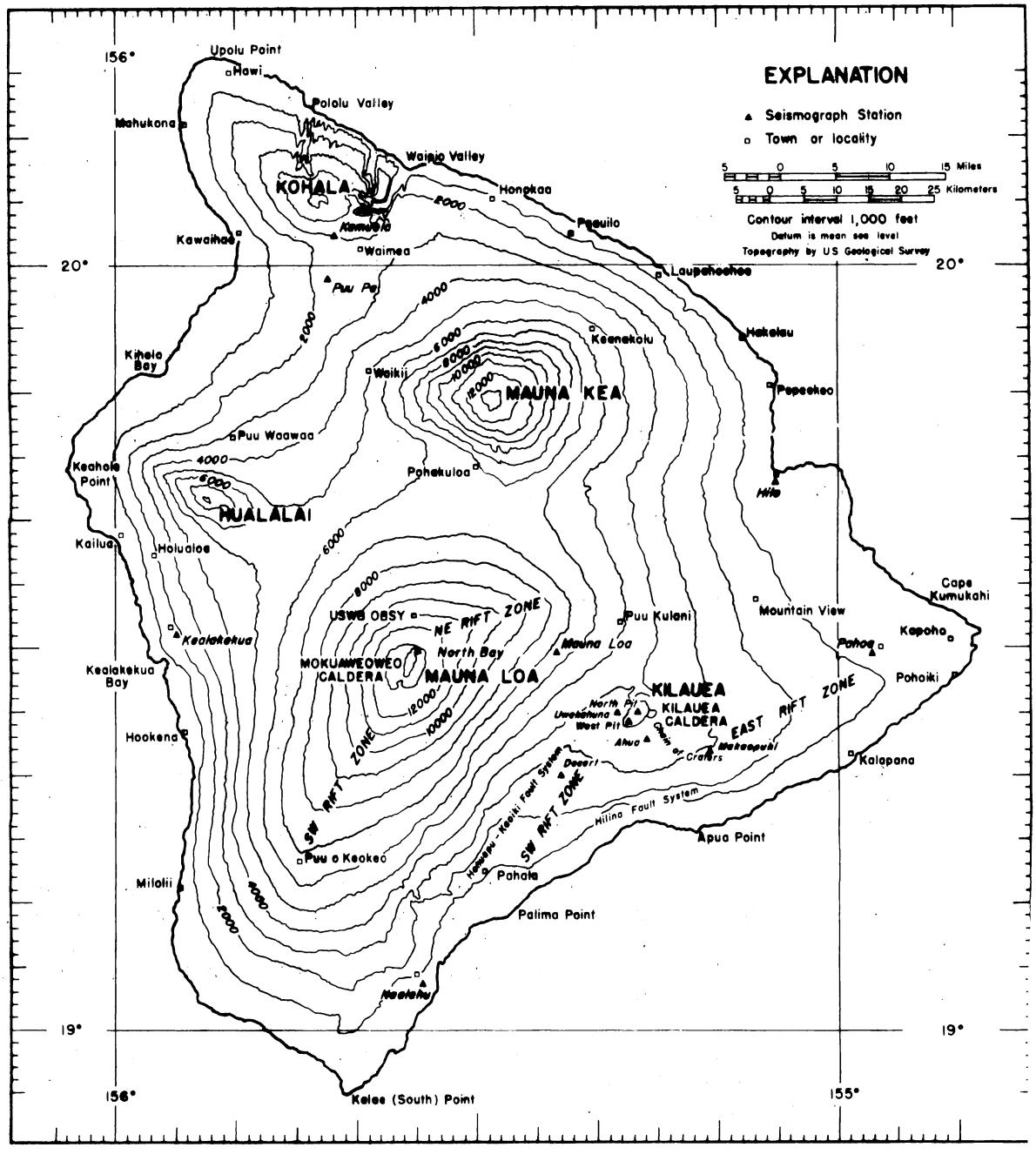

Figure 1.--Map of the island of Hawaii showing seismograph stations operated by the Geological Survey and localities mentioned in the text. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 1.--Tilt coordinates at Uwekahuna Vault, October, November, and December, 1964

Date	N-S	E-W	Date	N-S	E-W
Oct. 4	482	476	Dec. 6	482	470
11	482	478	13	483	467
18	482	476	20	483	465
25	484	472	27	483	465
Nov. 1	486	472			
8	487	465			
15	483	467			
22	481	467			
29	482	470			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera (fig. 2).

Tilt Base	Date (1964)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1964)
		N-S	E-W			
Uwekahuna	Dec. 10	488.5	455.5	8.2	N. 49.0° W.	Aug. 27
Tree Molds	Dec. 7	451.6	512.7	3.4	N. 23.5° W.	Aug. 28
Sand Spit	Dec. 11	893.2	717.4	9.6	N. 51.1° W.	Sept. 1
Kalihipaa	Dec. 8	320.4	381.3	3.1	S. 19.3° E.	Aug. 27
Keamoku	Dec. 11	506.1	563.5	3.9	N. 87.8° W.	Aug. 26
Ahua Kamokukolau	Dec. 10	540.7	523.0	12.5	S. 7.2° W.	Aug. 26
Kipuka Nene	Dec. 14	480.4	506.8	0.7	S. 34.3° W.	Sept. 1
Hilina Pali	Dec. 7	498.0	494.4	0.5	S. 88.5° W.	Apr. 30
Kapapala Ranch	Dec. 9	493.6	505.9	0.6	S. 81.5° E.	Aug. 24
Mehana	Dec. 10	547.4	552.8	2.2	N. 28.9° E.	Sept. 2

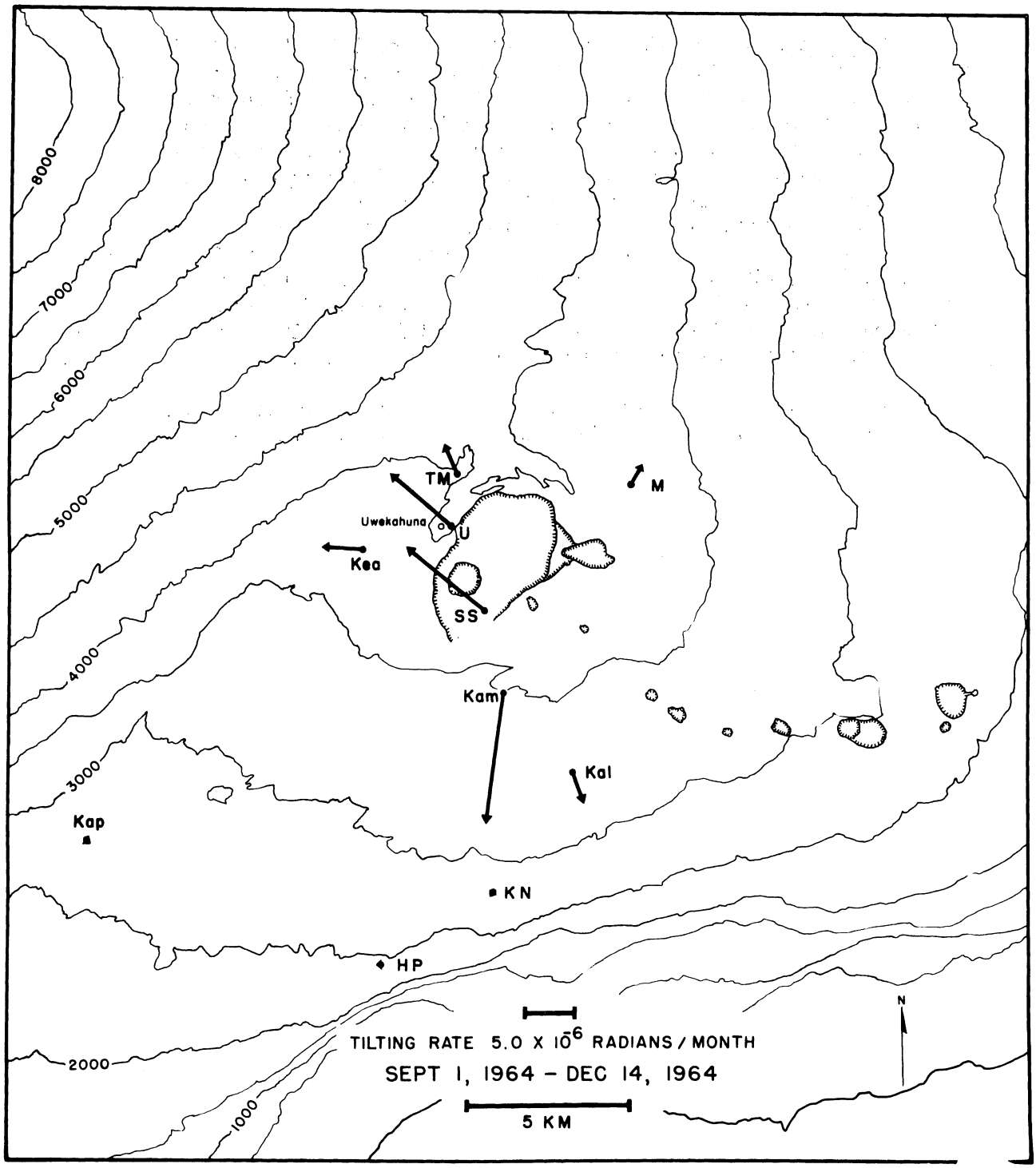

Figure 2.--Tilting of the ground around Kilauea caldera, Sept. 1-Dec. 14, 1964. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, WP, MP). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1, and essential data pertaining to the stations are listed in table 6, Summary 33.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes recorded by seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Halemaumau rock slides, which are detected by the characteristic record they produce on the North Pit seismograph; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone (from the Pahoa seismograph); earthquakes from a source about 30 km beneath the Kilauea summit region; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank, and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Intermediate	Shallow	Halemaumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern east rift	Kilauea summit 30 km	Upper east rift	Others
Oct. 1	33	------	-------	------	52	10	------	6	3	1 Mauna Loa south flank. 1 Mauna Kea
2	----	------	-------	------	53	7	4	1	----	1 South shore of Hawaii.
3	----	------	-------	------	50	6	1	2	----	----------
4	----	------	-------	------	53	8	2	3	6	----------
5	----	------	-------	------	55	5	1	-----	8	----------
6	----	------	-------	------	33	3	------	-----	9	1 Mauna Kea region
7	----	------	-------	------	45	6	------	1	4	----------
8	----	------	-------	------	31	5	------	-----	3	----------
9	----	------	-------	------	30	6	1	-----	4	1 Mauna Kea
10	----	------	-------	------	26	9	------	1	----	----------
11	3	------	-------	------	42	8	------	3	----	1 off S.W. shore of Hawaii.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern east rift	Kilauea summit 30 km	Upper east rift	Others
Oct. 12	----	-----	-----	1	62	10	----	2	----	1 Kona----------
13	9	-----	-----	-----	60	7	1	2	4	----------
14	----	-----	-----	-----	54	6	1	4	6	1 Kona----------
15	----	-----	-----	-----	65	5	1	-----	6	----------
16	----	-----	-----	1	68	22	----	4	14	----------
17	----	-----	-----	-----	73	16	----	2	11	----------
18	----	-----	-----	1	76	10	----	-----	----	----------
19	----	-----	-----	-----	87	10	----	-----	----	----------
20	31	-----	-----	-----	65	10	----	3	6	----------
21	----	14	2	-----	110	10	----	5	3	----------
22	----	16	7	-----	70	11	----	8	5+	----------
23	----	8+	-----	-----	75	12	----	6	6+	1 off south shore of Hawaii.
24	----	15+	-----	-----	43	14	----	-----	3	----------
25	----	27	-----	-----	65	11	----	5	6+	----------
26	----	21	-----	-----	75	6	----	4	8	1 Kona----------
27	6	-----	-----	-----	95	10	1	8	4	1 Kona----------
28	25	-----	-----	-----	60	12	----	32	----	----------
29	±25	-----	-----	-----	68	7	----	27	3	1 off south shore Hawaii.
30	35	-----	-----	-----	95	16	----	8+	6	----------
31	----	54	-----	-----	70	20	1	7	3	1 Mauna Loa S. flank
Nov. 1	55	-----	8	-----	40	4	----	6	10	2 Mauna Kea
2	25	24	-----	-----	54	5	4	3	3	----------
3	25	-----	-----	-----	43	5	2	2	3	----------
4	11	21	-----	-----	45	15	----	4	3	1 Kona 1 Mauna Loa
5	----	15	-----	-----	65	10	1	3	3	----------
6	8	-----	7	-----	38+	5+	1	2	4	----------
7	----	9	-----	-----	35	4+	1	2+	----	----------

Nov. 8	7	----	-----	------	38	8	3	3	----	----------
9	----	6	-----	------	40	9	5	----	6	1 off south shore
10	----	17	3	------	58	8	15	2	----	----------
11	----	42	15	------	40	13	17	10	----	----------
12	----	----	-----	------	50	15	34	5	5	1 Kona----------
13	----	----	-----	------	35	13	16	3	----	----------
14	----	----	-----	------	30	22+	8	1+	1	----------
15	18	----	10	1	43	11	10	2	6	----------
16	----	6	-----	------	56	18	3	3	2	----------
17	----	----	2	------	43	11	4	8	3	1 East flank Mauna Kea.
18	----	----	-----	------	66	25	2	1	5	----------
19	----	----	-----	------	80	13	1	----	3	----------
20	----	3	-----	------	58	15	----	3	2	1 offshore Kona
21	----	----	-----	------	70	10	----	7	4	----------
22	----	9	-----	------	45	9	----	8	3	----------
23	----	----	65	2	130+	11	----	7	4	----------
24	----	----	-----	------	70	13	----	13	6	1 Kona
25	----	----	-----	------	60	7	----	4	5	1 Mauna Kea
26	----	----	-----	------	72	12	3	4	3	1 Mauna Loa
27	----	----	-----	------	65	9	----	5	3	1 Kona
28	12	----	-----	------	65	10	----	4	4	----------
29	30	----	-----	------	63	17	----	5	2	1 Mauna Loa
30	124	----	-----	------	54+	8	----	1	3	----------
Dec. 1	----	61	-----	------	25	10	----	3	4	----------
2	----	----	5	------	48+	20	----	210+	4	----------
3	----	----	-----	------	33	10	----	46	4	1 Kona
4	----	115+	-----	1	90+	16	8	31	38+	2 Mauna Loa 1 Kona
5	----	46±	-----	------	70	13	1	22	4	----------
6	----	85+	-----	1	80+	19	----	12	16+	----------
7	----	47	-----	------	45	9	1	7	5	1 Mauna Loa 1 Kona
8	----	----	-----	------	48	8	3	3	4	----------
9	----	----	-----	------	85	15	2	21	31	----------
10	----	2	-----	------	58	6	----	3	3	----------
11	----	----	-----	------	63	11	7	6	17	1 Mauna Kea 1 Kohala
12	----	9	3	------	38	17	----	4	7	3 Mauna Loa
13	----	----	-----	------	30	10	3	8	20	1 Kona 1 Mauna Kea 1 Mauna Loa

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1964)	Tremor (in minutes)			Earthquakes						
	Deep	Inter-mediate	Shallow	Hale-maumau slides	Kilauea caldera	SW. rift and Kaoiki	Eastern east rift	Kilauea summit 30 km	Upper east rift	Others
Dec. 14	----	-----	3	------	30	10	2	4	7	1 Hilo 1 Kona
15	----	-----	10	4	65±	14	----	2	3	----------
16	----	-----	------	2	68	11	1	2	7	1 Kona
17	----	-----	7	------	61	6	----	2	9	1 Mauna Kea
18	----	33	8	------	25	11	----	1	7	1 Kohala
19	----	-----	3	------	25	(?)	2	2(?)	1	----------
20	9	11	------	------	45+	1+	----	2+	2+	----------
21	----	-----	3	1	40	6	----	1	----	----------
22	----	12	------	------	50	3	4	2	3	----------
23	----	-----	------	------	75	6	1	14	12	----------
24	----	-----	15±	------	94	13	----	4	5	----------
25	----	4	------	------	115+	8	3	5	2	1 Mauna Loa
26	3	-----	------	------	98	8(?)	----	5	----	----------
27	----	7+	------	------	114+	14	3	2	4	1 Kona
28	2	-----	------	1	91	9	2	3	4	----------
29	3(?)	-----	------	------	122	11	----	4	5	----------
30	----	4+	------	------	125+	4	1	4	13	----------
31	30	-----	------	------	148	6(?)	2	1	4	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1964

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

In the following list, some origin times are followed only by "KM 30" and a statement of magnitude. These are all members of a continuing family of quakes noted also in other Summaries. The best mean focus for this group is beneath Halemaumau at a depth of 30 km (19°24.1' N., 155°17.1' W.).

The mean focus of the magnitude 6.1 Kaoiki fault system earthquake of June 27, 1962, and its aftershocks is 19°24' N., 155°25' W., at a depth of 3-8 km. This focus has been abbreviated "Kaoiki."

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 1	15	09	32.2	3.3	8	19°12.0'	155°35.0'	15 km N. of Naalehu	Pahala and Naalehu----
1	17	18	06.0	2.4	13	19°59.4'	155°17.7'	7 km W. of Laupahoehoe	----------
2	08	59	33.2	2.5	3	19°11.8'	155°27.9'	2 km ESE. of Pahala	----------
6	06	39	37.4	2.1	8	19°18.9'	155°12.8'	8 km SW. of Makaopuhi seismometer.	----------
6	14	35	34.4	2.0	8	19°16.8'	155°13.7'	11 km SW. of Makaopuhi seismometer.	----------
6	18	26	39.5	2.0	3	19°23.5'	155°05.2'	12 km ENE. of Makaopuhi seismometer.	----------
6	02	48	42.0	2.4	8	19°57.3'	155°48.5'	16 km SW. of Kamuela	----------
7	09	36	10.0	2.0	3	19°24.3'	155°04.1'	13 km ENE. of Makaopuhi seismometer.	----------
8	06	56	29.0	2.2	---	--------	---------	KM 30----------	----------
9	05	41	58.5	2.0	3	19°17.4'	155°10.3'	5 km NE. of Apua Point	----------
9	23	31	14.0	2.0	8	19°51.1'	155°33.8'	24 km SSE. of Kamuela	----------
11	00	06	42.8	5.5	13	18°47'	156°37'	83 km SW. of Milolii	Hawaii, Maui, Oahu
12	01	48	11.7	3.0	---	--------	---------	KM 30----------	Volcano----------
12	22	15	46.0	2.0	8	19°36.2'	155°49.8'	14 km NE. of Kealakekua	----------
14	08	43	55.0	3.4	---	--------	---------	KM 30----------	Pahala, Puna, Volcano, and Hilo.
14	22	19	13.5	2.0	8	19°23.2'	155°49.2'	18 km SE. of Kealakekua	----------
16	01	07	53.0	2.1	3	19°21.3'	155°03.0'	14 km E. of Makaopuhi seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 17	16	20	17.2	3.7	5	19°19.8'	155°05.7'	11 km ESE. of Makaopuhi seismometer.	Volcano, Paauilo, Hilo.
20	11	38	22.3	3.3	---	--------	---------	KM 30----------	Volcano, Pahala
22	11	45	37.4	2.8	45	19°13.8'	155°18.8'	15 km SE. of Desert seismometer.	----------
23	06	58	49.3	2.6	8	19°19.9'	154°59.5'	3 km SW. of Kalapana	----------
23	19	13	26.6	3.6	30	19°01.1'	155°24.8'	20 km ESE. of Naalehu	Pahala and Naalehu
25	23	53	35.4	2.4	35	19°11.4'	155°08.5'	20 km SSE. of Makaopuhi seismometer.	----------
26	23	27	05.0	2.3	3	19°22.0'	155°53.8'	2 km SSE. of Hookena	----------
27	09	55	59.0	3.7	---	--------	---------	KM 30----------	Volcano
27	20	15	38.0	2.3	---	--------	---------	KM 30----------	----------
27	20	58	59.0	3.2	8	19°23.2'	155°49.4'	9 km E. of Hookena	----------
28	14	50	58.7	2.0	---	--------	---------	KM 30----------	----------
29	00	55	59.6	2.2	---	--------	---------	KM 30----------	----------
29	03	00	00.3	2.4	---	--------	---------	KM 30----------	----------
29	06	06	14.3	2.0	---	--------	---------	KM 30----------	----------
29	10	19	46.9	2.4	30	19°01.1'	155°29.8'	11 km ESE. of Naalehu	----------
29	16	10	58.7	2.9	---	--------	---------	KM 30----------	----------
29	16	47	50.1	2.0	---	--------	---------	KM 30----------	----------
30	18	26	14.2	2.2	10	19°17.8'	155°09.6'	9 km SSE. of Makaopuhi seismometer.	----------
30	19	18	02.9	2.0	8	19°23.6'	154°59.0'	12 km SW. of Pahoa	----------
31	05	35	48.5	2.9	8	19°11.0'	155°39.0'	14 km NNW. of Naalehu	----------
31	11	23	27.7	2.5	10	19°18.3'	155°10.2'	7 km S. of Makaopuhi seismometer.	----------
Nov. 1	00	41	50.1	2.5	3	19°55.0'	155°40.0'	16 km SSE. of Kamuela	----------
1	17	54	32.8	2.5	3	19°53.0'	155°36.2'	20 km SE. of Kamuela	----------
4	11	47	46.7	2.1	15	19°21.7'	155°28.0'	9 km WNW. of Desert seismometer.	----------
4	13	45	28.3	2.7	5	19°30.0'	155°42.8'	22 km E. of Kealakekua	----------
4	21	18	53.1	3.2	---	--------	---------	Kaoiki----------	Pahala----------
5	04	44	48.9	2.1	---	--------	---------	Kaoiki----------	----------
5	06	16	47.5	2.6	5	19°25.1'	155°01.1'	11 km SW. of Pahoa----	Pahoa----------

Nov. 6	05	27	37.9	2.5	----	--------	---------	KM 30----------	Pahoa----------
7	22	46	20.3	2.0	----	--------	---------	KM 30----------	----------
9	13	47	17.4	2.3	5	19°17.0'	155°01.1'	9 km SW. of Kalapana	----------
10	06	26	25.5	2.0	3	19°25.0'	155°04.0'	14 km ENE. of Makaopuhi seismometer.	----------
10	23	25	28.7	3.4	----	--------	--------	Kaoiki----------	Pahala and Volcano
11	22	46	25.6	2.2	----	--------	--------	Kaoiki----------	----------
12	01	24	26.1	2.8	8	19°38.7'	155°59.2'	1 km E. of Kailua----	----------
12	03	00	32.7	3.1	8	19°23.5'	154°56.4'	12 km S. of Pahoa----	Felt
12	22	08	10.7	2.5	3	19°26.0'	154°54.6'	8 km SSE. of Pahoa---	Kapoho----------
14	15	53	18.5	3.3	----	--------	---------	Kaoiki----------	Felt----------
15	09	56	25.4	2.4	35	19°26.5'	155°14.6'	5 km ENE. of Uwekahuna seismometer.	----------
17	17	04	16.0	2.5	3	20°04.9'	155°27.8'	1 km SE. of Honokaa	----------
18	03	15	29.0	3.0	10	19°18.1'	155°10.0'	7 km SSE. of Makaopuhi seismometer.	----------
20	16	17	24.0	3.2	13	19°10'	156°20'	59 km SW. of Kealakekua	----------
21	14	55	09.0	2.3	----	--------	---------	KM 30----------	----------
24	01	54	12.3	2.7	----	--------	---------	KM 30----------	Pahala----------
24	03	41	15.3	2.1	10	19°18.1'	155°10.9'	6 km S. of Makaopuhi seismometer.	----------
24	06	50	41.0	3.2	8	19°27.6'	155°56.7'	9 km SE. of Kealakekua	Kealakekua---------
24	16	12	41.1	2.4	10	19°18.6'	155°00.6'	6 km SW. of Kalapana	----------
25	22	10	32.4	2.1	10	19°17.5'	155°09.8'	8 km SSE. of Makaopuhi seismometer.	----------
25	23	41	25.8	2.2	8	19°49.1'	155°15.9'	23 km WNW. of Hilo	----------
26	18	00	21.5	2.7	Shallow depth	19°25.6'	155°41.5'	15 km SW. of North Bay seismometer.	----------
27	13	46	14.0	2.5	3	19°22'	156°17'	43 km WSW. of Kealakekua	----------
29	07	11	51.0	2.3	3	19°11.8'	155°40.4'	18 km NW. of Naalehu	----------
29	16	42	39.3	2.0	3	19°17.9'	155°28.2'	10 km WSW. of Desert seismometer.	Pahala, Pahoa
Dec. 2	04	12	32.0	2.6	10	19°15.6'	155°06.5'	14 km SE. of Makaopuhi seismometer.	----------
2	22	28	40.0	4.7	----	--------	---------	KM 30----------	Hawaii, Maui, Oahu
2	22	31	43.3	3.5	----	--------	---------	KM 30----------	Volcano, Pahala
2	22	34	45.8	2.4	----	--------	---------	KM 30----------	----------
2	22	36	46.2	2.3	----	--------	---------	KM 30----------	----------
2	22	44	03.4	2.0	----	--------	---------	KM 30----------	----------
2	22	48	26.9	2.3	----	--------	---------	KM 30----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 2	23	05	11.8	2.1	----	--------	-------	KM 30----------	----------
2	23	11	11.3	2.7	----	--------	-------	KM 30----------	----------
2	23	13	16.3	2.0	----	--------	-------	KM 30----------	----------
2	23	13	37.7	2.2	----	--------	-------	KM 30----------	----------
2	23	20	32.5	2.0	----	--------	-------	KM 30----------	----------
3	00	15	35.9	2.8	----	--------	-------	KM 30----------	Pahala----------
3	01	19	09.3	2.0	----	------	-------	KM 30----------	----------
3	01	22	42.5	2.1	----	------	-------	KM 30----------	----------
3	01	24	48.3	2.0	30	19°16.3'	155°18.2'	12 km SE. of Desert seismometer.	----------
3	01	35	47.8	2.1	----	--------	-------	KM 30----------	----------
3	05	54	40.8	2.7	----	--------	-------	KM 30----------	----------
3	07	56	00.5	4.0	----	--------	-------	KM 30----------	Volcano, Naalehu, Hilo.
3	12	17	04.0	2.0	3	19°32.1'	155°57.1'	5 km WNW. of Kealakekua	----------
3	12	19	25.0	2.0	8	19°17.9'	155°10.5'	8 km S. of Makaopuhi seismometer.	----------
3	15	40	16.2	2.3	----	--------	---------	KM 30----------	----------
3	18	21	24.0	2.5	----	--------	---------	KM 30----------	----------
4	02	01	45.9	2.0	----	--------	---------	KM 30----------	----------
4	03	16	35.8	2.1	----	--------	---------	KM 30----------	----------
4	04	24	19.0	2.2	5	19°30.5'	155°48.1'	13 km E. of Kealakekua	----------
4	12	17	42.7	2.5	10	19°11.4'	155°37.6'	15 km NNW. of Naalehu	----------
4	12	45	36.1	2.6	8	19°11.8'	155°37.1'	15 km NNW. of Naalehu--	----------
6	16	52	04.8	2.3	40	19°27.6'	155°05.9'	10 km SSW. of Mt. View	----------
6	20	06	57.4	2.2	5	19°20.5'	155°03.5'	14 km ESE. of Makaopuhi seismometer.	----------
7	03	24	12.6	2.8	8	19°29.1'	155°50.9'	9 km ESE. of Kealakekua	----------
7	06	13	38.0	2.0	13	19°26.6'	155°36.2'	6 km SSW. of North Bay seismometer.	----------
8	23	37	09.9	2.0	30	19°19.3'	155°16.8'	7 km SSW. of Ahua seismometer.	----------
9	00	06	30.1	2.0	----	--------	---------	Kaoiki----------	----------
10	01	53	45.0	5.0	10	19°18.5'	155°12.2'	7 km SW. of Makaopuhi seismometer.	Naalehu, Volcano, Puna, Hilo, Kona, and Laupahoehoe.

Dec.	10	02	03	03.2	2.3	5	19°16.7'	155°12.1'	10 km SW. of Makaopuhi seismometer.	----------
	10	04	12	04.2	2.4	10	19°18.1'	155°11.6'	7 km SSW. of Makaopuhi seismometer.	----------
	10	05	52	04.6	3.2	----	--------	---------	KM 30----------	Hilo, Volcano, Pahala, and Naalehu.
	11	03	51	43.6	2.7	10	19°52.1'	155°22.8'	7 km SW. of Keanakolu	----------
	11	20	07	18.0	3.4	10	20°06.0'	155°53.1'	9 km NW. of Kawaihae	Kamuela----------
	12	17	20	56.4	2.1	3	19°28.5'	155°36.0'	Mokuaweoweo Caldera	----------
	12	20	33	09.2	2.1	13	19°41.0'	155°38.1'	15 km SW. of Pohakuloa	----------
	12	23	21	14.7	2.4	8	19°27.2'	155°26.4'	7 km SW. of Mauna Loa seismometer.	----------
	13	02	14	00.5	2.1	3	19°59.1'	155°34.1'	14 km ESE. of Kamuela	----------
	13	16	26	56.3	2.3	10	19°12.0'	155°36.1'	15 km N. of Naalehu	----------
	13	19	30	19.7	3.8	3	19°23.3'	155°49.7'	8 km E. of Hookena	Volcano and Kealakekua
	14	04	37	27.9	3.4	10	19°39.3'	155°12.2'	15 km WSW. of Hilo	Hilo, Volcano, Pahala
	14	07	03	14.8	2.3	10	19°22.8'	155°12.7'	6 km E. of Ahua seismometer.	----------
	14	10	19	03.4	2.1	----	--------	---------	KM 30----------	----------
	14	13	21	32.8	2.3	5	19°47.5'	155°57.7'	4 km WNW. Puuwaawaa	----------
	15	07	30	38.2	2.5	10	19°21.1'	155°12.8'	4 km WSW. of Makaopuhi seismometer.	----------
	16	09	16	18.0	2.5	Shallow depth	19°31.1'	155°50.8'	8 km E. of Kealakekua	----------
	17	08	11	46.0	2.4	13	19°55.9'	155°33.9'	17 km SE. of Kamuela	----------
	17	11	47	46.9	3.2	----	--------	---------	Kaoiki----------	Pahala and Volcano
	18	20	14	34.7	2.0	8	19°11.2'	155°26.9'	4 km ESE. of Pahala	----------
	18	21	46	51.5	2.8	30	20°09.1'	155°49.0'	17 km NW. of Kamuela	----------
	24	03	18	27.1	2.2	----	--------	---------	KM 30----------	----------
	24	06	43	31.1	2.4	----	--------	---------	KM 30----------	----------
	24	14	39	59.6	3.2	----	--------	---------	Kaoiki----------	Felt----------
	24	17	39	25.9	2.1	5	19°21.8'	155°12.5'	5 km W. of Makaopuhi seismometer.	----------
	25	13	23	49.5	2.4	10	19°25.3'	155°34.7'	8 km S. of North Bay seismometer.	----------
	25	13	54	28.0	2.5	----	--------	---------	Kaoiki----------	----------
	25	14	23	07.5	2.6	----	--------	---------	Kaoiki----------	----------
	26	13	38	02.3	2.1	----	--------	---------	KM 30----------	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1964--Continued

Date (1964)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 27	10	11	01.2	2.8	8	19°52.0'	156°07.8'	16 km NW. of Keahole Point	----------
27	20	16	37.7	2.5	---	--------	---------	Kaoiki----------	----------
30	04	30	31.0	2.3	8	19°18.7'	155°13.6'	8 km SW. of Makaopuhi seismometer.	----------
31	01	31	51.7	2.5	10	19°18.8'	155°08.3'	8 km SE. of Makaopuhi seismometer.	----------

Table 5.--Distant earthquakes

Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in table 6. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin time, focal depth, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

October 1, 1964

Pa	Z	Tmax	11:41:25

C&GS card 76-64:
11:00:48.3
43.5° N., 126.9° W.
Off coast of Oregon
h about 33 km.

October 1

Pa	Z	Tmax	19:15:06

C&GS card 79-64:
18:30:01.9
49.3° N., 128.8° W.
Vancouver Island region
h about 9 km
Magnitude 4.5-4.75 (Brk)
5.3 (CGS).

October 2

A	Z	iP	13:09:37.2 c
D	Z	iP	36.2 c
WP	Z	iP	37.2 c
MP	Z	eP	37.7 c
U	Z	eP	37.2 c
Pa	Z	eP	38.9 c
Na	Z	eP	33.9 c
Hi	Z	iP	39.8 c
NB	Z	iP	36.0 c
Ha	Z	iP	13:09:36.0 c
U	PEZ	eS	13:16:54
U	PEZ	eR	13:24:30

C&GS card 77-64:
13:00:39.7
10.5° S., 162.4° E.
Solomon Islands
h about 68 km
Magnitude 6.0 (CGS)
6.0 (HVO).

October 2

A	Z	Tmax	23:14:48
D	Z	Tmax	23:15:06
WP	Z	Tmax	23:14:46
MP	Z	Tmax	23:14:46
U	Z	Tmax	23:14:53
Pa	Z	Tmax	23:14:34
NB	Z	Tmax	23:15:03
Ha	Z	Tmax	23:13:30

C&GS card 78-64:
22:23:32.4
59.7° N., 144.5° W.
Gulf of Alaska
h about 22 km
Magnitude 5.2 (CGS).

October 6

U	PEZ	eR	07:53:22

C&GS card 78-64:
07:17:57.1
36.2° S., 100.9° W.
Southern Pacific Ocean
h about 33 km
Magnitude 5.5 (CGS).

October 6

U	PEZ	ePP	14:51:42
U	PEZ	ePPS	15:02:50
U	PEN	eSS	15:08:26
U	PEE	eL	15:19:42

Table 5.--Distant earthquakes--Continued

October 6, 1964--Continued

C&GS card 81-64:
14:31:19.2
40.3° N., 28.2° E.
Turkey
19 killed, several injured, extensive property damage in western Turkey.
Felt widely throughout Black Sea region.
h about 10 km
Magnitude 6.75-7 (Pas), 6.75-7 (Brk), 6.25 (Pal), 6.0 (CGS), and 7.2 (HVO).

October 10

M	Z	eP	19:46:31.8 c
A	Z	eP	32.3 c
D	Z	eP	32.8 c

C&GS card 79-64:
19:38:47.7
60.4° N., 146.1° W.
Southern Alaska
h about 44 km
Magnitude 4.5-4.75 (Brk), 5.3 (CGS).

October 10

M	Z	iP	20:14:24.1 c
A	Z	iP	24.6 c
D	Z	iP	25.1 c
Ke	Z	iP	24.4 c

C&GS card 78-64:
20:06:39.8
60.5° N., 145.4° W.
Southern Alaska
h about 31 km
Magnitude 5.4 (CGS).

October 11, 1964

M	Z	iP	21:27:32.9 c
D	Z	eP	32.4 c
MP	Z	eP	33.6 c
U	Z	eP	33.0 c
Na	Z	eP	31.2 c
Hi	Z	eP	34.2 c
Ke	Z	eP	29.2 c
U	PEN	eS	21:38:01
U	PEN	iG	21:49:17
U	PEZ	eR	21:53:41

C&GS card 81-64:
21:15:03.9
0.6° S., 121.7° E.
Northern Celebes
h about 33 km
Magnitude 6.25-6.5 (Pal), 6.3 (CGS), 6.3 (HVO).

October 12

M	Z	Tmax	10:49:41
A	Z	Tmax	48
D	Z	Tmax	51
WP	Z	Tmax	47
MP	Z	Tmax	42
U	Z	Tmax	43
Pa	Z	Tmax	36

C&GS card 81-64:
09:14:52.2
55.9° S., 144.1° W.
South Pacific Cordillera
h about 33 km
Magnitude 5.3 (CGS).

October 12

M	Z	eP	15:54:49.9 d
A	Z	eP	50.1 d
NB	Z	eP	49.1 d
U	PEZ	eS	16:04:41
U	PEZ	eR	16:19:01

C&GS card 81-64:
15:42:54.7
3.0° N., 126.7° E.
Talaud Islands
h about 59 km

October 12, 1964--Continued

C&GS card--Continued
Magnitude 5.75-6 (Pal), 5.9 (CGS), and 5.9 (HVO).

October 12

M	Z	eP	22:06:20.1 c
A	Z	eP	18.9 c
D	Z	eP	19.4 c
MP	Z	eP	18.7 c
U	PEN	eS	22:15:11
U	PEE	eL	22:22:41
U	PEZ	eR	22:25:41

C&GS card 79-64:
21:55:33.2
31.3° S., 110.8° W.
Easter Island region
h about 25 km
Magnitude 6.25 (Pas)
6.25 (Brk)
5.75 (Pal)
6.0 (CGS), 5.9 (HVO).

October 13

U	PEZ	eR	11:05:36

C&GS card 80-64:
10:38:59.3
3.3° S., 149.9° E.
Bismarck Sea
h about 59 km
Magnitude 5.1 (CGS).

October 14

U	PEZ	eR	03:31:17

C&GS card 79-64:
03:04:59.6
33.4° N., 141.8° E.
Off east coast of Honshu, Japan
h about 33 km
Magnitude 5.6 (CGS).

October 15

M	Z	eP	20:35:56.8 c
MP	Z	eP	58.3 c
U	PEE	eS	20:43:39
U	PEE	eG	20:48:11
U	PEZ	eR	20:50:35

C&GS card 80-64:
20:26:53.5
44.7° N., 149.8° E.
Kurile Islands
h about 49 km
Magnitude 5.2 (CGS), 6.7 (HVO).

October 15

M	Z	Tmax	23:46:09
A	Z	Tmax	16
NP	Z	Tmax	06
WP	Z	Tmax	03
MP	Z	Tmax	05
U	Z	Tmax	09
Pa	Z	Tmax	05
Hi	Z	Tmax	23:45:38
NB	Z	Tmax	23:46:24
Ha	Z	Tmax	23:44:39

C&GS card 80-64:
22:59:43.6
56.8° N., 151.9° W.
Kodiak Island region
h about 33 km
Magnitude 5.2 (CGS).

October 16

M	Z	eP	07:08:46.3 c
D	Z	eP	47.1 c
MP	Z	eP	47.5 c
U	PEE	iS	07:16:11
U	PEE	iG	07:20:59
U	PEZ	eR	07:23:21

C&GS card 81-64:
06:59:38.6
44.3° N., 149.5° E.
Kurile Island
h about 33 km
Magnitude 5.5 (CGS), 6.5 (HVO).

October 16

M	**Z**	eP	08:27:35.5	c
D	Z	eP	36.0	c
MP	Z	eP	36.8	c
Pa	Z	eP	37.2	c
NB	Z	eP	34.8	c
U	PEE	iS	08:34:59	
U	PEE	eG	08:39:41	
U	PEZ	eR	08:42:21	

C&GS card 83-64:
08:18:28.3
44.6° N., 149.4° E.
Kurile Islands
h about 33 km
Magnitude 6-6.25 (Pal),
5.2 (CGS), 6.5 (HVO).

October 16

M	Z	eP	09:27:28.3	d
D	Z	eP	28.9	d
MP	Z	eP	29.8	d
U	PEE	iS	09:34:59	
U	PEN	eG	09:39:41	
U	PEZ	eR	09:41:57	

C&GS card 81-64:
09:18:16.6
44.5° N., 149.1° E.
Kurile Islands
h about 33 km
Magnitude 5.4 (CGS), 6.5 (HVO).

October 18

M	Z	iP	12:43:57.1	c
A	Z	iP	57.6	c
D	Z	iP	57.0	c
NP	Z	iP	57.6	c
WP	Z	iP	57.7	c
MP	Z	iP	57.8	c
U	Z	iP	57.8	c
Na	Z	iP	55.9	c
Hi	Z	iP	59.2	c
Ke	Z	iP	55.0	c
NB	Z	iP	57.0	c

October 18--Continued

C&GS card 83-64:
12:32:24.1
7.0° S., 124.0° E.
Banda Sea
h about 574 km
Magnitude 5.8 (CGS).

October 23

U	PEN	iG	02:34:01
U	PEZ	eR	02:38:12

C&GS card 85-64:
01:56:03.2
19.8° N., 56.0° W.
North Atlantic Ocean
h about 31 km
Magnitude 6.75 (Pas)
6.5 (Brk)
6.4 (CGS).

October 23

U	PEZ	eR	21:30:34

C&GS card 85-64:
21:06:24.2
44.0° N., 147.5° E.
Kurile Islands
h about 45 km
Magnitude 5.9 (CGS).

October 24

M	Z	Tmax	07:25:33
A	Z	Tmax	36
NP	Z	Tmax	33
WP	Z	Tmax	31
U	Z	Tmax	32
Pa	Z	Tmax	19

C&GS card 87-64:
06:44:38
44.4° N., 130.0° W.
Off coast of Oregon
h about 33 km
Magnitude 4.7 (CGS).

October 25

M	Z	iP	12:16:33.1 c
D	Z	eP	32.2 c
NP	Z	iP	32.7 c
WP	Z	iP	32.8 c
MP	Z	iP	32.8 c
U	Z	eP	32.8 c
Pa	Z	eP	34.2 c
Na	Z	iP	29.4 c
Hi	Z	iP	35.7 c
Ke	Z	iP	31.1 c
NB	Z	eP	32.5 c
Ha	Z	iP	38.0 c

C&GS card 85-64:
12:08:46.9
21.7° S., 179.2° W.
Fiji Islands region
h about 534 km
Magnitude 5.5 (CGS).

October 26

M	Z	iP	14:34:55.4 d
A	Z	iP	55.5 d
WP	Z	iP	55.6 d

C&GS card 86-64:
14:22:57.8
2.2° N., 126.8° E.
Molucca Passage
h about 48 km
Magnitude 6.0 (CGS).

October 26

M	Z	Tmax	15:19:15
Ha	Z	Tmax	15:17;47

C&GS card 84-64:
14:32:49.3
56.8° N., 152.3° W.
Kodiak Islands region
h about 33 km
Magnitude 5.0 (CGS).

October 27

U	PEZ	eR	22:19:19

C&GS card 84-64:
21:24:31.2
45.6° S., 96.1° E.
Southeast Indian Rise
h about 33 km

November 1

M	Z	Tmax	05:42:31
A	Z	Tmax	30
D	Z	Tmax	49
NP	Z	Tmax	32
U	Z	Tmax	33
Pa	Z	Tmax	36
Hi	Z	Tmax	43
NB	Z	Tmax	58
Ha	Z	Tmax	05:41:56

C&GS card 85-64:
04:55:47.4
51.8° N., 130.8° W.
Queen Charlotte Islands region
h about 33 km
Magnitude 4.9 (CGS).

November 1

M	Z	iP	12:37:51.9 c
D	Z	iP	52.0 c
NP	Z	eP	52.4 c
MP	Z	eP	52.7 c
U	Z	eP	52.1 c
Ke	Z	eP	48.9 c
NB	Z	eP	51.2 c

C&GS card 88-64:
12:26:06.2
3.1° N., 128.1° E.
North of Halmahera
h about 65 km
Magnitude 5.75-6 (Pal), 6.3 (CGS).

November 3

M	Z	eP	12:55:09.9 c
A	Z	eP	10.2 c
MP	Z	eP	10.4 c
NB	Z	eP	08.7 c

C&GS card 88-64:
12:43:04.7
0.1° N., 123.7° E.
Northern Celebes
h about 149 km
Magnitude 5.4 (CGS).

Table 5.--Distant earthquake--Continued

November 6, 1964

U	PEZ	eR	10:17:10

C&GS card 93-64:
09:53:22.4
44.4° N., 149.0° E.
Kurile Islands
h about 60 km
Magnitude 5.5-5.75 (Pal),
5.7 (CGS).

November 8, 1964

MP	Z	eP	02:55:50.9
U	PEN	ePPS	03:06:53
U	PEN	eSS	03:10:45
U	PEZ	eR	03:19:29

C&GS card 93-64:
02:43:57
49.0° S., 163.7° E.
Auckland Islands region
h about 33 km
Magnitude 6.5 (Pas),
6.25-6.5 (Pal),
6.3 (HVO).

November 12

U	PEN	eG	05:51:50

C&GS card 103-64:
05:33:29
18.2° S., 176.4° W.
Fiji Islands region
h about 107 km
Magnitude 5.2 (CGS).

November 16

M	Z	Tmax	03:29:10
A	Z	Tmax	15
D	Z	Tmax	26
NP	Z	Tmax	24
WP	Z	Tmax	23
MP	Z	Tmax	03
U	Z	Tmax	10
Pa	Z	Tmax	03:29:00
Ka	Z	Tmax	09

November 16--Continued

NB	Z	Tmax	26
Ha	Z	Tmax	03

C&GS card 96-64:
02:46:43
36.9° N., 121.8° W.
Central California
Minor damage at Corralitos, Morgan Hill, San Jose and Santa Cruz.
h about 33 km
Magnitude 5.25 (Pas)
5 (Brk)
5.2 (CGS).

November 17, 1964

M	Z	iP	08:25:34.9 c
A	Z	iP	34.9 c
D	Z	iP	34.1 c
WP	Z	iP	35.0 c
U	Z	iP	35.1 c
Na	Z	iP	32.1 c
Hi	Z	eP	37.2 c
Ke	Z	eP	31.9 c
NB	Z	iP	33.8 c
Ha	Z	iP	34.2 d
U	PEZ	iPP	08:27:38
U	PEE	iS	08:33:42
U	PEZ	eSS	08:37:25
U	PEN	iG	08:39:43
U	PEZ	iR	08:42:19

C&GS card 92-64:
08:15:39.3
5.7° S., 150.7° E.
New Britain region
h about 45 km
Magnitude 7.25 (Pas), 7-7.25 (Brk), 6.7 (CGS), 7.25 (HVO).

November 17, 1964

M	Z	iP	11:11:04.0 d
A	Z	iP	03.7 d
D	Z	iP	03.1 d
WP	Z	eP	03.4 d
MP	Z	iP	03.7 d
U	Z	iP	03.5 d
Pa	Z	iP?	05.1 d
Hi	Z	eP?	06.2 c
NB	Z	eP	03.9 d
Ke	Z	iP	01.9 c

C&GS card 96-64:
11:03:06.8
23.4° S., 179.9° W.
South of Fiji Islands
h about 549 km
Magnitude 5.5 (CGS).

November 17, 1964

M	Z	iP	17:53:04.3 d
A	Z	eP	03.7 d
WP	Z	iP	04.4 d

C&GS card 92-64:
17:40:57.4
0.1° S., 122.9° E.
Northern Celebes
h about 160 km
Magnitude 5.4 (CGS).

November 18

M	Z	iP	14:45:05.4 c
D	Z	iP	04.6 c
Hi	Z	eP	06.3 c
Ka	Z	eP	04.4 c
Ke	Z	eP	01.3 c
Ha	Z	eP	03.5 c
U	PEN	eG	15:00:13
U	PEZ	iR	15:03:05

C&GS card 92-64:
14:34:54.5
6.0° S., 148.2° E.
New Britain region
h about 49 km
Magnitude 6.1 (CGS)
6.25 (HVO).

November 19

M	Z	iP	23:45:09.0 c
A	Z	eP	09.3 c
D	Z	eP	08.1 c
MP	Z	eP	09.5 c
Hi	Z	eP	11.1 c
Ke	Z	iP	05.8 c
U	PEN	iS	23:53:16
U	PEN	iG	23:59:24
U	PEZ	iR	00:02:16

C&GS card 95-64:
23:35:06.0
6.0° S., 150.8° E.
New Britain region
Slight damage at Walindi
h about 3 km
Magnitude 6.75 (Pas)
6.75 (Brk)
6.0 (CGS), 6.7 (HVO).

November 20

M	Z	eP	23:42:13.9
MP	Z	eP	15.4
U	PEN	eG	23:54:52
U	PEZ	eR	00:00:24

C&GS card 93-64:
23:33:08.9
44.6° N., 149.7° E.
Kurile Islands
h about 33 km
Magnitude 5.6 (CGS), 6.2 (HVO).

November 21

A	Z	eP	02:28:35.4 d
MP	Z	eP	36.0 d

C&GS card 95-64:
02:16:44.5
1.0° N., 124.0° E.
Northern Celebes
h about 248 km
Magnitude 5.8 (CGS).

November 22, 1964

M	Z	iP	02:45:45.0 d
A	Z	iP	44.6 d
MP	Z	iP	45.0 d
Pa	Z	eP	46.7 c
Na	Z	iP	41.2 c
Hi	Z	iP	02:45:47.4 c
Ke	Z	iP	42.7 c
NB	Z	iP	44.5 d
Ha	Z	iP	49.7 c

C&GS card 94-64:
02:38:29.0
17.9° S., 178.5° W.
Fiji Islands region
h about 563 km
Magnitude 5.0 (CGS).

November 23

M	Z	eP	22:27:58.4 d

C&GS card 92-64:
22:15:47.0
0.1° S., 124.5° E.
Molucca Sea
h about 66 km
Magnitude 5.7 (CGS).

November 24

M	Z	iP	12:52:48.3 c
D	Z	iP	48.3 c
MP	Z	iP	48.9 c
U	Z	eP	48.7 c
Pa	Z	eP	51.9 c
NB	Z	eP	48.0 c
U	PEE	eS	13:02:34
U	PEZ	eSS	13:07:21
U	PEZ	iR	13:15:41

C&GS card 93-64:
12:40:51.4
13.1° N., 124.7° E.
Luzon, Philippine Islands
h about 5 km
Magnitude 6.1 (CGS)
6.9 (HVO).

November 25, 1964

M	Z	iP	09:35:42.9 d
A	Z	iP	42.8 d
D	Z	eP	42.1 d
MP	Z	iP	43.3 d
U	Z	eP	43.1 d
NB	Z	eP	41.6 d

C&GS card 94-64:
09:24:08.9
4.3° S., 122.2° E.
Celebes
h about 610 km
Magnitude 6.2 (CGS).

November 27

M	Z	eP	13:57:47.2 d
D	Z	eP	47.5 d
Na	Z	iP	48.5 d

C&GS card 93-64:
13:47:42.7
37.9° N., 138.3° E.
Near west coast of Honshu, Japan
h about 36 km
Magnitude 5.5 (CGS).

November 30

U	PEN	eG	13:11:44
U	PEZ	eR	13:16:44

C&GS card 95-64:
12:27:38.6
6.8° N., 94.8° E.
Nicobar Islands region
h about 33 km
Magnitude 6.5-6.75 (Pal), 5.7 (CGS).

November 30

M	Z	eP	19:01:11.7 d
WP	Z	eP	11.6 d
MP	Z	eP	11.3 d
Hi	Z	eP	14.5 d

C&GS card 98-64:
18:53:11.4
24.0° S., 179.9° E.
South of Fiji Islands
h about 550 km
Magnitude 5.5 (CGS).

November 30

M	Z	iP	22:47:37.2 d
A	Z	iP	38.2 d
D	Z	iP	38.2 d
NP	Z	iP	37.7 d
WP	Z	iP	37.9 d
MP	Z	iP	38.2 d
U	Z	iP	37.6 d
Hi	Z	eP	35.1 d

C&GS card 94-64:
22:40:46.0
53.7° N., 167.7° W.
Fox Islands, Aleutian Islands
h about 69 km
Magnitude 5.0 (CGS).

December 2

M	Z	eP	13:26:34.5 c
A	Z	eP	36.3 c
D	Z	eP	36.8 c
MP	Z	eP	37.0 c
U	Z	eP	35.9 c

C&GS card 93-64:
13:18:29.0
53.8° N., 165.4° W.
Fox Islands, Aleutian Islands
h about 35 km
Magnitude 5.0 (CGS).

December 5-6

U	PEZ	eR	00:18:42

C&GS card 94-64:
23:55:59.2
54.0° N., 161.5° E.
Near east coast of Kamchatka
h about 39 km
Magnitude 5.0 (CGS).

December 6

M	Z	eP	04:38:08.0

C&GS card 98-64:
04:27:16
2.3° S., 138.3° E.
West New Guinea
h about 33 km
Magnitude 5.0 (CGS).

Table 5.--Distant earthquakes--Continued

December 7, 1964

M	Z	iP	09:08:32.9 c
A	Z	eP	33.0 c
D	Z	eP	32.1 c
WP	Z	eP	33.1 c
U	Z	eP	32.9 c
Pa	Z	eP	35.1 c
Na	Z	iP	30.4 c
Hi	Z	iP	35.4 c
Ka	Z	eP	32.1 c
Ke	Z	iP	29.5 c
NB	Z	eP	31.8 c

C&GS card 98-64:
08:58:43.8
5.4° S., 151.3° E.
New Britain region
h about 54 km
Magnitude 5.5-5.75 (Brk)
6 (Pal)
5.8 (CGS).

December 8

Pa	Z	Tmax	16:52:09

C&GS card 100-64:
16:11:25
45.0° N., 130.1° W.
Off coast of Oregon
h about 28 km
Magnitude 4.3 (CGS).

December 10

M	Z	iP	15:21:06.5 d
A	Z	eP	07.2 d
D	Z	iP	06.8 d
WP	Z	eP	07.2 d
MP	Z	eP	07.9 d
U	Z	eP	07.1 d
Pa	Z	eP	09.0 c
Na	Z	iP	07.3 d
Hi	Z	eP	07.4 d
Ke	Z	iP	04.0 d
NB	Z	eP	06.2 d
Ha	Z	iP	15:20:58.0 c

C&GS card 103-64:
15:11:05.5
40.4° N., 138.9° E.
Eastern Sea of Japan
h about 33 km
Magnitude 6.75-7 (Brk), 6 (Pal),
6.0 (CGS).

Table 5.--Distant earthquakes--Continued

December 11, 1964

M	Z	eP	16:14:53.2 c
A	Z	eP	53.9 c
D	Z	eP	53.4 c
Pa	Z	eP	55.1 c
Na	Z	iP	54.0 c
Hi	Z	iP	16:14:53.7 c
Ha	Z	eP	44.8 c

C&GS card 101-64:
16:04:58.2
38.9° N., 130.0° E.
Sea of Japan
h about 550 km
Magnitude 5.6 (CGS)

December 12

Pa	Z	Tmax	21:58:24
NB	Z	Tmax	21:59:05
Ha	Z	Tmax	21:58:15

C&GS card 99-64:
21:17:21.0
40.3° N., 125.1° W.
Off coast of northern California
h about 33 km
Magnitude 3.5 (Brk).

December 13

M	Z	eP	00:41:43.4 c

C&GS card 102-64:
00:33:24.7
64.9° N., 165.7° W.
Alaska
Felt: Nome
h about 15 km
Magnitude 6 (Pal)
5.4 (CGS).

December 15

M	Z	iP	05:18:19.9 d
A	Z	eP	20.2 d
D	Z	eP	19.2 d
MP	Z	eP	20.2 d
U	Z	eP	20.2 d
NB	Z	eP	18.7 d

December 15--Continued

C&GS card 99-64:
05:06:22.8
2.3° N., 126.6° E.
Molucca Passage
h about 45 km.

December 15

A	Z	eP	12:23:25.8 d
D	Z	eP	26.8 d
MP	Z	eP	25.5 d
Hi	Z	eP	24.3 d

C&GS card 101-64:
12:13:25.8
14.7° N., 91.7° W.
Guatemala
h about 118 km
Magnitude 5.4 (CGS).

December 16

M	Z	iP	04:07:07.8 c
A	Z	iP	07.9 c
NP	Z	iP	07.9 c
WP	Z	iP	07.8 c
MP	Z	iP	08.4 c
U	Z	eP	07.9 c

C&GS card 101-64:
03:57:17.2
21.6° S., 169.6° E.
Loyalty Islands region
h about 44 km
Magnitude 4.3 (CGS).

December 17

D	Z	iP	05:27:57.4 d
WP	Z	iP	57.6 d
Pa	Z	eP	59.1 d

C&GS card 101-64:
05:18:34.8
45.4° N., 150.1° E.
Kurile Islands
h about 17 km
Magnitude 5.3 (CGS).

December 17-18, 1964

U	PEZ	eR	00:01:11

C&GS card 102-64:
23:44:46.2
51.4° N., 177.9° W.
Andreanof Islands, Aleutian Islands
h about 57 km
Magnitude 5.5 (CGS).

December 22

M	Z	iP	08:13:17.4	d
A	Z	iP	16.7	d
D	Z	iP	17.3	d
WP	Z	iP	16.8	d
Pa	Z	iP	14.9	c
Hi	Z	iP	15.5	d
Ka	Z	eP	18.5	d
NB	Z	iP	18.7	d

C&GS card 102-64:
08:01:12.6
18.4° N., 68.8° W.
Mona Passage
Felt widely on Puerto Rico
h about 115 km
Magnitude 6 (Pas)
5.6 (CGS).

December 24

M	Z	eP	18:55:17.9	c
D	Z	iP	17.8	c

C&GS card 105-64:
18:45:45.5
4.4° S., 153.1° E.
New Ireland region
Felt: Rabaul and Londolouit
h about 93 km
Magnitude 6.1 (CGS).

December 26

M	Z	iP	14:39:05.5	c
D	Z	iP	06.7	c
NP	Z	iP	05.8	c
MP	Z	iP	07.1	c
U	Z	iP	06.1	c
Pa	Z	iP	07.2	c
Na	Z	iP	07.7	c
Hi	Z	iP	05.4	c
Ka	Z	eP	00.5?	c
Ke	Z	iP	02.4	c
Ha	Z	iP	14:38:54.3	c

C&GS card 104-64:
14:30:29.1
51.8° N., 156.8° E.

December 26--Continued

C&GS card--Continued
Kamchatka
h about 136 km
Magnitude 5.7 (CGS).

December 28

M	Z	iP	16:23:55.6	c
A	Z	iP	55.5	c
D	Z	iP	55.1	c
NP	Z	iP	55.7	c
WP	Z	iP	55.7	c
MP	Z	iP	56.0	c
U	Z	iP	55.9	c
Na	Z	iP	52.5	c
Hi	Z	iP	57.2	c
Ka	Z	iP	56.8	c
Ke	Z	iP	52.8	c
NB	Z	eP	55.4	c
Ha	Z	iP	54.3	c
U	PEZ	epP	16:25:41	
U	PEZ	esP	16:26:55	
U	PEE	eS	16:30:11	
U	PEE	eScS	16:32:53	
U	PEE	isS	16:33:29	
U	PEE	iG	16:36:41	

C&GS card 104-64:
16:16:11.0
22.1° S., 179.6° W.
South of Fiji Islands
h about 611 km
Magnitude 6.25-6.5 (Pas)
6.2 (CGS).

December 30

Pa	Z	Tmax	10:33:04

C&GS card 105-64:
09:26:40
9.6° S., 109.1° W.
Northern Easter Island Cordillera
h about 33 km
Magnitude 4.5 (CGS).

December 30

Pa	Z	Tmax	11:04:16

C&GS card 105-64:
09:58:01
8.7° S., 109.3° W.
Northern Easter Island Cordillera
h about 33 km
Magnitude 4.6 (CGS).

Table 5.--Distant earthquakes--Continued

December 30, 1964

M	Z	iP	15:37:06.9 d
D	Z	iP	07.1 d
NP	Z	iP	07.5 d
WP	Z	iP	07.5 d
MP	Z	iP	08.2 d
U	Z	iP	07.1 d
Pa	Z	iP	09.5 d
Na	Z	iP	06.6 c
Hi	Z	iP	07.5 c
Ka	Z	eP	02.5 d
Ke	Z	iP	03.4 d
NB	Z	iP	06.0 d

C&GS card 104-64:
15:27:25.8
31.3° N., 138.8° E.
South of Honshu, Japan
h about 261 km
Magnitude 5.4 (CGS).

December 30

M	Z	iP	21:38:56.0 d
D	Z	eP	54.8 d
WP	Z	iP	55.4 d
NP	Z	iP	55.3 d
MP	Z	iP	55.2 d
Pa	Z	iP	56.9 c
Ka	Z	iP	58.3?c
NB	Z	iP	54.9 d

C&GS card 105-64:
21:30:58.8
23.3° S., 179.9° W.
South of Fiji Islands
h about 547 km
Magnitude 5.2 (CGS).

The following persons or agencies reported "felt" earthquakes during the 4th quarter, 1964. Their assistance is gratefully acknowledged.

Mauna Loa summit area

Mr. W. Francis
Mr. R. Decker
Mr. A. Yamamoto

Kilauea summit area

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Mr. A. Yamamoto
Mr. R. Decker
Mr. D. Peck
Mrs. B. Sumner
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Mr. and Mrs. J. Hanson
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Hilo region

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Mr. R. Edwards
Mr. H. Warner
Mr. K. Kimura
Mr. C. Guerino
Mr. E. Ross
Mr. R. Williamson

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Open-File Report 2007-1325
U.S. Department of the Interior
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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 37

January, February, and March, 1965

By

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Summary of activities

The big event of the quarter was the 10-day flank eruption, starting March 5, in the upper east rift zone of Kilauea. It was not unexpected, because tilt and leveling data showed a high degree of inflation of the Kilauea summit. However, no preceding events were recognized as indicating the place or time of outbreak until tremor started 1 1/2 hours before the appearance of lava. The extent of lava from this eruption is shown in Figure A.

The following events took place prior to eruption: In late December, a swarm of short bursts of long-period tremor and an episode of strong tilt in an almost due-north direction at Uwekahuna began, and continued through the first 10 days of January. Analysis of samples of the tremor recorded on the 12-channel seismic array indicates a source from 3 to 7 km beneath Halemaumau. Mid-January readings of the long-base tiltmeter net suggest that the center for the surge of rapid inflation was under the caldera rim, south of Halemaumau.

Slow inflation resumed about January 20, apparently over a center more to the north and east, and continued until the eruption started.

Several hundred short bursts of long-period tremor were recorded between January 24 and January 26, and flurries of several tens of events per day occurred sporadically six times during February. About 25 shallow-focus (less than 3 km) earthquakes were recorded on February 7 whose sources were a few km southeast of Makaopuhi Crater. Other than these seismic events, the number of daily quakes (less than 60) was low, and only eight quakes were large enough to be felt during January and February.

The eruption was preceded on March 5 by the onset of tremor at about 08^h02^m, recorded first on the Makaopuhi seismograph. Then it was picked up at all other stations of the Kilauea summit net with rapidly increasing intensity. This tremor was recorded on the 12-sensor array as well as the summit net. By 09^h00^m, constant ground trembling and continuous rockfalls were observed at Makaopuhi.

Outbreak of lava was first seen about 09^h50^m in Makaopuhi. Visibility was poor along the upper east rift because of rain and ground-level clouds. It is surmised that the first outbreaks produced an almost continuous line of fountains that cut across the north wall of Makaopuhi and the floor of Napau, nearly coincident with the two small fissure vents of 1922 and extending about 4 miles eastward from Makaopuhi Crater.

The first "curtain of fire" stage of activity erupted at least 30,000,000 cu yds during its 10-hour duration. About 2,200,000 cu yds of this lava had formed a lake 165 feet deep in the west pit of Makaopuhi when the fountains there ceased, at 18^h20^m. Napau was filled to a depth of about 40 feet, and overflowed through a graben intersecting the southeast wall; when fountaining ceased, the lake level subsided about 20 feet, which is equivalent to about 6,000,000 cu yds of flow back down the vent.

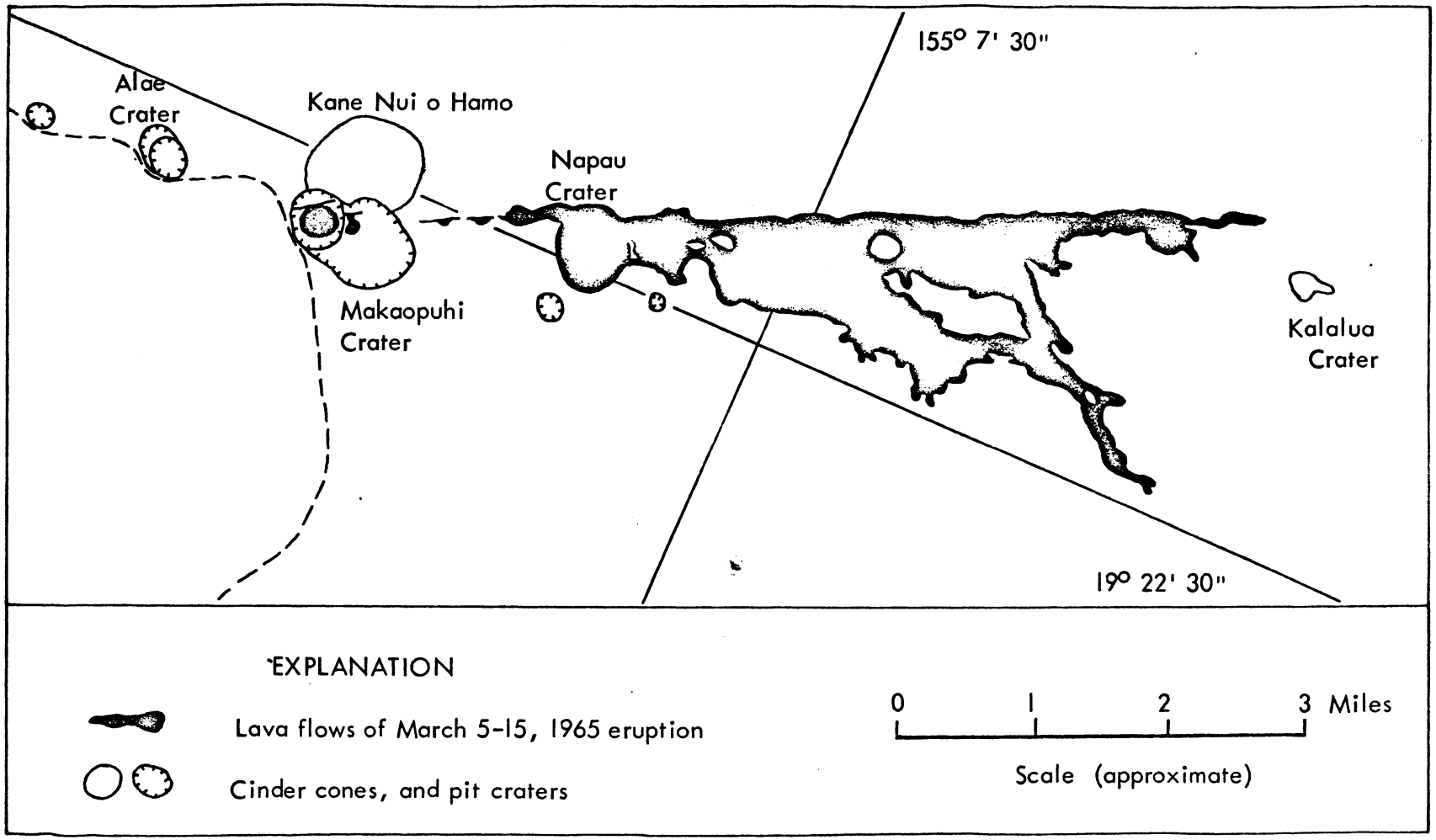

Figure A. Sketch map showing area of lava erupted March 5-15, 1965 (Makaopuhi eruption) from the east rift zone of Kilauea Volcano (Hawaii). Flow area mapped by J. G. Moore and D. L. Peck.

Pumice samples were collected from Makaopuhi and five other locations down the initial "curtain of fire," 1, 1.7, 1.9, and 3.4 miles east of Makaopuhi. Optical pyrometer measurements of Makaopuhi fountains gave 1,035°-1,070°C, but all readings were screened by fume or falling pumice and thus are undoubtedly too low.

The short-base tiltmeter monitored a summit collapse of about 70 microradians on a bearing about S. 60° E. during 10 hours, from 08^h30^m to 18^h30^m, and further collapse of about 25 microradians on a bearing of about S. 35° E. during the next 38 hours, until 09^h00^m on March 7. No further tilting was indicated. This structural deformation is further described by a shortening of the distance across Kilauea caldera (from Uwekahuna to Keanakakoi) by 25-30 cm and a measured loss of altitude of nearly a foot (relative to a benchmark on the nearest slope of Mauna Loa) at the center of collapse, which was defined by the azimuth intercepts of the long-base tilt net to be near the caldera wall south of Halemaumau.

A second phase of activity can be characterized by erratic waxing and waning at three localities scattered along nearly 8 miles of rift zone. This phase may be considered as having started before the "curtain of fire" phase died out. About 15^h25^m on March 5, new fountains broke out 6 1/2 miles east of Makaopuhi (2 1/2 miles beyond the eastern limit of the curtain of fire), and continued through the night as the only active fountains. Two more fountain groups started in the early morning, the easternmost nearly 8 miles from Makaopuhi and nearly due north of Kalalua Crater. By 09^h30^m they had coalesced into one group, and fountaining resumed in Makaopuhi 1 1/2 hours later. Activity alternated somewhat between the two rift areas outside Makaopuhi until about 10^h40^m March 7, when all activity ceased except in Makaopuhi, where sluggish eruption continued. A new vent that opened about 3 miles east of Makaopuhi during mid-morning of March 9 poured out a small flow, built a spatter rampart, and ceased activity completely about 07^h30^m March 10. This may be considered as the end of the second phase.

About 2,000,000 cu yds was erupted during these 4 1/2 days of erratic fountaining, half in Makaopuhi and half in flows to the east. Five samples of the eastern flows, representing this second phase, were collected after the eruption was over from sites 2.4 miles east of Makaopuhi and from 7.3 to 7.6 miles east of Makaopuhi. Four second-phase samples were dipped from Pahoehoe toes reaching the Makaopuhi lake margin. Temperatures in these lake-margin flows were found to be 1,090°C by both thermocouple and optical pyrometer measurement.

The third phase, consisting of activity in Makaopuhi, was characterized by an accelerated output and increased lava temperature. This phase actually started in Makaopuhi during the early hours of March 10, before the cessation of the last fountains farther down the rift. Features most noticeable included a distinctive sheen on the crust of the new more rapidly spreading flows and widespread advance of the "shore line" of the lava lake. Accelerated output continued until the sudden end of the eruption at 22^h51^m on March 15. During the last 6 hours the enormous extrusion rate averaged over 160,000 cu yds per hour. The lake reached a maximum depth of 330 feet and had a volume of 9,000,000 cu yds.

On March 12, good measurements of a temperature of 1,160°C by optical pyrometer were made at the lake's edge. The fluidity and color of the lava indicated characteristic high temperatures, though good pyrometer readings from the crater rim were not possible. Several samples of pumice, collected on canvas at intervals of as much as 24 hours beginning the morning of March 12, plus three samples dipped from the lake margin on the 12th and 14th, represent the lava of the third phase.

The fourth and last phase of activity comprised drain-back and episodic overturn of crust at Makaopuhi lava lake. These phenomena continued for 3 3/4 days after the fountaining and eruption had stopped. The altitude of the lake surface was lowered 60 feet below the high-lava shoreline during the drain-back. During this lowering, crust foundered and new crust formed over the entire lake surface 18 times.

Two days after the last overturn of the crust, surveying was started to establish benchmarks at 100-foot intervals along the two principal diameters of the lake. Two days of heavy rains, and immediate formation of thick clouds of steam rising from the thin still-hot crust, interrupted the work. But on March 19 the survey was completed, leveled, and tied to a large talus block near the level of the new lava shoreline. (Releveling 15 days later revealed an average crustal subsidence of 3.4 feet.) Measurements of gravity, magnetic field, temperatures on surface and in cracks, and detailed mapping of cracks, local relief, lines and spots of sublimate deposits, and other features of the lake crust were intitiated immediately and tied to the benchmarks. Plans were initiated to pursue a program of core drilling in the crust to help document the cooling history of the lake.

Alae Crater studies.--Work was continued on the study of the small lava lake in Alae Crater, which became solidified in September 1964. On January 21, temperatures were measured in 6 drill holes in the crust, and the elevations of 29 stations on the lake surface were determined by precise leveling. Temperatures of the lake showed a drastic decrease from those of December 8, 1964, probably influenced by the excessive rainfall during the period; the maximum temperature measured was 865°C, at a depth of 32 feet in drill hole No. 9, where the lake is 48 feet thick. The leveling showed an average subsidence of .017 foot since November 3.

Two groups of astronauts visited the observatory on consecutive weeks, each in January, for 5 days of field study. A great array of textural, structural, and mineralogical features were noted, but concentration was on a few important features that are most conspicuous and can be most readily studied in Hawaii. These include: the differences between the surface formed on a deep body of relatively stagnant lava (a confined lava lake, or a thick flood on a level plain) and the surface formed on thin gushes of rather mobile lava (layered overflows from Halemaumau on the floor of Kilauea caldera); features that characterize rift eruption; and differences between lapilli and lapilli cones formed from fluid basalt versus those formed from rather viscous feldspar-rich andesite.

Japan-United States cooperative study of Kilauea.--Professor T. Minakami, Doctor D. Shimozuru, J. P. Eaton, and J. G. Moore returned to H.V.O. to join with Arnold Okamura, Robert Koyanagi, W. T. Kinoshita, and Dallas Peck in conferences on progress made in analysing the results of the Japan-United States cooperative study of Kilauea, July-December 1963. Progress and promise of results were very gratifying and encouraged Professor Minakami to set the date and itinerary for a third general conference, to be held in Japan in October-November 1965.

Xenolith Studies.--E. D. Jackson started mapping and meticulous field study of the 1801 lava flow of Hualalai, the host to large quantities of xenoliths of coarse-grained rocks showing a great range of mineral composition. Several thousand zenoliths were described in the field study, and several hundred were collected for detailed laboratory study.

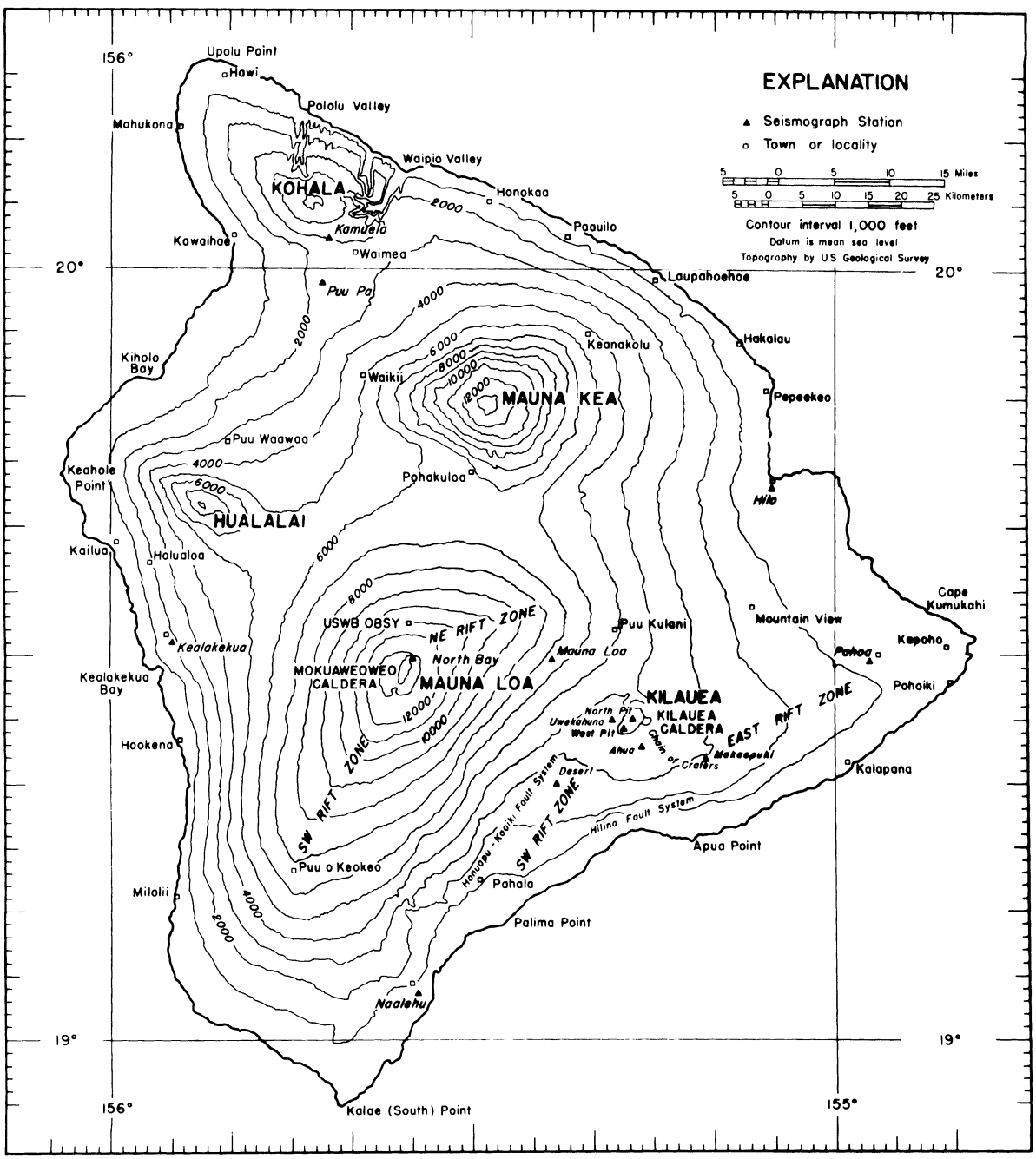

Figure 1.--Map of the island of Hawaii showing localities mentioned in the text and seismograph stations operated by the U.S. Geological Survey. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 7, which is published only in the first-quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna Vault, January, February, and March, 1965

Date (1965)	N-S	E-W	Date (1965)	N-S	E-W
Jan. 3	494	466	Feb. 21	513	454
10	503	463	28	514	452
17	506	463	Mar. 7	478	499
24	509	461	14	460	518
31	511	458	21	458	519
Feb. 7	513	455	28	459	514
14	513	454			

Table 2a.--Tilt coordinates and changes at bases around Kilauea caldera
(See tilt diagrams, figs. 2a, b.)

Tilt Base	Date (1965)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1964)
Uwekahuna	Jan. 17	507.6	453.3	15.2	N. 6.6° W.	Dec. 10
Tree Molds	17	459.1	512.8	5.7	N. 0.9° E.	7
Sand Spit	19	922.0	752.6	34.9	N. 50.7° E.	11
Kalihipaa	21	318.2	385.3	3.1	S. 61.6° E.	8
Keamoku	18	527.0	539.1	32.1	N. 49.5° W.	11
Ahua Kamokukolau	18	509.3	554.4	44.8	S. 45.4° E.	10
Kipuka Nene	21	479.2	506.2	1.0	S. 27.3° W.	14
Hilina Pali	------	-----	-----	not occupied this time		------
Kapapala Ranch	19	493.6	506.4	0.4	S. 85.6° E.	9
Mehana	17	549.7	554.3	2.2	N. 32.4° E.	10

Table 2b.--Tilt coordinates and changes at bases around Kilauea caldera
(See tilt diagrams, figs. 2a, b.)

Tilt Base	Date (1965)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1965)
Uwekahuna	Mar. 6	441.0	504.0	52.3	S. 37.3° E.	Jan. 17
Tree Molds	7	424.8	525.9	36.7	S. 20.9° E.	17
Sand Spit	8	882.3	735.4	43.3	S. 23.4° E.	19
Kalihipaa	7	333.6	385.3	16.9	N. 00.1° W.	21
Keamoku	7	585.1	510.1	40.6	S. 63.5° E.	18
Ahua Kamokukolau	6	609.9	542.9	101.2	N. 6.5° W.	18
Kipuka Nene	9	484.0	506.2	2.9	N. 00.4° W.	21
Hilina Pali	------	-----	-----	not occupied this time		------
Kapapala Ranch	8	493.7	506.8	.6	N. 21.8° E.	19
Mehana	9	540.7	545.2	7.5	S. 45.3° W.	17

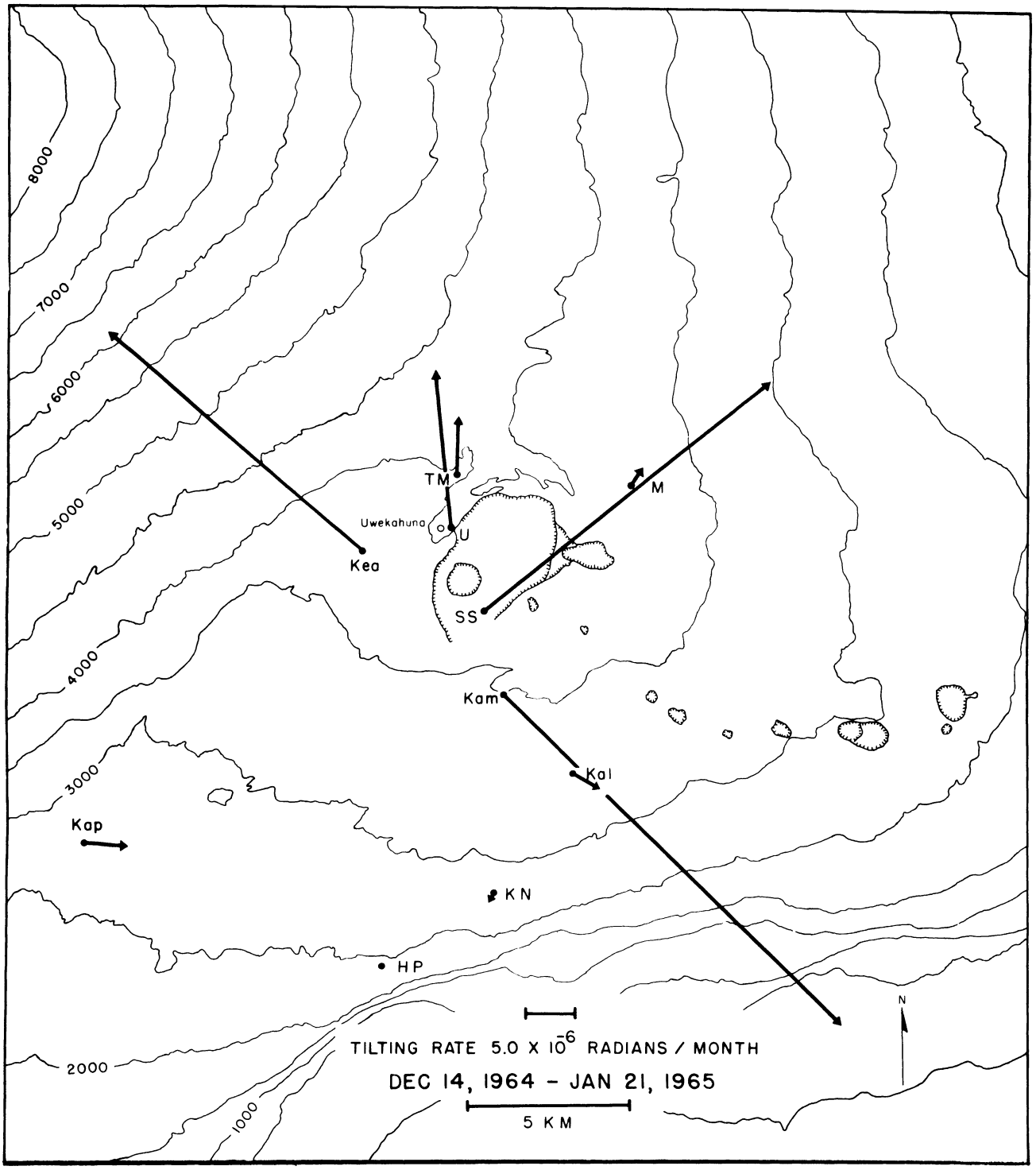

Figure 2a.--Tilting of the ground around Kilauea caldera, Dec. 14, 1964-Jan. 21, 1965. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

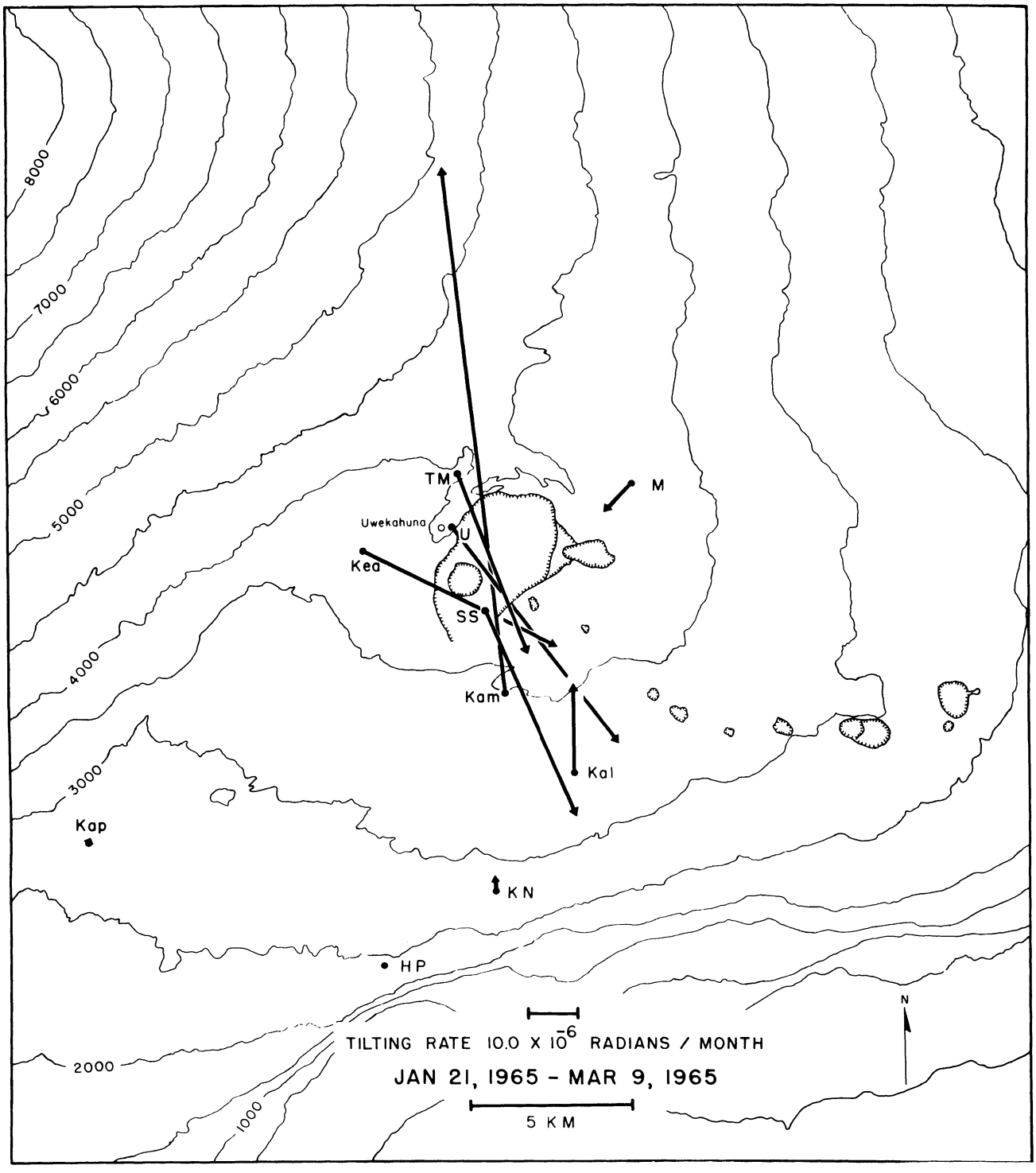

Figure 2b.--Tilting of the ground around Kilauea caldera, Jan. 21, 1965-Mar. 9, 1965. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, WP, MP). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases of distant earthquakes are listed in table 5.

Location of and essential data on each seismograph station are listed in table 6, which is published only in the first-quarter issue each year.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region, and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1965)	Tremor (in minutes)			Earthquakes					
				Kilauea Summit		SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 KM	Shallow				
Jan. 1	----	------	-----	----	134	6	----	8	2 Mauna Kea
2	----	------	-----	1	99	12	----	6	----------
3	----	------	15	2+	110	4+	----	13	1 Kona
4	----	------	27+	2	135+	9	----	10	----------
5	----	------	-----	----	61	5	1	3	1 Mauna Kea
6	----	------	-----	3	63	6	1	5	----------
7	----	------	-----	1	58	7	1	3	----------
8	----	12+	-----	3	65+	10	----	3	1 Kona
9	7	------	-----	3	89	9	----	3	1 off NE. shore of Maui
10	26	------	-----	----	135	4	----	3	1 Mauna Kea
11	44	------	8	4	110	7	----	4	----------
12	4	------	-----	4	115+	7	----	11	1 Kona
13	----	------	-----	4	40	3	----	7	1 Kohala
14	30	------	-----	6	60	4	----	12	----------
15	30	------	-----	1	45	7	----	6	----------
16	----	19	-----	4	25	3	----	7	1 Mauna Loa
17	----	20±	-----	4	55	4	----	6	----------

18	----	30±	-----	3	81	6	1	6	----------
19	----	20±	-----	2	60	2	1	18	----------
20	----	15±	-----	1	69	7	----	6	----------
21	----	-----	-----	6	80	1	----	13	----------
22	----	-----	-----	2	65	5	----	12	----------
23	----	-----	-----	----	57	5	----	4	----------
24	----	-----	-----	3	40	5	----	1	1 Mauna Kea
25	----	-----	5	----	20	3	----	----	----------
26	----	------	-----	4	150+	4	----	----	----------
27	13	-----	-----	----	68	3	4	?	----------
28	----	-----	-----	----	95	4	1	10	2 Kona
29	----	-----	-----	3	20	4	----	4	----------
30	----	-----	-----	1	47	6	----	1	----------
31	18+	-----	-----	2	35	3	2	4	1 Kona
Feb. 1	----	------	-----	3	30	6	1	5	----------
2	----	-----	-----	1	54	2	1	4	----------
3	----	-----	-----	2	50	3	----	3	1 Mauna Loa
4	39	-----	-----	----	60	2	----	?	----------
5	----	-----	-----	1	45+	9	----	4	----------
6	----	-----	-----	----	38	3	----	7	----------
7	----	-----	-----	2	75	2	2	----	----------
8	----	-----	-----	----	150	2	1	----	1 Mauna Kea
9	----	-----	-----	3	88	3	2	4	1 Kona
10	----	-----	-----	----	42	1	3	8	----------
11	----	-----	-----	2	41	2	----	10	----------
12	----	3	-----	3	47	2	----	5	1 Kona
13	----	-----	-----	2	54	4	1	32	1 off south shore of Hawaii 1 Kona
14	----	-----	-----	1	59	3	1	25	----------
15	----	-----	-----	----	36	4	----	15	----------
16	----	-----	-----	2	35	4	----	13	1 Mauna Loa
17	----	-----	-----	----	28	3	----	2	----------
18	----	-----	2	4	45+	7	----	11	1 Mauna Kea
19	----	-----	-----	2	35	4	----	4	----------
20	----	-----	-----	3	51	5	----	2	----------
21	----	-----	-----	----	33	1	4	3	----------
22	30	-----	-----	1	47	5	1	5	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1965)	Tremor (in minutes)			Earthquakes					
				Kilauea Summit		SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 KM	Shallow				
Feb. 23	----	------	-------	2	45	5	1	3	----------
24	----	------	-------	2	40	3	-----	4	----------
25	----	------	-------	----	33	5	1	3	----------
26	35	------	-------	2	45	5	-----	3	----------
27	----	------	-------	1	94	5	-----	3	----------
28	----	------	-------	2	68	6	1	----	2 Kohala
Mar. 1	----	------	-------	5	43	4	2	3	----------
2	----	7	-------	1	30	4	1	3	----------
3	28	------	5	3	51	7	2	2	----------
4	----	------	-------	1	76+	4	2	19	----------
5	----	------	Harmonic Tremor.	----	----	----	-----	----	----------
6	----	------	---do--	----	25+	4	-----	----	----------
7	----	------	---do--	1	57	7	-----	----	----------
8	----	------	---do--	3	66	9	-----	----	2 off south shore of Hawaii.
9	----	------	---do--	3?	20	6?	-----	4	1 off south shore of Hawaii.
10	----	------	---do--	2	28+	2+	-----	----	----------
11	2	------	---do--	3	22	6	-----	10	----------
12	3	------	---do--	2	22+	5	-----	2	----------
13	----	------	---do--	----	17	3	-----	----	----------
14	----	------	---do--	----	37	7	-----	5	2 Kona
15	----	------	-------	----	15	4	-----	----	----------
16	----	6	-------	1	24	8	-----	10	----------
17	----	------	-------	1	20+	10	-----	4	----------
18	----	------	-------	1	30	7	-----	5	1 Mauna Kea
19	----	------	-------	1	15	6	-----	6	1 Kona
20	----	------	-------	3	25	18	-----	14	----------

Mar. 21	----	----	----	3	45	21	-----	15	1 Mauna Kea
22	----	----	----	1	120	9	-----	?	1 off south shore of Hawaii.
23	----	----	----	4	20	13	-----	5	----------
24	----	----	----	6	17	5	-----	5	1 Mauna Kea
25	14	----	----	1	23	3	-----	5	----------
26	20	----	----	13	65	9	-----	5	1 Kona
27	----	----	----	2	75	11	-----	11	1 Kona
28	----	----	----	2	60	9	-----	5	1 Mauna Loa
29	----	-----	-----	5	35	5	-----	3	----------
30	----	----	----	?	25	?	-----	?	----------
31	----	----	----	?	20	?	-----	?	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1965

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger (as well as many favorably located smaller ones) are included in the list.

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 1	04	57	45.4	3.9	13	19°48.5'	155°25.4'	14 km NE. of Pohakuloa	Island-wide
1	13	05	00.5	3.4	10	19°47.1'	155°23.1'	15 km ENE. of Pohakuloa	----------
3	16	05	47.0	2.7	3	19°40.0'	155°52.9'	17 km NNE. of Kealakekua	----------
3	23	41	31.9	2.5	10	19°18.8'	155°13.7'	8 km SSE. of Ahua seismometer.	----------
5	16	45	11.6	2.6	5	19°53.0'	155°48.0'	20 km SW. of Kamuela	----------
6	07	18	58.7	2.1	8	19°16.2'	155°10.7'	10 km S. of Makaopuhi seismometer.	----------
8	14	51	07.9	3.1	27.5	19°23.5'	155°15.0'	Beneath Kilauea summit	Kilauea summit region.
8	17	51	44.2	2.9	5	19°24.8'	155°25.9'	Kaoiki fault system	----------
8	20	33	19.4	2.9	8	19°24.2'	155°52.8'	4 km NE. of Hookena	----------
9	05	58	46.6	3.1	13	20°50'	155°25'	83 km ENE. of Hakeakala seismometer.	----------
9	22	29	12.8	2.0	10	19°18.2'	155°13.7'	9 km SSE. of Ahua seismometer.	----------
10	01	25	19.0	2.2	8	19°46.6'	155°18.8'	25 km WNW. of Hilo	----------
10	07	15	03.4	2.4	10	19°18.6'	155°07.4'	9 km SE. of Makaopuhi seismometer.	----------
12	15	23	24.7	3.0	5	19°37.7'	155°49.4'	16 km NE. of Kealakekua	----------
12	18	37	19.7	2.1	30	19°23.1'	155°17.5'	Beneath Kilauea summit	----------
12	23	08	15.4	2.1	30	19°22.8'	155°19.8'	----do----------	----------
13	15	44	47.1	2.0	27.5	19°24.4'	155°16.2'	----do----------	----------
13	20	25	20.2	3.6	20	20°05.7'	155°50.5'	16 km NW. of Kamuela	Kamuela and Kohala.
14	03	49	35.1	2.7	45	19°34.4'	155°04.5'	5 km ENE. of Mt. View	----------
15	00	15	31.0	2.4	22.5	19°22.9'	155°18.0'	Beneath Kilauea summit	----------
16	01	56	14.1	2.8	8	19°11.8'	155°41.5'	19 km NW. of Naalehu	----------
18	00	25	52.0	2.2	10	19°20.9'	155°06.3'	9 km ESE. of Makaopuhi seismometer.	----------

Jan.	18	13	44	29.3	2.2	5	19°23.5'	155°24.6'	Kaoiki fault system	----------
	21	17	29	25.8	3.1	30	19°22.5'	155°18.2'	Beneath Kilauea summit	Kilauea summit region, Pahala.
	22	17	38	34.6	2.4	25	19°24.5'	155°16.0'	Beneath Kilauea summit	----------
	24	10	42	37.8	2.3	30	19°23.0'	155°17.4'	Beneath Kilauea summit	----------
	24	22	08	13.2	3.9	13	19°45.9'	155°34.2'	5 km NW. of Pohakuloa	Kamuela, Pahala, Kilauea summit region.
	27	02	23	10.6	2.6	8	19°19.6'	155°13.2'	7 km SW. of Makaopuhi seismometer.	----------
	27	06	14	35.1	2.0	25	19°20.8'	155°18.5'	Beneath Kilauea summit	----------
	27	12	58	17.4	2.2	22.5	19°21.9'	155°18.3'	---do----------	----------
	28	09	42	05.8	3.0	10	19°30.8'	155°04.7'	12 km W. of Kealakekua	----------
	28	20	57	19.8	2.3	13	19°41.5'	156°08.2'	10 km SW. of Keahole Point.	----------
	29	13	38	32.5	2.1	10	19°16.9'	155°07.8'	10 km SE. of Makaopuhi seismometer.	----------
	29	18	30	35.6	2.9	8	19°27.0'	155°27.0'	Kaoiki fault system	----------
	31	04	19	34.2	2.9	3	19°30.7'	155°55.8'	2 km WSW. of Kealakekua	----------
Feb.	3	16	37	28.6	2.4	13	19°24.1'	155°35.3'	10 km SSW. of North Bay seismometer.	----------
	5	05	36	50.7	2.0	<3	19°24.5'	155°10.1'	6 km NNE. of Makaopuhi seismometer.	----------
	6	06	10	21.9	2.4	8	19°17.4'	155°12.3'	10 km SSW. of Makaopuhi seismometer.	----------
	7	11	45	25.5	2.2	3	19°21.0'	155°02.2'	7 km W. of Kalapana	----------
	7	17	22	28.7	2.1	3	19°23.0'	155°08.3'	5 km ENE. of Makaopuhi seismometer.	----------
	7	21	28	19.8	2.6	3	19°23.0'	155°08.0'	5 km ENE. of Makaopuhi seismometer.	----------
	7	22	51	56.7	2.5	5	19°20.2'	155°07.1'	7 km ESE. of Makaopuhi seismometer.	----------
	8	09	40	31.0	3.7	13	19°53.0'	155°35.4'	8 km ENE. of Waikii	Kamuela, Pahala
	8	15	48	10.2	2.7	<3	19°16.8'	155°08.8'	10 km SSE. of Makaopuhi seismometer.	----------
	8	15	52	57.1	2.4	<3	19°19.7'	155°06.7'	8 km ESE. of Makaopuhi seismometer.	----------
	8	17	55	25.5	2.1	<3	19°19.5'	155°05.2'	11 km ESE. of Makaopuhi seismometer.	----------
	9	03	43	00.2	3.0	5	19°21.3'	154°59.0'	1 km NW. of Kalapana	----------
	9	10	53	21.1	3.3	8	19°29.5'	155°51.1'	8 km ESE. of Kealakekua	Kona
	10	20	05	11.3	2.3	20	19°38.4'	154°59.6'	14 km SE. of Hilo	----------
	10	21	22	05.2	2.4	8	19°17.1'	155°13.4'	10 km SW. of Makaopuhi seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1965--Continued

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Feb. 11	17	36	12.4	2.1	10	19°20.7'	155°05.3'	11 km ESE. of Makaopuhi seismometer.	Keaau
11	18	11	03.3	3.0	3	19°21.8'	155°08.5'	5 km E. of Makaopuhi seismometer.	----------
12	22	01	19.2	2.8	13	18°58'	156°15'	45 km SW. of Milolii	----------
13	01	19	03.7	2.2	8	19°40.8'	155°50.2'	20 km NNE. of Kealakekua.	----------
13	13	06	29.0	4.5	13	18°45'	155°16'	48 km SE. of Naalehu	Island-wide
14	01	28	21.0	3.0	8	19°14.8'	155°14.0'	5 km WSW. of Apua Point.	Kilauea summit region.
14	19	58	18.2	2.2	8	19°26.2'	155°24.8'	Kaoiki fault system	----------
14	22	14	03.0	2.3	3	19°20.8'	155°05.8'	10 km ESE. of Makaopuhi seismometer.	----------
14	23	50	42.7	3.3	5	19°20.3'	155°05.4'	11 km ESE. of Makaopuhi seismometer.	----------
16	02	31	04.6	3.2	20	19°17.5'	154°44.0'	33 km SE. of Pahoa	----------
16	05	49	59.2	2.4	<3	19°24.4'	155°10.5'	5 km N. of Makaopuhi seismometer.	----------
16	17	48	23.8	2.4	10	19°18.1'	155°07.7'	10 km SE. of Makaopuhi seismometer.	----------
16	22	28	42.4	2.7	8	19°08.8'	155°34.0'	9 km NNE. of Naalehu	----------
18	06	36	45.0	2.8	8	19°50.8'	155°24.9'	17 km NE. of Pohakuloa	----------
18	09	18	28.8	3.5	5	19°21.0'	155°05.5'	10 km ESE. of Makaopuhi seismometer.	----------
18	20	39	08.1	2.6	8	19°16.1'	155°12.5'	2 km WNW. of Apua Point	----------
19	07	00	42.6	2.9	8	19°16.0'	155°07.1'	13 km SE. of Makaopuhi seismometer.	----------
22	07	43	02.7	2.2	10	19°15.6'	155°13.4'	4 km W. of Apua Point	----------
23	04	28	12.4	2.0	10	19°36.0'	155°06.4'	13 km SSW. of Hilo	----------
23	11	24	40.5	2.2	6	19°24.2'	155°24.2'	Kaoiki fault system	----------
25	18	18	41.4	2.4	10	19°18.7'	155°08.7'	7 km SE. of Makaopuhi seismometer.	----------
26	22	06	50.9	2.5	10	19°17.7'	155°06.2'	11 km SE. of Makaopuhi seismometer.	----------
28	03	27	52.4	2.8	8	19°26.0'	155°26.0'	8 km SW. of Mauna Loa seismometer.	----------

Feb.	28	03	55	46.0	2.6	8	19°59.1'	155°49.8'	15 km WSW. of Kamuela	----------
	28	13	03	37.6	2.7	13	20°05.4'	155°50.5'	17 km WNW. of Kamuela	----------
Mar.	4	18	50	24.7	2.5	10	19°18.7'	155°14.6'	8 km SSE. of Ahua seismometer.	----------
	5	Shallow harmonic tremor and earthquakes start at 08-01. Although many earthquakes were recorded during the eruption, only those with greater than 2.0 magnitudes are listed.								
	5	08	42	16.7	2.7	3	19°21.8'	155°10.6'	Makaopuhi crater	----------
	5	09	16	12.8	2.9	3	19°20.4'	155°07.6'	7 km SE. of Makaopuhi seismometer.	----------
	5	09	21	02.7	3.1	5	19°14.2'	155°06.6'	10 km SE. of Makaopuhi seismometer.	----------
	5	09	55	34.8	2.8	6	19°22.4'	155°13.6'	4 km E. of Ahua seismometer.	----------
	5	10	55	14.3	2.7	5	19°24.2'	155°17.6'	2 km S. of Uwekahuna seismometer.	Kilauea summit region.
	5	11	15	25.8	2.7	5	19°24.9'	155°17.2'	1 km S. of Uwekahuna seismometer.	Kilauea summit region.
	5	11	27	39.6	2.8	10	19°16.5'	155°05.7'	13 km SE. of Makaopuhi seismometer.	----------
	5	11	55	19.2	2.6	5	19°24.6'	155°17.7'	2 km S. of Uwekahuna seismometer.	----------
	5	13	55	05.7	2.7	5	19°24.2'	155°17.6'	---do----------	----------
	5	15	28	47.8	3.1	10	19°15.9'	155°05.4'	14 km SE. of Makaopuhi seismometer.	----------
	5	15	37	23.2	2.7	13	19°18.3'	155°05.2'	12 km SE. of Makaopuhi seismometer.	----------
	5	16	12	33.7	2.5	10	19°17.5'	155°04.1'	14 km SE. of Makaopuhi seismometer.	----------
	5	16	39	17.7	2.4	8	19°25.4'	155°14.6'	5 km E. of Uwekahuna seismometer.	----------
	5	17	14	12.3	3.2	6	19°19.8'	155°05.0'	11 km ESE. of Makaopuhi seismometer.	----------
	5	17	56	28.6	3.5	11	19°18.5'	155°08.0'	8 km SE. of Makaopuhi seismometer.	----------
	5	21	55	11.5	2.7	3	19°20.3'	155°15.8'	4 km S. of Ahua seismometer.	----------
	5	22	39	08.2	2.6	3	19°21.8'	155°15.8'	1 km S. of Ahua seismometer.	----------
	6	00	11	10.3	2.3	3	19°19.3'	155°14.0'	7 km SE. of Ahua seismometer.	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1965--Continued

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Mar. 6	01	12	12.0	4.0	5	19°15.0'	155°13.3'	3 km WSW. of Apua Point	Pahala
6	02	02	05.7	2.7	10	19°17.1'	155°03.0'	16 km SE. of Makaopuhi seismometer.	----------
6	09	50	15.9	2.8	3	19°12.4'	155°10.4'	7 km SSE. of Apua Point	----------
6	10	47	52.1	2.7	10	19°15.0'	155°09.1'	4 km ESE. of Apua Point	----------
6	13	06	06.4	2.3	10	19°18.3'	155°11.0'	7 km SSW. of Makaopuhi seismometer.	----------
6	15	44	07.6	2.0	3	19°19.7'	155°16.1'	5 km S. of Ahua seismometer.	----------
6	17	02	47.0	2.0	<3	19°22.0'	155°11.0'	1 km NW. of Makaopuhi seismometer.	----------
6	18	11	20.1	2.1	5	19°20.1'	155°16.6'	5 km SSW. of Ahua seismometer.	----------
6	20	56	11.1	2.3	10	19°16.4'	155°10.5'	10 km S. of Makaopuhi seismometer.	----------
6	01	37	37.1	2.7	3	19°19.7'	155°16.6'	6 km SSW. of Ahua seismometer.	----------
7	03	31	59.5	3.3	8	19°17.7'	155°13.6'	10 km SW. of Makaopuhi seismometer.	----------
7	06	19	47.1	2.2	5	19°10.3'	155°08.3'	11 km SE. of Apua Point	----------
7	06	22	26.1	2.5	5	19°09.1'	155°03.4'	18 km SE. of Apua Point	----------
7	06	43	36.2	2.3	8	19°16.4'	155°14.4'	5 km WNW. of Apua Point	----------
7	07	43	15.3	2.4	9	19°15.9'	155°14.0'	4 km WNW. of Apua Point	----------
7	08	45	16.0	2.4	8	19°11.5'	155°08.8'	9 km SE. of Apua Point	----------
7	09	53	12.8	2.6	3	19°23.2'	155°04.7'	11 km ENE. of Makaopuhi seismometer.	----------
7	13	59	28.7	2.1	10	19°16.8'	155°09.0'	10 km SSE. of Makaopuhi seismometer.	----------
7	16	07	28.5	2.0	8	19°19.0'	155°10.5'	5 km S. of Makaopuhi seismometer.	----------
8	00	06	36.7	2.3	8	19°18.5'	155°14.2'	8 km SSE. of Ahua seismometer.	----------
8	01	22	45.5	2.5	13	19°12.9'	155°07.6'	9 km ESE. of Apua Point	----------

Mar. 8	01	31	10.3	2.0	10	19°19.8'	155°15.1'	5 km SSE. of Ahua seismometer.	----------
8	04	11	22.4	2.3	5	19°09.8'	155°09.6'	11 km SSE. of Apua Point.	----------
8	13	31	49.0	2.6	8	19°13.0'	155°26.5'	4 km NE. of Pahala	----------
8	13	59	14.2	2.5	30	18°49.3'	155°26.2'	31 km SSE. of Naalehu	----------
8	14	17	33.6	2.0	8	18°52.0'	155°22.5'	32 km SE. of Naalehu	----------
8	14	44	18.5	2.0	10	19°11.9'	155°05.7'	12 km SE. of Apua Point.	----------
8	19	03	56.0	2.8	<3	19°19.5'	155°06.2'	10 km ESE. of Makaopuhi seismometer.	----------
9	10	30	07.7	2.3	25	19°01.5'	155°32.4'	7 km SE. of Naalehu	----------
9	14	41	23.3	2.1	5	19°07.6'	155°11.5'	15 km S. of Apua Point	----------
9	22	14	47.4	2.3	22.5	19°21.2'	155°18.0'	Beneath Kilauea summit	----------
10	01	53	52.3	2.5	45	19°46.1'	155°09.4'	9 km NW. of Hilo	----------
10	10	41	23.3	2.0	8	19°37.3'	155°07.8'	8 km NNW. of Mt. View	----------
12	19	35	06.8	2.2	8	19°11.7'	155°30.3'	4 km W. of Pahala	----------
14	00	06	25.2	2.0	8	19°15.3'	155°51.3'	10 km NNE. of Milolii	----------
14	03	58	53.6	2.0	<3	19°21.1'	155°45.4'	16 km ESE. of Hookena	----------
14	08	24	27.0	2.1	3	19°29.9'	155°49.1'	11 km ESE. of Kealakekua	----------
14	13	58	15.0	2.2	8	19°12.0'	155°01.0'	17 km SSW. of Kalapana	----------
15	05	37	44.0	2.8	8	19°10.0'	155°28.6'	4 km S. of Pahala	Pahala
16	17	15	03.4	2.6	8	19°18.1'	155°03.3'	16 km ESE. of Makaopuhi seismometer.	----------
17	22	39	52.6	3.1	13	19°02.2'	155°08.5'	25 km SSE. of Apua Point.	----------
18	20	40	55.6	2.1	8	19°56.7'	155°15.3'	7 km SSW. of Laupahoehoe	----------
19	07	14	47.7	2.9	5	19°17.1'	155°09.5'	10 km SSE. of Makaopuhi seismometer.	----------
19	12	22	16.4	3.0	<3	19°18.0'	155°58.0'	12 km SW. of Hookena	----------
20	19	37	15.2	3.7	8	19°21.9'	155°24.7'	Kaoiki Fault system	Pahala
21	05	06	56.5	2.5	5	19°56.0'	155°13.6'	8 km SSE. of Laupahoehoe	----------
21	06	05	20.2	2.0	8	19°25.6'	155°19.2'	3 km W. of Uwekahuna seismometer.	----------
21	19	52	14.7	2.5	13	19°10.0'	155°30.7'	5 km SW. of Pahala	----------
21	23	27	52.0	2.0	8	19°23.5'	155°24.2'	Kaoiki Fault system	----------
22	09	33	12.8	4.6	30	19°13.3'	155°32.3'	7 km WNW. of Pahala	Island-wide
22	11	06	30.2	2.4	30	19°11.2'	155°30.2'	4 km WNW. of Pahala	----------
22	14	03	11.8	2.6	8	19°03.2'	155°18.5'	30 km E. of Naalehu	----------
22	14	22	16.8	2.2	5	19°16.1'	154°59.7'	10 km SSW. of Kalapana	----------
24	06	19	25.5	3.4	8	19°48.6'	155°33.3'	7 km NW. of Pohakuloa	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1965--Continued

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Mar. 24	20	16	38.1	2.0	27.5	19°17.9'	155°22.1'	Beneath Kilauea summit	--------
25	01	32	17.4	2.4	<3	19°12.4'	155°33.3'	8 km W. of Pahala	--------
25	09	25	39.5	2.1	3	19°03.9'	155°12.0'	22 km S. of Apua Point	--------
26	08	08	51.5	2.4	3	19°31.8'	155°46.1'	16 km ENE. of Kealakekua.	--------
27	06	25	43.7	2.3	40	19°24'	154°36'	38 km ESE. of Pahoa	--------
27	13	16	39.4	2.2	8	19°24.9'	155°24.5'	Kaoiki Fault system	--------
27	13	41	00.5	3.2	5	19°20.9'	155°47.6'	13 km ESE. of Hookena	--------
28	01	50	08.6	2.2	3	19°15.2'	155°14.8'	15 km SSE. of Ahua seismometer.	--------
28	13	34	20.9	2.0	35	19°07.5'	155°29.8'	12 km NE. of Naalehu	--------
30	10	01	22.9	3.1	5	19°08.0'	155°05.7'	17 km SE. of Apua Point.	--------

Table 5.--Distant earthquakes

Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in table 6. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, focal depths, and magnitude reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

Jan. 5, 1965

M	Z	eP	18:14:06.2 c
A	Z	eP	05.8 c
U	PEE	eS	18:20:33
U	PEE	iL	18:24:06
U	PEZ	eR	18:26:08

C&GS card 3-65:
18:05:58.6
20.3° S., 174.1° W.
Tonga Islands
h about 33 km
Magnitude 6.75 (Pas), 6.25 (Brk), 6.0 (CGS).

Jan. 7

M	Z	iP	16:06:03.0 d
A	Z	eP	02.2 d
D	Z	iP	03.1 d
MP	Z	eP	01.6 d
U	Z	eP	02.2 d

C&GS card 3-65:
15:56:32.5
16.2° N., 97.2° W.
Oaxaca, Mex.
Felt: Mexico City
h about 43 km
Magnitude 5.5 (CGS).

Jan. 8

Pa	Z	Tmax	22:15:00
NB	Z	Tmax	22:15:45

C&GS card 7-65:
21:08:06.0
13.2° S., 112.0° W.
Northern Easter Island Cordillera
h about 33 km
Magnitude 5.25-5.5 (Pas), 5 (Brk), 4.9 (CGS).

Jan. 9

M	Z	iP	13:44:34.5 c
A	Z	iP	34.8 c
D	Z	iP	34.1 c
MP	Z	iP	35.5 c
U	Z	iP	34.6 c
Pa	Z	eP	36.2 c
Hi	Z	eP	35.6 c
NB	Z	iP	33.3 c
U	PEZ	eR	14:07:21

C&GS card 5-65:
13:32:46.4
11.9° N., 126.2° E.
Philippine Islands region
h about 5 km
Magnitude 6.1 (CGS).

Table 5.--Distant earthquakes--Continued

Jan. 21, 1965

M	Z	eP	06:19:50.9 d
A	Z	eP	50.1 d
MP	Z	eP	50.3 d
U	Z	eP	50.5 d

C&GS card 15-65:
06:09:58
34.2° S., 179.8° E.
South of Kermadec Islands
h about 33 km
Magnitude 5.75-6 (Brk), 5.9 (CGS).

Jan. 24

M	Z	iP	00:23:27.4 c
A	Z	iP	27.4 c
D	Z	eP	26.9 c
MP	Z	iP	27.5 c
U	Z	iP	27.5 c
Hi	Z	iP	29.2 c
NB	Z	iP	26.4 c
Na	Z	iP	25.7 c
Ke	Z	iP	24.7 c
U	PEE	iS	00:34:01
U	PEE	eG	00:45:21
U	PEZ	eR	00:48:09

C&GS card 6-65:
00:11:12.1
2.4° S., 126.0° E.
Ceram Sea
Felt: Davao, Philippine Islands; Halmahera.
h about 6 km
Magnitude 6.6 (CGS), 7.5 (HVO).

Jan 25

M	Z	iP	16:53:58.3 c
NP	Z	iP	58.7 c

C&GS card 7-65:
16:44:18.7
13.7° N., 144.3° E.
Mariana Islands
h about 139 km
Magnitude 5.4 (CGS).

Jan. 30

M	Z	eP	17:49:50.5 c
A	Z	iP	50.6 c
D	Z	eP	50.3 c
MP	Z	iP	51.1 c
WP	Z	iP	50.7 c
Pa	Z	iP	52.5 c
Na	Z	iP	47.7 d

C&GS card 10-65:
17:42:12.3
13.0° S., 169.4° E.
Santa Cruz Islands region
h about 647 km
Magnitude 5.2 (CGS).

February 1, 1965

M	Z	eP	05:34:29.7 d
A	Z	eP	29.5 d
D	Z	eP	28.7 d
MP	Z	eP	29.7 d
U	Z	eP	29.5 d
Pa	Z	eP	31.2 d
Hi	Z	iP	32.5 d
NB	Z	iP	29.5 d
Ha	Z	iP	34.7 d
Na	Z	iP	25.1 d
Ka	Z	iP	32.3 d

C&GS card 8-65:
05:27:04.5
18.6° S., 178.1° W.
Fiji Islands region
h about 472 km
Magnitude 5.6 (CGS).

Feb. 2

A	Z	iP	04:40:08.7 c
D	Z	iP	09.6 c
MP	Z	iP	08.3 c
U	Z	iP	09.0 c

C&GS card 8-65:
04:30:33.1
17.2° N., 94.5° W.
Chiapas, Mex.
h about 140 km
Magnitude 4.75 (Brk), 5.3 (CGS).

January 10, 1965

M	Z	iP	13:45:23.5 d
A	Z	iP	23.4 d
D	Z	eP	23.0 d
U	Z	eP	23.4 d
NB	Z	iP	21.9 d
Ha	Z	eP	25.1 c
Ke	Z	eP	18.7 d
U	PEN	iS	13:52:30
U	PEE	iG	13:57:10
U	PEZ	iR	13:59:04
M	Z	Tmax	14:38:32
A	Z	Tmax	31
D	Z	Tmax	22
U	Z	Tmax	32
NB	Z	Tmax	46
Ha	Z	Tmax	53
Na	Z	Tmax	11
Ke	Z	Tmax	18
Ka	Z	Tmax	33

C&GS card 3-65A:
13:36:30.7
13.5° S., 166.6° E.
New Hebrides Islands
h about 32 km
Magnitude 6.75 (Pas), 6.5 (CGS), 7 (HVO).

Jan. 11

M	Z	iP	20:24:16.0 c
D	Z	eP	16.2 c
U	Z	eP	16.5 c
NB	Z	iP	14.2 c

C&GS card 2-65:
20:14:33.5
43.0° N., 139.2° E.
Eastern Sea of Japan
h about 189 km
Magnitude 5.3 (CGS).

Jan. 15

M	Z	iP	20:20:39.6 c
A	Z	eP	39.0 c
WP	Z	iP	39.3 c
Hi	Z	iP	42.2 c

C&GS card 8-65:
20:13:27.8
18.6° S., 178.7° W.
Fiji Islands region
h about 685 km
Magnitude 5.3 (CGS).

Jan. 15

U	PEZ	eS	23:34:01
U	PEZ	eR	23:40:25

C&GS card 6-65:
23:17:36.0
13.3° S., 166.3° E.
New Hebrides Islands
h about 8 km
Magnitude 5.5 (CGS).

Jan. 16

M	Z	iP	12:59:48.2 d
A	Z	iP	47.6 d
D	Z	eP	46.6 d
MP	Z	iP	47.7 d
U	Z	eP	47.6 d
Hi	Z	eP	50.4 d
Ka	Z	eP	50.1 d

C&GS card 5-65:
12:51:29
25.6° S., 180.0° W.
South of Fiji Islands
h about 445 km
Magnitude 4.9 (CGS).

Jan. 17

M	Z	iP	10:51:26.6 c
A	Z	iP	26.1 c
D	Z	iP	25.5 c
MP	Z	iP	26.4 c
U	Z	iP	26.1 c
Hi	Z	iP	28.9 c
NB	Z	eP	25.3 c
Na	Z	iP	23.0 c
Ka	Z	eP	28.6 c

C&GS card 5-65:
10:43:17.5
24.5° S., 178.4° E.
South of Fiji Islands
h about 568 km
Magnitude 5.5 (CGS).

February 4, 1965

MP	Z	eP	04:44:55.7 c

C&GS card 11-65:
04:33:09.5
3.9° N., 128.7° E.
North of Halmahera
h about 41 km.

Feb. 4

M	Z	eP	05:08:37.5 c
A	Z	eP	38.4 c
D	Z	eP	38.5 c
U	Z	eP	38.2 c
Pa	Z	eP	38.5 c
Hi	Z	eP	37.0 c
Ha	Z	eP	26.9 c
Ke	Z	eP	34.5 c

(All other phases lost)

C&GS card 9-65:
05:01:21.8
51.3° N., 178.6° E.
Rat Islands, Aleutian Islands
Seismic sea wave generated
h about 40 km
Magnitude 7.75 (Pas), 7.75 (Brk), 7.5 (CGS-ML).

Feb. 4

M	Z	eP	06:12:29.7 d
Hi	Z	eP	29.5 d

C&GS card 14-65:
06:04:58
51.7° N., 174.9° E.
Rat Islands, Aleutian Islands
aftershock.
h about 35 km
Magnitude 6.1 (CGS).

Feb. 4

M	Z	eP	06:44:51.2 c
A	Z	eP	52.2 c
D	Z	eP	52.2 c
MP	Z	eP	52.5 c

February 4--Continued

Hi	Z	eP	51.4 c
NB	Z	iP	51.1 c

C&GS card 9-65:
06:37:05.4
52.6° N., 172.0° W.
Rat Islands, Aleutian Islands
aftershock.
h about 35 km
Magnitude 5.7 (CGS).

Feb. 4

NB	Z	eP	07:30:54.1 d

C&GS card 9-65:
07:23:12.3
51.9° N., 173.2° E.
Rat Islands, Aleutian Islands
aftershock.
h about 25 km
Magnitude 5.5 (CGS).

Feb. 4

M	Z	iP	07:51:27.4 d
Hi	Z	eP	26.8 d
NB	Z	iP	27.1 d
Na	Z	eP	30.2 d

C&GS card 9-65:
07:43:43.2
52.7° N., 172.9° E.
Rat Islands, Aleutian Islands
aftershock.
h about 33 km
Magnitude 5.5 (CGS).

February 4, 1965

M	Z	iP	08:14:02.2 d
A	Z	eP	03.4 d
D	Z	eP	02.8 d
MP	Z	eP	03.7 d
NB	Z	iP	01.8 d

C&GS card 9-65:
08:06:16.6
51.9° N., 174.3° E.
Rat Islands, Aleutian Islands aftershock.
h about 40 km
Magnitude 5.6 (CGS).

Feb. 4

M	Z	eP	08:47:53.4 c
A	Z	eP	54.5 c
D	Z	eP	54.4 c
MP	Z	eP	54.7 c
U	Z	eP	54.2 c
Pa	Z	eP	54.7 c
Hi	Z	iP	52.7 c
NB	Z	eP	53.2 c
Ha	Z	iP	43.0 c
Na	Z	eP	08:47:54.6 c
Ke	Z	eP	51.0 c
M	Z	Tmax	09:27:55
A	Z	Tmax	53
D	Z	Tmax	09:27:52
MP	Z	Tmax	59
U	Z	Tmax	56
Pa	Z	Tmax	48
Hi	Z	Tmax	54
NB	Z	Tmax	56
Ha	Z	Tmax	09:25:44
Na	Z	Tmax	09:28:01

C&GS card 9-65:
08:40:40.9
51.3° N., 179.5° E.
Rat Islands, Aleutian Islands aftershock.
h about 40 km
Magnitude 6.75-7 (Pas), 6.4 (CGS).

Feb. 4

M	Z	Tmax	10:22:50
Ha	Z	Tmax	20

C&GS card 9-65:
09:35:20.3
51.8° N., 176.3° E.
Rat Islands, Aleutian Islands aftershock.
h about 30 km
Magnitude 5.2 (CGS).

Feb. 4

M	Z	Tmax	10:24:53
Ha	Z	Tmax	30

C&GS card 14-65:
09:37:28.4
51.8° N., 176.3° E.
Rat Islands, Aleutian Islands aftershock.
h about 25 km
Magnitude 5.3 (CGS).

Feb. 4

M	Z	eP	12:13:54.6 d
A	Z	eP	55.7 d
D	Z	eP	55.4 d
MP	Z	eP	56.1 d
Hi	Z	eP	53.9 d
NB	Z	eP	53.9 d
Ha	Z	iP	43.9 c
Na	Z	eP	57.6 d
Ke	Z	iP	52.8 d
U	PEZ	eS	12:20:12
U	PEZ	eR	12:25:00

C&GS card 9-65:
12:06:04.3
52.6° N., 172.1° E.
Rat Islands, Aleutian Islands aftershock.
h about 25 km
Magnitude 6.5 (Pas), 5.8 (CGS), 6.5 (HVO).

February 4, 1965

M	Z	iP	14:26:23.9 d
A	Z	eP	25.0 d
D	Z	eP	24.9 d
MP	Z	eP	25.2 d
U	Z	eP	24.5 d
Ha	Z	iP	12.9 d
U	PEE	iS	14:32:46
U	PEE	iG	14:36:00
U	PEZ	iR	14:37:52
Ha	Z	Tmax	15:09:51

C&GS card 9-65:
14:18:27.9
53.0° N., 171.0° E.
Rat Islands, Aleutian Islands aftershock.
h about 30 km
Magnitude 6.25 (Pas), 5.7 (CGS), 6.5 (HVO).

Feb. 4

M	Z	iP	15:59:19.3 d
A	Z	eP	20.3 d
D	Z	eP	20.1 d
MP	Z	eP	20.7 d
U	Z	eP	20.1 d
Pa	Z	eP	20.8 d
Hi	Z	iP	18.6 d
NB	Z	iP	18.8 d
Ha	Z	iP	07.5 c
Na	Z	iP	21.6 d
U	PEE	eG	16:09:00
U	PEZ	eR	16:10:52
Ha	Z	Tmax	16:42:33

C&GS card 9-65:
15:51:25.5
53.1° N., 170.8° E.
Rat Islands, Aleutian Islands aftershock.
h about 40 km
Magnitude 6.25 (Pas), 5.7 (CGS), 6.5 (HVO).

Feb. 5

M	Z	eP	09:39:45.3 d
A	Z	eP	46.4 d
D	Z	eP	46.5 d
U	Z	eP	46.0 d
Pa	Z	eP	47.7 d
Hi	Z	iP	45.2 d
NB	Z	iP	44.9 d
Ha	Z	iP	33.7 c
Na	Z	eP	47.5 d
Ke	Z	eP	43.7 d
U	PEZ	eS	09:45:56
U	PEE	eG	09:49:06
U	PEZ	eR	09:50:38
Ha	Z	Tmax	10:19:59

C&GS card 9-65:
09:32:09.3
52.3° N., 174.3° E.
Rat Islands, Aleutian Islands aftershock.
h about 41 km
Magnitude 5.5 (Brk), 6.5 (Pas), 5.9 (CGS), 6.3 (HVO).

Feb. 5

U	PEZ	iR	21:05:42

C&GS card 9-65:
20:47:13.3
51.9° N., 174.6° E.
Rat Islands, Aleutian Islands aftershock.
h about 35 km
Magnitude 5.7 (CGS).

Feb. 5

A	Z	eP	22:23:46.7 c

C&GS card 14-65:
22:15:59.5
51.5° N., 176.7° E.
Rat Islands, Aleutian Islands aftershock.
h about 25 km
Magnitude 5.6 (CGS).

February 6, 1965

M	Z	iP	01:47:16.2 d
A	Z	eP	17.4 d
D	Z	iP	17.5 d
MP	Z	iP	17.5 d
U	Z	iP	16.9 d
Pa	Z	eP	17.1 d
Hi	Z	iP	14.4 d
NB	Z	iP	16.3 d
Ha	Z	iP	04.6 d
Na	Z	iP	20.6 d
Ke	Z	iP	15.6 d
U	PEZ	iS	01:52:43
U	PEE	iL	01:54:31
U	PEZ	iR	01:55:53
M	Z	Tmax	02:25:12
A	Z	Tmax	23
MP	Z	Tmax	02:25:26
U	Z	Tmax	36
Pa	Z	Tmax	06
NB	Z	Tmax	52
Ha	Z	Tmax	02:23:38

C&GS card 11-65:
01:40:33.2
53.2° N., 161.9° W.
South of Alaska
h about 33 km
Magnitude 6.4 (CGS), 6.5 (HVO).

Feb. 6

M	Z	eP	04:10:23.5 c
A	Z	eP	24.5 c
D	Z	eP	24.5 c
MP	Z	eP	24.9 c
Hi	Z	iP	23.2 c
NB	Z	iP	23.6 c
U	PEZ	eS	04:16:23
U	PEN	eG	04:19:03
U	PEZ	iR	04:20:46
Ha	Z	Tmax	04:50:18

C&GS card 14-65:
04:02:53
52.1° N., 175.7° E.
Rat Islands, Aleutian Islands aftershock.
h about 35 km
Magnitude 6 (Pal), 5.9 (CGS).

Feb. 6

M	Z	iP	16:57:12.0 d
A	Z	eP	13.1 d
D	Z	iP	13.0 d
MP	Z	eP	13.3 d
U	Z	eP	12.7 d
Hi	Z	eP	10.5 d
NB	Z	iP	11.8 d
Ha	Z	eP	01.8 d
Na	Z	eP	16.1 d
Ke	Z	iP	11.5 d
U	PEZ	iS	17:02:43
U	PEE	iL	17:04:27
U	PEZ	iR	17:05:51
M	Z	Tmax	17:35:41
A	Z	Tmax	42
MP	Z	Tmax	34
U	Z	Tmax	40
NB	Z	Tmax	31
Ha	Z	Tmax	17:34:07

C&GS card 13-65:
16:50:29
53.3° N., 161.8° W.
South of Alaska
h about 33 km
Magnitude 6.5 (Pas), 6.25-6.5 (Brk), 6-6.25 (Pal), 6.1 (CGS), 6.5 (HVO).

Feb. 7

A	Z	iP	02:24:44.8 c
D	Z	eP	45.0 c
MP	Z	eP	45.3 c
U	Z	iP	44.3 c
Hi	Z	eP	43.9 c
NB	Z	eP	44.1 c
Na	Z	eP	45.8 c
U	PEZ	eR	02:34:51

C&GS card 9-65:
02:17:09.2
51.4° N., 173.4° E.
Rat Islands, Aleutian Islands aftershock
h about 40 km
Magnitude 6.0 (CGS).

Table 5.--Distant earthquakes--Continued

February 7, 1965

M	Z	iP	04:18:52.2 c
A	Z	eP	53.2 c
D	Z	eP	53.2 c
MP	Z	eP	54.3 c
U	Z	eP	52.8 c
Hi	Z	iP	51.6 c
NB	Z	eP	52.2 c
U	PEZ	eR	04:29:31

C&GS card 9-65:
04:11:19.3
51.9° N., 175.3° E.
Rat Islands, Aleutian Islands aftershock.
h about 25 km
Magnitude 5.5 (CGS), 5.4 (HVO).

Feb. 7

U	Z	eP	09:33:05.6 c
U	PEZ	iS	09:38:47
U	PEZ	iR	09:43:07

C&GS card 9-65:
09:25:51.1
51.4° N., 179.1° E.
Rat Islands, Aleutian Islands aftershock.
h about 30 km
Magnitude 5.3 (CGS), 5.5 (HVO).

Feb. 8

U	Z	eP	15:55:14.2 c
Pa	Z	eP	14.5 c
Hi	Z	eP	13.6 c
U	PEN	eG	16:05:55

C&GS card 10-65:
15:46:49.9
55.1° N., 165.7° E.
Komandorsky Islands region.
h about 40 km
Magnitude 5.6 (CGS).

Feb. 9

M	Z	iP	05:50:51.1 c
A	Z	eP	50.9 c
D	Z	eP	50.3 c
U	Z	eP	51.1 c
Pa	Z	iP	53.0 c
Hi	Z	eP	53.5 c
Na	Z	iP	47.7 c

C&GS card 18-65:
05:42:06.8
18.8° S., 169.2° E.
New Hebrides Islands
h about 223 km
Magnitude 5.5 (CGS).

Feb. 12

A	Z	eP	00:50:49.3 c
Ha	Z	Tmax	01:30:52

C&GS card 12-65:
00:43:17.1
51.5° N., 175.8° E.
Rat Islands, Aleutian Islands aftershock.
h about 33 km
Magnitude 5.75 (Pas), 5.4 (CGS).

Feb. 12

M	Z	eP	01:02:49.3 c
A	Z	eP	50.3 c
D	Z	eP	50.0 c
MP	Z	eP	50.5 c
NB	Z	eP	48.5 c
U	PEN	eS	01:09:10
U	PEE	eG	01:12:06
U	PEZ	eR	01:14:06
Ha	Z	Tmax	01:44:36

C&GS card 14-65:
00:55:06.2
52.2° N., 172.8° E.
Rat Islands, Aleutian Islands aftershock.
h about 25 km
Magnitude 6.0 (Pas), 5-5-5.75 (Pal), 5.5 (CGS), 5.8 (HVO).

Table 5.--Distant earthquakes--Continued

February 12, 1965

Pa	Z	Tmax	11:32:18
NB	Z	Tmax	50
Ha	Z	Tmax	10

C&GS card 13-65:
10:50:19.7
40.3° N., 124.9° W.
Near coast of northern Calif.
h about 33 km
Magnitude 5.3 (CGS).

Feb. 12

Ha	Z	Tmax	21:31:56

C&GS card 13-65:
20:50:46
40.3° N., 124.7° W.
Near coast of northern Calif.
h about 33 km
Magnitude 4.9 (CGS).

Feb. 15

U	PEZ	eR	01:42:20

C&GS card 12-65:
01:25:08.8
51.4° N., 179.4° E.
Rat Islands, Aleutian Islands aftershock.
h about 42 km
Magnitude 5.8 (CGS).

Feb. 15

Ha	Z	Tmax	07:27:14

C&GS card 21-65:
06:42:11.2
51.4° N., 179.5° E.
Rat Islands, Aleutian Islands aftershock.
h about 28 km
Magnitude 4.9 (CGS).

Feb. 15

M	Z	iP	10:55:20.9 c
A	Z	iP	21.0 c
D	Z	iP	20.4 c
MP	Z	iP	21.2 c
U	Z	iP	20.9 c
Hi	Z	iP	22.2 c
NB	Z	iP	19.9 c
Ha	Z	iP	18.5 c
Na	Z	eP	18.9 c

Feb. 15--Continued

Ke	Z	iP	17.6

C&GS card 023-65:
10:43:19.8
3.0° N., 125.9° E.
Talaud Islands
h about 33 km
Magnitude 6.0 (CGS).

Feb. 17

M	Z	iP	10:26:14.8 d
A	Z	eP	15.6 d
NB	Z	eP	14.7 d

C&GS card 12-65:
10:18:51.3
51.8° N., 176.6° E.
Rat Islands, Aleutian Islands aftershock.
h about 44 km
Magnitude 5-5.25 (Brk), 5.6 (CGS).

Feb. 18

M	Z	iP	23:20:51.2 c
A	Z	iP	52.4 c
D	Z	eP	52.3 c
MP	Z	iP	52.8 c
U	Z	iP	52.2 c
Pa	Z	iP	52.3 c
Hi	Z	iP	50.5 c
Ha	Z	iP	38.6 c
U	PEZ	iR	23:30:54

C&GS card 14-65:
23:13:36.3
51.4° N., 179.1° E.
Rat Islands, Aleutian Islands aftershock.
h about 28 km
Magnitude 6 (Pas), 5 (Brk), 5.5-5.75 (Pal), 5.4 (CGS).

Feb. 23

M	Z	eP	22:25:02.6 d
A	Z	iP	01.7 d
D	Z	iP	01.9 d
MP	Z	iP	01.2 d
Ke	Z	eP	04.4 d
U	PEE	iSKS	22:35:36
U	PEZ	iPS	22:37:24
U	PEZ	iSS	22:42:44
U	PEN	eG	22:50:20
U	PEZ	iR	22:54:22
M	Z	Tmax	00:09:21
A	Z	Tmax	09
D	Z	Tmax	10
MP	Z	Tmax	12
U	Z	Tmax	05
Pa	Z	Tmax	09
Hi	Z	Tmax	06
NB	Z	Tmax	19
Ha	Z	Tmax	00:10:54

C&GS card 20-65:
22:11:50.2
25.7° S., 70.5° W.
Near coast of northern Chile.
1 killed, 5 injured and heavy damage.
h about 80 km
Magnitude 7.25 (Pas), 6.75 (Brk), 6.75-7 (Pal), 6.2 (CGS), 7.25 (HVO).

Feb. 25

M	Z	eP	05:01:14.9 d
D	Z	iP	13.9 d
MP	Z	eP	13.7 d
Na	Z	eP	12.3 d
U	PEN	eS	05:09:09
U	PEN	iG	05:15:25
U	PEZ	eR	05:17:49

C&GS card 024-65:
04:51:27.8
5.5° S., 152.0° E.
New Britain region
h about 35 km
Magnitude 6.5 (Pas), 6.25-6.5 (Brk), 5.9 (CGS), 6.5 (HVO).

Feb. 25

M	Z	eP	05:29:54.8 c
A	Z	eP	55.7 c
D	Z	eP	55.6 c
MP	Z	eP	56.1 c

Feb. 25--Continued

U	Z	eP	55.4 c
Na	Z	eP	57.4 c

C&GS card 21-65:
05:22:14.5
52.1° N., 173.2° E.
Rat Islands, Aleutian Islands aftershock.
h about 35 km
Magnitude 5.6 (CGS).

Feb. 26

M	Z	iP	23:48:10.5 d
A	Z	iP	09.6 d
MP	Z	iP	09.5 d
U	Z	iP	09.7 d
NB	Z	eP	11.4 d
Ke	Z	eP	12.7 d

C&GS card 16-65:
23:36:12.2
6.9° N., 73.0° W.
Northern Colombia
Felt at Bogota, Bucaramanga, and Calcutta.
h about 146 km
Magnitude 5.75-6 (Brk), 5.7 (CGS).

Feb. 27

U	PEZ	eR	08:04:29

C&GS card 20-65:
07:46:29.1
28.5° N., 112.1° W.
Gulf of Calif.
h about 33 km
Magnitude 5.3 (CGS).

Mar. 1

M	Z	eP	07:30:42.7 d
D	Z	eP	41.6 d
Na	Z	eP	38.6 d
NB	Z	eP	41.3 d

C&GS card 024-65:
07:20:55.3
5.5° S., 152.1° E.
New Britain region
Felt at Rabaul, Doilene, and Karlai
h about 35 km
Magnitude 5.75-6 (Pal), 5.7 (CGS), 5.25-5.5 (Brk).

Table 5.--Distant earthquakes--Continued

March 1, 1965

M	Z	eP	13:32:49.9 d
D	Z	iP	49.9 d

C&GS card 023-65:
13:20:56.7
21.2° N., 121.2° E.
Taiwan region
h about 42 km
Magnitude 5.5 (CGS).

Mar. 1

M	Z	eP	19:29:40.3 c
D	Z	eP	41.1 c
MP	Z	eP	41.8 c
U	Z	eP	41.0 c
Hi	Z	eP	40.0 c
NB	Z	eP	39.6 c
Ha	Z	eP	27.8 c
Ke	Z	eP	38.0 c

C&GS card 17-65:
19:22:01.6
52.2° N., 173.9° W.
Rat Islands, Aleutian Islands
aftershock.
h about 30 km
Magnitude 5.5 (CGS).

Mar. 1

M	Z	eP	21:42:07.9 d
A	Z	eP	07.1 d
D	Z	eP	07.7 d
U	Z	eP	07.2 d
Pa	Z	eP	04.7 d
Hi	Z	iP	05.4 d
NB	Z	eP	09.2 d
Ha	Z	eP	12.2 d
Ke	Z	eP	10.5 d
M	Z	ipP	31.7 c
A	Z	epP	30.7 c
D	Z	ipP	31.4 c
U	Z	epP	31.0 c
U	PEN	eS	21:50:19
U	PEN	eG	21:56:41

Mar. 1, 1965--Continued

C&GS card 023-65:
21:32:11.8
15.4° N., 92.5° W.
Mexico-Guatemala Border region
Felt at San Salvador
h about 93 km
Magnitude 6 (Pas), 5.5 (Brk),
5.75-6 (Pal),
5.9 (CGS), 6 (HVO).

Mar. 1

M	Z	eP	22:00:06.9 c
Pa	Z	iP	07.8 c
NB	Z	eP	05.9 c
Ha	Z	eP	11.2 c
Ke	Z	iP	04.7 c

C&GS card 024-65:
21:52:04.4
23.5° S., 179.0° E.
South of Fiji Islands
h about 541 km
Magnitude 5.2 (CGS).

Mar. 3

M	Z	eP	15:24:01.5 d
U	Z	eP	01.0 d
Pa	Z	eP	04.2 d
NB	Z	eP	15:23:59.7 d
U	PEE	iS	15:31:56
U	PEE	eG	15:37:54
U	PEZ	iR	15:40:34

C&GS card 026-65:
15:14:09.7
5.5° S., 151.9° E.
New Britain region
h about 44 km
Magnitude 6.75-7 (Pas), 6.5-6.75
(Brk), 7.25-7.5 (Pal),
6.0 (CGS), 6.5 (HVO).

March 3, 1965

MP	Z	eP	16:55:21.4 c
NB	Z	eP	19.7 c

C&GS card 17-65:
16:47:25.7
53.1° N., 171.2° E.
Rat Islands, Aleutian Islands aftershock.
h about 23 km
Magnitude 5.6 (CGS).

Mar. 4

M	Z	iP	01:58:56.9 d
A	Z	eP	56.5 d
D	Z	iP	55.8 d
MP	Z	eP	56.8 d
U	Z	iP	56.5 d
Hi	Z	iP	58.5 d
NB	Z	eP	55.2 d
Ha	Z	iP	54.6 d
Ke	Z	iP	52.7 d

C&GS card 024-65:
01:48:54.1
5.4° S., 147.0° E.
East New Guinea region
Felt at Lae and Aiome
h about 191 km
Magnitude 6.4 (CGS).

Mar. 8

Pa	Z	iP	15:11:31.4 c
Hi	Z	iP	33.7 c
NB	Z	eP	29.4 c
Ke	Z	iP	28.0 c

C&GS card 025-65:
15:04:16.2
17.7° S., 178.9° W.
Fiji Islands region
h about 589 km
Magnitude 4.5-4.75 (Brk), 5.0 (CGS).

Mar. 8

Pa	Z	iP	19:31:50.7 c
Hi	Z	iP	50.9 c
NB	Z	iP	48.5 c
Ha	Z	eP	52.6 c

C&GS card 025-65:
19:22:45.6
22.3° S., 171.4° E.
Loyalty Islands region
h about 125 km
Magnitude 5.75-6 (Brk), 5.4 (CGS).

Mar. 9

Hi	Z	iP	01:44:04.0 c
Ke	Z	eP	02.4 c

C&GS card 023-65:
01:36:45.4
17.0° S., 177.4° W.
Fiji Islands region
h about 386 km
Magnitude 5.75-6 (Bks), 5.5 (CGS).

Mar. 10

M	Z	iP	16:01:28.2 d
D	Z	eP	27.0 d
U	Z	eP	27.7 d
Hi	Z	iP	30.6 d
NB	Z	iP	27.8 d
Ha	Z	iP	33.0 d
Na	Z	iP	24.2 d

C&GS card 023-65:
15:53:37.8
21.9° S., 179.6° E.
South of Fiji Islands
h about 547 km
Magnitude 5.7 (CGS).

Mar. 10

M	Z	Tmax	22:38:24
A	Z	Tmax	32
D	Z	Tmax	20
U	Z	Tmax	33
Ha	Z	Tmax	22:36:42

Mar. 10, 1965--Continued

C&GS card 026-65:
21:52:57.6
56.3° N., 155.6° W.
Alaska Peninsula
h about 33 km
Magnitude 5.0 (CGS).

Mar. 14

U	PEZ	iP	16:07:14	c
Hi	Z	iP[1]	16:11:15.8	c
NB	Z	iP[1]	16:11:16.3	c
U	PEN	iSKS	16:17:34	
U	PEN	eS	16:19:06	
U	PEN	iPS	16:21:20	
U	PEN	esSS	16:28:18	
U	PEN	eG	16:39:02	

C&GS card 026-65:
15:53:06.6
36.3° N., 70.7° E.
Hindu Kush region
Light damage in Afghanistan and West Pakistan.
Felt in India
h about 219 km
Magnitude 7.75 (Brk), 7.5-7.75 (Pas), 6.6 (CGS), 7.5 (HVO).

March 16

NB	Z	eP	16:55:52.9	c
Na	Z	iP	56.5	c
U	PEN	iS	17:03:45	
U	PEN	eG	17:09:25	
U	PEZ	eR	17:11:45	

C&GS card 025-65:
16:46:15.5
40.8° N., 142.9° E.
Near east coast of Honshu, Japan
Felt at Morioka and Aomori
h about 34 km
Magnitude 6.5 (Pas), 6.5-6.75 (Pal), 5.6 (CGS), 6.1 (HVO).

Mar. 17

M	Z	iP	12:53:04.3	c
A	Z	eP	04.7	c
WP	Z	iP	04.6	c
MP	Z	iP	05.2	c

C&GS card 029-65:
12:41:08.8
1.2° N., 126.8° E.
Molucca Passage
h about 68 km
Magnitude 5.1 (CGS).

Mar. 17

M	Z	iP	14:35:02.7	d
A	Z	iP	03.7	d
D	Z	iP	03.3	d
MP	Z	eP	04.4	d
U	Z	iP	03.2	d
Hi	Z	eP	02.6	d
NB	Z	iP	02.3	d
Na	Z	iP	05.1	d

C&GS card 025-65:
14:27:12.4
52.8° N., 171.9° E.
Near Islands, Aleutian Islands
Felt on Shemya
h about 23 km
Magnitude 6.0 (CGS).

Mar. 18

M	Z	iP	06:29:58.5	d
A	Z	iP	58.0	d
D	Z	eP	57.4	d
MP	Z	iP	58.2	d
WP	Z	iP	58.0	d
Pa	Z	eP	59.7	d
Hi	Z	iP	06:30:01.0	d
NB	Z	iP	06:29:57.5	d
Na	Z	eP	54.5	d
U	PEE	eS	06:36:10	
U	PEE	isS	06:37:28	
U	PEE	iSS	06:40:44	

March 18, 1965--Continued

C&GS card 026-65:
06:22:02.9
19.9° S., 176.1° W.
Fiji Islands region
h about 151 km
Magnitude 5.5 (CGS).

Mar. 18

M	Z	iP	16:23:16.8 c
A	Z	iP	16.4 c
M	Z	iP	16.5 c
U	Z	iP	16.5 c
Pa	Z	eP	18.1 c
Hi	Z	iP	19.4 c
NB	Z	eP	15.8 c
Na	Z	iP	12.7 c
Ka	Z	eP	19.7 c

C&GS card 026-65:
16:15:56.1
17.7° S., 178.9° W.
Fiji Islands region
h about 507 km
Magnitude 5.1 (CGS).

Mar. 19

M	Z	iP	16:33:30.9 c
A	Z	eP	31.1 c
Hi	Z	eP	32.6 c
NB	Z	eP	29.7 c

C&GS card 029-65:
16:20:51.4
2.0° S., 119.8° E.
Celebes
h about 46 km
Magnitude 5.0 (CGS).

Mar. 19

M	Z	iP	23:10:38.5 c
A	Z	iP	38.7 c
D	Z	iP	37.7 c
MP	Z	eP	39.2 c
U	Z	iP	38.7 c
Pa	Z	eP	39.9 c
Hi	Z	iP	40.0 c

Mar. 19--Continued

NB	Z	iP	37.5 c
Na	Z	eP	35.2 c

C&GS card 028-65:
22:58:34.9
0.0° N., 123.4° E.
Northern Celebes
h about 173 km
Magnitude 5.6 (CGS).

Mar. 21

M	Z	iP	11:20:21.7 c
A	Z	eP	21.9 c
D	Z	eP	21.3 c
MP	Z	eP	22.5 c
Pa	Z	eP	24.7 c
Hi	Z	eP	23.8 c
NB	Z	eP	20.5
Ke	Z	eP	18.4 c
U	PEE	iPPS	11:31:16
U	PEZ	iG	11:44:11

C&GS card 030-65:
11:08:16.2
1.5° S., 126.5° E.
Molucca Sea
h about 33 km
Magnitude 6.75 (Pas), 6.75 (Brk),
6.25-6.5 (Pal),
6.2 (CGS).

Mar. 22

M	Z	eP	02:52:10.4 c
A	Z	eP	09.8 c
D	Z	eP	09.2 c
MP	Z	eP	10.2 c
U	Z	eP	10.2 c
Pa	Z	eP	12. c
Hi	Z	eP	13.3 c
Na	Z	iP	07.0 c
Ke	Z	eP	07.9 c
U	PEN	eS	02:58:18
U	PEE	eG	03:00:46
U	PEZ	iR	03:02:34

Table 5.--Distant earthquakes--Continued

March 22, 1965--Continued

C&GS card 035-65:
02:44:47.5
15.3° S., 173.4° W.
Tonga Islands
Felt at Apia
h about 51 km
Magnitude 6.5 (Pas), 6-6.25 (Brk), 6.5-6.75 (Pal), 5.9 (CGS), 6.2 (HVO).

Mar. 23-24

M	Z	eP	00:01:27.4	c
A	Z	eP	26.9	c
D	Z	iP	26.2	c
U	Z	eP	27.2	c
Hi	Z	eP	30.1	c
Na	Z	iP	24.1	c
U	PEZ	eS	00:07:12	
U	PEZ	eR	00:11:16	

C&GS card 036-65:
23:54:14.7
15.2° S., 173.5° W.
Tonga Islands, felt at Apia
h about 130 km
Magnitude 6.5 (Pas), 5.9 (Brk), 6.25-6.5 (Pal), 5.7 (CGS), 6.1 (HVO).

Mar. 24

M	Z	Tmax	08:54:29	
A	Z	Tmax	46	
D	Z	Tmax	23	
U	Z	Tmax	33	
Pa	Z	Tmax	36	

C&GS card 031-65:
08:08:05.2
56.6° N., 152.4° W.
Kodiak Island region
h about 30 km
Magnitude 5 (Brk), 6 (Pal), 5.2 (CGS).

Mar. 24

WP	Z	eP	22:53:58.5	c

C&GS card 033-65:
22:42:09.6
8.4° N., 126.6° E.
Mindanao, P. I.
h about 51 km
Magnitude 5.8 (CGS).

Mar. 28

MP	Z	eP	13:31:37.9	c
Pa	Z	iP	39.1	c
Hi	Z	eP	36.8	c

C&GS card 030-65:
13:22:57.6
55.1° N., 162.1° E.
Near east coast of Kamchatka
h about 33 km
Magnitude 5.9 (CGS).

Mar. 28

M	Z	eP	16:46:35.9	d
A	Z	iP	34.5	d
MP	Z	iP	34.2	d
U	Z	eP	34.9	d
Pa	Z	iP	33.0	d
Hi	Z	iP	34.8	d
NB	Z	iP	37.1	d
Na	Z	iP	34.9	d
Ke	Z	eP	38.5	d
U	PEZ	iPP	16:50:40	c
U	PEE	iS	16:58:07	
U	PEZ	iR	17:16:59	
M	Z	Tmax	18:32:33	
A	Z	Tmax	27	
D	Z	Tmax	25	
MP	Z	Tmax	23	
U	Z	Tmax	27	
Pa	Z	Tmax	12	
Hi	Z	Tmax	24	
NB	Z	Tmax	52	
Na	Z	Tmax	24	

March 28, 1965--Continued

C&GS card 028-65:
16:33:14.6
32.4° S., 71.2° W.
Near coast of central Chile
About 400 dead or missing, many injured, and extensive property damage in central Chile.
h about 61 km
Magnitude 7-7.25 (Pas), 6.4 (CGS), 7.5 (HVO).

Mar. 29

M	Z	eP	10:57:17.3 c
D	Z	eP	17.9 c
MP	Z	eP	18.5 c
U	Z	eP	18.0 c
Hi	Z	eP	17.9 c
NB	Z	eP	16.6 c
Na	Z	eP	17.9 c
U	PEE	iS	11:05:14
U	PEZ	iR	11:13:20

C&GS card 031-65:
10:47:37.6
40.8° N., 142.8° E.
Near east coast of Honshu, Japan.
h about 33 km
Magnitude 6.1 (CGS), 6.3 (HVO).

Mar. 29-30

M	Z	iP	00:06:26.8 c

C&GS card 036-65:
23:57:33.5
28.7° S., 178.4° W.
Kermadec Islands
h about 228 km
Magnitude 4.4 (Brk), 5.2 (CGS).

Mar. 30

M	Z	iP	02:34:17.6 d
A	Z	eP	18.9 d
D	Z	eP	18.6 d
U	Z	eP	18.4 d

March 30, 1965--Continued

Hi	Z	eP	16.5 d
NB	Z	eP	17.3 d
Ha	Z	iP	05.7 d
Ke	Z	iP	16.5 d
U	PEE	iS	02:40:12
U	PEN	iG	02:42:44
A	Z	Tmax	03:14:50
D	Z	Tmax	47
MP	Z	Tmax	44
U	Z	Tmax	49
Ha	Z	Tmax	03:13:04

C&GS card 030-65:
02:27:07.2
50.6° N., 177.9° E.
Rat Islands, Aleutian Islands
Felt at Amchitka
Magnitude 7-7.25 (Pas), 6.75-7 (Brk), 7.75 (Pal), 7.1 (HVO).

Mar. 31

U	PEZ	iPP	10:08:06 d
U	PEZ	ePS	10:18:04
U	PEE	iSS	10:24:48
U	PEZ	eSSS	10:29:44
U	PEE	eG	10:38:44
U	PEZ	e	10:45:44

C&GS card 034-65:
09:47:30.7
38.6° N., 22.4° E.
Greece
3 killed, 16 injured, major property damage at Patras and Agrinion.
Felt in southern Italy
h about 78 km
Magnitude 6.75 (Pas), 6.75-7 (Brk), 6.5-6.75 (Pal), 6.3 (CGS).

Table 6.--U.S. Geological Survey seismograph stations in Hawaii

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Lat. N.	Long. W.		
Uwekahuna (Hawaiian Volcano Observatory)	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z. (Seismometer and galvanometer periods are 15 and 90 seconds, respectively.) Short-period Sprengnether: E, Z. HVO-1: Z[1]. Short-base liquid-level tiltmeter.
Mauna Loa	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z[2].
Ahua	A	19°22.4'	155°15.9'	1,070	Do.
Desert	D	19°20.2'	155°23.3'	815	Do.
North Pit	N	19°24.9'	155°17.0'	1,115	Do.
West Pit	WP	19°24.7'	155°17.5'	1,115	Do.
Makaopuhi	MP	19°21.8'	155°10.7'	885	1.0 sec. Benioff with transistorized pre-amplifier: Z. Wired into HVO-2 recording system.

1/HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Overdamping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

2/HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper. The response of this seismograph is similar to that of HVO-1. Records from these seismographs at M, A, and D, and N, WP, and MP (Benioff) are recorded on two 3-component drums to permit more accurate comparison of arrival times at these stations.

Table 6.--U.S. Geological Survey seismograph stations in Hawaii--Continued

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west
		Lat. N.	Long. W.		
Hilo	Hi	19°43.2'	155°05.3'	20	HVO-1: Z. Wood-Anderson: N, E. Operated by Sister Thecla at St. Joseph's School.
Kipapa Oahu	Kip	21°25.4'	158°00.9'	76	HVO-1: Z. Operated by U.S. Coast and Geodetic Survey.
Naalehu	Na	19°03.8'	155°35.2'	205	1.0 sec. EV-17 seismometer, 0.5 sec. galvanometer: Z. Operated by Rev. D. Thompson at Naalehu School.
Pahoa	Pa	19°29.7'	154°56.8'	205	HVO-1: Z. Operated by Mr. K. Kimura at Pahoa school.
Kamuela	Ka	20°01.9'	155°42.0'	740	HVO-1: Operated by Mr. Ed. Van Gorder, Preparatory Academy, Kamuela.
Haleakala	Ha	20° 6.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Haleakala National Park, Maui.
North Bay Installed 3/12/64	NB	19°29.7'	155°34.8'	4,005	0.8 sec. EV-17: Z. with helicorder. Operated by U.S. Weather Bureau.
Kealakekua Installed 1/28/64	Ke	19°31.2'	155°55.3'	505	1.0 sec. EV-17, 0.2 sec. galvanometer: Z. Wood-Anderson: N, E. Operated by H. Nelson at Kona County Hospital.

Table 7.--U.S. Geological Survey tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of Reading	Base Length M	Description
		Lat. N.	Long. W.			
Tree Molds	TM	19°26.3'	155°17.3'	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19°24.1'	155°16.8'	--do-----	25.40	Equilateral Triangle.
Kalihipaa	Kal	19°21.4'	155°15.3'	--do-----	50.79	NS. and EW.
Keamoku	Kea	19°25.1'	155°19.0'	--do-----	47.55	Equilateral Triangle.
Ahua Kamokukolau	Kam	19°22.7'	155°16.6'	--do-----	50.79	Do.
Kipuka Nene	KN	19°19.4'	155°16.7'	--do-----	50.79	Do.
Hilina Pali	HP	19°18.2'	155°18.6'	--do-----	47.73	Do.
Kapapala Ranch	Kap	19°20.5'	155°23.8'	--do-----	50.79	Do.
Mehana	M	19°26.2'	155°14.3'	--do-----	25.00	Do.
Uwekahuna	U	19°25.5'	155°17.4'	--do-----	50.79	Do.
Uwekahuna Vault		19°25.4'	155°17.6'	Daily	3.48	NS. and EW.

The following persons or agencies reported "felt" earthquakes during the 1st quarter, 1965. Their assistance is gratefully acknowledged.

Kilauea summit area

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Mrs. V. Hansen
Mr. A. Yamamoto
Mrs. C. K. Wentworth

North Hawaii

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Mr. Y. Kojima
Mrs. E. Christensen
Mrs. A. Walker
Mrs. R. Eklund
Mrs. E. Lindsey

Kona

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Mrs. Isbell
Miss N. Wallace
Mrs. Schattauer

Kau

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 38

April, May, and June, 1965

By

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Issued June 1966

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Summary of activities

Extreme quiet prevailed at Hawaii's volcanoes during the 3 months following the March 1965 eruption along the upper east rift of Kilauea. At no time did the total count of earthquakes reach 100 a day, and the count of local shallow Kilauea quakes did not exceed 55 on any day.

Moderate reinflation of the summit is recorded by the mid-June readings of the long-base tiltmeters. Monitoring daily from the short-base tiltmeter in Uwekahuna vault shows 3 microradians of rise to the west (with no northerly component) between April 1 and the end of May; during June there was a rise to the northwest of about 4 microradians. Long-period small quakes made up about half of the count of local Kilauea caldera quakes during June.

Field studies on Alae lava lake now include releveling once a year (done on May 11, 1965), and temperature measurements at shorter intervals. About the first of July the highest lava temperature was 725°C at 36 feet below surface, where the lake is 50 feet deep.

At Makaopuhi lava lake a net of level stations was laid out 5 days after the crust stabilized. Twenty days after stabilization the average subsidence was 3.4 feet; in the next half-month (to April 22) further subsidence averaged 0.275 feet; in the next month, 0.18 feet, and in the following month, 0.11 feet (on June 23, 1965). In the quarter April-June, crustal thickening and cooling was monitored by drilling through the crust in 14 core holes; the first hole was drilled on April 19 through 6 1/2 feet of crust. Sampling of gas from drill holes was started June 17-18 by a team from the University of Hawaii, led by Professor Naughton.

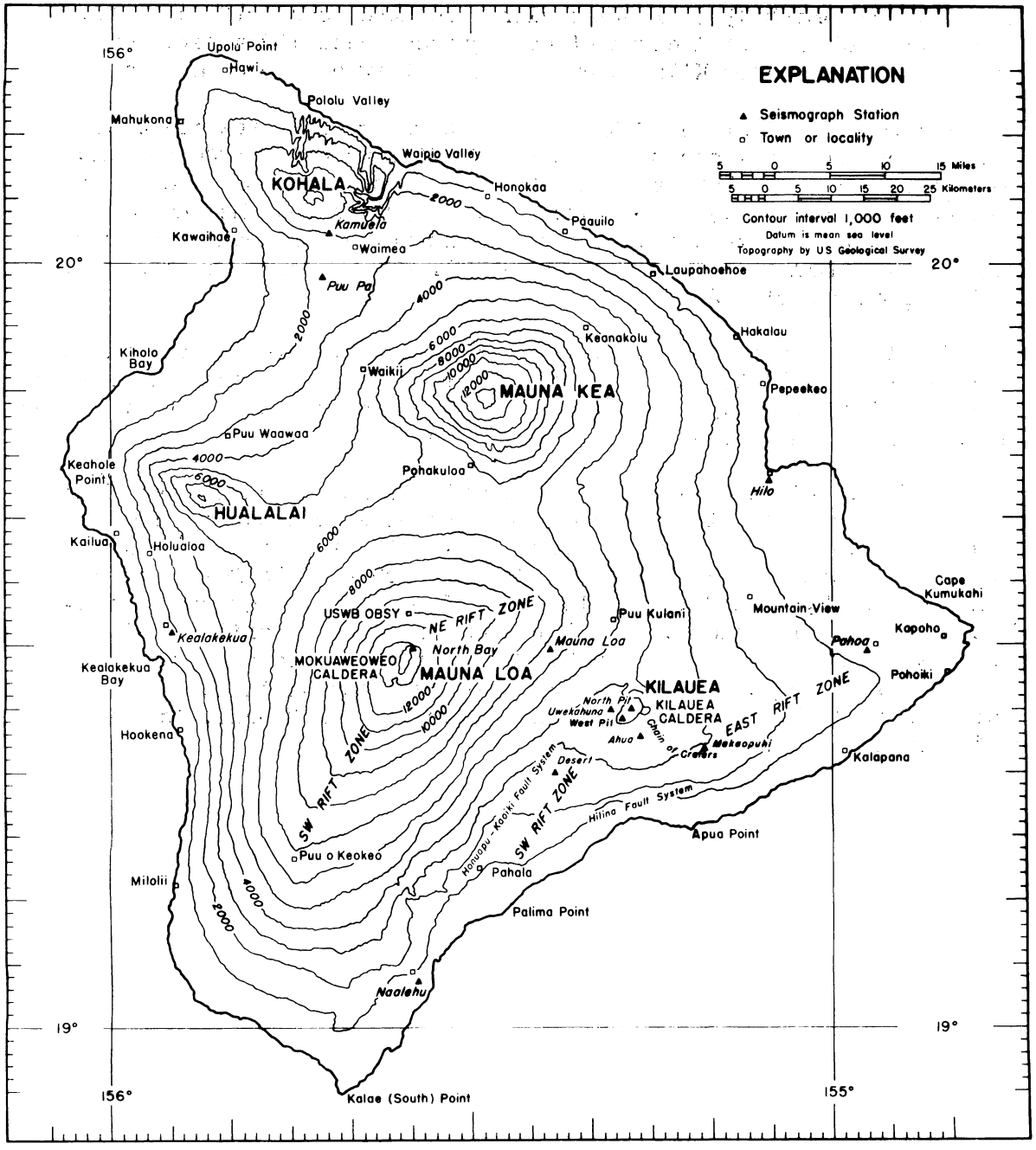

Figure 1.--Map of the island of Hawaii showing localities mentioned in the text and seismograph stations operated by the U.S. Geological Survey. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 7, which is published only in the first-quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna Vault, April, May, and June, 1965

Date (1965)	N-S	E-W	Date (1965)	N-S	E-W
April 4	459	511	June 5	461	509
11	458	510	12	463	510
18	460	511	19	464	508
25	460	512	26	464	504
May 1	460	510			
8	460	509			
15	461	511			
22	461	509			
29	461	508			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera. (See tilt diagram, figure 2.)

Tilt base	Date (1965)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1965)
Uwekahuna	June 15	466.4	494.8	8.0	N. 19.9° W.	March 6
Tree Molds	9	433.0	519.9	3.2	N. 36.1° W.	7
Sand Spit	16	874.7	734.1	2.3	S. 10.0° W.	8
Kalihipaa	8	334.9	380.4	1.6	N. 75.2° W.	7
Keamoku	7	586.8	503.3	2.3	N. 75.9° W.	7
Ahua Kamokukolau	15	621.7	532.7	4.6	N. 40.9° W.	6
Kipuka Nene	8	484.0	505.3	.01	S. 88.2° W.	9
Hilina Pali	9	502.0	493.2	.7	N. 17.1° W.	Dec. 7 (1964)
Kapapala Ranch	7	493.0	506.2	.32	S. 61.1° E.	March 9
Mehana	16	539.0	547.5	.8	S. 54.4° E.	March 9

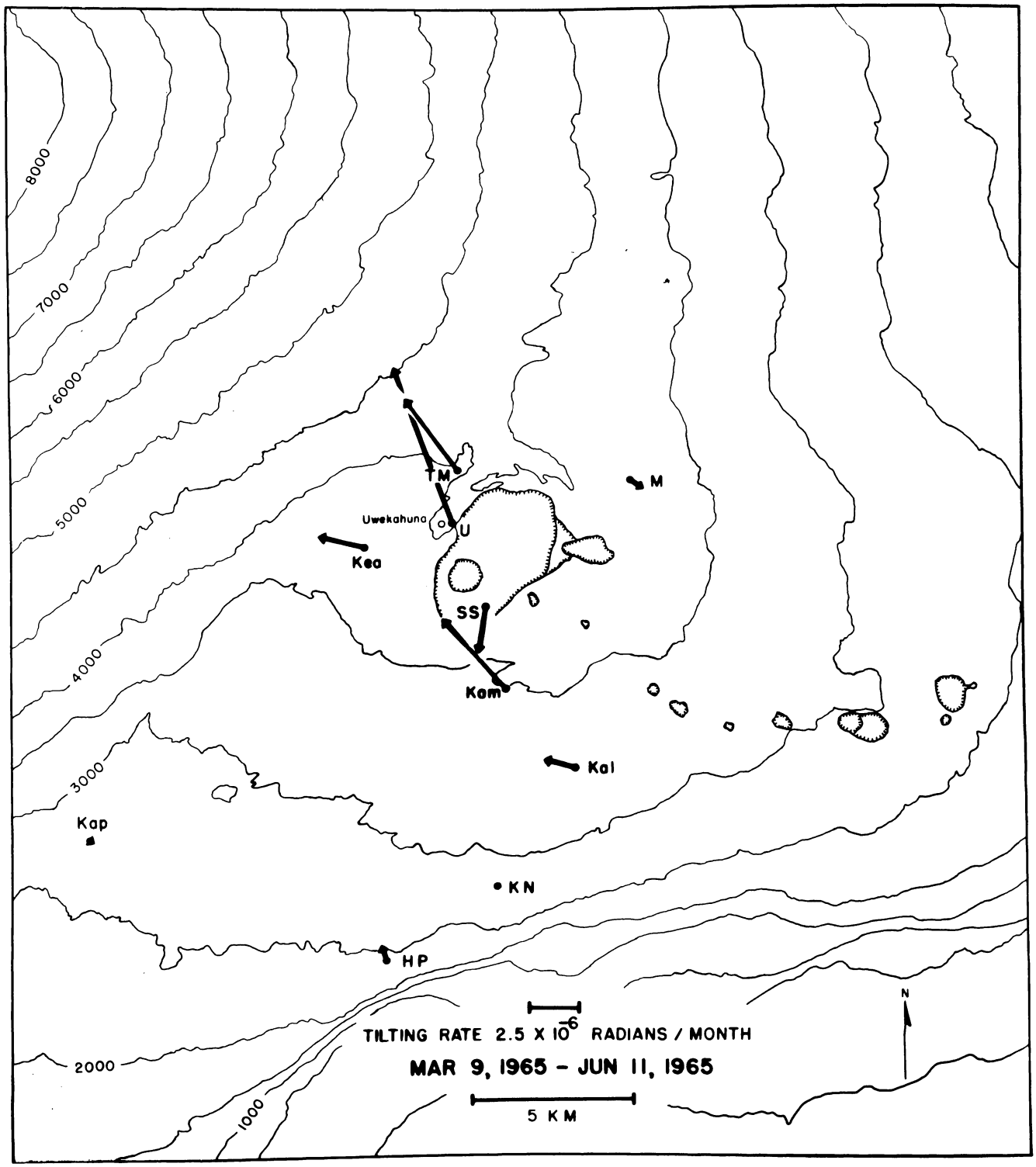

Figure 2.--Tilting of the ground around Kilauea caldera, March 9-June 11, 1965. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

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Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, WP, MP). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Locations of the seismograph stations are shown on figure 1; essential data pertaining to the stations are listed in table 6, which is published only in the first-quarter issue each year.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: earthquakes from a source about 30 km beneath the Kilauea summit region; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1965)	Tremor (in minutes)			Kilauea Summit	Kilauea caldera	Earthquakes			
	Deep	Intermediate	Shallow	30 KM	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
April 1	----	----	----	4	20	9	----	4	1 Kona
2	----	----	----	3	25	8	----	2	----
3	----	----	----	3	35	8	----	5	1 Mauna Kea
4	----	----	----	4	40	2	----	4	----
5	----	----	----	2	23	4	----	4	1 Mauna Loa
6	----	----	----	1	15	5	----	3	----
7	----	----	----	2	15	5	----	5	----
8	----	----	----	2	35	7	----	1	----
9	----	----	----	6	23	7	----	1	1 Mauna Loa
10	----	3	----	2	31	12	----	3	----
11	17	----	----	2	40	4	----	2	----
12	----	----	----	2	40	6	----	4	----
13	----	----	----	4	49	6	----	4	----
14	----	----	----	3	50	4	----	----	----
15	----	----	----	1	48	3	----	5	1 off SE. shore of Hawaii.
16	----	----	----	6	20	9	1	1	1 Hualalai

April	17	40	----	----	----	20	6	1	2	1 Mauna Kea
	18	----	----	----	----	30	7	----	4	----------
	19	7	----	----	2	32	5	----	2	----------
	20	----	----	----	----	20	5	----	2	----------
	21	----	9	----	----	28	7	----	----	----------
	22	----	----	----	3	35	16	----	2	----------
	23	4	----	----	1	45	9	----	1	----------
	24	----	----	----	1	53	6	----	4	1 Mauna Loa----------
	25	----	----	----	3	55	4	----	8	----------
	26	----	----	----	3	35	10	----	4	----------
	27	----	----	----	3	45	5	----	5	1 Mauna Loa
	28	----	----	----	6	30	7	----	4	----------
	29	15	----	----	----	25	6	----	5	2 off S. Shore of Lanai 1 Kona----------
	30	32	----	----	----	25	4	----	10	----------
May	1	36	----	----	----	33	6	----	3	1 off SE. shore of Hawaii
	2	----	----	----	1	30	9	----	----	----------
	3	----	----	5	2	45	3	----	4	----------
	4	----	5	----	2	45	5	----	13	1 off SW. shore of Hawaii
	5	10	----	----	1	33	4	----	6	----------
	6	----	----	----	5	22	12	----	1	----------
	7	----	37	----	1	30	6	----	5	----------
	8	----	----	----	1	14	1	----	----	1 Mauna Kea----------
	9	----	3	----	----	35	2	----	----	1 Kona----------
	10	----	----	----	5	20	4	----	----	----------
	11	----	----	----	5	35	11	----	4	1 Mauna Kea----------
	12	46	----	----	3	26	6	----	11	1 Mauna Kea----------
	13	----	----	----	1	22	6	----	7	----------
	14	----	2	----	2	10	10	----	4	----------
	15	----	----	4	2	30	10	----	6	----------
	16	----	----	----	----	25	3	----	3	1 Kona
	17	----	----	----	3	20	8	----	4	----------
	18	----	----	----	1	15	8	----	4	1 Mauna Loa----------
	19	----	----	----	2	20	4	----	1	----------
	20	----	4	----	2	23	3	----	5	1 Mauna Loa----------
	21	----	5	----	3	28	5	----	10	1 off E. shore of Maui
	22	----	----	----	----	15	7	----	7	1 Kona----------
	23	----	----	----	6	30	11	----	8	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1965)	Tremor (in minutes)			Kilauea Summit	Kilauea caldera	Earthquakes			
	Deep	Intermediate	Shallow	30 KM	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
May 24	----	5	----	1	25	9	----	6	1 Mauna Loa 1 Mauna Kea
25	----	----	----	3	23	8	----	11	----
26	----	----	----	2	36	7	----	8	----
27	----	----	----	2	21	5	----	14	1 Mauna Kea
28	----	----	----	4	23	5	----	6	----
29	----	----	----	6	27	5	----	10	1 Kona
30	----	----	----	1	22	8	----	8	----
31	----	----	----	3	20	4	----	6	1 Mauna Loa 1 off NE. shore of Hawaii
June 1	----	----	----	5	25	3	1	5	2 Kona
2	----	15	----	4	16	5	----	10	----
3	----	----	----	4	18	3	----	10	----
4	----	----	----	----	32	3	----	10	1 Kona 1 Hualalai
5	----	----	----	2	39	3	----	10	----
6	----	----	----	3	23	3	1	13	----
7	----	----	----	7	18	8	----	4	----
8	----	50	----	2	20	8	----	10	----
9	----	----	----	4	18	2	----	10	----
10	----	----	----	5	25	2	----	10	1 Mauna Kea
11	----	----	----	4	18	4	----	10	1 Kona
12	----	8	----	----	18	6	----	3	----
13	----	----	----	3	18	5	----	14	----
14	----	----	----	2	26	6	----	13	----
15	----	----	----	1	45	5	----	6	1 Mauna Kea
16	32	----	----	1	35	2	----	5	1 off SE. shore of Hawaii
17	----	9	----	1	41	3	----	3	----
18	----	----	----	2	70	2	----	3	1 Mauna Kea
19	----	----	----	2	31	2	----	4	1 Kona
20	----	----	----	----	23	5	----	5	----
21	----	----	2	----	38	3	----	6	----
22	----	----	----	----	46	5	----	7	----
23	47	----	----	4	33	13	----	6	----

June	24	----	8	----	2	38	3	----	4	1 off SE. shore of Hawaii
	25	----	----	----	----	42	5	----	3	----------
	26	----	20	----	3	35	6	----	6	----------
	27	----	8	----	2	35	3	1	4	1 off W. shore of Hawaii
	28	9	----	----	3	36	2	----	4	----------
	29	----	----	----	2	35	2	----	3	----------
	30	----	----	----	----	30	5	----	8	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1965

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger (as well as many favorably located smaller ones) are included in the list.

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
April 1	14	01	27.3	3.5	5	19°16'	156°07'	28 km SW. of Hookena	----------
2	02	43	19.2	2.4	6.5	19°25.9'	154°51.2'	12 km SE. of Pahoa	----------
3	03	07	32.5	2.2	8	19°17.3'	155°09.7'	9 km SSE. of Makaopuhi seismometer.	----------
3	05	23	26.0	2.4	13	19°58.2'	155°33.2'	16 km ESE. of Kamuela	----------
5	16	21	44.3	2.5	8	19°08.2'	155°32.5'	10 km NE. of Naalehu	----------
6	01	21	47.8	2.4	9	19°17.5'	155°08.0'	10 km SE. of Makaopuhi seismometer.	----------
9	10	19	18.3	2.4	8	19°17.7'	155°41.8'	10 km NNE. of Puu o Keokeo.	----------
10	02	57	29.6	2.4	30	19°28.1'	155°15.7'	Beneath Kilauea summit	----------
10	05	48	35.3	3.3	35	19°22.0'	155°18.0'	---do----------	Felt: Kilauea summit area.
10	05	50	20.4	2.2	27.5	19°22.6'	155°18.2'	---do----------	----------
10	06	09	18.1	3.0	25	19°21.5'	155°19.3'	---do----------	Felt: Kilauea summit area.
10	15	34	38.0	2.2	9	19°22.6'	155°24.6'	Kaoiki fault system	----------
11	20	38	26.4	2.6	50	19°15'	154°43'	36 km SE. of Pahoa	----------
12	19	27	31.2	2.6	6.5	19°22.3'	155°30.2'	Kaoiki fault system	----------
13	05	22	13.0	2.4	9	19°16.9'	155°15.3'	10 km S. of Ahua seismometer.	----------
15	16	29	21.1	2.2	30	19°01.0'	155°16.0'	33 km ESE. of Naalehu	----------
16	00	54	40.2	3.0	40	19°52.2'	155°51.5'	10 km NNW. of Puu Waawaa	----------
16	10	30	52.0	2.5	8	19°25.6'	155°28.5'	Kaoiki fault system	----------
16	16	17	27.9	3.7	30	19°21.6'	155°16.7'	Beneath Kilauea summit	Felt: Kilauea summit area.

April	17	01	32	52.7	2.0	30	19°22.8'	155°18.9'	Beneath Kilauea summit	----------
	17	17	45	57.0	2.0	45	19°12.2'	155°08.8'	8 km SE. of Apua Point	----------
	17	18	39	24.6	2.4	8	19°50.9'	155°31.5'	11 km N. of Pohakuloa	----------
	18	07	24	57.4	2.0	8	19°26.7'	155°25.9'	Kaoiki fault system	----------
	18	19	55	20.6	2.9	8	19°24.2'	155°24.4'	---do----------	Felt: Kilauea summit area.
	18	20	47	52.0	2.0	6.5	19°24.0'	155°25.4'	---do----------	----------
	20	04	18	08.0	2.3	40	19°15.3'	155°13.7'	4 km WSW. of Apua Point	----------
	20	16	54	03.3	2.2	6.5	19°17.2'	155°14.3'	11 km SW. of Makaopuhi seismometer.	----------
	20	16	55	57.7	2.2	6.5	19°17.2'	155°14.3'	11 km SW. of Makaopuhi seismometer.	----------
	21	15	35	32.1	2.4	8	19°30.0'	155°01.0'	8 km W. of Pahoa	----------
	23	02	02	52.0	2.5	8	19°17.0'	155°10.5'	9 km S. of Makaopuhi seismometer.	----------
	23	04	10	39.7	2.0	30	19°15.3'	155°22.2'	10 km SSE. of Desert seismometer.	----------
	23	05	01	21.3	2.3	9	19°16.3'	155°08.7'	11 km SSE. of Makaopuhi seismometer.	----------
	24	10	17	28.7	2.6	5	19°11.2'	155°40.7'	17 km NW. of Naalehu	----------
	25	10	28	23.1	2.5	3	19°32.0'	154°45.0'	7 km ENE. of Cape Kumukahi.	----------
	26	18	54	21.8	2.1	9	19°22.8'	155°23.9'	Kaoiki fault system	----------
	27	23	18	14.0	3.1	10	19°31.5'	155°36.5'	5 km NW. of North Bay seismometer.	----------
	29	04	19	25.2	2.3	25	19°22.9'	155°14.8'	Beneath Kilauea summit	----------
	29	10	08	30.1	4.0	13	20°35'	157°14'	44 km S. of Lanai City, Lanai.	----------
	29	17	22	29.2	4.0	13	20°35'	157°14'	44 km S. of Lanai City, Lanai.	----------
	29	10	38	57.9	3.0	42.5	19°51.7'	155°59.1'	8 km W. of Kiholo Bay	----------
May	1	07	14	57.2	2.5	40	18°55.5'	155°12.5'	43 km ESE. of Naalehu	----------
	3	15	26	06.6	2.5	35	19°23.4'	155°17.6'	Beneath Kilauea summit	----------
	4	05	26	12.3	2.2	27.5	19°13.5'	155°25.0'	13 km SSW. of Desert seismometer.	----------
	4	09	41	32.6	2.8	13	19°16'	156°29'	68 km SW. of Kealakekua	----------
	6	19	01	59.4	2.2	35	19°22.0'	155°14.3'	Beneath Kilauea summit	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1965--Continued

Date (1965)	Time h	Time m	Time s	Magnitude	Depth (km)	Epicenter Lat. N.	Epicenter Long. W.	Epicenter Description	Felt Report
May 7	00	19	44.2	2.3	8	19°25.8'	155°28.8'	Kaoiki fault system	----------
7	00	47	34.7	2.0	30	19°11.6'	155°26.1'	5 km ESE. of Pahala	----------
8	14	51	48.7	2.8	13	20°04.4'	155°20.5'	5 km NE. of Paauilo	----------
9	21	42	12.5	2.4	3	19°35.2'	155°56.9'	9 km NNW. of Kealakekua	----------
10	21	02	32.5	2.6	30	19°23.3'	155°18.9'	Beneath Kilauea summit	----------
11	02	52	16.0	2.5	13	19°56.7'	155°15.3'	6 km SSW. of Laupahoehoe	----------
11	13	17	32.2	2.3	30	19°20.1'	155°17.7'	Beneath Kilauea summit	----------
12	02	58	13.4	2.1	8	19°18.8'	155°01.7'	18 km ESE. of Makaopuhi seismometer.	----------
12	03	55	13.9	2.7	13	20°02.3'	155°19.5'	6 km E. of Paauilo	----------
12	05	24	49.1	2.2	30	19°21.8'	155°19.2'	Beneath Kilauea summit	----------
12	16	10	31.0	2.2	30	19°22.9'	155°18.3'	---do----------	----------
13	07	34	13.0	2.2	10	19°15.1'	155°11.9'	1 km SW. of Apua Point	----------
13	10	46	22.7	2.3	30	19°16.6'	155°23.1'	7 km S. of Desert seismometer.	----------
16	04	27	30.7	3.5	8	19°43.2'	156°02.3'	10 km NW. of Kailua	Felt
16	09	09	42.4	3.5	8	19°20.2'	155°26.7'	Kaoiki fault system	Felt: Hilo, Pahala, Kilauea summit area.
16	17	21	39.7	2.0	30	19°20.1'	155°17.7'	Beneath Kilauea summit	----------
18	07	22	30.0	3.2	4	19°33.0'	155°37.0'	8 km NW. of North Bay seismometer.	----------
19	22	02	59.7	2.2	30	19°22.9'	155°17.3'	Beneath Kilauea summit	----------
20	07	37	00.8	2.5	8	19°09.7'	155°34.5'	11 km NNE. of Naalehu	----------
20	13	40	59.3	2.7	40	19°13.7'	155°09.4'	5 km SE. of Apua Point	----------
21	09	18	27.1	3.0	13	20°40'	155°38'	64 km ESE. of Haleakala seismometer.	----------
22	17	13	37.5	2.7	<3	19°19.8'	155°44.7'	18 km ESE. of Hookena	----------
24	01	28	08.0	3.3	8	19°22.5'	155°25.0'	Kaoiki fault system	Felt
24	08	06	44.4	2.5	<3	19°52.1'	155°36.0'	6 km E. of Waikii	----------
24	09	06	11.0	2.3	5	19°24.3'	155°30.7'	17 km SW. of Mauna Loa seismometer.	----------

May	24	20	17	26.4	3.6	10	19°23.5'	155°24.6'	Kaoiki fault system	Felt: Pahala, Hilo, Kilauea summit area.
	27	03	53	47.0	2.3	10	19°53.5'	155°28.7'	16 km WSW. of Keanakolu	----------
	27	21	20	19.6	2.2	6.5	19°18.1'	155°10.2'	7 km SSE. of Makaopuhi seismometer.	----------
	29	09	46	42.9	2.2	13	19°23.2'	155°46.3'	14 km E. of Hookena	----------
	30	03	00	27.1	3.1	25	19°22.8'	155°18.2'	Beneath Kilauea summit	Felt: Kilauea summit area.
	30	04	29	12.6	2.5	27.5	19°22.9'	155°16.9'	---do----------	----------
	30	04	35	07.5	2.1	27.5	19°23.9'	155°16.0'	---do----------	----------
	31	00	27	03.2	2.0	8	19°51.8'	154°54.9'	25 km NE. of Hilo	----------
	31	11	36	11.2	3.4	3	19°13.2'	155°39.7'	19 km NW. of Naalehu	----------
June	1	18	10	10.5	2.3	<3	19°25.8'	155°46.5'	18 km SE. of Kealakekua	----------
	1	21	48	54.0	2.4	3	19°19.0'	155°45.9'	17 km SE. of Hookena	----------
	2	04	47	18.2	2.0	30	19°21.5'	155°16.3'	Beneath Kilauea summit	----------
	4	02	34	06.8	2.3	30	19°22.8'	155°18.6'	Beneath Kilauea summit	----------
	4	02	39	48.4	3.1	40	19°23.4'	155°16.6'	---do----------	Felt: Kilauea summit area.
	4	04	25	38.9	2.6	5	19°30.1'	155°48.8'	11 km ESE. of Kealakekua	----------
	4	17	48	55.4	2.5	<3	19°52.4'	155°49.7'	11 km NNE. of Puu Waawaa	----------
	5	18	13	29.7	2.2	30	19°22.8'	155°18.6'	Beneath Kilauea summit	----------
	7	04	39	59.0	2.4	35	19°22.8'	155°18.6'	---do----------	----------
	7	15	40	43.8	3.5	25	19°22.6'	155°19.4'	Beneath Kilauea summit	Felt: Kilauea summit area, Mauna Loa summit area, Pahala.
	9	19	18	55.0	2.7	6.5	19°22.7'	155°25.7'	Kaoiki fault system	----------
	10	03	36	34.5	2.3	30	19°23.5'	155°18.7'	Beneath Kilauea summit	----------
	10	11	22	42.1	2.3	8	19°47.1'	155°34.8'	7 km WNW. of Pohakuloa	----------
	11	00	54	13.9	2.1	10	19°16.1'	155°14.1'	12 km SSE. of Ahua seismometer.	----------
	11	11	29	01.0	2.6	1.5	19°28.2'	155°45.2'	18 km ESE. of Kealakekua	----------
	11	17	38	14.9	2.9	10	19°19.0'	155°13.4'	7 km SW. of Makaopuhi seismometer.	----------
	14	03	46	40.4	2.3	10	19°20.3'	155°04.0'	12 km ESE. of Makaopuhi seismometer.	----------
	15	10	28	59.0	2.8	3	19°52.8'	155°41.6'	5 km NW. of Waikii	----------
	15	23	08	04.7	2.3	8	19°12.1'	155°30.7'	4 km W. of Pahala	----------
	16	00	28	30.5	2.4	8	19°11.0'	155°30.7'	4 km SW. of Pahala	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1965--Continued

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
June 16	03	57	14.6	2.3	42.5	19°26.7'	155°02.9'	17 km ENE. of Makaopuhi seismometer.	----------
16	13	10	24.9	2.0	10	18°54.5'	155°26.5'	23 km SE. of Naalehu	----------
16	13	37	39.1	2.0	<3	19°13.5'	155°28.5'	2 km N. of Pahala	----------
18	19	16	34.1	2.7	10	19°48.6'	155°43.3'	10 km SW. of Waikii	----------
19	02	43	08.7	2.5	3	19°39.7'	155°56.0'	7 km ENE. of Kailua	----------
19	13	29	21.1	2.7	8	19°17.8'	155°14.6'	9 km SSE. of Ahua seismometer.	----------
23	13	21	44.9	2.4	6.5	19°24.4'	155°26.5'	Kaoiki fault system	----------
23	15	48	32.8	2.8	8	19°23.1'	155°26.4'	---do----------	----------
24	15	32	27.7	2.3	40	19°11.7'	155°06.6'	11 km SE. of Apua Point	----------
24	21	18	05.6	2.3	8	18°55.7'	155°13.4'	41 km ESE. of Naalehu	----------
25	17	01	38.3	2.2	10	19°16.8'	155°05.9'	13 km SE. of Makaopuhi seismometer.	----------
27	23	43	09.5	3.3	13	19°31'	156°31'	63 km W. of Kealakekua	----------
30	23	18	30.5	2.1	9	19°19.7'	155°05.8'	10 km ESE. of Makaopuhi seismometer.	----------

Table 5.--Distant earthquakes

Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in table 6, Summary 37. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

April 4, 1965

M	Z	iP	13:38:08.5 d
A	Z	iP	09.5 d
D	Z	iP	09.6 d
U	Z	iP	09.1 d
Pa	Z	iP	10.5 d
Hi	Z	eP	07.5 d
NB	Z	eP	07.8 d
Ke	Z	eP	05.9 d
U	PEZ	eR	13:48:31
M	Z	Tmax	14:20:46
A	Z	Tmax	43
U	Z	Tmax	31
Pa	Z	Tmax	28
Hi	Z	Tmax	00

C&GS card 037-65:
13:30:37.8
51.9° N., 175.2° E.
Rat Islands, Aleutian Islands
h about 40 km
Magnitude 6 (Pas)
5.4 (Brk)
6-6.25 (Pal)
5.7 (CGS)
5.5 (HVO).

April 4

Pa	Z	eP	20:21:58.3 c
Hi	Z	iP	59.5 c
Ke	Z	eP	20:22:03.0 c

C&GS card 037-65:
20:09:41.1
8.8° S., 74.5° W.
Peru-Brazil border region
h about 143 km
Magnitude 5.3 (CGS).

April 5

U	PEZ	er	06:48:43
Ke	Z	Tmax	07:35:44

C&GS card 040-65:
06:21:34.2
3.2° S., 148.4° E.
Bismarck Sea
h about 10 km
Magnitude 5.0 (CGS).

April 5

M	Z	eP	14:01:07.7 c
MP	Z	eP	09.6 c
Hi	Z	iP	08.5 c
NB	Z	eP	07.1 c
U	PEE	eG	14:13:15
U	PEZ	eR	14:15:03

C&GS card 038-65:
13:52:13.4
44.6° N., 151.1° E.
Kurile Islands region
h about 81 km
Magnitude 5 (Brk), 5.5-5.75 (Pal), 5.7 (CGS), 5.5 (HVO).

April 8

Pa	Z	iP	12:58:43.8 d
Na	Z	iP	39.3 d
Hi	Z	iP	45.6 d
NB	Z	iP	42.4 d
Ke	Z	iP	40.9 d

C&GS card 038-65:
12:51:27.8
17.6° S., 178.7° W.
Fiji Islands region

April 8, 1965--Continued

C&GS card 038-65--continued
h about 575 km
Magnitude 5.25-5.5 (Brk),
5.2 (CGS).

April 8

NB	Z	iP	13:51:43.1 d
U	PEN	eS	13:57:54
U	PEZ	iR	14:02:22

C&GS card 039-65:
13:43:52.8
52.2° N., 173.5° E.
Near Islands, Aleutian Islands
Felt on Shemya
Magnitude 5.75 (Pas), 6 (Pal),
5.4 (CGS), 5.6 (HVO).

April 9

U	PEN	eS	11:03:04
U	PEZ	eR	11:11:30

C&GS card 043-65:
10:45:29.4
32.6° S., 178.3° W.
South of Kermadec Islands
h about 52 km
Magnitude 5.1 (CGS).

April 9

U	PEZ	eR	23:26:20

C&GS card 042-65:
22:52:24.3
4.2° S., 134.1° E.
West New Guinea region
h about 33 km
Magnitude 5.6 (CGS).

April 10

M	Z	iP	22:40:05.1 d
A	Z	eP	04.8 d
U	Z	eP	04.9 d
Pa	Z	eP	06.7 d
Na	Z	eP	01.0 d
Hi	Z	iP	07.8 d
NB	Z	iP	04.2 d
Ke	Z	iP	01.9 d
Ha	Z	eP	09.1 d
U	PEN	eS	22:46:02
U	PEZ	eSS	22:49:42

C&GS card 040-65:
22:32:46.6
17.8° S., 178.8° W.
Fiji Islands region
h about 543 km
Magnitude 6 (Pas), 5.5-5.75 (Brk),
5.9 (CGS).

April 10

M	Z	iP	23:00:42.2 d
A	Z	eP	42.7 d
MP	Z	eP	43.3 d
U	Z	eP	42.6 d
Pa	Z	eP	44.5 d
Na	Z	iP	39.9 d
NB	Z	iP	41.2 d
Ha	Z	eP	44.9 d

C&GS card 040-65:
22:53:04.8
13.4° S., 170.3° E.
New Hebrides Islands region
h about 644 km
Magnitude 6.2 (CGS).

April 11

M	Z	iP	00:22:11.8 c
MP	Z	eP	11.3 c
U	Z	iP	11.3 c
Hi	Z	eP	13.3 c
NB	Z	eP	11.1 c
Ke	Z	iP	10.2 c

C&GS card 039-65:
00:11:08.8
42.7° S., 173.9° E.
South Island, New Zealand
h about 7 km
Magnitude 6.2 (CGS).

April 11, 1965

M	Z	iP	18:59:55.0 c
A	Z	eP	54.5 c
D	Z	eP	53.9 c
MP	Z	eP	54.7 c
Pa	Z	iP	56.6 c
Na	Z	eP	51.7 c
Hi	Z	eP	58.0 c
Ke	Z	iP	53.0 c
Ha	Z	eP	19:00:00.4 c

C&GS card 040-65:
18:51:38.1
26.2° S., 178.5° E.
South of Fiji Islands
h about 581 km
Magnitude 5.6 (CGS).

April 12

M	Z	Tmax	04:46:02
A	Z	Tmax	04:46:06
D	Z	Tmax	04:45:56
MP	Z	Tmax	04:46:07
U	Z	Tmax	04:46:07
Pa	Z	Tmax	04:46:07
Hi	Z	Tmax	04:45:42
NB	Z	Tmax	04:45:38
Ha	Z	Tmax	04:44:31

C&GS card 040-65:
03:59:40.2
56.6° N., 152.7° W.
Kodiak Island region
h about 33 km
Magnitude 5.3 (CGS).

April 12

M	Z	iP	20:50:44.5 c
A	Z	eP	45.5 c
D	Z	iP	44.9 c
MP	Z	eP	45.9 c
U	Z	eP	45.2 c
Na	Z	iP	44.4 c
Hi	Z	iP	45.6 c
NB	Z	iP	43.7 c
Ha	Z	iP	36.2 c

April 12--Continued

C&GS card 039-65
20:41:16.3
30.2° N., 138.5° E.
South of Honshu, Japan
h about 421 km
Magnitude 5.75-6 (Brk)
5.8 (CGS).

April 16

M	Z	eP	23:30:39.0 c
A	Z	eP	39.7 c
D	Z	eP	40.0 c
MP	Z	eP	39.7 c
U	Z	eP	39.7 c
Pa	Z	eP	38.2 c
Na	Z	iP	42.7 c
Hi	Z	eP	36.8 c
Ke	Z	iP	38.7 c
Ha	Z	eP	29.4 c
U	PEE	eS	23:37:36
U	PEE	eG	23:40:52

C&GS card 040-65:
23:22:18.6
64.7° N., 160.1° W.
Central Alaska
Felt at Norton Sound vicinity
h about 5 km
Magnitude 5.75-6 (Pas), 5.75-6 (Brk), 5.8 (CGS), 6.0 (HVO).

April 18

U	PEZ	eR	06:47:59
M	Z	Tmax	07:14:31
A	Z	Tmax	33
D	Z	Tmax	43
MP	Z	Tmax	37
U	Z	Tmax	36
Pa	Z	Tmax	18
Hi	Z	Tmax	02
NB	Z	Tmax	49
Ha	Z	Tmax	12

April 18, 1965--Continued

C&GS card 045-65:
06:33:58.8
41.5° N., 127.1° W.
Off coast of northern Calif.
h about 20 km
Magnitude 6 (Brk), 5.75-6 (Pal), 5.6 (CGS).

April 18

M	Z	iP'	09:58:20.9 c
U	PEZ	eR	10:37:19

C&GS card 040-65:
09:39:18.7
59.8° S., 26.8° W.
South Sandwich Islands region
h about 29 km
Magnitude 5.5 (Brk), 5.9 (CGS).

April 18

U	PEZ	eR	13:40:39

C&GS card 044-65:
12:41:54.9
59.7° S., 26.4° W.
South Sandwich Islands region
h about 25 km
Magnitude 6 (Pal), 5.8 (CGS).

April 19

M	Z	iP	23:52:13.4 c
D	Z	eP	13.9 c
MP	Z	iP	15.3 c
Na	Z	eP	14.0 c
Hi	Z	iP	15.0 c
NB	Z	eP	11.8 c
Ke	Z	iP	10.4 c
Ha	Z	eP	04.7 c
U	PEZ	eR	00:09:20

C&GS card 039-65:
23:41:58.8
34.9° N., 138.0° E.
Near south coast of Honshu, Japan
h about 36 km
Magnitude 5.6 (CGS), 5.9 (HVO).

April 20

WP	Z	iP	06:58:56.1 c

C&GS card 042-65:
06:50:17.6
54.6° N., 161.4° E.
Near east coast of Kamchatka
h about 33 km
Magnitude 5.3 (CGS).

April 22

U	PEZ	eR	18:53:58

C&GS card 042-65:
18:36:01.2
51.8° N., 176.1° E.
Rat Islands, Aleutian Islands
h about 37 km
Magnitude 4.5 (Brk), 5.1 (CGS).

April 24

M	Z	eP	22:05:46.7 d
U	PEZ	eR	22:23:38

C&GS card 042-65:
21:55:26.5
11.4° N., 140.1° E.
West Caroline Islands
h about 59 km
Magnitude 5.7 (CGS).

April 25

M	Z	iP	01:10:00.2 c
D	Z	iP	00.2 c
NB	Z	eP	01:09:58.2 c
U	PEZ	eR	01:27:17.9

C&GS card 041-65:
01:00:11.6
24.5° N., 142.7° E.
Volcano Islands region
h about 15 km
Magnitude 5.75-6 (Pas), 5.6 (CGS).

April 26, 1965

M	Z	iP	02:04:52.1 c
A	Z	eP	52.5 c
D	Z	iP	53.1 c
Ke	Z	eP	52.5 c
M	Z	ePP	02:06:35.6 d
NB	Z	ePP	36.3 d

C&GS card 041-65:
01:57:14.4
58.9° N., 142.7° W.
Gulf of Alaska
h about 33 km
Magnitude 5.3 (CGS).

April 26

M	Z	eP	09:59:34
U	PEZ	eR	10:23:59

C&GS card 044-65:
09:47:25.1
1.7° S., 126.6° E.
Molucca Sea
h about 15 km
Magnitude 5.75-6 (Pal),
5.7 (CGS), 5.8 (HVO).

April 26

M	Z	iP	20:36:09.4 c
U	PEZ	iS	20:41:37
U	PEZ	iR	20:45:01
M	Z	Tmax	21:13:21
A	Z	Tmax	35
D	Z	Tmax	35
MP	Z	Tmax	28
U	Z	Tmax	38
Pa	Z	Tmax	19
Hi	Z	Tmax	21:12:52
NB	Z	Tmax	21:13:42
Ha	Z	Tmax	21:11:34

C&GS card 041-65:
20:29:07.4
54.5° N., 162.6° W.
Alaska Peninsula
h about 53 km
Magnitude 5.9 (CGS).

April 26

M	Z	iP	22:27:39.9 c
D	Z	iP	39.9 c
NB	Z	eP	38.2 c
U	PEE	eS	22:38:07
U	PEZ	eR	22:51:13

C&GS card 042-65:
22:15:42.5
21.1° N., 120.7° E.
Taiwan region
h about 33 km
Magnitude 5.9 (CGS), 6.0 (HVO).

April 27

M	Z	eP	11:06:24.2 d
A	Z	eP	24.2 d

C&GS card 043-65:
10:54:28.0
7.0° S., 129.5° E.
Banda Sea
h about 67 km
Magnitude 5.9 (CGS).

April 29

M	Z	iP	11:28:54.5 d
A	Z	eP	55.2 d
D	Z	eP	54.2 d

C&GS card 043-65:
11:19:25.6
15.3° N., 145.6° E.
Mariana Islands
h about 134 km
Magnitude 5.2 (CGS).

April 29

M	Z	eP	11:37:56.2 d
A	Z	eP	55.3 d

C&GS card 049-65:
11:28:19.1
32.5° S., 179.1° W.
South of Kermadec Islands
h about 64 km
Magnitude 5.0 (CGS).

Table 5.--Distant earthquakes--Continued

April 29, 1965

M	Z	eP	15:36:03.2 d
A	Z	eP	03.7 d
MP	Z	eP	03.4 c
U	Z	eP	03.2 d
Pa	Z	eP	01.6 d
Na	Z	iP	07.3 d
Hi	Z	iP	00.2 d
NB	Z	iP	04.9 d
Ke	Z	iP	06.0 d
Ha	Z	iP	15:35:59.7 d
U	PEZ	ePP	15:37:41
U	PEZ	iS	15:41:57
U	PEZ	iR	15:46:05
M	Z	Tmax	16:15:38
A	Z	Tmax	26
U	Z	Tmax	34
NB	Z	Tmax	40
Ha	Z	Tmax	03

C&GS card 044-65:
15:28:43.3
47.4° N., 122.4° W.
Washington, two killed, some injured, moderate property damage in Seattle area, felt in Oregon, Idaho, Montana, British Columbia, and on Vancouver.
h about 57 km
Magnitude 6.6 (Pas), 6.75-7 (Brk), 7.25 (Pal), 6.5 (CGS), 6.6 (HVO).

May 1

M	Z	iP	13:12:46.9 c
D	Z	eP	46.8 c

C&GS card 042-65:
13:02:44.5
12.3° N., 143.7° E.
South of Mariana Islands
h about 5 km
Magnitude 5.1 (CGS).

May 1

M	Z	iP	21:35:39.9 c
A	Z	iP	40.3 c
D	Z	iP	40.9 c
Ke	Z	eP	39.8 c

C&GS card 042-65:
21:27:54.4
60.4° N., 146.0° W.
Southern Alaska
h about 33 km
Magnitude 5.3 (CGS).

May 3

U	PEZ	eR	10:30:37

C&GS card 044-65:
10:01:35.2
13.5° N., 89.3° W.
El Salvador
125 killed; 400 injured;
4,000 homes wrecked in San Salvador Cisneros district, San Marcos and Santo Tomas.
h about 23 km
Magnitude 6.25 (Pas), 6-6.25 (Pal), 5.1 (CGS).

Table 5.--Distant earthquakes--Continued

May 11, 1965

M	Z	iP	17:45:25.9 c
A	Z	iP	26.6 c
D	Z	iP	26.7 c
NB	Z	eP	26.1 c
Ke	Z	iP	26.1 c

C&GS card 044-65:
17:37:38.3
61.4° N., 149.6° W.
Southern Alaska
Felt widely in the Anchorage area.
h about 58 km
Magnitude 5.5 (CGS).

May 12

M	Z	iP	10:45:27.7 d
A	Z	iP	27.7 d
D	Z	iP	26.9 d
U	Z	iP	27.7 d
Na	Z	iP	25.4 d
Hi	Z	iP	29.5 d
Ka	Z	eP	26.0 d
Ke	Z	iP	24.6 d
Ha	Z	iP	24.6 d

C&GS card 046-65:
10:33:43.5
6.2° S., 130.3° E.
Banda Sea
Felt at Darwin
h about 125 km
Magnitude 5.25-5.5 (Pal), 5.7 (CGS).

May 13

M	Z	iP	19:32:53.5 c
A	Z	iP	53.6 c
Ke	Z	iP	50.4 c

C&GS card 046-65:
19:23:16.6
33.2° N., 138.0° E.
Near south coast of Honshu, Japan.
h about 324 km
Magnitude 4.8 (CGS).

May 16, 1965

M	Z	iP	11:47:45.6 c
A	Z	iP	45.8 c
MP	Z	iP	46.3 c
U	Z	iP	45.7 c
Pa	Z	eP	47.1 c
Hi	Z	iP	47.1 c
NB	Z	eP	44.4 c

C&GS card 047-65:
11:35:46.0
5.3° N., 125.7° E.
Mindanao, Philippine Islands
h about 36
Magnitude 6.2 (CGS).

May 17

M	Z	iP	17:31:19.9 d
D	Z	iP	19.7 d
U	Z	iP	20.5 d
Na	Z	eP	19.3 d
Hi	Z	iP	20.8 d
NB	Z	iP	19.0 d
U	PEN	iS	17:41:07
U	PEZ	eSS	17:46:15
U	PEN	eG	17:51:03
U	PEZ	iR	17:55:07

C&GS card 047-65:
17:19:25.9
22.5° N., 121.3° E.
Taiwan region
Felt at Hong Kong
h about 21 km
Magnitude 6.5 (Pas), 5.75-6 (Brk), 6.2 (CGS), 6.5 (HVO).

May 18

M	Z	eP	22:55:53.1 d
D	Z	eP	53.6 d

C&GS card 047-65
22:46:31.7
43.7° N., 146.5° E.
Kurile Islands
h about 45 km
Magnitude 5.4 (CGS).

May 19

A	Z	eP	03:10:14.6 d
D	Z	iP	13.7 d
MP	Z	eP	14.9 d
U	Z	iP	14.5 d
Pa	Z	eP	15.5 d
Na	Z	iP	11.2 d
Hi	Z	iP	16.6 d
NB	Z	iP	13.0 d

C&GS card 049-65:
03:00:59.0
9.2° S., 159.0° E.
Solomon Islands
Felt at Honiara
h about 50 km
Magnitude 5.6 (CGS).

May 20

M	Z	iP	00:49:09.8 c
A	Z	iP	09.4 c
D	Z	iP	08.5 c
MP	Z	iP	09.9 c
U	Z	iP	09.6 c
Pa	Z	iP	11.1 c
Na	Z	iP	06.3 c
Hi	Z	iP	12.5 c
NB	Z	iP	08.6 c
Ke	Z	iP	06.8 c
U	PEZ	iS	00:56:21
U	PEZ	iSS	00:59:57
U	PEN	iG	01:00:55
U	PEZ	iR	01:03:03
M	Z	Tmax	01:42:32
A	Z	Tmax	28
Na	Z	Tmax	05
NB	Z	Tmax	37
Ke	Z	Tmax	16
Ha	Z	Tmax	38

C&GS card 049-65:
00:40:10.9
14.7° S., 167.4° E.
New Hebrides Islands
Felt
h about 16 km
Magnitude 6.75-7 (Pas), 7 (Brk), 5.6 (CGS), 7.2 (HVO).

May 22, 1965

M	Z	iP	03:17:47.3 c
A	Z	eP	47.3 c
NB	Z	iP	46.1 c

C&GS card 049-65:
03:05:43.6
1.3° N., 126.3° E.
Molucca Passage
h about 25 km
Magnitude 5.5 (CGS).

May 22

M	Z	iP	10:39:15.9 d
Ke	Z	iP	13.9 d
U	PEZ	eS	10:45:23

C&GS card 049-65:
10:31:39.5
21.1° S., 178.7° W.
Fiji Islands region
h about 578 km
Magnitude 6.75-7 (Brk), 5.8 (CGS).

May 23

M	Z	iP	23:53:49.5 c
D	Z	eP	50.1 c
U	Z	eP	50.0 c
Pa	Z	eP	50.5 c
Hi	Z	eP	48.8 c
NB	Z	iP	48.6 c
U	PEZ	eS	23:59:56
U	PEE	eG	00:02:35
U	PEZ	iR	00:04:35
Ha	Z	Tmax	00:33:58

C&GS card 047-65:
23:46:12.0
52.2° N., 175.0° E.
Near Islands, Aleutian Islands
h about 22 km
Magnitude 6 (Pas), 6.1 (CGS), 5.8 (HVO).

May 24

A	Z	iP	23:33:10.3 c
D	Z	eP	10.2 c
MP	Z	iP	11.1 c
U	Z	eP	10.5 c
Pa	Z	eP	12.3 c
Hi	Z	iP	12.5 c
NB	Z	eP	08.2 c
Ke	Z	iP?	07.6 c
Ha	Z	eP	05.7 c
U	PEE	eS	23:43:16
U	PEZ	eR	23:56:08

C&GS card 048-65:--Continued
23:21:10.6
13.0° N., 124.5° E.
Samar, Philippine Islands
h about 33 km
Magnitude 5.75-6 (Pal), 6.0 (HVO), 5.9 (CGS).

May 25

U	PEN	eS	13:21:02
U	PEZ	iR	13:25:00

C&GS card 048-65:
13:07:49.7
51.3° N., 178.7° E.
Rat Islands, Aleutian Islands
h about 40 km
Magnitude 5 (Brk), 5.75-6 (Pal), 5.5 (CGS), 5.5 (HVO).

May 25

U	PEZ	iR	18:55:20

C&GS card 051-65:
18:34:28.4
17.0° S., 175.9° E.
Fiji Islands region
h about 16 km
Magnitude 5.2 (CGS).

May 26

M	Z	iP'	20:03:02.7 c
NB	Z	iP'	02.2 c

C&GS card 053-65:
19:44:10.9
56.1° S., 27.6° W.
South Sandwich Islands region
h about 120 km
Magnitude 6.7 (CGS).

May 29

U	PEZ	eR	16:11:04

C&GS card 051-65:
15:36:31.9
57.8° S., 147.3° W.
South Pacific Cordillera
h about 33 km
Magnitude 5.5 (CGS).

May 31, 1965

M	Z	Tmax	05:48:55
A	Z	Tmax	53
U	Z	Tmax	53
Pa	Z	Tmax	40
Hi	Z	Tmax	27
NB	Z	Tmax	57
Ha	Z	Tmax	33

C&GS card 052-65:
05:07:43.4
44.1° N., 128.8° W.
Off coast of Oregon
h about 33 km
Magnitude 5.5 (CGS).

May 31

WP	Z	eP	11:50:36.5 d
U	PEZ	eR	12:14:37

C&GS card 050-65:
11:38:28.0
7.5° S., 128.7° E.
Banda Sea
h about 37 km
Magnitude 6.0 (CGS).

June 2

M	Z	iP	05:20:58.5 d
A	Z	eP	58.2 d
MP	Z	iP	58.3 d
U	Z	iP	58.2 d
Ke	Z	iP	56.2 d
NB	Z	iP	57.5 d
Hi	Z	iP	05:21:00.2 d

C&GS card 050-65:
05:12:59.1
23.5° S., 180.0° E.
South of Fiji Islands
h about 539 km
Magnitude 5.5 (Brk), 5.6 (CGS).

June 2

MP	Z	eP	14:53:10.7 d
Pa	Z	eP	13.2 d
Na	Z	iP	08.4 d
Hi	Z	eP	14.8 d
NB	Z	iP	10.4 d
Ke	Z	iP	10.1 d

C&GS card 050-65:
14:45:55.8
17.9° S., 179.5° W.
Fiji Islands region
h about 637 km
Magnitude 5.1 (CGS).

June 2

M	Z	iP	15:05:48.9 d
A	Z	eP	48.5 d
U	Z	iP	48.5 d
Pa	Z	iP	49.4 d
Hi	Z	iP	51.0 d
NB	Z	iP	47.1 d
Ke	Z	iP	46.4 d

C&GS card 050-65:
14:58:31.9
18.0° S., 179.4° W.
Fiji Islands region
h about 621 km
Magnitude 4.5 (Brk), 5.1 (CGS).

June 4

M	Z	iP	15:35:57.5 c
A	Z	iP	57.0 c
MP	Z	iP	57.1 c
Pa	Z	eP	58.6 c
Hi	Z	eP	59.7 c
Ke	Z	iP	55.8 c

C&GS card 052-65:
15:26;54.7
29.9° S., 178.8° W.
Kermadec Islands region
h about 225 km
Magnitude 5.3 (CGS).

June 10

M	Z	iP	15:28:43.5 d
A	Z	eP	43.8 d

C&GS card 054-65:
15:16:50.5
1.9° N., 126.6° E.
Molucca Passage
h about 106 km
Magnitude 5.0 (CGS).

June 11

M	Z	eP	03:42:56.2 c
D	Z	eP	57.0 c
NB	Z	eP	54.9 c
U	PEE	iS	03:50:21
U	PEN	iG	03:55:27
U	PEZ	iR	03:57:37

C&GS card 052-65:
03:33:44.9
44.7° N., 148.7° E.
Kurile Islands
h about 47 km
Magnitude 6.75 (Pas), 6.5 (Brk), 6.0 (CGS), 6.5 (HVO).

Table 5.--Distant earthquakes--Continued

June 13, 1965

U	PEZ	eS	07:24:05
U	PEZ	eR	07:31:37

C&GS card 053-65:
07:06:13.6
41.9° N., 143.4° E.
Hokaaido, Japan region
h about 32 km
Magnitude 6-6.25 (Brk), 6 (Pal), 5.7 (CGS), 6.1 (HVO).

June 14

Pa	Z	Tmax	10:20:48
NB	Z	Tmax	51
Ha	Z	Tmax	28

C&GS card 054-65:
09:40:09.5
44.6° N., 129.5° W.
Off coast of Oregon
h about 33 km
Magnitude 5.5-5.75 (Pal), 5.2 (CGS).

June 14

Pa	Z	Tmax	13:46:49
NB	Z	Tmax	13:47:05
Ha	Z	Tmax	13:46:06

C&GS card 054-65:
13:05:54.0
44.5° N., 129.4° W.
Off coast of Oregon
h about 33 km
Magnitude 5.0 (CGS).

June 14

Pa	Z	Tmax	15:16:33
NB	Z	Tmax	51
Ha	Z	Tmax	06

No C&GS listing.

June 15

A	Z	eP	09:30:46.6 c

C&GS card 054-65:
09:20:29.8
37.9° S., 177.5° E.
Off east coast of North Island, New Zealand.
Felt from Bay of Plenty to Wellington.
h about 58 km
Magnitude 5.25 (Pal), 6.2 (CGS).

June 15

U	PEZ	eP	23:19:35
U	PEN	iS	23:26:37
U	PEZ	eSS	23:30:07
U	PEZ	iR	23:33:47

C&GS card 056-65:
23:10:25.2
20.9° S., 173.7° E.
New Hebrides Islands region
h about 22 km
Magnitude 6 (Brk), 6.25 (Pas), 6.5 (Pal), 5.7 (CGS), 6.0 (HVO).

June 17

M	Z	eP	11:01:25.8 d
A	Z	eP	25.1 d
MP	Z	eP	25.3 d
U	Z	eP	25.2 d
Ke	Z	iP	24.3 d

C&GS card 063-65:
10:51:37
33.9° S., 179.5° W.
South of Kermadec Islands
h about 33 km
Magnitude 5.3 (CGS).

June 20

Pa	Z	Tmax	18:45:38

C&GS card 055-65:
18:04:35.7
42.8° N., 126.5° W.

Table 5.--Distant earthquakes--Continued

June 20--Continued

C&GS card 055-65--Continued:
Off coast of Oregon
h about 33 km
Magnitude 5 (Brk), 5.25-5.5 (Pal), 5.6 (CGS).

June 22

U	PEZ	eR	13:36:35

C&GS card 058-65:
13:13:23.1
20.9° S., 173.2° E.
New Hebrides Islands region
h about 80 km
Magnitude 4.7 (CGS).

June 22-23

U	Z	eP	00:00:23.2 c
U	PEZ	eR	00:24:37

C&GS card 055-65:
23:48:07.1
7.1° N., 123.5° E.
Mindanao, Philippine Islands
h about 60 km
Magnitude 5.6 (CGS).

June 23

M	Z	iP	11:16:24.8 d
A	Z	eP	25.7 d
D	Z	eP	26.2 d
Na	Z	eP	31.0 d
NB	Z	eP	24.8 d
U	PEZ	iS	11:22:15
U	PEE	iG	11:24:37
U	PEZ	iR	11:26:25
M	Z	Tmax	11:55:47
A	Z	Tmax	43
D	Z	Tmax	54
MP	Z	Tmax	38
U	Z	Tmax	36
Pa	Z	Tmax	40
Hi	Z	Tmax	11
NB	Z	Tmax	33

June 23--Continued

Ha	Z	Tmax	11:54:09

C&GS card 054-65:
11:09:15.3
56.6° N., 152.9° W.
Kodiak Island region
h about 36 km
Magnitude 6.25-6.5 (Pas), 5.75 (Brk), 5.7 (CGS), 6.1 (HVO).

June 23

M	Z	Tmax	13:09:57
A	Z	Tmax	51
D	Z	Tmax	55
MP	Z	Tmax	44
U	Z	Tmax	44
Pa	Z	Tmax	49
Hi	Z	Tmax	21
NB	Z	Tmax	48
Ha	Z	Tmax	13:08:12

C&GS card 054-65:
12:23:22.2
56.6° N., 152.8° W.
Kodiak Island region
h about 25 km
Magnitude 6.0 (CGS).

June 24

M	Z	iP	07:57:04.0 d

C&GS card 055-65:
07:45:13.6
7.0° N., 126.2° E.
Mindanao, Philippine Islands
h about 50 km
Magnitude 6.0 (CGS).

June 24

M	Z	eP	14:17:22.1 d

C&GS card 056-65:
14:08:31.2
23.6° S., 176.7° W.
South of Fiji Islands
h about 91 km
Magnitude 5.5 (CGS).

Table 5.--Distant earthquakes--Continued

June 27, 1965

M	Z	Tmax	12:01:19
U	Z	Tmax	16
Pa	Z	Tmax	08
Hi	Z	Tmax	12:00:48
Ha	Z	Tmax	11:59:58

C&GS card 055-65:
11:08:55.9
60.3° N., 141.2° W.
Southeastern Alaska
h about 12 km
Magnitude 5 (Brk), 5.3 (CGS).

June 28

Na	Z	iP	03:43:12.1 c
Hi	Z	eP	17.1 c
NB	Z	eP	12.8 c
Ke	Z	iP	10.4 c
U	PEZ	eS	03:51:29
U	PEZ	eSS	03:55:29
U	PEZ	eR	03:59:37
M	Z	Tmax	04:43:55
A	Z	Tmax	59
D	Z	Tmax	56
U	Z	Tmax	48
Ke	Z	Tmax	36
NB	Z	Tmax	04:44:05

C&GS card 057-65:
03:33:36.5
5.1° S., 153.0° E.
New Ireland region
h about 50 km
Magnitude 5.25-5.5 (Brk), 6.25-6.5 (Pal),
6.1 (CGS), 5.7 (HVO).

The following persons or agencies reported "felt" earthquakes during the 2nd quarter, 1965. Their assistance is gratefully acknowledged.

Mauna Loa summit area

Mauna Loa Observatory

Kilauea summit area

Mr. B. Loucks
Mr. and Mrs. H. W. Mist
Mrs. M. Gorder
Mr. G. Yong
Mrs. V. Hansen
Miss M. English
Mrs. K. Yamamoto
Mr. C. Wentworth
Mr. J. Forbes

Kona

Mrs. Johnston

Kau

Mrs. A. Paiva

Hilo region

Mr. S. Ho
Mrs. T. Crabb
Mrs. H. Lewis
Mrs. B. Shaffer

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

Summary 39

July, August, and September, 1965

By

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Issued October, 1966

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Summary of activities

The summer quarter of 1965 had very little seismic activity and there was moderate swelling of the Kilauea volcanic edifice. The daily number of upper east rift quakes averaged about nine for the three months; against this background the swarm of more than 500 quakes that occurred August 24-26 was conspicuous. Only once, September 4 and 5, were more than 100 shallow Kilauea quakes recorded in a 24-hour period. Each of these two small seismic events coincided in time with an inconspicuous change from slight swelling to slight decline in the pattern of tilting that is read daily from the short-base tilt instrument in Uwekahuna Vault.

Three rather conspicuous episodes of moderate swelling were recorded by this same instrument, from July 1 to August 3, from August 13 to the 18th, and from September 12 to the 30th, separated by slight relaxation or aimless wandering. The total swelling amounts to about 25 microradians (25 mm tilt in 1 km of distance) and the direction of the center of swelling passes eastward through about the center of Kilauea. The pattern of swelling given by the plotting of movement at the long-base tiltmeter stations suggests that this center of inflation is under the upper east rift rather than under Kilauea caldera center (fig. 2).

In July, about 9 months after the liquid completely solidified in Alae lake, the hottest temperature is 725°C measured at a depth of 36 feet in the drill hole where the lake was 48 feet thick.

Several new procedures were used in the study of the perched liquid lava in Makaopuhi Crater erupted in early March 1965. Motoaki Sato developed a device, in the Survey laboratories in Washington, to measure the partial pressure of oxygen from a crystallizing silicate melt. Using the device in Makaopuhi, profiles plotting fugacity of oxygen through a range of temperatures from 1,000°C to 555°C have been measured successfully, and repeated several times, in a number of holes drilled in the crust of the lava lake.

Samples of molten magma were collected through drill holes from as deep as 8 feet below the 1,070°C isotherm marking the base of resistant crust. By rapid handling, the liquid sample was water quenched to clear glass in which no crystallization of the opaque oxides had started.

A direct measurement of the viscosity of the liquid basalt at 1,120°C was made by Reginald Okamura in drill hole No. 20 through the crust of Makaopuhi lake. The measurement was made using an instrument developed by Herbert R. Shaw and built by Burton Loucks in the HVO shop. The instrument consists of a foot-long, 4-bladed, stainless steel rotor, securely coupled with a long steel shaft that is rotated by a system of pulleys and weights which had been calibrated in hot tar of known viscosity.

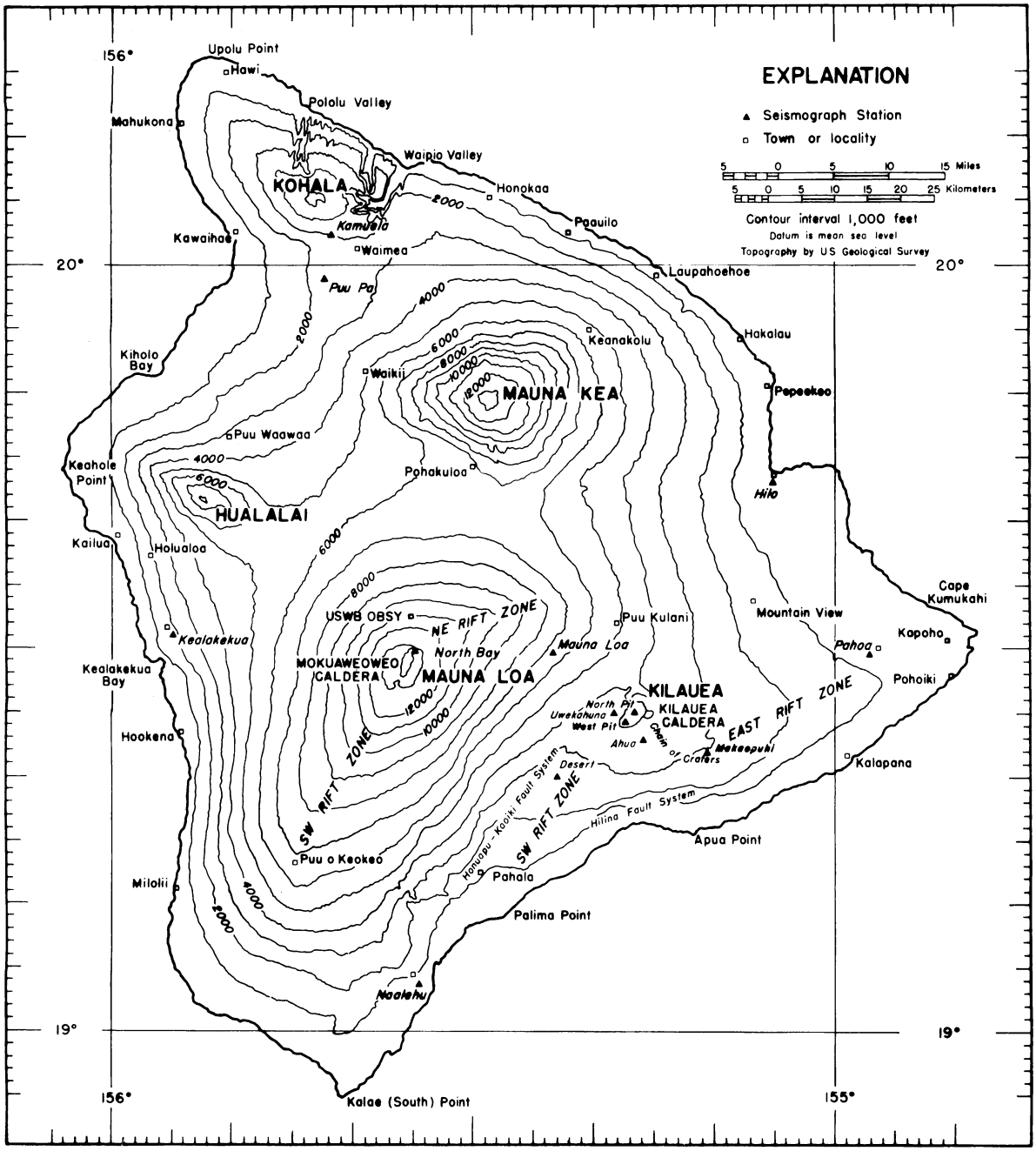

Figure 1.--Map of the island of Hawaii showing localities mentioned in the text and seismograph stations operated by the U.S. Geological Survey. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 7, which is published only in the first-quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna Vault, July, August, and September, 1965

Date (1965)	N-S	E-W	Date (1965)	N-S	E-W
July 3	464	506	Aug. 21	470	491
10	465	509	28	470	493
17	466	504	Sept. 4	470	492
24	468	491	11	472	488
31	468	497	18	471	483
Aug. 7	468	497	25	473	480
14	469	494			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera.

(See tilt diagram, fig. 2.)

Tilt base (location)	Date (1965)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1965)
		N-S	E-W			
Uwekahuna	Sept. 9	479.4	482.7	2.48	N. 43.0° W.	June 15
Tree Molds	Sept. 2	436.9	517.1	.68	N. 35.6° W.	9
Sand Spit	Sept. 7	871.4	723.9	1.56	S. 72.6° W.	16
Kalihipaa	Aug. 31	328.8	372.9	.88	S. 13.5° W.	8
Keamoku	Aug. 30	589.5	491.9	1.68	N. 76.8° W.	7
Ahua Kamokukolau	Aug. 30	606.6	526.7	2.6	S. 24.7° W.	15
Kipuka Nene	Aug. 31	483.5	505.3	.08	S. .2° W.	8
Hilina Pali	Not read this time					
Kapapala Ranch	Sept. 1	492.5	507.1	.76	S. 29.3° E.	7
Mehana	Sept. 9	536.3	550.5	.56	S. 47.3° E.	16

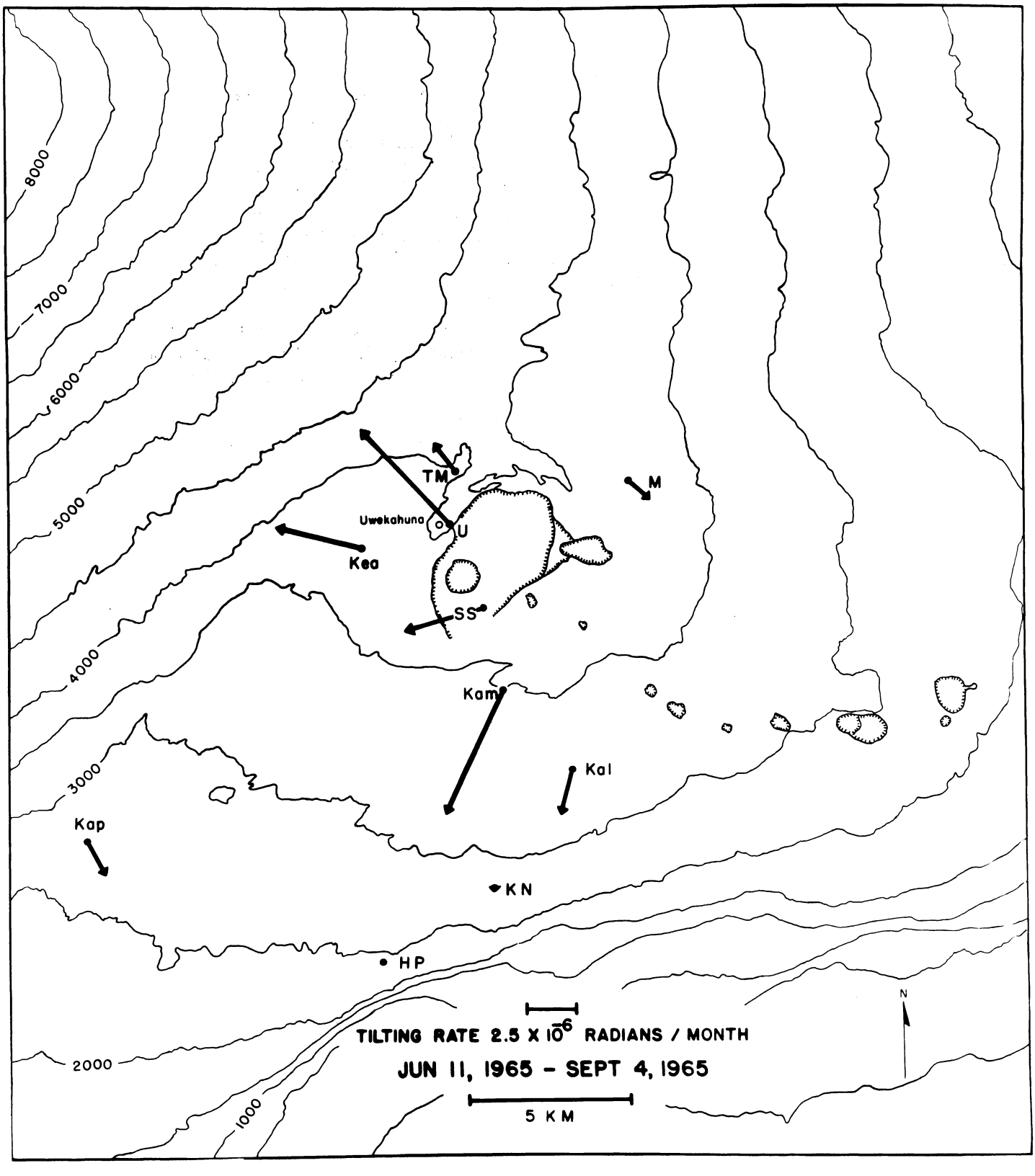

Figure 2.--Tilting of the ground around Kilauea caldera, June 11-September 4, 1965. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, A, D, N, WP, MP). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Location of and essential data on each seismograph station are listed in table 6, which is published only in the first-quarter issue each year.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera.

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: earthquakes from a source about 30 km beneath the Kilauea summit region; shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1965)	Tremor (in minutes)			Earthquakes					
				Kilauea Summit		SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Inter-mediate	Shallow	30 KM	Shallow				
July 1	----	-----	-----	2	29	8	-----	5	1 Hualalai
2	----	-----	-----	1	30	3	-----	4	----------
3	----	-----	-----	1	30	4	-----	5	1 Mauna Loa
4	----	-----	-----	5	25	9	1	5	----------
5	----	-----	-----	-----	23	5	-----	6	----------
6	----	-----	-----	3	37	5	-----	7	----------
7	----	-----	-----	1	35	2	-----	3	1 Haleakala
8	----	-----	-----	2	50	7	1	7	----------
9	----	-----	-----	2	74	4	-----	10	----------
10	----	-----	-----	3	40	9	-----	10	----------
11	4	-----	-----	6	45	10	-----	4	1 Kona
12	14	-----	-----	4	60	7	-----	6	----------
13	----	18	-----	2	30	8	-----	5	----------
14	----	4	-----	1	34	5	-----	10	1 Mauna Loa
15	----	6	-----	3	30	3	1	4	1 off W. shore of Hawaii
16	29	-----	-----	-----	35	6	-----	8	1 Mauna Loa
17	----	-----	-----	-----	32	6	-----	2	----------
18	----	-----	-----	-----	35	2	3	6	----------
19	----	-----	-----	-----	47	2	-----	5	----------
20	----	-----	3	1	35	4	-----	9	----------

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1965)	Tremor (in minutes)			Earthquakes					
				Kilauea Summit		SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Inter-mediate	Shallow	30 KM	Shallow				
July 21	----	-----	-----	-----	24	3	1	3	----------
22	----	5	-----	1	50	12	------	12	1 off W. shore of Hawaii
23	----	-----	-----	3	32	4	------	6	----------
24	----	-----	5	3	48	5	------	5	----------
25	----	-----	-----	2	41	7	------	8	----------
26	----	9	-----	4	38	1	------	12	1 Mauna Loa
27	----	-----	-----	4	46	10	------	9	----------
28	----	-----	-----	1	43	8	------	4	----------
29	----	4	-----	4	47	7	------	4	----------
30	----	-----	-----	2	39	8	1	5	1 Mauna Loa
31	----	-----	-----	-----	38	8	------	4	12 Mauna Loa
Aug. 1	----	-----	4	3	61	5	------	9	14 Mauna Loa
2	----	-----	-----	2	35	7	------	4	9 Mauna Loa
3	----	-----	-----	1	25	12	------	5	15 Mauna Loa
4	----	-----	-----	-----	35	7	------	6	14 Mauna Loa
5	----	-----	7	3	45	5	------	4	10 Mauna Loa
6	----	14	-----	4	55	5	------	5	1 Kona
7	----	-----	-----	1	45	7	------	3	1 Mauna Loa
8	----	-----	-----	8	41	3	------	12	2 Mauna Loa
9	----	-----	-----	-----	38	4	------	9	----------
10	----	-----	-----	-----	37	5	------	16	1 Mauna Loa
11	32	-----	-----	2	36	6	------	12	----------
12	----	-----	-----	-----	38	5	------	10	----------
13	----	14	-----	-----	27	3	------	3	----------
14	15	-----	-----	2	45	7	------	5	----------
15	----	-----	-----	-----	40	10	------	5	1 Mauna Kea 3 Mauna Loa
16	----	24	-----	-----	57	8	1	------	4 Mauna Loa
17	----	-----	-----	3	52	8	------	10	1 Mauna Loa

Aug. 18	30	----	9	3	48	6	-----	13	----------
19	32	----	-----	4	55	6	-----	------	----------
20	31	4	-----	4	53	9	-----	12	1 off W. shore of Hawaii
21	----	10	-----	-----	43	8	-----	15	1 Mauna Loa
22	----	----	20	3	55	12	-----	10	----------
23	----	----	8	2	45	9	-----	24	----------
24	----	6	-----	3	35	5	-----	303	1 Mauna Loa
25	----	----	-----	3	17	6	-----	285±	----------
26	----	----	-----	2	35	6	-----	66	----------
27	----	----	-----	5	22	3	-----	30	1 Kona
28	----	----	-----	1	25	4	-----	20	----------
29	----	----	-----	3	23	3	-----	10	1 Kohala
30	----	11	-----	1	40	9	-----	10	1 Mauna Loa 1 off W. shore of Hawaii 1 offshore Maui.
31	----	4	-----	27	29	5	-----	5	----------
Sept. 1	----	----	-----	-----	40	3	-----	25	----------
2	----	----	-----	-----	51	11	-----	10	1 Kona 1 off SE. shore of Hawaii
3	----	----	9	4	48	5	-----	10	----------
4	----	----	-----	1	90	5	-----	10	----------
5	----	----	5	1	115	7	-----	5	----------
6	----	----	-----	2	50	6	-----	------	----------
7	----	----	4	2	80	7	-----	10	----------
8	----	----	-----	-----	48	3	-----	5	1 Mauna Kea
9	----	----	3	1	55	3	-----	13	2 Mauna Loa
10	----	----	-----	1	49	12	-----	3	----------
11	----	----	-----	12	50	8	-----	10	1 Mauna Loa
12	----	----	-----	16	40	10	1	6	----------
13	34	----	-----	8	30	8	1	10	----------
14	----	----	3	10	45	12	-----	8	1 Kona
15	----	8	-----	3	42	6	-----	10	2 off S. shore of Hawaii
16	----	----	-----	20	30	6	-----	5	----------
17	----	----	-----	10	53	12	-----	15	----------
18	----	----	-----	5	48	6	-----	7	1 off SE. shore of Hawaii 1 Mauna Loa
19	----	----	-----	2	40	6	-----	10	----------
20	----	6	-----	3	65	7	-----	21	1 Mauna Loa
21	----	----	-----	2	76	7	-----	16	1 Mauna Loa
22	----	7	-----	1	84	10	-----	5	----------

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Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1965)	Tremor (in minutes)			Earthquakes					
				Kilauea Summit		SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Inter-mediate	Shallow	30 KM	Shallow				
Sept. 23	----	-----	-----	3	75	7	-----	5	1 off W. shore of Hawaii
24	----	-----	-----	2	44	7	-----	5	----------
25	----	-----	-----	3	50	5	-----	25	----------
26	----	-----	-----	3	62	12	-----	5	1 off S. shore of Hawaii
27	----	-----	-----	-----	47	7	-----	8	----------
28	----	-----	-----	-----	56	10	-----	7	----------
29	----	-----	-----	-----	45	7	-----	5	----------
30	----	-----	-----	2	73	3	-----	10	1 north of Molokai

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey
July, August, September, 1965

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 1	21	40	11.0	2.5	3	19°42.8'	155°47.9'	27 km NE. of Kealakekua	----------
3	11	57	40.6	3.0	8	19°11.9'	155°36.6'	15 km NNW. of Naalehu	----------
5	21	33	05.1	2.5	27	19°15.8'	155°28.2'	7 km NNE. of Pahala	----------
6	21	18	14.8	2.0	8	19°18.3'	155°08.0'	9 km SE. of Makaopuhi seismometer.	----------
7	00	31	36.8	3.6	13	20°43'	156°30'	11 km WSW. of Haleakala	Felt: Haleakala National Park.
8	23	26	07.0	2.0	5	19°21.5'	155°08.3'	5 km E. of Makaopuhi seismometer.	----------
11	14	37	13.4	2.5	8	19°24.0'	155°47.9'	18 km SE. of Kealakekua	----------
14	02	43	46.0	2.0	25	19°20.1'	155°20.8'	4 km E. of Desert seismometer.	----------
15	13	32	04.1	3.8	30	19°22.8'	155°14.3'	3 km E. of Ahua seismometer.	Kilauea Summit area, Hilo, Pahala, Puna, Mauna Loa Observatory.
16	04	26	33.0	2.0	5	19°25.0'	155°23.3'	8 km S. of Mauna Loa seismometer.	----------
16	16	54	02.6	2.5	8	19°12.4'	155°35.4'	16 km N. of Naalehu	----------
17	01	58	53.7	2.7	8	19°24.5'	155°29.2'	14 km NW. of Desert seismometer.	----------
18	04	56	15.6	2.3	3	19°23.1'	155°30.7'	14 km WNW. of Desert seismometer.	Hilo
18	12	15	37.5	2.0	3	19°22.4'	155°12.6'	4 km WNW. of Makaopuhi seismometer.	----------

July	19	17	05	09.8	2.5	8	19°22.6'	155°24.2'	5 km NNW. of Desert seismometer.	Kapapala, Puna
	22	07	15	44.0	3.0	5	19°16.8'	155°13.3'	11 km SSW. of Makaopuhi seismometer.	Kilauea summit area, Hilo.
	22	12	27	04.2	4.3	3	19°20.1'	155°30.6'	14 km W. of Desert seismometer.	Islandwide
	22	18	37	07.5	3.0	8	18°59'	156°47'	48 km SW. of Kealakekua	----------
	22	19	58	45.0	2.1	5	19°19.5'	155°10.5'	6 km S. of Makaopuhi seismometer.	----------
	26	04	07	35.5	2.5	8	19°24.1'	155°40.3'	15 km SW. of North Bay seismometer.	----------
	26	06	58	45.3	2.7	5	19°21.2'	155°05.3'	11 km E. of Makaopuhi seismometer.	----------
	27	01	51	01.4	2.0	28	19°23.1'	155°16.1'	2 km NW. of Ahua	----------
	28	10	40	23.7	3.1	5	19°24.1'	155°29.9'	14 km NW. of Desert seismometer.	Pahala, Hilo
	29	14	31	28.3	2.4	5	19°23.1'	155°29.8'	13 km NW. of Desert seismometer.	----------
	29	17	54	12.0	2.0	8	19°26.8'	155°28.7'	11 km SW. of Mauna Loa seismometer.	----------
	29	20	16	29.8	2.2	30	19°20.1'	155°15.2'	5 km S. of Ahua seismometer.	----------
	29	21	19	47.6	2.9	3	19°21.5'	155°05.5'	10 km E. of Makaopuhi seismometer.	Hilo
	30	22	09	13.0	2.4	10	19°23.8'	155°34.9'	11 km S. of North Bay	----------
	31	11	24	17.3	2.1	13	19°23.3'	155°37.7'	13 km SW. of North Bay seismometer.	----------
	31	16	54	56.7	2.3	45	19°27.3'	155°35.7'	4 km SW. of North Bay seismometer.	----------
August	1	03	17	22.0	2.5	40	19°29.1'	155°35.6'	3 km SW. of North Bay	----------
	1	15	28	32.1	2.1	3	19°24.1'	155°27.1'	10 km NW. of Desert seismometer.	----------
	2	03	44	48.9	2.3	50	19°29.0'	155°32.9'	5 km ESE. of North Bay seismometer.	----------
	3	11	46	55.7	2.0	27	19°23.8'	155°17.8'	3 km S. of Uwekahuna	----------
	4	15	47	35.1	2.3	5	19°20.1'	155°17.9'	7 km SW. of Ahua seismometer.	----------
	4	21	44	18.1	2.6	35	19°17.1'	155°00.5'	8 km SSW. of Kalapana	----------
	6	00	58	10.2	2.2	5	19°29.0'	155°46.0'	17 km ESE. of Kealakekua	----------
	7	07	01	08.5	2.0	3	19°24.9'	155°26.1'	10 km NW. of Desert seismometer.	----------
	7	10	07	39.2	2.1	40	19°07.6'	155°25.2'	19 km ESE. of Naalehu	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey
July, August, September, 1965--Continued

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
August 8	19	32	31.5	2.0	8	19°17.8'	155°12.8'	9 km SSW. of Makaopuhi seismometer.	----------
9	10	06	38.2	2.4	3	19°20.9'	155°07.3'	7 km ESE. of Makaopuhi seismometer.	----------
10	05	22	42.5	2.4	5	19°40.9'	155°35.1'	21 km N. of North Bay seismometer.	----------
11	12	18	16.5	3.7	3	19°05.7'	155°06.4'	20 km SSE. of Apua Point	Mauna Loa Observatory, Pahala, Haleakala National Park.
15	09	57	58.6	2.0	8	19°52.5'	155°26.8'	17 km NE. of Pohakuloa	----------
16	15	16	31.6	2.4	5	19°22.6'	155°27.1'	9 km NW. of Desert seismometer.	----------
17	12	28	17.4	3.3	30	19°21.2'	155°18.0'	4 km SW. of Ahua	Kilauea Summit area.
17	17	21	14.5	2.7	<3	19°15.7'	155°35.3'	22 km N. of Naalehu	----------
19	16	41	33.0	2.0	25	19°17.8'	155°14.9'	9 km SSE. of Ahua seismometer.	----------
20	09	45	47.0	3.1	13	19°39'	156°24'	56 km WNW. of Kealakekua.	----------
20	23	52	31.0	2.3	3	19°16.2'	155°13.5'	5 km WNW. of Apua Point	----------
21	13	16	46.0	2.2	8	19°21.5'	155°12.2'	3 km WSW. of Makaopuhi seismometer.	----------
21	20	33	52.5	2.1	10	19°31.5'	155°31.6'	7 km ENE. of North Bay seismometer.	----------
22	14	09	25.0	2.1	8	19°22.1'	155°26.5'	7 km WNW. of Desert seismometer.	----------
22	14	13	05.5	2.1	30	19°23.9'	155°17.5'	2 km S. of Uwekahuna	----------
23	00	26	21.4	2.0	8	19°19.8'	155°04.1'	13 km ESE. of Makaopuhi seismometer.	----------
23	11	25	07.0	3.6	8	19°16.8'	155°11.9'	2 km N. of Apua Point	Kilauea Summit, Hilo, Mt. View.
23	11	43	19.6	3.4	3	19°15.9'	155°11.2'	2 km NE. of Apua Point	Mt. View, Hilo.

August 23	14	11	44.8	2.0	8	19°21.4'	155°02.7'	15 km E. of Makaopuhi seismometer.	----------
24	10	05	28.0	2.9	8	19°19.5'	155°26.2'	6 km WSW. of Desert seismometer.	----------
24	11	38	06.2	2.9	5	19°18.7'	155°12.5'	8 km SW. of Makaopuhi seismometer.	----------
24	14	06	08.8	2.3	5	19°16.8'	155°13.0'	11 km SSW. of Makaopuhi seismometer.	----------
24	22	35	20.2	3.0	5	19°20.5'	155°08.5'	5 km SE. of Makaopuhi seismometer.	Kilauea Summit area, Pahala.
25	00	14	44.6	2.2	5	19°19.8'	155°05.7'	11 km ESE. of Makaopuhi seismometer.	----------
25	00	31	15.9	2.0	8	19°19.5'	155°10.5'	5 km S. of Makaopuhi seismometer.	----------
25	00	38	19.5	2.1	5	19°20.5'	155°11.7'	3 km SW. of Makaopuhi	Kilauea Summit area.
25	00	43	59.0	2.3	5	19°20.2'	155°11.7'	3 km SW. of Makaopuhi seismometer.	----------
25	00	46	32.8	2.0	8	19°19.0'	155°09.4'	7 km SSE. of Makaopuhi seismometer.	----------
25	00	52	49.2	2.9	3	19°21.0'	155°10.0'	3 km SE. of Makaopuhi seismometer.	----------
25	01	03	11.3	2.4	3	19°21.2'	155°07.8'	7 km ESE. of Makaopuhi seismometer.	----------
25	01	12	13.2	2.2	5	19°21.0'	155°08.9'	5 km SE. of Makaopuhi seismometer.	----------
25	01	14	28.0	2.0	5	19°20.7'	155°08.2'	6 km ESE. of Makaopuhi seismometer.	----------
25	01	23	01.3	2.3	10	19°20.9'	155°14.0'	6 km SE. of Ahua	----------
25	01	34	17.0	3.6	8	19°19.2'	155°09.8'	7 km SSE. of Makaopuhi seismometer.	Kilauea Summit area, Pahala, Hilo.
25	01	48	44.8	2.2	5	19°20.0'	155°11.2'	5 km SSW. of Desert seismometer.	----------
25	01	53	06.0	2.1	5	19°20.1'	155°12.2'	5 km SW. of Makaopuhi seismometer.	----------
25	01	58	48.0	2.1	5	19°21.2'	155°11.1'	3 km SW. of Makaopuhi seismometer.	----------
25	02	07	12.0	2.7	5	19°20.0'	155°10.1'	5 km SSE. of Makaopuhi	Kilauea Summit area, Pahala.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey
July, August, September, 1965

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
August 25	02	15	34.0	2.8	5	19°19.5'	155°10.8'	5 km S. of Makaopuhi seismometer.	Kilauea Summit area.
25	02	37	24.5	2.3	5	19°19.5'	155°12.5'	7 km SW. of Makaopuhi seismometer.	----------
25	02	59	35.5	3.5	5	19°19.0'	155°09.1'	7 km SE. of Makaopuhi seismometer.	Kilauea Summit area.
25	03	53	02.1	2.1	5	19°20.1'	155°09.5'	5 km SE. of Makaopuhi seismometer.	----------
25	05	09	47.7	2.8	5	19°20.0'	155°09.7'	5 km SE. of Makaopuhi seismometer.	----------
25	06	30	11.2	2.3	5	19°19.1'	155°12.0'	7 km SSW. of Makaopuhi seismometer.	----------
25	09	06	29.1	3.0	5	19°19.9'	155°09.9'	5 km SSE. of Makaopuhi seismometer.	Kilauea Summit area, Pahala.
25	12	33	16.5	2.7	3	19°19.9'	155°09.4'	6 km SE. of Makaopuhi	----------
27	18	37	51.6	2.7	5	19°31.9'	155°45.1'	18 km E. of Kealakekua	----------
28	16	26	31.8	2.8	27	19°22.9'	155°16.8'	2 km NW. of Ahua seismometer.	----------
29	09	31	14.5	3.1	8	20°13.2'	155°36.0'	23 km NNE. of Kamuela	----------
29	09	39	58.3	3.0	3	19°23.9'	155°27.2'	10 km NW. of Desert seismometer.	----------
30	14	05	50.3	3.1	8	19°35'	156°26'	50 km WNW. of Kealakekua	----------
30	16	43	15.0	3.2	8	20°29'	156°10'	35 km SSE. of Haleakala seismograph.	----------
30	22	18	13.7	2.0	5	19°20.9'	155°08.3'	5 km ESE. of Makaopuhi seismometer.	----------
31	16	05	02.2	3.0	5	19°25.2'	155°25.1'	10 km NNW. of Desert seismometer.	----------
31	18	00	57.0	3.8	32	19°21.8'	155°20.0'	7 km NE. of Desert seismometer.	Naalehu, Kilauea Summit area, Hilo.
31	18	05	38.3	2.3	32	19°22.8'	155°19.5'	7 km SW. of Uwekahuna	----------
31	23	49	50.5	2.3	31	19°23.0'	155°20.8'	8 km SW. of Uwekahuna	----------

September 1	09	34	28.7	2.7	5	19°25.0'	155°26.0'	11 km NW. of Desert seismometer.	Kilauea Summit area.
2	01	42	48.0	3.7	3	19°14.1'	155°03.8'	15 km ESE. of Apua Point	Hilo, Kilauea Summit area.
2	09	18	49.6	2.7	5	19°18.7'	155°12.2'	9 km SW. of Makaopuhi seismometer.	----------
3	21	17	53.2	2.6	8	19°24.4'	155°24.0'	8 km N. of Desert seismometer.	----------
5	05	55	14.2	2.0	3	19°07.2'	155°15.2'	16 km SW. of Apua Point	----------
5	07	36	07.8	2.0	5	19°23.9'	155°26.3'	9 km NW. of Desert seismometer.	----------
6	02	02	56.7	2.1	30	19°18.0'	155°18.8'	10 km ESE. of Desert seismometer.	----------
6	02	33	39.5	2.0	5	19°19.7'	155°08.7'	7 km SE. of Makaopuhi seismometer.	----------
7	05	04	37.2	2.3	27	19°23.5'	155°19.2'	5 km SW. of Uwekahuna	----------
8	15	54	59.2	2.7	35	19°15.8'	154°55.5'	11 km SSE. of Kalapana	----------
9	10	58	44.3	3.2	8	19°14.3'	155°35.7'	19 km N. of Naalehu	----------
9	11	04	22.2	2.5	8	19°13.2'	155°35.2'	17 km N. of Naalehu	Pahala
9	14	47	41.5	2.5	30	19°20.9'	155°18.5'	6 km SW. of Ahua seismometer.	----------
9	16	12	33.0	2.5	3	19°20.5'	155°10.0'	4 km SSE. of Makaopuhi seismometer.	----------
12	16	12	00.0	2.5	30	19°21.8'	155°18.7'	5 km WSW. of Ahua seismometer.	----------
13	04	49	44.2	2.7	25	19°24.5'	155°19.0'	4 km SW. of Uwekahuna	----------
14	21	32	09.0	2.3	<3	19°26.9'	155°47.4'	16 km ESE. of Kealakekua	----------
15	15	27	19.5	2.2	5	19°25.2'	155°26.3'	11 km NW. of Desert seismometer.	----------
15	18	06	54.0	2.1	27	19°24.0'	155°17.9'	4 km SSW. of Uwekahuna	----------
16	10	30	53.3	2.5	25	19°23.2'	155°19.7'	6 km SW. of Uwekahuna	----------
16	10	47	51.0	2.3	30	19°21.9'	155°18.1'	5 km WSW. of Ahua seismometer.	----------
16	14	21	40.7	3.0	30	19°22.8'	155°17.2'	3 km WNW. of Ahua seismometer.	Pahala
17	06	53	48.9	2.4	30	19°22.3'	155°18.8'	6 km W. of Ahua seismometer.	----------
17	18	17	56.8	2.9	30	19°22.4'	155°19.2'	7 km W. of Ahua seismometer.	----------
18	05	08	44.0	3.2	8	19°11.5'	155°36.1'	14 km N. of Naalehu	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey July, August, September, 1965--Continued

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
September 18	23	14	39.0	2.7	8	18°53.2'	155°06.8'	42 km SSE. of Apua Point	----------
20	00	30	24.5	2.7	3	19°12.1'	155°33.8'	15 km NNE. of Naalehu	----------
20	10	46	56.9	2.6	3	19°21.6'	155°08.3'	5 km E. of Makaopuhi seismometer.	----------
21	08	54	42.0	2.2	3	19°21.6'	155°04.8'	11 km E. of Makaopuhi seismometer.	----------
21	09	53	27.5	2.3	5	19°20.5'	155°06.8'	8 km ESE. of Makaopuhi seismometer.	----------
21	21	53	01.4	3.0	8	19°09.1'	155°36.5'	10 km NNW. of Naalehu	----------
24	00	57	15.5	3.1	8	19°28'	156°23'	51 km WSW. of Kealakekua	----------
25	11	21	25.1	2.1	5	19°21.5'	155°05.5'	10 km E. of Makaopuhi seismometer.	----------
25	15	25	32.5	2.3	5	19°19.9'	155°07.7'	7 km SE. of Makaopuhi seismometer.	----------
25	17	35	14.3	2.0	5	19°22.0'	155°05.7'	10 km ENE. of Makaopuhi	----------
26	02	21	59.3	2.3	26	19°23.8'	155°20.8'	7 km SW. of Uwekahuna	----------
26	11	20	14.2	2.5	8	18°59.8'	155°19.7'	29 km ESE. of Naalehu	----------
28	00	43	50.0	2.5	3	19°22.7'	155°04.8'	11 km ENE. of Makaopuhi seismometer.	----------
28	03	25	53.5	3.3	5	19°19.1'	155°08.6'	8 km SE. of Makaopuhi seismometer.	Hilo, Kilauea Summit area.
30	17	18	08.0	4.0	8	21°39'	157°09'	133 km NW. of Haleakala seismograph.	----------

Table 5.--Distant earthquakes

Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in table 6, Summary 37. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

July 1, 1965

U	PEZ	eR	23:49:36

C&GS card 058-65:
23:12:45.4
60.3° S., 163.7° W.
South Pacific Cordillera
h about 33 km
Magnitude 6.75 (Brk),
5.5 (CGS).

July 2

M	Z	eP	21:05:27.7 d
A	Z	eP	28.7 d
D	Z	eP	28.7 d
MP	Z	eP	28.7 d
U	Z	iP	28.3 d
Pa	Z	iP	29.2 d
Na	Z	iP	30.8 d
Hi	Z	iP	26.4 d
Ka	Z	eP	22.3 d
Ke	Z	iP	25.7 d
Ha	Z	iP	15.6 d
U	PEZ	iPP	21:06:46
U	PEN	iS	21:10:53
U	PEN	iG	21:12:53
U	PEZ	iR	21:14:16
M	Z	Tmax	21:43:06
A	Z	Tmax	21:43:18
D	Z	Tmax	21:42:58
MP	Z	Tmax	21:43:07
U	Z	Tmax	21:43:09
Pa	Z	Tmax	21:43:15
Hi	Z	Tmax	21:42:44
NB	Z	Tmax	21:42:44
Ke	Z	Tmax	21:42:33
Ka	Z	Tmax	21:41:54
Ha	Z	Tmax	21:41:46

July 2--Continued

C&GS card 057-65
20:58:40.0
53.1° N., 167.7° W.
Fox Islands, Aleutian Islands
Slight damage on Umnak Island
h about 59 km
Magnitude 6.75-7 (Pas), 6.75-7 (Brk),
6.75 (Pal), 7.5 (HVO).

July 6

M	Z	iP	03:13:28.0 d
Hi	Z	iP	30.8 d
U	PEZ	eR	03:27:35

C&GS card 059-65:
03:04:19.8
22.6° S., 172.9° E.
Loyalty Islands region
h about 41 km
Magnitude 6 (Brk), 5.9 (CGS).

July 6

M	Z	eP	18:45:26.9 c
A	Z	eP	26.9 c
MP	Z	eP	27.1 c
Na	Z	iP	24.2 c
Hi	Z	eP	28.8 c
U	PEZ	eS	18:52:35

C&GS card 058-65:
18:36:47.3
4.5° S., 155.1° E.
Solomon Islands
h about 510 km
Magnitude 6-6.25 (Pas),
6.25 (Brk),
6.5 (CGS).

July 7, 1965

M	Z	iP	21:48:36.0 d
D	Z	iP	36.2 d
Hi	Z	iP	37.1 d
NB	Z	iP	34.9 d

C&GS card 057-65:
21:38:50.5
32.7° N., 138.7° E.
South of Honshu, Japan
h about 218 km
Magnitude 5.6 (CGS).

July 16

U	PEZ	eR	22:56:17

C&GS card 061-65:
22:33:16
11.8° S., 166.1° E.
Santa Cruz Islands
h about 30 km
Magnitude 4.6 (CGS).

July 17

M	Z	iP	07:29:49.7 c
D	Z	iP	49.0 c
MP	Z	eP	50.0 c
U	Z	eP	49.6 c
Hi	Z	eP	51.6 c
NB	Z	iP	46.0 c
U	PEZ	eS	07:37:25
U	PEN	eG	07:42:05
U	PEZ	eR	07:43:50
NB	Z	Tmax	08:25:12
Ke	Z	Tmax	08:24:52

C&GS card 060-65:
07:20:30.5
9.7° S., 159.8° E.
Solomon Islands
Felt at Honiara
h about 23 km
Magnitude 5.5 (Brk), 6.4 (CGS), 5.6 (HVO).

July 17

Ke	Z	eP	12:57:31.7 c
Hi	Z	eP	12:57:34.5 c

C&GS card 061-65:
12:47:49.4
7.2° S., 153.6° E.
New Britain region
h about 28 km
Magnitude 5.7 (CGS).

July 17

MP	Z	eP	13:08:15.8 c
Ke	Z	eP	14.9 c

C&GS card 061-65:
12:59:10.7
27.2° S., 177.6° W.
Kermadec Islands
h about 27 km
Magnitude 5.4 (CGS).

July 20

M	Z	eP	13:30:30.7 c

C&GS card 063-65:
13:18:27.4
7.5° N., 124.3° E.
Mindanao, Philippine Islands
Felt at Cotabato, Malaybalay, and General Santos
h about 45 km
Magnitude 5.8 (CGS).

July 21

U	PEZ	eP	02:59:51
U	PEE	eS	03:06:25
U	PEN	iG	03:09:48
U	PEZ	eR	03:11:51

C&GS card 061-65:
02:51:39.0
20.8° S., 175.8° W.
Tonga Islands
h about 57 km
Magnitude 5.7 (CGS).

July 29, 1965

M	Z	eP	08:36:05.8 c
A	Z	eP	06.6 c
D	Z	eP	06.4 c
MP	Z	eP	06.7 c
U	Z	eP	06.0 c
Hi	Z	eP	04.6 c
NB	Z	iP	04.6 c
Ke	Z	eP	03.5 c
Ha	Z	eP	08:35:57.9 d
U	PEN	iPP	08:37:17
U	PEZ	iS	08:41:39
U	PEE	iL	08:43:17
U	PEZ	iR	08:44:59

C&GS card 063-65:
08:29:22.1
51.2° N., 171.3° W.
Fox Islands, Aleutian Islands.
h about 23 km
Magnitude 6.5-6.75 (Pas),
6.25-6.5 (Brk),
6.75-7 (Pal),
6.4 (CGS),
6.6 (HVO).

July 30

M	Z	iP	07:32:06.8 c
D	Z	iP	06.6 c
MP	Z	iP	05.5 c
U	Z	iP	06.1 c
Hi	Z	eP	05.1 c
NB	Z	iP	07.9 c

C&GS card 063-65:
07:20:10.3
6.7° N., 73.0° W.
Northern Colombia
Felt at Bogota
h about 174 km
Magnitude 5.3 (CGS).

August 1

M	Z	iP	15:11:58.3 d
NB	Z	iP	57.2 d

C&GS card 066-65:
15:02:56.1
46.9° N., 143.8° E.
Sakhalin Island
h about 400 km
Magnitude 5.7 (CGS).

August 1

M	Z	iP	16:49:36.4 c
D	Z	iP	36.9 c
MP	Z	iP	38.3 c
U	Z	eP	36.8 c
Hi	Z	iP	36.4 c
NB	Z	eP	35.7 c

C&GS card 063-65:
16:41:13.7
52.7° N., 153.4° E.
Northwest of Kurile Islands
h about 462 km
Magnitude 5.1 (CGS).

August 1

M	Z	iP	23:54:07.2 c
A	Z	iP	06.4 c
MP	Z	iP	06.8 c
Ke	Z	eP	04.3 c
Ha	Z	eP	12.7 c
U	PEZ	eR	00:10:09

C&GS card 064-65:
23:44:28.3
32.5° S., 178.9° W.
South of Kermadec Islands
h about 44 km
Magnitude 5.8 (CGS), 5.7 (HVO).

Table 5.--Distant earthquakes--Continued

August 2, 1965

M	Z	eP	13:32:31.7 c
A	Z	eP	31.3 c
D	Z	eP	30.6 c
MP	Z	eP	31.0 c
U	Z	eP	31.4 c
Pa	Z	eP	32.3 c
U	PEZ	iPP	13:35:53
U	PEZ	iS	13:43:07
U	PEZ	iScS	13:43:37
U	PEN	iPS	13:44:05
U	PEE	iSS	13:48:45
U	PEE	iL	13:54:39
U	PEN	iG	13:55:29
U	PEZ	iR	13:58:41

C&GS card 064-65:
13:19:54.7
56.2° S., 158.2° E.
Macquarie Island region
h about 33 km
Magnitude 7-7.25 (Pas), 7.75 (Brk), 7 (Pal), 6.7 (CGS), 7.0 (HVO).

August 3

M	Z	iP	02:13:48.0 c
A	Z	iP	47.2 c
D	Z	eP	47.8 c
MP	Z	iP	46.6 c
U	Z	iP	47.3 c
Hi	Z	eP	46.9 c
Ke	Z	iP	50.7 c
Ha	Z	eP	54.0 c

C&GS card 063-65:
02:01:52.2
7.7° S., 81.3° W.
Off coast of northern Peru
h about 49 km
Magnitude 5.25-5.5 (Brk), 5 (Pal), 5.8 (CGS).

August 4

M	Z	iP	01:15:32.8 c
A	Z	iP	32.0 c
D	Z	iP	32.8 c
MP	Z	eP	31.4 c

C&GS card 68-65:
01:05:53.0
16.8° N., 94.5° W.

August 4--Continued

C&GS card--Continued

Oaxaca, Mexico
h about 117 km
Magnitude 5.2 (CGS).

August 5

A	Z	eP	00:17:39.5 c
Pa	Z	eP	41.5 c
Hi	Z	eP	41.6 c
NB	Z	eP	38.6 c
Ke	Z	iP	35.1 c
U	PEE	iS	00:25:36
U	PEN	eG	00:31:54
U	PEZ	iR	00:34:14

C&GS card 65-65:
00:07:50.5
5.3° S., 151.7° E.
New Britain region
Felt on eastern New Britain
h about 47 km
Magnitude 6.5 (Pas), 5.75-6 (Brk), 6.5-6.75 (Pal), 6.3 (CGS), 6.8 (HVO).

August 8

M	Z	iP	09:58:14.7 c

C&GS card 65-65:
09:46:29.6
4.1° N., 128.6° E.
North of Halmahera
h about 51 km
Magnitude 5.5 (CGS).

August 8

M	Z	iP	12:56:19.9 c
Ha	Z	Tmax	13:32:34

C&GS card 65-65:
12:49:23.1
51.9° N., 175.3° W.
Andreanof Islands, Aleutian Islands
Felt on Adak Island.
h about 53 km
Magnitude 4.5 (Brk), 5.1 (CGS).

August 11, 1965

M	Z	iP	03:49:59.6 c
A	Z	eP	59.5 c
D	Z	eP	58.6 c
MP	Z	eP	59.6 c
Na	Z	eP	54.9 c
Ke	Z	eP	56.5 c
Hi	Z	iP	03:50:01.2 c
U	PEE	iS	03:57:19
U	PEZ	iSS	04:00:59
U	PEN	iG	04:02:11
U	PEZ	iR	04:04:15
M	Z	Tmax	04:44:14
A	Z	Tmax	06
D	Z	Tmax	09
U	Z	Tmax	05
Na	Z	Tmax	04:43:44
NB	Z	Tmax	04:44:18
Ke	Z	Tmax	04:43:58
Ha	Z	Tmax	04:44:33

C&GS card 66-65:
03:40:56.2
15.4° S., 166.9° E.
New Hebrides Islands
h about 26 km
Magnitude 7 (Pas), 6.3 (CGS), 7.1 (HVO).

August 11

M	Z	Tmax	19:20:19
A	Z	Tmax	33
D	Z	Tmax	21
MP	Z	Tmax	10
U	Z	Tmax	23
Hi	Z	Tmax	01
NB	Z	Tmax	28
Ha	Z	Tmax	19:19:50

C&GS card 65-65:
18:29:40.1
59.6° N., 145.8° W.
Gulf of Alaska
h about 25 km
Magnitude 5.5 (CGS).

August 11

M	Z	eP	20:01:30.7 c
MP	Z	eP	30.7 c

August 11--Continued

U	Z	eP	30.7 c
NB	Z	eP	29.4 c
Ha	Z	eP	33.3 c
U	PEE	ePP	20:03:43
U	PEZ	iS	20:08:49
U	PEZ	iSS	20:12:35
U	PEE	iG	20:13:39
U	PEZ	iR	20:15:55
Ke	Z	Tmax	20:55:39

C&GS card 65-65:
19:52:29.8
15.7° S., 167.1° E.
New Hebrides Islands
h about 33 km
Magnitude 6.5 (Pas), 5.6 (CGS), 6.8 (HVO).

August 11

M	Z	eP	22:40:49.7 c
A	Z	eP	49.7 c
D	Z	eP	48.7 c
MP	Z	eP	49.7 c
Na	Z	iP	45.3 c
Hi	Z	eP	51.2 c
NB	Z	eP	49.0 c
Ke	Z	iP	47.0 c
Ha	Z	eP	52.0 c
U	PEZ	ePP	22:43:10
U	PEZ	iS	22:48:15
U	PEN	eSS	22:51:55
U	PEE	iG	22:52:55
U	PEZ	iR	22:55:03
M	Z	Tmax	23:35:31
A	Z	Tmax	18
D	Z	Tmax	11
U	Z	Tmax	01
Na	Z	Tmax	00
NB	Z	Tmax	26
Ke	Z	Tmax	12
Ha	Z	Tmax	51

C&GS card 66-65:
22:31:48.9
15.8° S., 167.2° E.
New Hebrides Islands
Damage on Espiritu Santo
h about 33 km
Magnitude 7.25-7.5 (Pas), 6.4 (CGS), 7.8 (HVO).

August 12, 1965

M	Z	eP	08:10:43.7 d
A	Z	eP	43.7 d
D	Z	eP	42.7 d
MP	Z	eP	43.7 d
U	Z	eP	43.8 d
Na	Z	eP	39.9 d
NB	Z	eP	42.8 d
Ke	Z	eP	42.2 d
Ha	Z	eP	45.7 d
U	PEZ	ePP	08:12:51
U	PEE	eS	08:18:01
U	PEZ	iSS	08:21:45
U	PEE	eG	08:22:55
U	PEZ	iR	08:25:15

C&GS card 68-65:
08:01:43.3
15.9° S., 167.5° E.
New Hebrides Islands
Felt at Port Vila
h about 25 km
Magnitude 6.75 (Pas),
6.5 (Pal),
6.3 (CGS),
6.5 (HVO).

August 12

M	Z	eP	13:06:55.3 d
Na	Z	eP	52.3 d
U	PEE	eS	13:14:55
U	PEN	eG	13:21:11
U	PEZ	iR	13:23:31

C&GS card 67-65:
12:57:09.7
5.3° S., 152.2° E.
New Britain region
Felt widely
h about 41 km
Magnitude 6.5-6.75 (Pas),
7.25 (Pal),
5.9 (CGS),
6.6 (HVO).

August 12

NB	Z	eP	18:13:52.6 c
Ha	Z	eP	56.7 c

August 12--Continued

C&GS card 68-65:
18:04:56.1
16.0° S., 167.4° E.
New Hebrides Islands
Felt at Port Vila
h about 45 km
Magnitude 5.3 (CGS).

August 13

M	Z	iP	04:49:55.9 c
Ha	Z	eP	57.2 c

C&GS card 68-65:
04:40:55.3
15.9° S., 167.5° E.
New Hebrides Islands
h about 34 km
Magnitude 5.7 (CGS).

August 13

A	Z	eP	11:33:53.5 d
D	Z	eP	52.7 d
MP	Z	eP	54.0 d
NB	Z	eP	52.0 d
U	PEZ	eS	11:41:17
U	PEE	eG	11:45:43
U	PEZ	eR	11:47:59

C&GS card 68-65:
11:24:51.8
16.0° S., 167.0° E.
New Hebrides Islands
h about 33 km
Magnitude 5.5 (CGS),
5.8 (HVO).

August 13, 1965

M	Z	eP	12:49:34.8 d
A	Z	eP	34.8 d
D	Z	eP	33.7 d
MP	Z	eP	34.9 d
Na	Z	eP	31.0 d
U	PEZ	iS	12:56:57
U	PEZ	iSS	13:00:39
U	PEN	iG	13:01:35
U	PEZ	iR	13:03:39
Ke	Z	Tmax	13:43:43

C&GS card 68-65:
12:40:08.3
15.9° S., 166.8° E.
New Hebrides Islands
h about 33 km
Magnitude 7 (Pas), 7-7.25 (Brk), 5.6 (CGS), 7.7 (HVO).

August 13

M	Z	eP	13:22:33.2 d
A	Z	eP	33.0 d
D	Z	eP	32.1 d
MP	Z	eP	33.2 d
NB	Z	eP	32.6 d
Ha	Z	eP	36.6 d

No C&GS listing.

August 13

Hi	Z	eP	18:05:30.8 c

C&GS card 68-65:
17:56:27.6
16.6° S., 167.6° E.
New Hebrides Islands
h about 39 km
Magnitude 5.4 (CGS).

August 13

Hi	Z	eP	22:07:53.9 c

C&GS card 66-65:
21:57:38.7
6.4° S., 148.5° E.
New Britain region
h about 51 km
Magnitude 5.5 (Brk), 5.2 (CGS).

August 14

U	PEZ	iR	11:31:11

C&GS card 70-65:
11:07:47.1
15.8° S., 166.8° E.
New Britain Islands
h about 33 km
Magnitude 6 (Pal), 5.5 (CGS).

August 14--Continued

C&GS card 70-65--Continued

August 14

M	Z	eP	13:26:50.7 d
A	Z	eP	51.0 d
D	Z	eP	49.6 d
U	Z	eP	50.9 d
NB	Z	eP	49.1 d
U	PEN	eG	13:38:11
U	PEZ	iR	13:40:15
Ke	Z	Tmax	14:18:26

C&GS card 66-65:
13:18:06.0
11.5° S., 166.3° E.
Santa Cruz Islands
h about 49 km
Magnitude 5.6 (CGS).

August 17

U	PEZ	eR	11:23:56

C&GS card 66-65:
10:35:04.1
5.3° N., 96.2° E.
Northern Sumatra
h about 33 km
Magnitude 5.3 (CGS).

August 17

M	Z	eP	14:12:15.2 c
A	Z	iP	14.3 c
D	Z	eP	15.1 c
MP	Z	eP	13.2 c

C&GS card 66-65:
14:02:19
15.2° N., 92.1° W.
Mexico-Guatemala border region.
h about 121 km
Magnitude 4.9 (CGS).

August 17

U	PEZ	eR	16:40:43

C&GS card 70-65:
16:17:41.5
15.2° S., 166.6° E.
New Hebrides Islands
h about 19 km
Magnitude 5.8 (CGS).

August 18, 1965

M	Z	eP	15:00:31.3 d
U	PEZ	iS	15:07:51
U	PEZ	eSS	15:11:31
U	PEN	eG	15:12:39
U	PEZ	eR	15:14:43

C&GS card 71-65:
14:51:29.3
16.0° S., 167.0° E.
New Hebrides Islands
Felt at Port Vila
h about 5 km
Magnitude 5.75-6 (Pas),
6 (Brk),
5.7 (CGS),
6.2 (HVO).

August 20

M	Z	iP	06:06:20.4 d
A	Z	eP	20.8 d
D	Z	eP	20.1 d
MP	Z	iP	21.0 d
U	Z	iP	20.5 d
Pa	Z	eP	22.0 d
Na	Z	iP	18.6 d
Hi	Z	iP	22.3 d
NB	Z	iP	19.5 d
Ha	Z	iP	17.5 d
U	PEZ	isP	06:08:07
U	PEE	iS	06:15:53
U	PEN	iG	06:27:31
U	PEZ	i	06:31:39

C&GS card 69-65:
05:54:50.0
5.7° S., 128.6° E.
Banda Sea
h about 326 km
Magnitude 6.75 (Pas),
6.2 (CGS).

August 20

U	Z	iP	21:30:14.0 c
Pa	Z	eP	15.2 c
Na	Z	iP	10.9 c
Hi	Z	iP	17.0 c
NB	Z	iP	14.0 c
Ha	Z	iP	20.4 c
U	PEE	eS	21:37:01
U	PEE	iG	21:40:49
U	PEZ	eR	21:43:04

C&GS card 69-65:
21:21:50.9
22.9° S., 176.3° W.
South of Fiji Islands
h about 77 km
Magnitude 5.75 (Brk),
6-6.25 (Pal),
6.2 (CGS).

August 23

M	Z	iP	19:55:47.3 c
D	Z	iP	47.1 c
MP	Z	eP	45.8 c
Na	Z	eP	47.6 c
NB	Z	eP	47.8 c
Ke	Z	eP	51.5 c
Ha	Z	eP	55.6 c
U	PEN	iS	20:03:37
U	PEZ	iSS	20:07:31
U	PEN	eG	20:09:47
U	PEZ	eR	20:11:39

C&GS card 69-65:
19:46:02.9
16.3° N., 95.8° W.
Oaxaca, Mexico
Five killed in Mexico City,
one killed in Oaxaca.
Slight damage in Mexico
City and Oaxaca.
Felt throughout southern
Mexico.
h about 28 km
Magnitude 7.25 (Pas), 7.5-7.75
(Brk), 7.25 (Pal),
6.7 (CGS), 7.3 (HVO).

August 24, 1965

M	Z	iP	07:14:48.6 c
A	Z	eP	48.2 c
D	Z	eP	47.6 c
MP	Z	iP	48.1 c
U	Z	iP	48.3 c
Pa	Z	iP	50.0 c
Na	Z	iP	44.0 c
Hi	Z	iP	51.0 c
NB	Z	eP	47.8 c
Ke	Z	iP	46.5 c
Ha	Z	eP	53.7 c

C&GS card 70-65:
07:06:50.0
21.9° S., 177.3° W.
Fiji Islands region
h about 290 km
Magnitude 4.75 (Brk),
5.7 (CGS).

August 24

M	Z	Tmax	14:02:56
A	Z	Tmax	51
D	Z	Tmax	14:03:03
MP	Z	Tmax	14:02:54
U	Z	Tmax	58
Pa	Z	Tmax	52
Hi	Z	Tmax	36
NB	Z	Tmax	14:03:18
Ha	Z	Tmax	14:01:36

C&GS card 69-65:
13:12:19.4
59.4° N., 145.6° W.
Gulf of Alaska
h about 19 km
Magnitude 5.25 (Brk),
5.4 (CGS).

August 29

M	Z	iP	01:56:25.7 c
A	Z	iP	25.0 c
MP	Z	iP	24.3 c
U	Z	iP	25.0 c

C&GS card 70-65:
01:45:57.3
14.1° N., 90.5° W.
Guatemala
h about 107 km
Magnitude 4.5 (Brk), 5.0(CGS).

August 29

M	Z	eP	12:55:35
U	PEN	eG	13:07:11

C&GS card 77-65:
12:46:30.1
15.7° S., 167.6° E.
New Hebrides Islands
Felt at Norsup
h about 10 km
Magnitude 6.0 (CGS).

September 1

M	Z	iP	04:57:23.6 d
A	Z	iP	22.9 d
D	Z	eP	21.7 d
MP	Z	eP	23.1 d
U	Z	iP	23.0 d
Na	Z	eP	19.7 d
Hi	Z	eP	24.8 d
NB	Z	iP	22.6 d
Ke	Z	iP	21.7 d
U	PEN	eS	05:05:26
U	PEZ	e	05:14:13

C&GS card 70-65:
04:47:34.9
34.6° S., 179.6° E.
South of Kermadec Islands
h about 107 km
Magnitude 6.25 (Brk),
6.2 (CGS).

September 2

M	Z	eP	04:34:09.2 d
Pa	Z	eP	10.0 d
NB	Z	iP	08.8 d
U	PEZ	eR	04:44:38

September 2, 1965--Continued

C&GS card 70-65:
04:26:37.3
51.9° N., 175.5° E.
Rat Islands, Aleutian Islands.
h about 39 km
Magnitude 4.5-5 (Brk),
5.6 (CGS).

September 4

M	Z	eP	14:40:13.0	d
A	Z	eP	13.7	d
U	Z	eP	13.2	d
Pa	Z	eP	12.6	d
Na	Z	eP	16.5	d
Hi	Z	iP	10.2	d
NB	Z	iP	13.4	d
Ke	Z	eP	13.0	d
U	PEZ	iS	14:46:12	
U	PEN	eG	14:48:50	
U	PEZ	iR	14:50:26	
M	Z	Tmax	15:20:13	
A	Z	Tmax	20	
U	Z	Tmax	15:19:58	
Pa	Z	Tmax	15:20:03	
Hi	Z	Tmax	07	
NB	Z	Tmax	45	
Ha	Z	Tmax	15:18:40	

C&GS card 71-65:
14:32:47.9
58.2° N., 152.6° W.
Kodiak Island region
Felt aboard USC&GSS Surveyor located at 58°57' N., 151° 23' W., and in a wide area of south-central Alaska.
h about 19 km
Magnitude 6.75-7 (Pas),
7 (Brk),
6.75-7 (Pal),
6.1 (CGS),
7.0 (HVO).

September 8

M	Z	iP	03:33:38.3	c
A	Z	eP	39.0	c
D	Z	iP	39.2	c
MP	Z	eP	39.6	c
U	Z	eP	38.7	c
U	PEZ	eS	03:39:33	
M	Z	Tmax	04:13:35	
U	Z	Tmax	38	
Ha	Z	Tmax	04:11:58	

C&GS card 72-65:
57.5° N., 152.1° W.
Kodiak Island region
h about 25 km
Magnitude 5.25-5.5 (Pal),
5.6 (CGS),
5.2 (HVO).

September 8

M	Z	iP	11:23:37.2	c
A	Z	iP	38.0	c
U	Z	eP	37.6	c
U	PEZ	eS	11:29:27	
U	PEZ	eR	11:33:03	
M	Z	Tmax	12:02:14	
A	Z	Tmax	17	
D	Z	Tmax	08	
MP	Z	Tmax	07	
U	Z	Tmax	03	
Pa	Z	Tmax	12:02:00	
Hi	Z	Tmax	12:01:58	
NB	Z	Tmax	49	
Ka	Z	Tmax	24	
Ha	Z	Tmax	38	

C&GS card 71-65:
11:16:34.4
55.7° N., 155.4° W.
South of Alaska
h about 33 km
Magnitude 5.4 (CGS),
5.3 (HVO).

Table 5.--Distant earthquakes--Continued

September 9, 1965

A	Z	eP	10:13:37.9 d
D	Z	eP	38.4 d
U	PEZ	eS	10:23:02
U	PEN	eSS	10:27:26
U	PEN	eL	10:31:10
U	PEZ	iR	10:34:40
M	Z	Tmax	11:29:30
A	Z	Tmax	24
U	Z	Tmax	25
Hi	Z	Tmax	06
Na	Z	Tmax	36
Pa	Z	Tmax	11:28:41

C&GS card 71-65:
10:02:25.4
6.5° N., 84.4° W.
Off coast of Central America.
h about 27 km
Magnitude 6.75 (Pas),
6.75 (Brk),
5.5 (CGS),
6.3 (HVO).

September 11

A	Z	eP	07:02:39.1 c
D	Z	eP	38.1 c
U	Z	eP	39.2 c
Na	Z	iP	36.1 c
U	PEN	iS	07:10:27
U	PEN	iG	07:16:31
U	PEZ	eR	07:19:07
M	Z	Tmax	08:03:26
A	Z	Tmax	26
D	Z	Tmax	26
U	Z	Tmax	22
NB	Z	Tmax	25
Ke	Z	Tmax	09

C&GS card 71-65:
06:53:01.5
5.3° S., 153.0° E.
New Britain region
Felt at Rabaul
h about 67 km
Magnitude 6.3 (CGS).

September 12

M	Z	iP	08:50:05.4 c
D	Z	eP	04.6 c
Na	Z	iP	02.4 c
Hi	Z	eP	07.1 c
NB	Z	eP	04.1 c
U	PEE	iS	08:58:07
U	PEE	eG	09:04:31
U	PEZ	eR	09:06:47

C&GS card 71-65:
08:40:12.8
6.3° S., 151.6° E.
New Britain region
Felt at Rabaul
h about 48 km
Magnitude 6-6.25 (Brk),
6.2 (CGS),
5.7 (HVO).

September 13

M	Z	iP	13:16:14.0 c
A	Z	eP	15.1 c
D	Z	iP	14.9 c
U	Z	eP	14.8 c
Pa	Z	iP	14.9 c
NB	Z	eP	13.2 c
Ke	Z	eP	11.4 c
U	PEN	eS	13:23:11
U	PEE	eG	13:26:59
U	PEZ	eR	13:29:03

C&GS card 71-65:
13:07:48.3
55.5° N., 165.7° E.
Komandorsky Islands region
h about 23 km
Magnitude 5.4 (CGS),
5.6 (HVO).

September 13, 1965

U	PEZ	eR	16:51:51

C&GS card 74-65:
16:15:44.5
36.5° S., 97.5° W.
Southeast central Pacific Ocean
h about 33 km
Magnitude 5.75-6 (Pal),
5.4 (CGS).

September 16

Pa	Z	Tmax	04:50:54
Ha	Z	Tmax	44

C&GS card 73-65:
04:10:22.6
40.4° N., 125.7°
Off coast of northern California
h about 33 km
Magnitude 5 (Brk), 4.75-5 (Pal),
5.6 (CGS).

September 16

M	Z	iP	14:01:45.8 c
D	Z	eP	45.3 c
MP	Z	iP	46.4 c
U	Z	iP	45.9 c
Pa	Z	iP	47.7 c
Na	Z	eP	44.0 c
Hi	Z	iP	47.9 c
NB	Z	iP	44.7 c
Ha	Z	iP	41.4 c

C&GS card 73-65:
13:50:11.8
7.1° N., 126.5° E.
Mindanao, Philippine Islands
h about 179 km
Magnitude 6.0 (CGS).

September 17

M	Z	iP	11:25:41.6 d
A	Z	iP	40.7 d
D	Z	iP	41.4 d
MP	Z	iP	40.3 d
U	Z	eP	40.8 d
Pa	Z	eP	38.8 d
Na	Z	eP	42.0 d
Hi	Z	iP	40.0 d
NB	Z	iP	42.6 d
Ke	Z	iP	11:25:44.1 d
Ha	Z	eP	46.6 d
U	PEN	eS	11:35:29

C&GS card 73-65:
11:13:56.4
1.4° S., 77.6° W.
Ecuador
Felt at Guayaquil and Quito
h about 190 km
Magnitude 6.5 (Pas),
5.5-6 (Brk),
6.0 (CGS).

September 17

M	Z	eP	15:28:34.3 c

C&GS card 72-65:
15:18:38.4
36.3° N., 141.2° E.
Near east coast of Honshu, Japan
h about 66 km
Magnitude 5.2 (CGS).

September 17

M	Z	eP	16:31:05.8 c
Na	Z	eP	05.7 c
U	PEE	iS	16:39:07
U	PEN	eG	16:44:47
U	PEZ	iR	16:47:31

C&GS card 72-65:
16:21:21.9
36.3° N., 141.1° E.
Near East coast of Honshu,
Japan.
h about 72 km
Magnitude 5.8 (CGS), 6.7 (HVO).

September 18, 1965

U	PEZ	eR	21:05:32
M	Z	Tmax	21:37:46
A	Z	Tmax	47
D	Z	Tmax	21:38:02
MP	Z	Tmax	21:37:46
U	Z	Tmax	46
Pa	Z	Tmax	47
NB	Z	Tmax	38
Ha	Z	Tmax	21:36:22

C&GS card 75-65:
20:46:39.2
59.5° N., 145.1° W.
Gulf of Alaska
h about 22 km
Magnitude 6 (Pal), 5.3 (CGS).

September 18

M	Z	eP	22:14:58.8 c
MP	Z	eP	59.5 c

C&GS card 74-65:
22:03:18.8
8.2° N., 126.8° E.
Mindanao, Philippine Islands
h about 85 km
Magnitude 5.6 (CGS).

September 19

U	PEZ	eR	14:30:12

C&GS card 75-65:
13:55:39.9
54.4° S., 135.7° W.
South Pacific Cordillera
h about 33 km
Magnitude 4.8 (CGS).

September 21

WP	Z	iP	01:49:20.3 d
Na	Z	iP	19.9 d
Hi	Z	iP	21.2 d
Ke	Z	eP	17.3 d
U	PEZ	iS	01:58:12
U	PEN	eSS	02:02:28
U	PEN	iG	02:05:57

C&GS card 73-65:
01:38:30.2
29.1° N., 128.2° E.
East China Sea
h about 197 km

September 21--Continued

C&GS card--Continued

Magnitude 6.75 (Pas), 6.25 (Brk), 6.0 (CGS), 6.4 (HVO).

September 22

M	Z	iP	09:46:53.4 c

C&GS card 74-65:
09:35:25.3
1.3° S., 134.0° E.
West New Guinea region
h about 14 km
Magnitude 5.8 (CGS).

September 22

M	Z	iP	20:11:38.5 d
Na	Z	eP	35.0 d
Hi	Z	iP	39.8 d
U	PEZ	eR	20:28:32

C&GS card 74-65:
20:01:49.3
5.4° S., 151.5° E.
New Britain region
Felt at Rabaul
h about 57 km
Magnitude 5-5.5 (Brk), 6.5 (CGS), 6.0 (HVO).

September 22

M	Z	eP	22:17:48.1 c
MP	Z	eP	49.4 c
U	PEE	eS	22:25:46
U	PEN	eL	22:31:32
U	PEZ	iR	22:34:06

C&GS card 74-65:
22:08:01.1
36.4° N., 141.3° E.
Near east coast of Honshu, Japan
Felt at Tokyo
h about 44 km
Magnitude 6.75 (Pas), 6.25 (Brk), 5.6 (CGS), 6.2 (HVO).

Table 5.--Distant earthquakes--Continued

September 26, 1965

D	Z	iP	00:45:30.2 c

C&GS card 76-65:
00:36:24
18.4° N., 101.2° W.
Guerrero, Mexico
h about 93 km
Magnitude 4.8 (CGS).

September 28

M	Z	iP	05:15:50.1 c
MP	Z	eP	48.7 c
U	PEN	iS	05:23:12
U	PEN	eSS	05:26:46
U	PEE	eL	05:27:48
U	PEN	eG	05:28:04
U	PEZ	iR	05:30:24

C&GS card 77-65:
05:06:36.8
28.0° S., 178.1° W.
Kermadec Islands
h about 33 km
Magnitude 6.5-6.75 (Pas),
6.25-6.5 (Brk),
6.5-6.75 (Pal),
5.2 (CGS),
6.4 (HVO).

September 30

M	Z	eP	23:55:34.1 c
U	PEZ	eS	00:01:58
U	PEE	eG	00:04:32
U	PEZ	iR	00:06:38
M	Z	Tmax	00:39:00
A	Z	Tmax	05
D	Z	Tmax	07
MP	Z	Tmax	07
U	Z	Tmax	04
Pa	Z	Tmax	01
Hi	Z	Tmax	00:38:57
Ha	Z	Tmax	00:37:42

September 30--Continued

C&GS card 79-65:
23:47:40.7
59.7° N., 143.4° W.
Gulf of Alaska
h about 19 km
Magnitude 5.25-5.5 (Brk),
6.25-6.5 (Pal),
4.8 (CGS),
6.1 (HVO).

The following persons or agencies reported "felt" earthquakes during the 3d quarter, 1965. Their assistance is gratefully acknowledged.

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Mauna Loa Observatory

Kilauea summit area

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Mr. J. Larson

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 40

October, November, and December, 1965

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and Howard A. Powers

Issued February 1969

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Summary of Activities

Kilauea volcano continued its gradual inflation throughout much of the fall quarter of 1965. As monitored by daily readings of the short-base water-tube tiltmeters at Uwekahuna, the center of inflation lay to the southeast, just east of West Pit which is in the southwestern part of Kilauea caldera. Seismic activity remained at a normal level, punctuated by two small swarms of long-period quakes from beneath Kilauea summit and one swarm of 50 quakes from the east rift zone in mid-November.

These fairly normal conditions were abruptly interrupted by a 6-hour eruption on December 24 and 25. About 1.1 million cubic yards of lava were erupted from 2 reaches of en echelon fissures on the east rift zone of Kilauea extending from Aloi Crater, (which is midway between Ahua and Makaopuhi seismograph stations (fig. 1)), to Kane Nui o Hamo, a small lava and cinder cone about 4 km farther east. There was little prior warning of this activity--harmonic tremor and a swarm of quakes began at about 19:30 on December 24 and by 21:30 on the same evening the lava reached the surface.

The lava erupted from vents crossing the floor of Aloi Crater and formed a 47-foot-deep lava lake, but late-stage drainback withdrew all but 5 or 6 feet of this new lava.

The eruption ended as the tempo of earthquakes and ground cracking reached the maximum. The seismic crisis produced hundreds of felt quakes and thousands were detected instrumentally. This swarm continued with gradually decreasing intensity into mid-January 1966. The epicenters of most of the quakes as well as the location of most of the new ground cracks lay along the upper east rift zone and westward along the Koae fault system, a system that lies roughly between Makaopuhi and Desert seismograph stations (fig. 1), for a distance of about 15 km.

Studies in Makaopuhi lava lake, near Makaopuhi seismograph station, continued throughout this quarter. A number of samples of molten basalt were obtained from beneath the crust of the lake at temperatures ranging from 1,100° to 1,120°C. Modal studies of these melt samples as well as of samples from other levels in the crust of the lake indicate the following paragenesis of the main crystalline phases: olivine-clinopyroxene-plagioclase-opaque minerals.

Investigations of the partial pressure of oxygen are continuing in the Makaopuhi lava lake drill holes. Five drill holes now show zones of anomalously high Po_2 (up to 10^{-5} atm) within the temperature range 750°-450°C. The maxima of these anomalies moved deeper in the holes as the isotherms moved to greater depth. The explanation of these anomalies is still being explored.

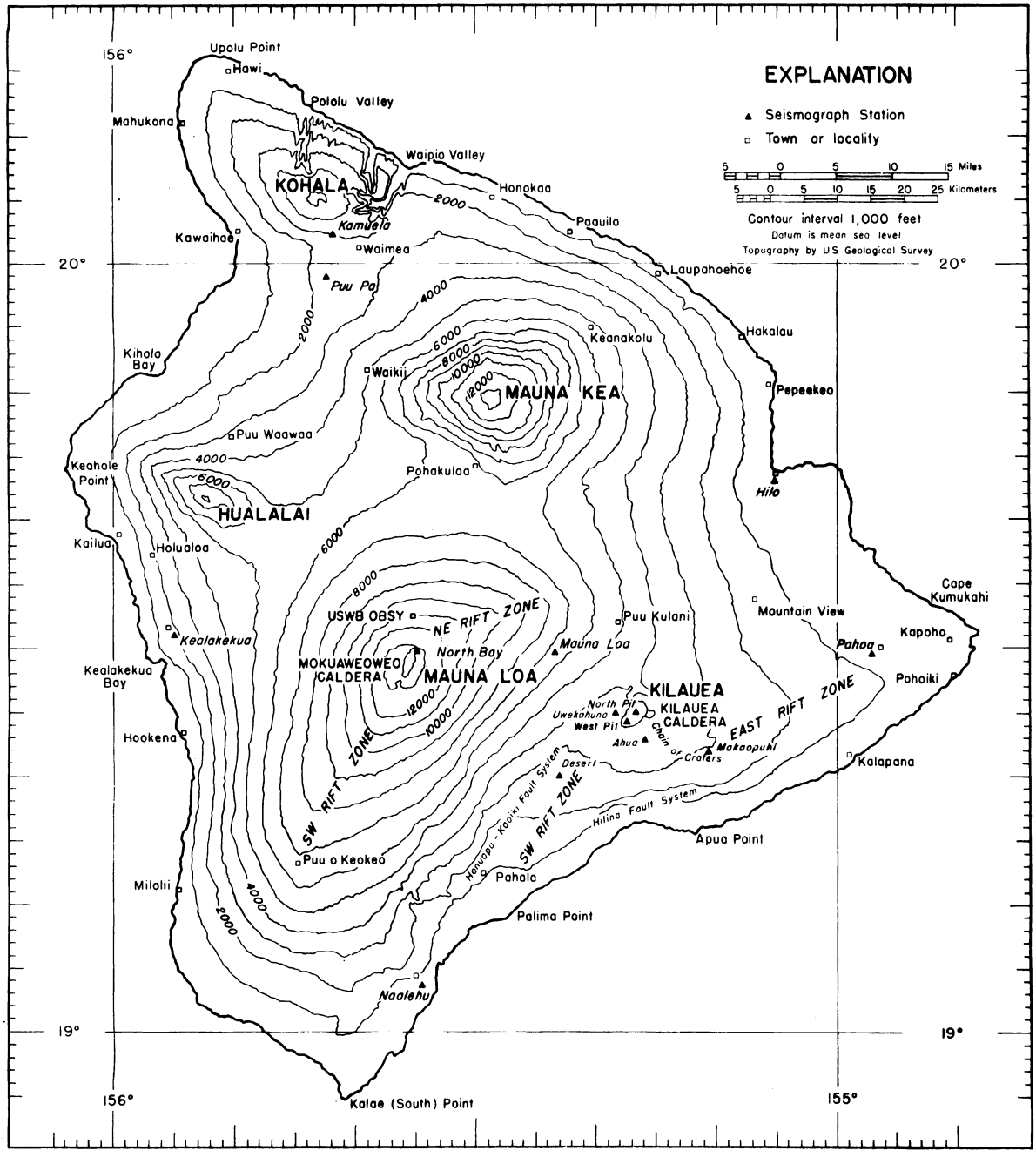

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter at Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 7 of summary 37, which covers the first quarter of 1965.

Table 1.--Tilt coordinates at Uwekahuna, October, November, and December, 1965

Date (1965)	N-S	E-W	Date (1965)	N-S	E-W
October 2	473	479	November 20	471	473
9	474	478	27	471	471
16	474	478	December 4	470	468
23	474	476	11	471	467
30	474	474	18	471	467
November 6	475	474	25	467	498
13	474	475			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera.

(See tilt diagram, fig. 2.)

Tilt base	Date (1965)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1965)
Uwekahuna (U)	Dec. 27	454.6	502.1	1.6	S. 38.0° E.	Sept. 9
Tree Molds (TM)	29	427.7	523.9	2.3	S. 36.4° E.	2
Sand Spit (SS)	30	858.8	738.2	1.46	S. 48.6° E.	7
Kalihipaa (Kal)	This station ruined during the eruption and earthquake swarm of Dec. 24-31, 1965.					
Keamoku (Kea)	Dec. 28	592.7	494.5	.2	N. 38.9° E.	Aug. 30
Ahua Kamokukolau (Kam).	28	662.3	532.5	11.2	N. 6.0° E.	30
Kipuka Nene (KN)	Jan. 13 (1966)	293.5	500.9	8.4	S. 1.3° W.	31
Hilina Pali (HP)	10 (1966)	463.4	507.7	1.2	S. 20.6° E.	June 9
Kapapala Ranch (Kap).	Dec. 27	492.7	508.4	.54	N. 7.2° E.	Sept. 1
Mehana (M)	29	541.3	547.8	.3	N. 28.1° E.	9

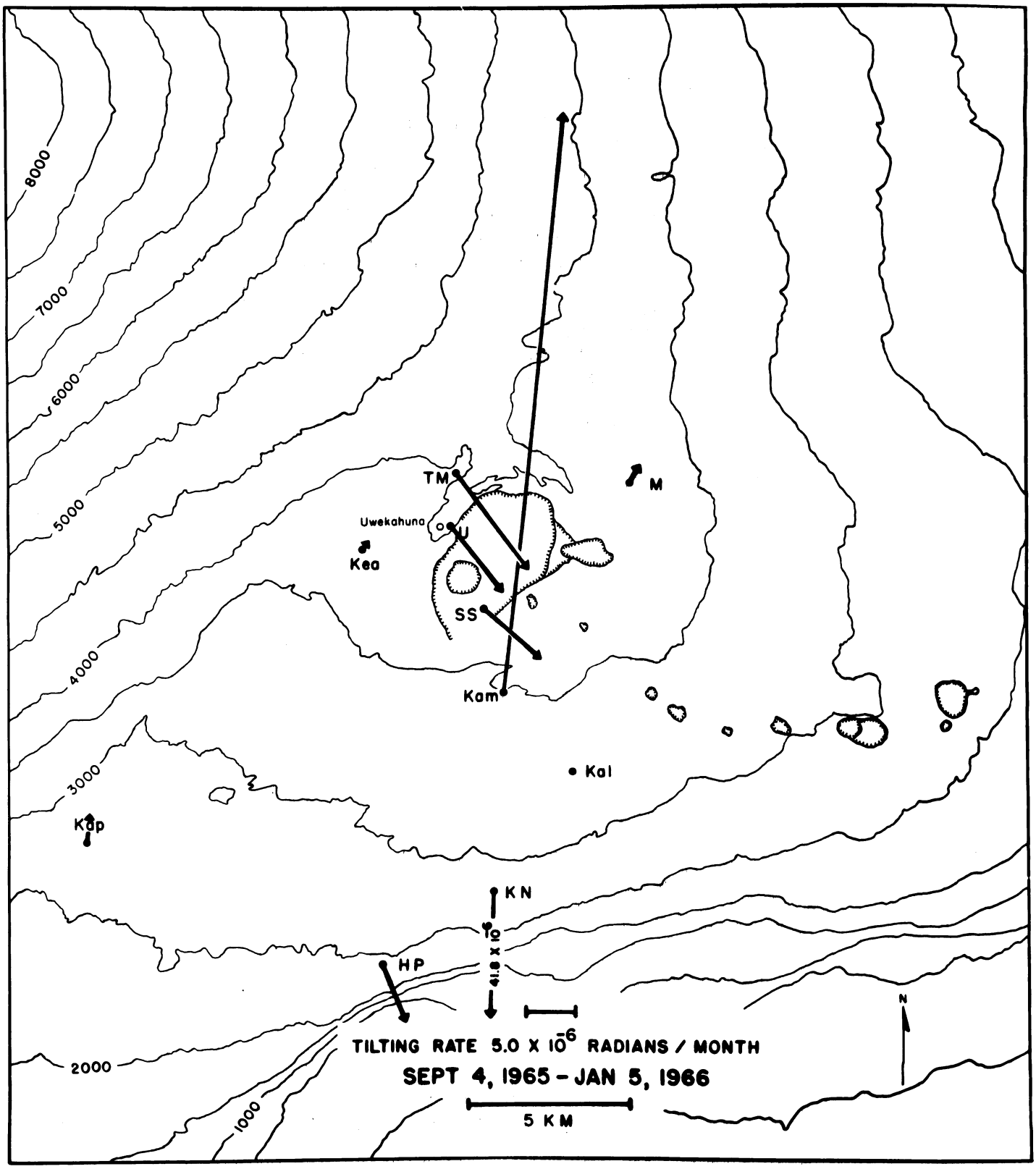

Figure 2.--Tilting of the ground around Kilauea caldera, September 4, 1965-January 5, 1966. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (stations U, M, A, D, N, WP, MP).* Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4. Data on identifiable phases from distant earthquakes are listed in table 5.

Acknowledgments.--Several people or agencies reported "felt" earthquakes during the fourth quarter, 1965. Their assistance is gratefully acknowledged.

*Location of and essential data on each seismograph station are listed in table 6 of summary 37, which covers the first quarter of 1965.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region, and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1965)	Tremor (in minutes)			Earthquakes					
				Kilauea summit		SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 km	Shallow				
Oct. 1	----	------	------	2	70	4	-----	5	----------
2	----	------	------	1	59	7	-----	14	----------
3	----	------	------	-----	80	8	-----	7	1 off south shore of Hawaii
4	----	5	------	2	120	2	-----	11	1 off NW. shore of Hawaii
5	----	------	------	1	47	3	-----	6	----------
6	----	------	------	2	33	5	-----	10	----------
7	----	------	16	-----	20	5	-----	10	----------
8	----	------	------	4	32	8	-----	4	----------
9	30	------	4	4	30	9	-----	10	1 Mauna Kea
10	----	------	2	2	39	6	-----	11	----------
11	----	6	------	-----	5	1	-----	3	----------
12	9	6	------	-----	32	8	-----	14	1 off SW. shore of Hawaii
13	----	3	------	2	32	4	-----	19	1 Kohala
14	----	7	------	-----	27	2	-----	14	1 off SE. shore of Maui
15	----	22	------	-----	55	7	-----	10	1 Kona, 1 Mauna Kea
16	7	------	------	-----	65	5	-----	7	1 off south shore of Hawaii 31 Mauna Loa

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1965)	Tremor (in minutes)			Earthquakes					
				Kilauea summit		SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 km	Shallow				
Oct. 17	----	2	------	-----	52	7	-----	7	21 Mauna Loa
18	----	5	------	1	7	6	-----	8	30 Mauna Loa
19	----	------	------	2	40	1	1	2	10 Mauna Loa, 1 Hualalai
20	----	7	------	10	55	8	-----	3	----------
21	----	4	8	5	58	6	-----	12	1 Mauna Loa
22	36	------	------	2	40	6	-----	11	----------
23	----	------	------	2	48	9	-----	11	1 Kona
24	----	------	3	3	52	8	-----	8	3 Mauna Loa
25	----	210	------	-----	90	12	-----	18	----------
26	----	18	------	1	65	8	1	7	----------
27	----	5	------	4	74	2	2	8	----------
28	34	------	------	5	98	9	-----	9	1 Kona
29	----	8	------	1	67	7	1	5	----------
30	----	8	------	2	80	10	-----	12	----------
31	17	------	7	3	65	6	-----	17	1 Mauna Loa
Nov. 1	----	21	------	3	53	3	-----	5	----------
2	----	12	------	1	64	6	-----	3	----------
3	----	18	------	1	69	7	1	12	----------
4	----	------	------	2	67	5	1	10	----------
5	----	10	------	3	72	5	-----	7	1 off SE. shore of Hawaii
6	----	9	------	3	74	5	-----	6	2 Mauna Kea
7	----	------	------	1	70	4	-----	7	----------
8	----	6	------	4	80	2	-----	6	----------
9	----	20	Severe electrical storm--instruments turned off						
10	----	46	------	-----	110	6	5	10	----------
11	----	20	------	4	96	6	4	13	----------
12	----	50	------	-----	54	3	1	26	1 Kona
13	----	------	------	3	79	3	1	70	----------
14	----	------	------	1	106	10	5	9	1 Mauna Loa

Nov.	15	----	9	------	1	68	6	6	9	1 Mauna Loa
	16	----	------	------	3	36	5	4	5	----------
	17	----	5	------	4	56	11	9	9	1 off SE. shore of Oahu
	18	----	------	------	4	46	6	7	6	1 off SE. shore of Oahu
	19	----	9	------	3	45	3	6	11	----------
	20	----	------	------	2	53	5	-----	6	----------
	21	----	------	------	3	31	6	-----	5	----------
	22	----	------	------	7	60	6	-----	9	----------
	23	----	7	5	24	101	5	-----	5	1 Mauna Kea, 2 Kona
	24	----	------	------	6	150	2	-----	7	----------
	25	----	------	------	5	142	3	-----	4	----------
	26	----	------	------	4	135	2	-----	6	----------
	27	----	3	------	1	115	9	-----	7	1 off SW. shore of Hawaii
	28	15	------	------	6	112	9	2	10	----------
	29	6	------	------	2	145	5	-----	5	----------
	30	----	------	------	6	200	6	1	13	1 Mauna Kea
Dec.	1	----	------	------	6	159	2	1	20	----------
	2	----	------	------	2	55	3	-----	20	1 off east shore of Hawaii
	3	32	------	------	3	56	4	1	31	----------
	4	----	------	------	2	58	9	-----	26	----------
	5	----	21	------	3	50	3	-----	22	1 Mauna Loa
	6	----	------	------	3	44	5	-----	-----	----------
	7	----	------	------	1	55	3	1	19	1 Mauna Loa, 1 Kona
	8	8	------	------	3	70	3	1	10	----------
	9	15	------	------	3	95	8	-----	3	----------
	10	----	------	------	2	60	9	2	12	----------
	11	----	------	------	4	72	13	4	4	----------
	12	----	------	------	2	63	6	1	7	1 Mauna Loa
	13	----	------	------	6	60	6	1	4	1 Mauna Kea
	14	38	------	------	2	36	3	1	7	----------
	15	----	------	------	2	36	3	-----	6	----------
	16	----	------	------	-----	42	6	-----	10	1 off west shore of Hawaii
	17	----	------	------	2	30	2	1	13	1 off NW. shore of Hawaii
	18	----	------	------	2	36	5	-----	10	----------
	19	----	------	------	3	43	5	-----	5	----------
	20	----	------	------	14	80	10	-----	-----	1 off west shore of Hawaii, 1 Mauna Loa.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1965)	Tremor (in minutes)			Earthquakes					
				Kilauea summit		SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 km	Shallow				
Dec. 21	----	------	------	10	80	15	------	6	----------
22	----	------	------	9	100	6	------	3	----------
23	----	------	3	4	93	14	------	8	----------
24	Eruption at Aloi Crater. Harmonic tremor and several thousands of earthquakes occurred beneath the southeast and south flanks of Kilauea, along the upper east rift and Koae fault system.								
25									
26									
27									
28									
29	----	------	------	3	10+	10	------	308	----------
30	----	------	------	3	17+	19	------	232	----------
31	19	------	------	2	14+	12	------	210	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1965

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 1	02	13	27.4	2.2	9	19°18.5'	155°10.7'	6 km south of Makaopuhi seismometer	----------
3	09	10	33.6	2.7	8	18°30.0'	155°28.5'	63 km SSE. of Naalehu	----------
4	22	25	33.1	3.2	13	20°09'	156°22'	48 km WSW. of Mahukona	----------
8	04	50	34.5	2.2	8	19°17.5'	155°10.1'	8 km SSE. of Makaopuhi seismometer	----------
8	14	38	29.6	2.5	5	19°24.8'	155°26.8'	Kaoiki fault system	----------
9	22	07	47.1	2.0	5	19°25.6'	155°25.7'	---do----------	----------
9	06	20	18.9	2.2	<3	19°53.9'	155°38.7'	16 km SSE. of Kamuela	----------
12	12	57	01.8	2.7	8	19°15.0'	156°01.3'	20 km SW. of Hookena	----------
13	06	46	59.2	2.2	8	19°17.2'	155°08.7'	10 km SSE. of Makaopuhi seismometer	----------
13	09	38	48.5	2.4	40	19°09.8'	155°24.3'	19 km SSW. of Desert seismometer	----------
13	14	34	24.9	2.7	8	20°10.0'	155°36.4'	17 km NE. of Kamuela	----------
14	01	57	36.5	2.3	8	19°18.0'	155°12.5'	8 km SW. of Makaopuhi seismometer	----------
14	05	49	16.2	2.1	8	19°16.0'	155°08.6'	12 km SSE. of Makaopuhi seismometer	----------
14	16	27	37.1	3.1	13	20°19'	156°12'	50 km SSE. of Haleakala seismometer	----------
15	11	36	51.1	2.8	50	19°10.5'	155°28.9'	2 km SSW. of Pahala	----------
15	11	40	00.9	3.0	50	19°08.7'	155°26.0'	8 km SE. of Pahala	----------
15	21	04	01.9	2.3	3	19°28.0'	155°47.1'	15 km ESE. of Kealakekua	----------
15	21	52	26.4	2.5	8	19°56.4'	155°27.5'	13 km ENE. of Keanakolu	----------
16	06	06	59.5	3.7	8	18°38.2'	155°31.7'	48 km SSE. of Naalehu	----------
17	20	59	28.5	2.3	8	19°26.1'	155°36.6'	8 km SW. of North Bay seismometer	----------
17	21	23	49.7	2.4	9	19°26.1'	155°35.4'	6 km SSW. of North Bay seismometer	----------
17	22	40	09.6	2.4	6	19°27.8'	155°38.5'	7 km WSW. of North Bay seismometer	----------
18	20	51	29.6	2.0	9	19°28.1'	155°30.6'	8 km ESE. of North Bay seismometer	----------
19	06	15	44.5	2.2	8	19°26.0'	154°56.1'	7 km SSE. of Pahoa	----------
20	05	50	52.0	3.2	30	19°22.4'	155°18.7'	Beneath Kilauea summit	Pahala, Kilauea summit region.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1965--Continued

Date (1965)	Time h	Time m	Time s	Magnitude	Depth (km)	Epicenter Lat. N.	Epicenter Long. W.	Epicenter Description	Felt Report
Oct. 20	18	32	15.8	2.4	30	19°21.7'	155°19.5'	Beneath Kilauea summit	----------
21	06	46	48.6	2.3	5	19°13.5'	155°36.3'	17 km NNW. of Naalehu	----------
21	08	56	33.2	2.4	50	19°47.3'	155°46.0'	8 km ENE. of Puu Waawaa	----------
21	11	49	58.4	2.4	9	19°18.2'	155°08.5'	9 km SE. of Makaopuhi seismometer	----------
21	15	28	57.8	2.0	30	19°11.1'	155°20.0'	17 km SSE. of Desert seismometer	----------
21	16	14	42.6	2.2	8	19°17.6'	155°09.0'	8 km SSE. of Makaopuhi seismometer	----------
21	16	15	01.9	2.4	9	19°17.6'	155°08.6'	9 km SSE. of Makaopuhi seismometer	----------
22	03	11	17.3	2.2	8	19°21.1'	155°01.1'	5 km west of Kalapana	----------
22	23	07	32.5	2.6	8	19°17.0'	155°07.3'	11 km SE. of Makaopuhi seismometer	----------
23	05	58	05.2	2.3	8	19°17.0'	155°07.5'	11 km SE. of Makaopuhi seismometer	----------
23	08	48	06.9	2.5	8	19°18.9'	155°47.9'	14 km SE. of Hookena	----------
23	20	45	50.5	2.0	8	19°22.3'	155°02.3'	7 km WNW. of Kalapana	----------
24	12	58	59.7	2.5	8	19°11.7'	155°35.3'	14 km north of Naalehu	----------
24	14	53	47.6	2.3	3	19°10.2'	155°34.5'	12 km north of Naalehu	----------
24	21	50	08.6	2.6	<3	19°26.2'	155°36.5'	7 km SSW. of North Bay seismometer	----------
25	00	20	03.2	2.4	8	19°21.8'	155°02.9'	15 km east of Makaopuhi seismometer	----------
28	04	55	01.6	2.0	8	19°22.1'	155°29.9'	13 km WNW. of Desert seismometer	----------
28	09	48	24.8	3.3	3	19°29.9'	155°48.0'	13 km ESE. of Kealakekua	Kona
28	10	19	40.2	2.2	30	19°22.8'	155°18.4'	Beneath Kilauea summit	----------
28	17	47	02.9	2.7	30	19°22.2'	155°19.4'	---do----------	----------
28	17	58	30.9	2.0	30	19°22.2'	155°19.4'	---do----------	----------
28	23	46	34.6	2.4	5	19°24.8'	155°27.3'	Kaoiki fault system	----------
30	22	25	05.9	3.3	10	19°16.4'	155°07.1'	12 km SE. of Makaopuhi seismometer	Hilo
30	22	31	35.6	2.3	10	19°17.0'	155°06.8'	11 km SE. of Makaopuhi seismometer	----------
31	01	04	43.3	2.3	10	19°17.6'	155°08.5'	8 km SE. of Makaopuhi seismometer	----------
31	12	20	04.5	2.2	8	19°21.0'	155°03.1'	14 km ESE. of Makaopuhi seismometer	----------
31	19	22	45.5	2.7	10	19°24.6'	155°29.6'	Kaoiki fault system	----------
31	21	10	04.7	2.4	13	19°25.5'	155°35.6'	8 km SSW. of North Bay seismometer	----------
Nov. 3	20	17	25.5	2.4	5	19°25.0'	155°26.4'	Kaoiki fault system	----------
4	00	44	47.0	2.2	10	19°19.2'	155°07.9'	7 km SE. of Makaopuhi seismometer	----------

Nov.	5	02	24	13.0	2.4	10	19°19.2'	155°07.2'	7 km SE. of Makaopuhi seismometer	----------
	5	19	31	58.3	2.7	40	18°58.1'	154°57.9'	42 km south of Kalapana	----------
	6	00	07	44.6	2.7	30	20°06.5'	155°47.5'	8 km WNW. of Honokaa	----------
	6	07	34	30.8	2.8	13	20°00.9'	155°22.2'	14 km WNW. of Laupahoehoe	----------
	7	06	54	33.3	2.5	40	19°14.8'	155°25.2'	11 km SSW. of Desert seismometer	----------
	7	12	34	02.4	2.5	8	19°16.8'	155°12.2'	10 km SSW. of Makaopuhi seismometer	----------
	8	00	48	35.0	3.4	37	19°24.5'	154°50.0'	16 km SE. of Pahoa	----------
	8	17	57	41.2	2.2	30	19°22.2'	155°18.1'	Beneath Kilauea summit	----------
	8	21	48	05.1	2.0	8	19°19.4'	155°04.4'	13 km ESE. of Makaopuhi seismometer	----------
	10	13	45	53.5	2.3	10	19°23.9'	154°53.9'	11 km SSE. of Pahoa	----------
	11	16	19	15.6	2.4	3	19°25.8'	154°56.3'	7 km south of Pahoa	----------
	12	17	35	49.3	3.4	6	19°12.9'	155°12.4'	5 km SSW. of Apua Point	----------
	12	17	39	10.3	2.5	5	19°14.7'	155°11.9'	14 km SSW. of Makaopuhi seismometer	----------
	12	18	10	43.4	2.1	3	19°15.0'	155°13.4'	14 km SW. of Makaopuhi seismometer	----------
	12	18	20	40.4	2.4	8	19°15.8'	155°13.3'	12 km SW. of Makaopuhi seismometer	----------
	12	21	51	55.7	2.7	8	19°32.7'	155°52.4'	6 km ENE. of Kealakekua	----------
	13	06	29	30.5	2.5	8	19°12.7'	155°27.3'	3 km NE. of Pahala	----------
	13	07	28	45.3	2.5	8	19°16.3'	155°10.4'	10 km south of Makaopuhi seismometer	----------
	13	07	29	01.8	3.2	3	19°13.9'	155°09.8'	15 km SSE. of Makaopuhi seismometer	Mauna Loa Observatory.
	13	07	50	59.3	3.2	6	19°14.3'	155°11.8'	15 km SSW. of Makaopuhi seismometer	Hilo
	13	12	02	22.2	2.5	8	19°15.2'	155°12.3'	13 km SSW. of Makaopuhi seismometer	----------
	14	17	29	19.9	2.1	8	19°24.0'	155°25.1'	Kaoiki fault system	----------
	16	12	44	51.1	2.0	20	19°23.3'	155°18.2'	Beneath Kilauea summit	----------
	17	04	14	42.0	3.0	10	19°22.8'	155°27.8'	Kaoiki fault system	Pahala
	17	06	16	59.9	3.7	13	20°55'	157°50'	40 km south of Diamond Head, Oahu	Oahu
	18	20	28	59.2	3.3	13	20°54'	157°50'	41 km south of Diamond Head, Oahu	----------
	19	11	28	28.5	3.1	3	19°25.7'	154°52.9'	10 km SE. of Pahoa	Pahoa
	21	20	36	30.4	2.5	8	19°19.1'	155°08.1'	7 km SE. of Makaopuhi seismometer	----------
	22	18	42	56.2	2.0	25	19°23.8'	155°18.6'	Beneath Kilauea summit	----------
	23	09	09	59.3	3.9	30	19°22.8'	155°19.7'	Beneath Kilauea summit	East 1/2 of Island.
	23	11	08	38.8	2.7	30	19°22.2'	155°18.2'	Beneath Kilauea summit	----------
	23	13	04	10.2	2.6	5	19°18.7'	155°30.0'	12 km WSW. of Desert seismometer	----------
	23	14	16	19.9	2.0	30	19°22.2'	155°18.2'	Beneath Kilauea summit	----------
	23	18	30	19.3	2.6	8	19°48.8'	155°31.6'	7 km north of Pohakuloa	----------
	23	20	30	22.4	2.7	3	19°18.4'	155°48.7'	13 km SE. of Hookena	----------
	25	03	37	16.3	2.2	25	19°23.9'	155°18.3'	Beneath Kilauea summit	----------
	26	00	09	13.6	2.5	8	19°25.6'	155°28.8'	Kaoiki fault system	----------
	27	09	51	21.8	2.9	13	19°05.5'	156°19.5'	45 km WSW. of Milolii	----------
	29	07	49	26.1	2.3	32	19°22.2'	155°15.7'	Beneath Kilauea Summit	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey October, November, and December, 1965--Continued

Date (1965)	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat. N.	Long. W.	Description	Felt Report
Nov. 29	15	44	45.0	2.1	30	19°23.5'	155°18.7'	Beneath Kilauea summit	----------
30	19	09	53.0	2.0	30	19°21.6'	155°19.6'	---do----------	----------
30	19	38	13.8	3.3	13	19°58.1'	155°39.5'	8 km SSE. of Kamuela	Kona
Dec. 1	21	02	47.7	2.1	8	19°20.7'	155°09.4'	3 km ESE. of Makaopuhi seismometer	----------
2	02	37	17.7	3.8	45	19°46.7'	154°56.4'	17 km ENE. of Hilo	Hilo, Pahala
3	04	13	19.0	3.3	10	19°22.2'	155°27.1'	Kaoiki fault system	Pahala
4	07	49	06.3	2.2	25	19°25.1'	155°16.3'	Beneath Kilauea summit	----------
4	16	18	27.8	2.3	5	19°22.0'	155°30.0'	Kaoiki fault system	----------
5	19	05	08.5	3.8	30	19°35.2'	154°57.8'	10 km NNW. of Pahoa	East 1/2 of Island
5	21	08	39.6	3.5	8	19°11.6'	155°38.6'	16 km NNW. of Naalehu	----------
6	08	22	08.3	3.0	25	19°22.8'	155°17.5'	Beneath Kilauea summit	----------
7	00	00	08.8	2.6	9	19°20.8'	155°06.0'	9 km ESE. of Makaopuhi seismometer	----------
7	02	29	02.4	2.5	5	19°13.1'	155°42.6'	21 km NW. of Naalehu	----------
7	22	48	31.8	2.5	5	19°43.1'	156°08.0'	7 km WSW. of Keahole Point	----------
8	21	41	00.8	2.2	8	19°21.1'	155°05.6'	9 km ESE. of Makaopuhi seismometer	----------
12	09	18	47.1	2.6	8	19°24.9'	155°25.3'	Kaoiki fault system	Mauna Loa Observatory.
12	14	12	31.3	2.8	8	19°22.1'	155°27.9'	---do----------	
12	15	35	50.8	3.0	13	19°24.7'	155°37.0'	10 km SSW. of North Bay seismometer	----------
13	10	01	36.6	2.6	3	19°55.7'	155°50.0'	18 km SW. of Kamuela	----------
15	10	43	13.8	2.3	8	19°26.2'	155°25.2'	Kaoiki fault system	----------
16	22	18	55.4	2.0	8	19°23.1'	155°24.9'	---do----------	----------
16	01	18	36.7	2.5	13	19°27.9'	156°04.9'	18 km WSW. of Kealakekua	----------
17	17	42	53.0	3.0	13	20°06'	156°26'	77 km WSW. of Mahukona	----------
19	17	31	05.2	2.1	25	19°23.0'	155°15.8'	Beneath Kilauea summit	----------
20	10	20	56.0	2.7	8	19°52.0'	156°04.0'	15 km north of Keahole Point	----------
20	12	16	37.7	2.3	8	19°22.1'	155°25.8'	Kaoiki fault system	Pahala
20	21	34	05.0	2.3	5	19°25.8'	155°31.7'	9 km SSE. of North Bay seismometer	----------
21	15	49	19.6	3.2	31	19°21.5'	155°17.5'	Beneath Kilauea summit	South 1/2 of Island.
21	16	01	16.9	2.5	30	19°22.0'	155°18.7'	---do----------	----------

The Aloi eruption of 1965.--During the very intense period of seismic activity from late December 24 to early December 28, several thousands of earthquakes occurred south of Kilauea caldera along the east-west-trending Koae fault system, and along adjacent structures. About 300 of these earthquakes ranged in magnitude from 2 to 4.5. The many earthquakes which occurred during this time are not listed separately in the usual manner.

Dec.	28	11	18	01.5	3.0	1.5	19°21.2'	155°16.9'	3 km SW. of Ahua seismometer	----------
	28	11	27	54.5	2.3	5	19°14.5'	155°23.7'	10 km south of Desert seismometer	----------
	28	11	34	58.2	2.9	5	19°20.9'	155°17.9'	5 km WSW. of Ahua seismometer	----------
	28	12	30	10.8	2.0	5	19°20.7'	155°18.4'	5 km SW. of Ahua seismometer	----------
	28	12	41	58.5	2.2	3	19°17.3'	155°19.0'	11 km SW. of Ahua seismometer	----------
	28	16	18	15.4	2.8	5	19°16.1'	155°21.8'	8 km SSE. of Desert seismometer	----------
	28	17	45	44.5	2.2	5	19°18.0'	155°17.9'	8 km SW. of Ahua seismometer	----------
	28	18	43	15.2	2.0	5	19°18.8'	155°16.4'	7 km SSW. of Ahua seismometer	----------
	28	20	51	27.3	2.3	3	19°20.2'	155°18.8'	8 km east of Desert seismometer	----------
	28	22	22	07.8	2.4	5	19°22.1'	155°12.1'	3 km west of Makaopuhi seismometer	----------
	28	22	24	44.2	2.2	3	19°20.9'	155°18.1'	5 km SW. of Ahua seismometer	----------
	28	22	39	27.8	1.9	3	19°20.8'	155°19.0'	6 km SW. of Ahua seismometer	----------
	29	01	09	13.1	1.7	5	19°18.2'	155°16.9'	8 km SSW. of Desert seismometer	----------
	29	03	43	43.9	2.5	5	19°20.6'	155°16.4'	4 km SW. of Ahua seismometer	----------
	29	04	30	19.7	2.1	3	19°21.7'	155°17.2'	3 km SW. of Ahua seismometer	----------
	29	06	06	08.7	2.0	5	19°21.4'	155°03.8'	13 km ESE. of Makaopuhi seismometer	----------
	29	07	12	12.0	1.9	5	19°21.0'	155°18.0'	4 km SW. of Ahua seismometer	----------
	29	07	48	00.0	2.6	5	19°12.3'	155°17.9'	17 km SE. of Desert seismometer	----------
	29	07	52	28.4	2.0	3	19°20.8'	155°17.1'	5 km SW. of Ahua seismometer	----------
	29	08	58	06.9	2.6	5	19°19.9'	155°19.0'	8 km SW. of Ahua seismometer	----------
	29	12	46	10.0	2.2	3	19°20.7'	155°18.1'	5 km SW. of Ahua seismometer	----------
	29	13	04	38.9	2.5	4	19°20.8'	155°18.6'	6 km SW. of Ahua seismometer	----------
	29	15	17	47.9	2.8	3	19°18.5'	155°16.0'	8 km south of Ahua seismometer	----------
	29	21	14	59.8	2.0	3	19°20.8'	155°16.8'	4 km SW. of Ahua seismometer	----------
	29	21	24	46.9	2.3	5	19°21.8'	155°10.2'	Near Makaopuhi seismometer	----------
	29	22	13	19.0	2.3	3	19°08.9'	155°16.9'	15 km SW. of Apua Point	----------
	30	00	10	55.3	3.6	5	19°20.1'	155°16.9'	4 km SW. of Ahua seismometer	Kilauea summit area.
	30	00	47	46.0	2.2	3	19°21.1'	155°17.2'	4 km SW. of Ahua seismometer	----------
	30	00	53	42.7	2.1	0	19°21.4'	155°17.7'	4 km SW. of Ahua seismometer	----------
	30	02	14	23.8	2.4	1	19°21.5'	155°15.5'	2 km SE. of Ahua seismometer	----------
	30	03	03	29.5	3.1	8	19°18.9'	155°11.3'	6 km south of Makaopuhi seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1965--Continued

Date (1965)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 30	10	45	39.5	2.2	0	19°21.9'	155°11.1'	Near Makaopuhi seismometer	----------
30	12	21	27.4	2.8	3	19°20.6'	155°16.2'	4 km SSW. of Ahua seismometer	----------
30	19	30	57.3	1.9	6	19°25.9'	155°25.2'	9 km SW. of Mauna Loa seismometer	----------
30	22	18	30.6	2.3	8	19°10.2'	155°17.9'	15 km SW. of Apua Point	----------
31	10	35	46.3	2.2	3	19°14.3'	155°23.2'	11 km south of Desert seismometer	----------
31	10	56	20.1	2.0	8	19°15.0'	155°22.7'	10 km SSE. of Desert seismometer	----------
31	20	02	04.1	2.7	5	19°07.8'	155°13.5'	15 km SSW. of Apua Point	----------
31	20	24	04.8	2.7	8	19°07.0'	155°14.6'	16 km SSW. of Apua Point	----------
31	20	28	02.0	2.0	5	19°20.9'	155°18.1'	5 km SW. of Ahua seismometer	----------

Table 5.--Distant earthquakes

Times are reported in Greenwich Civil Time which is 10 hours faster than Hawaiian Standard Time. A "c" following the time of P indicates compressional first motion; a "d" indicates dilatational first motion. Station symbols, locations, and instrumentation are presented in table 6, Summary 37. Magnitudes calculated from the Hawaii seismograms are followed by (HVO). Location of epicenter, origin times, and focal depths, and magnitudes reported by other institutions are taken from "Preliminary Determination of Epicenters" published by the U.S. Coast and Geodetic Survey.

October 1, 1965

M	Z	eP	08:59:15.5 d
A	Z	eP	16.7 d
D	Z	eP	16.5 d
MP	Z	eP	16.8 d
Ke	Z	eP	12.8 d
Hi	Z	eP	14.6 d
NB	Z	eP	14.8 d
U	PEE	iS	09:05:08
U	PEN	eG	09:07:14
U	PEZ	eR	09:09:12

C&GS card 77-65:
08:52:05.8
50.1°N., 178.3°E.
Rat Islands, Aleutian Islands
Felt on Adak
h about 32 km
Magnitude 6.5 (Pas), 6.25-6.5 (Brk), 6.5-6.75 (Pal), 6.3 (CGS), 6.1 (HVO).

Oct. 1

M	Z	eP	13:30:27.1 c
D	Z	eP	26.1 c
MP	Z	eP	27.3 c
U	Z	eP	26.8 c
Pa	Z	eP	28.6 c
Na	Z	iP	23.5 c
Hi	Z	eP	29.6 c
Ke	Z	eP	24.4 c
Ha	Z	iP	31.1 c

C&GS card 79-65:
13:22:28.5
20.0°S., 174.4°E.
New Hebrides Islands region
h about 553 km
Magnitude 5.9 (Brk), 6.2 (CGS).

Oct. 3

M	Z	iP	10:53:09.0 c
Ha	Z	Tmax	11:28:20

C&GS card 77-65:
10:46:16.7
52.6°N., 170.6°W.
Fox Islands, Aleutian Islands
h about 22 km
Magnitude 5.3 (CGS).

Oct. 3

M	Z	iP	14:54:09.0 c
D	Z	iP	10.4 c
MP	Z	iP	11.4 c
U	Z	ep	10.5 c
Pa	Z	eP	11.4 c
U	PEE	iS	15:01:13
U	PEN	eG	15:05:09
U	PEZ	iR	15:07:25
Ha	Z	Tmax	15:45:14

C&GS card 76-65:
14:45:26.8
49.5°N., 156.5°E.
Kurile Islands
h about 33 km
Magnitude 6 (Pas), 5.5-5.75 (Brk), 5.9 (CGS).

October 3, 1965

U	PEZ	iR	16:59:13

C&GS card 76-65:
16:14:54.9
42.9°S., 75.4°W.
Off coast of southern Chile
h about 28 km
Magnitude 6-6.5 (Brk), 6.0 (CGS).

Oct. 4

M	Z	Tmax	04:54:11
A	Z	Tmax	11
WP	Z	Tmax	04:53:58
Pa	Z	Tmax	52
Ha	Z	Tmax	42

C&GS card 77-65:
04:12:49.1
44.0°N., 128.3°W.
Off coast of Oregon
h about 33 km
Magnitude 5.1 (CGS).

Oct. 7

M	Z	eP	03:48:44.7 d
A	Z	eP	45.0 d
MP	Z	eP	45.2 d

C&GS card 78-65:
03:35:59.6
12.6°N., 114.5°E.
South China Sea
h about 17 km
Magnitude 5.9 (CGS).

Oct. 7

Ha	Z	Tmax	20:35:14

C&GS card 80-65:
19:51:57
51.7°N., 176.1°W.
Andreanof Islands, Aleutian Islands.
h about 63 km
Magnitude 4.7 (CGS).

Oct. 12

WP	Z	Tmax	07:12:24
U	Z	Tmax	28
Pa	Z	Tmax	28
Hi	Z	Tmax	03
Ha	Z	Tmax	07:10:15

C&GS card 79-65:
06:27:16.7
52.2°N., 174.8°W.
Andreanof Islands, Aleutian Islands.
Felt on Adak
h about 17 km
Magnitude 5.1 (CGS).

Oct. 12

WP	Z	eP	13:48:14.1 c
U	PEN	eS	13:54:01
U	PEE	eL	13:56:17
U	PEZ	eR	13:58:03
WP	Z	Tmax	14:27:03
U	Z	Tmax	14:26:56
Pa	Z	Tmax	14:27:01
Hi	Z	Tmax	14:26:36
Ha	Z	Tmax	14:25:26

C&GS card 78-65:
13:40:55.9
56.3°N., 153.7°W.
Kodiak Island region
h about 11 km
Magnitude 5.25 (Brk), 5.3 (CGS).

Oct. 12

Pa	Z	Tmax	15:44:12
Ha	Z	Tmax	15:42:34

C&GS card 81-65:
14:58:13.6
56.3° N., 154.0°W.
Kodiak Island region
h about 24 km
Magnitude 4.2 (CGS).

October 15, 1965

U	PEZ	iR	00:57:38

C&GS card 80-65:
00:34:09.3
8.5°N., 103.0°W.
Off coast of Mexico
h about 33 km
Magnitude 4.75-5 (Brk), 5.25-5.5 (Pal), 5.2 (CGS).

Oct. 16

M	Z	iP	08:34:23.6 c
A	Z	iP	23.8 c
D	Z	eP	22.7 c
MP	Z	iP	24.3 c
U	Z	iP	23.5 c
NB	Z	eP	22.4 c

C&GS card 80-65:
08:22:56.1
3.1°N., 128.5°E.
North of Halmahera
h about 213 km
Magnitude 5.7 (CGS).

Oct. 17

M	Z	eP	02:03:07.3 c
A	Z	eP	07.4 c
D	Z	eP	05.7 c
Na	Z	eP	02.0 c
U	PEZ	eR	02:18:23

C&GS card 80-65:
01:53:42.7
8.0°S., 155.9°E.
Solomon Islands
h about 93 km
Magnitude 5.5 (CGS).

Oct. 18

M	Z	iP	22:02:08.7 c
A	Z	eP	08.2 c
U	Z	eP	08.5 c
U	PEE	eS	22:11:55
U	PEE	iPPS	22:12:53
U	PEZ	eSS	22:17:05
U	PEE	eL	22:22:01
U	PEN	iG	22:22:28
U	PEZ	iR	22:25:43

C&GS card 80-65:
21:50:04.5
1.1°S., 127.9°E.
Halmahera
h about 33 km
Magnitude 6.75 (Pas), 6.5-6.75 (Pal), 5.9 (CGS), 6.6 (HVO).

Oct. 18

M	Z	iP	23:00:27.6 c
A	Z	iP	26.7 c
D	Z	iP	27.4 c
MP	Z	iP	25.9 c
U	Z	eP	26.8 c

C&GS card 81-65:
22:50:41.9
15.7°N., 95.4°W.
Near coast of Oaxaca, Mexico
h about 36 km
Magnitude 5.3 (CGS).

Oct. 19

M	Z	eP	20:56:25.0 d
U	PEZ	eS	21:02:38
U	PEZ	iR	21:07:15
Ha	Z	Tmax	21:38:01

C&GS card 80-65:
20:48:47.4
52.3°N., 174.3°E.
Near Islands, Aleutian Islands
h about 48 km
Magnitude 5-5.25 (Brk), 5.75-6 (Pal), 5.6 (CGS), 6.0 (HVO).

October 20-21, 1965

M	Z	eP	00:05:08.6 c
A	Z	iP	07.6 c
U	PEZ	eR	00:24:54

C&GS card 80-65:
23:54:29.9
12.5°N., 87.4°W.
Near coast of Nicaragua
Felt at San Salvador
h about 70 km
Magnitude 5-5.5 (Brk), 5.75 (Pal), 5.4 (CGS).

Oct. 23

M	Z	iP	06:07:43.0 c
A	Z	iP	44.0 c
D	Z	iP	44.1 c
M	Z	Tmax	06:45:29
A	Z	Tmax	33
D	Z	Tmax	26
U	Z	Tmax	26
Pa	Z	Tmax	13
Hi	Z	Tmax	04
Ha	Z	Tmax	06:43:17

C&GS card 80-65:
06:00:48.5
53.8°N., 165.5°W.
Fox Islands, Aleutian Islands
h about 16 km
Magnitude 5.5 (CGS).

Oct. 24

M	Z	iP	14:43:57.3 c
A	Z	iP	57.7 c
D	Z	eP	57.2 c
MP	Z	eP	58.2 c
U	Z	eP	57.5 c
Ke	Z	eP	54.9 c

C&GS card 85-65:
14:32:13.7
4.1°N., 125.9°E.
Talaud Islands
h about 175 km
Magnitude 5.8 (CGS).

Oct. 24

M	Z	iP	18:23:49.9 c
D	Z	eP	50.6 c
MP	Z	eP	50.9 c

C&GS card 80-65:
18:15:04.9
49.7°N., 156.1°E.
Kurile Islands
h about 30 km
Magnitude 5.7 (CGS).

Oct. 24

M	Z	eP	18:55:01.5 c
D	Z	eP	01.9 c

C&GS card 81-65:
18:45:38.3
45.0°N., 149.3°E.
Kurile Islands
h about 48 km
Magnitude 5.0 (CGS).

Oct. 24

M	Z	eP	21:17:02.8 c
D	Z	eP	01.7 c
MP	Z	iP	02.5 c
U	Z	iP	02.5 c
Pa	Z	iP	03.7 c
Hi	Z	eP	04.8 c
NB	Z	eP	01.7 c
Ke	Z	eP	21:16:59.9 c

C&GS card 82-65:
21:09:44.3
17.7°S., 178.5°W.
Fiji Islands region
h about 515 km
Magnitude 4.7 (CGS).

October 25, 1965

M	Z	iP	22:43:38.5 d
A	Z	eP	39.6 d
D	Z	iP	39.1 d
MP	Z	iP	39.7 d
U	Z	iP	39.1 d
Pa	Z	eP	40.4 d
Na	Z	eP	39.5 d
Hi	Z	eP	38.8 d
Ha	Z	eP	28.5 d
U	PEZ	iPP	22:45:38
U	PEE	iS	22:51:02
U	PEE	iG	22:56:55

C&GS card 83-65:
22:34:24.3
44.2°N., 145.3°E.
Hokkaido, Japan region
Felt in eastern and southern Hokkaido.
h about 180 km
Magnitude 6.5 (Pas), 6-6.5 (Brk), 7-7.25 (Pal), 6.2 (CGS), 6.2 (HVO).

Oct. 28

Pa	Z	Tmax	22:00:06

C&GS card 82-65:
21:19:50
44.5°N., 130.1°W.
Off coast of Oregon
h about 33 km
Magnitude 4.4 (CGS).

Oct. 29

M	Z	iP	21:07:17.4 c
A	Z	eP	18.3 c
D	Z	eP	18.3 c
MP	Z	eP	18.9 c
U	Z	eP	18.1 c
Pa	Z	eP	19.2 c
Na	Z	iP	19.9 c
Hi	Z	eP	16.8 c
NB	Z	iP	17.0 c
Ka	Z	eP	12.7 c
Ke	Z	eP	14.8 c
Ha	Z	iP	05.1 c
M	Z	Tmax	21:47:17
A	Z	Tmax	40
Ha	Z	Tmax	21:44:53

Oct. 29--Continued

C&GS card 89-65:
21:00:00.1
51°26'17"N., 179°10'57"E.
Amchitka Island "Longshot"
h about 0 km
Magnitude 5.5 (Brk), 5.5-5.75 (Pal), 6.2 (CGS).

Nov. 1, 1965

NP	Z	iP	18:11:15.9 c
MP	Z	iP	15.8 c
Hi	Z	iP	19.3 c
NB	Z	eP	16.0 c

C&GS card 83-65:
18:03:09.6
24.1°S., 178.9°E.
South of Fiji Islands
h about 546 km
Magnitude 5.6 (CGS).

Nov. 2

M	Z	iP	00:57:14.3 d
A	Z	iP	13.5 d
D	Z	eP	12.6 d
MP	Z	iP	13.8 d
U	Z	eP	13.6 d
Pa	Z	eP	15.4 d
Hi	Z	iP	16.1 d
NB	Z	iP	12.9 d

C&GS card 83-65:
00:49:13.4
23.7°S., 179.8°W.
South of Fiji Islands
h about 522 km
Magnitude 5.4 (CGS).

Nov. 3

U	Z	eP	01:50:50.7 c
Pa	Z	eP	49.0 c
Na	Z	iP	51.2 c
Hi	Z	eP	49.7 c
NB	Z	iP	51.8 c
Ke	Z	iP	53.1 c
Ha	Z	iP	56.8 c
U	PEZ	ipP	01:52:58
U	PEZ	iPP	01:54:36
U	PEE	iSKS	02:00:18

November 3, 1965--Continued

U	PEN	iS	02:00:43
U	PEE	iSP	02:01:47
U	PEE	isPS or isSP	02:05:30
U	PEZ	iSS	02:06:56
U	PEZ	isSS	02:10:09
U	PEN	i	02:13:40

C&GS card 83-65:
01:39:02.5
9.1°S., 71.4°W.
Peru-Brazil border region
h about 583 km
Magnitude 6.75 (Pas), 6.75-7.25 (Brk), 6.25-6.5 (Pal), 6.2 (CGS), 6.6 (HVO).

Nov. 3

M	Z	iP	16:52:33.4 d
A	Z	iP	33.4 d

C&GS card 86-65:
16:41:06.1
4.7°S., 126.6°E.
Banda Sea
h about 450 km
Magnitude 5.7 (CGS).

Nov. 3

M	Z	eP	18:31:00.9
A	Z	eP	18:30:59.4
D	Z	iP	59.6
MP	Z	eP	57.6
U	PE	iS	18:39:06
U	PE	iR	18:47:50

C&GS card 83-65:
18:21:05.0
22.3°S., 114.1°W.
Easter Island region
h about 12 km
Magnitude 6.25 (Pas), 5.9 (Brk), 6 (Pal), 5.8 (CGS), 6.2 (HVO).

Nov. 5

U	PEZ	eR	19:30:20

C&GS card 83-65:
19:01:04.3
3.1°S., 143.8°E.
Near north coast of New Guinea
h about 31 km
Magnitude 5.7 (CGS).

Nov. 6

M	Z	iP	06:46:27.0 c
D	Z	iP	28.0 c

C&GS card 86-65:
06:38:41.5
60.6°N., 147.3°W.
Southern Alaska
Felt at Anchorage
h about 37 km
Magnitude 5.2 (CGS).

Nov. 6

U	PEZ	eR	09:24:30

C&GS card 87-65:
08:57:12.3
34.0°N., 138.9°E.
Near south coast of Honshu, Japan
h about 15 km
Magnitude 5.0 (CGS).

Nov. 6

M	Z	iP	09:31:40.5 c
D	Z	iP	39.3 c

C&GS card 85-65:
09:21:48.6
22.1°S., 113.8°W.
Easter Island region
h about 33 km
Magnitude 6 (Pas), 6 (Brk), 5.5-5.75 (Pal), 6.2 (CGS).

November 9, 1965

M	Z	iP	22:08:57.1 c
D	Z	eP	56.1 c

C&GS card 86-65:
21:59:04.3
22.3°S., 113.7°W.
Easter Island region
h about 33 km
Magnitude 5.2 (CGS).

Nov. 11

M	Z	eP	01:42:00.5 c
MP	Z	eP	01:41:59.6 c

C&GS card 88-65:
01:32:59.3
22.8°S., 172.6°E.
Loyalty Islands region
h about 62 km
Magnitude 5.4 (CGS).

November 11

U	PEE	iG	03:28:16
U	PEZ	eR	03:32:08

C&GS card 92-65:
02:51:25
60.7°S., 154.0°E.
West of Macquarie Island
h about 33 km
Magnitude 5.1 (CGS).

Nov. 12

U	PEZ	eR	02:41:08

C&GS card 85-65:
02:04:19.5
56.0°S., 121.5°W.
Easter Island Cordillera
h about 33 km
Magnitude 4.9 (CGS).

November 12

M	Z	eP	17:24:14.1 c
U	PEZ	eR	17:40:58

C&GS card 90-65:
17:14:27.6
30.4°N., 139.8°E.
South of Honshu, Japan
h about 150 km

November 12--Continued

C&GS card 90-65--Continued
Magnitude 5.25-5.5 (Brk),
5.2 (CGS).

Nov. 12

M	Z	iP	18:02:22.9 c
D	Z	iP	23.0 c
MP	Z	iP	24.6 c
U	Z	eP	23.2 c
Pa	Z	eP	25.3 c
Na	Z	eP	23.0 c
Ke	Z	eP	19.1 c
Ha	Z	iP	14.6 c
U	PEZ	iPcP	18:03:02
U	PEE	iS	18:10:44
U	PEZ	eSS	18:14:46
U	PEZ	iR	18:18:46
Ke	Z	Tmax	19:05:22

C&GS card 84-65:
17:52:24.1
30.5°N., 140.2°E.
South of Honshu, Japan
h about 40 km
Magnitude 6.75 (Pas), 6.5 (Brk),
6-6.25 (Pal), 6.6 (CGS),
6.8 (HVO).

Nov. 13

M	Z	iP	04:47:11.4 c
A	Z	iP	11.9 c

C&GS card 84-65:
04:33:53.0
43.8°N., 87.8°E.
Northern Sinkiang Province, China
h about 59 km
Magnitude 6.75 (Pas), 7 (Brk),
6.75-7 (Pal), 6.3 (CGS).

November 15, 1965

Pa	Z	Tmax	07:30:06
Ha	Z	Tmax	07:30:57

C&GS card 88-65:
06:49:59
40.4°N., 125.8°W.
Off coast of northern California
h about 33 km
Magnitude 4.25 (Brk), 4.8 (CGS).

Nov. 15

U	PEE	iSS	11:58:55
U	PEN	eG	12:14:56
U	PEZ	eR	12:19:29

C&GS card 85-65:
11:18:49.9
0.3°S., 18.7°W.
Central mid-Atlantic Ridge
h about 24 km
Magnitude 6.5 (Pas), 6.25 (Pal), 5.6 (CGS).

Nov. 16

U	PEZ	eR	16:09:51

C&GS card 85-65:
15:24:42.9
31.0°N., 41.5°W.
North Atlantic Ridge
h about 17 km
Magnitude 6.5 (Pas), 6.4 (Brk), 6 (Pal), 6.0 (CGS).

Nov. 16

MP	Z	iP	17:17:04.1 c

C&GS card 86-65:
17:05:37.9
25.4°N., 125.2°E.
Southwestern Ryukyu Islands

Nov. 18

M	Z	iP	17:29:06.7 d

C&GS card 87-65:
17:17:23.1
7.1°S., 129.5°E.
Banda Sea
h about 208 km
Magnitude 5.4 (CGS).

Nov. 18

M	Z	iP	20:07:49.7 d
A	Z	iP	49.1 d
D	Z	iP	48.3 d
U	Z	iP	49.3 d
Na	Z	eP	45.2 d
Hi	Z	iP	52.1 d
NB	Z	iP	48.7 d
Ke	Z	iP	47.0 d
Ha	Z	eP	54.4 d

C&GS card 87-65:
20:00:19.0
18.8°S., 177.9°W.
Fiji Islands region
h about 421 km
Magnitude 5.6 (CGS).

Nov. 18

M	Z	iP	22:06:53.4 c
A	Z	eP	54.3 c
D	Z	iP	54.0 c
MP	Z	iP	54.7 c
NB	Z	iP	52.6 c
U	PEZ	iR	22:20:13

C&GS card 87-65:
21:58:12.4
53.9°N., 160.7°E.
Near east coast of Kamchatka
h about 12 km
Magnitude 5.5 (Pal), 6.0 (CGS).

Nov. 19

U	PEZ	eR	07:33:10

C&GS card 91-65:
07:08:10.8
29.6°S., 178.6°W.

November 19, 1965--Continued
C&GS card 91-65--Continued
Kermadec Islands region
h about 33 km
Magnitude 6-6.25 (Pal), 5.0 (CGS).

Nov. 20

M	Z	eP	15:17:31.4 d

C&GS card 87-65:
15:05:39.0
7.3°S., 129.2°E.
Banda Sea
h about 132 km
Magnitude 6.1 (CGS).

Nov. 21

M	Z	iP	10:43:39.0 c
A	Z	iP	39.0 c
Hi	Z	iP	42.4 c
NB	Z	iP	37.6 c
Ke	Z	iP	35.5 c
U	PEZ	eS	10:54:02
U	PEZ	eR	11:06:50

C&GS card 88-65:
10:31:49.7
6.1°S., 130.4°E.
Banda Sea
h about 93 km
Magnitude 6 (Pas), 6-6.25 (Pal), 6.3 (CGS), 6.4 (HVO).

Nov. 22

Ha	Z	Tmax	14:43:47

C&GS card 87-65:
14:00:27.0
52.0°N., 176.1°W.
Andreanof Islands, Aleutian Islands
Felt on Adak
h about 49 km
Magnitude 5.5 (CGS).

Nov. 22

Ha	Z	Tmax	21:09:53

C&GS card 88-65:
20:25:30.4
51.3°N., 179.8°W.
Andreanof Islands, Aleutian Islands
h about 40 km
Magnitude 5.9 (CGS).

Nov. 23

NP	Z	eP	01:29:39.3 c

C&GS card 90-65:
01:17:31.2
3.0°N., 124.8°E.
Celebes Sea
h about 45 km
Magnitude 5.6 (CGS).

Nov. 25

Hi	Z	iP	22:44:50.7 c
Ke	Z	eP	44.7 c

C&GS card 88-65:
22:35:37.2
3.9°S., 150.3°E.
New Ireland region
h about 457 km
Magnitude 5.5 (CGS).

Nov. 27

U	PEZ	eR	03:30:59

C&GS card 91-65:
03:04:20.6
30.6°N., 140.2°E.
South of Honshu, Japan
h about 60 km
Magnitude 5.2 (CGS).

Nov. 27

M	Z	iP	12:11:05.8 d
A	Z	eP	05.8 d
D	Z	iP	04.8 d
MP	Z	iP	06.3 d
Pa	Z	eP	07.8 d
Hi	Z	iP	08.2 d
NB	Z	iP	04.4 d
U	PEZ	eS	12:18:51
U	PEZ	eR	12:25:51

C&GS card 89-65:
12:01:51.9
9.7°S., 159.7°E.
Solomon Islands
Felt at Honiara
h about 51 km
Magnitude 6.75 (Pas), 5.75 (Brk), 6.75 (Pal), 6.3 (CGS), 5.4 (HVO).

December 6, 1965

M	Z	iP	11:43:14.6 d
A	Z	eP	13.6 d
D	Z	eP	14.6 d
U	PEN	iS	11:49:58
U	PEN	eG	11:53:14
M	Z	Tmax	12:31:16
A	Z	Tmax	11
D	Z	Tmax	30
MP	Z	Tmax	19
Pa	Z	Tmax	12:30:54
Na	Z	Tmax	12:31:01
Hi	Z	Tmax	12:30:56
NB	Z	Tmax	12:31:39
Ha	Z	Tmax	12:32:16

C&GS card 90-65:
11:34:53.7
18.9°N., 107.1°W.
Off coast of Jalisco, Mexico
h about 37 km
Magnitude 6.75 (Pas), 7-7.5 (Brk), 6.5-6.75 (Pal), 5.9 (CGS), 7.0 (HVO).

Dec. 7

Hi	Z	iP	22:29:34.1 c
Ke	Z	eP	28.9 c

C&GS card 90-65:
22:19:14.8
6.4°S., 146.3°E.
East New Guinea region
Felt widely
h about 109 km
Magnitude 6.4 (CGS).

Dec. 9

D	Z	iP	06:16:56.8 d
U	PEN	eS	06:24:20
U	PEZ	eR	06:30:54

C&GS card 92-65:
06:07:48.6
17.3°N., 100.0°W.
Guerrero, Mexico
Felt in southern Mexico
h about 57 km
Magnitude 6.25 (Pas), 6 (Brk), 6.25-6.5 (Pal), 6.0 (CGS), 5.8 (HVO).

Dec. 13

M	Z	eP	11:01:13.5 c
D	Z	eP	13.9 c
MP	Z	eP	14.6 c
U	Z	eP	13.7 c
Hi	Z	eP	13.3 c
U	PEZ	eS	11:08:39
U	PEN	eG	11:13:38
U	PEZ	eR	11:16:08

C&GS card 92-65:
10:52:08.5
44.7°N., 150.1°E.
Kurile Islands region
h about 35 km
Magnitude 6 (Pal), 5.7 (CGS), 6.1 (HVO).

Dec. 13

U	PEN	eG	15:07:47
U	PEZ	eR	15:10:09

C&GS card 93-65:
14:46:10.2
44.7°N., 150.2°E.
Kurile Islands region
h about 33 km
Magnitude 5.4 (CGS).

Dec. 15

A	Z	Tmax	13:45:54
D	Z	Tmax	53
U	Z	Tmax	53
MP	Z	Tmax	13:46:02
Pa	Z	Tmax	13:46:06

C&GS card 94-65:
12:09:36.4
57.0°S., 141.5°W.
South Pacific Cordillera
h about 33 km

December 15, 1965

A	Z	eP	23:16:46.8	d
D	Z	eP	47.3	d
MP	Z	eP	46.3	d
U	PEN	eS	23:26:37	
U	PEN	eG	23:35:23	
U	PEZ	iR	23:38:35	

C&GS card 93-65:
23:05:20.7
7.5°N., 82.2°W.
South of Panama
h about 15 km
Magnitude 6.75 (Pas), 6.25-6.5 (Pal), 6.0 (CGS), 6.4 (HVO).

Dec. 16

M	Z	iP	23:13:58.7	c
U	Z	eP	58.2	c
NB	Z	iP	58.0	c
Hi	Z	eP	23:14:00.9	c
Ha	Z	eP	02.3	c

C&GS card 95-65:
23:06:42.4
17.5°S., 179.1°W.
Fiji Islands region
h about 573 km
Magnitude 5.5 (CGS).

Dec. 22

M	Z	iP	19:48:45.4	d
D	Z	iP	46.2	d
MP	Z	iP	46.1	d
U	Z	iP	45.6	d
Pa	Z	iP	44.9	d
Na	Z	iP	49.0	d
Hi	Z	iP	42.9	d
NB	Z	iP	45.6	d
Ke	Z	iP	45.2	d
U	PEZ	ePP	19:50:11	
U	PEE	eS	19:55:07	
U	PEE	eL	19:57:41	
U	PEZ	eR	19:59:27	
M	Z	Tmax	20:28:38	
A	Z	Tmax	58	
D	Z	Tmax	51	

Dec. 22--Continued

MP	Z	Tmax	57
U	Z	Tmax	48
Pa	Z	Tmax	29
Hi	Z	Tmax	18

C&GS card 94-65:
19:41:23.0
58.4°N., 153.0°W.
Kodiak Island region
Minor damage at Kodiak and felt widely.
h about 50 km
Magnitude 6.75-7 (Pas), 6.75-7 (Brk), 6.5 (CGS), 6.8 (HVO).

Dec. 23

Ke	Z	eP	20:55:31.4	c
U	PEZ	eR	21:07:32	

C&GS card 94-65:
20:47:37.5
60.5°N., 141.0°W.
Southeastern Alaska
h about 33 km
Magnitude 5.4 (CGS).

Dec. 28

M	Z	iP	12:22:25.7	c
MP	Z	iP	26.2	c
U	Z	eP	25.6	c

C&GS card 98-65:
12:10:31.4
3.2°N., 127.0°E.
Talaud Islands
h about 53 km
Magnitude 5.3 (CGS).

Table 5.--Distant earthquakes--Continued

December 28, 1965

U	PEZ	eR	20:58:59

C&GS card 96-65:
20:32:24.7
27.8°N., 141.8°E.
Bonin Islands region
h about 36 km
Magnitude 6 (Pas), 5.9 (CGS).

Dec. 30

M	Z	iP	02:13:26.1 c
A	Z	eP	27.2 c
D	Z	iP	27.2 c
MP	Z	eP	28.2 c
U	Z	eP	26.3 c
M	Z	Tmax	02:50:26
A	Z	Tmax	44
D	Z	Tmax	24
MP	Z	Tmax	45
U	Z	Tmax	26
Pa	Z	Tmax	38
Hi	Z	Tmax	15
NB	Z	Tmax	22

C&GS card 96-65:
02:06:31.1
54.1°N., 164.3°W.
Unimak Island region
h about 28 km
Magnitude 5.75 (Brk),
5.75 (Pal), 5.6 (CGS).

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(Abstracts published in printed program for the meeting; copies of individual abstract available on request from Hawaiian Volcano Observatory.)

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Hawaiian Volcano Observatory
1966 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 41
January, February, and March 1966
By Arnold T. Okamura, Robert Y. Koyanagi, and Howard A. Powers

Summary 42
April, May, and June 1966
By Robert Y. Koyanagi, Arnold T. Okamura, and Howard A. Powers

Summary 43
July, August, and September 1966
By Arnold T. Okamura, Robert Y. Koyanagi, and Willie T. Kinoshita

Summary 44
October, November, and December 1966
By Robert Y. Koyanagi, Arnold T. Okamura, and Howard A. Powers

Open-File Report 2007-1326
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 41

January, February, and March, 1966

By Arnold T. Okamura, Robert Y. Koyanagi,

and Howard A. Powers

Issued February 1969

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Summary of Activities

The swarm of earthquakes that accompanied and followed the eruption of December 1965 continued into the first 10 days of January 1966. As this swarm was dwindling, various followup studies of this activity got underway.

A level line was carried from the junction of the slopes of Kilauea against the flank of Mauna Loa, to Halemaumau, in the southwestern part of Kilauea caldera, around the Desert and Caldera loops, and then to and beyond Makaopuhi seismograph along the Chain of Craters road. A line was reoccupied south for 5 km from the Chain of Craters to near Kipuka Nene tilt station (fig. 2). Because the summit area had not been leveled since June 1965, the leveling of January 1966 did not reveal large amounts of collapse following the eruption of December 1965. Significantly, the largest area of collapse that did show up lay about 3 km southeast of Halemaumau rather than over the geometrical center of the caldera.

Leveling along the Hilina Pali road revealed very large changes of altitude of the area along the southern margin of the Koae fault system, a system that lies roughly between the Desert and Makaopuhi seismographs (fig. 1). A graben area near the south edge of the system was downdropped locally as much as 6 feet and the area just south was uplifted more than 2 feet.

Ground tilt read daily from the short-base water-tube tiltmeters at Uwekahuna showed a continuous inflation of the summit area. The inflation recorded by the east-west component was considerably in excess of that recorded by the north-south component, indicating a center of inflation lying somewhere east-southeast of Uwekahuna.

The number of daily Kilauea summit shallow quakes, which had dwindled to less than 25 during the Koae swarm, gradually increased to a level of more than 100 during all of March. In the last week of March, the number of long-period caldera quakes rose from an average of less than 10 a day to more than 100 daily and this swarm continued into the next quarter.

In March, a 26-foot hole was drilled into the floor of Aloi Crater, which is about 3 km southeast of Kilauea in the Chain of Craters shown on figure 1, and the thickness of the lava in December 1965 was found to be 5 or 6 feet. The base of the December 1962 lava was penetrated at 11 feet, and the hole was bottomed in a rubbly zone presumably near the base of the flow that floored Aloi Crater prior to December 1962. The temperature in this hole was ambient when the measurements were made in mid-March.

In early February, a new drilling technique was used to emplace a closed-bottom stainless steel casing through the 25-foot crust of Makaopuhi lava lake and 15 feet down into the melt. Problems with the cromel/alumel and the platinum/platinum-rhodium thermocouples were still not fully solved, but the temperature at the base of the crust was confirmed to be about 1075°C and that at the bottom of the hole was found to be 1,150°C. This casing was still open when the first quarter ended, and many temperature profiles have been taken as the crust of the lake continued to grow.

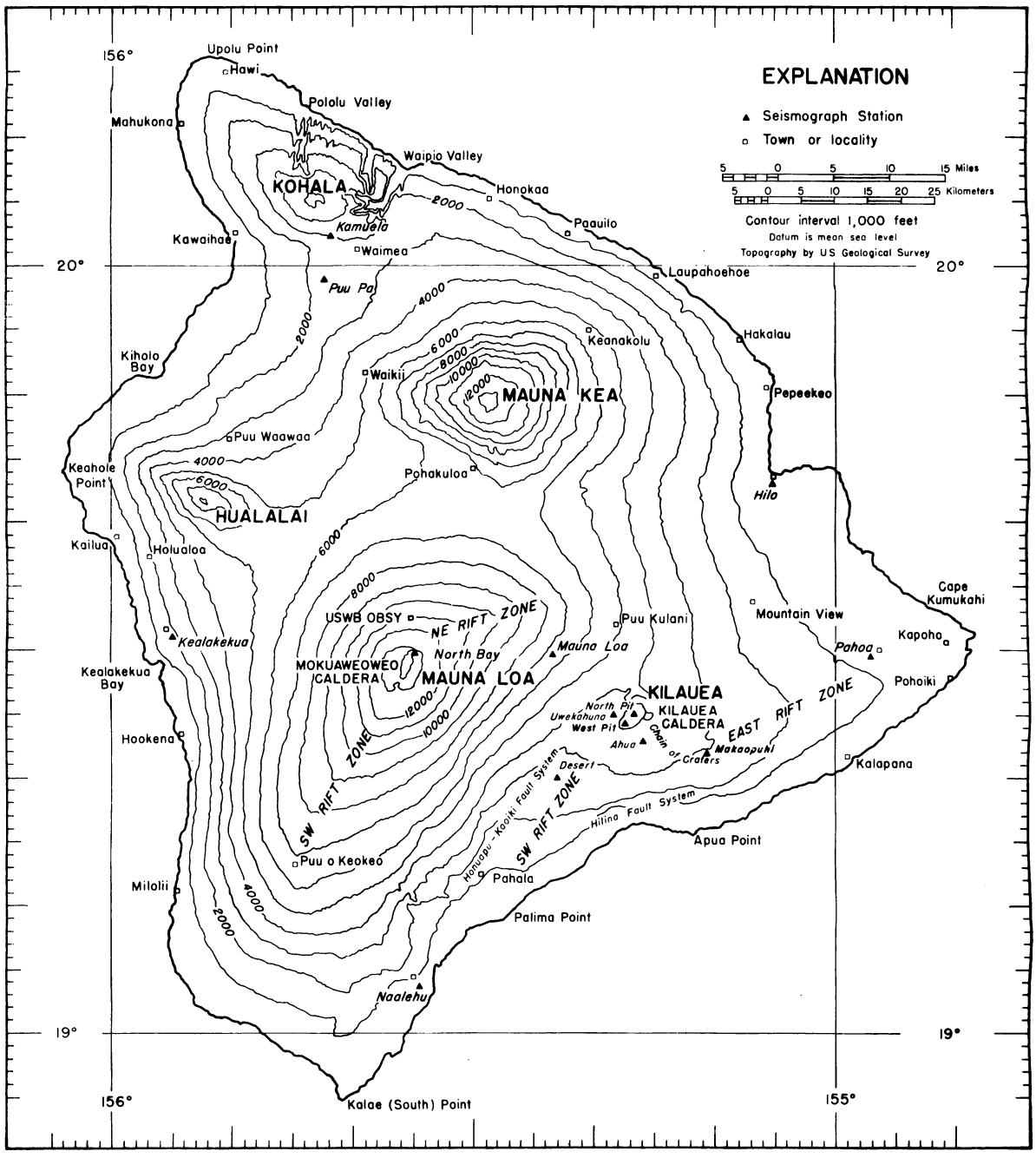

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6 of this report. Table 6 is published in the first-quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna, January, February, and March, 1966

Date (1966)	N-S	E-W	Date (1966)	N-S	E-W
Jan. 2	468	507	Feb. 20	474	487
9	470	503	27	477	485
16	472	499	Mar. 7	477	486
23	474	494	13	478	486
30	475	493	20	479	486
Feb. 6	476	490	27	480	482
13	475	488			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera.
(See tilt diagram, fig. 2.)

Tilt base	Date (1966)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1965)
Uwekahuna (U) (on fig. 2).	March 14	484.7	476.0	14.8	N. 43.0° W.	Dec. 27
Tree Molds (TM)	16	421.0	515.4	4.2	N. 52.0° W.	29
Sand Spit (SS)	17	834.8	734.3	9.5	S. 9.2° W.	30
Kalihipaa (Kal)	This station ruined during the eruption and earthquake swarm of Dec. 24-31, 1965.					
Keamoku (Kea)	March 15	585.7	475.9	7.8	N. 69.4° W.	28
Ahua Kamokukolau (Kam).	16	634.1	630.0	1.5	S. 42.0° W.	28
Kipuka Nene (KN)	14	297.2	501.3	3.7	N. 5.7° E.	Jan. 13 (1966)
Hilina Pali (HP)	Not done this epoch.					
Kapapala Ranch (Kap).	15	491.6	509.5	.6	N. 45.4° E.	Dec. 27
Mehana (M)	17	541.5	551.5	1.3	N. 85.7° E.	29

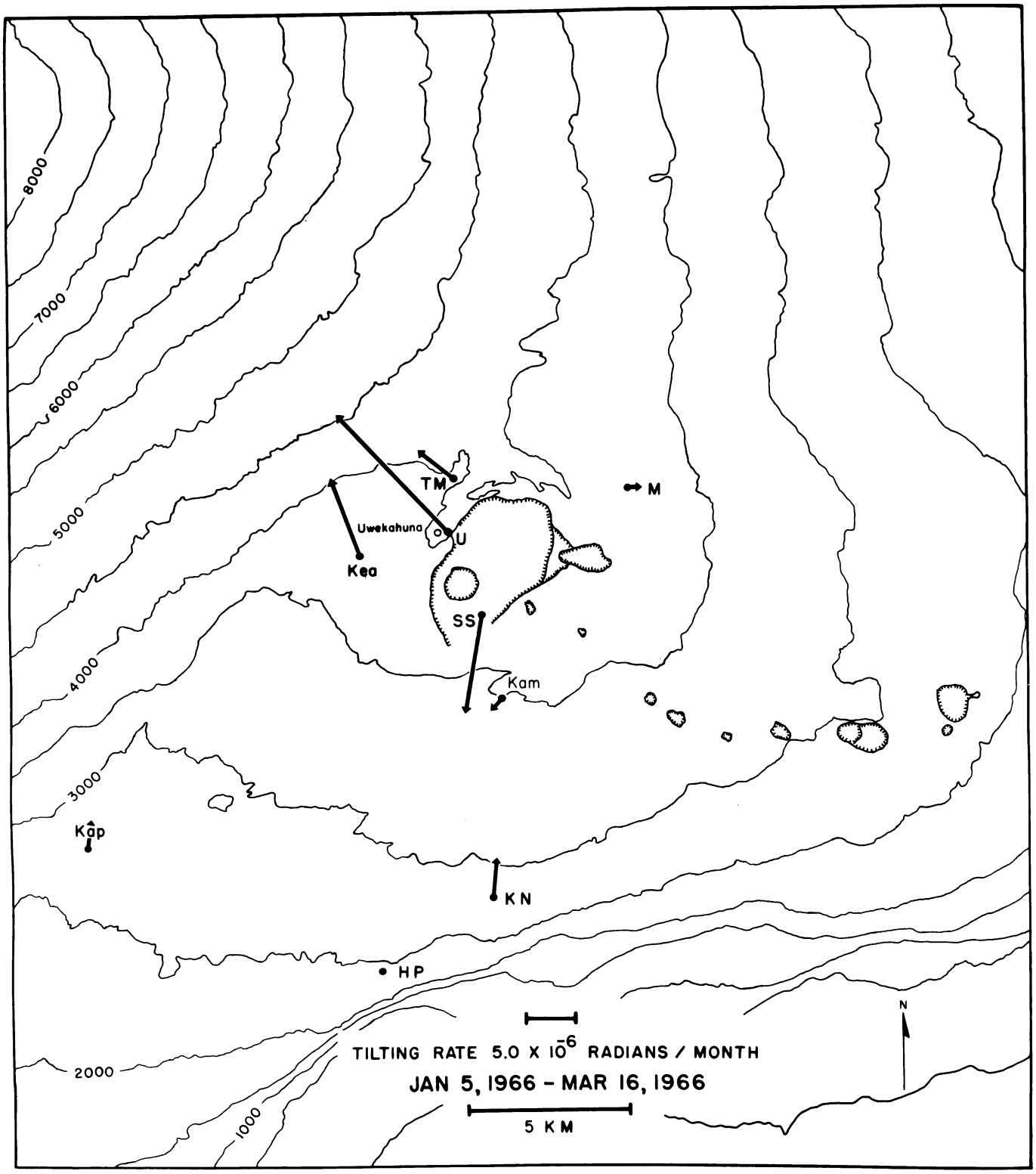

Figure 2.--Tilting of the ground around Kilauea caldera, January 5, 1966-March 16, 1966. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (stations U, M, A, D, N, WP, MP).* Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Beginning with this summary, data for the distant earthquakes will no longer be included in the summaries. Data for the distant earthquakes can be obtained directly from the Hawaiian Volcano Observatory.

Acknowledgments.--Several people or agencies reported "felt" earthquakes during the first quarter, 1966. Their assistance is gratefully acknowledged.

*Location of and essential data on each seismograph station are listed in table 5 of this report. Table 5 published only in the first-quarter issue each year.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: Kona, Mauna Kea, etc.

Date (1966)	Tremor (minutes)			Kiluea summit			Earthquakes			
	Deep	Inter-mediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
Jan. 1	----	-------	------	4	-----	13	10	-----	95	----------
2	----	-------	------	2	-----	15	10	-----	80	----------
3	38	-------	------	5	-----	------	7	-----	57	----------
4	----	-------	------	3	-----	14	7	-----	57	----------
5	29	-------	------	6	-----	17	8	-----	53	1 Kona
6	17	-------	------	4	-----	15	9	-----	60	1 Mauna Kea, 1 off west shore of Hawaii.
7	----	2	------	5	-----	15	13	-----	55	----------
8	----	-------	------	3	-----	10	13	-----	45	1 Mauna Kea
9	----	-------	------	6	-----	10	20	-----	38	1 off east shore of Hawaii
10	----	-------	------	3	-----	15	10	1	37	1 Mauna Loa
11	----	-------	------	6	-----	10	7	-----	37	----------
12	3	-------	------	12	-----	14	12	-----	26	----------
13	----	-------	------	3	-----	15	6	-----	35	----------
14	----	-------	------	8	-----	25	7	-----	37	1 Mauna Kea, 1 Kona

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Inter-mediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
Jan. 15	----	3	-----	8	------	13	13	-----	28	----------
16	----	-------	-----	3	------	30	15	-----	19	----------
17	4	-------	-----	4	------	15	13	-----	25	----------
18	----	-------	-----	3	------	15	14	1	12	----------
19	15	-------	-----	7	------	35	14	-----	14	2 Mauna Loa
20	5	-------	-----	Electrical storm----------				-----	5	
21	----	-------	-----	3	------	18	10	-----	27	1 Mauna Kea, 1 Kona
22	----	-------	-----	1	------	38	10	-----	4	----------
23	----	-------	-----	-----	------	30	18	-----	3	----------
24	----	-------	-----	3	------	40	9	-----	3	----------
25	----	-------	-----	3	------	30	8	-----	7	----------
26	----	6	-----	3	15	45	17	-----	9	----------
27	----	4	-----	14	2	25	10	-----	5	1 Mauna Kea
28	----	-------	3	3	------	33	9	-----	13	1 Kohala
29	----	-------	-----	3	------	45	6	-----	2	----------
30	----	-------	-----	3	------	40	7	-----	34	----------
31	----	-------	-----	4	------	45	11	-----	26	----------
Feb. 1	----	2	-----	1	3	40	14	-----	5	----------
2	----	-------	-----	6	------	35	7	-----	23	1 Hualalai
3	----	-------	-----	3	------	35	19	-----	5	----------
4	----	-------	-----	6	------	48	13	-----	18	1 Kona
5	----	-------	-----	2	------	50	20	-----	95	1 Mauna Loa
6	----	-------	-----	-----	------	35	16	-----	23	----------
7	----	-------	-----	4	------	?	5	-----	14	----------
8	----	3	-----	-----	------	25	4	-----	10	----------
9	----	-------	-----	8	------	?	6	-----	20	1 Hualalai
10	19	-------	-----	4	------	50	15	-----	8	----------

Feb.	11	14	-------	-----	3	------	56	9	-----	16	----------
	12	----	15	-----	20	------	105	9	-----	18	----------
	13	----	-------	-----	6	------	70	16	-----	11	1 Mauna Loa, 1 Kona
	14	----	-------	-----	4	4	70	6	-----	29	----------
	15	----	-------	-----	------	3	80	4	-----	27	----------
	16	11	-------	-----	------	------	60	11	-----	20	1 Mauna Loa
	17	----	-------	-----	4	4	60	15	-----	15	----------
	18	----	-------	-----	10	------	80	24	-----	18	----------
	19	----	-------	-----	12	------	120	18	-----	24	----------
	20	----	-------	-----	1	4	83	26	-----	15	1 Mauna Loa
	21	----	-------	-----	1	------	70	26	-----	107	1 Mauna Kea
	22	----	16	-----	7	------	77	26	-----	17	----------
	23	----	5	-----	5	------	71	12	-----	12	1 Kona, 1 Mauna Loa, 1 off west shore of Hawaii
	24	23	-------	-----	11	------	67	14	-----	4	1 Mauna Kea
	25	----	-------	-----	1	2	72	8	-----	8	1 off NW. shore of Hawaii
	26	5	-------	-----	6	------	72	16	-----	8	----------
	27	----	5	-----	6	------	74	8	-----	10	----------
	28	----	-------	-----	2	------	80	24	-----	12	1 off west shore of Hawaii
Mar.	1	36	-------	-----	1	------	70	5	-----	20	----------
	2	----	Several	-----	8	------	60	4	-----	14	----------
	3	----	Several	-----	1	------	120	12	-----	20	1 Kona
	4	----	-------	-----	3	2	105	12	-----	12	----------
	5	----	-------	-----	2	------	110	16	-----	32	1 off NW. shore of Hawaii 1 Mauna Kea
	6	----	-------	8	4	15	110	5	-----	13	----------
	7	----	-------	-----	------	------	110	8	1	12	----------
	8	----	-------	-----	------	5	99	9	-----	25	----------
	9	----	-------	6	11	------	96	12	-----	50	----------
	10	----	3	-----	2	------	110	6	1	20	1 Hualalai, 2 off west shore of Hawaii.
	11	4	-------	-----	6	------	130	16	-----	20	----------
	12	----	-------	-----	1	------	75	11	-----	19	----------
	13	8	-------	-----	3	------	95	11	-----	15	----------
	14	----	-------	-----	3	------	105	33	-----	16	----------
	15	----	-------	-----	10	------	97	6	-----	25	1 Mauna Kea

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Inter-mediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
Feb. 16	----	-------	-----	22	------	107	8	------	33	1 Hualalai
17	44	-------	-----	8	8	130	8	------	30	1 Kona
18	----	-------	-----	-----	5	105	10	1	15	1 Kona
19	----	-------	-----	4	------	85	12	------	18	----------
20	----	-------	-----	4	2	83	14	------	12	----------
21	----	-------	----	4	5	70	8	------	20	1 Mauna Kea
22	----	-------	-----	2	28	70	14	------	13	----------
23	----	-------	-----	4	35	50	7	------	8	----------
24	----	-------	-----	1	11	57	6	------	14	1 Kona
25	17	-------	4	3	5	67	15	------	15	----------
26	----	22	-----	7	------	79	7	------	10	----------
27	----	-------	6	1	14	69	16	------	18	----------
28	----	-------	12	-----	19	83	6	------	16	1 Kona
29	----	-------	-----	5	130	80	7	------	12	1 off south shore of Hawaii
30	----	-------	3	3	48	69	21	------	11	1 Mauna Loa
31	----	-------	-----	6	70	90	8	------	6	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1966

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1966)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 1	10	37	55.0	2.3	5	19°20.0'	155°12.8'	6 km SW. of Makaopuhi seismometer	----------
2	04	51	10.8	3.3	8	19°07.5'	155°13.3'	15 km SSW. of Apua Point	Kilauea summit area.
4	18	51	29.0	2.2	8	19°17.9'	155°10.2'	8 km south of Makaopuhi seismometer	----------
5	00	32	56.5	2.2	0	19°32.3'	155°41.0'	25 km east of Kealakekua	----------
5	08	52	45.0	2.6	8	19°12.1'	155°07.2'	20 km SSE. of Makaopuhi seismometer	----------
6	01	38	15.0	2.2	8	19°46.8'	155°31.0'	3 km NE. of Pohakuloa	----------
6	03	51	00.2	1.7	8	19°15.9'	155°25.1'	9 km SSW. of Desert seismometer	Pahala
6	03	53	25.2	1.7	8	19°18.8'	155°26.5'	6 km WSW. of Desert seismometer	Do.
6	11	01	20.0	2.7	3	19°26.2'	155°47.1'	17 km SE. of Kealakekua	----------
7	21	21	06.0	3.2	0	19°18.8'	155°16.6'	7 km SSW. of Ahua seismometer	----------
8	06	24	44.8	3.0	8	19°42.8'	155°37.6'	16 km SSE. of Waikii	----------
8	13	43	57.3	3.5	8	19°26.3'	155°28.7'	11 km SW. of Mauna Loa seismometer	Hilo, Pahala
8	19	30	15.6	2.1	8	19°23.5'	155°18.2'	5 km NW. of Ahua seismometer	----------
9	20	46	23.9	2.2	8	19°12.3'	154°43.3'	40 km SE. of Pahoa	----------
10	12	01	03.2	1.8	5	19°21.4'	155°13.1'	5 km WSW. of Makaopuhi seismometer	----------
10	18	53	08.5	2.4	3	19°11.4'	155°39.7'	16 km NW. of Naalehu	----------
11	06	25	03.1	2.7	3	19°20.5'	155°07.2'	7 km SE. of Makaopuhi seismometer	----------
12	11	26	23.5	1.8	8	19°23.8'	155°29.1'	12 km NW. of Desert seismometer	----------
12	19	49	01.3	1.8	25	19°23.5'	155°18.3'	5 km NW. of Ahua seismometer	----------
14	06	58	42.7	2.6	8	20°01.3'	155°21.6'	13 km WNW. of Laupahoehoe	Kamuela
14	22	30	19.0	3.0	3	19°21.8'	155°51.2'	5 km ESE. of Hookena	Kealakekua
17	16	13	45.0	3.2	8	18°45.1'	155°17.7'	69 km south of Ahua seismometer	----------
18	04	11	42.5	2.2	30	19°14.7'	155°28.7'	14 km SW. of Desert seismometer	----------
19	02	44	12.2	4.0	13	19°24.3'	155°32.8'	10 km SSE. of North Bay seismometer	Pahala, Kilauea summit area, Hilo, Naalehu, Kealakekua.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, March, 1966--Continued

Date (1966)	Time h	Time m	Time s	Magnitude	Depth (km)	Epicenter Lat. N.	Epicenter Long. W.	Epicenter Description	Felt Report
Jan. 19	14	01	37.4	4.1	13	19°23.8'	155°33.5'	11 km SSE. of North Bay seismometer	Islandwide
21	07	53	49.1	3.1	13	19°49.5'	155°35.6'	25 km SSE. of Kamuela	Kamuela
21	21	02	26.9	3.8	8	19°27.9'	155°52.7'	7 km SE. of Kealakekua	Kealakekua
26	06	14	22.7	3.0	8	19°10.6'	155°25.7'	6 km SE. of Pahala	Pahala
26	16	04	20.6	2.0	8	19°10.8'	155°26.1'	5 km SE. of Pahala	Do.
27	14	23	58.3	2.4	8	20°01.4'	155°19.9'	10 km WNW. of Laupahoehoe	----------
27	21	21	15.3	2.2	33	19°21.2'	155°19.0'	6 km SW. of Ahua seismometer	----------
28	11	09	18.3	2.2	26	19°22.2'	155°19.0'	5 km west of Ahua seismometer	----------
30	23	18	27.8	2.4	8	20°11.0'	155°46.9'	19 km NNW. of Kamuela	----------
31	03	05	47.2	3.3	27	19°26.1'	155°13.1'	8 km ENE. of Uwekahuna	Kilauea summit area, Pahala, Hilo.
Feb. 2	10	38	04.6	2.4	8	19°22.8'	155°29.9'	12 km WNW. of Desert seismometer	Pahala
2	15	18	56.1	2.5	8	19°43.2'	155°44.1'	30 km NE. of Kealakekua	----------
4	19	30	53.3	2.3	0	19°21.9'	155°46.9'	24 km SE. of Kealakekua	----------
5	06	42	16.8	2.0	3	19°37.5'	155°38.4'	16 km NW. of North Bay seismometer	----------
9	09	29	43.5	2.8	0	19°40.3'	155°52.9'	17 km NNE. of Kealakekua	----------
9	22	14	03.9	2.9	22	19°24.8'	155°19.0'	3 km WSW. of Uwekahuna seismometer	Pahala, Kilauea summit area.
10	06	14	55.7	2.0	5	19°22.8'	155°13.6'	5 km ENE. of Ahua seismometer	----------
10	21	54	42.3	2.2	8	19°25.9'	155°29.2'	14 km SW. of Mauna Loa seismometer	----------
11	04	32	37.9	2.4	40	19°12.1'	155°10.8'	19 km south of Makaopuhi seismometer	----------
12	19	56	16.3	3.7	30	19°22.3'	155°18.6'	5 km west of Ahua seismometer	Hilo, Kilauea summit area, Pahala.
13	05	27	10.5	2.7	30	19°23.5'	155°17.7'	4 km south of Uwekahuna	Kilauea summit area.
13	06	07	57.1	2.7	8	19°25.0'	155°24.5'	9 km NNW. of Desert seismometer	Kilauea summit area.

Feb.	13	18	55	10.1	2.0	8	19°11.9'	155°31.9'	16 km NNE. of Naalehu	----------
	13	23	06	50.0	2.9	5	19°31.7'	155°49.0'	11 km ENE. of Kealakekua	Kealakekua
	14	05	34	30.8	2.2	8	19°17.2'	155°08.8'	9 km SE. of Makaopuhi seismometer	----------
	16	01	41	21.5	2.4	8	19°28.1'	155°29.2'	11 km WSW. of Mauna Loa seismometer	----------
	16	14	41	03.1	1.8	20	19°20.7'	155°25.7'	4 km WNW. of Desert seismometer	Pahala
	16	15	35	09.5	2.2	8	19°11.0'	155°31.5'	16 km NE. of Naalehu	----------
	19	03	29	48.1	2.0	8	19°22.3'	155°24.7'	5 km NW. of Desert seismometer	----------
	19	18	23	37.7	3.3	8	19°20.7'	155°28.5'	9 km west of Desert seismometer	----------
	20	07	51	36.5	2.8	5	19°12.0'	155°38.1'	16 km NNW. of Naalehu	----------
	21	15	59	33.3	3.7	3	19°50.7'	155°40.2'	21 km SSE. of Kamuela	Kamuela
	22	11	05	19.5	2.2	8	19°20.8'	155°13.2'	5 km SW. of Makaopuhi seismometer	----------
	22	17	06	44.6	2.2	5	19°22.9'	155°12.5'	4 km NW. of Makaopuhi seismometer	----------
	23	02	45	04.5	3.2	3	19°19.8'	155°49.5'	10 km SE. of Hookena	----------
	23	09	29	11.1	2.0	5	19°14.0'	155°37.0'	19 km NNW. of Naalehu	----------
	23	15	18	19.1	2.1	30	19°22.7'	155°18.2'	4 km west of Ahua seismometer	----------
	23	18	52	35.7	2.5	8	19°25'	156°30'	62 km WSW. of Kealakekua	----------
	24	10	13	51.9	2.0	8	19°50.9'	155°41.9'	20 km south of Kamuela	----------
	25	03	10	51.6	3.3	30	19°22.8'	155°17.5'	3 km WNW. of Ahua seismometer	Kilauea summit area.
	25	06	37	49.8	3.1	8	19°56.6'	156°05.9'	42 km WSW. of Kamuela	----------
	27	06	59	42.9	2.5	8	19°22.7'	155°24.9'	5 km NW. of Desert seismometer	----------
	28	03	56	32.8	3.1	8	19°41'	156°28'	60 km WNW. of Kealakekua	----------
	28	06	30	38.5	2.4	8	19°19.8'	155°00.8'	5 km SW. of Kalapana	----------
	28	20	00	11.0	4.0	10	19°24.7'	155°27.2'	10 km NW. of Desert seismometer	Kilauea summit area, Pahala, Hilo, Kealakekua.
Mar.	2	02	50	05.7	2.7	8	19°15.5'	155°03.1'	18 km SE. of Makaopuhi seismometer	----------
	3	14	39	23.8	2.8	0	19°38.1'	156°00.1'	1 km SW. of Kailua	Kealakekua
	4	23	13	10.3	1.9	10	19°20.2'	155°14.0'	6 km SE. of Ahua seismometer	----------
	5	13	53	48.0	2.3	8	20°03.2'	155°55.5'	10 km WNW. of Kawaihae	----------
	5	16	53	15.0	2.1	45	19°52.2'	155°13.3'	22 km NW. of Hilo	----------
	10	08	00	23.3	3.7	8	19°47.0'	155°46.0'	8 km east of Puu WaaWaa	Islandwide
	10	11	47	08.6	3.3	8	19°58'	157°32'	177 km WNW. of Kealakekua	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1966--Continued

Date (1966)	Time h	Time m	Time s	Magnitude	Depth (km)	Epicenter Lat. N.	Epicenter Long. W.	Epicenter Description	Felt Report
Mar. 10	19	59	43.0	3.3	8	20°00'	157°41'	190 km WNW. of Kealakekua	----------
11	17	27	35.3	2.3	30	19°23.8'	155°16.9'	4 km SE. of Uwekahuna	----------
12	18	40	02.0	3.1	50	19°17.0'	155°05.7'	12 km SE. of Makaopuhi seismometer	Pahala
14	14	04	53.6	4.1	8	19°19.1'	155°26.5'	6 km WSW. of Desert seismometer	Kilauea summit area, Pahala, Hilo, Kealakekua.
15	04	03	55.1	2.2	5	19°26.2'	155°29.1'	15 km NW. of Desert seismometer	----------
15	10	26	47.9	3.0	13	19°58.8'	155°33.5'	15 km ESE. of Kamuela	----------
15	14	43	02.7	3.5	32	19°22.6'	155°18.0'	4 km west of Ahua seismometer	Pahala
16	19	28	02.8	2.3	8	19°51.0'	156°02.7'	13 km NNE. of Keahole Point	----------
17	09	51	50.5	3.2	8	19°20.8'	155°47.2'	23 km SE. of Kealakekua	----------
18	04	45	59.5	2.4	0	19°26.4'	155°47.0'	16 km SE. of Kealakekua	----------
20	23	07	35.9	2.2	8	19°21.1'	155°25.8'	5 km WNW. of Desert seismometer	----------
21	17	56	21.6	3.2	8	20°00.3'	155°50.9'	16 km WSW. of Kamuela	Kamuela
24	18	45	33.6	2.3	0	19°33.8'	155°46.5'	16 km ENE. of Kealakekua	----------
28	13	46	46.5	2.3	0	19°28.9'	155°48.9'	12 km ESE. of Kealakekua	----------
29	05	51	55.1	2.5	35	19°01.2'	155°29.5'	11 km SE. of Naalehu	----------
30	12	22	06.0	2.6	8	19°22.5'	155°25.1'	5 km NNW. of Desert seismometer	Pahala
30	21	32	12.3	2.6	8	19°11.9'	155°37.2'	15 km NNW. of Naalehu	----------

Table 5.--U.S. Geological Survey seismograph stations in Hawaii

[On island of Hawaii unless otherwise stated]

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Lat. N.	Long. W.		
Uwekahuna (Hawaiian Volcano Observatory)	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z. (Seismometer and galvanometer periods are 15 and 90 seconds, respectively.) Short-period Sprengnether: E, Z. HVO-1: Z[1]. Short-base liquid-level tiltmeter.
Mauna Loa	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z[2].
Ahua	A	19°22.4'	155°15.9'	1,070	Do.
Desert	D	19°20.2'	155°23.3'	815	Do.
North Pit	N	19°24.9'	155°17.0'	1,115	Remote recording 1.0 sec. EV-17 Z
West Pit	WP	19°24.7'	155°17.5'	1,115	Do.
Makaopuhi	MP	19°21.8'	155°10.7'	885	Do.
Hilo	Hi	19°43.2'	155°05.3'	20	HVO-1: Z Wood-Anderson: N, E. Operated by Sister Thecla at St. Joseph's School.
Kipapa, Island of Oahu.	Kip	21°25.4'	158°00.9'	76	HVO-1: Z. Operated by U.S. Coast and Geodetic Survey.
Naalehu	Na	19°03.8'	155°35.2'	205	1.0 sec. EV-17 seismometer, 0.5 sec. galvanometer: Z. Operated by Rev. D. Thompson at Naalehu School.
Pahoa	Pa	19°29.7'	154°56.8'	205	HVO-1: Z. Operated by Mr. K. Kimura at Pahoa School.
Kamuela	Ka	20°01.9'	155°42.0'	740	1.0 sec. EV-17, 0.286 sec. galvanometer. Operated by Mrs. Ed. Van Gorder, Preparatory Academy, Kamuela.

Table 5.--U.S. Geological Survey seismograph stations in Hawaii--Continued

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Lat. N.	Long. W.		
Haleakala, Island of Maui.	Ha	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Haleakala National Park, Maui.
North Bay	NB	19°29.7'	155°34.8'	4,005	0.8 sec. EV-17: Z. with helicorder. Operated by U.S. Weather Bureau.
Kealakekua	Ke	19°31.2'	155°55.3'	505	1.0 sec. EV-17, 0.286 sec. galvanometer: Z, EW, and NS. Operated by Mr. H. Nelson at Kona County Hospital.

1/ HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Overdamping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

2/ HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper. The response of this seismograph is similar to that of HVO-1. Records from these seismographs at M, A, and D, and at N, WP, and MP (Benioff) are recorded on two 3-component drums to permit more accurate comparison of arrival times at these stations.

Table 6.--U.S. Geological Survey tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N.	Long. W.			
Tree Molds	TM	19°26.3'	155°17.3'	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19°24.1'	155°16.8'	---do----	25.40	Equilateral triangle.
Keamoku	Kea	19°25.1'	155°19.0'	---do----	47.55	Do.
Ahua Kamokukolau	Kam	19°22.7'	155°16.6'	---do----	50.79	Do.
Kipuka Nene	KN	19°19.4'	155°16.7'	---do----	50.79	Do.
Hilina Pali	HP	19°18.2'	155°18.6'	---do----	47.73	Do.
Kapapala Ranch	Kap	19°20.5'	155°23.8'	---do----	50.79	Do.
Mehana	M	19°26.2'	155°14.3'	---do----	25.00	Do.
Uwekahuna	U	19°25.5'	155°17.4'	---do----	50.79	Do.
Uwekahuna Vault		19°25.4'	155°17.6'	Daily	3.48	NS. and EW.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 42

April, May, and June, 1966

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Issued February 1969

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Summary of activities

Swelling of Kilauea continued at a moderate rate during April, May, and June. Both tilt and level measurements indicated that the center of swelling was about 1 km east of Halemaumau. The greatest rise was 0.17 ft and the gradient of the swelling about this center is compatible with the computations for a model at 4 km depth to the center of expansion. Outlet tilt station (read daily), a short-base tilt station located midway between North Pit and Ahua seismograph stations (fig. 1), is much closer to the center of rise than is Uwekahuna station; therefore, the accumulation of outward tilt (southwest) at Outlet was four times as great as at Uwekahuna. During the only notable spurt, between June 6 and June 19, Outlet tilted at a rate of nearly 40 microradians a month.

The daily count of earthquakes local to Kilauea caldera was greater than average during most of the quarter. The daily total ranged from 125 to 300 quakes on all but about 15 days; it was less than 100 from April 22 through May 1. A swarm of deep caldera quakes occurred at the beginning of the quarter, on April 1 and 2; deep quakes continued at an average rate of 2 or 3 per day for the rest of the period. During the second week in May there was a peak in the rate of energy release, with 9 quakes having magnitudes that averaged about 3.

There appeared to be no demonstrable correlation between the flurries of higher seismicity and the details of the pattern of swelling.

During early April, a network of lines whose length can be measured very accurately with electronic measuring instruments (we are using a geodimeter) was laid out across Kilauea summit and Kilauea's two upper rift zones. Remeasurement of these surface distances indicates the location and amount of surface stretching and shrinking associated with the swelling and contraction of the volcanic structure.

Temperature measurements with thermocouples in stainless steel tubes thrust several feet into melt beneath the "base of crust" had been constantly suspect because of contamination of the wires of the thermocouple. In June 1966, two different techniques were used to correct the problem. Silver, gold, and germanium oxide were used to calibrate the thermocouple profiles with known melting point temperatures; heavy-gage CrAl wire was selected after the discovery that it did not contaminate rapidly.

The surface of the lava lakes in Kilauea Iki, Alae, a pit crater about 2 km west of Makaopuhi seismograph, and Makaopuhi, near Makaopuhi seismograph (fig. 1), were releveled, and temperature measurements were made in two holes still open in Alae. The highest temperature measured in Alae was 475°C at a depth of 39 feet below the surface in hole 12 where the body of new lava is 49 feet thick.

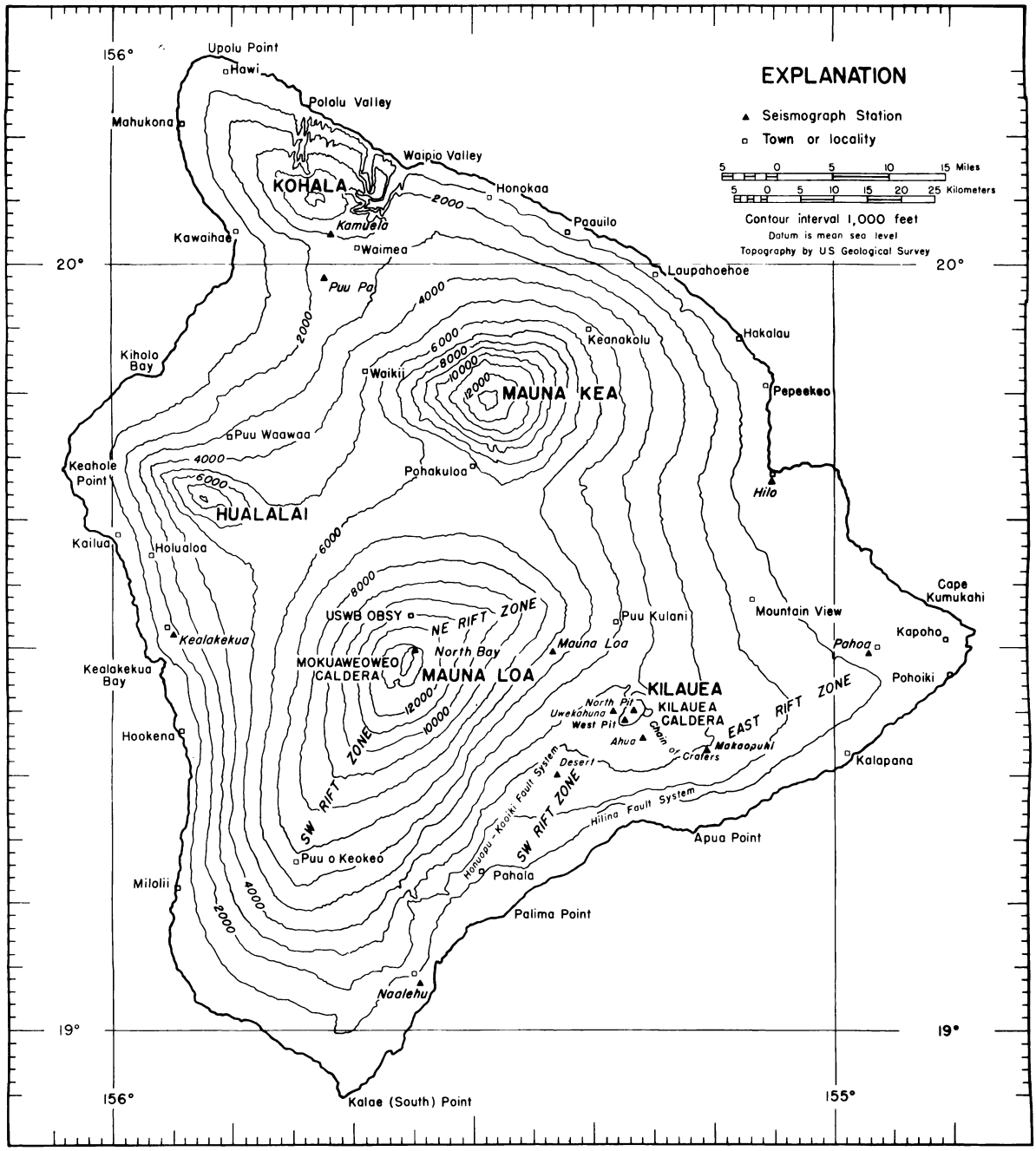

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first-quarter issue each year.

Seismic summary.-- Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (stations U, M, A, D, N, WP, MP). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5 of the first-quarter issue each year.

Acknowledgments.--Several people or agencies reported "felt" earthquakes during the second quarter, 1966. Their assistance is gratefully acknowledged.

Table 1.--Tilt coordinates at Uwekahuna, April, May, and June, 1966

Date (1966)	N-S	E-W	Date (1966)	N-S	E-W
April 3	481	479	May 22	482	475
10	481	479	29	483	474
17	481	478	June 5	484	471
24	482	475	12	486	472
May 1	480	478	19	486	472
8	481	474	26	488	474
15	482	474			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera,
(See tilt diagram, fig. 2)

Tilt base	Date (1966)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1966)
Uwekahuna (U on fig. 2)	June 7	500.3	461.8	7.4	N. 42.4° W.	Mar. 14
Tree Molds (TM)	8	430.2	513.3	3.3	N. 12.9° W.	16
Sand Spit (SS)	8	829.7	721.3	5.1	S. 68.7° W.	17
Kalihipaa	This station ruined during the eruption and earthquake swarm of Dec. 24-31, 1965.					
Keamoku (Kea)	6	489.9	464.8	4.3	N. 69.4° W.	15
Ahua Kamokukolau (Kam).	8	612.0	620.4	8.6	S. 23.6° W.	16
Kipuka Nene (KN)	9	299.0	501.0	.6	N. 10.8° W.	14
Hilina Pali (HP)	9	463.4	506.0	.3	S. 89.1° W.	Jan. 10
Kapapala Ranch (Kap)	6	492.3	508.5	.1	S. 20.7° E.	Mar. 15
Mehana (M)	16	543.9	555.6	1.6	N. 60.5° E.	17

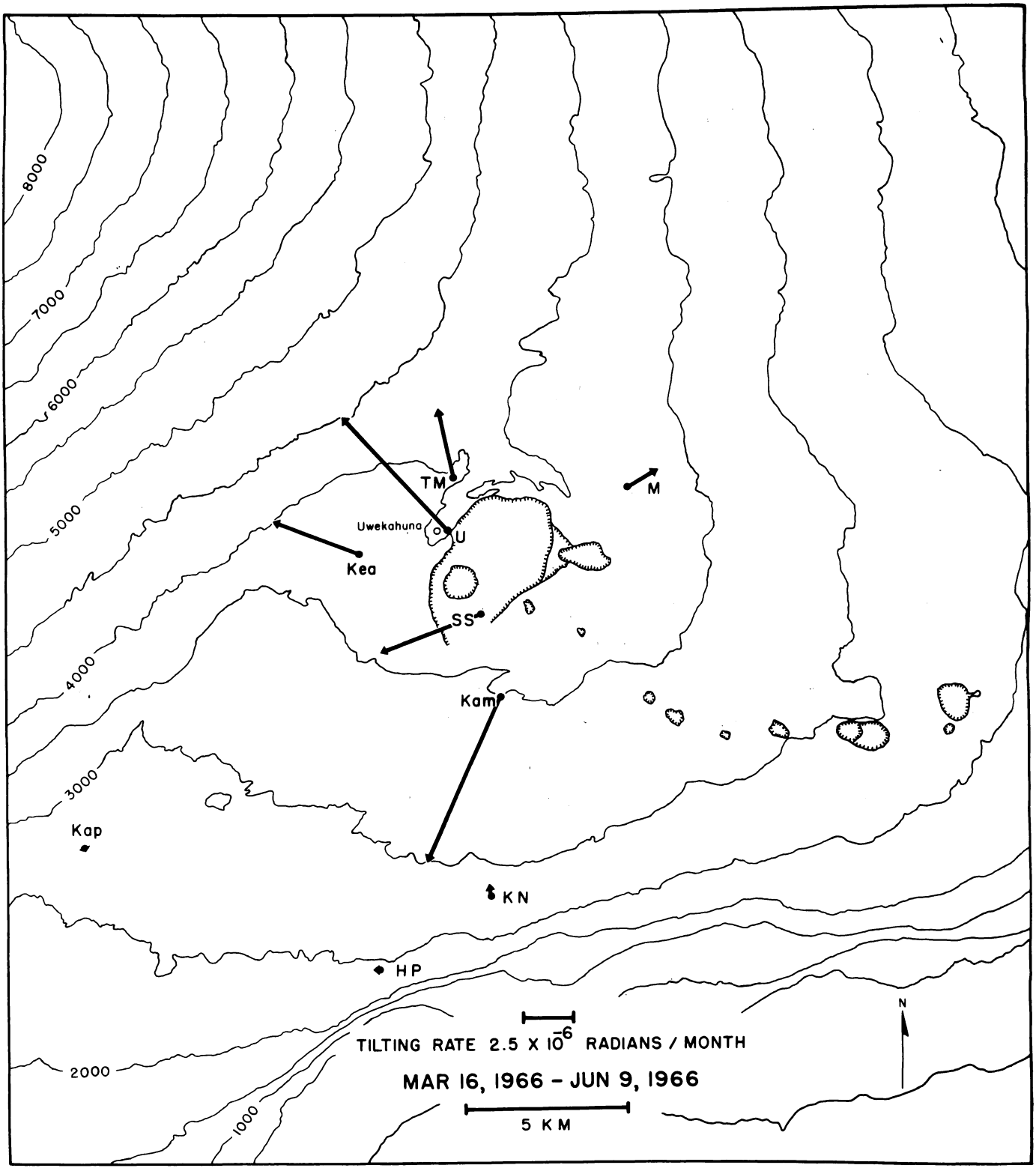

Figure 2.--Tilting of the ground around Kilauea caldera, March 16, 1966-June 9, 1966. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Intermediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
April 1	----	-------	-----	2	51	81	15	------	11	----------
2	----	-------	-----	36	185	70	12	------	10	----------
3	----	-------	8	8	31	106	17	------	4	----------
4	----	-------	-----	5	4	96	26	------	3+	----------
5	----	-------	-----	9	-----	93	11	------	7+	2 Mauna Loa
6	----	5	-----	2	-----	89	7	------	16	----------
7	----	-------	-----	3	4	113+	10	------	23	----------
8	----	-------	7	2	11	117	7	------	17	----------
9	27	-------	14	9	5	150	13	------	29	----------
10	----	-------	-----	4	6	142	14	------	26	----------
11	----	-------	-----	8	10+	133+	10	------	26	1 Mauna Kea
12	----	5	-----	5	12	180	6	------	37	Do.
13	----	-------	-----	7	30	115	6	------	21	----------
14	----	-------	15	2	53	120	7	------	21	----------
15	----	-------	-----	2	54	91	10	------	8	1 Mauna Kea
16	----	-------	3	3	121	79	8	------	16	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Inter-mediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
April 17	----	-------	-----	3	150	110	15	-----	16	----------
18	----	-------	-----	11	30	112	7	-----	27	----------
19	----	-------	-----	9	70	85	7	-----	20	----------
20	----	-------	-----	3	70	90	8	-----	42	----------
21	----	-------	4	-----	122	64	21	-----	39	----------
22	----	-------	-----	5	20	65	7	-----	15	----------
23	----	-------	-----	4	9	54	8	-----	10	1 off SE. shore of Hawaii
24	----	-------	-----	8	17	88	14	-----	14	----------
25	----	-------	-----	3	5	150	12	-----	8	2 Mauna Loa, 1 Hualalai
26	4	-------	-----	4	------	120	8	-----	5	----------
27	----	-------	-----	4	5	78	3	-----	10	----------
28	----	-------	-----	2	2	82+	14	-----	29	----------
29	----	-------	-----	2	------	90	9	-----	25	----------
30	----	-------	-----	2	8	120	7	-----	35	----------
May 1	----	-------	-----	-----	2	80	8	-----	10	----------
2	----	-------	-----	-----	15	70	13	-----	11	1 Mauna Kea
3	----	-------	-----	5	3	128	7	-----	15	1 west Hawaii
4	----	-------	-----	7	10	158	4	-----	20	1 off SE. shore of Hawaii
5	5	-------	-----	5	4	145	12	-----	12	1 west Hawaii
6	----	-------	-----	2	22	166	13	-----	14	----------
7	----	-------	-----	2	38	166+	15	-----	4	----------
8	----	-------	-----	-----	46	210	19	-----	14	----------
9	----	-------	-----	2	49	189	8	-----	28	----------
10	11	-------	-----	3	108	166	24	-----	27	----------
11	----	-------	-----	1	61	151	10	-----	16	----------
12	----	10	-----	3	21+	139+	12	-----	31	2 w. Hawaii, 1 Mauna Loa, 1 Mauna Kea, 1 off east shore of Hawaii.

May	13	----	-------	10	3	25	130	9	-----	34	1 off west shore of Hawaii
	14	----	-------	------	3	79	130	16	-----	26	----------
	15	5	-------	------	1	6	126	11	-----	17	----------
	16	----	-------	------	3	50?	?	15	-----	?	----------
	17	30	-------	------	4	10	124	4	-----	17	----------
	18	----	-------	10	-----	18	175	12	-----	22	1 off west shore of Hawaii
	19	----	-------	------	1	39	191	8	-----	39	1 Mauna Loa
	20	----	-------	------	6	80	110	14	-----	20	----------
	21	16	-------	------	4	91	145	9	-----	16	----------
	22	----	-------	------	3	39	120	13	-----	11	----------
	23	----	-------	17+	10	16	108	21	-----	25	----------
	24	----	4	------	16	13	95	19	-----	26	1 west Hawaii
	25	----	-------	------	10	6	72	18	-----	10+	----------
	26	----	11	------	11	7	132	17	-----	14	----------
	27	----	33	------	-----	20	186	12	-----	8	----------
	28	----	-------	------	6	28	170	18	-----	30	2 west Hawaii
	29	----	-------	------	3	29	152	11	-----	22	----------
	30	----	-------	------	3	21	117	12	-----	20	----------
	31	----	-------	------	1	33	132	11	-----	45	----------
June	1	36	-------	------	4	32	187	11	-----	34	----------
	2	13	-------	------	5	6	210	4	-----	35	----------
	3	----	-------	------	3	11	148	22	-----	17	----------
	4	----	-------	------	2	2	102	20	-----	7+	----------
	5	----	-------	5	10	3	109	14	-----	7	----------
	6	----	-------	------	11	3	93	17	-----	19	----------
	7	----	-------	8	7	18	117	10	-----	26	----------
	8	----	-------	------	2	2	72	16	-----	20	----------
	9	----	-------	------	4	6	57	12	-----	6	----------
	10	----	-------	3	3	24	128	25	-----	23	----------
	11	----	-------	4	2	14	129	15	-----	22	1 Mauna Kea, 1 west Hawaii
	12	----	-------	4	8	134	161	12	-----	29	----------
	13	----	-------	------	6	71	148	17	-----	16	----------
	14	----	-------	------	1	33	116	17	-----	6	----------
	15	----	-------	------	5	52	102	14	-----	9	----------
	16	----	-------	------	3	24	130	14	-----	16	----------
	17	----	-------	------	-----	26	99	7	1	7	1 west Hawaii
	18	----	-------	------	-----	47	98	4	1	9	1 west Hawaii
	19	----	-------	------	1	49	113	6	-----	18	2 off NW. shore of Hawaii
	20	----	-------	8	4	24	112	6	-----	17	----------
	21	----	-------	4	1	32	77	9	-----	27	----------
	22	----	-------	------	-----	23	96	12	-----	23	----------
	23	13	-------	------	1	37	83	14	-----	20	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Inter-mediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
June 24	----	------	------	1	25	51	6	-----	12	----------
25	----	------	3	11	54	71	10	1	24	----------
26	----	------	------	-----	21	61	10	1	76	----------
27	----	------	6	4	7	71	5	-----	15	1 west Hawaii
28	----	------	------	1	16	86	5	-----	21	1 Hualalai
29	----	------	12+	1	51	69	14	-----	22	----------
30	----	------	16+	2	63	105	14	-----	34	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1966

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1966)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
April 2	08	15	41.7	2.3	30	19°13.7'	155°30.5'	5 km NW. of Pahala	----------
2	09	07	02.9	3.4	30	19°22.8'	155°17.5'	1 km NW. of Ahua seismometer	Kilauea summit area, Mauna Loa.
4	16	33	50.5	2.7	5	19°23.4'	155°27.2'	9 km NW. of Desert seismometer	Kilauea summit area.
4	23	14	16.6	2.5	30	19°21.5'	155°15.9'	2 km south of Ahua seismometer	Kilauea summit area.
5	04	53	23.5	2.4	5	19°24.0'	155°32.1'	11 km SSE. of North Bay seismometer	----------
5	05	28	33.5	3.3	8	19°20.5'	155°25.7'	5 km WNW. of Desert seismometer	Pahala
5	07	14	47.0	2.1	8	19°26.4'	155°38.6'	9 km SW. of North Bay seismometer	----------
6	00	36	05.6	2.4	8	19°17.9'	155°10.4'	7 km south of Makaopuhi seismometer	----------
9	12	44	50.5	2.4	5	19°14.0'	155°12.8'	3 km SW. of Apua Point	----------
10	02	23	16.5	2.0	8	19°23.1'	155°25.3'	7 km NW. of Desert seismometer	----------
10	14	00	50.7	3.5	30	19°21.0'	155°19.5'	7 km WSW. of Ahua seismometer	----------
10	18	49	20.2	2.2	27	19°18.5'	155°19.7'	7 km SE. of Desert seismometer	----------
11	14	18	41.1	2.1	8	19°48.7'	155°19.0'	26 km WNW. of Hilo	----------
12	06	00	27.7	2.2	8	20°00.6'	155°32.1'	17 km ESE. of Kamuela	----------
12	06	16	55.3	2.0	8	19°19.0'	155°25.7'	5 km WSW. of Desert seismometer	----------
12	18	03	50.3	2.0	20	19°26.6'	155°18.2'	2 km NNW. of Uwekahuna seismometer	----------
12	10	57	35.4	2.0	8	19°19.7'	155°10.8'	4 km south of Makaopuhi seismometer	----------
15	06	16	29.5	2.4	8	19°58.6'	155°30.8'	20 km ESE. of Kamuela	----------
18	00	18	30.3	2.1	40	19°15.1'	155°09.1'	12 km SSE. of Ahua seismometer	----------
18	20	40	30.9	2.1	27	19°21.9'	155°17.7'	4 km WSW. of Ahua seismometer	----------
19	00	16	11.7	2.1	25	19°22.7'	155°18.0'	4 km WNW. of Ahua seismometer	----------
21	00	11	14.8	3.2	8	19°21.1'	155°04.1'	12 km ESE. of Makaopuhi seismometer	Hilo

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1966--Continued

Date (1966)	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat. N.	Long. W.	Description	Felt Report
April 21	06	35	26.4	1.5	10	19°19.1'	155°13.6'	7 km SE. of Ahua seismometer	----------
23	15	15	43.4	2.4	4	19°24.5'	155°27.5'	10 km NW. of Desert seismometer	----------
23	15	16	21.5	2.7	5	19°24.1'	155°27.3'	10 km NW. of Desert seismometer	----------
23	18	27	36.6	2.8	40	18°59.7'	155°17.9'	31 km ESE. of Naalehu	----------
25	05	14	48.1	2.2	13	19°08.0'	155°38.3'	9 km NW. of Naalehu	----------
25	06	35	38.3	2.7	8	19°35.4'	155°43.1'	22 km ENE. of Kealakekua	----------
25	10	44	41.2	2.4	8	19°42.1'	155°48.9'	9 km SSE. of Puu Waa Waa	----------
26	03	39	15.7	2.0	25	19°23.0'	155°18.6'	5 km SSW. of Uwekahuna	----------
26	06	21	33.2	2.5	5	19°27.0'	155°29.5'	12 km SW. of Mauna Loa seismometer	----------
29	04	23	58.7	2.3	8	19°20.1'	155°13.1'	6 km SW. of Makaopuhi seismometer	----------
May 2	15	38	32.4	2.2	8	19°57.4'	155°30.8'	22 km SE. of Kamuela	----------
2	22	14	23.8	2.6	8	19°19.7'	155°30.1'	12 km west of Desert seismometer	----------
3	08	36	22.8	2.4	0	19°30.8'	155°48.2'	12 km east of Kealakekua	----------
4	04	21	28.4	2.1	8	18°46.0'	155°08.1'	55 km SSE. of Apua Point	----------
5	04	45	18.0	2.2	30	19°21.0'	155°17.9'	5 km SW. of Ahua seismometer	----------
5	18	08	14.4	2.7	0	19°28.5'	155°47.0'	16 km SE. of Kealakekua	----------
5	18	12	34.5	2.0	3	19°25.5'	155°25.4'	10 km NNW. of Desert seismometer	----------
6	20	47	58.8	2.7	5	19°16.9'	155°04.4'	14 km SE. of Makaopuhi seismometer	Hilo
7	03	01	48.9	2.7	43	19°18.9'	155°06.0'	10 km SE. of Makaopuhi seismometer	----------
11	06	54	41.1	2.5	5	19°13.0'	155°27.0'	4 km NE. of Pahala	----------
11	07	06	39.4	3.2	27	19°23.0'	155°18.0'	4 km WNW. of Ahua seismometer	----------
12	00	01	49.7	2.7	0	19°29.8'	155°47.7'	14 km ESE. of Kealakekua	----------
12	05	55	04.7	2.8	30	19°21.8'	155°35.1'	15 km south of North Bay seismometer	----------
12	07	39	04.2	2.0	5	19°26.0'	155°27.0'	10 km SW. of Mauna Loa seismometer	----------
12	15	45	06.6	2.4	0	19°36.1'	155°47.3'	17 km NE. of Kealakekua	----------
12	18	02	26.5	3.8	13	18°52'	153°19'	175 km ESE. of Cape Kumukahi	----------
12	19	41	23.2	3.0	8	19°48.0'	155°33.8'	6 km NW. of Pohakuloa	----------
13	02	45	11.9	3.0	8	19°35'	156°24'	52 km WNW. of Kealakekua	----------
18	12	52	43.6	3.1	13	19°30'	156°27'	56 km west of Kealakekua	----------
19	04	54	45.3	2.5	3	19°22.1'	155°05.9'	9 km east of Makaopuhi seismometer	----------

May 19	06	22	17.0	2.9	8	19°14.1'	155°37.3'	20 km NNW. of Naalehu	Kealakekua
20	16	00	56.6	2.3	5	19°25.8'	155°28.9'	15 km NW. of Desert seismometer	----------
21	00	44	16.7	2.8	27	19°22.0'	155°19.3'	6 km west of Ahua seismometer	----------
21	00	46	30.2	2.8	27	19°22.0	155°19.3'	---do----------	----------
21	04	40	39.5	3.0	32	19°22.8'	155°19.6'	6 km SW. of Uwekahuna seismometer	----------
24	09	37	38.5	2.3	0	19°21.2'	155°46.0'	15 km ESE. of Hookena	----------
25	02	50	01.0	2.4	8	19°20.3'	155°11.7'	4 km SW. of Makaopuhi seismometer	----------
25	06	17	49.2	2.2	20	19°24.0	155°17.0'	3 km SE. of Uwekahuna	----------
27	01	05	46.0	3.7	40	19°13.1'	155°03.6'	20 km SE. of Makaopuhi seismometer	Kilauea summit area, Pahala.
28	15	14	10.4	2.7	13	19°46'	156°07'	7 km NW. of Keahole Point	----------
28	15	32	51.4	2.0	0	19°26.8'	155°48.1'	15 km SE. of Kealakekua	----------
29	10	50	11.1	2.3	8	19°22.0'	155°08.9'	4 km east of Makaopuhi seismometer	----------
June 2	19	22	08.2	2.5	9	19°27.0'	155°15.9'	4 km NE. of Uwekahuna	Kilauea summit area.
3	13	14	30.1	2.0	5	19°26.0'	155°28.2'	12 km SW. of Mauna Loa seismometer	----------
5	01	13	30.5	2.1	8	19°23.0'	155°03.8'	12 km ENE. of Makaopuhi seismometer	----------
5	11	36	48.2	2.1	5	19°22.0'	155°25.5'	5 km NNW. of Desert seismometer	----------
5	22	25	08.0	2.7	30	19°39.1'	155°17.3'	20 km NE. of Mauna Loa seismometer	----------
6	06	13	27.5	2.4	30	19°23.9'	155°17.1'	4 km SSE. of Uwekahuna	----------
6	15	53	28.7	2.6	8	19°21.9'	155°07.0'	7 km east of Makaopuhi seismometer	----------
11	02	41	38.5	2.5	0	19°36.0'	155°52.5'	10 km NE. of Kealakekua	----------
11	12	03	09.1	2.7	8	19°54.8'	155°45.5'	15 km SW. of Kamuela	----------
12	12	27	57.2	2.6	3	19°19.4'	155°05.6'	10 km SE. of Makaopuhi seismometer	----------
16	02	27	29.2	2.4	8	19°26.8'	155°28.7'	11 km SW. of Mauna Loa seismometer	----------
17	04	34	46.8	2.8	27	19°20.2'	155°19.2'	7 km east of Desert seismometer	----------
17	15	06	22.5	2.4	0	19°25.2'	155°42.8'	24 km SE. of Kealakekua	----------
17	19	54	49.4	2.0	5	19°22.5'	155°27.4'	9 km NW. of Desert seismometer	----------
18	21	21	26.9	3.5	0	19°21.1'	155°45.1'	16 km ESE. of Hookena	Kealakekua
19	12	50	15.1	2.9	13	20°02.9'	155°52.9'	5 km west of Kawaihae	----------
19	15	17	10.0	2.5	13	20°02.2'	155°58.1'	15 km west of Kawaihae	----------
20	00	26	47.8	2.2	3	19°13.9'	155°25.9'	12 km SSW. of Desert seismometer	----------
21	03	55	07.6	3.3	3	19°21.8'	155°30.8'	13 km WNW. of Desert seismometer	Pahala, Kilauea summit area.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June, 1966--Continued

Date (1966)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
June 24	21	01	36.8	2.4	8	19°19.0'	155°10.0'	6 km SSE. of Makaopuhi seismometer	----------
26	16	34	39.5	2.3	8	19°19.8'	155°10.2'	5 km SSE. of Makaopuhi seismometer	----------
26	18	01	29.0	2.0	3	19°22.6'	155°02.8'	8 km WNW. of Kalapana	----------
27	00	12	07.0	2.3	5	19°23.2'	155°26.6'	8 km NW. of Desert seismometer	----------
27	05	18	33.3	2.2	0	19°31.4'	155°41.4'	24 km east of Kealakekua	----------
27	16	01	49.1	2.4	25	19°21.9'	155°17.5'	3 km WSW. of Ahua seismometer	----------
28	04	24	57.9	2.6	13	19°50.7'	156°00.3'	14 km NE. of Keahole Point	----------
28	20	35	33.8	2.2	3	19°21.2'	155°07.5'	6 km east of Makaopuhi seismometer	----------
29	16	58	32.3	2.8	8	19°19.2'	155°13.7'	8 km SW. of Makaopuhi seismometer	----------
30	12	36	56.3	2.3	3	19°22.8'	155°06.0'	8 km ENE. of Makaopuhi seismometer	----------

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 43

July, August, and September, 1966

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Issued February 1969

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Summary of activities

Swelling of Kilauea continued through July, August, and September of 1966, and the apparent center of rise moved north of Halemaumau, then to the east of Halemaumau with an elongation southward. The rate of rise increased so that the net relative rise of the caldera floor was 1/3 foot in 3 months. The swelling was accomplished in 3 surges, indicated by the pattern of the daily tiltmeter readings, the rises taking place in the last 2 weeks of July, the last half of August, and from September 12 through October 2.

There were very few caldera quakes (both short-period and long-period types) from July 1 through August 18. However, during this period of low seismicity at the caldera, there were two seismic events of note. Between June 29 and July 13 there were nearly 200 earthquakes that originated under the east end of the East rift zone. Eight of them were felt in the vicinity of Pahoa and the largest was of magnitude 3.0. The swarm showed 3 peaks of intensity--33 quakes recorded on July 3, 23 on July 9, and 40 on July 13. The second event began less than an hour before midnight of July 5, when a swarm of quakes originated from shallow depth near Aloi crater, midway between Ahua and Makaopuhi seismographs, in the region of the junction of the Koae fault zone with the upper East rift. More than 500 quakes were recorded in about 2 hours; the maximum frequency of 7 per minute was reached at the end of the first half hour. All the quakes were small; the largest had a magnitude of 2.8 and was felt locally at 01:11 July 6. Coincident with the onset of earthquakes, collapse tilting (toward the caldera) at the rate of 2 microradians per hour began to record at Uwekahuna. The rate of tilting remained high for half an hour up to the peak in earthquake frequency, then it slackened somewhat until the time of the strongest earthquake, when the collapse tilting stopped entirely.

On August 18 and 19 there was a swarm of deep Kilauea caldera quakes, five of them strong enough to be felt; the strongest was recorded at magnitude 3.9. During the same interval, the number of long-period caldera quakes increased to between 200 and 500 a day and remained that large until September 2.

A swarm of more than 90 quakes took place on September 5 and 6 along the northeast portion of the Honuapu-Kaoiki Fault System. One was larger than magnitude 4 and four others were of magnitude 2.5.

More satisfactory temperature data in the lava-lake studies were obtained during September. Hole 24 in Makaopuhi was cased with 40.5 feet of stainless steel, 29 feet in crust and 11.5 in melt below the crust. The measured profile was checked by repeated measurements and against the melting of germanium oxide, gold, and silver and gave 1,137°C at 40.5 (11.5 feet in melt), 1,075°C at 29 feet (base of rigid crust), and 500°C at 10 feet below the surface of crust.

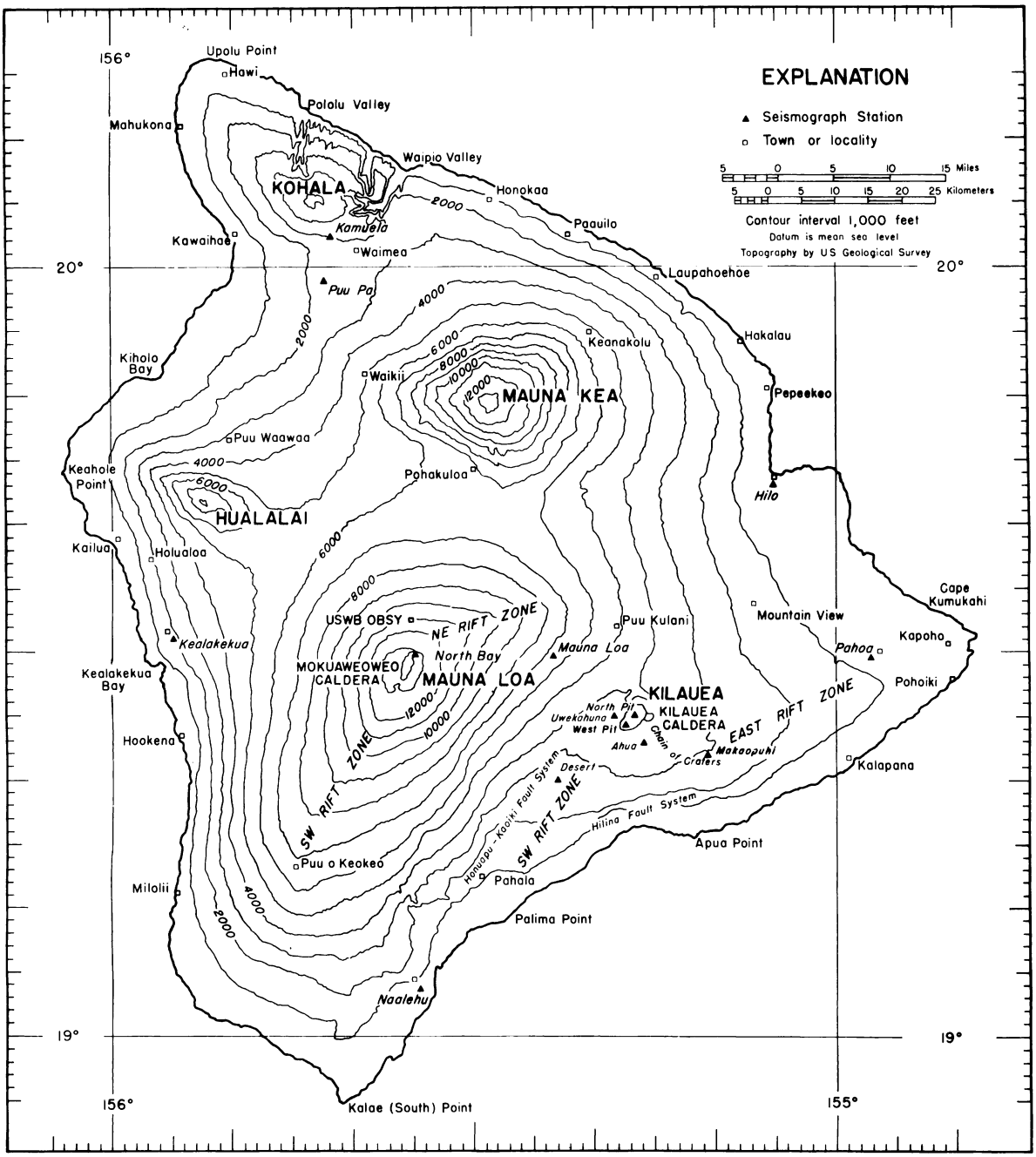

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter at Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6 which is published only in the first-quarter issue each year.

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (stations U, M, A, D, N, WP, MP). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5 in the first-quarter issue each year.

Acknowledgments.--Several people or agencies reported "felt" earthquakes during the third quarter, 1966. Their assistance is gratefully acknowledged.

Table 1.--Tilt coordinates at Uwekahuna, July, August, and September, 1966

Date (1966)	N-S	E-W	Date (1966)	N-S	E-W
July 3	489	466	Aug. 21	492	455
10	490	467	28	492	453
17	489	463	Sept. 4	493	450
24	491	461	11	492	451
31	491	458	18	492	448
Aug. 7	491	459	25	492	445
14	491	461			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera. (See tilt diagram, fig. 2.)

Tilt base	Date (1966)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1966)
Uwekahuna (U on fig. 2).	Sept. 13	513.3	446.7	6.1	N. 49.2° W.	June 7
Tree Molds (TM)	12	437.1	508.7	2.6	N. 33.5° W.	8
Sand Spit (SS)	12	824.8	703.1	5.9	S. 74.9° W.	8
Keamoku (Kea)	6	492.0	452.7	4.0	N. 80.2° W.	6
Ahua Kamokukolau (Kam).	8	586.3	615.5	8.5	S. 10.8° W.	8
Kipuka Nene (KN)	7	300.0	500.9	.3	N. 4.5° W.	9
Hilina Pali (HP)	Not done this epoch.					
Kapapala Ranch (Kap).	6	491.4	508.8	.1	S. 73.4° E.	6
Mehana (M)	12	548.5	559.5	2.0	N. 40.4° E.	16

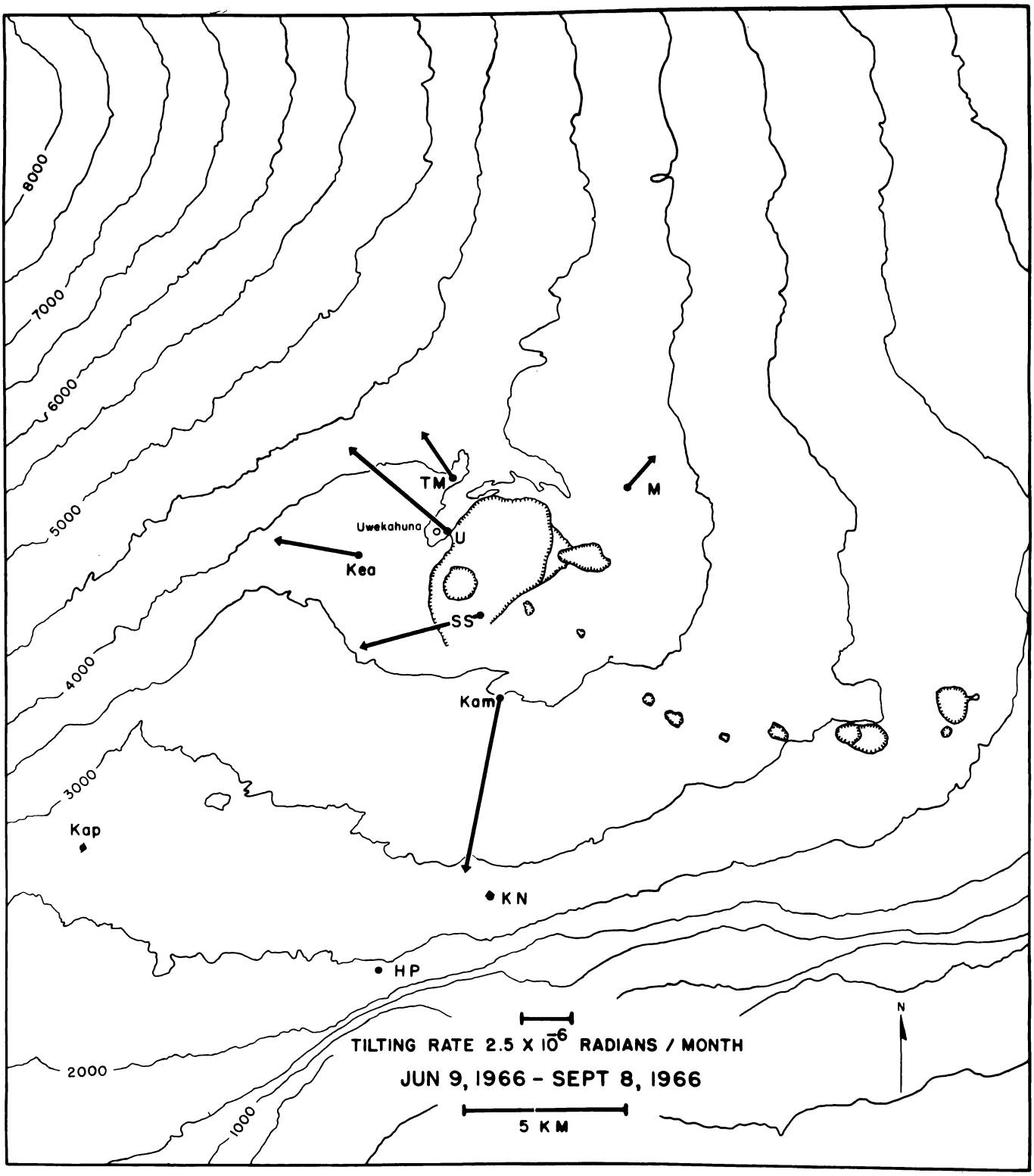

Figure 2.--Tilting of the ground around Kilauea caldera, June 9, 1966-September 8, 1966. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Table 3.--Number or earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma with the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low frequency waves that originate about 5 km beneath Kilauea summit, and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions; west Hawaii, Mauna Kea, etc.

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Inter-mediate	Shallow	30 km	Long period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Other
July 1	----	10	------	2	70	65	14	3	29	----------
2	----	-------	------	-----	86	53	14	17	34	1 west Hawaii
3	----	-------	------	3	51	78	15	33	8	----------
4	----	17	------	2	49	73	13	17	24	1 west Hawaii
5	----	-------	------	4	21+	45+	7	21	500+	----------
6	5	3	------	1	38	41	8	8	28+	----------
7	----	-------	------	-----	42	48	2	3	27	----------
8	----	4	------	1	31	65	6	3	20	----------
9	----	-------	------	4	16	55	11	23	10	----------
10	----	-------	------	3	18	61	10	11	17	1 west Hawaii
11	----	-------	------	3	16	56	10	4	6	2 Mauna Kea
12	----	12	------	1	27	63	23	5	7	1 Mauna Loa
13	11	-------	------	6	48	45	8	40	15	1 off SW. shore of Hawaii
14	----	-------	------	3	27	59	5	2	13	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Intermediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
July 15	----	-------	-----	2	43	60	10	1	2	----------
16	----	-------	-----	1	59	35	11	2	5	----------
17	----	-------	-----	3	24	48	11	7	4	----------
18	45	-------	-----	-----	37	56	10	4	17	1 off SE. shore of Hawaii
19	36	-------	-----	2	11	56	5	8	8	1 Mauna Loa
20	----	-------	-----	3	46	40	13	4	11	----------
21	----	13	-----	1	28	35	28	3	13	----------
22	----	15	-----	2	9	55	2	4	5	----------
23	----	-------	-----	-----	13	62	8	4	5	----------
24	----	2	-----	2	------		6	1	18	1 west Hawaii
25	----	-------	-----	1	10	99	4	7	22	----------
26	----	26	-----	6	39	104	6	6	28	1 Kona
27	----	5	-----	2	22	94	10	2	23	1 Mauna Loa, 1 Kohala
28	----	7	-----	4	14	74	10	13	13	----------
29	----	-------	-----	-----	11	60	11	24	12	----------
30	----	-------	-----	-----	14	61	14	18	16	----------
31	----	-------	-----	(?)	18	66	(?)	12	7	----------
Aug. 1	----	-------	-----	2	14	64	12	34	17	----------
2	----	-------	-----	3	33	74	3	4	19	----------
3	----	-------	-----	1	26	67	9	4	7	1 Mauna Loa
4	----	-------	-----	7	4	58	5	------	5	1 off NE. shore of Hawaii
5	----	3	-----	3	24	64	8	2	9	----------
6	----	-------	-----	-----	22	55	11	22	4	----------
7	----	5	-----	2	23	59	7	------	5	----------
8	----	-------	-----	3	12	38	7	------	10	----------
9	----	-------	9	1	7	40	10	------	5	----------
10	----	-------	-----	3	4	54	8	------	9	----------
11	----	7	-----	2	2	58	12	------	11	----------
12	----	-------	-----	-----	6	63	5	------	5	----------
13	----	-------	-----	-----	6	63	3	------	18	----------

Aug. 14	----	-------	-----	1	3	75	2	------	10	----------
15	----	10	-----	------	2	68	(2)	------	11	----------
16	----	-------	-----	------	2	34	2	1	(?)	1 Mauna Kea
17	----	-------	-----	3	20	56	3	------	12	----------
18	----	-------	-----	12	15	48	2	------	3	----------
19	----	-------	-----	7	11	101	9	------	2	----------
20	----	-------	-----	15	51	131	9	------	15	----------
21	----	-------	-----	11	375±	50	------	1	1	2 Mauna Loa
22	----	-------	-----	15	600±	60	6	------	8	----------
23	----	-------	-----	4	450	79	11	1	14	----------
24	----	-------	-----	6	225	92	5	------	31	2 Mauna Loa, 1 off NE. shore of Hawaii.
25	----	-------	-----	4	240	82	6	1	10	----------
26	----	-------	-----	2	300±	81	10	------	14	----------
27	----	3	-----	4	300±	61	15	4	18	----------
28	----	-------	-----	5	340	55	20	------	21	----------
29	----	-------	-----	2	385	51	11	------	15	----------
30	----	-------	-----	3	405	70	5	1	25	----------
31	----	-------	12	2	375	70	8	------	18	1 off NE. shore of Hawaii
Sept. 1	----	-------	-----	------	275±	100	8	------	12	----------
2	----	-------	3	2	90	142	11	5	22	1 Kohala, 1 west Hawaii
3	----	-------	-----	------	79	106	11	------	25	1 Mauna Kea
4	1	-------	-----	------	8	44	24	------	7	----------
5	34	-------	-----	5	5	75	66	------	----	----------
6	----	-------	-----	2	2	83	12	------	11	----------
7	----	3	-----	3	13	50±	------	------	10	----------
8	----	-------	-----	1	16	88	13	------	12	----------
9	----	5	-----	3	16	99	6	------	12	----------
10	----	-------	-----	------	21	63	2	7	5	----------
11	----	-------	-----	------	13	78	12	6	16	----------
12	----	-------	-----	------	45	107	5	------	18	1 Mauna Loa
13	----	-------	-----	2	4	93	6	4	19	----------
14	----	-------	3	------	7	93	5	5	9	----------
15	46	-------	-----	------	7	90	6	1	14	----------
16	----	-------	-----	2	16	66	3	2	4	----------
17	----	-------	-----	------	12	92	5	11	2	----------
18	----	6	-----	------	6	108	7	------	11	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, and MP around Kilauea caldera--Continued

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Intermediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
Sept. 18	----	6	-----	-----	6	108	7	------	11	----------
19	----	-------	-----	2	22	103	8	1	17	----------
20	----	-------	-----	51+	79	130	6	------	11	----------
21	----	-------	-----	4	24	148	8	------	18	----------
22	----	-------	-----	3	21	96	-------	------	7	----------
23	----	9	-----	7	26	90	5	1	13	----------
24	39	-------	-----	3	3	90	8	2	13	----------
25	----	7	-----	1	47	75	8	1	17	----------
26	----	-------	-----	1	7	70	3	------	10	----------
27	----	-------	6	-----	20	53	5	------	15	----------
28	----	-------	-----	1	38	78	7	------	9	----------
29	38	-------	-----	3	12	76	10	------	26	----------
30	18	-------	-----	3	12	79	7	------	13	1 Mauna Loa

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, September, 1966

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1966)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 1	05	04	28.5	3.7	10	19°19.5'	155°27.3'	7 km WSW. of Desert seismometer	Pahala, Volcano, Hilo.
2	16	13	39.9	2.5	5	19°20.3'	155°10.2'	4 km SSE. of Makaopuhi seismometer	----------
2	19	15	42.2	2.6	0	19°24.0'	155°02.5'	15 km ENE. of Makaopuhi seismometer	----------
2	19	54	35.1	2.0	3	19°27.6'	155°48.8'	14 km SE. of Kealakekua	----------
4	00	20	54.5	2.3	8	19°24.4'	155°24.1'	8 km NNW. of Desert seismometer	----------
4	03	43	36.8	2.5	3	19°29.8'	155°47.8'	13 km ESE. of Kealakekua	----------
5	04	45	27.4	2.5	5	19°25.8'	155°27.1'	12 km NW. of Desert seismometer	----------
5	22	23	41.5	2.1	5	19°22.9'	155°25.2'	6 km NW. of Desert seismometer	----------
5	23	10	58.0	2.7	0	19°26.1'	154°57.1'	8 km south of Pahoa	Pahoa
5	23	51	40.2	1.3	5	19°20.4'	155°13.0'	4 km SW. of Makaopuhi seismometer	----------
5	23	52	59.4	1.5	5	19°19.4'	155°11.6'	5 km SSW. of Makaopuhi seismometer	----------
5	23	55	51.1	1.9	5	19°19.7'	155°12.2'	5 km SW. of Makaopuhi seismometer	----------
5	23	58	05.6	1.5	5	19°20.9'	155°11.9'	3 km SW. of Makaopuhi seismometer	Kilauea summit area.
5	23	59	18.4	2.0	5	19°19.8'	155°12.9'	5 km SW. of Makaopuhi seismometer	----------
6	00	02	57.7	1.5	3	19°21.7'	155°13.3'	5 km WSW. of Makaopuhi seismometer	Kilauea summit area.
6	00	05	52.7	1.4	5	19°20.6'	155°13.3'	5 km WSW. of Makaopuhi seismometer	----------
6	00	22	11.3	1.8	3	19°20.4'	155°13.0'	5 km SW. of Makaopuhi seismometer	----------
6	00	31	20.0	1.5	5	19°19.8'	155°12.3'	5 km SW. of Makaopuhi seismometer	----------
6	00	35	45.6	2.4	5	19°20.4'	155°12.2'	4 km SW. of Makaopuhi seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, September, 1966--Continued

Date (1966)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
July 6	00	37	58.2	2.3	3	19°19.2'	155°12.6'	5 km SW. of Makaopuhi seismometer	----------
6	01	11	52.7	2.8	5	19°20.5'	155°13.8'	6 km SW. of Makaopuhi seismometer	Kilauea summit area.
6	01	33	40.2	1.8	5	19°18.5'	155°17.0'	7 km SSW. of Makaopuhi seismometer	----------
8	06	35	51.2	2.3	0	19°26.8'	154°55.3'	6 km SSE. of Pahoa	----------
10	20	08	40.0	2.5	3	19°31.8'	155°46.8'	15 km east of Kealakekua	----------
11	03	53	36.7	2.4	8	19°55.2'	155°23.5'	17 km SW. of Laupahoehoe	----------
11	04	55	40.1	2.4	8	19°55.2'	155°23.5'	17 km SW. of Laupahoehoe	----------
11	06	04	52.8	2.5	30	19°28.2'	155°10.5'	15 km ENE. of Uwekahuna	----------
12	03	26	21.9	2.7	3	19°21.3'	155°45.2'	26 km SE. of Kealakekua	----------
12	09	56	46.5	2.2	5	19°20.8'	155°28.8'	10 km west of Desert seismometer	----------
12	23	09	56.1	2.0	25	19°27.6'	155°13.4'	8 km NE. of Uwekahuna	----------
13	02	03	44.8	3.0	3	19°25.5'	154°53.5'	12 km SE. of Pahoa seismometer	Kapoho
13	08	30	59.0	2.7	3	19°19.3'	156°04.8'	27 km SW. of Kealakekua	----------
13	13	08	41.2	2.1	33	19°22.8'	155°17.7'	3 km west of Ahua seismometer	----------
16	20	48	54.8	2.1	5	19°22.7'	155°05.2'	10 km ENE. of Makaopuhi seismometer	----------
17	15	47	46.4	2.3	8	19°25.2'	155°28.2'	13 km NW. of Desert seismometer	----------
17	16	39	33.5	2.0	5	19°18.1'	155°15.2'	8 km SSE. of Ahua seismometer	----------
17	22	16	10.6	2.4	5	19°28.4'	154°52.2'	9 km ESE. of Pahoa	Pahoa
18	00	14	28.0	2.6	8	19°15.2'	155°29.0'	13 km SW. of Desert seismometer	----------
18	11	29	23.1	2.2	5	19°21.7'	155°11.8'	3 km SW. of Makaopuhi seismometer	----------
18	13	48	13.2	2.7	35	19°01.9'	155°29.0'	12 km ESE. of Naalehu	----------
19	01	09	11.3	2.7	5	19°20.5'	155°26.2'	5 km west of Desert seismometer	----------
19	17	00	08.0	2.0	3	19°14.5'	155°34.0'	20 km NNE. of Naalehu	----------
23	21	19	19.2	2.7	25	19°04.1'	155°30.9'	9 km east of Naalehu	----------
24	15	22	03.3	3.0	0	19°27.2'	155°45.5'	18 km ESE. of Kealakekua	west Hawaii
25	17	29	42.0	2.0	8	19°18.1'	155°33.5'	19 km WSW. of Desert seismometer	----------
25	23	02	28.5	1.9	27	19°23.5'	155°17.9'	3 km NW. of Ahua seismometer	----------
26	14	13	12.6	2.5	3	19°23.3'	155°56.2'	4 km west of Hookena	----------
26	14	32	36.8	2.6	10	19°26.1'	155°16.9'	2 km NE. of Uwekahuna	----------

July	27	14	04	31.5	3.2	31	19°23.1'	155°16.9'	2 km NW. of Ahua seismometer	Pahala
	27	19	03	48.3	2.6	8	19°38.0'	155°41.0'	19 km NW. of North Bay seismometer	----------
	27	23	13	44.0	2.7	8	20°03.0'	155°51.0'	2 km NW. of Kawaihae	----------
	29	05	28	21.0	2.2	3	19°26.2'	154°55.5'	8 km SSE. of Pahoa	----------
	30	16	58	22.3	4.3	8	19°25.0'	155°28.2'	13 km NW. of Desert	Islandwide
	31	20	01	39.0	2.3	0	19°28.5'	154°54.3'	5 km SE. of Pahoa	Kapoho
Aug.	1	02	25	07.1	2.5	0	19°27.0'	154°55.2'	7 km SE. of Pahoa	Pahoa, Kapoho
	1	19	02	20.2	2.7	0	19°27.1'	154°55.1'	---do----------	Do.
	3	18	48	33.6	2.4	8	19°11.9'	155°37.4'	15 km NNW. of Naalehu	----------
	4	05	17	05.3	3.0	13	20°54'	154°55'	127 km NE. of Kamuela	----------
	6	20	57	37.1	3.7	3	19°28.8'	154°54.2'	5 km ESE. of Pahoa	Pahoa, Hilo, Kilauea summit area.
	8	09	34	41.7	2.9	0	19°17.5'	154°57.1'	5 km south of Pahoa	----------
	9	05	12	51.0	2.0	8	19°21.2'	155°25.5'	5 km WNW. of Desert seismometer	----------
	11	05	01	01.0	2.0	8	19°19.7'	155°11.1'	5 km south of Makaopuhi seismometer	----------
	11	18	30	32.8	2.3	3	19°25.9'	154°54.7'	8 km SE. of Pahoa	Kapoho
	12	08	13	45.5	1.8	5	19°17.0'	155°15.1'	10 km south of Ahua seismometer	----------
	15	00	15	41.2	3.5	3	19°27.2'	154°55.1'	6 km SE. of Pahoa	Hilo, Mt. View, Pahoa.
	16	01	25	40.3	2.7	8	19°50.7'	155°46.5'	23 km SW. of Kamuela	----------
	17	09	58	49.8	3.0	5	19°24.6'	155°26.9'	10 km NW. of Desert seismometer	Pahala
	18	08	30	04.0	2.8	5	19°14.1'	155°25.3'	12 km SSW. of Desert seismometer	Do.
	18	12	22	39.3	2.0	5	19°21.5'	155°11.8'	3 km SW. of Makaopuhi seismometer	----------
	19	05	21	49.2	3.9	30	19°23.0'	155°18.5'	5 km WNW. of Ahua seismometer	Pahala, Pahoa, Hilo, Kilauea summit area, Paauilo.
	19	05	24	54.1	2.8	27	19°21.6'	155°19.0'	6 km WSW. of Ahua seismometer	Pahala, Kilauea summit area, west Hawaii, Hilo, Naalehu.
	19	05	33	00.4	2.7	27	19°20.9'	155°19.4'	7 km ENE. of Desert seismometer	Kilauea summit area.
	19	06	26	20.2	3.1	30	19°20.9'	155°19.4'	7 km ENE. of Desert seismometer	Pahala
	21	10	31	00.5	3.0	27	19°22.8'	155°19.3'	6 km west of Ahua	----------
	22	00	04	53.7	2.3	5	19°24.5'	155°27.0'	11 km NW. of Desert seismometer	----------
	22	01	36	29.6	2.4	13	19°09.0'	155°12.9'	24 km south of Makaopuhi seismometer	----------
	22	15	04	19.0	2.7	5	19°19.3'	155°11.4'	5 km SSW. of Makaopuhi seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, September, 1966--Continued

Date (1966)	Time h	m	s	Magnitude	Depth (km)	Epicenter Lat. N.	Long. W.	Description	Felt Report
Aug. 22	16	04	55.3	2.1	10	19°25.4'	155°27.4'	12 km NW. of Desert seismometer	----------
23	15	02	58.0	2.1	30	19°21.2'	155°17.5'	3 km SW. of Ahua seismometer	----------
24	02	24	10.2	2.4	3	19°30.6'	155°45.7'	16 km east of Kealakekua	----------
24	07	44	55.1	2.5	0	19°27.3'	155°32.5'	5 km SE. of North Bay seismometer	----------
24	10	39	55.1	2.5	3	19°23.7'	155°22.9'	7 km north of Desert seismometer	----------
24	21	25	35.2	2.6	45	19°52.0'	155°00.0'	20 km NE. of Hilo	----------
25	04	39	33.5	1.9	25	19°22.2'	155°19.1'	5 km west of Ahua seismometer	----------
26	15	00	43.9	3.1	8	19°24.7'	155°23.9'	8 km NNW. of Desert seismometer	----------
28	14	03	10.5	2.4	3	19°21.6'	155°27.5'	8 km WNW. of Desert seismometer	Pahala
31	04	19	05.6	2.3	40	19°55.9'	155°05.5'	24 km north of Hilo	----------
Sept. 1	18	05	17.0	2.2	8	19°24.5'	155°24.7'	8 km NNW. of Desert seismometer	----------
1	23	53	22.2	2.3	8	19°25.2'	155°29.9'	15 km NW. of Desert seismometer	----------
2	00	50	22.0	2.3	0	19°26.3'	155°47.3'	16 km SE. of Kealakekua	----------
2	06	36	10.4	2.2	8	19°25.7'	155°29.2'	15 km NW. of Desert seismometer	----------
2	08	40	49.9	2.6	40	19°19.7'	154°51.7'	21 km SE. of Pahoa	----------
2	13	56	58.5	3.4	13	20°02.2'	155°53.1'	5 km west of Kawaihae	Waimea
2	19	37	23.4	2.5	5	19°25.2'	155°28.8'	13 km NW. of Desert seismometer	----------
3	10	46	00.7	2.5	5	19°22.5'	155°13.3'	5 km east of Ahua seismometer	----------
3	11	37	16.0	2.8	8	19°51.0'	155°44.8'	21 km SSW. of Kamuela	----------
3	13	21	20.2	2.0	3	19°23.7'	155°05.9'	9 km ENE. of Makaopuhi seismometer	----------
4	10	28	16.1	2.4	5	19°26.4'	155°24.5'	12 km NNW. of Desert seismometer	----------
5	06	33	21.9	4.5	8	19°21.2'	155°26.2'	6 km WNW. of Desert seismometer	Islandwide
5	10	08	09.0	2.8	5	19°25.0'	155°26.0'	10 km NNW. of Desert seismometer	----------
5	10	17	21.5	2.3	8	19°25.5'	155°25.3'	10 km NW. of Desert seismometer	----------
5	12	55	16.2	2.2	25	19°22.2'	155°18.8'	5 km west of Ahua seismometer	----------
5	22	45	20.0	3.0	5	19°21.2'	155°28.8'	10 km WNW. of Desert seismometer	Pahala
5	06	45	34.5	2.3	5	19°23.8'	155°27.1'	9 km NW. of Desert seismometer	----------
6	03	36	06.7	2.4	8	19°26.8'	155°28.8'	17 km NW. of Desert seismometer	----------
7	02	46	44.2	2.0	8	19°19.2'	155°10.3'	5 km south of Makaopuhi seismometer	----------
8	15	03	52.6	2.1	5	19°22.3'	155°28.2'	10 km WNW. of Desert seismometer	Pahala
9	13	16	11.3	2.0	5	19°21.0'	155°11.2'	3 km SW. of Makaopuhi seismometer	----------
12	03	13	06.2	2.3	3	19°13.2'	155°31.5'	19 km NE. of Naalehu	----------

Sept.	12	16	47	13.0	2.9	5	19°20.8'	155°11.3'	3 km SW. of Makaopuhi seismometer	Hilo
	14	00	03	37.2	2.4	5	19°25.8'	155°25.8'	9 km NW. of Desert seismometer	----------
	15	22	16	52.7	2.1	8	19°02.8'	155°10.0'	36 km south of Makaopuhi seismometer	----------
	16	12	41	54.5	2.1	5	19°21.9'	155°26.5'	7 km WNW. of Desert seismometer	Pahala
	16	16	58	53.6	2.0	3	19°19.8'	155°11.3'	4 km SSW. of Makaopuhi seismometer	----------
	20	01	31	57.0	2.3	3	19°21.7'	155°12.9'	4 km west of Makaopuhi seismometer	----------
	20	09	55	56.0	3.7	27	19°24.1'	155°20.0'	5 km SW. of Uwekahuna	----------
	20	14	26	52.8	2.4	30	19°21.8'	155°18.5'	5 km WSW. of Ahua seismometer	----------
	21	01	45	48.5	3.4	27	19°23.9'	155°17.9'	3 km south of Uwekahuna	Naalehu, Pahala
	21	02	10	42.1	2.1	25	19°23.9'	155°19.7'	5 km SW. of Uwekahuna	----------
	21	04	22	53.5	2.3	26	19°23.0'	155°18.7'	5 km west of Ahua seismometer	----------
	22	18	31	30.5	2.5	5	19°19.2'	155°11.5'	5 km SSW. of Makaopuhi seismometer	----------
	23	01	44	22.5	2.2	10	19°21.8'	155°03.8'	13 km east of Makaopuhi seismometer	----------
	23	10	33	47.0	2.8	3	19°27.9'	154°56.5'	4 km south of Pahoa	Pahoa
	27	21	24	51.2	2.1	10	19°28.5'	155°23.3'	3 km south of Mauna Loa seismometer	----------
	28	12	03	21.4	3.5	5	19°26.0'	155°25.1'	8 km SW. of Mauna Loa seismometer	Hilo, Mt. View, Mauna Loa Summit.
	28	23	36	44.4	2.3	8	19°17.9'	154°59.9'	21 km SE. of Makaopuhi seismometer	----------
	29	15	55	59.2	2.1	3	19°20.1'	155°09.1'	5 km SE. of Makaopuhi seismometer	----------
	30	00	56	59.5	3.0	0	19°21.7'	155°48.2'	21 km SE. of Kealakekua	----------

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

Summary 44

October, November, and December, 1966

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Issued February 1969

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Summary of activities

The rate of swelling of Kilauea decreased during October, November, and early December, and the area of rising broadened as determined from the pattern of changes on the long-base tiltmeter net and the summit net of geodimeter lines; inclement weather prevented releveling the caldera level lines. Then in mid-month, the two tiltmeters that are read daily began to show that the rate of swelling increased and the center of inflation shifted southward during the last half of December. This shifting was confirmed by surveying done early in January 1967.

Earthquake activity was spotty during the quarter. Throughout the period, seismicity on the East rift of Kilauea was double that of the previous quarter, and a swarm in mid-November included several local quakes felt only in the vicinity of Pahoa-Kapoho. However, the daily number of caldera quakes was considerably below 100 except during 6 days in mid-October, 3 days in November, and 6 days scattered in December. There were two swarms of 30-km Kilauea summit quakes: 62 on November 26-29, and 67 on December 31.

Preparations were completed to commence drilling in January in the crust of Kilauea Iki lava lake (2 km east of North Pit), with a new Longyear "24" core drill capable of taking $2\frac{1}{4}$-inch core.

Seismic activity beneath the summit of Mauna Loa remained at a low level. During the entire year of 1966 there was no evidence of any revival in Mauna Loa.

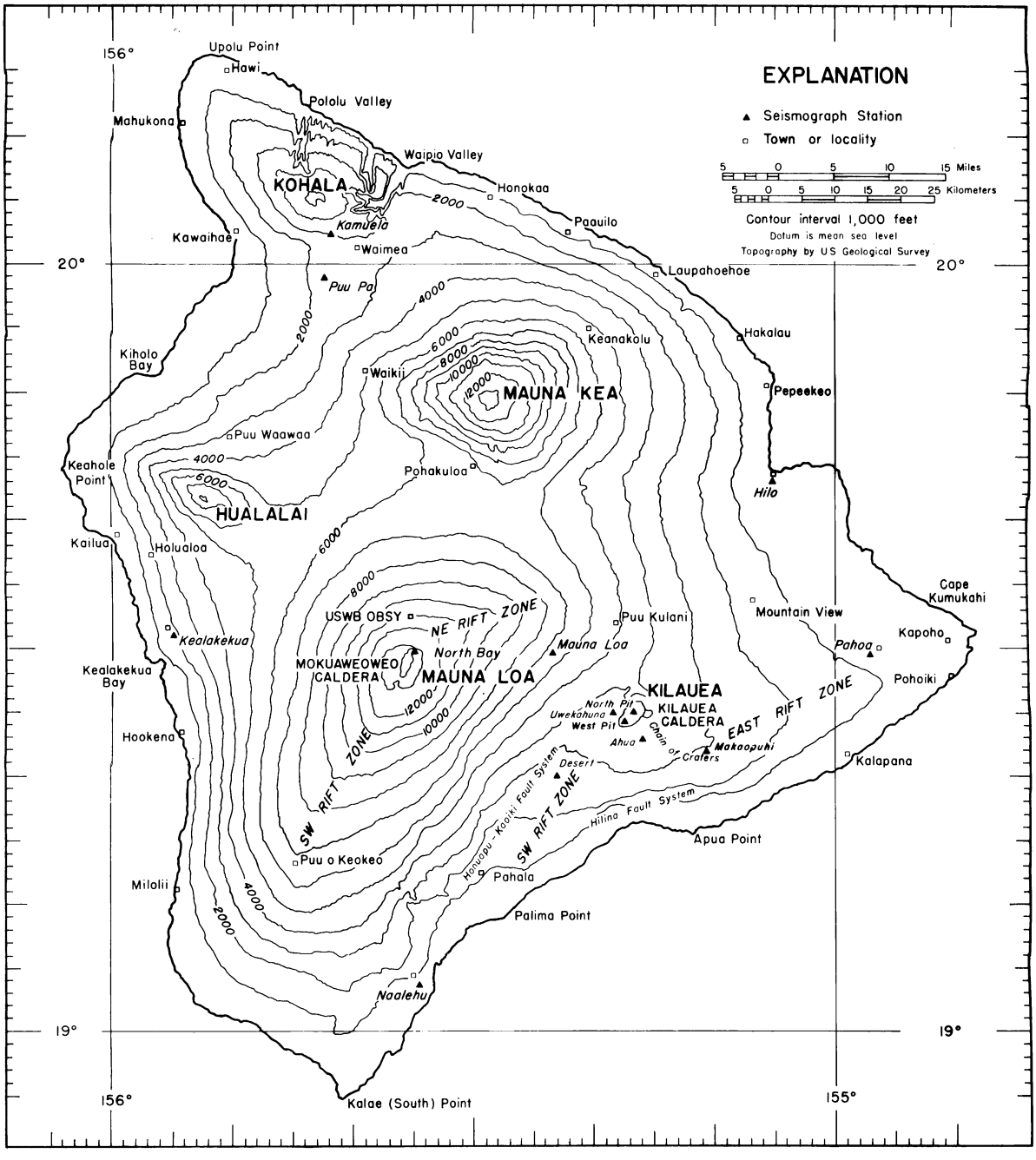

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea caldera.--Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter at Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first-quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna, October, November, and December, 1966

Date (1966)	N-S	E-W	Date (1966)	N-S	E-W
Oct. 2	492	443	Nov. 20	486	440
9	487	447	27	486	438
16	487	446	Dec. 4	486	439
23	486	446	11	485	439
30	487	446	18	488	437
Nov. 6	488	440	25	487	434
13	486	439			

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera.
(See tilt diagram, fig. 2.)

Tilt base	Date (1966)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1966)
Uwekahuna (U on fig. 2)	Dec. 8	521.1	434.4	5.1	N. 57.7° W.	Sept. 13
Tree Molds (TM)	8	446.1	504.1	2.9	N. 27.0° W.	12
Sand Spit (SS)	5	820.7	700.1	1.8	S. 36.1° W.	12
Keamoku (Kea)	6	483.8	448.7	3.0	S. 25.8° W.	6
Ahua Kamokukolau (Kam).	5	573.5	601.2	6.5	S. 41.9° W.	8
Kipuka Nene (KN)	7	301.9	500.3	.6	N. 17.9° W.	7
Hilina Pali (HP)	7	463.8	505.6	.1	N. 47.6° W.	June 9
Kapapala Ranch (Kap).	6	491.7	509.8	1.1	N. 72.4° E.	Sept. 6
Mehana (M)	9	552.7	562.8	1.8	N. 37.7° E.	12

Seismic summary.--Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (stations U, M, A, D, N, WP, MP, Mx, Kx). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5 in the first-quarter issue each year.

Acknowledgments.--Several people or agencies reported "felt" earthquakes during the fourth quarter, 1966. Their assistance is gratefully acknowledged.

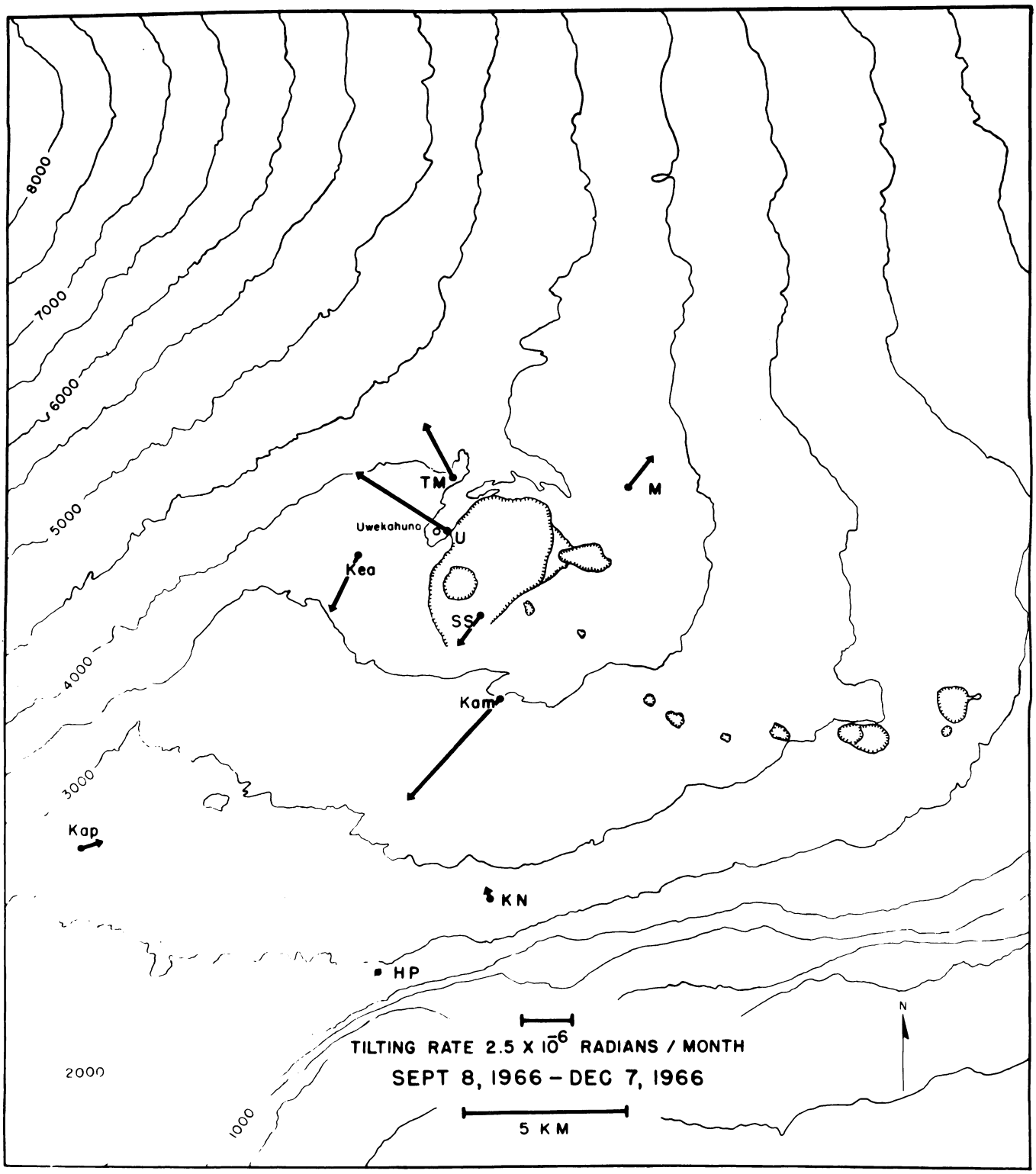

Figure 2.--Tilting of the ground around Kilauea caldera, September 8, 1966-December 7, 1966. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, MP, Mx, and Kx around Kilauea caldera *

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Intermediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
Oct. 1	----	-------	-----	1	10	64	14	5	28	1 west Hawaii
2	----	-------	-----	6	23	95	7	3	31	----------
3	----	-------	-----	5	26	72	5	2	25	----------
4	----	-------	-----	7	16	93	3	5	15	----------
5	----	-------	-----	-----	10	80	3	3	16	----------
6	----	-------	-----	3	9	68	3	8	17	----------
7	----	4	-----	-----	30	55	5	5	8	----------
8	----	-------	-----	1	40	57	12	3	20	----------
9	----	-------	off-electrical storm			-------	-------	2	-----	----------
10	----	-------	off-electrical storm			-------	-------	2	-----	1 Mauna Loa
11	----	-------	off-electrical storm			-------	-------	8	-----	----------
12	----	-------	-----	5	44	70	8	4	48	----------
13	----	-------	2	1	34	95	8	2	55	----------
14	----	-------	-----	1	34	107	6	2	27	----------
15	13	-------	-----	2	31+	71+	8	3	26	----------
16	----	-------	-----	-----	33	119	11	-----	31	----------

* See note on page 10.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, MP, Mx, and Kx around Kilauea caldera--Continued

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Intermediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
Oct. 17	----	-------	-----	1	22	92	6	2	31	----------
18	----	-------	-----	-----	15	91	3	8	38+	----------
19	----	-------	-----	2	36	35	2	1	53	1 Mauna Loa
20	----	-------	-----	5	18	90	3	3	20	----------
21	----	-------	-----	2	12	108	6	-----	11+	----------
22	----	-------	-----	4	9	164	3	1	17	----------
23	----	31	-----	3	15	144	12	-----	36	----------
24	----	-------	-----	3	18	120	12	-----	36	----------
25	----	-------	-----	2	16	90	8	-----	15	----------
26	----	-------	-----	1	9	54	5	-----	25	----------
27	----	-------	-----	-----	13	49	4	-----	50	----------
28	----	-------	-----	-----	15	38	4	1	25+	----------
29	----	-------	-----	1	19	33	7	-----	27	1 west Hawaii
30	----	-------	-----	5	5	60	11	-----	42	----------
31	----	-------	4	2	9	52	10	-----	39	----------
Nov. 1	----	-------	-----	3	1	46	12	5	44	----------
2	----	-------	-----	2	4	31	5	5	33	----------
3	----	-------	-----	(?)	3	41	(?)	3	27	----------
4	----	-------	off-electrical storm			-------	-------	2	-----	----------
5	25	-------	-----	1	3	47	7	10	17	1 west Hawaii
6	----	-------	-----	2	4	54	4	17	36	1 Mauna Loa
7	----	-------	-----	3	2	71	5	2	40	----------
8	----	-------	-----	3	2	76	8	6	22	1 west Hawaii
9	----	-------	-----	2	2	58	8	5	55	----------
10	----	-------	-----	-----	7	57	9	7	21	----------
11	----	-------	-----	1	9	60	2	5	27	----------
12	----	2	-----	-----	9	71	3	19	28	----------
13	----	-------	-----	2	6	66	5	26	35	----------

Nov. 14	----	5	-----	1	(?)	(?)	2	18	26	----------
15	----	5	-----	2	7	91	8	7	32	1 west Hawaii
16	----	-------	-----	2	11	195	5	15	96	----------
17	----	20	-----	2	25	130	4	10	54	----------
18	65	-------	-----	1	48	75	4	10	28	2 Mauna Loa, 1 Kohala
19	----	4	-----	-----	15	91	5	19	14	----------
20	----	-------	-----	1	10	57	7	5	19	----------
21	16	-------	-----	-----	4	66	3	2	30	----------
22	----	-------	-----	-----	3	78	3	4	25	----------
23	----	-------	-----	3	11	72	11	2	32	1 west Hawaii
24	----	8	-----	4	7	27	8	-----	35	----------
25	----	-------	-----	1	4	50	6	4	20	----------
26	----	4	-----	30	6	64	9	3	14	----------
27	----	-------	-----	18	-----	76	11	3	46	1 Mauna Loa
28	----	-------	-----	3	-----	73	11	-----	25	----------
29	----	-------	-----	11	7	81	16	1	35	----------
30	----	-------	-----	4	5	111	13	2	52	----------
Dec. 1	----	7	-----	5	5	104	18	-----	64	1 west Hawaii
2	----	-------	-----	5	-----	88	15	2	40	----------
3	----	-------	-----	12	10	85	14	1	33	----------
4	----	-------	-----	4	10	85	8	1	36	1 off N. shore of Hawaii
5	----	-------	-----	2	10	83	16	-----	42	----------
6	4	-------	-----	10	6	95	7	-----	40	----------
7	----	7	-----	8	9	140	9	-----	37	1 off SE. shore of Hawaii
8	61	-------	-----	4	13	73	7	-----	22	----------
9	40	-------	-----	2	-----	68	15	3	22	1 Mauna Loa
10	----	-------	-----	3	17	108	12	3	11	1 off W. shore of Hawaii
11	----	-------	-----	7	7	85	24	2	15	1 west Hawaii
12	----	-------	-----	4	-----	64	7	1	11	----------
13	----	-------	-----	1	9	80	2	-----	5	1 off SW. shore of Hawaii
14	----	-------	-----	2	6	69	7	-----	8	----------
15	----	-------	-----	-----	7	62	7	-----	9	----------
16	----	-------	-----	2	5	51	12	-----	15	----------
17	24	-------	-----	3	4	91	12	-----	8	----------
18	----	-------	-----	7	4	88	8	-----	14	----------
19	----	-------	-----	4	-----	77	8	2	10	----------
20	----	-------	-----	5	3	65	10	1	9	----------

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs U, M, A, D, N, WP, MP, Mx, and Kx around Kilauea caldera--Continued

Date (1966)	Tremor (minutes)			Kilauea summit			Earthquakes			
	Deep	Inter-mediate	Shallow	30 km	Long-period	Shallow	SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
Dec. 21	----	-------	-----	2	-----	72	6	-----	(?)	----------
22	----	-------	-----	3	10	85	9	1	10	----------
23	13	-------	-----	6	-----	119	11	6	35	----------
24	----	-------	-----	5	-----	115	16	1	29	----------
25	----	4	-----	10	6	138	8	2	38	----------
26	----	-------	3	1+	2	40	2+	2	8+	----------
27	----	-------	-----	electrical storm		-------	------	2	-----	----------
28	29	-------	instrument off		2+	30+	inst. off	5	inst. off	----------
29	----	-------	18	2	2	85	8	6	14	----------
30	----	-------	-----	12	-----	82	15	5	10	----------
31	----	-------	-----	67	-----	77	32	1	6	----------

Note: During the quarter two additional seismographs were installed.

Station	Symbol	Location		Altitude above sea level	Type instrument
		Lat. N.	Long. W.		
Mauna Loa (2)	Mx	19°27.6'	155°20.7'	1475 m	EV-17 vertical
Kealakomo	Kx	19°18.5'	155°09.6'	201 m	EV-17 vertical

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December, 1966

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1966)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Oct. 1	01	12	24.7	2.8	8	19°24.7'	155°59.8'	14 km SW. of Kealakekua	----------
1	14	50	40.8	2.6	8	19°25.0'	155°25.4'	10 km NW. of Desert seismometer	----------
3	03	49	17.2	3.5	25	19°22.5'	155°17.5'	3 km west of Ahua seismometer	Kilauea summit area, Pahala.
4	01	10	47.5	2.2	25	19°23.8'	155°17.0'	4 km SSE. of Uwekahuna	----------
4	22	41	24.1	2.4	3	19°22.1'	155°05.8'	10 km east of Makaopuhi seismometer	----------
7	02	26	39.5	2.3	5	19°23.1'	155°27.9'	10 km NW. of Desert seismometer	Pahala
9	06	27	40.1	2.5	5	19°21.8'	155°27.0'	8 km WNW. of Desert seismometer	----------
10	21	17	31.6	2.5	8	19°25.3'	155°33.5'	8 km SE. of North Bay seismometer	----------
12	01	21	01.2	2.0	13	19°23.7'	155°19.0'	5 km SW. of Uwekahuna	----------
12	11	21	58.0	2.5	0	19°15.3'	155°02.0'	12 km east of Apua Point	----------
12	13	34	22.4	2.3	3	19°23.4'	155°05.5'	10 km ENE. of Makaopuhi seismometer	----------
13	13	59	14.5	3.0	10	19°21.3'	155°07.9'	5 km ESE. of Makaopuhi seismometer	Hilo
13	22	00	52.8	2.7	0	19°19.9'	155°13.2'	7 km SE. of Ahua seismometer	----------
14	23	55	09.4	2.4	10	19°22.6'	155°09.0'	3 km NE. of Makaopuhi seismometer	----------
15	07	06	06.0	2.3	25	19°24.0'	155°19.3'	5 km SW. of Uwekahuna	----------
16	01	49	33.6	1.9	8	19°25.2'	155°25.7'	10 km NNW. of Desert seismometer	Pahala
16	02	15	21.3	2.4	3	19°16.1'	155°23.4'	8 km south of Desert seismometer	Do.
16	02	15	57.8	2.3	3	19°16.1'	155°23.4'	8 km south of Desert seismometer	Do.
16	07	46	12.5	2.6	0	19°21.1'	155°09.3'	3 km SE. of Makaopuhi seismometer	Do.
17	05	05	38.3	2.8	10	19°14.3'	155°26.7'	13 km SW. of Desert seismometer	Do.
19	12	49	46.8	3.0	5	19°20.9'	155°07.2'	6 km ESE. of Makaopuhi seismometer	Hilo, Kilauea summit area.
19	20	08	09.0	3.1	8	19°12.2'	155°39.0'	16 km NW of Naalehu	----------
22	14	07	41.1	2.3	5	19°23.7'	155°26.0'	8 km NW. of Desert seismometer	----------
23	02	25	59.4	3.0	8	19°33.2'	155°09.8'	5 km west of Mt. View	Hilo

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1966--Continued

Date (1966)	Time h	Time m	Time s	Magnitude	Depth (km)	Epicenter Lat. N.	Epicenter Long. W.	Epicenter Description	Felt Report
Oct. 27	20	08	57.8	2.4	5	19°21.7'	155°11.7'	2 km west of Makaopuhi seismometer	Kilauea summit area.
28	19	18	24.4	2.8	3	19°24.1'	155°02.1'	15 km ENE. of Makaopuhi seismometer	Pahala
29	12	04	47.1	2.7	8	19°26.7'	155°49.0'	15 km SE. of Kealakekua	----------
30	18	49	25.5	4.0	8	19°19.2'	155°28.0'	8 km WSW. of Desert seismometer	Islandwide
30	21	18	13.5	2.2	8	19°20.8'	155°12.6'	5 km SW. of Makaopuhi seismometer	----------
30	21	21	13.0	2.1	3	19°26.5'	155°00.2'	10 km SW. of Pahoa	----------
31	02	08	14.1	2.7	8	19°21.1'	155°07.0'	7 km ESE. of Makaopuhi seismometer	----------
31	18	10	03.6	2.5	8	19°19.3'	155°14.0'	6 km SE. of Ahua seismometer	----------
Nov. 1	18	50	37.7	1.8	5	19°19.0'	155°11.9'	6 km SW. of Makaopuhi seismometer	----------
2	09	51	11.3	3.3	10	19°21.3'	155°06.8'	7 km ESE. of Makaopuhi seismometer	Hilo
4	11	29	48.6	3.0	13	19°19.3'	155°13.6'	7 km SE. of Ahua seismometer	----------
5	09	42	30.0	3.8	3	19°30.0'	155°54.2'	3 km SE. of Kealakekua	Kealakekua
6	06	37	55.3	2.7	0	19°27.2'	154°55.2'	7 km SE. of Pahoa	Kapoho
6	10	00	06.9	2.6	5	19°25.1'	155°30.7'	11 km SE. of North Bay seismometer	----------
6	11	26	02.5	2.6	8	19°16.5'	155°13.5'	3 km WNW. of Apua Point	----------
7	23	51	44.5	2.4	0	19°26.3'	155°00.8'	10 km SW. of Pahoa	----------
8	01	22	56.0	2.2	3	19°23.7'	155°17.8'	4 km south of Uwekahuna	----------
8	11	15	03.5	2.4	8	19°42.9'	156°01.4'	5 km SE. of Keahole Point	----------
9	16	41	29.7	2.6	3	19°20.3'	155°09.8'	4 km SE. of Makaopuhi seismometer	----------
9	16	43	15.5	2.3	3	19°20.1'	155°08.5'	5 km SE. of Makaopuhi seismometer	----------
12	03	21	47.3	2.5	3	19°22.0'	155°06.0'	9 km east of Makaopuhi seismometer	----------
13	01	32	10.4	2.5	3	19°26.2'	154°53.4'	9 km SE. of Pahoa	Kapoho
13	13	08	08.5	2.8	31	19°21.0'	155°17.8'	4 km SW. of Ahua seismometer	----------
14	02	58	51.3	2.6	0	19°29.0'	154°54.1'	5 km ESE. of Pahoa	Kapoho
15	05	48	48.5	2.3	8	19°26.1'	155°24.2'	8 km SW. of Mauna Loa seismometer	----------
15	13	18	18.9	2.6	0	19°13.6'	155°49.2'	35 km SSE. of Kealakekua	Kealakekua
16	19	19	27.1	3.0	0	19°25.9'	154°54.6'	8 km SE. of Pahoa	Kapoho
17	05	17	09.1	3.5	0	19°26.5'	154°56.0'	7 km SSE. of Pahoa	Do.
17	19	41	01.8	2.0	3	19°22.1'	155°06.0'	10 km east of Makaopuhi seismometer	----------
17	22	17	58.5	2.4	0	19°20.2'	155°32.8'	16 km west of Desert seismometer	----------
18	13	00	20.8	2.9	20	19°30.1'	155°31.6'	6 km ENE. of North Bay seismometer	Mauna Loa Observatory, Kilauea summit area.

Nov.	18	00	39	57.4	2.7	8	20°12.1'	155°43.8'	18 km NNW. of Kamuela	----------
	18	14	17	43.5	2.7	8	19°18.7'	155°44.0'	31 km NW. of Naalehu	----------
	18	23	29	20.0	2.3	0	19°20.6'	154°59.3'	2 km SW. of Kalapana	----------
	20	07	37	21.3	2.8	13	19°19.9'	155°20.9'	4 km east of Desert seismometer	----------
	23	06	33	25.0	2.2	5	19°20.3'	155°09.8'	4 km SE. of Makaopuhi seismometer	----------
	23	18	47	42.4	2.4	3	19°27.5'	155°48.7'	13 km ESE. of Kealakekua	Kealakekua
	23	20	59	08.5	3.4	10	19°20.1'	155°14.0'	6 km SE. of Ahua seismometer	Kilauea summit area, Mt. View, Hilo, Kealakeku
	24	14	52	46.0	1.9	8	19°20.9'	155°06.8'	7 km SE. of Makaopuhi seismometer	----------
	27	13	19	34.0	3.5	0	19°19.2'	155°44.2'	32 km NW. of Naalehu	----------
	27	18	28	25.6	2.3	3	19°24.1'	155°25.9'	9 km NW. of Desert seismometer	----------
	27	11	54	51.3	3.6	10	19°18.1'	155°13.8'	9 km SE. of Ahua seismometer	Mt. View, Kilauea summit area, Hilo, Pahala.
	27	11	57	52.3	2.5	8	19°19.2'	155°13.2'	9 km SE. of Ahua seismometer	Pahala
	28	08	52	10.4	2.9	8	19°23.4'	155°24.1'	6 km NNW. of Desert seismometer	Do.
	30	05	47	32.5	2.4	26	19°21.8'	155°18.5'	5 km WSW. of Ahua seismometer	----------
Dec.	1	20	00	31.9	2.6	40	19°08.2'	155°20.8'	22 km SSE. of Desert seismometer	----------
	1	16	03	14.5	2.8	8	19°31.6'	155°44.9'	17 km east of Kealakekua	Kealakekua
	1	19	57	16.8	2.7	8	19°24.3'	155°23.2'	8 km north of Desert seismometer	Pahala
	2	14	37	24.3	2.6	40	19°13.8'	155°07.2'	8 km SE. of Apua Point	----------
	3	03	26	39.0	2.8	8	19°23.3'	155°26.5'	8 km NW. of Desert seismometer	----------
	4	12	57	42.6	3.3	8	20°23.8'	155°46.7'	17 km NNE. of Upolu Point	----------
	5	22	21	26.4	2.8	10	19°18.5'	155°12.9'	9 km SE. of Ahua seismometer	----------
	6	19	23	04.2	2.0	8	19°19.3'	155°13.6'	7 km SE. of Ahua seismometer	----------
	6	19	34	41.8	2.0	8	19°15.9'	155°14.7'	13 km south of Ahua seismometer	----------
	7	03	39	53.5	2.2	40	19°03.7'	155°23.2'	22 km east of Naalehu	----------
	9	03	48	50.8	2.3	31	19°21.8'	155°18.5'	5 km WSW. of Ahua seismometer	----------
	9	10	27	38.0	2.4	8	19°27.9'	155°38.1'	7 km SW. of North Bay seismometer	----------
	10	00	34	24.9	3.1	8	19°33.6'	156°04.5'	17 km WNW. of Kealakekua	----------
	10	03	01	28.0	2.0	8	19°19.2'	155°12.9'	7 km SW. of Makaopuhi seismometer	----------
	11	17	53	42.3	3.0	3	19°23.0'	155°00.0'	13 km SW. of Pahoa	----------
	11	19	44	01.0	3.7	8	19°28.5'	155°52.4'	7 km SE. of Kealakekua	Kealakekua
	13	05	41	15.0	3.9	8	19°16'	156°17'	47 km SW. of Kealakekua	----------
	13	19	57	02.7	2.0	8	19°22.2'	155°08.1'	5 km ENE. of Makaopuhi seismometer	----------
	15	04	00	23.3	2.5	0	19°24.7'	155°16.8'	3 km SE. of Uwekahuna	Kilauea summit area.
	16	02	33	13.5	2.6	8	19°26.0'	155°28.0'	11 km SW. of Mauna Loa seismometer	Kilauea summit area.

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1966--Continued

Date (1966)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Dec. 18	00	18	10.0	2.2	8	19°13.5'	155°29.8'	17 km SW. of Desert seismometer	----------
23	19	46	25.1	2.1	5	19°22.6'	155°07.3'	6 km ENE. of Makaopuhi seismometer	----------
25	09	59	28.2	2.2	26	19°23.7'	155°19.0'	5 km SW. of Uwekahuna	----------
26	03	51	32.0	3.5	8	19°20.3'	155°07.0'	8 km ESE. of Makaopuhi seismometer	Hilo
30	18	00	31.9	2.4	30	19°23.0'	155°18.7'	5 km SW. of Uwekahuna seismometer	----------
31	17	21	38.1	2.7	27	19°23.0'	155°18.7'	5 km SW. of Uwekahuna	----------
31	17	04	51.5	3.9	22	19°23.5'	155°18.5'	4 km SW. of Uwekahuna	Islandwide
31	19	12	19.6	3.5	27	19°23.5'	155°20.0'	7 km SW. of Uwekahuna	Kilauea summit area, Puu Kulani.

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Hawaiian Volcano Observatory
1967 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 45
January, February, and March 1967
By Arnold T. Okamura, Robert Y. Koyanagi,
and Willie T. Kinoshita

Summary 46
April, May, and June 1967
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and Willie T. Kinoshita

Summary 47
July, August, and September 1967
By Arnold T. Okamura, Robert Y. Koyanagi,
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Summary 48
October, November, and December 1967
By Robert Y. Koyanagi, Arnold T. Okamura,
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Open-File Report 2007-1327
U.S. Department of the Interior
U.S. Geological Survey

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 45

January, February, and March, 1967

By Arnold T. Okamura, Robert Y. Koyanagi,

and Willie T. Kinoshita

Issued May 1969

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Summary of activities

In this quarterly report, the map showing the tilting on Kilauea Volcano will include a contour map showing the total amount of altitude change at the summit. This map is based on measurements at a system of bench marks beginning near Bird Park and continues from there along the Crater Rim road to the Crater Rim - Chain of Craters road junction and then to BM 35YY at Makaopuhi Crater. Also included in this system of bench marks are spur loops, one into the center of the caldera east of Halemaumau and one southward almost to Ahua Kamokukolau tilt station. All of the changes are based on an assumed 0.0 change at HVO 23, a bench mark that is about 2-1/2 miles northwest of Halemaumau.

The summit uplifted a total of 0.5 foot during the first quarter of 1967. Uplift apparently took place in surges, with shiftings of the center of maximum inflation around various parts of the Kilauea Caldera. Precise leveling at the summit along with the tilt data showed that: (1) Between mid-October 1966 and January 12, 1967, the area of maximum uplift was 0.38 foot and located about 2 km south-southeast of Halemaumau. (2) Between January 12 and February 10 the summit uplifted an additional 0.2 foot and the "maximum" area shifted to about 2 km due south of Halemaumau. (3) Between February 10 and February 27 the uplift amounted to only 0.15 foot, but the striking feature of this level run was that it showed a change from roughly circular patterns of the past to an elongate pattern seemingly oriented along the southwest edge of the Caldera. (4) Between February 27 and March 30 the summit uplifted another 0.17 foot, with the maximum about 2 km due south of Halemaumau. Level data showed that the pattern had again returned to a circular pattern.

All of the structural deformation at the summit took place apparently with no seismic activity, as the shallow Caldera earthquake count stayed at low levels through most of the period. Two flurries of quakes from other sources did occur during this quarter. The first on December 31, 1966, and again January 6, 7, 1967, emanated from about 30 km beneath Kilauea. The second occurred late in February and consisted of several dozen small shallow quakes on the lower east rift near Kapoho.

Tilting of the ground around Kilauea Caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter at Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter (table 2). The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate correponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

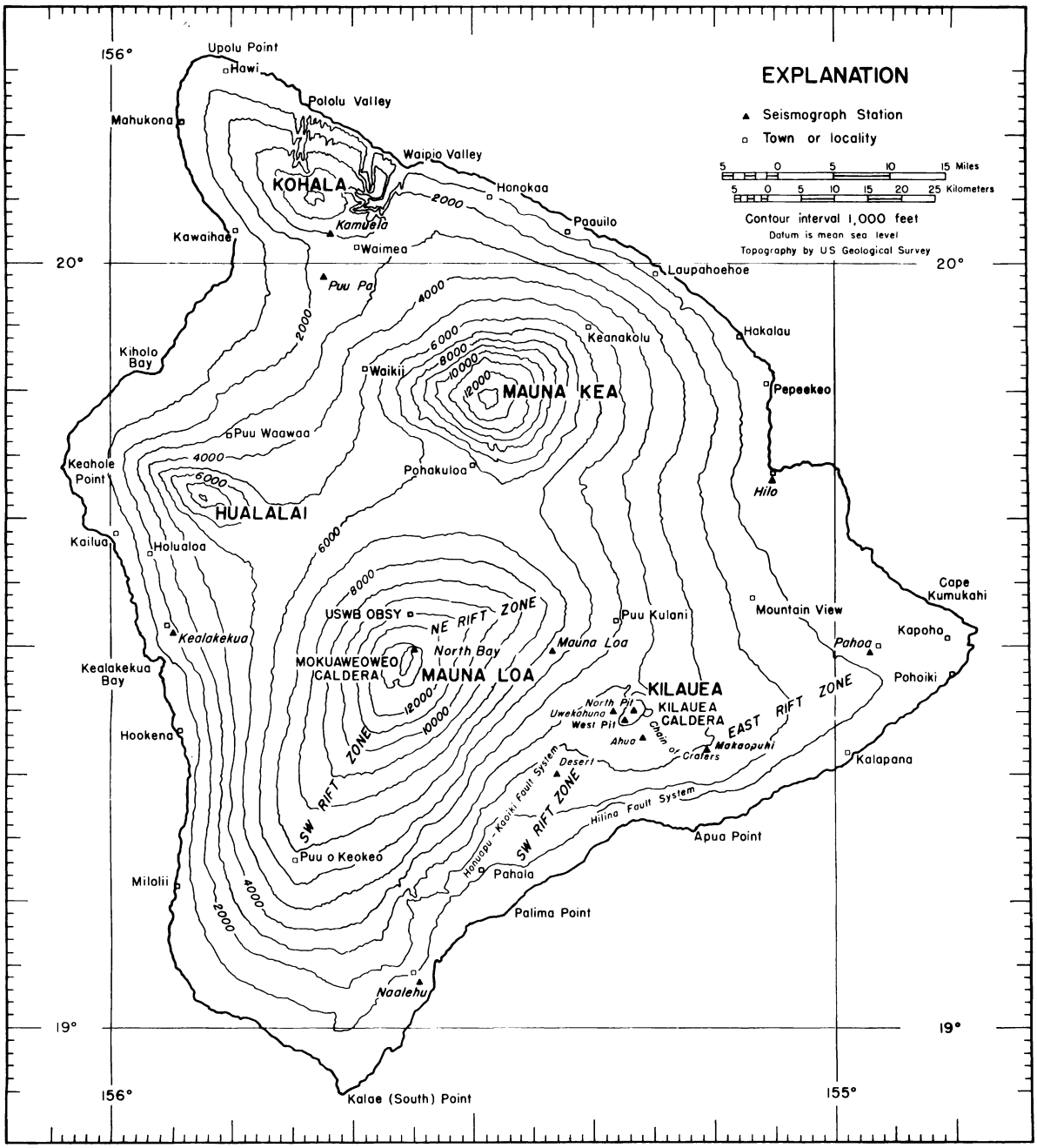

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first-quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna, January, February, and March, 1967

Date (1967)	N-S	E-W	Date (1967)	N-S	E-W
Jan. 1	490	431	Feb. 19	507	434
8	489	432	26	507	438
15	490	430	Mar. 5	507	437
22	491	433	12	509	438
29	492	433	19	512	435
Feb. 5	495	432	26	515	434
12	504	431			

Table 2.--Tilt coordinates and changes at bases around Kilauea Caldera

(See fig. 2 and table 6)

Tilt base (location)	Date (1967)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1966)
		N-S	E-W			
Uwekahuna (U on fig. 2)	Feb. 8	536.3	426.0	8.9	N. 29.1°W.	Dec. 8
Tree Molds (TM)	13	451.0	504.1	2.4	N. 0.2°E.	8
Sand Spit (SS)	12	865.6	692.2	19.9	N. 9.9°E.	5
Keamoku (Kea)	13	498.2	429.7	10.3	N. 52.9°W.	6
Ahua Kamokukolau (Kam)	12	516.5	517.9	25.8	S. 16.4°E.	5
Kipuka Nene (KN)	15	300.1	501.0	0.8	S. 21.2°E.	7
Hilina Pali (HP)			No data this epoch			
Kapapala Ranch (Kap)	15	491.8	509.7	0.1	N. 48.9°W.	6
Mehana (M)	14	558.5	564.6	2.7	N. 17.7°E.	9

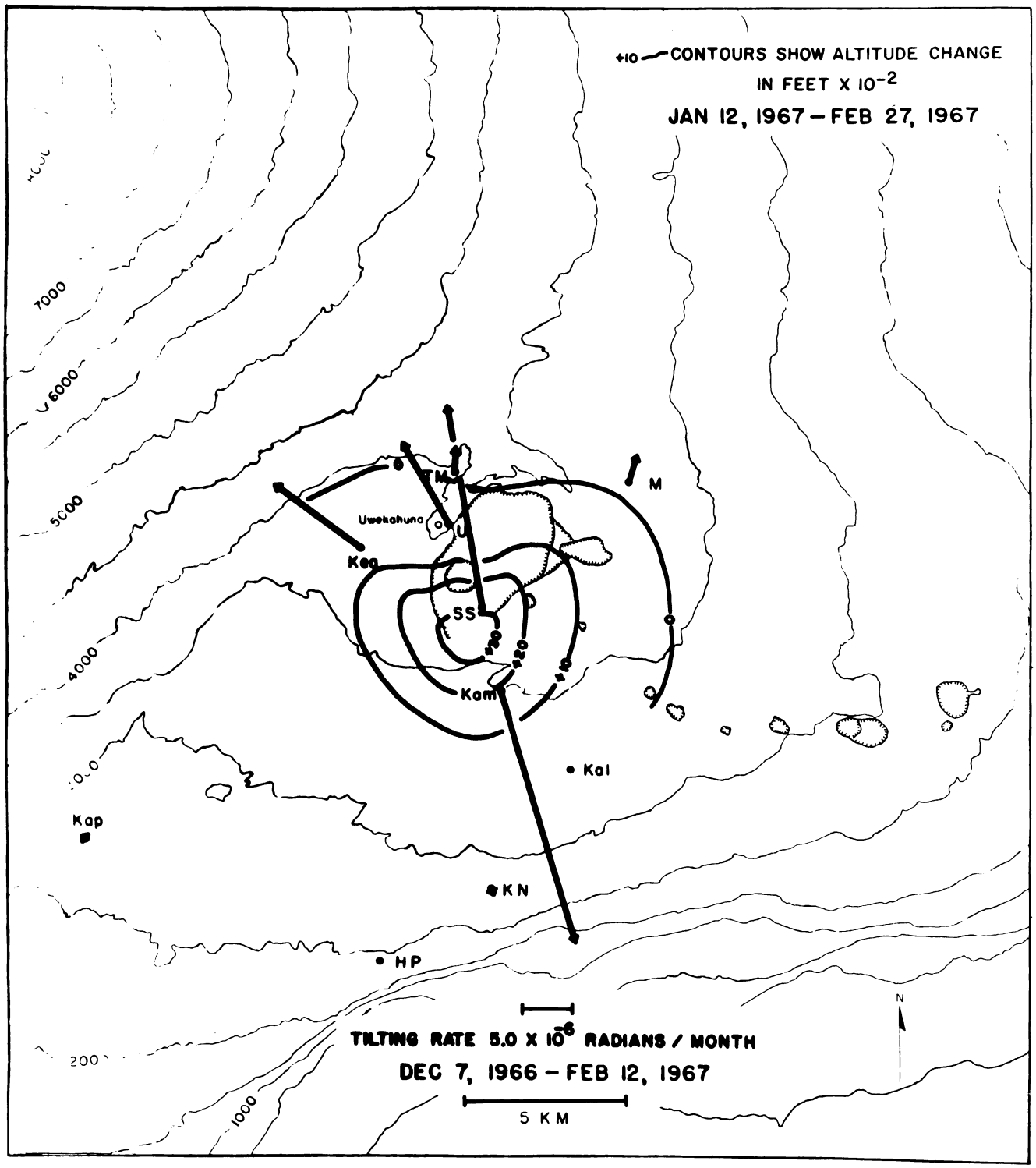

Figure 2.--Tilting of the ground around Kilauea Caldera between December 7, 1966, and February 12, 1967. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated into groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (stations U, M, M(2), A, D, N, WP, MP, K, O). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data of each seismograph station are listed in table 5 in the first-quarter issue each year.

Acknowledgments

Several people or agencies reported "felt" earthquakes during the first quarter, 1967. Their assistance is gratefully acknowledged.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1967)	Tremor (minutes)			Earthquakes						
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Inter-mediate	Shallow	30 km	Long period	Shallow				
Jan. 1	----	-------	--------	8	-------	60	10	1	17	----------
2	----	-------	--------	5	1	65	10	1	28	1 Kona
3	----	-------	--------	11	-------	85	9	1	6	----------
4	----	-------	--------	8	-------	100	14	--------	9	----------
5	----	-------	--------	4	-------	80	8	--------	14	----------
6	----	-------	--------	43	-------	103	10	--------	18	1 Mauna Kea
7	31	-------	--------	50	4	94	13	--------	26	1 Kohala
8	----	-------	--------	4	5	116	14	1	8±	1 offshore Keahole Pt. 1 Mauna Kea
9	----	-------	--------	4	2	57+	6	--------	9	----------
10	----	-------	--------	3	7	75+	5	1	14	----------
11	----	-------	--------	3+	-------	electrical storm-off	7+	--------	7+	1 Mauna Loa

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1967)	Tremor (minutes)			Earthquakes						
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 km	Long period	Shallow				
Jan. 12	22	--------	--------	2	-------	36+	5	--------	14+	----------
13	----	9	--------	6	-------	72	20	1	21	1 Kona; 1 S. flank of Mauna Kea
14	----	--------	--------	?	-------	70±	?	3	?	?/instrument turned off;
15	?	?	?	?	?	?	?	?	?	electrical storm
16	----	--------	--------	7	-------	135	7	2	3+	----------
17	20	--------	--------	14	-------	93	9	1	22	----------
18	----	8	--------	4	12	61	13	2	20	----------
19	11	--------	--------	4	-------	75	8	6	19	----------
20	----	--------	--------	-----	5	68	22	12	19	----------
21	----	2	--------	1	16	100	20	29	10	----------
22	----	--------	--------	3	-------	124	12	43	21	----------
23	----	--------	--------	4	-------	149	59	36	28	----------
24	----	--------	--------	5	-------	108	28	41	30	----------
25	----	--------	--------	4	-------	104	9	19	35	----------
26	----	--------	--------	3	-------	152	20	3	20	----------
27	----	36	--------	13	10	118	17	12	20	1 Mauna Kea 1 E. flank Mauna Loa
28	----	--------	--------	9	6	138	23	--------	20	----------
29	----	--------	--------	10	5	119	18	1	25	----------
30	----	3	--------	4	3	102	15	--------	47	1 Kohala
31	----	--------	--------	1	10	151	15	4	30	----------
Feb. 1	----	--------	--------	2	-------	150±	7	3	65	----------
2	----	--------	--------	4	4	142	13	5	51	3 Mauna Loa
3	----	--------	--------	4	2	136	34	4	45	1 offshore N. of Maui
4	----	--------	--------	2	4	137	10+	6	14+	----------
5	----	3+	--------	8	-------	105	5	--------	28	1 S. flank of Mauna Loa
6	----	2	--------	4	2	131	19	3	29	----------

Feb. 7	16	---------	--------	2	4	173	16	3	20	----------
8	----	---------	--------	2	2+	159	17	3	12+	2 Kona
9	----	---------	--------	2	1	141	7	-------	19	1 Kona
10	----	---------	--------	1+	------	45+	7+	-------	4+	1 S. flank of Mauna Loa
11	2	---------	--------	-----	1	101	17	-------	21	----------
12	----	---------	--------	3	------	72	16	-------	20	1 E. flank of Mauna Kea 1 offshore S. of Maui
13	----	---------	--------	3	------	50	18	-------	15	----------
14	26	---------	--------	-----	------	65	7	2	11	----------
15	----	---------	--------	-----	------	69	16	3	18	1 Kona
16	----	---------	--------	-----	------	50	11	1	30	----------
17	33	---------	--------	-----	1	98	15	10	27	1 Mauna Loa
18	----	---------	--------	-----	1	113	21	4	14	----------
19	----	---------	--------	-----	------	87	35	1	12	1 offshore, 1 S. flank Mauna Loa
20	----	---------	--------	1	------	56	28	1	8+	----------
21	----	---------	--------	-----	1	78	38	1	12	1 NW. flank Mauna Loa
22	----	---------	--------	5	------	53	27	2	4	1 flank Mauna Loa
23	----	---------	--------	3	------	45	26	1	10	1 offshore
24	----	---------	--------	3	2	41	29	1	19	----------
25	----	---------	--------	3	1	47	68	1	13	1 Mauna Loa
26	----	---------	--------	3	------	35	71	-------	24	----------
27	----	4	--------	8	------	41	39	-------	15	----------
28	----	---------	--------	2	2	29	29	-------	15	----------
Mar. 1	----	---------	--------	1	------	40	16	3	5	1 offshore
2	----	---------	--------	-----	------	40	19	-------	10	----------
3	----	---------	--------	-----	------	44	18	1	32	1 S. of Maui
4	----	---------	--------	-----	------	50	23	-------	18	1 Kohala
5	----	---------	--------	-----	5	48	22	-------	64	----------
6	----	---------	--------	1	2	56	14	-------	27	----------
7	----	---------	--------	-----	------	60	15	1	15	----------
8	----	---------	--------	3	------	80	4	-------	15	----------
9	----	---------	--------	3	------	88	13	-------	34	1 offshore
10	----	---------	--------	-----	1	128	15	-------	26	1 Kona

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1967)	Tremor (minutes)			Earthquakes						
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 km	Long period	Shallow				
Mar. 11	----	--------	-------	1	------	118	19	-------	16	2 flank Mauna Kea 1 offshore
12	5	--------	-------	3	3	163	18	-------	18+	----------
13	----	--------	-------	1	3	103	7	-------	21	1 flank Mauna Kea
14	----	--------	-------	2	------	102	9	-------	41	1 flank Mauna Loa 1 Kona
15	5	--------	-------	-----	------	130	13	-------	28+	----------
16	----	--------	-------	4	1	98	14	-------	10+	1 S. flank Mauna Loa
17	30	--------	-------	?	------	36	2	-------	5+	----------
18	----	--------	-------	2	1	72	8	-------	20	1 Mauna Loa
19	----	--------	-------	-----	2	95	12	-------	6	----------
20	----	--------	-------	-----	1	110	7	-------	7	----------
21	----	--------	-------	-----	3	133	3	-------	4	----------
22	----	--------	7	-----	1	43	1	-------	------	1 S. flank Mauna Loa
23	----	--------	-------	3	------	68	7	-------	2	----------
24	----	--------	-------	1	------	88	--------	-------	13	----------
25	----	--------	-------	2	------	103	14	-------	13	----------
26	----	--------	-------	1	2	98	5	-------	4	----------
27	----	--------	-------	1	------	87	11	-------	7	----------
28	----	--------	-------	3	4	77	20	1	19	----------
29	----	--------	60	3	------	57	29	-------	19	1 offshore
30	----	--------	-------	-----	5	41	--------	-------	5	----------
31	----	--------	-------	-----	------	?	?	-------	15	?/instrument turned off; electrical storm

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

January, February, and March, 1967

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 1	00	12	31.5	1.9	8	19°23.1'	155°27.7'	9 km NW. of Desert seismometer	----------
1	01	13	00.3	2.3	27	19°23.2'	155°18.5'	5 km WNW. of Ahua seismometer	----------
2	13	14	30.1	2.3	6	19°21.9'	155°31.1'	14 km WNW. of Desert seismometer	----------
2	14	33	39.0	2.6	3	19°15.7'	155°47.3'	15 km NE. of Milolii	----------
2	18	17	22.0	2.6	5	19°19.9'	155°11.9'	4 km SW. of Makaopuhi seismometer	----------
3	18	47	36.6	2.4	8	19°23.7'	155°26.8'	9 km NW. of Desert seismometer	----------
5	16	51	53.7	2.4	0	19°35.1'	155°46.4'	17 km NE. of Kealakekua	----------
6	01	56	32.0	2.7	35	19°48.3'	155°24.3'	14 km NE. of Pohakuloa	----------
6	19	00	28.4	2.1	10	19°19.7'	155°08.5'	6 km SE. of Makaopuhi seismometer	----------
6	20	36	20.9	3.9	35	19°22.7'	155°18.0'	4 km W. of Ahua seismometer	Kealakekua, Hilo, Kilauea summit area, Naalehu, Kamuela
7	13	42	13.8	2.8	35	19°23.3'	155°18.7'	5 km WNW. of Ahua seismometer	----------
7	23	31	34.0	2.6	8	20°03.3'	155°36.8'	9 km ENE. of Kamuela	----------
8	00	24	16.9	2.0	5	19°24.2'	155°27.4'	10 km NW. of Desert seismometer	----------
8	01	12	03.9	3.5	8	19°44'	156°09'	9 km W. of Keahole Pt.	----------
8	05	16	36.3	2.2	8	19°54.1'	155°32.9'	12 km ENE. of Waikii	----------
9	20	54	34.2	2.7	5	19°21.2'	155°06.3'	8 km ESE. of Makaopuhi seismometer	----------
9	20	55	15.8	3.0	3	19°21.3'	155°05.5'	9 km ESE. of Makaopuhi seismometer	----------
9	21	48	33.8	2.0	3	19°21.8'	155°07.8'	5 km E. of Makaopuhi seismometer	----------
10	07	52	30.8	3.3	3	19°23.9'	155°05.2'	10 km ENE. of Makaopuhi seismometer	Hilo
10	23	21	01.7	3.8	5	19°20.2'	155°04.5'	11 km SE. of Makaopuhi seismometer	Hilo, Pahoa
11	09	16	07.7	2.7	28	19°23.3'	155°17.2'	3 km NW. of Ahua seismometer	----------
11	17	52	10.1	2.6	10	19°28.9'	155°36.1'	3 km SW. of North Bay seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1967--Continued

Date (1967)	Time			Magnitude	Depth	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Jan. 13	03	16	42.8	2.5	8	19°25.8'	155°26.2'	11 km NW. of Desert seismometer	----------
13	10	35	07.2	2.0	0	19°37.8'	155°42.0'	26 km NE. of Kealakekua	----------
13	12	11	19.2	2.0	8	19°49.0'	155°35.0'	8 km SE. of Waikii	----------
15	02	37	06.6	2.7	0	19°25.0'	155°05.1'	11 km NE. of Makaopuhi seismometer	----------
15	13	31	29.9	2.5	28	19°20.0'	155°26.0'	5 km WSW. of Desert seismometer	----------
17	06	59	58.0	2.2	28	19°24.0'	155°18.2'	3 km SW. of Uwekahuna seismometer	----------
19	10	18	30.0	3.0	5	19°22.9'	155°27.0'	9 km NW. of Desert seismometer	----------
22	01	24	20.2	2.9	8	19°18.0'	155°09.1'	8 km SE. of Makaopuhi seismometer	----------
22	11	31	42.8	3.7	8	19°23.7'	155°27.3'	9 km NW. of Desert seismometer	Hilo
23	16	59	14.9	4.6	8	19°26.8'	155°26.0'	8 km SW. of Mauna Loa seismometer	Hilo, Kilauea summit area, Pahala, Pahoa, Kealakekua, Mt. View
23	18	53	50.3	2.2	5	19°26.0'	155°26.5'	9 km SW. of Mauna Loa seismometer	----------
23	21	50	07.4	2.0	5	19°26.0'	155°26.5'	10 km SW. of Mauna Loa seismometer	----------
24	10	49	53.1	2.1	5	19°24.0'	155°02.8'	14 km ENE. of Makaopuhi seismometer	----------
24	12	23	36.8	1.8	5	19°25.7'	154°56.0'	7 km SSE. of Pahoa	Kapoho
25	03	24	56.8	2.3	5	19°26.7'	154°54.4'	7 km SE. of Pahoa	----------
25	04	10	55.3	2.4	5	19°26.5'	155°25.5'	8 km SW. of Mauna Loa seismometer	----------
26	04	30	54.8	2.7	0	19°27.8'	154°53.8'	6 km SE. of Pahoa	Kapoho
26	04	32	03.8	3.4	5	19°26.9'	154°54.2'	7 km SE. of Pahoa	Kapoho
27	14	19	45.5	2.3	10	19°24.7'	155°36.8'	10 km SSW. of North Bay seismometer	----------
27	16	02	31.2	2.5	8	19°57.1'	155°17.8'	7 km SW. of Laupahoehoe	----------
28	06	15	51.9	2.5	28	19°17.0'	155°20.8'	7 km SE. of Desert seismometer	----------
28	12	42	59.1	2.4	1	19°24.2'	154°56.1'	10 km S. of Pahoa	----------
28	12	43	33.2	3.0	8	19°28.9'	154°54.1'	5 km ESE. of Pahoa	----------
28	21	43	48.7	2.3	3	19°26.0'	154°55.0'	8 km SE. of Pahoa	Kapoho
30	03	54	07.6	2.2	5	19°19.8'	155°12.0'	5 km SW. of Makaopuhi seismometer	----------

Jan. 30	23	42	01.1	2.2	13	20°11.5'	155°42.6'	Pololu Valley	----------
31	03	06	43.9	2.1	7	19°21.0'	155°07.8'	5 km SE. of Makaopuhi seismometer	----------
Feb. 1	23	30	41.5	4.5	5	19°21.7'	155°05.5'	9 km E. of Makaopuhi seismometer	Hilo, Kealakekua, Pahala, Kilauea summit area, Honokaa, Waimea, Mt. View, Naalehu
1	23	36	36.1	2.7	5	19°21.6'	155°03.7'	12 km E. of Makaopuhi seismometer	----------
2	15	32	06.1	2.7	5	19°21.1'	155°06.7'	7 km ESE. of Makaopuhi seismometer	----------
2	22	50	39.9	2.7	10	19°23.8'	155°39.2'	13 km SW. of North Bay seismometer	----------
3	02	08	42.7	2.3	0	19°26.3'	155°35.9'	6 km SW. of North Bay seismometer	----------
3	02	58	45.5	2.4	8	19°29.2'	155°32.3'	4 km ESE. of North Bay seismometer	----------
3	05	26	20.5	2.3	10	19°27.6'	155°36.0'	4 km SW. of North Bay seismometer	----------
3	17	25	02.2	2.1	8	19°25.3'	155°31.0'	17 km NW. of Desert seismometer	----------
3	18	49	33.0	3.1	5	19°22.4'	155°04.7'	10 km E. of Makaopuhi seismometer	----------
3	22	07	54.1	3.2	8	20°53'	155°59'	15 km N. of Hana, Maui	----------
4	21	51	59.5	2.0	5	19°25.4'	155°26.9'	11 km SW. of Mauna Loa seismometer	----------
5	17	20	52.1	2.4	3	19°21.8'	155°01.7'	16 km E. of Makaopuhi seismometer	----------
5	18	48	42.2	2.0	8	19°10.4'	155°39.7'	14 km NW. of Naalehu	----------
6	00	05	43.7	2.7	8	19°26.0'	155°29.0'	12 km SW. of Mauna Loa seismometer	----------
7	04	30	42.9	3.5	28	19°18.9'	155°18.0'	8 km SW. of Ahua seismometer	Pahala, Hilo, Kilauea summit area
7	11	16	45.1	2.1	5	19°24.2'	155°29.4'	13 km NW. of Desert seismometer	----------
7	13	49	47.8	2.4	5	19°20.3'	155°04.2'	12 km SE. of Makaopuhi seismometer	----------
8	07	45	26.4	2.9	0	19°34.2'	155°49.1'	12 km NE of Kealakekua	Kealakekua
10	17	51	42.5	2.2	8	19°09.8'	155°40.8'	15 km NW. of Naalehu	----------
11	00	35	19.3	2.3	5	19°20.6'	155°04.7'	11 km ESE. of Makaopuhi seismometer	----------
11	00	58	12.8	2.0	5	19°23.7'	155°25.4'	7 km NW. of Desert seismometer	----------
11	07	15	14.2	2.1	5	19°23.1'	155°24.4'	6 km NW. of Desert seismometer	----------
12	11	45	04.8	3.7	8	19°56.5'	155°26.8'	13 km SW. of Paauilo	Kamuela, Honokaa, Hilo, Laupahoehoe
12	14	26	21.0	1.9	8	19°22.5'	155°25.2'	5 km NW. of Desert seismometer	----------
12	16	01	14.8	3.4	13	20°02'	156°53'	115 km WNW. of Keahole Point	----------
12	18	35	21.8	1.8	10	19°24.8'	155°24.8'	9 km NNW. of Desert seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March, 1967--Continued

Date (1967)	Time			Magnitude	Depth	Epicenter			Felt Report
	h	m	s			Lat. N.	Long. W.	Description	
Feb. 13	01	46	42.1	2.2	10	19°22.0'	155°07.8'	5 km E. of Makaopuhi seismometer	----------
13	19	48	03.5	2.1	5	19°21.2'	155°04.0'	11 km ESE. of Makaopuhi seismometer	----------
14	14	29	35.2	2.1	5	19°20.5'	155°07.2'	6 km SE. of Makaopuhi seismometer	----------
15	03	51	43.4	2.0	0	19°28.3'	155°47.0'	15 km ESE. of Kealakekua	----------
16	21	49	12.0	3.3	0	19°26.8'	154°59.2'	7 km SW. of Pahoa	Kapoho
16	21	52	37.0	1.8	5	19°25.8'	154°55.8'	7 km SSE. of Pahoa	Kapoho
17	18	08	00.3	3.3	5	19°32.2'	155°41.8'	13 km NW. of North Bay seismometer	----------
17	23	28	54.9	1.5	8	19°24.0'	155°28.3'	11 km NW. of Desert seismometer	----------
18	23	59	26.2	1.5	2	19°20.6'	155°30.3'	12 km WNW. of Desert seismometer	----------
19	05	42	39.5	2.0	3	18°53.9'	155°13.1'	43 km ESE. of Naalehu	----------
19	20	44	27.3	2.0	8	19°08.7'	155°41.2'	14 km NW. of Naalehu	----------
21	05	33	22.4	2.4	0	19°36.4'	155°40.9'	16 km NW. of North Bay seismometer	----------
21	08	23	43.7	2.0	5	19°19.9'	155°19.7'	7 km ESE. of Desert seismometer	----------
22	02	10	18.9	1.9	5	19°19.0'	155°08.9'	6 km SE. of Makaopuhi seismometer	----------
22	21	08	57.7	2.5	0	19°30.5'	155°41.8'	12 km WNW. of North Bay seismometer	----------
23	05	32	15.5	3.0	5	19°06.4'	155°32.5'	7 km NE. of Naalehu	----------
23	17	33	44.1	2.6	5	19°16.7'	155°26.0'	9 km SW. of Desert seismometer	----------
24	02	04	26.0	2.2	5	19°21.4'	155°19.8'	7 km ENE. of Desert seismometer	----------
25	10	29	16.5	2.7	3	19°31.8'	155°36.4'	5 km NW. of North Bay seismometer	----------
27	05	42	24.0	2.1	5	19°25.4'	155°27.0'	12 km NW. of Desert seismometer	----------
Mar. 1	10	24	30.1	2.7	35	18°56.2'	155°30.0'	17 km SE. of Naalehu	----------
1	18	16	48.4	2.0	5	19°23.0'	155°23.0'	5 km NNE. of Desert seismometer	----------
3	11	40	04.8	2.5	13	20°20'	156°17'	47 km S. of Haleakala seismograph	----------
3	13	38	25.1	2.1	5	19°20.2'	155°05.4'	11 km ESE. of Makaopuhi seismometer	----------
4	09	26	56.2	2.7	5	19°25.9'	155°29.8'	13 km SW. of Mauna Loa seismometer	----------
5	14	17	36.0	2.0	8	19°20.3'	155°11.8'	3 km SW. of Makaopuhi seismometer	----------
7	07	02	42.2	2.1	8	19°21.2	155°01.9'	15 km E. of Makaopuhi seismometer	----------
7	11	28	02.5	1.7	.25	19°21.1'	155°19.8'	7 km SW. of Ahua seismometer	Pahala
8	05	09	02.5	2.3	5	19°19.0'	155°13.1'	7 km SW. of Makaopuhi seismometer	----------

Mar. 9	22	39	45.1	2.2	3	19°16.3'	155°28.8'	12 km SW. of Desert seismometer	Pahala
10	05	07	28.6	2.0	0	19°35.7'	155°50.1'	12 km NE. of Kealakekua	----------
10	06	13	04.9	2.0	0	20°00.8'	155°32.8'	16 km ESE. of Kamuela	----------
11	03	15	01.2	2.6	8	19°45'	156°16'	20 km W. of Keahole Point	----------
13	16	52	38.1	2.1	8	19°20.8'	155°09.5'	3 km SE. of Makaopuhi seismometer	----------
14	18	42	28.3	3.8	8	19°16.7'	155°13.3'	4 km NW. of Apua Point	Hilo, Kilauea summit area
14	18	44	50.1	2.0	8	19°15.7'	155°14.3'	5 km W. of Apua Point	Kilauea summit area
14	21	11	58.3	1.7	25	19°23.3'	155°15.7'	2 km NNE. of Ahua seismometer	----------
14	21	19	41.4	1.8	8	19°27.0'	155°40.0'	10 km SW. of North Bay seismometer	----------
15	12	21	09.2	2.2	0	19°24.1'	155°02.0'	16 km ENE. of Makaopuhi seismometer	----------
16	11	49	35.6	2.3	10	19°11.7'	155°30.6'	3 km WSW. of Pahala	----------
16	17	28	04.5	2.3	3	19°25.1'	155°23.2'	9 km N. of Desert seismometer	----------
17	15	28	26.4	2.0	29	19°25.3'	155°16.0'	Kilauea Caldera	----------
17	18	15	21.1	1.8	25	19°21.7'	155°17.7'	3 km SW. of Ahua seismometer	----------
18	02	34	10.1	2.7	0	19°22.4'	155°32.8'	17 km WNW. of Desert seismometer	----------
18	08	51	00.1	2.4	5	19°25.8'	155°34.0'	8 km SSE. of North Bay seismometer	----------
19	04	12	23.4	2.3	5	19°24.1'	155°26.9'	9 km NW. of Desert seismometer	----------
22	13	15	34.6	2.0	10	19°23.2'	155°24.2'	6 km NW. of Desert seismometer	Pahala
22	17	05	47.9	2.5	3	19°21.8'	155°26.8'	7 km NW. of Desert seismometer	----------
22	18	12	14.9	2.0	8	19°10.7'	155°28.8'	3 km S. of Pahala	----------
23	14	24	43.7	2.7	30	19°22.9'	155°18.7'	5 km WNW. of Ahua seismometer	Pahala
24	14	58	36.5	4.3	8	19°46.5'	155°41.0'	10 km SSW. of Waikii	Islandwide
26	13	36	25.0	2.2	30	19°21.0'	155°20.1'	8 km SW. of Ahua seismometer	----------
27	12	56	15.4	2.7	3	19°19.3'	155°20.7'	5 km SE. of Desert seismometer	Pahala
27	13	06	37.0	2.7	0	19°22.5'	155°23.6'	4 km N. of Desert seismometer	Pahala
27	13	10	54.4	2.0	8	19°15.0'	155°32.7'	19 km SW. of Desert seismometer	----------
27	18	25	46.8	3.0	6	19°08.1'	155°23.9'	6 km SE. of Palima Point	----------
28	05	08	22.7	2.5	10	19°21.3'	155°06.0'	8 km ESE. of Makaopuhi seismometer	----------
29	04	07	21.3	2.2	9	19°20.3'	155°11.3'	3 km SW. of Makaopuhi seismometer	----------
29	15	38	04.0	2.8	8	20°06'	156°10'	35 km WNW. of Kawaihae	----------

Table 5.--U.S. Geological Survey seismograph stations in Hawaii

[On island of Hawaii unless otherwise stated]

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Lat N.	Long W.		
Uwekahuna (Hawaiian Volcano Observatory)	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z. (Seismometer and galvanometer periods are 15 and 90 seconds, respectively) Short-period Sprengnether: E, Z. HVO-1: Z[1]. Short-base liquid-level tiltmeter.
Mauna Loa	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z[2].
Ahua	A	19°22.4'	155°15.9'	1,070	Do.
Desert	D	19°20.2'	155°23.3'	815	Do.
Mauna Loa (2)	M(2)	19°27.6'	155°20.7'	1,475	Remote recording 1.0 sec. EV-17 Z.
North Pit	N	19°24.9'	155°17.0'	1,115	Do.
West Pit	WP	19°24.7'	155°17.5'	1,115	Do.
Makaopuhi	MP	19°21.8'	155°10.7'	885	Do.
Kealakomo	K	19°18.5'	155°09.6'	201	Do. (installed Sept. 28, 1966)
Outlet	O	19°23.4'	155°16.8'	1,084	Do.
Hilo	Hi	19°43.2'	155°05.3'	20	HVO-1: Z Wood-Anderson: N, E. Operated by Joseph De Mello at St. Joseph's School.
Kipapa, Oahu	Kip	21°25.4'	158°00.9'	76	HVO-1: Z. Operated by U.S. Coast and Geodetic Survey.
Pahoa	Pa	19°29.7'	154°56.8'	205	HVO-1: Z. Operated by Kongo Kimura at Pahoa School
Haleakala, Maui	Ha	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Haleakala National Park, Maui.
Naalehu	Na	19°03.8'	155°35.2'	205	1.0 sec. EV-17 seismometer, 0.5 sec. galvanometer: Z. Operated by Virginia Ah Yee at Naalehu School.

Kamuela	Ka	20°01.9'	155°42.0'	740	1.0 sec. EV-17, 0.286 sec. galvanometer. Operated by Michael Foster at H.P.A., Kamuela.
North Bay	NB	19°29.7'	155°34.8'	4,005	1.0 sec. EV-17: Z. with helicorder. Operated by U.S. Weather Bureau.
Kealakekua	Ke	19°31.2'	155°55.3'	505	1.0 sec. EV-17, 0.286 sec. galvanometer: Z, EW, and NS. Operated by Henry Nelson at Kona County Hospital.

1/ HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Overdamping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

2/ HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked paper.

Table 6.--U.S. Geological Survey tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat N.	Long W.			
Tree Molds	TM	19°26.3'	155°17.3'	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19°24.1'	155°16.8'	--do-----	25.40	Equilateral triangle
Keamoku	Kea	19°25.1'	155°19.0'	--do-----	47.55	Do.
Ahua Kamokukolau	Kam	19°22.7'	155°16.6'	--do-----	50.79	Do.
Kipuka Nene	KN	19°19.4'	155°16.7'	--do-----	50.79	Do.
Hilina Pali	HP	19°18.2'	155°18.6'	--do-----	47.73	Do.
Kapapala Ranch	Kap	19°20.5'	155°23.8'	--do-----	50.79	Do.
Mehana	M	19°26.2'	155°14.3'	--do-----	25.00	Do.
Uwekahuna	U	19°25.5'	155°17.4'	--do-----	50.79	Do.
Uwekahuna Vault		19°25.4'	155°17.6'	Daily	3.48	NS. and EW.

GPO-977-335

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 46

April, May, and June 1967

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Issued May 1969

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Tilting of the ground around Kilauea Caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter at Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna

April, May, and June, 1967

Date (1967)	N-S	E-W	Date (1967)	N-S	E-W
April 2	517	436	May 21	535	435
9	522	430	28	537	431
16	523	429	June 4	539	430
23	525	432	11	539	430
30	527	434	18	539	431
May 7	529	433	25	540	430
14	531	433			

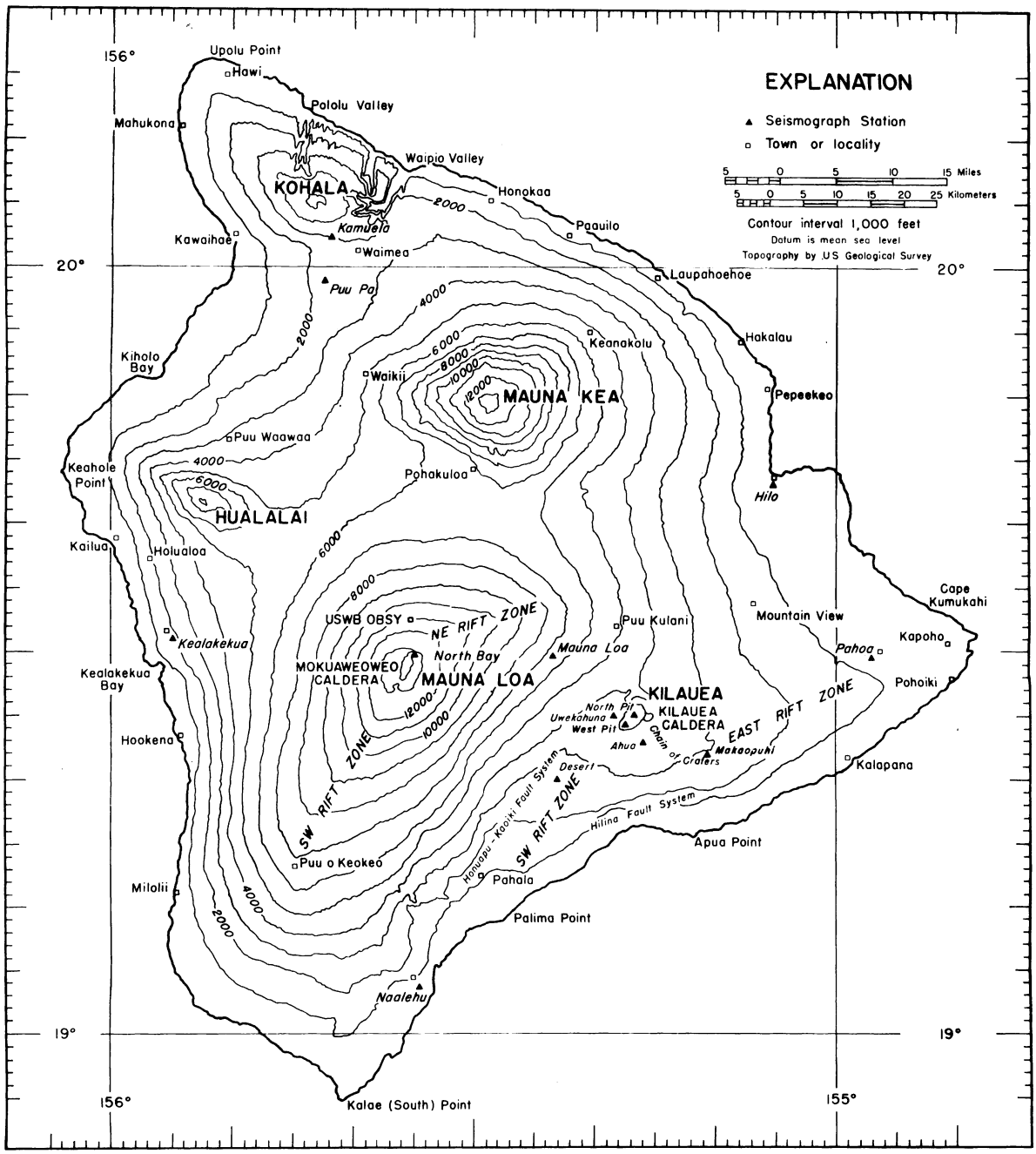

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Table 2.--Tilt coordinates and changes at bases around Kilauea Caldera

(See fig. 2)

Tilt base (location)	Date (1967)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1967)
		N-S	E-W			
Uwekahuna (U. on fig. 2)	June 5	566.9	421.3	8.4	N. 8.7° W.	Feb. 14
Tree Molds (TM)	7	463.7	504.1	3.9	N. 0.2° W.	13
Sand Spit (SS)	7	913.2	700.9	12.5	N. 10.4° E.	12
Keamoku (Kea)	6	536.1	399.7	12.8	N. 38.4° W.	13
Ahua Kamokukolau (Kam)	5	457.3	553.5	18.4	S. 31.0° E.	12
Kipuka Nene (KN)	8	303.9	508.1	2.1	S. 61.9° E.	15
Hilina Pali (HP)	28	456.0	503.6	1.5	S. 14.4° W.	Dec. 7, 1966
Kapapala Ranch (Kap)	6	494.8	507.0	0.7	N. 82.8° W.	Feb. 15
Mehena (M)	7	560.2	568.7	1.2	N. 67.8° E.	14

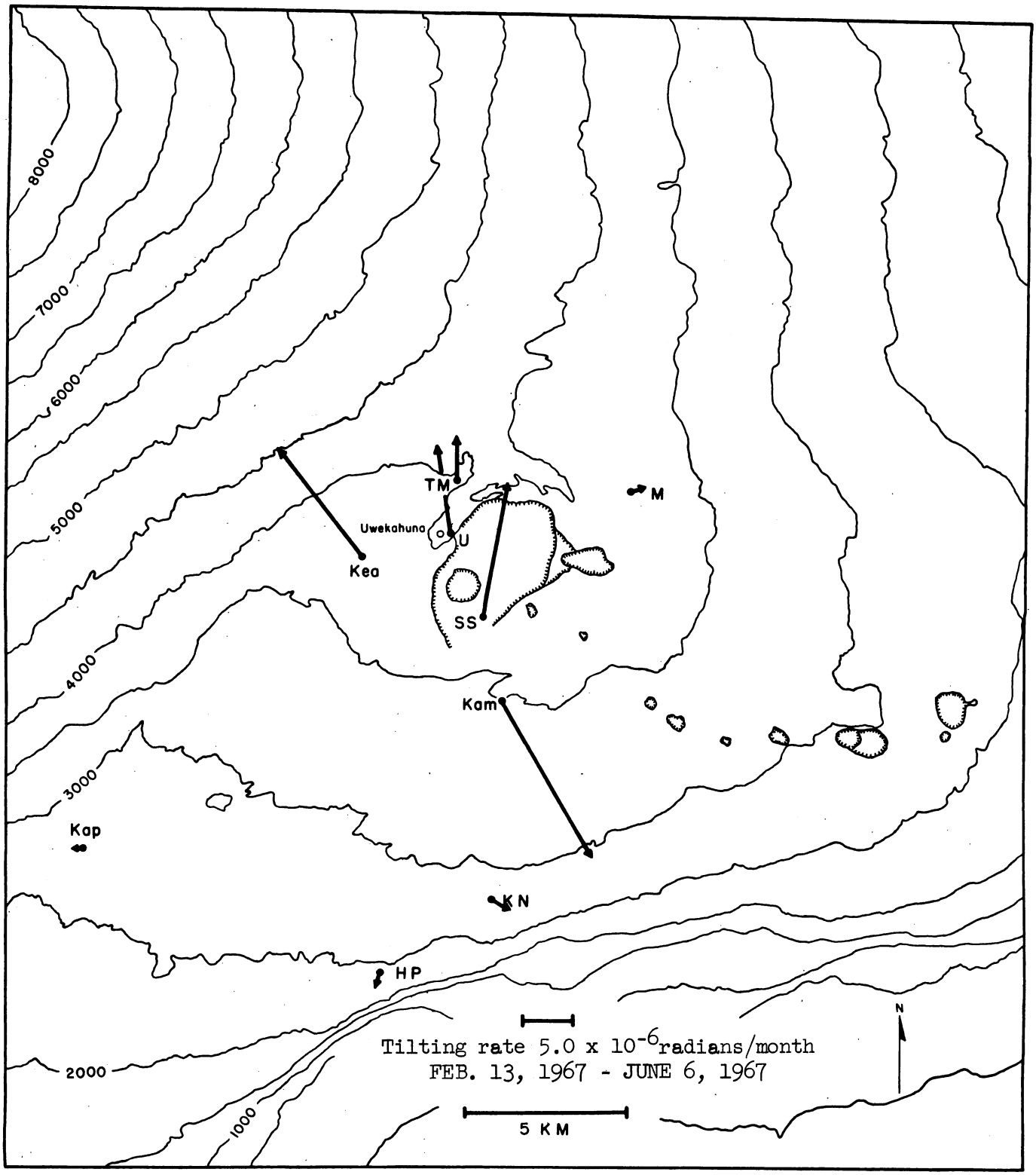

Figure 2.--Tilting of the ground around Kilauea Caldera between February 13 and June 6, 1967. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, M(2), A, D, N, WP, MP, K, O). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5, which is published only in the first quarter issue each year.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1967)	Tremor (minutes)			Earthquakes						
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 km	Long period	Shallow				
Apr. 1	----	-------	-------	1	2	69	10	-------	----	----------
2	----	-------	-------	1	2	65	8	-------	9	----------
3	----	-------	-------	4	9	100	13	-------	8	----------
4	----	1	-------	-----	18	200	25	-------	9	----------
5	----	-------	-------	-----	7	149	11	-------	18	----------
6	----	-------	-------	27	6	148	23	-------	18	1 east flank Mauna Kea
7	----	107	-------	3	77	70	43	-------	10	----------
8	----	14	-------	1	165	43	26	-------	10	1 south flank Mauna Loa 1 off south shore of Hawaii
9	1	-------	-------	4	11	106	23	-------	13	----------
10	----	-------	-------	4	12	104	10	-------	7	----------
11	----	-------	-------	2	1	32	5	-------	13	1 west Hawaii
12	----	-------	1	1	1	129	15	-------	10	----------

Apr. 13	----	---------	------	1	4	125	25	--------	23	1 Mauna Loa
14	----	---------	------	1	------	94	16	--------	12	----------
15	----	---------	------	-----	------	93	24	--------	9	----------
16	----	---------	------	-----	15	128	3+	--------	8	----------
17	----	---------	------	-----	------	104	13	1	7	----------
18	----	---------	------	2	119	18	18	--------	10	2 Mauna Loa
19	1	---------	1	1	28	139	16	--------	6	----------
20	1	1	------	-----	90+	177	18	--------	15+	1 Kohala
21	----	---------	------	-----	1	43	7	--------	2	----------
22	----	---------	------	1	6	43	37	--------	5	----------
23	----	---------	------	3	12	46	23	--------	11	----------
24	----	---------	------	1	13	58	18	--------	11	1 Mauna Loa
25	30	---------	------	3	13	37	14	--------	10	1 south flank Mauna Loa
26	----	---------	------	1	23	45	16	--------	6	----------
27	----	---------	------	3	22	41	27	--------	6	----------
28	----	2	------	-----	3	45	15	--------	12	----------
29	----	---------	------	-----	------	53	19	--------	7	----------
30	4	---------	------	3	------	36	14	--------	6	----------
May 1	----	---------	------	-----	1	33	12	--------	3	2 west Hawaii 1 south flank Mauna Loa
2	----	---------	------	-----	2	72	18	--------	15+	----------
3	1	---------	------	-----	14	54	63	--------	7	----------
4	----	---------	------	-----	5	52	44	--------	9	----------
5	----	---------	------	1	4	47	32	--------	5	1 west Hawaii
6	----	---------	------	1	6	40	16	--------	6	1 Mauna Kea
7	1	---------	------	2	7	59	15	--------	9	----------
8	----	---------	------	1	13	73	14	--------	12	----------
9	----	---------	------	4	14	62	25	--------	4	----------
10	----	---------	------	-----	30	61	26	--------	7	----------
11	----	---------	------	-----	18	64	33	--------	7	1 west Hawaii
12	----	3	------	-----	19	23	18	--------	10	----------
13	----	---------	------	-----	8	81	22	--------	10	----------
14	----	---------	------	2	7	58	20	--------	7	----------
15	----	---------	------	2	------	77	16	--------	3	----------
16	----	1	------	-----	1	101	11	--------	8	1 Kohala
17	----	---------	------	-----	3	81	20	--------	6	1 west Hawaii

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1967)	Tremor (minutes)			Earthquakes						
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Others
	Deep	Intermediate	Shallow	30 km	Long period	Shallow				
May 18	----	-------	-------	2	3	61	36	------	6+	----------
19	----	-------	-------	-----	2	39	31	------	8	1 off north shore of Hawaii
20	----	-------	-------	4	4	51	49	------	15	1 off SE. shore of Hawaii
21	----	-------	-------	-----	2	60	12	------	7	1 off east shore of Hawaii
22	----	-------	-------	2	3	167	16	------	3	----------
23	----	-------	-------	-----	4	121	6	------	4	1 west Hawaii
24	----	-------	-------	-----	4	94	13	------	3	1 west Hawaii; 4 Mauna Kea
25	----	-------	-------	-----	-----	67	21	------	8	3 Mauna Kea
26	----	-------	-------	-----	-----	57	7	------	13	2 Mauna Kea
27	----	-------	-------	3	15	33	7	------	9	----------
28	----	-------	-------	-----	2	45	9	------	14	1 Mauna Loa; 1 Mauna Kea
29	----	-------	-------	-----	-----	47	9	------	5	1 Mauna Kea 2 off SE. shore of Hawaii
30	----	-------	-------	-----	1	61	11	------	20	----------
31	----	2	1	-----	1	56	19	------	7	----------
June 1	----	-------	-------	1	-----	46	10	------	8	1 off NW. shore of Hawaii
2	----	-------	-------	-----	-----	50	3	------	1	----------
3	----	-------	-------	2	-----	38	19	------	18	----------
4	----	-------	-------	1	1	82	16	------	3	1 Mauna Kea
5	----	-------	1	-----	2	98	12	------	15	----------
6	----	-------	-------	-----	7	102	12	------	7	----------
7	----	1	-------	1	12	205	15	------	3	1 Mauna Kea
8	----	2	-------	-----	115	?	25	------	6	----------
9	----	-------	-------	-----	-----	112	32	------	9	4 Mauna Kea
10	----	-------	-------	-----	1	88	12	------	8	----------
11	----	-------	-------	2	-----	88	10	------	7	----------
12	----	-------	-------	3	5	119	11	------	5	----------

June 13	----	--------	-------	-----	------	102	14	-------	3	1 Mauna Kea
14	----	--------	-------	-----	------	82	16	-------	6	1 off SE. shore of Hawaii
15	----	--------	2	-----	3	89	4	-------	4	1 Mauna Kea
16	----	--------	-------	1	------	80	5	-------	5	1 off SE. shore of Hawaii
17	----	--------	-------	2	5	65	18	-------	11	----------
18	----	--------	-------	-----	20	123	5	-------	3	----------
19	----	--------	-------	1	8	102	9	-------	9	----------
20	----	--------	60+	3	11	111	8	-------	3	----------
21	----	--------	-------	5	3	84	5	-------	3	----------
22	----	--------	1	-----	------	107	6	-------	6	1 Mauna Loa; 1 west Hawaii
23	----	--------	?	2	------	117	7	-------	11	----------
24	----	--------	-------	-----	1	445	11	-------	15	1 Mauna Kea
25	----	--------	-------	-----	------	623	8	-------	13	1 off NW. shore of Hawaii.
26	----	--------	1	1	1	463	4	-------	6	1 west Hawaii
27	----	--------	1?	2	5	271	6	-------	6	----------
28	----	--------	2	-----	4	353	6	-------	5	----------
29	----	--------	1	3	30	205	5	-------	8	----------
30	----	--------	-------	7	1	70	9	-------	14	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

April, May, and June 1967

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Apr. 2	13	07	44.5	1.4	1	19°19.2'	155°12.5'	6 km SW. of Makaopuhi	----------
5	22	48	05.3	2.0	10	19°23.0'	155°29.0'	11 km NW. of Desert seismometer	----------
6	15	57	10.8	3.2	45	19°47.7'	155°03.0'	9 km NE. of Hilo	----------
6	22	57	08.4	4.0	25	19°23.8'	155°16.4'	3 km NW. of Ahua seismometer	Island-wide
7	02	17	47.3	3.1	30	19°24.7'	155°17.7'	2 km SSW. of Uwekahuna	Kilauea summit area
8	01	12	45.8	3.4	0	19°13.7'	155°33.5'	19 km NNE. of Naalehu	----------
8	03	52	58.5	3.0	45	18°57.0'	155°32.7'	13 km SSE. of Naalehu	----------
10	09	24	18.2	2.4	35	19°28.5'	155°26.8'	7 km SW. of Mauna Loa seismometer	----------
11	04	56	29.0	2.0	10	19°21.2'	155°09.4'	2 km SE. of Makaopuhi seismometer	----------
11	11	34	23.8	2.0	0	19°27.7'	155°47.7'	15 km SE. of Kealakekua	----------
13	18	06	10.0	3.5	3	19°28.0'	155°37.3'	5 km SW. of North Bay seismometer	----------
14	04	18	30.3	2.2	13	19°22.7'	155°25.8'	6 km NW. of Desert seismometer	----------
14	20	28	28.6	2.3	33	19°22.2'	155°18.4'	5 km WSW. of Ahua seismometer	----------
15	23	58	46.0	2.7	10	19°20.3'	155°30.7'	3 km west of Desert seismometer	----------
16	21	15	47.6	2.2	10	19°21.0'	155°07.1'	6 km ESE. of Makaopuhi seismometer	----------
18	00	57	22.9	2.6	5	19°26.3'	155°32.0'	8 km SE. of North Bay seismometer	----------
18	23	00	12.0	2.3	8	19°12.5'	155°46.9'	25 km NW. of Naalehu	----------
19	00	56	46.1	2.7	10	19°22.2'	155°23.6'	4 km NNW. of Desert seismometer	----------
19	03	23	21.6	2.0	10	19°19.8'	155°11.7'	4 km SW. of Makaopuhi seismometer	----------
20	16	00	14.0	3.6	8	20°04.8'	155°51.7'	5 km NW. of Kawaihae	Kamuela
22	17	40	05.8	1.7	3	19°21.3'	155°20.0'	6 km NE. of Desert seismometer	----------
23	07	06	43.0	2.9	40	19°16.8'	155°10.0'	4 km NE. of Apua Point	----------
24	00	16	28.5	3.2	6	19°31.3'	155°38.6'	7 km NW. of North Bay seismometer	----------
25	09	37	52.3	3.3	8	19°10.2'	155°38.8'	14 km NW. of Naalehu	----------

Apr.	27	23	05	23.6	2.2	8	19°18.9'	155°22.0'	4 km SE. of Desert seismometer	----------
	28	07	43	17.2	2.1	8	19°24.2'	155°28.9'	12 km NW. of Desert seismometer	----------
	28	07	50	01.6	2.4	10	19°24.2'	155°24.4'	8 km NW. of Desert seismometer	----------
	29	18	43	30.5	2.7	5	19°24.3'	155°23.4'	8 km north of Desert seismometer	----------
	29	18	45	31.2	2.8	6	19°24.8'	155°22.7'	13 km NNE. of Desert seismometer	----------
May	1	00	34	18.1	2.4	3	19°13.9'	155°34.4'	19 km west of Naalehu	----------
	1	04	56	11.7	2.4	28	19°21.9'	155°16.8'	2 km SW. of Ahua seismometer	----------
	1	08	13	12.8	2.3	29	19°21.3'	155°18.1'	5 km SW. of Ahua seismometer	----------
	1	14	08	10.2	2.6	0	19°22.8'	155°51.2'	5 km east of Hookena	----------
	1	19	40	53.3	2.7	0	19°21.3'	155°47.0'	13 km ESE. of Hookena	----------
	2	23	37	38.2	2.0	9	19°21.0'	155°04.9'	10 km ESE. of Makaopuhi seismometer	----------
	3	19	00	33.3	4.5	8	19°22.5'	155°27.2'	8 km NW. of Desert seismometer	Hilo, Kealakehua, Naalehu, Kamuela, Honokaa, Kilauea summit area
	3	19	46	22.6	2.7	10	19°23.5'	155°27.0'	9 km NW. of Desert seismometer	Naalehu
	4	01	17	30.7	2.7	6	19°22.7'	155°27.2'	8 km NW. of Desert seismometer	----------
	4	22	22	26.6	2.2	7	19°22.8'	155°28.9'	11 km NW. of Desert seismometer	----------
	5	19	42	53.2	2.9	3	19°31.8'	155°48.5'	12 km ENE. of Kealakekua	----------
	6	17	08	45.0	2.0	3	19°54.0'	155°21.0'	2 km SW. of Keanakolu	----------
	11	20	37	46.1	2.5	0	19°24.3'	155°55.1'	13 km south of Kealakekua	----------
	13	16	05	08.2	3.3	13	19°24.2'	155°27.2'	10 km NW. of Desert seismometer	Naalehu, Kilauea summit area
	15	01	27	49.7	2.4	8	19°24.7'	155°25.0'	9 km NNW. of Desert seismometer	Naalehu
	16	08	05	15.4	2.7	3	20°16.0'	155°53.6'	Near Upolu Point	----------
	16	10	59	49.3	2.6	1	19°23.4'	155°03.9'	12 km ENE. of Makaopuhi seismometer	----------
	17	02	07	50.1	2.0	5	19°26.8'	155°24.0'	5 km south of Mauna Loa seismometer	----------
	17	08	06	30.7	2.0	0	19°31.8'	155°47.8'	13 km ENE. of Kealakekua	----------
	18	03	04	19.3	2.2	8	19°03.5'	155°23.7'	20 km east of Naalehu	----------
	19	01	07	36.8	3.2	13	20°40'	155°47'	45 km north of Upolu Point	----------
	19	03	52	48.1	2.5	8	19°23.0'	155°24.2'	5 km NW. of Desert seismometer	Naalehu
	20	07	21	13.2	2.4	8	19°05.7'	155°26.2'	6 km SSE. of Palima Point	----------
	20	18	27	47.2	3.1	10	19°21.6'	155°08.3'	4 km east of Makaopuhi seismometer	----------
	21	16	55	38.0	3.4	45	19°23.0'	154°49.3'	15 km south of Cape Kumukahi	Kilauea summit area, Hilo
	22	03	46	08.5	2.2	8	19°17.9'	155°15.4'	8 km south of Ahua seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, and June 1967--Continued

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
May 22	20	51	38.2	2.4	8	19°25.2'	155°24.0'	10 km NNW. of Desert seismometer	----------
23	21	47	56.7	2.5	5	19°21.3'	155°57.2'	6 km SW. of Hookena	----------
24	07	42	53.9	2.5	5	19°29.5'	155°57.0'	5 km SW. of Kealakekua	----------
24	12	28	26.8	2.6	0	19°52.4'	155°23.5'	10 km NE. of Mauna Kea summit	Paauilo
24	12	49	43.5	3.2	0	19°55.3'	155°20.1'	1 km north of Keanakolu	----------
24	13	09	25.9	3.0	0	19°52.8'	155°22.0'	5 km SW. of Keanakolu	Laupahoehoe, Paauilo, Honokaa
24	13	34	32.0	3.2	10	20°04.5'	155°23.2'	5 km NW. of Paauilo	----------
25	01	29	38.0	3.0	13	20°10.0'	155°23.0'	14-1/2 km NNW. of Paauilo	Paauhau
25	01	33	17.5	2.7	13	20°02.1'	155°23.5'	2 km west of Paauilo	Laupahoehoe
25	06	15	40.7	2.6	5	19°18.5'	155°24.0'	3 km SW. of Desert seismometer	----------
25	00	50	29.1	2.2	0	19°50.0'	155°14.4'	14 km SW. of Hakalau	----------
26	05	47	28.4	3.4	7	19°59.8'	155°24.6'	6-1/2 km SW. of Paauilo	Kohala
26	10	32	07.0	2.1	0	19°53.8'	155°23.0'	5-1/2 km SW. of Keanakolu	----------
27	20	09	17.4	2.0	28	19°22.4'	155°17.8'	4 km west of Ahua seismometer	----------
28	06	53	31.2	1.9	5	19°27.7'	155°25.5'	5 km SW. of Mauna Loa	----------
28	15	36	47.4	2.0	5	19°26.1'	155°38.8'	10 km SW. of North Bay seismometer	----------
28	23	41	42.9	2.7	10	19°49.0'	155°30.7'	4 km WSW. of Mauna Kea summit	----------
29	02	05	16.2	2.2	6	19°19.6'	155°13.8'	6 km SE. of Ahua seismometer	----------
31	03	15	23.2	2.8	40	19°17.8'	154°43.0'	27 km SSE. of Cape Kumukahi	----------
31	17	44	14.0	2.6	0	19°52.9'	155°20.9'	4 km SW. of Keanakolu	----------
31	20	07	37.9	2.6	40	19°05.9'	155°22.9'	9 km SE. of Palima Point	----------
June 1	11	36	57.5	2.8	8	19°21'	156°17'	44 km WNW. of Upolu Point	----------
4	05	38	14.9	2.5	8	19°57.6'	155°19.2'	5 km NE. of Keanakolu	----------
7	09	02	42.0	2.1	4	19°23.5'	155°24.0'	6 km north of Desert seismometer	----------
7	09	34	15.5	2.2	6	19°22.0'	154°52.9'	10 km ENE. of Kalapana	----------
7	17	42	00.3	2.2	0	19°52.3'	155°23.3'	7 km SW. of Keanakolu	----------
8	13	27	57.5	2.5	29	19°20.9'	155°19.0'	6 km SW. of Ahua seismometer	Kilauea summit area

June	9	00	34	24.6	2.9	10	19°58.1'	155°23.1'	8 km NW. of Keanakolu	----------
	9	03	10	05.7	3.4	7	19°57.2'	155°23.8'	8 km NW. of Keanakolu	Hilo, Honokaa
	9	04	15	54.4	2.4	0	19°53.3'	155°22.8'	5 km SW. of Keanakolu	----------
	9	10	22	18.4	3.1	7	20°01.8'	155°22.3'	1 km SW. of Paauilo	Paauilo, Honokaa
	12	11	09	42.5	2.0	9	19°19.3'	155°16.7'	6 km SW. of Ahua seismometer	----------
	12	17	03	05.9	2.0	5	19°23.7'	155°24.5'	7 km NW. of Desert seismometer	----------
	13	14	50	53.7	3.6	5	19°55.8'	155°23.5'	6 km WNW. of Keanakolu	Kamuela, Honokaa, Laupahoehoe, Hilo
	14	02	31	56.9	2.9	50	19°07.8'	155°14.0'	15 km SSW. of Apua Point	----------
	14	17	24	25.8	2.4	40	19°06.3'	155°23.3'	8 km SE. of Palima Point	----------
	15	01	38	36.0	2.1	29	19°21.6'	155°18.7'	5 km SW. of Ahua seismometer	----------
	15	16	05	16.6	2.9	0	19°54.8'	155°22.9'	5 km west of Keanakolu	----------
	16	13	40	30.3	3.3	8	18°58.3'	154°59.5'	38 km SE. of Apua Point	----------
	17	23	10	52.8	2.0	6	19°23.5'	155°25.5'	7 km NW. of Desert seismometer	----------
	20	14	08	57.9	2.4	29	19°21.9'	155°18.2'	4 km WSW. of Ahua seismometer	----------
	21	17	02	57.0	3.4	45	19°25.3'	155°00.0'	10 km SW. of Pahoa	----------
	22	00	50	36.7	2.4	0	19°28.8'	155°46.8'	16 km SE. of Kealakekua	----------
	22	01	58	24.6	2.9	10	19°10.5'	155°43.1'	18 km NW. of Naalehua	----------
	23	23	01	18.0	2.7	29	19°22.8'	155°15.7'	1 km NE. of Ahua seismometer	----------
	24	07	42	05.5	3.2	8	19°52.0'	155°34.8'	8 km ENE. of Waikii	Hilo
	25	08	35	21.5	2.7	8	20°05'	156°14'	40 km west of Kawaihae	Kilauea summit area
	26	22	20	13.2	2.6	3	19°18.8'	155°59.4'	13 km SW. of Hookena	----------
	27	12	27	44.0	2.0	8	19°19.0'	155°00.2'	5 km SW. of Kalapana	----------
	28	20	18	35.4	2.5	10	19°07.8'	155°28.6'	14 km NE. of Naalehu	----------
	30	06	23	46.0	2.4	5	19°12.3'	155°00.3'	17 km SSW. of Kalapana	----------
	30	22	51	54.1	3.1	25	19°22.7'	155°17.8'	3 km west of Ahua seismometer	Pahala, Kilauea summit area

GPO-977-424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 47

July, August, and September 1967

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Issued May 1969

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Tilting of the ground around Kilauea Caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter at Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna

July, August, and September 1967

Date (1967)	N-S	E-W	Date (1967)	N-S	E-W
July 2	545	427	Aug. 20	545	426
9	548	428	27	549	426
16	548	426	Sept. 3	549	423
23	548	426	10	553	420
30	548	427	17	558	413
Aug. 6	549	422	24	559	413
13	547	419			

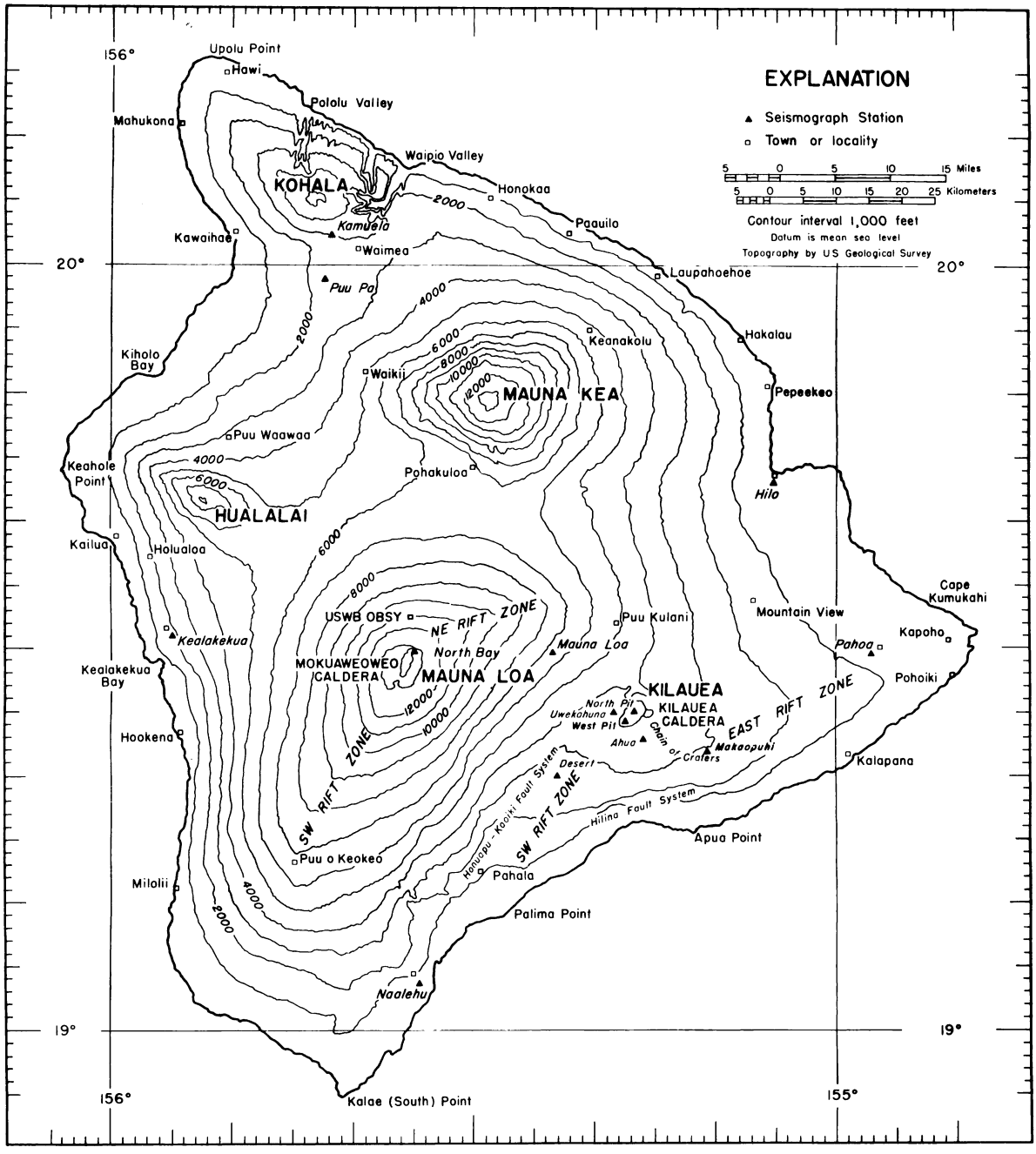

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Table 2.--Tilt coordinates and changes at bases around Kilauea Caldera

(See fig. 2)

Tilt base (location)	Date (1967)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1967)
		N-S	E-W			
Uwekahuna (U. on fig. 2)	Sept. 5	583.4	414.3	5.76	N. 23.0° W.	June 5
Tree Molds (TM)	7	471.7	502.8	2.6	N. 9.0° W.	7
Sand Spit (SS)	6	898.5	713.4	6.4	S. 40.5° E.	7
Keamoku (Kea)	5	551.5	383.9	7.29	N. 45.7° W.	6
Ahua Kamokukolau (Kam)	6	420.1	565.4	12.6	S. 17.8° E.	5
Kipuka Nene (KN)	7	302.2	309.8	0.8	S. 44.5° E.	8
Hilina Pali (HP)		Not read this epoch				
Kapapala Ranch (Kap)	5	496.5	508.5	0.8	N. 40.9° E.	6
Mehena (M)	6	563.0	573.2	1.75	N. 58.7° E.	7

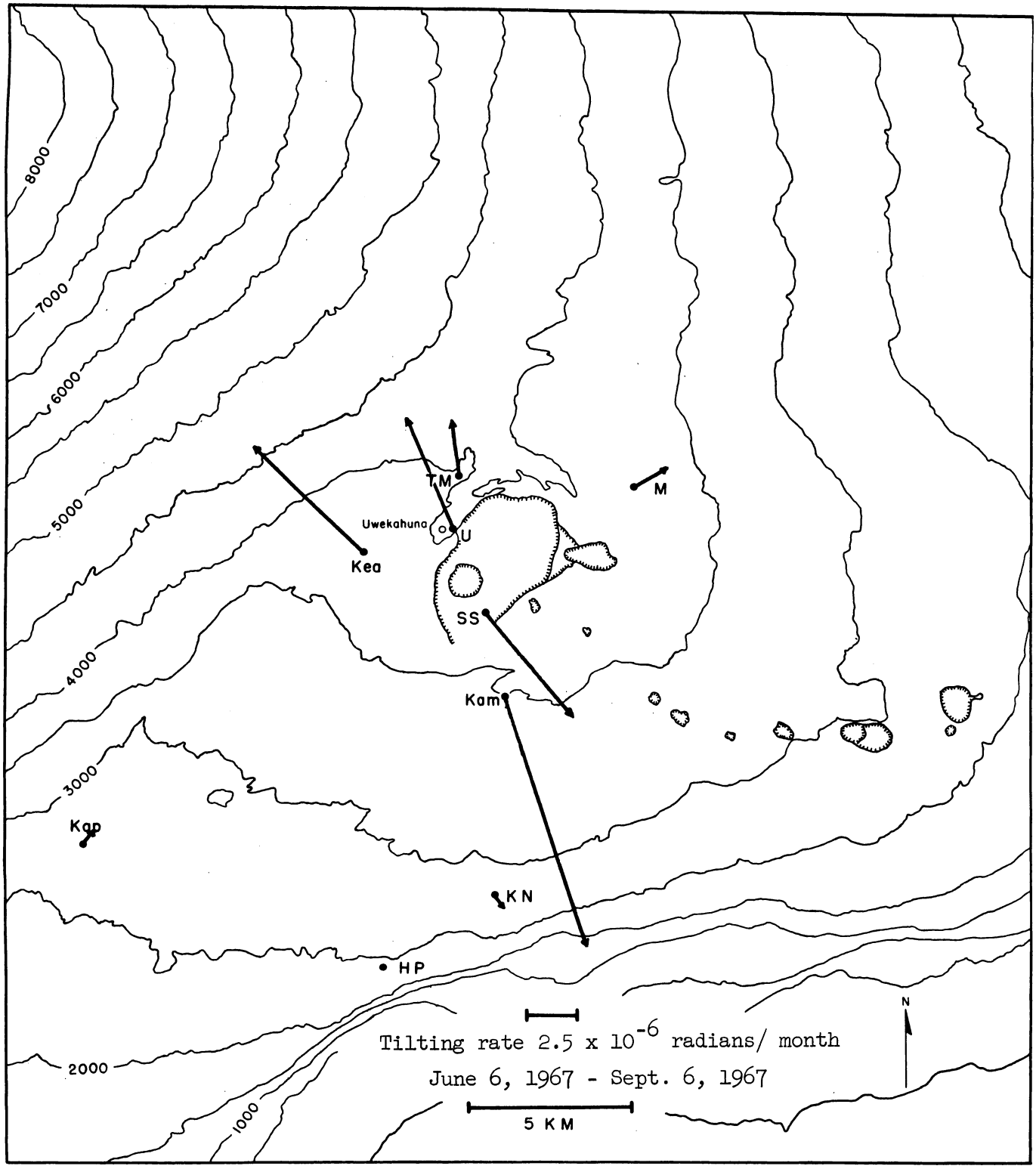

Figure 2.--Tilting of the ground around Kilauea Caldera between June 6 and September 6, 1967. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, M(2), A, D, N, WP, MP, K, O). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5, which is published only in the first quarter issue each year.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1967)	Tremor (minutes)			Earthquakes							
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Others
	Deep	Inter-mediate	Shallow	30 km	Long period	Shallow					
July 1	----	-------	-------	11	------	167	40	-------	6	3	1 Mauna Kea
2	----	-------	1	1	------	163	34	-------	5	6	2 off SE. shore of Hawaii
3	----	-------	-------	8	5	84	48	-------	6	2	----------
4	----	-------	-------	1	2	118	56	-------	4+	4	----------
5	----	-------	-------	2	2	107	46	-------	8	8	----------
6	----	-------	-------	2	9	92	26	-------	8	6	1 Kohala
7	----	-------	-------	----	11	53	27	-------	2	3	----------
8	2	-------	-------	----	2	83	35	-------	10	6	1 Kohala
9	----	-------	-------	----	------	80	73	-------	4	4	----------
10	2	-------	1	1	6	73	32	1	8+	5	----------
11	----	-------	-------	----	5	57	17	-------	10	8	1 Mauna Loa
12	----	-------	-------	1	4	30	23	-------	11	8	1 west Hawaii
13	----	-------	-------	1	4	75	28	-------	10	4	----------
14	----	-------	4	1	------	35	16	-------	10	5	----------

July 15	29	-------	-------	3	1	43	20	-------	14	4	1 off west shore of Hawaii
16	----	-------	-------	1	------	50	16	-------	12	----	----------
17	----	-------	-------	1	4	47	14	-------	11	2	----------
18	----	-------	-------	1	------	40	?	-------	8	3	----------
19	----	-------	-------	1	------	67	7	-------	10	4	----------
20	----	1	-------	----	------	67	?	-------	-----	----	2 off west shore of Hawaii
21	----	60	-------	----	1	38	3+	-------	2	----	----------
22	----	60	-------	----	4	43	8+	-------	1	----	----------
23	----	-------	-------	----	4	65	30	-------	10	8	1 Mauna Kea
24	----	-------	2	1	17	65	17	-------	16	4	----------
25	----	-------	-------	----	6	42	37	-------	7	6	1 west Hawaii
26	----	-------	10	3	17	45	14	-------	11	1	----------
27	----	-------	-------	----	4	52	13	-------	5	11	----------
28	----	2	-------	----	------	51	6	1	10	2	----------
29	----	9	-------	----	2	94	16	-------	8	8	1 Mauna Loa
30	----	-------	-------	4	24	95	7	2	6	5	1 Mauna Loa; 1 off west shore of Hawaii; 1 west Hawaii
31	----	-------	-------	12	------	104	7	-------	6	9	1 Mauna Loa
Aug. 1	----	-------	-------	4	10	102	11	-------	12	3	----------
2	----	-------	-------	2+	------	60+	5+	-------	3+	?	----------
3	----	-------	electrical storm					1	-----	----	----------
4	----	15	-------	10	2	94	16	1	6	1	----------
5	----	-------	-------	----	------	83	6	-------	4	11	----------
6	----	14	-------	2	------	58	7	-------	5	----	----------
7	----	-------	-------	2+	9+	70+	7+	-------	7+	----	----------
8	----	-------	-------	----	5+	63+	3	-------	6	----	----------
9	----	-------	-------	1	------	150	3	1	11	3	----------
10	----	-------	-------	----	2	148	2	-------	16	2	----------
11	----	52	-------	----	------	96	9	-------	14	3	1 west Hawaii
12	----	-------	-------	----	------	141	12	-------	17	2	----------
13	----	9	-------	3	1	148	6	-------	9	5	1 west Hawaii
14	----	-------	-------	4	------	92	7	-------	12	6	4 Mauna Kea 1 west Hawaii

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1967)	Tremor (minutes)			Earthquakes							
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Others
	Deep	Intermediate	Shallow	30 km	Long period	Shallow					
Aug. 15	----	--------	-------	-----	------	113	4	-------	14	----	2 Mauna Kea 1 west Hawaii
16	----	--------	-------	-----	------	91	6	-------	6	2	2 Mauna Loa 1 Mauna Kea
17	----	--------	-------	-----	1	65	3	-------	7	1	5 Mauna Kea 1 west Hawaii
18	----	--------	-------	4	------	65	8	-------	13	4	5 Mauna Kea
19	----	3	-------	3	------	63	3	-------	16	2	3 Mauna Kea; 1 west Hawaii; 1 off west shore of Hawaii
20	34	9	-------	-----	------	67	4	-------	6	1	1 Mauna Kea
21	----	--------	-------	1	3	46	10	-------	8	----	----------
22	----	--------	-------	-----	------	39	5	-------	9	----	1 Mauna Kea 1 Mauna Loa
23	----	--------	-------	2	------	55	5	-------	17	----	----------
24	----	--------	-------	2	------	39	17	-------	14	1	----------
25	----	--------	-------	-----	------	31	4	-------	12	4	----------
26	----	--------	-------	1	------	31	6	-------	11	----	1 Mauna Kea
27	----	--------	-------	1	------	39	5	-------	23	5	----------
28	----	6	-------	-----	3	79	10	-------	9	7	----------
29	----	--------	-------	2	------	58	11	-------	10	7	----------
30	----	--------	-------	-----	1	72	35	-------	7	6	1 Mauna Loa
31	----	--------	-------	2	------	66	62	-------	8	2	1 Kohala
Sept. 1	----	--------	-------	6	------	69	36	-------	20	4	----------
2	?	--------	-------	3	------	155	51	-------	7	1	----------
3	----	--------	-------	4	------	111	67	-------	14	2	1 west Hawaii
4	----	--------	-------	3	------	120	79	-------	11	12	----------

Sept. 5	----	--------	-------	1	------	108	51	-------	18	5	1 Mauna Kea; 1 off south shore of Hawaii
6	31	--------	-------	2	------	100	79	-------	7	7	----------
7	----	--------	-------	20	10	57	88	-------	16	8	1 Mauna Kea
8	----	26	-------	3	32	80	63	-------	12	7	1 west Hawaii
9	9	--------	-------	3	42	25	92	-------	9	3	----------
10	----	--------	-------	----	5	119	37+	-------	22	8	----------
11	----	--------	-------	6	------	109	140	-------	6	----	1 west Hawaii
12	----	--------	-------	1	------	147	101	-------	3	5	----------
13	----	--------	-------	2	------	131	144	-------	5	3	1 west Hawaii
14	----	--------	-------	1	9	177	63	-------	14	6	1 west Hawaii
15	----	--------	-------	----	22	159	94	-------	4	3	----------
16	----	--------	9	----	18	196+	150+	-------	11	8	1 west Hawaii
17	----	--------	-------	----	1	164	56	-------	11	3	1 west Hawaii 1 Mauna Kea
18	----	--------	-------	3	1	97	38	-------	7	12	----------
19	----	--------	-------	1	------	128	56	-------	20	7	----------
20	----	--------	-------	12	4	138	76	-------	16	2	----------
21	10	--------	-------	1	11	192	55	-------	11	5	1 west Hawaii
22	----	--------	-------	7	4	204	60	-------	8	6	1 west Hawaii
23	----	--------	-------	5	18	318	97	-------	16	7	1 Mauna Kea 1 west Hawaii
24	----	--------	-------	21+	------	529	70+	-------	31+	----	----------
25	----	--------	-------	3	4	326	63	1	18	16	1 west Hawaii; 1 off west shore of Hawaii; 1 Mauna Kea
26	----	6	-------	4	------	178	50	1	18	13	----------
27	----	--------	-------	2	------	221	54	-------	27	3	1 Mauna Loa
28	----	--------	-------	3	93+	190	71	-------	16	4	2 Mauna Kea
29	----	--------	-------	8	17+	212	41	-------	12	2	1 Mauna Loa
30	----	--------	-------	16	3	203	49	-------	12	14	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

July, August, and September 1967

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
July 1	05	03	49.5	4.2	25	19°27.2'	155°12.8'	9 km ENE. of Uwekahuna seismometer	Island-wide
1	05	34	33.1	2.0	20	19°26.9'	155°14.2'	7 km ENE. of Uwekahuna seismometer	----------
1	10	22	23.7	2.4	8	19°18.6'	155°16.0'	7 km south of Ahua seismometer	----------
1	12	33	08.7	2.8	13	19°52.1'	155°28.4'	15 km WSW. of Keanakolu	----------
1	22	29	13.0	2.0	27	19°24.6'	155°17.5'	2 km SE. of Uwekahuna seismometer	----------
2	09	29	19.1	3.7	25	18°55.9'	155°22.0'	28 km SE. of Naalehu	----------
2	12	11	17.4	2.6	25	18°56.4'	155°21.3'	28 km SE. of Naalehu	----------
2	15	14	59.2	3.5	9	19°22.0'	155°23.9'	4 km NNW. of Desert seismometer	----------
2	17	11	46.1	2.8	4	19°21.0'	155°30.5'	13 km WNW. of Desert seismometer	----------
3	16	12	12.3	2.7	27	19°24.3'	155°17.1'	2 km SE. of Uwekahuna seismometer	----------
5	02	51	10.9	4.1	8	19°23.2'	155°26.7'	8 km NW. of Desert seismometer	----------
5	18	58	12.0	2.4	6	19°23.0'	155°27.2'	9 km NW. of Desert seismometer	----------
6	14	59	04.0	3.5	13	20°21.7'	155°50.0'	14 km north of Hawi	----------
7	00	37	14.7	2.4	8	19°18.1'	155°12.5'	5 km west of Kealakomo seismometer	----------
8	18	46	08.6	2.9	45	20°10.6'	155°49.4'	7 km SSE. of Hawi	----------
9	17	14	17.5	3.0	20	19°33.9'	155°17.9'	12 km NE. of Mauna Loa seismometer	Kilauea summit area, Mt. View
9	21	18	43.6	2.6	8	19°25.8'	155°26.9'	12 km NW. of Desert seismometer	Pahala
9	22	46	13.4	1.8	8	19°20.3'	155°22.5'	2 km east of Desert seismometer	----------
11	16	54	23.8	3.2	2	19°27.5'	155°37.3'	6 km SW. of North Bay seismometer	Mauna Loa summit
12	18	10	27.7	2.5	8	19°29.6'	155°52.7'	5 km SE. of Kealakekua	----------
13	17	27	53.6	2.9	9	19°22.0'	155°26.0'	5 km NW. of Desert seismometer	----------
13	21	39	13.4	2.1	26	19°22.8'	155°17.7'	5 km south of Uwekahuna seismometer	----------

July	14	04	41	57.5	2.0	34	19°22.3'	155°17.2'	5 km south of Uwekahuna seismometer	----------
	15	22	03	29.4	2.8	20	19°47.1'	156°09.7'	38 km NW. of Kealakekua	----------
	20	15	09	06.7	2.8	20	19°47.1'	156°09.7'	38 km NW. of Kealakekua	----------
	20	23	19	02.3	3.1	8	18°47'	156°39'	112 km SW. of Kealakekua	----------
	21	21	34	27.0	3.2	8	19°21.7'	155°25.7'	5 km NW. of Desert seismometer	----------
	22	04	05	02.4	2.0	3	19°25.8'	155°04.2'	14 km ENE. of Makaopuhi seismometer	----------
	22	04	30	25.5	2.3	9	19°24.9'	155°23.6'	9 km north of Desert seismometer	----------
	23	17	54	50.1	2.7	13	19°59.2'	155°35.2'	13 km SE. of Kamuela	----------
	25	05	39	48.2	2.2	8	19°25.8'	155°01.0'	10 km SW. of Pahoa	----------
	25	09	23	24.4	2.5	3	19°22.4'	155°47.2'	22 km SE. of Kealakekua	----------
	25	23	17	05.5	2.0	8	19°18.0'	155°23.2'	4 km south of Desert seismometer	----------
	26	04	32	00.5	2.2	8	19°18.0'	155°23.2'	4 km south of Desert seismometer	----------
	27	01	50	26.9	2.3	28	19°16.6'	155°30.7'	15 km WSW. of Desert seismometer	----------
	27	11	44	44.8	2.0	6	19°17.3'	155°14.9'	10 km SSE. of Ahua seismometer	----------
	28	22	02	18.7	2.2	8	19°21.1	155°13.3'	5 km ESE. of Ahua seismometer	----------
	29	08	43	06.3	2.8	10	19°30.7'	155°42.2'	13 km WNW. of North Bay seismometer	----------
	30	05	20	17.5	2.7	15	19°30.5'	155°35.0'	2 km north of North Bay seismometer	----------
	30	16	48	38.2	3.0	13	19°41'	157°18'	128 km west of Keahole Point	----------
	30	17	51	13.3	2.2	8	19°23.0'	155°03.1'	13 km ENE. of Makaopuhi seismometer	----------
	30	18	53	21.1	2.7	3	19°26.2'	155°48.6'	15 km SE. of Kealakekua	----------
	31	21	45	06.2	2.5	10	19°08.0'	155°40.8'	13 km NW. of Naalehu	----------
Aug.	1	16	06	02.2	2.6	29	19°22.2'	155°16.6'	6 km SE. of Uwekahuna seismometer	----------
	1	18	17	33.8	2.2	8	19°17.6'	155°10.7'	8 km SW. of Kealakomo seismometer	----------
	1	18	18	02.8	2.0	5	19°22.0'	155°09.5'	2 km east of Makaopuhi seismometer	----------
	1	18	56	48.2	2.8	25	19°20.4'	155°13.8'	5 km SE. of Ahua seismometer	----------
	1	19	45	53.8	2.2	7	19°25.0'	155°25.2'	9 km NNW. of Desert seismometer	----------
	2	01	21	17.1	2.0	7	19°22.1'	155°27.6'	8 km WNW. of Desert seismometer	----------
	2	05	17	54.7	2.6	5	19°20.0'	155°01.5'	15 km ENE. of Kealakomo seismometer	----------
	3	19	29	09.8	3.3	7	19°13.6'	155°35.7'	18 km north of Naalehu	Naalehu
	4	11	33	28.1	2.6	26	19°24.7'	155°19.0'	3 km WSW. of Uwekahuna seismometer	----------
	4	17	40	26.9	2.4	8	19°22.2'	155°26.9'	7 km NW. of Desert seismometer	----------
	5	05	51	51.2	3.2	26	19°23.6'	155°16.9'	3 km SSE. of Uwekahuna seismometer	----------
	5	21	13	13.0	2.3	8	19°22.0'	155°26.8'	7 km WNW. of Desert seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

July, August, and September 1967--Continued

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Aug. 7	01	44	48.5	2.6	29	19°22.9'	155°18.8'	5 km SW. of Uwekahuna seismometer	----------
7	19	46	01.6	2.4	9	19°19.0'	155°12.7'	6 km WNW. of Kealakomo seismometer	----------
11	19	43	19.5	2.9	13	19°45.0'	155°55.0'	15 km NNW. of Kailua	----------
12	09	18	14.7	2.5	40	19°17.3'	154°50.2'	25 km SE. of Pahoa	----------
13	06	22	50.3	2.8	8	19°47.9'	156°05.0'	20 km NNW. of Kailua	----------
14	06	06	24.3	2.9	8	19°59.2'	155°21.8'	13 km west of Laupahoehoe	----------
14	09	05	06.1	3.0	8	19°49.2'	156°02.0'	20 km NNW. of Kailua	----------
14	18	26	05.9	2.1	shallow	19°17.7'	155°30.3'	13 km WSW. of Desert seismometer	----------
14	18	27	07.7	2.0	35	19°18.9'	155°08.7'	2 km ENE. of Kealakomo seismometer	----------
14	19	23	32.8	4.0	8	19°58.4'	155°23.5'	16 km WSW. of Laupahoehoe	Hilo, Paauilo, Honokaa, Kilauea summit area
14	19	44	35.8	3.2	8	19°59.4'	155°21.9'	13 km west of Laupahoehoe	Paauilo
14	22	52	27.2	2.5	5	19°56.5'	155°24.0'	18 km WSW. of Laupahoehoe	----------
15	01	02	05.8	2.0	26	19°33.3'	155°08.2'	3 km WNW. of Mt. View	----------
15	06	05	05.6	2.8	6	19°57.3'	155°23.0'	15 km WSW. of Laupahoehoe	----------
15	08	17	40.5	2.4	8	19°59.8'	155°21.6'	12 km west of Laupahoehoe	----------
15	14	53	43.5	2.2	3	19°27.4'	155°42.3'	24 km ESE. of Kealakekua	----------
16	12	25	45.7	2.5	6	19°11.4'	155°40.4'	17 km NW. of Naalehu	----------
16	21	45	39.9	2.5	13	19°28.7'	155°32.8'	4 km SE. of North Bay seismometer	----------
16	23	05	17.4	2.2	3	19°55.0'	155°24.2'	19 km WSW. of Laupahoehoe	----------
17	01	26	56.7	2.8	8	19°23.7'	155°25.7'	7 km NNW. of Desert seismometer	Pahala
17	02	22	34.0	2.2	8	19°58.7'	155°23.6'	16 km west of Laupahoehoe	----------
17	18	08	28.2	2.5	8	19°58.3'	155°23.4'	16 km west of Laupahoehoe	----------
17	18	19	07.9	2.6	8	19°57.4'	155°23.2'	16 km WSW. of Laupahoehoe	----------
17	19	33	12.3	2.5	3	19°20.4'	155°49.8'	8 km SE. of Hookena	----------
17	20	41	21.7	3.9	9	19°59.1'	155°22.5'	14 km west of Laupahoehoe	Laupahoehoe, Paauilo, Honokaa, Pahala, Kilauea summit area

Aug.	17	20	44	01.5	3.2	9	20°00.3'	155°21.5'	13 km west of Laupahoehoe	----------
	18	06	54	45.1	2.3	9	19°58.7'	155°23.6'	16 km west of Laupahoehoe	----------
	18	11	51	14.5	2.0	6	19°23.1'	155°24.6'	6 km NNW. of Desert seismometer	----------
	18	15	09	01.5	2.7	9	19°59.0'	155°22.4'	13 km west of Laupahoehoe	----------
	18	15	12	32.4	3.2	3	19°58.8'	155°21.8'	12 km west of Laupahoehoe	----------
	18	15	45	02.6	2.4	8	19°58.4'	155°21.5'	12 km west of Laupahoehoe	----------
	18	16	07	39.4	3.3	3	19°55.9'	155°23.4'	16 km WSW. of Laupahoehoe	----------
	18	17	12	37.9	2.3	26	19°22.0'	155°17.5'	6 km south of Uwekahuna seismometer	----------
	19	04	59	26.5	2.3	8	19°58.0'	155°23.0'	15 km WSW. of Laupahoehoe	----------
	19	05	08	16.9	3.3	13	19°37'	157°42'	187 km west of Kealakekua	----------
	19	06	14	43.7	2.7	8	19°59.9'	155°19.3'	8 km west of Laupahoehoe	----------
	19	07	23	19.0	2.0	8	19°57.6'	155°23.1'	15 km WSW. of Laupahoehoe	----------
	19	10	34	08.4	2.0	25	19°22.0'	155°17.3'	6 km south of Uwekahuna seismometer	----------
	19	16	40	37.3	2.5	3	19°36.4'	155°44.8'	20 km NE. of Kealakekua	----------
	20	01	17	17.5	2.4	8	19°58.8'	155°20.5'	10 km west of Laupahoehoe	----------
	21	22	02	58.3	3.4	8	19°09.1'	155°31.5'	12 km NE. of Naalehu	Naalehu
	22	01	38	16.8	2.1	3	19°58.3'	155°21.3'	12 km WSW. of Laupahoehoe	----------
	22	07	02	41.0	2.0	8	19°24.0'	155°03.4'	14 km ENE. of Makaopuhi seismometer	----------
	22	08	31	26.1	2.2	8	19°15.8'	155°35.0'	22 km north of Naalehu	----------
	23	02	16	34.2	2.4	13	19°59.6'	155°22.5'	14 km west of Laupahoehoe	----------
	23	17	00	37.8	2.6	7	19°07.3'	155°32.2'	9 km NE. of Naalehu	----------
	24	04	37	53.3	2.0	8	19°26.0'	155°27.5'	13 km NW. of Desert seismometer	----------
	25	08	40	08.7	2.7	6	19°09.0'	155°34.2'	10 km NNE. of Naalehu	----------
	25	09	28	10.9	2.0	6	19°09.0'	155°35.5'	10 km north of Naalehu	----------
	26	05	47	25.5	2.8	7	19°08.7'	155°34.4'	9 km NNE. of Naalehu	----------
	26	09	29	20.4	2.9	8	19°59.8'	155°21.9'	12 km west of Laupahoehoe	----------
	26	23	38	42.7	2.2	3	19°23.3'	155°02.7'	15 km SW. of Pahoa	----------
	27	00	13	52.1	2.7	8	19°22.7'	155°06.5'	7 km east of Makaopuhi seismometer	----------
	27	07	46	19.2	3.5	8	19°18.8'	155°13.8'	8 km SW. of Makaopuhi seismometer	Kilauea summit area
	29	18	20	36.6	2.7	8	19°18.8'	155°13.7'	8 km SW. of Makaopuhi seismometer	----------
	30	09	26	02.5	2.8	8	19°10.5'	155°40.9'	16 km NW. of Naalehu	----------
	30	18	00	41.2	2.1	8	19°19.5'	155°13.5'	7 km SW. of Makaopuhi seismometer	----------
	31	03	32	20.1	2.7	7	19°21.0'	155°23.2'	2 km north of Desert seismometer	----------
	31	04	32	46.8	2.2	7	19°08.0'	155°05.2'	20 km SE. of Kealakomo seismometer	----------
	31	07	56	23.5	3.2	9	19°19.5'	155°25.0'	3 km SW. Desert seismometer	Naalehu

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

July, August, and September 1967--Continued

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Aug. 31	08	41	40.3	2.0	9	19°20.5'	155°24.6'	3 km west of Desert seismometer	----------
31	13	18	26.7	2.3	9	19°19.0'	155°24.0'	3 km SW. of Desert seismometer	----------
31	14	04	06.8	2.9	30	19°56.8'	156°02.0'	23 km SW. of Kawaihae	----------
Sept. 1	13	08	57.5	2.0	5	19°23.2'	155°18.0'	4 km SSW. of Uwekahuna seismometer	----------
1	22	52	03.3	2.2	5	19°22.4'	155°28.7'	10 km NW. of Desert seismometer	----------
2	09	33	52.1	3.3	30	19°21.9'	155°16.3'	1 km SW. of Ahua seismometer	Kilauea summit area
3	03	24	22.0	2.2	9	19°19.8'	155°13.2'	6 km SW. of Makaopuhi seismometer	----------
3	15	39	08.3	2.8	3	19°20.1'	155°46.2'	14 km SE. of Hookena	----------
3	21	22	53.5	2.1	9	19°18.3'	155°13.8'	8 km SW. of Makaopuhi seismometer	----------
4	06	10	47.8	2.2	30	19°22.0'	155°16.6'	2 km WSW. of Ahua seismometer	----------
4	07	51	19.2	2.5	5	19°21.8'	155°04.9'	10 km east of Makaopuhi seismometer	----------
5	01	22	41.0	2.9	13	18°25'	155°26'	72 km SSE. of Naalehu	----------
5	03	33	16.6	2.4	8	19°53.6'	155°28.2'	26 km WSW. of Laupahoehoe	----------
6	17	41	55.0	2.4	5	19°15.9'	155°24.2'	8 km SSW. of Desert seismometer	----------
6	19	11	05.9	3.1	30	19°17.9'	155°18.4'	10 km SE. of Desert seismometer	Pahala, Kilauea summit area
7	13	28	44.1	2.4	8	19°18.0'	155°13.8'	9 km SW. of Makaopuhi seismometer	----------
7	16	37	45.5	2.2	9	19°08.3'	155°39.8'	12 km NW. of Naalehu	----------
7	19	49	15.1	2.6	8	20°00.2'	155°19.9'	9 km WNW. of Laupahoehoe	----------
8	02	22	32.5	4.0	13	19°25.3'	155°17.9'	1 km NE. of Uwekahuna seismometer	Island-wide
8	03	57	57.6	3.0	6	19°22.9'	155°46.3'	14 km east of Hookena	----------
10	02	33	10.1	2.5	8	19°22.3'	155°26.2'	6 km NW. of Desert seismometer	----------
10	01	55	11.0	2.0	8	19°16.1'	155°21.8'	8 km SSE. of Desert seismometer	----------
10	16	30	28.5	2.5	5	19°15.3'	155°21.3'	10 km SSE. of Desert seismometer	----------
10	16	32	50.9	2.2	8	19°19.3'	155°22.1'	3 km SE. of Desert seismometer	----------
11	11	13	04.8	2.2	8	19°32.8'	155°50.6'	9 km ENE. of Kealakekua	----------
12	00	59	50.9	2.2	8	19°18.3'	155°23.9'	4 km SSW. of Desert seismometer	----------

Sept.	12	01	27	32.0	2.6	6	19°22.1'	155°26.2'	6 km NW. of Desert seismometer	----------
	12	01	38	39.7	2.7	9	19°20.8'	155°24.5'	2 km WNW. of Desert seismometer	----------
	13	17	18	50.6	2.2	5	19°24.3'	155°17.6'	2 km south of Uwekahuna seismometer	----------
	13	18	34	17.2	2.3	8	19°24.5'	155°47.3'	12 km ENE. of Hookena	----------
	14	16	09	42.6	2.9	40	19°42.5'	156°06.3'	6 km WSW. of Keahole Point	----------
	15	07	10	52.8	2.1	7	19°21.2'	155°23.3'	2 km north of Desert seismometer	----------
	16	10	48	02.9	2.6	8	19°30.3'	155°51.7'	7 km ESE. of Kealakekua	----------
	17	12	25	13.4	2.5	3	19°14.2'	155°49.5'	10 km NE. of Milolii	----------
	17	13	04	37.2	2.5	3	19°53.2'	155°41.1'	5 km NW. of Waikii	----------
	18	11	05	28.4	2.4	8	19°08.1'	155°33.7'	9 km NNE. of Naalehu	----------
	19	02	41	43.2	2.2	8	19°24.8'	155°01.2'	17 km ENE. of Makaopuhi seismometer	----------
	19	13	44	57.8	2.2	5	19°23.5'	155°17.5'	3 km south of Uwekahuna seismometer	----------
	19	20	22	39.8	2.5	8	19°07.8'	155°40.5'	12 km NW. of Naalehu	----------
	19	22	58	20.1	2.5	10	19°10.5'	155°39.8'	15 km NW. of Naalehu	----------
	21	11	24	43.0	3.7	13	19°31.8'	156°04.0'	15 km west of Kealakekua	----------
	22	10	50	52.6	2.6	8	19°25.0'	155°23.4'	9 km north of Desert seismometer	----------
	22	16	34	23.6	2.5	8	19°28.4'	155°49.9'	10 km SE. of Kealakekua	----------
	22	19	20	40.9	2.0	8	19°25.0'	155°25.7'	10 km NW. of Desert seismometer	----------
	23	08	37	23.5	3.6	10	19°17.0'	155°22.3'	6 km SSE. of Desert seismometer	Kilauea summit area, Pahala
	23	21	25	04.6	3.5	10	19°40.2'	155°59.5'	18 km NNW. of Kealakekua	----------
	23	17	05	15.4	2.6	5	20°11.4'	155°23.7'	15 km NE. of Honokaa	----------
	24	15	23	32.3	2.1	35	19°23.5'	155°14.2'	6 km SE. of Uwekahuna seismometer	----------
	24	17	01	25.0	2.2	35	19°25.5'	155°15.5'	4 km east of Uwekahuna seismometer	----------
	24	17	08	18.6	2.8	35	19°25.0'	155°15.2'	4 km ESE. of Uwekahuna seismometer	Kilauea summit area
	24	17	45	32.2	2.5	35	19°26.0'	155°15.5'	4 km ENE. of Uwekahuna seismometer	----------
	24	19	42	42.8	2.7	35	19°26.0'	155°15.5'	4 km ENE. of Uwekahuna seismometer	Kilauea summit area
	25	02	27	38.1	2.1	8	19°45.1'	155°31.2'	1 km ENE. of Pohakuloa	----------
	25	04	28	35.8	2.6	5	19°19.6'	155°21.3'	4 km ESE. of Desert seismometer	Pahala
	25	08	14	52.1	3.1	13	19°55'	156°50'	82 km WNW. of Keahole Point	----------
	25	14	45	05.6	2.5	40	19°24.8'	155°15.8'	3 km ESE. of Uwekahuna seismometer	----------
	25	21	53	09.1	2.6	8	19°28.9'	155°52.8'	6 km SE. of Kealakekua	----------
	26	02	01	18.0	2.7	8	19°25.6'	155°24.9'	11 km NNW. of Desert seismometer	----------
	26	11	44	20.1	2.1	8	19°06.8'	155°22.1'	24 km ENE. of Naalehu	----------
	26	12	59	26.4	3.4	45	19°21.3'	155°10.6	1 km south of Makaopuhi seismometer	Kilauea summit area

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

July, August, and September 1967--Continued

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Sept. 27	12	45	23.4	2.2	8	19°25.5'	155°30.5'	10 km SE. of North Bay seismometer	----------
28	00	05	55.0	3.2	20	19°29.0'	155°13.9'	9 km NE. of Uwekahuna seismometer	Hilo, Pahoa, Kilauea summit area
28	03	22	44.0	2.6	7	19°24.2'	154°51.1'	14 km SE. of Pahoa	----------
28	12	77	46.7	2.8	6	19°24.7'	155°28.7'	13 km NW. of Desert seismometer	----------
28	16	48	08.2	2.7	8	19°59.2'	155°20.5'	10 km west of Laupahoehoe	----------
28	18	29	37.4	2.6	8	19°59.2'	155°20.5'	10 km west of Laupahoehoe	----------
29	16	16	54.7	2.0	30	19°23.0'	155°18.1'	5 km SSW. of Uwekahuna seismometer	----------
29	18	42	51.9	2.7	8	19°25.0'	155°40.5'	13 km SW. of North Bay seismometers	----------
30	13	33	54.2	2.1	8	19°09.5'	155°05.7'	15 km SE. of Apua Point	----------
30	15	51	16.8	2.4	40	19°15.0'	155°23.4'	10 km south of Desert seismometer	----------

GPO 871-471

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 48

October, November, and December 1967

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Issued June 1969

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Tilting of the ground around Kilauea Caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter at Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna

October, November, and December 1967

Date (1967)	N-S	E-W	Date (1967)	N-S	E-W
Oct. 1	560	412	Nov. 19	569	401
8	564	409	26	567	398
15	572	407	Dec. 3	563	401
22	574	400	10	560	404
29	575	398	17	559	402
Nov. 5	572	401	24	558	405
12	571	397	31	558	404

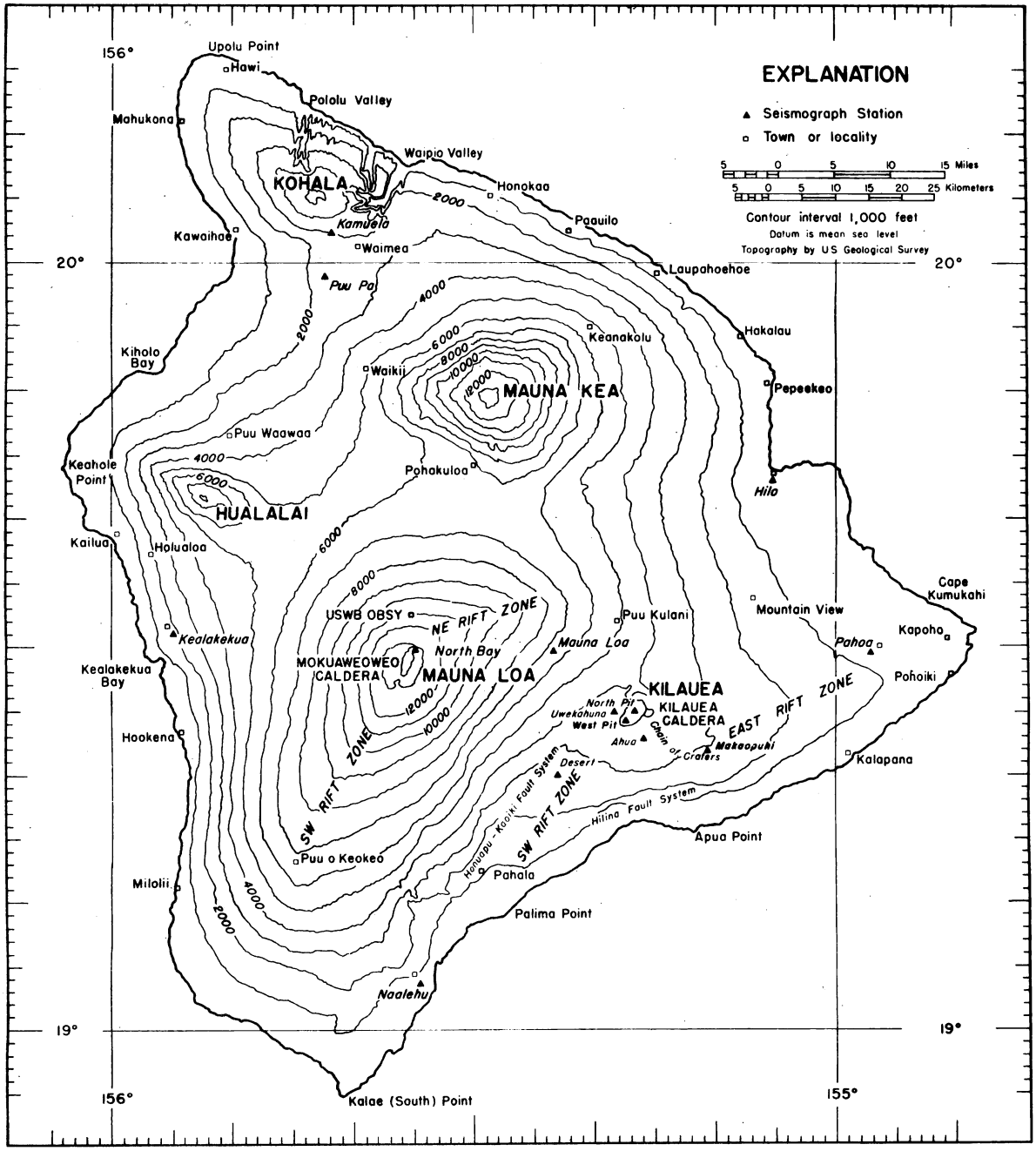

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

4th Quarter, 1967

Table 2.--Tilt coordinates and changes at bases around Kilauea Caldera

(See fig. 2)

Tilt base (location)	Date (1967)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1967)
		N-S	E-W			
Uwekahuna (U on fig. 2)	Nov. 9	597.8	404.7	8.9	N. 33.7° W.	Sept. 6
Tree Molds (TM)	7	474.8	505.0	1.6	N. 21.3° E.	7
Sand Spit (SS)	8	894.6	701.2	6.0	N. 72.0° W.	6
Keamoku (Kea)	8	559.7	367.0	8.8	N. 63.5° W.	5
Ahua Kamokukolau (Kam)	8	402.8	557.2	9.1	S. 25.5° W.	6
Kipuka Nene (KN)	7	299.6	308.5	1.45	S. 26.5° W.	7
Hilina Pali (HP)		Not read this epoch				
Kapapala Ranch (Kap)	8	496.9	509.5	0.36	N. 67.0° E.	5
Mehena (M)	8	571.1	578.8	4.77	N. 34.4° E.	6

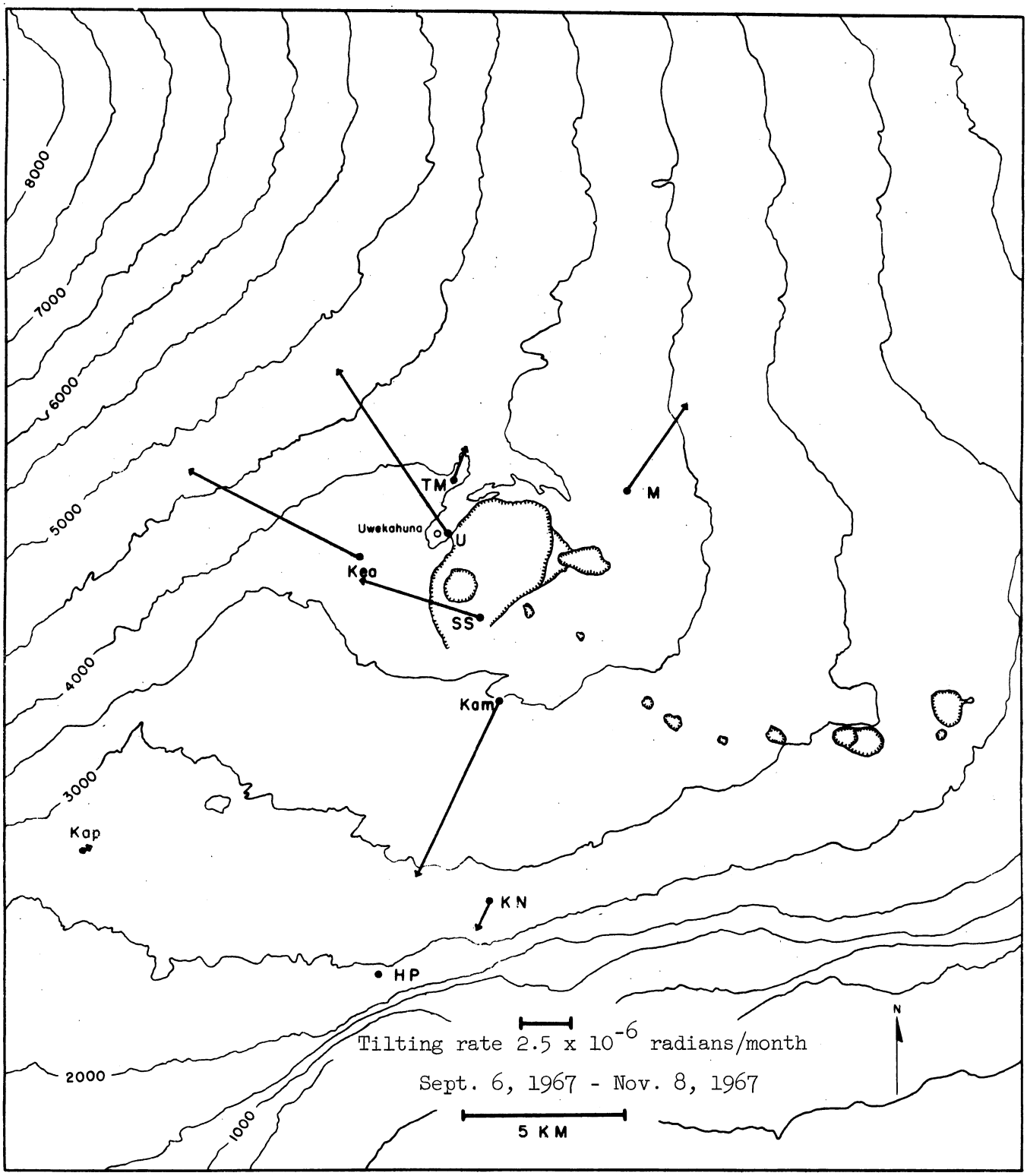

Figure 2.--Tilting of the ground around Kilauea Caldera between September 6 and November 8, 1967. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circle, short-base water-tube tiltmeter. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, M(2), A, D, N, WP, MP, K, O). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5, which is published only in the first quarter issue each year.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1967)	Tremor (minutes)			Earthquakes							
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Others
	Deep	Inter-mediate	Shallow	30 km	Long period	Shallow					
Oct. 1	----	--------	-------	5	------	208	26	-------	10	8	----------
2	----	--------	-------	9	3	251	35	-------	22	6	1 west Hawaii
3	----	--------	-------	5	------	152	29	-------	19	5	----------
4	----	--------	-------	3	4	245	27	-------	12	5	2 Mauna Loa
5	----	--------	-------	3	4	255	35	-------	16	10	----------
6	10	--------	-------	6	2	297	37	1	19	15	1 off SE. shore of Hawaii
7	----	--------	-------	7	------	405	32	-------	15	5	1 off east shore of Hawaii 1 off SE. shore of Hawaii
8	----	--------	-------	6	------	406	37	-------	3	6	1 west Hawaii
9	----	--------	-------	3	------	211	44	-------	22	4	1 off north shore of Hawaii 1 SW. flank of Mauna Loa 1 west Hawaii
10	15	--------	-------	1	3+	249	35	-------	17	3	----------
11	----	--------	-------	----	8	468	32	-------	32	12	----------

		Harmonic tremor and small shocks during Halemaumau eruption obscured the seismograms for accurate count of local seismic events									
Oct.	12	----	--------	-------	-----	15	407	46	--------	27	18	2 Mauna Loa 1 west Hawaii
	13	----	--------	-------	-----	4	317	7	--------	4	8	----------
	14	----	--------	-------	1	6	319	2	--------	15	8	----------
	15	----	--------	-------	3	11	197	65	--------	10	9	----------
	16	----	--------	-------	5	20	153	107	1	17	5	----------
	17	37	--------	-------	9	25	145	44	1	11	2	----------
	18	----	--------	-------	8	29	258	61	--------	30	5	2 SW. flank of Mauna Loa
	19	----	--------	-------	3	15	292	46	--------	13	9	----------
	20	----	--------	-------	-----	6	373	21	--------	22	9	----------
	21	----	--------	-------	3	13	247	26	--------	26	3	----------
	22	----	--------	-------	6	7	235	35	--------	11	7	1 west Hawaii
	23	----	--------	-------	-----	42	206	17	--------	25	4	----------
	24	----	--------	-------	3	21	202	24	--------	17	11	----------
	25	----	--------	-------	7	8	191	30	--------	24	14	----------
	26	----	--------	-------	1+	3+	123+	4+	--------	4+	11+	----------
	27	----	--------	-------	2	------	135	52	--------	12	1	1 Mauna Kea
	28	----	--------	-------	3	2	136	39	1	8	11	----------
	29	----	--------	-------	5	------	152	25	--------	20	20	1 Mauna Kea
	30	----	--------	5	-----	------	189	22	--------	9	6	1 SW. flank of Mauna Loa 1 off NW. shore of Hawaii
	31	----	--------	10	-----	17	141	16	--------	16	6	----------
Nov.	1				-----	5	74	20	--------	10	6	----------
	2				-----	2	113	10	2	12	3	----------
	3				-----	------	109	4	--------	10	----	1 off NW. shore of Hawaii
	4				-----	2	67	-------	--------	12	10	----------
	5				The start of the eruption in Halemaumau Crater							1 off SE. shore of Hawaii
	6				5	------	335	4	--------	11	3	1 Mauna Loa
	7				3	------	300	8	--------	3	2	----------
	8				2	------	150	8	--------	4	2	----------
	9				-----	------	70	6	--------	6	1	----------
	10				-----	------	?	?	--------	------	----	1 Mauna Loa
	11				-----	------	?	?	--------	------	----	----------
	12				-----	------	?	?	--------	9	----	----------
	13				-----	------	?	?	--------	------	----	1 off east shore of Hawaii

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1967)	Tremor (minutes)			Earthquakes							
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Others
	Deep	Intermediate	Shallow	30 km	Long period	Shallow					
Nov. 14	Harmonic tremor and small shocks during Halemaumau eruption obscured the seismograms for accurate count of local seismic events			-----	------	?	--------	-------	-----	----	----------
15				-----	------	?	--------	-------	-----	----	----------
16				-----	------	?	--------	-------	-----	----	----------
17				1	------	?	3	-------	4	----	----------
18				-----	------	?	1	-------	-----	1	----------
19				-----	2	120	9	-------	13	----	----------
20				1	------	50	11	-------	10	----	----------
21				?	?	?	?	-------	4	----	1 Mauna Kea
22				-----	2	83	20	-------	6	----	----------
23				1	------	47	11	1	10	1	----------
24				?	------	93	3	-------	?	2	1 Mauna Kea; 1 west Hawaii
25				1	------	26	10	-------	9	----	----------
26				5	------	37	5	-------	3	2	1 off east shore of Hawaii
27				1	------	13	26	-------	7	1	----------
28				-----	------	40	9	-------	10	----	----------
29				1	------	14	4	-------	15	1	----------
30				1	------	165	8	-------	11	----	----------
Dec. 1	----			5	------	71	9	-------	10	1	1 Mauna Kea
2	----			3	------	90	9	-------	5	1	2 Mauna Loa
3	----			1	------	-------	5	-------	7	----	----------
4	----			-----	------	55	7	-------	9	1	1 off west shore of Hawaii
5	----			1	------	71	7	-------	9	----	----------
6	23			1	------	-------	8	-------	8	----	----------
7	----			1	------	30	7	-------	21	----	1 SW. flank of Mauna Loa
8	----			1	------	45	4	-------	12	----	1 west Hawaii
9	----			-----	------	23	30	-------	33	6	1 Mauna Loa; 2 west Hawaii

Dec. 10	----		-----	------	40	10	--------	------	1	1 off west shore of Hawaii
11	----		2	------	5	4	--------	39	1	----------
12	----		4	------	244	14	--------	36	----	----------
13	----		-----	------	5	10	--------	33	2	1 off NW. shore of Hawaii
14	----		2	------	170	5	--------	48	3	1 off south shore of Hawaii
15	----		13	------	115	10	--------	51	2	1 off SE. shore of Hawaii
16	----		2	------	2	8	--------	30	----	----------
17	----		7	15	30	14	--------	18	----	2 Mauna Loa; 2 SW. flank of Mauna Loa
18	----		12	------	90	11	--------	31	----	----------
19	----		13	------	30	7	--------	35	1	----------
20	----		6	------	97	15	--------	30	----	----------
21	----		4	------	25	17	--------	37	----	----------
22	----		21	2	110	13	--------	29	2	1 west Hawaii
23	----		5	------	20	13	--------	17	----	1 west Hawaii
24	----		3	------	50	18	--------	9	----	1 west Hawaii
25	----		1	------	141	13	--------	9	----	----------
26	----		5	------	69	9	--------	15	----	----------
27	10		1	------	185	14	--------	27	----	----------
28	----		6+	------	220	7	--------	30	2	1 off NE. shore of Maui
29	----		-----	------	55+	17	--------	8	----	----------
30	----		6	------	50+	11	--------	14	----	1 Mauna Kea
31	----		-----	------	90+	14	--------	6	----	----------

Harmonic tremor and small shocks during

Halemaumau eruption obscured the seismograms

for accurate count of local seismic events

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, and December 1967

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Oct. 1	00	23	59.0	2.0	10	19°15.7'	155°04.5'	15 km SE. of Makaopuhi seismometer	----------
2	15	21	58.1	2.7	3	19°40.1'	156°00.0'	18 km NNW. of Kealakekua	----------
2	20	05	25.1	2.0	25	19°25.7'	155°16.5'	2 km ENE. of Uwekahuna seismometer	----------
3	00	37	49.0	2.3	8	19°17.5'	155°27.5'	9 km SW. of Desert seismometer	----------
3	13	26	40.7	2.0	13	19°18.6'	155°13.6'	8 km SE. of Ahua seismometer	----------
4	00	38	16.0	2.0	8	19°31.8'	155°45.2'	17 km ENE. of Kealakekua	----------
4	21	41	39.8	2.6	8	19°30.9'	155°50.1'	9 km east of Kealakekua	----------
5	01	25	21.1	2.0	7	19°19.4'	155°13.6'	7 km SE. of Ahua seismometer	----------
5	15	59	37.4	2.0	30	19°24.4'	155°17.5'	2 km south of Uwekahuna seismometer	----------
6	04	49	16.8	2.0	8	19°26.0'	155°23.8'	11 km NNW. of Desert seismometer	----------
6	06	16	27.5	2.3	6	19°14.2'	154°55.0'	14 km SE. of Kalapana	----------
6	04	26	37.1	2.0	8	19°09.8'	155°25.5'	7 km SE. of Pahala	----------
7	13	19	42.8	2.4	8	19°36.7'	154°47.7'	21 km NE. of Pahoa	----------
7	20	32	59.6	2.3	8	19°10.1'	154°58.7'	21 km south of Kalapana	----------
8	22	39	56.0	2.0	6	19°27.0'	155°52.5'	9 km SE. of Kealakekua	----------
9	08	25	06.2	2.4	8	20°05.9'	155°55.5'	13 km NW. of Kawaihae	----------
9	12	00	22.8	2.4	8	19°25.6'	155°55.1'	10 km south of Kealakekua	----------
9	13	04	10.9	2.3	5	19°23.5'	155°17.1'	4 km SSE. of Uwekahuna seismometer	----------
9	20	01	09.6	2.7	8	19°10.5'	155°36.5'	13 km NNW. of Naalehua	----------
9	23	43	38.0	3.2	10	19°23.1'	155°29.0'	11 km WNW. of Desert seismometer	Pahala
10	00	09	01.2	2.0	10	19°22.3'	155°28.0'	9 km WNW. of Desert seismometer	----------
10	08	58	04.5	2.2	20	19°26.1'	155°26.8'	13 km NW. of Desert seismometer	----------
11	08	16	51.9	2.5	45	19°17.1'	155°09.2'	2 km SSE. of Kealakomo seismometer	----------

Oct.	12	04	41	33.7	2.7	13	19°28.8'	155°46.7'	16 km ESE. of Kealakekua	----------
	12	06	25	23.7	2.7	13	19°28.3'	155°46.7'	16 km ESE. of Kealakekua	----------
	12	20	49	11.2	2.9	7	19°34.0'	155°52.2'	7 km NE. of Kealakekua	Kealakekua
	14	16	27	09.7	2.5	30	19°20.8'	155°17.9'	5 km SW. of Ahua seismometer	----------
	15	05	57	58.7	3.7	5	19°25.2'	155°28.7'	13 km NW. of Desert seismometer	Hilo, Pahala, Kilauea summit area
	15	11	01	54.0	2.2	6	19°19.6'	155°25.0'	3 km WSW. of Desert seismometer	----------
	15	12	44	21.1	2.5	8	19°20.1'	155°24.8'	3 km west of Desert seismometer	----------
	16	04	10	03.7	2.5	8	19°21.9'	155°13.0'	5 km ESE. of Ahua seismometer	----------
	16	11	45	04.8	2.0	10	19°14.3'	155°32.6'	8 km NW. of Pahala	----------
	17	04	37	54.9	2.1	5	19°22.0'	155°23.6'	3 km NNW. of Desert seismometer	----------
	17	08	48	06.4	2.0	5	19°22.0'	155°23.5'	3 km NNW. of Desert seismometer	----------
	17	11	45	27.1	2.5	10	19°21.0'	155°24.1'	2 km NW. of Desert seismometer	----------
	17	12	20	12.3	2.8	8	19°20.5'	155°26.3'	5 km WNW. of Desert seismometer	Pahala
	18	00	07	40.0	2.3	30	19°28.0'	155°15.5'	6 km NE. of Uwekahuna seismometer	----------
	18	06	57	20.1	2.1	8	19°09.5'	155°40.3'	14 km NW. of Naalehu	----------
	18	23	04	50.2	2.4	8	19°09.2'	155°40.5'	14 km NW. of Naalehu	----------
	19	11	16	31.0	3.3	40	19°23.0'	154°56.6'	5 km NE. of Kalapana	----------
	19	14	16	07.8	2.0	30	19°23.3'	155°17.0'	4 km SSE. of Uwekahuna seismometer	----------
	20	19	52	00.8	2.1	7	19°23.6'	155°02.7'	13 km ENE. of Makaopuhi seismometer	----------
	21	07	44	54.6	2.4	8	19°11.9'	155°32.3'	7 km west of Pahala	----------
	21	09	57	25.6	2.3	30	19°37.7'	155°10.0'	11 km NW. of Mt. View	----------
	21	19	35	17.3	2.3	10	19°24.5'	155°03.9'	12 km ENE. of Makaopuhi seismometer	----------
	21	23	11	25.3	2.0	30	19°22.4'	155°18.4'	6 km SSW. of Uwekahuna seismometer	----------
	22	03	15	34.7	2.0	8	19°20.3'	155°09.5'	3 km SSE. of Makaopuhi seismometer	----------
	22	13	35	32.1	2.1	8	19°34.5'	155°48.8'	13 km ENE. of Kealakekua	----------
	22	18	08	34.0	2.1	8	19°22.7'	155°24.3'	5 km NNW. of Desert seismometer	----------
	23	11	20	22.2	2.4	7	19°23.0'	155°24.9'	6 km NW. of Desert seismometer	----------
	26	02	18	02.5	2.0	9	19°23.0'	155°06.3'	7 km ENE. of Makaopuhi seismometer	----------
	27	00	01	34.6	2.2	8	19°53.0'	155°28.7'	15 km WNW. of Keanakolu	----------
	27	06	53	32.8	2.0	10	19°22.8'	155°04.7'	9 km ENE. of Makaopuhi seismometer	----------
	27	12	42	32.0	3.0	32	19°20.0'	155°15.5'	4 km SSE. of Ahua seismometer	Kilauea summit area
	28	07	16	38.4	2.5	10	19°23.1'	155°27.8'	9 km NW. of Desert seismometer	----------
	29	03	34	37.2	3.8	10	19°59.5'	155°33.9'	15 km ESE. of Kamuela	Kamuela, Kohala, Pahala

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December 1967--Continued

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Oct. 30	12	47	17.1	2.2	8	19°23.0'	155°27.8'	9 km NW. of Desert seismometer	Pahala
30	13	00	42.4	3.0	3	19°08.8'	155°37.9'	10 km NW. of Naalehu	----------
30	16	10	53.8	3.2	3	19°51.6'	156°12.2'	20 km NW. of Keahole Point	----------
30	21	28	00.4	3.0	60	19°23.0'	155°01.2'	5 km NW. of Kalapana	----------
31	15	50	28.7	2.2	9	19°20.2'	155°24.0'	2 km west of Desert seismometer	----------
31	18	16	56.3	3.1	25	19°21.2'	155°17.2'	3 km SW. of Ahua seismometer	Pahala, Kilauea summit area
Nov. 1	04	19	11.3	3.2	25	19°22.2'	155°18.5'	6 km SSW. of Uwekahuna seismometer	----------
1	08	40	55.3	2.5	30	19°21.6'	155°17.8'	7 km south of Uwekahuna seismometer	----------
2	10	22	07.6	2.7	8	19°25.2'	155°03.0'	10 km NW. of Kalapana	----------
2	14	46	51.0	3.0	9	19°28.6'	154°53.4'	6 km SE. of Pahoa	----------
3	00	52	43.0	4.1	13	19°49'	156°50'	80 km WNW. of Keahole Point	----------
4	13	34	41.0	2.7	9	19°20.2'	155°12.1'	5 km SW. of Makaopuhi seismometer	----------
4	20	14	07.3	3.0	9	19°10.6'	155°26.5'	5 km SE. of Pahala	----------
5	02	04	29.5	2.8	5	19°24.0'	155°17.8'	3 km SSW. of Uwekahuna seismometer	----------
5	02	20	16.8	3.4	5	19°24.0'	155°17.6'	3 km south of Uwekahuna seismometer	Kilauea summit area
5	02	57	26.5	2.8	5	19°23.7'	155°17.6	3 km south of Uwekahuna seismometer	----------
5	16	05	00.8	3.1	3	19°02.6'	155°29.0'	11 km ESE. of Naalehu	----------
6	12	01	25.8	2.5	10	19°20.8'	155°08.5'	3 km SE. of Makaopuhi seismometer	----------
8	13	31	59.8	2.2	7	19°24.6'	155°24.8'	8 km NNW. of Desert seismometer	----------
10	00	13	29.3	2.4	5	19°26.8'	155°40.5'	11 km SW. of North Bay seismometer	----------
11	17	14	36.2	2.5	30	19°19.2'	155°17.5'	6 km SSW. of Ahua seismometer	----------
12	03	40	42.0	2.7	6	19°18.2'	155°12.3'	8 km SW. of Makaopuhi seismometer	----------
13	07	45	56.4	3.0	40	19°41.9'	154°49.1'	28 km ESE. of Hilo	----------
13	17	04	44.3	2.0	5	19°15.3'	155°28.0'	12 km SW. of Desert seismometer	----------
15	05	33	17.0	2.4	5	19°22.8'	155°27.5'	9 km NW. of Desert seismometer	----------

Nov.	17	17	04	43.8	2.4	8	19°26.3'	155°24.1'	7 km SSW. of Mauna Loa seismometer	----------
	19	22	58	14.6	3.2	10	19°21.1'	155°25.0'	3 km NW. of Desert seismometer	Pahala
	20	10	27	20.5	2.0	40	19°08.3'	155°24.8'	9 km SE. of Pahala	----------
	20	10	37	37.8	2.0	25	19°21.5'	155°30.9'	13 km WNW. of Desert seismometer	----------
	21	06	23	47.1	2.8	8	19°53.5'	155°38.8'	4 km north of Waikii	----------
	23	19	59	04.7	3.0	3	19°15.2'	155°34.6'	12 km WNW. of Pahala	----------
	24	16	53	38.8	2.4	8	19°26.9'	155°48.8'	14 km SE. of Kealakekua	----------
	24	17	33	16.5	2.0	8	19°21.1'	155°24.2'	2 km NW. of Desert seismometer	----------
	24	18	58	52.2	2.9	8	19°59.0'	155°22.8'	5 km SSW. of Paauilo	----------
	26	00	38	27.5	2.7	13	19°24.7'	154°46.0'	21 km SE. of Pahoa	----------
	26	06	25	48.5	3.3	9	19°20.8'	155°17.2'	4 km SW. of Ahua seismometer	Hilo, Mt. View, Kilauea summit area
	28	08	40	26.2	2.9	7	19°19.8'	155°12.4'	6 km SW. of Makaopuhi seismometer	----------
	30	22	08	00.5	2.5	8	19°26.8'	155°24.9'	6 km SW. of Mauna Loa seismometer	----------
Dec.	1	05	37	35.0	2.3	5	19°54.9'	155°18.2'	3 km east of Keanakolu	----------
	1	13	04	09.9	2.1	7	19°19.5'	155°15.0'	6 km SSE. of Ahua seismometer	----------
	1	21	59	01.5	2.3	30	19°21.7'	155°18.8'	7 km SSW. of Uwekahuna seismometer	----------
	2	06	47	35.3	2.4	8	19°25.1'	155°24.9'	10 km NNW. of Desert seismometer	----------
	2	11	56	37.1	2.4	8	19°25.0'	155°35.3'	8 km SSW. of North Bay s eismometer	----------
	2	21	26	39.2	2.5	8	19°27.3'	155°40.8'	11 km WSW. of North Bay s eismometer	----------
	4	18	12	52.7	2.8	8	19°31'	156°31'	63 km west of Kealakekua	----------
	7	09	54	56.4	2.3	10	19°09.5'	155°37.6'	12 km NW. of Naalehu	----------
	7	16	14	12.8	3.1	10	19°20.3'	155°12.8'	5 km SW. of Makaopuhi seismometer	Hilo, Pahala, Kilauea summit area
	8	10	46	58.4	3.3	27	19°45.2'	156°04.0'	3 km north of Keahole Point	----------
	8	13	07	02.2	3.1	8	19°25.8'	155°25.9'	11 km NW. of Desert seismometer	Pahala
	9	02	06	03.8	3.8	25	19°47.3'	156°03.2'	6 km NNE. of Keahole Point	----------
	9	19	10	53.5	2.8	27	19°50.3'	156°04.8'	10 km NNW. of Keahole Point	----------
	9	20	36	34.4	2.6	8	19°33.3'	155°41.7'	14 km WNW. of North Bay seismometer	----------
	10	00	29	23.0	2.7	8	19°25.3'	156°02.7'	17 km SW. of Kealakekua	----------
	11	10	48	32.8	2.5	20	19°21.9'	155°19.8'	7 km WSW. of Ahua seismometer	----------
	12	19	24	42.8	2.2	30	19°22.2'	155°18.2'	6 km SSW. of Uwekahuna seismometer	----------
	12	23	58	17.1	2.4	8	19°19.3'	155°13.1'	7 km SW. of Makaopuhi seismometer	----------
	13	01	52	29.6	3.0	13	19°56'	156°11'	26 km NW. of Keahole Point	----------
	14	09	39	50.0	2.9	13	18°42'	156°27'	84 km WSW. of Kalae	----------
	15	03	43	42.0	2.0	13	19°02.1'	155°11.2'	25 km south of Apua Point	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, and December 1967--Continued

Date (1967)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Dec. 15	17	29	43.1	2.0	25	19°22.6'	155°21.0'	6 km NE. of Desert seismometer	----------
15	17	31	12.4	2.3	27	19°22.8'	155°19.1'	5 km SW. of Uwekahuna seismometer	----------
16	06	33	34.8	2.3	30	19°22.2'	155°19.4'	7 km SW. of Uwekahuna seismometer	----------
17	00	06	19.5	2.6	8	19°23.1'	155°36.0'	13 km SSW. of North Bay seismometer	----------
17	19	19	14.4	2.3	0	19°13.4'	155°41.2'	21 km NW. of Naalehu	----------
17	21	11	37.8	2.1	8	19°30.8'	155°49.5'	10 km east of Kealakekua	----------
17	23	06	33.7	2.7	8	19°09.9'	155°35.0'	10 km north of Naalehu	----------
18	20	02	51.5	2.8	10	19°19.2'	155°04.0'	12 km SE. of Makaopuhi seismometer	----------
19	20	41	31.1	3.3	8	19°24.0'	155°25.5'	8 km NW. of Desert seismometer	----------
22	17	44	43.7	2.1	8	19°25.7'	155°47.8'	16 km SE. of Kealakekua	----------
23	05	14	55.9	2.4	27	19°22.3'	155°18.9'	6 km SSW. of Uwekahuna seismometer	----------
23	10	09	50.1	2.4	8	19°26.8'	155°49.2'	13 km SE. of Kealakekua	----------
23	13	50	03.9	2.3	3	19°23.3'	155°28.5'	11 km WNW. of Desert seismometer	----------
24	01	43	34.4	2.7	25	19°22.2'	155°18.5'	6 km SW. of Uwekahuna seismometer	----------
24	17	28	15.3	2.5	3	19°28.1'	155°51.0'	9 km SE. of Kealakekua	----------
25	16	26	39.8	2.2	8	19°21.0'	155°07.1'	5 km SE. of Makaopuhi seismometer	----------
25	16	47	11.0	2.0	9	19°18.5'	155°13.1'	8 km SW. of Makaopuhi seismometer	----------
25	23	38	36.1	2.0	8	19°20.0'	155°08.8'	4 km SE. of Makaopuhi seismometer	----------
26	15	28	30.0	2.5	35	19°23.8'	155°17.0'	3 km SSE. of Uwekahuna seismometer	----------
27	10	08	29.9	2.0	10	19°21.7'	155°07.5'	5 km east of Makaopuhi seismometer	----------
28	03	26	56.2	2.3	7	19°19.2'	155°12.0'	6 km SW. of Makaopuhi seismometer	----------
28	11	20	29.5	3.2	13	20°49'	155°58'	10 km NE. of Hana, Maui	----------
29	03	59	30.2	3.3	8	19°19.1'	155°04.2'	11 km SE. of Makaopuhi seismometer	----------
29	04	22	49.2	2.2	30	19°21.0'	155°20.9'	5 km NE. of Desert seismometer	----------
30	03	39	37.8	2.3	5	19°54.2'	155°32.5'	22 km SE. of Kamuela	----------
30	22	08	40.1	2.2	31	19°23.5'	155°14.8'	6 km NE. of Ahua seismometer	----------

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Hawaiian Volcano Observatory
1968 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 49
January, February, and March 1968
By Arnold T. Okamura, Robert Y. Koyanagi, and Willie T. Kinoshita

Summary 50
April, May, and June 1968
By Robert Y. Koyanagi, Arnold T. Okamura, and Willie T. Kinoshita

Summary 51
July, August, and September 1968
By Robert Y. Koyanagi, Howard A. Powers, and Willie T. Kinoshita

Summary 52
October, November, and December 1968
By Robert Y. Koyanagi, Howard A. Powers, and Elliot T. Endo

Open-File Report 2007-1328
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 49

January, February, and March 1968

By Arnold T. Okamura, Robert Y. Koyanagi

and Willie T. Kinoshita

Issued July 1969

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Tilting of the ground around Kilauea Caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter at Uwekahuna (table 1), and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna

January, February, and March 1968

Date (1968)	N-S	E-W	Date (1968)	N-S	E-W
Jan. 7	557	404	Feb. 18	554	402
14	557	403	25	556	404
21	556	403	Mar. 3	555	404
28	556	402	10	556	404
Feb. 4	556	401	17	556	402
11	555	402	24	556	400
			31	556	400

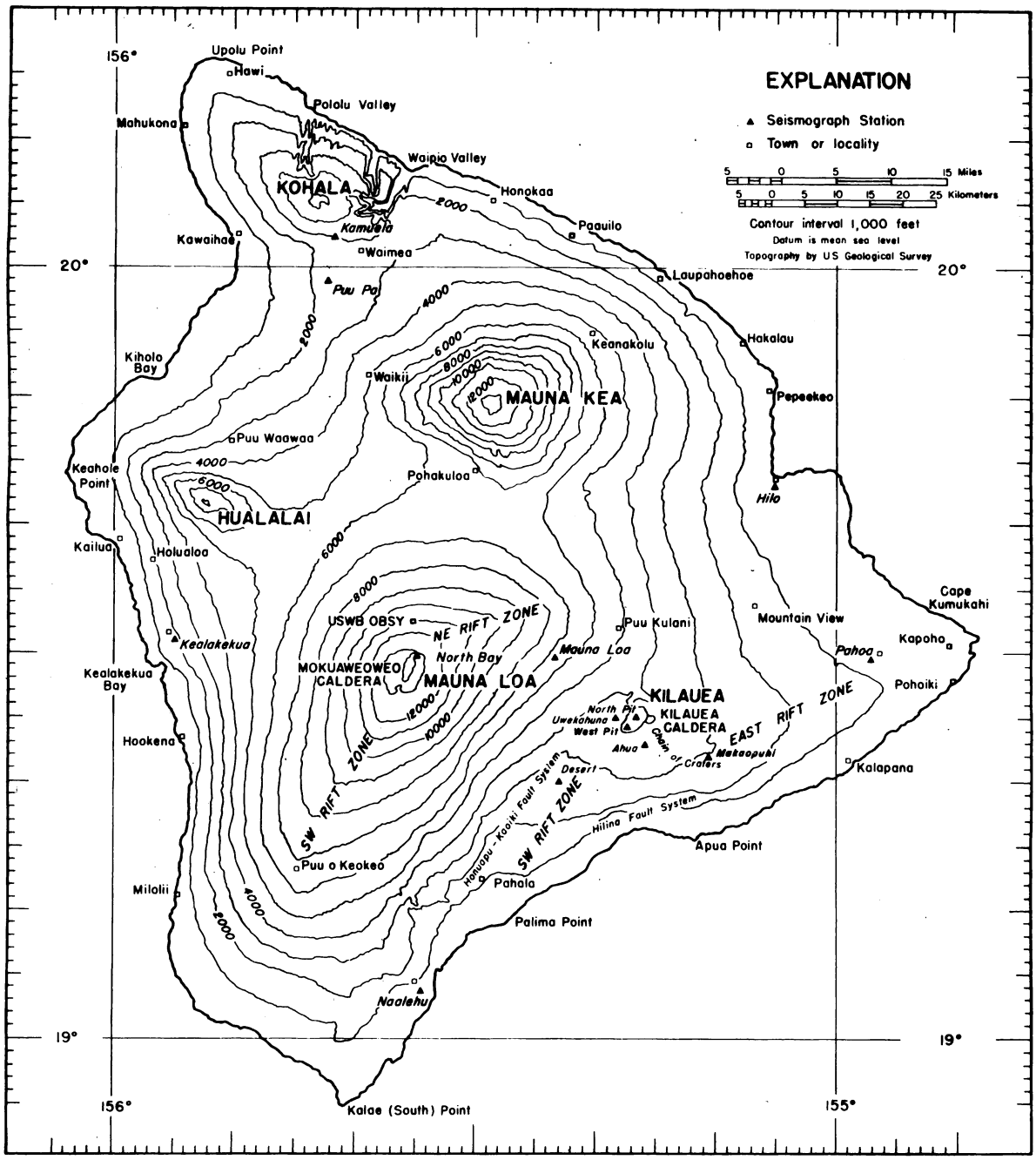

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Table 2.--Tilt coordinates and changes at bases around Kilauea Caldera

(see fig. 2 and table 6)

Tilt base (location)	Date (1968)	Tilt coordinates		Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1968)
		N-S	E-W			
Uwekahuna (U on fig. 2)	Feb. 13	598.1	395.7	2.8	N. 88.0° W.	Nov. 9
Tree Molds (TM)	21	481.1	500.2	2.1	N. 31.5° W.	8
Sand Spit (SS)	14	894.3	682.0	6.0	S. 89.2° W.	8
Keamoku (Kea)	14	546.4	372.0	4.3	S. 20.6° E.	8
Ahua Kamokukolau (Kam)	14	400.1	550.8	2.1	S. 67.4° W.	8
Kipuka Nene (KN)	14	299.7	308.5	0.02	N. 31.3° E.	7
Hilina Pali (HP)	14	455.1	502.6	0.17	S. 48.3° W.	June 28
Kapapala Ranch (Kap)	13	497.6	510.6	0.31	N. 56.5° E.	Nov. 8
Mehena (M)	21	574.8	578.8	1.1	N. 0.6° E.	8

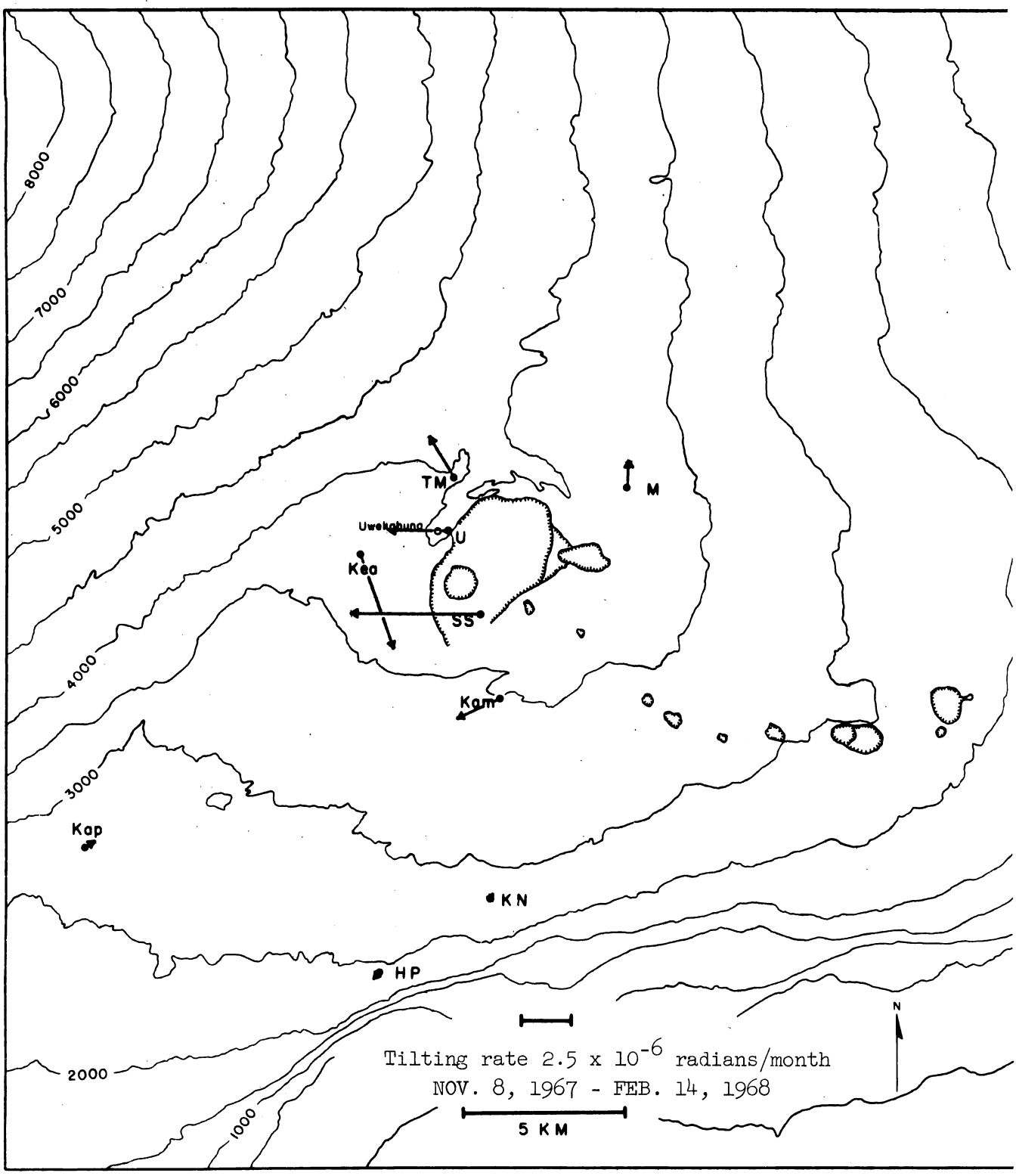

Figure 2.--Tilting of the ground around Kilauea Caldera between November 8, 1967, and February 14, 1968. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circle, short-base water-tube tiltmeter. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As in index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the Observatory (U, M, M(2), A, D, N, WP, MP, K, O). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5, which is published only in the first quarter issue each year.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1968)	Tremor (minutes)			Earthquakes							
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Others
	Deep	Intermediate	Shallow	30 km	Long period	Shallow					
Jan. 1	----	-------	-------	4	------	115	14	------	15	----	1 west Hawaii
2	18m	-------	-------	13	------	150	8	1	10	1	1 Kawaihae
3	14m	-------	-------	1	------	210	9	------	12	----	----------
4	30m	-------	-------	-----	------	105	16	1	76	----	----------
5	15m	-------	-------	-----	------	45	14	------	38	----	----------
6	10m	-------	5h	-----	------	75	21	1	48	----	----------
7	----	-------	12h	1	------	-------	13	1	315	16	----------
8	----	-------	-------	-----	------	180	15	------	142	3	1 southwest Hawaii
9	----	-------	6h	2	------	60	44	------	173	13	----------
10	----	-------	-------	2	------	140	31	------	27	----	1 Waikii
11	----	-------	6h	-----	------	135	29	------	26	13	1 Kawaihae
12	----	-------	16h	3	------	30	21	------	11	4	----------
13	----	-------	24h	4	------	------	23	------	10	2	1 Waipio Valley; 1 west Hawaii

Jan. 14	----	--------	24h	-----	------	-------	17	-------	17	4	----------	
15	----	--------	24h	2	------	-------	11	-------	16	----	----------	
16	----	--------	24h	1	------	-------	18	-------	16	----	----------	
17	----	--------	24h	-----	------	-------	11	-------	7	----	----------	
18	----	--------	-------	-----	------	195	10	-------	14	3	----------	
19	----	--------	24h	1	------	20	20	-------	29	----	1 offshore west Hawaii	
20	----	--------	24h	-----	------	-------	26	-------	22	6	----------	
21	----	--------	24h	1	------	-------	13	-------	-----	----	----------	
22	----	--------	24h	1	------	-------	8	-------	33	----	----------	
23	----	--------	24h	-----	------	-------	12	-------	21	----	1 Kawaihae	
24	----	--------	24h	1	------	-------	8	-------	38	----	----------	
25	----	--------	20h	2	------	-------	12	1	29	----	----------	
26	----	--------	24h	4	------	2	7	-------	13	1	----------	
27	----	--------	24h	5	?	?	5	2	5	?	----------	
28	----	--------	18h	5	------	30	8	1	24	----	2 west Hawaii	
29	----	--------	22h	4	------	-------	8	-------	10	1	----------	
30	----	--------	24h	-----	------	-------	6	-------	28	2	1 Naalehu	
31	----	--------	24h	2	------	75	13	-------	34	5	----------	
Feb. 1	----	--------	24h	2	------	30	16	-------	38	----	1 Keanakolu; 1 Waikii	
2	----	--------	24h	2	------	90	6	-------	16	----	----------	
3	----	--------	24h	2	------	------	10	-------	23	----	----------	
4	----	--------	24h	2	------	28	13	-------	27	5	----------	
5	----	--------	24h	5	------	75	11	-------	14	3	----------	
6	----	--------	24h	1	------	------	14	-------	17	----	1 Keanakolu	
7	----	7m	24h	5	------	30	18	-------	16	2	1 Waikii; 2 west Hawaii; 1 Naalehu	
8	----	--------	24h	3	------	29	9	-------	39	----	1 west Hawaii; 2 Keanakolu	
9	----	--------	24h	1	------	41	9	-------	15	----	1 Puu WaaWaa	
10	----	--------	24h	2	------	41	14	-------	21	----	----------	
11	34m	--------	24h	4	------	45	11	-------	29	----	----------	
12	----	--------	24h	2	------	31	9	-------	25	----	----------	
13	----	--------	24h	5	------	30	10	-------	25	5	----------	
14	----	--------	24h	12	------	30	23	-------	62	----	----------	
15	----	--------	24h	1	------	57	14	-------	48	----	1 west Hawaii	

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1968)	Tremor (minutes)			Earthquakes							
				Kilauea summit			SW. rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Others
	Deep	Inter-mediate	Shallow	30 km	Long period	Shallow					
Feb. 16	----	--------	24h	5	------	45	16	-------	30	1	1 west Hawaii
17	----	--------	24h	3	------	45	12	-------	5	----	----------
18	----	--------	24h	3	------	45	18	1	19	----	----------
19	----	--------	24h	8	------	30	6	-------	16	3	----------
20	----	--------	24h	2	------	45	12	1	26	2	1 west Hawaii
21	----	--------	24h	1	------	31	12	-------	31	----	----------
22	----	--------	24h	2	------	45	11	-------	20	3	1 offshore Milolii
23	26m	--------	24h	5	------	45	41	1	48	7	----------
24	----	--------	24h	5	------	55	57	-------	21	----	1 offshore Milolii
25	16m	--------	24h	2	------	60	117	-------	27	6	1 Mahukona; 1 offshore Maui
26	----	--------	24h	12	------	37	31	1	36	2	----------
27	10m	--------	10h	4	------	93	14	-------	37	2	----------
28	----	--------	24h	4	------	22	10	1	15	1	1 Mokuaweoweo Caldera
29	----	--------	24h	3	------	43	10	-------	20	2	1 Mokuaweoweo Caldera
Mar. 1	----	6m	24h	3	------	36	7	-------	28	5	1 Mokuaweoweo Caldera
2	4m	--------	24h	1	------	19	15	1	25	4	1 Mokuaweoweo Caldera; 1 west Hawaii
3	----	--------	24h	2	------	44	13	-------	?	5	----------
4	----	--------	24h	1	------	51	16	1	11	6	1 west Hawaii
5	----	--------	24h	1	------	180	16	1	15	----	----------
6	30m	--------	24h	2	------	12	5	-------	15	----	----------
7	----	--------	24h	2	------	73	7	-------	24	3	----------
8	----	--------	24h	2	------	25	14	-------	26	----	1 Hilo
9	30m	--------	24h	5	------	28	14	-------	20	----	1 Mokuaweoweo Caldera
10	----	--------	24h	7	------	49	15	-------	19	----	1 Naalehu
11	----	--------	24h	-----	------	47	11	-------	9	----	1 west Hawaii

Mar. 12	32m	--------	24h	1	-------	32	22	--------	24	3	----------
13	----	--------	24h	4	-------	51	15	1	18	3	1 west Hawaii
14	----	--------	24h	3	-------	21	4	--------	12	3	----------
15	----	--------	24h	2	-------	28	12	--------	14	8	----------
16	----	--------	24h	----	-------	44	6	--------	14	12	----------
17	----	--------	24h	3	-------	42	5	--------	15	9	1 Hilo; 2 Keanakolu
18	----	--------	24h	7	4	84	9	--------	10	8	----------
19	----	--------	24h	1	-------	26	9	--------	7	5	----------
20	----	--------	------	3	-------	12	11	--------	6	2	1 Keanakolu
21	14m	--------	24h	------	-------	50	8	--------	4	1	----------
22	----	--------	24h	4	-------	33	6	--------	16	3	----------
23	----	--------	24h	------	-------	120	5	--------	43	2	2 Mokuaweoweo Caldera
24	----	--------	24h	4	-------	24	12	--------	33	6	----------
25	----	--------	24h	------	-------	48	13	1	27	2	1 Mokuaweoweo Caldera; 1 Keanakolu
26	----	--------	24h	------	-------	94	7	--------	18	---	1 Naalehu
27	----	--------	24h	2	-------	45	4	--------	18	---	----------
28	----	--------	24h	2	-------	90	13	--------	35	5	----------
29	5m	--------	24h	3	-------	100	9	--------	12	5	----------
30	----	--------	24h	2	-------	105	9	--------	15	1	----------
31	----	--------	24h	3	-------	38	10	--------	15	4	1 offshore

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

January, February, and March 1968

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, edpicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date (1968)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Jan. 1	01	02	28.1	2.5	6	19°23.8'	154°55.8'	7 km NE. of Kalapana	----------
1	05	05	46.1	2.0	3	19°32.5'	156°00.2'	9 km NW. of Kealakekua	----------
1	09	50	53.0	2.3	8	19°20.5'	155°03.2'	12 km ESE. of Makaopuhi seismometer	----------
1	22	28	19.8	2.4	30	19°21.8'	155°16.3'	2 km SW. of Ahua seismometer	----------
2	04	43	37.0	2.5	8	20°05.1'	155°48.8'	5 km NNE. of Kawaihae	----------
2	16	32	29.0	2.2	6	19°25.4'	155°25.3'	10 km NNW. of Desert seismometer	----------
2	21	13	23.0	2.0	8	19°20.0'	155°08.8'	4 km SE. of Makaopuhi seismometer	----------
5	02	58	10.3	2.3	10	19°16.2'	155°07.2'	8 km ENE. of Apua Point	----------
5	10	47	32.7	2.2	8	19°20.2'	155°10.1'	3 km south of Makaopuhi seismometer	----------
6	06	28	41.8	2.7	10	19°15.8'	155°07.8'	7 km east of Apua Point	----------
6	12	17	17.5	2.0	10	19°13.7'	155°04.1'	14 km SE. of Apua Point	----------
6	18	25	15.0	2.6	40	19°14.0'	155°23.9'	12 km south of Desert seismometer	----------
6	23	10	22.8	3.0	6	19°11.2'	155°00.0'	22 km SE. of Apua Point	----------
7	04	21	49.4	3.1	26	19°21.1'	155°21.7'	3 km NE. of Desert seismometer	----------
7	14	24	33.0	2.4	27	19°24.2'	155°16.6'	South rim of Kilauea Caldera	----------
7	17	01	36.5	2.1	10	19°18.3'	155°15.1'	9 km NW. of Apua Point	----------
7	18	59	11.0	2.3	10	19°19.1'	155°03.3'	16 km NE. of Apua Point	----------
7	19	14	41.5	2.0	10	19°18.7'	155°08.0'	9 km NE. of Apua Point	----------
7	19	19	02.5	2.2	10	19°18.4'	155°13.1'	6 km NW. of Apua Point	----------
7	19	46	36.5	2.8	9	19°17.4'	155°13.0'	4 km NW. of Apua Point	----------
7	19	57	19.0	2.3	9	19°16.3'	155°13.7'	4 km NW. of Apua Point	----------
7	22	07	24.3	2.0	3	19°10.2'	154°50.0'	25 km SE. of Kalapana	----------
8	00	03	59.0	2.0	8	19°20.1'	155°49.1'	10 km SE. of Hookena	----------

Jan.	8	06	59	31.2	2.6	9	19°17.5'	155°13.1'	5 km NW. of Apua Point	----------
	8	11	39	56.8	2.0	10	19°18.1'	155°15.8'	9 km NW. of Apua Point	----------
	8	11	43	47.5	2.4	10	19°13.8'	155°08.8'	6 km SE. of Apua Point	----------
	8	13	36	44.0	2.0	8	19°19.5'	155°10.2'	5 km south of Makaopuhi seismometer	----------
	8	21	33	46.2	2.0	9	19°17.8'	155°14.6'	7 km NW. of Apua Point	----------
	9	02	39	54.2	2.0	9	19°17.7'	155°15.1'	7 km NW. of Apua Point	----------
	9	08	30	48.3	2.0	5	19°14.8'	155°21.5'	10 km SSE. of Desert seismometer	----------
	9	17	55	59.0	2.2	5	19°12.7'	155°21.6'	14 km SSE. of Desert seismometer	----------
	9	18	16	15.9	3.0	7	19°11.8'	155°20.8'	16 km SSE. of Desert seismometer	Pahala
	9	20	24	18.1	3.1	5	19°10.3'	155°20.8'	11 km ENE. of Palima Point	Pahala
	10	05	33	23.1	2.0	5	19°15.2'	155°22.5'	10 km south of Desert seismometer	----------
	10	10	29	36.1	3.6	8	19°11.3'	155°13.6'	8 km SW. of Apua Point	----------
	10	17	40	06.6	2.3	8	19°07.7'	155°09.8'	15 km south of Apua Point	----------
	10	17	40	57.6	2.3	8	19°09.2'	155°10.3'	12 km south of Apua Point	----------
	10	18	24	38.5	3.3	8	19°27.5'	155°23.7'	4 km SSW. of Mauna Loa seismometer	----------
	11	04	08	27.6	2.4	6	19°14.5'	155°21.2'	11 km SE. of Desert seismometer	----------
	11	23	51	11.1	2.0	8	20°06.8'	155°55.4'	13 km NW. of Kawaihae	----------
	13	07	43	38.1	2.0	8	19°09.9'	154°54.4'	22 km SSE. of Kalapana	----------
	13	10	37	38.8	2.5	8	19°22.7'	155°28.8'	11 km NW. of Desert seismometer	Pahala
	13	13	50	21.6	3.2	40	19°37'	156°07'	24 km WNW. of Kealakekua	----------
	15	07	10	47.7	3.0	10	19°21.3'	155°08.2'	4 km SE. of Makaopuhi seismometer	Hilo
	15	22	45	21.1	2.6	5	19°14.7'	155°20.2'	12 km SE. of Desert seismometer	----------
	16	02	35	06.7	2.0	6	19°20.0'	155°25.6'	4 km west of Desert seismometer	----------
	16	19	03	10.0	3.5	40	19°16.3'	155°22.2'	7 km SSE. of Desert seismometer	Pahala
	19	17	34	51.5	3.2	13	19°26'	156°21'	45 km WSW. of Kealakekua	----------
	19	18	43	30.7	2.2	35	19°23.2'	155°18.0'	3 km SW. of Uwekahuna seismometer	----------
	20	01	48	54.2	2.0	5	19°24.8'	155°26.8'	11 km SW. of Mauna Loa seismometer	----------
	20	13	14	25.3	2.0	13	19°19.7'	155°15.6'	5 km south of Ahua seismometer	----------
	20	16	26	33.2	2.5	10	19°21.2'	155°05.7'	8 km ESE. of Makaopuhi seismometer	----------
	21	12	33	11.9	2.2	8	19°13.8'	155°22.2'	12 km ENE. of Pahala	----------
	22	10	55	46.7	2.4	10	19°19.9'	155°09.4'	9 km NE. of Apua Point	----------
	22	23	55	57.7	2.0	5	19°24.0'	155°27.4'	10 km NW. of Desert seismometer	----------
	23	09	32	47.8	2.4	13	20°06.4'	155°54.3'	10 km NW. of Kawaihae	----------
	23	19	07	21.1	2.5	9	19°20.7'	155°10.0'	2 km south of Makaopuhi seismometer	----------
	23	23	31	22.6	2.1	9	19°21.8'	155°04.7'	10 km east of Makaopuhi seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March 1967--Continued

Date (1968)	Time			Magnitude	Depth	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Jan. 24	08	57	57.5	2.4	9	19°17.9'	155°16.1'	9 km NW. of Apua Point	----------
24	14	48	44.3	3.7	8	19°21.2'	155°01.8'	5 km west of Kalapana	Kilauea summit area, Hilo, Pahoa, Pahala
24	14	53	31.2	2.2	9	19°21.6'	155°02.3'	6 km west of Kalapana	----------
24	14	53	56.4	2.3	10	19°21.3'	155°01.0'	4 km west of Kalapana	----------
24	14	57	15.9	2.5	9	19°19.8'	155°12.3'	5 km SW. of Makaopuhi seismometer	----------
24	16	59	36.1	2.4	5	19°26.2'	155°28.2'	11 km SW. of Mauna Loa seismometer	----------
25	06	34	05.9	2.1	9	19°20.2'	155°12.0'	5 km SW. of Makaopuhi seismometer	----------
25	19	14	09.1	2.2	10	19°22.7'	155°03.3'	9 km NW. of Kalapana	----------
27	18	58	52.6	2.2	10	19°19.6'	155°11.9'	8 km north of Apua Point	----------
28	17	40	41.7	2.6	5	19°23.8'	155°25.0'	7 km NW. of Desert seismometer	----------
28	18	19	07.5	3.3	30	20°05.1'	155°31.2'	5 km west of Honokaa	----------
29	08	47	51.2	2.4	28	19°23.2'	155°18.0'	4 km south of Uwekahuna seismometer	----------
30	21	11	00.0	2.0	9	19°20.4'	155°09.1'	3 km SE. of Makaopuhi seismometer	----------
31	05	28	25.4	2.0	9	19°20.2'	155°12.3'	5 km SW. of Makaopuhi seismometer	----------
31	17	06	56.2	2.0	9	19°20.8'	155°09.7'	2 km south of Makaopuhi seismometer	----------
Feb. 1	09	03	05.5	2.0	5	19°24.1'	155°26.1'	9 km NW. of Desert seismometer	----------
1	17	32	36.6	3.5	9	19°20.5'	155°07.5'	5 km SE. of Makaopuhi seismometer	Pahala
2	02	00	20.4	2.6	3	19°15.9	155°33.1'	11 km NW. of Pahala	----------
2	06	28	36.4	2.6	9	19°20.0'	155°08.6'	5 km SE. of Makaopuhi seismometer	----------
2	07	52	53.6	3.2	9	19°20.2'	155°09.3'	3 km SE. of Makaopuhi seismometer	Hilo
4	17	47	34.5	2.1	10	19°21.8'	155°05.2'	9 km east of Makaopuhi seismometer	----------
5	03	23	23.9	2.0	10	19°23.7'	155°24.8'	7 km NW. of Desert seismometer	----------
6	04	45	43.4	2.0	10	19°19.9'	155°15.4'	5 km south of Ahua seismometer	----------
6	04	52	41.3	2.7	8	19°25.0'	155°24.8'	9 km NW. of Desert seismometer	----------
6	06	30	35.1	2.2	10	19°21.8'	155°05.2'	9 km ESE. of Makaopuhi seismometer	----------
6	11	09	23.5	2.0	10	19°25.7'	155°22.9'	8 km south of Mauna Loa seismometer	----------

Feb.	6	16	22	32.7	2.0	13	19°23.5'	155°27.5'	10 km NW. of Desert seismometer	----------
	7	04	41	20.3	3.3	8	19°46.7'	155°40.7'	10 km SW. of Waikii	----------
	7	15	40	35.9	2.1	13	19°20'	156°17'	43 km SW. of Kealakekua	----------
	7	21	24	14.7	2.4	9	19°19.4'	155°12.0'	7 km north of Apua Point	----------
	8	13	23	31.6	2.8	0	19°19.3'	155°46.8'	14 km SE. of Hookena	----------
	8	19	20	11.3	2.2	8	19°59.8'	155°18.8'	7 km west of Laupahoehoe	----------
	9	07	29	38.0	2.5	0	19°46.8'	155°50.9'	Puu WaaWaa	----------
	9	14	34	22.0	2.1	8	19°23.6'	155°27.4'	10 km NW. of Desert seismometer	----------
	9	19	06	57.1	2.6	30	19°09.3'	155°25.7'	7 km SE. of Pahala	----------
	10	18	21	06.8	2.3	29	19°20.7'	155°14.6'	4 km SE. of Ahua seismometer	----------
	11	06	17	51.9	2.3	10	19°24.7'	155°25.2'	9 km NW. of Desert seismometer	----------
	11	14	29	35.1	2.8	40	19°19.1'	154°59.3'	6 km SW. of Kalapana	----------
	11	14	43	45.7	2.9	8	19°24.9'	155°27.6'	12 km SW. of Mauna Loa seismometer	----------
	13	21	15	15.7	2.3	9	19°19.7'	155°12.1'	8 km north of Apua Point	----------
	14	00	03	58.1	2.4	10	19°17.9'	155°13.2'	5 km NW. of Apua Point	----------
	14	15	16	10.4	2.8	9	19°23.2'	155°24.0'	6 km NNW. of Desert seismometer	Pahala
	14	22	37	07.9	2.1	6	19°25.7'	155°26.0'	9 km SW. of Mauna Loa seismometer	----------
	15	05	07	47.8	3.1	34	19°21.1'	155°18.9'	8 km SW. of Uwekahuna seismometer	Pahala
	15	12	04	01.4	2.3	10	19°17.7'	155°16.7'	10 km WNW. of Apua Point	----------
	15	17	26	33.2	2.7	0	19°34.8'	155°50.9'	10 km NE. of Kealakekua	----------
	16	01	58	56.1	2.0	0	19°26'	156°06'	20 km SW. of Kealakekua	----------
	16	19	59	30.4	2.1	10	19°19.2'	155°16.1'	6 km south of Ahua seismometer	----------
	17	15	54	39.8	2.3	13	19°21.3'	155°07.4'	5 km SE. of Makaopuhi seismometer	----------
	18	21	09	18.8	2.4	9	19°23.2'	155°03.2'	9 km NW. of Kalapana	----------
	19	08	11	47.7	2.8	28	19°23.2'	155°19.2'	5 km SW. of Uwekahuna seismometer	----------
	19	08	52	29.4	3.0	9	19°23.7'	155°26.8'	9 km NW. of Desert seismometer	----------
	19	20	53	44.7	2.2	29	19°22.0'	155°18.0'	4 km SW. of Ahua seismometer	----------
	20	02	52	50.8	3.3	40	19°08.8'	154°58.8'	5 km south of Kalapana	----------
	20	10	47	00.3	2.0	3	19°25.2'	155°16.5'	Kilauea Caldera	Kilauea summit area
	20	15	06	33.1	2.2	8	19°22.9'	155°00.0'	4 km NW. of Kalapana	----------
	20	20	31	38.9	2.2	3	19°24.2'	155°47.1'	19 km SE. of Kealakekua	----------
	21	19	14	54.1	2.0	10	19°20.2'	155°07.4'	5 km SE. of Makaopuhi seismometer	----------
	21	19	17	27.7	2.2	9	19°18.4'	155°13.4'	6 km NW. of Apua Point	----------
	21	23	11	39.9	2.3	9	19°19.5'	155°15.7'	10 km NW. of Apua Point	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, January, February, and March 1969--Continued

Date (1968)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Feb. 22	08	13	46.9	2.2	9	19°20.0'	155°08.5'	10 km NE. of Apua Point	----------
22	09	20	40.0	4.5	8	19°15'	156°19'	43 km ENE. of Milolii	----------
22	12	06	45.1	2.4	32	19°18.9'	155°16.0'	7 km south of Ahua seismometer	----------
23	04	32	46.9	2.4	13	19°19.9'	155°11.2'	8 km north of Apua Point	----------
23	09	24	36.3	3.2	9	19°20.3'	155°08.2'	4 km SE. of Makaopuhi seismometer	----------
23	10	36	37.1	3.0	10	19°18.2'	155°13.9'	7 km NW. of Desert seismometer	----------
23	20	24	04.3	2.5	10	19°21.0'	155°03.6'	9 km west of Kalapana	----------
23	23	54	48.4	2.0	10	19°19.0'	155°14.3'	8 km NE. of Apua Point	----------
24	04	44	23.1	2.3	8	19°24.6'	155°25.3'	9 km NW. of Desert seismometer	----------
24	05	19	28.9	2.0	8	19°25.1'	155°26.9'	11 km NW. of Desert seismometer	----------
24	05	31	44.1	2.0	5	19°25.0'	155°26.3'	10 km NW. of Desert seismometer	----------
24	05	45	58.8	3.2	7	19°24.7'	155°26.7'	10 km NW. of Desert seismometer	----------
24	06	41	26.1	2.6	8	19°24.9'	155°25.8'	10 km NW. of Desert seismometer	----------
24	11	31	37.6	3.0	7	19°24.7'	155°26.2'	10 km NW. of Desert seismometer	----------
25	03	10	22.9	2.8	8	19°24.9'	155°24.9'	9 km NW. of Desert seismometer	----------
25	08	56	07.6	2.0	7	19°15.7'	155°21.9'	9 km SE. of Desert seismometer	----------
25	09	11	30.9	3.3	13	20°13'	156°47'	85 km SW. of Haleakala, Maui	----------
25	10	58	38.9	2.8	3	19°24.8'	155°24.8'	9 km NNW. of Desert seismometer	----------
25	12	52	54.8	2.2	5	19°14.8'	155°23.3'	10 km south of Desert seismometer	----------
25	15	09	35.9	3.1	3	20°13.0'	155°55.8'	4 km NW. of Mahukona	----------
26	18	00	18.6	2.9	9	19°19.7'	155°09.2'	9 km NE. of Apua Point	----------
26	19	10	56.5	2.0	9	19°20.1'	155°15.8'	4 km south of Ahua seismometer	----------
26	23	24	25.1	2.0	6	19°22.6'	155°26.8'	8 km NW. of Desert seismometer	----------
27	06	01	00.9	2.2	6	19°22.3'	155°26.8'	7 km NW. of Desert seismometer	----------
28	16	53	12.9	2.7	5	19°13.7'	155°32.7'	8 km NW. of Pahala	----------
28	17	04	40.6	2.4	3	19°14.3'	155°33.8'	10 km NW. of Pahala	----------
28	19	56	41.9	2.4	3	19°14.1'	155°36.8'	7 km SW. of Mokuaweoweo Caldera	----------
29	01	16	59.7	2.4	3	19°23.0'	155°35.9'	10 km SSW. of Mokuaweoweo Caldera	----------

Feb.	29	03	08	16.7	2.0	8	19°22.8'	155°03.8'	9 km NW. of Kalapana	----------
	29	03	29	00.2	2.0	8	19°25.9'	155°26.0'	9 km SW. of Mauna Loa seismometer	----------
	29	12	37	07.3	2.1	8	19°20.0'	155°10.7'	4 km south of Makaopuhi seismometer	----------
Mar.	1	00	51	02.4	2.4	2	19°23.3'	155°36.0'	8 km south of Mokuaweoweo Caldera	----------
	2	04	02	59.6	2.4	3	19°27.5'	155°46.2'	17 km ESE. of Kealakekua	----------
	2	05	00	28.4	2.2	9	19°20.7'	155°03.7'	9 km west of Kalapana	----------
	2	07	55	24.9	2.8	10	19°24.4'	155°35.2'	7 km south of Mokuaweoweo Caldera	----------
	2	15	00	14.4	2.0	9	19°18.4'	155°16.3'	7 km south of Ahua seismometer	----------
	4	02	32	36.9	2.2	0	19°20.0'	155°50.7'	8 km SE. of Hookena	----------
	4	05	14	55.6	2.0	8	19°25.1'	155°26.2'	10 km SW. of Mauna Loa seismometer	----------
	5	04	14	20.2	2.4	8	19°25.0'	155°26.5'	10 km SW. of Mauna Loa seismometer	----------
	5	17	30	54.1	2.2	9	19°20.7'	155°07.2'	6 km SE. of Makaopuhi seismometer	----------
	6	04	40	28.9	2.2	8	19°25.7'	155°25.2'	8 km SSW. of Mauna Loa seismometer	----------
	6	05	04	23.2	2.2	9	19°19.4'	155°11.3'	5 km SW. of Makaopuhi seismometer	----------
	6	12	29	07.8	2.0	10	19°21.7'	155°06.1'	7 km ESE. of Makaopuhi seismometer	----------
	9	01	42	12.8	2.0	0	19°29.0'	155°36.3'	Mokuaweoweo Caldera	----------
	9	13	52	12.4	2.3	31	19°22.0'	155°14.7'	3 km SE. of Ahua seismometer	----------
	9	16	58	09.0	2.1	9	19°19.8'	155°08.7'	5 km SE. of Makaopuhi seismometer	----------
	10	08	00	32.6	2.2	8	19°12.4'	155°31.0'	15 km NE. of Naalehu	----------
	10	12	01	48.5	2.0	10	19°17.7'	155°05.3'	12 km NE. of Apua Point	----------
	12	16	18	32.4	2.0	8	19°16.9'	155°23.1'	6 km south of Desert seismometer	----------
	17	05	17	01.4	2.7	8	19°56.3'	155°28.2'	14 km WNW. of Keanakolu	----------
	17	09	28	58.9	2.2	40	19°39.8'	155°13.7'	16 km SW. of Hilo	----------
	17	13	49	29.6	2.8	8	19°56.4'	155°27.4'	13 km WNW. of Keanakolu	----------
	17	17	00	03.9	2.0	9	19°22.0'	155°02.8'	7 km WNW. of Kalapana	----------
	18	01	42	17.2	2.2	29	19°21.7'	155°19.0'	6 km SW. of Kilauea Caldera	----------
	19	20	12	15.5	2.0	8	19°16.8'	155°28.2'	11 km SW. of Desert seismometer	----------
	23	05	29	18.0	2.4	5	19°23.2'	155°25.7'	7 km NW. of Desert seismometer	----------
	23	05	32	03.5	2.0	27	19°23.7'	155°17.6'	2 km SE. of Kilauea Caldera	----------
	23	06	47	11.1	2.5	3	19°30.7'	155°42.1'	12 km WNW. of Mokuaweoweo Caldera	----------
	23	13	57	13.2	2.5	3	19°33.2'	155°42.2'	15 km WNW. of Mokuaweoweo Caldera	----------
	24	02	45	02.6	2.7	9	19°19.9'	155°12.7'	8 km NNW. of Apua Point	----------
	25	14	50	53.3	2.5	40	19°46.0'	155°19.3'	25 km WNW. of Hilo	----------
	25	16	57	36.7	2.3	3	19°23.8'	155°37.4'	9 km SW. of Mokuaweoweo Caldera	----------
	26	03	27	54.8	2.4	9	19°20.0'	155°10.8'	4 km SW. of Makaopuhi seismometer	----------

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey,

January, February, and March 1968--Continued

Date (1968)	Time			Magnitude	Depth (km)	Epicenter			Felt Report
	h	m	s			Lat N.	Long W.	Description	
Mar. 26	09	41	27.6	2.3	3	19°13.2'	155°36.3'	17 km NNW. of Naalehu	----------
28	00	30	01.6	2.6	10	19°22.7'	155°23.7'	5 km north of Desert seismometer	----------
29	03	51	19.8	2.2	6	19°26.2'	155°27.1'	9 km SW. of Mauna Loa seismometer	----------
29	12	11	40.8	2.0	10	19°21.8'	155°16.1'	1 km south of Ahua seismometer	----------
30	03	37	14.3	2.1	8	19°24.0'	155°26.0'	8 km NW. of Desert seismometer	----------
30	23	21	18.1	2.0	9	19°20.2'	155°08.0'	5 km SE. of Makaopuhi seismometer	----------
31	00	56	15.0	4.2	13	21°45'	156°56'	60 km north of Molokai	----------
31	01	22	07.8	3.0	13	21°50'	156°51'	137 km NW. of Haleakala, Maui	----------
31	15	00	37.7	2.2	13	19°34.1'	155°20.0'	10 km NE. of Mauna Loa seismometer	----------
31	20	58	56.1	2.0	13	19°33.2'	155°21.3'	7 km NE. of Mauna Loa seismometer	----------

Table 5.--U.S. Geological Survey seismograph stations in Hawaii

/On island of Hawaii unless otherwise stated/

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Lat N.	Long W.		
Uwekahuna (Hawaiian Volcano Observatory)	U	19°25.4'	155°17.6'	1,240	Long-period Press-Ewing: N, E, Z. (Seismometer and galvanometer periods are 15 and 90 seconds, respectively.) Short-period Sprengnether: E, Z. HVO-1: Z[1] Short-base liquid-level tiltmeter
Mauna Loa	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z[2]
Ahua	A	19°22.4'	155°15.9'	1,070	Do.
Mauna Loa (2)	M(2)	19°27.6'	155°20.7'	1,475	Remote recording 1.0 sec. EV-17 Z.
Desert	D	19°20.2'	155°23.3'	815	Do.
North Pit	N	19°24.9'	155°17.0'	1,115	Do.
West Pit	WP	19°24.7'	155°17.5'	1,115	Do.
Makaopuhi	MP	19°21.8'	155°10.7'	885	Do.
Kealakomo	K	19°18.5'	155°09.6'	201	Do. (installed Sept. 28, 1966)
Outlet	O	19°23.4'	155°16.8'	1,084	Do.
Kipuka Nene	KN	19°20.1'	155°17.4'	924	Do. (installed Sept. 21, 1967)
Cone Peak	CP	19°23.7'	155°19.7'	1,038	Do. (installed Nov. 8, 1967)
Hilo	Hi	19°43.2'	155°05.3'	20	HVO-1: Z Wood-Anderson: N, E. Operated by Joseph De Mello at St. Joseph's School.
Kipapa, Oahu	Kip	21°25.4'	158°00.9'	76	HVO-1: Z. Operated by U.S. Coast and Geodetic Survey.
Pahoa	Pa	19°29.7'	154°56.8'	205	HVO-1: Z. Operated by Kongo Kimura at Pahoa School.

Table 5.--U.S. Geological Survey seismograph stations in Hawaii--Continued

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Lat N.	Long W.		
Haleakala, Maui	Ha	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Haleakala National Park, Maui.
Naalehu	Na	19°03.8'	155°35.2'	205	1.0 sec. EV-17 seismometer, 0.5 sec. galvanometer: Z. Operated by Mrs. E. Elarionoff at Naalehu School.
Kamuela	Ka	20°01.9'	155°42.0'	740	1.0 sec. EV-17, 0.286 sec. galvanometer. Operated by Michael Foster at H.P.A., Kamuela.
North Bay	NB	19°29.7'	155°34.8'	4,005	1.0 sec. EV-17: Z. with helicorder. Operated by U.S. Weather Bureau.
Kealakekua	Ke	19°31.2'	155°55.3'	505	1.0 sec. EV-17, 0.286 sec. galvanometer: Z, EW, and NS. Operated by Henry Nelson at Kona County Hospital.

1/ HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Overdamping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

2/ HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked-paper recorders.

Table 6.--U.S. Geological Survey tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat N.	Long W.			
Tree Molds	TM	19°26.3'	155°17.3'	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19°24.1'	155°16.8'	---do----	25.40	Equilateral triangle
Keamoku	Kea	19°25.1'	155°19.0'	---do----	47.55	Do.
Ahua Kamokukolau	Kam	19°22.7'	155°16.6'	---do----	50.79	Do.
Kipuka Nene	KN	19°19.4'	155°16.7'	---do----	50.79	Do.
Hilina Pali	HP	19°18.2'	155°18.6'	---do----	47.73	Do.
Kapapala Ranch	Kap	19°20.5'	155°23.8'	---do----	50.79	Do.
Mehana	M	19°26.2'	155°14.3'	---do----	25.00	Do.
Uwekahuna	U	19°25.5'	155°17.4'	---do----	50.79	Do.
Uwekahuna Vault		19°25.4'	155°17.6'	Daily	3.48	NS. and EW.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 50

April, May, and June 1968

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Issued September 1970

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Summary of activities

The eruption on the summit crater continued throughout this quarter except for a 2-hour period on May 5th when fountaining and tremor ceased. This short period of inactivity separated the 29th and 30th phases. By the end of June the depth of new lava to the 1961 floor in Halemaumau was 360 feet. Levees around the central, active portion of the lake are 405 to 420 feet above the pre-eruption floor.

Levels were run on the benchmarks in the summit area and the upper east rift in early April and early June. The leveling generally shows small inflation during the quarter. In early April the summit benchmarks were still about 0.1 foot below their pre-eruption levels. By June the summit was at about the pre-eruption level. Inflation along the upper east rift came into prominence during this period as uplift in the Alae-Makaopuhi crater area nearly matched uplift in the summit area in April. In June the upper east rift area showed slight deflation, but it still remained at a fairly high level.

There were slight extensions along all of the geodimeter lines in the summit area when their lengths as measured in May were compared with their October 1968 (pre-eruption) lengths.

In addition to several bursts of shallow caldera quakes several tens of earthquakes were recorded daily from sources beneath Kilauea's southwest and southeast flanks. The largest quake from the shallow caldera source region registered magnitude 4 on May 29. A swarm of several hundred "30-km deep" Kilauea summit quakes occurred in late April. The largest event, a 4-1/2 magnitude shock at 04^{h} 09^{m}, April 28, appeared to have initiated this deep episode.

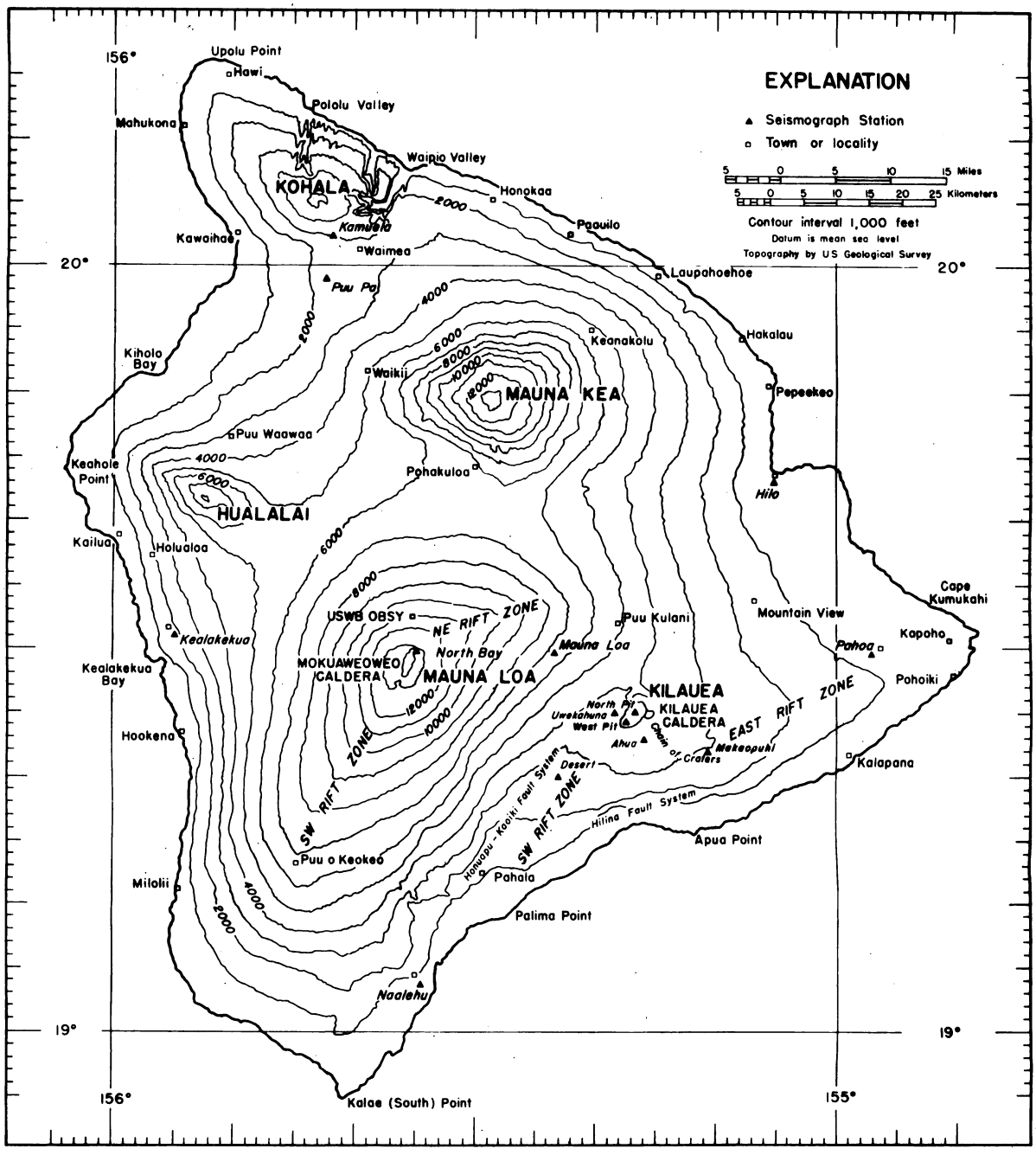

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Tilting of the ground around Kilauea Caldera

Tilting of the ground around the summit of Kilaeua is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna vault

April, May, and June 1968

Date (1968)	N-S	E-W	Date (1968)	N-S	E-W
April 7	556	402	May 19	555	399
14	556	399	26	555	402
21	556	399	June 2	555	402
28	556	398	9	555	402
May 5	555	400	16	556	395
12	556	399	23	555	394
			30	556	397

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 2)

Tilt base	Date (1968)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading (1968)
Uwekahuna (U on fig. 2)	11 Jun	613.4	364.2	8.8 N64.1°W	Feb 13
Tree Molds (TM)	10 Jun	489.3	499.8	2.3 N3.8°W	Feb 21
Sand Spit (SS)	13 Jun	903.4	657.2	6.6 N69.9°W	Feb 14
Keamoku (Kea).	19 Jun	556.2	361.3	3.4 N47.5°W	Feb 14
Ahua Kamokukolau (Kam).	13 Jun	391.2	538.5	3.8 S54.2°W	Feb 14
Kipuka Nene (KN)	10 Jun	299.4	308.5	0.1 S3.9°W	Feb 14
Hilina Pali (HP)	(ND)				
Kapapala Ranch (Kap).	11 Jun	492.5	509.8	0.9 S11.4°E	Feb 13
Mehena (M)	12 Jun	579.9	586.0	2.4 N54.8°E	Feb 21

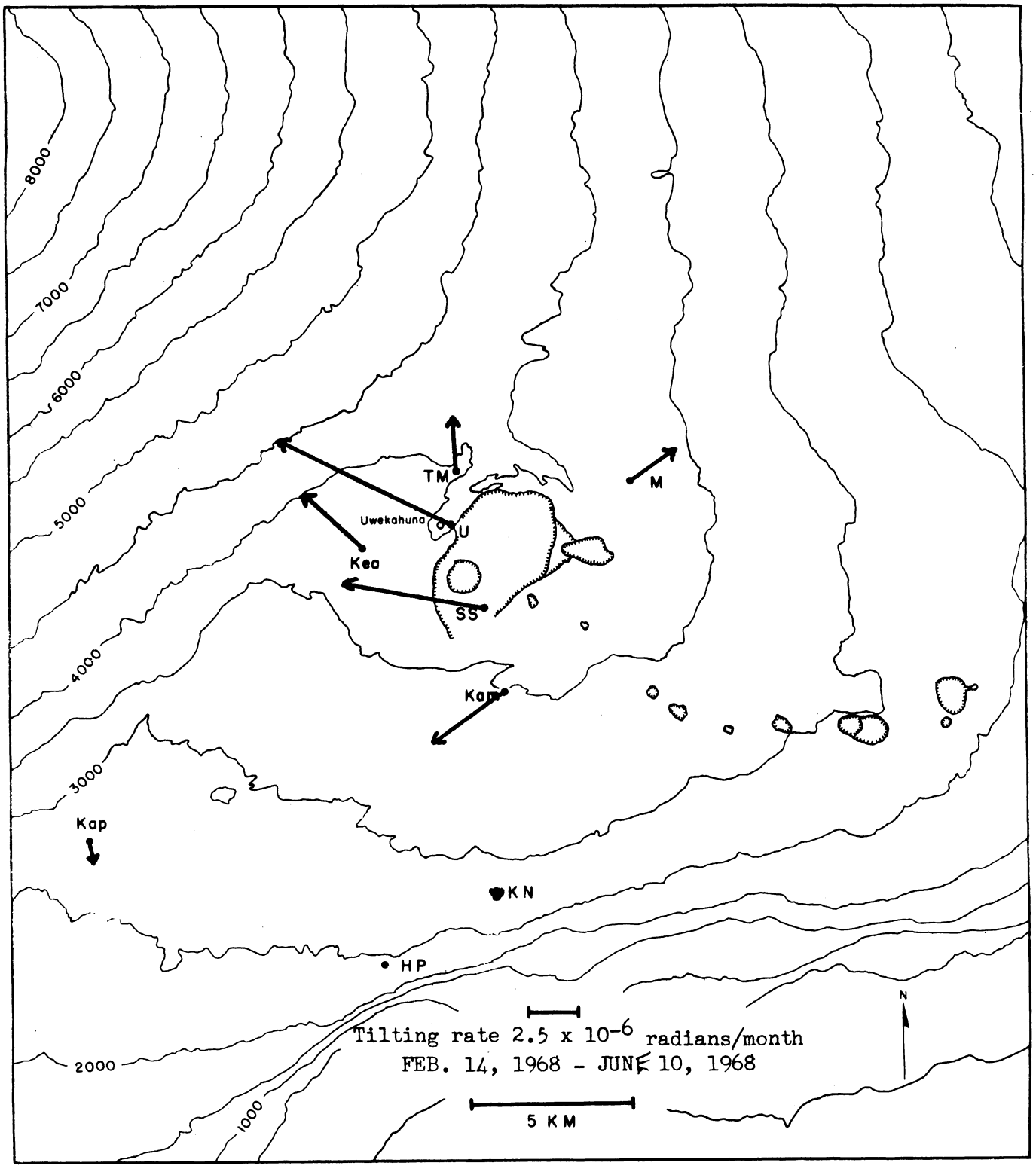

Figure 2.--Tilting of the ground around Kilauea caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the observatory (U, M, Mx, A, D, N, WP, MP, Kx, O,). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5 in the first-quarter issue each year.

Acknowledgments

Several people or agencies reported "felt" earthquakes during the 2nd quarter, 1968. Their assistance is gratefully acknowledged.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1968)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow					
April 1	.	.	24h	4	.	40	8	.	10	3	
2	.	.	24h	3	.	80	14	.	24	3	
3	.	.	24h	2	.	325	7	.	17	8	
4	.	.	24h	1	.	60	11	.	13	3	3
5	.	.	24h	2	.	105	3	.	15	3	1
6	.	.	24h	instruments off							1
7	.	.	24h	8	.	120	4	.	13	2	
8	.	.	24h	.	.	45	8	.	14	3	
9	6m	.	24h	6	.	60	7	.	16	6	2
10	.	.	24h	.	.	120	instruments off				
11	.	.	24h	3	.	60	4	.	14	5	
12	.	.	24h	5	.	120	9	.	4	2	

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1968)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow					
April 13	.	.	24h	.	.	60	9	.	22	5	2
14	.	.	24h	2	.	150	10	.	17	6	1
15	.	.	24h	.	.	45	22	.	19	5	
16	.	.	24h	2	.	105	9	.	21	10	
17	.	.	24h	1	.	45	7	.	21	10	1
18	14m	.	.	2	.	30	5	.	14	8	
19	.	.	24h	2	.	45	12	.	17	4	
20	.	.	24h	.	.	120	5	.	18	1	
21	.	.	24h	.	.	75	.	.	27	5	
22	.	.	24h	2	.	135	8	.	27	7	
23	.	.	24h	.	.	111	4	.	23	2	
24	.	.	24h	4	.	75	13	.	28	5	
25	.	.	24h	2	.	45	11	.	22	2	
26	.	.	24h	.	.	45	11	1	22	5	
27	.	.	24h	106	.	120	6	.	24	.	
28	.	.	24h	62	.	45	34	.	15	3	1
29	.	.	24h	25	.	45	8	.	6	3	
30	.	.	24h	15	.	9	11	.	26	4	2
May 1	.	.	24h	14	.	15	10	.	10	5	
2	.	.	24h	5	.	1	11	.	5	1	
3	.	.	24h	3	.	.	15	1	3	.	
4	.	.	24h	4	.	4	7	.	10	1	
5	.	.	22h	3	.	.	5	.	10	2	
6	.	.	24h	7	.	7	34	1	17	5	1
7	.	.	24h	5	.	.	19	.	22	6	

May	8	.	.	.	4	.	43	9	.	16	.	
	9	.	.	24h	9	.	5	12	.	34	6	
	10	.	.	24h	4	.	.	9	.	24	4	
	11	.	.	24h	2	.	.	7	.	7	1	
	12	.	.	24h	.	.	4	7	1	13	8	1
	13	.	.	24h	5	.	21	12	.	9	4	
	14	.	.	24h	3	.	3	16	1	16	7	
	15	.	.	24h	4	.	5	14	.	9	5	
	16	.	.	24h	5	.	24	13	.	17	17	
	17	.	.	24h	3	.	5	18	.	15	6	
	18	.	.	24h	3	.	22	18	.	12	4	
	19	.	.	.	15	.	122	16	.	15	4	2
	20	.	.	.	13	.	6	10	.	15	6	
	21	.	.	24h	7	.	4	14	.	13	2	
	22	.	.	24h	2	.	23	9	.	14	7	
	23	.	.	.	4	.	15	8	1	15	4	
	24	53m	.	.	9	.	160	6	.	16	3	
	25	65m	.	24h	5	.	69	9	.	63	5	
	26	20m	.	24h	6	.	10	2	.	14	6	
	27	.	.	24h	2	.	48	4	.	16	2	
	28	19m	.	24h	7	.	34	8	.	27	5	
	29	.	.	24h	1	.	190	4	1	18	6	
	30	.	.	24h	1	.	14	6	.	12	5	
	31	.	.	24h	6	.	4	9	.	29	8	2
June	1	.	.	24h	4	.	28	4	.	33	10	
	2	.	.	24h	2	.	16	7	1	26	2	
	3	.	.	24h	5	.	25	9	1	19	7	1
	4	.	.	24h	.	.	43	11	.	15	14	
	5	.	.	24h	1	.	36	3	.	18	28	
	6	.	.	24h	3	.	21	7	.	14	13	
	7	.	.	24h	2	.	58	8	1	20	5	1
	8	.	.	24h	1	.	65	9	.	9	.	1
	9	.	.	24h	2	.	13	17	.	11	.	
	10	10m	.	24h	7	.	38	20	.	16	3	
	11	.	.	24h	2	.	46	16	.	22	.	
	12	.	.	24h	6	.	21	30	.	24	.	
	13	.	.	24h	2	.	.	18	.	15	1	
	14	.	.	24h	3	.	48	8	.	15	17	

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1968)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit							
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
June 15	.	.	24h	1	.	15	9	--	28	19	
16	42m	.	.	3	.	69	6	1	20	19	
17	.	.	24h	10	.	19	31	.	36	13	1
18	.	.	24h	12	.	66	27	.	30	26	
19	.	.	24h	2	.	27	5	1	67	5	
20	.	.	24h	10	.	43	45	.	206	1	1
21	.	.	24h	6	.	25	15	.	52	4	1
22	.	.	24h	4	.	150	26	.	38	13	1
23	.	.	24h	3	.	70	43	.	63	20	
24	.	.	24h	3	.	44	28	.	58	9	
25	.	.	24h	7	.	57	20	.	72	26	
26	.	.	24h	9	.	72	23	.	45	43	
27	.	.	24h	7	.	35	21	.	18	14	
28	30m	.	.	11	.	24	26	.	50	44	
29	22m	.	24h	7	.	51	.	.	50	39	1
30	18m	.	24h	8	.	29	23	.	14	3	1

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Entries for a given quake are: date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
April 1	14-34-22.7	2.0	9	19°27.2'	155°27.4'	9 km SW of Mauna Loa seismometer	
3	15-06-11.1	3.7	8	19°23.1'	155°27.1'	8 km NW of Desert seismometer	Pahala, Hilo, Kilauea Summit Area
4	16-56-16.4	2.5	3	19°33.2'	155°50.8'	9 km NE of Kealakekua	
4	18-20-57.7	2.4	28	19°03.8'	155°23.8'	20 km E of Naalehu	
4	23-16-53.2	2.0	3	19°23.0'	155°36.1'	10 km S of Mokuaweoweo Caldera	
5	04-58-33.1	2.4	8	19°57.3'	155°29.8'	17 km WNW of Keanakolu	
5	07-11-40.6	2.0	8	19°25.6'	155°24.3'	8 km SSW of Mauna Loa seismometer	
6	00-30-15.7	2.5	35	19°19.5'	154°59.5'	3 km SW of Kalapana	
6	09-36-22.7	2.7	3	19°13.7'	155°31.0'	5 km NW of Pahala	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
April 7	20-25-15.7	2.0	27	19°22.3'	155°16.8'	2 km W of Ahua seismometer	
9	00-38-37.0	2.0	3	19°11.2'	155°39.6'	16 km NW of Naalehu	
9	01-14-56.7	2.6	13	20°00'	156°25'	90 km S of Haleakala, Maui	
10	01-00-24.8	3.7	27	19°23.9'	155°16.9'	South rim of Kilauea Caldera	Kilauea Summit Area, Pahala
10	04-59-48.6	2.0	2	19°25.5'	155°16.9'	Kilauea Caldera	
10	09-18-17.2	2.1	5	19°25.1'	155°26.0'	10 km SW of Mauna Loa seismometer	
11	14-45-20.9	2.2	9	19°19.5'	155°13.4'	7 km NW of Apua Point	
12	20-24-01.8	2.4	45	19°15.6'	155°12.9'	2 km W of Apua Point	
13	05-06-05.5	2.1	15	19°27.7'	155°38.8'	5 km SW of Mokuaweoweo Caldera	
13	11-13-00.6	2.4	3	19°43.2'	155°43.8'	30 km NE of Kealakekua	
14	08-25-25.1	2.2	9	19°19.0'	155°11.8'	6 km N of Apua Point	
14	10-45-57.3	2.5	0	20°02.1'	155°59.7'	17 km W Kawaihae	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
April 15	10-30-25.5	3.0	10	19°15.0'	155°25.2'	8 km NE of Pahala	Pahala
15	10-53-10.5	2.2	5	19°14.5'	155°27.7'	13 km SW of Desert seismometer	Pahala
16	20-16-17.0	2.2	35	19°20.1'	155°09.6'	3 km SE of Makaopuhi seismometer	
17	00-39-37.8	2.1	8	19°15.0'	155°26.7'	11 km SW of Desert seismometer	Pahala
17	04-58-06.3	2.4	8	19°48.3'	155°37.4'	6 km SE of Waikii	
17	12-38-56.5	2.0	8	19°25.3'	155°25.5'	9 km SW of Mauna Loa seismometer	
18	20-09-42.8	3.2	29	19°22.0'	155°16.8'	2 km SW of Ahua seismometer	Kilauea Summit Area, Pahala, Hilo
21	08-27-46.4	2.1	9	19°19.8'	155°11.7'	4 km SW of Makaopuhi seismometer	
21	20-27-52.1	2.3	8	19°19.4'	155°10.2'	5 km S of Makaopuhi seismometer	
28	04-08-59.0	4.5	30	19°22.5'	155°17.9'	4 km W of Ahua seismometer	Island-wide, possibly Oahu, too

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
April 28	04-16-24.8	2.1	30	19°22.8'	155°17.4'	3 km WNW of Ahua seismometer	Kilauea Summit Area
28	04-52-13.3	3.2	30	19°21.8'	155°18.4'	5 km SW of Ahua seismometer	Kilauea Summit Area
28	05-19-12.8	3.6	30	19°22.5'	155°16.9'	2 km W of Ahua seismometer	Kilauea Summit Area
28	05-59-13.0	2.2	30	19°22.9'	155°16.2'	1 km NW of Ahua seismometer	
28	06-44-47.3	2.0	29	19°21.8'	155°17.8'	3 km SW of Ahua seismometer	
28	08-35-25.0	3.4	8	19°24.9'	155°26.8'	11 km SW of Mauna Loa seismometer	Pahala
28	08-39-47.9	2.4	30	19°22.0'	155°17.3'	3 km SW of Ahua seismometer	
28	08-55-36.8	2.3	31	19°23.2'	155°17.0'	2 km S of Kilauea Caldera	
28	11-28-25.3	2.5	30	19°22.2'	155°17.2'	3 km W of Ahua seismometer	
28	19-45-05.1	2.1	30	19°22.0'	155°17.7'	3 km W of Ahua seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
April 28	21-23-40.4	2.1	8	19°21.8'	155°24.3'	3 km NW of Desert seismometer	Pahala
29	02-22-50.0	2.1	30	19°22.8'	155°16.7'	1 km NW of Ahua seismometer	
29	05-02-26.9	2.2	8	19°23.1'	155°27.1'	9 km NW of Desert seismometer	Pahala
29	08-07-05.9	2.3	31	19°22.5'	155°16.3'	1 km W of Ahua seismometer	
29	15-58-52.8	2.8	31	19°23.3'	155°17.0'	3 km NW of Ahua seismometer	
29	20-35-29.1	2.6	30	19°23.3'	155°16.2'	2 km NW of Ahua seismometer	
29	23-17-21.7	2.3	10	19°11.9'	155°27.7'	2 km E of Pahala	
30	01-30-51.6	2.2	3	19°26.9'	155°46.7'	17 km SE of Kealakekua	
30	03-21-12.1	2.0	30	19°22.8'	155°17.7'	3 km W of Ahua seismometer	
30	08-27-36.7	1.9	30	19°23.3'	155°16.9'	3 km NW of Ahua seismometer	
30	12-12-43.5	2.5	8	19°51.4'	155°33.6'	10 km E of Waikii	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
April 30	19-13-00.0	2.6	30	19°22.3'	155°17.2'	2 km W of Ahua seismometer	Pahala
30	23-27-19.4	2.4	30	19°23.0'	155°16.8'	2 km NW of Ahua seismometer	Pahala
May 1	03-33-07.7	2.4	30	19°22.2'	155°17.3'	2 km W of Ahua seismometer	
1	11-09-04.3	2.1	8	19°25.7'	155°24.2'	8 km SSW of Mauna Loa seismometer	
3	19-10-14.1	2.6	8	19°25.3'	155°24.8'	9 km SW of Mauna Loa seismometer	
3	19-39-12.0	3.2	30	19°21.7'	155°15.8'	2 km S of Ahua seismometer	
6	02-42-49.5	2.5	8	19°54.8'	155°38.8'	6 km N of Waikii	
7	12-51-19.6	2.1	31	19°22.9'	155°17.7'	3 km NW of Ahua seismometer	
8	07-18-02.5	2.6	32	19°22.8'	155°16.0'	1 km NW of Ahua seismometer	Pahala
8	10-01-13.3	2.7	9	19°20.3'	155°06.8'	7 km SE of Makaopuhi seismometer	
10	17-23-39.6	2.0	9	19°19.2'	155°16.2'	6 km S of Ahua seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
May 11	06-23-53.2	2.1	9	19°18.4'	155°16.3'	8 km S of Ahua seismometer	
12	04-54-05.1	2.0	8	19°23.0'	155°24.0'	5 km NNW of Desert seismometer	
12	10-06-52.9	3.6	0	19°20.2'	155°44.8'	17 km SE of Hookena	Kawaihae, Kealakekua
13	14-24-11.2	2.1	9	19°20.5'	155°06.9'	6 km SE of Makaopuhi seismometer	
14	13-21-06.8	2.4	8	19°24.7'	155°26.2'	11 km SW of Mauna Loa seismometer	
14	17-57-39.6	2.0	8	19°25.8'	155°25.5'	8 km SW of Mauna Loa seismometer	
16	09-38-00.9	2.0	9	19°20.3'	155°06.8'	6 km SE of Makaopuhi seismometer	
17	21-43-11.0	2.2	7	19°23.8'	155°14.9'	3 km NE of Ahua seismometer	
18	19-17-28.4	2.0	9	19°19.0'	155°12.7'	7 km NW of Apua Point	
18	16-18-43.2	2.8	5	19°23.8'	155°23.7'	7 km N of Desert seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
May 19	06-29-42.6	2.7	5	19°24.5'	155°35.5'	6 km S of Mokuaweoweo Caldera	
19	09-02-13.5	3.0	5	19°23.8'	155°36.5'	6 km SSW of Mokuaweoweo Caldera	
20	01-30-07.5	2.0	10	19°21.8'	155°05.9'	8 km E of Makaopuhi seismometer	
21	03-07-29.5	2.7	35	19°21.8'	155°01.9'	6 km WNW of Kalapana	
22	17-51-49.4	2.0	10	19°21.2'	155°03.9'	9 km W of Kalapana	
23	01-58-02.3	2.1	9	19°20.6'	155°06.7'	6 km SE of Makaopuhi seismometer	
23	10-23-43.3	2.4	40	19°15.3'	155°06.4'	9 km E of Apua Point	
23	19-56-39.6	2.2	9	19°21.2'	155°00.8'	4 km W of Kalapana	
23	21-11-52.3	2.3	7	19°23.2'	155°23.8'	6 km N of Desert seismometer	
26	04-26-02.3	2.3	30	19°23.0'	155°17.3'	2 km SSW of Kilauea Caldera	
28	04-43-13.0	2.0	9	19°19.8'	155°08.5'	5 km SE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
May 28	10-23-52.7	2.1	30	19°23.8'	155°14.5'	2 km SE of Kilauea Caldera	
28	16-54-40.1	2.3	10	19°15.6'	155°27.0'	11 km SW of Desert seismometer	Pahala
29	11-42-34.3	3.7	3	19°25.2'	155°16.3'	Kilauea Caldera	Kilauea Summit Area
29	21-54-40.1	2.5	9	19°19.7'	155°08.7'	5 km SE of Makaopuhi seismometer	
31	03-08-16.0	2.2	9	19°20.7'	155°08.7'	4 km SE of Makaopuhi seismometer	
31	08-53-18.1	2.5	5	19°29.9'	155°48.8'	12 km ESE of Kealakekua	
31	20-28-14.2	2.7	8	19°24.0'	155°46.8'	20 km SE of Kealakekua	
June 1	03-04-55.7	2.1	9	19°20.6'	155°07.1'	6 km SE of Makaopuhi seismometer	
2	21-17-25.4	3.1	9	19°20.8'	155°07.2'	6 km SE of Makaopuhi seismometer	Kilauea Summit Area, Hilo, Pahala
2	21-19-43.5	2.3	10	19°20.4'	155°05.4'	8 km SE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
June 3	06-29-58.8	2.0	30	19°22.2'	155°17.4'	3 km W of Ahua seismometer	
3	12-04-02.1	2.0	13	18°44'	155°28'	30 km SE of Kalae Point	
3	13-06-39.9	2.4	8	19°21.8'	155°29.0'	10 km WNW of Desert seismometer	
6	16-08-57.6	2.4	30	19°23.1'	155°17.2'	2 km S of Kilauea Caldera	
7	04-22-36.3	2.0	5	19°11.8'	155°40.2'	17 km NW of Naalehu	
8	04-25-25.6	2.1	8	20°00.0'	155°18.7'	8 km W of Laupahoehoe	
8	05-27-58.9	3.0	30	19°22.1'	155°17.8'	4 km SW of Kilauea Caldera	Kilauea Summit Area, Pahala
8	19-08-53.4	2.8	4	19°24.8'	155°16.7'	Kilauea Caldera	Kilauea Summit Area
9	10-22-58.4	2.1	10	19°18.9'	155°13.3'	7 km NW of Apua Point	
10	13-54-53.2	2.3	8	19°25.8'	155°27.2'	10 km SW of Mauna Loa seismometer	
11	11-25-28.5	2.1	5	19°25.3'	155°26.3'	10 km SW of Mauna Loa seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
June 16	17-08-26.5	2.4	10	19°21.7'	155°14.7'	3 km SE of Ahua seismometer	
16	22-10-36.6	2.3	10	19°20.5'	155°07.8'	5 km SE of Makaopuhi seismometer	
17	22-33-12.0	2.6	8	19°33.3'	155°48.5'	12 km ENE of Kealakekua	
18	14-47-14.6	2.0	10	19°20.8'	155°08.1'	4 km SE of Makaopuhi seismometer	
19	04-36-18.9	3.0	5	19°24.0'	155°17.3'	SW rim of Kilauea Caldera	Kilauea Summit Area
19	22-44-57.9	2.0	10	19°19.2'	155°13.3'	8 km NW of Apua Point	
20	04-20-09.8	3.0	13	20°44'	157°05'	105 km W of Haleakala, Maui	
20	23-07-57.7	3.1	30	19°22.0'	155°17.0'	2 km SW of Ahua seismometer	
21	05-03-29.9	2.0	3	19°22.7'	155°46.1'	14 km E of Hookena	
21	16-11-02.4	2.3	30	19°22.9'	155°16.7'	2 km NW of Ahua seismometer	
21	17-58-44.7	2.6	30	19°22.9'	155°17.0'	2 km S of Kilauea Caldera	Pahala

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
June 22	16-08-36.1	2.4	8	19°12.0'	155°33.8'	9 km W of Pahala	
23	09-08-51.0	2.5	5	19°21.0'	155°12.3'	4 km SW of Makaopuhi seismometer	
23	10-44-00.9	2.0	8	19°22.2'	155°24.8'	4 km NW of Desert seismometer	
24	18-10-19.0	2.7	8	19°25.2'	155°28.1'	11 km SW of Mauna Loa seismometer	
24	20-22-16.4	2.0	10	19°23.0'	155°26.9'	8 km NW of Desert seismometer	
25	02-40-12.0	2.7	5	19°23.2'	155°29.4'	12 km NW of Desert seismometer	
25	15-41-27.1	2.6	9	19°20.7'	155°11.6'	4 km SW of Makaopuhi seismometer	
27	03-28-19.4	2.1	8	19°22.2'	155°30.4'	13 km NW of Desert seismometer	
28	08-01-18.7	2.1	9	19°19.7'	155°12.7'	8 km NW of Apua Point	
29	08-49-41.9	2.4	8	19°12.0'	155°28.7'	Pahala	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

April, May, June 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
June 29	14-13-46.6	2.2	8	19°53.8'	155°44.0'	10 km NW of Waikii	
29	18-50-54.5	2.5	9	19°19.7'	155°11.2'	8 km NNE of Apua Point	
30	09-05-50.6	2.5	8	19°15'	156°23'	54 km WNW of Hookena	

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 51

July, August, and September 1968

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Issued September 1970

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Summary of activities

The eruption of Halemaumau that began on November 5, 1967, ended on the 13th of July. About 109 x 10^6 cubic yards of new lava was erupted into the pit during the 31 phases of this eruption. The final depths of filling, measured from the 1961 floor are: high lava marks 363-375 feet; inner levee, 420 $\pm$ 10 feet; highest cone, 470 feet. Following the end of the eruption, lava drained out of the inner lake, leaving about a 50 foot depression in the center.

The volcano, however, did not remain quiet very long as it began erupting again at 0248 HST on August 22 along the Upper East Rift. It began erupting at Hiiaka crater, about 2 miles east of Ahua seismometer, and eventually extended to fissures up to 10 miles to the east. This eruption continued until early morning of August 26. An estimated 130,000 cubic yards of lava was erupted of which only about 17,500 cubic yards remain on the surface.

The lava erupted from the main fissures in Hiiaka contains only olivine and spinel phenocrysts and so must have been hot, an interpretation supported by several optical pyrometer measurements of 1145°C. Large olivine phenocrysts are abundant (8-14 per cent) and commonly occur in clots. Many of the larger olivine crystals are strained. The lava from the Escape Road is similar to that in Hiiaka lake.

The lava that erupted from the small fissure on the southwest wall of Hiiaka is much more crystalline, with numerous aligned plagioclase and clinopyroxene microlites as well as 10 or so per cent olivine phenocrysts. This lava flowed slowly and quickly turned into aa, suggesting, together with its crystallinity, that the lava either was simply cooler lava of Hiiaka lake-type or that it is a more viscous, and also cooler, differentiate.

Several new cracks were formed before and during the eruptions along the Hilina Pali, Chain of Craters and Escape roads where they cross the Koae fault system. Some of these cracks reached widths of 2 to 3 inches. A few of the cracks showed right-lateral displacement, but the dominant horizontal displacement was tensional.

A comparison of the level and tilt data taken at the end of the Halemaumau eruption and after this eruption shows summit deflation of a little less than 0.8 foot and inflation

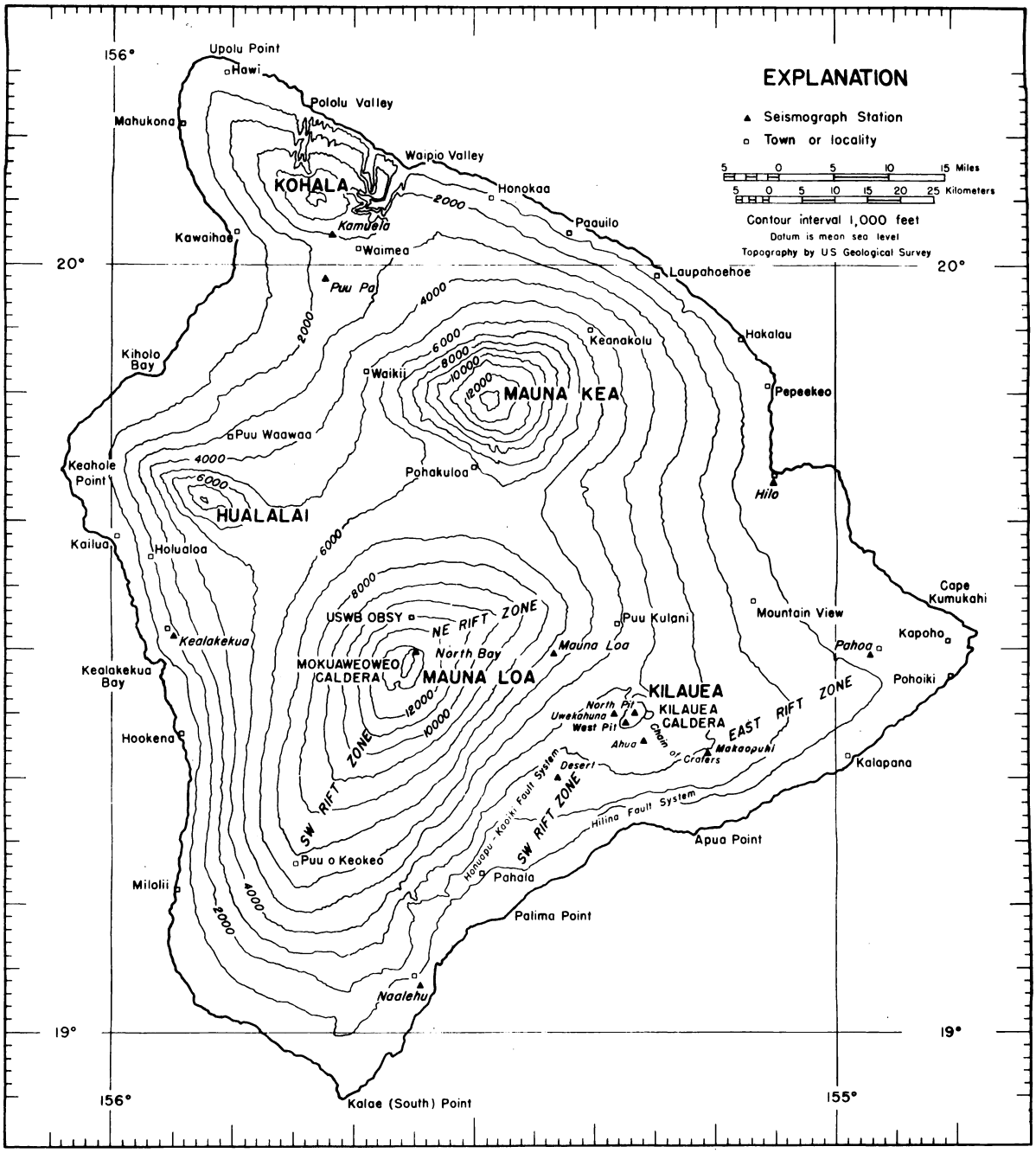

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

near Hiiaka crater of about 0.9 foot. Horizontal distance changes over roughly the same span of time showed general contraction lines in the summit area up to 66 parts per million and general extension along lines in the Upper East Rift area up to 130 parts per million.

The count for shallow caldera quakes was low throughout most of the Halemaumau eruption. This was partly due to the lower gains the seismometers were operated at in the summit area, necessitated by the continuous harmonic tremor associated with the fountaining. The count of East Rift quakes picked up slightly after the end of the Halemaumau eruption. The August eruption was preceded by a swarm of several hundred small quakes at or near the site of eruption.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna vault, July, August, and September, 1968.

Date (1968)	N-S	E-W	Date (1968)	N-S	E-W
July 7	557	395	Aug. 18	559	401
14	558	399	25	542	440
21	558	402	Sept. 1	539	435
28	559	402	8	542	423
Aug. 4	558	401	15	544	417
11	558	402	22	545	414
			29	545	408

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 2)

Tilt base	Date (1968)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading (1968)
Uwekahuna (U on fig. 2)	28 Aug	572.2	400.6	21.2 S41.5°E	Jun 11
Tree Molds (TM)	10 Oct	444.2	511.4	11.5 S14.4°E	Jun 10
Sand Spit (SS)	9 Sept	893.8	688.6	11.2 S73.0°E	Jun 13
Keamoku (Kea).	2 Sept	544.6	391.2	12.9 S68.8°E	Jun 19
Ahua Kamokukolau (Kam).	6 Sept	449.7	541.7	20.6 N3.1°E	Jun 13
Kipuka Nene (KN)	2 Sept	302.8	308.0	1.2 N8.0°W	Jun 10
Hilina Pali (HP)	16 Oct	456.1	499.1	0.45 N74.7°W	Feb 14
Kapapala Ranch (Kap).	28 Aug	492.5	509.8	0.01 S31.7°W	Jun 11
Mehena (M)	2 Sept	572.5	579.4	2.7 S41.4°W	Jun 12

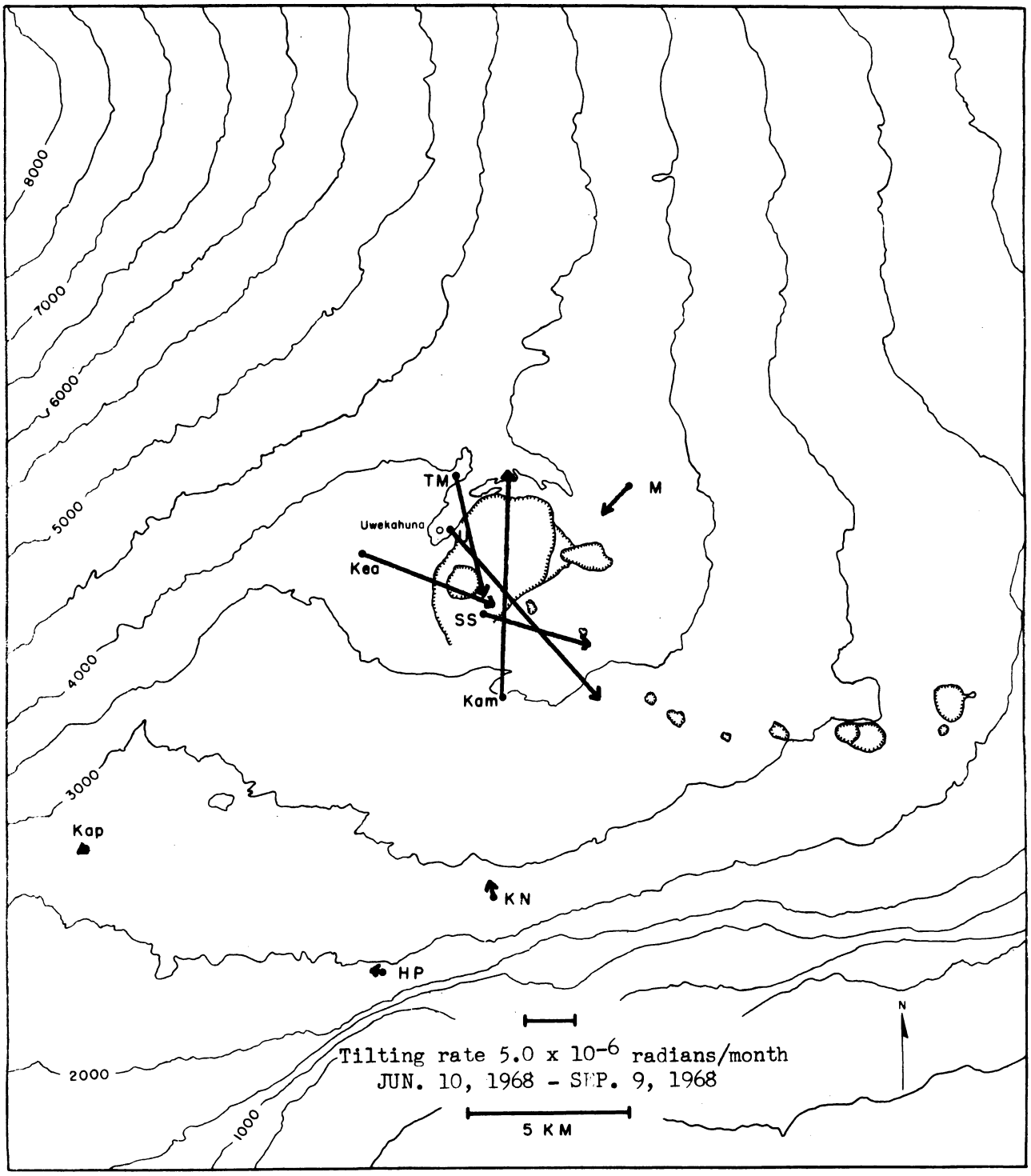

Figure 2.--Tilting of the ground around Kilauea caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the observatory (U, M, Mx, A, D, N, WP, MP, Kx, O,). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5 in the first-quarter issue each year.

Acknowledgments

Several people or agencies reported "felt" earthquakes during the 3rd quarter, 1968. Their assistance is gratefully acknowledged.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1968)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit							
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
July 1	24m	.	24h	10	.	9	37	.	20	4	
2	.	.	24h	4	.	5	21	1	16	6	2
3	.	.	24h	2	.	18	12	.	39	.	
4	.	.	24h	2	.	2	15	.	31	9	
5	.	.	24h	1	.	5	10	.	37	2	
6	.	3m	.	3	.	1	7	1	33	4	
7	22m	.	24h	2	.	5	42	1	13	3	
8	.	2m	.	2	.	1	45	2	59	2	1
9	.	.	.	10	.	2	36	2	21	.	1
10	.	.	.	5	.	.	41	2	25	.	1
11	.	.	.	2	.	1	25	1	47	1	
12	.	.	.	3	.	.	29	2	46	.	2
13	.	.	.	9	.	3	48	4	48	.	
14	.	.	.	3	.	2	41	2	4	.	

July	15	.	.	.	5	.	4	22	--	62	1		
	16	6m	.	.	4	.	1	5	--	67	.		
	17	.	.	.	1	.	23	17	.	71	.		
	18	.	.	.	2	.	24	.	11	75	.		
	19	.	.	.	1	.	16	4	23	47	1		
	20	.	.	.	3	.	38	14	22	36	2		
	21	8m	.	.	3	.	35	16	21	29	.	1	
	22	.	.	.	1	.	23	15	2	64	.		
	23	2m	.	.	3	.	39	19	6	47	.		
	24	.	.	.	2	.	51	8	1	41	.		
	25	.	.	.	6	.	48	18	1	66	.		
	26	38m	.	.	4	.	28	12	5	68	.		
	27	17m	.	.	.	.	35	15	4	49	.		
	28	.	.	.	3	.	32	12	6	56	3		
	29	.	.	.	.	.	41	10	5	86	.		
	30	4m	.	.	.	.	53	16	4	45	2	4	
	31	.	.	.	3	.	39	9	3	81	.		
August	1	30m	.	.	2	.	43	18	7	42	.	2	
	2	6m	.	.	1	.	56	7	1	36	3	1	
	3	.	.	.	5	.	79	18	.	34	.		
	4	.	.	.	2	.	47	13	2	50	.		
	5	5m	.	.	3	.	43	18	7	44	.	1	
	6	.	.	.	3	.	94	16	2	53	.	1	
	7	.	.	.	2	.	57	12	3	60	.	4	
	8	7m	.	.	1	.	74	21	3	51	.		
	9	.	.	.	1	.	39	19	1	38	.	1	
	10	.	.	.	.	.	38	7	6	42	.		
	11	.	.	.	1	.	50	26	7	58	.		
	12	.	.	.	.	.	53	12	3	28	.	1	
	13	.	.	.	.	.	88	12	4	59	.		
	14	.	.	.	1	.	73	9	2	46	.	1	
	15	19m	.	.	2	.	83	4	2	60	.	2	
	16	30m	.	.	8	.	50	10	7	52	4	3	
	17	.	.	.	4	.	60	16	4	28	2		
	18	.	.	.	1	.	102	14	14	56	.		
	19	.	.	.	2	.	68	12	3	60	.		
	20	.	3m	.	5	.	53	25	3	124	.		
	21	.	.	.	.	.	.	.	.	.	.	2	

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1968)		Tremor (m = minutes h = hours)			Earthquakes								
					Kilauea Summit			SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
		Deep	Intermediate	Shallow	30KM	Long Period	Shallow					
August	22	.	.	.	.	.	.	.	.	.	.	
	23	.	.	24h	.	.	7	.	.	.	8	
	24	.	.	24h	4	.	.	25	1	.	.	1
	25	.	.	24h	4	.	6	14	.	20	1	
	26	11m	.	24h	2	.	6	14	.	24	.	
	27	33m	.	24h	4	.	22	17	.	15	17	
	28	.	.	24h	.	.	40	28	.	20	.	
	29	.	.	5m	1	.	59	7	.	36	5	
	30	.	.	.	2	.	27	8	.	31	5	
	31	.	.	.	4	.	21	12	.	36	6	
		Aug. 22-26, a small eruption occurred at Hiiaka Crater on the east rift zone along the Chain of Craters road. The Makaopuhi seismograph line to the observatory was temporarily cut by fire from the eruption.										
September	1	.	.	.	2	.	23	6	.	27	3	1
	2	.	.	.	2	.	100	32	.	57	9	
	3	.	.	.	2	.	104	17	.	32	8	
	4	.	.	.	.	.	102	20	.	20	.	1
	5	.	.	.	1	.	57	8	.	13	1	3
	6	.	.	.	1	.	58	13	.	24	.	1
	7	.	.	.	4	.	55	25	--	22	1	1
	8	.	.	.	4	.	80	15	--	38	7	
	9	1m	.	.	.	.	101	16	--	37	4	
	10	.	.	.	1	.	123	9	--	23	3	2
	11	4m	.	.	5	.	122	28	--	30	2	

September	12	.	.	.	1	.	67	16	--	50	17	
	13	.	.	.	1	.	49	14	--	26	5	
	14	35m	.	.	3	.	75	2	--	28	4	
	15	3m	.	.	2	.	31	8	--	22	7	
	16	26m	.	.	3	.	91	27	--	35	6	
	17	.	.	.	2	.	66	8	--	28	3	
	18	5m	.	.	1	.	50	2	--	48	2	
	19	.	.	.	4	.	67	8	--	24	4	
	20	.	.	.	1	.	104	28	--	22	8	
	21	.	.	.	2	.	166	29	--	27	3	2
	22	.	.	.	7	.	127	11	.	27	6	
	23	.	.	.	2	.	102	22	.	37	8	2
	24	7m	.	.	2	.	67	15	.	23	9	2
	25	.	.	.	2	.	101	11	.	40	11	1
	26	.	.	.	4	.	76	10	.	19	3	
	27	.	.	.	.	.	124	21	.	20	10	1
	28	.	.	15m	2	.	105	18	1	42	3	1
	29	.	.	.	7	.	94	5	1	39	3	
	30	4m	.	.	3	.	196	27	.	47	4	1

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Entries for a given quake are: Date, origin tim (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
July 1	02-03-23.4	2.0	30	19°22.7'	155°14.9'	2 km NE of Ahua seismometer	
1	16-24-13.7	2.1	30	19°22.0'	155°16.8'	2 km SW of Ahua seismometer	
1	20-49-55.5	2.0	8	19°23.1'	155°29.2'	12 km NW of Desert seismometer	
2	04-23-09.4	2.0	8	19°26.2'	155°25.2'	7 km SW of Mauna Loa seismometer	
2	10-55-06.3	3.4	8	20°00.2'	155°49.3'	4 km SSE of Kawaihae	Honokaa, Kamuela
2	12-11-10.6	3.5	8	20°03.8'	155°50.2'	3 km NW of Kawaihae	Honokaa, Kamuela
2	12-31-59.0	2.0	20	19°24.8'	155°17.0'	Kilauea Caldera	
2	12-58-03.7	2.0	10	19°21.8'	155°05.3'	8 km E of Makaopuhi seismometer	
3	00-56-21.5	2.1	10	19°23.1'	155°03.8'	11 km E of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
July 3	02-38-23.1	2.0	33	19°25.2'	155°16.1'	Kilauea Caldera	
3	20-07-54.2	2.1	10	19°19.9'	155°09.9'	4 km S of Makaopuhi seismometer	
4	05-54-41.1	2.0	5	19°20.3'	155°07.8'	5 km SE of Makaopuhi seismometer	
4	07-34-18.3	2.1	10	19°19.8'	155°12.1'	18 km NNW of Apua Point	
5	02-17-21.5	2.7	32	19°23.2'	155°17.1'	2 km S of Kilauea Caldera	
5	02-21-59.0	2.2	30	19°22.2'	155°17.1'	2 km W of Ahua seismometer	
6	18-25-32.0	2.6	8	19°25.3'	155°23.1'	8 km S of Mauna Loa seismometer	Pahala
7	18-51-47.4	2.2	8	19°23.2'	155°29.3'	12 km NW of Desert seismometer	
8	04-13-08.8	2.9	13	20°04'	156°16'	45 km W of Kawaihae	
8	04-35-40.2	2.3	10	19°23.4'	154°58.7'	4 km N of Kalapana	
8	18-55-40.6	2.1	3	19°24.0'	155°25.2'	7 km NW of Desert seismometer	
8	20-08-50.5	2.1	8	19°23.2'	155°25.0'	6 km NW of Desert seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
July 8	20-23-32.0	2.0	5	19°23.4'	155°25.7'	7 km NW of Desert seismometer	
8	20-59-23.5	2.1	7	19°23.7'	155°25.5'	7 km NW of Desert seismometer	
8	23-44-54.2	2.1	10	19°19.8'	155°13.3'	9 km NW of Apua Point	
9	00-40-11.4	2.0	10	19°20.9'	155°07.1'	5 km SE of Makaopuhi seismometer	
9	03-50-51.1	2.5	8	19°55.9'	155°44.0'	11 km SSW of Kamuela	
9	19-24-57.3	2.5	30	19°22.3'	155°16.8'	2 km W of Ahua seismometer	
9	21-32-15.2	3.5	13	19°19.2'	155°13.7'	8 km NW of Apua Point	Hilo, Kilauea Summit Area, Pahala
10	11-14-27.3	2.0	10	19°21.2'	155°06.2'	8 km SE of Makaopuhi seismometer	
10	11-54-51.5	2.0	10	19°21.8'	155°02.8'	7 km NW of Kalapana	
10	18-45-23.4	3.3	40	18°51.7'	155°08.5'	45 km SSE of Apua Point	
10	21-41-23.7	2.0	9	19°22.4'	155°26.9'	8 km NW of Desert seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
July 10	22-49-53.2	2.0	8	19°26.2'	155°28.5'	11 km SW of Mauna Loa seismometer	
11	12-57-08.0	2.2	8	19°20.4'	155°09.0'	3 km SE of Makaopuhi seismometer	
12	05-53-55.4	2.0	5	19°24.9'	154°59.0'	10 km SW of Pahoa	
12	09-47-07.1	2.7	8	20°10.0'	155°36.2'	5 km NW of Waipio Valley	
12	11-00-58.9	2.5	8	20°07.5'	155°34.0'	Waipio Valley	
12	13-17-56.1	2.0	9	19°20.9'	155°04.9'	9 km SE of Makaopuhi seismometer	
12	20-20-31.2	2.0	10	19°20.0'	155°15.5'	5 km S of Ahua seismometer	
13	01-32-57.0	2.4	9	19°22.0'	155°06.4'	6 km ESE of Makaopuhi seismometer	
13	15-42-39.5	2.4	20	19°25.1'	155°17.1'	Kilauea Caldera	
15	13-00-54.2	2.4	8	19°24.7'	155°25.8'	10 km SW of Mauna Loa seismometer	
15	21-58-54.1	2.1	10	19°21.3'	155°06.8'	6 km SE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
July 15	21-59-22.1	2.3	10	19°20.7'	155°07.2'	6 km SE of Makaopuhi seismometer	Pahoa
16	04-19-14.4	2.1	9	19°18.1'	155°14.2'	7 km NW of Apua Point	
16	04-20-02.4	2.0	9	19°18.3'	155°14.7'	7 km NW of Apua Point	
17	05-44-49.0	2.1	8	19°26.9'	155°25.8'	7 km SW of Mauna Loa seismometer	
17	12-34-04.0	2.4	40	19°15.5'	155°06.7'	9 km E of Apua Point	
17	16-51-36.2	2.2	9	19°21.8'	155°05.7'	8 km ESE of Makaopuhi seismometer	
18	07-45-03.4	2.0	15	19°24.5'	155°17.0'	Kilauea Caldera	
18	16-59-16.6	2.0	10	19°21.4'	155°05.2'	8 km E of Makaopuhi seismometer	
18	23-20-27.2	2.5	9	19°21.2'	155°06.5'	7 km SE of Makaopuhi seismometer	
19	17-38-05.5	2.0	8	19°25.3'	155°24.8'	8 km SW of Mauna Loa seismometer	
20	15-52-42.4	2.1	6	19°28.0'	154°55.2'	4 km SE of Pahoa	Pahoa

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
July 21	08-29-27.9	2.5	7	19°10.2'	155°37.1'	12 km NW of Naalehu	Pahoa
21	13-25-27.5	2.2	10	19°24.7'	155°03.3'	13 km NE of Makaopuhi seismometer	
21	16-46-38.4	2.3	6	19°26.8'	154°53.8'	7 km SE of Pahoa	
21	21-15-24.0	3.3	10	19°22.8'	155°03.2'	8 km NW of Kalapana	Kilauea Summit Area, Mt. View, Hilo
22	19-59-14.6	2.0	10	19°19.4'	155°10.9'	8 km NE of Apua Point	
23	04-49-31.7	2.0	30	19°23.7'	155°15.8'	1 km S of Kilauea Caldera	
23	08-15-02.7	2.5	5	19°27.0'	154°55.7'	5 km SSE of Pahoa	
24	15-56-30.5	2.1	10	19°21.3'	155°11.3'	3 km SW of Makaopuhi seismometer	
26	01-53-23.4	2.3	10	19°20.9'	155°08.3'	3 km SE of Makaopuhi seismometer	
26	18-42-45.6	2.1	10	19°25.6'	155°00.0'	8 km NNW of Kalapana	Hilo
27	06-58-58.5	2.3	30	19°22.8'	155°17.2'	2 km S of Kilauea Caldera	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
July 28	05-45-51.4	2.5	9	19°19.3'	155°13.3'	7 km NW of Apua Point	
29	06-21-11.9	3.3	9	19°23.2'	155°05.6'	8 km ENE of Makaopuhi seismometer	Hilo, Keaau, Kilauea Summit Area
29	06-45-16.0	2.0	9	19°21.1'	155°06.7'	6 km SE of Makaopuhi seismometer	
29	09-37-47.9	2.0	9	19°20.8'	155°11.7'	4 km SW of Makaopuhi seismometer	
29	19-35-44.7	3.7	10	19°21.0'	155°06.7'	7 km SE of Makaopuhi seismometer	Hilo, Mt. View, Pahala, Kilauea Summit Area
29	19-41-24.9	2.1	10	19°21.0'	155°06.8'	6 km SE of Makaopuhi seismometer	
30	01-06-47.7	2.1	8	19°15.9'	155°29.1'	7 km N of Pahala	
30	04-39-35.8	2.0	31	19°24.1'	155°46.0'	14 km ENE of Hookena	
30	05-34-33.9	2.4	0	19°25.1'	155°53.6'	4 km NNE of Hookena	
30	15-40-55.6	2.0	7	19°28.2'	154°54.2'	4 km SE of Pahoa	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
July 30	22-34-02.9	3.3	30	19°27.1'	155°31.7'	7 km SE of Mokuaweoweo Caldera	
30	23-57-41.4	2.2	5	19°26.6'	154°53.8'	8 km SE of Pahoa	
31	00-39-25.2	2.7	8	20°03.0'	155°45.9'	7 km NW of Kamuela	Kealakekua
31	04-22-50.8	2.3	5	19°27.4'	154°55.8'	5 km SE of Pahoa	
31	09-34-58.0	2.0	8	19°22.8'	155°03.0'	8 km NW of Kalapana	
31	10-42-59.5	2.3	10	19°20.0'	155°08.7'	3 km SE of Makaopuhi seismometer	
31	14-41-56.0	2.5	5	19°26.9'	154°54.5'	7 km SE of Pahoa	
August 1	00-03-57.6	2.0	10	19°24.2'	155°02.7'	9 km NW of Kalapana	
1	00-34-37.8	4.0	10	19°20.0'	155°06.8'	7 km SE of Makaopuhi seismometer	Island-wide
1	00-47-41.5	2.0	10	19°21.0'	155°06.7'	6 km SE of Makaopuhi seismometer	
1	01-15-29.9	2.3	10	19°20.8'	155°06.9'	6 km SE of Makaopuhi seismometer	
1	01-48-22.4	2.3	8	19°55.7'	155°42.8'	10 km NW of Waikii	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
August 1	07-21-22.9	2.2	9	19°28.1'	154°55.2'	4 km SE of Pahoa	
1	22-50-14.3	2.0	10	19°19.7'	155°11.7'	5 km SW of Makaopuhi seismometer	
2	12-19-34.6	2.6	20	19°26.0'	154°57.2'	7 km S of Pahoa	Pahoa
2	12-59-17.2	2.7	8	19°23.9'	155°28.8'	12 km NW of Desert seismometer	
2	18-36-55.4	3.8	40	19°51.9'	155°55.1'	Kiholo Bay	Kealakekua, Paauilo
2	18-41-18.8	2.0	10	19°20.3'	155°08.9'	4 km SE of Makaopuhi seismometer	
3	06-32-22.4	2.3	8	19°22.8'	155°23.8'	5 km N of Desert seismometer	Pahala
3	17-03-41.1	2.0	9	19°25.1'	155°26.9'	11 km NW of Desert seismometer	
4	05-18-44.1	2.2	9	19°20.0'	155°08.5'	5 km SE of Makaopuhi seismometer	
5	08-38-09.6	2.6	5	19°26.4'	154°54.1'	8 km SE of Pahoa	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
August 5	10-30-38.3	2.0	8	19°25.9'	155°23.1'	7 km S of Mauna Loa seismometer	
5	10-37-18.0	3.1	5	19°54.1'	155°53.1'	7 km NE of Kiholo Bay	Kealakekua
5	17-24-34.6	2.2	9	19°23.2'	155°02.2'	7 km NW of Kalapana	
6	10-39-07.2	2.2	8	19°12.5'	155°33.9'	9 km W of Pahala	
6	16-34-42.8	2.0	13	20°09.5'	155°53.5'	3 km SE of Mahukona	
6	23-14-51.3	3.0	10	19°19.8'	155°13.1'	9 km NW of Apua Point	
7	01-44-08.1	2.3	8	20°02.0'	155°51.0'	2 km SW of Kawaihae	
7	09-12-43.6	2.5	5	19°23.0'	155°29.0'	11 km NW of Desert seismometer	
7	10-58-25.0	4.4	3	19°19.1'	155°48.2'	12 km SE of Kookena	Hakalau, Pahala, Kilauea Summit Area, Naalehu
7	12-05-01.0	3.7	3	19°23.0'	155°45.2'	15 km E of Hookena	
7	23-25-19.4	2.6	8	19°52.1'	155°33.2'	10 km E of Waikii	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
August 9	00-06-20.1	2.3	8	20°02.0'	155°51.9'	4 km SW of Kawaihae	Kilauea Summit Area, Pahala, Hakalau, Hilo, Pahoa, Mt. View
9	01-04-53.4	3.7	30	19°23.4'	155°17.0'	1 km S of Kilauea Caldera	Island-wide
10	11-09-21.2	2.5	10	19°20.4'	155°12.1'	9 km N of Apua Point	
10	15-59-43.8	2.6	9	19°22.4'	155°03.7'	12 km E of Makaopuhi seismometer	
12	04-07-12.7	3.5	13	19°00'	156°21'	53 km SW of Milolii	
12	06-32-23.5	2.0	9	19°20.1'	155°12.8'	6 km SW of Makaopuhi seismometer	
12	06-37-04.9	2.7	5	19°27.4'	154°55.4'	5 km SE of Pahoa	
13	17-05-03.7	2.2	5	19°25.2'	155°01.7'	9 km NW of Kalapana	
14	04-57-08.9	2.4	10	19°26.0'	155°03.5'	12 km NW of Kalapana	
14	10-39-23.8	2.4	3	19°27.2'	155°48.6'	14 km SE of Kealakekua	
15	16-27-34.4	2.3	8	18°59'	156°17'	45 km SE of Milolii	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
August 15	19-21-21.3	2.2	8	19°25.8'	155°56.0'	10 km S of Kealakekua	
16	01-52-49.3	2.2	5	19°23.4'	154°59.5'	4 km N of Kalapana	Pahala, Mt. View
16	02-05-41.6	2.6	5	19°26.3'	155°00.2'	8 km SW of Pahoa	
16	12-30-13.9	2.8	13	20°08.4'	155°53.5'	5 km S of Mahukona	
16	13-14-00.4	3.2	15	19°24.1'	155°17.0'	S rim of Kilauea Caldera	Pahala, Kilauea Summit Area, Mt. View
16	16-23-37.6	4.1	8	19°53.2'	155°22.9'	5 km SW of Keanakolu	Island-wide
16	16-47-19.9	2.4	8	19°52.4'	155°25.2'	10 km SW of Keanakolu	
17	13-15-25.1	2.3	10	19°21.7'	155°05.1'	9 km ESE of Makaopuhi seismometer	
17	22-38-49.6	2.3	10	19°24.2'	155°03.2'	10 km NW of Kalapana	
20	16-29-40.9	3.3	8	19°23.2'	155°25.1'	7 km NW of Desert seismometer	Pahala, Mt. View, Kilauea Summit Area
21	11-28-56.2	3.0	8	19°11.2'	155°36.7'	14 km NNW of Naalehu	Pahala

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
August 21	22-21-57.0	2.7	8	20°01.5'	155°59.6'	17 km W of Kawaihae	
22	03-21-59.0	2.5	5	19°22.8'	155°15.3'	1 km NE of Ahua seismometer	
22	03-31-02.0	2.6	5	19°22.7'	155°14.2'	3 km E of Ahua seismometer	
22	03-57-39.9	2.0	4	19°22.5'	155°14.0'	3 km E of Ahua seismometer	
22	04-09-56.0	3.0	4	19°22.4'	155°14.1'	3 km E of Ahua seismometer	Kilauea Summit Area
22	04-22-29.3	2.0	3	19°22.7'	155°14.6'	3 km E of Ahua seismometer	Kilauea Summit Area
22	04-46-21.3	3.0	3	19°21.2'	155°13.0'	5 km SE of Ahua seismometer	
22	05-06-54.2	3.1	2	19°22.8'	155°14.4'	3 km ENE of Ahua seismometer	
22	05-25-45.5	2.7	2	19°22.4'	155°14.5'	3 km E of Ahua seismometer	Kilauea Summit Area
22	05-45-02.0	2.8	2	19°21.7'	155°15.0'	2 km SE of Ahua seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
August 22	05-53-26.4	2.8	4	19°22.3'	155°15.1'	2 km E of Ahua seismometer	
22	06-01-07.5	2.7	9	19°20.9'	155°09.4'	2 km SE of Makaopuhi seismometer	Kilauea Summit Area
22	06-05-35.1	2.1	3	19°22.8'	155°14.7'	3 km NE of Ahua seismometer	
22	06-29-16.6	2.2	3	19°22.7'	155°14.3'	3 km E of Ahua seismometer	
22	10-07-44.7	2.0	10	19°21.2'	155°07.1'	5 km ESE of Makaopuhi seismometer	
22	16-36-47.0	2.3	30	19°23.2'	155°15.2'	2 km NE of Ahua seismometer	
23	06-37-35.0	2.9	8	19°25.1'	155°25.8'	10 km SW of Mauna Loa seismometer	
23	15-00-27.6	2.6	9	19°21.4'	155°08.8'	2 km SE of Makaopuhi seismometer	
24	14-13-59.5	2.8	8	19°54.8'	155°29.9'	17 km W of Keanakolu	
24	19-31-42.4	2.3	10	19°18.2'	155°07.7'	9 km NE of Apua Point	
25	10-15-35.2	2.0	10	19°19.8'	155°13.4'	7 km SW of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
August 25	20-12-15.7	2.6	34	19°24.8'	155°10.2'	5 km N of Makaopuhi seismometer	
26	05-32-11.2	2.4	8	19°23.1'	155°26.9'	8 km NW of Desert seismometer	
26	13-43-28.3	2.2	10	19°20.0'	155°08.7'	4 km SE of Makaopuhi seismometer	
29	22-36-21.6	2.3	9	19°20.1'	155°07.8'	5 km SE of Makaopuhi seismometer	
30	19-09-38.7	2.5	8	19°20.8'	155°26.3'	5 km NW of Desert seismometer	
31	08-59-00.5	2.2	10	19°20.6'	155°07.1'	5 km SE of Makaopuhi seismometer	
September 2	04-44-46.9	2.4	10	19°22.3'	155°02.0'	6 km NW of Kalapana	
2	14-58- 3.4	3.1	8	19°21.3'	155°27.1'	7 km NW of Desert seismometer	Kilauea Summit Area, Pahala, Hilo, Kealakekua
3	10-45-11.5	2.0	8	19°20.7'	155°26.8'	6 km W of Desert seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
September 3	11-29-39.6	2.6	8	19°24.5'	155°28.5'	12 km NW of Desert seismometer	
4	22-58-08.9	2.1	13	20°01.5'	155°17.0'	7 km NW of Laupahoehoe	
4	23-04-00.5	2.3	8	19°24.0'	155°23.8'	12 km N of Desert seismometer	
5	03-58-06.2	2.2	8	19°59.0'	155°25.0'	12 km NW of Keanakolu	
5	03-59-40.2	2.8	8	19°58.1'	155°23.9'	9 km NW of Keanakolu	
5	06-12-43.7	3.2	8	19°57.8'	155°23.8'	8 km NW of Keanakolu	Hilo
6	10-31-52.6	2.0	8	19°58.6'	155°50.2'	7 km S of Kawaihae	
7	05-52-45.1	2.1	8	19°22.6'	155°25.0'	5 km NW of Desert seismometer	
7	14-41-20.1	2.1	3	19°18.7'	155°39.7'	20 km SW of Mokuaweoweo Caldera	
7	17-08-44.3	3.7	20	19°26.0'	155°16.7'	Kilauea Caldera	Kilauea Summit Area, Hilo, Kealakekua, Keaau
7	17-17-25.9	2.6	20	19°25.3'	155°16.5'	Kilauea Caldera	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s		•	Lat. N.	Long. W.	Description	
September 8	07-59-47.3	2.3	25	19°24.9'	155°15.8'	Kilauea Caldera	
10	15-22-42.3	2.3	10	20°02.7'	155°34.2'	13 km ENE of Kamuela	
10	19-53-28.3	2.0	0	19°28.1'	155°47.9'	14 km SE of Kealakekua	
10	22-32-00.7	2.5	8	19°25.9'	155°24.1'	7 km S of Mauna Loa seismometer	Kilauea Summit Area
12	09-12-48.8	2.0	8	19°21.3'	155°24.5'	3 km NW of Desert seismometer	Pahala
21	02-13-34.1	3.0	8	19°13.0'	155°38.1'	17 km NW of Naalehu	
21	20-37-50.5	2.2	8	19°21.1'	155°26.7'	6 km NW of Desert seismometer	
21	23-44-01.9	2.4	50	19°47.8'	156°01.9'	8 km NE of Keahole Point	
22	14-42-36.8	2.0	3	19°23.2'	155°11.4'	3 km NW of Makaopuhi seismometer	
23	18-11-53.3	4.1	8	20°10.3'	155°48.5'	20 km NW of Kamuela	Waipio Valley, Kawaihae, Waimea, Hilo, Kamuela, Kilauea Summit Area

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
September 23	18-18-12.2	3.2	30	20°09.2'	155°48.0'	10 km SE of Hawi	
23	19-44-29.2	2.5	8	19°25.0'	155°25.5'	9 km NW of Desert seismometer	
24	15-08-48.8	2.3	50	19°53.5'	155°58.0'	5 km NW of Kiholo Bay	
24	15-58-52.3	2.2	0	19°39.0'	155°53.9'	10 km E of Kailua	
25	05-00-01.8	2.5	8	20°20.9'	155°47.2'	10 km NE of Upolu Point	
25	08-01-49.2	2.0	8	19°26.8'	155°26.1'	7 km SW of Mauna Loa seismometer	
25	16-04-54.7	2.0	20	19°25.2'	155°15.9'	Kilauea Caldera	
25	20-49-50.6	2.0	9	19°20.8'	155°07.8'	5 km SE of Makaopuhi seismometer	
26	13-01-15.2	2.0	9	19°20.2'	155°08.5'	4 km SE of Makaopuhi seismometer	
27	17-40-09.2	2.8	7	19°28.5'	155°46.2'	17 km SE of Kealakekua	
28	06-28-53.8	2.9	10	19°18.7'	155°14.4'	8 km NW of Apua Point	
28	11-50-08.6	2.3	9	19°17.9'	155°13.1'	5 km NW of Apua Point	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

July, August, September 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
September 28	19-12-09.8	2.7	20	19°28.6'	155°15.8'	5 km NE of Kilauea Caldera	
29	14-59-43.5	2.1	8	19°54.2'	155°29.0'	9 km N of Mauna Kea Summit	
29	15-31-22.9	2.2	9	19°21.0'	155°08.0'	4 km SE of Makaopuhi seismometer	
30	04-01-12.3	2.3	8	19°22.3'	155°25.8'	6 km NW of Desert seismometer	Pahala
30	12-15-35.4	2.0	30	19°23.2'	155°15.9'	2 km S of Kilauea Caldera	
30	13-34-51.2	2.3	45	18°51.9'	155°17.0'	39 km SE of Naalehu	

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 52

October, November, and December 1968

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Issued September 1970

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Summary of activities

After a sharp reinflation at Kilauea summit following the August eruption a new eruption broke out on the Upper East Rift at Kilauea. Strong harmonic tremors that began at 1037 October 7 at the Makaopuhi seismograph was followed by the sighting of fume clouds at 1435. Although fountaining was not sighted at this time, we believe that this was the beginning of the eruption. The eruption began at Kane Hui o Hamo, a low cone about 1 mile north of Makaopuhi seismometer, and eventually erupted from vents up to 3 miles further to the east. Fountaining continued intermittently until October 16. On October 22 activity renewed for a short time but the eruptive activity from this date until November 19 consisted mostly of low level harmonic tremor, fuming and occasional bursts of spatter. A downrift migration of vents that occurred during the August eruption, did not characterize this eruption; eruptive centers shifted at random between Napau Crater and 2 miles downrift. About 7 million cubic meters of new lava finally remained on the surface near and within Napau Crater as a result of the October eruption.

The volume of lava above ground may be higher than the guess given here, for we suspect the average thickness of new lava outside of Napau has been underestimated. The amount of lava that was erupted to the surface but drained back may be as much as 50% of the amount remaining on the surface.

Levels were run in the summit and Upper East Rift area on October 9-10 and again on November 25-26. A comparison with the August 25-26 (Post August eruption) level data shows that the summit area subsided about 0.4 feet and the Upper East Rift area near Makaopuhi seismometer showed an uplift of about 0.6 feet. Most of this deformation probably took place in the earliest stages of the eruption, judging from the behavior of the tiltmeter in Uwekahuna vault; it showed sharp deflation tilt beginning at about 1130 October 7 and leveling out about 1300 October 9.

Although intermittent eruptive activity continued until October 22 and harmonic tremor and dense fumes continued until November 19, the tilt evidence shows that reinflation began a few days after the start of the eruption. By November 25-26 the summit had uplifted about 0.2 foot above its October 9-10 level. The Upper East Rift area uplifted an additional 0.13 foot above its October 9-10 level.

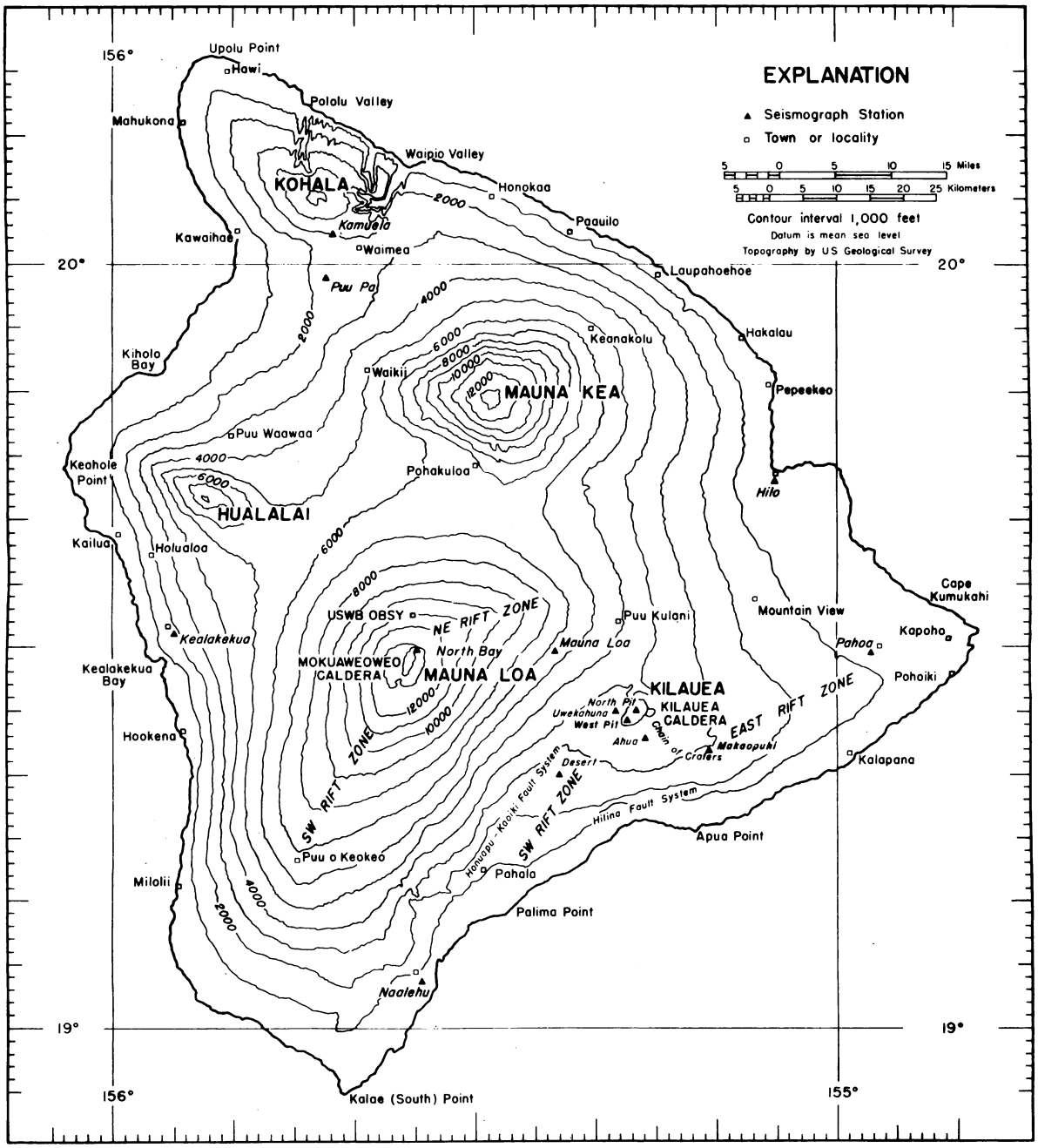

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

Tilt was measured at the summit stations 6 times between the August and October eruptions. The total tilt for the period covered by the leveling verified the level data except at outlet vault a tilt direction almost 180° opposite from the direction that was inferred from the leveling. The reason for this is unknown.

The short base water tube tiltmeter in Uwekahuna vault showed rapic inflation beginning on August 25. It showed an inflation direction and it averaged about 1.13 x 10^{-6} radians/day until October 2nd, when inflation ceased abruptly. Between October 2nd and the beginning of the eruption there was little or not tilt change.

Distance measurements between stations in the summit and Upper East Rift areas showed contraction strains at the summit and slight extension along the Upper East Rift. The maximum linear strain occurred along east-west lines just south of Halemaumau; they were as high as 7.4 x 10^{-5} in the August-October (after eruption) period.

Seismic activity associated with the October Upper East Rift eruption started at 1037, October 7. Harmonic tremor and large numbers of south flank and summit earthquakes characterized the early period followed by weak harmonic tremor and moderate numbers of quakes for the remainder of the month. During October 7-10, more than 3,000 quakes were recorded; 300 of these events between 0.5 to 3.0 magnitude were read and located.

Tilting of the Ground Around Kilauea Caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna vault, October, November, and December, 1968

Date (1968)	N-S	E-W	Date (1968)	N-S	E-W
Oct. 6	539	421	Nov. 17	523	427
13	517	454	24	524	423
20	516	452	Dec. 1	524	421
27	516	440	8	520	423
Nov. 3	519	436	15	520	420
10	520	432	22	521	418
			29	524	417

Table 2.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 2)

Tilt base	Date (1968)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading (1968)
Uwekahuna (U on fig. 2)	3 Dec.	558.2	399.5	4.3 S4.6°W	Aug. 28
Tree Molds (TM)	3 Dec.	460.6	503.7	10.1 N25.2°W	Oct. 10
Sand Spit (SS)	27 Nov.	866.8	701.2	11.5 S25.0°E	Sept. 9
Keamoku (Kea).	2 Dec.	521.5	412.5	10.4 S42.7°E	Sept. 2
Ahua Kamokukolau (Kam).	27 Nov.	493.1	531.9	16.3 N12.7°W	Sept. 6
Kipuka Nene (KN)	5 Dec.	305.0	308.5	0.7 N11.8°E	Sept. 2
Hilina Pali (HP)	N/D				
Kapapala Ranch (Kap).	N/D				
Mehena (M)	2 Dec.	569.6	576.8	1.3 S42.0°W	Sept. 2

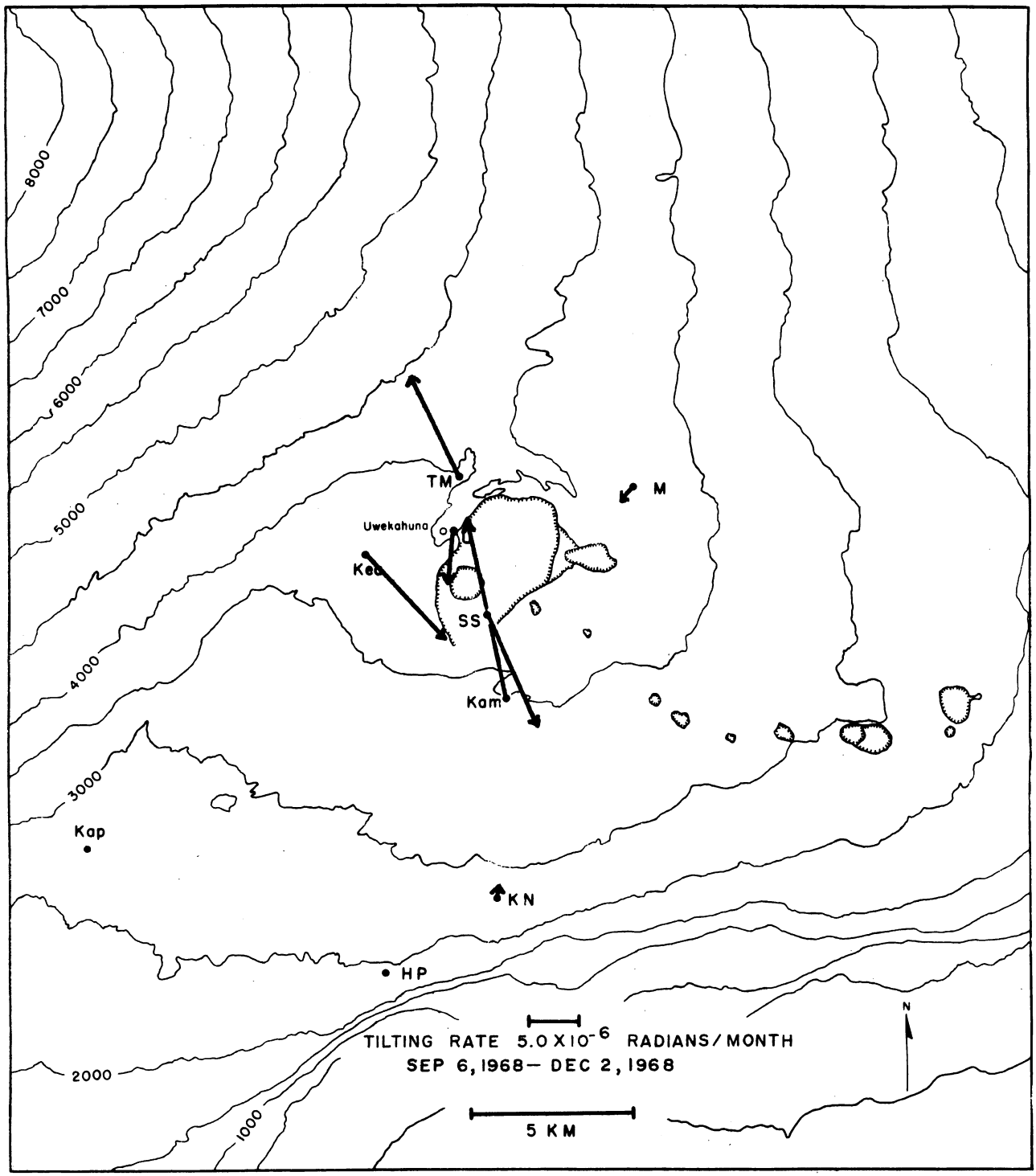

Figure 2.--Tilting of the ground around Kilauea Caldera between September 6, 1968, and December 2, 1968. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circle, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the observatory (U, M, Mx, A, D, N, WP, MP, Kx, O,). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5 in the first-quarter issue each year.

Acknowledgments

Several people or agencies reported "felt" earthquakes during the 4th quarter, 1968. Their assistance is gratefully acknowledged.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1968)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit							
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
October 1	.	4m	.	4	.	107	9	1	31	10	
2	.	.	.	3	.	175	27	.	40	7	2
3	.	7m	.	1	.	98	7	.	36	7	
4	5m	.	.	1	.	84	12	.	43	3	
5	.	34m	.	2	.	77	17	.	57	.	
6	2m	.	.	2	.	87	14	.	63	3	
7	.	.	.	.	.	.	.	--	.	.	
8	.	.	24h	.	.	.	.	--	.	.	
9	.	.	24h	.	.	19	11	--	224	1	2
10	.	.	24h	2	.	10	2	--	.	.	
11	.	.	24h	.	.	.	.	--	.	.	
12	.	.	24h	.	.	.	.	--	.	.	
13	.	.	24h	.	.	19	.	.	33	3	

October	14	.	.	24h	.	.	22	.	.	7	4	
	15	3	.	24h	.	.	27	.	.	66	8	1
	16	.	.	24h	.	.	13	.	.	22	3	
	17	.	12m	24h	.	.	20	.	1	34	4	1
	18	.	.	24h	1	.	15	.	.	29	1	
	19	.	.	24h	.	.	30	.	.	23	3	
	20	.	.	24h	.	.	15	.	.	14	2	
	21	.	.	24h	.	.	24	.	.	16	1	
	22	25m	.	.	.	.	.	.	.	10	6	1
	23	.	.	24h	.	.	30	.	.	22	2	
	24	.	.	24h	4	.	64	5	.	17	7	
	25	20m	.	24h	.	.	53	16	.	19	4	1
	26	.	.	24h	1	.	35	25	.	20	3	1
	27	.	6m	24h	4	.	45	23	.	.	.	1
	28	.	13m	24h	2	.	29	12	.	32	2	1
	29	3m	.	24h	3	.	26	5	.	11	5	
	30	.	6m	24h	2	.	35	34	.	16	9	
	31	.	.	24h	15	.	10	22	.	13	2	

Oct. 7-21, volcanic activity between Kane Nui O Hamo and Napau Crater. Weak harmonic tremor continued to record for several weeks after the end of surface activity.

November	1	.	.	24h	4	.	19	42	.	20	4	
	2	.	.	24h	5	.	22	12	.	18	2	1
	3	2m	.	24h	4	.	16	10	.	19	3	
	4	.	.	24h	2	.	11	9	.	16	3	
	5	.	.	24h	2	4	32	6	.	19	2	1
	6	.	.	24h	1	14	13	18	.	15	1	
	7	.	.	24h	8	75	21	22	.	24	7	
	8	.	.	24h	3	31	143	14	.	47	.	
	9	.	.	24h	.	25	172	20	.	10	2	
	10	.	.	24h	1	26	165	23	.	17	.	
	11	33m	.	24h	.	4	139	12	1	16	8	2
	12	14m	.	24h	3	.	90	10	.	13	4	
	13	13m	.	24h	6	.	189	16	.	58	1	
	14	26m	.	.	9	.	265	2	.	38	5	
	15	17m	.	.	.	.	182	9	.	13	3	
	16	15m	.	.	.	.	205	10	.	9	4	1

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1968)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow					
November 17	10m	.	.	3	.	195	14	.	15	11	
18	34m	.	.	1	.	132	18	1	13	6	2
19	31m	.	.	14	.	148	27	1	10	5	1
20	37m	.	.	2	.	113	34	.	12	5	2
21	13m	.	.	8	.	120	16	.	7	3	
22	65m	.	.	3	.	94	33	.	15	1	
23	18m	.	.	1	.	108	29	.	11	4	
24	2m	.	.	6	.	169	22	.	14	5	
25	12m	.	.	2	.	74	18	.	24	3	2
26	40m	.	.	1	.	75	41	.	31	3	1
27	24m	.	.	5	.	90	51	.	25	6	
28	18m	.	.	.	.	65	18	.	27	2	1
29	26m	.	.	2	5	81	18	.	20	1	1
30	.	.	.	2	3	81	13	.	16	6	1
December 1	3m	.	.	5	4	95	14	.	18	5	
2	.	.	.	14	.	85	13	2	14	2	1
3	.	.	.	6	.	.	10	.	14	.	1
4	.	.	.	2	.	102	12	.	14	6	
5	.	.	.	2	.	154	18	.	11	7	
6	.	.	.	6	.	124	24	.	28	2	1
7	.	.	.	.	.	68	6	.	17	2	
8	.	.	.	4	3	64	12	1	22	2	
9	.	.	.	3	.	105	36	.	24	1	
10	.	.	.	5	.	149	25	1	22	5	2
11	21m	.	.	5	.	149	28	.	22	4	

December	12	.	.	.	3	.	111	13	.	7	4	
	13	.	.	.	3	.	127	27	.	24	.	3
	14	.	.	.	1	.	106	36	.	18	4	1
	15	.	.	.	.	.	59	13	.	12	3	
	16	.	.	.	.	.	99	7	.	117	1	
	17	.	.	60m	.	.	87	8	.	31	6	
	18	.	.	.	1	.	91	7	.	15	4	
	19	.	.	.	.	3	82	9	1	42	3	1
	20	.	.	.	.	.	79	13	.	25	.	
	21	.	.	.	.	.	87	43	.	16	1	
	22	.	.	.	1	.	129	39	.	28	2	1
	23	.	.	.	1	.	70	36	.	33	1	1
	24	3m	.	.	8	.	96	54	.	23	5	1
	25	.	.	.	6	.	123	33	.	19	3	
	26	.	.	.	1	.	81	40	.	23	3	
	27	.	6m	.	.	.	121	17	.	17	3	3
	28	.	6m	.	5	2	104	18	.	10	5	
	29	.	.	.	2	13	117	33	1	43	3	2
	30	2m	13m	.	2	2	145	31	.	32	2	
	31	.	8m	.	1	.	123	30	.	29	2	1

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Entries for a given quake are: Date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
October 1	13-56-24.5	2.4	8	19°21.2'	155°01.7'	5 km W W of Kalapana	
1	19-11-10.7	2.1	30	19°22.7'	155°18.4'	4 km W of Ahua seismometer	
1	19-46-17.0	2.0	8	19°17.4'	155°11.1'	4 km NE of Apua Point	
2	02-10-04.8	3.3	8	19°18'	156°46'	93 km WSW of Kealakekua	
2	12-59-38.5	2.0	5	19°25.0'	155°25.8'	10 km NW of Desert seismometer	
2	21-54-30.4	2.0	0	19°21.1'	155°44.7'	17 km ESE of Hookena	
3	18-26-54.4	2.5	8	19°25.5'	155°25.2'	10 km NW of Desert seismometer	
4	20-40-28.5	2.5	9	19°20.8'	155°06.3'	7 km SE of Makaopuhi seismometer	
4	22-32-56.6	2.5	15	19°24.8'	155°17.7'	Kilauea Caldera	
6	08-29-01.8	2.4	30	19°22.2'	155°17.1'	2 km W of Ahua seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
October	6	11-59-51.8	2.0	10	19°21.2'	155°08.8'	3 km SE of Makaopuhi seismometer	
	7	11-00-59.7	2.2	3	19°22.5'	155°11.3'	3 km NW of Makaopuhi seismometer	
	7	11-04-59.3	2.2	4	19°22.5'	155°11.0'	2 km NW of Makaopuhi seismometer	
	7	11-36-21.2	2.3	5	19°21.9'	155°12.3'	4 km W of Makaopuhi seismometer	
	7	11-57-14.8	2.1	5	19°22.1'	155°12.6'	5 km W of Makaopuhi seismometer	
	7	13-52-26.7	2.1	5	19°22.7'	155°08.3'	4 km NE of Makaopuhi seismometer	
	7	14-24-43.2	2.2	4	19°22.7'	155°09.0'	2 km NE of Makaopuhi seismometer	
	7	14-36-31.3	2.7	6	19°21.4'	155°10.9'	2 km SW of Makaopuhi seismometer	
	7	16-27-54.0	2.7	7	19°22.7'	155°10.4'	2 km NW of Makaopuhi seismometer	
	7	18-25-09.0	2.2	2	19°23.3'	155°08.1'	4 km NE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
October	7	18-40-26.6	2.0	2	19°23.8'	155°08.3'	5 km NE of Makaopuhi seismometer	
	7	19-00-29.2	2.5	2	19°23.7'	155°07.3'	6 km NE of Makaopuhi seismometer	
	7	19-04-06.1	2.5	1	19°24.7'	155°08.8'	6 km NE of Makaopuhi seismometer	
	7	19-12-41.4	2.7	5	19°23.3'	155°08.5'	4 km NE of Makaopuhi seismometer	
	7	19-21-29.7	2.4	0	19°21.2'	155°09.0'	2 km SE of Makaopuhi seismometer	
	7	19-54-26.0	2.1	3	19°23.7'	155°07.8'	5 km NE of Makaopuhi seismometer	
	7	20-00-55.6	2.2	4	19°23.1'	155°08.0'	5 km NE of Makaopuhi seismometer	
	7	20-29-12.1	2.0	3	19°23.2'	155°07.7'	5 km NE of Makaopuhi seismometer	
	7	20-46-19.0	2.1	5	19°22.8'	155°09.0'	3 km NE of Makaopuhi seismometer	
	7	22-18-22.0	2.2	4	19°24.8'	155°16.9'	Kilauea Caldera	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
October	8	00-10-10.8	2.0	4	19°22.8'	155°07.3'	5 km NE of Makaopuhi seismometer	
	8	00-28-25.5	2.1	3	19°24.8'	155°17.4'	Kilauea Caldera	
	8	01-14-22.5	2.4	4	19°23.4'	155°07.3'	5 km NE of Makaopuhi seismometer	
	8	01-36-51.1	2.7	5	19°23.2'	155°08.6'	3 km NE of Makaopuhi seismometer	
	8	01-39-55.2	2.7	4	19°23.0'	155°07.9'	4 km NE of Makaopuhi seismometer	
	8	01-46-42.7	2.1	5	19°22.8'	155°08.8'	3 km NE of Makaopuhi seismometer	
	8	03-20-25.9	2.1	6	19°23.3'	155°08.7'	3 km NE of Makaopuhi seismometer	
	8	03-41-38.4	2.0	5	19°23.2'	155°08.3'	4 km NE of Makaopuhi seismometer	
	8	04-10-41.8	2.2	5	19°22.8'	155°08.2'	3 km NE of Makaopuhi seismometer	
	8	04-10-43.0	2.0	3	19°23.0'	155°08.3'	3 km NE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
October	8	04-18-43.0	2.0	3	19°23.0'	155°08.3'	3 km NE of Makaopuhi seismometer	
	8	04-57-49.1	2.5	5	19°22.9'	155°07.5'	5 km NE of Makaopuhi seismometer	
	8	05-19-55.5	2.2	2	19°23.3'	155°06.9'	6 km NE of Makaopuhi seismometer	
	8	05-39-05.6	2.1	5	19°22.3'	155°08.0'	4 km NE of Makaopuhi seismometer	
	8	06-14-38.0	2.4	3	19°23.1'	155°06.9'	6 km NE of Makaopuhi seismometer	
	8	07-06-25.6	2.6	9	19°18.8'	155°07.8'	9 km NE of Apua Point	
	8	07-20-31.5	2.1	2	19°23.1'	155°07.8'	5 km NE of Makaopuhi seismometer	
	8	07-40-24.8	2.1	2	19°23.2'	155°06.2'	7 km NE of Makaopuhi seismometer	
	8	07-46-35.1	2.4	4	19°22.8'	155°07.7'	5 km NE of Makaopuhi seismometer	
	8	08-23-03.5	2.5	6	19°22.9'	155°07.5'	5 km NE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
October	8	08-49-22.7	2.1	5	19°23.1'	155°08.3'	4 km NE of Makaopuhi seismometer	
	8	08-54-44.4	2.1	5	19°23.0'	155°07.8'	5 km NE of Makaopuhi seismometer	
	8	09-24-23.3	2.1	5	19°22.8'	155°08.8'	3 km NE of Makaopuhi seismometer	
	8	11-02-39.3	2.1	4	19°23.0'	155°07.7'	5 km NE of Makaopuhi seismometer	
	8	11-31-39.2	2.0	4	19°22.9'	155°08.0'	4 km NE of Makaopuhi seismometer	
	8	12-31-52.5	2.4	3	19°23.2'	155°07.2'	5 km NE of Makaopuhi seismometer	
	8	12-39-05.8	2.5	6	19°22.7'	155°08.4'	3 km NE of Makaopuhi seismometer	
	8	12-45-57.3	2.0	3	19°22.9'	155°08.6'	3 km NE of Makaopuhi seismometer	
	8	17-24-09.6	2.1	4	19°22.9'	155°08.0'	4 km NE of Makaopuhi seismometer	
	8	17-40-55.4	2.0	3	19°23.1'	155°07.8'	5 km NE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
October 8	22-07-17.1	2.1	4	19°23.2'	155°07.8'	5 km NE of Makaopuhi seismometer	
9	06-31-50.4	2.0	2	19°22.7'	155°08.0'	4 km NE of Makaopuhi seismometer	
9	13-39-57.5	2.4	30	19°23.3'	155°16.2'	2 km S of Kilauea Caldera	
9	22-32-40.2	2.7	10	19°13.0'	155°06.9'	10 km SE of Apua Point	
9	23-27-55.8	2.2	3	19°20.4'	155°17.8'	5 km SW of Ahua seismometer	
9	23-30-58.8	2.0	3	19°20.8'	155°17.8'	5 km SW of Ahua seismometer	
10	17-34-17.1	3.3	9	19°13.9'	155°05.9'	10 km SE of Apua Point	
14	06-09-54.0	2.0	8	19°24.0'	155°24.3'	7 km NW of Desert seismometer	Pahala
15	12-05-03.7	2.5	0	19°30.3'	155°48.0'	13 km ESE of Kealakekua	
17	11-41-52.3	2.5	10	19°22.1'	155°01.0'	5 km NW of Kalapana	
17	20-06-39.6	2.5	10	19°21.2'	155°06.6'	6 km E of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
October 17	22-51-20.1	2.7	3	19°45.1'	155°44.2'	10 km ESE of Puu Waawaa	
18	17-23-38.8	2.4	30	19°23.0'	155°16.9'	2 km S of Kilauea Caldera	
21	09-53-42.7	2.3	9	19°19.8'	155°08.3'	5 km SE of Makaopuhi seismometer	
22	11-58-27.1	2.0	5	19°09.4'	155°03.3'	18 km SE of Apua Point	
25	14-47-09.9	3.7	8	19°19.9'	155°30.6'	5 km SW of Pahala	Milolii, Pahala, South Point, Hilo
25	21-13-38.6	2.4	10	19°16.3'	155°10.8'	2 km NE of Apua Point	
26	15-20-36.7	2.4	7	19°23.9'	155°26.1	8 km NW of Desert seismometer	
26	16-22-03.2	2.5	9	19°20.0'	155°08.4'	5 km SE of Makaopuhi seismometer	
26	16-31-57.0	2.0	3	19°36.4'	156°06.0'	21 km NW of Kealakekua	
27	13-50-27.3	2.3	3	19°22.3'	155°00.4'	4 km NW of Kalapana	
27	22-00-07.6	2.3	10	19°49.2'	155°26.9'	Near Mauna Kea Summit	
28	14-58-53.0	2.0	0	19°27.2'	155°47.9'	15 km SE of Kealakekua	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
October 28	21-39-08.7	2.1	10	19°19.0'	155°13.0'	7 km NW of Apua Point	
29	05-10-01.2	2.5	6	19°24.4'	155°27.0'	10 km NW of Desert seismometer	
November 2	07-31-24.4	2.0	8	19°22.9'	155°27.8'	9 km NW of Desert seismometer	
2	09-03-20.6	2.0	9	19°19.0'	155°13.7'	8 km NW of Apua Point	
2	15-39-54.8	2.6	13	19°55'	156°20'	35 km NW of Keahole Point	
3	06-53-27.2	2.0	8	19°26.3'	155°24.7'	6 km SW of Mauna Loa seismometer	
3	10-02-42.3	2.3	9	19°19.8'	155°09.0'	4 km SE of Makaopuhi seismometer	
3	20-29-28.8	2.1	30	19°23.0'	155°16.7'	2 km S of Kilauea Caldera	
5	09-41-19.5	2.6	0	19°28.2'	155°50.5'	10 km SE of Kealakekua	
10	10-28-45.4	3.3	7	19°24.5'	155°29.4'	13 km NW of Desert seismometer	Pahala
10	20-53-42.1	2.0	20	19°25.7'	155°17.0'	Kilauea Caldera	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
November 11	05-33-54.9	2.2	8	19°12.3'	155°27.8'	2 km NE of Pahala	
11	10-39-23.2	2.5	8	19°11.9'	155°27.1'	3 km E of Pahala	
11	11-11-22.8	2.2	9	19°22.4'	155°06.1'	7 km E of Makaopuhi seismometer	
11	14-34-20.9	2.9	10	19°20.5'	155°02.5'	7 km SW of Kalapana	
12	14-45-23.5	2.7	8	19°25.8'	155°24.0'	7 km S of Mauna Loa seismometer	
14	00-27-44.1	2.0	9	19°21.8'	155°04.1'	9 km WNW of Kalapana	
15	00-41-14.7	2.6	10	19°11.2'	155°26.8'	4 km SE of Pahala	
15	14-16-44.5	2.5	8	19°23.2'	155°25.7'	7 km NW of Desert seismometer	Pahala
16	04-05-40.1	2.6	0	19°30.3'	155°46.9'	13 km E of Kealakekua	
18	02-03-37.8	2.9	0	19°13.3'	155°36.6'	14 km NW of Pahala	
18	19-34-21.8	2.4	9	19°22.7'	155°03.7'	9 km NW of Kalapana	
18	21-06-41.2	2.0	8	20°48'	155°09'	85 km NE of Honokaa	
18	23-52-59.0	4.3	7	19°13.3'	154°58.0'	15 km S of Kalapana	Hilo

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
November 18	23-56-52.3	2.3	7	19°12.7'	154°58.1'	16 km S of Kalapana	
19	20-43-21.1	3.7	30	19°22.8'	155°18.0'	3 km SW of Kilauea Caldera	Island-wide
19	21-17-21.1	2.4	0	19°22.1'	155°47.6'	12 km ESE of Hookena	Naalehu
19	21-21-31.7	2.5	30	19°22.8'	155°17.8'	3 km SE of Kilauea Caldera	
19	22-21-32.6	2.8	9	19°12.0'	154°58.9'	17 km S of Kalapana	
20	09-08-36.9	2.8	35	19°04.7'	155°28.8'	12 km E of Naalehu	
20	11-04-03.2	2.5	3	19°33.6'	155°44.8'	19 km ENE of Kealakekua	
21	01-36-19.4	2.2	8	19°13.9'	155°00.3'	14 km SW of Kalapana	
22	07-03-12.1	2.4	9	19°19.1'	155°02.3'	9 km SW of Kalapana	
22	13-46-26.6	2.5	8	19°26.4'	155°25.5'	7 km SW of Mauna Loa seismometer	
25	05-20-41.8	2.8	8	19°55.0'	155°37.0'	8 km NE of Waikii	
25	16-46-00.4	2.9	8	19°12.0'	154°58.0'	18 km S of Kalapana	
26	02-41-15.5	2.3	8	19°13.1'	155°33.9'	10 km NW of Pahala	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
November 26	19-40-59.3	2.7	5	19°22.7'	155°26.7'	7 km NW of Desert seismometer	
27	02-29-06.1	2.5	10	19°20.0'	155°08.7'	4 km SE of Makaopuhi seismometer	
28	01-36-16.0	2.5	7	19°14.5'	155°34.4'	11 km NW of Pahala	
28	02-37-34.2	2.3	9	19°21.7'	155°04.3'	10 km E of Makaopuhi seismometer	
28	06-42-03.3	2.3	8	19°22.0'	155°24.5'	4 km NW of Desert seismometer	
28	15-40-18.8	2.0	8	19°25.6'	155°24.7'	8 km SW of Mauna Loa seismometer	
28	21-25-41.3	2.1	9	19°19.4'	155°11.7'	7 km N of Apua Point	
29	03-11-33.9	2.2	8	19°24.5'	155°26.0'	9 km NW of Desert seismometer	
29	10-11-40.5	2.3	8	19°36.7'	156°05.0'	10 km SW of Kailua	
29	13-30-06.6	2.4	30	19°21.8'	155°16.9'	2 km SW of Ahua seismometer	
29	20-11-46.6	2.1	7	19°23.3'	155°22.8'	6 km NE of Desert seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
November 30	08-44-37.8	2.0	10	19°19.2'	155°13.0'	7 km NW of Apua Point	
30	18-19-42.4	2.4	30	19°24.1'	155°14.9'	SE rim of Kilauea Caldera	
30	19-16-31.4	2.2	0	19°26.6'	155°47.2'	16 km SE of Kealakekua	
December 2	10-31-01.8	2.3	3	19°31.8'	155°05.3'	4 km SE of Mountain View	
2	10-38-33.5	2.9	30	19°23.2'	155°16.8'	2 km S of Kilauea Caldera	
2	10-41-47.8	2.1	30	19°23.2'	155°16.8'	2 km S of Kilauea Caldera	Pahala
2	21-47-38.6	2.6	30	19°22.7'	155°17.8'	3 km SW of Kilauea Caldera	
3	06-01-49.9	2.0	8	19°20.8'	155°11.2'	3 km SW of Makaopuhi seismometer	
3	13-10-31.7	2.4	3	19°11.8'	155°35.1'	11 km W of Pahala	
4	11-17-30.7	2.4	8	19°26.1'	155°28.0'	11 km SW of Mauna Loa seismometer	
6	19-38-24.5	2.9	8	19°55.3'	155°28.8'	19 km SW of Paauilo	
7	04-09-37.9	2.2	10	19°19.3'	155°13.0'	8 km NW of Apua Point	
7	10-11-29.1	2.0	10	19°19.9'	155°11.8'	8 km N of Apua Point	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
December 8	05-09-40.2	2.8	10	19°21.6'	155°04.8'	9 km E of Makaopuhi seismometer	
8	06-51-00.8	2.3	10	19°21.7'	155°04.6'	10 km E of Makaopuhi seismometer	
10	01-55-18.9	2.0	13	19°47'	156°09'	10 km NW of Keahole Point	
10	13-07-02.9	2.0	40	19°30.5'	155°16.4'	9 km N of Kilauea Caldera	
10	19-40-53.4	2.7	9	19°21.1'	155°05.7'	8 km SE of Makaopuhi seismometer	
10	20-11-01.2	2.2	45	19°10.1'	155°23.2'	7 km NE of Palima Point	
11	14-08-13.5	2.0	8	19°25.5'	155°30.8'	15 km SW of Mauna Loa seismometer	
12	05-30-02.6	2.0	9	19°18.9'	155°14.8'	8 km NW of Apua Point	
13	06-38-54.5	3.3	8	20°47'	156°57'	55 km W of Haleakala, Maui	
13	15-25-29.6	2.7	0	19°21.3'	155°48.5'	10 km SE of Hookena	
13	19-30-48.8	2.0	13	19°38'	156°29'	60 km WNW of Kealakekua	
14	03-00-18.3	2.1	8	19°50.6'	155°37.7'	3 km SE of Waikii	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
December 15	00-07-12.1	2.7	9	19°14.6'	155°11.8'	2 km S of Apua Point	
16	16-33-03.5	4.7	10	19°19.9'	155°12.3'	5 km SW of Makaopuhi seismometer	Island-wide
19	00-41-13.6	2.7	8	19°26.1'	155°24.6'	8 km SSW of Mauna Loa seismometer	
19	22-16-11.1	3.5	9	19°20.2'	155°06.8'	7 km SE of Makaopuhi seismometer	Hilo, Kilauea Summit Area, Pahala
20	01-42-02.6	2.3	9	19°19.8'	155°11.9'	5 km SW of Makaopuhi seismometer	
20	15-26-59.2	2.6	8	19°22.8'	155°26.7'	8 km NW of Desert seismometer	
22	00-39-54.7	2.3	0	19°48.0'	156°06.0'	8 km NW of Keahole Point	
22	23-28-29.2	2.1	7	19°25.2'	155°25.9'	11 km NW of Desert seismometer	
23	01-09-16.6	2.3	8	19°26.2'	155°24.4'	7 km SSW of Mauna Loa seismometer	
23	03-37-45.8	2.4	9	19°20.0'	155°07.7'	5 km SE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
December 23	12-09-58.2	2.4	0	19°40.0'	156°01.8'	5 km NW of Kailua	
23	16-03-01.1	2.1	35	19°24.3'	155°07.6'	6 km NE of Makaopuhi seismometer	
23	16-49-24.1	2.0	8	19°23.9'	155°28.1'	11 km NW of Desert seismometer	
24	17-44-35.2	2.2	8	19°24.3'	155°25.2'	8 km NW of Desert seismometer	
24	20-32-12.0	2.3	0	19°26.8'	155°48.0'	15 km SE of Kealakekua	
25	04-28-04.7	2.0	8	19°26.0'	155°24.7'	7 km SW of Mauna Loa seismometer	
27	13-08-09.0	2.3	8	20°04.5'	155°44.0'	6 km NW of Kamuela	
27	17-12-32.2	3.1	3	19°53.0'	155°38.9'	3 km N of Waikii	
27	23-13-45.5	2.3	3	19°47.9'	155°42.0'	8 km SW of Waikii	
29	07-50-55.5	2.7	8	19°49.2'	155°43.9'	10 km SW of Waikii	
29	17-58-11.7	2.0	8	19°50'	156°10'	15 km NW of Keahole Point	
30	10-17-11.2	2.6	9	19°21.4'	155°05.7'	8 km E of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

October, November, December 1968

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
December 31	09-35-38.0	3.2	13	20°17.5'	156°00.5'	15 km WNW of Upolu Point	

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Hawaiian Volcano Observatory
1969 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 53
January, February, and March 1969
By Robert Y. Koyanagi, Steven A. Takeguchi, and Willie T. Kinoshita

Summary 54
April, May, and June 1969
By Robert Y. Koyanagi, Marie S. Onouye, and Elliot T. Endo

Summary 55
July, August, and September 1969
By Robert Y. Koyanagi, Akira Yamamoto, and Patricia Stevenson

Summary 56
October, November, and December 1969
By Arnold T. Okamura, Marie S. Onouye, and Willie T. Kinoshita

Open-File Report 2007-1329
U.S. Department of the Interior
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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 53

January, February, and March 1969

By Robert Y. Koyanagi, Steven A. Takeguchi
and Willie T. Kinoshita*/

Issued September 1970

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Summary of activities

Kilauea erupted from about 3 miles of fissure in the upper east rift starting a little before 10 a.m. on February 22, 1969. A swarm of short tremor bursts and small earthquakes started at 06:27. By nine o'clock the tremor was constant, though earthquakes had diminished, and lava appeared about 09:50. The first crack extended from the northeast rim of Alae nearly to the base of Kane Nui o Hamo and produced two flows that rapidly moved south across the Chain of Craters road. Within the next two hours, the erupting fissure extended eastward across the north flank of Kane Nui o Hamo, and westward across the western mezzanine of Alae, across the Chain of Craters road and to a point south of the west edge of Alae. Fountain from Alae mezzanine are forming a new lava lake in Alae that has filled the eastern pit by late afternoon of February 23rd. A sluggish aa flow from the eastern fissure is moving down the new highway, and rached more than a mile and a half by Sunday afternoon. The eruption continued until 17:15, February 24, and subsequently, the last fountain activity in Alae Crater subsided. In the afternoon of February 25, the fissure between Alae and Kane Nui o Hamo reopened, and started a second phase of eruption. Fountains nearly 200 feet high fed a flow, which once again, cascaded lava into Alae Crater. Activity finally ended on the morning of February 28.

The summit tilt network was run periodically this quarter to keep track of the inflation in the summit area. Two areas at the summit continue to inflate following the October 1968 eruption; one area northeast of Halemaumau that began inflating as the October eruption ended and a new area just west of Outlet vault that begun inflating near the first part of this quarter.

Leveling completed on February 4, 1969, shows that the summit uplifted about 0.2 foot since November. The area near Makaopuhi seismometer also uplifted about 0.2 in the same time interval. Near the earliest August 1968 eruption vents, however, a subsidence of about 0.12 foot occurred during the same time interval.

It appears that, in the summit area, the inflation has not yet recovered its level of July 1968 before the 2 Upper East Rift eruptions. The line lengths as measured by the Geodimeter are still shorter than their July 1968 lengths and benchmark altitudes are still apparently about 0.1 foot lower than their July levels.

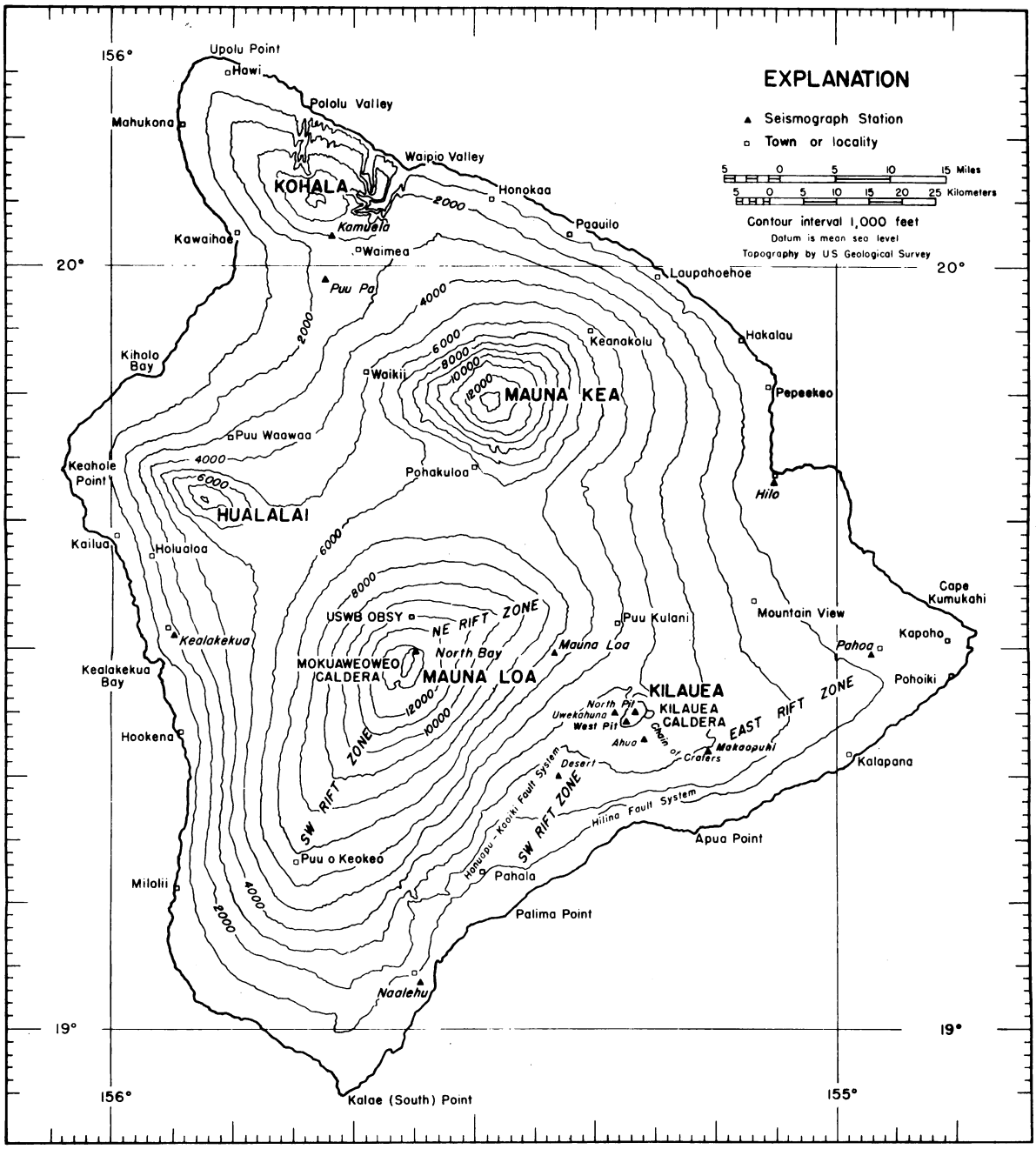

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

A third hole was drilled in Makaopuhi lava lake to the 'island' of crust to which our tramway cable is attached. Core was obtained from a section of the island root and the melt below. The crust-melt interface was displaced downwards to about 58 feet beneath the island. Most of the core is dense, very fine grained basalt, presumably the normal melt of the lake intruded into and quenched by the cooler island root. More vesicular core represents recrystallized and partially melted crust from the root. The sequence is similar to that reported last year from Kilauea Iki lava lake. Drilling extended 8 feet into the melt (66 feet) and ended when the molten lava moved into the core barrel before the drilling string could be completely lowered in order to attempt to drill deeper. We recovered the five-foot sample of glassy core, which proved to have lost most of its crystals during flow, a phenomenon also observed to have occurred in earlier samples collected by 'flow-in'.

The drilling rig was successfully removed from the crater by helicopter on February 11, 1969. We plan tentatively to re-drill Makaopuhi no later than the summer of 1971 and perhaps earlier as the volcano permits.

Tilting of the Ground Around Kilauea Caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna, January, February, and March, 1969

Date (1969)	N-S	E-W	Date (1969)	N-S	E-W
Jan. 5	527	412	Mar. 2	516	436
12	526	412	9	520	429
19	529	409	16	524	425
26	529	405	23	526	422
Feb. 2	532	406	30	530	417
9	533	408			
16	534	408			
23	527	424			

Table 2.--Tilt coordinates and changes at basis around Kilauea calders. (See fig. 2)

Tilt base	Date (1969)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1968)
Uwekahuna (U on fig. 2)	6 Feb	580.9	381.6	13.3	N38.2°W	3 Dec
Tree Molds (TM)	6 Feb	472.1	504.6	5.2	N4.5°W	3 Dec
Sand Spit (SS)	4 Feb	875.0	698.4	4.0	N18.0°W	27 Nov
Keamoku (Kea).	6 Feb	531.9	431.1	9.6	N60.8°W	2 Dec
Ahua Kamokukolau (Kam).	7 Feb	466.3	542.1	11.9	S20.8°E	27 Nov
Kipuka Nene (KN)						
Hilina Pali (HP)						
Kapapala Ranch (Kap).						
Mehena (M)	5 Feb	575.3	577.9	2.7	N11.1°E	2 Dec

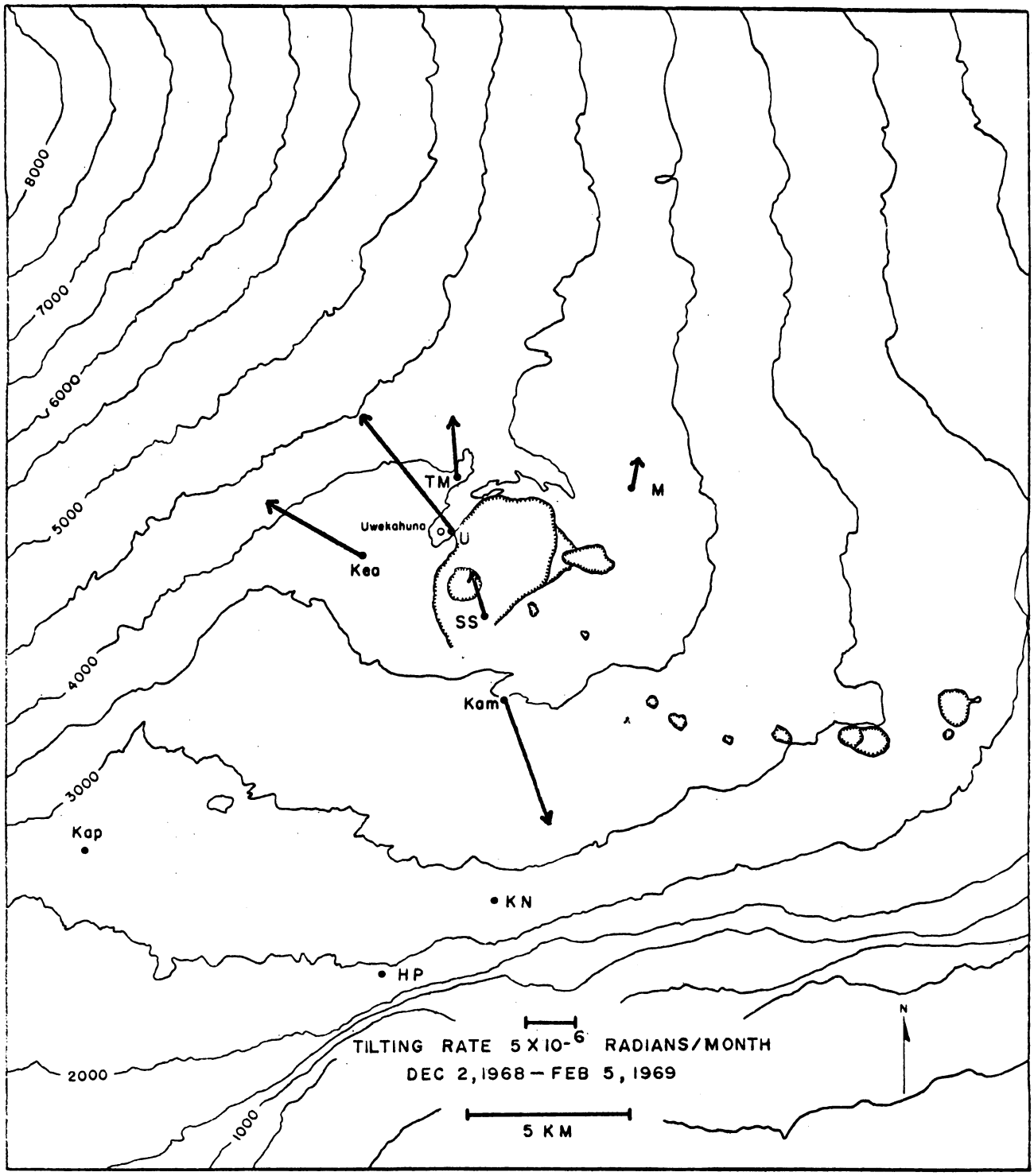

Figure 2.--Tilting of the ground around Kilauea Caldera between December 2, 1968, and February 5, 1969. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 2 for explanation of abbreviations.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 kn of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the observatory (U, M, Mx, A, D, N, WP, MP, Kx, O). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of and essential data on each seismograph station are listed in table 5 in the first-quarter issue each year.

Acknowledgments

Several people or agencies reported "felt" earthquakes during the first quarter, 1969. Their assistance is gratefully acknowledged.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitudes on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes along the eastern half of Kilauea's east rift zone--detected largely on the Pahoa seismograph; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1969)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit							
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
January 1	.	.	.	.	3	104	43	2	27	3	1
2	.	.	.	1	.	97	9	.	18	1	
3	.	.	.	.	.	92	8	.	28	4	
4	.	.	.	.	.	63	5	.	29	4	
5	.	.	.	.	.	120	.	.	29	4	
6	.	5m	.	1	.	290	6	.	22	2	
7	.	.	.	.	.	139	16	1	43	.	
8	.	.	.	1	.	89	9	.	23	3	
9	.	.	.	.	.	122	6	.	26	8	
10	.	.	.	3	.	87	11	.	31	3	
11	.	.	.	2	44	122	16	.	37	.	
12	.	.	.	2	36	73	5	.	30	5	2
13	.	.	.	3	5	89	18	.	25	2	1
14	.	6m	.	2	.	76	9	.	26	1	1

January	15	.	.	.	2	7	70	14	.	111	3	
	16	.	.	.	4	14	111	7	.	55	2	
	17	13m	.	.	1	7	78	10	.	50	6	
	18	.	6m	.	.	2	93	14	.	145	1	
	19	.	.	.	13	1	77	13	.	47	3	
	20	.	.	.	2	7	87	14	.	19	2	
	21	31m	.	.	.	.	106	13	.	42	2	
	22	.	.	.	.	3	353	7	.	28	.	1
	23	6m	.	.	.	28	130	18	.	30	1	
	24	.	.	.	1	8	143	11	1	24	2	1
	25	.	.	.	1	18	116	9	.	24	1	
	26	.	.	.	.	2	58	6	.	30	1	
	27	.	.	.	.	.	54	14	.	26	.	
	28	.	.	.	.	9	72	13	.	41	2	2
	29	.	.	.	.	2	52	16	.	35	3	1
	30	.	3m	.	1	4	47	15	1	33	2	
	31	.	.	.	.	.	89	14	.	27	1	1
February	1	.	.	.	1	3	140	12	.	19	2	
	2	.	.	.	2	.	90	6	.	22	4	
	3	.	.	.	.	.	51	4	.	19	.	2
	4	.	.	.	.	.	57	9	.	18	3	1
	5	.	.	.	.	.	62	5	3	20	5	
	6	.	.	.	.	.	64	8	.	16	4	
	7	.	.	.	2	6	61	9	1	22	2	
	8	.	.	.	.	6	73	11	.	48	4	
	9	3m	.	.	.	5	72	4	.	158	2	
	10	.	.	.	2	2	83	4	.	70	4	1
	11	.	.	.	2	3	155	8	.	25	.	3
	12	.	.	.	2	3	81	10	.	70	4	1
	13	.	.	.	.	1	136	17	.	36	2	
	14	.	.	.	1	3	176	10	3	16	4	2
	15	.	.	.	1	.	150	13	1	25	2	
	16	.	.	.	2	60	300	5	1	31	.	
	17	.	.	.	7	200	109	3	3	21	5	
	18	.	.	.	2	.	380	5	1	26	10	
	19	.	.	.	3	.	180	5	.	25	13	
	20	.	.	.	4	.	180	7	.	--	.	
	21	.	.	.	.	.	138	7	3	--	.	

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1969)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit							
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Eastern east rift	Upper east rift	Koae	Other
February 22	.	.	.	.	.	--	--	2	--	.	1
23	.	.	24h	.	9	29	9	.	--	.	3
24	60m	.	24h	5	.	19	5	.	--	5	1
25	.	.	24h	7	15	31	10	.	--	3	
26	6h	.	24h	3	.	28	8	1	--	3	
27	2h	.	24h	6	.	30	5	1	--	.	
28	.	.	.	2	495	38	12	3	--	.	1
	On Feb. 22, lava erupted for a few days between Alae Crater and Kane Nui o Hamo on the east rift zone. The Makaopuhi seismograph line was cut by the lava flow (-- = station out of order).										
March 1	1	.	.	1	.	42	13	2	--	2	1
2	17	.	.	5	10	33	11	.	40	.	
3	.	.	.	7	1	49	6	.	24	1	
4	.	.	.	6	7	50	6	2	17	4	1
5	.	.	.	3	11	71	10	.	--	2	
6	.	.	.	3	4	57	11	1	60	1	1
7	.	.	.	4	2	73	11	1	60	.	
8	.	.	.	2	.	88	10	2	30	1	
9	.	.	.	3	2	72	8	.	45	2	1
10	26	.	.	4	2	73	14	.	60	.	
11	.	.	.	1	4	83	11	1	35	1	1
12	.	.	.	5	2	86	12	.	30	.	
13	.	.	.	3	.	92	10	1	26	3	1
14	.	.	.	2	.	111	9	.	40	2	
15	3	.	.	6	2	110	12	1	78	6	1

March	16	.	.	.	2	1	111	16	.	41	.	2
	17	.	.	.	4	.	110	8	2	33	1	1
	18	30	.	.	3	.	107	19	.	45	.	1
	19	.	.	.	2	.	86	11	.	45	3	
	20	.	.	45	1	.	98	9	.	200	2	
	21	.	.	.	1	.	54	8	2	55	2	
	22	.	.	.	1	.	79	12	1	49	1	
	23	.	7	.	.	.	90	22	1	51	2	1
	24	8	.	.	2	1	109	10	1	55	1	2
	25	.	.	.	1	3	195	7	.	70	3	
	26	.	.	.	.	2	125	7	.	50	.	
	27	.	25	.	3	.	143	5	.	63	.	
	28	.	.	.	1	5	194	16	.	45	2	1
	29	.	.	.	1	.	107	16	1	35	.	1
	30	.	.	.	1	.	147	17	1	61	2	1
	31	.	.	.	4	.	375	9	.	57	6	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Entries for a given quake are: Date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
January 1	02-47-27.8	4.2	13	20°06'	157°52'	150 km SE of Kipapa, Oahu	
3	01-53-57.9	2.4	9	19°24.1'	155°28.3'	13 km NW of Desert seismometer	
5	17-25-00.2	3.6	10	19°19.8'	155°13.2'	7 km SW of Makaopuhi seismometer	Kilauea Summit Area
5	18-31-26.7	3.0	10	19°18.8'	155°13.3'	8 km SW of Makaopuhi seismometer	Kilauea Summit Area
7	07-59-05.4	2.0	10	19°19.8'	155°13.0'	7 km SW of Makaopuhi seismometer	
8	14-00-41.0	2.8	8	19°24.2'	155°26.3'	9 km NW of Desert seismometer	
9	17-25-12.3	2.5	25	19°24.0'	155°18.8'	2 km SW of Kilauea Caldera	
10	22-38-52.2	2.0	9	19°22.0'	155°02.5'	7 km NW of Kalapana	
12	07-22-17.5	2.3	13	19°39.5'	155°26.4'	14 km SE of Pohakuloa	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
January 12	11-06-47.2	2.3	0	19°27.2'	155°48.2'	14 km SE of Kealakekua	
13	18-30-08.9	2.0	3	19°19.8'	155°47.8'	12 km SE of Hookena	
14	17-21-24.5	2.3	8	19°26.0'	155°28.1'	11 km SW of Mauna Loa seismometer	
14	17-35-22.3	2.1	8	19°51.9'	155°31.9'	8 km NW of Mauna Kea summit	
14	21-37-06.0	3.8	8	19°47.7'	155°30.9'	6 km SW of Mauna Kea summit	Kamuela, Pepeekeo, Kealakekua, Hilo
16	00-02-07.5	2.3	9	19°21.3'	155°03.8'	9 km NW of Kalapana	
16	07-48-41.6	2.0	9	19°24.0'	155°25.3'	8 km NW of Desert seismometer	
16	10-50-15.5	2.5	40	19°13.2'	155°21.0'	14 km NE of Pahala	
17	12-41-59.6	2.3	9	19°20.2'	155°11.9'	5 km SW of Makaopuhi seismometer	
20	05-55-26.0	3.2	8	19°22.3'	155°29.9'	12 km NW of Desert seismometer	Pahala

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
January 21	23-22-41.6	2.5	10	19°19.7'	155°12.7'	6 km SW of Makaopuhi seismometer	
21	23-29-51.8	2.1	10	19°18.0'	155°12.8'	5 km NW of Apua Point	
22	05-15-32.7	2.6	0	19°32.7'	155°48.2'	13 km NE of Kealakekua	
23	05-30-14.1	2.2	9	19°20.8'	155°08.1'	4 km SE of Makaopuhi seismometer	
23	18-20-48.6	2.7	8	19°24.8'	155°26.0'	10 km NW of Desert seismometer	Pahala
23	21-04-39.0	2.7	55	19°26.5'	154°59.2'	7 km SW of Pahoa	
24	01-48-36.7	2.4	8	19°26.1'	154°53.2'	5 km SW of Pohoiki	
24	14-06-20.5	2.6	3	19°22.3'	155°47.0'	13 km ESE of Hookena	
24	16-58-27.0	2.9	30	19°23.3'	155°18.6'	3 km SW of Kilauea Caldera	Kilauea Summit Area, Pahala
25	09-07-36.2	2.0	9	19°19.5'	155°08.6'	5 km SE of Makaopuhi seismometer	
25	19-18-02.9	2.0	9	19°20.8'	155°08.0'	5 km SE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
January 25	23-16-53.9	2.0	9	19°19.9'	155°11.3'	4 km SW of Makaopuhi seismometer	
26	08-41-20.9	2.2	9	19°19.3'	155°13.2'	7 km SW of Makaopuhi seismometer	
26	12-58-32.0	2.6	29	19°22.1'	155°17.3'	3 km SW of Ahua seismometer	
27	06-03-30.5	2.8	8	19°52.1'	155°34.2'	9 km NE of Waikii	
28	07-34-37.1	3.2	8	19°24.0'	155°24.9'	8 km NW of Desert seismometer	Pahala, Hilo
28	10-44-19.1	2.0	13	20°52'	155°05'	95 km NE of Honokaa	
28	11-22-26.4	2.5	9	19°21.0'	155°07.7'	5 km SE of Makaopuhi seismometer	
29	05-34-36.3	2.5	8	19°24.5'	155°53.2'	3 km NE of Hookena	
30	02-26-43.6	2.0	11	19°20.4'	155°08.7'	4 km SE of Makaopuhi seismometer	
30	06-07-01.7	2.2	10	19°22.2'	155°04.0'	11 km E of Makaopuhi seismometer	
31	02-05-48.3	2.4	30	19°45.8'	154°59.0'	12 km NE of Hilo	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
February	2	15-05-58.4	2.0	10	19°17.2'	155°12.7'	4 km NW of Apua Point	
	3	01-15-47.3	2.9	13	19°37'	156°28'	60 km W of Kealakekua	
	3	14-42-10.2	2.0	0	19°28.3'	155°49.0'	12 km SE of Kealakekua	
	4	07-51-51.3	2.4	8	19°24.2'	155°26.0'	8 km NW of Desert seismometer	Pahala
	4	21-15-23.1	2.5	13	18°35'	156°01'	50 km SW of Kalae Point	
	5	14-14-46.4	2.1	9	19°20.3'	155°08.3'	4 km SE of Makaopuhi seismometer	
	5	20-01-50.6	2.4	9	19°20.6'	155°14.7'	4 km SE of Ahua seismometer	
	6	21-58-52.8	2.0	9	19°20.6'	155°11.5'	4 km SW of Makaopuhi seismometer	
	6	23-33-51.1	3.5	45	19°12.3'	155°21.2'	13 km E of Pahala	Pahala, Kealakekua
	7	05-59-36.6	3.5	30	19°21.3'	155°23.1'	2 km NE of Desert seismometer	Pahala, Mt. View, Kealakekua, Kilauea Summit Area

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
February 8	04-12-20.7	2.0	25	19°24.0'	155°15.2'	2 km SE of Kilauea Caldera	
8	06-28-45.5	2.0	10	19°20.7'	155°06.3'	7 km SE of Makaopuhi seismometer	
8	22-56-43.8	3.3	10	19°20.3'	155°09.0'	3 km SE of Makaopuhi seismometer	Hilo
9	16-24-42.2	4.1	10	19°20.2'	155°08.1'	5 km SE of Makaopuhi seismometer	Hilo, Mt. View, Kilauea Summit Area, Kealakikua, Honokaa, Pohakuloa, Kamuela
10	10-55-08.0	2.5	31	20°10'	156°22'	55 km WSW of Upolu Point	
10	21-29-59.3	2.1	10	19°20.0'	155°09.2'	3 km SE of Makaopuhi seismometer	
11	04-49-34.4	3.2	8	19°25.5'	156°02.5'	17 km SW of Kealakekua	
11	13-09-12.8	2.0	0	19°51.9'	155°26.9'	5 km NE of Mauna Kea Summit	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
February 11	13-42-02.6	2.0	0	19°52.3'	155°25.5'	7 km NE of Mauna Kea Summit	
12	01-34-18.5	2.1	3	19°53.3'	155°24.1'	11 km NE of Mauna Kea Summit	
13	03-05-01.9	2.1	20	19°26.2'	155°15.4'	1 km NE of Kilauea Caldera	
14	07-22-44.0	2.3	10	19°19.8'	155°12.0'	5 km SW of Makaopuhi seismometer	
14	16-03-52.4	2.0	8	19°49'	156°09'	13 km NW of Keahole Point	
14	18-26-39.8	2.2	3	19°34.0'	155°56.9'	6 km NW of Kealakekua	
14	20-48-31.7	2.4	10	19°20.3'	155°07.7'	5 km SE of Makaopuhi seismometer	Hilo
17	00-42-00.6	3.3	10	19°18.7'	155°13.1'	7 km NW of Apua Point	Kilauea Summit Area, Hilo, Pohakuloa, Pahala
17	00-59-19.2	2.2	10	19°18.5'	155°13.5'	7 km NW of Apua Point	
20	02-16-07.4	2.4	10	19°19.2'	155°13.2'	7 km SW of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
February 22	12-24-23.5	3.5	13	19°30'	156°20'	44 km W of Kealakekua	
22	14-37-12.3	2.0	5	19°22.1'	155°12.3'	4 km W of Makaopuhi seismometer	
22	14-54-10.7	2.0	7	19°21.9'	155°13.0'	5 km E of Ahua seismometer	
22	16-27-19.0	2.4	30	19°27.2'	155°12.3'	10 km NE of Uwekahuna seismometer	
23	14-55-05.0	3.2	8	19°31.5'	155°37.4'	6 km NW of Mokuaweoweo Caldera	
23	14-56-26.3	2.5	8	19°32.2'	155°36.8'	7 km NW of Mokuaweoweo Caldera	
23	15-48-23.4	2.4	7	19°31.2'	155°36.6'	4 km NW of Mokuaweoweo Caldera	
24	18-35-11.7	2.5	8	19°10.3'	155°38.5'	14 km NW of Naalehu	
26	00-28-08.0	2.0	10	19°19.7'	155°02.0'	7 km SW of Kalapana	
26	12-12-49.7	2.6	25	19°22.1'	155°18.7'	4 km SW of Kilauea Caldera	Pahala
26	12-52-23.0	2.0	8	19°15.2'	155°25.8'	8 km NE of Pahala	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date	Time	Magnitude	Depth (km)	Epicenter			Felt Report
	h m s			Lat. N.	Long. W.	Description	
February 28	07-33-35.0	3.7	32	19°18.8'	155°24.7'	4 km SW of Desert seismometer	Pahala, Mt. View, Hilo, Kealakekua
28	17-40-41.9	3.7	8	19°25.5'	155°26.2'	10 km SW of Mauna Loa seismometer	Pahala
28	19-03-07.0	2.0	0	19°31.2'	155°43.0'	21 km E of Kealakekua	
March 1	07-09-18.5	2.5	8	20°00'	155°21'	5 km SE of Paauilo	
1	08-45-36.4	2.2	8	19°23.7'	155°25.9'	7 km NW of Desert seismometer	
2	12-56-55.9	3.0	8	19°24.2'	155°25.8'	9 km NW of Desert seismometer	
4	10-27-19.9	2.1	8	19°22.8'	155°25.0'	5 km NW of Desert seismometer	
4	18-16-10.3	3.6	35	18°59.5'	155°29.3'	13 km SE of Naalehu	Pahala
4	18-30-14.3	2.3	30	19°20.2'	155°19.4'	7 km E of Desert seismometer	Pahala
6	01-50-42.7	2.2	30	19°21.9'	155°20.3'	8 km SW of Uwekahuna seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
March	6	04-54-26.4	2.4	13	20°44'	155°06'	14 km ESE of Haleakala, Maui	
	8	05-25-51.2	2.5	9	19°19.8'	155°07.2'	6 km SE of Makaopuhi seismometer	
	9	03-08-06.1	2.4	9	19°18.9'	155°06.8'	8 km SE of Makaopuhi seismometer	
	9	16-08-38.0	2.2	8	19°32.7'	155°39.3'	10 km NW of Mokuaweoweo Caldera	
	10	20-15-05.2	2.2	30	19°22.9'	155°16.8'	2 km S of Kilauea Caldera	
	11	00-36-55.4	2.1	9	19°17.0'	155°11.6'	3 km N of Apua Point	
	11	03-35-07.6	3.5	27	19°23.5'	155°16.9'	1 km S of Kilauea Caldera	Pahala, Kilauea Summit Area, Naalehu, Pohakuloa
	11	04-48-47.5	2.2	9	19°18.2'	155°12.0'	5 km N of Apua Point	
	11	10-10-13.2	3.7	8	19°13.2'	155°27.9'	3 km NE of Pahala	Kealakekua, Pahala, Kilauea Summit Area

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
March	11	17-54-51.1	2.1	35	19°26.0'	155°31.2'	8 km SE of Mokuaweoweo Caldera	
	13	00-21-32.7	2.8	13	19°19'	156°22'	50 km W of Hookena	
	13	07-47-40.4	2.0	13	19°25.5'	155°17.8'	Near Uwekahuna	
	15	02-49-35.9	2.3	0	19°52.7'	155°42.8'	7 km NW of Waikii	
	16	07-33-27.1	2.5	10	19°41'	156°10'	13 km SW of Keahole Point	
	16	13-23-18.9	2.2	13	19°26.2'	155°35.5'	2 km S of Mokuaweoweo Caldera	
	17	03-51-00.3	2.7	8	19°45.6'	155°26.'	8 km SE of Mauna Kea Summit	
	18	06-40-04.7	2.3	8	19°11.9'	155°36.7'	15 km NW of Naalehu	
	19	04-40-38.0	2.8	8	19°24.2'	155°25.8'	8 km NW of Desert seismometer	Kilauea Summit Area, Pahala
	20	15-41-35.6	2.0	15	19°29.8'	155°16.2'	9 km NE of Uwekahuna seismometer	
	22	16-51-24.3	2.0	10	19°17.7'	155°04.4'	13 km SE of Makaopuhi seismometer	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey

January, February, March 1969

Date		Time	Magnitude	Depth (km)	Epicenter			Felt Report
		h m s			Lat. N.	Long. W.	Description	
March	23	07-03-11.3	2.4	10	19°19.3'	155°06.8'	8 km SE of Makaopuhi seismometer	
	23	19-25-36.6	2.7	35	19°18.7'	154°48.9'	18 km SE of Kalapana	
	24	08-45-29.2	2.4	0	19°29.0'	155°48.0'	13 km SE of Kealakekua	
	24	20-51-14.0	2.8	3	19°39'	156°22'	33 km SW of Keahole Point	
	25	18-36-07.8	2.4	13	19°24.8'	155°17.5'	West Kilauea Caldera	
	27	23-53-56.6	2.6	28	19°19.0'	155°21.2'	4 km SE of Desert seismometer	
	28	07-03-12.0	2.8	13	19°54.6'	155°20.5'	1 km SW of Keanakolu	
	29	06-14-18.5	2.2	10	19°20.2'	155°01.7'	5 km SW of Kalapana	
	29	09-54-53.0	2.6	13	20°01.4'	155°21.9'	2 km S of Paauilo	
	29	21-24-21.9	2.3	10	19°19.2'	155°12.0'	7 km SW of Makaopuhi seismometer	
	30	03-46-20.5	3.0	3	20°04.1'	155°22.2'	4 km N of Paauilo	

Table 5.--U.S. Geological Survey seismograph stations in Hawaii

[On island of Hawaii unless otherwise stated]

Station	Symbol	Location		Altitude (m) above sea level	Equipment (Z, vertical; N, north-south; E, east-west)
		Lat N.	Long W.		
Uwekahuna (Hawaiian Volcano Observatory)	U	19°25.4'	155°17.6'	1,240	Long-range Press-Ewing: N, E, Z. (Seismometer and galvanometer periods are 15 and 90 seconds, respectively.) Short-period Sprengnether: E, Z. HVO-1: Z[1]/ Short-base liquid-level tiltmeter
Mauna Loa	M	19°29.8'	155°23.3'	2,010	Remote recording HVO-2: Z[2]/
Ahua	A	19°22.4'	155°15.9'	1,070	Do.
Mauna Loa (2)	M(2)	19°27.6'	155°20.7'	1,475	Remote recording 1.0 sec. EV-17 Z.
Desert	D	19°20.2'	155°23.3'	815	Do.
North Pit	N	19°24.9'	155°17.0'	1,115	Do.
West Pit	WP	19°24.7'	155°17.5'	1,115	Do.
Makaopuhi	MP	19°21.8'	155°10.7'	885	Do.
Kealakomo	K	19°18.5'	155°09.6'	201	Do. (installed Sept. 28, 1966)
Outlet	O	19°23.4'	155°16.8'	1,084	Do.
Kipuka Nene	KN	19°20.1'	155°17.4'	924	Do. (installed Sept. 21, 1967)
Cone Peak	CP	19°23.7'	155°19.7'	1,038	Do. (installed Nov. 8, 1967)
Hilo	Hi	19°43.2'	155°05.3'	20	HVO-1: Z Wood-Anderson: N, E. Operated by Joseph De Mello at St. Joseph's School.
Kipapa, Oahu	Kip	21°25.4'	158°00.9'	76	HVO-1: Z. Operated by U.S. Coast and Geodetic Survey.
Pahoa	Pa	19°29.7'	154°56.8'	205	HVO-1: Z. Operated by Kongo Kimura at Pahoa School.

Haleakala, Maui	HA	20°46.0'	156°15.0'	2,090	HVO-1: Z. Wood-Anderson: N, E. Operated by the staff of Haleakala National Park, Maui.
Naalehu	Na	19°03.8'	155°35.2'	205	1.0 sec. EV-17 seismometer, 0.5 sec. galvanometer: Z. Operated by Mrs. E. Elarionoff at Naalehu School.
Kamuela	Ka	20°01.9'	155°42.0'	740	1.0 sec. EV-17, 0.286 sec. galvanometer. Operated by Mrs. P. Hall at H.P.A., Kamuela.
North Bay	NB	19°29.7'	155°34.8'	4,005	1.0 sec. EV-17: Z. with helicorder. Operated by U.S. Weather Bureau.
Kealakekua	Ke	19°31.2'	155°55.3'	505	1.0 sec. EV-17, 0.286 sec. galvanometer: Z, EW, and NS. Operated by Henry Helson at Kona County Hospital.

[1]/HVO-1 is a moving-coil, hinged, vertical-component seismograph with seismometer and galvanometer periods of 0.5 second. Overdamping of both seismometer and galvanometer is used to control the strong galvanometer reaction. This seismograph has a peak magnification of about 20,000 at a period of 0.25 second. Recording is optical, on photographic paper.

[2]/HVO-2 is a moving-coil, vertical-component seismograph with a seismometer period of 0.8 second. Its signal is transmitted over telephone wires to the Hawaiian Volcano Observatory, where it is recorded on smoked-paper recorders.

Table 6.--U.S. Geological Survey tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N.	Long. W.			
Tree Molds	TM	19°26.3'	155°17.3'	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19°24.1'	155°16.8'	---do---	25.40	Equilateral triangle.
Keamoku	Kea	19°25.1'	155°19.0'	---do---	47.55	Do.
Ahua Kamokukolau	Kam	19°22.7'	155°16.6'	---do---	50.79	Do.
Kipuka Nene	KN	19°19.4'	155°16.7'	---do---	50.79	Do.
Hilina Pali	HP	19°18.2'	155°18.6'	---do---	47.73	Do.
Kapapala Ranch	Kap	19°20.5'	155°23.8'	---do---	50.79	Do.
Mehana	M	19°26.2'	155°14.3'	---do---	25.00	Do.
Uwekahuna	U	19°25.5'	155°17.4'	---do---	50.79	Do.
Uwekahuna Vault		19°25.4'	155°17.6'	Daily	3.48	NS. and EW.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 54

April, May, and June 1969

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Issued September 1970

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Summary of activities*/

May-June Kilauea east rift eruptions

After approximately 3 months of quiescence the east rift of Kilauea begin erupting at about 04:45 on May 24. Initial fountaining apparently began from a fissure that crossed the northern part of Aloi Crater and extended as far east as due north of the west edge of Alae. The fissure quickly spread westward, crossing the Chain of Craters road at the north edge of the Aloi steam flat. Several earthquakes were felt by local residents at about this time. The fissure continued to spread westward--much as the February 22 fissure did--and crossed the Ainahou Ranch road about 450 meters south of the Chain of Craters road. Fountains from this fissure were plainly visible from the Observatory. The fissure finally reached as far west as about 150 meters west of the Ainahou road--the farthest an eruptive fissure has penetrated into the Koae fault zone during historic time. The western part of the fissure follow faithfully the pre-existing Koae fault trend, curving in just the right places. In fact, the fissure seems to follow precisely an older Koae crack--the largest crack north of the Kalanaokuaiki Pali. Vertical 9 x 9 inch color aerial photographs show that fountaining was concentrated in two areas--one from west of the Ainahou road to the Chain of Craters road, the other about halfway between Aloi and Alae Craters. (This last area has been the site of all subsequent activity.) The photos show that Aloi Crater had been filled by 25 meters of lava, nearly all of which had already drained back down the eruptive fissure that cut the floor. The photos further show that the floor of Alae Crater was already covered with new lava and that more was cascading in. The line of February spatter cones just west of Alae that had been such a tourist attraction was in the process of being buried by a flow moving downslope from the fissure, and by the next day only the tips of the higher cones remained. Even these were covered 3 days later, and now all that remains of them is an abrupt change in slope in the new lava that covers them.

Lava from the western fissure line flowed southward before being dammed by the Kalanaokuaiki Pali, thereby saving the Ainahou Ranch from inundation. Nearly all of

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*/ Taken from Hawaiian Volcano Observatory, USGS monthly reports.

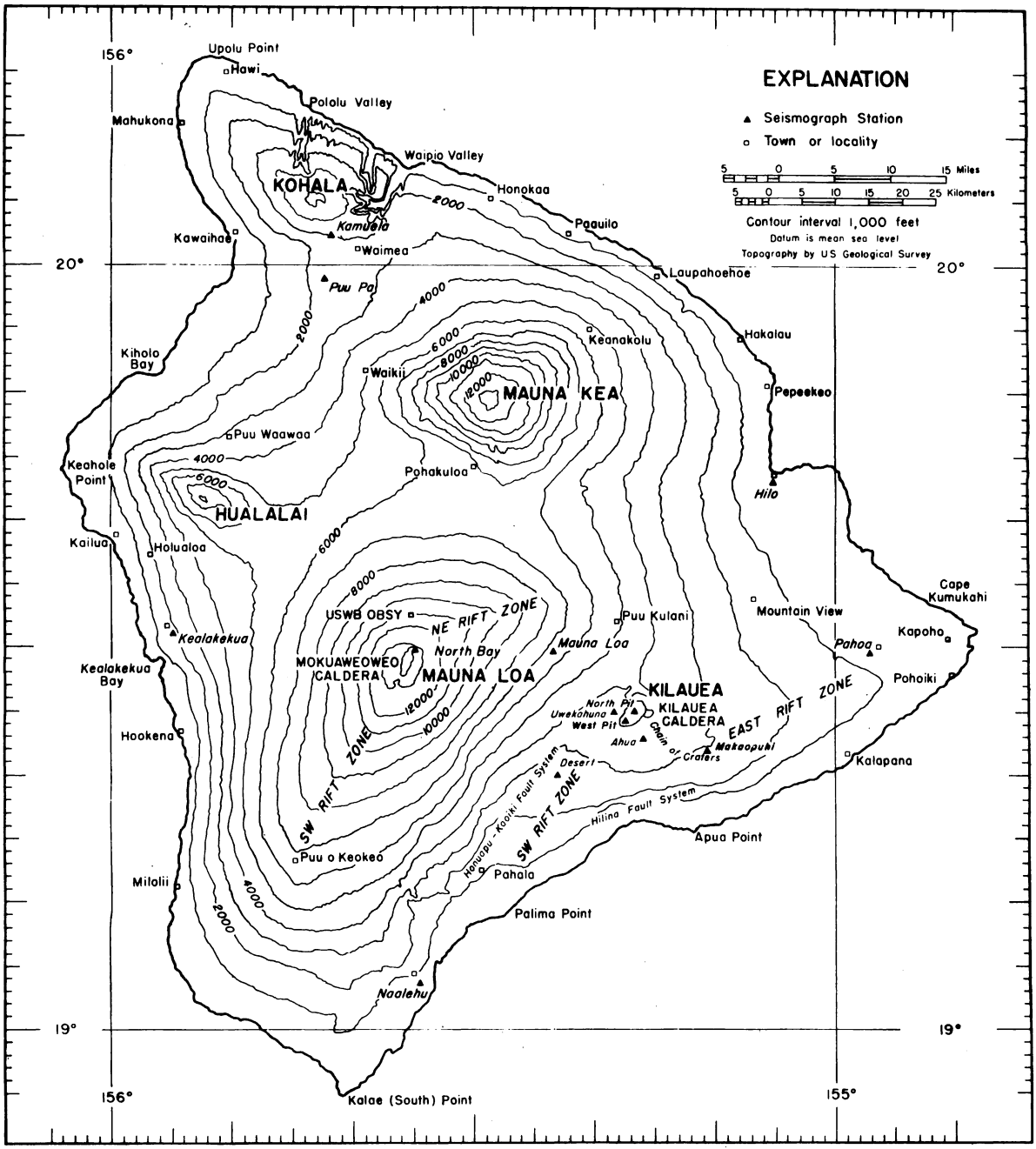

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

the area bounded by the Ainahou road, the Pali, a line south of Aloi, and the fissure was covered by new lava.

Most activity stopped by 22:00, May 24, but an observation flight at 10:30, May 25, showed weak fountaining from the major vent area between Aloi and Alae. This activity ended sometime later in the day. An estimated 4.5×10^6 cubic meters of lava was erupted.

Tremor continued to be recorded by the portable seismometer on May 26 and May 27, and we were quite sure that the eruption had not ended. Sure enough, at 19:00, May 27, phase 2 fountaining resumed at the vent area between Aloi and Alae. Summit tilt delayed change until 22:45, when slow deflation began. Flows spread eastward into Alae and southward across the lava flows of phase 1 and February 22. By 17:00, May 28, the flow moving southward was about 1.5 km south of Alae, and summit tilt was still recording deflation. Tremor and tilt drop stopped within the space of 3 minutes at 09:20, May 29, and phase 2 had ended. About 3.5×10^6 cubic meters of lava erupted in phase 2. Strain and tilt changes for both phases 1 and 2 were small.

During phase 2, two vent areas were established in the main fountaining area between Aloi and Alae. These are hereafter called the eastern and western vent areas. A high spatter rampart separated the two, and spatter ramparts encircled the entire area. Both vent areas would fountain during each phase, but fountains from the eastern, and deeper, vent area were consistently higher. During interphase periods, sloshing and bubbling sounds could be heard from the eastern vent area, and we correlated these sounds with the continuous tremor that was being recorded by temporary seismometers placed at Aloi and near the Hilina Pali-Chain of Craters road junction. Never was lava visible in the fissure, however, and we were continually guessing as to what the sounds and tremor meant--degassing of stagnant lava, or evidence of active magma waiting to erupt. Needless to say, each phase gave us confidence in the latter interpretation, and it is now clear that the eruption should actually be considered as being continuous since May 24.

Phase 3 began at 13:30 on June 12 with no premonitory tremor or earthquakes. Our survey party happened on the scene minutes after the eruption had begun. Fountaining then was only 3-4 meters high but grew into 100-meter high showers within 2 hours. The crew watched lava

advance down the May 27 channel leading southward from the fountains, and soon the vigorous flow filled and overflowed the channel. This flow eventually cascaded brilliantly over the Poliokeawe fault scarp, on down over the even steeper Holei fault scarp, and spread slowly seaward as an aa flow toward Apua Point. It stopped before noon on June 13, leaving its distal margin about a kilometer from the beach at Apua. A small amount of lava again poured into Alae Crater. The volume of erupted lava for this phase was about 4.0×10^6 cubic meters.

Phase 4, which began from the same vent area at 21:45, June 25, finally did it. Lava fed by the 220 meter high fountains poured across the June 12-13 lava, cascaded over Poliokeawe and Holei Palis, and reached the sea about a kilometer east of Apua Point at 08:35, June 26, an hour and a half after fountaining had ceased in the vent area. The aa "flow" that reached the ocean is more aptly described as a "trickle." Much pumice was produced by these fountains, and the parking lot and roadway at Aloi were buried beneath 50 cm of the stuff. More lava poured into Alae, raising the floor to about 30-35 meters of the rim. About 4.5 cubic meters of lava was erupted during the fourth phase.

The days preceding the outbreak of the eruption on May 24 showed high counts of earthquakes from the upper east rift and shallow caldera area. Bursts of 20 to 40 quakes per 2-hour periods were commonly recorded on Makaopuhi and North Pit seismographs. Caldera quakes dropped off early on May 23, but rift quakes continued high and reached a peak of nearly 200 at the time of the onset of tremor, about 04:45, May 24. Strong tremor and large numbers of rift quakes coincided with the fountaining of phases 1 and 2. Since early June, except for a few moderate-sized swarms of earthquakes, the eruption assumed a monotonous seismic pattern of high harmonic tremor during phases and relative quiescence during inter-phases. Stations at moderate distances from the eruption site showed no tremor a few hours after a phase, but intermittent recordings taken on a portable seismometer near Aloi indicated that local tremor fluctuates continually between phases.

The tie-in of the summit magma chamber(s) to the active rift zone was again noted. The eruption area was the main source of tremor, but immediately after major fountain activity, a secondary tremor source near the summit became quite obvious on the West Pit seismograms.

Tremor readings taken with the portable seismograph immediately after a phase also suggested relatively high tremor amplitudes at the summit and a possible link south-east to the site of eruption. A large number of tremor-like bursts beneath the caldera (referred to long-period caldera quakes), usually recorded just after an eruptive phase seem to indicate further activity of magma. These post-phase seismic activities generally fit times of rapid summit re-inflation, as recorded by the ideal Aerosmith E-W tiltmeter at Uwekahuna.

The May 24 eruption did not come unexpected. Strain and tilt data indicated that another eruptive event was in the final stage of gestation. Cumulative caldera strains were higher than before the February eruption, and the E-W Uwekahuna tilt had recovered about 90 percent of the 40 microradians lost in February.

On May 23 the flank eruption was preceded by a 5 microradian collapse in the Uwekahuna recording tiltmeter. During the early hours of the 24th accompanying the development of tremor amplitude was a sharp drop in the Uwekahuna tilt. The Uwekahuna tilt dropped nearly 15 microradians in less than 24 hours after beginning of the eruption. After a small recovery the tilt dropped till the 29th of May for a total collapse of 25 x 10^{-6} radians in less than 7 days. The Uwekahuna tilt recovered 14 microradians before the June 12 eruption. This recovery was quickly lost with the onset of the outbreak in the Aloi-Alae area. Like on previous events of the year, the tilt began a rapid recovery with the termination of surface activity.

Releveling during mid-April and on 27-28 May revealed interesting altitude changes not only at the summit and eruption area, but also on the south-east flank of Kilauea.

Data from the mid-April run showed a maximum summit uplift of +11 cm and a maximum uplift of +30 cm near Kane Nui O Hamo. Unlike the summit and east rift, the south-east flank showed negative changes of -4 cm on the Hilina Pali and Chain of Craters road and about -3 cm on the Ainahou road.

The May 24 eruption did not change the sense of deformation significantly. The May 27-28 run showed a net uplift of 8 cm in the summit area with a shift in the center of inflation to the vicinity of Outlet vault. (1 1/2 - 2 km south of previous center.) Like in the February 22 eruption, the eruption area had been uplifted. A maximum

of +42 cm was recorded less than a 1/4 kilometer south of Aloi crater. A new center of uplift a kilometer south of Makaopuhi crater showed a change of +14 cm since the April run.

In deformation studies, coinciding with the leveling efforts are measurements of a horizontal strain. More recently, of these labors, the geodimeter/geodolite operation is the most impressive. Between 24-27 February and 21-23 April the summit lines extended by centimeters. Peripheral lines contracted by 25% to 50% less than the maximum summit extensions. Asymmetry of summit strains continued to be evident.

Notes of other events

In the latter part of March, as part of the continuing studies of the lower east rift, Willie Kinoshita, Robert Decker, and several members of the Kilauea Job Corps reran the Pahoa-Kalapana-Kupaupau tide gage level line and the Pahoa-Pohoiki level line in the Puna area. The lower east rift has continued to inflate during the interval 1965-1969 and the maximum uplift since 1958 has been about 0.6 to 0.7 feet at the south end of the new section of straight road constructed over the 1955 flows.

During mid-April a drilling program was initiated on the Alae lava lake formed during the February eruption. On April 14 we bottomed the first hole at 9.7 feet; with relatively poor core recovery. The crust melt interface was at a depth of about 7.5 feet. Alae lava lake drilling ceased with the loss of the drill and related equipment by an inundation of Alae with lava from the May 24 vents.

Several additional seismic observations were noteworthy during this quarter. At 04^h36^m, 7 May, a moderate-sized 4.7 magnitude quake located 65 km east-northeast of Hana, Maui was felt by residents of Hana, Kohala, and Kamuela. A larger event at 15^h33^m, 9 May, located 10 km beneath the east rift of Kilauea registered 5.0 in magnitude. The latter event was felt island-wide (with one report of minor damage in Hilo). At least one of the 50 or so aftershocks was felt at the Volcano.

The number of shallow caldera quakes during the quarter ranged from about 50 to 500 per day. During this same period were several small summit deflations, superposed on the general long term trend of inflation that corresponded to highs and lows of seismic activity.

The pattern appears to be an increase in shallow quake count with continued build-up of tilt followed by a decrease in quake count coinciding with the small tilt collapse.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna

April, May, and June 1969

Date (1969)	N-S	E-W	Date (1969)	N-S	E-W
April 6	535	415	May 18	548	407
13	536	416	25	545	420
20	539	412	June 1	541	427
27	542	410	8	545	419
May 4	546	406	15	543	424
11	546	407	22	546	419
			29	543	427

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the observatory (see Table 5 for list of stations). Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in Table 4.

Location of and essential data on each seismograph station are listed in Table 5 in the first-quarter issue each year.

Acknowledgments

Several people and agencies reported "felt" earthquakes during the second quarter, 1969. Their assistance is gratefully acknowledged.

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; shallow earthquakes along the northeast-trending Koae fault system south of Kilauea caldera; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1969)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit							
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
April 1	.	.	.	1	.	185	17	65?	2	.	
2	.	.	.	3	.	165	10	70?	3	.	
3	.	.	.	3	.	111	7	45?	2	1	
4	.	.	.	2	.	56	9	38?	3	.	
5	.	.	.	1	.	56	6	43?	4	1	
6	.	.	.	.	.	122	12	68?	.	.	
7	.	.	.	2	.	101	20	66?	.	.	
8	.	3	.	2	6	79	11	45?	2	.	
9	.	.	.	2	1	74	22	27?	.	2	
10	.	.	.	8	.	75	7	75?	3	1	
11	.	.	.	1	.	102	16	17?	2	1	
12	.	.	.	2	.	144	13	12	4	.	
13	.	.	.	.	.	149	11	30	2	.	
14	.	.	.	.	.	190	8	22	3	1	
15	.	.	.	3	.	70	10	21	5	.	

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1969)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit							
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
April 16	.	.	.	7	.	65	7	19	5	1	
17	.	.	.	2	.	155	12	21	2	.	
18	.	.	.	1	.	273	23	8	.	.	
19	.	.	2	.	.	336	23	12	6	.	
20	.	.	.	2	.	255	15	18	.	1	
21	.	.	.	3	.	205	4	7	2	.	
22	.	5	.	3	.	217	12	11	4	.	
23	.	.	.	.	.	330	4	14	3	.	
24	.	.	.	.	27	87	17	53	5	.	
25	.	.	.	5	2	54	10	23	2	2	
26	.	.	.	2	.	96	19	20	2	1	
27	.	.	.	3	.	129	10	22	5	.	
28	.	.	.	2	.	232	9	15	23	1	
29	.	.	.	2	.	370	14	12	21	1	
30	20	.	.	2	.	375	5	27	15	1	
May 1	11	.	.	1	.	290	10	23	21	.	
2	.	.	.	.	.	189	13	23	26	.	
3	.	.	.	6	.	310	13	13	25	.	
4	.	.	.	2	2	230	7	19	8	.	
5	.	.	.	1	.	470	11	20	19	1	
6	.	.	.	3	.	191	12	10	25	.	
7	.	.	.	1	7	131	11	21	10	2	
8	23	.	.	3	9	66	7	31	3	1	
9	30	.	.	2	.	85	7	53	6	.	
10	.	.	.	1	.	173	30	34	3	.	
11	.	.	.	5	.	230	18	25	.	1	

May	12	.	.	.	.	.	215	5	13	19	1	
	13	.	.	.	.	15	202	10	?	10	.	
	14	.	.	.	3	3	220	11	25	19	.	
	15	.	.	.	2	.	279	6	46	19	.	
	16	.	.	.	.	20	85	5	115	4	1	
	17	.	.	.	.	4	95	12	95	5	.	
	18	25	.	.	2	3	83	10	32	4	1	
	19	.	.	.	.	2	161	9	21	5	1	
	20	.	.	.	1	.	401	8	84	8	.	
	21	.	.	.	.	.	178	9	435	5	.	
	22	.	.	.	.	.	211	7	825+	7	3	
	23	.	.		2	6	57	6	675+	6	.	
	24	.	.	Start of shallow tremor and rift quakes at 0312, May 24.	.	.	65	8	75	6	1	(from May 24 upper east rift quake counts taken from EKO station located 19°21.8'N, 155°15.3'W) Kilauea East Rift eruption Phase 1 (0445, May 24 to 1500, May 25) Phase 2 (1900, May 27 to 0900, May 29)
	25	.	.		1	4	49	17	189	7	2	
	26	.	.		2	17	54	8	244	4+	.	
	27	.	.		2	9	39	11	19	2	.	
	28	.	.		1	?	30	5	9	1	1	
	29	.	.		2	195?	37	10	47	.	1	
	30	.	12		2	30?	44	5	41	1	1	
	31	.	.		4	25?	56	12	75	.	2	
June	1	.	6	Strong during phases of eruption and fluctuating at low levels during interphases	1	9	70	6	95	.	.	Phase 3 (1330, June 12 to 1100, June 13)
	2	.	.		1	.	76	10	230	.	.	
	3	.	.		1	.	100	12	480	.	.	
	4	3	.		2	.	104	12	185+	.	.	
	5	.	.		1	.	110+	15	176+	2	1	
	6	.	.		2	.	110	23	172+	.	.	
	7	.	.		3	.	118	16	115?	.	.	
	8	.	.		1	4	130	10	98?	1	.	
	9	.	.		3	.	140	7	92?	.	.	
	10	4	.		1	.	108	8	87	.	1	
	11	.	.		1	.	138	17	42	.	.	
	12	.	.		4	10	115	7	16	3	.	
	13	.	.		3	345?	70	6	40+	2	.	
	14	.	.		.	75?	71	4	90?	4	1	
	15	.	.		1	5	14	13	68	.	.	
	16	.	.		.	14	11	9	50	3	1	
	17	.	.		2	?	13	7	180?	2	.	

Table 3.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1969)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow					
June 18	.	.		1	7	14	9	90?	2	.	
19	.	.		1	2	121	7	49	.	.	
20	.	.		1	.	186	8	28	1	3	
21	.	.		3	.	226	5	24	.	1	
22	.	.		1	.	190	10	8	2	1	
23	.	.		.	.	304	15	19	.	.	
24	.	.		.	.	282	3	10	.	.	
25	.	.		1	12?	160	14	68?	1	.	
26	.	.		.	.	37	7	7	.	1	Phase 4 (2145, June 25 to 0700, June 26)
27	.	.		1	.	53	11	11	.	.	
28	.	.		2	.	95	18	27	.	.	
29	.	.		1	10	94	7	45?	3	1	
30	.	.		2	1	48	3	15?	3	2	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Entries for a given quake are: Date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date	Time h m s	Magnitude	Depth (km)	Epicenter		Felt Report
				Lat. N.	Long. W.	
April 3	13-44-04.5	3.0	5	19°30.2'	155°47.8'	
April 5	07-47-50.7	2.2	8	19°25.8'	155°27.4'	
April 5	17-29-15.5	2.5	0	19°28.3'	155°48.0'	
April 5	18-32-26.1	2.0	8	19°23.0'	155°27.1'	
April 5	19-45-07.4	2.3	5	19°22.8'	155°14.8'	
April 6	03-45-07.8	2.0	10	19°21.3'	155°05.5'	
April 6	13-54-20.1	2.0	10	19°20.3'	155°07.7'	
April 6	19-30-28.3	2.8	8	19°14.9'	155°27.2'	Pahala
April 7	13-05-12.2	2.6	10	19°20.8'	155°04.2'	
April 9	07-30-56.1	4.2	13	20°59'	155°43'	Hana (Maui)
April 9	09-12-13.1	2.5	6	19°25.2'	155°25.2'	
April 9	17-42-08.8	2.2	30	19°04.7'	155°21.3'	
April 9	20-20-04.4	2.3	30	19°22.7'	155°17.8'	
April 10	18-52-10.1	2.8	30	19°22.2'	155°16.9'	Pahala
April 10	23-11-29.0	2.1	10	19°46.2'	155°25.3'	
April 11	03-06-19.7	2.4	0	19°28.1'	155°48.1'	
April 11	05-30-03.3	2.2	10	19°20.2'	155°08.7'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
April 11	21-30-02.5	2.5	10	19°20.3'	155°08.9'	
April 13	14-49-38.3	2.8	10	19°19.8'	155°04.8'	Hilo
April 14	03-57-05.0	2.1	35	19°46.7'	156°03.0'	
April 16	18-17-27.1	2.9	30	19°22.8'	155°17.8'	Pahala
April 16	19-26-01.4	2.1	8	19°09.7'	155°36.4'	
April 17	17-41-25.1	3.0	8	19°27.2'	155°27.0'	
April 18	00-56-46.9	2.4	8	19°12.8'	155°07.2'	
April 18	02-00-39.4	2.2	10	19°21.5'	155°01.0'	
April 18	21-25-57.0	3.4	8	19°26.0'	155°26.7'	Pahala, Kilauea Summit Area
April 19	01-24-12.1	2.5	5	19°20.2'	155°22.5'	Pahala
April 19	14-04-18.8	2.4	9	19°13.5'	155°27.4'	
April 20	07-31-29.6	2.0	0	19°22.7'	155°47.3'	
April 20	20-57-54.7	2.0	10	19°20.3'	155°12.4'	
April 23	14-44-24.8	2.7	35	19°01.0'	155°14.3'	
April 25	02-48-34.1	2.4	35	18°56.1'	155°14.3'	
April 25	21-18-34.6	2.0	5	19°29.0'	155°26.2'	
April 26	10-13-19.1	2.0	15	19°24.1'	155°18.0'	
April 26	22-56-43.0	2.6	0	19°23.7'	155°46.8'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
April 28	04-48-25.1	3.2	9	19°24.8'	155°27.4'	Kilaeua Summit Area, Kealakekua, Pahala, Pohakuloa
April 28	10-05-38.2	2.8	30	19°13.7'	155°31.3'	
April 29	15-12-56.0	2.0	8	19°25.7'	155°25.0'	
April 29	19-15-28.3	2.5	6	19°41.3'	155°36.2'	
April 30	02-02-41.6	2.3	5	19°48.7'	155°36.2'	
May 3	08-46-53.6	2.4	30	19°22.7'	155°17.3'	
May 4	09-56-15.6	2.0	10	19°20.7'	155°05.1'	
May 4	13-53-24.6	2.4	10	19°18.7'	155°11.0'	
May 5	01-05-03.8	3.7	8	19°29.3'	155°37.9'	Island-wide
May 7	04-35-59.0	4.5	13	20°50'	155°21'	Hena (Maui), Kohala, Kamuela, Waimea
May 7	04-48-33.5	2.2	13	20°50'	155°21'	
May 8	01-48-24.3	2.9	20	19°25.8'	155°16.7'	Kilauea Summit Area
May 8	13-45-30.5	2.0	8	19°54.8'	155°43.9'	
May 8	23-48-20.3	2.2	10	19°22.6'	155°03.1'	
May 9	07-40-52.6	2.2	10	19°20.5'	155°07.3'	
May 9	15-33-27.6	5.0	11	19°22.1'	155°04.9'	Island-wide

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
May 9	16-03-28.4	2.8	20	19°27.0'	155°16.8'	Kilauea Summit Area
May 9	18-14-41.4	2.6	10	19°20.4'	155°03.7'	
May 9	20-14-50.5	2.2	10	19°21.0'	155°02.8'	
May 9	20-38-08.7	2.1	10	19°20.7'	155°03.8'	
May 10	00-52-46.6	2.0	10	19°19.8'	155°07.1'	
May 10	04-50-40.9	3.1	10	19°18.3'	155°01.4'	Kalapana
May 10	16-54-16.2	2.0	10	19°20.3'	155°02.3'	
May 10	22-34-36.2	2.0	20	19°25.2'	155°16.2'	Kilauea Summit Area
May 10	23-00-26.3	2.2	10	19°18.6'	155°12.7'	
May 11	02-15-14.6	2.3	8	19°23.7'	155°25.2'	
May 11	10-24-32.7	2.5	40	19°01.7'	155°06.0'	
May 11	10-47-49.1	2.0	26	19°27.1'	155°14.5'	
May 12	16-17-12.7	2.3	0	19°28.7'	155°46.3'	
May 14	02-17-10.7	2.4	10	19°20.3'	155°03.3'	
May 14	15-26-26.0	2.3	32	19°13.6'	155°24.2'	
May 14	05-42-47.3	2.1	10	19°17.5'	155°04.1'	
May 15	12-39-18.5	2.2	5	19°23.1'	155°15.2'	
May 16	09-54-58.2	2.1	37	19°13.3'	155°24.7'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
May 16	22-38-46.0	3.0	47	19°56.8'	155°05.7'	Kilauea Summit Area
May 17	12-52-58.4	3.6	34	19°14.7'	155°25.4'	Kealakekua
May 17	13-52-23.5	2.5	32	19°12.4'	155°22.7'	
May 17	19-52-52.8	2.0	11	19°17.5'	155°04.3'	
May 17	20-56-22.2	2.5	32	19°13.0'	155°22.9'	Kealakekua
May 18	03-42-41.8	2.7	0	19°48.8'	155°48.2'	
May 19	02-30-03.0	2.9	10	20°43.1'	155°33.1'	
May 21	06-03-32.3	2.6	6	19°23.1'	155°14.9'	Kilauea Summit Area
May 22	05-25-08.5	2.6	59	20°23.7'	156°17.3'	
May 22	17-07-28.8	3.8	12	19°02.4'	155°02.3'	Kilauea Summit Area
May 22	17-10-27.5	2.9	10	19°16.5'	155°05.4'	
May 22	18-44-51.8	2.6	6	19°09.2'	154°57.4'	
May 24	04-10-54.4	2.3	6	19°21.8'	155°12.4'	
May 24	05-04-15.9	2.4	9	19°21.5'	155°17.9'	
May 24	05-34-51.0	2.7	10	19°21.4'	155°11.7'	
May 24	05-49-33.9	3.0	10	19°19.0'	156°34.7'	
May 24	06-42-41.9	2.3	8	19°23.7'	155°06.5'	
May 24	06-49-24.8	2.3	2	19°20.1'	155°05.9'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
May 24	07-29-34.7	2.7	9	19°21.6'	155°15.9'	
May 24	09-05-38.7	2.8	9	19°23.5'	155°07.0'	
May 24	09-50-36.5	2.3	2	19°21.0'	155°05.8'	
May 24	10-43-56.2	2.3	12	19°19.0'	155°08.7'	
May 24	11-29-57.4	2.2	9	19°23.3'	155°06.7'	
May 24	13-19-37.1	2.1	10	19°21.3'	155°08.9'	
May 24	14-00-23.9	2.3	10	19°23.1'	155°06.0'	
May 24	14-26-22.9	2.1	3	19°21.2'	155°14.9'	
May 24	15-48-07.2	2.6	7	19°21.5'	155°14.0'	
May 24	17-59-59.8	3.8	5	19°19.5'	155°07.7'	Kealakekua, Kilauea Summit Area
May 24	21-29-02.7	2.1	10	19°11.9'	155°08.6'	
May 25	03-43-15.1	3.7	8	19°23.8'	155°32.1'	Kilauea Summit Area, Waimea, Kealakekua
May 25	06-55-54.4	2.0	13	19°19.9'	155°12.8'	
May 25	07-55-40.9	2.0	6	19°17.4'	155°00.9'	
May 25	18-01-49.7	3.3	4	19°20.3'	155°07.6'	Kilauea Summit Area
May 25	22-54-39.1	2.2	10	19°19.7'	155°05.7'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
May 26	19-58-47.4	2.5	30	19°23.3'	155°15.9'	
May 26	22-22-12.2	2.5	11	19°23.0'	155°29.0'	Pahala, Pohakuloa
May 27	09-19-20.0	3.3	19	19°25.5'	155°17.3'	Pahala
May 27	10-04-59.2	2.4	19	19°24.7'	155°16.5'	
May 27	11-40-04.6	2.4	10	19°12.9'	155°00.2'	
May 27	14-35-25.8	2.4	31	19°28.4'	155°17.0'	
May 28	20-20-12.9	2.9	10	20°06.3'	156°49.9'	
May 29	12-00-25.8	2.5	8	19°47.9'	155°36.1'	
May 30	02-15-43.5	2.1	10	19°18.4'	155°13.7'	
May 30	03-43-27.6	2.4	7	19°14.1'	155°00.7'	
May 31	02-55-08.9	2.2	39	19°27.7'	155°32.7'	
May 31	12-07-02.5	2.5	6	19°17.0'	155°06.5'	
May 31	19-22-48.4	2.7	10	19°22.6'	155°29.4'	
May 31	21-12-19.7	2.2	56	19°04.4'	154°41.1'	
June 1	06-54-04.5	2.3	2	19°20.1'	155°05.1'	
June 1	17-35-06.9	2.4	36	19°12.3'	155°28.7'	
June 2	17-33-51.6	3.3	11	19°20.1'	155°07.9'	Hilo
June 2	18-16-46.0	2.0	8	19°16.1'	155°08.2'	
June 2	21-36-41.0	2.3	8	19°22.8'	155°21.9'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
June 3	17-49-13.1	2.2	10	19°19.0'	155°14.2'	
June 4	03-32-56.3	3.7	10	19°18.5'	155°12.7'	Hilo, Pahala
June 4	04-11-14.2	2.3	10	19°19.8'	155°14.3'	
June 4	05-22-07.8	2.6	1	19°15.1'	155°06.1'	
June 4	09-34-31.1	2.8	11	19°26.0'	155°25.7'	Pahala
June 4	11-29-43.4	2.1	36	19°17.4'	155°01.1'	
June 4	21-09-33.2	2.0	10	19°19.3'	155°13.3'	
June 5	03-16-50.0	2.2	2	19°52.0'	155°37.9'	
June 5	10-43-26.6	2.0	10	19°20.1'	155°14.9'	
June 5	13-06-08.7	2.1	10	19°23.9'	155°23.1'	Pahala
June 5	14-12-30.9	2.3	11	19°21.6'	155°11.6'	Hilo
June 5	14-41-26.3	2.2	11	19°18.7'	155°13.2'	
June 5	14-43-41.3	3.7	9	19°19.4'	155°13.7'	Hilo, Pahala, Kilauea Summit Area, Kealakekua
June 5	14-54-46.3	3.0	9	19°19.9'	155°14.6'	Kilauea Summit Area
June 5	15-36-48.7	2.0	9	19°20.0'	155°14.2'	
June 5	17-31-33.2	2.1	9	19°20.0'	155°14.2	
June 5	22-06-56.0	2.1	10	19°17.3'	155°13.1'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
June 6	01-37-37.6	2.6	10	19°10.7'	155°07.8'	
June 6	02-37-42.9	2.5	10	19°17.2'	155°08.1'	
June 6	09-41-46.9	4.4	11	19°25.5'	155°27.0'	Mauna Loa, Pahala, Kilauea Summit Area, Hilo, Kamuela, Paauilo
June 6	11-55-32.6	4.2	35	19°21.3'	155°16.9'	Island-wide
June 6	21-50-56.9	2.0	35	19°12.5'	155°28.8'	
June 7	00-28-11.7	2.4	34	19°20.4'	155°16.5'	
June 7	01-41-26.2	4.0	10	19°16.2'	155°11.2'	Pahala, Hilo, Kilauea Summit Area, Kealakekua
June 7	01-50-31.8	3.1	10	19°15.8'	155°11.1'	Hilo, Kealakekua
June 7	05-14-49.0	2.4	10	19°17.1'	155°13.1'	
June 7	09-33-31.9	2.1	8	19°20.6'	155°13.8'	
June 8	01-05-28.9	2.2	10	19°17.6'	155°13.2'	
June 8	07-20-54.3	2.4	13	19°20.2'	155°04.8'	
June 8	11-50-48.2	2.1	10	19°20.0'	155°15.1'	
June 10	00-53-16.7	2.2	14	19°24.3'	155°18.1'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
June 10	06-39-59.1	2.2	11	19°10.4'	155°38.4'	
June 10	23-20-58.3	3.1	67	18°49.8'	155°41.6'	
June 11	06-06-28.5	2.1	10	19°19.9'	155°23.7'	
June 13	06-17-25.4	2.4	9	19°25.8'	155°27.5'	
June 14	13-37-23.1	2.5	51	19°09.9'	154°45.9'	
June 16	19-04-53.1	3.4	61	19°56.9'	155°06.9'	Hilo
June 17	11-27-57.6	2.5	9	19°21.6'	155°24.8'	
June 18	00-00-49.4	3.3	7	19°21.4'	155°03.0'	Pahala
June 19	03-26-54.6	2.1	6	19°24.8'	155°23.2'	
June 19	18-42-34.6	2.0	12	19°18.5'	155°10.1'	
June 20	10-15-30.3	2.3	10	19°49.2'	155°36.0'	
June 20	18-12-41.4	2.1	10	19°27.2'	155°43.6'	
June 20	18-16-03.9	2.6	6	19°28.0'	155°41.8'	
June 21	03-48-24.0	3.3	8	20°26'	156°50'	
June 22	03-28-19.6	2.0	10	19°23.7'	155°45.7'	
June 22	07-54-30.9	2.2	32	19°21.7'	155°17.0'	
June 22	10-23-01.5	2.4	9	19°25.9'	155°24.2'	
June 25	17-47-57.6	2.1	7	19°17.3'	155°03.3'	
June 26	15-24-58.4	3.1	10	20°29.9'	155°27.1'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, April, May, June, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
June 28	21-11-48.8	2.3	5	19°16.0'	155°02.8'	
June 29	02-01-17.9	2.3	35	19°22.3'	155°16.0'	
June 29	22-52-59.5	2.7	10	19°09.3'	155°41.1'	
June 30	08-51.1	3.2	8	20°36'	154°54'	
June 30	15-21-00.4	2.4	35	19°17.2'	155°13.8'	
June 30	22-41-20.8	2.1	8	19°20.9'	155°01.2'	
June 30	23-17-59.2	2.0	10	19°36.3'	155°42.5'	

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 55

July, August, and September 1969

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Issued February 1971

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Summary of activities

Eruptive activity that began in the second quarter of 1969 on May 24 continued through the third quarter. The vent area resumed its May 24 vigor on July 15. Fountain activity which persisted for 8 hours fed a flow with a course similar as the June 26 flow. The new flow terminated near the base of Holei Pali.

Except for nearly continuous tremor local to the vent, there was no preliminary seismic activity. Prior to the fountaining on July 11, lava was observed rising slowly deep in the throat of the western vent. Samples were collected when the lava rose to favorable heights. Visible fountaining began shortly before 0430. By 0430 fountain heights rose over 350 meters. Surface activity and tremor ceased abruptly at 1222, and summit inflation resumed immediately. Approximately 2 hours later, tremor resumed in the vent area. Fuming continued, and during degassing mobile lava was occasionally visible in the western vent. Most of the new lava had gone under the crust of the Alae lava lake and had lifted the crust en masse to within 50 feet of the Alae crater rim.

On July 20 the lava column beneath the vent was observed rising and falling in 50-meter intervals. The level of the new lava approached within 3-6 meters of the vent level and would fall to a lower level in crudely determined cycles. The lava usually took about an hour to rise to its highest level and less time to fall to its lowest level. This type of activity continued on to July 31, occasionally interrupting the change in lava level with violent spattering and a more rapid change in the height of the lava column within the vent.

At 1715, August 3, violent fountaining up to 150 meters high marked another period of high level activity. Fountaining ended at 0000, August 4. A lava flow filled Alae Crater to within 10 meters of the rim. As on July 15 the old crust had been lifted en masse by the new lava that invaded Alae Crater. Between 0400 and 0430, August 4, seismometers recorded a vigorous episode of harmonic tremor and earthquakes. This episode accompanied tremendous ground cracking and graben formation between Alae Crater and Kane Nui o Hamo. The cracks intersected the floor of Alae Crater, and probably in the span of a half hour Alae drained to a level below the mezzanine that was buried during February. Over 10 million cubic meters of lava had been drained out. The graben surface, where observed just east of Alae Crater, was about 10 meters wide and 60-70 meters deep (limit of visibility). A Geodimeter line across the graben showed considerable extension.

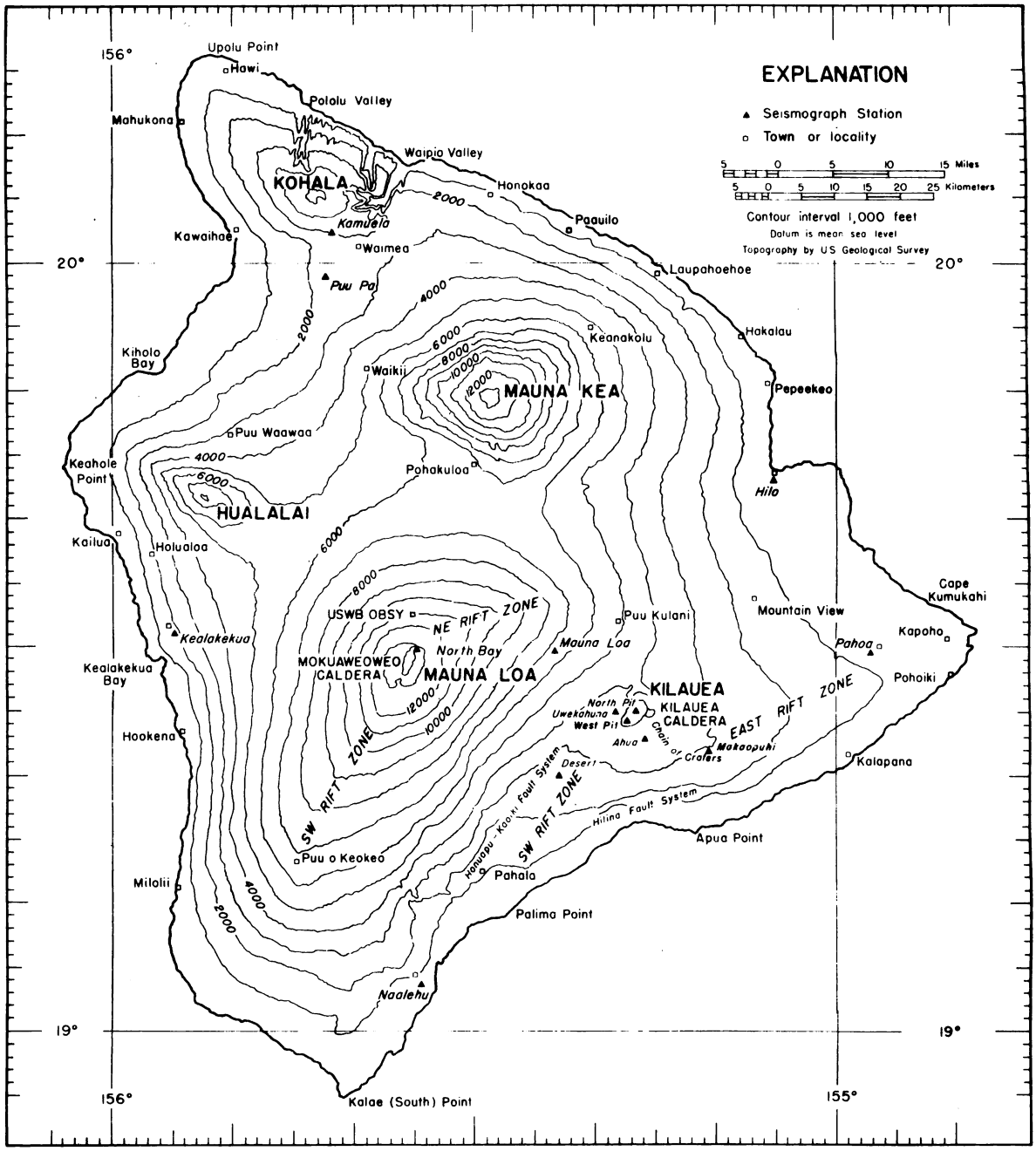

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 3 in terms of geographic coordinates, which are indicated at the edges of the map.

At 1400, August 4, characteristic eruption-type fume clouds were observed to be coming from a zone along the East Rift, east of Napau Crater. Only lava oozing out from fissures could be seen from the air. There was little or no fountaining. A narrow tongue of lava flowed east for 1.2-1.3 km from a point less than 1 km northwest of Puu Kamoamoa. Samples collected from the flow were richer in olivine than any lava that drained from Alae Crater.

At 2100, August 5, fountaining several tens of meters high was occasionally observed in the vent area. An aa lava flow continued into Alae Crater. Large remnants of overfill that had clung to the sides of the crater were rafted across the crater. The crater floor had taken on an unusual character consisting of aa, rafted blocks, and talus.

At 1130, August 21, spattering up to 15 meters high started to build up a cone.

At 0015, August 22, the highest fountains, more than 400 meters high, were in the western vent area. Activity was spread along a fissure both east and west of the main vent complex. A flow developed southward for 1 km. Nearly all erupted material flowed into Alae Crater (2.7×10^6 cubic meters), raising the level of the floor to 34 meters below the rim. Activity has better defined a cone of spatter and pumice to the south side of the main vent.

At 1930, September 6, there was strong activity at the vent preceding actual lava fountaining. Nearly degassed lava rose and fell with rapidity in the vent area. Volumetric changes were estimated to be 20,000-30,000 m^3. In almost continuous sequences the lava column in the vent rose 40 meters in 40 minutes and drained back within 5 minutes or less. The column commonly rose within 10 meters of the vent level. As with the drop in fuming, tremor was low or absent during periods of rising lava columns. Fuming and tremor (local to the vent area) picked up suddenly and remained at high levels during drainback. At 1930 Kilauea summit seismometers began recording higher level tremor and fountaining was first observed at about this time. Fountaining was confined to the western vent. By 0415, September 7, a lava flow had completely filled Alae Crater. Smaller flows developed at two points on the southwest rim. At 2100 a westward flow began cascading into Aloi Crater. Eventually it covered the floor with 10 meters of aa. Two other flows extended from the south edge of the new cone. One flow reached Poliokeawe Pali, where it split into two tongues, one of which stopped at the bottom of the cliff. The other tongue continued over Poliokeawe Pali and flowed a short distance from the base of the Pali. The largest newly developed cone is now 30 meters high and is visible from the Observatory. All of the current lava and spatter is moderately to highly olivine rich, whereas the early material contains only sparse olivine. Fountains at 2200 reached 540 meters in height but by 2300 were down to 400-420 meters, where they stayed until about 0130, when the heights abruptly decreased to about 300 meters. At 0425 in the span of 5 minutes, high-level surface activity ceased.

Changes in the seismic net

FM radios for continuous seismic telemetry were installed at the following locations:

	Lat	Long	Elevation (m)	Date began (1969)
a) Puu Huluhulu - PHH	19°22.5'N	155°12.4'W	1021	July 28
b) Makaopuhi - MPR	19°22.1'N	155°09.8'W	881	July 31
c) Kahuku - KHU	19°14.9'N	155°37.1'W	1939	August 8
d) Hale Pohaku - HPU	19°46.6'N	155°27.3'W	3231	August 19

With the exception of MPR, all stations transmitted directly to Uwekahuna. Like VCO signals that are telemetered via rented telephone lines, FM radio signals are discriminated and recorded on a develocorder unit.

During this quarter, the University of Hawaii, under contract from ESSA, installed a transmitter at HVO to telemeter Honuapo tide gauge data and seismic data from HVO's Pahoa and Waiohino stations. Their receiver is located at the Mauna Kea Observatory.

Tilting of the ground around Kilauea caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of tiltmeter stations and essential data on each station are listed in table 6, which is published only in the first-quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna vault,

July, August, and September 1969

Date (1969)	N-S	E-W	Date (1969)	N-S	E-W
July 6	544	418	Aug. 31	546	408
13	545	416	Sept. 7	543	415
20	544	418	14	541	418
27	546	410	21	543	412
Aug. 3	547	418	28	543	409
10	544	418			
17	546	410			
24	545	410			

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the observatory. Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of seismograph stations and essential data on each station are listed in table 5 in the first-quarter issue each year.

Acknowledgments

Several people and agencies reported "felt" earthquakes during the third quarter, 1969. Their assistance is gratefully acknowledged.

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Table 2.--Number of Earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, intermediate, and shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the S.W. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; shallow earthquakes along the northeast-trending Koae fault system south of Kilauea caldera; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1969)		Tremor (in minutes)			Earthquakes							
					Kilauea Summit							
		Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
July	1	15	.		1	45	80	5	45	0	.	
	2	.	.		1	0	109+	7	269+	1	.	
	3	.	.		7	0	105	?	804+	?	1	
	4	.	.		2	45+	127	11	60	5	.	
	5	.	.		2	20	128	12	58	15	.	
	6	.	.		3	6	50	10	28	1	.	
	7	.	.		0	4	136	2	29	9	.	
	8	.	.		1	0	220	13	145(?)	1	.	
	9	6	.		1	0	189	5	72(?)	0	1	
	10	.	.		0	0	31	3	20(?)	0	.	
	11	5	.		0	?	30	7	60(?)	0	1	
	12	.	.		3	?	17	6	37(?)	0	1	
	13	.	.		0	0	6	14	67(?)	0	1	
	14	.	.		3	0	14	16	42(?)	0	1	
	15	.	.		0	6+	3	14	40(?)	2	1	(Phase 5 0345 July 15 to 1222 July 15)
	16	.	.		1		14	2	15(?)	1	.	
	17	.	.		0		15	5	12(?)	0	1	
	18	.	.		0	10	18	3	17	0	.	
	19	.	.		0	79+	16	21	22	0	.	

Strong during phases of eruption and fluctuating at low levels during interphases

Several hundreds

July	20	.	.	1	16+	22	9	51	1	1
	21	12	.	0	69+	33	16	43(?)	0	1
	22	120	.	1	12+	33	6	31	1	.
	23	.	.	1	72+	35	20	24	1	.
	24	20	.	0	?	36	7	14	0	.
	25	.	.	0	0	70	4	15	0	.
	26	.	.	0	0	54	6	16	0	2
	27	.	.	0	0	44	6	13(?)	1	.
	28	32	.	0	2	64	6	21	4	.
	29	.	15	0	0	103	3	17	1	.
	30	.	.	1	1	76	3	29	2	.
	31	21	.	0	?	60	12	13	2	.

Table 2.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea -- Continued

Date (1969)		Tremor (in minutes)			Earthquakes								
					Kilauea Summit			SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
		Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
August	1	.	.	Strong during phases of eruption and fluctuating at low levels during interphases	2	0	56	8	52	1	1	
	2	.	.		0	0	44	4	83	4	.	
	3	.	.		2	5	10	11	183+	0	.	(Phase 6,-17:15 Aug. 3 to 00:08 Aug. 4)
	4	.	.		?	10	8	?	50(?)	?	1	
	5	.	.		2	?	8	11	32(?)	?	.	
	6	.	.		0	325+ several thousands	16	11	117+	0	1	(Phase 7, 2100 Aug. 5 to 0545 Aug. 6)
	7	.	.		0		14	23	17	0	3	
	8	.	.		0		6	4	5	3	.	
	9	.	.		0		5	7	7(?)	0	.	
	10	.	.		1	0	18	11	50(?)	0	1	
	11	.	.		0	2	14	6	60(?)	0	1	
	12	.	.		1	3	12	6	75	2	.	
	13	.	.		1	5	26	14	75	0	.	
	14	.	.		0	0	18	10	?	0	2	
	15	.	.		1	9	10	20	17	0	1	
	16	30	.		0	10	8	9	27	0	.	
	17	40	7		0	6	14	4	13	0	.	
	18	.	.		0	9	8	5	17(?)	0	.	
	19	.	.		0	0	7	5	14	0	1	
	20	29	.		1	0	47	9	15	0	3	
	21	.	.		2	8	22	2	4	0	.	
	22	.	31		0	18+	11	2	4+	?	1	(Phase 8, 00:15 Aug. 22 to 04:40 Aug. 22)
	23	.	.		0	?	4	4	2	0	.	

August	24	.	.	2	16+	7	11	32	?	1
	25	.	.	0	1	9	7	11	1	1
	26	.	.	1	10	16	16	6	0	1
	27	.	.	0	4	10	5	5	1	.
	28	.	.	0	5	21	8	6(?)	2	.
	29	.	.	2	2	56	5	10	2	2
	30	.	.	5	6	30	14	10	2	1
	31	.	.	3	2	31	5	9	6	.

Table 2.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea -- Continued

Date (1969)	Tremor (in minutes)			Earthquakes							
				Kilauea Summit							
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
September 1	.	.	Strong during phases of eruption and fluctuating at low levels during interphases	2	2	54	6	17	2	3	
2	29	.		1	0	23	5	4(?)	0	1	
3	.	.		0	1	19	8	5(?)	0	.	
4	.	30		0	3	101	4	4	2	.	
5	.	.		0	3	72	8	1	1	1	
6	.	.		0	? several thousands	59	8+	4+	?	.	(Phase 9 - 19:30
7	20	20		0		3(?)	7	5+	?	.	Sept. 6 to 04:30
8	.	.		0		3	4	2+	0	.	Sept. 7)
9	.	.		0		22	8	7	0	3	
10	.	.		0		11	5	13	0	.	
11	.	.		0	17+	15	6	8	1	1	
12	.	.		0	0	15	7	9	0	.	
13	.	.		0	5	6	4	6	0	.	
14	.	.		?	37	8	?	15	?	1	
15	.	.		3	30+	8	15	11+	0	.	
16	.	.		2	13	12	7	26	0	.	
17	.	.		0	16	21	14	17	0	2	
18	.	.		5	13	23	16	20	1	2	
19	.	.		0	3	26	4	4	0	4	
20	.	.		0	0	28	10	3	0	.	
21	.	.		0	7	18	6	5+	0	.	
22	.	.		0	3	23	6	11	0	2	
23	.	.		5	6	16	5	6	0	.	

September	24	.	.	2	0	27	4	0	0	.
	25	.	.	1	10	14	9	7	0	.
	26	.	.	0	7	11	6	3(?)	0	.
	27	.	.	0	4	13	2	3(?)	0	.
	28	42	.	3	11	13	28	20	18	2
	29	.	.	2	1	13	47	15	9	.
	30	.	.	0	1	30	66+	15+	4+	.

Table 3.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, September, 1969.

Entries for a given quake are: Date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occuring on or near the island of Hawaii are included in the list.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
July 2	09-50-36.2	2.4	7	19°22.1'	155°11.4'	
3	06-57-36.6	3.0	5	19°21.9'	155°12.0'	Kilauea Summit Are
3	07-04-08.5	2.1	10	19°21.4'	155°12.7'	
3	07-07-24.1	2.1	8	19°23.1'	155°14.5'	
3	07-22-16.9	2.4	7	19°22.6'	155°15.2'	Kilauea Summit Are
3	09-47-47.2	2.2	10	19°20.0'	155°11.9'	
3	18-08-21.2	2.0	10	19°39.8'	156°02.7'	
6	11-37-24.2	3.5	32	19°20.8'	155°21.6'	Kealakekua
7	04-59-16.3	2.2	32	19°21.8'	155°18.1'	
7	18-58-20.0	2.0	10	19°15.6'	155°04.8'	
9	04-30-05.1	2.8	4	19°17.9'	155°06.9'	
9	01-17-27.4	2.4	3	19°19.0'	155°06.9'	
9	21-34-23.5	2.4	20	19°18.8'	155°50.8'	
10	08-32-06.1	2.9	9	19°20.9'	155°29.2'	Pahala
11	23-32-46.7	2.4	28	19°10.0'	155°32.4'	
12	11-14-20.8	3.1	0	19°13.3'	155°37.6'	
13	01-22-08.0	4.2	8	19°12.2'	155°34.8'	(Kilauea Summit Are Pahala, Kealakekua
13	09-38.07.5	2.0	9	19°48.6'	155°35.6'	
15	17-54-14.5	3.3	13	18°28'	156°48'	
17	20-06-49.6	2.1	8	19°21.4'	155°14.1'	
17	23-14-58.9	2.2	10	19°22.8'	155°29.0'	
20	04-47-13.1	3.6	10	19°23.7'	155°54.8'	Kealakekua
21	16-13-26.3	3.0	16	19°55.7'	155°32.0'	
22	13-41-35.0	2.7	9	19°23.1'	155°25.5'	
26	00-11-02.5	2.2	6	19°32.0'	155°41.8'	
26	00-25-03.3	2.3	10	19°19.7'	155°09.3'	

Table 3.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, September, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
July 26	23-00-48.4	2.3	10	19°26.6'	155°45.3'	
29	02-19-26.0	2.1	9	19°21.7'	155°13.5'	
30	02-29-51.7	2.5	2	19°19.2'	155°05.3'	
August 1	10-14-11.7	2.3	11	19°17.4'	155°07.5'	
1	19-17-31.3	3.0	2	19°52.3'	155°35.7'	
2	07-47-13.0	2.0	32	19°21.6'	155°16.8'	
3	10-50-12.0	2.4	10	19°25.4'	155°28.2'	
3	16-40-24.9	2.6	1	19°19.0'	155°05.7'	
4	02-54-29.6	2.0	7	19°21.6'	155°13.3'	
4	16-50-13.6	2.7	0	19°28.6'	155°40.4'	
6	18-42-17.2	3.5	4	19°41.9'	156°02.7'	Kohala
7	02-58-20.5	2.0	7	19°24.2'	155°23.4'	
7	14-53-07.7	2.3	25	19°13.3'	155°30.0'	
7	18-08-08.8	2.2	6	19°13.1'	155°27.5'	
7	18-13-21.7	2.8	10	19°03.0'	155°02.5'	
7	23-19-05.7	3.0	10	20°15.9'	155°32.5'	
9	01-12-27.1	2.2	6	19°21.7'	155°13.6'	
9	16-08-59.3	2.3	8	19°24.8'	155°23.1'	
10	09-37-27.8	2.5	62	19°29.1'	155°37.5'	Hilo
10	17-30-14.0	2.3	36	19°24.4'	155°22.2'	
11	02-10-22.2	2.4	8	19°18.6'	155°16.3'	
11	22-59-07.0	2.8	10	19°56.6'	155°31.0'	Pohakuloa
14	12-27-20.0	2.5	10	19°05.0'	156°43.4'	
14	14-30-44.3	3.0	13	19°42.3'	155°36.0'	
15	09-57-02.9	2.6	48	19°21.6'	155°35.1'	
15	19-14-04.3	2.2	37	19°19.1'	155°30.7'	

Table 3.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, September, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
August 19	05-50-53.8	2.3	48	19°24.5'	155°33.8'	
19	06-58-56.7	2.0	26	19°19.5'	155°17.8'	
19	15-57-13.8	2.0	24	19°21.4'	155°29.8'	
20	01-18-31.2	2.1	13	19°23.5'	155°17.3'	
20	17-46-42.7	2.0	42	19°25.5'	155°37.7'	
20	21-54-08.1	2.7	5	19°27.5'	155°32.3'	
20	23-39-20.7	2.2	4	19°10.5'	155°31.3'	
22	17-59-28.6	2.5	46	19°54.3'	155°29.4'	
22	20-49-45.0	2.3	30	19°20.9'	155°16.8'	
24	06-38-55.7	2.4	10	19°25.9'	155°54.0'	
24	21-47-55.3	2.1	14	19°27.3'	155°24.1'	
25	14-26-14.4	2.2	12	19°24.3'	155°25.6'	
25	21-49-01.5	2.7	4	19°13.4'	155°34.1'	
26	14-32-53.2	2.4	10	19°18.0'	155°51.0'	
27	01-11-55.6	2.2	0	19°12.6'	155°19.5'	
28	23-21-05.3	2.2	6	19°17.6'	155°01.4'	
29	02-53-35.8	2.5	8	19°10.9'	155°33.5'	
29	04-11-33.2	2.3	32	19°30.8'	156°03.8'	
30	14-27-11.3	2.9	10	19°38.3'	156°28.3'	
September 1	02-22-14.2	2.3	10	19°18.6'	155°44.8'	
1	04-42-14.4	2.6	10	19°57.7'	155°44.6'	
1	07-16-54.2	2.6	10	19°19.2'	155°14.4'	
1	12-17-51.2	2.2	17	19°23.8'	155°16.4'	
1	16-54-55.5	2.6	15	20°01.3'	155°46.8'	
2	05-06-22.0	3.3	10	19°34.9'	156°23.3'	
2	23-23-50.8	2.4	20	19°56.0'	155°38.6'	

Table 3.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, September, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
September 3	09-40-09.4	4.3	31	19°20.0'	155°25.0'	Islands of Hawaii and Oahu
5	20-05-12.9	2.1	8	19°27.1'	155°35.5'	
8	01-40-27.6	2.2	9	19°20.8'	155°13.8'	
8	16-35-42.6	2.3	10	19°34.5'	155°18.8'	
8	17-35-23.7	2.2	9	19°23.9'	155°25.9'	
9	00-09-23.0	2.8	10	19°53.9'	155°47.7'	
9	10-49-47.1	2.1	71?	19°26.2'	155°58.1'	
9	18-27-37.5	2.2	10	19°41.2'	155°41.5'	
11	08-00-52.0	2.5	0	19°53.3'	155°41.4'	
11	20-24-13.3	2.1	8	19°20.6'	155°07.9'	
13	13-06-41.6	2.3	7	19°18.5'	155°15.4'	
14	10-08-55.7	2.9	12	19°44.0'	155°47.0'	
15	11-44-01.2	2.5	7	19°20.5'	155°12.7'	
15	14-04-01.2	2.4	27	19°23.0'	155°30.0'	
16	11-31-56.7	2.3	7	19°20.1'	155°11.2'	
17	04-39-03.3	2.6	47	19°26.5'	155°57.9'	
17	12-06-54.0	2.1	34	19°23.0'	155°20.6'	
17	13-10-38.5	2.3	5	19°17.1'	155°15.8'	
17	12-50-30.9	2.4	5	19°10.2'	155°34.2'	
17	23-43-45.7	2.6	7	19°24.8'	155°25.6'	
18	01-31-22.1	2.6	6	19°25.5'	155°45.4'	
18	12-39-26.9	2.3	26	19°21.8'	155°30.9'	
18	14-38-15.9	2.6	13	19°16.5'	155°45.1'	
18	22-03-35.4	2.9	7	19°22.9'	155°24.3'	Pahala
19	05-15-28.7	3.1	43	19°56.5'	155°17.9'	
19	08-24-34.6	3.0	83?	19°42.0'	156°11.3'	

Table 3.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, July, August, September, 1969.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
September 19	11-25-09.4	2.4	26	19°41.0'	156°04.0'	
19	13-28-19.6	2.0	1	19°56.5'	155°30.2'	
19	15-45-51.8	2.8	3	19°11.8'	155°31.6'	
19	17-23-50.2	2.3	7	19°24.1'	155°25.2'	
19	19-14-13.5	2.0	6	19°26.9'	155°27.4'	
20	18-29-40.2	2.0	5	19°22.9'	155°27.9'	
21	00-16-03.9	2.1	6	19°22.0'	155°25.1'	
22	04-28-41.7	2.4	40	19°37.0'	156°03.9'	
22	05-52-15.5	2.2	13	19°23.1'	155°25.8'	
22	18-28-59.8	2.2	3	19°29.4'	155°40.1'	
23	15-54-25.5	2.3	6	19°13.7'	155°28.7'	
23	16-31-44.8	2.0	15	19°24.7'	155°16.4'	
27	13-23-15.4	2.2	0	19°19.6'	155°05.2'	
28	09-51-49.5	2.0	8	19°35.3'	155°51.7'	
28	10-00-36.6	2.2	0	19°32.6'	155°41.4'	
28	14-23-14.8	2.3	6	19°20.5'	155°12.7'	
28	22-00-45.1	2.4	0	19°30.8'	155°46.9'	
28	22-11-13.3	2.8	8	19°24.2'	155°28.0'	
29	04-27-48.4	2.7	3	19°14.4'	155°21.6'	Pahala
30	11-43-33.0	2.7	6	19°13.7'	155°08.3'	
30	21-27-47.6	2.1	5	19°10.2'	155°06.8'	
30	22-48-21.9	2.1	0	19°13.4'	155°21.5'	

GPO 980-673

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 56

October, November, and December 1969

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Issued February 1971

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Summary of activities

At 0900, on October 10 fountaining was observed in the main vent area. Significant tremor was first recorded shortly after the initial observation by Park personnel. A slow decline in summit tilt probably recorded the true beginning of the obvious surface activity. This activity lasted for more than 3 days (ending at about 1100 on October 13, with sporadic periods of spattering spread over the following 36 hours), yet it produced only about 2×10^6 m^3 of lava (excluding Alae drainout), which was supplied by fountains 15-25 m high. New lava covered the Sept. 6 lava (plus some forest along the southeast base of Puu Huluhulu), refilled Alae Crater (whose floor had lowered 5 meters as a result of degassing and probable draining out its graben outlet since Sept. 6), and spread southward from the southeast lip of Alae for about a kilometer. The flow which entered Alae Crater spread slowly across the floor from the feeder lava cascade near the vent area. The floor was not completely covered until 1230 (3.5 hours after the start of the phase). Shortly thereafter, lava started spilling into the outlet graben, which quickly became choked with lava so it could no longer accept the runoff from Alae, and the Alae floor began to rise again. At about 1400, the lowest lip of Alae was overwhelmed, and from then on lava spilled out of the crater along an arc several hundred meters long.

During much of October 11 and 12, most of the lava that was entering Alae must have been draining out somewhere at depth. There was little or no evidence of either uplift of the Alae floor or continued outflow south of the crater. Late in the day of October 12, however, marked outflow resumed, as shown by fires at the front of advancing flows. It is hard to estimate the volume that apparently drained from Alae, but it could have been as much as 2×10^6 m^3, if eruption rates of the first day can be extrapolated across the next 2 days. East rift surveying showed no large changes between Alae and Kane Nui o Hamo, so

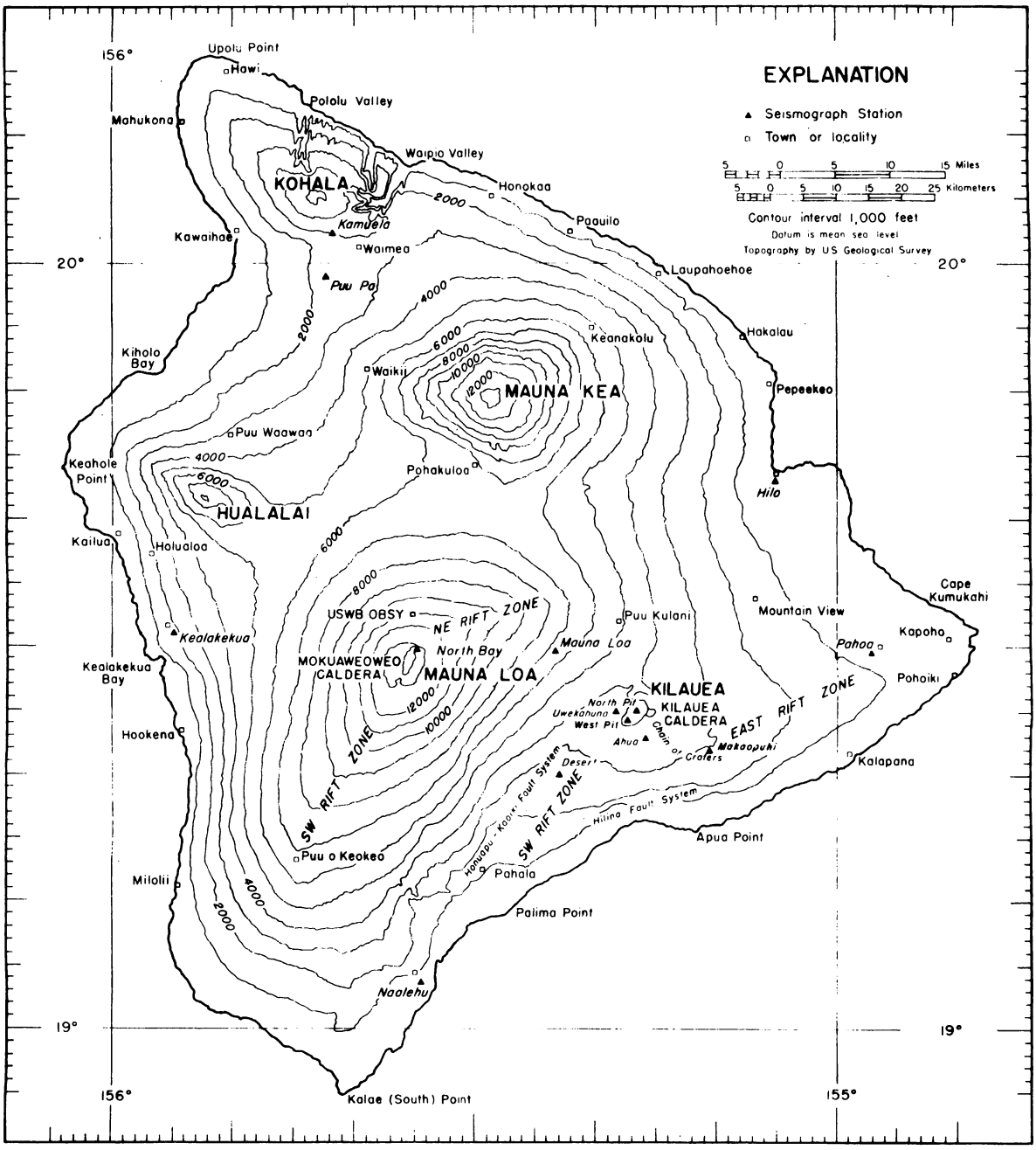

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 4 in terms of geographic coordinates, which are indicated at the edges of the map.

if the lava exited via the graben it probably moved farther downrift than Kane Nui o Hamo.

At 0100, on October 20 strong surface activity resumed at the main vent. Lava quickly filled the depression in the vent area and spilled outward into Alae and Aloi Craters. By 0230, violent fountains were playing 300 meters above the fissure. A high-level obstruction in the vent directed the fountaining towards the Puu Huluhulu observation point for a short length of time. Spatter fell as far as 10-20 meters over the south edge of the old Puu Huluhulu vent. Fountains reached a maximum height of about 300 meters by 0230 and persisted until about 0615, then began to diminish in height and volume. By 0640, the fountains had dropped to 150 meters, a height they maintained with a few pulsations until the end of the phase, which came quickly at 0820 (within 2-3 minutes the phase was over). As the fountains waned, lava filling the surface depression in the vent area began pouring back down the fissure, carrying solidified crust with it. Jetted gas from the fissure propelled fragments of this dark crust back out of the fissure and high into the air, resulting in an ominous black, billowing cloud that continued to rush forth for several minutes before it died as the gas escaped.

Spattering took place from two vents along the eastward projection of the eruptive fissure. One vent was in the area of minor vents during phase 8, the other in a new area almost due north of the northern rim of Alae. These vents were active for only an hour or two in the early morning.

Sometime between 0415 and 0615, these large cracks opened across the road constructed over the May 24 flow just west of Aloi. These cracks have an aggregate tensional displacement of 30-50 cm and lie about 50-75 m south of the May 24 fissure.

Except for the latest flows, most of the 10.5×10^6 m^3 of lava from this eruption is poor in olivine. Most of the lava went into two flows (one fed directly from the vent area, the other flowing out of the full Alae Crater) which cascaded over Poliokeawe and Holei Palis before coming to rest near the base of the scarps. The flow from Alae endangered the Chain of Craters road at the crest of the scarps but failed to cross it; the other flow followed the channels of preceding flows over the palis. Another flow moved eastward north of Alae, covering the Christmas Eve tilt station. A relatively small volume of lava entered Aloi Crater, but considerable spatter was added to the cone. This cone is now 60 meters above its pre-eruption base, and both of its two summits are plainly visible from the Observatory.

On October 24, lava was reported to be oozing down the Kalapana Trail, about 2.5 km southeast of Alae Crater. The gas-poor pahoehoe was traced upslope to an opening of a lava tube approximately 1 km southeast of Alae Crater. Apparently, lava was moving out of Alae, over its drowned southeastern rim, as the crust of the cooling lake settled. This lava was flowing through tubes in the most recent flow and emerging about a kilometer away. Over the course of 4 days since the end of the most recent fountaining, the oozing lava had created its own pahoehoe flow, and the active lava that was crossing the Kalapana Trail was flowing through tubes in it. The oozing ended by October 29. Two sections of the trail were covered, and the oozing came close to, but did not reach, the highway at the trail crossing. The oozing probably stopped when the crust of Alae lake solidified down to the top of the drowned rim, because the lake clearly did not drain down to that level, since the buried rim has no surface expression.

For most of the quarter, active lava was visible in the vent. On several occasions the lava column reached the surface and stayed

there for periods of from several hours to 2 or 3 days. During three of these times (November 12-13, 15, and 19), lava filled the vent depression and flowed into Alae and over its drowned rim for short distances. These active periods were characterized by dome-shaped upwellings of lava, as if the lava column were simply projecting 5-10 meters above the ground surface, without any spattering, and taking on the general appearance of an artesian well. At times there was also spattering, but some (though not all) of this seems to have been associated primarily with times of drainback (every 10-15 minutes in the normal rise-and-fall cycle) and may have resulted from liberation of entrapped air carried down during drainback. This spatter built three small cones, and it provides good material for sampling, as it is commonly quite dense. This nonviolent action allowed closeup use of the optical pyrometer, which in fume-free close-in conditions normally gave temperatures of 1165°-1175° C.

From November 19 to 30, all activity was confined within the fissure; only Pele's hair escaped to the surface. The top of the lava column was visible at times and out of sight at other times. Periodic rise and fall of the column throughout an amplitude of several meters could be observed or inferred from audible sounds at the vent, and marked fluctuations in the amount of fume were also keyed to the rise-fall pattern (much fume accompanied spatter released during falls).

At 0830, November 30, lava was nearly at the surface and was flowing from the west end of the fissure into the east end (an estimated distance of 75 meters), where it plunged 15-20 meters into a seething pool. Suddenly, at about 1100, the pool in the east end rapidly filled and blossomed into a dome fountain several meters high. This started a 2.5 day-long episode of surface activity. Between periods of drainback, the vent depression would fill and then spill

out in broad lava rivers, many of which reached the remaining rim of Alae and either cascaded into the crater or flowed around it and extended southward across the slightly older flows of October and November. This activity resulted in the addition of 1.1×10^6 m^3 of lava to the surface.

All was quiet at the main vent area from the night of December 2-3 until December 13, but three new segments of the eruptive fissure opened sometime between December 3 and 8, most likely on December 5, between 800 and 1500 meters downrift. Several small spatter ramparts were built, and pahoehoe flows that erupted from these three segments (offset in a right an echelon sense from the main fissure and from each other) spread out across most of the February 1969 lava between Alae Crater and February 22 lava west of Makaopuhi. This outbreak was not accompanied by harmonic tremor detectable by any of the Observatory seismographs, but summit tilt showed a small deflation that may have been associated with the activity. The new pahoehoe has a volume of about $.5 \times 10^6$ m^3.

Surface activity resumed at the main vent early in the morning of December 13, and by 0830 one flow had already reached Aloi Crater. Throughout the next 5 days (but especially on December 13 and 14), low broken dome fountains and simple upwellings of the entire lava column fed small flows that left the vent depression and spread toward Aloi and Alae; a few flows eventually reached both craters. About 0.8×10^6 m^3 of lava was added to the surface.

On December 14, lava was observed flowing eastward in the fissure during rises and standstills of the lava column. By 1300, December 15, the current had reversed to a westward direction, which it maintained until some time between 1700 and 2000, December 18, when it resumed flowing eastward. During this time, summit tilt recorded at Uwekahuna was nearly flat, but during the night of December 18-19 the summit

began to rise gradually. By 0930, December 9, all flow of lava had stopped within the fissure, and the top of the lava column was at a depth of about 15 meters and was periodically rising and falling throughout an amplitude of only 2.3 meters. On December 23, the level of lava dropped out of sight, although a faint glow reflected by glassy spatter clinging to the wall of the fissure provided evidence of a turbulent lava column at depth. Computations show that between 500 and 100 m^3/minute was being cycled through the fissure on December 14, and the flow velocity increased subsequently, so that volume rates for December 15-18 were probably closer to 1000-1500 m^3/minute. A total of about 58 x 10^6 m^3 of lava was erupted from the day the eruption began, on May 24, to the end of this quarter.

Seismic Notes

Seismic activity was concentrated in several zones: Southeast flank of Kilauea, south flank of Kilauea, northeast flank of Mauna Kea, and the southeast flank of Mauna Loa. Quakes on the southwest flank increased from less than 10 per day to more than 20 per day starting September 28. The activity increased further to a moderate swarm and reached a peak on October 7-9, when nearly 400 quakes were recorded on the Desert seismograph. These earthquakes appeared to have been centered between the central southwest rift and west end of Hilina Pali. The larger shocks of this group, nearly 3 in magnitude, were reported to have been felt at Kapapala Ranch.

At about the time the southwest flank seismic activity peaked, upper east rift and Poliokeawe fault quakes increased in number. The pick-up of larger Poliokeawe quakes was very obvious. The largest shock from the area at 1256, October 14, registered about 3-1/2 magnitude and was strongly felt by residents of Hilo.

Kilauea upper east rift quakes increased to over 200 on November 3, when, during a short-lived but impressive flurry between 1100 to 1200, quakes began to occur at 3 to 4 per minute. Several shocks measuring nearly 3 in magnitude were felt by Volcano residents.

During the early morning hours of November 5, Hamakua coast residents were disturbed by a half dozen shocks. These were the largest (magnitude 3 to 3-1/2) of 35 northeast Mauna Kea quakes recorded on the Mauna Loa seismograph. The source area appears to have been near Keanakolu on Mauna Kea's northeast flank.

The largest earthquake during November occurred beneath the Honuapo-Kaoiki fault system near the town of Pahala. It registered a magnitude of 4 to 4-1/2 and was felt over nearly half the island (strongest in Kau). Considerable numbers of aftershocks were recorded. During the first 5 hours, 130 shocks were recorded by

a recently installed radio-telemeter station from the upper Kahuku Ranch area.

Many small Kilauea caldera quakes were recorded during the quarter, and seismographs continued to respond to the different levels of volcanic activity. The count of shallow Kilauea Caldera quakes showed changes in the generally expected way: During periods of continuous inflation on the Uwekahuna E-W tiltmeter, quake counts increased to high levels with frequent hour to several-hour long flurries, whereas periods of minor deflation were characterized by low quake activity.

Tilting of the Ground Around Kilauea Caldera

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of tiltmeter stations and essential data on each station are listed in table 6, which is published only in the first quarter issue each year.

Table 1.--Tilt coordinates at Uwekahuna vault, October, November, and December 1969

Date (1969)	N-S	E-W	Date (1969)	N-S	E-W
Oct. 5	544	404	Nov. 23	543	398
12	543	407	30	544	397
19	539	416	Dec. 7	545	398
26	541	413	14	546	393
Nov. 2	543	406	21	547	391
9	542	404	28	548	386
16	543	402			

Table 2.--Tilt coordinates and changes at bases around Kilauea cladera. (Figure 2, tilting around Kilauea, will not be included in this summary).

Tilt base	Date (1969)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading
Uwekahuna (U)	Dec. 3	591.2	373.0	1.33	N40.0°W	Feb. 6, 1961
Tree Molds (TM)	Oct. 30	473.6	500.6	0.48	N69.0°W	Feb. 6, 1969
Sand Spit (SS)	31	940.8	673.9	2.34	N13.7°W	Feb. 12, 1967*
Keamoku (Kea)	27	527.7	388.5	0.48	N53.4°W	Jun. 6, 1967*
Ahua Kamokukolau (Kam)	31	449.1	540.0	0.54	S58.8°W	Jun. 5, 1967*
Kipuka Nene (KN)	28	298.7	308.5	0.58	S 0.2°E	Dec. 5, 1968
Hilina Pali (HP)	29	452.3	494.9	0.45	S47.4°W	Oct. 16, 1968
Kapapala (Kap)	27	490.4	513.8	0.32	S62.6°E	Aug. 28, 1968
Mehana (M)	30	573.5	581.2	0.42	S60.6°E	Feb. 5, 1969

*For purposes of continuity of the tilt coordinates, we are disregarding all 3-pot readings and reverting to the last set of 2-pot readings used in the summary. All readings hereafter will be of the 2-pot system.

Seismic summary

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories: local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and distant earthquakes originating more than 3,000 km from Hawaii. As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 3. The earthquakes are separated in groups on the basis of region of origin as determined by analysis of records obtained daily at the observatory. Earthquakes of magnitude 2.0 or greater are generally sufficiently well recorded to be located with greater precision; they are listed individually in table 4.

Location of seismograph stations and essential data on each station are listed in table 5 in the first-quarter issue each year.

Acknowledgments

Several people and agencies reported "felt" earthquakes during the fourth quarter, 1969. Their assistance is gratefully acknowledged.

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: Deep, intermediate, and shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea caldera region; shallow earthquakes along the S.W. rift zone of Kilauea and the adjacent portion of the Kaoiki fault system; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; shallow earthquakes along the northeast-trending Koae fault system south of Kilauea caldera; and earthquakes from other regions: west Hawaii, Mauna Kea, etc

Date (1969)	Tremor (in minutes)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
October 1	.	.		.	.	44	22	3	1	.	
2	.	.		.	21?	27	66	19	6	.	
3	.	.		1	17?	13	45	14	2	2	
4	.	.		.	3	9	35	10	3	4	
5	.	.		.	9	14	26	17	4	2	
6	.	.		1	8	21	22	27	1	2	
7	.	.		.	6	71	159	64	61	2	
8	.	.		5	3	85	151	40	10	3	
9	.	.		4	4	44	11	34	12	3	

October 10	.	.	Strong during phases of eruption and fluctuating at low levels during interphases.	3	15?	6	45	9	.	3	(0900 Oct. 10, 1100 Oct. 13 eruption phase 10)
11	.	.		2	1?	7	21	13	4	2	
12	.	.		.	?	10	33	13	4	1	
13	.	.		1	14?	13	12	31	5	1	
14	.	.		2	21?	12	37	31	9	2	
15	.	.		1	17	7	24	10	2	.	
16	.	.		.	.	8	18	13	2	.	
17	.	.		2	75	15	7	17	7	1	
18	.	.		1	10	23	19	17	4	.	
19	.	.		1	45	27	32	12	4	.	
20	.	.		1	45?	5?	6	24?	3	1	(0100 Oct. 20, 0820 Oct. 20 eruption phase 11
21	.	.		.	2?	15?	17	7	.	.	
22	.	.		?	?	?	?	?	?	.	
23	.	.		4	1	12	11	8	6	.	
24	.	.		.	1?	7	5	2	2	.	
25	.	.		.	2	6	17	4	3	.	
26	.	.		4	10?	7	12	11	5	.	
27	12	.		2	3	28	6	10	3	1	
28	.	.		3	30	44	7	8	3	1	
29	.	.		2	.	330	7	30?	3	.	Shallow summit and upper east rift quake count increase due to instrument adjustment
30	33	.		4	2	316	15	43	5	.	
31	.	.		.	6	346	9	21	3	1	

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1969)	Tremor (in minutes)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
November 1	.	.		.	1	508	15	8	5	.	
2	42	.		5	2	360	12	19	2	.	
3	.	.		4	2	92	11	225?	3	.	
4	.	.		.	.	78	13	27	2	1	
5	.	.		.	1	65	15	18	1	24	Mauna Ken earthquake flurry
6	.	.		3	.	114	8	4	5	5	
7	.	.		.	1	52	3	2	2	3	
8	.	.		.	8	129	5	6	1	.	
9	.	.		1	2	100?	35	5	1	1	
10	.	.		.	1	220	10	3	.	8	
11	.	.		.	15?	164?	16?	22?	3?	6	
12	36	.		.	9?	158	17	25	7	1	
13	.	.		1	5	174	10	22	3	.	
14	.	.		.	3	235?	7	13	3	3	
15	3	.		.	2	268	5	12	1	1	
16	.	.		2	.	421	5	23	2	1	
17	.	.		.	12?	224	11	46	49	4	

November 18	.	9		2	3	436	9	27	1	2
19	.	.		.	?	186	13	185?	.	1
20	.	.		.	2?	598	10	9	.	.
21	4	.		.	2	1000	2	13	.	1
22	.	.		.	1	430	6	14	1	1
23	.	.		.	4	974	13	205?	1	1
24	.	.		1	.	647	19	138?	.	4
25	.	.		1	.	407	12	95?	3	1
26	.	.		.	.	308	11	110?	.	1
27	.	.		.	1	1200	6	36	1	1
28	.	.		.	3	325	9	24	.	.
29	.	.		.	.	178	11	23	1	.
30	.	.		1	5	95	17	15	.	3

Table 3.--Numbers of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1969)	Tremor (in minutes)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Upper east rift	Koae	Others	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow					
December 1	25	.		1	?	251	14	28	1	3	
2	.	.		1	2	220	11	22	.	.	
3	.	.		2	7	242	9	38	4	1	
4	.	.		1	3	203	5	27	1	2	
5	.	.		.	1	199	6	7	.	.	
6	.	.		.	.	287	15	15	1	1	
7	.	.		.	4	353	11	91	2	1	
8	.	.		.	.	390	17	164?	1	1	
9	.	.		1	1	240	5	85	2	1	
10	.	.		.	1	213	8	10	.	.	
11	.	.		.	3	517	6	5	1	1	
12	.	.		.	1	294	2	164?	1	.	
13	.	.		.	2?	77?	4	60?	1	.	
14	.	.		4	.	57	11	8?	5	1	
15	.	.		.	1	190	8	11	1	1	
16	.	75		.	1	228	24	29	2	1	
17	.	.		.	2	236	6	25	2	2	

December 18	3	3	.	1	281	15	12	.	.	
19	.	.	.	2	486	13	78	.	.	
20	.	.	.	.	1248	12	150	2	1	
21	.	.	2	5	1290	13	18	5	.	
22	.	.	1	.	1020	19	60?	13	.	
23	.	.	2	5?	615	7	10?	5?	.	
24	.	.	.	2	?	8	227?	.	1	
25	.	.	.	.	?	6	13	4	.	
26	.	.	.	1	286	6	13	1	.	
27	.	.	.	.	287	5	159	?	1	
28	.	.	?	.	178?	?	84	10	1	
29	.	.	.	4	47	4	44	7	.	
30	.	.	2?	176?	218?	15?	54?	6?	.	(0500 Dec. 30,
31	.	.	.	?	39?	28	17?	1	.	1830 Dec. 30 eruption phase 12)

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969.

Entries for a given quake are: Date, origin time (Hawaiian Standard Time), magnitude, depth, epicenter, and felt report. All earthquakes of magnitude 2.5 and larger, as well as many favorably located smaller ones, occurring on or near the island of Hawaii are included in the list.

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
October 1	12-31-22.2	2.1	5	19°14.3'	155°21.0'	
2	23-10-35.4	2.0	7	19°10.8'	155°20.6'	
3	01-14-45.0	2.4	9	19°20.3'	155°46.9'	
3	19-24-48.3	2.0	2	19°12.7'	155°20.0'	
3	19-25-56.2	2.8	22	18°49.0'	155°23.1'	
3	23-16-55.1	2.0	2	19°17.4'	155°12.3'	
4	05-47-52.7	2.2	6	19°26.7'	155°42.3'	
4	11-08-45.5	2.4	10	19°09.6'	155°14.0'	
4	17-22-24.4	2.0	5	19°11.6'	155°20.5'	
4	18-13-12.8	2.9	7	19°12.7'	155°20.2'	
4	18-37-08.2	2.0	2	19°11.2'	155°20.0'	
4	21-06-10.2	2.1	3	19°32.9'	155°38.0'	
4	23-43.59.7	2.1	7	19°31.3'	155°37.9'	
5	12-55-51.0	2.1	14	19°10.2'	155°21.1'	
5	13-41-11.0	2.5	8	19°10.1'	155°36.8'	
5	18-56-34-9	2.7	6	19°18.0'	155°06.6'	
6	00-42-39.2	2.0	0	19°17.7'	155°00.4'	
6	04-13-22.0	2.3	6	19°14.8'	155°20.9'	near Pahala
6	08-34-41.4	2.6	8	19°10.3'	155°12.9'	
6	22-54-32.8	2.9	23	20°08.5'	155°49.4'	near Paauilo, Kohala
7	10-41-25.7	2.5	6	19°11.7'	155°21.0'	
7	10-43-02.7	2.1	7	19°15.0'	155°20.7'	
7	12-36-04.9	2.7	16	20°07.3'	155°48.3'	
7	14-29-53.7	2.1	6	19°14.4'	155°20.2'	
7	14-49-37.4	2.6	7	19°14.5'	155°20.1'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
October 7	15-26-46.3	2.6	4	19°11.6'	155°21.3'	
7	15-30-05.6	2.6	5	19°11.3'	155°20.9'	
7	17-35-13.2	2.1	11	19°13.8'	155°20.9'	
7	21-45-44.4	2.6	10	19°01.8'	155°06.2'	
7	23-27-13.3	2.5	6	19°14.6'	155°20.4'	
8	00-12-34.6	2.7	8	19°13.4'	155°20.2'	
8	03-57-55.5	2.0	4	19°21.2'	155°01.1'	
8	04-51-06.3	2.2	7	19°13.0'	155°21.1'	
8	08-37-58.4	2.0	5	19°14.1'	155°21.0'	
8	08-44-34.4	2.0	4	19°15.5'	155°20.8'	
8	09-43-01.6	2.7	10	19°01.8'	155°10.5'	
8	11-13-31.1	2.4	8	19°25.3'	155°49.7'	
8	12-58-34.1	2.0	11	19°23.4'	155°24.2'	
8	14-17-20.1	2.9	5	19°13.3'	155°20.8'	near Pahala
9	01-18-38.7	2.1	5	19°14.2'	155°20.1'	
9	02-39-02.7	2.3	31	19°25.5'	155°34.8'	
9	08-05-20.1	2.0	4	19°13.9'	155°20.4'	
9	12-31-08.8	2.0	35	19°21.8'	155°11.6'	
9	15-41-11.8	2.4	5	19°23.0'	155°03.4'	
9	17-59-22.0	2.2	18	19°02.7'	155°13.4'	
9	21-50-34.5	2.0	5	19°13.7'	155°19.8'	
10	01-58-06.6	2.8	9	19°20.4'	155°48.2'	
10	04-02-35.6	2.1	7	19°21.9'	155°07.7'	
10	06-12-10.6	2.1	7	19°14.6'	155°19.8'	
10	18-17-06.8	2.1	6	19°32.8'	155°39.5'	
10	20-25-55.9	2.8	4	19°11.6'	155°20.2'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
October 10	21-55-31.5	2.9	15	19°10.8'	155°35.8'	
11	10-34-08.7	2.0	1	19°10.5'	155°17.3'	
11	12-00-07.2	3.0	5	20°20.0'	155°03.3'	Hilo
11	14-17-43.2	2.0	5	19°40.0'	155°04.7'	
11	24-41-00.3	2.4	2	19°13.6'	155°20.6'	
12	15-28-11.0	2.4	10	20°49.3'	156°04.6'	
13	05-30-15.8	2.5	10	19°24.1'	155°24.7'	
13	06-45-05.0	2.2	7	19°19.3'	155°01.7'	
13	14-13-11.0	2.1	16	19°04.1'	155°14.1'	
14	12-55-31.9	4.0	8	19°22.9'	155°04.2'	
14	13-15-08.0	2.2	4	19°15.1'	154°59.9'	
14	16-29-15.3	2.5	5	19°16.2'	155°06.7'	
14	16-52-53.9	2.0	5	19°18.4'	154°59.7'	
14	16-57-36.5	2.4	8	19°23.1'	155°02.4'	
14	17-26-41.7	2.6	5	19°13.6'	155°20.0'	
16	13-12-36.1	2.3	3	19°12.0'	155°21.4'	
17	05-13-02.9	2.9	27	19°22.8'	155°20.2'	
17	17-00-01.7	2.6	9	19°11.1'	155°36.1'	
18	21-16-31.1	3.2	7	19°21.5'	155°03.7'	
19	15-38-11.1	2.3	4	19°13.5'	155°21.4'	
19	15-49-53.4	2.2	9	19°19.5'	155°13.7'	
20	16-35-49.4	2.5	9	19°53.3'	155°29.8'	
21	13-01-56.6	2.0	12	19°21.9'	155°26.0'	
22	01-28-37.8	2.0	16	19°25.2'	155°16.9'	
22	03-26-30.0	3.3	11	19°22.7'	155°23.5'	near Pahala, Hilo, Mt. View
22	17-18-50.3	2.0	10	19°24.2'	155°24.5'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
October 23	05-21-56.9	3.0	4	19°16.6'	155°05.0'	
23	07-09-12.4	2.0	4	19°23.6'	155°01.8'	
27	13-39-09.3	2.2	19	19°45.6'	155°23.9'	
28	14-47-03.2	2.5	31	19°22.0'	155°15.9'	
28	18-13-21.4	2.3	9	19°30.4'	155°45.8'	
29	10-48-57.9	2.0	7	19°11.4'	155°12.1'	
30	08-59-24.6	2.4	36	19°13.0'	155°23.6'	
30	10-19-29.9	2.4	11	19°16.9'	155°04.4'	
31	07-17-33.4	2.9	11	19°24.0'	155°24.1'	near Pahala
31	17-00-52.4	2.9	128?	20°14.9'	156°06.8'	
November 2	08-09-31.5	2.7	9	19°19.5'	155°07.3'	
3	02-21-38.2	2.4	33	19°21.4'	155°17.1'	
4	06-26-36.9	2.2	32	19°48.2'	155°11.0'	
5	05-15-48.0	2.5	4	19°58.8'	155°18.5'	
5	05-21-24.6	3.6	9	19°58.5'	155°21.4'	near Paauilo, Hilo, Honokaa
5	05-23-03.5	2.7	8	19°54.6'	155°20.0'	Honokaa
5	05-32-13.9	2.2	10	19°46.6'	155°23.0'	
5	05-33-48.3	2.4	6	19°56.8'	155°18.9'	
5	05-39-02.3	2.9	9	19°54.0'	155°19.6'	near Paauilo
5	05-43-03.0	2.0	6	19°47.8'	155°18.9'	
5	05-44-06.1	3.7	10	19°59.6'	155°21.5'	near Paauilo, Hilo, Kilauea, Honokaa
5	05-46-46.7	2.1	10	19°50.5'	155°20.7'	
5	06-35-51.9	2.1	10	19°45.1'	155°21.4'	
5	06-45-29.8	2.4	10	19°54.3'	155°20.1'	Honokaa

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
November 5	06-57-11.0	3.5	9	19°55.4'	155°20.0'	Honokaa, near Paauilo, Kilauea
5	07-00-07.3	3.4	9	19°59.1'	155°21.5'	near Paauilo, Honokaa
5	07-02-32.7	2.5	10	20°00.5'	155°20.8'	Honokaa
5	07-10-09.2	2.3	10	19°52.7'	155°20.8'	Honokaa
5	07-23-05.3	2.7	10	20°14.0'	155°23.7'	Honokaa
5	07-38-11.2	2.8	10	20°05.6'	155°21.9'	Honokaa, Hilo
5	07-46-43.3	2.5	8	19°54.4'	155°19.1'	Honokaa
5	07-49-33.0	2.3	10	19°53.2'	155°20.7'	
5	07-51-47.3	2.4	17	19°54.4'	155°20.0'	
5	08-54-48.4	2.6	10	19°52.4'	155°20.7'	Honokaa
5	09-01-04.9	2.4	10	19°46.2'	155°41.3'	
5	09-26-38.9	3.7	10	20°00.7'	155°19.7'	near Paauilo, Hilo
5	16-32-35.3	2.7	6	20°00.1'	155°19.5'	
5	16-51-07.0	2.8	34	19°32.9'	156°18.8'	
6	03-41-11.5	2.5	10	19°24.8'	155°24.0'	
6	05-30-51.8	2.9	8	19°59.4'	155°21.6'	
6	05-32-12.7	2.1	10	19°50.7'	155°20.1'	
6	23-26-41.9	2.8	7	19°56.1'	155°18.4'	
7	00-46-49.1	2.8	9	19°57.7'	155°21.3'	
7	00-52-17.9	2.5	4	20°01.1'	155°17.6'	
7	11-01-00.5	3.3	6	20°00.9'	155°48.5'	
8	03-16-18.2	2.3	1	19°13.9'	155°05.2'	
9	01-29-34.3	2.6	15	19°51.2'	155°21.0'	
9	01-56-57.2	2.1	8	19°21.6'	155°09.9'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
November 9	10-40-04.5	2.1	11	19°25.3'	155°25.3'	
9	19-12-12.2	4.5	8	19°10.6'	155°30.7'	Pahala, Hilo, Kilauea, Naalehu, Kealakekua
9	19-42-21.2	2.3	6	19°11.3'	155°30.5'	
9	20-23-21.4	2.2	8	19°10.8'	155°31.2'	
9	23-00-17.1	2.0	5	19°10.6'	155°30.1'	
10	02-05-02.3	2.1	40	19°22.9'	155°14.8'	
10	13-34-37.4	2.5	8	19°10.0'	155°30.6'	
10	21-16-56.7	2.7	10	19°57.6'	155°21.5'	near Paauilo
10	21-20-25.7	3.1	10	19°57.9'	155°21.3'	near Paauilo
10	21-26-33.5	2.3	9	19°56.9'	155°20.6'	
10	21-35-51.7	2.3	7	19°59.6'	155°20.2'	
10	21-36-43.4	2.9	11	19°57.8'	155°21.4'	near Paauilo
10	21-42-54.0	2.4	9	19°50.6'	155°19.2'	near Paauilo
10	21-44-12.1	2.1	8	19°51.1'	155°19.0'	
11	03-26-29.6	2.6	7	20°00.2'	155°20.4'	near Paauilo
11	03-32-36.4	2.6	9	19°58.4'	155°21.1'	
11	03-41-19.5	2.4	9	19°58.2'	155°20.9'	near Paauilo
11	05-27-18.4	2.3	10	19°20.8'	155°46.4'	
11	09-24-42.0	2.6	8	19°58.8'	155°20.5'	
11	14-19-32.2	3.2	10	19°11.1'	154°50.8'	
12	02-24-22.1	2.6	9	19°52.9'	155°19.5'	
12	11-10-34.7	2.9	10	19°54.8'	155°19.7'	
13	02-02-21.6	2.6	10	18°51.1'	155°09.6'	
13	07-06-47.0	2.9	27	19°22.4'	155°16.5'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
November 13	11-52-43.3	2.5	24	19°29.1'	155°09.5'	
13	14-44-59.3	2.5	4	19°17.1'	155°07.2'	
14	02-33-07.3	3.6	9	19°32.1'	155°36.2'	
14	02-41-31.4	2.3	7	19°32.7'	155°39.0'	
14	03-01-42.9	2.1	6	19°32.1'	155°37.4'	
14	14-11-29.3	2.3	7	19°17.3'	155°16.9'	
14	17-48-54.1	2.1	11	19°23.0'	155°24.4'	
15	02-22-11.3	2.6	9	19°51.1'	155°19.4'	
16	07-06-37.2	2.2	10	20°17.0'	156°14.8'	
16	12-20-16.7	2.9	9	19°53.5'	155°19.5'	
17	05-35-47.4	2.1	7	19°09.8'	155°30.0'	
17	10-29-05.8	2.6	10	19°51.3'	155°21.2'	
17	11-37-39.9	3.2	10	19°54.4'	155°54.0'	
17	16-49-51.8	2.3	5	19°24.5'	155°37.2'	
17	23-05-17.0	2.9	10	19°36.8'	156°31.6'	
17	23-56-34.7	2.6	4	19°33.0'	155°39.9'	
18	01-05-28.5	2.5	1	19°11.2'	155°17.6'	
18	03-00-52.8	2.6	9	19°59.2'	155°21.6'	Paauilo
18	16-56-28.2	3.0	9	19°56.7'	155°20.2'	
19	11-10-10.3	2.5	9	19°53.2'	155°19.7'	
19	22-18-54.7	2.6	9	19°18.6'	155°13.8'	
21	02-21-14.3	2.1	9	19°56.8'	155°20.8'	
22	14-05-44.0	3.6	17	19°33.5'	155°05.2'	Mt. View, Kilauea, Hilo, Paauilo, Pahala
23	13-34-16.0	3.2	32	19°53.1'	155°31.0'	Paauilo, near Pahala

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
November 23	18-57-51.8	2.3	7	19°17.8'	155°28.1'	
24	05-15-52.2	2.6	10	19°09.6'	155°35.5'	
24	09-12-22.9	4.5	35	19°41.8'	156°03.5'	northern half of island
24	09-44-09.1	2.7	45	19°43.4'	156°10.9'	
24	12-51-28.0	2.5	3	19°19.7'	155°52.8'	
25	10-42-57.4	2.6	6	19°11.6'	155°31.3'	
26	22-09-17.9	2.7	35	19°42.4'	156°05.1'	
27	23-56-09.7	2.8	15	19°20.2'	155°56.5'	
30	04-58-47.5	2.3	10	20°03.6'	155°47.4'	
30	21-11-14.0	3.9	10	20 3/4°	162°	
30	23-56-23.3	3.5	9	19°57.9'	155°20.3'	Paauilo
December 1	01-43-52.4	2.4	10	19°55.2'	155°20.4'	
1	04-48-22.3	2.7	9	19°53.1'	155°19.6'	Paauilo
1	07-56-15.3	2.8	9	19°54.0'	155°19.5'	Paauilo
1	22-02-00.1	2.6	7	19°25.6'	155°16.3'	Kilauea
3	15-02-24.7	2.5	10	19°47.4'	155°48.9'	
4	10-12-28.6	2.5	13	20°01.6'	155°21.6'	Paauilo
4	11.36-28.2	2.7	9	19°53.2'	155°19.9'	
5	01-30-57.6	2.0	6	19°18.5'	155°08.0'	
6	18-45-29.3	2.5	6	19°18.3'	155°00.9'	
6	20-22-18.9	2.7	31	19°02.4'	155°21.4'	
6	22-34-29.9	3.1	10	19°20.2'	155°06.3'	Mt. View
7	09-36-03.2	2.3	0	19°02.2'	155°05.5'	
8	11-13-53.8	2.8	10	19°54.9'	155°20.0'	Paauilo
9	00-24-20.5	2.0	6	19°15.1'	155°25.9'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
December 9	17-09-43.0	2.6	10	19°01.3'	154°43.3'	
9	22-56-11.2	2.6	10	19°21.7'	155°15.8'	
9	23-01-45.1	2.5	9	19°20.5'	155°12.4'	
10	04-13-58.6	2.4	9	19°20.0'	155°13.2'	
10	18-17-14.9	2.0	9	19°20.1'	155°12.4'	
11	00-01-04.7	2.1	23	19°20.7'	155°15.8'	
11	02-19-53.6	3.5	10	19°10.4'	155°37.2'	
11	04-57-17.8	2.7	2	19°14.9'	155°05.7'	
12	14-58-34.1	2.3	8	19°20.6'	155°02.1'	Hilo
12	18-27-04.6	3.2	10	19°18.6'	155°14.4'	
12	18-29-03.9	3.1	9	19°18.3'	155°14.1'	
13	00-43-38.0	2.1	9	19°18.8'	155°14.3'	
13	08-59-10.9	2.7	9	19°21.6'	155°09.8'	
14	00-59-58.5	2.4	75?	19°30.8'	155°22.0'	
14	11-00-07.5	2.4	7	19°21.8'	155°02.4'	
15	07-57-57.2	2.1	29	19°19.9'	155°17.8'	
15	18-39-31.9	2.6	10	19°22.1'	155°10.4'	
15	22-03-46.1	2.4	29	20°00.3'	155°37.8'	
16	04-02-42.0	2.0	8	19°30.4'	155°46.2'	
16	23-37-58.0	2.3	8	19°20.0'	155°13.3'	
17	08-43-10.8	2.5	9	19°18.0'	155°14.8'	
17	19-42-25.3	3.1	13	19°03'	156°48'	
17	21-59-31.8	2.0	8	19°26.9'	155°50.6'	
20	03-40-33.5	2.0	7	19°11.3'	155°48.7'	
21	04-48-01.4	2.6	9	19°19.4'	155°13.7'	
22	16-14-14.1	3.4	10	19°19.7'	155°27.8'	

Table 4.--Local earthquakes recorded by seismographs of the U.S. Geological Survey, October, November, December, 1969

Date	Time	Magnitude	Depth (km)	Epicenter		Felt Report
	h m s			Lat. N.	Long. W.	
December 22	16-16-18.3	2.1	9	19°20.0'	155°28.2'	
23	08-03-37.7	2.0	8	19°22.8'	155°27.4'	
23	22-53-33.9	2.3	28	19°17.5'	155°18.6'	
24	13-35-10.9	2.2	8	19°20.4'	155°09.4'	
24	19-34-12.0	2.9	13	20°45'	154°54'	
24	19-39-34.1	3.2	25	19°30.0'	155°08.9'	Kilauea, Hilo
25	00-43-10.6	2.0	5	19°15.4'	155°06.7'	
25	03-28-26.7	3.3	32	19°21.4'	155°17.2'	Kilauea, near Pahala
25	07-42-30.9	2.1	25	19°21.9'	155°16.2'	
26	02-13-32.3	2.1	1	19°11.4'	155°17.7'	
26	12-05-00.3	2.0	7	19°23.2'	155°16.9'	
27	16-59-44.0	4.1	9	19°19.1'	155°14.6'	Hilo, Kilauea
27	17-36-31.4	3.2	10	19°07.4'	155°09.7'	
27	19-37-20.8	3.7	10	19°19.0'	155°13.3'	Hilo, Kealakekua Paauilo
28	11-01-24.0	2.5	19	19°56.5'	155°36.8'	
28	13-52-03.8	2.6	8	19°16.5'	155°13.0'	
28	22-44-29.4	2.0	6	19°23.6'	155°16.8'	
29	06-00-52.7	3.6	10	19°20.1'	155°28.7'	near Pahala
30	10-58-14.6	2.1	29	19°21.3'	155°19.8'	
30	19-43-42.0	2.2	9	19°21.2'	155°12.4'	

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GPO 980-673

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Hawaiian Volcano Observatory
1970 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 57
January, February, and March 1970
By Elliot T. Endo, Robert Y. Koyanagi, and Arnold T. Okamura

Summary 58
April, May, and June 1970
By Elliot T. Endo, Robert Y. Koyanagi, and Arnold T. Okamura

Summary 59
July, August, and September 1970
By Elliot T. Endo, Robert Y. Koyanagi, and Arnold T. Okamura

Summary 60
October, November, and December 1970
By Robert Y. Koyanagi, Arnold T. Okamura, and Patricia Stevenson

Trilateration Network on Kīlauea, Fall 1970
By Donald A. Swanson and Reginald T. Okamura

Open-File Report 2007-1330
U.S. Department of the Interior
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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 57

January, February, and March 1970

By Elliot T. Endo*/, Robert Y. Koyanagi

and Arnold T. Okamura

Issued May 1972

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INTRODUCTION

During the last few years the Hawaiian Volcano Observatory's seismic network has undergone important changes. The telemetered network around the summit of Kilauea has been reinforced and extended, and more stations (mostly telemetered by radio) have been added to the broader Island of Hawaii network (fig. 1). All the telemetered stations are recorded side by side, along with the Uwekahuna chronometer and the WWHV radio trace, on a single 16 mm film strip on a Develocorder at the observatory. Outstation timing has also been improved substantially by the use of crystal chronometers instead of the old mechanical ones. As a result of these improvements, the volume of usable recorded seismic data has increased tremendously, both in the number of stations available for each earthquake and in the number of earthquakes that are sufficiently well recorded to be located. Methods of analysis previously used with the HVO network are too slow and too subjective to enable using the improved network data to fullest advantage.

Detailed studies of microearthquakes in California and Nevada by the Geological Survey's National Center for Earthquake Research (NCER) have generated similar voluminous sets of seismic data. Efficient computer-oriented procedures for data reduction and computer programs for data analysis have been developed and used extensively at NCER. The HVO seismic data are now being analyzed by a joint HVO-NCER team; and the methods and computer programs used are virtually identical with those employed with other networks at NCER.

Seismogram readings are punched on computer cards to provide an input deck for use in the location program HYPOLAYR (Eaton, 1969), which generates an output deck summarizing the solution of each event. The output deck is a convenient source of material for further analyses of the earthquakes, and the input deck is saved for possible reanalysis when better velocity-depth models of the crust are worked out. The velocity-depth model currently used in the determination of hypocenters (as tabulated below) is based on very limited data and represents a broad average of crustal structure along the Hawaiian Ridge. It is anticipated that further refinements in the model will not lead to large changes in hypocenters calculated for events within the network, but hypocenter solutions for some "poorly controlled" events outside the network may be changed substantially.

Velocity model used for locating earthquakes in Hawaii (Eaton, 1962)

Depth to layer (km)	Layer velocity (km/sec)
0.00	3.90
3.10	5.00
11.20	6.80
14.80	8.25

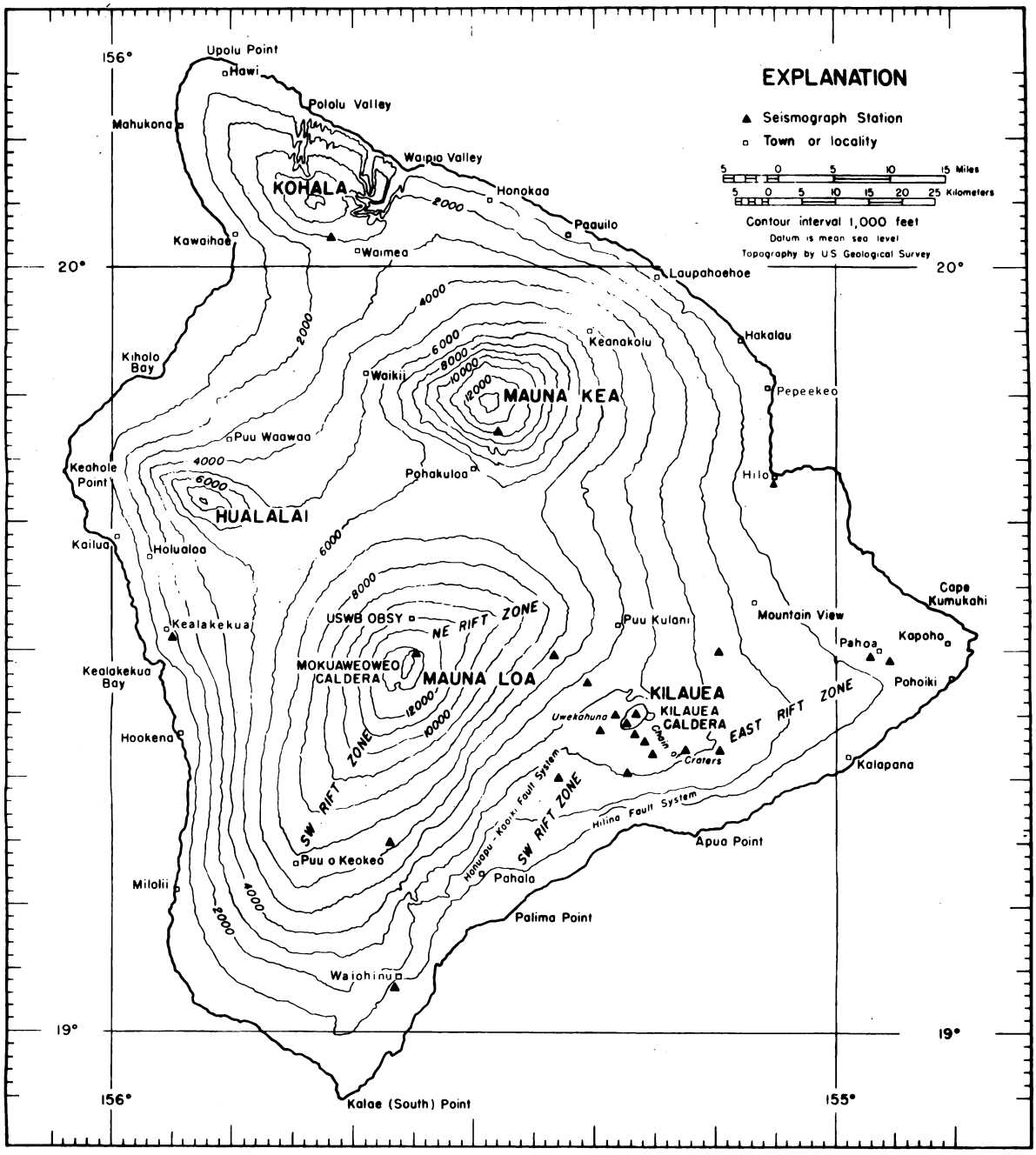

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 2 in terms of geographic coordinates, which are indicated at the edges of the map.

To permit more adequate reporting of results on individual earthquakes and to bring the HVO earthquake reports into conformity with those produced at NCER, some revisions in the format of the HVO summary are required. Beginning with the 1st quarter 1970 the following changes are introduced:

a) The list of local earthquakes includes all events for which satisfactory hypocenters can be determined. This list includes statistics on the hypocenter determination as well as a summary hypocenter quality rating.

b) A map of epicenters on and near Kilauea volcano during the quarter is included.

c) The station list is augmented to describe the timing system, the type of preamplifier (for telemetered stations), and the mode of recording.

d) The velocity-depth model of the crust used in the hypocenter determinations is described.

CHRONOLOGICAL SUMMARY

Mauna Ulu eruption

Eruptive activity continued between Aloi and Alae craters on the east rift. Shallow tremor and degassing were continuous, and on January 25 and 30, February 15, and March 1, weak fountaining and overflow were observed at the vent. Flows reached Aloi and also spread north and eastward. The broad lava shield built by these and earlier overflows is nearly 60 meters high and has overrun a considerable part of the complex pumice and spatter cone built during earlier phases of major fountaining. On April 1, 1970, the volume of lava erupted since the last major fountaining on December 30, 1969 is in the neighborhood of 2×10^6 m^3.

Deformation studies

New tilt and Geodimeter stations were established on the rift zone between Alae and Kane Nui o Hamo to replace those flooded on December 30.

Horizontal strain increased to high levels during the first 3 months of 1970. The distances exhibiting greatest extensions were those that cross the southern part of the caldera. These extensions are consistent with the summit tilt changes as recorded at Uwekahuna and Outlet vaults, although the extensions seem to be larger than would be predicted on the basis of the tilt alone.

Attention is being focused on the Koae fault system. Detailed mapping at a scale of about 1:5,000 was initiated. One continuously recording INVAR-wire creepmeter is being tested on the Kalanaokuaiki Pali about 1 km east of the Ainahou road crossing. Level lines across the Koae system were rerun, and five new tilt triangles between Ahua seismometer and the top of Kalanaokuaiki Pali were located and measured. In addition, a detailed horizontal strain network, consisting of 99 Geodimeter lines averaging 1 km long, was established across the southern part of Kilauea caldera and adjacent part of the Koae fault zone.

Lower east rift earthquakes

About the middle of February, the Pahoa seismograph started to record an increasing number of local earthquakes. Many of these events were recorded in earlier years, but recent instrumental improvements and the change of seismometer location from Pahoa School to Kaniahiku Village (PAX, a site closer to the seismic area) greatly increased recording capabilities. Consequently, larger numbers of earthquakes are being recorded, although there may actually be no more events than in earlier swarms.

To get a better idea of the source of the recent activity, a temporary station was installed at Puu Honuaula (PHO), about 5 km east of the new Pahoa station (PAX). In addition, a portable seismograph was operated at key sites. From the recordings obtained, the center of activity appeared to be near the vents of the 1955 rift eruption, and a few earthquakes scattered as far as 5 km from this center.

The magnitudes of these shocks were relatively small. Of approximately 6,600 recorded quakes, 16 were between magnitudes 2 and 3, and 2 were between magnitudes 3 and 4. Local residents reported feeling the two larger events.

A segment of the level line from Pahoa to Pohoiki was releveled to see if the current earthquake swarm caused any surface deformation. The new altitudes show no significant change from those in March 1969, relative to a bench mark at Pahoa High School. Likewise, the Geodimeter lines along the lower east rift south of Pahoa show no evidence for local swelling but do show changes consistent with long-term trends.

SEISMIC SUMMARY

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in table 2. The location of each seismograph station is listed in table 4, along with a description of the equipment at each station.

Acknowledgments.--Several people or agencies "felt" earthquakes during the first quarter, 1970. Their assistance is gratefully acknowledged.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea summit, 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region; shallow earthquakes along the SW. rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; shallow earthquakes along the northeast-trending Koae fault system south of Kilauea caldera; and earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1970)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Upper east rift	Lower east rift	Others	Remarks
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow					
Jan 1					?	47	42	8			
2					?	58	21	22			
3					?	53	3	23			
4					?	45	?	3			
5					35?	48	6	11			
6					63?	159	11	54			
7					98	239	12	21			
8					42?	229	17	40			
9					23?	267	9	27			
10					9?	38	9	24			

	11				1	31?	69	9	20		
	12					8	61	12	36		
	13					2	32	69	14		
	14	15				2	42	17	20		
	15				1		28	8	23	5	
	16	60					59	7	14		
	17					2	57	15	11		
	18				1	4	389	10	37		
	19				6	5	445	9	32	1	
	20				2	4	331	6	43		
	21					2	1290	9	60		
	22				1	10?	611	6	72		
	23					16?	456	7	60		
	24					8?	187	4	35		
	25				1	6?	115	8	26		
	26					4?	144	6	42		
	27	27				2?	133	10	80		
	28	30			1	2?	165	5	15		
	29				2	10?	266	11	21		
	30		45	1		15?	123	5	6		
	31					?	171	4	6		
Feb	1				10	570?	303	?	7		
	2	36			4	9?	502	9	13		
	3				2		920	8	28	1	
	4				12		465	15	38		
	5				1		372	9	56		
	6						361	3	20		
	7						260	4	18		
	8				6		312	7	177	1	
	9				2		424	7	180	2	
	10				1	1	190	7	75		
	11					22?	222	15	29	2	
	12					18?	39	12	26		

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera--Continued

Date (1970)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW rift and Kaoiki	Upper east rift	Lower east rift	Others	Remarks
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow					
Feb 13					17?	27	16	190			
14					2	35	28	42			
15				3		70	19	15			
16				2		62	8	13	1		
17				8		117	6	6	2		Lower East Rift
18				10		163	10	28	242		swarm - counts
19	20			20	2?	160	5	16	449		taken from new
20					?	110	6	7	792		Pahoa station
21					?	125	8	8	978		PAX located at
22	4				?	101	10	8	538		Kaniahiku
23				4		58	6	15	468		Village
24		4		1	2	126	5	8	139		
25				7		190	11	8	?		
26				2	2	188	10	10	81		
27						580	7	12	26		
28			(1)			413	5	7	?		
Mar 1				4	3	79	7	7	152		
2				3		120	9	7	486		
3					4	159	5	44	430		
4				4		164	10	16	311		
5				4	2	160	3	9	239		

Mar	6					1	162	9	5	397	
	7						66	9	5	113	
	8				1		187	12	17	212	West Pit
	9				1		207	15	21	118	seismometer
	10	20			4		151	13	14	207	changed -
	11				9		99	12	17	36	1.0 sec Benioff
	12				4	6?	171	10	15	226	replaced with
	13					5?	79	14	9	27	0.5 sec. HS-10
	14	1				71?	378	5	10	39	
	15				2	61?	1467	18	29	19	
	16					34?	251	9	23	?	
	17				2		236	10	40	3	
	18				2		375	8	32	3	
	19						248	12	18	13	
	20					5?	534	6	34	6	
	21					2?	282	3	32	4	
	22				3		315	15	51		
	23				2		677	10	49		
	24				2		218	62	36		
	25					6?	134	24	35		
	26					5?	99	17	20		
	27					4?	57	11	14		
	28						81	7	13		
	29				2	1	138	14	37		
	30				1		169	15	31		
	31				2	1	351	8	85	1	

Computer analysis of the HVO network data permits the systematic treatment of far more earthquakes than was possible previously. This extended coverage should permit a more detailed examination of the relationship between earthquakes and volcanism in Hawaii.

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Greenwich Civil Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i /NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	$\geq$ 8	$\leq$ 120°	$\leq$ DEPTH or 5 km
B	$\geq$ 6	$\leq$ 150°	$\leq$ 2 x DEPTH or 10 km
C	$\geq$ 6	$\leq$ 225°	$\leq$ 50 km
	$\geq$ 4	$\leq$ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	$\leq$ 1.0	$\leq$ 2.0	$\leq$ 0.10	$\leq$ 0.25
B	$\leq$ 2.5	$\leq$ 5.0	$\leq$ 0.20	$\leq$ 0.50
C	$\leq$ 5.0		$\leq$ 0.30	$\leq$ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U.S. Geological Survey.

*RMAX is the maximum residual

TABLE 2

SUMMARY OF SEISMIC EVENTS

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 1	3	29	17.4	19-19.1	155-13.8	9.9	1.9	12	199	6.5	0.17	1.3	0.6	0.17	C
1	4	44	53.8	19-22.6	155-23.7	11.1	1.9	14	113	4.6	0.06	0.6	0.3	0.11	B
1	5	22	45.8	19-10.9	155-29.8	36.1	2.7	14	161	14.8	0.29	1.2	2.9	0.09	C
1	9	37	42.6	19-16.9	155-21.4	7.2	1.8	12	177	6.9	0.11	0.8	0.6	0.12	C
1	10	11	58.4	19-18.4	155-14.1	8.4	1.6	12	212	6.5	0.25	1.6	0.8	0.21	C
1	23	28	0.3	19-15.2	155- 7.0	4.3	1.8	10	251	13.3	0.53	2.5	2.0	0.16	C
2	5	50	7.7	19-24.4	155-17.1	13.9	1.4	12	72	0.9	0.12	1.0	1.0	0.11	B
2	5	50	57.8	19-24.0	155-17.0	16.8	1.5	11	74	1.2	0.08	0.5	0.8	0.05	A
2	12	20	32.6	19-23.0	155-36.5?	10.6	3.3	18	168	15.0	0.14	0.9	1.3	0.14	C
2	21	21	27.1	19-21.6	155-23.9	9.6	2.1	9	194	2.9	0.14	0.9	0.7	0.08	B
2	22	8	53.8	19-22.9	155-23.6	11.1	1.9	18	114	5.0	0.08	0.7	0.4	0.14	B
2	22	18	38.0	19-22.3	155-10.1	6.3	2.8	9	164	1.0	0.23	1.3	1.1	0.12	C
3	1	11	41.3	19-17.4	155-28.1	8.8	2.5	15	135	9.9	0.09	0.8	0.6	0.16	B
3	1	58	56.7	19-25.1	155-23.2	11.1	1.5	11	169	6.4	0.10	0.9	0.4	0.11	C
3	3	47	9.9	19-17.9	155- 9.0?	10.8		12	237	7.3	0.25	1.7	1.2	0.10	C
3	3	47	32.9	19-19.9	155-10.4	10.0	1.4	7	259	3.5	1.44	4.6	6.0	0.14	D
3	4	28	1.8	19-25.4	155-38.3	4.0	1.9	5	212	19.5				0.15	D
3	5	54	43.4	19-23.6	155-16.5	14.3	1.7	17	68	0.6	0.07	0.8	0.6	0.14	B
3	13	24	57.1	19-23.0	155-17.8	18.0	2.0	10	89	1.9	0.12	0.9	1.4	0.09	B
3	15	6	27.8	19-16.2	155- 5.1	3.9	2.9	14	234	17.3	0.46	2.2	1.9	0.20	C
3	15	29	59.0	19-18.1	155- 5.7	6.7	2.5	16	223	10.1	0.34	1.7	0.9	0.23	C
3	22	57	15.0	19-15.2	155- 4.3	4.8	2.0	15	255	15.8	0.69	3.2	2.0	0.25	D
4	0	30	17.6	19-54.5	155-29.4	34.6	2.5	13	299	15.0	0.27	1.9	3.0	0.13	C
4	6	59	2.0	19-21.0	155- 1.7	4.4	2.2	15	225	14.6	0.35	1.9	1.3	0.21	C
4	11	40	23.6	19-19.0	155- 8.5	9.6	2.5	11	283	5.8	0.59	3.1	0.8	0.17	D
5	17	54	45.8	19-31.2	155-52.8	6.3	1.0	6	184	4.3	0.48	10.3	7.6	0.03	D
6	4	14	59.1	19-26.7	155-26.5	14.9		7	249	7.9	0.97	4.4	7.6	0.07	D
6	6	16	25.3	19-19.8	155-25.1	11.1		11	160	3.2	0.08	0.8	1.3	0.09	B
6	19	48	38.4	19-22.1	155-12.6	5.6	2.1	15	141	0.5	0.20	1.3	1.0	0.26	C
6	21	50	57.6	19-47.6	155-58.9?	16.5*	2.7	18	240	30.9	0.46	3.1		0.30	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 7	5	18	46.6	19-20.6	155-13.3	9.1	3.0	16	186	2.7	0.12	0.9	0.5	0.15	C
7	7	33	41.0	19-19.8	155- 5.9	5.6	2.1	15	215	8.1	0.33	1.9	1.3	0.22	C
7	7	58	28.9	19-24.6	155-49.3	7.3	1.6	12	189	16.1	0.35	4.8	1.8	0.10	C
7	18	26	60.0	19-31.0	155-41.3	5.4	1.5	13	183	24.5	0.14	1.0	0.8	0.14	C
7	22	25	17.7	19-20.3	155-13.8	9.4		14	165	3.7	0.11	0.9	0.7	0.15	C
7	23	22	54.8	19-19.5	155-14.5	9.1	1.9	15	172	4.5	0.11	0.9	0.5	0.15	C
7	23	32	57.6	19-20.0	155-11.3	8.3		10	223	4.0	0.22	1.7	1.2	0.15	C
8	0	41	19.8	19-21.0	155-13.0	9.0	2.4	16	157	1.8	0.09	0.8	0.4	0.14	C
8	2	5	45.2	19-23.2	155-27.0?	11.7	2.3	14	75	8.6	0.12	0.9	0.7	0.14	B
8	4	40	4.0	19-22.5	155-26.0	12.2		8	146	6.4	0.12	1.0	2.2	0.08	B
8	7	17	36.6	19-19.9	155-13.7	10.1		14	195	4.3	0.06	0.6	0.3	0.08	B
8	7	25	33.5	19-12.8	155-22.9	2.2		14	221	13.6	0.74	1.4	3.4	0.16	C
8	9	35	53.9	19-21.9	155- 7.4	7.0	1.8	14	199	4.5	0.18	1.4	1.0	0.18	C
8	12	20	42.9	19-30.8	155-27.3	10.9		13	246	7.2	0.15	1.0	0.4	0.08	C
8	16	33	27.2	19-23.6	155-23.5	8.2		13	150	6.2	0.12	0.9	0.7	0.15	B
8	17	38	40.4	19-19.0	155-14.1	10.6		12	224	6.0	0.18	1.1	0.4	0.11	C
8	18	13	37.3	19-18.7	155-13.9?	10.2		9	229	6.4	0.28	1.6	0.8	0.12	C
8	18	53	56.5	19-20.4	155-13.9	10.9		10	196	3.6	0.11	0.9	0.4	0.10	B
8	19	0	46.1	19-19.6	155-14.0	10.0		14	172	4.9	0.10	0.8	0.5	0.13	C
8	20	57	21.3	19-17.7	155-13.9	10.0		9	229	7.6	0.19	1.3	0.8	0.10	C
8	21	10	21.6	19-50.4	155-35.5?	60.5*	2.6	17	282	43.5	3.89	32.6		1.77	D
8	21	43	39.6	19-53.9	155-29.0	5.6	1.8	21	208	27.0	0.32	2.2	2.8	0.23	C
8	22	48	41.7	19-20.1	155-15.9	9.3		14	157	2.5	0.06	0.7	0.4	0.10	B
8	22	55	6.0	19-20.0	155-15.8	9.3		15	158	2.8	0.06	0.6	0.4	0.10	B
9	3	20	1.5	19-21.7	155-24.3	11.7		14	125	3.2	0.09	0.7	1.4	0.11	B
9	3	54	13.3	19-20.8	155-28.7	9.5	2.2	17	106	9.6	0.09	0.9	0.6	0.17	B
9	4	49	47.9	19-24.9	155-25.8	10.2		14	233	9.8	0.19	1.0	0.4	0.11	C
9	7	46	56.1	19-48.5	155-48.7	7.2*		13	320	56.2	3.11	18.9		0.11	D
9	13	17	31.8	19-19.9	155-11.4	13.5	1.8	12	238	4.3	0.26	1.3	1.5	0.08	C
9	14	23	27.5	19-18.9	155-13.7	12.9	1.7	12	228	5.9	0.10	0.5	0.7	0.04	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 9	14	56	56.3	19-19.5	155-28.4	13.2	1.6	7	161	9.0	0.13	1.3	2.3	0.06	C
9	17	43	5.6	19-19.0	155-14.5	12.5	1.5	8	293	5.3	0.14	1.0	0.7	0.04	C
9	20	44	17.8	19-25.9	155-22.5	10.8	1.6	16	137	4.4	0.08	0.8	0.4	0.15	B
9	23	7	18.4	19-17.6	155-16.2	10.1	2.5	18	175	5.1	0.10	0.8	0.4	0.11	C
9	23	13	40.9	19-17.6	155-16.1	14.5	0.9	9	237	5.2	0.14	0.6	1.1	0.03	C
9	23	22	46.7	19-17.8	155-16.1	10.1		15	202	4.8	0.10	0.7	0.3	0.10	B
10	5	48	37.4	19-20.1	155-11.8	11.0	1.4	15	211	3.9	0.10	0.8	0.3	0.11	C
10	12	33	32.1	19-25.6	155-24.6	13.1	1.5	8	209	7.8	0.27	1.0	2.3	0.05	C
10	18	56	33.7	19-10.4	155- 5.2	0.5	2.0	14	274	22.6	1.59	3.2	5.4	0.18	D
10	19	9	20.8	19-16.1	155- 5.9	9.1	1.9	12	247	12.7	0.61	3.3	1.2	0.14	D
10	19	41	42.8	19-19.1	155-14.6	9.2	1.5	15	217	5.1	0.20	1.4	0.8	0.17	C
10	23	48	3.2	19-20.1	155-28.6	12.7	1.6	9	168	9.3	0.11	1.2	2.4	0.08	C
11	2	15	39.4	19-21.2	155-17.9	29.5	2.0	18	73	2.2	0.13	0.9	1.3	0.10	A
11	9	30	1.9	19-20.2	155-12.4	11.4	1.4	14	208	3.4	0.09	0.9	0.3	0.11	C
11	15	29	52.4	19-18.4	155-15.7	8.9	1.8	15	224	4.3	0.21	1.3	0.7	0.15	C
11	15	55	57.0	19-18.0	155-17.2	8.2	1.7	11	230	3.9	0.26	1.8	0.9	0.20	D
12	0	59	16.5	19-19.4	155-11.4	11.2	1.7	10	217	5.1	0.18	1.3	0.6	0.10	C
12	2	23	41.8	19-24.7	155-15.7	9.5		9	178	2.3	0.62	1.8	3.8	0.17	C
12	4	34	12.1	19-17.4	155-24.5	17.2	1.5	7	302	5.6	1.50	8.0	8.4	0.09	D
12	8	3	30.6	19-18.3	155-14.4	14.5	1.3	9	234	6.3	0.14	0.6	1.1	0.03	C
12	8	51	17.3	19-22.4	155-23.3	9.9	1.9	9	181	4.0	0.67	1.4	4.0	0.11	C
12	14	8	59.5	19-25.4	155-23.5	11.5	1.8	12	185	6.4	0.16	0.7	1.3	0.06	B
12	17	10	42.1	19-19.4	155-11.9	13.8	1.6	5	238	5.5				0.04	D
12	17	16	8.9	19-19.4	155-11.9	8.8	1.3	10	236	5.0	0.30	1.8	0.9	0.16	C
12	17	26	59.4	19-17.2	155-10.1	12.9	1.7	9	282	8.5	0.33	2.3	1.1	0.08	C
12	17	39	35.0	19-19.8	155-10.3	13.2	1.2	9	265	3.7	0.21	1.0	1.3	0.04	C
12	17	41	2.6	19-20.6	155-12.6	9.0	1.5	8	201	2.7	0.52	2.5	2.9	0.21	C
12	17	43	46.6	19-17.5	155-10.2?	13.7	1.4	8	279	7.9	0.38	1.6	1.8	0.08	C
12	18	31	45.2	19-16.9	155- 4.4	7.5	2.2	13	246	13.3	0.59	3.1	1.6	0.22	D
12	20	50	26.6	19-19.1	155-13.9	10.9	1.7	11	223	5.5	0.15	1.0	0.4	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 12	20	52	18.8	19-19.4	155-15.9	9.0	2.1	15	211	3.0	0.15	1.0	0.6	0.14	C
12	23	15	9.3	19-24.3	155-18.2	18.5	1.9	12	94	1.5	0.20	1.1	2.1	0.10	B
12	23	54	55.0	19-20.1	155-14.5	11.0	1.1	10	232	3.5	0.12	0.9	0.3	0.08	C
13	6	20	6.5	19-25.0	155- 9.1?	53.0*	2.5	16	123	6.0	0.55	6.8		0.44	C
13	6	23	31.5	19-20.0	155-12.1	8.3	1.2	10	223	3.8	0.30	1.5	1.7	0.16	C
13	6	29	30.9	19-19.8	155-12.0	9.1	1.4	12	229	4.3	0.21	1.2	0.7	0.14	C
13	6	32	32.6	19-20.5	155-12.3	9.2		11	205	2.8	0.26	1.2	1.5	0.17	C
13	6	47	49.6	19-20.7	155-13.4	10.0		9	190	2.7	0.44	1.1	2.3	0.09	C
13	10	30	44.6	19-20.5	155-12.6	15.3	1.5	8	272	2.8	0.18	1.1	1.2	0.03	C
13	20	27	22.9	19-12.8	155-27.9	8.9	2.3	13	168	15.8	0.10	1.0	0.7	0.14	C
13	23	29	28.6	19-22.8	155-21.6	5.8	1.0	6	158	3.7	0.30	0.8	2.5	0.05	C
14	0	38	59.2	19-20.4	155-26.9	14.8	1.9	6	288	6.4	1.45	6.2	8.2	0.08	D
14	7	29	38.3	19-23.4	155-31.5	22.2	2.1	11	298	15.5	0.30	2.2	3.6	0.11	C
14	11	17	40.4	19-18.6	155-16.2	9.6		9	239	3.4	0.15	1.0	0.6	0.09	C
14	12	14	57.8	19-19.7	155-11.6	11.4		10	238	4.8	0.28	1.5	1.7	0.10	C
14	12	15	53.6	19-19.6	155-11.7	8.1	1.6	8	235	4.7	0.42	2.7	1.3	0.17	D
14	16	44	56.7	19-19.4	155-10.5	11.2	1.4	11	219	4.5	0.10	0.9	0.2	0.06	B
14	17	18	25.4	18-53.0	155-25.5	8.0*		5	337	50.3	6.35	37.4		0.04	D
14	21	12	47.6	19-25.1	155-22.2	10.3	2.4	15	136	5.1	0.09	0.8	0.4	0.14	B
14	22	12	10.0	19-18.7	155-15.5	14.2		7	244	4.2	0.36	1.4	2.4	0.04	C
14	22	15	12.5	19-18.0	155-27.3	8.3	1.7	13	133	8.1	0.10	1.1	0.9	0.17	B
14	22	17	54.1	19-18.7	155-25.7?	11.5		8	156	5.0	0.16	1.7	2.2	0.13	C
14	23	2	34.2	19-16.3	155-26.6	3.2	1.8	14	146	9.2	0.15	1.4	1.8	0.25	C
15	2	14	4.9	19-19.0	155-12.7	10.8	1.1	14	219	5.5	0.14	1.0	0.3	0.12	C
15	2	28	7.6	19-16.1	155-20.9	9.9		11	168	8.5	0.09	0.8	0.5	0.08	B
15	2	33	59.4	19-16.5	155-21.0	9.8		11	166	7.9	0.09	0.8	0.5	0.09	B
15	3	11	49.3	19-19.6	155-11.5	11.0		9	216	4.9	0.22	1.9	0.6	0.15	C
15	5	32	10.1	19-19.4	155-16.2	11.2		10	225	2.4	0.34	1.0	1.7	0.08	C
15	11	51	37.9	19-16.7	155- 8.9	7.8		10	239	9.5	0.50	2.7	1.6	0.16	D
15	12	13	6.2	19-49.4	155- 2.8?	37.1	1.4	22	297	39.4	0.28	2.7	2.4	0.22	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 15	13	34	23.6	19-11.4	155-31.7	7.6	2.1	12	148	11.4	0.11	1.1	0.8	0.17	B
15	20	7	24.5	19-10.1	155-31.2	8.2		10	158	13.6	0.11	1.1	0.9	0.14	C
15	23	57	55.0	19- 3.9	155- 7.9?	7.2		17	244	33.1	0.37	3.6	8.1	0.23	D
15	23	58	18.0	19- 9.4	155-30.4?	7.8		9	172	15.2	0.19	2.0	1.7	0.23	C
16	0	50	46.2	19-24.0	155-27.6	8.4	1.7	17	136	13.1	0.13	1.0	0.8	0.20	B
16	7	1	17.4	19-21.0	155-18.5	28.0	1.1	17	96	2.5	0.15	0.9	1.5	0.12	B
16	9	27	59.3	19-19.4	155-13.6	10.6		8	221	5.0	0.10	0.9	0.4	0.05	B
16	15	10	40.0	19-21.2	155-17.9	23.0	2.2	16	92	2.2	0.16	1.2	1.5	0.11	B
16	16	44	24.7	19-57.6	155-26.4?	13.2	1.6	11	302	20.4	0.49	4.1	2.2	0.21	D
17	9	50	4.3	19-18.4	155-20.2	27.5		14	195	5.9	0.45	3.8	3.7	0.24	C
17	12	8	36.6	19-10.2	155-34.4	5.2		13	135	9.9	0.08	0.8	0.6	0.12	B
17	16	5	19.3	19-11.4	155-29.9	8.2		12	162	14.1	0.11	1.0	0.7	0.14	C
17	16	35	12.2	19-16.3	155-25.5?	11.5		9	199	8.2	0.26	1.4	3.0	0.10	C
17	18	52	44.3	19-21.5	155-29.1	7.9		8	135	10.4	0.16	1.6	1.5	0.16	B
17	22	23	37.1	19-14.4	155-48.0	8.3	2.4	15	282	19.1	0.31	2.0	1.1	0.16	C
18	0	56	24.4	19-15.1	155- 5.6	5.6		13	254	14.7	0.61	2.9	1.7	0.21	D
18	1	44	43.3	19-14.2	155- 4.5	3.7	1.6	14	260	20.5	0.77	3.4	2.2	0.22	D
19	1	40	50.1	19-22.8	155-26.4?	7.7	0.8	15	126	7.3	0.11	0.9	0.8	0.18	B
19	6	57	32.4	19-22.5	155-16.3	27.4		16	78	0.8	0.21	1.3	2.0	0.13	B
19	7	3	5.9	19-22.0	155-23.5?	7.6		12	111	3.4	0.11	1.1	1.1	0.18	B
19	8	8	24.8	19-21.3	155-13.9	8.5	2.5	19	149	2.4	0.09	0.8	0.4	0.17	B
19	8	52	23.9	19-23.5	155-17.2	17.5		16	67	0.7	0.05	0.5	0.6	0.08	A
19	9	1	34.0	19-10.5	155-35.1	8.7		8	145	8.8	0.07	0.8	0.5	0.08	B
19	21	15	9.2	19-10.4	155-25.7	22.7		10	196	18.5	0.27	2.3	4.4	0.09	C
19	22	10	55.2	19-28.0	155-52.8	10.4	1.6	17	175	7.3	0.12	2.7	2.4	0.11	C
20	1	19	34.9	19-23.6	155-35.8	9.4	2.0	19	104	16.2	0.15	0.9	1.0	0.16	B
20	2	1	22.8	19-16.8	155-19.8	31.2		17	169	7.4	0.18	0.9	1.7	0.08	B
20	2	56	19.6	19-17.3	155- 7.4	5.3		16	238	9.5	0.40	1.9	1.1	0.22	D
20	4	11	11.0	19-19.3	155-16.9	30.8		17	209	1.7	0.19	1.9	1.4	0.12	C
20	7	54	40.7	19-23.5	155- 4.2	6.6	2.2	15	198	10.5	0.25	2.0	1.2	0.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 20	10	35	54.0	19-21.4	155-10.4	9.6	1.4	15	208	1.0	0.16	1.2	0.6	0.14	C
20	18	20	54.2	19-21.4	155-11.2	6.2		12	185	2.2	0.23	1.6	0.9	0.19	C
20	20	50	36.4	19-23.3	155-16.7	14.6	0.7	18	59	0.2	0.06	0.8	0.5	0.14	B
21	7	5	36.0	19-18.5	155-18.8	36.1		11	227	3.8	0.35	1.6	2.6	0.05	C
21	7	55	56.6	19-19.6	155-10.9	7.9		9	237	4.4	0.40	2.9	1.2	0.17	D
21	15	31	26.8	19-18.5	155-16.1	8.0		13	199	3.7	0.15	1.0	0.7	0.15	C
21	18	2	36.9	19-16.6	155- 9.6	8.2	1.2	13	240	9.7	0.79	4.1	2.3	0.29	D
21	20	16	5.1	19-22.4	155-25.9	9.1	1.9	16	77	6.1	0.09	0.9	0.8	0.19	B
22	0	29	24.9	19-24.0	155-16.5?	3.0	0.5	8	111	1.3	0.08	0.6	0.4	0.08	B
22	0	31	27.8	19-23.9	155-16.3	4.0	0.8	11	85	1.3	0.10	0.5	0.9	0.11	B
22	0	33	28.9	19-24.3	155-16.4	3.5		7	111	1.5	0.08	0.4	0.7	0.05	B
22	0	33	49.2	19-23.9	155-16.1	3.1		6	142	1.5	0.12	0.9	0.6	0.08	B
22	0	36	56.2	19-24.1	155-16.0	2.6		6	99	2.2	0.11	0.7	0.7	0.08	B
22	0	37	39.1	19-24.3	155-16.4	2.7		5	114	1.6				0.03	D
22	0	38	23.4	19-23.1	155-17.0	11.3		6	87	4.9	1.15	2.3	8.0	0.18	C
22	0	43	36.0	19-24.3	155-15.4	1.7		10	110	2.9	0.05	0.3	0.6	0.07	A
22	0	49	10.8	19-24.1	155-17.0	2.9		7	95	1.4	0.13	0.8	1.4	0.09	B
22	0	50	46.4	19-22.1	155-16.1	9.9		6	122	4.3	2.11	5.0	14.0	0.29	C
22	0	55	3.8	19-24.4	155-16.7	6.5	1.7	12	58	1.1	0.10	0.9	0.9	0.20	B
22	0	58	52.0	19-24.5	155-16.2	1.6		7	112	1.6	0.08	0.5	0.6	0.08	B
22	0	59	24.4	19-23.9	155-17.0?	3.4		9	54	1.7	0.13	0.7	1.4	0.19	B
22	1	0	40.7	19-23.6	155-16.8	3.9		8	93	2.7	0.18	1.0	3.1	0.18	B
22	1	1	11.1	19-24.1	155-16.6	2.8		11	79	1.3	0.06	0.5	0.3	0.11	B
22	1	3	20.2	19-24.2	155-16.0	1.9		7	101	3.3	0.10	0.8	1.3	0.11	B
22	1	3	44.6	19-24.2	155-16.4?	2.2		8	104	1.6	0.06	0.5	0.5	0.07	B
22	1	4	53.1	19-24.3	155-16.0	2.8		7	124	2.1	0.09	0.7	1.0	0.08	B
22	1	5	57.2	19-24.6	155-16.7	2.4		7	106	0.8	0.08	0.6	0.6	0.06	B
22	1	9	24.1	19-24.8	155-16.9	1.6	-0.1	7	204	1.0	0.04	0.3	0.2	0.03	B
22	1	10	10.9	19-23.9	155-16.5	2.9		13	76	1.0	0.06	0.5	0.3	0.15	B
22	1	11	17.9	19-21.9	155-25.6	8.4	1.7	14	119	5.1	0.14	1.2	0.9	0.26	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 22	1	12	28.8	19-24.1	155-16.6	2.8		9	108	1.4	0.05	0.4	0.3	0.05	A
22	1	13	12.1	19-24.2	155-16.1	3.1		6	232	1.9	0.12	0.6	0.5	0.03	C
22	1	14	48.1	19-24.7	155-15.8	0.1		9	110	2.2	0.12	0.4	10.6	0.08	B
22	1	15	9.8	19-24.1	155-16.3	2.3		11	92	1.6	0.08	0.6	0.7	0.11	B
22	1	18	17.1	19-24.5	155-16.4	0.5		7	178	1.3	0.11	0.4	1.4	0.05	B
22	1	19	16.5	19-23.8	155-16.0	3.9		12	90	1.6	0.07	0.4	0.8	0.10	A
22	1	20	18.6	19-23.9	155-16.4?	3.1		11	78	1.1	0.07	0.6	0.4	0.14	B
22	1	21	53.0	19-21.9	155-27.4?	11.0	2.4	13	118	8.0	0.12	1.0	0.6	0.17	B
22	1	22	52.6	19-26.3	155-14.7	7.9	0.6	7	304	4.7	1.51	8.7	6.9	0.26	D
22	1	24	44.7	19-24.4	155-15.8	2.0		9	118	2.4	0.07	0.5	0.8	0.08	A
22	1	26	5.8	19-27.5	155-13.1	8.0*		5	329	8.4	0.58	2.6		0.02	D
22	1	26	54.8	19-24.3	155-16.6	2.7		8	100	1.4	0.04	0.3	0.3	0.03	A
22	1	29	17.2	19-24.3	155-16.2	3.1		6	223	1.8	0.63	2.6	2.9	0.09	C
22	1	29	42.4	19-24.4	155-16.5	2.5		6	110	1.3	0.03	0.3	0.3	0.02	B
22	1	30	9.9	19-24.2	155-16.7	3.7		8	105	1.4	0.13	0.7	1.0	0.08	A
22	1	32	12.8	19-32.2	155-11.1?	8.0*		5	337	19.1	3.56	13.9		0.07	D
22	1	32	38.4	19-24.2	155-15.9	3.1		5	238	2.1				0.01	D
22	1	33	58.6	19-24.3	155-16.4	3.4		6	227	1.8	0.07	0.3	0.3	0.01	C
22	1	36	4.2	19-24.8	155-16.0	0.5		8	147	2.6	0.09	0.5	0.9	0.08	B
22	1	37	23.4	19-28.5	155-15.6?	3.1*	0.2	7	324	6.6	1.15	5.5		0.31	D
22	1	38	42.0	19-24.3	155-16.7	2.9		6	115	1.6	0.03	0.2	0.1	0.02	B
22	1	40	43.3	19-24.4	155-16.5	2.7		7	103	1.3	0.03	0.2	0.2	0.02	B
22	1	45	37.7	19-24.7	155-16.2	3.4		7	242	1.4	0.25	1.0	1.1	0.05	C
22	1	46	4.7	19-25.0	155-16.7	0.0*	-0.5	10	112	0.5	0.04	0.2		0.06	B
22	1	48	9.8	19-24.3	155-16.6	2.7		7	101	1.4	0.07	0.4	0.4	0.05	B
22	1	50	20.4	19-24.8	155-15.2	4.1		6	274	3.8	0.51	1.9	1.7	0.04	C
22	1	54	10.2	19-25.0	155-16.6?	0.0*		7	164	0.8	0.14	0.7		0.14	C
22	1	55	31.8	19-24.2	155-16.7	3.4		9	97	1.4	0.07	0.4	0.6	0.07	A
22	1	57	14.8	19-30.2	155-15.0?	8.0*	0.5	8	328	10.0	1.00	6.7		0.31	D
22	2	2	58.3	19-20.8	155-23.9	8.3		9	220	1.5	0.18	1.1	0.8	0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 22	2	5	43.5	19-24.2	155-16.5	2.9		9	102	1.5	0.05	0.4	0.3	0.05	A
22	2	7	41.9	19-24.6	155-16.4	3.1		7	217	1.2	0.13	0.6	0.6	0.03	B
22	2	17	58.1	19-30.8	155-14.8?	8.0*	1.4	8	330	11.0	0.81	7.3		0.37	D
22	2	19	23.4	19-23.9	155-16.6	3.1	0.3	12	98	1.1	0.07	0.5	0.7	0.10	B
22	2	20	10.3	19-27.7	155-13.9	8.0*		5	318	8.4	2.06	9.7		0.08	D
22	2	22	5.8	19-24.8	155-16.4	2.3	0.6	8	119	2.0	0.07	0.5	0.7	0.07	A
22	2	23	10.1	19-24.1	155-16.4?	2.7	0.9	10	90	1.5	0.07	0.4	0.7	0.07	B
22	2	31	24.6	19-28.1	155-11.8	8.0*		7	328	10.8	1.46	6.0		0.07	D
22	2	33	19.5	19-24.7	155-16.3	3.3		6	236	1.3	0.17	1.1	0.4	0.05	C
22	2	39	51.2	19-26.9	155-13.3	8.0*		5	326	7.4	1.38	6.5		0.07	D
22	2	41	7.5	19-24.4	155-16.6?	3.0		6	195	1.1	0.10	0.5	0.5	0.02	C
22	2	41	24.9	19-28.7	155-13.1	8.0*		7	326	9.8	1.40	5.7		0.06	D
22	3	13	27.1	19-24.1	155-16.2	2.8		8	108	1.7	0.02	0.2	0.1	0.03	A
22	3	25	21.2	19-25.1	155-17.0	8.0*		5	289	0.4	0.24	4.3		0.06	D
22	3	28	11.0	19-30.4	155-12.4	8.0*		7	331	13.0	2.63	10.3		0.07	D
22	3	36	2.8	19-24.0	155-16.6?	4.0	0.9	9	174	1.2	0.16	0.8	1.1	0.14	C
22	3	41	41.3	19-31.9	155-14.9?	8.0*	1.3	7	333	12.9	1.19	10.4		0.46	D
22	3	48	55.7	19-19.9	155-28.5	10.0		9	149	9.1	0.11	1.2	0.8	0.11	B
22	5	1	10.6	19-24.0	155-27.4	11.0		10	226	10.1	0.16	1.0	0.4	0.08	C
23	4	51	46.4	19-22.8	155- 3.7	4.2	2.2	16	188	11.2	0.19	1.2	1.1	0.18	C
23	5	0	32.9	19-21.0	155-12.9	9.8	1.2	16	181	1.8	0.09	0.8	0.4	0.13	C
23	11	8	40.7	19-20.5	155- 6.3	5.8	1.8	13	210	6.9	0.29	2.0	1.1	0.20	C
23	13	15	27.2	19-26.3	155-14.2	29.7		14	112	5.5	0.18	1.1	1.8	0.13	B
23	14	54	3.3	19-54.6	155-53.1?	41.7	3.4	12	256	110.6	2.19	9.3	19.4	0.12	D
23	17	39	38.1	19-22.1	155-10.0	6.5	1.0	11	172	0.5	0.15	0.8	0.7	0.08	C
23	19	6	50.5	19-17.5	155- 7.1	5.0		15	237	13.0	0.37	1.9	1.6	0.18	C
23	19	16	17.8	19-24.1	155-16.4	3.2	0.9	11	91	1.6	0.04	0.4	0.3	0.09	A
23	21	59	27.8	19-23.5	155-16.9	14.0	1.7	17	55	0.2	0.04	0.5	0.4	0.09	B
23	22	9	38.4	19-20.6	155-11.5	10.7		15	197	3.4	0.11	0.9	0.4	0.13	C
23	22	26	38.7	19-23.1	155-16.5	14.2	1.3	14	66	0.8	0.08	0.9	0.6	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 24	1	52	50.4	19-19.7	155-18.5	7.4	1.8	17	151	2.1	0.10	0.8	0.7	0.13	C
24	7	38	48.1	19- 4.4	155-21.3	14.0*	2.0	17	223	26.8	0.22	1.7		0.14	C
24	10	18	11.1	19-25.9	155-23.7	11.0	1.1	11	175	6.2	0.06	0.5	0.2	0.07	B
24	14	18	36.1	19-28.8	155-53.1	11.8	2.0	11	188	5.9	0.26	4.3	5.4	0.12	C
24	19	44	38.1	19-20.3	155- 1.5	7.3	2.0	13	229	15.1	0.34	2.0	1.1	0.18	C
25	7	20	41.8	19-19.2	155-11.8	21.8	1.3	13	179	5.7	0.27	2.2	3.3	0.17	C
25	12	24	5.9	19-30.6	155-19.4	15.4	1.4	12	76	5.9	0.06	0.6	1.1	0.07	A
25	13	58	55.3	19-19.7	155- 8.9	8.2	2.0	16	207	4.4	0.20	1.3	0.7	0.16	C
25	15	11	8.6	19-23.2	155-15.1	3.3		9	166	2.0	0.10	0.8	1.4	0.10	C
25	15	24	51.9	19-20.2	155-13.7	9.9		15	192	3.8	0.10	0.8	0.4	0.12	C
25	16	42	34.3	19-20.7	155-12.4	9.5	1.9	17	169	2.5	0.11	0.9	0.5	0.16	C
25	19	18	34.4	19-24.6	155-30.0	10.4	2.2	15	152	14.3	0.13	0.8	0.5	0.13	C
26	0	49	47.1	19-25.7	155-30.4	22.6	2.4	15	157	14.5	0.26	1.3	3.7	0.13	C
26	4	52	29.0	19-31.4	155-16.1	19.0	2.4	12	253	11.4	0.44	3.6	4.2	0.15	D
26	6	0	36.4	19-10.0	155-34.3	3.3	2.8	17	136	10.3	0.12	0.8	0.8	0.15	B
26	7	2	48.5	19-21.5	155-26.1	9.5	2.8	19	93	5.4	0.09	0.8	0.6	0.19	B
26	16	2	4.5	19-18.4	155-10.8	6.3		12	249	6.5	0.40	2.2	1.3	0.20	C
26	18	58	13.6	19-16.8	155-23.6	6.4		12	154	6.4	0.12	0.9	1.2	0.15	C
27	3	30	28.3	19-24.2	155-24.7	8.3	1.6	18	141	7.8	0.10	0.8	0.7	0.16	B
27	3	34	16.7	19-10.9	155-31.1	8.6		13	155	12.9	0.11	1.2	1.0	0.16	C
27	8	57	28.1	19-17.4	155- 6.2	5.4	3.3	18	204	103.2	0.33	1.7	1.3	0.23	C
27	9	2	38.1	19-19.6	155-10.5	7.1		9	260	4.2	0.49	2.8	1.3	0.18	D
27	9	8	44.2	19-21.2	155- 9.9	8.0	1.8	16	250	1.2	0.18	1.1	0.6	0.14	C
27	9	9	9.1	19-16.9	155- 5.9	4.2	3.8	18	207	104.3	0.30	1.4	1.2	0.20	C
27	9	23	55.3	19-19.6	155-10.7	7.4		11	256	4.2	0.39	2.2	1.0	0.18	C
27	12	17	46.6	19-19.0	155-14.2	8.3	1.9	16	204	5.6	0.17	1.1	0.7	0.17	C
27	13	29	0.3	19-19.9	155-15.7	7.9		13	201	3.1	0.14	0.8	0.6	0.12	C
27	15	41	36.0	19-18.6	155-16.0	8.2		15	199	3.7	0.15	1.0	0.7	0.15	C
27	17	15	49.0	19- 8.4	155-26.0	43.6	2.7	11	253	22.2	1.76	5.4	15.1	0.14	D
27	18	42	0.9	19-19.5	155-12.7	7.9	1.9	15	211	4.6	0.18	1.1	0.7	0.18	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 27	19	41	15.7	20- 2.1	155-21.5	6.7	2.8	19	232	30.3	0.52	2.0	1.9	0.16	C
27	21	27	3.9	19-19.4	155-12.6	10.6	2.0	15	216	4.9	0.11	0.9	0.3	0.10	B
27	21	31	54.3	19-23.6	155-17.6	15.0		11	60	1.4	0.08	0.7	0.9	0.07	A
28	2	47	37.2	19-19.3	155-10.1?	10.5		10	271	4.7	0.44	2.6	2.1	0.13	D
28	7	49	58.1	19-16.3	155-23.9	4.7	2.1	13	164	7.2	0.10	0.9	1.2	0.13	C
28	16	47	25.6	19-20.4	155-25.4	10.4	1.8	14	148	3.6	0.08	0.7	0.5	0.11	B
29	0	31	38.4	19-20.4	155-12.7	9.9		15	195	2.9	0.10	0.8	0.4	0.14	C
29	9	3	14.9	19-21.6	155-28.9	8.4	2.4	13	135	10.1	0.12	1.1	0.8	0.17	B
29	17	51	8.1	19-24.1	155-25.1	10.7	1.9	16	124	7.8	0.08	0.7	0.4	0.13	B
29	18	14	43.0	19-19.0	155-17.7	30.7	2.9	17	160	2.2	0.15	1.0	1.4	0.11	C
29	19	43	20.9	19-20.8	155-12.3	9.7	1.9	15	190	2.3	0.13	0.9	0.5	0.14	C
29	20	44	1.4	19-18.0	155-14.5	8.5	2.1	17	214	6.4	0.20	1.1	0.7	0.18	C
29	20	55	11.9	19-18.5	155-13.3	10.6		10	222	6.4	0.19	1.5	0.9	0.11	C
29	22	50	19.2	19-19.6	155-16.1	9.6		16	187	2.4	0.06	0.4	0.3	0.08	B
30	1	28	50.8	19-19.2	155-14.1	9.5	1.9	16	199	5.2	0.08	0.6	0.3	0.10	B
30	3	6	20.2	19-43.8	155-54.0	8.7		17	293	105.4	0.19	3.6	3.6	0.10	D
30	6	2	49.7	19-21.6	155-24.1	10.2		14	111	2.9	0.10	0.9	0.5	0.16	B
30	6	25	16.5	19-29.5	155-41.8	5.1		9	236	28.2	0.21	0.9	0.7	0.06	C
30	19	3	1.5	19-22.9	155-26.1?	13.8	2.0	15	124	6.9	0.11	1.1	2.2	0.13	B
30	19	51	47.5	19-17.9	155- 7.5	6.4	2.4	15	219	8.5	0.35	1.9	1.5	0.22	C
31	14	44	53.7	19-22.0	155-26.9	9.8	2.6	17	116	7.1	0.10	0.9	0.7	0.18	B
31	18	7	36.9	19-25.8	155-32.9	31.0	2.3	13	174	18.4	0.35	1.7	4.2	0.18	C
31	20	10	19.8	19-37.1	155-17.0	22.6	1.6	12	158	17.4	0.28	1.4	5.0	0.14	C
31	20	44	16.4	19-26.0	155-26.3	10.7	2.4	19	58	8.7	0.10	0.8	0.5	0.16	B
FEB 1	1	55	0.4	19-20.9	155-26.3	11.1		9	255	5.4	0.32	2.3	0.8	0.13	C
1	3	6	16.8	19-20.0	155- 0.6	9.4	1.9	15	243	16.8	0.32	1.8	0.7	0.13	C
1	18	26	6.1	19-26.9	155-24.4	9.7	1.9	13	115	5.6	0.05	0.5	0.4	0.09	A
1	21	12	10.2	19-45.7	155-21.4?	13.0	2.5	12	228	10.4	0.52	5.3	4.3	0.10	D
2	6	28	49.2	19-16.7	155-24.1	6.3		16	157	6.6	0.12	0.9	1.0	0.20	C
2	10	14	44.4	19-23.8	155-17.6	7.5		7	145	1.6	0.28	1.0	1.8	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB	2	16	42 42.7	19-22.4	155- 6.1	5.2		14	201	6.9	0.21	1.7	1.1	0.21	C
	2	16	51 46.3	19-19.3	155-15.7	9.8	1.9	15	193	3.4	0.07	0.6	0.3	0.09	B
	3	3	13 20.2	19-21.0	155-12.4	9.5		17	185	2.0	0.11	0.8	0.4	0.16	C
	3	6	7 17.4	19-23.5	155-17.1	3.1	1.0	9	109	0.5	0.03	0.2	0.2	0.04	A
	3	6	37 29.5	19-28.2	155-50.8	7.7	3.5	20	154	9.6	0.14	1.2	1.0	0.17	C
	3	7	7 10.0	19-20.1	155-28.3	10.0	3.4	20	115	8.8	0.08	0.7	0.5	0.16	B
	3	7	59 14.9	19-23.8	155-30.4?	8.6	2.2	9	110	13.3	0.09	0.8	0.7	0.13	B
	3	15	3 36.1	19-23.6	155-17.2	7.7	1.7	13	98	0.7	0.14	0.9	0.9	0.17	B
	3	18	17 23.7	19-23.5	155-16.9	2.3	1.0	10	86	0.2	0.06	0.3	0.4	0.07	A
	3	19	41 16.6	19-16.3	155- 8.1	3.9	2.4	16	225	13.4	0.42	1.9	1.6	0.24	C
	3	22	50 3.4	19-24.7	155-17.2	0.0	1.0	12	91	0.4	0.13	0.6	13.8	0.17	B
	3	23	10 35.7	19-24.7	155-16.9?	0.1	0.6	10	95	0.3	0.09	0.5	2.4	0.13	B
	3	23	28 39.0	19-24.4	155-17.4	0.1	0.7	10	106	0.6	0.13	0.6	3.4	0.13	B
	3	23	40 34.0	19-28.5	155-13.6?	8.0*	2.0	9	276	8.9	1.07	7.3		0.71	D
	3	23	59 37.7	19-29.5	155-15.1?	8.0*	2.1	8	324	8.7	0.76	6.1		0.34	D
	4	0	29 44.6	19-23.6	155-17.1	5.6	2.5	14	99	0.7	0.09	0.6	0.7	0.15	B
	4	1	5 24.6	19-23.6	155-17.2	6.1	2.7	20	53	0.9	0.06	0.6	0.5	0.17	B
	4	1	15 24.4	19-23.4	155-17.1	1.8		6	143	0.6	0.06	0.2	0.4	0.02	B
	4	1	20 6.4	19-23.4	155-17.2	1.9		6	148	0.8	0.21	0.5	1.3	0.04	B
	4	5	17 32.6	19-23.7	155-17.2	2.0	0.9	9	101	0.9	0.06	0.2	0.4	0.03	A
	4	6	8 25.2	19-22.4	155-18.2	27.8	3.1	22	60	3.0	0.16	1.0	1.6	0.14	B
	4	7	47 3.1	19-23.8	155-16.9	2.7		8	121	0.7	0.14	0.4	0.8	0.05	B
	4	9	20 57.1	19-20.2	155-16.9	28.2	2.3	17	152	0.9	0.13	0.9	1.2	0.11	C
	4	15	4 48.5	19-19.6	155-13.0	8.5		17	198	4.4	0.18	1.3	0.7	0.20	C
	4	16	59 29.4	19-24.3	155-15.6	2.8		8	198	2.6	0.12	0.7	0.4	0.07	B
	4	19	51 16.2	19-23.2	155-17.1	2.8		9	152	0.7	0.06	0.3	0.3	0.05	B
	4	20	42 56.9	19-24.6	155-17.4	0.3	0.9	11	75	0.3	0.11	0.5	1.5	0.16	B
	4	20	43 48.0	19- 1.6	155-21.8?	32.7		17	249	26.3	0.25	1.9	3.4	0.13	C
	4	20	56 59.6	20- 1.5	155-33.0?	8.0*		15	233	15.6	0.24	4.2		0.31	D
	4	22	29 59.7	19-24.5	155-17.2	0.1	0.8	11	90	0.6	0.11	0.5	4.5	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 4	22	38	10.1	19-25.1	155-17.8?	11.1*	1.6	7	158	0.7	1.60	11.8		0.45	D
5	0	20	53.3	19-20.4	155-28.4	8.2	3.5	20	112	177.6	0.07	0.6	0.5	0.16	B
5	1	40	43.4	19-22.9	155-17.5?	0.5		9	170	1.4	0.18	0.8	1.0	0.13	C
5	2	9	12.5	19-17.3	155- 6.7	3.1		16	224	10.1	0.38	1.8	1.8	0.21	C
5	2	18	42.3	19-17.8	155- 7.6	5.8	1.3	18	219	8.5	0.33	1.7	1.2	0.23	C
5	5	32	58.4	19-20.2	155-14.4	8.4	2.4	18	163	3.3	0.11	0.9	0.5	0.16	C
5	6	59	59.3	19-23.3	155-16.7	2.5	-0.0	9	117	0.3	0.21	0.6	1.4	0.11	B
5	7	26	31.5	19-24.9	155-57.3	8.0*		6	295	39.9	1.23	7.8		0.10	D
5	7	43	37.8	20- 6.8	155-38.2?	13.3*		15	346	41.9	0.24	4.0		0.15	D
5	12	7	0.7	19-34.1	155-20.3?	10.0	2.0	18	85	9.4	0.13	1.1	2.7	0.21	B
5	12	10	27.8	19-23.3	155-17.3	6.2	2.3	18	54	1.0	0.07	0.7	0.5	0.18	B
5	15	58	39.3	19-21.9	155- 7.9	7.2	2.3	16	178	3.7	0.15	1.1	0.7	0.19	C
5	16	35	43.1	19-23.7	155-17.3	2.3	0.8	10	115	1.0	0.03	0.2	0.2	0.03	A
5	18	49	10.6	19-23.7	155-17.3	1.5		7	106	1.1	0.09	0.2	0.7	0.03	B
5	21	23	57.9	19-23.7	155-17.3	2.3	0.7	13	56	1.0	0.09	0.6	0.6	0.14	B
5	22	19	24.1	19-23.4	155-17.6	3.0	1.4	15	63	1.4	0.05	0.4	0.3	0.11	B
6	0	26	58.3	19-23.9	155-16.1?	3.0	0.1	8	109	1.5	0.04	0.3	0.5	0.04	B
6	0	32	14.5	19-23.2	155-16.9	5.3	1.7	14	92	0.5	0.11	0.7	0.7	0.15	B
6	1	59	7.7	19-23.9	155-17.4	1.0	0.2	8	109	1.3	0.06	0.2	0.6	0.03	A
6	2	22	30.9	19-23.6	155-22.4	9.2	1.1	14	158	4.7	0.14	0.8	0.7	0.13	C
6	3	2	46.0	19-23.8	155-17.1	2.0	1.2	12	99	0.9	0.07	0.5	0.5	0.12	B
6	4	39	59.9	19-23.6	155-15.3	3.3	0.7	11	95	2.5	0.14	0.7	1.6	0.16	B
6	5	45	13.1	19-21.5	155-10.6	7.7	1.0	11	196	1.3	0.18	1.3	0.7	0.10	C
6	6	37	45.9	19-23.2	155-17.1	5.8	2.1	16	58	0.7	0.07	0.6	0.5	0.16	B
6	8	10	27.3	19-23.6	155-17.0	5.2	2.5	16	75	0.6	0.06	0.5	0.4	0.14	B
6	10	14	12.2	19-23.6	155-17.3	2.1		7	105	0.9	0.03	0.1	0.2	0.01	B
6	12	37	9.3	19-23.4	155-17.2	2.2		6	144	0.7	0.10	0.2	0.6	0.02	B
6	14	12	21.6	19-23.4	155-17.4	2.7		9	73	1.1	0.12	0.6	1.2	0.07	A
6	20	3	29.3	19-23.6	155-14.7	3.3		8	190	3.0	0.07	0.3	0.7	0.03	B
7	1	38	16.8	19-23.3	155-17.5	2.9	1.6	13	62	1.2	0.05	0.3	0.7	0.08	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 7	4	5	30.3	19-23.3	155-15.1	3.0	0.4	10	90	2.3	0.05	0.3	0.4	0.08	A
7	6	22	9.3	19-23.6	155-15.2	4.1	1.7	12	94	2.6	0.06	0.5	1.4	0.10	B
7	8	0	56.4	19-22.1	155- 7.1?	5.7	2.0	18	201	5.1	0.42	2.7	1.7	0.42	D
7	11	48	43.4	19-24.0	155-15.6	3.8	1.5	10	224	2.3	0.11	0.6	0.6	0.05	B
7	18	18	18.7	19-20.5	155-17.3	30.0	1.8	17	109	0.8	0.12	0.9	1.1	0.10	A
7	20	25	21.1	19-24.0	155-15.8	2.9	0.5	9	120	2.1	0.07	0.5	0.5	0.08	A
7	21	21	56.4	19-20.4	155-10.9	7.3		12	234	3.0	0.31	1.7	1.0	0.18	C
7	22	43	51.1	19-23.6	155-17.3	5.0	2.1	14	58	0.9	0.05	0.4	0.4	0.11	B
7	22	49	52.4	19-23.8	155-16.9	2.1	1.3	10	81	0.8	0.04	0.2	0.3	0.06	A
7	22	51	50.8	19-23.7	155-17.0	2.6	0.5	9	112	0.7	0.16	0.4	1.0	0.08	A
7	22	58	46.6	19-23.2	155-17.4	1.5	0.4	9	102	1.1	0.05	0.2	0.5	0.03	A
8	5	31	43.7	19-21.9	155-12.4	3.8		8	159	0.7	0.11	0.7	1.1	0.08	B
8	6	53	39.0	19-23.3	155-17.1	2.6	0.9	12	94	0.5	0.03	0.2	0.2	0.05	A
8	7	33	49.9	19-10.5	155-27.6	9.5		15	173	18.5	0.11	1.0	0.9	0.12	C
8	7	35	58.8	19-23.3	155-15.1	2.7		9	89	2.2	0.05	0.4	0.3	0.08	A
8	8	19	10.3	19-22.9	155-15.3	6.5	2.2	16	68	1.4	0.07	0.6	0.5	0.13	B
8	9	33	0.9	19-20.6	155-17.5	30.1	2.4	21	93	0.9	0.15	0.9	1.4	0.13	B
8	9	36	19.1	19-23.1	155-17.3	2.9	1.4	12	61	1.0	0.03	0.3	0.2	0.08	A
8	10	1	26.0	19-17.4	155-13.5	9.0	2.0	19	183	8.4	0.17	1.1	0.6	0.17	C
8	10	54	59.4	19-16.6	155-12.9	9.1		12	214	10.0	0.34	2.1	1.2	0.14	C
8	11	32	32.5	19-23.5	155-16.2	5.7	1.8	15	73	1.0	0.08	0.5	0.6	0.13	B
8	11	58	47.8	19-18.8	155-15.9	8.6	2.5	18	171	3.6	0.11	0.8	0.5	0.15	C
8	13	42	7.9	19-10.9	155-34.8?	8.3		9	137	8.5	0.31	7.1	5.7	0.28	C
8	14	57	44.1	19-23.5	155-17.1	2.9		9	100	0.5	0.04	0.2	0.2	0.04	A
8	16	2	20.1	19-22.8	155-14.4	3.0		9	103	2.3	0.06	0.5	0.3	0.09	A
8	16	15	45.6	19-18.9	155-10.3	8.0	1.8	15	208	5.5	0.28	1.8	1.0	0.21	C
8	17	2	1.3	19-22.8	155-15.3	6.0	2.2	14	77	1.4	0.08	0.6	0.6	0.12	B
8	19	42	23.3	19-23.3	155-14.9	2.1	1.2	11	91	2.4	0.06	0.4	0.6	0.08	A
8	19	47	14.2	19-23.2	155-15.0	2.9	1.3	11	89	2.2	0.07	0.4	1.0	0.10	A
8	20	16	46.2	19-23.1	155-15.1	3.0	1.3	10	85	1.9	0.07	0.4	0.8	0.07	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB	8	20	17 32.9	19-24.5	155-14.7	13.2	2.5	21	53	4.1	0.06	0.7	0.6	0.14	B
	8	21	23 1.8	19-23.1	155-15.0	3.1		11	86	2.0	0.06	0.5	0.4	0.12	B
	9	0	11 58.3	19-22.8	155-14.9	4.5	1.7	12	86	1.8	0.10	0.5	0.9	0.10	A
	9	0	39 16.7	19-23.4	155-15.3	2.7		10	90	2.2	0.06	0.3	0.5	0.06	A
	9	1	26 3.8	19-23.2	155-17.3	2.8	1.1	12	61	1.0	0.05	0.3	0.7	0.07	A
	9	2	36 3.9	19-23.1	155-17.1	3.0	1.4	14	58	0.7	0.03	0.2	0.2	0.08	A
	9	2	58 39.9	19-21.1	155-25.7	6.9		16	114	11.6	0.09	0.7	0.8	0.16	B
	9	3	4 10.1	19-22.9	155-15.3	5.9	2.2	16	78	1.3	0.06	0.4	0.4	0.09	B
	9	3	35 2.9	19-23.4	155-17.6?	1.9	0.9	9	81	1.4	0.34	1.1	2.7	0.13	B
	9	4	22 54.8	19-19.3	155-14.7	8.6	3.0	19	172	4.8	0.12	0.9	0.5	0.17	C
	9	4	24 20.6	19-19.6	155-14.6	8.4	2.3	19	169	4.2	0.10	0.7	0.4	0.14	C
	9	4	26 54.5	19-18.7	155-14.0	10.3		15	221	6.2	0.13	0.9	0.3	0.11	C
	9	5	33 24.7	19-23.5	155-17.2	1.8		7	142	0.8	0.04	0.1	0.3	0.01	B
	9	9	10 10.9	19-23.8	155-16.2	4.0	1.0	13	84	1.3	0.08	0.4	0.8	0.11	B
	9	9	12 34.1	19-27.5	155-11.4?	8.0*		8	329	10.9	0.97	7.5		0.48	D
	9	9	28 1.2	19-24.6	155- 8.9	8.0*		7	329	12.3	1.71	6.8		0.07	D
	9	9	44 1.3	19-23.1	155- 8.7	8.1		10	287	3.4	1.38	4.3	5.7	0.17	D
	9	9	50 33.6	19-23.1	155-15.5	4.0	1.3	11	143	1.5	0.12	0.6	1.1	0.11	B
	9	10	5 16.8	19- 9.5	155-34.9	7.9		14	144	10.7	0.11	1.2	0.8	0.14	B
	9	11	19 42.6	19-23.4	155-17.2	2.3		7	92	0.7	0.07	0.2	0.4	0.02	B
	9	13	26 36.4	19-23.2	155-17.0	1.9	0.3	9	94	0.5	0.18	0.6	1.4	0.11	B
	9	14	29 7.6	19-18.4	155-15.1	9.6	1.9	13	206	5.1	0.16	1.2	0.7	0.15	C
	9	14	43 39.5	19-26.4	155-26.8?	10.8	2.4	16	74	8.8	0.10	0.9	0.5	0.16	B
	9	14	59 58.5	19-23.5	155-17.1	2.6		6	140	0.6	0.05	0.1	0.3	0.01	B
	9	15	15 34.5	19-24.1	155-17.2?	0.2	0.9	9	132	1.2	0.41	1.2	7.1	0.20	C
	9	15	22 51.0	19-23.8	155-16.0	5.2	1.3	13	150	1.6	0.13	0.6	1.0	0.12	B
	9	15	25 57.8	19-20.6	155-13.3	8.4		13	188	2.8	0.13	1.0	0.6	0.14	C
	9	16	13 49.9	19-24.1	155-14.5	2.9		7	214	4.0	0.10	0.5	0.3	0.04	B
	9	17	21 33.6	19-23.3	155-17.0	5.6	2.4	14	60	0.3	0.08	0.5	0.6	0.12	B
	9	18	26 37.4	19-32.0	155-14.3	2.2*	1.6	7	333	13.5	0.94	5.7		0.26	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 9	19	23	16.9	19-22.7	155-23.9	11.0	1.3	15	71	4.7	0.08	0.5	1.2	0.10	A
9	20	48	13.5	19-23.6	155-16.8	2.3	0.6	10	120	0.3	0.12	0.4	1.0	0.09	B
9	21	7	53.3	19-24.2	155-17.6?	0.0*	0.8	8	125	0.9	0.08	0.5		0.12	C
9	21	8	48.7	19-22.5	155-14.8	6.5	1.5	15	109	1.5	0.08	0.5	0.5	0.10	B
9	21	10	17.9	19-23.3	155-15.0	2.7		9	98	2.2	0.05	0.4	0.4	0.08	A
9	21	14	35.7	19-23.5	155-17.3	2.9	0.9	13	59	0.9	0.03	0.3	0.2	0.07	A
9	21	26	24.0	19-23.9	155-17.4	1.6		6	128	1.3	0.05	0.1	0.4	0.01	B
9	22	37	49.3	19-23.4	155-17.1	2.7	0.8	11	91	0.6	0.03	0.2	0.2	0.05	A
9	23	19	13.0	19-23.5	155-14.8	2.2		10	96	2.8	0.04	0.4	0.5	0.07	A
9	23	37	8.5	19-16.2	155- 6.9	7.2	1.4	14	245	11.6	0.52	2.6	1.5	0.23	D
9	23	42	50.5	19-55.8	155-36.6	1.8		9	315	23.5	0.33	3.8	2.0	0.11	D
10	0	0	29.7	19-23.0	155-15.1	4.2	1.1	12	83	1.7	0.09	0.5	0.9	0.11	B
10	0	11	39.3	19-19.3	155-12.3	11.7		10	234	5.1	0.24	1.5	1.4	0.09	C
10	0	31	5.1	19-17.6	155-13.2	11.8		9	249	8.2	0.34	2.0	1.9	0.09	C
10	0	36	20.3	19-20.2	155-16.8	32.7		11	188	1.0	0.17	1.1	1.6	0.07	C
10	0	46	56.6	19-23.0	155-15.2	4.9	1.4	12	82	1.6	0.13	0.5	1.1	0.11	B
10	2	36	23.1	19-23.4	155-17.1	5.7	2.3	18	52	0.6	0.06	0.6	0.4	0.16	B
10	2	39	11.5	19-23.4	155-14.8	2.2	1.2	12	92	2.7	0.07	0.5	0.6	0.12	B
10	5	55	30.7	19-19.8	155-12.7	10.8		14	212	4.0	0.09	0.8	0.3	0.10	B
10	6	46	6.5	19-23.3	155-17.0	2.6	0.9	11	91	0.3	0.05	0.3	0.3	0.07	A
10	8	35	0.3	19-23.6	155-14.4	3.1		7	198	3.4	0.05	0.3	0.9	0.02	B
10	9	52	18.4	19-24.1	155-15.8	6.7	2.6	16	85	2.2	0.07	0.6	0.4	0.13	B
10	10	56	57.9	19-23.5	155-17.1	3.0	0.1	8	106	0.5	0.03	0.2	0.2	0.03	A
10	14	7	51.0	19-24.3	155-16.5	3.2	1.2	9	150	1.4	0.09	0.5	0.7	0.06	B
10	14	26	6.8	19-21.1	155-12.5	8.2		7	185	1.8	0.06	0.6	0.2	0.02	B
10	14	39	1.5	19-24.7	155-16.0	5.5		8	209	1.9	0.53	1.6	2.9	0.13	C
10	18	42	56.0	19-23.2	155-17.2	2.7		7	152	0.7	0.13	0.4	0.8	0.05	B
10	19	44	42.9	19-23.1	155-14.5	0.2*	0.7	10	89	2.8	0.04	0.3		0.08	B
10	20	22	27.9	19-23.3	155-17.4?	2.7	0.3	10	75	1.1	0.16	0.7	1.3	0.10	B
10	21	13	21.0	19-23.1	155-15.1	2.8	0.6	11	85	1.9	0.08	0.6	0.5	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB	10	21	49	27.9	19-23.6	155-17.0	2.4		7	133	0.6	0.03	0.2	0.2	0.02	B
	10	22	57	48.1	19-24.5	155-16.5	0.0*	0.5	10	104	1.1	0.04	0.2		0.07	B
	10	23	28	36.0	19-23.4	155-15.1	2.7		9	91	2.3	0.09	0.5	1.2	0.10	A
	11	0	30	36.1	19-23.8	155-16.9	2.2	0.0	9	91	0.7	0.10	0.5	0.7	0.10	B
	11	0	46	45.3	19-23.2	155-17.2	3.0	1.3	13	60	0.8	0.04	0.3	0.2	0.09	A
	11	1	6	39.1	19-23.5	155-15.4	3.0		8	131	2.2	0.06	0.3	0.7	0.05	B
	11	1	53	54.7	19-23.1	155-15.1	4.3	0.9	14	84	1.9	0.08	0.4	0.8	0.10	B
	11	1	55	43.2	19-23.5	155-16.6	2.6	1.4	14	62	0.3	0.06	0.4	0.4	0.14	B
	11	2	11	37.3	19-20.3	155-13.7	8.0	0.9	13	201	3.6	0.16	1.0	0.6	0.15	C
	11	4	14	45.4	19-20.0	155-12.5	10.8		11	211	3.7	0.12	1.0	0.4	0.11	C
	11	4	15	7.5	19-23.5	155-15.1	2.9		9	95	2.5	0.05	0.3	0.3	0.07	A
	11	4	19	9.6	19-19.1	155- 8.2	9.3		9	224	5.9	0.26	1.9	1.0	0.12	C
	11	4	59	17.7	19-24.0	155-14.7	4.4		8	206	3.7	0.20	0.6	1.3	0.06	B
	11	5	14	54.2	19-24.1	155-14.7	3.0		8	207	3.7	0.08	0.4	0.2	0.04	B
	11	21	45	36.9	20-16.9	156- 0.7	18.1*	2.3	20	328	143.6	0.26	2.6		0.17	D
	11	21	59	19.7	19-24.7	155-23.3	9.5	2.1	16	139	6.6	0.09	0.7	0.5	0.12	B
	11	23	2	11.6	19-23.6	155-23.2	10.3	2.2	18	102	6.1	0.08	0.8	0.5	0.16	B
	12	2	51	49.0	19-15.4	154-60.0	4.7	1.8	14	266	21.1	0.77	3.5	1.9	0.18	D
	12	3	35	44.9	19-22.7	155-15.2?	0.0*		7	147	1.4	0.11	0.6		0.11	C
	12	4	58	3.5	20- 0.1	156-36.2	3.8	2.6	24	249	184.6	0.34	3.9	4.0	0.24	D
	12	6	17	31.3	19-26.6	156-26.6?	3.0	3.3	15	325	124.1	1.27	23.2	16.6	0.39	D
	12	6	47	24.8	19-20.2	155-12.9	8.5		13	196	3.3	0.13	1.1	0.5	0.15	C
	12	11	24	3.6	19-23.8	155-23.2	10.3	2.1	16	86	6.2	0.08	0.8	0.6	0.16	B
	12	18	10	56.3	19-19.3	155-14.0	10.1	3.2	18	174	5.2	0.11	0.9	0.5	0.15	C
	12	22	46	29.4	19-26.5	155-25.9	10.3	2.2	19	76	7.7	0.07	0.7	0.5	0.16	B
	12	23	8	34.8	19-18.9	155-13.9	9.7	1.9	17	201	5.8	0.12	0.9	0.4	0.14	C
	12	23	55	33.4	19-19.6	155-14.1	9.9		16	197	4.5	0.10	0.7	0.4	0.13	C
	13	3	55	25.2	19-57.1	155-26.5	9.4	2.2	8	206	19.4	0.71	4.1	2.7	0.16	C
	13	5	6	11.8	19-18.3	155-14.6	8.2	2.5	17	184	5.9	0.14	1.0	0.6	0.17	C
	13	7	31	32.1	19-56.6	155-25.5	7.9		5	336	18.7				0.23	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 13	7	55	2.7	19-19.5	155-13.9	8.5		15	199	4.8	0.15	1.1	0.6	0.15	C
13	8	50	10.9	19-15.5	155-22.9?	12.7		9	300	8.7	1.30	4.0	6.0	0.11	D
13	11	22	13.2	19-22.8	155-15.0	19.2		11	237	1.7	0.30	1.6	2.2	0.06	C
13	11	29	27.4	19-20.9	155-14.0	11.1	1.8	12	178	2.9	0.07	0.8	0.3	0.11	C
13	13	37	40.7	19-19.2	155-13.8	9.9		12	205	5.5	0.11	0.9	0.4	0.11	C
13	19	21	49.3	19-25.4	155-29.4	6.2	1.8	12	102	12.3	0.09	0.7	0.8	0.13	B
13	20	2	49.4	19-24.3	155-24.8	10.8	2.0	15	144	9.1	0.08	0.7	0.3	0.11	B
14	2	40	35.2	19-21.1	155-11.5	9.6	1.0	13	192	2.8	0.15	1.3	0.6	0.18	C
14	3	6	10.1	19-24.3	155-24.4	11.6	1.0	11	204	7.7	0.20	0.9	1.8	0.07	B
14	3	28	22.4	19-22.5	155-25.9	13.7	2.0	15	127	11.0	0.11	1.2	1.4	0.17	B
14	4	54	0.2	19-18.6	155- 2.7?	0.1	2.1	13	232	22.8	1.04	2.0	4.4	0.16	C
14	5	37	14.3	19-19.2	155-11.3	11.0		8	223	5.3	0.20	1.6	1.0	0.10	C
14	5	52	29.4	19-18.9	155-10.9	9.8		9	206	5.5	0.29	2.7	1.2	0.12	C
14	9	13	3.7	19-24.3	155-25.2	13.6		9	222	8.2	0.43	1.5	3.3	0.07	C
14	9	41	19.2	19-24.5	155- 8.2	5.8	3.0	15	143	6.0	0.11	0.9	1.0	0.16	B
14	15	35	26.4	19-20.7	155-28.1	7.5		10	143	15.6	0.11	1.0	1.3	0.13	B
14	17	13	3.3	19-24.0	155-24.8	11.4	1.2	13	195	7.6	0.08	0.6	0.7	0.07	B
14	19	0	32.8	19-24.3	155-14.1	29.6	1.6	15	133	4.8	0.20	1.3	1.8	0.11	B
14	23	54	46.8	19-17.9	155- 8.5	11.2	1.3	13	232	7.6	0.38	2.4	0.8	0.13	D
15	0	36	39.1	19-16.9	155- 7.6	12.0		9	292	9.9	0.56	3.5	1.6	0.09	D
15	1	5	16.7	19-53.8	155-17.5?	85.2*		12	294	45.4	4.91	50.4		3.06	D
15	2	57	39.4	19-24.5	155-24.0	10.9	2.2	17	87	7.7	0.09	0.8	0.5	0.15	B
15	5	6	5.4	19-20.4	155- 1.9	7.9	1.2	11	235	14.4	0.34	2.1	0.9	0.16	C
15	19	53	21.9	19-21.8	155-26.7	9.7	1.9	12	124	6.6	0.09	0.7	0.7	0.13	B
16	0	56	57.6	19-10.4	155-33.2?	7.9	1.9	16	146	10.7	0.11	2.3	1.9	0.17	B
16	5	48	30.2	19-20.5	155-19.7	4.8		8	165	4.1	0.16	0.5	1.7	0.05	B
16	6	2	5.4	19-24.0	155-25.9	8.1		10	157	8.3	0.13	0.9	1.0	0.14	C
16	20	51	51.4	19-23.5	155-24.3	9.9	1.9	16	118	6.3	0.09	0.7	0.5	0.14	B
17	2	56	58.4	19-51.3	155-41.7?	8.8	1.9	19	184	19.5	0.38	5.7	13.9	0.25	D
17	4	58	19.0	19-20.9	155-13.9	9.9		16	179	2.9	0.07	0.6	0.4	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB	17	14	31	52.0	19-24.8	155-23.8	11.1	2.2	16	63	7.4	0.05	0.5	0.3	0.11	B
	17	19	24	47.8	19-24.7	155-25.1	6.5	1.9	14	126	8.9	0.17	1.4	1.5	0.23	C
	17	20	42	35.2	19-22.3	155-16.2	27.3	3.4	19	88	0.6	0.19	1.2	1.6	0.13	B
	18	10	57	31.0	19-21.8	155-17.5	22.5		16	86	3.0	0.16	0.9	1.5	0.10	A
	18	12	13	54.6	19-22.0	155-16.8	23.6	2.5	15	101	1.7	0.17	1.0	1.5	0.09	A
	18	19	20	12.3	19-26.1	155-49.8	7.6	2.7	18	181	13.5	0.10	0.9	0.5	0.11	C
	18	20	15	10.3	19-50.3	154-58.7?	8.0*		6	310	39.5	7.54	65.6		2.03	D
	18	22	58	22.8	19-21.0	155- 5.7	5.8	2.4	14	209	12.5	0.29	2.0	1.0	0.20	C
	18	23	12	32.4	19-55.4	156- 2.3	8.0*		6	315	63.2	4.58	27.8		0.18	D
	19	2	5	37.0	19-20.5	155-11.0	7.7		14	222	2.9	0.16	1.1	0.5	0.15	C
	19	4	43	14.0	19-21.4	155-16.4	30.6	2.1	17	130	2.2	0.24	1.4	2.0	0.14	B
	19	7	37	14.5	19-20.6	155-15.3	23.2		14	178	3.5	0.20	1.4	1.8	0.14	C
	19	10	41	32.3	19- 7.8	155-27.3	35.3		9	270	21.6	1.61	6.0	12.7	0.08	D
	19	10	41	34.8	19-17.9	155-28.9?	24.3	2.2	17	170	10.8	0.72	3.7	8.6	0.37	D
	19	10	43	4.2	19- 9.6	155-26.8	29.4		10	256	20.4	1.04	4.0	8.7	0.08	D
	19	12	57	59.8	19-22.4	155-16.0	28.8		17	93	0.2	0.20	1.2	1.8	0.12	B
	19	13	45	2.0	19-21.7	155-17.4	22.3	2.1	16	91	2.8	0.15	0.9	1.4	0.08	A
	19	14	53	50.4	19-14.3	155-47.5?	13.5*		14	305	18.3	0.51	3.4		0.16	D
	19	15	8	19.3	19-40.4	156-14.2?	8.0*	2.3	16	289	108.6	2.96	20.1		0.68	D
	19	18	46	6.6	19-30.7	154-59.5	8.5		7	214	7.1	0.52	10.6	1.7	0.21	D
	19	23	30	15.1	19-18.9	155-14.3	9.1	1.7	17	206	5.6	0.12	0.8	0.4	0.13	C
	20	16	22	55.5	19-20.9	155-10.2	7.8		14	248	1.7	0.14	1.0	0.4	0.11	C
	20	17	40	27.2	19-22.1	155-26.4	12.7	1.8	12	146	6.5	0.11	0.8	1.9	0.10	B
	20	20	28	10.4	19-20.1	155-17.2	7.6	0.8	10	225	0.4	0.15	0.8	0.6	0.07	B
	20	20	59	25.3	19-48.5	155-30.2	8.0*		8	302	35.6	1.21	7.5		0.11	D
	20	21	13	23.4	19-44.6	155-27.1	7.8		11	150	3.6	0.14	1.7	0.9	0.12	B
	20	21	50	47.9	19-21.8	155-16.2	25.8	2.1	16	124	1.3	0.17	1.1	1.6	0.12	B
	20	22	25	17.1	19-45.0	155-29.8	7.6		10	224	5.3	0.17	1.4	0.6	0.09	C
	20	22	34	52.9	19-29.4	155- 0.4?	8.0*		12	187	8.0	4.51	28.3		2.10	D
	21	0	42	24.6	19-22.9	155- 2.2?	0.5	2.3	13	212	16.0	0.79	1.7	3.5	0.18	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 21	8	21	58.7	19- 7.1	155-35.1	6.7		10	292	14.9	0.82	3.8	1.9	0.09	D
21	11	55	28.1	19-24.9	155-27.9	10.3	1.2	10	190	12.1	0.10	0.9	0.5	0.09	B
21	12	27	48.0	19-21.4	155-13.3	12.9		7	169	1.4	0.25	1.1	1.9	0.04	C
21	13	4	53.7	19-18.2	155- 6.1	11.2		11	235	9.6	0.43	2.9	0.9	0.11	D
21	14	3	51.2	19-21.1	155-14.3	8.5	1.1	14	169	2.1	0.13	1.0	0.5	0.17	C
21	14	21	39.4	19-19.1	155-26.8	8.9		8	163	6.4	0.18	1.9	1.6	0.15	C
21	16	35	20.9	20- 4.7	155-19.9	3.7	2.6	19	245	35.8	0.39	1.8	1.6	0.13	C
21	16	48	17.9	19-15.9	155-21.0	6.7		13	214	8.9	0.18	1.0	0.8	0.13	C
21	23	24	46.8	19-23.8	155-23.1	6.2	1.0	10	114	5.9	0.17	0.6	2.1	0.10	B
22	1	48	18.8	19-29.4	154-53.7	6.8	2.7	10	287	3.8	0.40	2.3	0.7	0.13	C
22	3	9	50.3	19-24.2	154-45.9?	0.1	2.1	14	303	42.9	6.01	27.7	52.1	0.49	D
22	9	37	31.8	19-22.8	155-29.5	14.3		9	198	11.9	0.14	1.3	0.9	0.06	C
22	9	38	1.6	19- 5.5	155-15.9	19.1*		10	315	27.0	1.85	11.4		0.12	D
22	9	47	24.9	19-19.7	155- 4.8	10.4	1.2	11	273	9.9	0.76	4.1	1.2	0.16	D
22	11	9	23.8	19-20.3	155-25.3	12.0		9	151	3.4	0.18	1.6	2.8	0.13	C
22	11	53	8.4	19-21.6	155-11.4	8.3	1.2	12	174	2.5	0.17	1.1	0.7	0.17	C
22	12	1	44.9	19-24.2	155-28.4	6.4	1.8	12	110	13.6	0.08	0.6	1.0	0.11	B
22	12	25	40.4	18-58.2	155- 4.9	8.0*	2.3	16	283	44.5	0.66	4.1		0.15	D
22	14	50	21.8	19-20.6	155-19.9	3.2		7	163	4.5	0.17	0.7	10.5	0.07	C
22	16	0	26.1	19-23.2	155-29.1	9.2		8	117	15.7	0.10	0.8	1.1	0.11	B
22	17	31	13.6	19-28.7	155-23.5	11.8	1.3	12	102	2.1	0.05	0.6	0.6	0.08	A
23	1	33	44.9	19-20.7	155-25.1	8.6		9	207	3.3	0.25	1.4	1.3	0.17	C
23	3	2	18.3	19-49.6	155-48.9	7.9	3.0	18	190	100.2	0.20	1.8	2.6	0.09	C
23	3	21	43.2	19-22.0	155-25.5	11.7		9	138	5.1	0.11	0.9	1.9	0.10	B
23	4	51	34.6	19-27.3	154-50.5	5.0	2.3	12	295	9.9	1.29	6.2	2.6	0.27	D
23	5	33	17.4	19-20.4	155- 8.5	8.5		15	205	3.7	0.31	2.1	1.0	0.27	C
23	14	33	50.5	19-23.5	155-16.9	15.1	2.3	17	56	0.2	0.08	0.8	1.0	0.13	B
23	16	8	38.7	19-22.1	154-43.5?	0.2	3.5	15	311	25.1	8.44	15.6	26.4	0.25	D
23	22	23	20.6	19-54.7	155-41.0?	8.0*	2.9	18	178	13.4	0.60	6.7		0.58	D
24	4	4	57.2	19-22.2	155-22.6	9.6	2.1	16	108	4.0	0.08	0.7	0.5	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 24	11	33	14.6	19-22.3	155- 4.5	3.6	2.0	15	206	14.6	0.19	1.2	0.9	0.14	C
25	16	28	27.1	19-19.4	155-15.6	10.3	1.9	14	193	3.5	0.06	0.6	0.3	0.07	B
26	0	23	20.1	19-20.4	155-16.0	33.1	3.0	19	177	2.5	0.22	1.2	1.9	0.12	C
26	3	33	54.5	19-25.0	155-14.6	31.2	2.4	18	77	4.2	0.15	0.8	1.4	0.09	A
26	7	41	33.9	19-12.5	155- 5.8	1.7		12	265	18.7	1.65	3.5	6.2	0.19	D
26	8	47	27.4	19-21.6	155-14.3	9.2	2.9	20	142	1.8	0.08	0.7	0.4	0.16	B
26	9	33	8.0	19-21.0	155-14.1	7.8		14	176	2.5	0.14	1.0	0.6	0.15	C
27	1	1	53.9	19-27.7	155-51.2	6.2	1.6	16	178	9.7	0.12	1.2	0.7	0.13	C
27	2	27	36.5	19-25.4	155-14.6	29.8		17	81	5.3	0.14	0.8	1.4	0.09	B
27	3	42	59.0	19-20.3	155-25.5	11.5	1.7	19	118	3.9	0.07	0.7	1.1	0.15	B
27	7	45	35.4	19-49.5	155-28.4	9.9		12	323	5.6	0.62	4.8	1.3	0.20	D
27	8	21	28.2	19-25.4	155-14.6	29.5	1.1	17	107	4.3	0.14	0.8	1.3	0.08	A
27	11	6	36.7	19-22.5	155-13.2	29.3	2.7	21	86	1.2	0.17	1.1	1.5	0.13	B
27	12	6	26.6	19-23.7	155-22.5?	11.0	1.9	16	66	4.9	0.07	0.6	1.1	0.14	B
27	12	14	8.4	19-24.0	155-23.0	10.5	1.4	9	166	5.9	0.10	0.8	0.6	0.07	B
27	17	33	23.4	19-20.6	155-15.9	12.1	1.0	11	184	2.4	0.11	0.9	0.8	0.09	B
27	21	14	46.8	19-21.6	155-10.2	7.5		10	220	0.5	0.23	1.3	0.9	0.12	C
27	21	17	34.7	19-19.2	155-13.7	9.2	1.0	15	199	5.4	0.12	0.9	0.5	0.13	C
27	23	58	9.3	19-25.8	155-14.5	29.2	1.6	16	84	5.4	0.16	0.9	1.6	0.09	A
28	1	26	33.0	19-22.2	155-16.2	25.0	1.5	13	94	0.7	0.24	1.2	2.1	0.08	B
28	2	40	21.3	19-17.9	155-14.1	7.1		11	240	7.5	0.29	1.5	0.9	0.14	C
28	3	48	29.3	19-18.7	155-13.7	10.4	1.8	15	201	6.3	0.10	0.7	0.3	0.11	C
28	4	38	1.4	19-19.6	155-11.4	11.1		11	216	4.7	0.13	1.1	0.3	0.10	C
28	5	6	54.3	19-14.1	155-22.1	8.4		13	193	13.8	0.15	1.1	0.6	0.13	C
28	6	15	14.1	19-19.2	155-13.0	14.8		9	228	5.1	0.06	0.6	0.4	0.03	C
28	6	21	1.3	19-21.4	155-12.6	8.1		13	174	1.2	0.16	0.9	0.7	0.14	C
28	14	41	45.3	19-20.9	155-13.2	7.5		10	186	2.2	0.15	1.1	0.7	0.11	C
28	17	33	36.2	19-18.4	155-16.8	9.9	1.8	15	198	3.4	0.16	1.3	0.7	0.16	C
28	21	33	53.0	19-19.1	155- 7.1	7.2	1.2	10	229	7.1	0.33	2.0	1.3	0.15	C
MAR 1	3	9	59.7	19-16.9	155- 3.8	8.2		11	248	14.1	0.41	2.3	1.0	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 1	4	39	38.8	19-19.4	155-16.1	9.4	0.9	14	194	2.6	0.10	0.8	0.4	0.11	C
1	11	54	17.2	19-18.7	155-14.7	26.9		15	174	5.4	0.20	1.5	1.9	0.16	C
1	19	53	16.9	19-25.5	154-48.7	1.0*	2.0	9	303	14.0	0.28	1.8		0.12	D
2	1	4	10.5	19-19.7	155-15.4	7.9	1.5	18	163	3.5	0.08	0.6	0.4	0.13	C
2	4	53	55.3	19-19.6	155-19.9	29.1		14	146	4.4	0.12	0.7	1.2	0.08	B
2	6	0	41.5	19-23.7	155-24.8	7.2	1.8	9	121	6.9	0.15	1.5	1.5	0.21	C
2	7	40	15.2	19-24.1	154-57.4?	8.0*		9	309	23.7	7.09	42.5		0.21	D
2	13	43	14.8	19-24.8	155-25.7	11.3		11	147	9.4	0.07	0.7	0.3	0.09	B
2	14	30	2.9	20- 4.9	155-39.6?	8.0*	4.0	26	163	113.2	9.49	66.0		5.05	D
2	15	13	22.0	19-18.1	155-13.8	8.4	1.9	19	205	7.4	0.21	1.3	0.7	0.20	C
2	19	6	45.6	19-17.4	155-14.2	10.0		10	232	7.5	0.26	1.7	0.7	0.12	C
2	19	30	11.4	19-21.0	155-16.2	30.4	3.3	20	145	2.1	0.17	1.0	1.6	0.13	B
3	2	22	42.3	19-21.1	155-16.2	28.0		11	145	2.0	0.17	1.1	1.8	0.11	B
3	8	20	1.8	19-22.8	155-23.0	9.0	2.5	16	70	4.7	0.07	0.6	0.5	0.12	B
3	8	42	40.0	19-19.6	155-13.8	10.0	2.4	16	197	4.8	0.13	1.0	0.5	0.14	C
3	12	50	20.6	19-21.2	155-12.2	8.3	2.6	17	158	1.8	0.12	0.9	0.5	0.16	C
3	13	41	12.8	19-24.9	154-50.9	7.3		11	307	11.6	1.12	6.4	1.6	0.09	D
3	16	12	25.3	19-19.7	155-10.9	7.8	1.9	15	237	4.2	0.20	1.3	0.6	0.16	C
3	16	30	4.6	19-54.3	155-22.2	38.1	2.9	19	203	16.7	0.30	1.5	3.3	0.11	C
3	16	45	14.4	19-55.0	155-22.3	38.9	2.8	17	206	17.7	0.35	1.7	3.6	0.13	C
3	16	51	28.0	19-10.7	155-32.8	8.6	2.5	17	144	10.8	0.09	0.8	0.6	0.13	B
3	18	38	10.9	19-27.2	154-52.2	5.0	2.0	6	295	3.7	0.69	3.9	1.9	0.10	D
3	19	30	53.1	19-25.1	154-51.7?	2.4	2.1	8	281	7.6	0.80	3.4	2.5	0.10	D
3	20	0	40.3	19-27.8	154-52.6	4.8	2.8	19	283	2.4	0.39	2.2	0.9	0.21	D
3	20	50	12.3	19-18.3	155-16.4	7.9	2.0	18	173	3.7	0.12	0.8	0.5	0.15	C
4	1	25	1.7	19-21.0	154-52.5?	8.0*		9	274	14.7	0.68	9.3		0.86	D
4	5	19	41.9	19-21.1	155- 3.2	7.2	2.5	21	191	101.3	0.24	1.7	0.9	0.26	C
4	10	21	20.9	19-26.5	154-52.4	5.5	2.0	9	276	4.7	0.59	3.8	1.1	0.19	D
4	13	23	53.7	19-19.9	155- 1.6	4.8	2.2	16	221	15.2	0.35	2.1	1.4	0.20	C
4	16	27	33.4	19-22.3	155-24.0	10.8	1.9	16	76	4.1	0.07	0.7	0.4	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 4	16	51	36.2	19-22.6	155-25.3	11.9		16	93	5.7	0.09	0.8	1.6	0.14	B
4	19	36	34.9	19-20.7	155- 7.1	6.7	2.1	18	201	5.6	0.22	1.4	0.8	0.21	C
4	21	0	34.1	19-27.4	154-53.5	4.5	2.3	14	249	2.8	0.31	2.3	1.2	0.19	D
5	3	7	0.2	19-21.2	155- 1.4	2.0		13	214	15.2	0.59	1.4	2.9	0.14	C
5	3	32	29.4	19-24.0	154-58.5?	0.3		7	224	10.5	0.37	2.0	2.2	0.12	C
5	4	17	6.5	19-30.1	154-52.1?	8.0*		7	319	3.2	0.42	4.3		0.25	D
5	12	57	32.8	19-20.5	155- 9.6	7.4		10	260	2.5	0.29	1.8	1.0	0.14	C
5	13	42	58.6	19-13.0	155-23.6	29.8		12	191	13.4	0.42	1.4	4.6	0.09	C
5	15	9	38.4	19-38.2	155-11.3	35.4	2.0	18	109	13.9	0.23	0.8	2.4	0.08	B
5	15	53	18.4	19-31.8	155- 2.7?	10.5*		12	319	13.6	1.27	6.5		0.16	D
5	18	22	16.0	19-20.3	154-57.0	1.7		10	247	16.4	0.94	2.6	3.4	0.14	D
5	19	9	3.5	19-12.0	155-29.3	31.5	1.9	16	166	14.7	0.30	1.2	3.2	0.10	C
6	2	3	28.3	19-18.8	155-10.9	7.1		13	261	5.8	0.35	1.9	0.8	0.18	C
6	2	24	59.0	19-19.9	155- 9.4	7.6		16	200	3.8	0.18	1.2	0.7	0.17	C
6	3	47	0.9	19-19.4	155-17.5	34.9		13	184	1.3	0.14	0.7	1.3	0.06	B
6	6	43	46.4	19-27.3	154-51.8	4.8	2.6	19	280	4.0	0.72	3.6	1.6	0.26	D
6	9	42	23.1	19-20.4	155-16.3	8.6		9	220	2.0	0.07	0.4	0.2	0.04	B
6	15	44	54.0	19-22.7	155-23.9	12.0		13	71	4.7	0.07	0.7	1.0	0.10	B
6	19	11	18.1	19- 4.0	155- 0.8?	8.0*		17	272	36.6	0.60	4.0		0.25	D
6	22	12	28.8	19-25.9	155-31.7	33.2		12	117	8.9	0.93	2.8	9.5	0.22	B
7	3	7	1.2	19-25.4	154-53.9?	0.9	3.1	20	235	107.7	1.09	4.1	3.4	0.39	D
7	3	48	44.7	20-30.0	155-24.7?	8.0*	2.7	18	309	129.7	5.93			6.62	D
7	4	26	30.9	19-20.9	155-13.5	8.2		15	183	2.4	0.16	0.9	0.7	0.15	C
7	8	28	58.3	19-26.5	154-52.8?	8.0*	2.0	11	268	4.6	1.41	9.1		0.44	D
7	10	19	51.6	19-25.5	155-24.3	13.0		8	123	7.4	0.10	0.6	1.3	0.05	B
7	12	1	20.8	19-27.5	154-52.2	6.0	2.3	8	291	3.3	0.35	2.3	0.6	0.10	C
7	12	48	24.4	19-21.1	155-28.1	13.9	2.2	10	223	8.6	0.28	1.4	3.1	0.09	C
8	3	49	7.1	19-22.3	155-29.0?	10.3	2.1	13	115	10.8	0.08	0.9	2.2	0.13	B
8	7	36	24.9	19-23.6	155-13.9	29.1		17	101	3.5	0.23	1.4	2.2	0.11	B
8	8	8	42.1	19-23.3	154-58.6	6.3		6	222	11.9	0.59	3.3	2.7	0.07	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 8	8	38	16.4	19-19.3	155- 7.5	10.9		14	219	6.3	0.22	1.7	0.5	0.13	C
8	13	0	26.9	19-23.6	155-24.1	8.2	2.2	21	52	6.5	0.10	0.9	0.8	0.25	B
8	15	5	31.0	19-11.1	155-36.9	10.7	2.1	8	141	6.9	0.17	1.9	1.2	0.16	B
8	17	5	7.2	19-23.7	155-25.2	11.5		16	79	7.2	0.05	0.5	1.1	0.11	B
8	17	15	48.1	19-20.6	155-12.8	8.1	2.4	21	166	2.5	0.14	1.0	0.6	0.21	C
9	0	59	45.6	19-22.5	155- 2.8?	10.4	2.0	9	215	12.7	0.22	1.7	0.8	0.14	C
9	16	12	36.3	19-26.4	155-22.0	9.7	2.2	14	109	3.2	0.07	0.8	0.6	0.12	B
9	20	50	12.7	19-20.5	155- 7.7	7.8	2.2	19	201	4.6	0.21	1.5	0.7	0.23	C
9	22	49	30.3	19-26.2	155-27.3	11.5	2.4	17	76	9.7	0.04	0.5	0.7	0.08	A
10	0	45	59.1	19-25.3	155-16.7	2.9	1.2	12	114	0.9	0.06	0.5	0.3	0.10	B
10	4	51	8.7	19-21.3	155-12.0	8.9	1.7	19	157	1.9	0.10	0.9	0.5	0.18	C
10	18	9	32.3	19-27.1	154-58.1?	8.0*		11	181	5.5	2.09	12.9		0.70	D
11	12	9	48.6	19-19.1	155-12.0	7.7		9	246	6.1	0.49	1.8	3.2	0.18	C
11	12	47	34.8	19-19.8	155-23.7	37.6		12	162	1.0	0.95	2.2	8.9	0.11	C
11	12	57	51.7	19-20.1	155-25.8?	9.5		10	154	4.5	0.26	2.3	1.4	0.26	D
11	14	41	38.2	19-48.2	155-22.9?	23.5	2.0	16	218	8.2	0.35	1.9	4.0	0.10	C
11	17	22	50.6	19-24.2	155-25.6	12.5		7	230	8.4	0.39	1.7	3.1	0.06	C
11	18	29	36.7	19-23.2	155-47.6	7.9		12	247	23.9	0.36	1.7	0.8	0.10	C
11	19	6	46.4	19-18.5	155-17.0	30.7		12	167	7.4	0.22	1.5	2.5	0.12	C
11	21	42	57.4	19-12.8	155-26.7?	8.0*		5	251	15.0	1.07	5.5		0.13	D
11	21	49	21.5	19-18.2	155-15.9	9.6	1.5	17	204	4.4	0.12	0.8	0.4	0.13	C
12	0	34	12.9	19-20.5	155-26.5	7.0		13	115	5.7	0.10	0.8	1.1	0.18	B
12	1	38	12.5	19-59.3	155-34.8	10.8	2.5	17	189	102.8	0.14	2.5	2.7	0.13	C
12	3	17	59.3	19-21.8	155-10.5	6.4		12	177	0.9	0.18	1.0	0.7	0.11	C
12	5	9	8.6	19-20.2	155-26.0	7.8		9	228	4.8	0.32	1.7	1.3	0.16	C
12	5	16	16.2	19-20.1	155-26.1	7.6		11	153	5.0	0.16	1.1	1.5	0.19	C
12	7	24	22.9	19-20.3	155-12.8	8.5	1.7	18	206	3.1	0.16	1.1	0.6	0.19	C
12	8	33	36.5	19-23.6	155-14.9	5.9		10	168	2.8	0.17	0.6	1.1	0.07	B
12	8	36	28.0	19-27.4	154-49.2?	8.0*	1.7	8	299	7.9	1.08	8.1		0.36	D
12	8	37	19.7	19-24.3	154-49.4?	8.0*	1.7	8	299	11.0	0.60	5.0		0.46	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR	12	10	34	15.1	19-21.9	155-14.6	27.3	2.1	19	137	1.2	0.11	0.8	1.1	0.10	B
	12	16	44	55.1	19-26.9	154-49.6?	8.0*	2.6	16	297	7.6	0.31	2.8		0.28	D
	12	20	7	29.8	19-23.3	155-24.9	6.8	1.9	18	70	6.4	0.10	0.8	0.9	0.22	B
	12	21	25	12.8	19-20.7	155-10.0	8.3	2.5	20	173	2.0	0.19	1.4	0.8	0.27	C
	13	5	49	9.1	19-23.4	155-24.6	8.4	1.7	17	76	6.3	0.11	0.9	1.0	0.21	B
	13	17	53	42.5	19-16.8	155- 4.1	4.8	2.1	16	241	13.9	0.41	2.1	1.2	0.20	C
	13	19	11	18.7	19-26.6	155-25.1	6.7	1.8	13	124	6.7	0.30	1.2	3.9	0.19	C
	13	23	43	41.2	19-24.4	155-16.6	11.4		11	89	1.2	0.12	0.9	1.2	0.12	B
	13	23	44	12.7	19-17.9	155-22.7	18.4	2.5	8	299	14.5	1.86	11.1	7.2	0.13	D
	14	8	51	23.9	19-23.3	155-37.2	11.8	2.1	15	116	12.5	0.07	0.5	0.8	0.08	A
	14	11	15	9.0	19-25.8	156- 3.3	7.3	2.3	11	301	17.1	2.15	10.2	3.4	0.13	D
	14	18	38	25.6	19-14.1	155-28.1?	8.0*		9	302	14.1	1.94	12.5		1.20	D
	15	1	17	25.6	19-20.3	155- 8.7	8.3	1.5	16	261	3.6	0.38	2.2	0.8	0.20	C
	15	1	20	37.8	19-19.7	155- 8.9	9.8	1.3	14	264	4.3	0.34	2.0	0.6	0.18	C
	15	1	51	14.9	19-13.5	155-23.4	28.5		14	189	12.4	0.21	1.0	2.2	0.08	C
	15	3	14	31.6	19-15.3	155-24.7	25.5		5	213	9.4				0.03	D
	15	3	56	39.8	19- 0.5	155-18.2?	8.0*		9	289	36.2	1.35	8.8		0.30	D
	15	5	33	54.2	19-18.5	155- 1.6	9.4	2.1	19	238	16.0	0.62	3.7	1.4	0.28	D
	15	12	22	23.7	19-29.5	155-13.6?	8.0*		6	342	10.4	1.33	9.6		0.32	D
	15	13	21	8.2	19-30.7	155-16.6?	8.0*	2.0	8	329	10.0	1.24	8.1		0.41	D
	15	15	50	6.6	19-32.1	155-18.8?	8.0*	2.4	8	325	12.5	1.88	11.1		0.59	D
	15	16	40	47.6	19-29.3	155- 7.1?	8.0*	2.1	5	349	19.2	6.13	61.1		0.17	D
	15	19	16	34.9	19-22.6	155-45.3	8.8		10	261	20.2	0.49	2.4	0.9	0.07	C
	16	3	6	51.6	19-27.7	155-42.1	9.3	2.4	18	118	13.4	0.13	1.1	0.9	0.19	B
	16	4	18	45.3	19-24.1	155-25.5	7.6	1.9	19	72	8.1	0.11	0.9	1.0	0.25	B
	16	9	25	45.6	18-48.6	155-34.9?	8.0*	3.1	16	293	101.4	2.40	15.1		0.30	D
	16	19	59	34.2	20-28.4	156- 2.2?	9.4	2.6	26	164	159.3	0.70	6.5	22.7	0.75	D
	16	22	49	28.7	19-20.1	155-10.5	8.2	2.0	18	243	3.2	0.22	1.3	0.6	0.20	D
	17	6	59	53.3	19-23.6	155-17.6?	3.2	2.0	15	61	1.5	0.06	0.4	0.4	0.13	B
	17	7	27	57.2	19-23.5	155-17.2	1.9		6	140	0.7	0.04	0.1	0.2	0.01	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 17	10	37	5.1	19-24.3	155-27.2	11.8	1.9	17	82	10.2	0.05	0.5	0.9	0.11	B
17	11	23	35.9	19-25.4	155-15.0	11.4		8	255	3.7	1.65	3.2	8.0	0.09	D
17	12	15	53.6	19-20.8	155-15.8	12.0	1.1	8	169	2.1	0.34	1.6	2.4	0.09	C
17	15	45	45.2	19-23.7	155-17.2	1.9	0.9	7	121	1.0	0.06	0.1	0.4	0.02	B
17	19	21	17.0	19-22.5	155-24.2	10.4		14	129	4.5	0.10	0.9	0.6	0.15	B
17	19	50	44.0	19-21.5	155- 7.9	7.0	2.4	20	195	3.8	0.19	1.4	0.8	0.26	C
17	19	59	33.3	19-24.1	155-25.1	10.9		15	74	7.8	0.06	0.6	0.4	0.12	B
17	21	4	2.8	19-23.2	155-17.1	3.0	0.6	13	59	0.7	0.04	0.3	0.3	0.09	A
17	21	7	32.5	19-23.0	155-17.6	3.0	1.5	15	66	1.5	0.05	0.4	0.3	0.12	B
17	21	23	42.4	19-23.2	155-17.2	3.0		13	59	0.7	0.03	0.2	0.2	0.08	A
17	21	49	19.6	19-20.9	155-12.6	7.8		11	190	2.1	0.15	0.9	0.6	0.11	C
17	22	51	14.2	19-23.4	155-17.2	2.1		7	145	0.7	0.14	0.4	0.9	0.04	B
17	23	13	38.7	19-23.4	155-17.5	2.9	1.0	12	61	1.2	0.04	0.3	0.3	0.08	A
18	0	11	55.7	19-23.4	155-17.1	3.0	0.8	8	144	0.5	0.05	0.3	0.3	0.04	B
18	2	36	48.4	19-23.3	155-17.4	2.5	1.1	14	61	1.1	0.05	0.3	0.3	0.10	B
18	3	29	48.8	19-23.8	155-17.3	1.7	0.8	7	132	1.1	0.09	0.3	0.7	0.04	B
18	6	21	6.5	19-18.3	155-11.6	5.9	1.6	12	257	7.0	0.29	1.5	0.9	0.16	C
18	6	23	30.7	19-22.7	155- 3.4	7.2	4.1	18	182	11.7	0.15	1.3	0.6	0.18	C
18	6	37	26.6	19-20.6	155- 1.9	5.0	2.5	18	216	14.4	0.30	1.8	1.0	0.23	C
18	6	41	33.2	19-15.8	154-55.9?	0.1*	2.3	7	325	27.1	0.29	2.0		0.10	D
18	6	53	0.4	19-23.6	155-17.3	2.4	0.9	6	141	0.9	0.31	0.7	1.9	0.05	B
18	6	55	35.0	19-21.9	155- 4.4	9.2		13	293	9.7	0.61	3.0	0.9	0.15	D
18	6	57	49.5	19-23.3	155-17.0	2.9	1.4	11	91	0.4	0.04	0.3	0.2	0.06	A
18	7	48	55.7	19-17.3	155-16.4	8.1		14	210	5.5	0.25	1.6	1.0	0.20	C
18	9	3	50.3	19-23.3	155-17.2	1.8	0.5	5	153	0.8				0.02	D
18	11	5	35.5	19-23.6	155-17.1	7.4	2.3	13	102	0.6	0.13	0.9	0.9	0.16	B
18	12	34	27.8	19-23.7	155-17.4	1.4	0.8	8	102	1.1	0.17	0.5	1.4	0.08	A
18	12	53	4.6	19-23.5	155-17.0	1.8		7	137	0.4	0.11	0.3	0.7	0.03	B
18	13	47	23.4	19-23.4	155-17.4	2.8	1.3	11	78	1.0	0.04	0.4	0.3	0.07	A
18	15	12	22.9	19-23.4	155-17.3	2.8	1.0	10	74	0.9	0.08	0.5	1.0	0.08	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 18	16	43	2.8	19-22.6	155-17.9	4.0	1.3	10	137	2.4	0.16	0.7	1.8	0.14	B
18	18	38	59.5	19-41.5	155-57.3?	1.0	2.1	17	225	19.4	0.76	6.3	5.0	0.47	D
18	19	21	51.5	19-23.6	155-16.9	3.3		5	147	0.4				0.01	D
18	19	27	31.9	19-24.4	155-24.0	12.0	1.9	12	128	7.7	0.08	0.6	1.2	0.09	B
18	19	43	59.4	19-23.4	155-17.5	3.9	1.9	17	62	1.3	0.06	0.5	0.6	0.15	B
18	19	52	3.6	19-23.3	155-17.2	2.1		7	96	0.8	0.07	0.2	0.5	0.02	B
18	21	37	59.3	19-23.0	155-38.9?	10.5	1.9	12	130	14.2	0.22	1.7	2.4	0.27	C
19	0	37	46.9	19-23.5	155-17.1	2.5	1.3	11	106	0.6	0.03	0.2	0.2	0.05	A
19	1	11	59.6	19-56.8	155-34.1?	13.6	2.5	19	173	16.7	0.12	1.1	1.0	0.13	C
19	1	51	7.3	19-27.7	155-15.4	4.5	1.3	8	314	5.8	1.02	5.4	7.7	0.22	D
19	3	8	45.9	19-23.4	155-17.2	2.8		8	147	0.6	0.11	0.3	0.7	0.04	B
19	3	34	19.1	19-23.7	155-17.0	2.0	0.9	6	140	0.7	0.23	0.5	1.3	0.04	B
19	4	53	53.2	19-28.0	155-14.9	3.2*	1.4	6	317	6.8	9.85	35.5		0.17	D
19	5	8	48.2	19-23.4	155-17.5?	2.7		8	83	1.2	0.46	1.5	3.1	0.11	B
19	5	21	31.8	19-21.8	155- 3.0	7.7	2.0	12	227	12.3	0.26	1.7	0.8	0.13	C
19	6	17	30.7	19-23.5	155-17.1	2.2	0.1	7	141	0.6	0.06	0.2	0.4	0.02	B
19	8	46	20.0	19-20.5	155-16.8	30.4	3.0	20	149	1.3	0.14	1.0	1.4	0.13	B
19	10	8	51.4	19-15.4	155- 6.1	4.1	3.0	18	227	13.6	0.37	1.7	1.4	0.20	C
19	11	8	35.0	19-23.6	155-17.8?	3.7	1.5	11	72	1.8	0.07	0.5	0.6	0.11	B
19	18	31	51.2	19-23.4	155-17.1	2.4	1.0	12	91	0.5	0.04	0.3	0.3	0.08	A
20	0	10	57.3	19-21.4	155- 8.9	8.4	1.7	15	252	2.0	0.21	1.3	0.6	0.15	C
20	4	46	52.5	19-20.2	155-25.6	7.4	1.6	12	154	4.1	0.12	0.9	1.0	0.18	C
20	5	49	39.6	19-23.6	155-17.3	2.9	1.3	12	100	0.9	0.03	0.3	0.2	0.07	A
20	6	19	49.4	19-23.5	155-17.1	2.9	1.0	9	142	0.6	0.02	0.2	0.1	0.03	B
20	7	41	58.3	19-23.8	155-17.2	2.1	0.9	8	122	1.0	0.10	0.2	0.6	0.03	B
20	8	31	29.4	19-23.7	155-14.6	2.8		7	195	3.2	0.12	0.5	0.4	0.05	B
20	10	5	43.1	19-23.5	155-17.1	7.6	2.3	12	99	0.5	0.21	1.7	1.3	0.23	B
20	12	42	19.7	19-23.3	155-17.3	1.2	0.7	6	156	0.9	0.12	0.4	1.2	0.03	B
20	13	54	20.2	19-21.8	155-26.7	8.8	2.2	13	119	6.7	0.10	0.9	1.0	0.18	B
20	13	55	7.5	19-20.4	155-26.2	9.7	2.0	8	147	5.2	0.15	1.8	1.7	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 20	16	3	28.9	19-23.1	155-16.8	3.1	0.8	6	149	0.6	0.04	0.4	0.3	0.03	B
20	16	55	8.4	19-10.1	155-39.4	7.6		7	221	9.8	0.35	2.9	1.2	0.12	C
20	17	54	41.4	19-23.1	155-17.2	2.9	1.3	13	59	0.9	0.05	0.3	0.7	0.08	A
20	18	13	39.2	19-23.4	155-17.1	2.7	0.3	9	93	0.5	0.08	0.2	0.5	0.04	A
20	22	52	36.2	19-16.7	155-52.9?	1.3*	2.4	15	267	27.1	0.62	3.7		0.53	D
20	23	17	57.8	19-24.0	155-23.6	7.8	2.0	14	109	6.9	0.10	0.8	0.8	0.17	B
20	23	19	27.3	19-19.0	155-12.7	7.6		11	234	5.5	0.31	1.9	0.8	0.17	C
20	23	21	27.4	19-23.6	155-17.4	0.9	-0.3	7	141	1.1	0.11	0.3	1.1	0.04	B
21	0	11	51.5	19-23.4	155-17.1	2.6		6	142	0.5	0.27	0.6	1.5	0.05	B
21	1	4	26.8	19-19.3	155-10.7	8.1		9	260	4.7	0.43	1.7	2.8	0.16	C
21	1	11	10.1	19-23.8	155-14.8	4.2		6	254	3.2	0.12	0.4	0.5	0.01	C
21	1	33	53.5	19-23.0	155-14.7	3.0	1.3	10	102	2.3	0.13	1.0	0.7	0.19	B
21	1	49	4.0	19-17.5	155-16.0	8.5	1.6	17	228	5.3	0.21	1.2	0.6	0.16	C
21	1	51	1.9	19-23.3	155-17.3	1.7	0.1	7	152	0.9	0.10	0.3	0.8	0.03	B
21	2	21	54.8	19-23.8	155-17.3	2.7	1.3	10	87	1.2	0.05	0.3	0.3	0.08	A
21	2	22	36.0	19-23.7	155-17.4	2.1	0.8	9	100	1.3	0.11	0.6	0.8	0.10	B
21	3	57	24.6	19-23.7	155-17.1	2.0	0.7	9	107	0.8	0.09	0.2	0.6	0.05	A
21	4	45	10.3	19-23.2	155-17.4?	2.8	1.2	12	61	1.1	0.06	0.4	0.8	0.08	B
21	5	42	47.8	19-19.9	155-24.5	10.6	1.4	9	227	2.2	0.17	1.2	1.1	0.10	C
21	5	43	40.7	19-19.0	155-24.8	11.2		8	287	3.5	0.32	2.1	0.6	0.10	C
21	7	2	26.3	20-14.8	154-59.2?	4.6*		6	355	101.7	6.10	22.3		0.16	D
21	7	55	40.3	19-20.6	155-10.4	14.4		9	248	2.4	0.23	1.6	1.5	0.05	C
21	9	5	17.2	19-18.1	155-23.4?	8.0*		6	336	15.2	2.08	54.5		0.54	D
21	10	14	29.4	19-18.0	155- 6.6	6.4	2.1	14	215	9.2	0.25	1.5	0.9	0.16	C
21	12	36	3.9	19-23.0	155-17.6?	3.2	1.3	12	67	1.6	0.07	0.5	0.5	0.12	B
21	14	2	29.1	19-23.7	155-16.1	4.4	1.9	10	124	1.4	0.11	0.5	0.8	0.10	B
21	15	51	54.5	19-23.8	155-16.0	4.5	1.8	11	89	1.6	0.11	0.5	0.9	0.11	B
21	16	8	29.5	19-23.4	155-17.3	2.2	1.3	10	97	1.0	0.03	0.2	0.2	0.03	A
21	17	32	34.5	19-24.1	155-16.2	4.7		9	199	1.6	0.50	1.6	2.6	0.10	C
21	18	58	38.9	19-23.3	155-17.1	3.0	1.1	12	95	0.5	0.04	0.3	0.2	0.07	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 21	21	13	58.6	19-23.6	155-17.1	2.8	1.4	12	87	0.6	0.03	0.2	0.2	0.05	A
21	21	21	19.3	19-23.5	155-17.7	2.6	1.4	11	63	1.6	0.06	0.4	0.4	0.10	A
21	21	55	24.0	19- 2.9	155-19.7	44.2*	2.8	27	262	32.0	0.24	1.9		0.26	D
21	23	47	46.0	19-23.6	155-17.2	2.1		6	136	0.9	0.12	0.3	0.7	0.02	B
22	0	8	35.3	19-23.4	155-17.3	2.6		10	96	0.8	0.03	0.2	0.2	0.05	A
22	0	31	20.0	19-23.8	155-14.8	2.9		8	193	3.1	0.04	0.2	0.1	0.03	B
22	0	38	25.0	19-19.5	155-17.2	10.3		7	239	1.2	0.65	1.2	3.3	0.04	C
22	1	5	42.1	19-23.8	155-17.7	1.7		7	147	1.7	0.03	0.2	0.3	0.01	B
22	1	5	44.7	19-51.6	155-44.4?	6.7	2.1	13	165	19.5	0.99	5.3	28.7	0.46	D
22	1	11	25.9	19-23.5	155-17.2	2.6		6	140	0.7	0.21	0.4	1.2	0.04	B
22	1	15	56.0	19-23.4	155-15.2	3.1		10	91	2.3	0.07	0.5	0.4	0.12	B
22	1	19	9.1	19-23.1	155-15.3	6.5	1.7	16	66	1.6	0.06	0.5	0.4	0.10	B
22	1	33	32.8	19-23.8	155-17.4	2.8		11	102	1.4	0.06	0.4	0.4	0.10	A
22	2	2	0.3	19-23.3	155-17.2	3.6		8	113	0.7	0.11	0.7	0.9	0.09	A
22	2	5	49.4	19-23.8	155-17.5	5.8	2.4	16	59	1.5	0.08	0.6	0.6	0.15	B
22	3	34	25.5	19-21.6	155-13.5	11.8		9	293	3.1	1.62	7.9	6.8	0.17	D
22	4	2	27.5	19-23.1	155-14.3	5.4		6	273	2.9	0.23	0.7	1.0	0.02	C
22	4	48	4.1	19-21.9	155-20.5	29.4	2.6	21	117	3.7	0.19	1.1	1.8	0.13	B
22	4	53	1.9	19-23.9	155-14.8	2.9		8	200	3.4	0.07	0.4	0.2	0.04	B
22	5	3	37.8	19- 6.7	155-29.4	8.9		9	335	27.1	0.66	7.7	6.6	0.30	D
22	5	11	21.6	19-23.2	155-17.3	3.2		12	61	0.9	0.05	0.3	0.3	0.10	B
22	5	53	5.2	19-23.1	155-17.4	4.1	2.2	13	106	1.2	0.14	0.7	1.3	0.16	B
22	5	54	6.9	19-23.3	155-17.0	0.6		8	93	0.5	0.21	1.1	3.0	0.20	B
22	7	45	28.0	19-20.0	155-12.6	9.0	2.4	15	194	3.8	0.14	1.2	0.5	0.17	C
22	8	17	13.5	19-22.4	155-17.5	0.7		6	126	2.3	0.32	0.5	5.6	0.06	C
22	14	15	15.0	19-16.6	155-26.2	6.7	2.5	14	194	8.4	0.16	1.1	0.9	0.18	C
22	15	58	50.7	18-43.0	155-15.0	17.9*	3.0	16	320	119.3	0.47	3.8		0.20	D
22	17	19	18.8	19-22.8	155-15.4	6.0	2.1	14	77	1.2	0.08	0.6	0.6	0.12	B
22	17	33	44.2	19-23.9	155-16.4	0.0		11	77	1.1	0.08	0.4	1.6	0.13	B
22	18	3	43.3	19-24.5	155-17.1	0.1	1.0	12	115	0.7	0.11	0.5	4.4	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR	22	19	14	20.2	19-23.2	155-17.4	3.9	2.1	15	62	1.1	0.08	0.4	0.8	0.12	B
	22	20	3	59.0	19-23.3	155-14.9	3.7	1.3	9	172	2.4	0.16	0.6	1.4	0.09	B
	22	20	24	55.5	19-23.6	155-14.6	2.8	1.3	9	191	3.2	0.08	0.4	1.1	0.06	B
	22	21	26	10.5	19-23.3	155-17.6	4.8	2.4	16	64	1.4	0.07	0.4	0.6	0.14	B
	22	23	40	20.7	19-23.7	155-17.4	0.4	0.8	7	136	1.1	0.09	0.3	2.2	0.04	B
	23	1	38	44.9	19-23.8	155-17.5	0.7	0.7	9	90	1.4	0.08	0.2	1.2	0.05	A
	23	5	20	36.3	19-23.9	155-17.0	2.1	1.2	9	115	0.9	0.10	0.3	0.6	0.05	A
	23	6	39	54.2	19-23.5	155-15.1	3.2	1.6	9	175	2.4	0.10	0.6	1.2	0.08	B
	23	7	27	25.3	19-14.4	155-32.0?	6.5*		5	225	9.0	1.43	11.6		0.25	D
	23	15	45	22.7	19-24.0	155-17.3	1.6	1.0	8	125	1.4	0.09	0.2	0.7	0.03	B
	23	22	0	41.3	19-21.7	155-25.3	10.7	2.3	16	111	4.5	0.08	0.6	0.4	0.12	B
	23	22	6	37.1	19-27.4	155-50.5	6.7	2.3	16	176	10.9	0.11	1.1	0.6	0.12	C
	23	22	54	4.2	19-21.7	155-25.9	9.1	2.9	18	115	5.3	0.09	0.7	0.5	0.14	B
	24	1	46	18.2	19-19.9	155-15.9	31.6		18	185	2.6	0.23	1.3	1.9	0.12	C
	24	8	4	51.1	19-20.4	155- 9.1	8.7	2.0	16	198	3.0	0.17	1.2	0.6	0.16	C
	24	15	16	44.9	19-23.4	155-17.4	4.7	2.3	16	61	1.0	0.11	0.6	1.0	0.16	B
	24	15	17	45.3	19-23.6	155-17.5	5.8	2.7	16	51	1.3	0.09	0.7	0.7	0.22	B
	24	20	6	54.9	19-22.1	155-24.3	5.5	2.2	15	85	4.0	0.08	0.7	0.9	0.16	B
	24	20	17	54.2	19-23.0	155-15.4	6.1	2.4	16	66	1.3	0.07	0.5	0.5	0.11	B
	24	22	19	8.9	19-23.4	155-17.2	2.3	1.5	13	93	0.7	0.04	0.3	0.3	0.08	A
	25	2	38	29.5	19-23.4	155-16.9	6.0	2.5	17	75	0.2	0.08	0.7	0.5	0.16	B
	25	10	37	56.1	19-10.8	155-35.0	10.7	2.4	15	252	8.5	0.38	2.7	0.9	0.14	D
	25	15	33	46.8	19-23.8	155-17.4	2.7	1.6	13	85	1.4	0.03	0.2	0.2	0.06	A
	25	15	34	11.5	19-23.7	155-17.4	2.5	1.6	13	85	1.3	0.03	0.2	0.2	0.07	A
	26	3	47	34.9	19-46.0	155-23.7?	22.6		14	221	6.3	0.43	2.1	4.1	0.08	C
	26	3	48	27.1	19-25.9	155-34.4	2.7*		7	145	20.7	0.13	1.0		0.15	C
	26	9	54	39.9	19-17.7	155-13.6	10.2	2.6	19	203	8.1	0.17	1.1	0.5	0.16	C
	26	11	10	5.7	19-23.3	155-24.8	13.1		13	78	6.3	0.05	0.5	1.1	0.08	A
	26	11	27	47.8	19-15.8	155-13.3	8.2		10	241	10.8	0.40	2.2	1.2	0.15	C
	26	11	31	51.7	19-18.4	155-13.6	11.4	2.7	14	200	6.8	0.11	0.9	0.8	0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 26	13	40	22.3	19-20.3	154-58.6?	9.7		9	252	16.9	0.43	4.6	3.3	0.13	D
26	18	28	6.6	19-22.2	155-24.9?	11.7		13	167	4.7	0.14	1.2	0.6	0.15	C
26	20	11	9.2	19-23.5	155-17.1	2.7		7	138	0.5	0.07	0.2	0.4	0.02	B
26	20	18	10.7	19-22.9	155-22.8	0.0		10	112	4.9	0.22	1.0	3.4	0.23	B
26	21	17	46.0	19-22.5	155-19.8	0.2*		10	99	2.2	0.10	0.5		0.13	B
27	1	34	44.6	19-24.6	155-28.3?	11.0	2.1	17	89	11.9	0.13	0.7	0.8	0.13	B
27	3	12	23.8	19-17.5	155-13.9	7.9		13	246	7.8	0.32	1.6	0.9	0.14	C
27	6	6	51.0	19-22.0	155-24.0	9.3	1.9	11	193	3.4	0.17	1.1	0.9	0.13	C
27	6	56	44.5	19-20.7	155-12.1	7.6		16	201	2.7	0.20	1.2	0.7	0.19	C
27	9	57	6.7	19-21.8	155-28.7	11.5	1.4	11	134	9.9	0.09	1.4	3.0	0.11	B
27	13	27	16.2	20-15.3	155-31.6	8.0*	3.1	19	195	132.5	0.28	2.9		0.26	D
27	18	22	16.4	19-21.9	155-24.3	8.3		8	214	3.6	0.78	1.9	4.7	0.11	C
27	20	38	40.5	19-18.3	155-13.7	9.5	2.2	18	225	7.1	0.23	1.4	0.6	0.18	C
27	21	14	39.4	19-21.1	155-25.0	10.9	2.0	16	125	3.4	0.11	1.0	1.8	0.18	B
27	23	15	28.3	19-20.3	155-19.7	5.7	1.5	12	173	4.1	0.26	0.7	2.0	0.11	C
28	1	56	37.8	19-23.0	155-28.1	9.9	2.3	20	81	9.9	0.07	0.6	0.5	0.17	B
28	6	52	26.4	19-19.6	155-19.7	9.2	1.6	14	202	4.1	0.09	0.5	0.5	0.08	B
28	13	2	16.1	19-19.2	155-15.8	8.0	1.7	17	212	3.2	0.14	0.9	0.4	0.15	C
28	15	22	38.8	19-24.7	155-24.3	11.0		13	127	8.2	0.06	0.5	0.4	0.08	B
28	21	22	51.9	19- 8.7	155-32.1	6.6		9	169	12.3	0.11	1.1	0.9	0.10	C
28	21	23	59.2	19-22.1	155- 7.3	9.4	1.5	19	283	4.8	0.33	1.9	0.8	0.29	D
29	9	46	27.6	19-20.0	155- 9.2	8.9	2.0	19	200	3.6	0.18	1.3	0.7	0.21	C
29	15	4	5.6	19-24.3	155-17.4	13.5		17	54	0.7	0.05	0.6	0.5	0.10	A
29	16	4	49.1	19-20.1	155-17.8	7.8	1.7	17	165	0.7	0.08	0.6	0.5	0.12	C
29	17	18	15.4	19-18.5	155-15.9	8.3	1.9	17	200	3.9	0.14	0.9	0.6	0.15	C
29	22	2	51.9	19-20.2	155-13.4	8.3	1.5	18	193	3.5	0.13	0.9	0.5	0.16	C
29	22	59	14.1	18-58.2	155-30.3?	1.1		6	314	33.1	3.96	28.5	42.0	0.14	D
30	2	35	26.7	19-31.7	155-15.4	27.8	4.3	23	77	10.9	0.12	0.7	1.6	0.12	B
30	3	12	12.2	19-19.5	155-25.8	6.9	2.0	12	174	4.6	0.16	1.1	1.3	0.18	C
31	10	11	52.6	19-23.7	155-15.3	3.3	1.8	10	163	2.6	0.06	0.4	1.0	0.07	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 31	21	0	17.3	19-18.2	155- 8.3	7.3	2.4	18	216	7.4	0.30	1.7	0.9	0.22	C
31	22	30	2.3	19-19.0	155- 3.2	6.8	3.8	17	220	13.0	0.33	2.0	1.1	0.22	C
31	22	35	58.9	19-22.3	155- 7.1	6.7	2.0	16	250	5.1	0.36	2.1	1.2	0.21	D
31	23	0	15.8	19-21.8	155- 8.8	8.0	1.6	14	264	2.0	0.20	1.2	0.5	0.12	C
31	23	19	34.5	19-15.8	155- 2.3	3.6	2.2	17	261	17.5	0.71	3.4	1.8	0.22	D
31	23	53	13.5	19-20.3	155-13.1	9.2	2.3	18	194	3.3	0.13	1.0	0.5	0.19	C

Table 3.--Felt earthquakes

Date	Time H	Time M	Time S	Magnitude	Felt report
Jan 2	12	20	32.6	3.3	Kealakekua
3	15	06	27.8	2.9	Hilo
27	09	09	09.1	3.8	Hilo, Mt. View
Feb 4	06	08	25.2	3.1	Kapapala Ranch
5	00	20	53.3	3.5	Kapapala Ranch
17	20	42	35.2	3.4	Kapapala Ranch
Mar 2	14	30	02.9	4.0	Pahoa, Hilo, Laupahoehoe, Kapapala Ranch
18	06	23	30.7	4.1	Paauilo, Hilo
19	08	46	20.0	3.0	Paauilo
30	02	35	26.7	4.3	Hilo, Paauilo Kapapala Ranch, Kamuela, Mt. View, Volcano
31	22	30	02.3	3.8	Kapapala Ranch

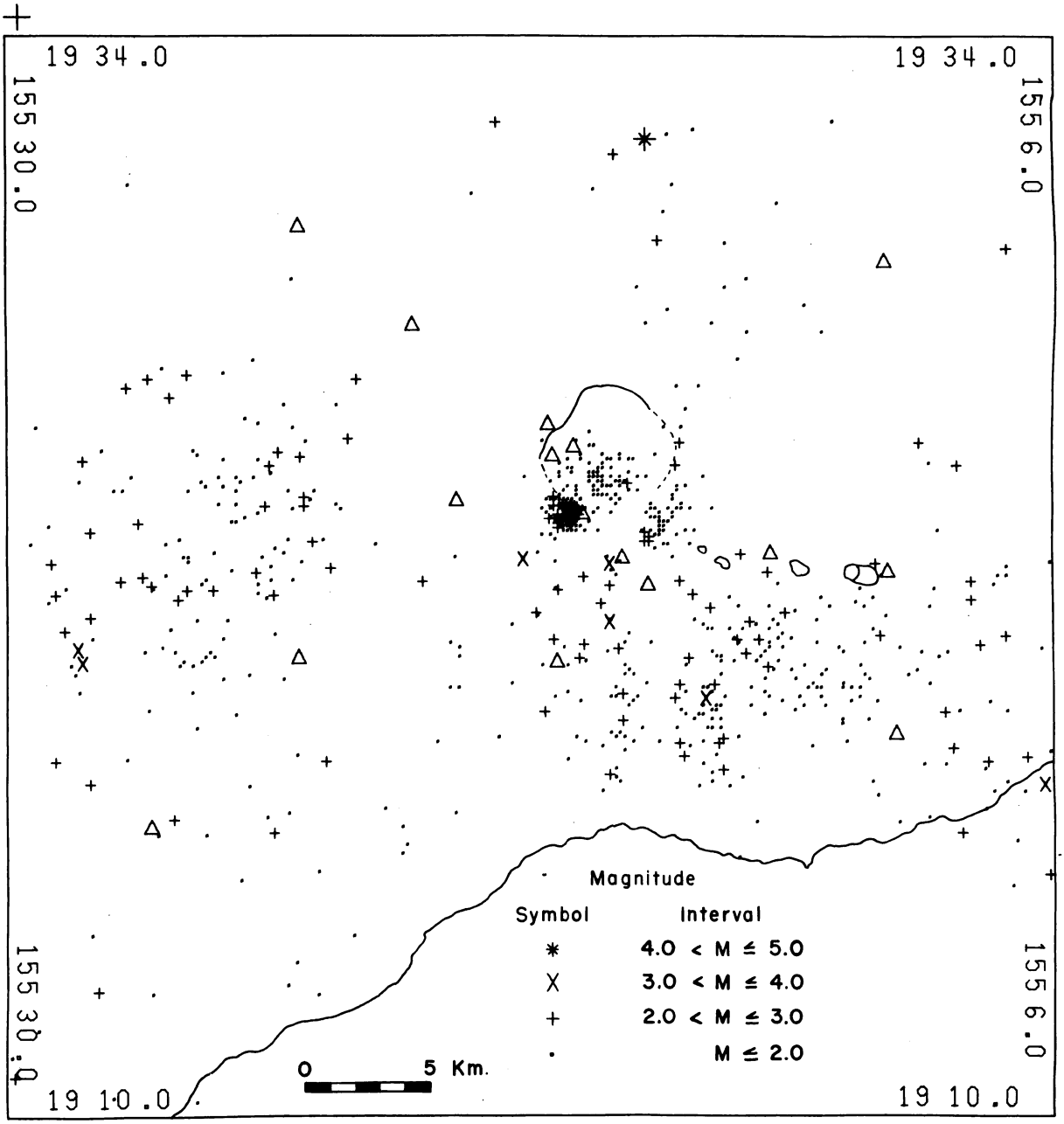

Figure 2.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

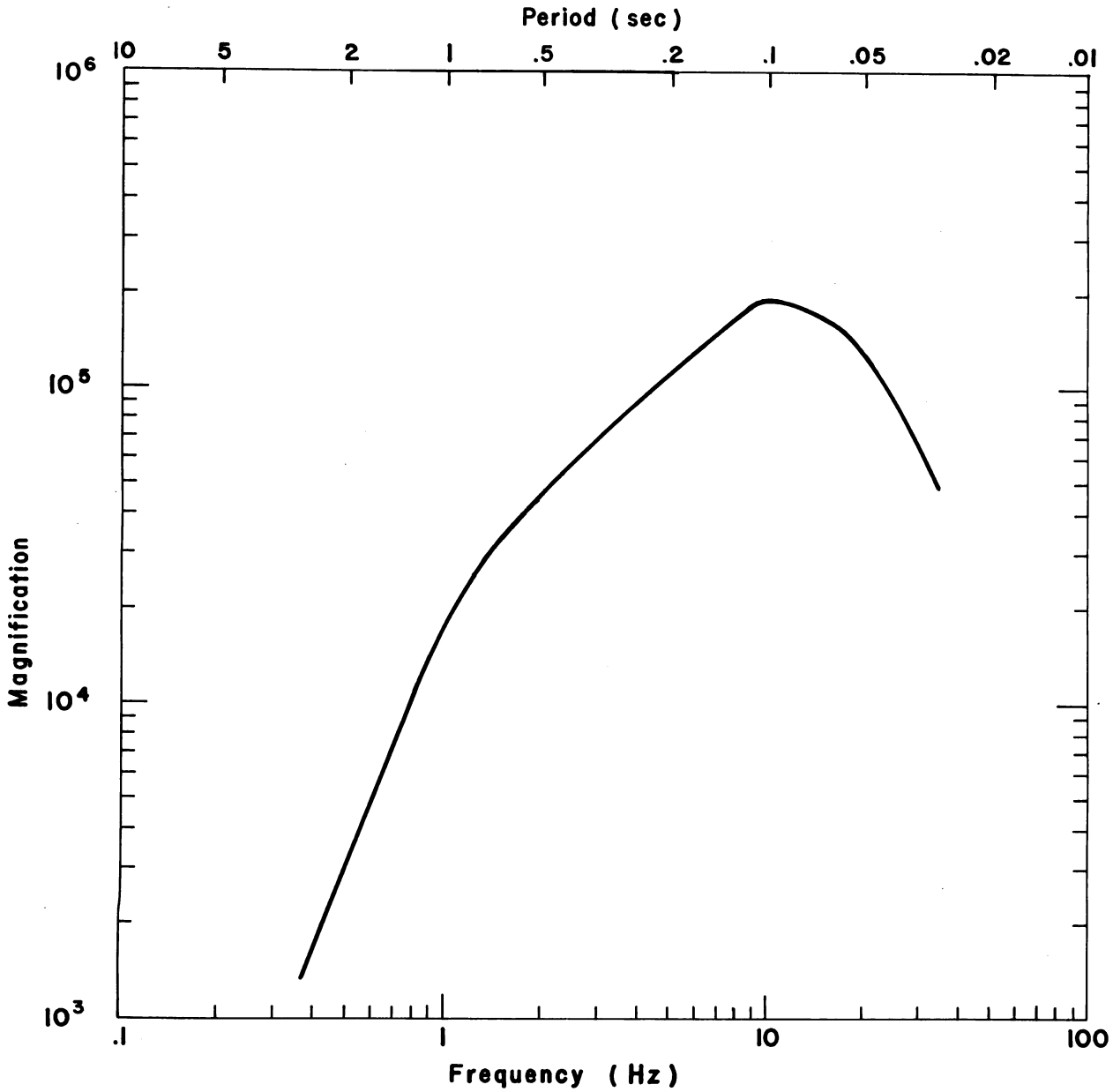

Figure 3.--Response curve for System II, EV-17, Teledyne seismic preamplifier.

Table 4.--U.S. Geological Survey seismograph stations in Hawaii
[on island of Hawaii unless otherwise stated]

Station	Symbol	Location	Instrumentation	Recording	Timing
Uwekahuna	UWE	19° 25.4'N, 155° 17.6'W	a) 15-90 Press Ewing system b) HVO-1 vertical system c) Sprengnether short period vertical and horizontal (E-W)	Local drum recorded " "	HVO master chron. (RM-USGS) " "
Mauna Loa	MLO	19° 29.8'N, 155° 23.3'W	EV-17/system I	HVO Develocorder	"
Mauna Loa X	MLX	19° 27.6'N, 155° 20.7'W	EV-17/system I	"	"
Ahua	AHU	19° 22.4'N, 155° 15.9'W	HVO-2/system I	"	"
Desert	DES	19° 20.2'N, 155° 23.3'W	EV-17/system I	"	"
North Pit	NPT	19° 24.9'N 155° 17.0'W	EV-17/system I	"	"
West Pit[1/]	WPT	19° 24.7'N, 155° 17.5'W	HS-10/system I	"	"
Kipuka Nene	KPN	19° 20.1'N, 155° 17.4'W	EV-17 system I	"	"
Outlet	OTL	19° 23.4'N, 155° 16.8'W	EV-17/system I	"	"
Cone Peak	CPK	19° 23.7'N, 155° 19.7'W	EV-17/system I	"	"
Makaopuhi	MPR	19° 22.1'N, 155° 9.8'W	EV-17 system II	"	"
East Koae	EKO	19° 21.8'N, 155° 15.3'W	EV-17/system I	"	"
Aloi[2/]	ALO	19° 22.0'N, 155° 12.8'W	EV-17/system I	"	"
Glenwood[3/]	GLN	19° 29.0'N, 155° 9.9'W	EV-17/system II	"	"
Puu Huluhulu	PHH	19° 22.5'N, 155° 12.5'W	EV-17/system II	"	"
Kahuku	KHU	19° 14.9'N, 155° 37.1'W	EV-17/system II	"	"
Hale Pohaku	HPU	19° 46.6'N, 155° 27.3'W	EV-17/system II	"	"
Pohoa[4/]	PAX	19° 29.1'N, 154° 55.8'W	EV-17/system II	"	"
Puu Honuaula	PHO	19° 28.9'N, 154° 53.4"W	EV-17/system II	"	"
Waiohinu	WAO	19° 3.6'N, 155° 36.6'W	EV-17/system II	"	"
Hilo	HIL	19° 43.2'N, 155° 5.3'W	a) HVO-1 vertical system b) Wood-Anderson NS and EW	Local drum recorder	RM-USGS
Kamuela	KAM	20° 2.1'N, 155° 42.2'W	EV-17/2.0 cps galv	"	TS-100
Kealakekua	KLK	19° 31.2'N 155° 55.3'W	EV-17/3.5 cps galv (vertical) EV-17H/3.5 cps galv (NS and EW)	" "	 RM-USGS
North Bay	NBY	19° 29.7'N, 155° 34.8'W	HS-10/Geotech PTA	"	RM-USGS
Maui (Hakeakala)	HAL	20° 46.0'N, 156° 15.0'W	HVO-1 vertical system Wood-Anderson NS and EW	"	TS-100
Oahu (EWA Beach)	KIP	21° 19.0'N, 158° 1.0'W	HVO-1 vertical system	"	Local chronometer

[1/] HS-10 replaced by Benioff 4681A (vertical, 1.0 second period).

[2/] Aloi discontinued on April 15, 1970.

[3/] Glenwood temporarily discontinued April 30, 1970.

[4/] Pahoa discontinued April 15, 1970. Replaced by Puu Honuala (PHO).

Table 5.--Seismic instrumentation

1. Seismometers

EV-17	Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer
EV-17 H	Same as above, but horizontal component
HS-10	Hall-Sears 0.5 sec. period moving coil seismometer
HVO-2	0.8 sec. period moving coil seismometer

2. Seismographs

HVO-1	Vertical-component electromagnetic seismograph with a peak magnification of about 20,000 at 0.25 sec. period.
15-90	Press-Ewing System: 3-component long period Press-Ewing seismograph system with pendulum and galvanometer periods of 15 and 90 seconds, respectively.
EV-17/3.5	cps galv, EV-17 H/3.5 cps galv, etc.: Short period electromagnetic seismographs composed of the seismometers and galvanometers indicated. Response similar to HVO-1. Poorly calibrated.

3. Amplifier and signal transmission systems

System I: HVO-built solid state seismic preamplifier (voltage gain, 200x), direct signal transmission over "hard" wire to HVO, HVO-built solid state amplifier and galvanometer driver.

System II: Develco or Teledyne seismic preamplifier--voltage controlled oscillator, signal transmission on audio FM carrier over "hard" wire or FM radio link to HVO, discriminator.

Geotech PTA: Short period Geotech photo-tube amplifier.

4. Timing systems

RM-USGS: Crystal-controlled chronometer employing solid-state binary dividers to produce minute and

hour marks. Typical drift rates are a few milliseconds per day.

TS-100: Sprengnether crystal controlled chronometer. Output and performance characteristics are similar to those of RM-USGS.

5. Telemetered system response

The peak magnification of the standard telemetered systems (System II, with the film strip magnified 20 times for viewing) is about 2×10^5 at a period of 0.1 second. For periods between 0.1 and about 1.0 second, the response falls off 6 db/octave. (fig. 3)

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tllt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 8, which is published only in the first quarter issue each year.

Table 6.--Tilt Coordinates at Uwekahuna, January, February, and March, 1970

Date (1970)	N-S	E-W	Date (1970)	N-S	E-W
Jan. 4	544	402	Mar. 1	552	384
11	546	395	8	552	385
18	548	392	15	553	386
25	547	391	22	557	381
Feb. 1	548	391	29	559	379
8	550	383			
15	551	386			
22	551	386			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 4)

Tilt base	Date (1970)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1969)
Uwekahuna (U on fig. 4)	27 Feb	606.0	357.2	7.55	N46.7°W	3 Dec
Tree Molds (TM)	9 Feb	485.6	495.8	3.79	N21.6°W	30 Oct
Sand Spit (SS)			Not read this epoch			
Keamoku (Kea).	11 Feb	530.1	375.1	3.81	N79.7°W	27 Oct
Ahua Kamokukolau (Kam).			Not read this epoch			
Kipuka Nene (KN)	13 Feb	295.5	1/ 507.5	0.95	S17.6°W	28 Oct
Hilina Pali (HP)			Not read this epoch			
Kapapala Ranch (Kap).	11 Feb	487.7	519.3	1.72	S63.8°E	27 Oct
Mehana (M)	9 Feb	579.2	587.0	2.36	N45.4°E	30 Oct

1/ The hundreds digit of the E-W tilt coordinate of Kipuka Nene is 5 instead of 3 as reported in the last 10 summaries.

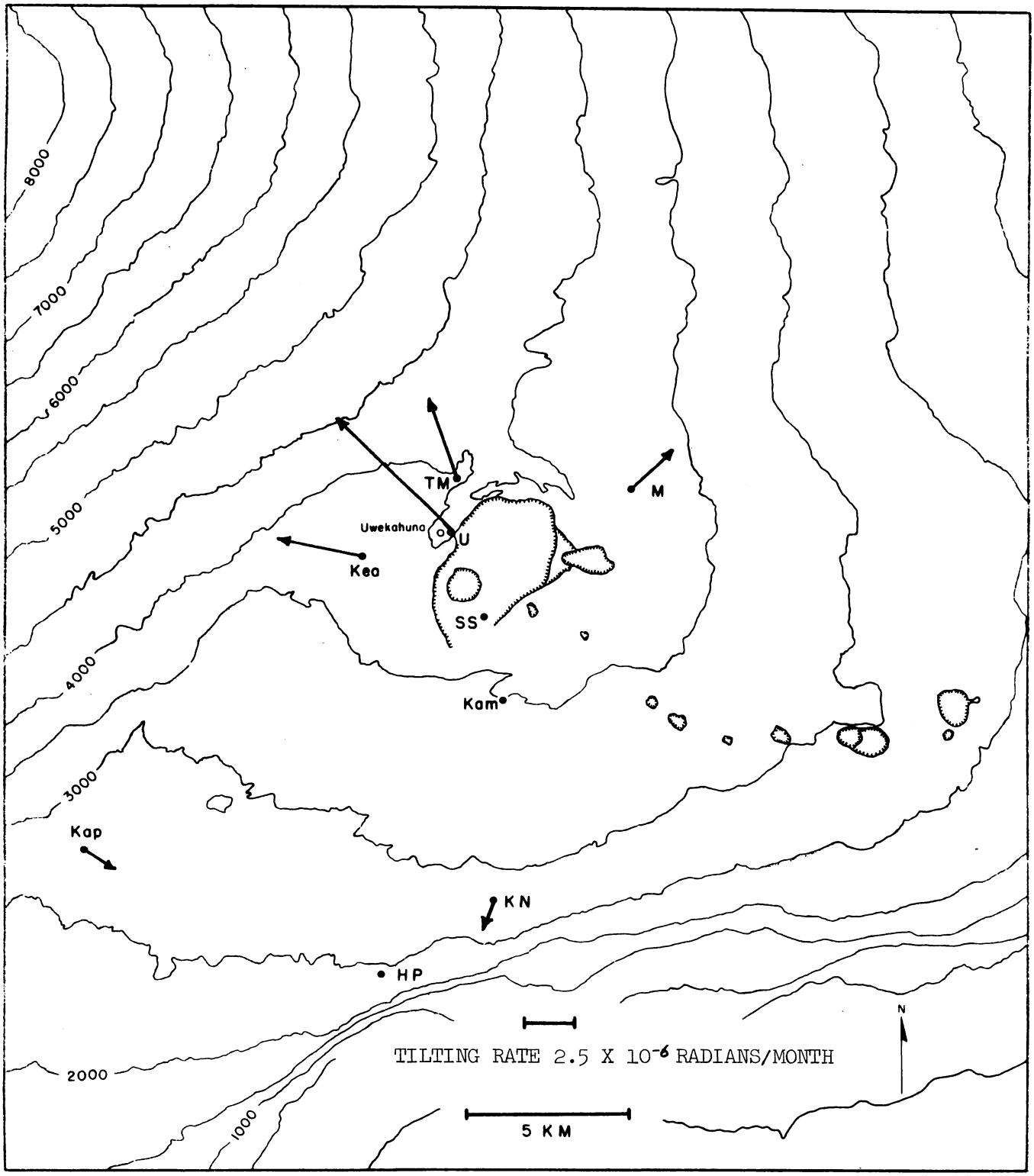

Figure 4.--Tilting of the ground around Kilauea Caldera between Oct. 27, 1969, and Feb. 9, 1970. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 7 for explanation of abbreviations.

Table 8.--U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N.	Long. W.			
Tree Molds	TM	19° 26.3'	155° 17.3'	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19° 24.1'	155° 16.8'	---do---	25.40	Equilateral triangle.
Keamoku	Kea	19° 25.1'	155° 19.0'	---do---	47.55	Do.
Ahua Kamokukolau	Kam	19° 22.7'	155° 16.6'	---do---	50.79	Do.
Kipuka Nene	KN	19° 19.4'	155° 16.7'	---do---	50.79	Do.
Hilina Pali	HP	19° 18.2'	155° 18.6'	---do---	47.73	Do.
Kapapala Ranch	Kap	19° 20.5'	155° 23.8'	---do---	50.79	Do.
Mehana	M	19° 26.2'	155° 14.3'	---do---	25.00	Do.
Uwekahuna	U	19° 25.5'	155° 17.4'	---do---	50.79	Do.
Uwekahuna Vault		19° 25.4'	155° 17.6'	Daily	3.48	NS. and EW.

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GPO 982-410

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 58

April, May, and June 1970

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INTRODUCTION

During the last few years the Hawaiian Volcano Observatory's seismic network has undergone important changes. The telemetered network around the summit of Kilauea has been reinforced and extended, and more stations (mostly telemetered by radio) have been added to the broader Island of Hawaii network (fig. 1). All the telemetered stations are recorded side by side, along with the Uwekahuna chronometer and the WWVH radio trace, on a single 16 mm film strip on a Develocorder at the Observatory. Outstation timing has also been improved substantially by the use of crystal chronometers instead of the old mechanical ones. As a result of these improvements, the volume of usable recorded seismic data has increased tremendously, both in the number of stations available for each earthquake and in the number of earthquakes that are sufficiently well recorded to be located.

Detailed studies of microearthquakes in California and Nevada by the Geological Survey's National Center for Earthquake Research (NCER) have generated similar voluminous sets of seismic data. Efficient computer-oriented procedures for data reduction and computer programs for data analysis have been developed and used extensively at NCER. The HVO seismic data are now being analyzed by a joint HVO-NCER team, and the methods and computer programs used are virtually identical with those employed with other networks at NCER.

Seismogram readings are punched on computer cards to provide an input deck for use in the location program HYPOLAYR (Eaton, 1969), which generates an output deck summarizing the solution of each event. The output deck is a convenient source of material for further analyses of the earthquakes, and the input deck is saved for possible reanalysis when better velocity-depth models of the crust are worked out. The velocity-depth model currently used in the determination of hypocenters (as tabulated below) is based on very limited data and represents a broad average of crustal structure along the Hawaiian Ridge. It is anticipated that further refinements in the model will not lead to large changes in hypocenters calculated for events within the network, but hypocenter solutions for some "poorly controlled" events outside the network may be changed substantially.

Velocity model used for locating earthquakes in Hawaii
(Eaton, 1962)

Depth to top of layer (km)	Layer velocity (km/sec)
0.00	3.90
3.10	5.00
11.20	6.80
14.80	8.25

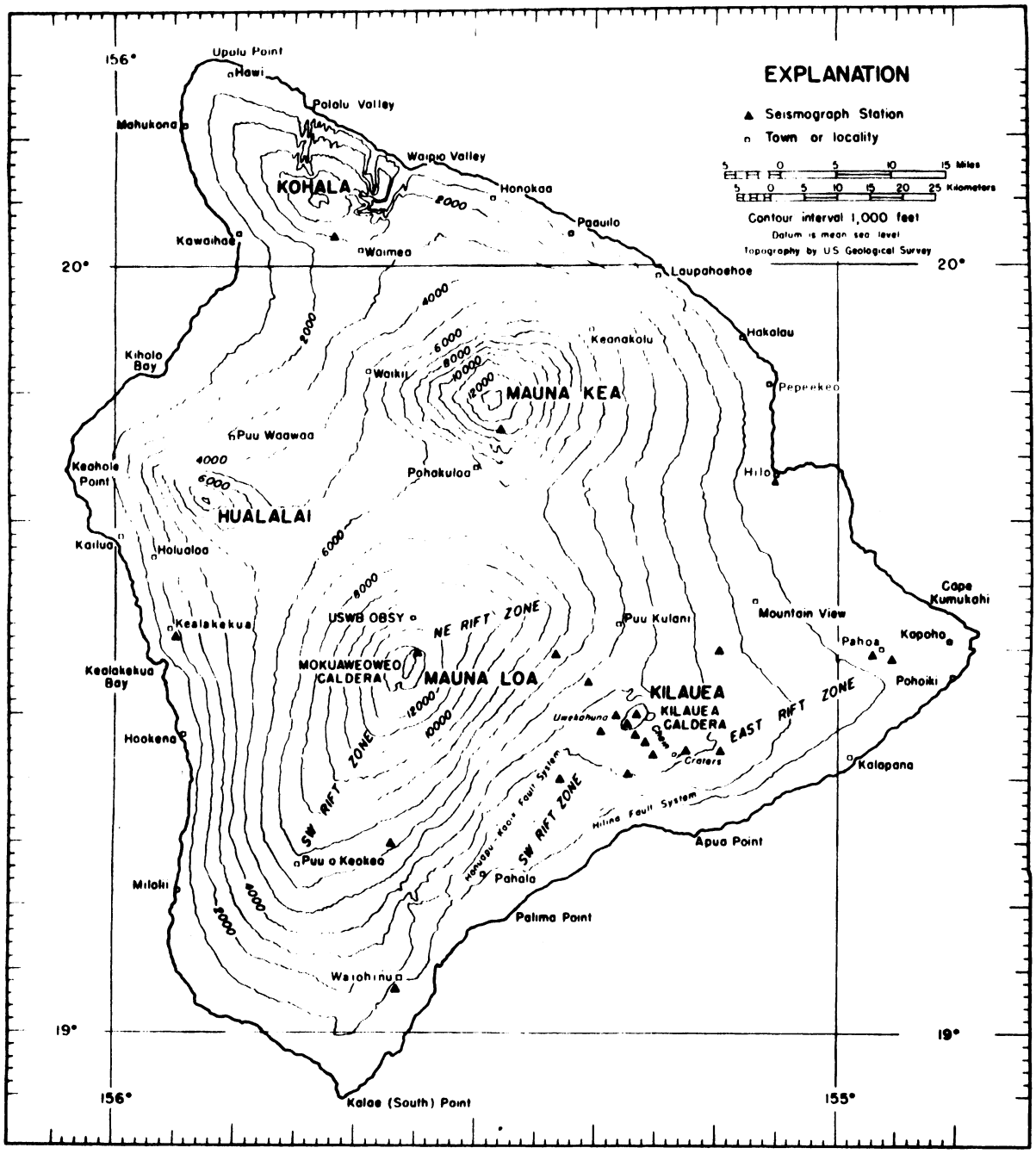

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U. S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in table 2 in terms of geographic coordinates, which are indicated at the edges of the map.

To permit more adequate reporting of results on individual earthquakes and to bring the HVO earthquake reports into conformity with those produced at NCER, some revisions in the format of the HVO summary are required. Beginning with the first quarter 1970 the following changes were introduced:

a) The list of local earthquakes includes all events for which satisfactory hypocenters can be determined. This list includes statistics on the hypocenter determination as well as a summary hypocenter quality rating.

b) A map of epicenters on and near Kilauea Volcano during the quarter is included.

c) The station list is augmented to describe the timing system, the type of preamplifier (for telemetered stations), and the mode of recording.

d) The velocity-depth model of the crust used in the hypocenter determinations is described.

SUMMARY OF PRINCIPAL EVENTS

Eruptive and intrusive activity

The long-lived upper east rift eruption that began in May of 1969 continued through this period. The shield that grew around the central vent of this eruption was informally named Mauna Ulu ("Growing Mountain" in Hawaiian) early in 1970; this name was soon adopted formally.

The first two years of the Mauna Ulu eruption were described by Swanson and others (1971). The period covered by the present summary was principally a time of rapid growth of the Mauna Ulu shield. Growth was sustained by repeated brief periods of overflow with or without accompanying fountains up to 20 or 30 m, adding scores of thin layers of pahoehoe around the central vent. Ground deformation over the summit reservoir was virtually negligible during this type of activity, suggesting a state of dynamic equilibrium. Two distinct events, however, punctuated this period of remarkable shield building; one began in early April and the other in mid-May.

At 0830 April 9 a new radial fissure was discovered on the southwest flank of Mauna Ulu. In a period of several hours, the fissure grew about 1.5 km to the southwest, crossing the floor of Aloi Crater en route. When the fissure was discovered, lava was gushing from where it cut the floor and east wall of Aloi, and small flows that had quietly oozed from the fissure immediately southwest of the crater had already puddled and were cooling. By 1000 the crater was filled and overflowing to the south.

Although no one saw the onset of activity, examination of seismic and tilt records suggests initial fissure formation at about 2200 April 8, followed by the outbreak of lava at about 0600 April 9. The rate of summit deflation and the frequency of earthquake activity near Aloi increased slightly between 2100 and 2200, April 8. The frequency of local Aloi quakes increased to 160/hr between 0400 and 0500, April 9, and there was some local tremor. The rate of summit deflation and the amplitude of tremor both increased sharply at about 0600.

The new fissure erupted sporadically until about April 21, feeding new flows that extended as much as 5.5 km to the south, and creating a levee-contained lava lake in Aloi. This lake was perched above the pre-April level of the crater rim at the height of activity, but subsided just below the rim when activity ceased. The central Mauna Ulu vent appeared to behave independently. Summit overflows added to the height of the shield several times immediately preceding and during the Aloi filling.

On May 15 and 16 seismicity increased greatly from the area of Devil's Throat on the upper east rift to the summit caldera (see following section) and two episodes of minor summit collapse took place. Collapse amounted to 4 and 7 microradians, respectively, at Uwekahuna and was recovered entirely by May 27. Small open cracks formed across the Chain of Craters Road near Lua Manu. Analysis of subsequent tilt, level, and geodimeter surveys suggested that these events resulted from the shallow intrusion of magma into the southeast caldera-upper east rift area.

In general, behavior of the active lava in the central vent at Mauna Ulu appeared to be unaffected by the May 15-16 events. May 21 marked the beginning of a new series of overflows there that lasted until late June. By the end of June all vestiges of Aloi Crater were buried and the top of the Mauna Ulu shield stood about 100 m above surrounding terrain.

Seismic activity around the summit of Kilauea

The swarm of shallow earthquakes that began on the morning of May 15 was centered in the Kokoolau Crater-Devil's Throat area of the upper east rift. The activity started about 0435, at the rate of 1 to 3 quakes per minute. The frequency rapidly increased, and for several hours during the peak of activity the records were so obscured that earthquake arrival times were impossible to read. Several of the quakes were felt locally.

By May 16, the initial seismicity near Kokoolau and Devil's Throat had diminished, but high activity spread northwest toward the southeastern rim of Kilauea Caldera. At about 0100, May 16, many quakes were centered near the southern part of the caldera, and at 0200-0400 seismicity was climaxed by a flurry of small quakes near Halemaumau. Shallow tremor accompanied the May 15-16 events and together with minor summit deflation suggest movement of magma. This earthquake swarm was studied in some detail by Endo (1971).

Lower east rift earthquakes

Following a month of quiescence, lower east rift quakes picked up in mid-April. Activity peaked on April 26, when nearly a thousand small shocks recorded on the local Puna station (PHO). Activity leveled after a few days, and shocks continued to occur in moderate numbers. The continued activity prompted the installation of two temporary stations near the permanent station, Puu Honuaula, making a small tripartite array with stations located about 1 to 1-1/2 km apart. Signals were wired from the seismometer sites to the base of Puu Honuaula, and transmitted over FM radio to the Observatory. Recording was made on Develocorder 16 mm film. The data showed that activity was centered near the 1955 vents (see HVO Summary 57).

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPR, OTL).

Computer locations of well-recorded events are listed in table 2. The location of each seismograph station is listed in table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea summit: 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long period, earthquakes characterized by low-frequency waves that originate about 5 km or deeper beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region. Shallow earthquakes along the SW rift zone of Kilauea and the adjacent portions of the Kaoiki fault system. Earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank. Shallow earthquakes along the northeast-trending Koae fault system south of Kilauea Caldera. Earthquakes from other regions: west Hawaii, Mauna Kea, etc.

Date (1970)	Tremor (m = minutes)			Number of Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper[1] East Rift	Lower[2] East Rift	Others	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow					
April 1			Fluctuating from moderate to low levels near eruptive site on the upper east rift	1		597+	14	64	1		
2				1		620+	18	16	?		
3						408+	8	40	?		
4					4	282	6	33	?		
5				1		228	24	41	?		
6						1355	11	83	?		Shallow Caldera swarm 0925-1200
7						502	13	109	2		
8				1		196	13	75	2		
9						66	11	26			
10					2	48	6	11			
11					5	103	15	17			
12						102	36	16+	1		
13				2		117	33	12+			
14				4		129	28	10			

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera (cont'd)

Date (1970)	Tremor (m = minutes)			Number of Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper[1] East Rift	Lower[2] East Rift	Others	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow					
April 15			Fluctuating from moderate to low levels near eruptive site on the upper east rift	2		115	28	9	1		
16						126	15	12			
17						120	7	7			
18						116	15	8			
19				5	7	103	17	8	36		
20						81	9	7	4		
21				2	3	121	8	18	9		
22				4		177	17	19	8		
23				3		216	14	14	80		
24	33m					119	10	9	158		
25					2	75	14	5?	409		
26				1	1	75	11	6	956		
27				3	3+	114	13	17	754		
28				1		102	17	13	800		
29				2		126	13	10	297		
30						129	23	6	386		
May 1						93	8	5	303		
2					38	78	13	5	625		
3				3		254	17	13	446		
4						222	15	6	186		
5				2		215	11	18	185		
6						370	19	27	252		
7						277	12	45	140		
8				2		179	12	33	75		
9				1		78	16	27	63		
10				2		72	18	38	30		

	11						55	9	19	42
	12				1		66	10	9	29
	13				5		57	12	30	73
	14				2		65	8	220+	?
	15				2?		698?	8?	1815+	?
	16				2		221	14	210+	?
	17				1		241	8	125	?
	18				2		175	9	70	?
	19				5?		87	11	73	?
	20				4?		104	5	68	?
	21				5?		143	13	33	?
	22				3?	3	87	11	37	?
	23				10?	37	73	16	81	?
	24				2	125	78	8	65	?
	25				1	193	88	12	37	?
	26				2	233	70	16	32	?
	27	35m				360	47	5	31	?
	28					309	63	7	28	?
	29					185	49	8	26	?
	30	25m			2	110	43	8	15	?
	31				3	130	95	2	48	?
June	1				2	2	70	8	7	?
	2					1	57	8	14	?
	3				3	2	112	5	11	?
	4				3		675	22	56	?
	5				3		323	11	40	?
	6				7	12	117	25	7	?
	7					23	113	22	20	20
	8	55m			4	33	120	5	14	?
	9	103m			1	45+	68	9	24	20
	10				4	220+	52	8	34	?
	11				5	16	106	18	20	?
	12				4		97	16	16	?
	13				2	2	92	17	13	?
	14	49m			1	1	240	12	52	?
	15					1	175	14	38	?

Fluctuating from moderate to low levels near eruptive site on the upper east rift

Table 1.- -Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera (Cont'd)

Date (1970)	Tremor (m = minutes)			Number of Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper[1/] East Rift	Lower[2/] East Rift	Others	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
June 16			Fluctuating from moderate to low levels near eruptive site on the upper east rift		1	143	14	24	?		
17	39m				11	132	15	11	?		
18					12	92	22	15	?		
19					71	123	11	23	?		
20					18	80	14	11	?		
21					5	42	11	12	?		
22				10		151	22	19	?		
23				5		456	18	37	?		
24				2	11	140	16	18	?		
25				1		88	8	7	?		
26	9m			1		51	12	12	?		
27				2	4	75	13	11	?		
28				3		82	11	12	?		
29				5		57	12	12	?		
30				1		319	16	15	34		

1/ Upper East Rift count poor due to continuous tremor and traffic.

2/ Count taken from station Puu Honuaula (PHO).

Computer analysis of the HVO network data permits the systematic treatment of far more earthquakes than was possible previously. This extended coverage should permit a more detailed examination of the relationship between earthquakes and volcanism in Hawaii.

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i / NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ DEPTH or 5 km
B	≥ 6	≤ 150°	≤ 2 x DEPTH or 10 km
C	≥ 6	≤ 225°	≤ 50 km
	≥ 4	≤ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U.S. Geological Survey.

*RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 1	2	19	35.4	19-23.9	155-16.9	7.1	1.7	11	93	1.0	0.13	0.4	0.8	0.06	A
1	8	10	49.4	19-25.6	155-11.3	25.4	2.3	18	86	6.8	0.19	1.1	1.9	0.14	B
1	15	33	36.5	19-18.8	155-15.5	9.2	2.4	18	198	4.0	0.12	0.9	0.5	0.14	C
2	3	3	9.4	19-23.8	155-17.2	3.0	1.8	13	86	1.0	0.03	0.3	0.2	0.07	A
2	4	58	12.2	19-24.4	155-25.6?	11.1	2.0	16	77	8.7	0.06	0.6	0.3	0.12	B
2	5	57	6.9	19-18.7	155-14.1	9.3	2.2	18	201	6.0	0.15	1.0	0.5	0.16	C
2	7	50	1.7	19-23.1	155-17.3	3.5	1.4	9	119	1.0	0.06	0.5	0.9	0.09	A
2	8	32	6.7	19-13.3	155-23.6	32.6		12	220	12.8	0.70	2.5	6.5	0.13	C
2	12	13	21.7	19-22.0	155-20.1?	9.7	2.2	11	115	3.1	1.15	2.7	6.9	0.36	C
2	12	18	47.5	19-23.1	155-17.6?	3.3	2.0	13	65	1.5	0.06	0.4	0.4	0.12	B
2	14	21	59.2	19-20.0	155-39.1	7.0	2.5	11	223	10.0	0.25	1.6	0.7	0.12	C
2	15	47	31.4	19-23.6	155-17.1	2.9	1.7	10	111	0.7	0.03	0.2	0.2	0.04	A
2	21	30	46.7	19-20.1	155-34.2?	3.2*		5	212	10.9	2.78	16.6		0.72	D
2	22	45	38.5	19-23.3	155- 4.4	4.1	2.0	16	199	10.1	0.22	1.4	1.2	0.20	C
3	1	35	36.9	19-23.4	155-17.6	2.4	1.8	12	69	1.3	0.11	0.7	1.4	0.14	B
3	5	16	19.2	19-25.6	155-24.1	10.5	2.2	15	63	7.0	0.05	0.5	0.4	0.09	B
3	13	20	24.2	19-23.4	155-14.1?	3.8		8	172	3.7	0.17	0.4	2.0	0.06	C
3	13	30	29.4	19-26.2	155-24.2	9.7		7	180	6.7	0.06	0.6	0.4	0.04	B
3	13	38	21.7	19-23.2	155-17.4	3.0	1.6	11	62	1.1	0.03	0.3	0.2	0.06	A
3	15	17	49.4	19-23.3	155-17.2	3.0	1.1	11	97	0.8	0.03	0.2	0.2	0.05	A
3	15	22	56.9	19-23.8	155-17.2	2.2	1.0	9	122	1.0	0.07	0.2	0.5	0.04	A
3	16	0	8.8	19-20.8	155-18.5	5.4	2.0	12	141	2.4	0.14	0.4	1.1	0.07	B
3	16	42	5.7	19-23.1	155-17.4?	2.6	1.0	9	71	1.1	0.27	1.1	3.0	0.16	B
3	17	33	13.6	19-23.8	155-17.3	2.2	0.9	9	112	1.2	0.08	0.4	0.5	0.07	A
3	18	41	21.8	19-22.3	155-17.1?	9.2	1.6	14	82	2.1	0.24	1.6	1.5	0.33	C
3	22	24	9.2	19-23.0	155-15.2	3.6	1.3	11	83	1.7	0.08	0.5	1.0	0.11	B
4	0	25	46.2	19-23.5	155-17.1	2.1		7	141	0.6	0.04	0.1	0.2	0.01	B
4	0	38	12.3	19-22.0	155-19.4	1.2		8	161	3.2	0.10	0.5	0.8	0.08	B
4	0	58	10.5	19-23.8	155-17.9?	0.1*	0.1	8	137	1.8	0.24	1.2		0.35	C
4	1	45	44.9	19-24.2	155-17.3	1.9	2.0	14	62	1.0	0.08	0.5	0.5	0.19	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 4	1	52	40.7	19-24.2	155-17.3?	3.6	1.0	8	121	1.0	0.10	0.6	0.8	0.10	B
4	2	21	12.2	19-21.3	155-14.4	30.0	1.8	18	147	1.8	0.16	1.0	1.5	0.12	B
4	2	53	27.7	19-20.4	155-10.4	7.4		15	252	2.7	0.25	1.4	0.7	0.17	C
4	5	11	24.0	19-22.8	155-23.5	11.8		10	123	4.7	0.12	0.8	1.7	0.10	B
4	5	33	31.5	19-23.5	155-17.0	2.3	1.0	10	139	0.4	0.04	0.3	0.2	0.05	B
4	7	2	39.0	19-23.6	155-17.0	2.3		7	136	0.5	0.10	0.3	0.6	0.04	B
4	10	37	27.5	19-24.1	155-14.7	3.1		8	209	3.8	0.07	0.3	0.2	0.04	B
4	16	38	42.9	19-19.4	155-10.5	7.0		11	248	4.5	0.42	2.4	1.1	0.24	D
4	16	41	43.2	19-13.9	155- 0.2?	7.5	2.7	18	271	22.5	0.88	4.2	1.8	0.36	D
4	16	43	37.9	19-21.4	155- 9.0	7.3		11	262	1.9	0.26	1.5	0.8	0.14	C
4	17	26	57.2	19-21.1	155-12.6	9.2		14	181	1.7	0.16	1.0	0.8	0.15	C
4	18	35	29.4	19-18.0	155-14.2	8.1		11	237	6.8	0.31	1.8	0.8	0.17	C
4	18	44	18.1	19-41.0	156- 0.3	8.0*		5	328	63.0	7.53	45.2		0.10	D
4	20	13	38.8	19-21.7	155-44.6	9.6		12	237	18.2	0.38	2.1	0.8	0.16	C
4	20	36	18.6	19-23.3	155-15.3	4.4	1.3	12	87	2.0	0.11	0.5	1.0	0.11	B
4	20	48	17.5	19-20.2	155-16.2	8.5		13	203	2.0	0.11	0.7	0.5	0.09	B
4	21	29	2.1	19-23.8	155-17.9	3.5	2.3	13	71	1.8	0.10	0.6	1.2	0.15	B
4	22	24	33.7	19-24.0	155-17.3	2.3	0.7	11	84	1.3	0.02	0.2	0.1	0.04	A
4	22	43	16.9	19-19.3	155- 0.6	17.1*		11	342	17.1	1.55	9.5		0.08	D
4	23	58	9.9	19-22.0	155-17.7	4.1	1.1	13	81	3.0	0.12	0.5	1.3	0.13	B
5	2	28	23.0	19- 9.2	156- 3.1?	20.6*		6	323	46.7	8.46	67.8		0.75	D
5	3	48	51.2	19-23.5	155-17.1	2.3	1.0	11	91	0.6	0.02	0.1	0.1	0.03	A
5	3	54	59.9	19-21.1	155-14.2	7.5		16	172	2.3	0.14	0.9	0.6	0.16	C
5	5	13	12.5	19-23.4	155-15.0	1.9	1.0	12	93	2.5	0.05	0.4	0.6	0.10	A
5	6	38	55.9	19-28.5	155-53.0?	5.6		14	173	6.4	0.19	1.6	1.3	0.23	C
5	7	0	43.9	19-23.2	155-17.9	4.5	1.2	12	119	2.0	0.17	0.8	1.5	0.16	B
5	7	16	37.7	19-23.4	155-15.1	2.5	0.5	10	91	2.4	0.08	0.5	0.8	0.10	B
5	7	59	8.7	19-23.2	155-17.3?	3.1	1.6	13	60	0.9	0.04	0.3	0.2	0.07	B
5	8	30	49.3	19-23.0	155-17.3	3.0	1.1	13	62	1.2	0.04	0.3	0.3	0.10	A
5	9	25	31.0	19-26.8	155-22.7	11.1	2.4	16	99	3.8	0.07	0.8	0.4	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 5	10	32	57.0	19-23.4	155-17.4	1.9	0.5	6	147	1.0	0.23	0.5	1.6	0.05	B
5	10	59	6.9	19-18.3	155-15.0	8.0*	1.5	5	310	6.5	0.33	1.7		0.01	D
5	11	32	10.3	19-20.6	155-18.8	3.1		7	152	2.7	0.03	0.3	0.2	0.02	B
5	12	9	18.8	19-25.0	155-23.2?	8.0*		5	338	9.9	2.49	13.7		0.07	D
5	12	18	27.7	19-15.1	155-19.2	15.7*		5	329	14.1	3.11	18.8		0.02	D
5	12	48	2.2	19-23.1	155-17.1	6.4	2.6	14	72	0.8	0.08	0.7	0.6	0.14	B
5	12	52	16.9	19-23.7	155-14.6	4.8	1.0	8	183	3.3	0.14	0.6	1.2	0.06	B
5	13	12	29.8	19-23.7	155-17.0?	2.4		5	165	0.6		0.0		0.02	D
5	13	41	46.7	19-28.0	155-14.4?	8.0*	1.3	7	319	8.1	1.59	10.9		0.74	D
5	13	55	3.7	19-26.8	155-15.0?	8.0*		6	308	5.9	1.37	8.8		0.41	D
5	14	45	40.9	19-18.1	155- 4.0	8.4	2.0	9	303	12.5	0.91	4.3	1.2	0.21	D
5	15	17	53.2	19-23.5	155-17.7	4.8	2.6	15	62	1.5	0.12	0.6	1.1	0.17	B
5	15	19	14.3	19-23.8	155-17.4	1.9	0.3	8	132	1.4	0.07	0.4	0.5	0.06	B
5	15	21	31.9	19-18.1	155-12.9	14.6		8	245	7.2	0.16	1.5	0.9	0.05	C
5	15	22	33.4	19-22.7	155-14.4	3.7		11	107	2.2	0.05	0.4	0.9	0.08	A
5	15	29	33.4	19-23.8	155-14.3	0.1*	0.8	10	106	3.8	0.12	0.6		0.16	B
5	16	51	47.2	19-20.0	155-16.9	10.4		8	209	0.9	0.11	0.3	0.6	0.02	B
5	16	58	38.9	19-23.6	155-17.3	1.9	0.7	6	139	0.9	0.11	0.3	0.8	0.03	B
5	18	29	52.9	19-23.1	155-14.9	2.9		10	86	2.1	0.06	0.4	0.3	0.10	A
5	18	55	12.0	19-23.4	155-17.1	0.7		7	145	0.5	0.06	0.3	0.6	0.03	B
5	21	26	40.7	19-23.8	155-14.7	4.6	0.8	8	198	3.3	0.18	0.6	1.3	0.06	B
5	21	35	16.8	19-26.5	155-35.9	10.7	2.6	13	99	6.2	0.09	0.8	0.6	0.10	B
5	22	5	11.9	19-18.3	155-13.6	11.7	1.4	12	238	7.0	0.28	1.6	1.6	0.11	C
5	22	57	41.2	19-19.2	155-11.2?	2.9	0.7	8	281	5.3	0.74	2.3	3.0	0.20	C
5	23	0	37.9	19-23.5	155-17.6	4.6	2.4	16	50	1.4	0.07	0.5	0.7	0.15	B
5	23	7	48.0	19-28.3	155-14.5?	8.0*		7	320	7.6	1.43	9.6		0.47	D
5	23	8	11.8	19-20.6	155-10.6	7.1	1.1	13	240	2.6	0.27	1.4	0.9	0.16	C
6	1	13	10.9	19-18.5	155- 7.0	7.2	3.0	18	197	8.0	0.27	1.5	0.9	0.22	C
6	1	23	54.8	19-22.7	155-25.5	6.3	2.1	19	68	6.1	0.08	0.7	0.7	0.19	B
6	1	29	38.7	19-22.2	155-25.3	7.2	2.6	21	74	5.1	0.07	0.6	0.5	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	6	2	38	52.3	19-23.9	155-17.3	2.1	0.6	6	125	1.3	0.06	0.1	0.4	0.01	B
	6	4	13	52.5	19-22.3	155-27.8	8.4	1.9	18	88	8.8	0.07	0.6	0.6	0.16	B
	6	4	57	10.7	19-30.8	155-15.8?	8.0*	2.2	8	329	10.5	0.83	7.4		0.41	D
	6	5	34	48.3	19-24.1	155-14.8	5.2		7	207	3.7	0.08	0.3	0.5	0.01	B
	6	5	36	14.9	19-23.9	155-17.1	2.7		8	134	1.0	0.03	0.3	0.2	0.03	B
	6	6	6	9.7	19-13.5	155-31.9	5.7	2.4	10	148	9.4	0.11	1.0	1.0	0.15	B
	6	6	8	8.8	19-23.1	155-17.4	3.0	1.9	14	61	1.1	0.03	0.2	0.2	0.08	A
	6	6	16	59.8	19-11.8	155-28.8	35.9	2.6	12	235	15.7	1.31	4.0	11.5	0.14	D
	6	7	49	37.1	19-23.3	155-17.6	4.2	2.1	16	64	1.4	0.10	0.5	1.0	0.14	B
	6	8	4	6.9	19-23.2	155-17.2	1.5	0.4	6	155	0.8	0.15	0.4	1.1	0.04	B
	6	8	48	36.0	19-23.3	155-17.2	2.9		8	96	0.7	0.04	0.2	0.2	0.04	A
	6	9	14	34.7	19-18.3	155-20.0	9.4		11	232	5.8	0.24	1.3	0.7	0.12	C
	6	10	20	34.4	19-24.6	155-16.9?	2.6	0.8	9	177	0.5	0.44	2.8	1.6	0.30	C
	6	10	20	57.2	19-22.5	155-15.8	5.2		5	138	0.3		0.0		0.01	D
	6	10	27	8.1	19-23.0	155-15.3	5.7	2.6	14	81	1.6	0.06	0.5	0.6	0.10	B
	6	10	41	41.1	19-29.8	155-14.3?	8.0*	1.7	7	327	10.2	0.93	9.4		0.45	D
	6	11	7	4.5	19-22.9	155-14.8	3.0		8	157	2.0	0.06	0.5	0.3	0.07	B
	6	11	19	25.9	19-23.8	155-17.1	3.0	1.1	11	112	0.8	0.06	0.6	0.4	0.14	B
	6	11	42	54.5	19-24.1	155-17.3	1.6	0.8	9	122	1.2	0.17	1.7	1.6	0.23	C
	6	11	52	30.8	19-25.8	155-14.4?	8.0*	2.0	11	257	4.9	0.27	3.2		0.56	D
	6	11	57	55.4	19-23.4	155-17.0	1.7		7	98	0.4	0.14	0.4	1.0	0.05	B
	6	12	11	36.7	19-30.8	155-16.5?	1.2	1.9	8	330	10.1	1.33	8.8	8.1	0.29	D
	6	13	1	29.0	19-22.9	155-15.4	5.1	1.7	13	78	1.3	0.13	0.6	1.1	0.13	B
	6	14	53	19.8	19-23.4	155-17.3	2.0	0.7	6	146	0.8	0.12	0.3	0.8	0.02	B
	6	15	4	22.6	19-23.7	155-16.9	2.1	0.6	11	146	0.5	0.06	0.4	0.4	0.07	B
	6	15	20	50.0	19-26.2	155-16.5	4.8		8	271	2.7	0.60	2.2	2.1	0.09	C
	6	15	31	58.0	19-23.9	155-17.2	2.8	1.9	14	54	1.2	0.06	0.4	0.7	0.11	B
	6	16	29	25.6	19-23.5	155-17.1	2.9		7	141	0.6	0.02	0.1	0.1	0.02	B
	6	16	46	24.9	19-20.1	155- 9.6	10.1	1.9	12	272	3.2	0.32	1.9	0.8	0.16	C
	6	16	54	13.1	19-20.4	155-25.4	11.7	1.3	10	146	3.7	0.10	0.9	1.6	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 6	17	22	14.1	19-23.7	155-16.6	3.5	1.1	10	134	0.7	0.10	0.5	0.9	0.09	B
6	17	39	11.1	19-23.7	155-16.9	2.1		10	120	0.6	0.07	0.3	0.4	0.07	A
6	17	49	8.8	19-23.6	155-17.1	2.4		6	138	0.7	0.13	0.3	0.7	0.02	B
6	17	52	13.6	19-24.0	155-17.1	2.9		6	140	1.2	0.09	0.2	0.4	0.01	B
6	17	59	58.3	19-18.9	155- 8.3	10.8		12	226	6.1	0.36	2.7	0.6	0.16	D
6	18	17	1.8	19-23.5	155-16.9	2.0	0.8	12	115	0.3	0.05	0.3	0.4	0.08	A
6	18	24	34.6	19-23.5	155-17.3	2.1		7	142	0.8	0.06	0.1	0.4	0.02	B
6	18	48	46.7	19-23.5	155-17.1	2.1		6	141	0.6	0.06	0.1	0.3	0.01	B
6	19	20	24.4	19-23.8	155-17.2	2.6	1.0	13	61	1.0	0.05	0.3	0.3	0.09	B
6	19	57	24.4	19-30.9	155-14.4?	8.0*		6	330	11.6	3.10	15.0		0.30	D
6	21	35	7.1	19-13.9	155- 7.2?	33.9*	2.3	13	290	20.3	0.39	12.7		0.65	D
6	21	41	40.7	19-23.1	155-17.4	6.0	2.5	21	56	1.1	0.06	0.6	0.4	0.17	B
6	21	50	37.3	19-24.0	155-16.9	3.3	0.3	8	125	1.2	0.09	0.5	0.7	0.05	B
6	21	51	6.9	19-23.5	155-17.4	2.8	0.7	12	85	1.1	0.04	0.4	0.3	0.08	A
6	23	25	35.8	19-23.8	155-17.2	2.2	0.5	7	128	1.1	0.08	0.2	0.5	0.02	B
7	1	22	33.2	19-23.0	155-17.9	0.2*		9	125	2.1	0.12	0.6		0.18	C
7	2	18	53.2	19-23.3	155-17.2	1.8		7	150	0.8	0.07	0.2	0.5	0.02	B
7	2	21	49.7	19-23.5	155-14.7	2.9		9	184	2.9	0.08	0.5	0.3	0.07	B
7	2	55	38.8	19-21.4	155-15.8?	7.1*	0.9	7	256	1.1	0.38	2.5		0.20	D
7	3	49	22.1	19-22.8	155-15.1	4.9	0.8	7	150	1.6	0.15	0.6	1.0	0.03	B
7	3	54	44.2	19-22.8	155-18.1?	3.3	0.8	6	191	2.5	3.36	13.9	8.1	0.28	D
7	3	59	57.4	19-24.0	155-17.2	1.9		7	132	1.2	0.07	0.2	0.4	0.02	B
7	4	24	52.5	19-23.3	155-17.3	1.8	1.8	14	60	0.9	0.06	0.4	0.5	0.11	B
7	4	44	57.2	19-23.2	155-14.7	3.3	0.6	7	173	2.5	0.06	0.4	0.9	0.03	B
7	4	46	14.2	19-23.5	155-17.3	1.9	0.2	7	142	0.9	0.18	0.5	1.3	0.06	B
7	5	4	19.6	19-22.1	155-12.6	7.2	1.0	13	142	0.4	0.18	1.0	1.0	0.17	B
7	5	24	13.7	19-23.5	155-14.4	0.2	0.5	10	99	3.3	0.05	0.3	0.8	0.09	A
7	5	31	6.4	19-23.2	155-14.8	2.7	0.1	10	90	2.4	0.05	0.4	0.3	0.09	A
7	6	12	11.3	19-23.2	155-15.5?	3.6		10	83	1.6	0.14	1.0	2.2	0.18	B
7	6	16	41.6	19-23.6	155-17.3	1.5	0.7	6	140	1.0	0.18	0.5	1.3	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	7	6	23	16.0	19-23.8	155-17.4	2.5	0.6	8	131	1.2	0.29	0.7	1.6	0.07	B
	7	6	26	34.4	19-23.8	155-14.7	4.2	1.0	6	260	3.3	0.16	0.5	0.7	0.01	C
	7	7	25	13.1	19-23.9	155-17.1	2.1	0.3	6	133	1.1	0.07	0.2	0.4	0.01	B
	7	8	2	23.1	19-19.0	155-15.8	12.1	1.5	9	217	3.4	0.12	0.7	1.0	0.04	B
	7	8	23	30.9	19-27.0	155-25.6?	10.0		12	124	6.5	0.13	1.0	2.1	0.10	B
	7	9	2	4.2	19-23.9	155-14.7	3.4	1.1	8	201	3.4	0.08	0.3	0.7	0.03	B
	7	10	9	25.6	19-22.4	155-15.4	5.3	0.9	7	140	0.8	0.18	0.6	1.2	0.05	B
	7	10	13	37.1	19-20.6	155-18.7	2.9	0.7	7	151	2.5	0.03	0.2	0.2	0.02	B
	7	10	17	30.6	19-24.5	155-11.6?	8.0*	1.4	7	317	8.3	0.34	5.9		0.30	D
	7	10	27	1.1	19-23.9	155-17.2	2.2	0.7	6	131	1.1	0.10	0.2	0.6	0.02	B
	7	13	33	17.3	19-23.6	155-17.1	2.0	0.8	7	132	0.7	0.22	0.5	1.2	0.05	B
	7	13	44	1.8	18-58.3	155-23.4	12.9	2.7	16	250	25.2	0.33	2.2	5.8	0.13	D
	7	14	0	32.5	19-32.2	155-57.2?	0.2	2.3	15	277	47.5	0.64	8.4	6.0	0.30	D
	7	14	17	10.2	19-23.8	155-23.7	11.1	1.5	10	189	6.6	0.46	0.8	2.8	0.08	C
	7	14	24	27.3	19-21.1	155-12.6	9.9	2.6	17	157	1.6	0.07	0.7	0.4	0.13	C
	7	14	29	57.8	19-23.7	155-17.1	2.7	0.5	6	132	0.8	0.13	0.3	0.7	0.02	B
	7	15	38	16.1	19-23.5	155-14.8	3.1	0.8	8	184	2.8	0.06	0.3	0.2	0.04	B
	7	15	40	3.8	19-23.9	155-16.9	2.7	0.7	6	147	0.9	0.15	0.3	0.8	0.02	B
	7	15	42	49.3	19-20.4	155-19.4	3.7	0.6	6	169	3.6	0.14	0.6	2.3	0.03	C
	7	15	50	3.5	19-23.1	155-11.6?	8.0*	1.2	8	316	6.9	0.38	4.7		0.43	D
	7	15	58	59.0	19-23.1	155-11.3?	8.0*	1.3	7	317	7.3	0.42	5.3		0.38	D
	7	16	34	48.2	19-23.7	155-17.0	3.6	0.7	7	140	0.6	0.09	0.5	0.5	0.05	B
	7	17	41	43.1	19-23.6	155-17.0	2.7	1.3	11	110	0.5	0.03	0.3	0.2	0.06	A
	7	18	17	9.4	19-24.2	155-15.9	3.7	0.5	6	224	2.2	0.12	0.5	0.6	0.02	B
	7	18	26	0.9	19-24.1	155-16.5	2.0	0.7	7	179	1.3	0.25	0.7	1.4	0.06	B
	7	18	27	42.3	19-23.3	155-15.3	4.1	2.0	12	88	2.0	0.10	0.5	1.1	0.11	B
	7	18	30	13.4	19-23.9	155- 9.6	6.8	1.1	8	285	4.0	0.44	5.4	5.1	0.13	D
	7	18	35	17.1	19-23.1	155-15.5	4.4	0.6	6	209	1.4	0.15	0.5	0.8	0.02	B
	7	18	41	45.4	19-23.8	155-14.6	3.0	1.3	8	201	3.4	0.06	0.3	0.2	0.03	B
	7	18	51	59.3	19-23.6	155-17.0	2.8	0.6	10	112	0.4	0.02	0.2	0.1	0.03	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 7	18	59	49.7	19-23.9	155-17.2	2.5	0.4	7	126	1.2	0.05	0.1	0.3	0.01	B
7	19	4	59.8	19-23.2	155-17.0	2.9	1.3	12	65	0.5	0.06	0.5	0.3	0.10	B
7	19	15	26.3	19-23.1	155-14.8	3.5	0.7	7	171	2.4	0.11	0.8	1.5	0.05	B
7	19	43	26.6	19-19.9	155-17.0	9.1	1.0	11	210	0.7	0.14	0.7	0.6	0.07	B
7	19	43	51.9	19-25.4	155-16.4?	3.4	0.7	9	255	1.4	0.56	1.5	2.2	0.14	C
7	19	52	5.7	19-23.9	155-14.9	3.9	1.5	8	197	3.3	0.16	0.6	1.3	0.05	B
7	20	11	32.7	19-23.4	155-17.4?	2.8	2.1	15	61	1.1	0.08	0.5	1.1	0.16	B
7	20	18	13.8	19-23.4	155-17.1	2.6	0.1	8	143	0.5	0.07	0.2	0.4	0.03	B
7	20	42	13.1	19-21.4	155-16.8	11.1	0.7	8	130	2.5	0.06	0.5	0.3	0.04	B
7	21	0	11.9	19-23.7	155-17.3	1.9	0.3	6	133	1.0	0.04	0.1	0.3	0.01	A
7	21	39	34.0	19-20.4	155-15.8	11.9	1.5	10	181	2.6	0.17	1.0	1.3	0.10	C
7	22	27	11.8	19-23.4	155-17.1	2.8	1.0	12	92	0.6	0.03	0.2	0.2	0.06	A
7	22	37	5.4	19-54.7	155-32.9	9.7	2.3	13	164	17.9	0.14	1.5	0.9	0.15	C
7	22	53	57.6	19-18.9	155-11.0	15.3	1.6	8	263	5.6	0.32	1.9	2.0	0.04	C
7	23	3	43.3	19-20.3	155-15.6?	8.0*	1.1	7	317	7.4	0.95	9.7		0.60	D
7	23	9	38.9	19-23.4	155-24.7	11.3	1.6	8	213	6.4	0.21	1.0	1.9	0.05	B
7	23	28	3.0	19-23.7	155-14.9	0.2*	1.0	12	168	3.0	0.09	0.4		0.12	C
7	23	38	5.9	19-24.3	155-15.6	4.2	0.5	6	240	2.7	0.15	0.6	0.7	0.02	C
7	23	46	48.4	19-23.9	155-17.3	1.0	0.6	7	127	1.3	0.09	0.2	0.8	0.03	B
7	23	54	37.2	19-22.7	155-14.8	5.9	0.7	6	165	2.0	0.09	0.3	0.6	0.01	B
8	0	15	29.8	19-23.4	155-17.0	1.9	0.8	11	91	0.4	0.06	0.4	0.4	0.08	A
8	0	18	7.1	19-23.1	155-15.1	3.1	0.6	10	85	1.9	0.06	0.4	0.4	0.09	A
8	0	21	10.9	19-23.1	155-17.3?	3.1	0.8	14	61	1.0	0.05	0.3	0.3	0.11	B
8	0	42	12.3	19-23.7	155-17.4	0.7	0.2	7	136	1.1	0.16	0.6	2.4	0.07	B
8	0	55	12.8	19-23.9	155-17.5	1.8	0.5	7	128	1.4	0.12	0.3	0.8	0.04	B
8	1	3	23.6	19-23.3	155-14.6	4.4	0.8	7	184	2.9	0.10	0.4	0.8	0.03	B
8	1	9	6.2	19-23.5	155-14.9	1.8	0.9	12	94	2.7	0.06	0.4	0.5	0.10	B
8	1	40	46.7	18-56.9	154-58.8?	8.0*	2.2	7	356	54.3	7.71	0.0		1.79	D
8	1	55	26.4	19-21.1	155-16.9?	8.0*	1.0	6	273	2.9	0.41	3.2		0.17	D
8	1	56	51.0	19-15.1	155-18.3	16.1*	1.4	5	328	13.5	0.42	2.9		0.01	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	8	3	13	40.5	19-23.2	155-17.4	2.8	0.4	9	115	1.1	0.07	0.6	0.5	0.10	A
	8	3	14	50.2	19-23.7	155-14.9	1.8	1.0	12	97	3.0	0.08	0.4	0.8	0.10	B
	8	3	21	59.4	19-23.1	155-17.4	3.2	0.9	10	118	1.1	0.06	0.3	0.7	0.06	A
	8	3	24	55.6	19-23.9	155-13.5	5.5	0.7	7	297	4.9	0.14	1.2	1.5	0.04	C
	8	4	55	4.2	19-24.3	155-17.7?	0.1	0.5	10	93	0.7	0.14	0.6	4.3	0.15	B
	8	5	21	0.6	19-22.4	155-16.6	4.4	0.7	7	223	1.2	0.16	1.5	1.1	0.06	C
	8	6	18	5.6	19-23.5	155-17.6	2.5	0.9	12	111	1.4	0.06	0.5	0.4	0.11	B
	8	6	30	29.4	19-23.3	155-17.0	3.1		7	147	0.4	0.05	0.4	0.5	0.04	B
	8	6	31	33.1	19-23.4	155-17.3	2.5	0.6	6	148	0.8	0.06	0.1	0.4	0.01	B
	8	6	38	34.5	19-23.6	155-14.7	3.9	1.0	7	200	3.1	0.03	0.2	0.3	0.01	B
	8	7	17	33.8	19-23.8	155-17.5	4.0	0.8	10	104	1.4	0.24	1.1	2.1	0.18	B
	8	7	33	45.4	19-23.7	155-17.0	2.4	0.4	7	181	0.7	0.20	1.1	0.9	0.05	C
	8	8	30	34.2	19-24.0	155-17.2	3.0		8	101	1.3	0.03	0.2	0.1	0.03	A
	8	9	23	31.9	19-23.4	155-17.1	1.9	0.1	7	93	0.6	0.17	0.4	1.0	0.04	B
	8	10	1	17.0	19-23.5	155-17.1	2.2	0.9	6	141	0.6	0.05	0.1	0.3	0.01	B
	8	10	19	27.1	19-23.2	155-17.2	3.2		8	98	0.8	0.03	0.2	0.2	0.03	A
	8	11	0	49.8	19-20.8	155-13.2	8.3	1.9	18	182	2.3	0.10	0.8	0.4	0.15	C
	8	11	17	16.7	19-23.9	155-14.2	3.9	0.7	7	275	4.0	0.42	1.5	1.5	0.04	C
	8	12	7	30.6	19-23.6	155-17.5	4.1	2.1	14	59	1.3	0.10	0.5	1.0	0.15	B
	8	12	11	43.2	19-21.2	155-17.0?	8.0*	1.0	7	133	2.1	1.63	8.5		0.46	C
	8	12	19	0.1	19-19.9	155-16.4	12.0	1.1	7	244	1.7	0.21	0.8	1.4	0.02	C
	8	12	30	47.6	19-23.4	155-17.3	2.4		7	97	0.9	0.13	0.3	0.8	0.04	B
	8	12	31	24.2	19-23.3	155-17.1	3.1	0.7	6	149	0.6	0.20	0.4	1.0	0.04	B
	8	13	18	9.5	19-23.4	155-14.5	3.4	1.0	8	189	3.1	0.06	0.3	0.7	0.03	B
	8	13	49	18.3	19-23.5	155-17.3	2.0	0.5	6	144	0.8	0.07	0.2	0.5	0.02	B
	8	13	52	45.8	19-23.5	155-17.1	2.8	0.5	7	141	0.6	0.10	0.5	0.4	0.04	B
	8	14	7	54.6	19-23.5	155-17.3	3.0	0.9	7	141	0.8	0.13	0.5	0.5	0.05	B
	8	14	8	23.8	19-29.5	155-50.8	5.4	2.3	15	154	8.5	0.06	0.7	0.5	0.11	C
	8	14	59	53.2	19-23.6	155-17.2	2.3	0.9	9	109	0.7	0.03	0.2	0.2	0.03	A
	8	15	36	4.2	19-21.9	155-10.1	5.7	1.2	7	208	0.2	0.76	5.2	3.1	0.22	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 8	16	4	3.8	19-18.3	155-12.9	11.2		11	242	6.7	0.21	1.4	0.4	0.10	C
8	16	21	32.1	19-20.2	155-15.8	9.8	1.0	8	208	2.8	0.29	0.7	1.6	0.05	B
8	16	38	31.1	19-23.7	155-14.6	4.1	1.1	8	195	3.3	0.10	0.3	0.7	0.03	B
8	16	59	22.7	19-23.5	155-17.1	2.2	0.1	8	109	0.6	0.06	0.2	0.4	0.03	A
8	17	27	34.5	19-23.1	155- 1.6	7.8	1.9	15	208	15.0	0.26	2.0	0.9	0.27	C
8	18	28	17.2	19-20.9	155- 0.9	6.7	1.8	18	227	16.1	0.27	1.7	0.7	0.21	D
8	18	42	54.4	19-23.4	155-15.4	4.3	1.0	7	231	2.0	0.20	0.9	0.8	0.05	C
8	18	45	29.0	19-23.6	155-14.5	2.9	0.9	6	206	3.4	0.12	0.6	0.4	0.04	B
8	18	48	29.4	19-23.6	155-17.0	2.5	0.7	8	164	0.6	0.12	0.4	0.5	0.06	B
8	18	50	25.4	19-23.4	155-17.1	2.2	0.7	6	143	0.6	0.08	0.2	0.5	0.01	B
8	19	0	32.2	19-24.4	155-16.7	4.4	1.0	7	226	1.5	0.26	0.8	1.5	0.06	C
8	20	1	34.5	19-24.6	155-10.0?	8.0*	1.5	8	276	5.2	0.27	6.8		0.21	D
8	20	4	38.1	19-22.1	155-10.6?	6.3	1.1	6	193	1.1	1.10	6.6	5.4	0.13	D
8	20	11	38.8	19-17.4	155- 1.9	7.8	1.8	12	243	16.3	0.46	2.7	1.2	0.18	D
8	21	39	13.9	19-20.4	155-17.9?	2.7	1.0	7	206	1.1	0.33	2.0	1.0	0.07	C
8	21	51	19.6	19-29.9	155-52.1	6.1		15	143	6.1	0.11	1.4	0.9	0.20	B
8	21	56	56.3	19-22.6	155-14.8	5.1	1.1	5	161	1.8		0.0		0.01	D
8	22	56	15.7	19-22.3	155-22.9	7.2	1.1	8	167	3.8	0.48	1.1	3.2	0.09	C
9	0	47	58.1	19-22.6	155-21.5	3.9	1.1	11	93	3.8	0.20	0.9	3.3	0.19	B
9	1	0	11.5	19-17.9	155- 8.8?	10.9	1.3	9	304	7.5	0.68	4.0	0.6	0.16	D
9	1	59	10.6	19-14.7	155-13.5?	8.0*	1.1	6	319	13.5	2.56	27.8		0.89	D
9	2	1	36.7	19-21.6	155-13.6	2.6	0.3	6	187	1.5	0.19	2.4	1.5	0.07	C
9	2	29	51.0	19-20.6	155-12.8	14.4	1.4	9	199	2.6	0.20	0.9	1.5	0.04	B
9	3	28	18.0	19-21.6	155-12.4?	6.1*	1.0	6	189	1.0	1.14	6.1		0.28	D
9	3	32	47.9	19-19.9	155-11.8	14.5	1.5	9	231	4.4	0.07	0.7	0.5	0.04	C
9	6	30	44.3	19-21.6	155-12.5?	0.2	0.5	6	187	0.8	0.26	5.0	10.6	0.12	D
9	7	24	16.4	19-20.0	155- 7.1?	15.5*	1.8	10	328	6.1	0.97	7.4		0.27	D
9	8	19	21.8	19-21.9	155-12.5	2.1		8	154	0.5	0.12	0.9	0.7	0.11	C
9	8	35	20.0	19-23.4	155-15.9	3.4	1.3	10	140	1.5	0.12	0.6	1.1	0.12	B
9	16	46	19.0	19-28.9	155-52.1?	7.0	2.9	19	157	7.0	0.16	1.4	1.2	0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 9	18	24	2.7	19-27.4	155-22.3	7.3	2.0	15	111	2.9	0.21	1.7	1.4	0.29	C
9	19	57	25.5	19-22.6	155-24.1	7.7	1.7	13	67	4.7	0.09	0.8	0.9	0.17	B
10	2	59	41.2	19-22.1	155-18.2	28.5		7	141	4.0	0.49	2.5	4.4	0.06	B
10	4	42	55.8	19-10.9	155-25.6	34.2	2.6	20	193	17.7	0.31	2.0	2.6	0.26	C
10	7	54	13.7	19-21.4	155-11.7	9.5	1.9	16	178	2.3	0.12	1.0	0.5	0.17	C
10	8	34	15.1	19-16.4	155-12.6	17.3		6	285	10.9	0.55	3.0	3.5	0.02	D
10	10	26	35.1	19-18.7	155-14.2	11.3		5	298	6.1		0.0		0.02	D
10	10	48	25.4	19-19.7	155-16.8	9.0	0.3	8	240	1.2	0.21	0.5	1.1	0.02	C
10	13	18	53.3	19-21.0	155-11.4	8.8		7	196	3.0	0.23	2.9	1.3	0.14	C
10	13	54	57.8	18-56.8	155-24.1	8.5		10	285	25.3	0.69	6.6	4.4	0.26	D
10	15	37	17.8	19-20.3	155-12.0?	11.0		12	204	3.5	0.11	0.9	0.5	0.11	C
10	15	46	38.7	19-36.5	155-14.8	15.0*	1.6	13	233	19.3	0.12	1.0		0.10	D
10	16	27	36.9	19-20.9	155-18.5	20.0		11	125	2.5	0.26	1.7	2.3	0.11	B
10	17	55	36.9	19-21.9	155-21.8	3.3		7	152	4.1	0.49	1.5	4.7	0.10	C
10	18	14	38.2	19-20.7	155-12.7	14.0	0.7	10	196	2.4	0.20	0.9	1.5	0.05	B
10	23	13	31.4	19-22.9	155-24.4	9.1		8	194	5.4	0.15	1.0	0.9	0.08	C
11	0	55	54.2	19-19.2	155-13.2	15.1		8	226	6.0	0.14	0.9	1.3	0.04	C
11	1	32	34.9	19-22.3	155-19.7	25.5	1.9	14	87	2.7	0.16	0.9	1.6	0.09	A
11	1	32	47.1	19-22.4	155-21.1?	50.1*		5	220	7.7	1.88	10.0		0.65	D
11	3	30	51.7	19-22.9	155-23.6	12.1		6	188	4.9	0.28	1.0	2.6	0.04	C
11	3	50	37.9	19-29.8	155-47.1	8.0	1.9	12	128	14.6	0.09	0.8	0.7	0.11	B
11	6	44	56.6	19-22.3	155-10.2	9.0		8	231	1.0	0.27	2.2	1.7	0.08	C
11	8	7	31.8	19-20.4	155-15.2	13.2	0.6	9	189	2.7	0.23	1.0	1.9	0.07	C
11	8	10	39.4	19-20.6	155-11.3	15.2*	0.8	6	320	7.3	0.24	2.0		0.04	D
11	8	35	24.8	19-18.4	155-13.8	8.7		7	234	7.1	0.73	3.2	4.5	0.17	D
11	12	0	17.2	19-19.6	155-16.6	10.9		7	245	1.6	0.48	1.0	2.4	0.02	C
11	12	15	21.3	19-19.8	155-16.6	11.3		7	241	1.5	0.14	0.7	1.0	0.02	C
11	15	57	43.9	19-26.6	155- 9.8?	15.5	0.7	7	267	8.8	1.19	2.8	7.2	0.11	D
11	17	11	27.3	19-20.5	155-12.4	15.8	0.6	9	203	2.8	0.19	1.2	1.6	0.05	C
11	18	46	14.3	19-23.0	155-12.3	6.4		10	150	4.6	0.15	1.2	1.2	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 11	19	0	16.5	19-18.1	155-12.0	8.0*	0.8	5	292	7.6	2.93	15.8		0.16	D
11	19	29	21.3	19-20.9	155-23.4	9.1		8	180	1.2	0.17	1.1	0.8	0.08	C
11	21	20	55.5	19-18.5	155-13.2	12.3		13	237	6.5	0.16	0.9	1.0	0.07	C
11	22	41	23.4	19-15.1	155- 7.8	7.4		10	306	12.9	0.75	3.7	1.3	0.23	D
11	23	17	4.6	19-10.6	155-18.9?	32.2	2.7	16	231	17.6	0.24	1.6	1.8	0.11	C
12	1	26	50.0	19-27.4	155-24.6	9.2	1.5	7	215	5.0	0.31	0.8	2.4	0.06	C
12	2	9	52.6	19-23.1	155-25.7	10.8	1.3	12	123	6.8	0.08	0.8	0.8	0.12	B
12	2	11	15.2	19-19.9	155-14.5	7.8	1.1	14	206	3.7	0.19	1.1	0.8	0.16	C
12	4	29	15.0	19-22.5	155-22.6	9.2		11	154	4.5	0.11	0.7	0.7	0.09	C
12	9	13	43.7	19-22.9	155-25.3	10.5	4.3	21	65	6.0	0.07	0.6	0.4	0.15	B
12	9	17	40.0	19-23.4	155-25.9	8.2	2.2	17	107	7.5	0.10	0.9	0.7	0.19	B
12	9	20	19.3	19-23.0	155-26.5	9.0	1.8	10	127	7.7	0.10	0.9	1.1	0.13	B
12	11	19	48.4	19-23.9	155-26.1	7.6	2.5	18	72	8.5	0.08	0.7	0.6	0.15	B
12	19	43	21.3	19-22.7	155-29.2	9.9	2.3	17	86	11.4	0.08	0.7	0.5	0.16	B
12	20	8	6.4	19-21.5	155-12.5	9.2	2.3	17	149	1.1	0.09	0.9	0.5	0.16	C
13	0	14	41.2	19-23.6	155-25.9	12.6	1.9	11	151	7.7	0.09	0.7	1.6	0.09	B
13	1	8	48.2	19-23.7	155-24.8	9.2	3.2	19	76	6.9	0.09	0.8	0.5	0.14	B
13	1	14	26.3	19-22.0	155-23.8	9.7	1.8	11	111	3.5	0.09	0.8	0.7	0.12	B
13	2	59	59.9	19-23.4	155-25.3	10.8	1.9	11	122	6.9	0.07	0.6	0.5	0.10	B
13	4	43	20.7	19-23.9	155-26.6	11.1	2.0	15	145	9.0	0.07	0.6	0.3	0.08	B
13	5	28	3.9	19-12.6	155-22.4	29.6	2.0	9	204	14.1	0.32	1.7	3.0	0.07	C
13	7	4	25.5	19-13.8	155-23.8	35.3	2.6	20	168	11.9	0.16	0.9	1.5	0.10	C
13	9	39	47.0	19-22.6	155-25.9	7.0	2.7	17	101	11.0	0.09	0.8	0.7	0.16	B
13	9	51	21.5	19-20.2	155-15.0	9.9	1.8	14	185	3.1	0.07	0.6	0.3	0.10	B
13	12	55	1.1	19-19.5	155-13.6	8.5	2.4	16	198	4.7	0.14	1.0	0.5	0.17	C
13	21	36	24.7	19-13.3	155- 8.0	7.8	1.9	8	253	16.1	0.71	3.5	2.2	0.13	D
13	21	47	10.4	19-21.4	155-23.4	10.2		7	188	2.2	0.71	1.5	4.0	0.07	C
13	22	26	14.2	19-21.5	155-24.9	8.7	2.2	12	115	3.7	0.13	0.9	1.1	0.16	B
13	22	41	8.1	19-23.0	155-25.7	10.7	1.8	12	123	6.7	0.09	1.0	0.9	0.14	B
13	23	13	11.2	19-24.2	155- 2.5	5.6	2.1	13	190	13.8	0.14	1.2	1.1	0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 13	23	24	26.9	19-22.1	155-13.1?	3.3	1.3	6	181	0.5	0.71	2.5	3.8	0.08	C
13	23	49	54.6	19-18.3	155-16.7	9.8	2.2	18	167	3.4	0.08	0.6	0.3	0.12	C
14	2	18	1.8	19-19.6	155-16.3	10.1	1.6	13	203	2.1	0.09	0.6	0.5	0.07	B
14	7	31	24.4	19-19.0	155-15.8	9.9		12	217	3.5	0.16	0.9	0.6	0.10	B
14	11	7	57.4	19-27.4	155-14.4	24.3	3.6	24	62	6.6	0.14	1.0	1.6	0.18	B
14	12	58	25.9	19- 7.4	156- 4.1	8.0*	3.2	17	281	46.5	0.60	3.9		0.14	D
14	14	13	6.0	19-12.3	155-21.8	29.7	2.5	11	251	14.9	0.99	4.2	8.3	0.12	D
14	15	52	5.7	19-39.4	155-59.0	45.1	2.7	7	239	16.5	1.26	5.5	11.2	0.16	D
14	17	10	29.7	19-14.3	155-30.9	8.3	2.3	13	141	11.0	0.08	0.8	0.6	0.14	B
15	0	7	12.3	19-21.4	155-16.7	28.8		18	121	2.2	0.16	1.0	1.5	0.14	B
15	7	27	12.7	19-21.8	155-13.2	9.9	2.1	16	141	0.8	0.08	0.8	0.4	0.13	B
15	8	42	19.6	19-20.6	155-24.5	10.7	2.3	14	109	2.2	0.08	0.8	0.6	0.14	B
15	15	39	16.8	19-19.6	155-16.0	8.9	2.4	16	162	2.6	0.09	0.7	0.5	0.14	C
15	22	39	45.5	19-15.7	155-21.5	6.1	2.3	17	166	8.9	0.09	0.7	0.8	0.13	C
15	22	41	31.2	19-16.7	155-22.2	8.3	2.0	16	160	6.8	0.10	0.9	0.8	0.17	C
16	2	25	33.5	19-18.8	155-15.0	28.4	3.2	21	170	4.9	0.15	1.0	1.3	0.13	C
16	23	7	39.5	19-23.0	155-25.0	10.5	1.9	14	205	6.0	0.14	0.9	0.4	0.11	C
17	12	9	24.9	19-21.1	155-13.9	9.5	1.5	14	173	2.8	0.14	0.9	0.7	0.15	C
17	12	12	13.6	19-31.6	155-55.5	10.4	4.1	21	227	0.7	0.23	2.5	1.4	0.22	D
17	16	58	12.1	19-20.6	155-11.5	7.5	2.0	13	206	3.3	0.18	1.1	0.7	0.17	C
17	17	46	2.9	19-30.1	155-45.0	2.0	2.8	14	130	18.2	0.44	1.0	2.2	0.16	B
17	18	54	26.5	19-25.0	155-26.6	10.4	2.0	12	168	10.6	0.10	0.8	0.6	0.11	C
17	22	34	27.8	19-25.2	155-50.2	7.9	1.9	12	276	29.9	1.33	11.8	2.1	0.13	D
18	1	47	41.4	19-18.3	155-11.6	11.3	1.3	11	222	7.1	0.27	1.9	0.6	0.14	C
18	6	38	19.7	19-13.9	155-23.9	27.1	1.9	16	171	11.7	0.20	1.0	2.3	0.10	C
18	6	45	6.8	19-19.1	155-16.3	10.1		8	261	2.7	1.03	2.4	4.8	0.05	C
18	7	31	47.5	19-19.6	155-10.5	7.4		10	247	4.1	0.26	1.7	0.8	0.15	C
18	11	40	30.9	19-46.0	155- 2.3?	4.2	2.0	9	283	7.3	0.28	1.4	0.5	0.06	C
18	12	54	37.9	19-19.6	155-16.1	7.9		12	206	2.4	0.19	1.1	0.8	0.15	C
18	14	53	38.5	19-10.3	155-38.9	10.3	3.0	12	161	9.1	0.12	1.1	0.6	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 18	15	24	38.9	19-20.7	155-27.6	9.9		10	140	7.6	0.13	1.1	1.3	0.16	B
18	16	3	56.3	19-20.0	155-11.0	9.2		11	196	3.7	0.14	1.1	0.6	0.12	C
18	17	14	34.7	19-26.1	155-10.9?	9.8	1.5	9	250	8.1	0.81	3.9	8.1	0.11	D
19	3	12	30.7	19-20.2	155-15.9	7.8		14	192	2.7	0.16	0.9	0.7	0.15	C
19	3	18	8.3	19-28.9	155-46.5	6.6	2.1	14	125	16.0	0.16	1.4	1.6	0.15	B
19	5	30	38.8	19-15.7	155-46.5	26.1	3.2	23	153	9.2	0.16	1.1	2.4	0.19	C
19	6	7	1.4	19-13.4	155-23.4	32.9	2.3	17	171	12.5	0.28	1.5	2.8	0.15	C
19	8	48	45.9	19-22.9	155-25.3?	10.7		9	209	6.1	0.21	1.5	0.8	0.11	C
19	8	53	19.2	19-16.8	155-21.6	23.4		10	300	9.5	1.05	5.9	5.5	0.12	D
19	9	29	48.1	19-24.9	155-26.2	9.5		14	131	10.0	0.11	0.9	0.7	0.14	B
19	16	1	16.4	19-19.0	154-56.9?	0.0	2.2	8	254	19.3	1.07	2.5	3.9	0.11	C
19	19	45	19.1	19-11.3	155-30.7	5.8		7	164	13.0	0.12	1.1	1.1	0.10	C
20	1	3	52.5	19-24.1	155- 2.7	0.3	1.9	14	177	18.6	0.46	0.9	2.3	0.12	C
20	1	52	21.7	19-20.0	155- 2.1	5.2	1.9	9	237	21.5	0.55	3.2	1.6	0.22	D
20	8	12	44.1	19-23.9	155- 7.5	6.7		9	252	5.8	0.32	1.8	1.0	0.11	C
20	17	41	19.2	19-21.3	155-25.3	8.5	2.1	16	120	4.0	0.09	0.8	0.6	0.18	B
21	14	58	44.7	19-22.0	155-17.2	29.4	2.5	19	90	2.5	0.19	1.1	1.7	0.11	B
21	21	4	3.7	19-10.3	155-38.1	7.6	2.6	13	204	8.7	0.14	1.5	0.7	0.08	C
22	0	26	40.1	19-21.7	155- 2.0	6.8	2.3	13	218	14.1	0.35	2.5	1.4	0.25	C
22	3	8	19.1	19-24.5	155- 4.1	3.2	2.5	13	169	20.3	0.14	0.9	1.0	0.15	C
22	10	0	6.9	19-18.9	155-17.8	26.2	2.3	13	218	2.3	0.29	1.6	2.5	0.10	C
22	17	5	9.7	19-17.9	155-16.4	9.3	2.2	14	204	4.5	0.10	0.7	0.6	0.10	B
22	19	15	54.4	19-23.1	155-24.7	10.4	2.4	15	200	5.8	0.16	1.0	0.5	0.13	C
22	20	56	11.8	19-23.4	155-24.7	9.5	2.0	15	75	6.4	0.07	0.7	0.5	0.12	B
23	9	16	1.4	20- 2.3	155-47.6?	14.0*	3.3	20	262	9.7	0.72	4.9		0.31	D
24	4	36	5.4	19-22.8	155-25.9	10.7	3.0	18	79	6.5	0.09	0.7	0.4	0.15	B
24	15	56	49.4	19-56.4	155-31.5	10.0	2.3	7	219	19.5	0.25	2.6	0.8	0.08	C
24	19	51	21.7	19-17.5	155-28.0	5.4		10	136	9.6	0.09	0.9	1.4	0.15	B
24	20	38	14.5	20- 9.7	156-18.6	2.7	3.3	23	313	5.4	0.34	11.3	11.0	0.18	D
24	23	50	34.4	19-20.7	155-13.2	9.8	1.8	14	186	4.2	0.13	0.8	0.5	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 25	0	46	59.3	19-22.9	155-29.0	9.3	2.1	15	97	16.2	0.08	0.7	0.7	0.14	B
25	1	26	47.8	19- 9.4	155-27.1?	40.1		13	178	19.8	0.39	1.8	3.8	0.12	C
25	2	29	2.3	19-16.1	155-27.3	7.0		8	202	10.3	0.25	2.2	1.2	0.08	C
25	3	47	53.5	19-21.3	155-12.0	9.9		13	181	3.6	0.17	1.2	0.6	0.16	C
25	6	48	32.5	19-17.5	155-25.3	5.8		8	196	15.1	0.20	1.5	1.6	0.14	C
25	12	6	33.6	19-24.0	155-24.1	8.1	2.4	13	83	7.1	0.06	0.6	0.6	0.08	A
25	14	32	52.1	19-23.6	155-24.6	11.4		9	137	6.7	0.07	0.6	1.2	0.06	B
25	20	10	15.8	19-21.2	155-24.8	9.5		10	230	3.2	0.19	1.2	0.9	0.11	C
25	20	34	8.8	19-11.4	155-29.0?	8.5	2.7	16	163	15.6	0.10	0.8	0.6	0.13	C
25	21	2	52.7	19-20.5	155-19.9	5.0		9	164	4.4	0.17	0.5	2.0	0.06	B
25	21	55	10.1	19-18.5	155-39.3	9.1		6	243	27.8	0.92	5.0	3.0	0.09	D
26	2	10	57.7	19-10.6	155-28.8	7.6		9	181	16.6	0.14	1.2	0.8	0.12	C
26	2	26	6.9	19-23.8	155-24.8	9.4	3.2	18	75	7.1	0.07	0.6	0.4	0.12	B
26	3	18	8.8	19-12.2	155-47.9	12.1		9	338	19.5	0.54	5.8	3.1	0.12	D
26	4	46	18.6	19-20.2	155-38.4?	13.4*		7	292	26.4	0.33	2.1		0.16	D
26	5	49	26.8	19-17.2	155-41.9	6.4		5	255	26.8		0.0		0.08	D
26	12	48	45.9	19-21.5	155-13.6	8.4	2.6	15	163	2.6	0.11	1.1	0.5	0.18	C
26	16	56	48.6	19-11.6	154-57.9?	0.3*		9	276	28.4	0.50	2.8		0.23	D
26	19	41	59.6	19-23.3	155- 2.6	7.8		9	199	13.2	0.24	3.0	1.1	0.15	C
27	16	0	18.3	19-12.0	155-28.7	8.3	2.7	18	161	15.7	0.09	0.8	0.5	0.14	C
27	19	15	11.6	19-20.4	155- 8.6	6.3	2.0	14	179	3.7	0.19	1.2	1.0	0.19	C
28	3	14	29.7	19-25.2	154-51.8	3.5	2.5	7	283	7.4	1.01	4.6	3.4	0.13	D
28	6	9	20.8	19-26.3	155-14.1	31.3	2.1	17	87	5.7	0.19	1.2	1.8	0.15	B
28	6	47	5.2	19-23.2	155- 3.6	14.3		8	197	11.5	0.06	0.7	0.4	0.03	B
28	7	57	10.1	19- 4.2	156-21.9?	8.0*		9	335	81.1	4.30	26.5		0.13	D
28	8	6	17.7	19-20.6	155-11.7	10.6	2.3	15	204	3.6	0.16	1.1	0.5	0.16	C
28	9	1	2.5	19-48.8	155-46.1?	3.6	2.9	22	171	25.2	1.54	17.9	11.3	0.57	D
28	13	36	35.5	19-20.6	155-29.2	8.6	2.2	15	108	10.4	0.09	0.9	0.7	0.14	B
28	15	23	5.3	19-26.7	154-54.9	1.5	3.5	17	208	4.9	0.31	1.7	1.4	0.21	C
28	16	39	38.9	19-45.9	156- 6.9?	0.2	2.6	9	270	33.9	1.98	4.8	6.5	0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 28	16	55	56.4	19-15.7	154-42.6	28.7	2.7	19	295	30.9	0.61	3.5	4.0	0.10	D
28	22	22	25.9	19-19.4	155-13.8	9.8	1.8	16	194	5.1	0.09	0.7	0.4	0.12	C
29	6	11	17.2	19-19.9	155-28.9	8.4	1.8	13	117	9.8	0.10	1.1	0.9	0.17	B
29	20	58	57.1	19-21.6	155-16.7	27.7	2.7	19	117	2.1	0.12	0.8	1.2	0.11	B
29	21	45	45.3	19-19.6	155-14.1	10.2	1.6	16	193	4.6	0.07	0.6	0.3	0.10	B
30	2	18	6.8	19-13.2	155-27.9	28.0	2.4	16	158	15.2	0.25	1.2	2.9	0.11	C
30	5	32	13.5	19-19.5	155- 5.6	6.6	3.2	18	191	8.8	0.26	1.5	1.0	0.23	C
30	6	7	1.6	19-22.3	155- 7.8	10.7	3.9	21	230	4.0	0.17	1.1	0.4	0.16	C
30	6	40	14.7	19-21.9	155-10.5	6.8		10	163	0.9	0.25	1.4	1.0	0.14	C
30	8	46	30.5	19-25.2	154-55.5?	2.4*	2.1	7	286	37.4	0.34	1.7		0.13	D
30	14	58	44.6	19-24.2	155-24.9	10.8	1.9	14	123	7.8	0.05	0.4	0.3	0.09	B
30	16	55	25.8	19-23.4	155-13.4?	13.7*	1.7	5	308	7.7	0.38	6.9		0.25	D
30	18	56	30.7	19-12.3	155-22.3	29.5		12	206	14.7	0.30	1.6	3.0	0.08	C
30	21	32	39.1	19-14.4	155-24.8	32.4	3.9	23	161	11.0	0.29	1.6	2.9	0.22	C
30	21	56	17.8	19-12.2	155-22.9	30.9		12	204	14.8	0.31	1.7	2.9	0.09	C
30	23	32	32.5	19-12.3	155-22.8	31.8	2.3	10	204	14.7	0.43	2.2	4.0	0.09	C
1	5	10	11.1	19-20.2	155-27.8	11.4	1.9	9	149	7.9	0.12	1.1	0.7	0.09	B
1	6	31	17.5	19-30.8	155-35.2?	15.1	2.1	8	198	20.9	0.13	0.9	1.1	0.07	C
1	8	53	25.0	19-22.3	155-25.1	10.3	1.6	13	118	4.9	0.07	0.7	0.7	0.11	B
1	9	0	59.2	20- 3.8	155-53.1?	3.6	3.7	20	276	19.6	3.82	20.1	7.3	0.34	D
1	20	19	1.6	19-14.0	155-17.6	42.9	1.9	14	219	11.3	0.31	1.5	2.4	0.09	C
1	20	46	4.3	19-19.9	155- 1.5	4.9		8	241	19.7	0.44	2.5	1.3	0.15	D
2	4	12	44.1	19-19.6	155-10.0?	11.4	1.6	13	214	4.1	0.13	1.3	0.3	0.11	C
2	4	13	15.6	20- 4.1	155-57.6?	8.0*	2.0	18	319	27.6	4.10	27.9		4.26	D
2	8	47	33.9	19-29.5	155-17.4	16.8*	3.0	5	233	33.0	0.33	2.8		0.08	D
2	11	22	7.2	19-20.6	155-13.4	9.7	1.4	14	187	2.8	0.14	1.0	0.6	0.14	C
2	13	17	15.5	19-18.9	155-42.5	12.1		8	259	12.1	0.55	3.4	1.9	0.07	D
2	15	13	31.8	19-21.5	155-18.2	30.1	2.6	19	73	3.0	0.14	1.0	1.4	0.13	B
2	15	26	40.3	19-50.3	155-36.6	14.6*	2.3	10	137	17.7	0.08	0.9		0.10	C
3	1	56	57.2	19-44.6	155-43.3	37.3	2.7	18	144	31.9	0.48	1.5	6.3	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 3	3	36	15.2	19-12.0	155-34.5	8.2		6	141	7.1	0.13	1.4	1.1	0.08	B
3	3	50	49.8	19-12.3	155-33.0	8.6		7	147	8.6	0.12	1.3	1.0	0.13	B
3	5	26	16.9	19-22.4	155-23.1	9.7	0.9	12	137	4.0	0.07	0.7	0.6	0.10	B
3	6	47	32.3	19-21.9	155-16.1	32.0	2.4	20	117	1.0	0.14	0.9	1.3	0.12	B
3	7	30	35.3	19-26.2	154-51.7	8.0*	2.5	11	292	39.3	2.3?	15.4		0.29	D
3	9	26	2.3	20- 3.1	155-31.6	50.1	3.2	18	226	18.3	0.49	2.1	4.2	0.09	C
3	20	43	36.0	19- 2.5	155-24.0	27.2*	2.6	11	254	22.2	0.22	1.9		0.09	D
4	12	31	60.0	19-24.5	155-25.1	8.6	2.2	14	125	8.6	0.10	0.8	0.8	0.17	B
4	14	5	0.8	19-21.4	155-15.6	7.7	1.2	7	148	1.0	0.24	0.7	1.5	0.05	B
4	14	34	51.6	19-19.6	155-28.0	7.2	2.6	13	120	16.4	0.11	1.0	1.1	0.19	B
4	16	23	48.9	19-21.5	155- 9.9	14.1	1.3	6	194	0.6	0.08	1.3	0.7	0.03	C
4	16	57	25.4	19-19.2	155-16.2	12.9	1.5	8	212	2.6	0.08	0.4	0.7	0.02	B
4	17	32	29.3	19-25.4	155-11.2	9.8	1.2	10	232	6.9	0.15	1.0	0.7	0.07	C
4	18	6	17.9	19-13.8	155-31.1	7.1	1.8	12	143	10.6	0.08	0.7	0.8	0.11	B
4	18	36	19.4	19-19.6	155-15.9	9.7	1.0	14	189	2.8	0.07	0.6	0.4	0.09	B
4	23	2	3.1	19-27.6	155-14.2?	8.0*	1.8	10	266	7.0	0.72	5.0		0.57	D
5	0	52	15.8	19-20.5	155-13.3	8.0	2.1	17	166	4.0	0.13	1.0	0.5	0.19	C
5	5	26	5.2	19-21.4	155-11.4	7.5	1.5	14	159	2.5	0.17	1.3	0.7	0.19	C
5	7	14	2.2	19-19.1	155- 6.9	22.4*	1.9	6	336	7.4	0.04	0.8		0.01	D
5	11	39	52.0	20- 0.7	155-32.5	8.4	2.8	15	213	16.7	0.15	1.1	0.6	0.07	C
5	14	48	41.6	19-26.6	154-52.1?	8.0*	2.2	7	282	3.6	0.21	2.3		0.21	D
5	15	17	21.4	19-19.4	155-13.8	8.6	1.4	15	211	5.2	0.16	1.3	0.7	0.16	C
5	17	50	53.7	19-20.1	155-11.6	12.4	1.5	7	229	4.2	0.31	1.3	2.1	0.04	C
5	19	39	18.6	19-21.2	155-11.8	14.4	1.5	8	186	2.6	0.40	1.4	2.8	0.05	C
5	23	13	57.3	19-12.8	155-22.9	29.3	2.0	11	181	13.7	0.26	1.3	2.8	0.08	C
6	0	39	53.1	19-11.9	155-22.1	26.2	2.0	7	220	15.4	0.52	2.9	6.2	0.09	C
6	2	41	39.1	19-15.5	155- 8.1	24.4	1.8	8	242	17.1	0.23	2.0	2.8	0.04	C
6	4	4	26.8	19-19.9	155-14.0	9.0	1.2	16	168	4.1	0.08	0.8	0.5	0.13	C
6	5	20	39.4	19-27.7	155-13.3?	8.0*	1.6	11	276	8.4	0.26	5.1		0.43	D
6	5	22	18.7	19-20.6	155-16.4	22.8	1.6	10	175	3.0	0.18	1.0	1.7	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 6	6	21	38.7	19-18.0	155-15.3	7.8	3.2	17	182	7.0	0.14	1.0	0.6	0.17	C
6	6	23	36.7	19-18.9	155-13.7	15.6	1.6	9	227	6.0	0.04	0.3	0.4	0.02	C
6	6	24	12.4	19-19.2	155-14.8	9.1	1.5	9	198	4.8	0.20	1.8	1.3	0.16	C
6	6	28	60.0	19-18.8	155-14.1	15.4	1.7	6	227	5.9	0.18	1.6	1.6	0.03	C
6	9	46	17.4	19-24.0	155-16.7	2.6	0.8	8	164	1.1	0.20	0.5	1.1	0.05	B
6	12	32	2.0	19-23.6	155-17.1	1.9	0.7	7	135	0.6	0.02	0.1	0.2	0.01	B
6	18	10	12.5	19-20.3	155-10.0	9.0	2.5	19	175	2.7	0.12	1.0	0.5	0.17	C
6	22	27	45.7	19-24.1	155-15.7	6.0	1.2	8	224	2.3	0.77	2.1	3.6	0.09	C
6	22	31	3.3	19-34.0	155-41.1	17.4*	2.1	12	237	33.5	0.22	1.5		0.16	D
7	2	58	21.7	19-23.5	155-16.6	15.7	1.8	16	92	0.4	0.07	0.7	0.8	0.11	B
7	4	16	10.8	19-20.5	155-14.3	8.2	1.6	14	182	2.9	0.12	0.9	0.6	0.15	C
7	5	2	3.3	19-23.7	155-17.2	1.4	0.7	7	133	1.0	0.13	0.4	1.1	0.05	B
7	7	41	7.8	19-23.6	155-17.0	2.2	0.8	7	136	0.4	0.25	0.7	1.7	0.08	B
7	7	41	44.6	19-22.2	155- 9.8	7.1	1.8	14	243	0.9	0.17	1.1	0.6	0.13	C
7	10	30	40.8	19-12.1	155-31.3	6.7		10	152	11.4	0.10	0.9	1.1	0.11	C
7	17	22	57.4	19-19.4	155-13.6	9.9	1.8	16	194	5.4	0.08	0.7	0.4	0.10	C
7	23	25	18.0	19-33.2	155-56.9	30.7	2.8	12	278	4.7	0.59	2.9	4.7	0.07	D
7	23	58	46.6	19-18.6	155- 5.8?	15.2*	1.3	8	226	9.4	0.19	4.2		0.21	D
8	1	16	56.1	19-19.4	155-15.5	9.8	1.6	15	191	3.5	0.08	0.6	0.3	0.10	B
8	2	16	37.8	19-19.4	155-11.8	10.8	1.8	10	265	5.4	0.35	3.1	1.2	0.19	D
8	2	25	58.9	19-12.8	155- 7.9	4.2	1.9	12	257	17.0	0.63	2.9	1.8	0.19	D
8	3	15	55.4	19-22.7	155-22.3	9.3	1.3	11	149	4.9	0.09	0.6	0.5	0.08	B
8	9	0	19.8	20- 1.6	155-50.5	5.5	3.0	18	145	14.9	0.26	1.2	1.5	0.13	B
8	20	27	5.8	19-20.9	155-25.6?	5.5	2.2	16	115	11.6	0.11	0.9	0.8	0.19	B
9	9	10	50.1	19-22.9	155-11.1	9.1	2.1	16	129	2.6	0.04	0.5	0.3	0.09	B
9	18	4	41.7	19-14.1	155-24.4?	42.6	2.7	18	164	11.4	0.25	1.3	2.3	0.10	C
9	18	21	26.9	19-30.4	155-42.8	5.9	2.4	16	128	21.9	0.10	0.7	0.8	0.14	B
9	21	9	1.6	19-25.9	155-27.6	13.4	1.8	10	216	10.3	0.25	2.2	2.2	0.16	C
10	3	1	21.1	19-13.2	155-23.9	30.7	2.1	10	191	13.0	0.38	1.9	3.7	0.09	C
10	3	58	39.0	19-11.6	155-22.0	31.8	2.3	13	183	16.1	0.18	1.2	2.7	0.08	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 10	5	30	53.2	19-22.8	155- 3.8?	9.1	4.1	23	177	11.1	0.20	1.9	0.9	0.30	C
10	6	33	49.4	19-14.4	155- 7.8	2.2	2.1	14	228	14.1	1.02	1.7	4.4	0.18	C
10	9	55	16.9	19-19.5	155- 7.6	9.1	1.7	12	317	6.0	0.68	3.6	1.0	0.26	D
10	11	17	37.8	19-21.0	155-25.5	11.1	1.7	13	129	4.2	0.08	0.8	1.3	0.12	B
10	11	31	59.0	19-20.9	155-11.6	6.9	1.4	9	200	3.3	0.29	2.0	1.1	0.16	C
10	11	33	34.4	19-14.0	155-24.1	17.3	1.5	14	182	11.5	0.15	1.3	3.4	0.13	C
10	11	36	30.6	19-12.8	155-22.9	33.1	2.2	16	181	13.7	0.38	1.7	3.7	0.13	C
10	13	10	5.0	19-22.2	155-26.3	7.7	1.9	14	83	6.5	0.10	0.9	0.9	0.21	F
10	16	22	53.0	19-20.6	155-13.9	15.4	1.2	7	188	3.3	0.18	0.9	1.7	0.03	B
10	17	11	40.3	19-21.9	155-23.0	6.1	1.2	9	169	3.2	0.42	1.2	3.1	0.11	C
10	20	5	41.7	19-18.7	155-16.7	9.7	1.4	16	166	2.9	0.06	0.5	0.4	0.09	B
10	20	47	55.6	19-20.4	155-18.8	8.2	1.1	11	151	2.5	0.10	0.7	0.6	0.11	C
10	20	50	36.9	19-20.5	155-17.5	10.0	1.1	13	90	0.8	0.09	0.7	0.6	0.11	B
10	20	51	48.2	19-20.1	155-17.9	8.7	1.2	14	159	0.9	0.09	0.7	0.5	0.12	C
10	20	55	4.5	19-20.6	155-18.8	8.1	1.3	10	140	2.6	0.11	1.0	0.7	0.12	B
11	1	15	13.2	19-19.7	155-16.5	11.8		7	247	1.8	0.24	0.9	1.6	0.02	C
11	2	18	57.1	19- 7.9	155-35.1	9.6	2.2	15	136	8.4	0.09	1.0	0.7	0.11	B
11	6	16	14.6	19-26.8	155-27.0?	13.8	1.3	7	258	8.4	0.52	2.6	4.2	0.04	D
11	7	40	57.4	19-43.7	156- 7.2	32.2	2.6	13	302	31.0	1.06	5.8	5.7	0.08	D
11	21	12	32.3	19-22.0	155- 7.3	7.4	2.1	14	191	4.8	0.12	1.3	0.7	0.15	C
12	6	49	7.7	19-10.6	155- 4.4	3.4	2.6	12	268	22.9	0.80	3.4	2.0	0.15	D
12	9	24	25.9	19-21.4	155-18.5	26.9		13	107	3.1	0.23	1.2	2.1	0.09	B
12	12	48	43.9	19-20.8	155- 7.3	5.2	2.0	16	198	14.2	0.13	1.0	0.7	0.15	C
13	11	59	10.0	19-24.5	154-46.3?	8.0*	2.7	17	319	14.0	1.59	12.7		0.72	D
13	14	2	25.8	19-19.9	155-18.5	26.2	1.7	10	144	1.9	0.18	0.8	1.8	0.06	B
13	14	28	50.1	19-28.5	155-13.9?	8.0*	1.2	8	322	8.6	0.78	7.0		0.45	D
13	14	29	26.4	19-26.1	155-14.7?	1.8	1.0	10	292	4.6	1.19	4.4	14.7	0.37	D
13	15	12	57.1	19-23.5	155-25.3	8.4	3.2	17	82	7.0	0.09	0.8	0.7	0.18	B
13	15	21	39.4	19-23.5	155-25.4	7.4	2.7	18	59	7.1	0.09	0.8	0.7	0.16	B
13	16	32	36.1	19-18.7	155-17.2	27.6	1.3	11	193	6.6	0.16	1.3	1.7	0.07	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 13	16	42	7.2	19-20.9	155- 3.5	4.0	2.1	10	263	20.7	1.36	5.4	5.0	0.12	D
13	19	36	37.0	19- 8.4	155-28.7?	17.2	1.9	12	195	16.4	0.21	1.5	5.1	0.14	C
13	20	4	25.4	19-25.5	155-22.9	10.5	1.3	9	171	5.5	0.28	0.5	1.8	0.04	B
13	21	38	19.0	19-15.8	155- 9.7	2.8	1.7	8	218	14.7	1.02	1.9	4.4	0.12	C
13	22	9	17.1	19-11.7	155-35.0	8.6	1.8	6	139	7.0	0.18	1.9	1.4	0.11	B
13	22	36	7.4	19-21.3	155-15.2	11.2	1.1	7	156	0.9	0.07	0.7	0.4	0.04	B
13	23	45	44.7	19-54.8	155-33.3	9.5	2.3	12	194	18.4	0.14	1.9	0.9	0.14	C
14	0	32	7.2	19-24.8	155-24.9	8.6	2.3	16	74	8.9	0.07	0.6	0.5	0.11	B
14	5	11	37.7	19-20.2	155- 5.5	4.3	2.2	14	188	17.4	0.19	1.2	1.0	0.15	C
14	6	29	27.0	19-24.9	155-24.0	10.6	1.7	12	180	7.6	0.06	0.5	0.4	0.06	B
14	7	35	37.7	19-24.3	155-17.4	8.4	1.1	9	112	0.8	0.08	0.3	0.5	0.02	A
14	11	12	21.4	19-17.6	155-47.6	10.2	3.3	14	189	19.2	0.22	1.3	1.0	0.13	C
14	17	14	6.0	19-25.7	155-10.9	10.2	1.6	10	238	7.4	0.38	1.1	2.7	0.06	C
14	20	10	45.2	19-19.4	155-16.2	9.9	1.7	14	189	2.4	0.06	0.5	0.3	0.08	B
15	2	13	14.0	19-28.0	155-54.2?	19.2*	3.5	14	213	6.2	0.72	6.5		0.59	D
15	2	40	22.0	19-20.9	155-16.4	28.1	1.8	11	171	2.6	0.36	1.5	3.2	0.08	C
15	2	53	7.8	19-21.5	155- 2.0	0.1	2.1	13	211	20.3	0.50	1.1	2.4	0.12	C
15	3	38	23.0	19-19.6	155-15.9	9.7	1.7	12	188	2.8	0.09	0.8	0.5	0.11	C
15	4	34	47.9	19-23.6	155-14.9?	1.5	0.5	6	167	2.8	0.15	0.9	2.1	0.06	C
15	4	40	11.6	19-23.1	155-13.3	6.9	1.2	6	299	4.3	0.45	1.2	1.7	0.01	C
15	4	40	55.9	19-21.7	155-16.1	3.5	1.1	6	220	1.4	1.11	4.5	6.5	0.12	C
15	4	41	17.1	19-23.1	155-15.2	6.3	1.5	11	146	1.7	0.11	0.8	0.7	0.12	B
15	4	41	46.5	19-23.2	155-14.9	6.2	1.8	13	156	2.3	0.08	0.5	0.5	0.09	C
15	4	42	26.5	19-23.4	155-15.1	2.3	1.6	11	160	2.4	0.06	0.5	0.4	0.10	B
15	4	43	13.6	19-23.1	155-14.8	6.6	2.1	9	114	2.4	0.07	0.7	0.5	0.11	B
15	4	44	42.8	19-22.4	155-14.4	6.9	2.2	6	133	2.6	0.30	2.7	1.9	0.20	C
15	4	45	22.9	19-22.6	155-14.6	6.8	2.2	6	139	2.4	0.32	2.4	1.7	0.15	B
15	4	48	28.8	19-23.5	155-14.9	3.0	1.3	6	166	2.6	0.06	0.4	0.3	0.03	B
15	4	48	55.4	19-24.5	155- 5.8	2.4	2.1	8	333	18.1	0.38	1.9	1.8	0.08	C
15	4	49	36.3	19-23.1	155-13.8	7.2	1.9	5	174	2.6		0.0		0.11	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	4	51	43.1	19-23.1	155-14.9	6.4	1.7	12	153	2.2	0.09	0.6	0.6	0.10	C
15	4	52	11.8	19-23.5	155-14.4	6.9	2.0	5	175	3.3		0.0		0.10	D
15	4	52	28.2	19-23.8	155-14.3	6.8	1.8	7	190	3.8	0.12	0.8	0.5	0.05	B
15	4	53	12.3	19-23.3	155-15.0	6.7	2.2	15	108	2.3	0.05	0.5	0.4	0.10	A
15	4	54	43.6	19-27.9	155-15.2	1.9		4	277	10.3		0.0		0.0	D
15	4	55	20.3	19-23.1	155-14.6	6.7	1.4	8	272	2.6	0.42	2.4	1.0	0.15	C
15	4	55	46.1	19-23.6	155-14.8	6.4	2.2	8	100	2.9	0.07	0.8	0.6	0.10	A
15	4	56	28.9	19-23.4	155-15.0	6.5	2.7	11	103	2.5	0.07	0.8	0.5	0.13	B
15	5	0	23.9	19-22.1	155-13.9	6.9	2.0	5	167	2.5		0.0		0.14	D
15	5	0	36.1	19-22.9	155-14.1	7.0	2.5	6	121	2.9	0.10	1.1	0.6	0.06	B
15	5	1	12.6	19-24.4	155-14.7	6.3	2.2	5	203	4.2		0.0		0.03	D
15	5	2	24.2	19-23.3	155-14.2	6.8	2.2	6	108	3.3	0.11	1.2	0.7	0.07	B
15	5	4	46.5	19-23.0	155-14.9	6.8	2.6	8	116	2.1	0.12	1.1	0.7	0.13	B
15	5	8	34.0	19-23.1	155-15.0	6.1	2.5	9	114	1.9	0.10	1.0	0.6	0.15	B
15	5	12	9.1	19-23.6	155-14.7	3.1		7	179	3.0	0.03	0.2	0.1	0.02	B
15	5	12	20.4	19-23.2	155-14.8	6.3	2.7	16	112	2.4	0.05	0.5	0.3	0.12	B
15	5	14	5.8	19-23.3	155-15.0	6.1	2.5	14	84	2.3	0.07	0.6	0.3	0.10	B
15	5	17	1.8	19-23.6	155-14.4	6.2		7	184	3.5	0.19	1.3	0.8	0.09	C
15	5	17	41.3	19-23.3	155-14.9	5.7	2.1	15	108	2.4	0.06	0.5	0.4	0.13	B
15	5	19	30.6	19-23.5	155-14.6	6.3	2.2	9	103	3.0	0.07	0.8	0.4	0.10	A
15	5	20	28.6	19-23.3	155-14.9	6.3	2.1	9	86	2.5	0.09	0.8	0.5	0.11	B
15	5	22	20.0	19-23.1	155-14.7	6.3	2.5	15	95	2.5	0.05	0.6	0.4	0.13	B
15	5	23	35.4	19-23.1	155-14.7	2.9	1.9	7	156	2.5	0.25	0.5	1.8	0.07	B
15	5	24	23.3	19-23.2	155-14.4	6.7	2.4	9	163	2.9	0.14	0.9	0.6	0.10	B
15	5	25	26.9	19-23.2	155-14.8	6.3	2.2	11	160	2.5	0.13	0.8	0.6	0.12	C
15	5	27	35.2	19-23.2	155-15.0	6.6	2.2	14	85	2.1	0.06	0.5	0.4	0.10	B
15	5	28	55.4	19-23.3	155-14.6	2.5	1.3	9	167	2.9	0.07	0.4	0.3	0.06	B
15	5	29	13.4	19-23.8	155-14.2	6.5	1.8	11	181	3.8	0.09	0.6	0.5	0.08	B
15	5	29	55.3	19-23.4	155-14.4	6.5	1.8	10	172	3.1	0.14	0.9	0.6	0.10	B
15	5	33	48.4	19-23.1	155-14.4	4.2		5	168	2.8		0.0		0.04	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	5	34	9.7	19-23.2	155-13.7	5.2	1.4	9	171	2.5	0.26	0.8	2.1	0.11	C
15	5	34	26.6	19-23.5	155-14.9	2.9	1.6	9	169	2.7	0.07	0.4	0.3	0.06	B
15	5	35	33.9	19-23.2	155-14.9	6.3	2.1	10	90	2.3	0.07	0.7	0.5	0.11	B
15	5	38	22.8	19-23.1	155-14.4?	2.0	1.2	9	161	2.9	0.15	0.9	1.7	0.09	C
15	5	38	47.5	19-22.7	155-14.2	6.2	1.5	11	147	2.5	0.13	0.9	0.8	0.14	B
15	5	40	40.6	19-22.4	155-14.8	6.0	1.6	10	125	1.3	0.04	0.4	0.3	0.04	B
15	5	41	11.6	19-23.4	155-14.4	6.4	1.8	10	168	3.2	0.11	0.8	0.7	0.11	C
15	5	42	35.3	19-23.1	155-14.8	6.4	2.1	15	92	2.3	0.05	0.5	0.3	0.09	A
15	5	43	33.9	19-23.5	155-14.6	2.1		6	176	3.1	0.22	0.4	1.8	0.04	B
15	5	43	51.0	19-23.3	155-14.6	6.5	2.2	14	92	2.8	0.06	0.6	0.4	0.12	B
15	5	44	28.7	19-13.5	155-17.4	3.2*	2.0	9	319	15.7	0.60	2.6		0.18	D
15	5	44	46.7	19-23.4	155-14.8	3.3	1.6	9	165	2.7	0.11	0.6	1.5	0.08	B
15	5	45	51.4	19-23.4	155-14.5	3.1	1.4	10	167	3.1	0.06	0.5	1.6	0.08	B
15	5	46	0.1	19-22.8	155-14.6	6.1	2.1	12	113	2.2	0.09	0.7	0.5	0.12	B
15	5	46	43.9	19-23.4	155-14.7	2.8	1.3	8	167	2.8	0.32	0.6	2.3	0.08	C
15	5	47	31.8	19-23.2	155-15.5	2.1	1.4	8	144	1.7	0.19	0.5	1.3	0.09	B
15	5	48	21.3	19-23.2	155-14.7	1.0	1.9	9	161	2.6	0.08	0.4	0.6	0.06	B
15	5	49	18.1	19-23.1	155-14.9?	10.0	1.5	9	155	2.3	0.57	2.5	4.9	0.21	C
15	5	50	2.9	19-22.6	155-14.6	6.2	1.7	10	138	1.9	0.16	1.2	1.0	0.17	B
15	5	51	18.4	19-23.2	155-14.5	6.6	1.7	10	163	2.9	0.16	1.0	0.7	0.13	C
15	5	51	57.9	19-22.1	155-14.7?	7.2	1.5	12	139	1.1	0.46	1.8	2.7	0.26	C
15	5	52	20.3	19-23.5	155-14.8	3.0		7	171	2.8	0.07	0.4	0.3	0.04	B
15	5	52	41.5	19-22.8	155-14.6	6.0	1.9	11	145	2.2	0.14	1.0	0.9	0.16	B
15	5	53	27.5	19-21.0	155-15.7	2.6	1.9	9	189	1.5	0.14	0.8	0.6	0.10	B
15	5	54	30.3	19-23.2	155-14.8	6.1	1.7	11	157	2.4	0.10	0.7	0.6	0.11	C
15	5	55	11.1	19-21.8	155-14.5	4.2	2.1	12	159	1.4	0.06	0.5	0.4	0.08	B
15	5	55	57.9	19-22.6	155-14.4	4.4	3.2	15	128	2.1	0.08	0.7	0.6	0.18	B
15	5	58	7.5	19-22.8	155-14.8	2.4	1.6	9	143	2.0	0.17	0.5	1.4	0.10	B
15	6	0	42.3	19-22.5	155-14.0	6.8	1.6	11	144	2.5	0.26	1.7	1.2	0.21	C
15	6	2	16.4	19-23.4	155-14.4	6.5	1.5	10	171	3.1	0.14	0.9	0.6	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	6	2	23.7	19-22.8	155-14.8	7.1	2.2	12	109	2.0	0.10	0.8	0.5	0.13	B
15	6	3	4.0	19-22.2	155-14.8	5.9	1.6	9	149	1.1	0.09	0.8	0.5	0.08	B
15	6	3	35.2	19-22.6	155-15.2	4.7	1.9	9	130	1.3	0.10	0.8	0.6	0.09	B
15	6	6	8.7	19-23.0	155-15.4	3.3	1.2	8	215	1.4	0.27	1.2	1.4	0.09	C
15	6	7	9.7	19-22.9	155-14.8	5.2	2.3	8	148	2.2	0.27	1.1	2.1	0.10	B
15	6	9	13.0	19-23.2	155-14.6	3.4	1.5	10	160	2.7	0.07	0.4	1.0	0.06	B
15	6	9	57.0	19-23.6	155-14.8	6.2	1.7	10	168	2.9	0.09	0.7	0.5	0.10	B
15	6	12	52.6	19-23.1	155-14.5	2.5	1.7	8	160	2.8	0.11	0.5	0.5	0.07	B
15	6	15	14.1	19-16.5	155-19.1	10.5	2.4	8	323	11.8	0.46	3.2	6.2	0.08	D
15	6	15	22.7	19-26.4	155- 5.1	8.0*		7	174	19.7	0.05	1.3		0.05	C
15	6	16	25.1	19-23.0	155-14.7	6.4	2.2	15	101	2.3	0.06	0.5	0.4	0.08	B
15	6	19	35.8	19-23.5	155-14.8	6.6	1.5	11	164	2.8	0.09	0.6	0.5	0.08	B
15	6	20	8.7	19-22.9	155-14.8	4.2	1.1	8	146	2.1	0.26	0.9	2.1	0.07	B
15	6	20	41.0	19-23.0	155-14.8	6.2	2.4	16	95	2.2	0.06	0.5	0.4	0.11	B
15	6	22	26.0	19-23.4	155-15.3	2.7		7	154	2.0	0.05	0.1	0.4	0.01	B
15	6	25	14.0	19-22.5	155- 8.6?	12.1	1.8	8	335	11.9	0.41	5.0	4.6	0.08	D
15	6	32	8.8	19-22.5	155-13.9	6.1	1.8	10	143	2.4	0.18	1.1	0.8	0.13	B
15	6	34	14.0	19-23.2	155-14.5	3.7	1.2	7	261	2.9	0.42	1.5	2.1	0.05	C
15	6	36	44.9	19-23.9	155-13.8	6.3	1.4	9	282	4.6	0.47	2.5	0.7	0.10	C
15	6	37	24.2	19-23.4	155-14.9	6.4	1.5	11	161	2.5	0.12	0.9	0.7	0.13	C
15	6	37	44.0	19-23.2	155-14.7	6.4	1.5	11	158	2.6	0.10	0.7	0.6	0.11	C
15	6	38	28.9	19-23.5	155-15.6	6.0	1.2	10	150	2.0	0.07	0.5	0.4	0.08	B
15	6	40	38.7	19-23.1	155-14.8	4.7	1.8	12	154	2.3	0.07	0.5	0.5	0.07	C
15	6	41	0.9	19-22.9	155-14.9	6.4	2.1	13	145	2.0	0.09	0.6	0.6	0.11	B
15	6	42	20.1	19-23.4	155-14.7	3.0	1.1	8	166	2.8	0.05	0.4	0.3	0.04	B
15	6	42	49.4	19-23.1	155-14.6	3.4	1.5	10	159	2.6	0.05	0.3	0.7	0.05	B
15	6	43	31.2	19-23.1	155-15.3	4.2	1.2	7	226	1.7	0.41	1.5	2.1	0.09	C
15	6	46	43.6	19-23.3	155-14.8	3.8	1.3	9	162	2.6	0.12	0.5	1.1	0.07	B
15	6	46	59.2	19-23.5	155-14.8	0.0*	1.0	9	169	2.8	0.09	0.4		0.10	C
15	6	48	23.5	19-22.2	155-14.5	4.4		5	162	1.6		0.0		0.02	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	6	49	32.6	19-23.3	155-15.3	3.0	1.1	9	154	2.1	0.04	0.3	0.2	0.05	B
15	6	51	38.4	19-23.2	155-14.4?	4.4	0.7	7	166	3.0	0.48	0.9	8.5	0.09	C
15	6	52	15.4	19-23.1	155-14.2	2.8	3.0	13	109	3.1	0.07	0.5	0.5	0.14	B
15	6	55	29.3	19-24.3	155- 7.9	23.1	2.1	10	328	8.6	0.80	7.8	7.5	0.24	D
15	6	56	20.4	19-22.7	155-14.5	1.1	1.2	9	145	2.3	0.12	0.4	1.6	0.07	B
15	6	59	15.1	19-22.1	155-14.0	0.2*	1.5	8	143	2.3	0.10	0.6		0.14	C
15	7	0	21.9	19-23.2	155-15.2?	4.3	1.3	7	151	1.9	0.53	1.2	3.9	0.14	C
15	7	5	12.2	19-23.3	155-14.3	3.8		9	168	3.2	0.17	0.4	2.1	0.08	C
15	7	7	26.1	19-23.1	155-14.4	0.1*	1.0	10	161	2.9	0.07	0.4		0.11	C
15	7	7	44.0	19-24.8	155-10.5	8.0*		7	323	10.1	1.14	4.8		0.08	D
15	7	9	5.5	19-23.7	155-11.5	8.0*	1.5	6	319	7.5	0.41	2.0		0.04	D
15	7	21	9.2	19-23.0	155-14.7	6.4	2.2	13	99	2.4	0.06	0.6	0.4	0.11	B
15	7	43	31.4	19-23.2	155-15.4	3.3	1.4	9	146	1.7	0.09	0.5	0.9	0.09	B
15	7	43	59.5	19-23.4	155-14.6	3.6	1.2	8	255	2.9	0.33	1.3	1.4	0.07	C
15	7	45	5.2	19-23.5	155-14.6	0.2*	1.3	10	166	3.0	0.06	0.4		0.08	C
15	7	47	17.4	19-16.5	155-13.5	0.6	2.0	8	312	10.3	0.50	2.0	1.0	0.12	C
15	7	56	1.9	19-22.5	155-12.2	11.3	1.8	8	317	5.7	0.39	2.7	2.3	0.09	D
15	7	56	22.6	19-23.3	155-15.4	1.5	1.3	9	151	1.9	0.09	0.3	1.0	0.06	B
15	7	57	28.1	19-23.1	155-14.8?	1.8	1.7	11	155	2.3	0.18	1.3	1.0	0.21	C
15	8	8	58.2	19-22.9	155-14.4	0.1*	1.1	9	154	2.6	0.08	0.4		0.12	C
15	8	10	34.4	19-23.6	155-14.5	3.2	1.2	8	261	3.2	0.34	1.5	0.4	0.07	C
15	8	12	24.6	19-22.0	155-15.1	2.9	1.6	10	126	0.4	0.06	0.5	0.4	0.09	B
15	8	26	50.2	19-22.9	155-14.4	4.5	1.3	11	153	2.5	0.13	0.9	0.9	0.16	C
15	8	28	51.9	19-23.7	155-14.3	4.1	0.7	7	272	3.7	0.12	0.4	0.4	0.01	C
15	8	31	33.1	19-22.7	155-14.6	0.2*		8	149	2.1	0.07	0.4		0.09	C
15	8	38	35.7	19-22.9	155-14.6	2.7	0.9	8	159	2.4	0.06	0.4	0.4	0.06	B
15	8	41	38.3	19-22.6	155-14.2	2.3	1.4	11	142	2.4	0.09	0.4	0.6	0.11	B
15	9	3	24.0	19-23.5	155-14.3	3.8		7	270	3.4	0.50	1.9	1.7	0.05	C
15	9	35	43.5	19-22.1	155-15.0	7.4	1.6	9	157	1.7	0.16	2.1	1.4	0.15	C
15	9	42	8.6	19-25.2	155- 8.7	8.0*	1.8	6	332	13.2	2.96	11.8		0.09	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	9	43	39.9	19-25.0	155-10.0	8.0*		7	326	11.0	1.80	7.4		0.09	D
15	9	46	30.7	19-24.8	155- 9.5	8.0*	1.7	7	327	11.5	1.37	5.5		0.07	D
15	9	47	27.0	19-23.9	155-14.1	3.0	0.6	8	273	4.2	0.27	1.1	0.2	0.04	C
15	10	4	27.8	19-23.3	155-15.3	4.1	1.0	11	150	1.9	0.13	0.6	1.2	0.12	B
15	10	20	57.6	19-21.8	155-15.3	3.0	1.1	11	162	0.1	0.07	0.5	0.3	0.11	C
15	10	33	9.9	19-24.9	155- 9.8	8.0*	1.6	7	326	11.2	1.44	5.8		0.07	D
15	10	45	1.3	19-22.4	155-14.2	2.7		12	135	2.3	0.07	0.5	0.4	0.10	B
15	11	0	42.5	19-22.7	155-14.5	6.5	1.0	13	144	2.2	0.09	0.6	0.6	0.10	B
15	11	4	26.5	19-19.2	155-13.6	10.1	3.8	19	170	5.7	0.11	0.9	0.4	0.15	C
15	11	8	3.1	19-19.4	155-13.2	13.8	1.5	8	223	5.9	0.31	1.3	2.4	0.06	C
15	11	9	21.2	19-18.4	155-13.6	9.2	2.6	15	175	6.9	0.12	0.9	0.6	0.12	C
15	11	12	57.6	19-18.5	155-12.7	15.1	1.3	7	242	7.6	0.14	1.4	0.5	0.04	C
15	11	13	45.4	19-19.7	155-13.8	10.0	1.3	17	168	4.7	0.06	0.6	0.3	0.10	C
15	11	15	42.2	19-19.6	155-13.9	11.1	1.1	13	209	4.7	0.08	0.7	0.3	0.08	B
15	11	16	4.5	19-24.9	155-10.5	8.0*	1.5	7	324	10.2	0.96	4.0		0.06	D
15	11	16	39.3	19-23.6	155-14.7	3.9	1.0	8	176	3.0	0.05	0.2	0.5	0.02	B
15	11	17	19.4	19-17.7	155-12.6	14.5	1.7	9	252	8.8	0.12	1.2	0.7	0.05	C
15	11	19	3.4	19-18.1	155-12.9	14.6	1.5	9	245	8.0	0.28	1.3	2.1	0.06	C
15	11	22	9.2	19-17.4	155-12.7	13.8	1.5	10	255	9.2	0.22	1.1	1.4	0.04	C
15	11	22	58.6	19-19.4	155-13.9	9.7	1.2	13	203	5.1	0.13	0.9	0.5	0.13	C
15	11	23	44.3	19-19.5	155-13.9	10.1	1.5	12	200	4.9	0.12	0.9	0.7	0.11	C
15	11	26	41.6	19-17.7	155-12.2	16.3	1.0	6	256	8.4	0.35	2.6	2.9	0.05	D
15	11	27	31.8	19-18.5	155-12.6	15.1	1.5	6	244	7.6	0.14	1.2	1.1	0.02	C
15	11	30	18.1	19-18.2	155-13.1	13.5	1.5	10	243	7.7	0.20	0.9	1.3	0.04	C
15	11	37	56.6	19-18.5	155-13.1	13.1	1.3	10	239	7.3	0.24	1.2	1.6	0.07	C
15	11	38	54.1	19-17.5	155-12.8	13.8	1.4	8	253	9.2	0.44	1.9	3.3	0.06	C
15	11	40	22.9	19-23.4	155-14.1	0.8	0.7	6	179	3.6	0.08	0.3	2.1	0.02	C
15	12	3	42.6	19-24.7	155-23.7	12.5	1.1	13	133	7.3	0.06	0.6	0.8	0.07	B
15	12	6	34.5	19-18.6	155-12.8	15.5	1.6	9	238	7.2	0.08	0.5	0.7	0.02	C
15	12	11	46.8	19-19.0	155-13.3	14.7	1.3	6	228	6.2	0.06	0.6	0.2	0.01	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	12	12	34.7	19-25.3	155- 9.3	8.0*	1.5	7	329	12.3	2.00	7.9		0.07	D
15	12	17	13.7	19-18.8	155-13.1	15.2	1.3	7	233	6.7	0.06	0.5	0.5	0.02	C
15	12	29	17.9	19-23.4	155-15.0	2.5	0.7	10	158	2.4	0.04	0.2	0.3	0.04	B
15	12	46	33.6	19-26.3	155- 4.8?	8.0*	1.5	7	339	20.2	3.98	14.8		0.05	D
15	13	7	19.6	19-18.7	155-13.2	14.6	1.3	7	234	6.8	0.13	0.6	1.0	0.02	C
15	13	23	16.6	19-23.2	155-15.2	6.3	1.3	12	150	1.9	0.09	0.6	0.6	0.11	B
15	13	32	51.9	19-17.9	155-13.0	13.8	1.2	9	247	8.2	0.30	1.4	2.2	0.06	C
15	13	33	19.7	19-25.0	155- 9.7	8.0*	1.5	7	327	11.5	1.43	5.8		0.07	D
15	13	48	56.8	19-24.3	155-10.9?	8.0*	1.3	8	320	9.0	0.31	4.3		0.29	D
15	14	0	56.0	19-23.1	155-14.2	3.1	1.0	10	162	3.0	0.04	0.3	0.2	0.06	B
15	14	8	3.6	19-23.1	155-14.9	6.2	1.6	14	151	2.1	0.07	0.5	0.5	0.09	C
15	14	8	57.9	19-23.7	155-14.5	2.9		8	185	3.4	0.06	0.3	0.2	0.04	B
15	14	11	12.4	19-27.6	155- 1.1	8.0*	1.7	7	344	27.1	0.79	3.8		0.09	D
15	14	13	39.1	19-23.1	155-14.9	6.1	1.9	14	91	2.1	0.05	0.5	0.4	0.08	B
15	14	18	47.3	19-27.0	155-13.2?	8.0*	1.4	6	319	8.7	3.83	34.3		0.68	D
15	14	22	46.9	19-24.5	155-15.4	4.1	0.8	6	252	2.9	0.12	0.5	0.5	0.01	C
15	14	26	47.2	19-22.5	155-14.5	5.7	1.3	12	136	1.9	0.18	0.7	1.3	0.12	B
15	14	45	43.0	19-17.4	155-12.5	14.7	1.8	8	256	9.2	0.17	1.4	0.5	0.04	C
15	15	8	44.9	19-25.0	155- 9.7	8.0*	1.3	6	329	11.5	1.14	4.6		0.04	D
15	15	34	44.9	19-24.2	155-15.7	2.6	0.7	9	171	2.4	0.07	0.5	0.4	0.07	B
15	15	37	13.7	19-16.1	155-12.8	15.4	1.4	7	287	10.9	0.83	4.7	4.9	0.07	D
15	15	39	54.8	19-24.0	155-13.9	3.1*	0.8	8	284	4.5	0.06	0.3		0.02	D
15	15	43	24.4	19-23.3	155-14.8?	2.2	0.7	10	161	2.6	0.06	0.4	0.9	0.06	C
15	15	43	53.9	19-24.0	155-12.3?	8.0*	1.3	10	310	6.7	0.23	3.6		0.42	D
15	15	48	32.8	19-23.1	155-14.3	3.0	0.9	6	172	3.0	0.05	0.4	0.2	0.03	B
15	15	48	49.8	19-24.8	155-11.2?	8.0*	1.4	5	322	9.0	9.61	36.6		0.08	D
15	16	5	40.4	19-22.7	155-14.9	6.2	2.0	16	98	1.8	0.06	0.5	0.4	0.12	B
15	16	28	59.7	19-14.4	155-33.7	7.9	2.4	10	124	6.0	0.08	0.9	0.7	0.11	B
15	16	50	13.6	19-23.6	155-14.5	3.9	0.8	8	181	3.3	0.05	0.3	1.3	0.03	B
15	18	7	34.8	19-23.9	155-10.7	8.0*	1.3	6	325	9.0	0.48	2.1		0.03	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	18	15	6.0	19-19.9	155-14.1	10.6	1.2	14	192	4.1	0.08	0.7	0.3	0.10	C
15	18	40	2.1	19-21.6	155- 3.2	0.6	2.4	15	188	16.4	0.61	1.2	2.9	0.16	C
15	18	41	47.7	19-30.2	155- 9.9	8.0*		7	336	15.8	3.65	13.9		0.06	D
15	18	48	53.6	19-23.1	155-14.2	2.8	0.9	7	171	3.1	0.05	0.4	0.2	0.04	B
15	19	3	5.6	19-24.1	155-15.3	4.8	0.9	6	243	2.9	0.23	0.7	1.1	0.02	C
15	19	31	28.5	19-23.9	155-16.2	4.2	1.4	11	150	1.5	0.13	0.6	1.0	0.11	B
15	20	0	13.3	19-23.4	155-15.0?	0.3*	0.7	11	160	2.4	0.07	0.4		0.10	C
15	20	1	7.3	19-22.9	155-14.6	2.6	0.8	7	159	2.4	0.07	0.4	0.3	0.05	B
15	20	13	2.7	19-18.8	155-13.1	14.9	1.4	9	234	6.8	0.13	0.9	1.0	0.04	C
15	20	31	28.1	19-24.7	155-15.0	4.1	0.8	7	216	3.5	0.08	0.3	0.7	0.02	B
15	21	9	20.3	19-27.2	155-26.4	7.9	2.2	15	76	7.3	0.08	0.7	0.6	0.12	B
15	21	18	19.6	19-23.4	155-14.6	3.2	0.7	9	165	2.9	0.06	0.4	1.0	0.06	B
15	21	35	12.8	19-23.5	155-15.0	3.3	0.9	9	167	2.6	0.06	0.4	0.9	0.06	B
15	21	38	44.6	19-24.1	155-15.9	3.1	0.7	8	215	1.9	0.19	1.1	0.5	0.07	C
15	22	18	45.9	19-23.2	155-15.3	3.3	0.8	7	147	1.8	0.06	0.7	1.2	0.05	B
15	23	29	10.7	19-23.9	155-15.5	4.5	0.8	6	230	2.4	0.09	0.3	0.4	0.01	C
15	23	34	58.6	19-24.7	155-16.0	5.3		9	195	1.7	0.26	1.1	1.5	0.11	C
15	23	39	21.2	19-24.1	155-16.2	0.1	0.9	8	153	1.6	0.19	0.6	9.7	0.13	C
15	23	40	15.8	19-23.8	155-15.0	0.5		7	179	3.0	0.13	0.4	2.5	0.05	C
15	23	47	7.5	19-25.3	155-16.7	4.3	2.0	7	160	0.9	0.29	1.4	2.2	0.10	C
15	23	50	26.4	19-23.9	155-15.3	0.2*	1.0	8	167	3.0	0.10	0.6		0.13	C
15	23	53	46.5	19-23.3	155-15.0	6.1	1.9	9	84	2.3	0.09	0.8	0.9	0.10	B
15	23	57	13.8	19-24.3	155-16.0	2.4	0.3	8	172	2.0	0.13	0.8	0.9	0.10	C
15	23	59	49.3	19-23.6	155-14.3	4.6	3.6	15	98	3.5	0.08	0.6	0.5	0.14	B
16	0	3	39.3	19-23.8	155-14.3	0.1*	1.5	7	189	3.7	0.08	0.4		0.07	C
16	0	4	18.8	19-23.8	155-15.5	2.1	0.4	9	164	2.4	0.16	0.5	1.9	0.10	B
16	0	9	1.3	19-23.3	155-15.9	4.4	1.4	11	137	1.6	0.09	0.7	0.7	0.13	B
16	0	13	46.9	19-24.1	155-16.8	2.3	0.3	7	122	1.3	0.14	0.4	0.8	0.04	B
16	0	14	34.4	19-24.0	155-15.5	2.5	0.5	9	170	2.5	0.03	0.2	0.2	0.03	B
16	0	14	59.1	19-23.7	155-15.7	5.0	2.2	12	82	2.0	0.07	0.6	0.5	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 16	0	16	51.4	19-22.3	155-15.6	5.5		10	113	0.6	0.07	0.6	0.5	0.08	A
16	0	20	44.3	19-24.5	155-16.0	1.2	1.2	9	170	1.9	0.06	0.2	0.6	0.04	B
16	0	21	17.3	19-23.9	155-16.2	0.1*	1.2	8	145	1.3	0.06	0.4		0.08	C
16	0	22	32.5	19-23.3	155-14.3	1.9		8	168	3.2	0.10	0.6	0.7	0.09	B
16	0	23	18.4	19-24.8	155-15.7	4.9	2.4	12	115	2.3	0.09	0.7	0.7	0.14	B
16	0	26	41.1	19-24.5	155-14.5	3.6	0.9	10	204	4.4	0.16	1.0	1.1	0.12	C
16	0	27	25.7	19-24.3	155-15.6	4.2	1.1	6	240	2.7	0.15	0.6	0.7	0.02	C
16	0	28	6.2	19-24.4	155-16.7	2.2	1.1	9	147	1.1	0.09	0.5	0.5	0.10	B
16	0	30	31.5	19-23.4	155-16.3?	4.5	1.8	11	82	1.0	0.13	0.7	1.2	0.17	B
16	0	32	8.9	19-23.9	155-15.6	3.1	2.0	11	165	2.3	0.10	0.7	0.4	0.13	C
16	0	32	56.5	19-23.9	155-15.9	2.2		8	158	1.7	0.26	0.7	1.8	0.12	C
16	0	33	37.9	19-23.4	155-15.2	3.1		6	156	2.8	0.22	1.5	5.0	0.14	C
16	0	34	18.2	19-24.3	155-15.5	0.3*	1.1	8	192	2.8	0.06	0.3		0.06	C
16	0	36	1.2	19-20.9	155- 8.3?	8.0*	2.9	13	251	3.4	1.05	9.7		1.92	D
16	0	38	5.9	19-23.0	155-14.1	0.2*	-0.3	7	169	3.0	0.06	0.4		0.07	C
16	0	39	55.3	19-22.4	155-16.1?	3.0	0.9	8	124	0.4	0.13	0.8	1.2	0.11	B
16	0	41	37.7	19-23.5	155-15.7	4.5	2.0	12	147	1.9	0.11	0.8	0.8	0.16	B
16	0	45	13.2	19-23.9	155-15.5?	0.9	1.6	11	165	2.4	0.16	0.8	1.8	0.14	C
16	0	48	44.7	19-24.3	155-15.4	2.3	0.8	7	194	3.0	0.06	0.5	0.6	0.04	B
16	0	50	31.1	19-25.0	155-15.7	0.2	1.0	8	181	2.2	0.18	0.8	4.9	0.12	C
16	0	52	22.8	19-28.8	155-13.4?	8.0*	1.5	6	325	9.6	1.30	12.4		0.58	D
16	0	54	7.9	19-24.7	155-15.6	4.7	2.2	11	202	2.6	0.16	1.0	0.8	0.14	C
16	0	57	10.9	19-23.9	155-16.4	4.1	0.9	9	182	1.1	0.26	1.0	1.6	0.11	C
16	1	6	35.3	19-15.0	155-15.4?	8.0*	1.5	6	298	12.6	1.28	17.4		0.57	D
16	1	8	27.2	19-23.8	155-15.1	3.4		6	247	3.0	0.23	1.0	1.3	0.03	C
16	1	9	25.7	19-23.2	155-14.6	2.7	1.1	7	170	2.7	0.08	0.6	0.4	0.08	B
16	1	22	29.7	19-21.9	155-16.9	5.9		6	256	2.0	0.29	3.8	2.2	0.05	D
16	1	22	49.8	19-23.3	155-15.2	2.1		9	154	2.1	0.19	0.5	1.7	0.10	B
16	1	25	51.5	19-23.5	155-14.9	2.2		8	165	2.7	0.09	0.6	1.3	0.08	B
16	1	26	9.7	19-23.5	155-14.7	2.9		8	169	2.9	0.04	0.3	0.2	0.05	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 16	1	29	26.0	19-23.9	155-15.9	6.4	1.3	7	209	1.8	1.49	4.0	7.2	0.14	C
16	1	31	17.8	19-20.1	155-15.3	8.9	2.1	16	160	3.2	0.11	1.0	0.5	0.17	C
16	1	36	45.2	19-24.3	155- 7.5	8.0*	1.8	5	337	14.5	3.20	50.7		0.17	D
16	1	46	20.6	19-22.8	155-14.6?	3.4	1.4	8	147	2.3	0.21	0.6	2.9	0.09	B
16	1	58	3.1	19-23.4	155-15.3	3.9	0.8	9	153	2.6	0.08	0.4	0.9	0.06	B
16	2	1	33.8	19-24.2	155-16.7	0.1*	1.6	11	130	1.4	0.02	0.1		0.03	C
16	2	7	39.3	19-23.4	155-14.9	3.2	0.8	9	163	2.6	0.07	0.5	1.2	0.08	B
16	2	9	37.6	19-23.3	155-16.0	8.0*	1.2	5	185	1.4	0.06	2.3		0.03	D
16	2	22	20.3	19-27.4	155-13.6?	8.0*	1.9	8	314	7.6	0.40	5.6		0.40	D
16	2	25	47.5	19-26.1	155-13.4	8.0*	1.2	5	322	6.8	0.84	4.2		0.05	D
16	2	26	38.6	19-26.2	155-16.1	5.8	2.4	15	103	2.8	0.07	0.6	0.6	0.14	B
16	2	29	0.3	19-23.9	155-16.1	3.4	0.5	7	200	1.5	0.21	1.0	1.4	0.07	B
16	2	37	23.1	19-22.7	155-14.1	2.3		9	150	2.8	0.03	0.3	0.2	0.05	B
16	2	40	54.1	19-21.7	155-14.7	5.7	1.2	7	172	1.1	0.12	0.6	0.9	0.04	B
16	3	9	10.1	19-23.4	155-14.8	2.2	0.5	10	163	2.7	0.07	0.4	0.6	0.09	B
16	3	12	0.7	19-23.6	155-14.0	3.7	0.9	7	201	3.3	0.07	0.4	1.0	0.02	B
16	3	15	36.3	19-22.4	155-15.2	6.1	1.4	11	122	1.1	0.06	0.5	0.5	0.07	B
16	3	18	48.1	19-24.3	155-15.8	4.2	1.1	6	228	2.3	0.03	0.1	0.1	0.0	C
16	3	19	19.9	19-23.3	155-14.9	6.8	2.1	15	86	2.4	0.07	0.6	0.5	0.13	B
16	3	40	30.9	19-24.4	155-15.9	3.5		6	232	2.1	0.10	0.4	0.5	0.02	C
16	3	41	21.1	19-24.5	155-15.2	3.5		6	258	3.3	0.41	1.6	1.9	0.05	C
16	3	46	1.0	19-24.2	155-15.4	8.0*		5	242	2.9	0.33	4.2		0.06	D
16	4	4	49.8	19-27.1	155-13.5	8.0*		6	318	7.4	1.14	5.3		0.08	D
16	4	14	43.2	19-24.5	155-15.5	8.0*		5	251	2.8	0.24	2.6		0.03	D
16	4	16	36.6	19-26.7	155-11.7	8.0*		6	324	9.8	1.75	7.5		0.08	D
16	4	22	32.4	19-24.1	155-15.6	2.8	0.3	7	226	2.4	0.17	0.9	1.2	0.06	C
16	4	24	24.4	19-23.5	155-16.4	4.5	0.5	8	174	0.8	0.43	1.3	2.6	0.10	C
16	4	34	22.4	19-23.6	155-15.6	4.1	0.7	5	230	2.2		0.0		0.0	D
16	5	6	6.9	19-26.1	155-23.6	8.4	1.9	14	156	5.8	0.11	0.8	0.5	0.11	C
16	5	29	53.1	19-24.0	155-15.5	3.3	0.6	7	228	2.5	0.28	1.5	0.8	0.07	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 16	5	42	18.5	19-23.9	155-16.3	3.1	0.5	7	190	1.3	0.12	0.8	0.9	0.06	B
16	5	59	12.7	19-24.1	155-16.7	2.7	0.5	7	167	1.2	0.34	0.8	1.7	0.07	B
16	6	39	46.4	19-25.8	155-16.1	4.6	1.0	9	201	2.2	0.09	0.5	0.6	0.04	B
16	6	58	17.1	19-23.8	155-16.7	3.3	0.8	11	123	0.7	0.08	0.4	0.8	0.09	B
16	7	0	51.0	19-19.9	155- 8.2	12.0	1.9	14	213	4.6	0.14	1.2	1.1	0.10	C
16	7	17	21.2	19-23.8	155-16.4	1.4		8	136	1.0	0.11	0.7	0.8	0.10	B
16	7	22	56.0	19-24.3	155-15.7	3.8	1.2	6	234	2.5	0.02	0.1	0.1	0.0	C
16	7	35	33.6	19-24.9	155-15.3	4.6	1.0	6	272	3.0	0.42	1.4	1.6	0.02	C
16	7	59	12.5	19-24.4	155-16.1	6.2	1.0	11	176	1.9	0.11	0.7	0.5	0.09	B
16	8	6	50.1	19-23.9	155-15.5	3.1	1.0	9	169	2.5	0.07	0.4	0.3	0.06	B
16	8	8	9.6	19-23.1	155-13.9	1.6		8	167	2.7	0.12	0.3	1.4	0.05	B
16	8	30	20.3	19-22.9	155-14.4	2.2	0.1	7	161	2.5	0.16	0.4	2.0	0.07	B
16	8	37	25.1	19-23.6	155-14.6	3.0	0.8	8	180	3.2	0.06	0.3	0.2	0.04	B
16	8	42	46.9	19-23.1	155-14.9	6.0	1.3	13	153	2.2	0.07	0.5	0.4	0.08	B
16	8	53	20.8	19-24.4	155-16.3	3.2	0.9	7	215	1.5	0.05	0.2	0.3	0.01	B
16	10	8	19.8	19-19.3	155- 7.9	9.2	1.8	8	220	6.0	0.07	0.6	0.2	0.02	B
16	10	14	33.6	19-15.5	155-26.7	6.8	2.3	13	199	10.5	0.16	1.2	0.9	0.17	C
16	11	25	16.6	19-23.0	155-15.0	5.1	1.1	11	145	1.8	0.19	0.7	1.4	0.12	B
16	11	40	22.9	19-17.8	155-13.0	14.9	1.4	8	248	8.3	0.26	1.3	2.0	0.05	C
16	11	49	40.9	19-24.1	155-15.9	6.1	0.9	10	169	2.1	0.32	0.9	1.8	0.10	B
16	12	29	0.3	19-22.4	155-13.3	8.5	1.2	8	294	3.7	1.20	3.3	4.6	0.06	D
16	12	30	53.4	19-23.0	155-14.7	2.3	0.6	8	162	2.4	0.14	0.5	1.6	0.08	B
16	12	36	30.8	19-27.2	155-11.7	8.0*		7	327	10.2	1.10	4.6		0.05	D
16	13	0	21.7	19-19.6	155-27.4	8.8	2.0	13	156	7.2	0.14	1.2	1.1	0.21	C
16	13	7	4.4	19-19.8	155-16.9	9.7	1.2	8	235	1.0	0.80	1.6	4.1	0.06	C
16	13	11	47.9	19-19.5	155-27.6	6.5	1.8	9	156	15.8	0.12	1.4	1.6	0.12	C
16	13	59	32.6	19-24.2	155-15.7	3.3	0.5	7	244	2.5	0.25	1.4	0.5	0.06	C
16	14	5	57.0	19-24.3	155-15.7	3.3	0.8	7	179	2.5	0.22	1.4	2.7	0.10	C
16	14	19	15.4	19-23.3	155-14.2	0.3*		8	169	3.3	0.04	0.3		0.04	C
16	14	26	31.3	19-23.4	155-17.3	1.9	0.6	7	96	0.8	0.15	0.4	1.1	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 16	14	50	9.8	19- 9.5	155-23.7	7.0	1.0	10	237	19.8	0.59	3.0	1.7	0.21	D
16	15	11	25.9	19-24.1	155-15.9	2.5	0.3	7	233	2.1	0.26	1.2	1.2	0.05	C
16	15	25	58.1	19-23.5	155-14.7	3.0	1.3	8	174	3.0	0.07	0.4	0.3	0.05	B
16	15	37	51.8	19-23.6	155-14.3	11.9	1.1	9	177	3.6	0.23	1.2	1.7	0.08	C
16	15	53	23.9	19-24.0	155-16.2	3.3	0.7	8	202	1.6	0.12	0.8	0.4	0.05	B
16	17	15	26.1	19-25.7	155-10.0	8.0*	1.6	7	329	11.8	1.3*	5.3		0.05	D
16	18	3	42.1	19-19.2	155-15.0	8.3	1.9	15	197	4.5	0.16	1.0	0.6	0.17	C
16	18	45	51.7	19-25.7	155-16.1	0.7	0.4	7	289	2.1	0.73	2.1	13.7	0.13	D
16	19	2	55.9	19-24.2	155-16.5	3.1	0.6	8	190	1.6	0.08	0.5	0.3	0.04	B
16	19	11	38.2	19-27.0	155-14.5	3.9	1.3	8	307	5.8	0.76	3.7	8.9	0.17	D
16	19	39	14.3	19-22.8	155-14.6	6.9	2.6	15	110	2.2	0.05	0.5	0.3	0.10	A
16	20	12	50.3	19-13.5	155-23.3	27.5	2.1	14	175	12.4	0.37	1.5	4.6	0.12	C
16	21	5	16.2	19-24.6	155-15.0	5.5	1.1	6	266	3.6	0.43	1.3	1.8	0.02	C
16	21	10	32.7	19-23.5	155-15.8	2.9	0.7	7	201	1.7	0.26	1.3	1.8	0.10	C
16	22	25	42.7	19-23.7	155-16.7	3.4	0.2	10	119	0.5	0.11	0.6	1.0	0.12	B
16	23	23	27.1	19-24.2	155-15.8	3.0	0.5	8	226	2.4	0.21	1.0	1.2	0.07	C
16	23	24	12.7	19-24.1	155-11.5	8.0*	1.4	6	319	7.9	0.46	2.2		0.04	D
16	23	26	10.5	19-24.5	155-15.6	3.8	1.0	6	246	2.6	0.09	0.4	0.4	0.01	C
16	23	40	4.7	19-24.4	155-15.6	3.9	0.8	6	241	2.6	0.18	0.7	0.9	0.02	C
17	0	9	25.4	19-19.9	155-15.2	14.1	1.2	8	203	3.6	0.07	0.3	0.5	0.02	B
17	0	48	0.0	19-24.3	155-15.6	3.5		8	188	2.7	0.05	0.3	0.6	0.04	B
17	1	19	58.8	19-25.1	155-12.7?	8.0*	1.2	8	302	7.4	0.30	5.1		0.29	D
17	1	43	44.5	19-22.1	155-17.5	22.7	1.5	15	79	2.7	0.12	0.7	1.1	0.07	A
17	2	7	7.0	19-23.6	155-14.7	2.3		8	171	3.0	0.06	0.4	0.5	0.06	B
17	2	19	24.5	19-23.3	155-14.7	3.9	0.6	10	160	2.6	0.05	0.3	0.7	0.06	B
17	2	59	59.1	19-23.6	155-13.8	5.0	1.0	6	287	4.3	0.29	1.0	1.2	0.02	C
17	3	46	39.9	19-22.6	155-14.1	3.3	0.6	6	152	2.6	0.07	0.7	0.5	0.04	B
17	4	13	16.7	19-24.4	155-16.4	3.5	0.9	6	204	1.4	0.06	0.3	0.3	0.01	B
17	4	54	17.6	19-24.4	155-15.4	4.2	0.8	6	248	2.9	0.41	1.4	1.9	0.04	C
17	4	54	49.0	19-24.4	155-15.9	3.4	0.9	6	230	2.1	0.08	0.3	0.4	0.01	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 17	5	18	33.9	19-22.4	155-15.0	6.1	1.4	12	125	1.2	0.07	0.5	0.5	0.08	B
17	5	50	57.8	19-17.7	155-15.9	8.2	1.2	10	208	5.2	0.25	1.7	1.0	0.17	C
17	6	4	0.4	19-18.9	155-12.9	14.7	1.6	8	235	6.8	0.15	2.4	1.5	0.05	C
17	6	15	49.6	19-23.7	155-13.5	5.9	1.3	6	293	4.8	0.55	1.6	2.1	0.02	C
17	6	27	1.1	19-19.5	155-13.6	10.1	0.9	15	194	5.2	0.09	0.7	0.4	0.11	C
17	6	32	32.3	19-19.6	155-14.0	10.7		12	210	4.7	0.13	1.0	0.5	0.11	C
17	7	38	55.1	19-24.1	155-16.6	3.2	0.5	6	177	1.3	0.14	0.8	0.9	0.04	B
17	8	3	55.1	19-24.3	155-15.6	3.3	0.8	6	241	2.7	0.24	1.0	1.2	0.03	C
17	8	49	52.7	19-25.4	155-14.0	6.5		6	299	5.4	1.62	5.0	5.5	0.04	D
17	9	32	52.6	19-23.4	155-15.2	3.8		5	262	2.3		0.0		0.01	D
17	9	57	57.1	19-27.4	155-12.5	8.0*	1.6	6	324	9.1	1.00	4.3		0.07	D
17	9	59	54.4	19-21.5	155- 8.0	26.4*		8	331	3.5	0.22	4.1		0.11	D
17	10	4	11.6	19-21.5	155-25.1	8.0		11	139	10.2	0.11	0.8	1.1	0.12	B
17	10	18	9.6	19-27.3	155-14.0	8.0*	1.2	6	316	6.9	1.04	4.9		0.07	D
17	11	21	4.5	19-24.4	155-10.2?	8.0*	1.5	6	323	10.1	0.43	2.7		0.08	D
17	11	27	24.7	19-19.3	155-13.2	16.1	1.7	7	225	5.9	0.36	2.6	3.3	0.08	C
17	12	13	18.1	19-24.4	155-15.5	3.4		6	247	2.8	0.14	0.6	0.7	0.02	C
17	12	39	26.5	19-24.4	155-16.4	3.3	0.9	9	202	1.4	0.05	0.2	0.3	0.02	B
17	12	44	47.9	19- 4.7	155-52.1	21.1	2.8	10	259	27.2	0.78	4.4	10.0	0.12	D
17	13	10	2.4	19-23.2	155-31.0	4.0		4	154	14.6		0.0		0.0	D
17	13	12	3.4	19-27.3	155-11.6	11.4		8	327	10.4	0.48	2.6	0.7	0.07	D
17	14	29	53.0	19-23.8	155-16.1	6.0	1.6	14	148	1.5	0.09	0.6	0.6	0.14	B
17	15	16	40.5	19-24.3	155-15.9	4.0		7	227	2.3	0.25	0.9	1.2	0.04	C
17	16	21	7.3	19-19.4	155-11.2	14.7	1.6	8	248	4.9	0.14	1.6	0.8	0.05	C
17	16	32	11.0	19-23.1	155-14.7	3.1		8	158	2.5	0.07	0.6	0.4	0.09	B
17	16	35	57.1	19-24.8	155-15.2	4.3		7	268	3.1	0.28	1.0	1.1	0.03	C
17	17	50	25.3	19-24.0	155-16.8	2.5	1.2	9	161	1.0	0.08	0.4	0.4	0.06	B
17	18	4	38.7	19-19.9	155-16.7	8.8	1.2	11	236	1.3	0.34	0.9	1.6	0.04	C
17	18	16	0.1	19-16.2	155- 6.4	7.3		8	246	12.1	0.71	4.0	1.4	0.14	D
17	19	49	0.4	19-27.7	155-11.7	8.0*	1.4	6	328	10.6	1.37	5.6		0.05	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 17	19	58	22.9	19-24.0	155-13.7	6.3	1.3	6	289	4.8	0.47	1.4	1.8	0.02	C
17	20	1	26.4	19-23.1	155-13.4	8.0*	1.2	5	297	4.1	0.67	4.6		0.05	D
17	20	58	25.7	19-24.2	155-15.9	3.3	0.8	6	222	2.2	0.16	0.7	0.8	0.03	B
17	22	46	33.6	19-23.8	155-16.5	3.7	0.9	11	173	0.9	0.11	0.7	0.9	0.09	C
17	22	53	19.3	19-19.4	155-14.1	9.3	2.3	16	170	4.9	0.12	1.0	0.6	0.17	C
18	0	0	51.0	19-25.1	155-17.6	1.6	0.5	6	161	0.8	0.13	0.5	0.8	0.04	B
18	0	15	49.3	19-24.2	155-15.8	5.7	1.0	9	224	2.3	0.74	2.1	3.5	0.10	C
18	0	31	12.7	19-24.2	155-14.9	3.4	0.9	6	260	3.6	0.17	0.7	0.9	0.02	C
18	0	52	4.2	19-25.9	155-26.4	9.6		8	244	9.0	0.31	1.3	1.8	0.12	C
18	1	30	38.9	19-23.0	155-14.9	4.4	0.5	7	245	2.1	0.46	1.4	2.2	0.05	C
18	1	45	37.4	19-25.7	155-14.1	8.0*	1.2	5	303	5.3	0.57	3.2		0.03	D
18	2	15	41.6	19-24.1	155-16.3	0.1*		7	152	1.6	0.02	0.1		0.02	C
18	2	21	21.6	19-17.3	155-13.2	17.0	1.7	8	253	9.0	0.15	0.9	1.3	0.02	C
18	2	23	51.4	19-23.1	155-14.5	2.7	0.5	9	159	2.8	0.08	0.5	0.7	0.10	B
18	2	31	57.9	19-24.6	155-15.4	4.2	1.3	6	257	2.9	0.13	0.5	0.6	0.01	C
18	2	33	6.2	19-22.9	155-15.1	5.6	2.6	17	87	1.7	0.03	0.4	0.2	0.08	A
18	2	48	42.2	19-23.1	155-14.4	0.1*	0.9	7	170	3.0	0.06	0.4		0.08	C
18	3	28	7.3	19-24.5	155-15.3	3.6	0.8	6	256	3.1	0.06	0.3	0.3	0.01	C
18	3	52	23.0	19-23.8	155-15.1	2.2	0.6	10	167	2.9	0.08	0.5	1.1	0.08	B
18	4	39	48.3	19-23.5	155-14.7	2.8	1.0	10	175	3.0	0.08	0.4	0.8	0.06	B
18	5	20	49.4	19-23.6	155-14.9	5.2	0.8	7	173	2.8	0.19	0.5	1.3	0.04	B
18	5	37	31.6	19-25.4	155-12.7	8.3	1.4	7	312	7.6	2.17	6.5	6.9	0.05	D
18	8	45	4.0	19-19.6	155- 2.5	8.0	2.3	13	229	13.7	0.34	2.2	0.9	0.21	D
18	8	53	28.1	19-18.5	155-15.4	7.9	1.5	10	226	4.5	0.28	1.6	0.9	0.16	C
18	10	40	56.7	19-25.2	155-15.1	8.0*		3	294	3.4		0.0		0.0	D
18	10	40	58.0	19-23.7	155-16.3	1.5	0.4	5	188	2.8		0.0		0.02	D
18	11	55	17.8	19-25.9	155-25.3?	12.6	1.9	13	160	8.0	0.05	0.5	0.5	0.06	C
18	12	16	34.3	19-23.9	155-14.3	3.4	0.6	8	270	4.0	0.27	1.1	1.2	0.04	C
18	12	30	48.2	19-24.2	155-17.5	3.6	1.2	10	61	1.0	0.14	1.1	1.1	0.19	B
18	13	19	11.6	19-20.3	155-12.2	9.2	2.7	16	168	4.0	0.11	1.0	0.5	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 18	13	25	3.7	19-23.2	155-14.2	0.4		9	166	3.1	0.12	0.3	3.1	0.07	C
18	13	31	3.7	19-18.9	155-12.8	13.9	1.5	12	235	6.6	0.17	0.7	1.1	0.05	C
18	14	35	53.0	19-12.6	156-24.1	8.0*		7	317	82.4	2.47	14.9		0.11	D
18	14	56	55.6	19-22.1	155-23.8	9.8		8	112	3.6	0.10	1.0	0.9	0.12	B
18	16	26	59.2	19-21.1	155-16.2	7.4		10	174	2.0	0.13	0.8	0.5	0.09	B
18	20	7	4.3	19-23.4	155-14.6	3.0		8	172	2.9	0.06	0.3	0.2	0.04	B
18	20	15	59.8	19-57.4	155-40.0	13.4*		5	332	58.7	3.14	78.4		0.08	D
18	20	35	51.8	19-23.8	155-13.2	6.8		6	299	5.2	0.89	2.5	3.3	0.02	D
18	23	9	37.3	19-55.5	155-17.4	17.3	2.1	8	212	23.7	0.13	1.0	6.5	0.06	C
19	1	49	54.6	19- 1.5	155-29.6	4.3		5	309	28.0		0.0		0.02	D
19	3	23	9.2	19-27.9	155-34.6	16.7*		10	158	20.0	0.10	1.0		0.12	C
19	4	5	7.1	19-13.1	155-22.6	30.9	1.8	12	195	13.1	0.33	1.6	3.2	0.08	C
19	4	35	32.1	19-22.7	155-26.6	11.6		6	152	7.3	0.16	1.5	3.8	0.08	C
19	5	5	33.7	19-22.3	155-26.7	8.7	3.1	18	84	7.1	0.07	0.7	0.5	0.15	B
19	5	9	33.5	19-22.9	155-26.6	11.3		8	154	7.7	0.09	0.8	0.5	0.07	B
19	5	24	21.2	19-23.4	155-28.0	4.8		6	137	10.2	0.13	1.2	1.9	0.08	B
19	6	8	23.6	19-18.4	155- 8.3?	11.2	2.1	14	224	7.0	0.28	1.9	0.5	0.12	C
19	7	14	0.7	19-24.2	155-15.8	3.8	0.9	6	227	2.3	0.22	0.8	1.1	0.02	C
19	10	30	17.6	19-24.2	155-16.3	4.0	1.6	12	152	1.6	0.09	0.5	0.8	0.11	C
19	10	36	25.8	19-22.5	155- 4.5	2.2	2.0	14	197	14.0	0.64	1.6	3.3	0.18	C
19	10	43	16.7	19-24.0	155-17.3	2.3	0.9	10	121	1.3	0.03	0.2	0.2	0.04	B
19	10	50	15.9	19-17.6	155-15.7	6.8	1.3	14	210	7.8	0.19	1.1	0.9	0.14	C
19	10	50	48.2	19-19.4	155- 3.3	2.2		11	217	17.1	1.03	2.6	4.4	0.18	C
19	11	35	4.3	19-23.6	155-21.2?	6.9	2.6	15	157	2.7	0.29	2.4	1.8	0.41	D
19	12	28	40.6	19-16.3	155-23.4	3.5		11	169	12.5	0.08	0.7	1.1	0.10	B
19	12	33	25.1	19-19.3	155- 8.9	16.8		7	299	5.0	0.78	4.1	5.2	0.05	D
19	12	40	19.4	19-27.5	155-13.1	8.0*		6	321	8.4	1.63	7.4		0.10	D
19	12	57	24.1	19-17.7	155-12.6	14.5	1.6	9	253	8.8	0.29	1.4	1.8	0.06	C
19	13	6	15.4	19-18.6	155-12.9	17.3	1.3	8	238	7.2	0.28	1.5	2.4	0.05	C
19	17	14	39.9	19-17.4	155-13.9	7.7		10	223	7.9	0.27	1.7	1.0	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 19	17	25	5.3	19-19.6	155-11.0	15.1		8	250	4.4	0.39	1.8	2.7	0.07	C
19	17	25	30.9	19-24.1	155-11.1	8.0*	1.4	6	322	8.4	0.36	1.6		0.02	D
19	17	41	40.7	19-18.2	155-12.8	14.5	1.5	6	314	7.9	0.67	3.9	2.8	0.02	D
19	17	41	51.2	19-19.8	155-15.8	10.7	1.2	5	261	2.9		0.0		0.0	D
19	17	52	45.6	19-20.9	155- 4.2	12.9	1.7	11	214	10.3	0.09	1.1	0.5	0.05	C
19	18	30	45.9	19-18.7	155-15.6	7.5	1.6	8	223	4.1	0.27	1.6	0.9	0.14	C
19	18	33	3.6	19-19.2	155-15.5	10.1		11	194	3.6	0.10	0.9	0.7	0.10	B
19	18	49	40.1	19-24.9	155-27.4?	11.2	1.5	13	138	11.3	0.08	0.6	0.4	0.10	B
19	19	6	7.7	19-55.0	155-32.1	10.4	2.3	11	204	17.7	0.18	1.6	0.8	0.11	C
19	20	16	20.9	19-20.5	155-25.3	7.1		5	257	3.5		0.0		0.09	D
19	21	30	54.9	19-19.7	155-13.3	8.0	1.6	12	202	5.2	0.21	1.5	0.9	0.22	C
19	21	56	9.6	19-24.5	155-28.6	11.0	1.5	7	232	12.2	0.23	1.4	0.6	0.08	C
19	23	36	29.8	19-31.8	155-46.2	8.5		6	189	15.9	0.30	2.7	4.3	0.05	C
19	23	57	45.7	19-24.0	155-16.3	3.7	0.6	6	191	1.4	0.32	1.2	1.8	0.05	C
20	0	29	8.6	19-18.4	155-24.0	10.8		6	191	3.4	0.27	3.4	1.6	0.14	C
20	0	50	54.4	19-16.2	155-13.0	7.8		11	212	11.1	0.39	2.2	1.5	0.19	C
20	1	52	53.6	19-37.8	155-17.9	38.4	2.3	14	207	17.6	0.18	1.1	1.7	0.06	C
20	2	16	17.8	19-30.1	155-40.0	7.0	2.2	10	122	26.8	0.09	0.7	0.7	0.09	B
20	2	24	10.7	19-29.8	155-38.9	4.4	1.7	9	118	27.7	0.14	0.9	1.4	0.15	B
20	2	37	42.1	19-23.8	155-16.2	3.4	0.4	6	190	1.2	0.07	0.3	0.4	0.02	B
20	4	1	49.1	19-21.8	155-13.0	4.0	1.0	6	178	1.5	0.19	1.8	1.7	0.06	C
20	5	25	34.0	19-23.2	155-14.9	5.9	1.1	11	156	2.3	0.17	0.6	1.2	0.09	B
20	5	33	59.2	19-24.3	155-15.5	3.8	0.8	6	245	2.9	0.09	0.4	0.4	0.01	C
20	5	44	29.0	19-20.3	155- 8.4	8.4		9	200	4.0	0.24	2.0	0.8	0.14	C
20	6	15	39.9	19-23.4	155-26.9	7.8	2.1	13	130	8.7	0.11	0.9	1.0	0.17	B
20	6	24	14.8	19-24.9	155-15.5	4.2		6	265	2.6	0.52	1.9	2.1	0.04	C
20	7	30	3.0	19-27.5	155-30.0	6.6		9	160	12.5	0.25	1.6	2.2	0.20	C
20	7	51	40.5	19-19.2	155- 7.5	32.9		11	295	6.5	0.32	1.6	2.0	0.05	C
20	10	19	26.9	19-23.1	155-26.9	7.3	2.7	16	74	8.2	0.11	1.0	1.0	0.20	B
20	12	7	24.3	19-17.9	155-13.7	10.5		9	220	7.6	0.21	1.9	1.2	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 20	13	29	41.8	19-20.6	155-12.9	8.5		10	189	3.5	0.12	1.0	0.5	0.11	C
20	14	8	0.2	19-17.8	155- 3.1	38.2	2.4	16	225	14.2	0.26	1.4	2.1	0.08	C
20	14	37	6.1	19-16.1	155-13.8	6.5	1.3	8	261	10.8	0.52	2.5	1.3	0.10	C
20	14	57	23.9	19-18.3	155-12.9	14.6	1.7	8	242	7.6	0.17	1.8	1.0	0.06	C
20	15	56	35.6	19-13.3	155- 6.6	3.7		7	315	16.9	1.37	5.2	3.3	0.06	D
20	17	43	5.3	19-25.0	155-23.3	11.0	2.2	14	118	6.6	0.06	0.5	0.8	0.10	A
20	18	7	10.8	19-17.9	155- 2.9	39.0	2.4	16	226	18.8	0.28	1.4	2.2	0.08	C
20	18	24	39.8	19-28.5	155-13.5	8.0*		6	324	9.1	1.77	7.9		0.09	D
20	18	57	53.3	19-19.0	155-15.5	33.1		7	194	8.3	0.19	1.0	1.9	0.05	C
20	21	39	0.4	19-26.8	155-12.7	8.0*	1.3	6	321	8.3	0.80	3.7		0.05	D
20	22	12	26.3	19-18.2	155- 3.3	37.7	2.3	17	223	13.5	0.27	1.3	2.1	0.08	C
21	0	41	58.4	19-24.9	155-29.5	12.4		8	150	13.9	0.08	0.8	1.1	0.07	B
21	0	57	16.7	19-21.6	155-13.2	2.0		6	165	2.1	0.07	0.2	0.7	0.02	B
21	2	28	40.0	19-24.9	155-16.7	0.0	1.1	10	173	0.5	0.04	0.2	3.8	0.04	C
21	2	57	17.7	19-24.4	155-15.7	4.2		6	242	2.5	0.12	0.4	0.6	0.01	C
21	3	30	23.2	19-24.1	155-15.8	4.1	0.8	6	222	2.1	0.24	0.9	1.3	0.03	B
21	4	58	30.6	19-19.9	155-15.2	13.6	1.3	9	203	3.6	0.06	0.3	0.5	0.02	B
21	5	35	17.6	19-24.3	155-16.4	3.1		6	200	1.4	0.07	0.3	0.4	0.01	B
21	6	5	42.0	19-17.7	155- 3.4	37.3	2.4	16	225	13.9	0.25	1.3	2.0	0.08	C
21	6	20	57.1	19-19.2	155-15.0	13.0		6	216	4.6	0.08	0.5	0.7	0.02	B
21	7	40	28.4	19-24.1	155-16.3	4.3	1.2	9	152	1.6	0.16	0.7	1.0	0.08	B
21	9	44	38.5	19-16.6	155-13.6	8.2		11	233	9.3	0.34	1.9	1.2	0.17	C
21	9	47	23.8	19-10.2	155-34.4	8.3		13	135	9.8	0.08	0.8	0.5	0.11	B
21	10	10	12.8	19-18.1	155-14.1	8.1		10	236	6.8	0.33	1.8	0.9	0.16	C
21	10	19	24.4	19-12.8	155-27.6	8.6		12	170	15.6	0.10	1.0	0.7	0.12	C
21	10	56	16.0	19-19.8	155-16.6	11.3		8	243	1.6	0.11	0.6	0.7	0.02	C
21	12	1	14.9	19-23.1	155-27.8	14.3		7	268	9.4	0.45	2.8	1.4	0.08	D
21	12	24	26.2	19-23.7	155-17.5?	3.2	0.8	11	95	1.3	0.06	0.4	0.5	0.09	B
21	13	7	16.6	19-29.0	155-26.0	10.3	1.3	6	192	4.9	0.18	1.6	1.4	0.07	C
21	13	27	19.8	19-24.1	155-15.9	3.4	1.2	10	163	2.0	0.05	0.3	0.6	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 21	15	52	30.0	19-23.3	155-17.2	1.8	0.3	7	153	0.8	0.04	0.1	0.3	0.01	B
21	16	22	33.0	19-19.6	155-27.8	6.6		6	159	7.9	0.18	2.0	1.9	0.10	C
21	17	20	29.7	19-25.7	155-24.3	11.5		7	182	7.2	0.11	1.0	1.1	0.07	B
21	18	6	24.6	19-21.5	155-14.4	17.7	1.1	12	157	1.6	0.32	2.2	2.8	0.17	C
21	18	6	47.2	19-23.2	155-14.4	8.0*		5	265	2.9	0.24	2.4		0.03	D
21	18	57	55.7	19-18.7	155-12.7	14.6		9	238	7.0	0.21	1.0	1.3	0.04	C
21	19	4	18.3	19-24.3	155-17.1	2.9	0.6	8	134	1.0	0.03	0.2	0.2	0.03	B
21	20	11	42.4	19-18.4	155- 3.4?	34.9	2.2	19	203	21.8	0.16	1.0	1.6	0.11	C
21	21	52	12.8	19-23.8	155-25.4	11.1		8	205	7.5	0.17	1.2	0.5	0.11	C
21	21	57	12.8	19-17.7	155- 3.0	38.0	1.6	13	226	14.4	0.32	1.7	2.6	0.09	C
21	22	49	15.9	19-23.0	155-14.3	4.2		8	160	2.8	0.15	0.5	1.1	0.06	B
21	23	32	40.4	19-22.3	155-17.3	29.3	2.5	17	77	2.2	0.13	0.9	1.3	0.12	B
21	23	46	40.9	19-23.3	155-15.3	3.3	0.7	9	153	2.0	0.08	0.5	0.9	0.08	B
22	2	14	13.7	19-10.1	155-30.1?	1.3*		5	176	15.2	0.08	0.6		0.05	C
22	3	37	44.4	19-23.6	155-17.6	3.2	1.5	12	108	1.5	0.09	0.5	1.0	0.12	B
22	4	37	15.1	19-16.7	155-15.9	7.1	1.3	9	217	9.4	0.27	1.6	1.1	0.14	C
22	4	54	23.6	19-24.0	155-17.2	2.1	0.3	5	133	1.2		0.0		0.03	D
22	5	30	15.0	19-18.8	155-15.7	9.2	1.9	17	169	3.9	0.10	0.8	0.5	0.15	C
22	6	1	2.2	20- 2.4	155-27.7	8.0	2.3	14	224	24.9	0.24	1.4	1.0	0.10	C
22	6	25	12.6	19-19.1	155- 3.9	37.1	2.2	18	197	11.7	0.22	1.2	1.8	0.11	C
22	11	58	40.1	19-23.8	155-16.3	4.8	1.2	11	187	1.2	0.22	0.9	1.3	0.09	B
22	13	8	29.4	19-23.9	155-17.3	1.2		7	126	1.3	0.05	0.1	0.4	0.02	B
22	13	58	58.4	19-25.2	155-14.9	4.9	1.2	9	212	3.6	0.22	0.6	1.8	0.06	B
22	18	11	8.0	19-12.9	155-22.9	29.7		13	195	13.4	0.36	2.0	3.7	0.09	C
22	20	5	12.8	19-20.3	155-14.4	8.1	1.6	12	196	3.2	0.21	1.3	0.9	0.19	C
22	20	28	53.4	19-16.2	155- 3.0	38.6		12	246	16.0	0.53	2.6	4.0	0.07	D
22	21	56	32.8	20-21.5	156- 6.6	8.0*	3.2	11	336	94.1	5.46	32.2		0.09	D
22	23	8	26.3	19-23.8	155-17.0	1.6		7	139	0.9	0.03	0.1	0.2	0.01	B
22	23	11	57.8	19-21.4	155-25.2	8.2	1.7	11	140	10.5	0.09	0.7	0.9	0.11	B
23	1	58	1.9	19-25.6	155-22.0	8.1	1.5	12	151	4.4	0.08	0.6	0.5	0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 23	3	5	42.5	19-23.7	155-17.1	2.8	0.7	8	131	0.9	0.05	0.3	0.3	0.04	B
23	3	39	31.3	19-19.5	155- 3.7	37.6	2.4	16	197	16.4	0.17	1.0	1.7	0.08	C
23	3	49	25.3	19-19.6	155-15.7	10.2	1.7	13	189	3.1	0.07	0.6	0.5	0.08	B
23	4	9	25.6	19-24.2	155-25.7	7.1	2.1	13	154	8.6	0.10	0.8	0.8	0.14	C
23	4	13	43.4	19-17.5	155-33.5	1.4*	2.1	7	298	18.6	0.55	3.1		0.06	D
23	4	16	2.3	19-25.1	155-24.7	11.3	1.8	11	188	9.0	0.07	0.5	0.9	0.07	B
23	4	51	40.9	19-23.2	155-25.1	10.8	1.8	12	121	6.4	0.06	0.6	0.4	0.10	B
23	7	27	24.6	19-17.6	155- 3.3	38.1*		15	225	14.1	0.10	1.3		0.09	C
23	9	42	37.7	19-19.3	155-16.0	13.7	1.5	8	210	2.8	0.11	0.5	0.9	0.03	B
23	10	1	29.3	19-24.9	155-17.3	8.7	1.3	8	109	0.5	0.11	0.3	0.6	0.01	A
23	10	56	29.7	19-19.0	155- 4.0?	33.6	2.2	18	198	11.7	0.30	1.5	2.4	0.11	C
23	12	46	5.9	20- 7.6	154-54.3	8.0*		5	303	69.4	1.63	10.3		0.08	D
23	13	38	51.6	19-12.2	154-58.5?	0.4		6	273	26.8	3.59	7.5	12.0	0.10	D
23	14	14	36.8	19-21.0	155- 3.8	7.9	2.2	15	208	15.5	0.36	2.7	1.1	0.27	C
23	15	11	26.9	19-14.3	155-26.3	5.8		11	217	12.1	0.23	1.4	1.3	0.14	C
23	16	15	38.7	19-17.9	155- 3.2	37.2	2.6	18	222	13.8	0.23	1.2	2.0	0.09	C
23	17	58	33.3	19-24.3	155-15.6	3.6	0.3	6	239	2.6	0.13	0.5	0.6	0.02	C
23	18	26	52.5	19-22.3	155-27.2	4.5		5	154	7.8		0.0		0.14	D
23	19	13	20.6	19-24.2	155-16.4	3.0	1.1	6	201	1.7	0.21	0.5	0.9	0.03	B
23	19	33	16.7	19-18.4	155-17.1	28.8		13	197	3.2	0.25	1.3	2.1	0.07	C
23	23	35	56.0	19-19.0	155-13.4	14.9		8	228	6.1	0.05	0.4	0.4	0.01	C
23	23	56	29.8	19-24.8	155-15.3	4.6	0.2	6	268	3.0	0.14	0.5	0.5	0.01	C
24	0	18	23.5	19-19.8	155- 3.8?	41.2	2.3	18	196	11.5	0.12	0.9	1.6	0.09	C
24	4	5	57.5	19-20.0	155-18.6	27.2		12	167	6.5	0.23	1.3	2.0	0.07	C
24	4	48	1.6	19-18.8	155-16.1	10.1	1.5	14	194	3.3	0.08	0.6	0.3	0.09	B
24	5	23	57.9	19- 8.9	155- 5.5?	8.0*	2.4	14	250	30.9	2.08	13.3		1.18	D
24	5	31	57.0	19-18.4	155-13.5	10.4	2.1	15	198	6.9	0.11	0.9	0.4	0.11	C
24	7	4	4.3	19-19.9	155- 8.2	31.5		9	294	4.8	0.37	2.0	2.4	0.07	C
24	7	20	52.8	19-19.9	155-13.5	7.4	1.4	9	212	6.3	0.27	1.7	1.1	0.18	C
24	12	38	37.2	19-27.4	155-37.8?	7.2		9	263	23.0	0.63	2.9	1.3	0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 24	12	57	24.2	19-18.4	155- 3.1	35.6	2.4	18	201	13.5	0.17	0.9	1.6	0.09	B
24	16	31	12.2	19-21.9	155-11.0	9.8		6	176	1.7	1.03	2.9	5.3	0.05	C
24	17	55	20.8	19-26.2	155-29.6	10.8		9	154	12.9	0.05	0.4	0.2	0.05	B
24	19	18	35.0	19-24.1	155-25.2	11.4	1.6	12	124	7.8	0.06	0.6	1.2	0.10	B
24	19	54	6.1	19-20.7	155- 4.0	40.4	2.5	18	190	10.7	0.20	1.1	1.6	0.08	C
24	20	4	11.3	19-24.7	155-17.6	9.0	1.2	7	113	0.2	0.28	0.7	1.5	0.04	B
24	20	16	18.6	19-22.6	155-14.4	6.5	1.9	15	126	2.1	0.05	0.5	0.3	0.09	B
24	20	19	9.1	19-23.6	155-18.1	5.9		5	151	2.2		0.0		0.07	D
24	21	41	58.3	19-15.7	155-23.9	3.5		10	170	13.9	0.08	0.8	1.1	0.09	B
24	22	38	45.8	19-23.8	155-20.9	17.9*		6	323	2.0	0.17	3.2		0.05	D
24	22	47	28.9	19-24.7	155-17.6	7.5		6	114	0.1	0.31	0.8	1.8	0.03	B
24	22	49	2.2	19-24.5	155-17.6	8.7	1.2	8	103	0.5	0.15	0.6	0.9	0.04	A
24	23	21	29.7	19-24.1	155-18.4	7.6	1.1	7	126	1.9	0.19	0.5	1.1	0.03	B
25	0	3	23.7	19-23.7	155-18.2	6.1		7	144	2.1	0.28	0.9	1.7	0.07	B
25	0	13	18.8	19-17.3	155- 3.1	36.8	1.7	15	228	14.7	0.20	1.2	1.8	0.07	C
25	0	46	42.5	19-23.9	155-18.3	6.8		6	141	2.1	0.39	1.0	2.3	0.04	B
25	1	1	0.2	19-24.8	155-17.9	7.4	1.3	7	125	0.6	0.19	0.6	1.1	0.03	B
25	1	5	6.8	19-23.5	155-19.1	6.9	1.0	5	175	1.2		0.0		0.02	D
25	1	15	11.7	19-24.0	155-18.4	7.6		5	133	2.0		0.0		0.03	D
25	1	15	46.9	19-23.7	155-17.9	6.3	1.0	6	141	1.9	0.07	0.3	0.4	0.01	B
25	1	26	41.3	19-24.5	155-18.2	5.5	1.0	8	107	1.4	0.18	0.6	1.3	0.06	A
25	1	27	9.4	19-24.3	155-18.4	5.9	0.9	6	116	1.8	0.26	0.9	1.6	0.04	B
25	2	3	27.9	19-23.2	155-19.1	5.8	0.8	8	197	1.4	0.28	0.9	1.7	0.08	B
25	2	44	0.2	19-24.9	155-17.5	6.9	0.9	7	134	0.3	0.08	0.3	0.5	0.01	B
25	2	57	4.7	19-14.2	154-53.6?	4.4	2.0	10	280	26.2	1.33	5.5	4.0	0.40	D
25	3	45	14.0	19-15.4	155- 2.7	41.3		12	251	17.3	0.73	3.5	5.3	0.08	D
25	3	52	55.6	19-24.0	155-18.3	8.1	0.9	8	129	1.9	0.21	0.5	1.2	0.03	B
25	3	53	39.0	19-26.7	155-36.5	7.6	1.4	11	253	21.9	0.34	1.7	0.9	0.13	C
25	3	56	10.9	19-23.8	155-18.1	9.1	1.0	6	142	1.9	0.12	0.2	0.6	0.01	B
25	4	2	47.5	19-23.8	155-17.9	9.6	0.8	7	138	1.8	0.08	0.2	0.4	0.01	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 25	4	25	33.1	19-24.4	155-18.0	8.4	0.8	8	113	1.1	0.10	0.3	0.6	0.02	A
25	4	43	8.3	18-55.5	155- 5.0	8.0*	2.7	13	284	51.6	1.09	6.9		0.19	D
25	5	45	9.1	19-17.5	155- 3.1	37.7		14	226	14.4	0.23	1.3	2.0	0.08	C
25	5	51	18.7	19-24.5	155-17.7	8.2	0.9	6	105	0.5	0.35	0.8	2.0	0.03	B
25	5	52	40.4	19-21.3	155-16.2	25.7	1.8	16	139	2.2	0.12	0.9	1.2	0.11	B
25	6	8	32.3	19-24.4	155-17.4	9.6	1.0	7	107	0.6	0.21	0.6	1.2	0.02	B
25	6	38	8.4	19-24.6	155-17.0	9.2	1.4	7	148	0.6	0.25	0.7	1.4	0.03	B
25	7	6	28.5	19-24.9	155-18.5	15.4	1.3	6	128	1.8	1.04	5.0	9.5	0.09	C
25	7	48	34.5	19-20.6	155- 1.3?	8.0*		6	224	20.3	8.89	0.0		0.81	D
25	8	44	11.0	19-27.0	155-37.0	7.7	1.4	10	258	22.3	0.42	2.1	1.1	0.14	C
25	8	45	15.4	19-16.3	155- 2.6	40.6		14	247	16.6	0.50	2.4	4.0	0.08	C
25	11	3	35.3	19-27.5	155-37.4	6.0	1.7	10	261	23.3	0.19	0.9	0.6	0.09	C
25	11	23	38.9	19-21.3	155-26.1	7.1		10	138	5.3	0.12	1.1	1.4	0.18	B
25	11	31	1.6	19-36.7	154-57.6	8.0*		5	259	16.1	0.71	5.5		0.02	D
25	11	54	52.3	19-45.4	155-21.4	31.3	2.7	20	176	10.5	0.15	0.7	1.7	0.08	B
25	12	44	5.5	19-21.3	154-56.4?	8.4*		6	249	14.4	0.40	5.0		0.23	D
25	13	49	24.7	19-18.3	155- 3.2	36.3	2.2	17	221	13.6	0.25	1.4	2.1	0.09	C
25	14	2	53.1	19-16.4	155-10.7	6.5		8	281	10.0	0.83	3.8	1.7	0.13	D
25	14	21	36.7	19-48.3	156- 0.8	4.0	2.7	14	290	32.9	0.90	5.5	5.4	0.29	D
25	16	27	33.0	19-26.1	154-57.1?	8.2		5	195	7.6		0.0		0.11	D
25	18	59	13.3	19-15.1	155-46.0	12.6	3.0	15	247	15.5	0.27	1.5	1.2	0.08	C
25	21	7	59.6	19-19.0	155-14.2	7.6		11	223	5.5	0.25	1.4	0.9	0.16	C
25	21	21	9.3	19-24.4	155-23.8	3.4*	0.6	10	178	7.3	0.10	0.6		0.10	C
25	21	55	29.6	19-17.6	155- 3.0	38.6	1.9	16	226	14.5	0.33	1.7	2.5	0.09	C
25	22	13	59.4	19-23.2	155-17.9	2.3	0.5	6	166	2.0	0.49	0.8	3.4	0.07	C
25	22	40	48.9	19-23.8	155-18.3	11.1	1.2	8	141	2.1	0.34	0.7	1.8	0.03	B
25	22	46	49.4	19-12.3	155-26.6?	10.0	2.0	7	178	15.7	0.15	1.4	1.0	0.11	C
26	0	24	7.6	19-24.1	155-17.9	7.6	0.5	8	123	1.3	0.14	0.4	0.8	0.03	B
26	0	39	0.2	19-23.4	155-18.0	6.4	0.6	7	165	2.1	0.88	2.2	5.1	0.11	C
26	1	29	30.9	19-23.5	155-19.8	3.7	0.5	7	242	0.5	0.30	1.3	1.7	0.07	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 26	2	27	0.2	19-23.9	155-17.9	11.3	1.1	8	131	1.5	0.22	1.1	1.7	0.05	B
26	3	38	58.0	19-23.9	155-17.9	10.5	0.9	7	106	2.2	0.34	0.6	1.9	0.03	B
26	3	39	50.6	19-24.5	155-17.9	6.2		8	107	0.8	0.16	0.8	1.1	0.05	A
26	3	43	48.8	19-24.4	155-17.9	7.9	0.5	7	128	0.9	1.08	1.5	5.7	0.05	C
26	4	7	16.5	19-23.9	155-17.9	5.4	0.1	7	137	1.7	0.46	1.3	2.8	0.09	B
26	4	11	6.1	19-24.6	155-17.4	8.8	0.6	7	96	0.3	0.46	1.0	2.5	0.05	B
26	4	49	1.4	19-29.1	155-17.8	18.4*	1.3	7	312	6.8	0.14	1.3		0.03	D
26	5	27	35.0	19-26.5	155-26.6	16.4		7	250	8.4	0.38	1.7	3.2	0.03	C
26	6	15	37.4	19-18.7	155- 3.0?	40.8	2.3	18	203	13.5	0.24	1.3	1.9	0.09	C
26	8	2	22.5	19-25.5	155-19.8	17.6*		6	285	3.4	0.06	1.3		0.03	D
26	8	10	13.5	19-17.7	155-13.3	14.1		7	248	8.3	0.23	1.2	1.8	0.04	C
26	8	57	23.5	19-58.8	155-13.2?	81.7*	3.2	11	309	56.4	4.66	0.0		5.27	D
26	9	18	35.2	19-24.8	155-17.8	10.4*	0.8	4	221	0.5		0.0		0.0	D
26	9	33	8.0	19-23.7	155-18.0	5.2	0.7	5	142	2.0		0.0		0.01	D
26	10	0	27.9	19-12.5	155- 9.9?	8.0*	1.6	19	231	17.1	3.40	21.6		1.77	D
26	11	49	21.1	19-18.0	155-21.6?	11.4	1.5	11	196	5.0	0.13	1.1	0.7	0.10	C
26	12	8	46.3	19-28.9	155-39.4	8.3	1.8	8	276	26.2	0.44	2.4	1.0	0.12	C
26	12	25	9.0	19-18.6	155-21.2	6.2	1.3	8	242	4.8	0.93	2.4	4.6	0.07	C
26	12	51	29.1	19-25.8	155-18.7	14.4*		6	274	2.9	0.03	0.6		0.01	D
26	13	8	26.8	19-23.4	155-17.6	0.1*	0.1	6	151	1.3	0.08	0.5		0.09	C
26	13	14	48.8	19-23.8	155-20.4	15.0*	1.5	5	319	1.2	0.04	0.8		0.01	D
26	13	33	38.0	19-20.0	155- 8.8	12.0	1.6	10	304	3.9	0.20	1.5	1.5	0.08	C
26	13	41	37.5	19-17.4	155-20.6	20.3*	1.7	5	319	11.8	0.79	7.0		0.04	D
26	13	44	40.2	19-20.0	155-18.4	25.2	1.7	11	168	1.7	0.45	1.8	4.0	0.08	C
26	14	53	56.8	19-23.8	155-18.3	11.5	1.2	7	109	2.3	0.18	0.8	1.6	0.05	B
26	17	46	38.0	19-22.1	155- 8.5?	6.2	3.3	20	170	2.7	0.33	2.4	1.5	0.46	D
26	18	12	21.1	19-24.6	155-17.5	7.6		7	94	0.1	0.11	0.3	0.6	0.02	B
26	18	19	2.8	19-19.9	155-16.7	11.2	1.5	8	238	1.3	0.08	0.6	0.4	0.03	C
26	18	20	11.6	19-19.9	155-16.8	9.9	1.2	7	234	1.1	0.19	0.4	1.0	0.01	C
26	20	3	31.6	19-19.6	155- 2.1	11.0	2.1	12	230	14.4	0.34	2.5	0.8	0.09	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 26	20	45	2.3	19-24.9	155-17.5	7.0	0.9	7	99	0.4	0.18	0.5	1.0	0.02	B
26	20	51	23.6	19-24.0	155-18.3	7.7	1.0	8	128	1.9	0.30	0.8	1.7	0.06	B
26	21	39	30.5	19-16.7	155-11.3	6.5		7	274	9.7	0.74	3.5	1.7	0.11	D
26	22	3	21.6	19-24.9	155-17.6	6.9		6	132	0.3	0.06	0.2	0.4	0.01	B
26	22	19	36.8	19-24.1	155-18.0	7.6	0.9	7	126	1.4	0.34	0.8	1.9	0.04	B
26	22	30	20.9	19-24.8	155-17.5	9.5		6	120	0.1	2.12	4.4	11.5	0.13	C
26	22	33	59.7	19-19.6	155-25.6	7.4		8	161	4.2	0.13	1.1	1.1	0.13	C
26	22	39	46.9	19-22.8	155- 8.7	8.0*		6	338	6.7	0.57	3.2		0.07	D
26	22	56	30.1	19-24.5	155-18.3	4.1		6	109	1.4	0.16	0.7	1.3	0.05	B
26	23	21	13.5	19-24.0	155-18.1	10.8	0.7	7	194	1.8	0.09	2.4	0.5	0.05	C
27	0	4	28.2	19-18.9	155- 3.7	33.3		16	219	12.3	0.23	1.1	2.0	0.13	C
27	0	14	13.7	19-22.1	155-13.5	7.1	1.3	12	145	1.9	0.15	1.0	0.8	0.15	B
27	0	25	7.5	19-47.0	155- 3.9?	36.2	2.8	30	219	7.5	0.34	2.1	3.2	0.30	C
27	0	40	56.0	19-21.9	155-13.5	7.6	0.8	11	153	3.2	0.15	1.1	0.8	0.13	C
27	0	50	12.9	19-21.1	155-13.9	7.8		13	173	2.8	0.17	1.1	0.8	0.16	C
27	0	53	54.3	19-21.5	155-16.0	7.7		10	150	1.4	0.08	0.6	0.4	0.07	B
27	1	22	25.9	19-24.8	155-17.5	6.3	0.5	7	153	0.1	0.14	0.4	0.8	0.02	B
27	2	36	46.1	19-24.5	155-18.7	4.0	0.6	7	109	2.1	0.31	1.1	2.4	0.09	B
27	3	21	22.9	19-21.2	155-25.1	8.3		9	143	10.6	0.12	0.9	1.2	0.12	B
27	3	36	8.6	19-26.0	155-34.8	8.5	2.0	10	240	20.8	0.29	1.7	0.7	0.11	C
27	4	48	58.2	19-23.9	155-18.5	6.5		6	142	2.1	0.57	1.5	3.4	0.06	B
27	5	4	7.1	19-25.1	155-15.1	12.9	1.4	14	107	3.3	0.06	0.8	0.6	0.12	B
27	6	39	2.4	19-21.9	155-24.7	10.2		10	115	3.9	0.09	0.9	0.8	0.12	B
27	7	39	41.1	18-56.3	155-21.0	20.0		14	274	30.6	0.97	4.9	14.6	0.10	D
27	9	35	25.4	19-21.8	155-25.3	11.1		11	134	4.5	0.09	0.8	1.5	0.10	B
27	10	19	36.2	19-24.0	155-17.6	8.2	1.0	8	101	1.3	0.16	0.4	0.9	0.02	A
27	10	26	42.3	19-19.8	155- 0.6	20.0*		8	344	16.8	0.48	3.5		0.04	D
27	12	47	0.7	19-23.9	155-14.3	4.3		7	274	4.0	0.54	1.9	1.9	0.05	C
27	18	15	39.7	19-21.3	155-11.8	6.4		8	183	3.2	0.24	1.8	1.2	0.14	C
27	18	29	43.4	19-25.6	155-24.5	8.9	1.1	11	207	7.6	0.37	0.9	2.1	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 27	20	15	50.5	19-19.4	155-16.1	9.9	1.5	16	164	2.6	0.07	0.6	0.3	0.12	C
27	23	27	57.1	19-24.1	155-18.1	8.4	0.9	7	126	1.5	0.30	0.6	1.7	0.03	B
28	0	10	34.5	19-17.3	155- 3.2	37.4*	1.9	16	227	14.6	0.11	1.3		0.10	D
28	1	7	50.3	19-23.6	155-19.1	4.7	0.6	6	176	1.0	0.25	0.9	1.5	0.05	B
28	2	24	9.8	19-27.4	155-25.7	13.1	1.9	11	194	6.2	0.09	0.8	0.8	0.07	B
28	2	25	20.2	19-24.9	155-17.6	10.2	0.9	6	118	0.4	0.83	0.9	4.2	0.01	B
28	5	4	56.7	19-24.6	155-17.3	9.5	1.1	6	193	0.5	0.33	0.9	1.9	0.03	B
28	5	18	9.1	19-22.2	155-19.7	11.0		6	262	2.7	1.01	2.2	4.8	0.04	C
28	6	0	16.0	19-24.7	155-17.9	5.5	0.9	6	115	0.6	0.51	1.6	3.2	0.08	B
28	6	33	1.8	19-23.5	155-18.0	0.3*	0.4	6	157	2.2	0.13	0.7		0.13	C
28	7	12	35.6	19-25.2	155-16.9	8.5		8	180	0.6	0.36	1.2	2.2	0.08	C
28	7	33	49.6	19-24.6	155-17.5	7.5	0.8	6	95	0.1	0.16	0.4	0.9	0.01	B
28	12	24	25.8	19-17.9	155- 5.3	26.6*		10	327	10.9	0.45	4.7		0.13	D
28	18	22	13.5	19-25.5	155-16.0	3.0	2.5	14	93	2.1	0.07	0.4	0.3	0.11	B
28	22	31	35.8	19-23.7	155-25.2	10.2	3.5	17	129	7.3	0.10	0.8	0.5	0.14	B
29	0	0	14.3	19-24.2	155-18.1	7.1	1.0	7	121	1.4	0.54	1.3	3.1	0.07	B
29	4	2	34.8	19-24.6	155-18.0	5.7	0.9	7	105	0.9	0.29	0.9	1.8	0.06	B
29	4	5	29.8	19-23.8	155-19.3	6.4	1.1	6	149	0.7	0.41	1.1	2.3	0.05	B
29	4	42	8.5	19-15.5	155-13.5	7.0		8	269	10.8	0.85	4.1	1.9	0.15	D
29	6	26	48.4	19-19.5	155-14.1	7.7	0.9	13	216	4.8	0.23	1.3	0.9	0.18	C
29	8	19	30.8	19-22.0	155-24.3	9.5		9	202	3.9	0.18	1.2	1.0	0.12	C
29	8	20	8.9	19- 9.0	155-45.9	8.0*		3	290	18.8		0.0		0.0	D
29	9	37	33.1	19-24.6	155-18.2	6.0	1.0	7	114	1.2	0.27	0.9	1.7	0.06	B
29	9	54	57.1	19-24.9	155-17.9	12.5	1.5	5	156	0.8		0.0		0.01	D
29	10	15	18.4	19-27.6	155-24.9	19.3*		5	342	11.5	0.28	2.7		0.02	D
29	11	18	5.5	19-23.9	155-19.3	2.9		4	239	3.4		0.0		0.0	D
29	11	18	28.2	19-25.6	155-24.3	8.2		10	203	7.3	0.18	0.6	1.1	0.08	B
29	11	38	56.2	19-24.4	155-18.4	4.9	0.4	6	119	1.7	0.38	0.9	2.4	0.04	B
29	12	3	38.5	19-25.0	155-17.4	3.1	0.5	5	203	0.7		0.0		0.01	D
29	12	14	13.1	19-19.9	155-14.2	7.8		12	208	4.0	0.22	1.3	0.9	0.18	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 29	12	51	26.6	19-23.7	155-18.8	6.0	0.8	8	154	1.5	0.23	0.7	1.5	0.06	B
29	14	36	52.1	19-24.6	155-17.5	8.8	0.9	7	94	0.1	0.40	0.9	2.1	0.04	B
29	15	7	27.3	19-23.8	155-18.0	7.9		6	96	1.9	0.53	1.3	3.1	0.06	B
29	15	35	52.9	19-24.1	155-18.0	8.2	0.9	7	83	2.2	0.34	0.8	2.0	0.04	B
29	15	36	54.9	19-24.2	155-18.4	6.4	0.6	8	120	1.9	0.19	0.6	1.2	0.05	A
29	15	43	30.4	19-24.3	155-18.0	3.4	0.2	4	169	2.0		0.0		0.03	D
29	16	3	9.0	19-25.4	155-18.0	9.2	1.3	6	171	2.0	0.56	1.3	3.3	0.05	C
29	16	28	5.3	19-24.4	155-17.0	14.0	1.5	6	168	1.0	0.39	1.3	2.7	0.02	C
29	16	30	46.7	19-24.2	155-18.8	5.0	1.1	6	170	2.4	0.31	1.4	3.1	0.05	C
29	16	52	35.3	19-24.9	155-16.4	12.7	1.0	6	181	2.0	0.56	3.8	4.9	0.07	C
29	17	31	25.7	19-23.7	155-17.8	10.2	0.7	7	110	1.8	0.41	0.8	2.2	0.05	B
29	18	33	0.2	19-24.5	155-17.2	6.1	0.8	6	122	0.6	0.33	0.5	1.8	0.01	B
29	18	38	6.5	19-24.6	155-17.1	9.5		5	140	0.6		0.0		0.04	D
29	19	17	51.0	19-22.8	155-20.0	5.3	1.1	6	256	5.6	0.22	1.3	3.4	0.02	C
29	21	14	18.9	19-23.2	155-18.5	5.9	1.0	8	181	2.3	0.15	0.5	1.0	0.04	B
29	21	28	54.0	19-23.6	155-19.2	4.1		6	172	0.9	0.14	0.6	0.9	0.03	B
29	22	38	33.8	19-24.2	155-17.8	10.1	1.5	8	118	1.0	0.10	0.4	0.6	0.02	A
29	22	39	36.2	19-24.5	155-17.7	8.6	1.1	8	103	0.4	0.12	0.3	0.7	0.02	A
29	23	6	52.3	19-24.0	155-17.9	7.2	1.1	7	129	1.5	0.17	0.5	1.0	0.03	B
29	23	59	18.2	19-24.3	155-17.9	8.3	0.9	8	116	1.0	0.29	0.8	1.7	0.05	A
30	0	35	50.5	19-14.9	155-12.7	7.4	1.6	12	217	12.7	0.25	1.3	0.8	0.11	C
30	0	45	14.7	19-17.5	155-12.9	14.7	1.7	8	253	9.0	0.35	1.6	2.5	0.05	C
30	1	9	28.3	19-26.2	155-16.7	15.7*	1.4	6	294	2.1	0.05	0.8		0.02	D
30	1	33	15.0	19-23.2	155-18.4	4.3	1.1	6	183	2.4	0.35	1.1	2.3	0.06	C
30	2	18	30.7	19-23.8	155-18.2	4.8	0.7	7	143	2.1	0.23	0.9	1.6	0.07	B
30	2	20	19.5	19-24.4	155-18.3	5.0	0.9	7	112	1.6	0.23	0.7	1.6	0.06	B
30	2	22	16.6	19-23.7	155-17.8	7.8	1.0	8	143	1.8	0.21	0.6	1.2	0.03	B
30	3	31	14.8	19-24.0	155-18.1	10.2	1.0	8	131	1.7	0.59	1.3	3.3	0.06	B
30	3	43	42.8	19-24.5	155-18.1	8.9	1.2	6	107	1.1	0.71	1.5	3.9	0.06	B
30	4	21	44.5	19-24.6	155-17.9	9.8	1.1	8	90	0.8	0.34	0.7	1.9	0.03	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 30	4	24	43.3	19-22.5	155-17.8	8.1	0.8	7	198	2.5	0.85	2.3	4.7	0.09	C
30	5	13	44.1	19-23.9	155-18.4	7.6	1.0	8	106	2.2	0.28	0.6	1.7	0.06	A
30	5	48	18.5	19-23.8	155-17.7	3.4	0.9	8	137	1.7	0.16	0.7	1.3	0.10	B
30	6	16	43.5	19-24.1	155-17.9	10.1	1.1	6	122	1.2	0.20	0.5	1.1	0.01	B
30	7	15	1.6	19-23.8	155-18.0	10.7	1.4	10	108	1.9	0.35	0.9	2.0	0.10	A
30	7	16	7.6	19-23.3	155-18.0	6.2	1.1	7	162	2.1	0.21	0.7	1.3	0.04	B
30	9	56	30.5	19-12.8	155-32.5	8.1		10	136	9.0	0.08	0.9	0.7	0.11	B
30	11	44	47.8	19-23.8	155-18.4	10.1	1.4	8	100	2.2	0.49	0.9	2.8	0.06	B
30	11	47	11.0	19-24.3	155-17.9	6.3	0.7	7	86	1.1	0.23	0.7	1.4	0.05	B
30	11	51	31.5	19-23.8	155-18.1	9.7	1.0	7	142	2.0	0.33	1.0	1.8	0.04	B
30	11	54	28.0	19-24.1	155-18.0	11.0	1.3	8	82	1.3	0.62	1.2	3.4	0.05	B
30	12	17	10.9	19-24.4	155-17.3	11.4	1.5	9	87	0.7	0.12	0.7	1.0	0.06	A
30	12	28	49.5	19-24.1	155-18.0	8.5	0.9	7	128	1.5	0.36	0.8	2.0	0.04	B
30	12	35	33.6	19-24.2	155-17.9	8.3	0.9	8	81	2.1	0.30	0.7	1.8	0.05	A
30	12	53	58.6	19-24.3	155-17.7	9.2	0.8	8	90	0.7	0.37	0.9	2.0	0.05	A
30	13	1	22.2	19-24.5	155-17.7	9.3	1.2	9	83	0.6	0.22	0.5	1.2	0.03	A
30	13	2	59.3	19-24.2	155-17.9	8.9	1.2	9	98	1.1	0.24	0.6	1.4	0.05	A
30	13	11	24.1	19-25.1	155-17.7	13.2	1.7	8	97	0.5	0.35	1.3	2.6	0.05	B
30	13	17	55.9	19-36.8	155-14.3?	22.5*	2.1	9	235	20.4	0.40	15.3		0.32	D
30	13	26	43.0	19-23.5	155-18.3	12.3	1.5	7	120	2.4	0.32	1.0	2.6	0.04	B
30	14	55	39.7	19-55.2	155-56.8	5.4		9	247	28.6	0.49	5.5	3.5	0.10	D
30	18	17	0.2	19-23.8	155-27.8?	11.2	2.0	13	136	10.3	0.09	0.7	0.4	0.11	B
30	18	54	35.6	19-21.4	155-13.3	13.9	1.4	7	167	3.5	0.21	0.7	1.6	0.03	B
30	21	36	31.0	19-19.0	155-13.8	6.7	1.2	13	206	5.7	0.17	1.1	0.8	0.14	C
30	23	25	37.5	19-28.6	155-39.0	8.5		9	165	25.4	0.07	0.6	0.6	0.07	B
30	23	32	27.1	19-18.9	155-13.0	6.8		8	216	7.6	0.26	1.7	1.1	0.14	C
30	23	33	6.1	19-22.3	155-12.2	9.8	1.4	13	145	3.9	0.07	0.7	0.4	0.11	B
31	2	9	29.7	19-20.4	155-16.4	32.6		13	152	3.1	0.13	0.9	1.3	0.09	B
31	4	20	2.9	19-21.3	155- 5.4	4.6	2.6	18	180	17.3	0.14	1.1	0.8	0.17	C
31	11	42	1.1	19-19.0	155- 9.7	30.2	1.9	13	270	11.0	0.40	2.5	2.1	0.07	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 31	13	47	53.3	19-24.5	155-17.9	10.2	1.2	7	106	0.8	0.07	0.2	0.4	0.01	B
31	15	4	54.9	19-13.2	155-26.1?	9.2	2.1	11	165	13.8	0.14	1.2	0.7	0.14	C
31	15	35	1.9	19-23.7	155-17.8	5.7	1.0	8	141	1.8	0.11	0.4	0.7	0.03	B
31	15	44	32.9	19-24.3	155-17.7	9.2	1.2	9	91	0.9	0.21	0.5	1.2	0.04	A
31	16	23	55.2	19-24.2	155-17.8	8.7	1.1	9	84	1.1	0.25	0.6	1.4	0.04	A
31	18	47	53.4	19-25.4	155-17.1	10.9	0.9	7	218	0.9	0.53	1.1	2.7	0.04	C
31	19	16	4.6	19-24.1	155-18.7	4.7	0.6	7	126	1.9	0.21	0.7	1.4	0.06	B
31	19	41	46.7	19-23.2	155-14.4	3.2		8	166	3.0	0.12	0.6	1.5	0.07	B
31	19	52	44.1	19-23.4	155-18.9	5.9	1.0	7	178	1.5	0.43	1.1	2.5	0.08	C
31	20	37	48.2	19-23.6	155-16.0?	3.3	0.2	7	197	1.5	0.64	1.5	3.2	0.11	C
31	20	57	6.8	19-23.7	155-18.4	7.7	1.0	8	154	2.3	0.24	0.8	1.4	0.05	B
31	21	13	15.1	19-24.4	155-17.6	9.8	0.9	8	105	0.5	0.26	0.7	1.4	0.03	A
31	21	18	43.1	19-24.3	155-17.9	9.8	1.1	7	117	1.0	0.21	0.6	1.2	0.03	B
31	21	43	49.8	19-20.8	155-18.1	25.8	2.0	9	117	1.8	0.58	2.3	4.9	0.08	B
31	21	43	59.4	19-21.1	155-16.4	29.2	1.8	17	137	2.3	0.11	0.9	1.2	0.11	B
31	22	21	12.3	19-24.7	155-18.7	0.1*	0.4	7	104	2.2	0.11	0.6		0.13	C
31	22	25	36.7	19-24.7	155-18.3	7.1	0.9	6	98	1.4	0.15	0.4	0.9	0.02	B
31	23	18	35.9	19-18.1	155-16.9	30.2		13	171	3.7	0.34	1.5	3.2	0.09	C
31	23	41	25.9	19-17.4	155-12.0	8.4		9	262	8.8	0.38	1.9	0.9	0.10	C
1	0	48	52.4	19-19.3	155-16.2	11.4	1.0	7	259	2.6	0.16	0.8	1.0	0.02	C
1	0	56	3.9	19-24.1	155-17.7	3.4	1.3	7	124	1.2	0.33	0.7	1.8	0.04	B
1	1	48	3.4	19-24.3	155-18.0	4.0	0.8	6	117	1.2	0.17	0.7	1.3	0.06	B
1	1	56	37.4	19-25.7	155-11.0?	28.2		12	150	10.4	0.14	1.2	1.6	0.08	B
1	2	19	46.8	19-25.1	155-17.3	7.5	1.1	9	174	0.6	0.10	0.5	0.6	0.03	B
1	3	6	55.0	19-24.3	155-17.9	8.0	0.9	7	116	1.0	0.72	1.6	4.0	0.09	B
1	3	32	29.1	19-24.2	155-18.3	7.9	1.3	8	102	1.6	0.22	0.5	1.3	0.05	A
1	3	44	10.8	19-24.6	155-17.8	9.3	1.4	9	90	0.6	0.09	0.3	0.5	0.02	A
1	3	49	10.2	19-24.1	155-17.7	9.2	1.2	7	121	1.1	0.42	0.9	2.3	0.04	B
1	4	46	56.8	19-18.3	155- 1.8	5.7	2.0	12	236	23.7	0.44	2.9	1.0	0.15	D
1	4	56	15.5	19-24.1	155-18.3	5.5	0.8	7	126	1.8	0.41	1.2	2.6	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 1	5	3	14.3	19-24.2	155-18.2	6.1	0.8	7	120	1.5	0.16	0.4	1.0	0.03	B
1	5	22	48.9	19-24.0	155-16.8	11.8	1.3	7	167	1.2	0.29	1.1	2.0	0.03	C
1	6	39	15.0	19-23.5	155-17.8	8.5	1.2	7	155	1.8	0.73	2.2	4.0	0.10	C
1	7	18	20.8	19-24.8	155-16.0	11.5	1.1	7	237	1.8	0.36	1.6	2.3	0.04	C
1	7	23	36.8	19- 6.6	155-34.8	8.7		12	153	6.4	0.08	1.8	1.4	0.09	C
1	7	53	38.5	19-28.0	155-24.7	12.6	1.2	7	226	4.1	0.41	1.6	3.2	0.03	C
1	9	41	44.3	19-20.8	155-13.0	9.3	1.3	14	184	3.2	0.15	1.0	0.8	0.14	C
1	10	51	18.1	19-24.1	155-16.5?	3.2	1.4	9	139	1.3	0.06	0.4	0.3	0.05	B
1	19	30	5.7	19-18.2	155-17.1	28.5	1.7	10	170	3.6	0.27	1.3	2.7	0.07	C
1	21	29	10.5	19-27.6	155-14.3?	8.0*	1.3	9	279	7.0	0.67	4.9		0.46	D
2	1	17	44.3	19-20.3	155-25.9	7.8	1.3	8	166	12.6	0.13	1.1	1.2	0.11	C
2	8	56	48.3	19-24.2	155-24.7	12.2	1.5	9	212	7.7	0.28	1.3	2.4	0.09	C
2	16	33	56.4	19-21.5	155-12.9	9.0		13	168	1.9	0.17	1.2	0.9	0.16	C
3	1	8	19.3	19-20.9	155- 7.0	5.8	1.8	16	180	10.1	0.20	1.3	1.0	0.19	C
3	2	13	15.7	19-22.3	155-40.2	10.9	1.8	11	132	14.7	0.06	0.4	0.5	0.05	B
3	8	14	13.3	19-37.9	156- 5.7	5.3	2.0	10	262	22.1	0.97	4.3	2.6	0.17	D
3	8	53	44.9	19-22.3	155-11.3	9.6	1.7	11	169	2.1	0.12	1.0	0.4	0.10	C
4	7	52	49.0	19-21.0	155-12.3	10.1	1.3	15	184	2.7	0.10	0.9	0.4	0.12	C
4	12	5	21.9	19-20.3	155-16.7	34.6	2.5	17	153	1.2	0.16	1.0	1.5	0.09	C
4	12	12	36.2	19-24.2	155-25.6	13.7	1.5	8	231	8.5	0.46	1.7	3.6	0.07	C
4	15	55	10.1	19-49.3	155-25.9?	35.9	1.9	14	157	5.6	0.38	2.5	3.5	0.26	C
4	16	13	24.0	19-31.9	155-29.6?	15.4*		10	166	11.7	0.38	3.6		0.41	D
4	19	1	48.2	19-19.0	155-16.1	7.9	2.8	18	168	3.0	0.12	0.9	0.5	0.17	C
4	19	21	32.1	19-24.4	155-23.5	9.6	1.6	14	140	6.9	0.07	0.6	0.6	0.09	B
4	23	53	2.1	19-22.2	155-28.8	8.7	1.8	14	101	16.2	0.09	0.9	0.8	0.17	B
5	1	43	5.0	19-19.5	155-16.1	9.9	1.0	11	188	2.5	0.10	0.8	0.4	0.10	B
5	3	34	23.7	19-24.5	155-23.9	9.4	2.3	15	73	7.5	0.10	0.9	0.6	0.14	B
5	8	9	50.6	20- 1.8	155-46.5	18.0	2.6	19	253	7.9	0.48	2.9	4.3	0.10	D
5	13	7	6.7	19-19.9	155- 1.3	6.3	1.9	9	231	21.5	0.20	1.3	0.5	0.06	C
5	17	36	1.2	19-24.8	154-53.9	13.6*	2.1	10	289	28.7	1.04	6.8		0.13	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 5	19	25	16.5	19-21.3	155-18.4	30.6	2.9	20	83	2.9	0.12	0.8	1.2	0.11	B
5	20	3	49.3	19-17.6	155-13.7?	11.3	1.1	9	223	7.9	0.26	2.0	2.1	0.14	C
5	20	38	57.6	19-29.3	155-42.6?	7.2	1.9	14	170	22.4	0.22	1.5	1.8	0.21	C
5	22	1	0.0	19-21.5	155- 8.6	9.0	1.7	13	193	2.5	0.15	1.4	0.7	0.14	C
6	2	54	42.7	19-20.5	155-13.2	8.9		11	189	3.9	0.17	1.4	1.0	0.15	C
6	5	30	47.0	19-24.6	155-23.4?	11.2	3.4	18	71	6.7	0.06	0.6	0.3	0.13	B
6	7	41	1.6	19-33.9	155-33.9	1.0	2.3	15	83	20.0	0.58	0.9	3.0	0.22	B
6	8	12	52.7	19-21.6	155-10.1	7.9	1.3	10	244	0.4	0.19	1.4	0.7	0.10	C
6	9	9	57.1	19-22.2	155-22.8	10.1	1.4	10	114	3.8	0.09	0.8	0.9	0.10	A
6	9	12	12.5	19-22.5	155-21.9	8.0	1.0	11	138	4.5	0.12	0.8	0.8	0.12	B
6	9	47	39.4	19-22.7	155-10.8?	3.7	1.2	10	206	2.1	0.31	1.4	1.2	0.16	C
6	11	43	30.4	19-19.3	155-13.9	9.9	1.5	15	195	5.2	0.09	0.7	0.4	0.10	B
6	12	14	57.9	19-22.5	155-23.7	7.4	1.3	11	113	4.3	0.11	0.8	1.1	0.16	B
6	17	47	5.8	19-27.1	155-22.7?	10.1	1.6	10	165	3.7	0.34	1.0	2.3	0.12	C
7	5	59	41.1	19-11.2	155-20.4	28.0	1.7	7	231	17.3	0.47	3.2	5.0	0.05	D
7	9	49	11.6	19-23.2	155-18.3	21.1	1.8	10	73	2.6	0.45	1.3	4.2	0.06	B
7	10	18	17.5	19-27.6	155- 6.6	24.2*		7	311	12.2	0.20	2.0		0.03	D
7	11	30	58.6	18-56.7	155- 9.0	8.0*	2.5	19	260	45.6	0.25	1.6		0.11	D
7	16	29	16.1	19-25.5	155- 1.7	0.0	2.3	16	166	15.0	0.14	1.0	1.2	0.17	C
7	18	43	30.2	19-24.2	155- 3.6?	0.1	2.3	16	170	19.1	0.42	0.9	2.3	0.13	C
7	22	47	29.5	19-22.3	155-23.8	9.1	1.6	15	74	3.9	0.06	0.5	0.4	0.11	B
8	0	7	28.8	19-22.3	155-18.4	25.7	2.0	9	146	3.4	0.69	1.5	5.9	0.05	C
8	1	0	17.1	19-20.8	155-25.5	6.7	1.7	11	147	11.5	0.10	0.8	1.2	0.13	B
8	1	34	27.9	19-23.9	155-18.0	5.8	1.4	7	135	1.8	0.39	0.6	2.3	0.04	B
8	1	36	22.9	19-22.5	155-18.4	3.2	1.3	6	213	3.1	0.99	2.9	8.1	0.14	C
8	2	49	3.6	19-27.3	155-24.6	9.7	1.6	8	216	5.2	0.41	1.2	3.2	0.12	C
8	4	22	34.2	19-23.4	155-18.6	6.9	1.2	6	167	2.0	0.65	0.9	3.7	0.03	C
8	4	33	57.1	19-22.9	155- 9.2	8.6	1.7	12	145	2.6	0.08	1.2	0.6	0.13	B
8	5	16	56.9	19-20.7	155-14.1	8.0	0.6	15	181	3.0	0.12	0.8	0.5	0.15	C
8	5	54	44.3	19-23.1	155-17.9	5.4	1.1	6	173	2.1	0.60	1.1	3.8	0.06	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 8	13	1	26.6	19-23.9	155-18.2	10.7	1.6	9	138	2.0	0.48	1.6	2.7	0.07	B
8	13	31	25.8	19- 6.7	155-27.4	33.7		8	275	22.7	1.27	4.9	10.0	0.07	D
8	15	39	55.7	19-26.7	155-10.5	13.5	2.0	8	301	12.3	1.57	10.1	6.6	0.10	D
8	21	51	27.7	19-28.1	155-18.1	24.4	2.1	12	154	4.6	0.17	1.0	1.7	0.08	C
9	0	18	1.1	19-17.4	155-13.8	10.5		10	248	8.0	0.32	1.8	0.6	0.11	C
9	1	23	11.0	19-25.6	155-14.5	10.3	1.7	8	254	5.4	0.88	3.5	4.4	0.10	D
9	1	35	19.1	19-19.8	155-16.6	7.5	1.0	8	259	1.5	0.13	0.8	0.4	0.04	C
9	1	37	30.7	19-19.4	155-16.5	7.7	0.7	8	251	2.0	0.29	1.7	0.9	0.11	C
9	2	46	51.4	19-23.2	154-56.3	7.5	2.1	7	233	11.0	0.48	5.0	2.1	0.07	D
9	6	37	9.4	19-20.3	155-17.1	14.4	2.2	8	276	4.3	0.19	2.0	0.8	0.05	C
9	8	56	4.2	19-32.5	156-16.4	29.6*	3.0	11	318	37.1	1.85	11.6		0.16	D
9	10	27	29.3	19-21.6	155-12.2	5.9		9	168	3.8	0.19	1.4	1.1	0.13	C
9	11	47	14.9	19-25.3	155-17.8	4.3	1.1	8	119	0.4	0.40	1.8	2.5	0.15	B
9	13	26	40.4	19-21.5	155-15.9	19.1	2.1	8	235	1.2	1.36	4.9	10.7	0.08	D
9	14	57	30.4	19-19.4	155-15.7	9.4	1.6	12	165	3.2	0.08	0.8	0.6	0.11	C
9	15	33	47.3	19-24.6	155-17.1	8.9	1.3	10	119	0.5	0.14	0.5	0.8	0.04	A
9	17	10	6.5	19-43.3	155-25.9	21.3	2.3	15	177	6.6	0.21	1.7	2.4	0.13	C
9	18	32	47.8	19-22.2	155- 0.4	3.8	2.3	14	210	16.7	0.15	1.1	1.0	0.11	C
9	19	59	23.6	19-49.1	155-40.3	8.0*	2.6	8	177	23.2	0.07	0.7		0.08	C
9	21	18	55.3	19-24.7	155-17.7	6.4	1.3	7	96	0.4	0.11	0.4	0.7	0.03	B
9	23	0	39.1	19-20.2	155-12.9	9.6	2.5	20	168	4.3	0.09	0.8	0.4	0.15	C
9	23	9	50.4	19-12.4	155-34.7	8.9	3.0	18	124	6.2	0.09	0.9	0.6	0.14	B
10	0	2	34.1	19-18.9	155-14.6	7.8	0.8	12	222	5.4	0.28	1.5	1.0	0.20	C
10	0	9	19.3	19-21.4	155-24.9	7.2	1.8	11	114	3.5	0.11	0.9	1.1	0.15	B
10	1	34	44.6	19-24.3	155-18.2	6.9	1.2	10	98	1.4	0.25	0.8	1.6	0.11	B
10	3	11	38.9	19-24.5	155-17.4	8.3	1.3	9	101	0.4	0.14	0.6	0.8	0.04	A
10	4	14	2.8	19-24.6	155-13.3	19.3	2.2	10	193	6.1	0.64	3.3	5.6	0.17	C
10	5	7	24.4	19-24.6	155-16.8	10.7	1.6	9	192	0.7	0.13	0.5	0.7	0.02	B
10	6	24	9.0	19-24.4	155-17.6	6.7	1.5	7	128	0.6	0.06	0.2	0.4	0.01	B
10	7	14	51.6	19-24.7	155-17.7	12.1	1.6	7	97	0.4	0.35	2.2	2.7	0.07	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 10	7	26	35.0	19-18.1	155- 6.5?	4.1		11	215	13.2	0.79	2.4	2.7	0.22	C
10	10	42	12.9	19- 2.8	155-17.0	16.9*	2.3	14	253	31.9	0.31	2.3		0.16	D
10	18	8	13.3	19-24.1	155-17.9	10.2	1.5	11	75	1.3	0.20	0.5	1.2	0.05	A
10	22	55	18.7	19-40.2	156- 5.3	7.2	2.9	14	262	24.2	0.62	3.1	1.5	0.14	D
10	23	14	49.6	19-24.1	155-17.9	11.9	1.9	10	99	1.2	0.13	0.7	1.1	0.06	A
10	23	18	25.1	19-24.6	155-17.6	8.4	1.6	8	98	0.3	0.06	0.2	0.3	0.01	A
10	23	55	13.9	19-16.0	154-41.6	1.2*	2.6	9	316	31.5	0.82	5.2		0.15	D
11	0	1	10.2	19-21.6	155-16.1	27.5	2.0	15	139	1.5	0.13	1.1	1.4	0.11	B
11	1	8	16.7	19-21.1	155-17.4	22.6		12	142	3.6	0.16	0.9	1.7	0.07	B
11	2	25	49.4	19-18.3	155-24.4	7.7	1.8	11	150	4.0	0.16	1.3	1.3	0.18	B
11	3	1	14.5	19-17.8	155-16.2	7.0		10	207	7.6	0.17	1.0	0.8	0.11	C
11	3	6	30.6	19-23.9	155-18.2	9.6	1.3	10	104	1.8	0.13	0.3	0.8	0.03	A
11	3	22	26.6	19-24.1	155-18.6	8.4	1.6	10	102	2.1	0.29	0.7	1.8	0.10	A
11	4	30	24.6	19-24.4	155-17.7	9.2	1.4	6	108	0.6	0.23	0.5	1.2	0.01	B
11	4	37	32.6	19-24.3	155-16.6	12.2	1.9	11	145	1.3	0.14	0.9	1.1	0.10	B
11	5	2	53.7	19-18.9	155-11.5	10.2	2.2	15	217	5.9	0.19	1.5	0.5	0.16	C
11	5	46	58.9	19-25.0	155-17.8	6.4	1.7	7	104	0.8	0.32	1.1	1.9	0.06	B
11	5	48	47.4	19-25.5	155-18.2	11.5	1.8	7	244	1.1	1.05	3.1	6.6	0.05	D
11	6	33	33.6	19-24.6	155-17.4	9.9	1.8	9	95	0.3	0.08	0.3	0.5	0.02	A
11	7	5	12.4	19-21.5	155-16.1	28.4	2.1	13	165	1.5	0.18	1.6	1.8	0.11	C
11	7	13	46.1	19-23.4	155-17.6	5.0	1.1	7	153	1.4	0.13	0.3	0.9	0.02	B
11	8	45	35.5	19-22.0	155-15.3	30.2	2.2	18	102	0.4	0.14	0.9	1.3	0.13	B
11	8	50	38.6	19-20.4	155-27.6	5.7	1.9	12	145	15.2	0.10	0.9	1.3	0.15	B
11	10	0	36.7	19-24.2	155-17.9	9.6	2.0	11	74	1.2	0.23	0.5	1.3	0.06	A
11	10	45	34.6	19-24.3	155-17.5	10.4	1.7	10	101	0.7	0.15	0.5	0.8	0.03	A
11	11	22	22.4	19-22.1	155-16.9	31.1	3.6	21	92	1.9	0.15	1.1	1.5	0.16	B
11	15	44	19.1	19-17.6	154-59.8	7.3	2.1	7	249	19.5	0.16	1.0	0.4	0.02	C
11	19	56	52.9	19-25.2	155- 1.2	5.5	2.3	15	181	14.5	0.11	1.1	1.0	0.16	C
11	22	0	1.1	19-14.3	155-17.3?	29.8*	2.3	8	231	10.8	0.52	9.9		0.29	D
11	23	20	51.1	19-22.5	155-23.4	8.6	2.1	14	119	10.5	0.10	0.9	0.7	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 11	23	35	18.4	19-22.5	155-26.4	8.7	1.7	14	125	6.8	0.10	0.8	0.7	0.16	B
12	0	50	10.1	I9-20.4	155-44.3?	11.1	2.4	12	160	16.2	0.10	1.1	0.9	0.11	C
12	7	18	49.5	19-24.7	155-24.4	10.9	2.1	13	122	8.4	0.06	0.5	0.3	0.10	B
12	10	52	5.9	19-24.4	155-28.3	8.2	2.6	16	69	11.7	0.11	0.9	1.1	0.20	B
12	11	55	52.6	19-20.8	155-52.5?	1.3*	2.8	15	207	19.9	0.21	1.5		0.14	C
12	12	44	47.3	19-17.7	155-44.1	12.6	2.5	11	265	13.3	0.42	2.5	1.3	0.06	D
12	13	28	15.5	19-19.4	155-14.2	10.3	1.6	14	212	4.9	0.09	0.7	0.4	0.10	B
12	13	53	31.3	19-19.4	155-14.2	10.2	1.6	15	209	4.9	0.08	0.7	0.3	0.09	B
12	14	18	10.3	19-10.3	155-19.8	44.1	2.6	8	269	18.5	1.80	7.5	13.0	0.08	D
12	15	18	55.8	19-20.8	155-11.4	8.8	1.8	15	191	3.1	0.10	0.9	0.6	0.14	C
12	21	51	25.6	19-22.0	155-27.0	6.8	2.7	18	95	7.3	0.09	0.7	0.6	0.17	B
13	0	32	11.8	19-19.3	155-15.8	9.1	2.0	17	166	3.2	0.09	0.8	0.5	0.15	C
13	5	8	4.1	19-21.6	155-15.4	29.2	2.2	14	140	1.7	0.16	1.1	1.6	0.11	B
13	7	47	19.3	19-23.6	155-23.0	9.9	2.5	19	71	5.8	0.06	0.6	0.3	0.12	B
13	7	49	37.6	19-20.8	155-17.9	28.8	2.1	10	169	4.6	0.24	1.2	2.1	0.07	C
13	7	53	27.5	19-23.3	155-23.6	11.1	1.9	14	114	5.7	0.06	0.6	0.3	0.11	B
13	8	33	28.8	19-12.8	155-29.3	5.9	2.2	11	230	14.3	0.32	1.9	1.3	0.14	C
13	8	36	45.1	19-11.1	155-34.8?	8.6	2.1	7	139	8.0	0.14	2.8	1.9	0.12	C
13	10	40	24.1	19-20.1	155-12.1	9.1	2.7	18	170	4.5	0.12	1.0	0.5	0.18	C
13	18	14	14.4	18-51.1	155-14.4	8.0*	2.8	19	273	45.3	0.34	2.2		0.12	D
13	19	35	38.5	19-29.5	155-43.6?	1.0	2.2	7	176	20.7	1.69	3.5	8.8	0.48	D
13	20	42	12.1	19-24.8	155-22.5	9.3	2.0	15	136	5.3	0.09	0.8	0.5	0.13	B
13	23	2	9.2	19-19.1	155- 6.9	5.8	2.2	16	188	11.6	0.18	1.1	0.8	0.16	C
14	6	27	42.9	19-30.8	155- 6.6	8.0*	2.2	9	193	21.3	0.32	2.7		0.21	D
14	9	14	14.8	19-11.8	155-32.8	7.4	1.9	14	143	9.4	0.08	0.9	0.7	0.11	B
14	15	47	50.2	19-14.3	155- 7.1	4.9	1.1	14	250	14.7	0.53	2.5	1.6	0.19	D
14	23	3	8.4	19-10.5	155-34.9	8.3		7	142	9.0	0.18	2.0	1.4	0.18	B
14	23	34	55.9	19-10.7	155-30.9	5.3		9	165	13.5	0.13	1.0	1.5	0.12	C
15	3	53	36.6	19-11.4	155-30.9	5.4	2.5	17	151	12.6	0.11	0.8	0.7	0.18	C
15	4	9	37.3	19-10.5	155-30.5	4.7		10	160	14.1	0.12	1.0	1.1	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 15	4	37	35.6	19-10.9	155-30.9	3.9*	2.2	6	164	13.2	0.15	1.2		0.12	C
15	5	3	59.6	19-10.3	155-30.2	5.4	2.3	12	163	14.7	0.10	0.9	0.9	0.13	C
15	6	31	49.7	19-18.7	155- 6.4	4.2	3.2	18	190	8.6	0.19	1.2	0.9	0.18	C
15	11	38	36.3	19-20.6	155- 5.6	4.5	2.4	16	183	17.2	0.16	1.2	0.9	0.17	C
15	18	40	8.1	19-23.7	155-17.1	2.6	0.8	9	132	0.8	0.04	0.3	0.2	0.05	B
15	18	44	35.0	19-18.7	155-13.5	10.5	1.8	15	198	6.5	0.11	0.8	0.4	0.11	C
15	19	34	27.5	19-20.8	155-13.9	8.2	1.5	15	180	3.0	0.12	0.9	0.6	0.15	C
15	21	51	22.5	19-23.4	155-25.2	10.9		12	76	6.8	0.06	0.6	0.4	0.09	A
15	22	27	53.2	19-23.1	155-26.8	8.5	2.5	17	75	8.1	0.08	0.7	0.6	0.16	B
15	23	34	15.2	19-23.9	155-35.7	9.2	2.3	10	191	16.7	0.12	0.8	0.5	0.08	B
15	23	39	58.2	19-23.1	155-25.4	9.9	2.4	17	78	6.6	0.09	0.8	0.5	0.16	B
16	0	44	0.0	19-23.9	155-17.3	1.9	0.7	6	127	1.3	0.06	0.2	0.4	0.01	B
16	7	7	0.1	19-23.5	155-17.1	2.4		7	140	0.5	0.02	0.2	0.1	0.02	B
16	7	18	7.1	19-23.4	155-17.2	2.3	0.9	8	144	0.7	0.02	0.1	0.1	0.02	B
16	10	35	7.3	19-23.8	155-17.3	2.3	1.1	10	112	1.2	0.04	0.2	0.2	0.04	A
16	18	13	9.6	19-29.3	155-45.8	6.4	2.9	16	205	30.7	0.27	1.5	1.6	0.13	C
16	23	41	2.6	19-18.8	155- 8.4?	10.6	1.9	13	221	6.1	0.29	2.0	0.8	0.12	C
17	0	58	23.6	19-15.8	155-13.5	8.7	2.4	16	186	11.6	0.20	1.1	0.8	0.15	C
17	0	59	24.1	19-19.5	155-13.9	11.1	1.7	13	170	5.0	0.10	1.0	0.9	0.13	C
17	21	7	33.1	19-18.5	155-13.8	11.6	1.7	17	173	6.6	0.07	0.7	0.7	0.10	B
17	2	18	49.1	19-22.3	155-25.0	8.8	1.7	10	162	4.9	0.10	0.8	0.9	0.10	B
17	2	46	27.3	19-22.8	155-16.2	34.0*	2.3	10	126	0.9	0.04	1.8		0.07	C
17	5	55	44.5	19-23.6	155-17.7	25.7	2.1	8	108	1.6	1.24	2.7	10.7	0.07	B
17	6	10	42.4	19-19.6	155-25.4	5.8	2.3	14	128	12.5	0.07	0.6	0.6	0.13	B
17	6	23	2.3	19-19.4	155-25.3	6.5	2.5	17	129	12.6	0.07	0.6	0.5	0.12	B
17	9	26	7.9	19-19.5	155-16.3	69.5*		11	188	2.2	0.07	3.0		0.08	C
17	10	55	12.3	19-11.2	155-28.8	9.6		9	173	16.1	0.09	0.9	0.6	0.09	B
17	12	23	46.9	19-22.6	155-16.4	33.7*	2.3	10	119	1.6	0.05	1.9		0.09	B
17	14	57	31.8	19-19.0	155-24.5	8.6	3.4	22	136	3.0	0.08	0.7	0.4	0.17	B
17	16	29	54.9	19-24.3	155-35.1	8.7	2.8	12	134	17.7	0.13	0.9	0.7	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 17	17	26	44.9	19-22.2	155-11.6	9.7	1.6	15	127	1.7	0.09	0.9	0.4	0.13	B
17	17	53	21.2	19-20.1	155-10.6	9.7	2.2	17	194	3.3	0.13	1.2	0.6	0.17	C
17	20	45	7.7	19-24.6	155-21.7	16.6	2.0	5	140	3.8		0.0		0.11	D
17	20	58	17.8	19-17.1	156-27.7	8.0*	2.2	8	298	52.4	1.90	11.8		0.19	D
17	21	34	40.5	19-29.5	155-45.9	6.5	3.2	17	120	16.8	0.10	0.9	1.1	0.10	B
18	2	30	18.0	19-22.5	155-10.7	9.7	2.4	17	128	1.8	0.04	0.5	0.3	0.09	B
18	12	22	39.7	19-21.5	155-26.8	3.5*	1.8	11	146	13.1	0.15	1.1		0.15	C
18	13	43	12.0	19-20.4	155-29.8	9.0	2.5	9	115	16.3	0.07	0.7	0.6	0.10	A
18	14	39	39.8	19-26.4	155-34.4	14.5*	2.1	10	187	20.4	0.10	0.9		0.09	C
19	1	35	56.1	19-18.8	155-16.4	7.3	1.9	16	168	5.9	0.12	0.9	0.7	0.17	C
19	3	33	23.0	19-11.3	155-34.5	8.3		7	145	8.1	0.17	1.9	1.4	0.17	B
19	12	44	29.5	19-50.3	154-59.3	8.0*	2.6	12	297	40.9	0.78	5.0		0.08	D
19	13	42	29.3	19-22.6	155-23.5	10.1		10	113	4.4	0.12	1.3	1.1	0.16	B
19	17	21	7.4	19-20.4	155-13.6	10.2	2.0	16	164	3.9	0.07	0.7	0.4	0.11	C
19	19	14	51.5	19-47.1	155-33.4?	24.9*		10	268	10.8	0.19	1.5		0.07	D
19	20	44	33.9	19-21.2	155-25.2	6.9	2.2	16	114	10.7	0.07	0.6	0.6	0.14	B
20	4	0	21.9	19-22.4	155-25.7	6.0	1.9	14	102	10.7	0.10	0.9	0.9	0.18	B
20	6	4	1.0	19-20.6	155- 4.5	4.3	3.0	18	187	9.9	0.18	1.3	0.9	0.20	C
20	16	59	45.7	19-25.0	155-28.1	6.3	2.3	17	183	12.2	0.15	0.9	0.9	0.20	C
20	22	33	37.1	19-21.7	155- 8.4	5.3	2.2	16	173	7.3	0.15	1.1	1.0	0.19	C
21	7	3	53.4	19-17.1	154-53.7	7.7	2.4	11	280	20.8	0.73	4.0	1.3	0.09	D
21	19	21	57.4	19-22.9	155- 1.7	1.2	2.1	11	201	17.5	0.63	1.0	3.4	0.11	C
21	23	36	44.7	19-12.6	155-20.1	34.1	1.9	11	194	15.1	0.31	1.4	2.9	0.08	C
21	23	49	50.7	19-22.9	155-22.9	9.4	2.0	14	111	5.1	0.07	0.7	0.6	0.12	B
22	2	14	30.5	19-23.5	155- 2.4?	0.0	2.1	14	178	17.8	0.39	0.8	2.0	0.11	C
22	4	53	44.8	19-18.5	155- 0.6	1.5		8	242	22.4	1.29	4.8	5.0	0.13	D
22	12	38	42.1	19-22.5	155-25.7	10.3	4.2	17	130	6.0	0.12	0.9	0.5	0.16	B
22	13	32	39.4	19-22.0	155-24.8	11.0	2.3	15	115	4.1	0.09	0.8	0.4	0.14	B
22	13	34	12.5	19-21.9	155-25.2	10.2	2.0	12	118	4.7	0.07	0.7	0.7	0.10	A
22	15	45	58.1	19-21.0	155-16.8	26.8	2.0	8	170	7.0	0.19	1.0	1.7	0.05	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 22	17	35	30.3	19-19.5	155-24.9	45.1	2.4	16	130	3.1	0.28	1.2	2.7	0.11	B
22	18	49	49.7	19-37.2	156-11.6	8.0*	2.4	14	302	73.1	1.08	6.6		0.11	D
22	19	46	43.1	19-22.2	155-25.4	6.3	2.5	22	75	5.2	0.10	0.8	0.7	0.21	B
22	21	40	42.4	19-25.1	155- 1.5	1.1	2.2	14	181	15.0	0.54	1.0	3.1	0.18	C
22	23	32	4.7	19-17.9	155-25.4	6.6	1.9	10	148	14.6	0.11	1.1	1.5	0.16	B
23	0	43	2.8	19-19.9	155-16.0	9.6	1.7	14	158	2.4	0.07	0.7	0.6	0.12	C
23	1	0	58.3	19-23.8	155- 6.2	2.4	2.5	16	167	11.2	0.46	1.1	2.6	0.17	C
23	1	56	12.2	19-20.5	155-15.5	28.7	2.3	20	154	2.5	0.10	0.7	1.0	0.10	C
23	2	16	57.1	19-20.7	155-15.8	28.0	2.3	17	150	2.2	0.11	0.9	1.1	0.09	B
23	4	5	57.4	19-18.3	155- 7.0	3.5	2.1	14	212	12.4	0.31	1.8	1.6	0.18	C
23	5	1	14.1	19-21.3	155-13.7	9.9	1.7	17	150	2.9	0.08	0.8	0.4	0.15	B
23	6	53	6.3	19-25.6	155-14.8	26.0	1.2	11	144	4.9	0.12	1.0	1.3	0.07	B
23	9	54	56.7	19-18.6	155-14.6	8.5	2.1	16	180	5.6	0.14	1.0	0.7	0.17	C
23	16	54	57.6	19-23.4	154-59.2?	8.0*	2.0	11	213	13.6	1.72	11.5		0.40	D
23	17	26	35.6	19-22.0	155-12.6	10.2	1.6	13	152	0.9	0.05	0.6	0.3	0.07	B
24	3	34	38.8	19-20.9	155-16.5	31.1	1.5	17	146	2.7	0.14	0.9	1.4	0.12	B
24	4	10	21.3	19-20.5	155-28.4	9.5	2.2	14	112	9.0	0.08	0.8	0.6	0.14	B
24	6	54	40.4	19-21.4	155- 6.2	3.4	1.8	13	200	15.9	0.18	1.4	1.1	0.13	C
24	12	28	48.7	19-20.6	155-11.8	10.5	2.0	12	202	3.8	0.19	1.5	0.5	0.14	C
24	22	40	9.7	20- 2.8	155-22.4	8.0*	2.5	15	304	31.0	0.85	5.3		0.11	D
25	2	31	29.7	19-10.8	155-33.7	8.5		9	137	9.7	0.13	1.5	1.1	0.17	B
25	5	28	24.1	19-26.4	155-22.2	9.1	2.2	18	68	3.5	0.05	0.5	0.3	0.11	B
25	5	50	52.1	19-24.4	155-25.4	8.5	1.9	13	127	8.7	0.08	0.7	0.6	0.14	B
25	14	29	13.4	19-22.9	155-24.4	10.0	1.3	13	118	5.4	0.06	0.6	0.6	0.11	B
25	15	43	51.9	19-22.4	155-23.2	8.3	1.5	7	177	4.0	0.66	1.5	4.3	0.11	C
25	21	8	38.8	19-21.7	155-12.1	9.1	2.2	15	146	3.6	0.08	0.7	0.4	0.13	B
26	4	24	45.0	19-15.6	155-13.7	6.4	1.7	6	267	11.8	0.89	4.2	2.1	0.10	D
26	7	12	42.1	19-22.6	155-10.9	9.5	1.5	8	140	2.1	0.08	1.3	0.5	0.06	B
26	8	20	38.6	19-23.6	155-20.1	13.9	2.0	7	113	5.0	0.17	0.4	1.5	0.02	B
26	16	23	57.4	19-27.0	154-53.9	7.9	2.0	9	226	2.9	0.33	4.0	1.6	0.11	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 26	17	22	40.5	19-19.4	155- 6.4	4.7	2.5	18	187	12.1	0.24	1.7	1.3	0.27	A
26	22	58	22.2	20-41.1	155-30.5	8.0*	3.1	19	330	75.1	2.06	12.2		0.08	D
27	14	52	12.4	19-20.8	155-25.6	8.4	2.1	14	136	4.1	0.15	1.1	1.3	0.20	B
27	17	17	6.2	19-14.6	155-25.2	37.6	2.6	20	158	10.8	0.19	1.1	1.9	0.12	C
27	19	41	20.2	19-25.2	155-16.8	5.6	2.0	10	210	1.4	0.25	1.3	1.2	0.14	C
28	0	20	46.1	19-22.3	155-11.1	10.2	1.9	17	126	2.1	0.08	0.9	0.4	0.14	C
28	1	38	43.4	19-15.5	155-24.1	41.7	2.3	11	160	8.8	0.40	1.9	3.8	0.13	C
29	3	18	51.8	19-24.7	155- 1.8?	0.0	2.1	14	188	15.8	0.19	1.1	1.8	0.16	C
29	12	21	17.7	19-21.1	155-17.8	27.4	2.1	14	73	2.1	0.13	0.7	1.2	0.06	A
29	22	40	55.0	19-21.6	155-25.0	7.5	1.8	13	138	10.1	0.08	0.6	0.6	0.12	B
29	22	44	28.6	19-19.3	155-23.4	5.0	1.5	8	179	1.6	0.19	1.5	1.9	0.13	C
30	0	17	40.0	19-20.9	155-11.7	7.9	1.7	11	173	3.2	0.18	1.4	1.0	0.14	C
30	14	12	27.3	19-21.8	155-24.8	7.1	1.5	11	137	9.6	0.11	0.8	1.2	0.14	B
30	14	53	30.7	19-23.2	155-28.3	9.5	1.6	12	138	15.1	0.09	0.8	0.8	0.11	B
30	15	4	28.3	19-15.0	155-20.2	24.3	2.1	15	179	10.6	0.17	1.0	1.9	0.09	B
30	18	8	52.2	19-24.4	155-17.6?	0.1	0.6	9	95	0.7	0.14	0.6	4.5	0.14	B
30	18	23	30.9	19-22.2	155-12.7	6.9	1.6	14	144	0.6	0.08	0.7	0.6	0.12	B
30	22	19	30.9	19-24.4	155-15.6	3.4	0.6	7	235	2.5	0.09	0.4	0.5	0.02	C

Table 3.--Felt Earthquakes*

Date	Time H	Time M	Time S	Magnitude	Felt Report
Apr 9	16	46	19.0	2.9	Kealakekua
12	09	13	43.7	4.3	Hilo, Pohakuloa, Kapapala Ranch
14	11	07	57.4	3.6	Volcano
16	02	25	33.5	3.2	Kapapala Ranch
17	12	12	13.6	4.2	Holualoa, Kealakekua
19	05	30	38.8	3.2	Kapapala Ranch
28	15	23	05.3	3.5	Pahoa
30	06	07	01.6	3.9	Hilo, Volcano, Mt. View Kapapala Ranch, Kalapana, Paauilo
May 1	06	31	17.5	2.1	Naalehu
1	09	00	59.2 1/	3.7	Kamuela
2	08	47	33.9	3.0	Hilo
6	06	21	38.7	3.2	Hilo
8	20	27	05.8	2.3	Kapapala Ranch
10	05	30	53.2	4.1	Hilo, Volcano, Mt. View, Kalapana, Paauilo
13	15	12	57.1	3.2	Kapapala Ranch
15	04	56	28.9	2.7	Volcano
15	05	12	20.4	2.7	Volcano
15	05	55	57.9	3.2	Volcano
15	06	52	15.4	3.0	Volcano
15	11	04	26.5	3.8	Hilo
15	11	09	21.2	2.6	Volcano
15	23	59	49.3	3.6	Volcano
Jun 10	22	55	18.7	2.9	Kealakekua
11	11	22	22.4	3.6	Kapapala Ranch
15	22	27	53.2	2.5	Kapapala Ranch
17	14	57	31.8	3.4	Kapapala Ranch
22	12	38	42.1	4.3	Hilo, Kapapala Ranch Mt. View, Kealakekua

* Acknowledgements: Several people felt earthquakes during the second quarter of 1970 and reported their observations to HVO; that information is gratefully acknowledged.

1/ Kawaihae Harbor blast.

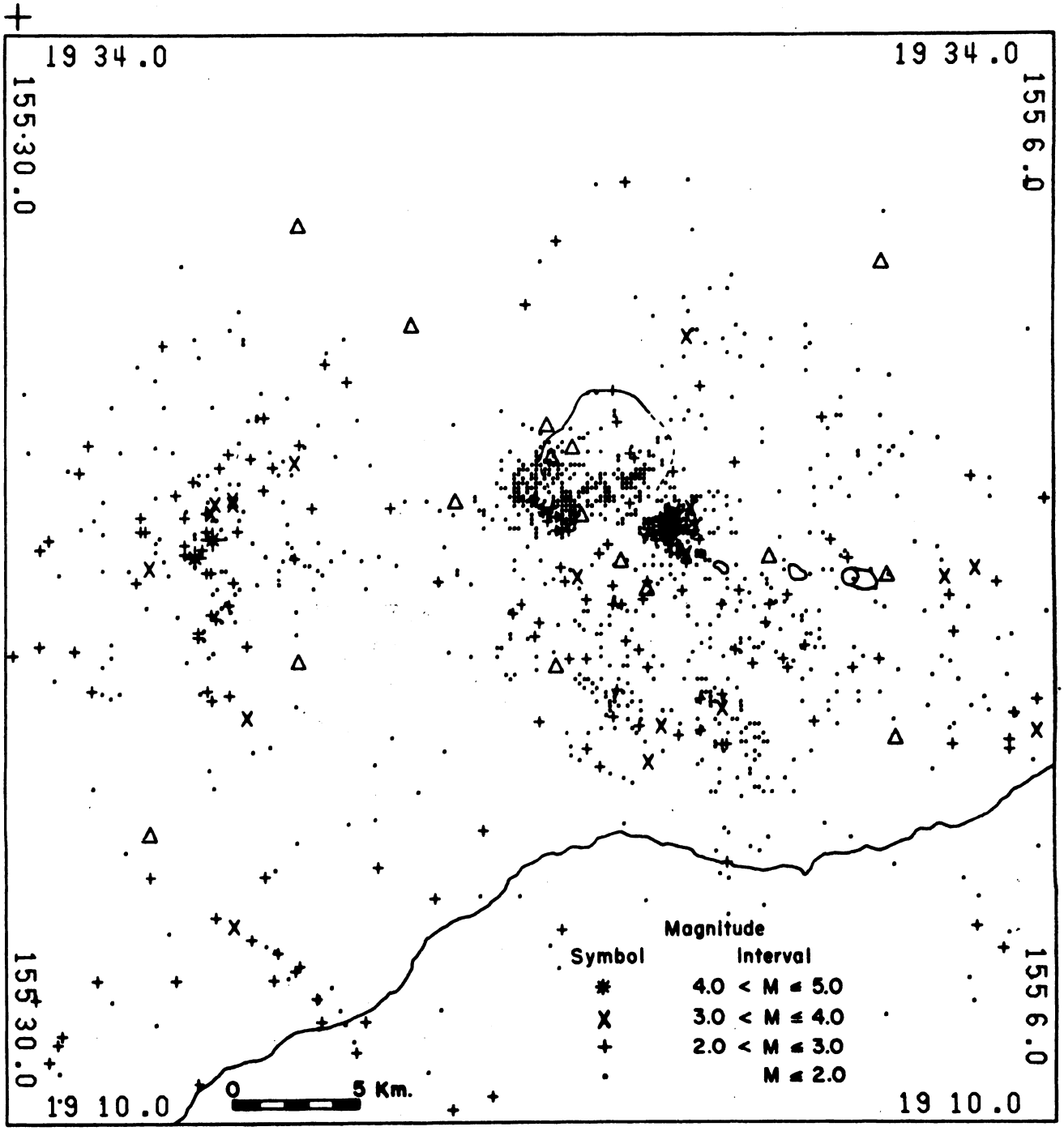

Figure 2.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

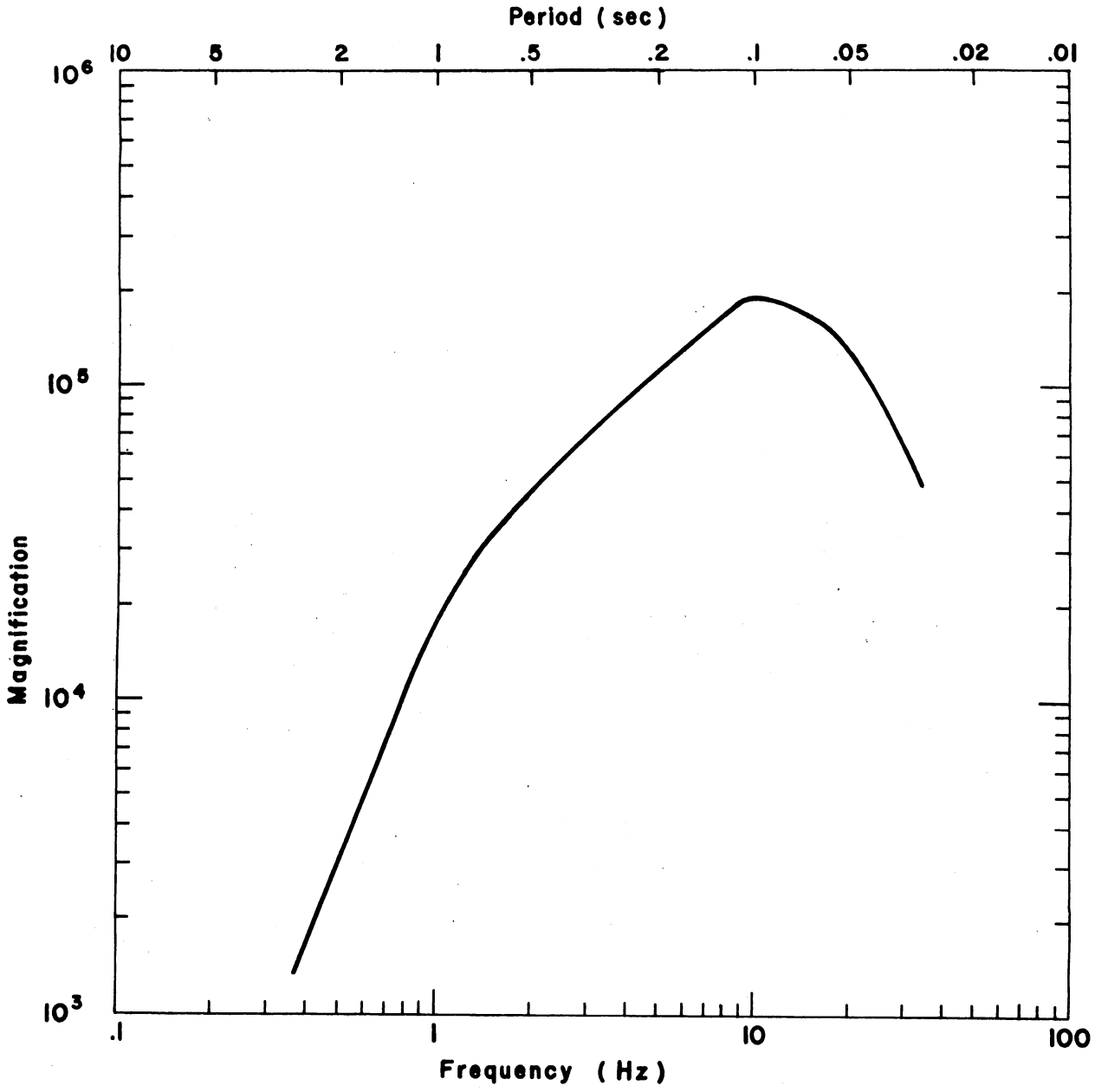

Figure 3.--Response curve for System II, EV-17, Teledyne seismic preamplifier.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
EAST KOAE	EKO	19 22.17	155 14.99	1090	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RFS	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
KAHUKU	KHU	19 14.90	155 37.10	1930	1	5.7	1700	RF3	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
LAVA FLOW	LAF	19 28.70	154 53.80	210	1				Temporary
LOWER STATION	LOS	19 28.40	154 53.10	180	1				Temporary
MAUNA LOA	MLO	19 28.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 0.85	881	1	5.7	2720	RFS	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
WAIOHINU	WAO	19 3.60	155 36.80	425					Discontinued 9/1/70
WEST PIT	WPT	19 24.70	155 17.50	1115	3	1.34			
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	3	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	3	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	3	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	3	1.0			Wood-Anderson
KAMUELA	KAH	20 1.90	155 42.00	740	2	0.7			
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

Table 5.--Seismic Instrumentation

1. Seismometers

EV-17: Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer.

EV-17H: Same as above, but horizontal component.

HS-10: Hall-Sears 0.5 sec. period moving coil seismometer.

HVO-2: 0.8 sec. period moving coil seismometer.

2. Seismographs

HVO-1: Vertical-component electromagnetic seismograph with a peak magnification of about 20,000 at 0.25 sec. period.

15-90: Press-Ewing System: 3-component long-period Press-Ewing seismograph system with pendulum and galvanometer periods of 15 and 90 seconds, respectively.

EV-17/3.5 cps galv, EV-17H/3.5 cps galv, etc.: Short-period electromagnetic seismographs composed of the seismometers and galvanometers indicated. Response similar to HVO-1. Poorly calibrated.

3. Amplifier and Signal Transmission Systems

System I: HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over "hard" wire to HVO-built solid state amplifier and galvanometer driver.

System II: Develco or Teledyne seismic preamplifier--voltage controlled oscillator, signal transmission on audio FM carrier over "hard" wire or FM radio link to HVO discriminator.

Geotech PTA: Short-period Geotech photo-tube amplifier.

4. Timing Systems

RM-USGS: Crystal-controlled chronometer employing solid-state binary dividers to produce minute and hour marks; typical drift rates are a few milliseconds per day.

TS-100: Sprengnether crystal-controlled chronometer; output and performance characteristics are similar to those of RM-USGS.

5. Telemetered System Response

The peak magnification of the standard telemetered systems (System II, with the film strip magnified 20 times for viewing) is about 2×10^5 at a period of 0.1 second. For periods between 0.1 and about 1.0 second, the response falls off 6 db/octave. (fig. 3)

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault; weekly results are summarized in table 6. At irregular intervals, tilt is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. These results are summarized in table 7. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of tiltmeter stations and essential data on each station are listed in table 8.

Table 6.--Tilt Coordinates at Uwekahuna Vault
April, May, and June 1970

Date	N-S	E-W	Date	N-S	E-W
Apr 5	561	376	Jun 7	557	382
12	561	381	14	557	383
19	561	379	21	557	383
26	562	375	28	558	381
May 3	561	375			
10	560	380			
17	556	385			
24	557	382			
31	557	382			

Table 7.--Tilt coordinates and rate of changes at bases around Kilauea Caldera (See fig. 4)

Tilt Base	Date (1970)	Tilt Coordinates		Rate (10^{-6} rad/mo) and Direction of Tilting Since Last Reading		Date of Last Reading (1970)
		N-S	E-W			
Uwekahuna (U on fig. 4)	22 May	619.6	344.4	6.67	N43.3°W	27 Feb
Tree Molds (TM)	18 May	490.8	495.6	1.58	N 2.7°W	9 Feb
Sand Spit (SS)	20 May	1039.9	602.1	18.27	N35.9°W	31 Oct 1969
Keamoku (Kea)	20 May	541.6	367.7	4.20	N32.9°W	11 Feb
Ahua Kamokukolau (Kam)	21 May	330.0	509.8	18.07	S14.2°W	31 Oct 1969
Kipuka Nene (KN)	21 May	291.6	505.6	1.36	S26.1°W	13 Feb
Hilina Pali (HP)	25 May	452.0	492.0	0.39	S84.5°W	29 Oct 1969
Kapapala Ranch (Kap)	20 May	486.3	518.8	0.47	S19.2°W	11 Feb
Mehana (M)	18 May	588.7	594.0	3.61	N36.2°E	9 Feb

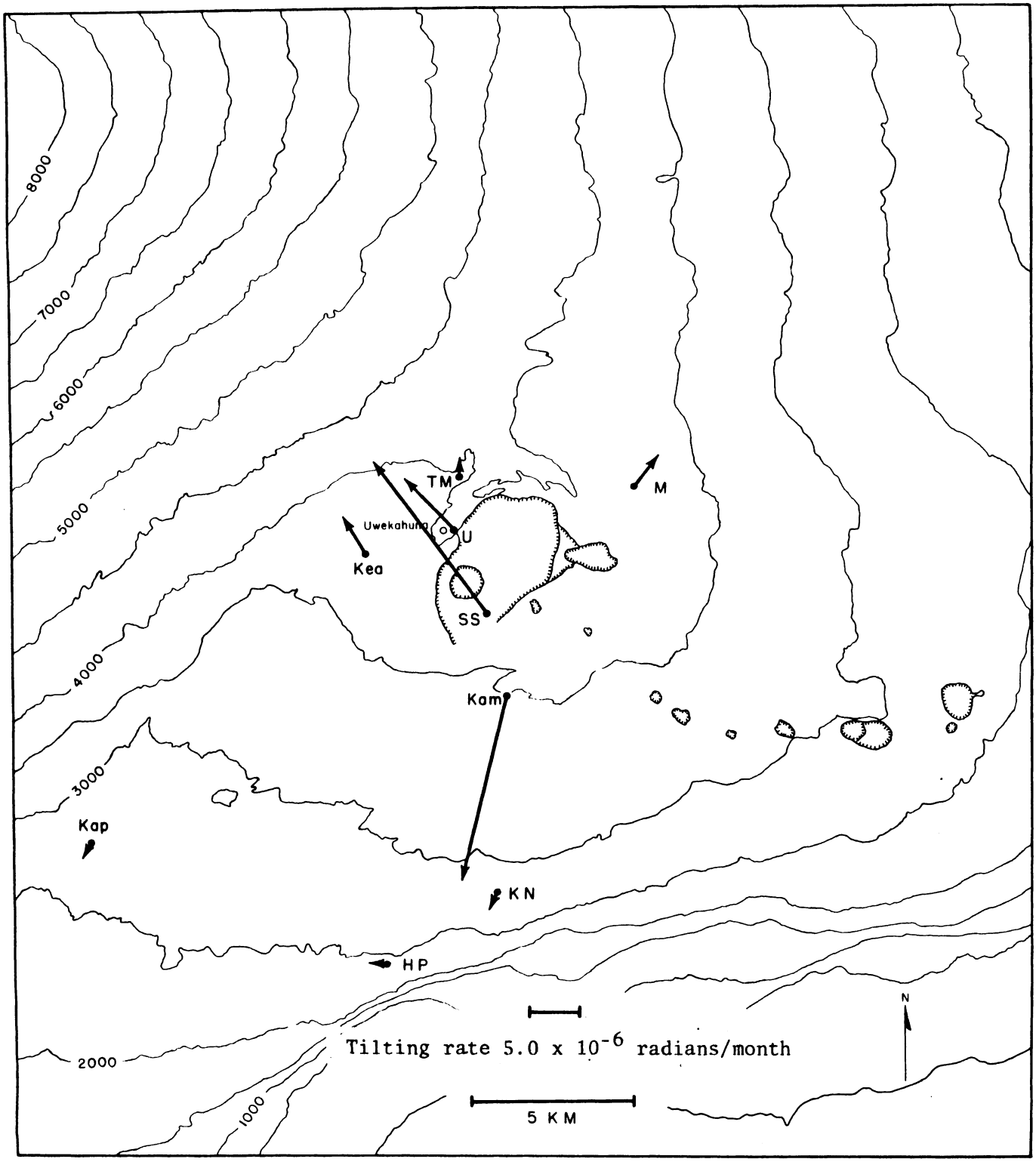

Figure 4.--Tilting of the ground around Kilauea Caldera. Time interval between measurements is given in table 7. Vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See table 8 for explanation of abbreviations.

Table 8.--U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of Reading	Base Length M	Description
		Lat N	Long W			
Tree Molds	TM	19°26.3'	155°17.3'	Approx. Quarterly	50.79	NS and EW
Sand Spit	SS	19°24.1'	155°16.8'	"	25.40	Equilateral Triangle
Keamoku	Kea	19°25.1'	155°19.0'	"	47.55	"
Ahua Kamokukolau	Kam	19°22.7'	155°16.6'	"	50.79	"
Kipuka Nene	KN	19°19.4'	155°16.7'	"	50.79	"
Hilina Pali	HP	19°18.2'	155°18.6'	"	47.73	"
Kapapala Ranch	Kap	19°20.5'	155°23.8'	"	50.79	"
Mehana	M	19°26.2'	155°14.3'	"	25.00	"
Uwekahuna	U	19°25.5'	155°17.4'	"	50.79	"
Uwekahuna Vault		19°25.4'	155°17.6'	Daily	3.48	NS and EW

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GPO 693-056

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 59

July, August, and September, 1970

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Issued

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SUMMARY OF PRINCIPAL EVENTS

The Mauna Ulu eruption (Swanson and others, 1971), which began on May 24, 1969, on the upper east rift, continued throughout the summary period. However, the focus of activity shifted from the summit of Mauna Ulu, where it had been during most of the eruption, to a set of new vents east of the summit.

On July 6, a swarm of small earthquakes preceded the opening of a new fissure about 150 m northwest of Alae Crater. Lava fountained from a "curtain of fire" about 200 m long, and flows advanced southward into Alae and eastward for about 3 km. Eruption at a reduced rate continued from three vents along the new fissure until July 9, and similar episodes of fountaining from the same vents took place on July 13 - 15, 16 - 17, and 20 - 21, and at several times during early August.

During this activity, the walls of the summit fissure of Mauna Ula sporadically caved in, eventually yielding a large pit with overhanging walls. A pool of lava occupied the pit. The level of this pool fluctuated between 25 and 35 m below the rim throughout the summary period, with no overflows taking place. Lava in the pool was in constant circulation generally but not always moving eastward along the 120 m length of the fissure.

A small vent opened on August 3 about 150 m east-northeast of the summit pit. Most activity was confined within the new fissure itself, but periodically lava spilled out onto the ground surface, forming small flows, the largest of which extended about 1 km from the vent.

Another new vent about 650 m east-northeast of the summit of Mauna Ulu opened sometime between August 4 and 7, probably on August 6. The new activity was not accompanied by any detectable change of seismicity or summit tilt. Lava welled quietly from the vent, flowed in a surface river for 50 to 100 m, and then disappeared into a tube (formed by crusting over of the river) which carried the lava for several tens of meters before feeding it beneath the crust of the lava lake in Alae Crater. Increased fluid pressure within the lake eventually broke a barrier that sealed an older tube leading out of the south rim of the filled crater, and lava poured from the lake through this outlet, finally emerging as a surface flow about 2.5 km southeast of the crater. This draining removed support for the lake crust, which subsided a maximum of 13 m between August 8 and 11. Details of this subsidence episode are given by Swanson and Peterson (1972) and Swanson and others (1972).

Lava continued to erupt from the August 6 vent and other nearby areas for the remainder of the summary period. Most of this lava flowed into and out of Alae through the tubes, feeding a flow south of Alae that slowly moved seaward as it developed and lengthened its complex tube system. The development of this tube system is described by Swanson (1973) and Peterson and Swanson (1973). The lava remained in tubes along the upper part of its course, but a complex braided pattern of tubes and surface flow units

marked the descent over Poliokeawe, Holei, and Kealakomo Palis. Lava flowing in tubes hidden from view was detected by electromagnetic surveys (Anderson and others, 1971). The tube-fed flow eventually reached the coastline on September 21, but the volume of lava was so small that only small toes entered the water. This flow stopped moving on September 26, apparently because of obstructions that developed in the tubes just south of Alae. These obstructions were only temporary, however; and on October 1, surface flows again began issuing from tubes about 2 km south of Makaopuhi Crater.

This three-month period ushered in a new phase of activity for the Mauna Ulu eruption. From this time until the end of the eruption in the fall of 1971, surface activity was concentrated east of Mauna Ulu's summit crater, which last filled to overflowing in June 1970. The tube system through Alae that developed in August 1970 was maintained, with some periods of inactivity, until late spring of 1971. It is interesting that despite this marked change in eruptive behavior the seismic and tilt behavior remained essentially unchanged.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 10 km of at least one seismometer),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of the number of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated into groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPR, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit: 30 km, earthquakes from a source about 30 km beneath the Kilauea summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km or deeper beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region. Shallow earthquakes along the SW rift zone of Kilauea and the adjacent portions of the Kaoiki fault system. Earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank. Shallow earthquakes along the northeast-trending Koae fault system south of Kilauea Caldera. Earthquakes from other regions, such as, west Hawaii, Mauna Kea, etc.

Date (1970)	Tremor (m = minutes)			Number of Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper[1/] East Rift	Lower[2/] East Rift	Others	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
Jul 1			Fluctuating from moderate to low levels near eruptive site on the upper east rift	2	51	931	16	37	30		
2						168	11	6	27		
3				2	1	167	12	10	31		
4					2	256	12	14	88		
5				3		940	15	129	31		Lava outbreak along new fissure north of former Alea Crater
6	31m			2		53	12	12	21		
7				2		34	12	11	12		
8	30m			5		81	14	14	11		
9				1		109	10	11	12		
10				2		101	9	10	10?		
11				2		60	18	5	9		
12	15m			3		195	19	13	16		
13						127	19	11	7		

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera (cont'd)

Date (1970)	Tremor (m = minutes)			Number of Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper[1/] East Rift	Lower[2/] East Rift	Others	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
Jul 14	40m			3	?	86	9	10	12		
15				4	?	101	7	14	4		
16				1	15?	165	10	7	4		
17				3	37	43	6	11	15		
18				5	98	35	11	8	9		
19				2		42	5	5	4		
20						48	11	14	151?		
21				4	12	151	10	22	5		
22				1	14	145	8	12	3		
23				4	5?	86	15	4	5		
24				1	7	203	15	7	3		
25				2	9	325	15	9?	2		
26				4	27	210	11	10	1		
27				3		174	11	11	7		
28				1		143	19	17	9		
29				1		181	18	25	9		
30				1		193	9	19	2		
31	48m			3		219	8	18	2		
Aug 1	3m			1	2	2025	15	48	11		
2	3m			3	29	69	21	18	2		
3				3	8	37	10	13	5		
4				3	2	53	19	14	4		
5				3		45	16	22	5		
6					?	54	9	22	8		
7					4	110	12	15	1		
8				3	3?	115	9	17	7		
9				1	13	148	16	13	5		

Fluctuating at low levels near eruptive site on the upper east rift

	10				3		85	9	10	1	
	11				2		88	8	15	6	
	12				2	2	107	7	19	?	
	13						104	10	23	6	
	14						41	15	14		
	15				3		96	17	14	3	
	16				1		81	23	15	3	
	17				6		199	18	24	1	
	18				3	7?	145	9	4	1	West Pit Seismometer Changed
	19				4	3	110	5	17	1	
	20				2	7	92	13	16	1	
	21				4	24	107	9	14	3	
	22				2	19	122	15	10	3	
	23				1	5	212	13	10	3	
	24						311	16	12	3	
	25					1	220	3	?	?	
	26				?	?	?	?	?	?	Electrical Storm
	27						?	10	9	?	
	28				2		?	15	27	?	
	29					1	148	18	31	?	
	30				2		135	11	24	?	
	31				5		139	3	21	3+	
Sep	1						134	8	17	2	
	2				1		133	12	13	3	
	3					2	264	4	7	4	
	4				1	3	221	7	9	4	
	5				2	5	55?	15	7	1	
	6				1		144	12	8	1	
	7				5	3?	295	20	3	4	
	8	20m			2		284	7	9	2	
	9	5m			2		245	6	18	4	
	10				1	1	140	4	12	6	
	11				1	2	308	25	11	5	

Fluctuating at low levels near eruptive site on the upper east

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera (cont'd)

Date (1970)	Tremor (m = minutes)			Number of Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper[1/] East Rift	Lower[2/] East Rift	Others	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
12	12m			4	7	294	34	20	6		
13				3	7	341	38	22	2		
14				3	3	292	38	34	?		
15				2		288	20	29	2		
16				1		324	27	12	7		
17						286	28	7	1		
18	40m			4		313	20	9			
19				4		237	20	17			
20				6		266	19	46	7		
21				6		223	29	34	4		
22				4	2	193	16	26	6		
23				3		227	21	25	2		
24				1	3	176	29	16	2		
25				2	5	189	25	31	2		
26	8m			5	1	478	39	28	1		
27				1	4	1851	46	52	4		
28	6m			9	16	1089	29	62	6		
29				2		437	26	32	3		
30				7		277	25	36	3		

Fluctuating at low levels near eruptive site on the upper east rift

1/ Upper east rift count poor due to continuous tremor and traffic.

2/ Count taken from station Puu Honuaula (PHO).

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO\right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	Excellent	Good
B	Good	Fair
C	Fair	Poor
D	Poor	Poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	$\leq 120°$	$\leq$ Depth or 5 km
B	≥ 6	$\leq 150°$	$\leq 2 \times$ Depth or 10 km
C	≥ 6 ≥ 4	$\leq 225°$ $\leq 180°$	≤ 50 km
D	Others		

Statistical Measures

	ERH (km)	ERZ (km)	MD (sec)	RMAX (sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes; that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used; that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U.S. Geological Survey.

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* RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1970		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	1	3	17	13.9	19-24.2	154-58.6	4.7	1.9	11	205	11.8	0.12	0.9	0.7	0.10	C
	1	5	23	43.0	19-17.2	155- 6.3	4.8	2.5	17	199	103.4	0.30	1.6	1.3	0.25	C
	1	6	22	46.6	19-24.3	155-15.6	3.8	1.0	6	239	2.6	0.28	1.1	1.4	0.03	C
	1	6	24	34.7	19-23.6	155-16.7?	3.3	1.1	9	119	0.4	0.10	0.7	0.6	0.12	B
	1	10	5	26.1	19-25.0	155-25.4	10.8	1.8	13	198	9.6	0.12	0.8	0.4	0.09	C
	1	13	8	57.9	19-26.7	155-13.7	26.0	2.3	21	59	6.7	0.10	0.7	1.2	0.13	B
	1	18	58	42.9	19-24.6	155-17.4?	0.1	0.8	9	88	0.2	0.17	0.8	1.7	0.16	B
	1	20	36	30.2	19-33.4	155-14.8	4.1*	1.9	7	336	15.6	0.82	5.0		0.22	D
	1	20	58	27.4	19-31.8	155-15.8?	8.0*	1.8	8	332	12.2	1.27	9.0		0.40	D
	1	22	2	29.9	19-24.2	155-15.6	3.6	1.0	8	227	2.5	0.10	0.5	0.6	0.03	C
	1	22	20	10.0	19-48.9	155-42.3	7.7	2.4	13	189	24.0	0.22	1.6	1.5	0.09	C
	1	22	48	35.2	19-20.7	155-29.2	8.5	2.2	15	107	10.4	0.09	0.9	1.0	0.17	B
	1	23	48	39.3	19-30.1	155-28.0	5.4	2.1	13	152	8.2	0.15	1.0	1.3	0.20	C
	2	4	54	47.3	19-25.1	155-17.1	7.9	1.8	8	198	0.4	0.39	1.3	2.1	0.07	C
	2	11	48	39.4	19-22.1	155- 8.1	8.0	1.7	13	189	3.3	0.11	1.1	0.6	0.12	C
	3	1	52	25.8	19- 8.0	155-32.9	8.7	2.8	15	158	100.8	0.12	1.2	1.1	0.14	C
	3	4	4	30.5	19-24.0	154-58.3	8.5	2.6	14	210	11.7	0.12	1.6	0.6	0.09	C
	3	6	41	6.7	19-19.4	155-15.8	9.8	1.5	12	191	3.1	0.09	0.7	0.4	0.09	B
	3	11	5	59.1	19-32.7	155-40.0	4.9	2.6	9	230	29.6	0.12	0.6	0.4	0.05	C
	3	19	27	57.2	19-12.0	155-34.9	8.6	2.6	17	124	6.6	0.09	0.8	0.6	0.13	B
	3	21	27	59.9	19- 8.1	155-31.4	6.8	2.4	11	182	12.3	0.12	1.1	0.9	0.10	C
	4	3	53	27.5	19- 8.2	155-31.6	6.3	2.4	14	170	12.2	0.14	1.2	0.9	0.17	C
	4	4	54	39.9	19- 8.1	155-32.1	7.5	2.3	14	166	11.4	0.13	1.3	1.0	0.15	C
	4	23	13	6.7	19-26.3	154-52.0	6.2	2.4	8	285	4.4	0.33	2.5	0.9	0.10	C
	5	0	20	54.8	18-59.1	155-12.3	21.9*	2.5	17	250	39.8	0.25	1.8		0.14	D
	5	12	21	50.5	19-21.6	155- 6.3	4.0	2.4	17	176	15.8	0.09	0.7	0.8	0.12	C
	5	17	51	8.6	19-23.9	155-16.5	2.2	0.7	7	177	1.1	0.32	0.8	1.8	0.08	B
	5	19	22	35.7	19-35.5	155-22.8	33.5	2.1	15	126	10.5	0.19	0.9	1.9	0.10	B
	6	0	36	19.7	19-19.2	155-13.5	10.6	1.5	12	224	5.7	0.23	1.4	0.6	0.14	C
	6	1	37	57.8	19-19.9	155-13.5	9.5	1.7	12	192	4.8	0.12	1.0	0.5	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	6	2	25 3.2	19-17.4	155- 9.5?	2.0	1.6	9	189	14.5	0.30	1.6	1.9	0.17	C
	6	2	56 7.2	19-22.6	155-12.4	0.7	0.8	6	175	0.3	0.17	1.5	1.8	0.08	C
	6	3	38 46.7	19-20.5	154-55.6?	5.1	2.3	9	252	15.2	1.84	4.8	5.9	0.10	D
	6	5	50 33.1	19-23.8	155-17.1	2.8	0.7	9	132	1.0	0.06	0.5	0.4	0.07	B
	6	6	38 28.1	19-29.6	155-28.1	6.4	1.7	11	153	8.4	0.13	0.8	1.3	0.14	C
	6	8	23 37.4	19-19.4	155-16.5	8.3	1.6	10	232	2.1	0.22	1.5	0.8	0.16	C
	6	10	59 39.2	19-22.8	155- 3.6	1.4	2.3	14	178	21.1	0.42	0.8	2.2	0.13	C
	6	11	6 54.2	19-23.8	155-24.1	10.5	1.7	13	119	6.8	0.07	0.7	0.6	0.11	B
	6	11	10 17.1	19-20.3	155-19.5	6.1	1.5	11	128	3.7	0.04	0.3	0.4	0.06	B
	7	2	12 35.6	19-22.7	155-25.6	10.4	1.8	13	122	6.1	0.07	0.7	0.7	0.10	B
	7	2	54 47.3	19-18.4	155-12.6	6.5	1.5	9	244	7.7	0.51	2.7	1.5	0.20	D
	7	11	41 1.4	19-13.3	155-32.3	7.1	2.6	16	135	8.9	0.07	0.6	0.5	0.12	B
	7	16	20 31.5	19-13.9	155-30.3	27.7	2.3	11	142	12.0	0.41	1.7	4.8	0.09	B
	7	23	39 45.2	19-21.8	155-26.8	7.6	2.5	18	91	6.8	0.07	0.6	0.5	0.14	B
	8	0	12 12.3	19-19.9	155-15.7	10.0	2.2	16	160	3.0	0.05	0.5	0.3	0.08	B
	8	0	25 4.2	19-24.1	155-17.6	14.7	1.7	9	98	1.2	0.18	0.7	1.4	0.06	A
	8	1	55 16.2	19-17.4	155- 2.0	29.6	2.4	11	212	25.3	0.12	0.6	1.6	0.04	B
	8	6	47 28.2	19-20.4	155- 6.5	5.8	1.8	13	203	6.7	0.28	2.1	1.4	0.23	C
	8	10	59 32.9	19-19.5	155-16.1	9.2	2.4	16	163	2.6	0.08	0.6	0.4	0.13	C
	8	16	48 2.3	19-24.8	155-17.9	9.2	1.9	11	77	0.8	0.39	1.0	2.3	0.10	B
	8	17	43 43.4	19-18.6	155-12.0	13.3	1.9	10	248	6.9	0.31	1.7	1.9	0.09	C
	8	17	46 53.6	19-22.9	155-11.9	10.0	1.7	8	132	3.9	0.12	1.7	1.2	0.09	B
	8	17	47 14.2	19-22.2	155-11.8	9.2	2.1	18	130	1.3	0.07	0.8	0.5	0.15	C
	8	17	54 1.9	19-22.8	155-11.8	9.3	1.6	15	128	3.7	0.04	0.5	0.3	0.09	B
	8	18	21 39.8	19-47.0	155-17.7?	3.2*	2.4	5	221	16.7	0.50	3.0		0.19	D
	8	18	42 14.3	19-20.8	155-15.5	27.8	2.3	17	150	2.0	0.15	1.1	1.5	0.14	B
	9	2	13 52.7	20- 2.6	155-34.5	8.0*	2.9	11	308	63.5	1.87	11.3		0.15	D
	10	3	48 40.6	19-26.5	155-24.4	9.0	2.1	14	181	6.4	0.12	0.9	0.5	0.14	C
	10	5	43 4.6	19-11.8	155- 4.3?	0.1	2.4	11	264	21.1	1.62	3.8	5.5	0.19	D
	10	14	43 28.6	19-26.7	155-14.5	25.7	2.0	15	104	5.9	0.09	0.7	1.0	0.09	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	RMS	ERH	ERZ	MD	Q
JUL	10	16	45	56.1	19-21.9	155-13.1	11.8	1.3	8	154	1.5	0.17	0.8	1.4	0.04	B
	10	18	0	43.1	19-21.8	155-12.2	9.9	1.8	15	161	1.4	0.05	0.6	0.3	0.09	B
	10	18	7	13.3	19-23.2	155- 4.1	3.6	2.8	18	175	14.8	0.11	0.9	0.9	0.17	C
	10	18	10	16.6	19-22.7	155- 3.8?	0.0	2.0	15	177	20.1	0.46	0.9	2.5	0.12	C
	10	19	58	27.3	19-19.9	155-16.0	9.8	1.7	15	158	2.5	0.06	0.6	0.4	0.09	B
	10	21	40	12.5	19-22.9	155- 4.0	5.7	3.2	18	176	14.9	0.10	0.9	0.6	0.13	C
	10	21	52	32.4	19-25.5	155- 4.5	9.4	3.0	17	159	11.8	0.05	0.8	0.4	0.10	C
	10	23	25	46.6	19-43.5	156- 6.7	8.0*	2.1	7	301	69.1	1.20	7.4		0.10	D
	11	11	36	28.1	19-25.2	155-23.2	9.9	1.4	12	169	6.2	0.08	0.6	0.5	0.08	B
	11	12	38	21.4	19-21.9	155-16.3	31.2	3.0	22	112	1.2	0.11	0.8	1.1	0.13	B
	11	18	59	14.9	19-19.3	155-15.2	7.9	1.1	13	214	4.1	0.21	1.1	0.8	0.15	C
	11	21	16	28.6	18-59.6	155-20.9	26.6	2.3	18	242	28.5	0.28	1.4	5.1	0.09	D
	11	21	32	39.5	19-29.3	155-35.5	5.1	1.7	6	262	21.3	1.03	5.0	3.8	0.14	D
	11	22	11	9.5	19-16.5	155-19.1	10.3	1.4	13	169	7.3	0.11	0.9	0.6	0.12	C
	11	23	30	7.9	19-26.4	155-25.9	8.5	1.5	12	173	7.7	0.09	0.6	0.5	0.09	B
	12	1	13	41.7	20-17.0	156- 0.3?	4.6	2.5	23	320	146.4	0.19	1.7	1.1	0.14	C
	12	5	11	37.3	19-28.2	155-52.3	9.1	2.7	18	168	7.5	0.14	2.0	1.8	0.17	C
	12	5	15	10.7	19-24.4	155-57.1	6.5	2.7	12	237	13.0	0.43	2.9	1.8	0.14	D
	12	5	41	58.1	19-10.4	155- 3.0	1.8	1.7	8	271	24.3	1.48	3.5	4.6	0.08	D
	12	7	32	17.6	19-19.8	155-28.7	8.0	1.8	8	127	17.3	0.10	1.2	1.1	0.13	B
	12	8	40	31.8	19-25.6	155-23.2	13.2	1.7	8	178	5.7	0.36	1.2	3.2	0.08	C
	12	10	14	5.1	19-19.5	155-11.4	26.9	2.5	11	288	8.1	0.36	2.1	2.0	0.05	C
	12	13	39	43.1	19-11.2	154-59.3	7.6	2.3	12	258	27.1	0.80	3.3	2.2	0.11	D
	12	14	51	55.8	19-18.8	155-16.5	34.3	2.6	21	166	2.8	0.16	1.0	1.5	0.14	C
	12	14	55	36.1	19-29.9	155-14.4	9.3	1.7	16	129	10.0	0.08	0.6	0.6	0.09	B
	12	18	18	31.0	19-17.5	155-13.1	12.5	1.8	14	204	8.8	0.25	1.7	2.2	0.14	C
	12	18	56	32.5	18-43.6	155-43.3	3.2*	3.0	9	336	119.7	0.51	4.9		0.17	D
	12	18	58	23.6	19-16.2	155-22.3	5.4	1.7	16	162	7.6	0.10	0.7	0.9	0.16	C
	13	12	48	36.4	19-17.2	155-24.4	4.0	1.7	13	154	5.9	0.10	0.9	1.4	0.17	C
	13	16	6	2.9	19-17.9	155-43.3	11.2	2.7	12	262	12.1	0.47	3.1	1.6	0.09	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	13	17	9	31.3	19-50.0	155-20.8	25.6	2.5	14	219	12.9	0.15	1.4	1.9	0.07	C
	13	18	46	18.3	19-21.9	155- 1.5?	0.0	2.7	16	207	18.5	0.34	0.7	1.8	0.08	C
	13	21	39	48.2	19-20.1	155-15.9	10.0	1.7	17	157	2.5	0.06	0.5	0.3	0.10	C
	14	1	40	38.0	19-24.0	155-16.1	2.8	1.1	8	204	1.6	0.07	0.4	0.3	0.04	B
	14	1	59	5.2	19-22.3	155-11.4	7.9	2.0	16	139	1.9	0.12	1.4	0.9	0.22	C
	14	3	29	48.0	19-30.6	155-40.6	24.6	2.3	9	125	25.8	0.55	1.5	10.3	0.15	C
	14	5	33	24.3	19-17.9	155- 5.2?	29.6	2.5	13	199	20.5	0.17	1.1	2.0	0.08	C
	14	10	58	1.3	19-19.5	155-28.8	9.1	1.7	14	153	9.8	0.11	0.9	0.8	0.15	C
	14	13	48	41.9	19-21.4	155-13.6	14.1	1.5	12	166	2.7	0.07	1.1	0.6	0.10	C
	14	17	23	51.8	19-21.5	155-26.4	9.0	2.0	15	94	5.9	0.08	0.8	0.8	0.16	B
	14	17	34	25.5	19-22.0	155-13.8	13.8	1.5	9	149	3.9	0.07	0.9	0.6	0.05	B
	14	21	44	36.9	19-21.6	155-13.7	13.4	1.3	13	159	2.7	0.06	0.9	0.5	0.09	C
	15	4	13	55.0	19-21.8	155-13.7	13.5	1.7	14	154	2.4	0.05	0.7	0.5	0.08	C
	15	6	15	24.8	19-12.4	155-22.0?	54.7*	2.1	13	221	14.6	0.42	16.7		0.62	D
	15	6	22	5.5	19- 8.6	155-26.1?	36.3*	2.0	13	187	20.6	0.11	1.5		0.10	C
	15	6	38	21.5	19-12.4	155-26.2	5.3	2.2	8	194	15.3	0.11	0.8	0.8	0.07	B
	15	10	54	9.6	19-20.2	155-15.8	9.7	2.5	16	156	2.8	0.06	0.5	0.3	0.09	C
	15	11	5	23.8	19-19.0	155-11.3	6.9	1.3	12	237	5.6	0.27	1.6	0.9	0.18	C
	15	14	52	13.8	19-19.6	155-14.4	7.2	1.4	12	212	4.3	0.24	1.4	1.0	0.19	C
	15	16	12	19.6	19-19.2	155- 6.6	6.4	3.4	17	187	100.2	0.17	1.1	0.8	0.18	C
	15	16	28	18.4	19-21.2	155- 6.0	6.8	2.1	15	198	7.0	0.19	1.6	0.8	0.17	C
	15	18	1	41.3	19-20.5	155-19.4	7.1	1.4	14	123	3.6	0.09	0.8	0.6	0.15	B
	15	18	4	37.5	19-22.8	155-50.8	8.0		10	188	17.4	0.12	1.1	0.6	0.07	C
	15	18	22	6.8	19-20.2	155- 9.9	9.3	1.4	12	197	3.0	0.17	1.7	0.8	0.13	C
	15	21	5	1.7	19-25.0	155-24.6	13.7	1.5	9	208	8.4	0.35	1.0	2.9	0.05	C
	15	22	3	21.2	19-21.4	155- 4.0	23.4*	1.7	7	347	10.5	0.32	5.2		0.08	D
	15	22	21	23.4	19-18.8	155-12.3	6.7	1.5	9	225	6.8	0.24	1.5	1.0	0.13	C
	15	23	41	30.9	19-20.7	155-13.0	9.3	1.4	13	187	3.4	0.14	1.0	0.7	0.12	C
	15	23	54	53.4	19-20.4	155- 7.4	5.6	2.3	17	179	14.0	0.14	1.1	0.8	0.16	C
	15	23	55	57.7	19-19.4	154-59.3	7.7	1.7	12	239	19.3	0.64	4.3	1.2	0.12	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	16	2	2 23.5	19-11.1	155- 3.7?	0.0	1.7	9	268	22.5	1.96	4.5	6.9	0.17	D
	16	5	10 39.4	19-21.2	155-15.3	29.8	1.9	16	146	1.2	0.13	0.8	1.2	0.10	B
	16	11	2 0.5	19-27.5	155-37.4	9.4	2.1	11	261	23.2	0.44	2.6	0.6	0.08	D
	16	19	40 26.1	19-46.2	155-24.1	34.7	2.4	16	146	5.5	0.12	0.6	1.6	0.08	B
	16	20	23 13.9	19-46.9	155-24.2	33.1	2.5	17	150	5.4	0.17	0.9	2.2	0.11	B
	17	3	19 32.9	19-54.1	155-34.6	14.7*	2.5	13	153	18.8	0.10	1.1		0.14	C
	17	11	8 31.1	19-19.4	155-22.8	27.2		14	138	1.7	0.19	1.0	2.1	0.08	B
	17	16	27 41.2	19-21.9	155- 8.1	6.2	2.4	18	171	12.6	0.10	0.9	0.7	0.17	C
	17	22	19 10.0	19-19.3	155-14.0	31.2	2.1	18	169	5.1	0.09	0.7	1.0	0.08	B
	18	5	59 31.2	19-37.1	156- 7.7	1.3	2.5	13	265	24.2	0.53	2.4	2.5	0.21	D
	18	13	54 38.6	19-12.6	155-31.6	7.0	2.4	14	142	10.6	0.10	0.9	0.7	0.17	B
	18	14	45 58.5	19-22.1	155-15.5	31.5	2.3	14	103	0.6	0.14	1.0	1.4	0.10	B
	18	15	20 4.3	19-21.6	155-15.2	29.4	2.1	17	142	0.5	0.11	0.8	1.1	0.11	B
	18	15	38 15.9	19-15.8	154-59.9	17.2*	2.3	15	224	26.1	0.20	1.6		0.13	C
	19	1	41 15.7	19-14.9	156-13.5	0.7	2.7	13	299	141.9	0.24	2.3	1.7	0.10	C
	19	4	49 23.1	19-37.9	156-16.4?	0.0	2.8	17	282	146.0	0.48	2.1	2.5	0.19	C
	19	8	58 59.4	19-24.9	155- 3.0	5.5	1.8	11	178	13.5	0.08	1.1	1.0	0.11	C
	19	9	43 2.9	19-22.0	155-12.0	29.6	1.5	12	180	5.8	0.14	1.1	1.5	0.08	C
	19	19	58 45.2	19-25.6	154-52.4	8.5	2.2	15	271	5.3	0.53	3.8	0.9	0.12	D
	19	23	7 31.9	19-17.1	155- 3.5?	10.0	1.9	11	241	14.4	0.45	4.0	1.7	0.12	D
	19	23	16 21.4	19-21.4	155-25.5	8.9	1.4	12	119	4.5	0.13	1.0	1.2	0.17	B
	20	6	0 10.4	19-22.8	155-11.6	2.1	1.4	5	193	1.6				0.09	D
	20	12	57 46.2	19-11.6	155-28.7	7.9	2.4	14	163	16.0	0.12	1.1	0.7	0.15	C
	20	18	12 58.1	19-22.5	155-11.8	9.5	1.6	14	135	1.2	0.06	0.6	0.4	0.09	B
	20	18	44 57.8	19-24.5	155-28.9	7.7	2.4	17	70	12.6	0.09	0.7	0.8	0.16	B
	21	2	59 52.7	19-10.1	155-36.9	7.2	2.3	14	181	8.8	0.12	1.1	0.6	0.14	C
	21	5	52 0.1	19-14.9	155- 8.0	0.6	2.0	10	226	13.3	1.39	2.4	6.0	0.21	D
	21	10	15 33.4	19-20.7	155-17.4	27.8		13	95	1.1	0.36	1.7	3.5	0.11	B
	21	12	9 14.1	19-19.1	155-10.9	7.2	2.0	13	242	5.3	0.26	1.6	0.9	0.18	C
	21	22	46 34.1	19-28.9	155-53.4	8.5	2.8	15	173	5.4	0.11	1.6	1.2	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	22	12	47 4.1	19-24.0	155-25.2	11.4	2.3	14	124	7.8	0.08	0.7	1.3	0.13	B
	22	15	54 10.6	19-20.6	155-30.0	11.3	2.5	13	136	11.8	0.07	0.7	1.0	0.09	B
	22	16	15 58.1	19-59.3	155-24.1	10.5	3.7	21	266	105.0	1.09	1.6	6.2	0.09	D
	22	16	38 19.3	19-20.1	155-25.8	8.1	2.0	13	122	4.3	0.09	0.9	0.8	0.16	B
	23	2	26 33.9	19-20.0	155-13.2	10.7	1.9	13	192	4.9	0.09	0.9	0.3	0.10	B
	23	9	43 46.2	19-22.3	155-23.7	7.8	1.5	11	112	4.0	0.14	1.0	1.3	0.19	B
	23	12	56 52.2	19-18.3	155-14.4	8.0	1.5	13	211	6.3	0.20	1.3	0.8	0.18	C
	23	14	47 35.5	19-17.8	155- 6.6	3.5	2.1	14	214	13.5	0.33	1.9	1.7	0.19	C
	24	6	54 28.7	19-21.5	155-26.0	8.5	2.3	16	92	5.3	0.08	0.8	0.6	0.16	B
	24	7	46 30.9	19-21.9	155-16.8	28.2	1.9	15	107	1.8	0.15	0.9	1.4	0.07	A
	24	16	30 52.7	19- 7.6	155-23.6?	15.4*	1.8	10	210	23.2	0.25	2.5		0.17	C
	24	19	15 46.6	19- 2.5	155-19.4	12.3	1.8	14	264	30.2	0.48	6.2	13.9	0.20	D
	24	19	34 30.2	19-21.4	155-12.6	9.6	1.6	13	173	2.0	0.07	0.7	0.3	0.10	B
	24	21	31 11.7	19-17.5	155-24.6	2.0	1.5	10	150	13.5	0.53	0.8	3.2	0.11	B
	24	22	32 48.3	19-15.6	155- 8.6	3.2	1.8	13	221	11.7	0.32	1.6	1.7	0.18	C
	24	22	38 33.0	19-13.9	155- 9.0	6.0	1.7	11	250	14.7	0.52	2.4	1.7	0.14	C
	24	23	26 15.0	19-19.7	155-12.3	12.2	1.4	11	227	5.3	0.34	1.8	2.1	0.11	C
	25	1	48 0.2	19-25.3	155-29.4	6.8	1.8	13	127	13.5	0.14	1.0	1.4	0.18	B
	25	2	43 36.0	19-23.9	155-17.6	10.9	1.6	11	93	1.4	0.17	0.4	0.9	0.03	A
	25	6	0 45.0	19-42.3	155- 2.6?	3.3*	1.9	18	227	29.5	0.26	1.3		0.31	D
	25	14	1 6.2	19-19.7	155-13.7	7.9	1.0	10	214	4.8	0.30	1.9	1.1	0.19	C
	25	20	16 58.8	19-32.3	155-36.4?	0.8	2.0	15	124	23.4	0.57	0.8	3.2	0.17	B
	25	21	30 34.4	19-13.0	155- 8.0	2.6	1.6	8	255	16.6	1.12	2.4	4.5	0.11	C
	25	23	16 46.6	19-23.9	155-17.2	11.9	1.3	9	129	1.2	0.18	0.7	1.4	0.04	B
	26	0	55 44.9	19-18.2	155-15.9	10.2	1.4	12	204	4.4	0.12	0.9	0.5	0.10	B
	26	5	42 45.9	19-23.9	155-17.8	9.0	1.3	10	104	1.6	0.24	0.6	1.4	0.07	A
	26	13	4 37.3	19-24.1	155-24.6	11.9	1.5	12	122	7.5	0.08	0.7	1.3	0.12	B
	26	17	27 36.6	19-30.3	155-36.6	8.5	2.2	14	179	23.2	0.10	0.6	0.5	0.09	B
	26	17	43 2.7	19-12.1	155-27.5?	0.0	1.8	8	176	16.7	0.34	1.3	1.7	0.14	C
	26	18	8 14.6	19-21.0	155-24.3	8.7	1.6	12	115	2.2	0.14	1.1	1.1	0.19	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 26	21	10	14.7	19-24.5	155-17.6	9.5	1.1	8	103	0.4	0.33	0.8	1.8	0.05	A
26	21	27	7.6	19-20.9	155-11.7	9.5	1.2	9	200	3.2	0.53	1.9	2.4	0.11	C
26	23	4	39.4	19-30.0	155-51.5	7.6	1.9	12	137	7.0	0.15	2.8	3.3	0.10	C
27	3	27	37.0	19-29.3	155-41.0	6.8	1.9	12	226	27.4	0.21	1.0	0.7	0.09	C
27	3	29	17.0	19-26.2	155-16.6	15.6	2.1	15	109	2.3	0.09	0.9	1.1	0.12	B
27	4	12	3.1	19-21.8	155-29.1	8.2	1.7	11	136	10.7	0.13	1.2	1.2	0.18	B
27	5	40	34.9	19-21.2	155-16.6	26.4	2.2	12	142	2.6	0.15	0.9	1.4	0.07	B
28	3	9	38.0	19-20.8	155-16.7	29.9		15	141	1.8	0.11	0.8	1.2	0.10	B
28	7	51	0.2	19-14.1	155-24.3	32.5	2.5	18	165	11.3	0.15	0.9	1.6	0.09	C
28	8	12	24.1	18-54.6	155-14.5	15.8*	2.8	20	284	42.3	0.23	1.6		0.17	D
28	9	12	30.0	19-50.8	155-21.4	37.8	2.6	12	190	12.7	0.25	1.3	2.8	0.11	C
28	11	11	38.6	19-25.4	155-23.1	11.5	1.9	12	168	5.9	0.07	0.6	0.7	0.08	B
28	11	58	58.4	19-20.7	155-14.5	8.1	1.7	15	180	2.5	0.12	0.8	0.6	0.15	C
28	23	44	14.6	19-22.2	155-11.4	8.5	1.8	12	164	2.0	0.15	1.1	0.6	0.13	C
29	8	7	20.1	19-48.3	155-18.9?	5.5	2.2	6	287	14.8	0.61	2.6	1.8	0.07	D
29	12	42	40.3	19-20.7	155-11.4	7.4		13	207	3.2	0.21	1.5	0.8	0.20	C
29	18	23	21.9	19-23.4	155- 3.3	7.9	2.1	15	192	12.2	0.14	1.7	0.7	0.17	C
30	1	28	36.7	19-45.8	155-23.6	32.1	2.5	17	146	6.6	0.13	0.7	1.7	0.09	B
30	1	48	18.0	19-27.5	155-17.2	10.6	1.7	13	155	3.9	0.11	1.0	0.9	0.12	C
30	1	51	50.7	19-20.6	155- 4.2	5.0	2.9	17	188	100.9	0.16	1.1	0.8	0.16	C
31	0	58	31.0	19-20.5	155-12.0	9.4	2.2	15	169	4.2	0.10	0.9	0.5	0.14	C
31	5	39	34.7	19-19.6	155-13.4	7.3	2.2	15	178	5.3	0.15	1.1	0.7	0.16	C
31	5	52	59.0	19-19.1	155-13.5	6.8	1.8	11	226	5.9	0.35	2.0	1.2	0.20	C
31	17	20	59.4	19- 9.1	155-22.6	39.5		13	194	20.6	0.23	1.2	2.4	0.08	C
31	22	13	29.7	19-22.9	155-12.2	0.1	1.8	9	184	1.0	0.10	0.6	4.4	0.09	C
31	22	51	31.0	19-57.5	154-54.0?	8.0*	3.1	25	262	124.2	0.70	4.7		0.72	D
AUG 1	2	22	29.8	19-10.4	155-37.8	10.6	2.5	15	151	8.3	0.08	0.9	0.5	0.10	C
1	2	55	56.8	19-20.7	155-11.0	7.3		12	194	2.6	0.14	1.1	0.6	0.14	C
1	5	10	46.5	19-20.6	155-16.1	31.2	2.3	18	151	2.6	0.11	0.8	1.1	0.11	C
1	9	44	28.1	19-20.0	155- 3.0	4.6	2.8	16	195	17.4	0.19	1.4	0.9	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 1	9	49	42.7	19-21.0	155- 5.9	4.5	2.1	14	183	11.9	0.19	1.2	1.0	0.15	C
2	1	45	40.6	18-58.6	155- 5.9	7.7	2.5	16	259	43.5	0.25	2.3	2.8	0.12	C
2	5	53	49.7	19-23.1	155-28.6	7.5	2.6	16	81	10.8	0.10	0.8	0.8	0.17	B
2	11	45	16.5	19-20.6	155- 6.8	7.7	2.3	16	200	6.1	0.19	1.5	0.8	0.18	C
2	14	12	31.0	19-17.5	155- 4.7	35.4	2.5	14	236	12.2	0.62	2.8	4.9	0.10	D
2	21	35	16.1	19-23.8	155-23.5	8.0	2.2	15	78	6.6	0.07	0.6	0.4	0.11	B
3	2	8	46.6	19-22.8	155- 8.4	8.9	2.2	18	165	3.3	0.08	0.9	0.5	0.15	C
3	7	50	37.4	19-24.3	155-17.1	8.4		9	132	1.0	0.43	1.0	2.4	0.08	B
3	12	2	54.5	20- 3.6	156- 1.9	8.0*	3.1	19	175	35.4	0.11	1.4		0.15	C
3	22	54	1.9	19-22.4	155- 8.0	6.6	2.0	16	168	12.8	0.10	1.1	0.8	0.18	C
4	20	59	4.2	19-23.8	155-18.4	8.6	1.9	11	67	2.3	0.16	0.4	1.0	0.05	A
4	20	59	54.8	19-23.4	155- 4.5	2.2	2.1	13	172	19.1	0.44	0.9	2.3	0.14	C
4	21	45	46.8	19-15.4	155-27.2	6.2	2.7	18	148	11.2	0.08	0.7	0.6	0.16	B
5	2	42	8.2	19-16.3	155- 2.5	35.3	2.5	15	212	108.7	0.29	1.6	2.7	0.13	C
5	9	33	7.6	19-21.7	155-10.4	10.3	2.4	16	160	0.8	0.13	1.0	0.4	0.14	C
5	12	36	36.8	19-59.1	155-34.8	8.1	2.8	17	216	102.4	0.16	1.6	0.7	0.12	C
5	16	25	58.0	19-19.3	155-14.1	9.9		14	202	5.0	0.11	0.8	0.4	0.11	C
5	22	55	33.8	19-20.0	155-16.1	9.9		16	157	2.4	0.05	0.5	0.3	0.09	C
6	0	33	33.8	19-11.1	155-13.0	40.5		14	206	18.4	0.38	2.1	3.6	0.14	C
6	3	17	34.7	19-10.5	155-36.3?	7.0		11	168	8.2	0.41	3.9	1.7	0.27	C
6	4	15	44.0	19-14.2	155-22.2	4.1	1.8	13	170	11.2	0.12	0.9	1.0	0.11	C
6	6	51	0.9	19-21.6	155- 6.8	5.3	2.6	16	176	14.8	0.13	1.1	0.8	0.17	C
6	21	51	55.6	19-21.5	155- 1.6?	0.0	2.5	13	213	19.1	0.81	1.3	4.2	0.13	C
6	22	46	42.2	19-19.7	155-16.7	11.4	1.3	8	242	1.4	0.78	1.6	3.9	0.06	C
6	23	13	10.6	19-21.3	155-13.5	9.8	1.6	14	171	3.3	0.08	0.8	0.4	0.11	C
7	0	33	28.2	19-16.6	155- 0.3	34.3	2.6	20	219	110.9	0.28	1.5	2.6	0.13	C
7	0	59	53.5	19-24.3	155-15.6	3.5	0.8	6	239	2.6	0.03	0.1	0.1	0.00	C
7	2	1	15.8	19-17.6	155-13.2	13.6	1.5	9	249	8.6	0.25	1.2	1.6	0.05	C
7	4	13	57.8	19-20.6	155-13.3	13.3	1.4	9	193	4.1	0.11	0.5	0.8	0.03	B
7	5	11	36.9	19-16.9	155- 0.4	32.3	2.8	21	218	110.4	0.19	1.1	1.7	0.09	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 7	6	48	32.4	19-17.5	155- 6.7	3.7	1.8	15	217	13.6	0.32	1.9	1.6	0.21	C
7	6	59	46.5	19-20.0	155-17.5	7.1	1.2	10	216	0.2	0.09	0.5	0.4	0.06	B
7	10	22	28.2	19-20.2	155-13.9	8.0	1.5	15	189	3.8	0.15	1.1	0.7	0.17	C
7	10	23	8.0	19-54.0	155-22.8?	0.0	3.7	23	190	36.4	1.15	4.0	4.5	0.60	D
7	11	8	2.7	19-19.8	155-13.3	7.7	1.7	13	201	5.2	0.20	1.4	0.8	0.19	C
7	17	46	36.0	20- 3.6	155-20.4	9.4	3.0	22	195	123.1	1.15	1.1	6.9	0.14	C
7	18	51	48.3	19-40.9	155-16.2	45.3	2.3	18	140	19.4	0.27	0.8	2.6	0.07	B
8	1	4	25.9	19-17.4	155- 7.1	2.9	1.7	12	217	16.5	0.87	1.7	3.8	0.15	C
8	1	5	17.6	19-24.2	155-25.2	13.3	1.3	9	222	8.1	0.45	1.5	3.9	0.07	C
8	8	4	58.9	20- 4.4	155-22.5	8.1	2.5	19	302	114.8	0.32	1.9	1.2	0.16	C
8	11	17	42.5	19-20.3	155-13.9	8.1	1.5	14	188	3.7	0.16	1.1	0.7	0.18	C
8	11	53	54.0	19-21.3	155-14.4	8.2	1.4	14	164	1.8	0.12	0.9	0.6	0.15	C
8	12	58	2.7	19-21.9	155-13.6	9.9	1.4	15	152	2.2	0.07	0.7	0.4	0.11	C
8	15	13	37.1	19-17.6	155- 0.7	37.6	2.0	13	217	23.7	0.31	1.6	2.9	0.11	C
8	17	20	27.4	19-22.5	155- 7.0	7.6	2.0	14	191	5.4	0.14	1.2	0.9	0.17	C
8	23	21	41.1	19-22.5	155-18.1	22.3	1.7	13	79	2.8	0.11	0.7	1.1	0.07	A
8	23	58	36.6	19-19.6	155-15.9	9.3	1.5	13	163	2.9	0.06	0.6	0.4	0.10	B
9	0	8	12.6	19-21.1	155-10.5	8.6	1.7	15	192	4.4	0.18	1.4	0.8	0.17	C
9	5	32	2.6	19-25.0	155-23.6	8.9	2.6	17	72	6.9	0.07	0.7	0.5	0.12	B
9	5	47	2.2	20- 9.6	155-34.9	33.7	2.6	16	272	121.9		1.2	2.3	0.14	C
9	7	3	21.5	19-19.7	155-25.6	6.7	1.3	11	126	12.7	0.08	0.8	1.0	0.13	B
9	7	46	6.7	19-15.5	155-30.4	8.2	2.1	11	134	11.7	0.11	1.1	1.0	0.18	B
9	8	19	51.8	19-11.4	155- 7.3	35.5	2.3	17	217	22.4	0.19	1.2	1.9	0.12	C
9	8	36	34.0	19-12.9	155- 5.2	4.3	2.2	16	257	18.6	0.69	3.2	1.7	0.24	D
9	13	10	10.3	19-54.4	155-18.7	8.3	1.9	14	255	20.7	0.46	2.5	1.2	0.12	D
10	0	29	13.5	19-22.1	155-23.7	8.7	1.3	14	138	3.5	0.07	0.6	0.4	0.10	B
10	6	22	34.9	19-25.6	155-24.1	7.6	2.3	14	162	6.9	0.07	0.5	0.4	0.08	B
10	10	33	35.4	19- 9.4	155-31.1	7.0	2.1	6	174	14.4	0.33	2.9	2.6	0.20	C
11	11	37	18.9	19-58.2	156- 6.0	0.4	2.5	14	309	113.1	0.22	7.9	5.9	0.12	D
11	21	18	44.7	19-20.7	155-12.9	9.3	1.7	14	188	3.4	0.16	1.1	0.8	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 11	21	49	57.2	19-21.6	155- 8.2	5.4	1.9	17	171	12.4	0.11	0.9	0.7	0.16	C
12	0	51	46.0	19-13.6	155-24.3	30.9		10	167	12.2	0.29	1.7	3.6	0.11	C
12	0	58	23.2	19-45.0	155-20.1?	8.8	2.5	9	221	12.8	0.71	3.9	2.2	0.17	C
12	3	32	30.7	19-18.8	155-14.4	8.9	2.4	19	169	5.8	0.12	1.0	0.6	0.17	C
12	9	24	11.0	19-29.3	155-14.2?	23.6		15	127	11.8	0.19	1.1	2.7	0.19	B
12	20	56	35.5	19-20.5	155-12.6	9.7	2.1	19	166	3.7	0.08	0.8	0.4	0.15	C
12	21	51	0.9	19-10.4	155-32.9	28.8	2.4	17	142	11.0	0.23	1.2	2.4	0.09	B
13	1	6	31.2	19-20.4	155- 7.1	5.0	2.0	16	180	14.5	0.13	0.9	0.7	0.13	C
13	7	22	0.0	19-18.6	154-59.6	7.9	2.3	12	242	19.2	0.40	2.7	0.7	0.08	D
13	9	25	46.4	19-15.2	155-26.9	7.7		15	151	11.2	0.11	0.9	0.7	0.18	C
13	20	15	3.9	19-20.5	155-11.6	9.7	2.1	15	191	3.7	0.13	1.3	0.5	0.17	C
13	22	15	55.8	19-20.9	155-12.9	8.9	1.8	15	183	3.0	0.12	0.9	0.5	0.15	C
13	23	46	53.6	19-16.5	155- 5.3	30.4	2.4	18	225	21.6	0.27	1.5	3.0	0.15	C
14	11	42	58.1	19- 4.2	155-20.9	15.6*		13	238	27.6	0.22	1.7		0.16	D
14	21	37	43.3	19-11.4	155-30.7	4.2		13	154	13.0	0.12	1.0	1.1	0.18	C
14	23	3	28.3	19-19.9	155-14.3	9.1	1.7	16	192	4.0	0.11	0.8	0.5	0.16	C
16	7	41	53.1	19-25.5	154-47.7	50.5*	4.4	24	288	118.8	0.20	2.2		0.21	D
16	13	0	20.2	19-12.8	155-28.8	30.0	2.1	14	163	15.0	0.18	1.4	1.9	0.12	C
16	14	43	38.5	19-20.0	155-52.0	6.9	2.7	17	263	27.8	0.28	1.8	1.2	0.17	C
16	17	7	36.7	19-22.8	155- 8.5	7.9	2.0	15	166	3.2	0.11	1.1	0.8	0.16	C
16	17	9	57.2	19-22.2	155-50.1	7.3	2.4	14	187	19.0	0.13	1.2	0.9	0.14	C
16	19	6	24.9	19-56.0	155-40.3?	33.1	2.6	15	311	28.6	0.23	2.1	4.8	0.14	C
16	21	17	46.6	19-20.9	155-12.6	9.8	1.9	14	187	3.0	0.13	1.0	0.5	0.13	C
17	12	38	28.5	19-21.2	155-15.9	15.1	1.8	12	147	1.5	0.12	0.7	1.2	0.07	B
17	13	16	27.8	19-13.1	155-30.5	6.3	2.8	15	146	12.1	0.08	0.7	0.7	0.13	B
17	15	33	1.1	19-24.1	155-28.6	7.8	2.5	17	93	11.8	0.09	0.8	0.8	0.17	B
17	20	25	53.5	19-22.0	155- 8.9	9.2	1.8	13	190	1.9	0.11	1.1	0.5	0.13	C
17	20	33	36.9	19-21.2	155- 9.2	8.6	1.9	15	194	1.9	0.14	1.1	0.6	0.14	C
17	23	28	0.5	19-19.4	155-16.0	31.8	3.4	23	163	190.0	0.11	0.8	1.0	0.12	C
17	23	34	2.8	19-18.2	155-16.4	28.6	2.1	14	169	7.9	0.12	0.8	1.3	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 18	1	50	34.1	19-20.3	155-17.1	31.6	2.4	19	150	4.2	0.10	0.8	1.0	0.10	B
18	4	6	50.9	19-22.4	155-27.3	7.5	1.9	13	129	8.1	0.09	0.7	0.8	0.14	B
18	8	52	42.8	19-17.1	155-22.2	6.8	1.8	8	169	6.1	0.10	0.8	1.2	0.07	B
18	9	27	32.3	19-21.7	155-25.7	13.2	1.6	10	138	5.1	0.11	0.8	1.8	0.09	B
18	16	29	23.2	19-12.3	155-23.0	30.8	1.7	9	201	14.5	0.68	2.7	7.2	0.11	C
18	18	6	55.7	19-21.6	155- 3.4	1.9	1.9	13	206	16.0	0.49	1.2	2.4	0.11	C
18	20	38	7.8	19-11.6	155-33.5	7.3	2.3	11	139	8.8	0.08	0.8	0.6	0.11	B
18	23	33	6.0	19-24.6	155-30.0	6.7	1.8	12	152	14.3	0.16	1.1	1.3	0.14	C
19	6	53	10.5	19-10.8	155-35.0	8.2	2.3	6	142	8.4	0.11	1.2	0.9	0.06	B
19	13	4	13.3	19-18.3	155-12.8	13.5		9	244	7.7	0.33	1.6	2.1	0.08	C
19	13	5	39.9	19-29.4	155-27.0	10.9	1.5	9	200	6.6	0.11	0.8	0.3	0.05	B
19	14	31	8.9	19-13.8	155- 7.8	3.8	1.8	10	251	15.2	0.53	2.5	2.0	0.12	C
19	15	12	50.0	19-18.6	155-13.3	14.0	1.2	6	235	6.8	0.22	1.2	1.7	0.03	C
19	15	13	28.4	19-17.1	155-13.3	10.6	1.6	9	254	9.0	0.36	2.2	0.8	0.12	C
19	16	3	55.1	19-19.6	155- 6.8	5.1	1.9	13	207	11.4	0.24	1.5	1.0	0.16	C
20	2	25	46.9	19-22.8	155-23.8	11.3	1.3	12	126	4.9	0.11	0.7	1.5	0.10	B
20	2	36	2.8	19-22.3	155-10.7	9.6	1.8	15	126	1.5	0.05	0.6	0.3	0.10	B
20	9	44	43.0	19-22.3	155-26.2	7.4	1.1	10	129	11.7	0.08	0.7	0.9	0.11	B
20	10	43	13.7	19-24.8	155-26.3	7.4	1.4	12	132	9.9	0.12	0.9	1.1	0.18	B
20	12	19	47.2	19-24.6	155-23.7	11.6	1.5	6	189	7.1	0.15	0.7	1.5	0.03	B
20	20	39	15.4	19-19.9	155- 1.7	8.1	1.9	7	230	14.9	1.00	7.6	2.0	0.17	D
21	8	16	2.5	19-17.0	155-24.7?	9.7	2.0	14	171	6.4	0.23	2.1	1.6	0.39	D
21	9	59	54.8	19-29.4	155-53.5?	8.4	2.2	13	184	4.6	0.13	5.3	5.0	0.19	D
21	11	2	28.0	19-15.8	155-22.9	9.3	1.6	13	171	8.2	0.09	0.9	0.8	0.12	C
21	14	7	7.5	19-15.8	155-23.3	9.0	1.0	9	213	8.1	0.18	1.1	0.8	0.09	C
21	15	23	55.4	19-38.1	155- 5.7?	12.5	2.4	20	227	28.5	0.69	5.0	4.7	1.02	D
21	18	16	58.7	19-18.6	155-14.5	14.9	1.5	8	255	5.8	0.12	0.8	0.8	0.03	C
21	23	22	36.4	19-18.6	155-16.9	9.5	2.1	17	166	2.9	0.11	0.9	0.5	0.13	C
21	23	37	30.0	19-19.8	155-14.7	10.3	1.3	16	166	3.9	0.06	0.5	0.3	0.09	B
22	1	48	54.9	19-24.7	155-17.6	7.4	1.2	6	112	0.2	0.42	1.1	2.4	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 22	3	15	11.3	19-23.4	155-46.1	9.2	1.9	6	242	22.2	0.54	2.8	1.7	0.06	D
22	4	52	20.0	19-24.1	155-19.3	7.3	1.4	8	104	1.0	0.38	1.1	2.6	0.13	B
22	6	34	49.3	19-22.4	155-26.1	8.5	1.4	9	122	6.2	0.16	1.3	1.6	0.19	B
22	9	42	56.5	19-15.8	155- 8.5	1.9	2.1	14	199	14.3	0.91	1.5	3.9	0.20	C
22	15	43	0.9	19-18.0	155-16.4	7.8	1.0	10	203	4.3	0.20	1.4	0.8	0.14	C
22	18	3	8.2	19-21.1	155-15.9	8.9	0.9	8	152	1.7	0.20	0.7	1.2	0.06	B
22	18	25	42.2	19-19.3	155-16.1	13.0	1.3	8	212	2.8	0.10	0.5	0.8	0.03	B
23	1	33	19.4	19-17.3	155-24.0	6.4	1.7	10	153	14.0	0.11	1.0	0.9	0.14	C
23	6	17	49.6	19-31.3	155-41.9	6.2	1.9	14	132	23.4	0.06	0.4	0.4	0.06	B
24	4	32	58.6	19-23.9	154-59.3	5.7	2.4	16	203	102.4	0.16	1.3	0.8	0.17	C
24	5	27	40.7	19- 8.9	155-31.3?	25.7	2.4	15	173	13.6	0.26	2.1	2.7	0.18	C
24	11	30	32.2	19-23.4	155-22.4	10.3	1.5	14	111	4.8	0.09	1.0	0.9	0.16	B
25	2	51	38.8	19- 3.3	155- 2.1	12.5	2.6	11	272	41.2	0.44	5.4	11.5	0.19	D
25	5	50	36.9	19- 9.9	155-41.2	9.8	2.6	11	183	11.7	0.10	0.8	0.4	0.07	B
28	3	37	9.5	19-47.0	155-45.3?	5.6		9	161	28.1	0.22	1.4	1.7	0.21	C
28	5	18	33.1	19-26.5	155-24.3	8.7		9	145	9.5	0.20	1.6	1.7	0.12	B
28	7	40	24.5	19- 8.3	155-38.6	8.6	2.4	4	214	9.4				0.00	D
30	10	48	6.8	19-15.0	155- 6.1?	37.6	2.4	13	281	20.4	0.29	2.4	2.5	0.17	C
30	16	2	46.2	19-18.0	155- 5.1?	29.9	2.3	13	280	19.2	0.22	2.0	2.8	0.12	C
30	17	6	22.3	19-59.1	155-20.8	8.4	3.1	12	219	106.1	0.40	1.8	1.5	0.12	C
30	19	19	37.5	19-21.9	155-23.2	9.6	1.9	12	93	3.1	0.06	0.7	0.5	0.10	A
31	4	54	32.7	19-19.8	155-14.3	7.9	2.1	11	202	4.2	0.17	1.3	1.1	0.14	C
31	6	18	12.2	19-21.0	155-17.5	28.8	2.2	12	153	3.8	0.22	1.3	1.9	0.08	C
31	6	55	15.8	19-46.1	155-48.6	5.3	3.3	14	178	29.8	0.11	0.9	0.8	0.11	C
31	11	2	47.7	19-20.4	155- 9.1?	10.5		11	266	3.0	0.21	1.6	0.6	0.13	C
SEP 1	0	16	45.1	19-25.7	155-13.7	30.7	2.2	18	63	5.9	0.11	0.7	1.2	0.10	A
1	2	8	10.9	19-18.6	155-14.1	10.4	1.6	14	216	6.3	0.12	0.9	0.3	0.10	B
1	13	45	23.4	19-22.8	155-27.3	8.1	2.5	16	81	8.5	0.09	0.8	0.8	0.17	B
1	16	39	11.0	19-20.3	155-13.2	7.1	1.5	13	169	4.2	0.16	1.2	0.8	0.17	C
1	17	33	56.8	19-25.6	155-13.9	30.7	2.1	12	112	6.5	0.18	1.1	1.8	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 2	2	26	37.2	19-17.7	155- 7.2	4.8	2.3	15	192	12.8	0.22	1.3	1.1	0.19	C
2	5	44	40.4	19-21.2	155- 5.6	1.1	2.0	12	183	17.1	0.50	1.1	2.5	0.10	C
2	5	56	14.4	19-25.7	155-23.6	8.7	1.6	13	142	6.2	0.09	0.8	0.6	0.13	B
2	7	12	29.6	19-15.9	155- 1.1	16.6*	2.0	11	221	26.8	0.20	1.6		0.14	C
2	8	50	27.9	19-22.1	155- 8.7	4.4		12	168	11.6	0.12	1.1	1.0	0.13	C
2	21	40	48.7	19-22.4	155- 8.8	7.7	2.1	14	169	6.5	0.14	1.3	1.3	0.17	C
3	5	15	54.3	19-12.1	155-25.8	32.4	2.4	13	169	15.5	0.24	1.3	2.6	0.09	C
3	12	0	53.3	19-27.4	155-25.4	7.9	1.9	13	195	5.8	0.12	0.8	0.6	0.10	B
3	14	47	47.4	19-24.3	155-43.3	21.7	2.5	11	231	20.5	0.39	2.1	6.9	0.14	D
4	0	48	14.7	19-18.7	155- 6.4	5.4	2.4	16	191	12.7	0.19	1.2	1.0	0.17	C
4	9	24	38.7	19-22.6	155-22.9	9.3	1.3	11	162	4.5	0.12	0.8	0.7	0.10	C
4	14	19	8.0	19-21.6	155-11.5	10.0	1.7	16	151	2.4	0.06	0.6	0.3	0.10	B
4	18	22	24.9	19-18.7	155-15.0	11.8	1.5	10	194	5.0	0.10	0.9	0.9	0.08	B
4	19	11	35.8	19-21.5	155-10.4?	11.2	1.4	11	181	0.9	0.14	1.6	1.3	0.13	C
4	20	41	16.5	19-23.4	155-29.2	8.4	1.8	16	80	11.8	0.09	0.7	0.9	0.14	B
5	1	40	36.1	19-20.1	155-15.8	29.8	1.5	13	162	2.9	0.20	1.4	2.0	0.11	C
5	8	5	54.6	19-21.7	155-26.5	7.6	1.7	7	242	12.5	0.69	4.1	3.2	0.14	D
5	11	33	3.7	19-21.5	155-11.8	8.8	1.0	13	151	2.1	0.10	0.9	0.6	0.15	C
5	13	12	35.4	19-21.8	155-24.4	8.5	1.3	9	207	3.5	0.16	1.1	0.9	0.11	C
5	15	38	30.2	19-22.4	155- 4.7	13.8	1.9	9	192	9.3	0.15	2.4	0.8	0.08	C
5	16	25	1.4	19-21.6	155-26.1	7.1	1.3	12	121	5.6	0.09	0.8	0.9	0.15	B
5	20	10	47.3	19-21.1	155-25.8	7.9	2.4	18	99	4.7	0.09	0.8	0.7	0.19	B
5	23	17	45.8	19-25.3	155-27.1?	6.2	1.3	10	255	10.7	1.50	8.3	12.9	0.14	D
6	2	44	36.0	19-20.4	155- 7.0	7.7	1.6	13	200	10.3	0.19	1.4	0.9	0.12	C
6	7	20	15.5	19-17.3	155-22.1	8.0	1.0	7	260	5.7	1.33	3.3	6.2	0.04	D
6	9	57	49.7	19-20.8	155- 4.1?	10.6	2.3	17	189	10.4	0.15	1.2	0.5	0.15	C
6	15	54	26.0	19-22.2	155-25.2	8.5	2.1	17	77	5.0	0.10	0.8	0.7	0.16	B
6	22	3	18.4	19-58.8	155-35.0	14.2	2.9	20	184	102.0	0.08	1.8	3.0	0.10	C
7	0	37	5.1	19-20.4	155-15.8	10.8	1.4	9	160	2.8	0.04	0.4	0.3	0.04	B
7	6	31	49.6	19-22.3	155-24.1	8.5	1.4	14	141	4.0	0.08	0.6	0.5	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 7	8	16	54.0	19-21.3	155-14.6	9.6	1.0	8	145	1.6	0.25	0.5	1.5	0.04	B
7	12	19	33.5	19-21.5	155-12.5	11.5	1.2	9	157	1.9	0.16	0.8	1.3	0.06	B
7	13	59	13.1	19-24.5	155-24.3	8.5	1.5	12	185	8.1	0.08	0.6	0.6	0.09	B
7	17	24	50.4	19-25.8	155-11.7	19.8	1.8	12	252	6.3	0.38	1.7	2.7	0.05	C
7	17	45	3.1	18-34.8	155-24.4	8.0	2.8	12	322	57.3		2.2		0.14	D
7	18	50	3.0	19-25.6	155-26.1	10.8	1.4	11	188	9.2	0.11	0.8	0.4	0.10	B
7	18	58	22.3	19-20.6	155-13.8	11.3	1.5	10	168	3.4	0.07	0.7	0.7	0.08	B
7	19	21	29.5	19-26.5	155-13.9	30.8	2.3	20	58	6.1	0.13	0.8	1.4	0.13	B
7	21	20	49.0	19-21.0	155-15.1	11.9	1.1	9	146	1.5	0.08	0.4	0.7	0.04	B
8	0	51	57.1	19-21.7	155-16.6	34.8	1.8	10	118	2.3	0.55	2.1	4.8	0.11	B
8	2	13	5.4	19-21.5	155- 4.0?	16.4	1.5	9	202	10.6	0.40	3.4	6.4	0.15	C
8	5	40	33.4	19-20.3	155- 4.0	8.0	2.2	11	193	20.0	0.18	1.7	1.0	0.13	C
8	10	41	8.3	19-24.1	155-27.1	11.2	1.6	12	156	9.7	0.09	0.7	0.4	0.09	B
8	12	9	35.3	19-13.4	155-20.5	32.1	2.1	17	178	9.1	0.21	1.2	2.1	0.12	C
8	14	4	47.1	19-20.7	155- 8.6	3.8	1.6	12	193	11.8	0.21	1.4	1.8	0.15	C
8	19	14	4.4	19-18.9	155-13.9	12.4	1.5	8	195	5.9	0.14	1.5	1.2	0.11	C
8	19	55	4.2	19-22.2	155- 4.8	13.2		8	194	9.1	0.08	1.7	0.6	0.05	C
8	22	45	27.6	19-19.6	155- 7.3	6.1	1.5	10	206	6.2	0.33	2.2	1.6	0.20	C
8	23	31	51.1	19-17.4	155-14.1	15.5	1.5	8	236	7.6	0.29	1.6	2.4	0.07	C
8	23	34	54.0	19-20.6	155-10.8	10.6	1.4	9	188	2.7	0.09	0.9	0.6	0.06	B
9	0	4	21.8	19-21.6	155-16.2	33.1	2.8	22	125	1.5	0.14	0.9	1.4	0.13	B
9	0	40	23.1	19- 3.2	155-20.4?	0.0*	2.3	11	226	27.4	2.66	17.3		0.56	D
9	0	42	16.1	19- 1.6	155-19.5	16.9*	2.1	10	235	30.2	0.34	2.6		0.25	D
9	0	47	4.4	18-58.3	155-14.8	17.1*	2.3	10	285	36.9	0.65	4.8		0.27	D
9	0	48	19.1	19- 4.2	155-20.4?	11.7	2.0	13	253	25.6	0.56	2.7	2.0	0.27	D
9	13	27	4.4	19-19.2	155-15.8	7.6	1.1	11	182	3.3	0.19	1.1	0.9	0.15	C
9	13	36	5.1	19-20.4	155- 7.1	5.7	1.5	15	182	5.8	0.15	1.2	1.0	0.16	C
9	14	46	15.4	19-20.9	155-10.3	6.7	1.4	11	230	1.8	0.26	1.5	1.0	0.13	C
9	18	16	36.4	19- 2.6	155-18.1	3.4	2.2	5	231	32.5				0.03	D
9	21	30	30.1	19-21.4	155-13.8	9.7	1.3	10	149	2.8	0.14	1.0	0.7	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 9	23	3	44.6	18-59.8	155-26.2	29.4*	2.2	13	244	19.6	0.18	1.6		0.10	D
10	0	23	7.3	19-22.7	155-22.8	9.0	1.3	15	159	4.7	0.12	0.8	0.6	0.14	C
10	3	9	3.1	19-13.4	155- 3.3	4.5	1.9	11	267	19.5	0.79	3.7	1.7	0.13	D
10	3	10	20.3	19-10.4	155- 3.0?	0.2	2.2	12	271	24.4	1.83	4.2	5.7	0.18	D
10	5	53	4.6	19-21.3	155- 9.3	9.3	1.2	12	186	1.5	0.12	1.0	0.7	0.11	C
10	6	20	3.1	19-24.0	155-21.1	8.4	1.5	12	131	2.5	0.23	0.6	1.6	0.11	B
10	6	20	45.4	19-24.0	155-21.2	9.5	1.4	13	133	2.7	0.08	0.6	0.5	0.11	B
10	7	32	56.9	19-21.9	155-10.9	9.8	1.5	16	138	1.6	0.07	0.7	0.4	0.13	B
10	14	44	54.0	19-19.6	155-16.8	11.4	1.2	8	192	1.3	0.11	0.5	0.8	0.02	B
10	20	6	56.8	19-21.1	155-48.4	4.8	2.1	8	289	38.3	0.33	8.2	7.6	0.10	D
10	20	32	33.7	19-17.5	155-25.5	7.6	2.0	8	140	6.3	0.21	1.9	2.0	0.17	B
10	20	55	47.5	19-24.7	155-17.2	0.0*	0.2	6	96	0.5	0.13	0.7		0.15	C
10	23	55	29.3	19-24.1	155-16.2	0.0*	0.5	5	217	1.7	0.30	1.2		0.10	D
11	4	37	48.9	19-20.5	155-13.9	7.9	1.4	10	169	3.4	0.19	1.2	0.9	0.17	C
11	7	34	16.1	19-21.1	155- 9.8	12.5	1.5	9	263	1.3	0.45	2.2	2.9	0.07	C
11	10	7	57.9	19-21.5	155-25.1	8.2	2.2	16	83	4.0	0.07	0.7	0.8	0.17	B
11	11	18	12.3	19-21.4	155-13.3	7.3	1.8	14	153	2.4	0.16	0.9	0.9	0.17	C
11	20	17	9.6	19-24.4	155-24.1	8.8	2.3	14	157	7.7	0.06	0.5	0.4	0.08	B
12	0	42	0.9	19-22.9	155- 7.2?	7.8	1.9	14	179	5.3	0.15	1.4	1.0	0.15	C
12	5	53	48.1	19-20.9	155-14.3	30.6	2.1	15	153	2.4	0.15	1.1	1.4	0.09	C
13	1	52	30.3	19-36.3	156-22.5	8.0*	3.3	21	239	156.4	0.26	2.0		0.12	D
13	7	59	1.5	19-21.4	155-23.6	8.2	1.6	13	137	2.4	0.09	0.8	0.7	0.12	B
13	10	52	22.2	19-24.3	155-22.5	10.5		14	136	5.0	0.06	0.6	0.4	0.10	B
13	12	19	11.5	19-23.4	155-25.0	11.1	1.5	11	221	6.6	0.18	1.1	0.5	0.11	C
13	18	16	25.2	19-23.1	155-44.6	15.1*	2.6	19	149	20.1	0.11	1.0		0.15	C
13	19	38	56.1	19-22.2	155-23.8	9.1	2.2	17	74	3.7	0.06	0.6	0.4	0.12	B
13	20	18	12.3	19-22.6	155-24.1	9.8	1.0	12	191	4.7	0.11	0.7	0.7	0.09	C
13	23	16	2.9	19-21.2	155- 7.3	4.3	1.7	14	178	15.2	0.11	0.7	0.7	0.11	C
13	23	33	53.4	19-21.8	155-25.2	8.2	1.3	15	116	4.4	0.09	0.8	0.7	0.19	B
14	2	23	26.0	19-24.9	155-23.5	9.2	1.6	14	173	6.9	0.08	0.6	0.4	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 14	4	52	9.4	19-20.1	155-11.0	10.9	1.5	10	191	3.5	0.12	1.6	1.1	0.11	C
14	5	39	13.4	19-28.6	155-51.7	8.0	2.3	11	158	7.9	0.17	3.2	3.7	0.10	C
14	6	6	58.3	19-22.5	155- 5.8	14.2	1.4	8	335	7.4	0.19	1.5	0.4	0.04	C
14	11	48	55.0	19-35.7	156-31.0	8.0*	3.1	12	318	144.0	2.28	13.7		0.12	D
14	23	48	51.7	19-21.5	155-25.3	8.5	1.5	14	116	4.2	0.09	0.8	0.8	0.17	B
15	8	12	16.0	19-28.1	155-28.9	6.9	2.4	13	154	10.2	0.19	1.2	1.7	0.21	C
15	18	28	54.6	19-25.6	155-27.8	9.2	1.8	16	143	11.1	0.11	0.8	1.0	0.18	B
15	19	6	9.2	19-22.6	155-23.6	9.1	1.9	16	73	4.4	0.05	0.5	0.4	0.10	B
15	22	52	42.3	19-19.6	155-13.6	10.2	1.9	18	170	5.0	0.08	0.8	0.4	0.13	C
15	23	6	17.1	19-22.2	155-24.7	8.2	1.6	15	116	4.5	0.09	0.8	0.8	0.18	B
16	3	21	56.3	19- 8.2	155-15.0	59.8	2.7	17	212	19.0	0.47	1.9	4.0	0.11	C
16	3	43	1.3	19-21.5	155-13.9	10.5	2.0	17	144	2.4	0.07	0.6	0.3	0.10	B
16	5	8	6.6	19-21.7	155-14.1	10.4	1.8	16	141	2.1	0.06	0.6	0.3	0.10	B
16	18	17	55.6	19-25.2	155-28.8	5.0	1.8	14	192	12.8	0.18	1.1	1.8	0.16	C
16	23	39	13.6	19-23.6	155-25.3	10.5	1.8	13	204	7.1	0.10	0.6	0.4	0.08	B
17	4	25	24.5	19-21.0	155-12.4	8.2	1.9	17	164	2.9	0.12	0.9	0.5	0.16	C
17	8	20	18.5	19-22.8	155-23.8	9.3	1.6	14	140	4.8	0.08	0.7	0.7	0.11	B
17	20	2	7.1	19-23.4	155-26.5	11.3	2.6	19	80	8.2	0.06	0.5	0.3	0.09	B
18	3	25	12.6	19-18.3	155-25.6	6.2	1.8	15	122	5.4	0.10	0.8	1.3	0.18	B
18	12	10	31.3	19-21.2	155-13.7	13.3	1.2	10	156	3.1	0.13	0.6	1.1	0.05	B
18	15	40	8.4	19-24.4	155-15.5?	1.3	0.6	9	240	2.9	0.46	2.1	2.9	0.10	C
18	17	42	26.6	19-40.4	155-54.5?	10.1	2.3	9	281	49.0	1.24	9.8	7.3	0.53	D
18	19	15	41.4	19-21.6	155-25.1?	10.6	1.2	14	115	4.0	0.11	1.0	1.7	0.18	B
18	19	33	23.6	19-21.0	155-20.0	1.3	0.9	10	98	4.8	0.10	0.5	1.2	0.12	B
18	19	46	10.9	19-11.1	155-38.2	7.0	2.0	9	237	14.0	0.16	1.0	0.5	0.09	C
19	0	28	33.9	19-21.3	155-15.3	11.1	0.8	9	140	1.0	0.19	0.5	1.1	0.05	B
19	0	59	28.4	19-24.2	155-25.9	8.1	1.7	15	128	8.7	0.09	0.7	0.9	0.15	B
19	7	8	17.3	19-18.2	155- 6.5	9.7	1.8	11	220	9.1	0.28	2.0	0.7	0.12	C
19	7	18	59.1	19- 1.0	155-23.6	8.3	2.3	15	271	34.8		3.5	3.6	0.18	D
19	7	21	53.6	19- 8.6	155-27.1	37.9	1.8	8	262	21.0	3.34	12.5	26.6	0.17	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 19	7	23	34.7	19- 7.5	155-26.2?	36.7	2.1	12	214	19.5	0.20	1.7	2.2	0.11	C
19	7	27	16.9	19- 9.6	155-28.9?	38.3	1.7	8	180	17.3	0.34	1.8	7.2	0.10	C
19	7	38	49.9	19- 5.4	155-19.9?	16.8*	1.8	7	262	27.9	0.72	4.9		0.24	D
19	7	40	28.6	19-19.5	155-33.5	0.5	2.0	7	182	26.2	1.89	2.3	9.6	0.11	C
19	9	52	43.6	19-18.0	155- 9.2	7.2	1.6	9	216	7.2	0.31	2.0	1.3	0.15	C
19	11	13	28.8	19-23.9	155- 1.1?	0.1	1.9	13	194	15.6	0.62	1.2	3.5	0.20	C
19	12	10	22.6	19-25.3	155-24.4	10.8	1.8	17	124	7.7	0.05	0.4	0.3	0.08	B
19	17	13	28.8	19-22.3	155- 9.4	9.0	1.7	12	166	1.4	0.12	1.4	0.7	0.15	C
19	17	45	40.8	19-21.3	155-12.3	9.1	2.2	18	156	2.3	0.06	0.6	0.4	0.13	C
19	17	48	41.2	19-20.1	155-11.1	14.9	1.5	8	237	3.6	0.10	0.6	0.7	0.02	C
19	23	3	45.1	19-20.2	155-16.1	31.8	2.8	22	151	2.2	0.11	0.7	1.0	0.11	C
19	23	12	18.7	19-19.6	155-14.3	10.2	1.0	16	183	4.4	0.06	0.5	0.3	0.09	B
19	23	24	6.0	19-18.6	155-13.7	13.2	1.4	9	216	6.6	0.27	1.2	2.1	0.07	C
20	0	19	2.8	19-21.3	155-13.6	13.6	1.2	9	154	3.2	0.18	0.7	1.4	0.05	B
20	3	46	37.1	19-21.2	155-12.5	14.9	1.4	9	165	4.6	0.08	0.7	0.5	0.04	B
20	4	46	56.6	19-21.2	155-25.5	8.9	1.4	12	123	4.3	0.13	1.0	1.2	0.19	B
20	7	4	46.6	19-27.7	155-17.3	31.4	2.0	8	208	6.0	0.29	1.7	2.4	0.07	C
20	10	20	17.1	19-58.9	156- 0.3	40.4	3.4	23	172	29.3	0.16	1.1	3.1	0.13	C
20	13	16	10.1	19-22.6	155-37.3?	10.1	2.3	15	118	14.3	0.13	0.9	1.4	0.15	B
20	14	39	24.1	19-27.5	155-25.5	8.3	1.7	13	238	5.7	0.15	0.8	0.5	0.08	C
20	23	3	53.5	19-18.8	155-14.1	7.8	1.3	10	207	5.9	0.27	1.5	1.1	0.19	C
21	0	44	21.0	19-20.7	155-11.6	8.1	1.6	11	195	3.5	0.16	1.2	0.6	0.14	C
21	1	26	36.1	19-20.0	155-12.3	10.0	4.4	22	171	4.6	0.11	1.0	0.5	0.21	C
21	1	33	0.6	19-20.5	155-12.9	9.0	2.1	20	167	3.8	0.08	0.7	0.4	0.16	C
21	1	40	31.5	19-21.3	155-12.7	9.6	2.0	17	153	2.2	0.06	0.6	0.3	0.12	C
21	2	17	46.6	19-21.2	155-12.7	9.7	1.6	16	164	2.5	0.08	0.7	0.4	0.12	C
21	2	19	55.1	19-21.4	155-12.6	8.9	1.9	16	151	2.0	0.09	0.7	0.4	0.14	C
21	3	7	46.7	19-21.5	155-13.0	9.5	1.7	16	146	2.0	0.08	0.7	0.4	0.14	B
21	4	9	31.1	19-21.4	155-13.5	7.4	1.5	11	151	3.2	0.12	0.8	0.7	0.12	C
21	4	14	52.9	19-21.0	155-13.0	9.7	1.7	16	166	2.9	0.08	0.7	0.4	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 21	5	59	0.9	19-22.4	155- 8.9	6.5	2.1	16	168	2.3	0.13	1.0	0.8	0.20	C
21	8	6	37.4	19-24.9	155-18.1	15.0	2.2	8	88	1.0	0.10	0.8	1.2	0.06	A
21	8	6	40.3	19-27.9	155-14.2	5.6	2.4	6	161	7.6	0.13	0.5	2.9	0.03	C
21	11	22	40.3	19-10.8	155-39.1	9.5		15	216	8.3	0.24	2.1	0.8	0.16	C
21	13	45	55.7	19-20.7	155-11.7	14.2	1.8	10	193	3.6	0.21	1.4	1.7	0.07	C
21	14	43	52.3	19-15.9	155-15.7	9.7	1.8	10	225	6.5	0.25	1.5	0.8	0.16	C
21	14	55	24.0	19-16.2	155-15.9	9.5		12	221	5.8	0.21	1.3	0.8	0.16	C
21	15	14	58.3	19-21.9	155-12.4	9.4	1.7	17	139	1.1	0.07	0.7	0.4	0.14	B
21	15	21	31.9	19-21.2	155-13.2	9.9	1.6	15	158	2.6	0.11	0.8	0.5	0.12	C
21	15	28	52.4	19-19.9	155-11.6	15.3	1.8	9	215	4.5	0.16	1.4	1.5	0.05	C
21	16	28	46.7	19-37.2	155-11.7	13.8*	2.1	8	252	23.7	0.10	0.9		0.03	D
21	17	13	15.0	19-12.7	155-32.8	8.1	2.4	9	133	8.5	0.13	1.3	1.1	0.16	B
21	19	54	49.8	19-21.2	155-12.9	9.4	1.8	15	154	4.4	0.08	0.7	0.5	0.12	C
21	21	7	37.4	19-20.8	155-12.8	9.3	2.1	18	163	3.2	0.07	0.7	0.4	0.12	C
21	22	35	26.3	19-15.8	155-15.1?	8.1	3.0	23	182	7.4	0.23	1.3	0.9	0.31	D
22	1	49	13.4	19-52.8	155-14.4	18.0*		18	212	45.2	0.13	1.1		0.13	C
22	2	5	31.3	19-20.9	155-13.1	8.9	1.8	18	159	3.2	0.09	0.7	0.5	0.16	C
22	3	12	28.8	19-28.9	155-55.2	9.4	2.2	12	213	4.1	0.25	3.4	2.0	0.11	C
22	4	50	42.3	19-21.2	155-13.3	9.0	1.5	16	153	2.8	0.12	0.9	0.6	0.14	C
22	7	20	38.2	19-32.0	155- 5.9	9.9	2.0	17	159	20.1	0.69	0.7	4.8	0.10	C
22	7	26	22.7	19-16.4	155-15.9	8.7	1.7	13	220	5.5	0.23	1.4	0.7	0.17	C
22	7	29	24.0	19-19.5	155-15.9	8.3	1.5	14	171	2.8	0.12	0.9	0.6	0.16	C
22	8	32	5.5	19-22.6	155-17.6	17.8		11	81	2.0	0.17	0.8	1.6	0.08	A
22	9	30	13.5	19-20.6	155-12.7	6.7	1.4	9	180	5.0	0.18	1.1	0.9	0.13	C
22	17	15	22.8	20-15.0	155-43.4	8.0*	3.4	20	175	32.3	0.08	1.0		0.11	C
22	18	48	51.2	19-29.3	155-25.9	10.0	1.9	10	191	4.6	0.10	0.8	0.5	0.07	B
23	0	50	19.8	19-21.1	155-14.6	7.8	1.5	13	149	1.7	0.17	1.1	0.9	0.18	B
23	2	21	35.6	18-55.8	155-24.8	35.2	2.5	12	286	25.2	2.07	8.9	16.4	0.13	D
23	7	50	32.6	19-22.9	155-17.8	35.9	2.0	7	126	2.1	0.15	2.6	1.4	0.04	C
23	11	46	16.4	19-20.4	155- 9.4	8.6	1.5	13	194	2.8	0.12	1.0	0.6	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP	23	12	33	21.1	19-20.8	155-12.2	13.0	1.5	12	167	7.1	0.09	0.9	0.6	0.09	C
	23	17	38	27.8	20-17.0	155-52.4	31.9	2.8	19	163	138.2	0.14	1.3	3.4	0.13	C
	23	17	39	9.6	20-15.6	155-54.6	35.8	2.8	19	157	137.3	0.13	1.1	2.8	0.10	C
	23	18	33	5.8	19-24.0	155-17.2	14.1	1.8	16	98	1.3	0.06	0.6	0.5	0.10	A
	23	18	33	54.1	19-24.6	155-16.9	14.7	2.5	16	99	0.6	0.06	0.5	0.6	0.08	A
	23	21	45	1.1	19-21.1	155-12.9	9.1	1.7	15	155	2.6	0.11	0.8	0.5	0.12	C
	24	3	17	46.9	19-23.0	155-15.3	2.9	0.7	8	153	1.5	0.09	0.7	0.4	0.09	B
	24	4	23	44.9	19-17.3	155-20.7	9.3	1.7	13	157	3.9	0.08	0.7	0.6	0.12	C
	24	4	50	13.6	19-20.1	155-13.9	9.9	1.3	10	178	3.9	0.13	1.0	0.7	0.11	C
	24	6	14	27.1	19-22.0	155-23.7	8.1	1.3	11	111	3.3	0.12	0.9	1.1	0.17	B
	24	7	37	37.8	19-19.3	155-14.8	10.0	1.2	11	187	4.7	0.15	1.2	0.8	0.14	C
	24	13	8	59.1	19-21.3	155-13.0	7.3	1.5	12	159	2.5	0.16	1.0	0.8	0.16	C
	24	16	15	13.6	19-24.4	155-25.4?	11.7		12	151	8.6	0.08	0.5	1.2	0.06	C
	25	0	59	43.1	19-23.8	155-27.1	11.0	1.8	12	156	9.4	0.12	0.8	1.5	0.07	B
	25	1	18	46.6	19-10.7	155-24.8	14.6*		7	199	17.2	0.29	3.2		0.22	C
	25	2	19	16.3	19-24.1	155-24.2	10.0	2.3	17	74	7.3	0.04	0.4	0.3	0.08	A
	25	3	58	18.5	19-23.5	155-28.2	8.5	1.3	11	137	10.4	0.14	1.1	1.2	0.16	B
	25	4	55	58.1	19-21.7	155-29.5	9.1		12	138	11.2	0.12	1.0	0.9	0.17	B
	25	6	27	55.0	19-25.3	155-29.3	11.0	1.5	8	150	13.3	0.09	0.6	0.5	0.07	B
	25	8	28	13.9	19-24.5	156- 1.0	9.7	2.3	12	286	15.9	1.88	10.7	2.1	0.16	D
	25	8	29	43.1	19-21.3	155-12.7	9.7		15	160	2.3	0.06	0.7	0.3	0.11	C
	25	13	0	15.0	19-20.2	155-26.0	7.5	1.9	13	114	4.8	0.09	0.8	1.0	0.17	B
	25	17	15	7.1	19-20.9	155-16.2	33.1	2.7	18	137	2.6	0.13	0.9	1.3	0.12	B
	26	3	15	42.3	19-28.9	155-50.2?	7.9	2.4	10	153	10.0	0.29	7.0	10.1	0.10	D
	26	6	3	6.2	19-22.8	155-22.6	9.8	2.2	17	70	4.9	0.05	0.5	0.3	0.10	B
	26	13	51	55.6	19-24.9	155-25.2?	10.9	1.4	14	126	9.3	0.06	0.6	0.4	0.10	B
	26	14	32	29.4	19-18.4	155-12.9	5.8	1.0	14	198	7.5	0.19	1.2	1.0	0.18	C
	26	14	37	17.6	19-25.0	155-27.0	10.4	3.4	19	59	10.9	0.09	0.7	0.5	0.17	B
	26	15	43	50.7	19-21.2	155-13.3	9.1	1.1	15	151	3.7	0.13	0.9	0.6	0.15	C
	26	15	44	14.1	19-28.7	155-28.2	13.2	2.0	11	285	8.9	0.41	2.5	0.6	0.08	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 26	22	0	57.9	19-11.5	155-29.4	35.0	1.9	16	160	14.9	0.37	1.4	3.6	0.10	C
27	2	35	13.6	19-20.9	155-12.3	9.7	2.8	19	165	3.0	0.07	0.7	0.3	0.12	C
27	2	44	32.9	19-20.9	155-11.3	13.9	1.6	9	192	2.9	0.29	1.0	2.0	0.05	C
27	7	27	16.1	19-20.6	155-10.3	15.1	2.1	10	237	2.3	0.32	1.3	2.1	0.06	C
27	8	37	23.1	19-20.5	155-13.6	10.1		16	163	3.9	0.07	0.6	0.3	0.10	C
27	9	41	6.7	19-20.6	155-14.9	31.1	2.0	14	163	2.4	0.17	1.2	1.7	0.10	C
27	19	39	6.9	19-21.1	155-25.5	8.1	2.0	16	95	4.2	0.08	0.8	0.9	0.18	B
27	22	0	16.1	19-13.9	155-22.3	3.7	1.3	12	193	11.8	0.15	1.1	1.5	0.15	C
27	22	1	29.0	19-20.8	155-19.6	2.5	0.9	9	99	4.2	0.08	0.4	0.7	0.09	A
27	22	45	37.3	19-23.8	155-17.7?	3.1	0.5	7	134	1.6	0.88	2.5	4.4	0.29	C
28	1	46	50.5	19-28.2	155-16.0?	3.4	1.2	8	316	5.9	0.70	3.1	3.0	0.20	D
28	1	58	23.9	19-27.1	155-14.5?	8.0*	0.7	7	309	6.0	0.37	5.8		0.38	D
28	2	26	45.1	19-21.4	155-13.2	14.7	1.2	10	156	2.4	0.10	0.9	0.7	0.06	B
28	2	51	29.9	19-24.6	155-16.9	0.0*	0.5	5	205	0.5	0.13	0.6		0.05	D
28	3	18	9.6	19-24.9	155-14.9	3.3	0.8	7	276	3.7		0.5	1.4	0.06	C
28	4	39	56.4	19-18.8	155- 5.7	4.9	2.4	19	194	9.3	0.27	1.5	1.3	0.23	C
28	6	46	41.7	19-21.2	155- 9.4	8.7	1.8	15	173	1.4	0.13	1.1	0.6	0.15	C
28	8	18	44.6	19-24.7	155-16.9	0.0*	0.6	7	163	0.4	0.10	0.5		0.06	C
28	8	27	54.3	19-20.4	155-13.3	9.2	1.7	15	178	4.1	0.13	0.8	0.7	0.13	C
28	8	51	51.3	19-11.2	155-33.2	8.2	2.5	16	139	9.7	0.11	1.1	0.8	0.18	B
28	8	56	28.7	19-21.7	155- 9.5	7.4		13	280	0.9	0.18	1.1	0.6	0.12	C
28	14	14	54.6	19-21.6	155-16.9	27.4	2.0	14	110	2.2	0.33	1.6	3.0	0.11	B
28	14	15	11.8	19-22.5	155-16.1	30.5	2.1	12	117	0.3	0.41	1.7	3.5	0.09	B
28	15	56	15.0	19-19.4	155-24.3	7.8		11	137	2.2	0.12	1.1	0.9	0.15	B
28	18	29	45.5	19-18.5	155-13.0	7.5	2.3	18	175	7.2	0.20	1.3	0.9	0.27	C
28	18	30	44.4	19-18.7	155-13.1	14.6		8	219	6.9	0.09	0.8	0.5	0.04	B
28	18	31	39.7	19-18.6	155-13.1	14.8	1.8	8	220	7.0	0.13	0.9	1.1	0.04	B
28	19	6	8.0	19-10.0	155-23.0	48.0	2.4	13	244	16.5	0.77	2.9	6.0	0.10	D
28	21	48	37.9	19-20.5	155-19.9	2.1		10	110	4.5	0.05	0.3	0.5	0.07	A
29	2	34	15.6	19-22.7	155-15.3	6.1	1.2	12	138	1.2	0.13	0.8	0.8	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 29	4	1	37.6	19-22.5	155-17.8	30.9	2.6	21	65	2.5	0.14	0.9	1.4	0.15	B
29	6	36	46.6	19-23.0	155-26.6	6.4	2.3	16	98	7.7	0.10	0.8	0.8	0.20	B
29	7	54	22.0	19-26.0	155-14.6	3.1	0.9	5	320	4.7		2.2		0.15	D
29	12	30	49.6	19-25.1	155-27.1	11.2	1.9	14	216	11.0	0.08	0.6	0.6	0.06	B
29	14	44	26.1	19-21.1	155-10.0	7.4	1.7	13	251	1.4	0.16	1.0	0.5	0.12	C
29	15	59	22.1	19- 8.9	155-36.8	6.6		7	179	9.8	0.18	1.7	1.1	0.10	C
29	16	29	4.9	19-23.5	155-23.3	12.2	1.2	7	219	6.3	0.34	2.0	3.8	0.09	C
29	16	36	40.1	19-21.4	155-25.3	7.8	1.6	14	118	4.1	0.14	1.0	1.4	0.22	B
29	18	43	49.0	19-29.3	155-16.5	0.4*	1.1	7	322	7.4	0.70	2.8		0.18	D
29	19	55	38.8	19-26.4	155-48.8	1.1	2.2	13	155	14.3	0.63	2.2	4.2	0.09	C
29	22	27	7.3	19-20.1	155-19.5	25.1	1.6	10	95	3.7	0.35	1.4	3.2	0.06	B
30	8	8	21.4	19-23.2	155-24.6	5.2	2.3	8	214	6.0	0.12	0.6	0.7	0.07	B
30	10	8	12.9	19-20.3	155-14.2	9.9		17	163	3.4	0.07	0.6	0.4	0.12	C
30	14	22	52.4	19-19.2	155-15.5	11.8		11	183	3.6	0.09	0.5	0.7	0.05	B
30	21	57	18.8	19-45.0	155-17.1?	43.3	2.2	9	261	18.1		6.3		0.28	D
30	21	59	52.1	19-20.9	155-12.3	9.8	1.5	12	174	2.9	0.07	0.6	0.3	0.08	B
30	22	6	28.5	19-21.7	155-12.4	0.3	0.7	7	149	1.4	0.13	0.5	2.8	0.06	B

Table 3.--Felt Earthquakes

Date	Hawaii Standard Time H	M	S	Magnitude	Location of Felt Report
Jul 10	21	40	12.48	3.2	Kalapana
10	21	52	32.36	3.1	Kalapana
15	16	12	19.59	3.5	Hilo
21	22	46	34.14	2.9	Kealakekua
22	16	15	58.12	3.8	Paauilo, Papaikou, Honokaa
Aug 4	21	45	46.84	2.8	Kapapala Ranch
7	10	23	08.00	3.7	Paauilo, Paauhau, Honokaa, Hilo, Pohakuloa, Waimea
16	07	41	53.13	4.4	Hilo
17	23	28	00.52	3.5	Kapapala Ranch
Sep 21	01	26	36.11	4.5	Island-wide
26	14	37	17.65	3.4	Kapapala Ranch

Acknowledgements: Several people felt earthquakes during the third quarter of 1970 and reported their observations to HVO; that information is gratefully acknowledged.

JUL '70 – SEPT '70

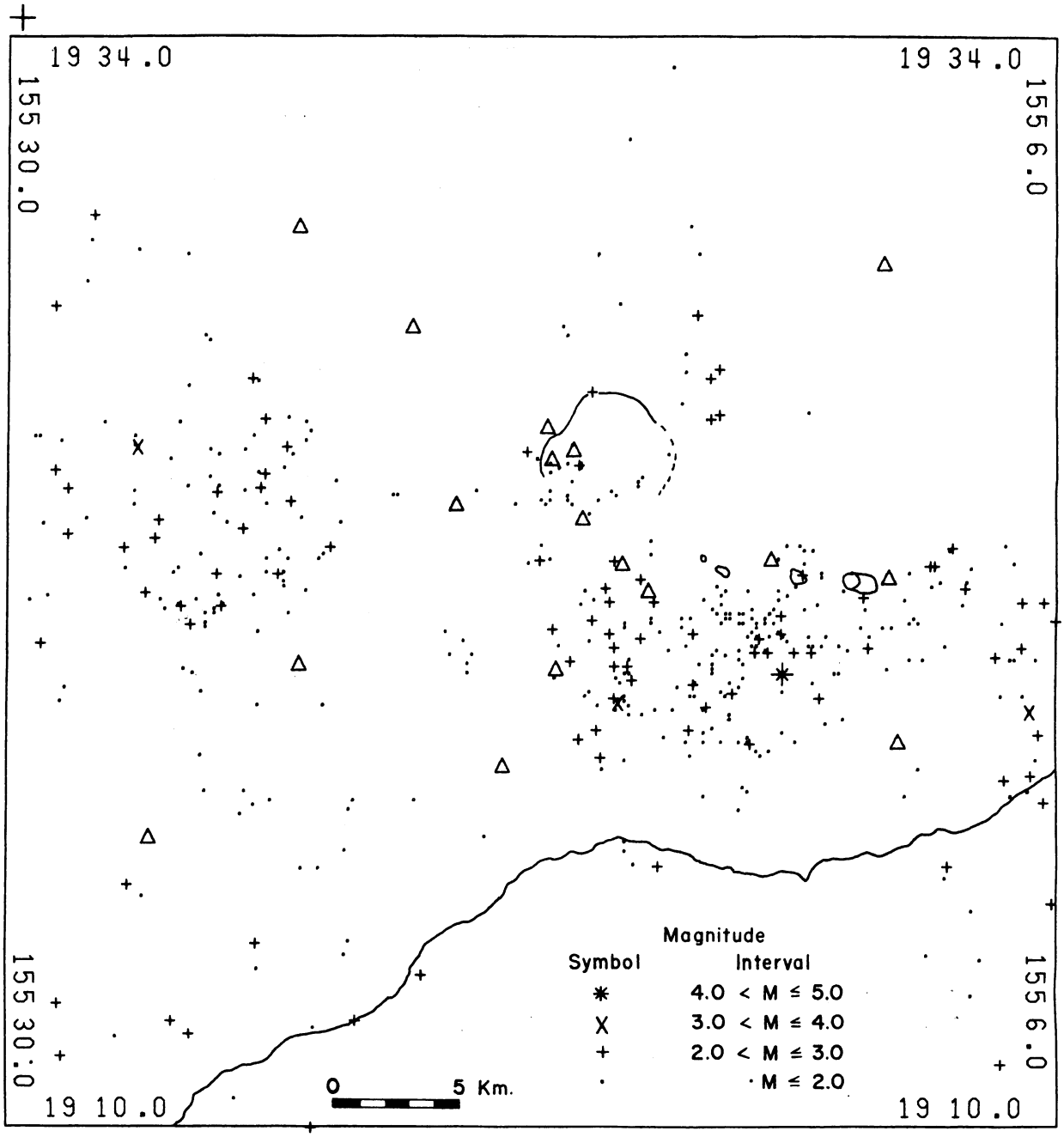

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

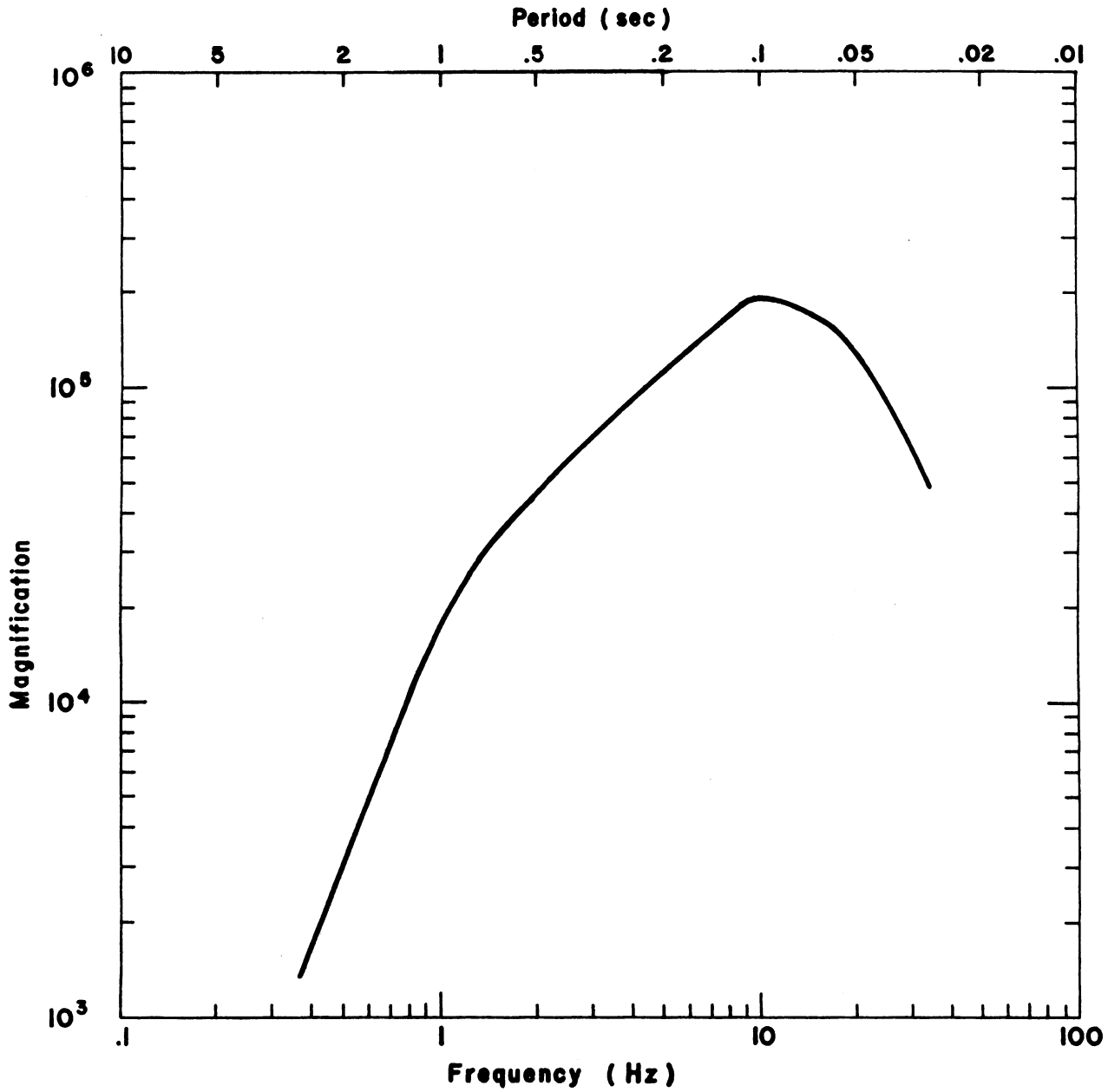

Figure 2.--Response curve for System II, EV-17, Teledyne seismic preamplifier.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
EAST KOAE	EKO	19 22.17	155 14.99	1000	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
LAVA FLOW	LAF	19 28.70	154 53.80	210	1				Temporary
LOWER STATION	LOS	19 28.40	154 53.10	180	1				Temporary
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
WAIOHINU	WAO	19 3.60	155 36.60	425					Discontinued 9/1/70
WEST PIT	WPT	19 24.70	155 17.50	1115	3	1.34			
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	3	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	3	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KAHUELA	KAH	20 1.90	155 42.00	740	2	0.7			
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Fwing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

Table 5.--Seismic Instrumentation

1. SEISMOMETERS

EV-17	Electrotech EV-17 1.0 sec period moving magnet vertical component seismometer.
EV-17H	Same as above, but horizontal component.
HS-10	Hall-Sears 0.5 sec period moving coil seismometer.
HVO-2	0.8 sec period moving coil seismometer.

2. SEISMOGRAPHS

HVO-1	Vertical-component electromagnetic seismograph with a peak magnification of about 20,000 at 0.25 sec.
15-90	Press-Ewing System: 3-component long-period Press-Ewing seismograph system with pendulum and galvanometer periods of 15 and 90 seconds, respectively.
EV-17/3.5 cps	galv, EV-17 H/3.5 cps galv, etc. Short-period electromagnetic seismographs composed of the seismometers and galvanometers indicated. Response similar to HVO-1. Poorly calibrated.

3. AMPLIFIER AND SIGNAL TRANSMISSION SYSTEMS

System I	HVO-built solid-state seismic preamplifier (voltage gain, 200x), direct signal transmission over hard wire to HVO, HVO-built solid-state amplifier and galvanometer driver.
System II	Develco or Teledyne seismic preamplifier--voltage controlled oscillator, signal transmission on audio FM carrier over hard wire or FM radio link to HVO, discriminator
Geotech PTA	Short-period Geotech photo-tube amplifier.

4. TIMING SYSTEMS

RM-USGS	Crystal-controlled chronometer employing solid-state binary dividers to produce minute and hour marks. Typical drift rates are a few milliseconds per day.
TS-100	Sprengnether crystal-controlled chronometer. Output and performance characteristics are similar to those of RM-USGS.

5. TELEMETERED SYSTEM RESPONSE

The peak magnification of the standard telemetered systems (Systems II, with the film strip magnified 20 times for viewing) is about 2×10^5 at a period of 0.1 sec. For periods between 0.1 and about 1.0 sec, the response falls off 6 db/octave (fig. 3).

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault; weekly results are summarized in Table 6. At irregular intervals tilt is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter, and these results are summarized in Table 7. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of tiltmeter stations and essential data on each station are listed in Table 8, Summary 57.

Table 6.--Tilt Coordinates at Uwekahuna Vault, July, August, and September 1970

Date	N-S	E-W	Date	N-S	E-W
July 5	559	380	Sept. 6	562	366
12	559	380	13	562	366
19	559	380	20	561	367
26	560	382	27	561	366
Aug. 2	560	380			
9	560	379			
16	561	380			
23	562	379			
30	562	370			

Table 7.--Tilt coordinates and changes at long-base tilt station around Kilauea Caldera (See fig 4).

Tilt Base	Date (1970)	Tilt Coordinates		Rate (10^{-6} rad/mo) and Direction of Tilting Since Last Reading		Date of Last Reading (1970)
		N-S	E-W			
Uwekahuna (U on fig 4)	9 sep	624.4	338.1	2.16	N52.3°W	22 May
Tree Molds (TM)	9 Sep	494.0	492.0	1.27	N47.8°W	18 May
Sand Spit (SS)	10 Sep	1039.0	601.1	0.37	S48.3°W	20 May
Keamoku (Kea)	10 Sep	542.6	362.7	1.35	N78.2°W	20 May
Ahua Kamokukolau (Kam)	11 Sep	333.2	508.9	0.87	N15.3°W	21 May
Kipuka Nene (KN)	11 Sep	293.5	503.9	0.69	N41.9°W	21 May
Hilina Pali (HP)		N O T R E A D T H I S E P O C H				
Kapapala Ranch (Kap)	10 Sep	486.9	518.1	0.24	N49.1°W	20 May
Mehana (M)	9 Sep	591.8	597.7	1.27	N50.5°E	18 May

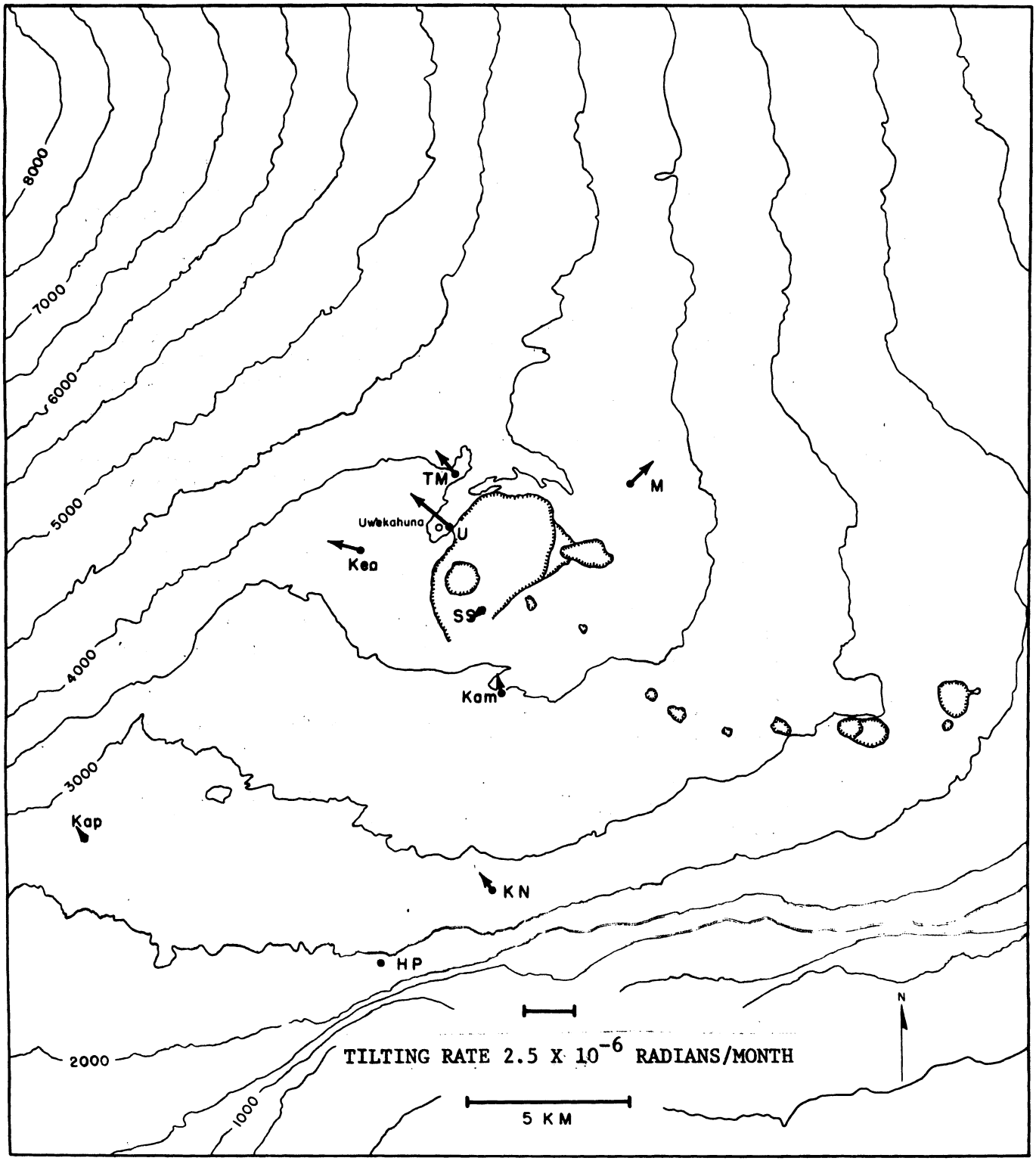

Figure 3.--Tilting of the ground around Kilauea Caldera between May 18, 1970, and September 9, 1970. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence and has a length proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circle, short-base water-tube tiltmeter (See Table 7 for explanation of abbreviations).

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

Summary 60

October, November, and December 1970
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Trilateration Network on Kilauea, Fall 1970
By
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CHRONOLOGICAL SUMMARY

The Mauna Ulu eruption continued throughout this quarter following basically the pattern developed in August 1970. A pool of lava, slowly circulating from west to east, persisted in the summit fissure of Mauna Ulu but did not overflow. The surface of this pool was generally 15 to 25 m below the rim but occasionally dropped to 30 m and once, on December 5, rose to within 6 m of the rim. Weak spattering was nearly continuous at the east end of the pool, and brief episodes of low fountaining related to transient degassing took place in other parts of the pool. The fissure walls collapsed markedly, and the fissure widened by more than 20 m in places as a result of such collapse, especially in December.

A chain of several vents, some briefly active and others more persistent, extended down the east flank of Mauna Ulu to a point just north of the north rim of Alae. These vents, probably large skylights in an underground lava stream connected to the summit fissure, overflowed at times feeding small short-lived flows. Some of these flows entered the subsidence bowl in Alae, piling up and creating a lava fan that partly filled the bowl (Swanson and Peterson, 1972). More commonly, the vents did not overflow, but lava or a distinct glow could be seen within them at depths of several meters. When the lava could be seen clearly, a distinct eastward current was discernible. Five collapse pits, or large skylights, formed along the chain of vents on October 26, November 5 and 13, and December 8 and 20; these pits were as much as 40 m in diameter (Figure 1).

For most of the quarter, lava continued to flow through a tube from the eastern end of the chain of vents into the Alae holding reservoir. From Alae, the lava flowed through a tube system as far as the flat below Holei Pali. This tube system and the relation of the Alae reservoir to it are described by Swanson (1973) and Swanson and Peterson (1972). No lava entered the ocean during this period.

A brief but significant change in this overall scheme of activity took place between October 26 and November 2. Flow in the tube system stopped on October 26, and the only visible lava was in the collapse pit that formed on that day and in Mauna Ulu's fissure. This pause was accompanied by swelling of the Kilauea summit area and a swarm of shallow caldera earthquakes. Apparently, a blockage had developed somewhere in the Volcano's plumbing. However, the swelling caused by this blockage was relieved on October 28 when copious overflows began from most of the vents on Mauna Ulu's east flank, summit tilt dropped slightly, and the caldera quakes stopped. Flows fed by these and related overflows during the next several days ultimately reached as far as the area due north of Kane Nui o Hamo. During this time, lava in the new collapse pit participated in a cyclic rise-fall (gas-piston) cycle like that which has characterized the Mauna Ulu summit vent throughout the eruption. Finally, lava reentered the tube system connected with Alae on November 2 and the prevailing pattern was once more reestablished.

For much of November and December, lava in the collapse pits of October 26 and November 13 (only 100 m apart) (Figure 1) took part in a rise-fall cycle that demonstrated a connection between them. The two pits were on a nearly synchronous schedule, except that the eastern pit, 10 m lower in elevation, would begin to overflow sooner than the upper pit.

On November 29, a new collapse area formed near the site of the November 13 pit. By late December it reached 230 m in length, 35 m in width, and more than 15 m in depth. Lava in this collapse trench was observed to feed the inlet tube to Alae. Between December 6 and 8, overflows from the October 26 pit spilled into the trench nearly filling it with thin flows that quickly solidified. However, another collapse event on December 8 reestablished the November 13 pit at the west end of the filled trench, and a pool of molten lava occupied this new pit. On December 13 the vigorous subsurface flow of lava between these pits and Alae stopped, although some flow probably continued into Alae through a deeper tube. A sulfur-encrusted cone 100 m from the summit fissure collapsed, leaving a pit 20 by 35 m in diameter. From December 21 to 24, a very active stream of lava flowed eastward beneath the pits of December 20, October 26, and December 8 at a depth of 20 to 30 m below the surface. The pits progressively enlarged as their unsupported walls caved into the lava, especially at their west and east ends. Consequently, the pits became elongated and began to grow toward each other. On December 31, only two unstable bridges kept the separate pits from merging into a single elongate collapse trench (Figure 1b).

TRILATERATION NETWORK ON KILAUEA

The trilateration network in Kilauea was expanded during the fall of 1970 to cover most of the volcano. This network should provide a base for monitoring future horizontal deformation of Kilauea. The network is shown in Figure 2; in addition, there are many stations in the summit area of Kilauea as shown in Kinoshita and others (in press). The locations of all previously established stations are shown on Figure 3; most of these stations are in the 1970 network, but others were included in our survey only in order to enable comparison with past surveys. The locations of previous stations are obtainable from the Topographic Division of the U. S. Geological Survey, and those of the new stations from the Volcano Observatory.

We attempted to make the survey figures as strong as possible geometrically but geologic considerations along with unfavorable topography and dense vegetation resulted in many figures being rather weak. Nonetheless, only six stations are located by the minimal two distances and these are not critical to the rest of the network.

Most of the network was measured between late August and mid-September 1970; a few distances, chiefly those necessary to tie in previous surveys, were measured over the following two months. We could not recognize any significant deformation of Kilauea during this time, so the network can probably be considered to have been measured virtually instantaneously. Helicopter support was necessary for work on the south flank and southwest rift for transport to Kalalua Cone.

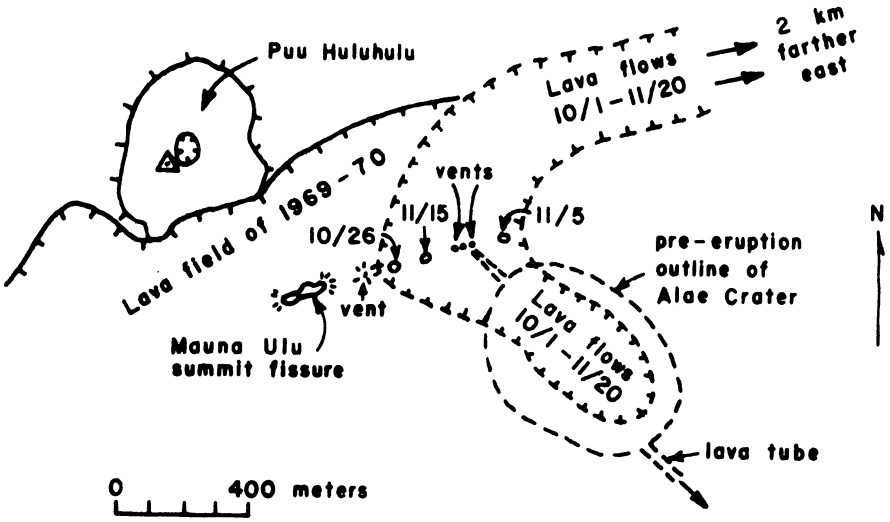

Figure 1a

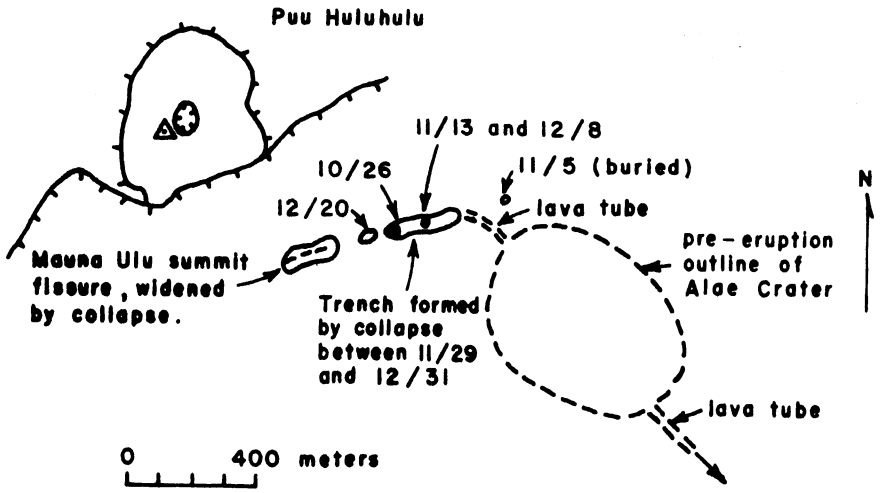

Figure 1b

Figure 1.--Sketch map showing approximate location of major events in the Mauna Ulu area during the fourth quarter of 1970. Figure 1a shows configuration on November 20, including location of vents and collapse craters on Mauna Ulu's east flank and the approximate outline of surface lava flows which extended about 2 km farther east than shown by the map. Figure 1b shows the configuration on December 31 after additional pits had developed, and some had merged to form an elongated trench.

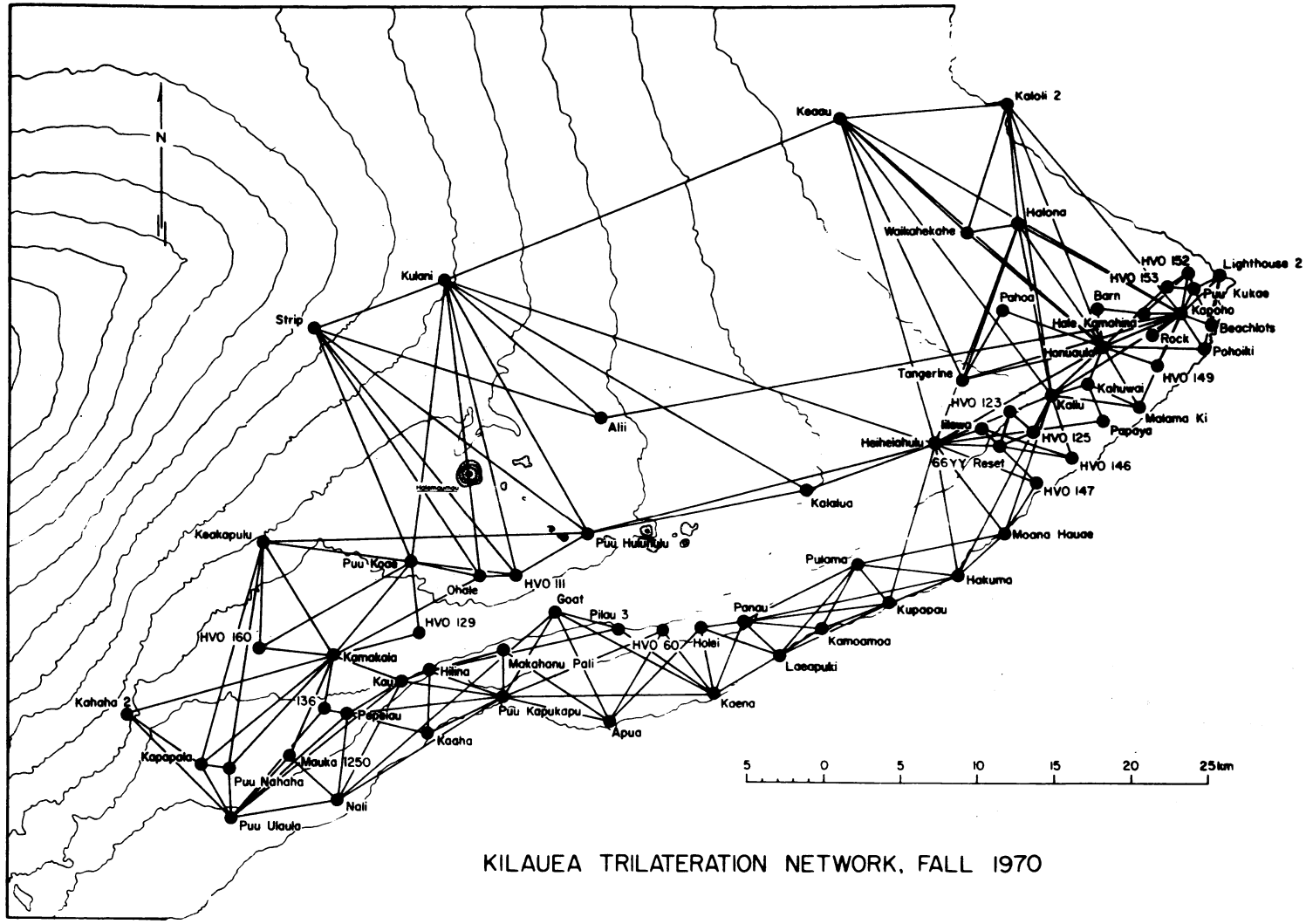

Figure 2.--Distances measured in the Kilauea trilateration network. Many other distances in the summit region (Kinoshita and others, in press) are measured periodically.

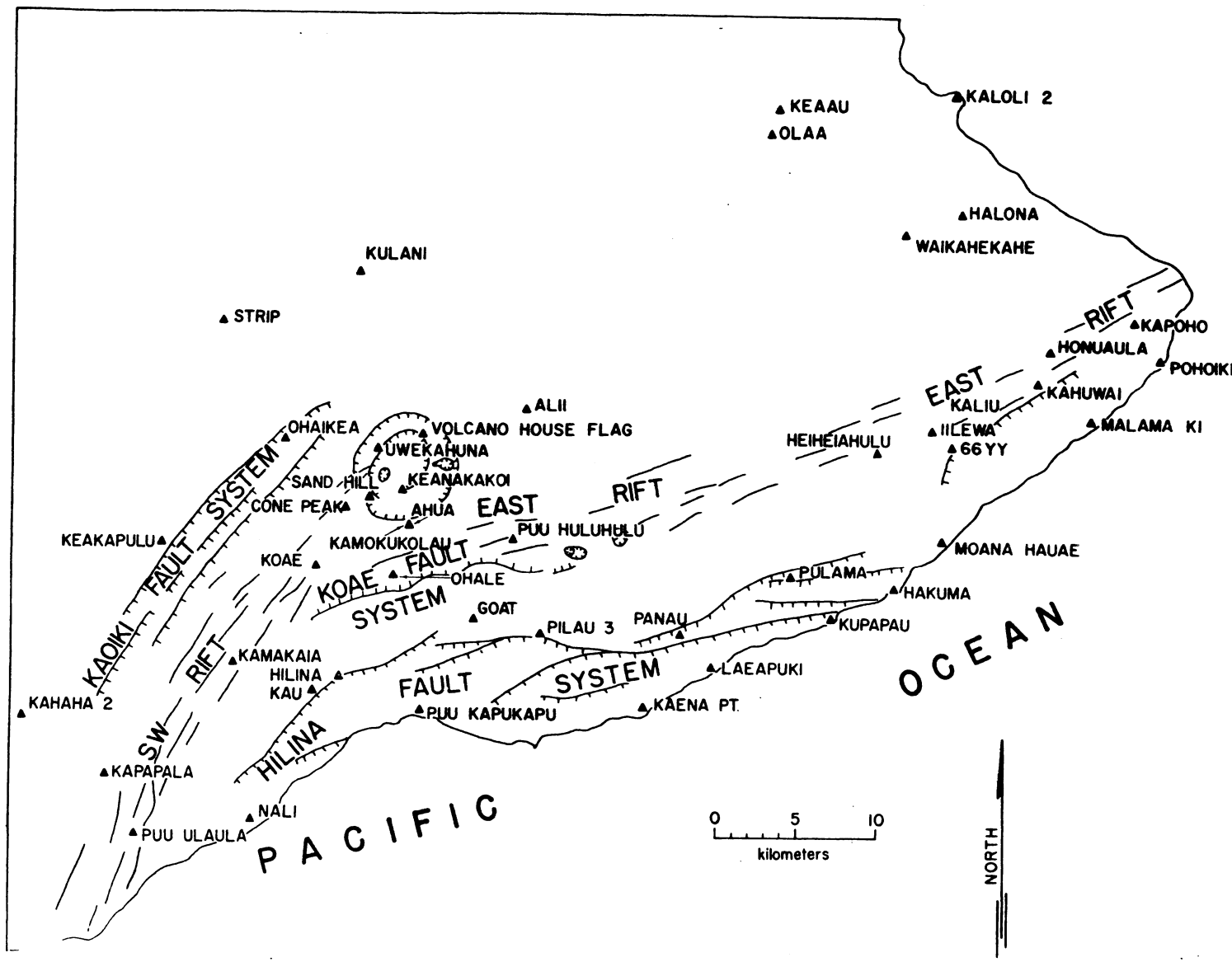

Figure 3.--Locations of all but one previously existing triangulation stations occupied in the 1970 trilateration survey. The missing station, Kaiwiki New, is about 18 km north-northwest of Keaau, on the lower slope of Mauna Kea. Major structures of Kilauea are schematically shown.

The distances were measured once each (rarely, twice) with a Model 8 Geodimeter. No difference between the three frequency readings, D_1, D_2, and D_3, greater than 25 mm was tolerated, and most differences were 5 to 15 mm. All measurements were made between 0900 and 1700 (mostly before 1600) in order to minimize diurnal temperature and pressure changes. Temperatures at both ends of each measured line were obtained from good quality mercury thermometers shielded from direct sunlight but open to air circulation. The thermometers were suspended about 6 m above ground. Barometric pressures were determined with high quality Wallace and Tiernan barometers at each end of the line. Endline temperatures and pressures were read before and after each shot and were averaged in the final calculations. A constant humidity correction of 0.5 ppm was applied. Distances were corrected for beam and earth curvature using the formula, $C = (1-K)^2 D^3/24\ R^2$, where D is slope distance in meters, R is earth's radius in meters, and K is assumed to be 0.20 (Höpcke, 1966; Meade, 1969). Each distance measured was reduced first to the horizontal at the elevation of the lower station; the necessary vertical angles were computed from station elevations known or estimated from 20-ft contour maps. The distances were then reduced to sea level, following the procedure outlined by Gossett (1959, pp 234-235). Programs were written for a Wang calculator to handle all the reductions and a summary of the reductions is on file at the Volcano Observatory. The final reduced distances are given in table 1, which includes all shots in the network as well as those necessary to tie in previous surveys. No least-squares adjustment of the network internal consistency was made for we considered it best when comparing triangulation and trilateration data to use unadjusted measurements.

Table 1.--Final 1970 geodimeter measurements, in meters, reduced to sea level.

1.	HV0129-Koae	4,372.361
2.	HV0129-Kamakaia	6,305.522
3.	Kau-Hilina	2,020.616
4.	Kau-Kamakaia	5,192.126
5.	Kau-Pepeiau	4,073.183
6.	136-Kamakaia	3,792.796
7.	136-Pepeiau	1,832.556
8.	Kamakaia-Mauka 1250	6,960.194
9.	Kamakaia-Puu Ulaula	12,441.715
10.	Mauka 1250-Puu Ulaula	5,731.351
11.	Kau-Puu Ulaula	14,423.194
12.	135-Puu Ulaula	9,278.157
13.	Puu Ulaula-Puu Nahaha	3,293.141
14.	Puu Ulaula-Pepeiau	10,353.488
15.	Puu Ulaula-Kapapala	4,146.403
16.	Puu Ulaula-Nali	6,830.812
17.	Nali-Pepeiau	5,977.434
18.	Nali-Mauka 1250	4,485.762
19.	Nali-Puu Kapukapu	13,304.687
20.	Nali-Kau	9,416.448
21.	Nali-Goat	19,347.512
22.	Kaaha-Puu Kapukapu	6,797.933
23.	Kaaha-Hilina	5,339.504
24.	Kaaha-Pepeiau	4,446.224
25.	Pilau 3-Hilina	12,859.372
26.	Pilau 3-Goat	4,366.121
27.	Pilau 3-Kaena Pt.	8,048.895
28.	Makahanu Pali-Puu Kapukapu	2,736.931
29.	Makahanu Pali-Hilina	5,556.769
30.	Puu Kapukapu-Pepeiau	10,141.569
31.	Puu Kapukapu-Hilina	5,431.211
32.	Puu Kapukapu-Goat	6,521.382
33.	Puu Kapukapu-Kau	6,910.325
34.	Puu Kapukapu-HV060	11,470.174
35.	Apua-Goat	8,238.758
36.	Apua-Makahanu Pali	7,836.096
37.	Apua-HV060	7,230.411
38.	Apua-Puu Kapukapu	7,171.000
39.	Kaena Pt.-Goat	12,273.493
40.	Kaena Pt.-HV060	5,548.909
41.	Kaena Pt.-Puu Kapukapu	14,528.096
42.	Panau-Laeapuki	2,978.626
43.	Panau-Kaena Pt.	4,552.013
44.	Panau-Kamoamoa (HV0158)	4,522.543
45.	Panau-Pulama	7,813.588
46.	Panau-Hakuma	13,638.022
47.	Panau-Kupapau	9,408.834
48.	Kamakaia-Koae	7,916.170
49.	Kamakaia-Keakapulu	8,821.719
50.	Kamakaia-HV0160	4,564.017

Table 1.--Final 1970 geodimeter measurements, in meters, reduced to sea level (Cont'd)

51.	Kamakaia-Puu Nahaha	9,754.445
52.	Kamakaia-Kapapala	10,611.925
53.	Keakapulu-Kapapala	14,380.639
54.	Keakapulu-Puu Nahaha	14,623.370
55.	Keakapulu-HV0160	6,655.751
56.	Kapapala-Puu Nahaha	1,769.620
57.	Koae-Keakapulu	10,404.766
58.	Koae-Strip	16,552.115
59.	Koae-Kulani	18,436.152
60.	Koae-HV0160	11,140.506
61.	Laeapuki-Kaena Pt.	4,177.263
62.	Laeapuki-Pulama	7,639.911
63.	Kamoamoa (HV0158) - Pulama	4,512.883
64.	Kamoamoa (HV0158) - Laeapuki	3,232.288
65.	Kupapau-Laeapuki	8,029.370
66.	Kupapau-Pulama	3,587.826
67.	Kupapau-Heiheiahulu	10,913.022
68.	Kupapau-Hakuma	4,394.006
69.	Hakuma-Heiheiahulu	8,741.897
70.	Hakuma-Pulama	6,461.037
71.	Hakuma-Moana Hauae	4,177.272
72.	Moana Hauae-Pulama	9,646.205
73.	Moana Hauae-Heiheiahulu	7,071.189
74.	HV0147-Heiheiahulu	7,624.278
75.	HV0147-Moana Hauae	4,160.641
76.	66YY Reset-Heiheiahulu	4,790.289
77.	66YY Reset-HV0125	1,762.606
78.	66YY Reset-HV0147	3,596.809
79.	Kaliu-Halona	11,617.347
80.	Kaliu-Hakuma	13,387.104
81.	Kaliu-Moana Hauae	9,479.827
82.	Kaliu-Keaau	22,235.425
83.	Kaliu-Kapoho	9,734.721
84.	Kaliu-66YY Reset	4,161.570
85.	Kaliu-Honuaula	4,425.810
86.	Kaliu-HV0125	3,028.773
87.	Kaliu-Kahuwai	2,657.955
88.	Kaliu-Heiheiahulu	8,112.779
89.	Papaya (HV0157) - Kahuwai	3,033.904
90.	Papaya (HV0157) - Heiheiahulu	10,566.079
91.	Iilewa-Heiheiahulu	3,708.644
92.	Iilewa-66YY Reset	1,778.787
93.	Iilewa-HV0146	6,007.179
94.	Halona-Keaau	12,927.696
95.	Halona-Kapoho	12,478.057
96.	Halona-Heiheiahulu	15,399.656
97.	Halona-Honuaula	9,978.639
98.	Halona-Waikahekahe	3,692.674
99.	Halona-Tangerine (HV0148)	10,924.808
100.	Halona-Kaloli 2	7,381.488

Table 1.--Final 1970 geodimeter measurements, in meters, reduced to sea level. (Cont'd)

101.	Keaau-Kaloli 2	10,929.932
102.	Keaau-Heiheiahulu	21,550.349
103.	Keaau-Tangerine(HV0148)	18,523.877
104.	Keaau-Waikahekahe	10,749.154
105.	Honuaula-Kahuwai	2,164.178
106.	Honuaula-Heiheiahulu	12,343.353
107.	Honuaula-HV0149	3,329.064
108.	Honuaula-Waikahekahe	11,496.620
109.	Honuaula-HV0152	7,581.277
110.	Honuaula-Pohoiki	6,855.529
111.	Honuaula-HV0153	5,887.652
112.	Honuaula-Barn(HV0159)	2,287.226
113.	Halekamahina(HV0155)- Rock(HV0154)	1,188.731
114.	Halekamahina(HV0155)- Pohoiki	4,675.552
115.	Halekamahina(HV0155)- Kapoho	2,322.956
116.	Halekamahina(HV0155)- Honuaula	3,474.681
117.	Halekamahina(HV0155)- Barn(HV0159)	3,008.427
118.	Rock(HV0154)-Pohoiki	3,979.273
119.	Rock(HV0154)-Kapoho	2,377.966
120.	Lighthouse 2 (HV0151) - Beachlots(HV0150)	2,745.356
121.	Lighthouse 2 (HV0151) - Puu Kukae(HV0156)	2,396.645
122.	Lighthouse 2 (HV0151) - Pohoiki	4,816.418
123.	Lighthouse 2 (HV0151) - Kapoho	3,726.131
124.	Beachlots(HV0150) - Kapoho	2,296.709
125.	Beachlots(HV0150) - Puu Kukae(HV0156)	2,450.312
126.	Beachlots(HV0150) - Pohoiki	2,071.758
127.	Puu Kukae(HV0156) - HV0153	1,491.519
128.	Puu Kukae(HV0156) - HV0152	1,763.890
129.	HV0153-HV0152	1,706.587
130.	Kapoho-Puu Kukae(HV0156)	1,641.377
131.	Kapoho-HV0152	3,249.134
132.	Kapoho-Honuaula	5,519.644
133.	Kapoho-Pohoiki	2,904.057
134.	Kapoho-HV0149	3,901.878
135.	Kaloli 2-Waikahekahe	9,045.629
136.	Kaloli 2-Kapoho	17,776.150
137.	Kaloli 2-Honuaula	16,802.303
138.	Tangerine (HV0148)-Kapoho	14,417.664
139.	Tangerine (HV0148)-Honuaula	8,917.633
140.	Tangerine (HV0148)-Pahoa (HV0161)	5,233.361
141.	Pahoa (HV0161)-Honuaula	7,255.425
142.	HV0146-66YY Reset	4,469.637
143.	HV0146-Kaliu	4,203.344
144.	Malama Ki-Kaliu	5,930.867
145.	Malama Ki-Honuaula	5,057.450
146.	Malama Ki-Kahuwai	4,061.340
147.	Malama Ki-Kapoho	6,745.691
148.	Heiheiahulu-Puu Huluhulu	23,349.339
149.	Heiheiahulu-Kulani	34,125.052
150.	Kulani-Keaau	27,984.684

Table 1.--Final 1970 geodimeter measurements, in meters, reduced to sea level. (Cont'd)

151.	Kulani-Puu Huluhulu	19,193.192
152.	HVO111-Puu Huluhulu	5,627.569
153.	HVO111-Strip	20,885.590
154.	HVO111-Kulani	19,386.007
155.	HVO111-Keakapulu	17,586.263
156.	PUU Huluhulu-Keakapulu	22,647.315
157.	Puu Huluhulu-Strip	23,148.590
158.	Keaau-Honuaula	22,229.102
159.	Keaau-Kapoho	25,398.737
160.	HVO123-66YY Reset	1,344.179
161.	HVO123-HVO125	2,085.413
162.	Alii-Kulani	13,541.769
163.	Alii-Strip	20,358.845
164.	Alii-Kapoho	38,144.855
165.	Kalalua-Kulani	27,761.023
166.	Kalalua-Heiheiahulu	8,271.285
167.	Kalalua-Puu Huluhulu	15,088.731
168.	Olaa-Honuaula	21,948.322
169.	Olaa-Heiheiahulu	20,593.275
170.	Olaa-Kapoho	25,368.791
171.	Kaloli 2-Kaliu	18,960.631
172.	Kaloli 2-Olaa	11,725.933
173.	Olaa-Keaau	1,350.354
174.	Olaa-Kulani	27,003.954
175.	Kulani-Strip	9,559.139
176.	Olaa-Kaliu	21,696.355
177.	Holei (HVO162)-Panau	3,040.039
178.	Holei (HVO162)-Apua	8,660.297
179.	Holei (HVO162)-Laeapuki	5,233.460
180.	Holei (HVO162)-Kaena Pt.	3,880.220
181.	Keakapulu-Uwekahuna	15,383.470
182.	Keakapulu-Ohale	15,262.753
183.	Uwekahuna-Sand Hill	3,155.613
184.	Uwekahuna-Keanakakoi	3,077.184
185.	Uwekahuna-Ahua Kamokukolau	5,124.748
186.	Uwekahuna-Cone Peak	3,893.306
187.	Sand Hill-Ahua	3,069.590
188.	Sand Hill-Cone Peak	1,625.521
189.	Sand Hill-Keanakakoi	2,090.594
190.	Sand Hill-Koae	5,275.225
191.	Ahua Kamokukolau-Keanakakoi	2,078.123
192.	Ahua Kamokukolau-Cone Peak	4,496.031
193.	Ahua Kamokukolau-Koae	6,473.669
194.	Ohale-Cone Peak	5,526.545
195.	Ohale-Ahua Kamokukolau	3,319.567
196.	Ohale-Koae	4,857.979
197.	Ohale-Uwekahuna	7,854.841
198.	Ohale-HVO111	2,332.273
199.	Uwekahuna-Koae	8,178.144
200.	Uwekahuna-Volcano House Flag	3,075.886

Table 1.--Final 1970 geodimeter measurements, in meters, reduced to sea level. (Cont'd)

201.	Ohaikea-Volcano House Flag	8,869.570
202.	Ohaikea-Ohale	10,813.479
203.	Ohaikea-Uwekahuna	5,950.180
204.	Ohaikea-Sand Hill	6,503.523
205.	Ohaikea-Keanakakoi	8,099.865
206.	Volcano House Flag-Keanakakoi	3,875.229
207.	Kahaha 2-Puu Ulaula	9,859.145
208.	Kahaha 2-Kamakaia	13,871.647
209.	Kahaha 2-Kapapala	6,172.983
210.	Kamakaia-Strip	21,257.909
211.	Kamakaia-Uwekahuna	15,987.265
212.	Kamakaia-Ohale	11,392.540
213.	Kaiwiki New-Kulani	31.423.553
214.	Kaiwiki New-Keaau	18,254.385
215.	Hakuma 1891-Heiheiahulu	8,614.906
216.	Hakuma 1891-Kaliu	13,305.151
217.	Hakuma 1891-Moana Hauae	4,131.061
218.	Uwekahuna-Strip	13,011.875
219.	Uwekahuna-Puu Huluhulu	10,156.450
220.	Uwekahuna-Kulani	11,073.963
221.	Ohale-Strip	19,406.832
222.	Ohale-Puu Huluhulu	7,803.000
223.	Ohale-Kulani	18,927.582
224.	Heiheiahulu-Kapoho	17,804.534
225.	West Heiheiahulu-Kulani	34,026.251
226.	West Heiheiahulu-Olaa	20,510.533
227.	West Heiheiahulu-Kaloli 2	22,319.040
228.	Ohaikea-Koae	8,020.553

SEISMIC SUMMARY

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories:

1. Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph).

2. Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in table 2. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well recorded events are listed in table 3. The location of each seismograph station is listed in table 5, along with a description of the equipment at each station.

Acknowledgements

Several people or agencies reported "felt" earthquakes during this quarter of 1970. Their assistance is gratefully acknowledged.

Table 2.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera

Tremor is separated into three categories: deep, intermediate, and shallow on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea summit: 30 km, earthquakes from a source about 30 km beneath the summit region; long-period, earthquakes characterized by low-frequency waves that originate about 5 km or deeper beneath Kilauea summit; and shallow earthquakes in the Kilauea Caldera region, a few km deep. SW Rift and Kaoiki: earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system. Upper East Rift: earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank. Koae: earthquakes along the northeast-trending Koae fault system south of the caldera. Lower East Rift: earthquakes from the lower east rift zone of Kilauea.

Date (1970)	Tremor (m = minutes)			Number of Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper[1/] East Rift	Lower[2/] East Rift	Others	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow					
Oct 1			Fluctuating at low levels near eruptive site on upper east rift	5	7	222	28	39	2		
2				3		194	21	34	4		
3				12	5	104	22	20	5		
4				6	3	450	25	?	5		NPT instrument adjusted
5				6		645	12	22	1		
6				14		742	31	24	3		
7				2	3	789	20	12	2		
8				6	1	381	8	8?	2		
9				7		365	21	11	5		
10				6		443	29	16	3		
11		11m		4		?	27	?	4		
12		14m		7	4	548	19	31	9		
13	8m	10m		4	4	555	28	23	11		
14				6	2	566	12	26	6		

15	76m			5	5	523	22	19	14	
16				2	3	633	16	12?	6	
17				2	7	468	20	15?	5	
18	8m			6		293	32	31	4	
19				8	4	325	15	18	6	
20	30m			1	7	1035	18	41	4	
21				1	1	795	21	44	2	
22				2	5	545	18	39	6	
23				2		1685	37	68	6	
24				1	3	2710	42	45	7	
25				25	3	4035	25	84?	8	
26		5m		12	11	3175	25	45	5	
27				6	3	1730	20	49	10	
28				1		509	13	16	6	
29	45m			1		473	18	33	7	
30				6	1	331	16	25	?	
31				3	6	373	32	20	?	
Nov 1				3	1	380	16	17	?	
2				4	2	305	20	12?	?	
3				5	6	320	15	18?	?	
4				2?	7?	207?	7?	?	2	Electrical storm
5				?	?	?	?	?	8?	
6				?	?	?	?	?	?	
7				1?	1?	458?	10?	8?	24?	
8				3		464	15	22	19	
9				4		401	17	8?	?	
10				1	3	280	13	30	13	
11	29m			5	2	360	18	19	1	
12				4	5	293	13	18	?	
13				3		1005	11	17	17	
14				2		406	14	15	?	
15	3m			7		547	21	17	3	
16				4		570	15	14	12	
17	25m			3	5	325	12	15?	?	
18				3	5	416	18	14?	?	
19				?	?	?	?	?	?	Instruments off
20				?	?	?	?	?	?	Electrical storm

Fluctuating at low levels near eruptive site on the upper east rift

Table 2.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea Caldera (cont'd)

	Tremor (m = minutes)			Number of Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper[1] East Rift	Lower[2] East Rift	Others	Remarks
	Deep	Inter mediate	Shallow	30 KM	Long Period	Shallow					
Nov 21			Fluctuating at low levels near eruptive site on the upper east rift	3?		167?	10?	25?	?		
22				1		159	7	13	?		
23				1		244	1	9	?		
24						300	6	11	?		
25					4	328	6	13	3		
26				1		255	7	9			
27				1		251	9	18	7		
28	8m					181	6	22	7		
29				2	2	105	11	14	9		
30				2	1	149	17	22	31		
Dec 1				6		495	12	26	2		
2				2		330	15	32	4		
3	20m			7		300	7	23	4		
4				4		225	36	12	11		
5		4m		8		232	31	15	6		
6				5		209	15	18	3		
7	6m			2		230	13	12	4		
8				4	3	217	17	18	3		
9				4	7	185	16	14	6		
10				2	3	204	30	19	9		
11				5	3	675	14	20?	8		
12				4	3	1875	26	20?	7		
13				2		1350	20	15	7		
14				3		750	15	9	5		
16				7	1	171	15	22	5		
17	7m			4		219	9	19	1		
18				1		347	6	46	3		

19						222	2	14	1	
20				1		540	3	7	6	
21				1		520	6	38	2	
22				3	28	2000+	7	?	2	
23				1	4	1410	8	28	3	
24				1?	3	480	2?	29	9	
25				1		450	8	32	7	
26					3	390	6	33	9	
27				2	4	375	9	60?	2	
28				2	60	1500	10	105?	2	
29				2	50	1050	4	30	4	
30				2	33	455	17	19	4	
31	78m		Fluctuating at low levels near eruptive site on the upper east rift	1	26	526	16	43	2	

1/ Upper east rift count poor due to continuous tremor and traffic.

2/ Count taken from station Puu Honuaula (PHO).

Table 3 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SED).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of fucus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

HRZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	Excellent	Good
B	Good	Fair
C	Fair	Poor
D	Poor	Poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ Depth or 5 km
B	≥ 6	≤ 150°	≤ 2 x depth or 10 km
	≥ 6	≤ 225°	
C	≥ 4	≤ 180°	≤ 50 km
D	Others		

Statistical Measures

	ERH (km)	ERZ (km)	MD (sec)	RMAX (sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes; that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used; that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U.S. Geological Survey.

*RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1970		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	1	0	12	8.5	19-21.9	155-15.0	28.0	2.2	19	133	0.6	0.12	0.7	1.1	0.09	B
	1	1	40	55.8	19-29.5	155-16.1	24.7	1.8	17	69	8.0	0.11	0.7	1.4	0.10	A
	1	2	49	53.5	19-20.7	155-17.4	7.1	0.8	10	102	1.1	0.10	0.3	0.7	0.04	A
	1	5	43	22.3	19-24.5	155-17.9	0.1*	0.4	9	93	0.9	0.12	0.7		0.25	B
	1	5	56	29.1	19-19.4	155- 7.1	6.8	1.3	11	209	6.9	0.27	1.8	1.0	0.17	C
	1	8	57	21.3	19-25.8	155-16.4?	0.2*		7	289	2.0	0.50	1.5		0.19	D
	1	11	4	14.0	19-20.9	155-28.7	9.4	2.1	13	130	9.6	0.12	0.9	0.9	0.18	B
	1	11	25	55.9	19-27.2	155-27.9	11.0	1.3	11	147	9.4	0.06	0.4	0.2	0.06	B
	1	11	45	16.7	19-21.3	155-25.3	8.3	1.5	12	120	4.0	0.14	1.0	1.3	0.19	B
	1	12	4	57.4	19-26.6	155-56.7	10.7	2.9	17	254	8.9	0.30	2.9	1.5	0.16	D
	1	17	25	58.6	19-20.6	155-12.8	7.5	1.5	12	183	3.6	0.13	0.9	0.6	0.14	C
	1	18	50	36.9	19-21.0	155-17.4	22.0	2.1	11	112	1.7	0.26	1.4	2.3	0.08	B
	1	21	53	9.8	19-19.6	155-11.8	12.2	1.4	11	219	5.5	0.30	1.6	2.1	0.10	C
	2	0	28	14.2	19-21.2	155-13.1	7.2	1.1	11	164	2.7	0.15	0.9	0.8	0.13	C
	2	1	24	33.1	19-21.0	155-13.1	9.7		14	169	2.9	0.11	0.8	0.5	0.11	C
	2	5	13	11.5	19-17.9	155-16.9	25.5	1.9	13	203	3.0	0.39	2.1	3.1	0.14	C
	2	6	44	47.7	19-20.9	155-12.8	9.5	1.4	13	174	2.9	0.09	0.8	0.4	0.11	C
	2	14	4	6.0	19-21.6	155-28.9?	11.4		14	135	10.2	0.10	0.9	0.5	0.15	B
	2	18	1	52.2	19-22.7	155-23.7	11.3		13	124	4.6	0.08	0.7	1.3	0.12	B
	2	18	6	43.6	19-22.2	155-23.8	10.2		12	112	3.9	0.09	0.9	0.9	0.15	B
	2	18	7	16.0	19-22.9	155-22.9	9.1		10	170	4.9	0.39	0.8	2.6	0.10	C
	2	18	57	18.1	19-19.9	155-14.7	10.0	1.7	16	176	3.6	0.07	0.6	0.3	0.11	C
	2	19	17	24.2	19-24.4	155-24.1	11.7	0.7	14	182	7.8	0.10	0.8	1.0	0.10	C
	3	2	27	45.3	19-30.8	155-15.9	3.2*	2.0	7	330	11.1	0.68	3.6		0.19	D
	3	6	31	44.0	19-19.6	155-15.4	10.2	1.1	13	177	3.5	0.08	0.6	0.4	0.08	B
	3	9	42	37.6	19-22.1	155-16.7	20.8	1.6	12	96	1.5	0.19	1.0	1.8	0.08	A
	3	9	54	52.7	19-20.3	155-27.7	6.7	1.4	11	134	15.4	0.12	1.0	1.5	0.16	B
	3	11	1	3.3	19- 4.4	155-22.9?	8.7	2.2	9	273	29.2	0.64	3.3	2.0	0.20	D
	3	14	36	49.0	19-18.7	155-16.4	29.1	2.1	14	190	3.1	0.34	1.7	2.7	0.11	C
	3	14	55	19.7	19-25.8	155-22.9	10.7	1.4	11	170	5.0	0.09	0.5	0.4	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

197C	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 3	15	23	10.3	19-20.9	155-13.2	7.2	1.1	10	171	3.2	0.14	0.9	C.7	0.11	C
3	18	37	33.2	19-20.7	155-13.1	8.9	1.8	17	176	3.5	0.08	0.7	C.4	0.13	C
3	21	56	48.0	19-11.0	155-31.7?	8.9		11	246	11.8	0.46	3.1	1.2	0.16	D
3	23	41	12.7	19-12.7	155-30.3	6.3		12	225	12.5	0.40	2.6	2.3	0.22	C
4	0	18	46.0	19-20.9	155-13.3	7.3	1.1	11	170	3.3	0.14	0.9	0.7	0.12	C
4	1	54	22.8	19-11.2	155-27.7	34.6	2.2	8	232	17.8	0.62	3.4	5.5	0.11	D
4	3	0	29.9	19-21.5	155-12.2	7.0	1.6	13	165	2.0	0.20	1.2	1.0	0.18	C
4	3	52	7.7	19-20.1	155-11.0	13.2	1.0	10	222	4.2	0.36	1.5	2.5	0.08	C
4	13	2	14.4	19-19.0	155-14.5	10.3	1.9	15	191	5.3	0.09	0.7	C.4	0.11	C
4	13	3	20.2	19-18.6	155-13.9	14.8	1.7	9	214	6.4	0.05	0.4	0.5	0.02	B
4	15	27	7.4	19-25.0	155-23.6	11.2	1.6	13	174	7.0	0.07	0.6	C.7	0.08	B
4	19	39	34.9	19-19.8	155-50.9	5.7	2.3	12	290	25.9	0.56	3.4	1.2	0.20	D
4	20	50	26.0	19-18.5	155-16.3	9.0	1.4	12	196	3.5	0.14	1.0	C.6	0.15	C
4	21	16	59.5	19-20.9	155-27.0	8.2	1.6	11	143	13.9	0.10	0.9	1.1	0.12	B
4	23	24	41.5	19-20.7	155- 9.9	7.9	1.5	11	249	2.5	0.23	1.3	C.9	0.12	C
5	0	8	8.9	19-12.7	155-22.9	38.2	2.7	19	219	12.3	0.32	1.8	2.3	0.13	C
5	4	18	58.6	19-19.6	155-13.0	10.8		13	203	5.5	0.14	0.9	0.4	0.11	C
5	12	25	12.2	19-20.6	155-18.0	30.3	1.5	14	65	1.3	0.31	1.4	2.6	0.10	B
5	12	44	21.3	19-21.5	155-11.8	9.6	1.7	11	168	2.2	0.07	0.6	C.4	C.06	B
5	13	0	22.1	19-23.9	155-24.2	0.0*	1.0	8	200	7.1	0.45	1.7		0.28	D
5	18	7	42.5	19-19.6	155-26.9	9.8	1.3	9	157	6.5	0.18	1.9	1.7	0.17	C
5	20	1	18.5	19-19.9	155-17.2	7.4	1.4	10	172	0.5	0.06	0.3	C.3	0.04	B
5	20	40	20.8	19-19.3	155-13.9	10.0	1.6	13	198	5.1	0.13	0.9	C.5	0.12	C
6	1	28	27.9	19- 0.8	155-20.0	12.8	2.4	16	287	36.0		C.9		0.14	D
6	3	54	18.4	19-20.0	155-14.0	8.5	1.3	13	182	4.0	0.18	1.0	C.8	0.17	C
6	5	9	0.3	19-26.0	155-29.7	11.0	1.5	13	155	13.2	0.07	0.5	0.3	0.08	B
6	7	34	22.3	19-24.0	155-23.4	11.1	1.3	14	116	6.5	0.05	0.5	C.5	C.10	A
6	13	6	37.4	19- 0.9	155-28.6?	18.6*		11	301	29.8	0.34	2.4		0.10	D
6	15	27	25.7	19-22.1	155-18.9	23.7		14	85	3.2	0.24	1.2	2.2	0.09	B
6	16	27	54.2	19-21.9	155-18.5	24.4	1.9	15	79	3.8	0.21	1.1	2.0	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 6	17	58	54.8	19-21.8	155-11.1	14.2		10	175	7.4	0.04	0.5	0.4	0.04	B
6	20	17	58.9	19-21.8	155-17.3	31.6	2.9	22	94	2.7	0.15	1.0	1.4	0.13	B
6	21	35	15.3	19-22.3	155-15.8	40.0	2.0	14	121	0.3	0.24	1.7	2.0	0.11	B
6	22	51	33.9	19-21.9	155-18.7	24.6		12	83	3.7	0.51	1.8	4.5	0.10	B
7	0	38	44.3	19-21.7	155-19.0	24.6		11	84	3.9	0.47	1.7	4.2	0.09	B
7	8	46	6.9	18-57.4	155-12.7	16.7*		15	301	39.4	0.37	2.8		0.14	D
7	9	29	11.7	19-22.3	155-18.6	24.6	1.9	15	77	3.2	0.22	1.1	2.0	0.11	B
7	10	7	35.0	19-49.7	155-33.8	8.7	2.5	12	316	12.8	0.62	8.2	3.4	0.20	D
7	18	43	36.6	19-21.7	155-29.1	9.1	2.3	16	118	10.5	0.09	0.8	0.8	0.18	B
7	20	9	56.5	19-23.6	155-18.2	19.0	1.5	10	68	2.5	0.45	1.3	4.1	0.07	B
7	20	17	46.4	19-29.5	155-50.9	14.9	2.4	12	154	8.3	0.47	3.0	10.3	0.09	C
7	21	28	12.2	19-22.7	155-25.6?	11.4	1.7	15	122	6.1	0.07	0.6	0.3	0.10	B
8	6	13	4.5	19-21.3	155- 7.2	3.5	3.2	16	191	9.5	0.11	0.8	1.0	0.11	C
8	10	48	32.7	19-21.9	155-18.2	26.0		14	72	3.5	0.20	1.0	1.8	0.10	B
8	13	58	9.9	19-21.7	155-19.4	21.3		13	87	3.8	0.26	1.4	2.5	0.11	B
8	21	10	22.6	19-25.3	155-16.1	0.1*	0.7	10	223	1.7	0.12	0.5		0.09	C
8	23	55	4.1	19-16.7	155- 6.1	7.8	1.7	8	321	11.8		2.8	1.8	0.21	D
9	1	23	43.7	19-16.0	155- 9.6	37.6	2.0	16	270	11.3	0.20	1.3	1.5	0.09	C
9	2	57	59.3	19-26.2	155-15.6	0.0*	0.6	7	289	3.4	0.39	1.3		0.06	D
9	5	11	55.0	19-18.6	155-13.5	7.4	1.5	11	217	6.7	0.30	1.6	1.1	0.20	C
9	11	46	36.4	19-21.9	155-18.1	26.5	1.9	13	70	3.6	0.54	2.0	4.7	0.09	B
9	21	25	19.9	19-13.7	155-28.1	25.9	1.9	9	213	14.6	0.52	2.3	4.9	0.07	C
9	21	33	49.4	19-21.0	155-12.6	9.7	1.1	15	175	2.8	0.12	0.8	0.5	0.12	C
9	21	43	3.4	19-19.7	155-25.5	6.8	1.8	15	141	3.9	0.11	1.0	0.9	0.18	B
9	22	12	55.7	19-21.5	155-28.8	11.5	1.5	12	133	10.0	0.15	1.0	0.9	0.15	B
9	22	53	13.4	19-21.8	155-26.3	7.1	1.3	11	122	5.9	0.12	1.0	1.4	0.17	B
10	4	26	14.2	19-13.9	155-28.1	23.4	1.8	7	212	14.4	1.04	4.1	10.7	0.10	C
10	5	13	16.3	19-29.3	155-54.5	10.9	2.1	11	206	3.7	0.36	5.2	3.1	0.13	D
10	6	41	31.9	19-21.6	155-29.1	9.0	2.1	16	119	10.5	0.09	0.8	0.8	0.16	B
10	7	49	33.0	19-20.1	155- 7.1	7.1	1.9	13	203	6.0	0.17	1.2	0.7	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 10	11	10	51.4	19-20.6	155-15.7	22.9	2.1	12	152	2.4	0.22	1.1	1.9	0.09	C
10	12	48	58.6	19-11.7	155-22.5	40.0	2.5	15	225	13.4	0.24	1.6	2.1	0.13	C
10	13	20	10.6	19-23.7	155-17.4	13.5	1.8	16	73	1.2	0.05	0.5	0.4	0.09	A
10	18	26	2.2	19-59.2	155-31.5?	45.5	2.5	22	198	19.0	0.30	1.5	2.6	0.14	C
10	20	57	34.3	19-12.8	155-26.8	7.5	2.0	12	222	14.9	0.31	1.9	1.0	0.18	C
10	21	29	25.5	19-14.3	155-27.5	5.5	2.0	9	215	13.1	0.11	0.7	0.7	0.06	B
10	21	45	56.4	19-25.4	155-30.0	10.9	1.9	12	154	14.3	0.09	0.6	0.4	0.08	B
10	23	30	51.9	19-22.8	155-26.4	7.4	2.2	19	101	7.3	0.13	1.1	1.0	0.27	B
11	1	52	36.3	19-23.3	155-27.7	11.2	1.8	15	134	9.6	0.11	0.7	0.7	0.11	B
11	9	0	38.8	19-21.1	155-25.4	8.3		12	125	4.0	0.13	1.0	1.3	0.18	B
11	12	42	26.0	19-18.3	155-14.0	15.0	1.6	8	218	6.8	0.09	0.6	0.8	0.03	B
11	16	40	2.0	19-25.7	155-29.4	10.9	2.2	14	152	13.2	0.13	0.8	C.6	0.11	C
11	20	5	53.5	19-22.9	155-24.9	11.0		13	120	5.8	0.07	0.6	C.4	0.11	B
11	23	12	19.9	19-23.2	155-17.1?	4.7	1.1	13	96	0.6	0.40	1.6	2.6	0.26	B
12	0	53	58.4	19-21.0	155-25.2	9.2	1.6	13	126	3.7	0.11	0.8	0.9	0.14	B
12	1	55	27.8	19-18.3	155-16.4	9.3	1.6	12	196	3.8	0.07	0.7	C.4	0.08	B
12	4	45	25.4	19-25.4	155-28.2	8.9	2.4	18	81	11.8	0.09	0.7	0.6	0.14	B
12	6	44	8.6	19-20.7	155-12.9	6.7	1.4	10	178	4.6	0.17	1.1	C.9	0.15	C
12	7	18	45.9	19-21.6	155- 3.4	2.8	1.9	14	204	20.8	0.54	1.1	2.7	0.15	C
12	12	28	7.7	19-19.3	155-13.3	10.8		14	207	5.9	0.14	1.0	0.4	0.12	C
12	13	8	59.2	19- 7.7	155-27.5	28.6	2.5	13	269	21.5	1.32	5.7	10.4	0.13	D
12	13	42	24.1	19-21.4	155-11.6	9.7	1.8	14	175	3.5	0.06	0.6	0.3	0.08	B
12	17	57	11.0	19-56.5	155-29.3	8.6	2.6	14	329	18.7	0.49	3.8	1.2	0.15	D
12	19	47	36.6	19-16.7	155-10.9?	30.4	2.2	16	255	10.2	0.22	1.7	1.6	0.09	C
12	23	26	25.8	19-33.3	155-45.4?	0.0	2.6	17	154	17.7	0.61	1.9	2.8	0.34	D
13	0	20	7.7	19-21.6	155-13.4	5.2		10	153	2.4	0.28	1.1	2.3	0.17	C
13	2	1	21.4	19-24.3	155-17.1	7.9	1.8	17	55	1.1	0.04	0.4	0.3	0.09	B
13	2	6	4.8	19-24.9	155-17.6	11.5	1.4	10	123	0.4	0.11	0.5	C.7	0.02	B
13	2	9	26.5	19-24.7	155-15.6	10.8		9	142	2.4	0.11	1.2	C.9	0.10	B
13	2	9	42.2	19-23.8	155-18.1	6.7	1.2	12	66	2.0	0.11	0.4	C.8	0.05	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 13	2	9	43.5	19-23.7	155-18.1	6.7	1.4	11	74	2.1	0.16	0.5	1.1	0.08	A
13	2	11	39.8	19-23.3	155-17.8	7.4	1.1	8	94	1.8	0.45	0.7	2.6	0.05	B
13	4	37	19.3	19-11.5	155-19.2	43.7	2.2	14	226	12.0	0.49	2.6	3.8	0.13	D
13	8	40	1.0	19-28.9	155-14.7	26.9	3.2	20	66	8.2	0.11	0.7	1.3	0.11	B
13	10	1	30.6	19-23.6	155-18.4	19.7	1.7	11	58	2.2	0.27	0.8	2.5	0.05	B
13	12	30	37.2	19- 9.2	155-30.5	28.3	2.6	6	277	15.6	0.05	0.4	0.3	0.01	C
13	12	52	34.0	19-10.0	155-19.8	37.2		13	249	14.9	0.32	2.3	2.4	0.14	C
13	12	53	13.9	19-11.9	155-19.7	45.0		12	237	11.4	0.78	2.6	6.6	0.09	D
13	12	54	17.8	19- 4.2	155-17.6	49.3		8	277	25.5	1.97	8.7	12.9	0.11	D
13	15	7	55.8	19- 9.4	155-34.0	15.4*	2.6	15	256	27.4	0.28	2.3		0.16	D
13	21	35	55.6	19-19.7	155-15.6	7.7		14	173	3.2	0.15	0.9	0.7	0.14	C
13	22	5	27.6	19-21.0	155-13.9	8.4		14	161	2.8	0.14	1.0	0.6	0.17	C
14	1	32	41.3	19-26.9	155-33.5	4.2	3.5	17	95	18.6	0.12	0.8	1.0	0.18	B
14	6	28	20.1	19-18.4	155-15.4	9.9		11	205	4.8	0.13	0.9	0.5	0.11	C
14	11	29	25.5	19-19.5	155- 4.6	7.4	2.3	11	215	10.2	0.30	2.0	1.0	0.14	C
14	16	36	20.4	19-23.0	155-18.0	22.8	1.8	9	72	2.2	0.73	1.8	6.4	0.06	B
14	19	6	8.3	19-12.7	155-31.9?	9.3		9	227	10.0	0.25	2.1	0.8	0.12	C
14	19	18	38.1	19-21.4	155-13.4	7.3		10	157	3.3	0.14	0.9	0.8	0.14	C
14	20	56	14.9	19-24.7	155-32.7	12.0		11	170	18.5	0.12	0.9	1.5	0.11	C
14	21	5	47.2	19-14.7	155-25.9	26.2		11	206	11.0	0.57	2.5	5.3	0.11	C
14	22	17	11.4	19-21.7	155-17.3	28.2	2.3	17	97	2.8	0.24	1.3	2.1	0.11	B
15	5	35	43.0	19-15.0	155-28.5	5.6		11	198	13.3	0.19	1.3	1.5	0.13	C
15	8	24	11.1	19-14.6	155-33.0	10.3		12	199	7.3	0.31	3.8	1.5	0.18	C
15	8	32	42.2	19-19.7	155-25.5	8.1		10	141	4.0	0.13	1.0	1.2	0.16	B
15	10	56	48.3	19-23.9	155-25.5?	10.4	1.9	15	125	7.8	0.08	0.7	1.4	0.12	B
15	11	11	5.9	19-20.1	155-15.3	13.6	1.4	8	239	3.2	0.38	1.3	2.4	0.03	C
15	17	23	15.4	19-19.6	155- 7.2	5.7	2.0	17	206	10.7	0.19	1.3	1.0	0.18	C
15	17	27	27.7	19-26.0	155-24.9	12.2	1.1	10	189	7.6	0.09	0.8	0.9	0.07	B
16	0	39	39.5	18-58.3	155-33.0	0.0*	2.5	14	276	43.9	0.37	2.7		0.19	D
16	1	23	1.1	19- 7.2	155-25.1	32.2		14	260	22.9	0.94	4.4	6.9	0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 16	1	25	4.9	19-29.8	155-32.2?	0.0		9	273	20.5	2.13	5.4	11.0	0.72	D
16	1	25	17.7	19- 8.1	155-25.2	29.0		9	255	22.6	1.04	5.0	11.0	0.13	D
16	1	26	37.4	19- 8.3	155-25.6	31.9	2.2	9	265	21.6	1.98	7.9	15.9	0.16	D
16	1	27	14.0	18-52.7	155-26.3?	1.3*	2.2	13	307	45.2	2.32	10.1		1.11	D
16	1	28	51.1	19-14.2	155-28.6	34.5		9	214	14.4	0.54	3.3	4.5	0.20	C
16	1	37	9.8	19-14.3	155-30.5	42.0		10	203	11.6	0.66	4.1	5.4	0.25	C
16	1	43	11.9	19-29.7	155-32.6?	0.0	1.8	7	273	21.2	3.07	4.8	15.8	0.54	D
16	2	19	25.1	19-25.4	155-22.8	9.6	1.4	12	117	5.5	0.04	0.4	0.4	0.07	A
16	2	24	5.4	19-23.1	155-24.9	10.6	1.2	14	120	6.0	0.07	0.7	0.7	0.12	B
16	4	0	20.9	19-21.8	155-25.0	8.6	2.7	18	106	4.2	0.08	0.8	0.6	0.17	B
16	5	28	33.6	19- 9.4	155-26.1	24.5		9	259	20.6	0.39	2.0	3.9	0.08	C
16	5	32	54.9	19-13.7	155-29.9	38.4		15	212	12.8	0.49	3.2	4.1	0.20	C
16	5	44	6.5	19-15.4	155-29.6?	37.7		10	190	13.2	0.80	5.8	6.9	0.33	D
16	5	51	25.3	19- 2.0	155-26.7	58.6	1.6	13	267	29.9	1.00	5.1	6.8	0.17	D
16	7	18	30.0	19-20.3	155-19.6	7.8	1.5	10	111	3.9	0.09	0.6	0.5	0.09	A
16	7	30	46.9	19-45.6	156- 2.9	6.3	2.5	18	258	29.8	0.20	1.6	0.8	0.08	C
16	11	54	19.9	19-14.3	155-30.6?	43.9	2.2	16	204	11.5	0.37	2.5	3.0	0.20	C
16	12	2	22.3	19-10.2	155-29.1	41.9	2.5	14	245	16.4	0.35	2.1	2.5	0.16	C
16	14	21	43.4	19-21.4	155-14.8	10.1	1.2	8	145	1.2	0.18	0.4	1.1	0.04	B
16	16	36	32.4	19-20.5	155-14.2	8.6	1.4	16	168	3.0	0.13	0.9	0.6	0.17	C
16	19	21	12.1	19-20.4	155-14.3	8.4	1.9	17	171	3.1	0.11	0.8	0.5	0.16	C
16	23	11	39.4	19-21.3	155-12.9	14.7	1.7	9	163	4.3	0.07	0.4	0.7	0.02	B
17	2	46	51.7	19-20.6	155- 8.7	6.7	1.2	12	195	3.5	0.22	1.6	1.2	0.17	C
17	4	1	12.3	19-25.0	155-27.7	10.6	1.3	13	140	11.8	0.11	0.8	0.5	0.14	B
17	5	42	29.7	19- 7.6	155-25.2	38.0	1.9	8	272	22.4	0.31	3.0	3.0	0.09	D
17	5	49	0.4	19-17.2	155-28.7?	34.9	2.4	10	168	10.9	0.24	1.4	1.9	0.09	C
17	5	55	9.2	19- 0.6	155-23.3	13.6	2.4	9	272	35.8	0.47	4.4	11.0	0.12	D
17	5	55	46.3	19- 2.4	155-22.5?	6.2	1.6	9	280	32.9	0.56	3.0	5.0	0.16	D
17	6	1	27.7	19- 4.3	155-24.3	19.1*	2.1	8	273	29.5	0.52	3.7		0.08	D
17	6	4	14.4	19- 0.3	155-22.3	16.2*	2.1	10	299	36.8	0.47	3.4		0.20	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 17	6	13	25.7	19-20.4	155-12.0	11.7	1.6	7	262	4.0	0.21	0.9	1.2	0.03	C
17	6	30	19.6	19-10.7	155-26.0	30.3	1.7	13	239	18.1	0.74	3.0	6.7	0.12	D
17	8	36	24.7	19- 9.6	155-25.4	15.2*	1.9	10	246	19.9	0.35	2.7		0.13	D
17	8	48	43.3	19-10.7	155-24.6	34.5	2.2	11	250	16.9	0.38	3.0	3.6	0.17	D
17	9	37	42.5	19-19.5	155-11.6	11.6	1.5	10	224	5.7	0.36	1.9	2.7	0.10	C
17	15	25	46.7	19-21.6	155-15.4	9.6	3.1	20	135	0.4	0.05	0.5	0.3	0.11	B
17	22	6	14.4	19-19.6	155-15.7	7.9	0.9	12	174	3.1	0.21	1.2	1.0	0.18	C
18	1	34	33.0	19-23.5	155-16.5	2.5	0.4	7	166	0.6	0.62	1.6	3.4	0.16	C
18	3	46	15.7	19-42.0	155-17.6	33.3	2.5	20	133	18.9	0.15	0.6	2.0	0.10	B
18	4	5	43.7	19-16.7	156-19.6	9.5	2.7	11	305	50.2	0.28	8.9	9.4	0.14	D
18	4	23	30.9	19-21.0	155-11.6	9.4	2.2	18	181	3.2	0.10	0.9	0.5	0.17	C
18	4	32	37.4	19-22.1	155-12.2	7.1	1.6	13	145	0.9	0.12	0.9	0.7	0.15	B
18	6	3	54.9	19-25.6	155-28.2	10.9	1.5	11	223	11.6	0.18	1.1	0.5	0.08	C
18	7	21	33.1	19-24.8	155-23.7	12.1	1.2	10	188	7.3	0.30	1.2	2.5	0.09	C
18	8	3	15.4	19-18.5	155- 4.6	3.8	2.0	12	218	11.4	0.30	1.7	1.5	0.15	C
18	10	53	45.0	19-21.0	155-14.5	8.4		15	156	2.1	0.13	0.9	0.6	0.16	C
18	12	18	59.3	19-23.6	155-22.6	10.6		14	159	5.2	0.09	0.6	0.4	0.11	C
18	12	24	42.1	19-23.2	155-16.7	28.1	2.2	18	56	0.5	0.20	1.3	1.9	0.15	B
18	14	1	20.7	19-19.3	155-13.7	10.1	2.8	20	190	5.5	0.07	0.6	0.3	0.12	C
18	15	26	18.9	19-17.0	155-14.2	6.9		14	224	7.9	0.22	1.2	0.9	0.16	C
18	15	44	11.4	19-18.9	155-13.7	9.8	2.4	21	194	6.0	0.10	0.8	0.4	0.16	C
18	16	0	28.8	19-19.8	155-13.7	10.6	1.8	15	192	4.7	0.09	0.6	0.3	0.09	C
18	17	25	38.3	19-19.8	155-13.9	10.2		13	182	4.4	0.07	0.6	0.3	0.08	C
18	17	57	29.9	19-24.3	155-17.1	18.6	1.8	12	128	1.0	0.18	0.8	1.7	0.08	B
18	20	12	32.4	19-41.2	156- 3.8	8.0*	2.4	10	305	64.6	1.23	7.5		0.11	D
18	21	0	16.7	19-17.6	155- 6.2	7.3		12	225	10.5	0.44	2.6	1.4	0.24	C
18	22	13	17.3	19-20.2	155-16.9	32.7	2.3	16	143	0.9	0.35	1.8	2.8	0.12	B
19	0	38	4.4	19- 9.8	155-43.3	8.0*		11	338	14.3	0.70	5.8		0.15	D
19	16	44	2.8	19-18.8	155-15.6	34.7	2.6	14	195	4.0	0.33	1.5	2.7	0.09	C
19	20	15	10.9	19-18.1	155-15.6	32.3	2.0	15	198	4.9	0.24	1.4	2.0	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 19	21	56	45.2	19-19.6	155-13.8	10.2	1.4	16	186	4.8	0.08	0.6	C.4	0.11	C
19	23	39	4.0	19-22.2	155-25.0	7.6	2.1	16	97	4.7	0.09	0.8	C.9	0.19	B
20	0	42	7.6	19-22.2	155-23.3	10.0	2.0	11	110	3.6	0.10	1.0	0.9	0.15	B
20	1	36	29.4	19-20.9	155- 9.4	8.6	2.1	14	241	1.9	0.17	1.2	C.5	0.13	C
20	4	41	29.4	19-26.0	155-25.9	13.0	2.1	14	199	8.4	0.09	0.7	C.6	0.07	B
20	4	58	51.0	19-22.1	155-16.1	26.2	1.5	14	99	0.7	0.30	1.4	2.5	0.10	B
20	9	21	4.0	18-57.2	155-16.8?	5.2	2.6	16	298	42.3	0.23	1.5	C.9	0.13	C
20	10	5	28.9	19-21.0	155-13.1	9.9	1.9	15	169	3.0	0.12	0.8	C.5	0.12	C
20	10	52	30.8	19-23.4	155-24.8	11.2	2.0	15	120	6.5	0.07	0.6	C.4	0.11	B
20	11	48	57.3	19-24.5	155-23.8?	10.8	2.0	14	119	7.4	0.06	0.5	C.9	0.11	B
20	14	47	45.7	19-18.9	155-13.6	9.8		10	211	6.1	0.26	1.4	C.9	C.14	C
20	23	39	33.0	19-24.6	155-16.9	8.6	1.2	12	167	0.5	0.21	0.8	0.9	0.07	B
20	23	41	29.1	19-26.0	155-17.0	12.5	1.5	7	291	1.5	0.69	2.2	4.1	0.03	C
21	14	8	20.8	19-19.6	155-13.4	10.2	2.1	13	199	5.3	0.16	1.1	0.6	0.14	C
21	15	9	56.6	19-19.5	155-13.6	11.0	2.5	17	188	5.2	0.06	0.6	C.2	0.09	C
21	17	32	45.9	19-20.8	155-12.9?	11.7		12	177	4.7	0.24	1.2	1.8	0.11	C
21	18	32	49.8	19-18.9	155-13.8	10.5	2.2	16	195	6.0	0.10	0.8	C.4	0.13	C
21	21	3	19.8	19-19.7	155-15.7	7.9	2.3	15	170	3.0	0.14	0.9	0.6	0.16	C
21	21	7	50.5	19-53.7	155-48.1	4.2	2.5	20	230	18.5	0.24	2.2	2.7	0.17	C
21	22	36	15.4	19-18.6	155-14.9	14.9		11	205	5.2	0.06	0.4	0.5	0.02	B
21	23	5	1.4	19-10.9	155-38.8	9.1	2.7	15	252	8.0	0.44	2.7	0.9	0.12	D
21	23	22	52.0	19- 9.7	155-37.4?	6.5		13	298	9.7	0.42	2.1	1.0	0.21	D
22	1	22	14.8	19-17.3	154-59.3	32.5		17	240	20.4	0.30	1.6	2.6	C.08	C
22	3	44	31.1	18-56.4	155-26.3?	5.6		15	310	39.0	0.32	1.2	1.5	0.17	C
22	7	42	33.8	19-20.2	155-10.4	11.8		11	237	3.7	0.32	1.6	2.0	0.10	C
22	9	30	20.7	19-20.9	155-26.4	43.8	2.5	16	127	5.6	0.33	1.7	3.1	0.15	B
22	17	46	13.2	19-33.2	155-40.9	4.8	2.7	15	96	25.5	0.07	0.5	C.5	0.10	A
22	18	22	36.8	19-20.3	155-12.5	9.3	1.8	11	193	4.1	0.20	1.1	0.8	0.13	C
23	0	6	48.4	19-21.0	155-12.6	9.0	1.7	15	174	2.7	0.10	0.7	C.5	0.12	C
23	0	28	12.5	19-21.0	155-12.9	9.9	1.7	15	171	2.9	0.12	0.8	C.5	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 23	16	33	15.8	19-19.2	155-24.9	8.1	2.9	15	167	3.3	0.11	0.9	0.7	0.16	C
23	21	57	3.1	19-23.6	155-23.5	10.3	1.6	14	174	6.4	0.11	0.7	0.5	0.13	C
23	23	15	2.9	19-27.0	155-14.1?	3.2*	2.0	8	276	6.3	0.90	3.7		0.38	D
23	23	40	24.1	19-25.5	155-16.2?	4.9	1.9	8	232	2.5	0.78	4.3	3.3	0.31	D
23	23	53	12.7	19-19.1	155-13.6	10.2		12	193	5.8	0.12	0.9	0.5	0.12	C
24	0	49	24.2	19-23.1	155-15.7	37.6	2.3	13	187	1.3	0.58	2.5	4.6	0.11	C
24	8	36	8.5	19-23.7	155-16.4	3.3	1.1	10	175	0.9	0.26	0.9	1.5	0.08	B
24	11	45	30.9	19-23.5	155-25.1	13.3		12	142	6.8	0.07	0.7	0.7	0.08	B
24	12	17	43.4	19-21.2	155-12.5	7.9	1.6	15	171	2.5	0.13	0.9	0.6	0.16	C
24	16	27	0.9	19-20.9	155-29.2	10.7	2.0	11	133	10.5	0.12	1.2	0.7	0.15	B
24	19	33	11.2	19-18.6	155-27.1	6.9	2.2	16	155	14.9	0.11	0.9	0.9	0.18	C
25	0	56	0.5	19-25.7	155-26.1	7.8	2.3	18	113	9.0	0.09	0.7	0.7	0.16	B
25	6	42	45.6	19-30.5	155-15.8	3.4*	1.9	7	329	10.0	0.59	3.0		0.17	D
25	8	32	52.8	19-18.1	155-14.5	35.5	4.1	23	198	193.4	0.17	1.1	1.4	0.12	C
25	9	12	13.3	19-19.0	155-14.4	34.5		16	191	5.4	0.17	1.0	1.5	0.09	C
25	9	31	51.8	19-36.1	155-14.4	11.9	1.7	16	100	19.2	0.05	0.4	0.8	0.07	A
25	9	55	28.0	21- 0.6	156-49.1	7.5	4.8	7	184	64.9	0.88	4.7	5.3	0.22	C
25	10	16	31.5	19-20.7	155- 7.6	5.9	1.2	16	194	13.6	0.09	0.7	0.6	0.11	C
25	10	53	26.7	19-29.3	155-10.3	8.0*	1.0	9	331	14.3	2.82	11.4		0.15	D
25	13	21	53.5	19-21.2	155-46.0	11.3	2.3	10	267	19.5	0.29	5.9	8.6	0.16	D
25	13	47	8.1	19-20.5	155-12.9	28.9	2.3	19	178	3.7	0.13	0.9	1.2	0.09	B
25	14	22	0.1	19-21.6	155-13.0	29.8	1.5	15	156	4.1	0.18	1.3	1.7	0.10	C
25	15	42	9.1	19-18.5	155-14.7	33.2	2.4	19	197	5.6	0.19	1.1	1.4	0.10	C
25	16	24	18.8	19-25.0	155-16.5	0.9	1.0	9	167	0.9	0.04	0.3	0.3	0.04	B
25	17	17	47.9	19-27.8	155-12.2?	3.2*	1.6	7	298	10.5	0.95	3.9		0.32	D
25	17	43	2.5	19-24.6	155-15.4	4.2	0.3	7	246	2.8	0.13	0.5	0.6	0.02	C
25	18	4	35.2	19-22.9	155-14.5	5.8	0.8	13	149	2.4	0.14	0.5	1.0	0.09	B
25	18	35	38.4	19-17.9	155-16.3	33.3	1.6	15	198	4.1	0.20	1.3	1.9	0.10	C
25	19	14	55.4	19-27.1	155-13.4?	8.0*	2.1	11	273	7.4	0.54	3.9		0.54	D
25	19	19	42.9	19-24.6	155-17.4	0.0	0.7	10	94	0.3	0.08	0.4	3.9	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 25	19	34	37.8	19-24.4	155-17.5	0.0	0.4	8	96	0.5	0.14	0.6	1C.2	0.13	B
26	0	39	51.6	19-29.4	155-15.3	0.3*	1.9	8	324	8.4	0.43	1.6		0.12	D
26	1	5	52.1	19-25.0	155-17.4	2.3	0.8	8	129	0.6	0.03	0.2	0.2	0.02	B
26	3	2	18.2	19-47.0	155-15.6	4.3	1.6	18	170	19.4	0.16	0.9	C.8	0.18	C
26	7	6	5.2	19-20.5	154-45.7	40.0*	1.7	18	304	19.5	0.19	1.9		0.09	D
26	7	26	47.4	19-24.5	155-17.0	1.1	0.5	10	107	0.7	0.08	0.6	0.5	0.12	B
26	7	37	4.6	19-27.1	155-14.1	8.0*		6	315	6.6	1.04	5.1		0.07	D
26	11	29	56.9	19-31.5	155-14.5	2.6*	1.3	7	332	12.5	0.57	3.1		0.15	D
26	14	19	54.8	19-31.3	155-14.2?	8.0*	1.2	6	343	12.3	1.93	13.3		0.41	D
26	15	38	21.6	19-27.1	155-16.3	3.9	0.5	6	312	3.9		2.5	4.4	0.19	D
26	18	42	12.1	19-22.0	155-13.1	2.8	0.6	6	157	1.4	0.03	0.4	C.3	0.01	B
26	20	44	43.3	19-25.C	155-16.3?	1.5	0.4	10	218	1.3	0.25	1.1	1.2	0.18	C
26	21	24	54.8	19-24.4	155-17.4	0.5	1.2	10	110	0.6	0.19	0.7	1.6	0.14	B
26	21	27	8.1	19-26.1	155-16.8	4.0	1.2	9	293	2.0	0.71	3.0	1.4	0.15	D
26	21	27	34.2	19-31.2	155-13.6	3.2*	1.1	6	332	13.1	0.68	3.8		0.14	D
26	21	32	8.8	19-26.5	155-14.5	2.5	0.9	7	325	5.2	0.40	1.6	1.1	0.11	C
26	21	36	26.1	19-26.2	155-14.7?	0.4*	0.5	8	305	4.6	0.35	1.1		0.15	D
26	21	40	14.3	19-25.7	155-13.7?	8.0*	1.1	7	327	6.0	0.47	5.9		0.36	D
26	21	41	47.9	19-24.3	155-15.6	3.7	0.3	6	236	2.6	0.20	0.8	1.0	0.03	C
26	23	36	28.3	19-27.8	155-14.0?	0.2	0.6	8	317	7.5	0.81	4.0	5C.7	0.17	D
27	0	8	29.6	19-24.9	155-16.1	3.9	0.2	7	256	1.6	0.26	1.1	1.3	0.06	C
27	1	29	40.4	19-24.2	155-17.2	2.7	1.6	13	92	1.1	0.08	0.5	C.8	0.10	B
27	2	55	45.9	19-27.5	155-14.5?	1.6	0.8	8	313	6.5	0.59	2.3	1.7	0.19	C
27	3	21	14.7	19-19.1	155-17.1	32.3	1.5	14	168	2.0	0.21	1.3	2.0	0.10	C
27	5	3	23.8	19-17.1	155-17.3	32.6	1.7	13	200	2.7	0.24	1.4	2.1	0.11	C
27	5	54	45.8	19-19.1	155-13.8	12.9	1.1	10	204	5.6	0.18	1.5	1.3	0.13	C
27	6	26	58.0	19-23.2	155-23.8	10.2	2.6	15	67	5.6	0.06	0.7	C.7	0.11	B
27	6	29	35.6	19-23.3	155-24.1	10.8	1.4	12	131	6.0	0.07	0.6	1.2	0.09	B
27	6	30	20.1	19-24.6	155-17.2	0.0	0.4	9	123	0.6	0.10	0.5	6.2	0.10	C
27	6	32	42.8	19-23.0	155-24.9	7.9	2.4	17	84	5.9	0.08	0.8	0.7	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 27	6	36	42.3	19-23.2	155-23.7	10.1	2.2	15	66	5.6	0.07	0.8	0.8	0.13	B
27	7	29	54.6	19-23.1	155-24.1	10.9	2.0	15	115	5.4	0.06	0.5	0.4	0.10	A
27	7	34	10.3	19-23.1	155-24.2	10.8	1.3	14	131	5.6	0.09	0.6	1.3	0.10	B
27	8	27	31.1	19-25.9	155-24.6	10.6		12	211	7.5	0.08	0.4	0.3	0.05	B
27	9	21	25.9	19-23.9	155-16.0	2.4	0.6	8	205	1.6	0.28	0.7	1.3	0.07	B
27	10	11	44.2	19-29.4	155-14.6	0.5*	1.9	7	330	8.9	0.59	2.4		0.15	D
27	10	12	33.5	19-25.3	155-21.9	10.0	1.5	11	150	4.7	0.32	0.6	2.1	0.08	B
27	10	16	8.2	19-22.7	155-25.1	8.0	1.8	15	138	5.6	0.13	0.9	1.2	0.19	B
27	12	37	49.2	19-29.8	155-14.6?	8.0*	2.2	7	331	9.7	0.36	7.0		0.42	D
27	13	23	31.6	19-23.4	155-17.4	1.1	0.8	11	73	1.0	0.11	0.5	1.2	0.16	B
27	13	47	53.2	19-25.8	155-24.4	10.4	1.8	13	183	7.3	0.06	0.4	0.3	0.06	B
27	14	57	43.3	19-26.8	155-13.1	3.0*	1.9	6	334	7.6	0.72	4.0		0.15	D
27	17	18	58.8	19-17.0	155-50.4	7.1	2.8	15	296	23.6	0.40	2.9	1.3	0.13	D
27	18	8	9.4	19- 1.1	155-14.3	8.0*		12	291	35.5	0.83	5.2		0.11	D
28	6	43	58.2	19-32.1	155-45.7?	2.2	2.3	15	192	16.8	0.27	1.0	1.1	0.12	C
28	7	19	50.3	19-21.5	155-11.6	9.8		12	172	2.5	0.08	0.8	0.4	0.10	B
28	19	48	20.6	19-21.0	155- 6.5?	4.2	2.1	16	198	15.5	0.12	0.8	0.9	0.15	C
29	0	1	17.5	19-16.5	155-51.7	8.2	2.7	11	327	25.7	0.40	4.7	1.8	0.12	D
29	2	56	19.1	19-18.9	155-16.0	9.0	1.6	15	185	3.3	0.10	0.8	0.5	0.14	C
29	7	12	45.5	19-21.2	155-13.9	8.5	1.5	16	156	2.7	0.11	0.8	0.6	0.15	C
29	7	47	30.6	19-31.1	156-26.2	10.1	3.9	24	259	54.1	0.27	3.3	3.6	0.14	D
29	12	24	31.8	19-22.4	155-24.8	11.4	2.1	14	117	4.9	0.08	0.7	1.3	0.13	B
29	20	14	54.4	19-19.5	155-15.4	9.4		10	180	3.7	0.11	0.8	0.6	0.09	B
29	23	53	34.0	19-21.1	155-13.5	9.4	2.0	18	163	3.1	0.08	0.7	0.4	0.14	C
30	0	4	23.5	19-19.2	155-15.8	9.4	1.6	16	178	3.2	0.09	0.7	0.5	0.13	C
30	1	44	5.0	19- 3.2	155-19.4	35.2	2.7	23	260	31.4	0.36	2.1	4.5	0.24	D
30	2	4	50.2	19-26.9	154-56.2?	53.3		10	184	5.3	0.80	2.4	7.0	0.04	C
30	12	47	57.4	19-23.3	155-25.6	10.7	1.4	11	211	6.9	0.09	0.6	0.4	0.07	B
30	14	25	24.2	19-24.5	155- 4.3?	7.6	1.8	9	174	10.5	0.20	2.8	1.1	0.17	C
30	18	50	57.4	19-16.7	155- 5.0	0.0*	3.2	16	225	17.0	0.30	1.8		0.29	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 30	19	53	49.8	19-18.3	155-14.3	31.5	1.6	15	199	6.3	0.22	1.3	1.8	0.11	C
31	1	0	15.6	19-21.3	155-10.7	10.5	1.4	10	181	2.1	0.09	0.9	0.6	0.09	B
31	3	4	21.2	19-19.8	155-14.2	9.9	2.2	16	185	4.1	0.10	0.8	0.4	0.13	C
31	4	20	38.0	19-19.5	155-13.7	10.0	1.6	15	197	5.1	0.10	0.7	0.4	0.10	C
31	6	21	2.3	19-19.4	155-15.7	13.2	1.4	9	179	3.2	0.05	0.2	0.4	0.02	B
31	22	18	6.2	19-22.6	155-26.1	8.8	2.2	16	123	6.6	0.10	0.8	0.7	0.17	B
NOV 1	0	59	33.3	19-22.5	155-23.9	8.9	2.1	15	120	4.4	0.04	0.3	0.2	0.06	A
1	3	15	39.9	19-22.7	155-28.3	9.4	1.5	11	135	9.9	0.13	1.3	1.6	0.17	B
1	5	26	32.3	19-24.1	155-25.2?	11.0	1.5	15	124	8.0	0.07	0.5	0.3	0.11	B
1	10	16	52.6	19-20.6	155-10.8?	11.1	1.3	11	217	3.3	0.16	1.1	0.5	0.11	C
1	11	16	28.3	19-22.6	155-13.1	6.1	0.8	9	171	1.1	0.16	1.5	0.9	0.13	C
1	17	41	7.5	19-27.1	155-26.1	13.4	1.7	12	262	7.0	0.13	1.3	0.5	0.07	C
1	18	11	53.8	19-21.3	155-16.0	8.9	0.9	10	135	1.6	0.26	0.7	1.6	0.09	B
2	3	55	41.4	19-45.9	155-36.0?	27.9	2.7	15	110	15.0	0.32	1.5	5.0	0.22	B
2	6	18	40.8	19-18.3	155-14.7?	11.0	1.4	9	210	6.5	0.25	2.2	2.3	0.19	C
2	7	40	26.1	19-25.4	155-25.2	10.3	1.5	11	127	8.8	0.06	0.6	0.6	0.08	B
2	12	44	23.3	19-20.8	155-24.8	7.3		11	127	2.8	0.12	0.9	1.1	0.17	B
2	14	2	24.6	19-25.5	155-25.4	10.0	2.0	12	128	8.8	0.06	0.5	0.5	0.07	B
2	16	26	58.3	19-20.9	155-27.0	9.4		11	128	6.7	0.12	0.9	1.1	0.15	B
3	0	51	10.6	19-12.9	155-26.6	7.2	1.9	13	221	14.7	0.24	1.5	1.0	0.15	C
3	2	51	0.8	19-21.3	155-48.6	7.5	2.6	16	207	21.7	0.42	4.2	1.5	0.19	C
3	4	50	4.8	19-23.6	155-16.2	37.0	1.7	13	129	1.2	0.37	1.5	3.1	0.09	B
3	7	57	45.1	19-23.9	155-26.6	6.7	2.8	15	100	12.1	0.07	0.6	0.6	0.13	B
3	10	6	54.8	19-31.7	156-10.7	8.0*	2.2	12	284	26.9	0.82	5.3		0.14	D
3	12	10	3.4	19-21.9	155-24.9	8.8	1.7	15	102	4.2	0.09	0.8	0.7	0.18	B
3	20	50	59.2	19-20.8	155-14.7	32.7	2.3	15	159	2.1	0.20	1.2	1.8	0.11	C
3	21	53	44.1	19-20.9	155-13.8	8.2	0.9	13	164	3.1	0.13	0.9	0.6	0.16	C
4	1	58	52.0	19-20.9	155-12.8	7.0	1.3	11	174	2.9	0.16	1.0	0.8	0.15	C
4	12	19	5.0	19-23.6	155-17.1	14.9	2.1	16	71	0.7	0.05	0.5	0.6	0.09	A
4	15	22	45.1	19-20.6	155-27.7	9.2		11	131	7.7	0.15	1.5	1.7	0.20	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 5	2	40	9.0	19-12.8	155-16.4	44.2	2.4	12	242	10.3	0.37	3.1	2.4	0.16	D
5	2	43	31.4	19- 0.1	155-14.2?	8.0*	2.4	12	293	33.9	1.10	8.1		0.55	D
5	2	44	17.9	19-12.1	155-16.5	39.4	2.5	13	245	11.5	0.47	3.7	3.3	0.23	D
5	6	36	46.4	19-32.5	155-59.6	9.4	2.9	8	296	7.9	1.25	7.1	1.0	0.11	D
5	23	55	11.9	19-22.6	155-25.4	8.9	2.3	15	95	5.9	0.07	0.7	0.6	0.14	B
6	1	49	32.6	20-23.1	155-47.8	8.0*	2.8	16	183	40.4	0.13	2.1		0.15	C
6	7	59	18.1	19-24.8	155-32.0	10.0	2.1	12	165	17.4	0.16	1.1	0.7	0.17	C
6	8	4	32.5	19-21.5	155-17.2	22.7	2.2	14	102	2.7	0.19	1.0	1.8	0.10	A
7	21	30	36.5	19-20.1	155-19.6	30.2	2.2	12	98	3.9	0.19	1.2	1.7	0.09	B
7	22	11	57.5	19-26.1	155-26.8?	1.9	2.3	13	137	12.5	0.09	0.6	1.3	0.12	B
7	22	41	0.9	19- 0.1	156-14.4	18.8*	3.0	18	315	66.5	0.31	2.2		0.15	D
8	5	3	15.8	19-17.6	155-22.2	6.5	1.7	12	176	5.3	0.16	1.1	1.1	0.17	C
8	8	52	58.1	19-22.5	155-17.8	24.6		13	64	2.5	0.15	0.9	1.4	0.06	A
8	10	51	28.5	19-19.7	155-16.6	28.4		10	158	1.5	0.31	1.7	2.6	0.09	C
8	12	6	30.8	19-19.3	155-18.5	7.8		11	132	2.4	0.10	0.8	0.5	0.10	B
9	3	32	50.2	19-19.7	155-12.7	8.5	1.6	14	190	5.2	0.16	1.2	0.7	0.18	C
9	10	52	49.2	19-23.1	155-23.6	10.5	1.4	11	176	5.4	0.11	0.9	0.5	0.11	C
9	20	11	20.1	19-18.6	155-21.3	6.4	1.1	10	204	4.6	0.10	0.6	0.5	0.07	B
9	23	53	18.5	19-21.8	155-26.9?	11.6	1.7	13	124	6.9	0.17	1.1	1.0	0.17	B
10	0	31	46.3	19-43.4	155-47.9	15.4*	2.4	14	167	25.9	0.06	0.5		0.06	C
10	0	46	47.0	19-12.5	155-20.9?	31.3	1.8	14	221	14.8	0.18	1.2	1.7	0.09	C
10	2	53	14.0	19-19.4	155-15.3	8.1	1.4	10	184	4.0	0.22	1.3	1.0	0.18	C
10	7	24	0.8	19-19.7	155-21.2	30.7	2.5	16	126	3.8	0.20	1.2	1.8	0.11	B
10	12	14	1.9	19-18.9	155-15.1	8.2	1.2	10	197	4.6	0.24	1.4	1.0	0.19	C
10	12	54	43.6	19-24.8	155-27.8	10.4	1.7	14	139	11.6	0.11	0.8	0.5	0.14	B
10	14	10	21.1	19-18.0	155-16.1?	11.3	1.4	10	213	4.4	0.33	1.8	2.2	0.12	C
10	15	28	2.0	19-22.1	155- 7.6	13.7	1.9	10	286	3.8	0.24	1.8	0.6	0.08	C
10	16	0	1.6	19-20.5	155-10.9	10.3	1.5	10	218	3.4	0.11	0.7	0.3	0.06	B
10	17	16	12.0	19-18.4	155-14.5	10.1	1.5	15	199	6.0	0.09	0.7	0.4	0.10	B
10	17	19	52.0	19-18.4	155-14.3	14.9	1.3	6	215	6.3	0.10	0.7	0.9	0.02	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 10	21	37	17.6	19-18.4	155-14.6	10.1	1.2	11	210	5.8	0.15	1.0	0.5	0.13	C
10	22	3	24.4	19-18.1	155-14.7	10.2	2.1	15	222	5.9	0.12	0.9	C.4	0.11	C
10	22	38	15.1	19-53.2	155-21.2	6.6	2.1	15	190	16.1	0.26	1.4	1.1	0.18	C
10	23	33	54.8	19-19.5	155- 7.5	10.3	1.6	13	207	6.3	0.25	1.9	0.7	0.18	C
11	1	40	0.1	19-18.6	155-15.5	10.0	1.7	13	193	4.2	0.09	0.8	0.4	0.11	C
11	9	37	4.7	19-20.8	155-12.9	8.0		14	175	3.2	0.16	1.1	0.7	0.18	C
11	12	53	57.0	19-19.0	155-15.4	9.8		11	191	4.0	0.10	0.7	0.4	0.09	B
11	15	53	45.4	19-11.4	155-19.9	45.2		15	240	12.2	0.30	2.6	2.1	0.11	D
11	17	12	41.4	19-12.2	155-20.5	37.3	3.7	18	223	197.5	0.21	1.3	1.5	0.09	C
11	18	15	12.1	19-35.8	155-16.7?	11.9	2.4	16	99	16.0	0.14	0.9	0.8	0.12	B
11	19	18	54.3	19-13.5	155-23.1	27.8	2.2	15	234	12.3	0.14	0.9	1.2	0.09	C
11	22	4	51.4	19-20.7	155-10.9	7.0		10	214	3.2	0.24	1.5	0.9	0.14	C
11	23	27	20.3	19-24.4	155-16.3	8.7	1.2	9	162	1.5	0.14	0.5	C.9	0.05	B
11	23	27	34.5	19-24.4	155-16.8	9.3	2.0	17	50	1.1	0.03	0.3	0.2	0.07	A
12	0	56	51.3	19-14.7	155-25.3	26.9	2.2	17	208	10.7	0.38	1.9	3.4	0.21	C
12	8	19	32.3	19-16.8	155-19.8	23.6	2.2	6	275	8.7	0.37	2.6	3.6	0.06	D
12	19	46	13.8	20- 5.4	155-50.4	20.3	4.3	23	144	16.0	0.08	1.0	3.2	0.16	B
12	19	57	19.1	20- 6.5	155-51.4	20.1	3.1	24	146	18.4	0.10	1.0	4.2	0.18	B
12	20	17	6.8	20- 4.7	155-51.4	17.5	2.5	15	303	17.2	0.23	1.6	4.9	0.13	C
12	21	36	0.3	20- 6.8	155-50.1	15.2*	3.2	20	150	16.7	0.08	1.0		0.13	C
12	21	46	19.5	19-22.8	155-22.0	10.6	1.6	15	107	4.4	0.06	0.6	C.4	0.13	B
13	1	4	11.9	19-18.4	155-14.3?	11.7	1.3	10	213	6.2	0.31	1.6	2.2	0.11	C
13	1	35	31.9	19-18.1	155-12.9	15.9	1.4	8	231	8.0	0.20	1.2	1.8	0.05	C
13	2	34	42.0	19-19.4	155-15.7	8.1	1.2	12	179	3.3	0.17	1.0	0.8	0.15	C
13	3	45	50.3	19-21.4	155-10.0	7.1	1.5	8	243	1.5	0.28	1.9	0.9	0.10	C
13	4	57	56.9	19-20.6	155- 8.9	13.9	1.4	8	282	3.2	0.25	2.1	1.1	0.07	C
13	7	44	9.9	19-19.1	155-14.5	13.8	1.4	7	198	5.1	0.14	0.7	1.1	0.03	B
13	18	18	14.3	19-23.1	155-29.9	7.2	2.5	17	104	12.8	0.11	0.9	C.9	0.17	B
14	0	34	9.0	19-22.2	155-12.7	26.5	2.1	19	140	0.6	0.14	0.9	1.3	0.10	B
14	1	5	19.C	19- 3.3	155-24.7	14.5*	1.7	9	289	30.5	0.65	4.4		0.08	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

197C	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 14	11	8	22.4	19-24.1	155-25.0	12.6	1.6	14	145	7.7	0.10	0.6	1.4	0.08	B
14	11	37	33.6	19-21.5	155-15.6	8.4	1.0	8	135	0.7	0.15	0.4	1.0	0.04	B
14	13	16	8.7	19-20.0	155-12.1	10.9	1.5	9	206	5.6	0.23	1.6	0.7	0.13	C
14	15	36	10.2	19-23.5	155-23.9	9.2		9	182	6.1	0.11	0.8	0.7	0.08	B
14	19	48	33.9	19-18.4	155-14.3	7.4	1.3	16	212	6.6	0.17	1.0	0.7	0.16	C
14	20	32	8.6	19-21.8	155-12.8	14.3	1.3	9	151	4.4	0.17	0.7	1.3	0.04	B
14	20	45	48.4	19-27.7	155-36.9?	9.6	1.4	7	204	23.6	0.17	1.0	0.8	0.06	C
14	21	21	43.7	19-22.1	155- 4.5	26.2*	1.8	9	331	9.3	0.34	3.8		0.11	D
15	5	43	13.8	19-21.2	155- 4.8	16.8*	1.7	8	335	8.9	0.31	2.4		0.05	D
15	7	9	3.8	19-20.9	155-13.7	13.3	1.2	9	166	3.2	0.22	0.7	1.7	0.06	B
15	9	52	10.8	19-19.6	155-15.7	32.4	2.0	15	171	4.1	0.24	1.5	2.2	0.13	C
15	10	38	11.1	19-21.2	155-14.2	8.5	1.5	15	156	2.2	0.12	0.8	C.6	0.16	C
15	10	54	35.0	19-33.5	155-25.0?	29.6	2.1	9	177	7.5	0.25	2.4	2.7	0.11	C
15	10	56	47.2	19-23.1	155-22.0	5.7		11	145	4.2	0.17	0.5	1.7	0.09	B
15	12	59	22.5	19-20.8	155-14.2	8.1		15	163	2.6	0.15	0.8	C.8	0.15	C
15	14	21	50.4	19-33.6	156-16.1	2.9	3.0	14	303	36.7	0.23	1.5	C.9	0.10	C
15	22	22	39.5	19-20.3	155-16.5	29.5	2.0	21	147	1.7	0.18	1.2	1.5	0.17	B
16	0	33	43.2	18-49.2	155-23.2	26.9*	2.8	17	303	53.7	0.55	3.5		0.16	D
16	4	2	51.6	19-20.1	155- 6.4	5.1	3.3	17	202	7.0	0.17	1.2	C.8	0.16	C
16	4	23	48.7	19-46.8	156-37.5	8.0*	3.3	14	315	79.2	2.53	15.3		0.14	D
16	4	43	27.6	19-21.0	155- 7.8	8.2	1.2	13	192	4.1	0.16	1.3	C.8	0.12	C
16	9	17	26.6	19-20.2	155-11.9	11.8	1.5	10	206	5.1	0.26	1.4	2.0	0.10	C
16	12	17	34.5	19-20.6	155-12.4	8.0	1.7	17	179	3.5	0.12	1.0	C.6	0.18	C
16	16	4	10.4	19-10.9	155-36.2	10.3	2.3	13	251	7.4	0.33	2.3	0.7	0.10	C
16	20	2	46.5	19-19.9	155-25.4	6.6	2.1	16	139	3.7	0.10	0.9	C.9	0.18	B
16	20	24	6.0	19-19.9	155- 6.2	5.3	2.5	16	207	12.1	0.21	1.4	1.0	0.19	C
16	20	57	55.9	19-19.9	155- 7.6	6.6	1.5	17	204	5.6	0.21	1.4	0.9	0.19	C
16	21	9	3.3	19-10.1	155-34.0?	8.5	1.9	9	266	10.4	1.42	9.9	4.1	0.19	D
17	9	51	7.1	19-24.9	155-23.8	10.6	1.4	13	177	7.5	0.09	0.7	0.4	0.10	B
17	12	21	25.1	19-25.7	155-26.1?	18.1	1.8	12	168	9.0	0.38	1.2	4.2	0.21	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 17	14	2	30.1	19-12.1	155-26.2	23.3	1.7	10	234	15.7	0.63	3.0	6.2	0.11	D
17	14	4	8.5	19- 6.1	155-26.8	30.0	2.1	8	279	24.2	2.07	8.8	15.5	0.09	D
17	14	6	59.0	19-11.4	155-22.6?	3.4	1.5	11	235	16.4	3.24	0.0	43.2	0.84	D
17	14	9	30.3	19- 7.3	155-28.0?	45.9	2.3	10	262	21.2	1.63	5.5	13.4	0.13	D
17	14	11	1.6	19- 3.5	155-25.1	50.4	2.4	13	277	29.0	0.38	3.8	4.1	0.13	D
17	14	11	36.4	19- 1.8	155-23.3	15.8*	2.4	10	283	33.9	0.48	3.3		0.20	D
17	16	11	25.1	19-21.4	155- 9.5	11.7	1.3	7	269	1.3	0.38	1.9	2.2	0.05	C
17	17	12	44.1	19-20.2	155-11.8	10.9	1.7	11	206	4.4	0.19	1.3	0.6	0.12	C
17	19	58	42.7	19-16.8	155-28.5	6.1	1.9	9	184	11.0	0.18	1.5	1.5	0.15	C
17	21	55	18.6	19-26.0	155- 5.7?	28.5*	1.9	11	176	10.2	0.55	5.9		0.26	D
18	0	43	58.8	19-21.8	155-11.6	6.6	1.5	10	174	2.0	0.18	1.3	0.8	0.11	C
18	6	7	57.8	19-52.3	155-46.8?	0.0	3.3	17	133	19.6	0.43	0.8	2.0	0.13	B
18	15	28	32.2	19-23.7	155-17.2	3.1	2.1	13	96	0.9	0.06	0.4	0.6	0.08	A
18	16	31	6.6	19-24.7	155-23.4	11.0	1.7	13	117	6.7	0.06	0.6	0.4	0.11	B
18	17	22	41.2	19-25.6	155-24.0	7.3	1.5	12	196	6.8	0.11	0.6	0.6	0.08	C
18	21	40	44.5	19-19.4	155-15.9	8.1	1.8	12	175	2.9	0.15	0.9	0.7	0.14	C
18	22	25	33.3	19-23.1	155-25.0	10.1	1.2	11	203	6.2	0.16	1.1	0.9	0.12	C
19	0	48	13.0	19-16.4	155- 0.6?	30.3	1.8	9	244	25.7	0.49	3.9	6.1	0.12	D
19	1	29	26.4	19-21.1	155-13.4	9.2	2.1	16	165	3.0	0.14	1.0	0.6	0.17	C
19	2	48	27.2	19-34.8	155-19.4	27.9	1.6	12	284	11.5	0.35	1.9	2.1	0.06	C
19	14	27	26.2	19-23.4	155- 3.4?	0.9	2.3	15	190	16.0	0.56	1.1	3.0	0.16	C
21	15	20	37.9	19-18.1	155-12.6	11.8		13	228	8.3	0.18	1.2	1.2	0.11	C
22	1	54	51.5	19-21.4	155-42.1	6.7	2.5	12	281	14.9	0.84	3.9	2.2	0.10	D
22	2	36	21.8	19-23.7	155-17.0	18.5	1.7	12	73	0.7	0.07	0.5	0.7	0.05	A
22	3	21	34.5	19-21.5	155-17.1	29.9	2.2	14	106	2.6	0.44	1.7	3.9	0.10	B
22	7	30	52.3	19-24.6	155-29.5	12.2	2.0	13	193	13.6	0.09	0.7	1.1	0.07	B
22	8	9	28.1	19-18.6	155-13.7	10.1	1.8	12	213	6.5	0.16	1.0	0.6	0.14	C
22	8	48	14.8	19-23.3	155-23.4	12.5		9	124	5.8	0.09	0.9	1.3	0.09	B
22	12	27	38.0	19-38.0	155-41.0?	0.3	1.9	8	232	28.0	1.24	32.4	36.5	0.27	D
22	13	46	57.4	19-53.7	156-16.3?	84.6*	2.8	7	300	61.6	7.84	88.9		2.07	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 22	20	7	47.7	19-22.4	155-14.4	6.6	1.4	11	139	1.9	0.10	0.7	0.6	0.09	B
22	22	15	48.4	19-22.1	155-25.5	12.4		10	138	5.2	0.13	0.9	2.1	0.10	B
23	3	31	44.6	19-19.3	155-15.9	8.8	1.2	14	178	3.0	0.11	0.8	C.5	0.13	C
23	7	28	28.3	19-23.6	155-27.3?	11.2	2.3	15	96	9.4	0.07	0.7	1.2	0.12	B
23	12	2	37.1	19-19.8	155-13.8	9.9	1.4	12	189	4.5	0.12	0.9	C.5	0.12	C
23	15	32	15.8	19-19.2	155-13.6	10.1	1.3	11	203	5.5	0.14	1.0	0.5	0.12	C
23	16	20	56.1	19-22.2	155- 9.2	8.1	1.8	8	305	1.1	1.25	3.9	5.4	0.13	D
23	16	55	19.7	19-21.5	155-12.5	8.5	1.3	7	162	4.8		1.0	C.8	0.12	C
23	19	23	54.4	19-27.5	155-27.1	11.3	1.4	8	265	8.0	0.11	0.7	0.3	0.03	C
24	1	34	32.7	19-19.4	155-11.6?	3.0	1.4	6	225	5.9	0.14	0.7	0.5	0.04	C
24	14	5	43.1	19-12.2	155-34.4?	4.3*	2.2	9	247	6.9	0.61	2.6		0.22	D
24	16	26	55.4	19-18.6	155-26.1	11.1	2.1	13	156	5.7	0.12	1.0	0.7	0.12	C
24	19	57	36.1	19-21.8	155- 6.2	9.2	1.4	10	316	6.3	0.57	2.8	C.9	0.17	D
24	21	3	40.7	19-18.4	155-13.8	16.1	1.0	8	219	6.8	0.14	0.9	1.3	0.04	B
24	21	19	19.6	19-18.4	155-28.4?	9.8	1.6	7	155	9.6	0.28	3.2	7.7	0.19	C
25	2	25	52.9	19-22.6	155-25.8	10.9	1.3	11	243	6.2	0.27	1.5	2.1	0.08	C
25	3	42	6.6	19-26.7	155-29.6	11.8	2.1	12	212	12.5	0.16	1.2	1.1	0.09	C
25	7	26	26.8	19-20.3	155-13.2	8.0	1.7	13	184	4.6	0.16	1.1	0.7	0.18	C
25	7	43	14.8	19-19.4	155-12.7	26.8	1.9	10	299	6.4	0.78	3.8	5.2	0.07	D
25	11	22	52.0	19-22.4	155-24.0	9.5	1.8	9	202	4.2	0.54	1.2	3.4	0.11	C
25	17	4	13.9	19-19.8	155-13.4	11.8	1.2	13	194	5.0	0.22	1.2	1.6	0.11	C
25	19	37	3.4	19-23.6	155-23.1	11.5	1.6	9	177	6.0	0.18	1.0	1.9	0.11	C
25	20	47	47.7	19-21.6	155-24.1	11.3	1.9	12	138	2.9	0.09	0.8	0.4	0.12	B
25	21	16	57.2	19-23.5	155-17.3	17.7	1.8	10	139	1.0	0.13	0.8	1.4	0.08	B
26	0	30	57.5	19-21.0	155-10.1	10.8	0.8	9	185	2.1	0.10	1.2	0.4	0.09	C
26	7	11	56.7	19-25.0	155-17.4	17.2	1.4	9	233	0.6	0.12	0.6	C.9	0.03	C
26	15	2	29.4	19-22.5	155-23.2	9.9	1.5	13	110	4.2	0.08	0.8	C.7	0.14	B
26	19	2	57.1	19-43.7	155-45.4	10.1	2.8	10	153	28.8	0.87	0.9	5.8	0.10	C
26	20	53	20.3	19-20.9	155-13.7	8.2	1.0	11	166	3.2	0.18	1.2	C.9	0.17	C
26	21	21	21.8	19- 6.2	155-26.2?	16.3*	2.2	14	266	24.9	0.41	3.0		0.22	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 27	6	4	11.0	19-20.8	155-13.8	7.8	1.2	12	167	3.2	0.17	1.0	C.9	0.17	C
27	5	2	32.5	19-21.2	155-11.2	8.3	1.6	14	180	3.0	0.13	1.1	C.6	0.15	C
27	5	30	56.2	19-20.9	155- 8.0	7.1	1.5	15	194	3.9	0.16	1.1	0.7	0.15	C
27	6	4	11.0	19-20.8	155-13.8	7.8	1.2	12	167	3.2	0.17	1.0	C.9	0.17	C
27	7	37	20.1	19-20.8	155-13.2	9.0	2.4	16	173	3.4	0.11	0.8	C.5	0.15	C
27	15	34	49.5	19-15.4	155-26.5	9.1	2.0	12	200	10.5	0.18	1.4	C.9	0.16	C
27	17	31	5.2	19-31.4	155-24.7	13.8	1.7	13	135	3.8	0.11	1.1	0.8	0.14	B
27	19	46	22.7	19-18.7	155-12.6	14.8	1.6	7	226	7.5	0.12	1.0	C.4	0.04	C
27	20	22	10.2	19-20.9	155-11.5	9.9	1.5	7	182	3.8	0.15	1.7	1.1	0.10	C
27	20	22	31.1	19-19.5	155-10.5	8.5	1.3	9	198	4.9	0.10	0.9	0.4	0.08	B
27	21	57	32.4	19-20.5	155-11.0	9.4	1.6	12	188	3.6	0.13	1.1	C.6	0.13	C
28	1	4	1.2	19-21.7	155-21.6	10.7	2.3	15	144	5.0	0.07	0.7	0.4	0.10	B
28	1	43	54.0	20- 0.7	155-29.5	14.9*		14	217	21.9	0.11	1.1		0.07	C
28	2	3	17.1	19-22.6	155-22.6	9.5	1.8	15	94	4.6	0.07	0.7	0.6	0.13	B
28	5	13	42.0	19-20.8	155-11.6	15.2	0.9	10	195	3.6	0.10	0.7	0.8	0.04	B
28	16	2	15.8	19-24.1	155-25.8?	10.4	1.8	12	127	8.4	0.07	0.7	1.6	0.11	B
28	16	18	27.3	19-19.9	155-13.1	14.5	1.2	9	193	5.1	0.15	0.6	1.2	0.03	B
28	20	52	9.3	18-55.3	155-17.0	8.0*	2.7	16	281	45.7	0.54	3.5		0.13	D
29	2	1	4.8	19-25.2	155-17.2	3.0	0.6	7	198	0.7	0.16	0.6	0.7	0.06	B
29	5	13	55.9	19-24.1	155-12.3	8.8	1.5	11	250	3.0	0.19	1.0	C.6	0.10	C
29	14	27	13.4	19-20.8	155-11.5	14.0	1.2	8	196	3.8	0.29	1.0	2.2	0.05	C
29	16	21	13.6	19-21.1	155-13.6	7.8	1.0	10	163	3.2	0.12	0.8	C.6	0.11	C
29	16	23	26.5	19-23.0	155-23.9	12.4	1.1	12	156	5.3	0.13	0.9	1.6	0.11	C
29	17	47	3.6	19-21.4	155-18.3	28.0	1.7	13	73	2.8	0.32	1.5	2.7	0.08	B
29	21	3	10.9	19-23.1	155-25.8	8.1	1.6	12	216	6.9	0.16	1.0	1.0	0.11	C
29	22	4	28.7	19-19.8	155-36.7?	65.4*	1.9	8	194	9.1	0.22	3.9		0.15	C
29	22	22	25.1	19-21.0	155-12.6	9.1	1.0	9	174	2.8	0.14	1.2	0.8	0.11	C
29	22	25	27.9	19-21.1	155-12.9	9.7	1.3	11	168	2.7	0.11	1.3	0.6	0.14	C
29	23	36	53.2	19-20.7	155-11.0	13.1	1.2	7	210	3.3	0.23	0.9	1.7	0.03	B
30	2	45	54.2	19-22.9	155-22.1	10.8	0.9	12	108	5.5	0.07	0.6	0.4	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 30	3	30	21.3	19-20.2	155-13.0	8.7	2.2	19	182	4.4	0.12	1.0	C.5	0.20	C
30	5	11	26.6	19-19.8	155- 9.9	7.3	1.2	10	254	4.2	0.26	1.6	0.8	0.13	C
30	5	41	19.3	19-19.5	155-11.3	8.8	1.2	6	229	5.5	0.44	0.9	2.9	0.03	C
30	8	45	5.2	19-19.7	155- 5.5	15.6*	1.5	8	322	8.7	0.38	2.8		0.06	D
30	9	16	7.3	19-22.0	155-18.9	12.4	0.9	9	89	3.5	0.04	0.3	0.4	0.03	A
30	14	27	27.0	19-21.1	155-10.6?	15.0	1.2	10	208	2.3	0.33	1.3	2.2	0.07	C
30	16	42	2.9	19-21.3	155-14.3	22.9	1.5	8	152	2.0	0.46	2.3	4.0	0.08	C
30	19	34	10.6	19-31.4	155-40.2	5.0	2.6	15	187	26.4	0.11	0.9	C.6	0.12	C
30	20	6	38.6	19-22.8	155-29.3	13.1		7	141	11.6	0.10	1.5	3.2	0.07	B
30	21	11	19.2	19-21.3	155-10.7	14.6	1.4	10	199	2.3	0.15	1.2	0.8	0.07	C
1	0	42	11.1	19-20.7	155- 9.7	11.0	1.1	6	254	2.5	0.14	1.2	C.4	0.03	C
1	1	36	53.0	19-21.0	155-13.8	8.3	1.0	13	163	3.0	0.16	1.0	C.8	0.16	C
1	1	55	8.2	18-58.9	155-24.6	8.0*	1.8	16	292	36.7	0.21	1.3		0.10	D
1	4	38	19.0	19-20.9	155- 7.1	26.4*	1.5	7	320	5.2	0.21	3.3		0.09	D
1	6	29	27.1	19-21.8	155-18.3	26.7	1.2	11	72	3.4	0.28	1.3	2.6	0.07	B
1	7	58	7.4	19-24.4	155-23.4	11.3	1.4	15	116	6.6	0.05	0.4	C.7	0.08	A
1	7	58	55.6	19-20.5	155-11.3	0.1*		6	224	4.0	0.66	3.1		0.23	C
1	9	56	21.6	19-18.3	155-11.2	14.1	1.2	7	248	7.4	0.29	2.3	1.2	0.08	C
1	12	10	44.0	19-24.9	155-24.3	9.7	1.4	13	121	7.9	0.04	0.4	C.4	0.06	B
1	13	12	18.1	19-25.2	155-23.3	11.4	2.0	15	117	6.3	0.05	0.5	C.8	0.10	A
1	13	13	2.0	19-19.3	155-12.4	12.0	1.3	10	217	6.0	0.32	1.7	2.3	0.11	C
1	14	1	56.0	19-33.6	155-29.4	8.0*	1.6	4	212	12.8		0.0		0.19	D
1	14	2	53.1	19-58.2	155-59.5?	8.0		5	333	59.6		0.0		0.73	D
1	16	27	22.2	19-19.1	155-12.7	15.9	1.2	9	217	6.4	0.25	1.5	2.3	0.07	C
1	18	17	29.1	19- 4.1	156-11.5	16.9*	2.3	14	317	57.5	0.30	2.0		0.16	D
1	18	20	2.9	19-23.3	155-24.3	11.1	2.0	12	83	5.9	0.10	1.0	0.6	0.16	B
1	19	14	43.7	19-20.8	155-10.7	14.5	1.3	10	215	2.8	0.08	0.7	0.5	0.04	B
1	21	16	59.6	19-20.7	155-14.2	9.0	2.1	18	166	2.8	0.09	0.7	0.4	0.16	C
1	23	27	46.3	19-17.7	155-15.4	10.4	1.5	12	211	5.5	0.15	1.0	0.6	0.13	C
2	0	0	36.7	19-21.7	155-15.4	9.3	1.3	14	133	0.3	0.10	0.7	C.6	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 2	1	9	57.5	19-18.6	155-17.6	9.6	0.9	11	198	2.1	0.07	0.5	0.4	0.05	B
2	2	28	26.7	19-23.4	155-16.5	2.1	0.0	7	165	0.6	0.48	1.4	2.8	0.13	C
2	5	27	28.1	19-19.8	155- 8.2?	12.5	1.4	11	293	5.2	0.32	2.2	0.8	0.10	C
2	5	42	37.0	19-21.8	155-17.1	27.4	1.7	13	102	2.3	0.41	1.5	3.6	0.10	B
2	7	38	32.6	19-20.8	155-12.1	0.2*	0.6	6	202	3.2	0.09	0.5		0.05	C
2	8	49	43.8	19- 5.0	155-37.5	7.4		14	270	18.2	1.09	4.7	2.9	0.16	D
2	10	21	20.8	19-21.4	155-11.9	0.2*	0.6	7	173	2.4	0.17	0.9		0.16	C
2	10	47	27.4	19-23.7	155-12.9	3.0	0.8	6	212	2.3	0.15	0.8	0.4	0.04	B
2	13	26	9.6	19-20.6	155-13.1	9.1	1.2	11	180	3.7	0.16	1.2	0.9	0.14	C
2	15	57	1.6	19-32.4	155-41.0	5.9	2.0	10	291	31.3	2.35	10.5	4.1	0.11	D
2	16	10	0.3	19-22.4	155-16.1	27.0	2.1	15	95	0.3	0.36	1.5	3.1	0.11	B
2	18	39	59.0	19-20.5	155-12.6	7.2	1.3	10	187	3.7	0.16	1.0	0.7	0.11	C
2	19	0	31.0	19-41.3	155-46.7	8.0*	1.6	8	316	46.0	0.14	1.0		0.04	D
2	19	3	0.4	19-16.6	155-28.0	33.9	1.7	12	177	10.6	0.22	1.6	1.8	0.09	C
2	19	36	0.3	19-22.1	155-26.7	9.2	1.9	15	114	6.9	0.07	0.7	0.6	0.14	B
2	19	38	55.3	19-13.1	155-50.8	8.1	3.0	15	265	24.3	0.75	4.0	1.4	0.12	D
2	19	46	41.4	19-20.4	155-13.2	8.5	0.9	16	178	4.0	0.11	0.9	0.5	0.17	C
2	19	54	42.3	19-22.1	155-13.1	4.0	0.7	9	143	1.4	0.23	1.3	2.1	0.13	B
2	20	0	53.5	19-20.6	155-12.6	0.2*	0.8	9	185	3.5	0.17	0.8		0.15	C
2	20	3	58.5	19-21.6	155-12.7	3.8	0.6	6	158	1.7	0.08	0.5	0.9	0.03	B
2	23	49	58.5	19-21.2	155-11.8	5.6	0.9	11	180	2.7	0.41	1.4	2.8	0.16	C
3	5	58	39.7	19-22.1	155-12.9	3.1	1.0	8	143	1.1	0.13	0.9	1.5	0.10	B
3	12	51	34.1	19-19.0	155-15.7	13.8	1.0	10	188	3.6	0.19	0.7	1.4	0.05	B
3	17	23	36.3	19-23.3	155-22.1	8.5	1.0	12	149	4.2	0.35	0.8	2.4	0.14	B
3	21	25	15.5	19-13.6	155-20.0	29.5	1.7	14	226	8.4	0.22	1.5	1.7	0.10	C
3	21	55	7.4	19-13.8	155-29.5	39.9	1.5	13	211	13.5	0.34	2.4	2.3	0.11	C
3	21	55	48.9	18-28.2	155-19.8?	112.2*		10	319	91.4	7.52	90.8		1.89	D
3	22	9	31.9	19-21.0	155-12.6	14.8	1.4	9	174	4.9	0.07	0.6	0.4	0.04	B
4	5	51	8.3	19-22.5	155-24.5	8.9	0.9	12	115	4.7	0.11	0.8	1.0	0.16	B
4	6	35	23.9	19-19.9	155-12.8	5.1	0.6	7	199	5.7	0.35	1.2	4.5	0.08	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 4	9	34	54.7	19-21.6	155-13.1	2.6	0.5	6	154	4.0	0.06	0.5	C.4	0.04	B
4	13	9	4.2	19-20.4	155-25.3	8.0	1.1	9	133	3.5	0.12	1.0	1.1	0.13	B
4	16	31	10.8	19-16.0	155-22.6	4.9	1.2	11	204	7.8	0.25	1.5	1.7	0.20	C
4	16	35	58.8	19-13.3	155-21.8	3.1	2.0	12	224	13.1	0.82	1.6	3.8	0.18	C
4	16	45	31.1	19-12.9	155-21.8	2.4	3.2	17	227	10.8	0.68	1.4	2.9	0.20	D
4	16	50	43.9	19-12.5	155-21.1	4.2	2.5	15	221	14.8	0.32	1.6	1.4	0.20	C
4	17	26	43.3	19-16.1	155-22.2	11.3	1.1	7	203	7.0	0.11	1.1	0.4	0.05	C
4	17	43	55.3	19-18.9	155-13.7	15.2	1.3	7	209	6.9	0.18	1.2	1.7	0.05	C
4	20	30	14.1	19-19.3	155-14.0	15.7	1.3	8	200	5.2	0.17	1.0	1.6	0.05	B
4	20	30	44.4	19-19.9	155-14.5	9.9	1.3	13	178	3.8	0.09	0.8	C.4	0.11	C
4	21	50	40.1	19-12.8	155-21.4	5.4	3.2	19	219	10.7	0.30	1.5	1.2	0.26	C
5	1	32	26.1	19-12.9	155-21.6	3.5	2.8	17	219	13.7	0.25	1.2	1.0	0.17	C
5	1	35	37.5	19-21.3	155- 9.6	9.5	1.6	12	185	1.6	0.09	0.9	C.4	0.09	C
5	1	46	32.5	19-14.6	155-21.6	11.7	1.5	13	232	8.1	0.23	1.6	1.7	0.12	C
5	1	53	13.1	19-13.3	155-21.9	5.3	1.9	14	216	12.9	0.24	1.3	1.2	0.16	C
5	3	51	52.7	19-27.5	155-14.2	28.6	2.2	17	65	6.8	0.15	0.9	1.6	0.11	B
5	4	23	26.6	19-15.3	155-22.3	7.1	1.7	14	208	8.0	0.20	1.1	1.1	0.17	C
5	4	27	0.9	19-12.4	155-21.2	2.5	2.4	17	221	14.9	0.95	1.7	3.9	0.23	C
5	6	2	33.2	19-24.0	155-29.1	12.4	1.5	15	144	12.3	0.22	1.7	3.4	0.22	C
5	6	49	18.2	19-19.5	155-16.7	11.1	0.7	8	216	1.7	0.58	1.2	2.9	0.03	C
5	7	17	25.2	19-20.7	155-10.7	14.9	1.4	10	219	3.1	0.09	0.8	C.4	0.05	B
5	7	56	9.2	19-26.0	155-12.7	24.1	2.3	16	64	6.5	0.11	0.7	1.3	0.09	A
5	9	36	56.0	19-15.4	155-22.0	10.8	1.4	10	217	7.5	0.16	1.2	C.4	0.09	C
5	11	32	56.0	19-24.3	155-29.7	8.1	1.9	11	148	13.5	0.23	2.1	2.9	0.22	C
5	12	2	42.9	19-13.7	155-22.1	31.2		11	214	9.9	0.36	2.0	3.0	0.13	C
5	12	51	25.0	19-15.9	155-22.3	11.2	1.4	6	207	7.4	0.06	0.5	C.7	0.02	B
5	12	53	11.4	19-26.1	155-25.0	11.1	1.1	9	220	7.5	0.10	0.7	C.3	0.05	B
5	14	31	50.7	19-15.3	155-22.8	5.4	1.3	12	211	8.8	0.24	1.5	1.5	0.18	C
5	15	55	6.3	19- 7.1	155-39.7	8.8	2.3	7	324	15.2	0.87	17.0	5.8	0.19	D
5	16	18	23.1	19-19.8	155-17.0	10.1	1.1	8	179	0.8	0.13	0.3	0.7	0.01	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 5	16	34	30.3	19- 5.7	155-42.3	6.0	3.1	15	272	19.3	0.99	4.0	2.8	0.11	D
5	17	59	45.1	19-23.2	155-37.1	11.7	3.9	18	115	16.5	0.09	0.6	1.1	0.12	B
5	18	6	35.9	19-18.1	155-39.6?	35.1*	2.1	7	279	7.3	1.06	9.9		0.39	D
5	19	5	37.1	19-19.5	155-13.1	10.2	1.1	14	190	5.6	0.09	0.8	0.5	0.10	C
5	20	3	57.0	19-23.9	155-37.0?	9.1	2.3	13	133	16.6	0.11	0.8	0.7	0.12	B
6	4	33	58.9	19-25.1	155-23.4	14.1	1.2	12	130	6.7	0.13	1.2	1.7	0.11	B
6	6	4	21.6	19-55.6	155-35.8	26.9	2.5	18	181	15.9	0.18	1.1	2.2	0.08	C
6	8	11	20.9	19-23.7	155-17.7?	10.0	1.1	12	83	1.6	0.24	1.7	1.6	0.12	B
6	9	1	41.1	19-23.9	155-25.8?	11.4		11	126	8.1	0.08	0.6	0.4	0.11	B
6	9	41	30.7	19-24.2	155-30.9	0.9*		7	161	15.1	0.09	0.7		0.08	C
6	9	48	8.7	19-23.4	155-17.3	14.3	1.4	13	82	0.8	0.13	1.0	1.0	0.12	B
6	13	26	46.1	19-17.8	155-14.5	13.1	1.0	7	226	6.6	0.18	0.8	1.4	0.03	C
6	14	5	19.8	19-21.3	155-14.9	11.4	0.9	9	146	1.2	0.07	0.6	0.4	0.05	B
6	17	27	36.9	19-23.1	155-35.9	9.7	1.7	9	190	15.3	0.12	0.9	0.9	0.06	B
6	23	3	58.0	19-30.9	155-14.8?	8.0*	1.5	6	341	11.2	1.68	11.8		0.36	D
7	2	9	57.9	19- 9.6	155-33.0?	8.0*	1.8	13	290	25.8	0.73	4.9		0.32	D
7	3	10	43.6	19-20.9	155-12.9	14.1	1.0	10	174	4.6	0.22	0.8	1.7	0.06	B
7	13	43	55.8	19-13.1	155-21.5	40.0	2.0	10	248	10.2	0.24	1.7	1.6	0.09	C
7	15	11	44.0	19-20.1	155-12.3	7.6	1.3	12	199	4.4	0.18	1.3	0.7	0.18	C
7	16	13	55.2	19-19.5	155-15.7	10.1	1.2	10	177	3.2	0.09	0.7	0.5	0.09	B
7	18	19	35.5	19-20.8	155-25.0	8.8	1.7	14	128	3.1	0.09	0.8	0.7	0.17	B
7	19	32	52.6	19-30.4	155-10.0?	8.0*	1.3	5	348	15.9	0.18	40.4		0.18	D
7	20	35	31.7	19-20.6	155-11.3	9.1	1.0	9	208	3.9	0.09	0.7	0.4	0.05	B
7	22	40	1.1	19-23.8	154-59.7	10.0	1.8	12	203	14.4	0.27	3.0	1.1	0.20	C
8	0	20	8.3	19-20.1	155-15.6	9.7	1.1	12	163	3.1	0.06	0.6	0.4	0.09	B
8	1	24	53.4	19-13.0	155- 2.1	4.8	1.6	10	262	21.5	0.64	3.0	1.8	0.12	D
8	4	9	5.6	19-23.3	155-17.2	14.7	1.4	12	110	2.7	0.13	1.0	1.1	0.13	B
8	6	32	22.8	19-20.6	155- 8.6?	11.3	0.9	9	194	3.5	0.17	1.6	0.8	0.12	C
8	7	18	14.6	19-20.7	155- 4.4	4.6	2.5	16	206	9.7	0.23	1.5	0.9	0.19	C
8	7	48	59.6	19-23.1	155-24.1	10.9	1.3	10	129	5.4	0.07	0.7	0.8	0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

197C	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 8	10	59	14.7	20- 0.6	155-51.8	0.3	2.7	18	148	49.5	1.16	1.3	5.1	0.12	C
8	13	44	59.5	19-19.4	155-16.1	8.8	1.6	14	174	2.7	0.10	0.8	0.5	0.14	C
8	16	22	23.5	19-21.7	155-38.7	17.4	2.5	14	134	12.8	0.27	2.2	8.8	0.17	C
8	20	43	43.6	19-19.3	155- 2.0	7.0	2.2	13	224	14.5	0.45	2.9	1.0	0.20	C
8	20	53	18.2	19-26.1	155-29.3	11.0	2.3	16	83	12.5	0.07	0.5	0.3	0.10	A
9	5	0	47.3	19-23.7	155-30.3	8.4	2.4	18	98	13.9	0.15	1.2	1.2	0.22	B
9	5	2	52.2	19-41.5	155-15.3	39.5	2.5	15	186	23.4	0.31	1.1	3.2	0.08	C
9	6	35	57.8	19-17.1	155-24.1	6.9		10	179	5.8	0.12	0.9	0.9	0.12	C
9	6	39	40.9	19-38.3	155-56.4	4.2*	1.7	9	323	54.8	1.45	8.7		0.06	D
9	7	53	56.1	19-21.1	155- 9.7	7.4		11	254	1.8	0.19	1.3	0.6	0.13	C
9	9	6	16.2	19-20.2	155-16.4	30.3	1.9	9	182	1.7	0.21	1.1	1.8	0.05	C
9	11	36	55.4	19-22.9	155-34.7	1.8	1.8	8	235	15.4	0.82	4.5	5.9	0.22	D
9	18	29	29.5	19-24.5	155-23.5?	10.7	0.9	10	129	6.8	0.06	0.6	0.4	0.08	B
9	18	42	0.7	19-10.3	155-37.4	7.7	1.9	7	297	8.6	1.41	8.8	2.7	0.15	D
9	21	32	40.4	19-21.0	155-11.5	7.4	1.3	11	190	3.2	0.18	1.1	0.8	0.11	C
9	22	33	9.1	19-23.2	155-23.3	9.4	1.4	15	113	5.6	0.10	0.9	0.7	0.17	B
9	22	33	50.8	19-23.2	155-23.4	9.5	2.0	14	114	5.6	0.07	0.6	0.5	0.13	B
10	2	0	17.8	19-21.3	155-11.5	14.7	1.1	10	180	2.8	0.08	0.7	0.5	0.05	B
10	4	32	28.3	19-23.0	155-22.3	9.3	1.1	11	149	4.8	0.10	0.7	0.7	0.12	B
10	5	53	31.7	19- 5.5	155-24.2	25.6*	1.7	16	269	25.0	0.37	2.7		0.21	D
10	10	9	40.0	19-24.1	155-29.0	11.1	2.4	14	94	12.3	0.06	0.5	0.3	0.09	A
10	17	9	34.2	19-20.1	155-29.3	9.5	1.5	7	133	10.5	0.20	2.3	2.4	0.16	B
10	18	43	34.2	19-24.6	155-17.3	9.0	1.0	12	105	0.4	0.06	0.4	0.3	0.05	A
10	18	44	17.5	19-24.7	155-17.7	9.1	1.3	11	72	1.2	0.09	0.6	0.5	0.07	A
10	20	26	35.8	19-20.9	155-19.8	2.6	0.3	9	99	4.5	0.07	0.3	0.6	0.07	A
10	20	28	5.9	19-23.4	155-22.1	9.1	3.6	15	85	6.3	0.09	0.7	0.6	0.14	B
10	20	33	34.1	19-23.6	155-22.6	7.2	0.7	9	162	5.0	0.20	0.5	1.6	0.06	B
10	23	20	14.4	19-21.0	155-11.6	9.8	1.3	14	181	3.2	0.13	1.2	0.6	0.15	C
11	1	15	24.0	19-14.4	155-38.0	11.3	2.1	7	298	1.9	0.05	0.6	0.3	0.02	C
11	1	30	57.1	19-23.6	155-16.3	3.1	0.4	7	131	1.0	0.04	0.4	0.2	0.05	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 11	8	30	24.1	19-19.1	155-15.5	9.7	1.3	9	188	3.8	0.14	1.0	0.6	0.11	C
11	14	5	26.7	19-16.9	155-11.5	17.3	1.8	8	261	10.0	0.38	1.9	3.0	0.05	C
11	19	15	50.2	19-20.8	155-25.0	8.6	1.1	10	128	3.2	0.13	1.0	1.2	0.16	B
12	0	50	50.2	19-16.3	155-24.1?	36.0	2.0	15	192	7.4	0.76	4.5	6.1	0.34	D
12	0	57	2.2	19-26.9	155-15.3	2.3	0.9	8	305	4.8	0.88	3.6	1.3	0.27	D
12	1	38	35.4	19-35.3	156- 7.3?	8.0*	2.8	13	277	22.3	1.24	8.4		0.40	D
12	5	25	51.3	19-23.2	155-28.9	11.2*	1.0	11	176	11.3	0.12	1.0		0.13	C
12	10	8	16.4	19-22.0	155-14.2	24.6	1.7	14	137	1.9	0.28	1.3	2.3	0.09	B
12	10	55	6.6	19-24.5	155-17.5	0.7	0.7	9	94	0.4	0.14	0.6	18.0	0.15	B
12	12	40	9.3	19-24.4	155-17.4?	0.0	0.1	8	107	0.6	0.11	0.5	9.0	0.10	B
12	15	37	55.4	19-21.2	155-28.6?	10.4	1.6	10	177	9.4	0.17	1.8	2.5	0.17	C
12	16	28	41.0	19-27.1	155-19.5?	8.0*	1.2	7	348	4.6	1.15	6.9		0.35	D
12	18	56	40.6	19-29.7	155-15.4?	8.0*	1.4	8	325	8.8	0.52	7.0		0.52	D
12	19	40	2.4	19-27.3	155-15.6?	10.9	1.4	7	310	5.0	2.00	10.1	45.5	0.38	D
12	19	40	50.4	19-21.1	155-10.8	6.7	1.1	9	204	2.6	0.39	1.7	2.4	0.13	C
12	20	14	37.6	19-56.1	155-21.1	24.2	2.5	17	205	20.4	0.16	0.9	2.4	0.11	C
12	20	59	25.6	19-23.5	155-22.3?	8.0*	0.9	7	327	8.7	1.45	41.3		0.49	D
12	21	6	31.1	19-27.5	155-21.6?	3.5	0.9	6	345	8.0	1.73	11.0	4.5	0.25	D
12	21	11	48.4	19-26.9	155-15.0	5.2	0.9	6	327	5.1	1.42	8.5	7.9	0.18	D
12	21	19	20.2	19-23.6	155-16.3	2.9	0.2	7	176	0.9	0.41	1.0	2.2	0.08	C
12	21	30	11.2	19-27.7	155-14.8?	8.0*	1.3	6	335	6.4	0.49	6.0		0.28	D
12	21	40	58.2	19-28.1	155-14.9?	8.0*	1.1	6	335	6.8	0.56	6.1		0.26	D
12	23	3	27.9	19-18.4	155-13.7	16.8	1.2	9	219	6.8	0.18	0.9	1.6	0.04	B
12	23	7	58.0	19-24.3	155-17.7	0.1*	0.5	11	93	0.8	0.08	0.5		0.18	B
12	23	51	36.5	19-23.8	155-16.8	1.9	-0.1	7	156	0.7	0.22	0.6	1.3	0.06	B
13	0	57	52.7	19-24.0	155-19.4	7.9	0.8	7	291	3.5	1.03	13.2	11.1	0.19	D
13	2	20	6.1	19-18.7	155- 8.8	21.3	2.0	15	254	6.5	0.47	3.4	4.1	0.25	D
13	4	28	51.0	19-22.1	155-25.0?	11.0	1.7	12	134	4.6	0.09	0.8	1.6	0.11	B
13	4	54	21.3	19-19.9	155-13.5	15.1	1.3	8	190	4.7	0.05	0.4	0.5	0.02	B
13	6	5	28.7	19-28.5	155-16.4?	8.0*	1.2	7	318	6.1	0.46	6.0		0.40	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 13	6	12	13.0	19-26.2	155-12.9?	9.7	1.5	6	333	7.5	2.42	20.0	16.5	0.33	D
13	6	16	40.1	19-28.8	155-16.7?	3.2*	0.8	8	321	6.5	1.16	5.4		0.36	D
13	6	41	53.8	19-23.6	155-16.3	1.9	0.5	8	181	1.0	0.40	1.2	2.5	0.17	C
13	7	3	26.0	19-18.1	155-12.5	15.3	1.5	8	236	8.4	0.09	0.6	0.8	0.02	C
13	7	23	9.2	19-28.2	155-14.5?.	8.0*	1.3	8	319	7.4	0.52	5.2		0.33	D
13	7	44	27.6	19-24.9	155-16.1?	3.2	1.3	10	184	1.6	0.16	0.8	1.0	0.16	C
13	8	2	6.4	19-41.4	156- 5.1?	16.5*	3.6	21	269	25.5	0.49	3.3		0.38	D
13	8	32	11.8	19-24.1	155-16.5	2.6	0.1	7	185	1.4	0.21	0.5	1.1	0.05	B
13	8	55	19.6	19-20.6	155- 9.7	20.7	1.4	9	255	2.8	1.49	6.1	11.5	0.12	D
13	9	1	12.8	19-25.7	155-15.2	3.2	0.5	6	311	3.4	1.07	4.2	1.5	0.14	D
13	10	26	47.9	19-24.3	155-17.7	0.1*	0.0	6	116	0.8	0.13	0.8		0.15	C
13	10	41	43.9	19-26.8	155-16.0	4.1	0.9	8	304	3.8	0.67	3.6	4.6	0.23	D
13	11	26	35.4	19-21.6	155-13.0	14.5	1.3	10	154	1.9	0.20	0.8	1.5	0.05	B
13	11	56	27.7	19-25.3	155-15.2	5.6	1.0	7	305	3.2	0.58	3.2	2.9	0.13	D
13	12	44	24.5	19-29.7	155-14.2?	0.4	1.6	7	326	9.9	1.09	4.7	2.8	0.21	D
13	12	49	18.1	19-24.4	155-15.9	3.0	0.3	9	237	2.2	0.41	1.6	0.9	0.18	C
13	12	50	50.1	19-29.9	155-14.7?	8.0*	1.5	7	331	9.7	1.13	7.7		0.33	D
13	14	40	13.6	19-23.9	155-15.9	2.4	0.4	8	208	1.7	0.32	0.8	1.6	0.08	B
13	14	43	36.4	19-27.6	155-16.1	5.6	1.0	8	311	4.8	1.10	5.9	4.9	0.24	D
13	16	59	48.1	19-24.7	155-16.8?	2.5	0.6	8	204	0.6	0.76	2.6	3.1	0.28	C
13	19	20	24.2	19-17.8	155-27.4	7.5	1.3	9	177	8.5	0.25	2.6	2.1	0.21	C
13	20	0	27.4	19-22.9	155-23.6?	11.4	1.4	14	113	4.9	0.07	0.6	0.4	0.11	B
13	20	2	8.2	19-25.6	155-26.8	9.7	1.9	15	189	9.8	0.22	1.6	1.0	0.19	C
13	20	3	24.0	19-23.9	155-16.7	2.8	0.2	7	162	0.9	0.28	0.7	1.5	0.06	B
13	22	3	49.5	19-23.9	155-16.2	2.2	0.3	8	193	1.3	0.30	0.8	1.5	0.08	B
13	23	22	22.4	19-23.0	155-23.6	12.4	1.0	8	124	5.3	0.08	0.9	1.2	0.08	B
13	23	57	49.2	19-27.0	155-14.9?	8.0*	1.2	9	306	5.3	0.25	3.5		0.28	D
14	2	3	3.4	19-23.7	155-16.3	2.6	0.1	7	179	0.9	0.33	0.8	1.7	0.07	B
14	3	6	23.8	19-20.0	155-13.2	13.2	1.2	10	192	5.0	0.27	1.1	2.1	0.08	C
14	3	17	1.6	19-24.0	155-16.7	1.6	0.1	8	168	1.1	0.20	0.6	1.3	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 14	3	48	39.2	19-19.1	155-24.9	8.0	1.4	13	149	3.5	0.14	1.0	1.2	0.19	B
14	3	49	10.8	19-25.5	155-14.2	0.3*	0.6	6	321	5.1	1.03	3.7		0.21	D
14	3	57	34.0	19-23.1	155-16.7	2.0	0.1	7	145	0.5	0.65	2.0	4.2	0.21	C
14	4	14	50.9	19-19.1	155-25.2	7.3	1.2	11	150	4.0	0.16	1.3	1.4	0.20	B
14	4	46	24.1	19-23.8	155-16.7	3.0	0.0	7	157	0.7	0.26	0.6	1.3	0.06	B
14	5	21	16.2	19-23.9	155-16.6	1.9	-0.0	7	171	1.0	0.19	0.5	1.1	0.05	B
14	5	26	46.4	19-23.8	155-16.7	1.6	-0.1	7	160	0.8	0.28	0.8	1.7	0.09	B
14	5	56	44.6	19-23.0	155-27.7	11.6	1.2	9	187	9.2	0.12	1.1	3.0	0.08	C
14	6	4	35.0	19-20.7	155-12.8	8.4	1.6	16	179	3.3	0.13	0.9	0.5	0.16	C
14	6	29	10.7	19-23.3	155-16.6	2.4	0.4	7	155	0.4	0.52	1.4	3.0	0.13	C
14	8	0	26.0	19-19.4	155-13.9	13.1	1.3	10	197	5.1	0.18	1.3	0.9	0.08	C
14	10	37	55.9	19-23.5	155-16.9	11.9	0.7	13	108	0.3	0.07	0.5	0.6	0.07	A
14	11	36	35.7	19-23.8	155-16.5	3.4	2.0	13	129	0.9	0.10	0.6	1.0	0.14	B
14	13	19	50.6	19-30.2	155-13.9?	8.0*	1.7	10	282	11.0	1.31	8.1		0.75	D
14	17	12	5.8	19-13.8	155-28.1	7.4	1.7	12	212	14.5	0.29	1.9	1.4	0.21	C
14	18	28	57.6	19- 9.5	155-25.4?	0.8	1.5	11	246	19.5	1.74	8.0	18.0	0.51	D
15	0	0	52.2	19-20.6	155-10.6	14.8	1.4	9	222	3.1	0.20	1.1	1.6	0.05	C
15	1	26	10.2	19-21.1	155-12.6	14.0	1.4	9	173	4.9	0.18	0.7	1.4	0.05	B
15	2	18	22.1	19-22.5	155- 7.1?	11.2	1.1	9	324	4.7	0.40	3.3	0.8	0.14	D
15	3	13	9.4	19-14.7	155-15.4?	18.4	1.8	12	270	8.3	0.82	4.8	7.6	0.33	D
15	4	44	38.1	19-18.9	155-15.5	14.5	1.3	9	192	3.9	0.11	0.4	0.9	0.02	B
15	15	19	38.4	19-19.8	155-13.2	7.7	1.4	12	195	5.1	0.15	1.1	0.6	0.16	C
15	15	52	33.3	19-20.8	155-13.9	8.5	1.3	13	166	3.1	0.14	1.0	0.6	0.17	C
15	16	40	13.3	19-16.4	155- 1.7	33.2	1.8	15	244	17.7	0.28	2.0	2.3	0.10	C
15	19	56	2.3	19-23.2	155-25.1?	11.4	1.8	15	121	6.4	0.06	0.6	0.4	0.10	B
15	20	13	6.2	19-19.2	155-11.4	15.3	1.5	9	233	6.0	0.22	1.2	1.8	0.05	C
15	20	18	14.3	19-23.3	155-26.0	7.7	2.2	17	91	7.4	0.10	0.9	0.8	0.20	B
15	21	39	11.1	19-21.3	155-13.7	9.5	1.3	11	158	3.0	0.14	1.0	0.7	0.12	C
15	22	3	33.2	19-20.8	155-12.8	9.1	1.2	10	178	4.8	0.21	1.6	1.1	0.17	C
16	2	30	32.3	19-30.6	155-50.8	24.7	3.1	18	136	8.0	0.54	2.8	6.8	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 16	3	37	43.9	19-21.3	155-16.3	30.6	1.8	13	131	1.9	0.55	2.1	4.8	0.13	B
16	6	16	55.5	19-20.5	155-17.5	24.7	2.3	15	86	0.8	0.35	2.6	3.2	0.21	C
16	6	38	30.1	19-21.9	155-18.2	24.9	2.0	13	72	3.7	0.27	1.1	2.5	0.10	B
16	8	49	39.1	19-22.3	155-23.4	9.5	1.2	12	174	3.9	0.09	0.6	0.6	0.08	B
16	10	46	38.4	19-22.3	155-18.3	24.5	2.1	15	68	3.3	0.16	1.0	1.5	0.10	A
16	13	48	51.4	19-21.3	155-19.6	20.2	1.4	10	164	4.4	0.11	0.6	1.2	0.05	B
16	14	53	30.3	19-20.1	155-12.2	8.6	1.3	9	200	5.6	0.17	1.2	0.9	0.12	C
16	15	24	0.3	19-20.4	155- 7.4	25.4*	1.7	8	310	5.3	0.18	2.5		0.07	D
16	16	3	19.0	19-21.7	155-23.8?	10.9	1.6	12	121	3.0	0.08	0.7	0.5	0.11	B
16	19	15	18.2	19-19.4	155-16.6	10.6	0.7	8	206	1.9	0.23	0.5	1.2	0.02	B
16	19	45	22.1	19-19.6	155-17.1	10.3	0.7	8	186	1.1	0.41	0.8	2.2	0.04	C
16	20	2	31.5	19-24.4	155-17.6?	0.0	0.7	10	90	0.6	0.13	0.6	12.9	0.15	B
16	23	13	1.6	19-20.7	155-12.6	11.0	1.1	12	181	3.3	0.14	1.0	0.5	0.11	C
17	2	27	8.0	19-22.5	155-17.5	11.6	1.0	13	70	2.1	0.12	1.1	1.1	0.17	B
17	4	28	42.9	19-21.3	155-10.2	8.7	1.3	11	224	1.7	0.25	1.4	0.9	0.13	C
17	5	39	26.2	19-20.1	155-11.9	10.9	1.1	12	205	4.5	0.16	1.1	0.5	0.11	C
17	6	31	47.8	19-19.6	155-13.4	11.7	1.3	12	198	5.3	0.24	1.3	1.8	0.10	C
17	11	22	42.5	19-51.6	155-28.6	20.9	3.4	17	162	8.9	0.09	0.8	1.6	0.09	B
17	14	41	32.4	19-19.8	155-10.0?	15.0	1.2	7	252	4.2	0.36	1.5	2.5	0.06	C
17	15	12	0.5	19-19.5	155-10.7	8.3	1.9	12	241	5.1	0.33	1.7	1.4	0.21	D
18	6	3	32.0	19-23.2	155-37.6	11.4	2.7	13	118	15.4	0.16	1.1	1.3	0.12	B
18	7	34	58.9	19-18.9	155-23.1	7.4	1.2	10	249	2.4	0.74	2.3	3.6	0.14	C
18	8	42	32.1	19-30.4	155-16.9?	8.0*	1.9	7	328	9.4	0.82	7.6		0.45	D
18	16	58	31.3	19-19.4	155-15.9	8.7	1.7	14	175	2.9	0.12	0.8	0.6	0.14	C
19	14	14	59.4	19-20.5	155-12.8	7.4	1.6	12	186	3.8	0.19	1.1	0.9	0.17	C
20	11	0	8.9	19-22.9	155-22.1	10.6	1.5	10	107	8.9	0.08	0.9	0.9	0.12	B
20	11	1	56.1	19-23.9	155-17.1	1.9	1.0	8	124	1.2	0.10	0.8	0.7	0.12	B
20	15	52	55.2	19-29.4	155-15.4?	8.0*	1.6	6	337	8.3	0.94	9.0		0.35	D
20	16	25	35.5	19-20.6	155-13.1	15.4	1.2	8	178	4.4	0.11	0.7	1.0	0.03	B
20	17	58	27.0	19-13.4	155-31.1	33.9	3.2	18	216	10.9	0.18	1.0	1.8	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 20	20	44	16.8	20-12.1	155-14.6	10.8	2.9	18	267	51.4	0.98	7.3	6.9	0.24	D
21	2	13	32.2	19-32.2	155-37.8	8.2	3.7	18	89	25.8	0.26	1.1	1.5	0.17	C
21	2	33	21.7	19-31.8	155-37.1	7.9	2.5	16	123	24.3	0.16	0.8	C.8	0.14	B
21	2	35	24.4	19-32.3	155-38.8	7.5	2.2	12	221	27.5	0.31	1.3	1.1	0.10	C
21	2	36	12.4	19-32.1	155-36.6	9.0	2.3	13	123	23.6	0.19	0.9	1.1	0.14	B
21	10	33	51.2	19-19.9	155-13.9	8.7	1.7	14	185	4.2	0.14	0.9	C.6	0.15	C
21	11	11	56.2	19-23.7	155-19.2?	0.6	1.0	6	284	3.4	0.26	1.6	3.1	0.04	C
21	12	45	45.9	19-21.2	155- 9.1	7.6	1.7	12	284	2.1	0.22	1.2	C.8	0.09	C
21	13	1	55.3	19-26.4	155-21.8?	8.8	2.4	14	106	3.0	0.15	1.4	1.2	0.24	B
21	13	51	15.7	19-18.8	155-15.4	12.9		10	197	4.2	0.11	0.5	0.8	0.04	B
21	18	27	36.4	19-27.6	155-12.6?	0.0	1.9	11	282	9.2	0.72	2.4	4.8	C.35	D
21	19	15	30.7	19-18.8	155- 9.5	28.7	2.0	10	269	6.1	0.50	2.6	3.5	0.09	D
21	19	20	25.4	19-21.4	155-49.9	4.5	3.0	18	214	20.5	0.28	2.9	1.4	0.14	C
21	20	20	39.6	19-24.2	155-16.9	13.2	1.6	15	111	1.2	0.06	0.6	0.5	0.08	A
21	22	52	7.1	19-19.1	155-13.8	7.9		11	204	5.7	0.23	1.3	C.9	0.16	C
22	0	23	38.1	19-18.8	154-58.9	30.2	2.0	8	241	20.0	0.44	2.2	3.6	0.05	C
22	0	24	1.4	19-49.8	155-58.8	6.5	2.9	18	243	34.9	0.35	2.6	3.3	0.16	D
22	0	52	20.7	19-18.8	155-12.6	15.2		8	224	7.3	0.10	0.6	C.8	0.03	B
22	2	42	18.0	19-24.5	155- 3.4	2.9	2.1	11	181	12.1	0.53	1.2	2.9	0.14	C
22	5	27	20.3	19-18.3	155-13.2	9.5	2.3	16	201	7.5	0.18	1.2	C.6	0.18	C
22	5	29	4.1	19-18.0	155-12.9	8.9		11	211	8.2	0.27	1.8	1.1	0.21	C
22	5	48	42.3	19-18.6	155-13.4	9.6	2.4	17	200	6.8	0.15	1.1	0.5	0.18	C
22	5	53	56.4	19-17.8	155-12.7	8.5		12	212	8.6	0.26	1.7	C.9	C.21	C
22	6	2	11.5	19-18.1	155-13.1	9.0	2.1	12	208	7.8	0.19	1.3	C.8	0.16	C
22	6	19	51.3	19-17.7	155-13.0	8.4		10	214	8.5	0.28	1.9	1.1	0.19	C
22	6	59	54.4	19-20.9	155-19.9	1.9	1.3	11	99	4.7	0.05	0.3	C.5	0.07	A
22	8	21	50.5	19-25.9	155-17.3	11.7	0.8	8	289	1.0	0.48	2.0	2.6	0.05	C
22	9	16	41.2	19-17.9	155-12.5	14.8	1.4	10	240	8.8	0.18	1.3	0.9	0.08	C
22	16	6	2.9	19-22.1	155-18.8	3.4	0.2	10	86	3.4	0.07	0.3	1.4	0.07	A
22	16	15	56.4	19-24.0	155-16.7	2.4	0.0	7	166	1.2	0.26	0.7	1.4	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 22	18	42	45.4	19-25.3	155-17.0	8.0	1.1	8	168	0.7	0.11	0.8	0.8	0.04	B
22	20	29	22.4	19-30.9	155- 7.7?	8.0*	2.3	8	323	19.7	1.17	20.6		0.73	D
22	21	0	31.3	19-13.6	155-23.2	34.0	2.8	14	220	11.4	0.52	2.2	4.3	0.11	C
22	21	13	57.4	19-14.0	155-23.4	32.5	1.6	14	216	11.1	0.42	1.8	3.6	0.10	C
22	21	42	22.4	19-24.7	155-16.1	0.1*	1.2	8	171	1.7	0.08	0.5		0.09	C
22	23	1	23.8	19-21.7	155-12.0	6.9	1.8	10	160	4.0	0.05	0.5	0.4	0.06	B
22	23	9	46.1	19-24.4	155-16.0	0.3*	-0.0	6	221	2.0	0.13	0.6		0.05	C
22	23	23	13.2	19-25.4	155-22.3?	0.9*	1.3	6	332	8.3	1.09	4.4		0.22	D
22	23	29	12.5	19-18.7	155-13.1	8.7	2.1	15	201	6.8	0.20	1.4	0.8	0.21	C
22	23	31	51.0	19-17.7	155-12.2	13.8	1.2	7	244	9.1	0.21	1.0	1.7	0.03	C
23	0	3	21.6	19-24.6	155-16.2	2.1	1.2	9	167	1.5	0.10	0.7	0.6	0.11	C
23	0	4	21.6	19-24.5	155-16.0?	1.2	1.6	10	165	1.9	0.13	0.6	4.6	0.14	C
23	0	37	15.2	19-23.1	155-18.7?	8.0*	1.8	7	271	3.3	1.83	27.6		0.37	D
23	2	2	37.9	19-31.9	155- 8.1?	8.0*	2.4	9	312	20.2	1.12	18.4		0.88	D
23	2	10	57.9	19-28.6	155-14.9?	8.0*	1.8	8	320	7.4	0.54	5.2		0.34	D
23	2	11	39.3	19-18.8	155-19.2?	1.2	1.6	7	303	8.8	4.00	0.0	55.2	0.95	D
23	2	13	30.4	19-27.9	155-16.4?	7.9*	1.4	6	327	5.1	1.58	25.1		0.34	D
23	3	8	33.2	19-28.5	155-20.3?	8.6*	1.5	6	352	7.4	1.31	7.8		0.28	D
23	3	25	39.4	19-24.9	155-17.6	1.3	1.7	11	86	0.3	0.10	0.6	0.7	0.15	B
23	3	43	31.9	19-27.6	155-18.2?	6.5	1.5	6	347	4.1	1.54	21.5	7.1	0.22	D
23	3	46	10.4	19-27.6	155-18.6?	8.0*	1.8	6	350	4.3	1.30	7.3		0.28	D
23	4	0	26.3	19-25.8	155-19.6	6.2	1.2	7	327	3.5	0.80	12.9	9.3	0.22	D
23	4	9	0.2	19-24.5	155-17.3	0.4	1.5	12	74	0.5	0.10	0.5	1.6	0.14	B
23	4	25	39.7	19-28.0	155-13.3?	8.0*	1.9	10	276	8.7	0.81	5.7		0.54	D
23	4	27	5.4	19-32.1	155-15.4?	8.0*	2.0	7	333	12.9	1.59	12.2		0.54	D
23	4	32	0.2	19-27.4	155-16.3	4.8	1.1	7	309	4.3	1.29	6.7	5.6	0.25	D
23	4	53	17.3	19-21.1	155- 6.5	5.4	2.3	14	197	15.5	0.08	0.6	0.4	0.08	B
23	4	59	13.5	19-19.9	155- 6.1	5.7	2.3	13	207	7.6	0.23	1.5	1.0	0.14	C
23	5	4	11.2	19-26.7	155-21.4?	5.3	1.1	6	340	7.0	1.88	30.5	18.6	0.27	D
23	5	14	30.2	19-26.5	155-16.4	3.6	0.8	6	301	2.9	0.14	0.9	1.1	0.02	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 23	5	22	0.8	19-24.2	155-15.4	0.5	0.9	6	237	2.8	0.37	1.5	10.1	0.05	D
23	5	34	28.2	19-27.9	155-17.3	5.7	1.7	7	336	4.6	0.78	14.4	5.5	0.20	D
23	6	8	54.8	19-27.2	155-18.3?	8.0*	1.3	6	349	3.5	1.35	19.4		0.30	D
23	6	36	14.2	19-26.5	155-19.9	5.9	1.2	6	339	4.6	1.63	21.6	14.1	0.23	D
23	7	5	40.5	19-20.6	155-10.3	7.7	1.9	11	235	3.0	0.17	1.0	0.6	0.12	C
23	7	14	18.0	19-23.0	155-19.2	8.0	1.2	7	285	4.3	0.80	10.3	9.7	0.14	D
23	8	0	34.3	19-24.6	155-15.8?	1.9	-0.2	6	244	2.1	0.42	2.7	3.9	0.06	D
23	8	14	32.9	19-47.7	155-14.6	7.5	1.5	13	211	18.3	0.82	7.7	3.1	0.18	D
23	8	23	38.9	19-25.5	155-16.9	8.0*	0.2	5	303	1.2	0.26	3.8		0.05	D
23	10	14	14.5	19-16.7	155-26.9	7.8	1.9	12	179	9.1	0.13	1.0	0.8	0.16	C
23	20	22	21.0	19-19.5	155-15.3	7.5	0.9	12	180	3.8	0.17	1.0	0.8	0.15	C
23	20	40	49.5	19-22.0	155-24.7	8.5	1.4	13	115	4.2	0.12	0.9	1.2	0.19	B
23	22	44	18.9	19-21.9	155-13.1	2.5	1.0	7	146	3.8	0.10	0.7	2.5	0.07	B
24	1	3	36.3	19-23.3	155-27.0	12.2	1.2	10	227	8.7	0.12	1.0	1.3	0.07	C
24	3	54	29.2	19-17.4	155-12.7	9.2	1.7	11	217	9.3	0.27	1.8	0.8	0.17	C
24	4	32	39.7	19-21.2	155-28.3	9.8	1.9	13	124	8.9	0.09	1.0	0.9	0.16	B
24	6	16	47.7	19-24.4	155-22.1	9.7	1.2	12	152	6.3	0.11	0.8	0.8	0.12	C
24	8	19	3.3	19-24.4	155-16.8	2.3	0.9	9	148	1.4	0.08	1.0	0.5	0.10	B
24	9	24	5.2	19-21.5	155-11.7	9.1	2.4	15	170	3.5	0.11	1.0	0.6	0.16	C
24	11	19	35.8	19-26.1	155-15.7	5.4	0.8	7	285	3.1	1.01	9.5	9.9	0.18	D
24	12	41	47.1	19-25.4	155-15.9?	0.1*	1.3	9	177	2.1	0.12	0.6		0.13	C
24	23	17	19.6	19-19.9	155- 7.4	5.6	2.0	13	204	5.9	0.25	1.7	1.4	0.18	C
25	0	35	36.7	19-25.2	155-34.1?	8.0*	2.1	7	348	28.8	5.15	92.1		1.03	D
25	1	0	18.4	19-26.1	155-23.7	10.8	2.5	15	70	5.9	0.08	0.9	0.6	0.13	B
25	2	59	33.7	19-23.5	155- 2.8?	2.4	1.8	10	191	12.6	0.19	1.7	1.9	0.16	C
25	4	54	0.8	19-23.0	155-18.9?	8.0*	0.7	8	278	3.8	1.23	6.5		0.42	D
25	5	41	25.9	19-22.8	155-19.8?	0.2*	0.7	7	295	5.3	0.61	1.9		0.14	D
25	6	8	5.4	19-31.0	155- 8.1?	8.0*	1.8	6	339	19.3	4.70	96.2		0.81	D
25	6	29	48.4	19-11.8	155-39.1	10.5	2.5	12	250	6.7	0.28	2.1	0.5	0.07	C
25	7	2	15.8	19-16.7	155-22.3?	8.0*	1.2	7	335	15.3	3.56	82.4		0.72	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 25	9	46	14.6	19-23.7	155-17.4	2.4	0.5	7	174	1.2	0.15	0.4	0.9	0.04	B
25	10	35	30.4	19-22.4	155-20.1?	2.1	0.9	7	301	6.1	0.42	2.0	1.2	0.07	C
25	10	59	23.0	19-19.1	155-13.8	12.2	1.1	10	205	5.7	0.15	0.8	1.1	0.06	B
25	14	16	35.4	19-20.8	155-13.2	11.8	1.0	5	192	4.0		0.0		0.01	D
25	14	55	19.6	19-22.9	155-20.4?	0.2*	0.8	7	305	6.1	0.48	1.5		0.10	D
25	15	1	44.5	19-30.1	155-15.1	3.2*	0.8	7	335	9.7	0.33	1.8		0.06	D
25	15	43	11.1	19-26.1	155-15.7	5.3	3.0	15	145	3.2	0.11	0.9	0.7	0.17	B
25	16	48	20.0	19-18.4	155-25.8?	8.0*	1.3	7	337	18.2	2.34	53.6		0.65	D
25	16	54	11.3	19-22.9	155-17.5?	8.0*	0.8	8	180	1.6	1.13	5.8		0.29	D
25	18	3	57.4	19-23.9	155-17.5	3.5	0.5	7	221	1.5	0.13	0.9	0.7	0.03	B
25	18	45	52.8	19-23.4	155-20.5?	0.5*	0.9	7	305	5.7	0.73	2.3		0.16	D
25	19	1	49.3	19-24.3	155-18.7	1.3	0.8	9	98	2.3	0.31	1.0	5.5	0.18	B
25	19	7	46.2	19-25.9	155-15.9	5.6	2.7	14	143	2.7	0.10	0.8	0.6	0.14	B
25	19	12	3.6	19-25.7	155-15.9	3.1	2.4	12	182	2.5	0.13	0.6	0.4	0.11	C
25	19	28	45.5	19-23.4	155-17.6?	0.1*	0.4	7	235	1.4	0.18	0.7		0.05	D
25	20	46	16.0	19-22.0	155-20.7	3.2*	0.6	7	309	7.3	0.62	2.5		0.14	D
25	23	22	19.4	19-22.8	155-20.6	3.4*	0.9	7	306	6.4	0.29	1.1		0.07	D
26	1	37	51.9	19-23.6	155-17.3	1.8	0.6	7	166	0.9	0.18	0.6	1.3	0.06	B
26	1	39	12.1	19-28.2	155-11.3?	8.0*	1.5	7	326	11.7	2.32	20.4		0.53	D
26	2	21	49.1	19-18.6	155-18.5	9.4	1.0	10	152	1.1	0.13	0.9	0.7	0.07	C
26	3	7	47.5	19-23.3	155-18.2	0.3*	0.6	7	258	2.5	0.29	1.0		0.06	D
26	4	21	10.7	19-23.7	155-17.3	3.0	0.4	7	216	1.0	0.52	2.8	2.3	0.09	C
26	5	42	47.0	19-23.8	155-17.4?	2.4	0.3	7	215	1.2	0.12	0.6	0.5	0.02	C
26	6	43	32.9	19-23.5	155-20.2	3.2*	0.8	8	302	5.3	0.83	3.1		0.24	D
26	7	19	55.9	19-22.9	155-20.0?	4.2	0.6	7	299	5.6	0.49	4.8	28.5	0.10	D
26	7	59	55.0	19-21.0	155-53.8?	3.5	2.9	13	241	19.0	0.65	9.8	6.7	0.30	D
26	8	3	29.7	19-23.1	155-19.1	3.4	0.8	8	281	4.0	0.28	1.7	4.0	0.08	C
26	11	19	10.3	19-19.2	155- 7.0	9.8	1.1	9	221	7.2	0.40	3.1	1.1	0.15	C
26	11	29	19.9	19-24.0	155-17.3?	4.4	0.7	8	123	1.3	0.13	1.3	2.0	0.14	B
26	12	20	10.1	19-22.5	155-19.7?	0.4*	0.9	7	295	5.4	0.48	1.5		0.11	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 26	12	43	34.5	19-20.1	155-12.5	11.8	1.1	10	198	5.8	0.29	1.5	2.2	0.11	C
26	13	12	12.6	19-22.5	155-23.1	11.1	2.4	14	72	4.3	0.09	1.0	0.8	0.18	B
26	13	15	57.3	19-21.9	155-14.8?	8.0*	1.5	9	289	0.8	1.81	8.4		0.61	D
26	13	18	30.8	19-23.2	155-19.0	3.0	0.8	7	279	3.8	0.16	0.7	0.2	0.03	C
26	14	20	16.6	19-23.1	155-18.9?	0.2*	0.4	7	278	3.8	0.34	1.1		0.07	D
26	16	12	54.0	19-24.0	155-16.9	2.8	0.4	7	151	1.1	0.10	0.6	0.4	0.03	B
26	17	23	6.6	19-22.8	155-19.8?	0.2	0.8	7	296	5.3	0.71	5.2	65.8	0.14	D
26	18	18	14.6	19-23.3	155-18.8?	6.7	1.0	7	273	3.4	0.72	5.1	23.4	0.13	D
26	21	33	21.8	19-23.3	155-17.5?	2.8*	0.3	7	231	1.2	0.46	1.9		0.09	D
27	3	6	25.1	19-18.1	155- 6.5?	8.0*	2.0	15	215	9.4	0.77	6.3		1.05	D
27	3	24	48.7	19-23.2	155-19.7	2.8	0.6	7	295	4.8	0.12	0.4	0.2	0.02	C
27	4	11	1.5	19-21.3	155- 2.4	18.1*	1.5	7	342	13.1	0.36	2.9		0.04	D
27	5	39	45.3	19-21.5	155-12.6?	4.0	1.0	8	176	4.8	0.60	2.2	2.9	0.16	C
27	5	50	56.8	19-16.8	155-10.9	7.9	0.9	8	267	10.0	0.67	2.6	4.9	0.12	D
27	7	43	34.5	19-23.8	155-17.2	3.0	2.0	12	92	1.0	0.07	0.5	0.7	0.09	A
27	12	1	27.8	19-23.2	155-19.0?	0.8	0.6	7	280	3.8	1.24	7.8	6.1	0.20	D
27	12	56	54.8	19-20.0	155-22.5?	8.0*	0.8	7	326	11.8	1.60	14.8		0.51	D
27	13	1	30.4	20- 0.1	155-24.0	11.7	3.3	16	218	25.2	0.32	1.5	2.5	0.11	C
27	13	42	56.0	19-21.8	155-17.4	23.9	1.2	12	90	2.9	0.34	1.2	3.0	0.08	B
27	15	48	42.7	19-18.6	155-15.2	14.9	0.9	7	203	4.8	0.11	0.9	1.0	0.04	B
27	16	0	49.2	19-22.0	155-24.7?	8.0*	1.6	6	332	13.6	3.21	31.6		0.56	D
27	17	15	43.6	19-22.3	155-23.8?	3.0	1.3	7	329	11.9	2.63	39.0	13.1	0.38	D
27	19	24	48.2	19-24.6	155-16.3?	8.3*	1.0	7	218	1.3	1.01	5.1		0.22	D
27	22	19	37.3	19-37.6	155-37.4	8.0*	2.3	11	301	28.6	0.85	5.5		0.09	D
28	3	11	28.5	19-19.8	155-17.8	8.7	1.1	12	131	0.9	0.10	0.7	0.6	0.12	B
28	8	18	55.7	19-23.3	155-19.0?	4.1	1.1	7	279	3.7	0.67	4.4	3.4	0.13	D
28	10	12	36.2	19-26.5	155-17.4?	8.0*	1.2	7	328	2.1	0.65	10.7		0.18	D
28	12	0	59.6	19-36.6	155- 4.3?	8.6	2.5	8	335	31.0	5.07	0.0	54.2	0.89	D
28	14	13	32.1	19-18.9	155-12.6	11.7	1.8	11	222	7.2	0.28	1.4	1.9	0.08	C
28	14	58	15.2	19-25.4	155-23.1	13.0	1.9	11	125	5.8	0.08	0.7	1.0	0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 28	15	11	2.2	19-21.6	155-11.9	10.8	2.2	14	166	3.9	0.09	0.9	0.4	0.11	C
28	15	12	26.1	19-27.4	155-14.4	3.2*	1.6	8	311	6.4	0.82	3.3		0.18	D
28	15	33	14.2	19-20.5	155-11.2	12.2	1.1	10	210	3.8	0.26	1.2	1.8	0.08	C
28	15	58	15.6	19-23.9	155-17.1	1.6	0.4	7	154	1.1	0.09	0.3	0.7	0.03	B
28	16	32	57.6	19-30.6	155-10.3?	8.0*	1.8	9	302	15.8	0.96	14.7		0.71	D
28	17	44	53.9	19-23.7	155-17.6	3.4	0.6	7	121	1.4	0.11	0.5	1.1	0.05	B
28	18	11	25.9	19-30.4	155-10.5?	8.0*	2.4	9	301	15.2	0.98	14.0		0.76	D
28	18	29	39.2	19-23.8	155-17.7?	2.7	0.4	7	233	1.7	0.14	0.7	0.6	0.03	C
28	18	59	37.5	19-23.3	155-19.7?	1.6	0.7	7	294	4.7	0.38	2.8	11.5	0.07	D
28	19	31	35.9	19-23.3	155-19.2	3.4	0.6	7	283	3.8	0.50	2.0	1.0	0.09	C
28	19	41	21.9	19-22.3	155-22.3?	4.4	1.4	7	321	9.5	1.06	18.4	11.9	0.18	D
28	19	48	39.2	19-23.1	155-20.4?	1.5	1.0	7	305	5.9	0.56	4.5	13.0	0.09	D
28	19	55	14.2	19-23.5	155-18.6	3.0	1.0	7	268	2.9	0.18	0.8	0.3	0.03	C
28	20	21	51.5	19-21.9	155-21.7	0.3*	1.1	7	317	9.0	0.48	1.6		0.10	D
28	21	30	50.9	19-23.4	155-18.2?	0.3*	1.1	7	256	2.5	0.18	0.7		0.04	D
28	21	59	18.6	19-23.4	155-18.2	1.5	0.7	8	86	2.4	0.07	0.4	0.8	0.08	A
28	22	20	47.2	19-23.8	155-17.7	2.8	1.4	7	127	1.7	0.11	1.2	1.3	0.05	B
28	23	1	13.1	19-23.6	155-18.4	0.2	1.3	7	149	2.5	0.21	0.5	6.4	0.05	C
28	23	31	49.4	19-25.1	155-17.5	2.0	2.5	13	127	0.6	0.10	0.7	0.5	0.18	B
29	0	1	13.8	19-24.0	155-17.1?	3.3	1.2	7	170	1.2	0.43	1.8	5.0	0.13	C
29	2	8	12.7	19-24.6	155-19.4?	0.5	1.1	9	105	3.4	1.26	4.5	23.7	0.72	C
29	4	58	32.9	19-26.8	155-14.8?	1.3	1.2	7	304	5.2	1.06	6.0	71.4	0.19	D
29	5	21	28.5	19-26.9	155-15.6?	5.4	1.6	7	306	4.4	0.64	8.4	9.1	0.11	D
29	5	59	31.5	19-20.3	155-27.5	8.0*	2.1	7	339	19.3	0.69	4.1		0.17	D
29	6	45	54.0	19-29.5	155-11.9?	8.0*	2.0	8	306	12.3	1.47	23.3		0.59	D
29	6	57	49.0	19-30.9	155- 8.6?	8.0*	2.5	7	321	18.4	0.69	23.1		0.70	D
29	11	59	29.4	19-26.9	155-16.0	5.4	1.2	7	255	4.0	0.16	1.1	0.7	0.02	C
29	15	20	3.8	19-23.5	155-19.1?	2.7	0.6	7	282	3.6	0.44	3.1	12.0	0.07	D
29	18	1	25.9	19-19.5	155- 9.1	8.9	1.3	9	202	4.8	0.32	3.0	1.6	0.16	C
29	19	8	52.2	19-23.4	155-19.0	2.9	0.7	7	279	3.5	0.33	1.3	3.3	0.06	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 29	20	51	54.6	19-28.0	155-15.3?	7.7	1.3	10	275	6.3	2.66	9.3	9.9	0.40	D
29	20	59	31.9	19-24.8	155-17.7	2.6	0.8	8	85	0.3	0.12	0.8	1.0	0.10	A
30	0	27	31.9	19-23.2	155-19.5?	0.4*	0.8	7	290	4.5	0.55	1.7		0.11	D
30	2	7	37.8	19-21.3	155-23.6	11.1	1.4	12	118	2.0	0.08	0.6	1.3	0.10	A
30	2	8	14.8	19-25.2	155-23.6	3.2*	1.4	7	335	10.5	1.07	5.3		0.26	D
30	3	7	31.4	19-23.9	155-24.6	10.9	1.5	12	192	7.2	0.09	0.6	C.3	0.07	B
30	4	2	26.9	19-24.0	155-17.9?	3.6	1.0	7	241	1.5	0.42	2.4	2.9	0.08	C
30	6	20	16.8	19-27.0	155-12.8?	10.7*	1.8	7	314	8.3	2.28	15.4		0.43	D
30	8	3	34.6	19-21.2	155-12.2	12.9	1.4	6	190	4.5	0.46	1.4	3.6	0.04	C
30	8	40	22.7	19-24.0	155-17.1?	0.5	0.7	8	140	1.2	0.23	0.8	2.5	0.12	B
30	9	18	23.7	19-24.1	155-17.0	1.4	0.6	7	147	1.3	0.10	0.3	C.7	0.04	B
30	13	22	52.3	19-24.0	155-17.2?	0.9	0.5	8	134	1.3	0.27	0.7	2.4	0.11	B
30	13	43	28.6	19-18.0	155-13.4	10.0	1.1	10	222	7.7	0.20	1.3	C.6	0.14	C
30	13	52	48.3	19-14.7	155-27.3	6.4	1.4	10	203	12.3	0.25	1.6	1.6	0.18	C
30	14	16	46.5	19-13.4	155-26.8?	9.0	1.8	10	217	13.9	0.30	2.1	1.3	0.19	C
30	14	49	28.3	19-28.4	155-16.6?	8.0*	1.6	8	318	5.9	0.25	3.1		0.18	D
30	16	26	43.9	19-23.9	155-17.3	0.1*	0.6	8	127	1.3	0.07	0.4		0.10	C
30	17	57	20.2	19-23.9	155-17.2	0.4	0.5	8	129	1.1	0.15	0.5	1.3	0.06	B
30	19	28	39.6	19-20.4	155-13.3	12.6	0.8	11	181	4.4	0.17	0.8	1.3	0.07	B
30	19	35	54.1	19-21.5	155-25.9	9.7	2.0	14	121	5.1	0.13	1.0	C.9	0.19	B
30	19	39	26.3	19-27.4	155-15.4?	8.0*	1.5	8	311	5.3	0.19	3.4		0.25	D
30	20	16	18.0	19-25.4	155-15.9	4.7	1.1	8	262	2.2	0.50	2.1	1.9	0.10	C
30	21	16	44.0	19-24.1	155-16.9	1.3	0.5	8	156	1.4	0.31	0.9	2.1	0.11	C
30	21	38	15.3	19-24.4	155-28.3?	9.9	1.6	15	141	11.8	0.12	0.9	1.4	0.15	B
30	22	10	46.5	19-28.4	155-15.0	8.9	1.5	8	319	7.1	0.81	5.4	4.7	0.17	D
30	22	31	45.8	19-23.4	155-16.4	2.1	0.0	7	168	0.7	0.43	1.3	2.6	0.12	C
30	22	35	34.8	19-23.8	155-17.4	1.7	0.1	7	134	1.3	0.08	0.2	C.6	0.03	B
30	22	46	21.2	19-21.2	155-29.1	9.3	1.7	10	133	10.3	0.15	1.6	1.9	0.17	B
31	0	42	34.9	19-27.2	155-15.7	5.9	0.9	8	309	4.8	0.97	5.1	4.3	0.19	D
31	1	59	15.2	19-30.1	155-14.0?	8.0*	1.9	9	280	10.7	1.28	8.2		0.68	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1970	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 31	2	5	1.8	19-24.1	155-17.4	1.9	0.7	7	121	1.2	0.20	0.5	1.3	0.05	B
31	2	6	48.7	19-19.6	155-11.8	11.8	0.8	11	219	5.9	0.33	1.7	2.4	0.10	C
31	2	8	52.3	19-20.3	155-13.4	8.4	2.2	16	181	4.2	0.15	1.1	0.6	0.19	C
31	3	30	34.2	19-24.1	155-17.0	0.3	0.2	8	148	1.3	0.19	0.6	2.2	0.09	B
31	3	35	14.3	19-23.8	155-16.1	4.9	1.0	9	197	1.4	0.56	1.7	3.0	0.11	C
31	5	13	29.6	19-26.6	155-16.1	6.8	1.1	8	300	3.4	0.69	3.5	2.4	0.15	D
31	6	22	33.4	19-23.9	155-16.8?	0.0	0.4	8	160	1.0	0.18	0.7	11.2	0.11	C
31	6	36	33.4	19-20.7	155-13.1	8.8	1.4	16	177	4.4	0.12	1.0	0.6	0.18	C
31	7	35	30.4	19-24.4	155-17.0	2.2	0.5	8	145	1.0	0.33	0.8	1.9	0.10	B
31	9	21	29.0	19-20.2	155-11.0	7.0		11	222	4.0	0.31	1.7	1.2	0.19	C
31	10	11	56.8	19-20.4	155-10.9	7.2		10	220	3.7	0.33	1.9	1.3	0.19	C
31	12	8	58.2	19-13.1	155-22.8	33.7		14	224	11.6	0.57	2.1	5.1	0.11	C
31	12	33	15.1	19-20.6	155-13.1	8.9		11	179	3.7	0.23	1.7	1.3	0.20	C
31	13	25	35.5	19-25.1	155-17.3	9.6		6	176	0.7	1.54	2.4	7.7	0.04	C
31	13	26	3.5	19-28.5	155-17.6?	8.0*		6	320	5.7	0.45	44.6		0.52	D
31	18	50	24.9	19-23.9	155-17.1?	3.2	1.7	12	101	1.0	0.05	0.4	0.3	0.11	B
31	19	8	38.7	19-23.6	155-17.4?	3.6	0.9	9	97	1.1	0.10	0.5	0.8	0.11	B
31	19	50	13.5	19-25.2	155-15.8	4.4	1.0	9	201	2.1	0.21	0.8	1.4	0.09	B
31	22	0	25.2	19-18.7	155-15.9	9.0	2.1	17	190	4.9	0.12	0.9	0.5	0.16	C
31	22	51	0.7	19-21.0	155-24.5	8.6	1.8	15	117	2.5	0.13	1.0	0.9	0.20	B
31	23	53	10.5	19-24.4	155-17.0	2.2	1.2	9	107	1.0	0.06	0.3	0.3	0.06	A

Table 4.--Felt Earthquakes

Date	Greenwich Civil Time H	M	S	Magnitude	Location of Felt Report
Oct 6	20	17	58.89	2.98	Kapapala Ranch
8	06	13	04.52	3.28	Hilo
13	08	40	01.00	3.25	Kapapala Ranch
25	08	32	52.84	4.17	Hilo, Kealakekua
25	09	55	27.98	4.85	Islands of Maui, Molokai, Hawaii
29	07	47	30.56	3.96	Kamuela, Kula (Island of Maui)
30	18	50	57.44	3.21	Hilo
Nov 3	07	57	45.13	2.84	Kapapala Ranch
11	17	12	41.43	3.70	Kapapala Ranch
12	19	46	13.77	4.34	Northern half of Island
12	19	57	19.13	3.18	Kamuela
12	21	36	00.27	3.23	Kamuela
16	04	02	51.58	3.34	Keaau, Hilo
18	06	07	57.79	3.37	Kamuela
Dec 4	16	35	58.82	2.08	Kapapala Ranch
4	16	45	31.09	3.26	Kapapala Ranch
4	16	50	43.87	2.50	Kapapala Ranch
4	21	50	40.13	3.25	Kapapala Ranch
5	01	32	26.05	2.81	Kapapala Ranch
5	17	59	45.12	3.96	Hilo, Volcano, Kealakekua
10	20	28	05.91	3.63	Hilo, Kapapala Ranch
13	08	02	06.36	3.61	Kealakekua, Kailua
20	20	44	16.83	2.97	Paauilo
25	15	43	11.10	3.03	Hawaii National Park
25	19	07	46.20	2.71	Hawaii National Park
25	19	12	03.64	2.48	Hawaii National Park
26	13	12	12.57	2.43	Hawaii National Park
28	23	31	49.43	2.53	Hawaii National Park

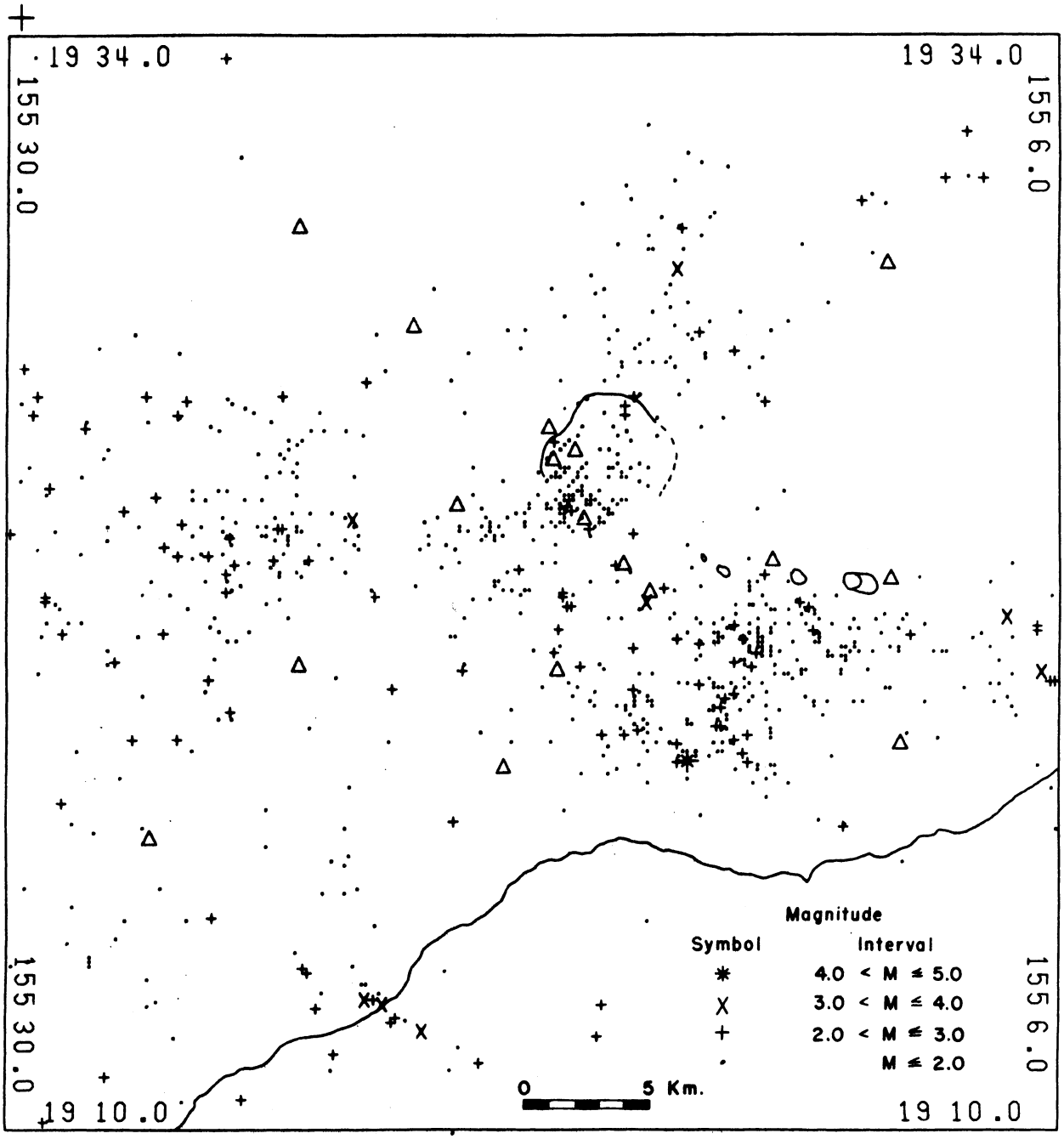

Figure 4.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

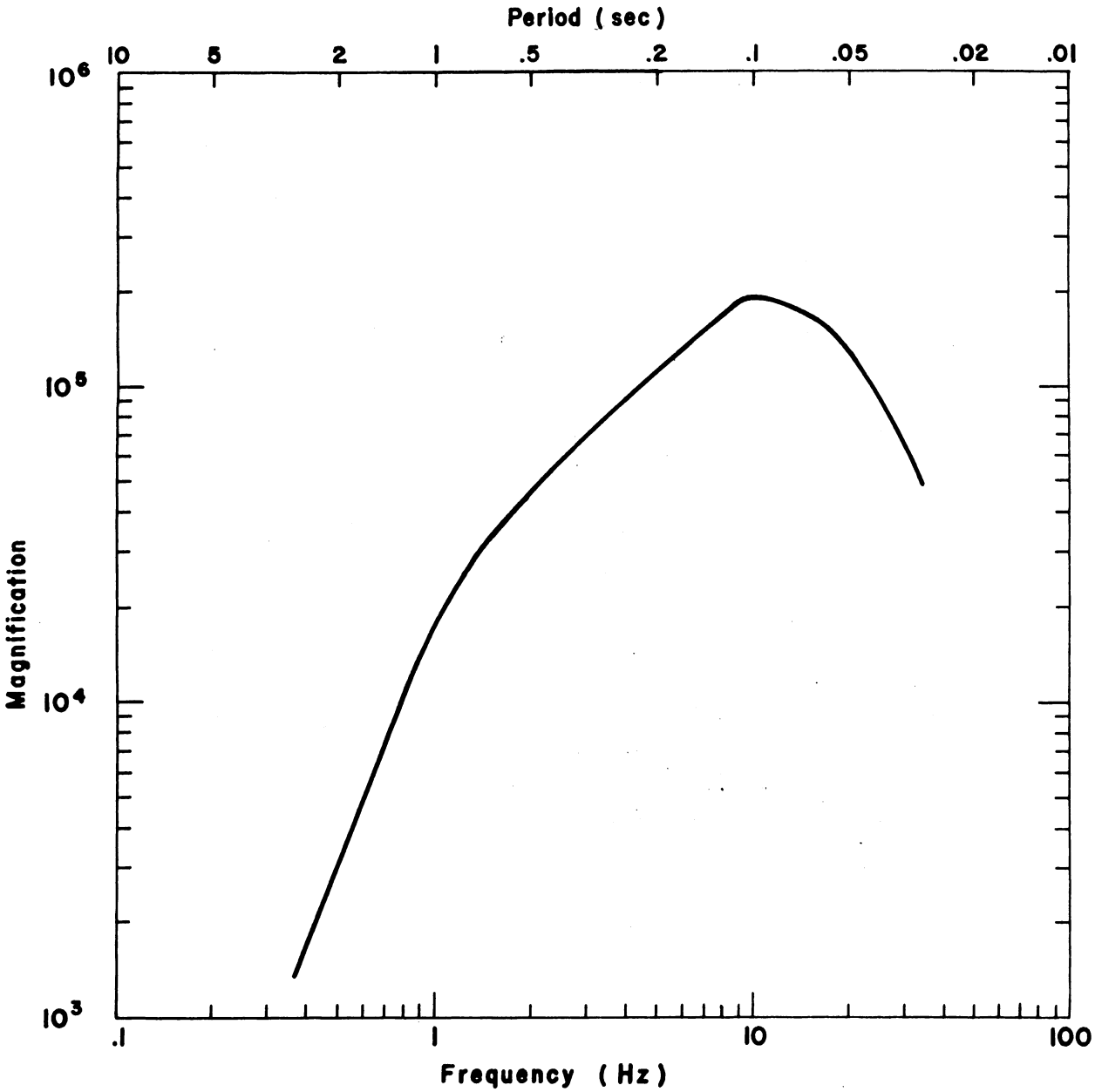

Figure 5.--Response curve for System II, EV-17, Teledyne seismic preamplifier.

Table 5. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
EAST KOAE	EKO	19 22.17	155 14.99	1009	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 13.63	707	3	6.0	2040		
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
LAVA FLOW	LAF	19 28.70	154 53.80	210	1				Temporary
LOWER STATION	LOS	19 23.40	154 53.10	180	1				Temporary
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HONUAULA	PHO	19 28.00	154 53.40	215	1	6.5	2720	RF1	
PUU HULUHULU	PHH	19 22.45	155 12.66	088	3				
WEST PIT	WPT	19 24.70	155 17.50	1115	3	1.34			
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2030	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	3	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	3	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KAHUELA	KAH	20 1.90	155 42.00	740	2	0.7			
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	70	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-00 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

Table 6.--Seismic instrumentation

1. SEISMOMETERS

EV-17	Electrotech EV-17 1.0 sec period moving magnet vertical component seismometer.
EV-17H	Same as above, but horizontal component.
HS-10	Hall-Sears 0.5 sec period moving coil seismometer.
HVO-2	0.8 sec period moving coil seismometer.

2. SEISMOGRAPHS

HVO-1	Vertical-component electromagnetic seismograph with a peak magnification of about 20,000 at 0.25 sec period.
15-90 Press Ewing System:	3-component long-period seismograph system with peneulum and galvanometer periods of 15 and 90 sec, respectively.
EV-17/3.5 cps galv, EV-17H/3.5 cps galv, etc:	Short-period electromagnetic seismographs composed of the seismometers and galvanometers indicated. Response similar to HVO-1. Poorly calibrated.

3. AMPLIFIER AND SIGNAL TRANSMISSION SYSTEMS

System I	HVO-built solid-state seismic preamplifier (voltage gain, 200x), direct-signal transmission over "hard" wire to HVO, HVO-built solid-state amplifier and galvanometer driver.
System II	Develco or Teledyne seismic preamplifier--voltage-controlled oscillator, signal transmission on audio FM carrier over "hard" wire or fm radio link to HVO, discriminator.
Geotech PTA	Short-period Geotech photo-tube amplifier.

4. TIMING SYSTEMS

RM-USGS	Crystal-controlled chronometer employing solid-state binary dividers to produce minute and hour marks. Typical drift rates are a few milliseconds per day.
TS-100	Sprengnether crystal-controlled chronometer. Output and performance characteristics similar to RM-USGS.

5. TELEMETERED SYSTEM RESPONSE

The peak magnification of the standard telemetered systems (System II, with the film strip magnified 20 times for viewing) is about 2×10^5 at a period of 0.1 sec. For periods between 0.1 and about 1.0 sec, the response falls off 6 db/octave (Fig. 5).

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Due to errors in our earlier summaries, a complete and corrected list of tilt coordinates for all tilt stations is listed in Table 9. This list excludes the three pot readings which were taken at Ahua Kamokukolau, Tree Molds, Sandspit, and Keamoku, but it includes the two pot readings which were not previously published for all stations.

Essential data on each tiltmeter station are listed in the first quarter issue of each year.

Table 7.--Tilt Coordinates at Uwekahuna Vault,

October, November, and December 1970

Date	N-S	E-W	Date	N-S	E-W
Oct. 4	560	366	Dec. 6	554	365
11	560	366	13	552	365
18	560	368	20	551	362
25	560	363	27	549	356
Nov. 1	561	361			
8	559	363			
15	560	363			
22	560	361			
29	558	363			

Table 8.--Tilt coordinates and changes at bases around Kilauea Caldera (See fig. 7).

Tilt Base	Date (1971)	Tilt Coordinates 1/		Rate (10^{-6} rad/mo) and Direction of Tilting Since Last Reading		Date of Last Reading (1970)
		N-S	E-W			
Uwekahuna (U on fig. 7)	25 Jan	616.5	393.5	3.88	N67.6°W	9 Sep
Tree Molds (TM)	25 Jan	535.5	478.6	1.99	N19.8°W	9 Sep
Sand Spit (SS)	26 Jan	1031.6	606.8	3.99	S16.5°W	10 Sep
Mehana (M)	25 Jan	594.8	591.4	1.25	N27.9°E	9 Sep
Keamoku (Kea)	2 Feb	568.8	441.7	3.60	S 2.6°W	10 Sep
Ahua Kamokukolau (Kam)	26 Jan	494.5	502.5	1.79	S59.0°W	11 Sep
Kipuka Nene (KN)	3 Feb	288.6	502.1	0.53	N20.6°E	11 Sep
Hilina Pali (HP)	3 Feb	456.8	497.1	0.43	N 9.5°W	25 May
Kapapala Ranch (Kap)	2 Feb	486.3	521.8	0.67	N72.1°E	10 Sep

1/ Due to several errors in the tilt coordinates columns in the earlier summaries, a complete and corrected list of tilt coordinates for all tilt bases is provided in table 9.

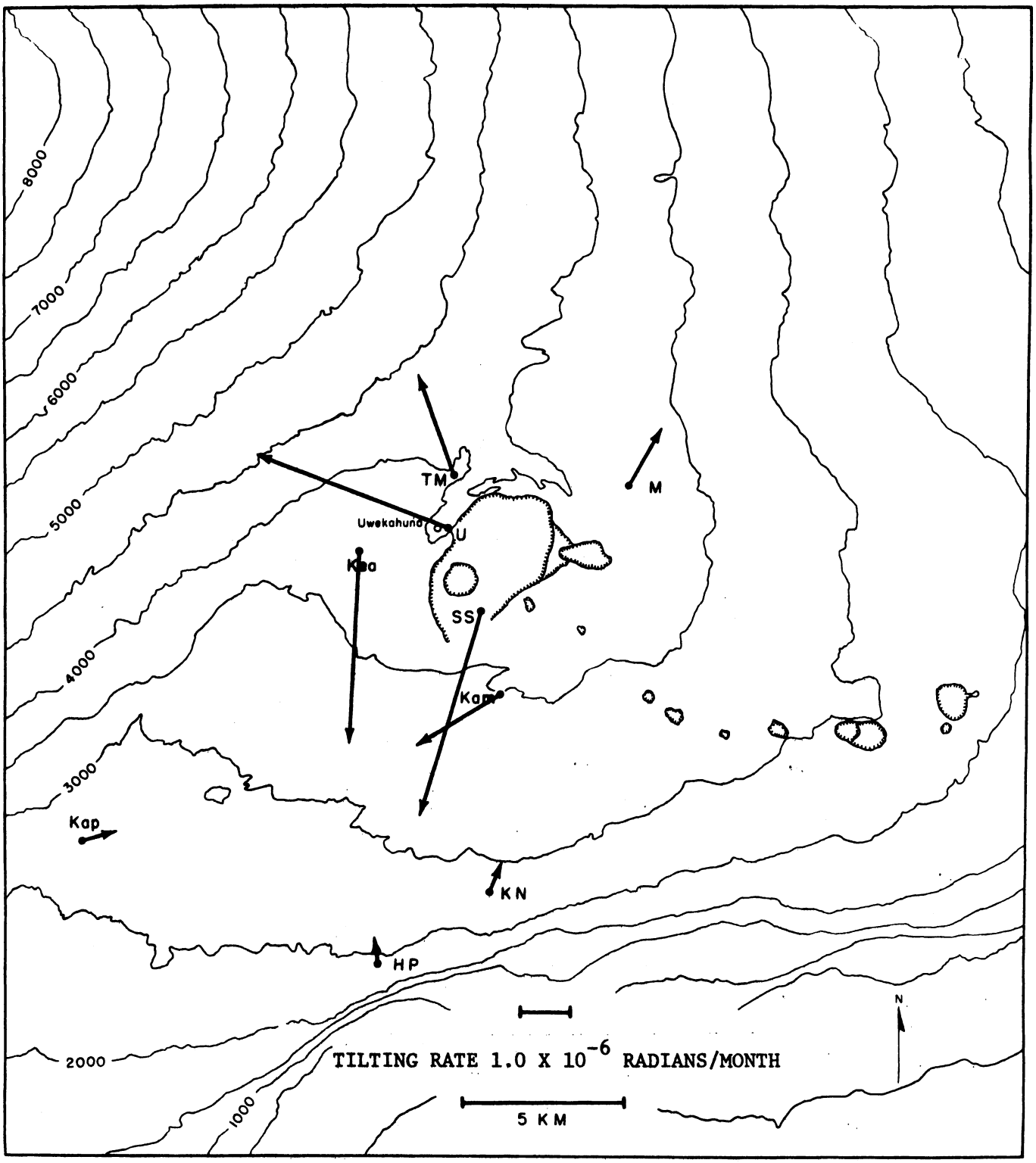

Figure 6.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 8 for explanation of abbreviations.

Table 9.--Complete and corrected tilt coordinates at all tilt bases around Kilauea Caldera

Tilt Base and Location	Date	Tilt Coordinates N-S	E-W	Tilt Base and Location	Date	Tilt Coordinates N-S	E-W
Uwekahuna	22 Nov 57	500.0	500.0	Uwekahuna	13 Sep 66	499.2	520.4
19°25.5'N	6 Feb 58	508.3	492.8	(cont'd)	8 Dec 66	506.5	507.8
155°17.4'W	22 May 58	518.1	487.6		17 Jan 67	512.5	499.1
	4 Aug 58	526.8	483.4		14 Feb 67	521.7	499.4
	2 Oct 58	533.6	479.9		2 Mar 67	521.5	502.6
	2 Feb 59	543.9	467.8		8 May 67	544.6	497.3
	27 Apr 59	544.2	469.1		5 Jun 67	552.2	494.8
	13 Aug 59	543.3	472.4		6 Sep 67	568.6	487.7
	12 Oct 59	546.8	468.8		8 Nov 67	583.0	478.0
	10 Nov 59	552.8	461.2		13 Feb 68	583.3	469.1
	1 Dec 59	535.6	464.2		11 Jun 68	598.7	437.5
	28 Dec 59	570.5	443.8		28 Aug 68	557.5	474.1
	20 Jan 60	557.8	458.4		3 Dec 68	543.4	472.9
	28 Mar 60	272.0	716.2		6 Feb 69	566.1	455.1
	5 Jul 60	218.9	759.8		19 Aug 69	572.8	452.5
	16 Sep 60	216.2	758.8		29 Sep 69	572.1	451.6
	29 Nov 60	283.6	690.0		3 Dec 69	576.4	444.9
	23 Feb 61	374.6	628.2		27 Feb 70	591.3	429.1
	8 May 61	444.1	594.6		22 May 70	604.9	416.3
	26 Jun 61	468.0	583.4		9 Sep 70	609.7	410.0
	22 Jul 61	476.8	572.4		25 Jan 71	616.5	393.5
	22 Sep 61	404.4	626.8				
	6 Oct 61	358.9	645.6				
	2 Jan 62	394.1	611.5	Kalihipaa	26 May 58	500.0	500.0
	27 Mar 62	409.2	601.7	19°21.4'N	6 Oct 58	498.9	500.7
	29 Jun 62	422.2	590.5	155°15.3'W	9 Feb 59	496.0	503.3
	30 Oct 62	446.9	576.8		28 Apr 59	487.3	502.4
	10 Dec 62	437.3	580.1		14 Aug 59	488.6	501.0
	20 Mar 63	471.2	561.7		13 Oct 59	488.6	500.7
	10 May 63	471.6	575.1		29 Oct 59	489.3	500.8
	6 Jul 63	478.6	568.7		12 Nov 59	487.1	501.7
	6 Aug 63	486.8	561.0		2 Dec 59	486.8	501.8
	10 Oct 63	420.8	608.0		29 Dec 59	471.4	509.0
	22 Jan 64	440.6	583.6		19 Jan 60	477.2	511.0
	29 Apr 64	452.5	572.4		4 Feb 60	508.2	504.3
	27 Aug 64	469.6	557.7		29 Mar 60	563.4	447.7
	10 Dec 64	488.4	455.6		7 Jul 60	599.2	416.5
	4 Jan 65	500.3	534.8		26 Sep 60	611.8	408.7
	17 Jan 65	507.6	533.8		3 Nov 60	605.2	407.2
	6 Mar 65	441.0	584.5		24 Feb 61	579.9	414.2
	15 Jun 65	454.4	568.5		11 May 61	549.1	427.5
	7 Sep 65	467.3	556.4		26 Jun 61	541.5	433.9
	27 Dec 65	442.5	575.8		22 Jul 61	540.5	435.9
	10 Feb 66	463.9	555.2		22 Sep 61	562.5	431.4
	14 Mar 66	470.6	549.7		8 Oct 61	580.5	421.3
	7 Jun 66	486.2	535.5		5 Jan 62	577.5	422.3

Table 9.--Complete and corrected tilt coordinates at all tilt bases around Kilauea Caldera (cont'd)

Tilt Base and Location	Date	Tilt Coordinates N-S	Tilt Coordinates E-W
Kalihipaa (cont'd)	28 Mar 62	577.3	422.0
	5 Jul 62	577.3	422.2
	26 Oct 62	568.6	427.0
	11 Dec 62	569.6	423.7
	18 Mar 63	562.7	428.2
	11 May 63	553.7	451.0
	3 Jul 63	343.4	387.5
	5 Aug 63	330.4	377.7
	22 Aug 63	338.8	377.1
	7 Oct 63	358.1	375.1
	20 Jan 64	362.8	373.6
	6 Feb 64	361.9	373.2
	27 Apr 64	360.6	371.4
	27 Aug 64	352.6	372.6
	8 Dec 64	342.4	376.1
	21 Jan 65	340.2	380.2
	6 Mar 65	365.6	380.1
	8 Jun 65	366.9	375.3
	31 Aug 65	360.9	373.8
	This station was lost during the eruption and earthquake of Dec 24-31 1965		
Summer Camp 19°24.6'N 155°15.6'W	9 Jun 58	500.0	500.0
	7 Oct 58	505.6	515.0
	8 Feb 59	508.4	527.1
	4 May 59	517.6	527.9
	15 Aug 59	517.6	525.1
	16 Oct 59	519.7	529.5
	13 Nov 59	530.9	538.6
	This station was lost during the eruption of Kilauea Iki Nov 14,1959		
Tree Molds 19°26.3'N 155°17.3'W	9 Oct 58	500.0	500.0
	5 Feb 59	508.6	498.9
	28 Apr 59	502.1	498.7
	14 Aug 59	499.7	498.5
	13 Oct 59	501.5	498.1
	12 Nov 59	509.5	496.4
	2 Dec 59	504.6	490.0
	28 Dec 59	516.1	488.1
Tree Molds (cont'd)	20 Jan 60	506.2	493.0
	5 Feb 60	408.8	528.9
	29 Mar 60	334.0	550.2
	7 Jul 60	305.8	555.9
	23 Sep 60	308.0	552.8
	31 Oct 60	342.5	538.4
	26 Feb 61	408.5	517.4
	9 May 61	438.3	512.1
	27 Jun 61	450.2	510.6
	25 Jul 61	455.3	509.1
	7 Oct 61	389.5	528.5
	4 Jan 62	412.9	519.3
	27 Mar 62	420.5	517.4
	29 Jun 62	427.1	514.6
	31 Oct 62	438.5	512.7
	12 Dec 62	435.8	512.4
	19 Mar 63	448.7	510.9
	14 May 63	453.5	512.2
	7 Jul 63	452.5	512.7
	6 Aug 63	457.0	509.8
	23 Aug 63	457.9	509.8
	9 Oct 63	422.6	521.3
	21 Jan 64	436.2	514.0
	1 May 64	443.1	511.6
	28 Aug 64	450.9	508.8
	7 Dec 64	461.6	504.1
	17 Jan 65	469.3	504.3
	6 Mar 65	435.1	517.3
	9 Jun 65	443.2	511.4
	2 Sep 65	447.1	508.6
	29 Dec 65	437.9	515.4
	16 Mar 66	453.8	506.9
	8 Jun 66	462.9	504.8
	12 Sep 66	469.8	500.2
	8 Dec 66	477.9	495.6
	18 Jan 67	480.8	495.2
	13 Feb 67	483.7	495.8
	1 May 67	491.9	495.4
	7 Jun 67	496.4	495.7
	19 Jul 67	501.0	494.1
	7 Sep 67	504.4	494.5
	30 Oct 67	513.6	492.4
	7 Nov 67	507.5	495.7
	5 Dec 67	510.0	493.2
	21 Feb 68	513.8	491.8

Table 9.--Complete and corrected tilt coordinates at all tilt bases around Kilauea Caldera (cont'd)

Tilt Base and Location	Date	Tilt Coordinates N-S	Tilt Coordinates E-W
Tree Molds (cont'd)	10 Jun 68	522.0	491.3
	10 Oct 68	477.0	502.9
	3 Dec 68	493.4	495.1
	6 Feb 69	504.9	494.2
	24 Feb 69	484.3	499.9
	1 May 69	508.3	491.5
	27 May 69	501.3	493.3
	30 Oct 69	506.4	490.3
	9 Feb 70	518.4	485.5
	18 May 70	523.6	485.3
	9 Sep 70	526.9	481.7
	25 Jan 71	535.5	478.6
Sand Spit 19°24.1'N 155°16.8'W	31 Oct 58	500.0	500.0
	8 Feb 59	505.1	493.7
	4 May 59	531.2	482.8
	15 Aug 59	527.4	485.8
	16 Oct 59	525.3	483.6
	13 Nov 59	527.5	472.9
	4 Dec 59	545.0	468.9
	31 Dec 59	605.9	466.7
	22 Jan 60	605.0	481.1
	5 Feb 60	599.2	580.1
	4 Apr 60	757.8	703.9
	14 Jul 60	794.0	735.6
	23 Sep 60	786.3	743.1
	31 Oct 60	774.8	724.3
	26 Feb 61	854.5	700.9
	10 May 61	962.0	687.0
	28 Jun 61	993.1	672.7
	25 Jul 61	974.8	658.8
	11 Oct 61	839.2	695.2
	9 Jan 62	844.6	692.5
	29 Mar 62	849.4	700.9
	29 Jun 62	852.5	705.9
	1 Nov 62	895.4	706.7
	12 Dec 62	891.7	701.5
	21 Mar 63	938.8	706.4
	14 May 63	930.2	708.8
	6 Jul 63	924.6	724.4
	12 Aug 63	921.7	726.2
	11 Oct 63	882.8	748.1
	24 Jan 64	863.1	751.8
	1 May 64	861.2	748.6
	1 Sep 64	885.3	723.0
Sand Spit (cont'd)	11 Dec 64	905.9	697.5
	19 Jan 65	934.7	732.7
	8 Mar 65	893.9	749.9
	16 Jun 65	884.9	747.7
	7 Sep 65	881.6	737.5
	30 Dec 65	869.0	751.8
	17 Mar 66	845.0	747.9
	8 Jun 66	839.9	734.9
	12 Sep 66	835.1	716.8
	5 Dec 66	831.0	710.6
	17 Jan 67	848.8	687.3
	7 Feb 67	863.2	684.3
	12 Feb 68	875.8	703.1
	1 Mar 67	877.6	709.5
	20 Mar 67	881.2	712.7
	12 Apr 67	892.0	717.2
	8 May 67	907.0	718.7
	13 Sep 67	942.4	706.6
	12 Jun 68	955.1	650.7
	31 Oct 69	951.0	684.8
	20 May 70	1050.1	613.0
	10 Sep 70	1049.2	612.0
	26 Jan 71	1031.6	606.8
Keamoku 19°25.1'N 155°19.0'W	2 Mar 59	500.0	500.0
	12 May 69	512.8	498.6
	16 Aug 59	516.1	497.6
	20 Oct 59	515.5	493.4
	4 Dec 59	504.9	496.7
	31 Dec 59	534.8	469.8
	21 Jan 60	530.6	484.2
	4 Feb 60	483.3	608.1
	30 Mar 60	425.0	739.1
	12 Jul 60	396.1	792.1
	22 Sep 60	385.1	799.3
	1 Nov 60	384.1	768.7
	24 Feb 61	429.1	664.5
	9 May 61	492.4	597.0
	24 Jun 61	511.3	572.1
	21 Jul 61	513.3	567.5
	8 Oct 61	443.3	677.9
	5 Jan 62	447.1	651.1
	29 Mar 62	453.9	637.7
	30 Jun 62	466.2	623.4
	31 Oct 62	481.4	598.5

Table 9.--Complete and corrected tilt coordinates at all tilt bases around Kilauea Caldera (cont'd)

Tilt Base and Location	Date	Tilt Coordinates N-S	Tilt Coordinates E-W
Keamoku (cont'd)	11 Dec 62	474.5	605.6
	18 Mar 63	494.7	577.8
	10 Mar 63	519.2	564.3
	4 Jul 63	531.4	552.6
	12 Aug 63	537.0	544.9
	7 Oct 63	501.7	598.4
	24 Jan 64	492.4	591.9
	28 Apr 64	495.9	584.4
	26 Aug 64	505.7	569.8
	11 Dec 64	506.2	556.1
	18 Jan 65	527.1	531.7
	7 Mar 65	498.1	589.8
	7 Jun 65	499.8	583.0
	30 Aug 65	502.5	571.6
	28 Dec 65	505.7	574.2
	15 Mar 66	512.7	555.6
	6 Jun 66	516.8	544.5
	6 Sep 66	518.9	532.4
	6 Dec 66	510.8	528.5
	13 Feb 67	525.1	509.5
	2 Mar 67	531.4	509.2
	21 Mar 67	535.5	503.6
	2 May 67	555.0	488.7
	6 Jun 67	562.9	479.5
	19 Jul 67	572.3	469.2
	5 Sep 67	578.3	463.7
	30 Oct 67	590.1	440.6
	8 Nov 67	586.6	446.8
	21 Nov 67	585.1	448.4
	30 Nov 67	574.3	452.6
	13 Jun 68	582.1	442.4
	19 Jun 68	583.1	441.1
	2 Sep 68	571.5	471.0
	10 Oct 68	551.4	503.2
	2 Dec 68	548.4	492.2
	6 Feb 69	558.8	473.6
	25 Feb 69	546.9	498.5
	27 Oct 69	571.3	468.3
	11 Feb 70	573.7	454.9
	20 May 70	585.2	447.4
	10 Sep 70	586.3	442.5
	2 Feb 71	568.8	441.7
Ahua Kamokukolau 19°ww.7'N 155°16.6'W	4 Mar 59	500.0	500.0
	5 May 59	489.1	506.3
	16 Aug 59	493.9	506.0
	19 Oct 59	488.6	505.7
Ahua Kamokukolau (cont'd)	3 Dec 59	479.1	500.7
	30 Dec 59	413.9	535.4
	22 Jan 60	444.7	543.5
	5 Feb 60	634.0	494.3
	5 Apr 60	817.2	456.7
	29 Apr 60	839.5	452.1
	8 Jul 60	899.5	441.4
	24 Sep 60	927.8	433.7
	28 Nov 60	883.2	441.2
	25 Feb 61	722.6	478.7
	10 May 61	588.7	530.2
	24 Jun 61	546.4	543.5
	21 Jul 61	547.4	542.8
	7 Oct 61	769.6	469.2
	3 Jan 62	733.9	488.8
	28 Mar 62	717.8	499.4
	1 Jul 62	704.9	509.2
	26 Oct 62	652.9	521.8
	10 Dec 62	658.3	521.5
	19 Mar 63	599.6	539.1
	10 May 63	608.1	583.1
	3 Jul 63	694.9	548.1
	5 Aug 63	701.9	555.6
	10 Oct 63	802.0	529.6
	22 Jan 64	798.9	536.4
	1 May 64	788.1	532.2
	26 Aug 64	752.1	528.4
	10 Dec 64	708.4	522.7
	18 Jan 65	677.0	554.4
	6 Mar 65	777.6	542.9
	15 Jun 65	789.4	532.7
	30 Aug 65	774.3	525.7
	28 Dec 65	830.0	531.6
	16 Mar 66	800.8	529.0
	8 Jun 66	778.8	519.4
	8 Sep 66	753.1	514.4
	5 Dec 66	738.8	501.7
	18 Jan 67	706.6	497.8
	7 Feb 67	688.6	501.3
	12 Feb 67	681.9	518.4
	1 Mar 67	684.0	526.5
	20 Mar 67	675.5	533.6
	1 May 67	646.2	550.2
	5 Jun 67	622.7	554.0
	18 Jul 67	603.0	557.5
	13 Sep 67	587.7	558.0
	7 Feb 69	630.6	539.7

Table 9.--Complete and corrected tilt coordinates at all tilt bases around Kilauea Caldera (cont'd)

Tilt Base and Location	Date	Tilt Coordinates N-S	Tilt Coordinates E-W
Ahua Kamokukolau (cont'd)	18 Feb 69	625.8	542.5
	22 Feb 69	643.3	542.2
	23 Feb 69	656.1	536.5
	27 Feb 69	665.3	535.6
	31 Oct 69	614.6	540.5
	21 May 70	495.5	510.3
	11 Sep 70	498.7	509.5
	26 Jan 71	494.5	502.5
Hilina Pali 19°18.2'N 155°18.6'W	19 Jan 60	500.0	500.0
	6 Feb 60	504.6	497.1
	4 Apr 60	516.0	490.5
	11 Jul 60	522.7	484.9
	20 Sep 60	525.7	483.3
	21 Nov 60	522.9	486.3
	27 Feb 61	518.1	491.4
	12 May 61	511.4	496.1
	28 Jun 61	505.3	499.6
	23 Jul 61	504.8	499.9
	9 Oct 61	511.1	494.9
	8 Jan 62	512.9	496.3
	4 Apr 62	514.4	495.3
	24 Oct 62	512.2	494.2
	13 Mar 63	509.7	495.5
	13 May 63	500.9	500.0
	6 Aug 63	497.9	498.8
	14 Oct 63	497.7	499.6
	30 Apr 64	498.7	498.4
	7 Dec 64	498.6	495.0
	9 Jun 65	502.7	493.8
	10 Jan 66	464.1	508.3
	9 Jun 66	464.7	506.3
	7 Dec 66	465.3	505.7
	28 Jun 67	457.3	509.3
	14 Feb 68	456.4	508.1
	16 Oct 68	457.3	504.6
	29 Oct 69	453.5	500.5
	25 May 70	453.2	497.7
	3 Feb 71	456.8	497.1
Kipuka Nene 19°19.4'N 155°16.7'W	26 Jan 60	500.0	500.0
	6 Feb 60	504.8	497.2
	31 Mar 60	517.7	491.8
	13 Jul 60	526.9	487.2
	26 Sep 60	529.1	485.5
Kipuka Nene (cont'd)	22 Nov 60	526.9	485.4
	27 Feb 61	521.3	488.0
	11 May 61	513.6	493.2
	27 Jun 61	510.6	498.3
	24 Jul 61	509.6	499.1
	9 Oct 61	516.7	494.4
	4 Jan 62	517.1	493.4
	5 Apr 62	516.8	493.5
	2 Oct 62	515.1	494.1
	13 Dec 62	511.8	495.2
	15 Mar 63	509.5	495.5
	13 May 63	500.4	502.5
	5 Jul 63	489.3	505.7
	9 Aug 63	487.3	505.9
	14 Oct 63	488.7	506.5
	20 Jan 64	488.3	505.3
	27 Apr 64	488.2	505.4
	1 Sep 64	485.5	505.5
	14 Dec 64	483.3	504.0
	20 Jan 65	482.1	503.5
	9 Mar 65	486.9	503.4
	8 Jun 65	486.8	502.6
	31 Aug 65	486.4	502.6
	11 Jan 66	296.5	498.1
	14 Mar 66	300.2	498.5
	9 Jun 66	302.0	498.2
	11 Jul 66	302.6	498.9
	8 Sep 66	303.0	498.1
	7 Dec 66	304.9	497.5
	15 Feb 67	303.0	498.2
	17 Mar 67	303.0	501.7
	8 Jun 67	299.2	505.2
	7 Sep 67	297.5	507.0
	7 Nov 67	294.9	505.6
	14 Feb 68	294.9	506.1
	10 Jun 68	292.1	506.0
	2 Sep 68	295.6	505.4
	11 Oct 68	298.5	505.9
	5 Dec 68	297.8	505.9
	12 Feb 69	295.4	506.1
	22 May 69	293.7	505.5
	3 Jun 69	293.9	505.3
	28 Oct 69	291.5	505.9
	13 Feb 70	288.2	504.9
	21 May 70	284.3	502.9
	11 Sep 70	286.2	501.2
	3 Feb 71	288.6	502.1

Table 9. Complete and corrected tilt coordinates at all tilt bases around Kilauea Caldera (cont'd)

Tilt Base and Location	Date	Tilt Coordinates N-S	Tilt Coordinates E-W
Mehana	19 Sep 60	500.0	500.0
19°26.2'N	2 Nov 60	508.0	514.6
155°14.3'W	2 Mar 61	530.0	533.7
	12 May 61	540.1	541.9
	26 Jun 61	541.8	546.6
	25 Jul 61	543.5	547.8
	10 Oct 61	526.8	527.6
	2 Jan 62	532.2	536.6
	26 Mar 62	533.8	535.9
	2 Sep 64	541.4	545.0
	30 Sep 64	543.9	546.5
	10 Dec 64	547.7	548.3
	16 Jan 65	550.0	549.8
	9 Mar 65	541.3	540.7
	16 Jun 65	539.6	543.0
	9 Sep 65	536.9	546.0
	29 Dec 65	541.9	543.3
	17 Mar 66	542.1	546.8
	16 Jun 66	544.6	551.1
	12 Sep 66	549.1	555.0
	9 Dec 66	553.4	558.3
	14 Feb 67	559.2	560.1
	7 Jun 67	560.8	564.2
	6 Sep 67	563.6	568.7
	8 Nov 67	569.0	569.8
	21 Feb 68	572.7	569.8
	12 Jun 68	577.8	577.0
	17 Jul 68	579.4	776.9
	2 Sep 68	570.4	570.4
	11 Oct 68	563.3	564.2
	2 Dec 68	567.5	567.8
	5 Feb 69	573.2	568.7
	24 Feb 69	569.2	564.0
	21 Apr 69	571.3	566.8
	27 May 69	570.0	567.4
	30 Oct 69	571.4	572.2
	9 Feb 70	577.1	578.0
	18 May 70	586.6	584.9
	9 Sep 70	589.7	588.7
	25 Jan 71	594.8	591.4
Kapapala Ranch	10 Oct 61	500.0	500.0
19°20.5'N	9 Jan 62	501.0	501.4
155°23.8'W	30 Mar 62	500.3	501.4
	30 Jun 62	497.0	503.6
	23 Oct 62	497.8	504.5
Kapapala Ranch (cont'd)	19 Dec 62	497.8	505.0
	14 Mar 63	497.6	505.0
	11 May 63	498.0	503.1
	8 Aug 63	497.0	503.5
	11 Oct 63	496.0	505.6
	21 Jan 64	496.2	507.5
	28 Apr 64	496.4	508.5
	24 Aug 64	494.5	508.2
	9 Dec 64	494.7	510.1
	19 Jan 65	494.7	510.6
	8 Mar 65	494.8	512.0
	7 Jun 65	494.2	511.4
	1 Sep 65	493.6	512.3
	27 Dec 65	493.8	513.7
	15 Mar 66	492.5	514.8
	6 Jun 66	492.1	514.8
	6 Sep 66	491.3	516.1
	6 Dec 66	491.6	517.2
	15 Feb 67	491.6	518.2
	22 Mar 67	493.4	515.9
	6 Jun 67	493.0	513.7
	5 Sep 67	491.2	512.2
	8 Nov 67	491.7	513.1
	13 Feb 68	492.4	515.0
	11 Jun 68	489.1	514.3
	28 Aug 68	488.9	514.4
	14 Oct 68	490.1	515.6
	11 Feb 69	490.1	516.9
	27 Oct 69	486.8	518.4
	11 Feb 70	586.2	519.9
	20 May 70	484.7	519.4
	10 Sep 70	485.3	518.7
	2 Feb 71	486.3	521.8

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☆ GPO 692-806

Hawaiian Volcano Observatory
1971 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 61
January, February, and March 1971
By Robert Y. Koyanagi, Elliot T. Endo, and Arnold T. Okamura

Chronological Summary By W. A. Duffield

January-March 1971 Leveling at Kīlauea and Tabulated Comparisons with Previous Data
By Reginald T. Okamura and Donald A. Swanson

Summary 62
April, May, and June 1971
By Arnold T. Okamura, Robert Y. Koyanagi, and Patricia Stevenson

Chronological Summary By Donald A. Swanson

Summary 63
July, August, and September 1971
By Robert Y. Koyanagi, Arnold T. Okamura, and George Kojima

Chronological Summary By Donald W. Peterson

Summary 64
October, November, and December 1971
By Arnold T. Okamura, Robert Y. Koyanagi, and Marie S. Onouye

Chronological Summary By Robert L. Christiansen

Open-File Report 2007-1331
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

Summary 61

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January-March 1971 Leveling at Kilauea
and Tabulated Comparisons with Previous Data
By
R. T. Okamura and D. A. Swanson

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INTRODUCTION

1971 marks the second year of a cooperative effort by the U. S. Geological Survey's National Center for Earthquake Research (NCER) and the Hawaiian Volcano Observatory to publish quarterly summaries on a regular basis. The usefulness of the summary has often been questioned. It is hoped that constant improvements and the timely publication of summaries will obviate this question. With the continued expansion of the Observatory's seismic net it is obviously important to maintain a readily available reference to serve as a guide for detailed analysis of the large volume of data being collected. As such a reference an attempt is made to document as accurately as possible seismometer station lists, instrumentation, parameters used for preliminary data analysis, changes in tilt, and the chronology of events for the quarter. In addition when the opportunity is presented, detailed descriptions of other Observatory projects will be published.

The Observatory seismic net has been undergoing a significant expansion in size and a marked improvement in the quality of instrumentation. More stations have been added to the net or updated using preamp/voltage controlled oscillators for seismic telemetry (cable or FM radio). All the telemetered stations are recorded side by side along with the Uwekahuna chronometer and the WWVH radio trace, on a single 16 mm film strip on a Develocorder located at the Observatory. The stability in timing at the few outstations in the net have also been improved substantially by the replacement of old pendulum clocks with more stable crystal controlled chronometers. As a result of the continued improvements the volume and quality of usable recorded seismic data has increased both in the number of stations available for each earthquake and in the total number of earthquakes that are sufficiently well recorded to be located.

Seismogram readings are punched on computer cards to provide an input deck for use in a slightly modified version of the location program HYPOLAYR (Eaton, 1969), which generates an output deck summarizing the solution of each event. The output deck is a convenient source of material for further analyses of the earthquakes, and the input deck is saved for possible reanalysis. Starting in the first quarter of 1971, a velocity-depth model based on refraction studies by Hill (1969) is used in the determination of hypocenters (as tabulated below).

Velocity model used for locating earthquakes in Hawaii

Layer	Velocity km/sec.	Depth km	Thickness km
1	1.8	0	0.8
2	3.1	0.8	1.4
3	5.2	2.2	5.8
4	6.8	8.0	5.5
5	8.25	13.5	

For future summaries, as has been done in this quarter, an attempt will be made to limit changes in the methods of analysis or computer program parameters to the first quarter and appropriately described in the first summary of the year. On the other hand, an effort will be made to continually improve the format and also to simplify the process of preparing the summaries so that the summaries are rapidly available as a reference.

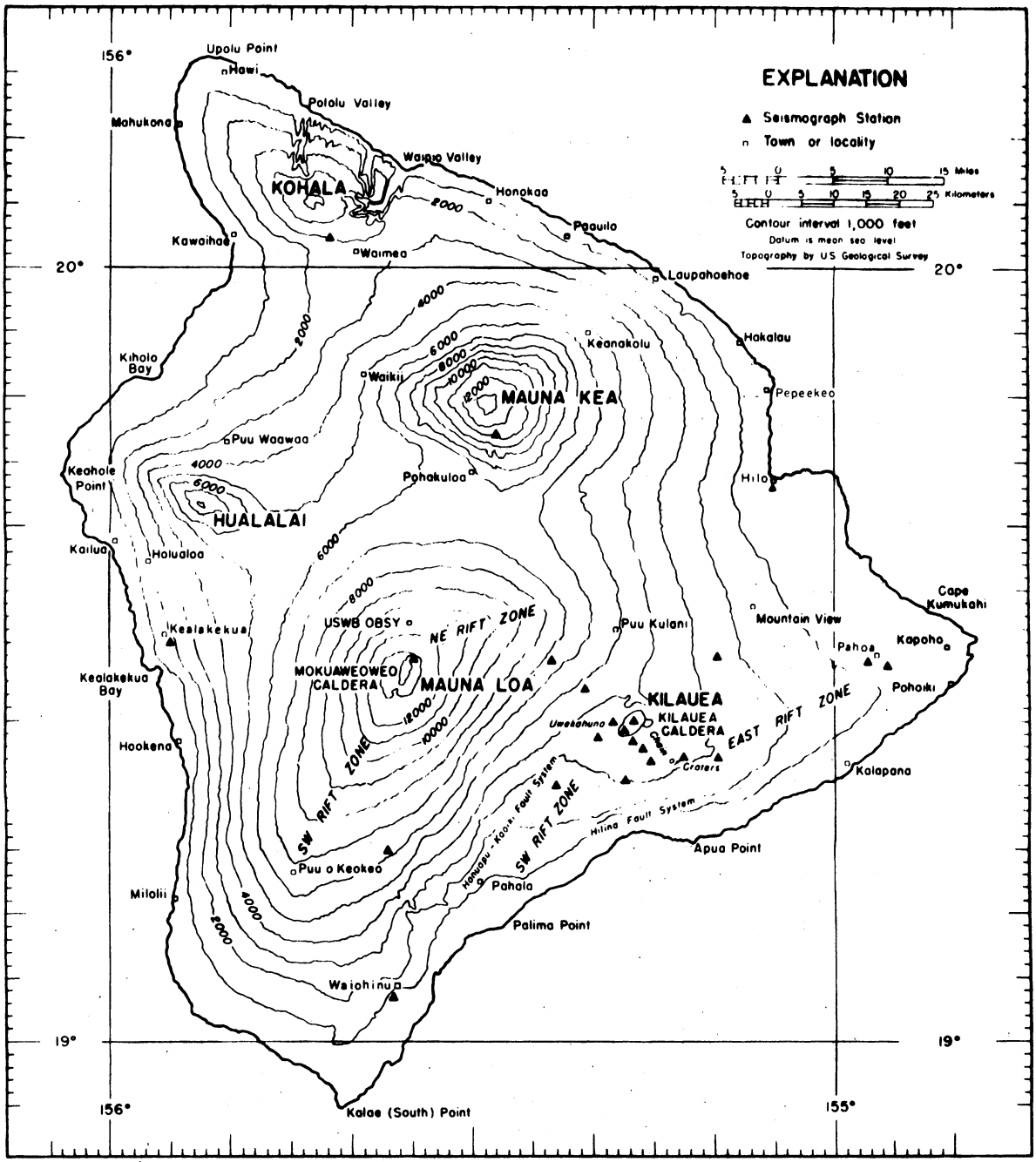

Figure 1.--Map of the Island of Hawaii showing seismograph stations operated by the U.S. Geological Survey, principal settlements, and selected geologic features. Epicenters of local earthquakes are given in Table 10 in terms of geographic coordinates, which are indicated at the edges of the map.

CHRONOLOGICAL SUMMARY

JANUARY-MARCH 1971 (1st quarter of 1971)

The Mauna Ulu eruption continued throughout this quarter in much the same manner as during the preceding 6 months. A brief outbreak in late January and early February from a new vent west of Mauna Ulu was the only major departure from the general pattern of activity on Mauna Ulu's east flank.

The quarter began with a comparative lull in activity. The lava lake in the summit crater (by now sufficiently widened by rock falls to make obsolete the term, fissure) of Mauna Ulu remained 25-35 m below the rim, and no lava was visible along the chain of vents to the east. The last remaining bridge along this chain collapsed on January 2, leaving a talus-mantled collapse trench more than 300 m long and 15-25 m deep (Figure 2).

The lull ended on January 14, when the trench became filled with a stream of lava flowing eastward and spilling over its banks. Some of these overflows reached the floor of the subsidence bowl in Alae Crater. At times the lava took part in the familiar rise-fall cycle, centered at the site of the engulfed December 20 collapse pit (see last summary). During this interval of trench activity, the lake in the summit crater rose to within 12-15 m of the rim. By January 21, lava had drained from the trench except for a small pool of bubbling lava at the site of the December 20 pit. Lava was, however, moving in conduits below the floor of the trench, for lava continued to pour through the old tube system into the Alae holding reservoir. Small flows fed by outlet tubes from Alae spilled into Makaopuhi Crater on January 23 and over Poliokeawe and Holei Palis on January 24.

These flows continued until January 28, when a new vent opened on Mauna Ulu's lower west flank, causing an abrupt change in pattern. Low fountains issued from a 650 m-long fissure that crossed the buried Chain of Craters road 50 m east of the west edge of the 1969-70 lava field (Figure 2). This outbreak continued until February 10 and fed flows that eventually built a low satellitic shield over the site of most persistent activity at the east end of the fissure. New flows covered several square kilometers south of the fissure, in places ponding against the scarp along Kalanaokuaiki Pali.

Activity on the east flank of Mauna Ulu resumed immediately after the new outbreak had ended. On February 11, a vigorous flow was pouring into the Alae subsidence bowl, which had already filled with new lava. Over the next several days a wide area was covered by lava that spilled from Alae (Figure 2). This surface flow stopped between February 18 and 20, although lava continued to pour out of Alae through the tube system.

A new subsidence bowl resulted from this continued withdrawal and is described by Swanson and Peterson (1972).

During most of the January 28 - February 10 outbreaks, the lava lake in Mauna Ulu's summit crater continued its slow circulation and cyclic rise-fall action apparently unrelated to the activity on the west flank. On February 7-9, the lake rose to within 3 m of the crater rim, but by February 11, when the east-flank activity had resumed, it had dropped to its usual depth of 15-20 m below the rim. Lake level continued to drop slowly throughout March and, by the end of the quarter, fluctuated between depths of 40 and 55 m.

On February 22, a new lava stream, fed by the outlet tube from Alae, plunged over Poliokeawe and Holei Palis. It then pooled at the base of the palis, crossed the Chain of Craters road, and continued slowly toward the sea, finally reaching it near the Hawaiian village site of Kealakomo on March 8. Lava continued to enter the sea for the rest of the month, slowly building a lava delta outward away from the old shoreline. This delta and its formation are described by Moore and others (1973).

Throughout March, no lava could be seen in the trench on Mauna Ulu's east flank, but it could be heard flowing and bubbling beneath the rubbly trench floor. By the end of March, the trench was about 350 m long and varied from 15 to 50 m in depth. The trench was growing westward, and the summit crater eastward, because of rockfalls; on March 23 the bridge separating them was 50 m wide but by March 28 had narrowed to only 12 m wide.

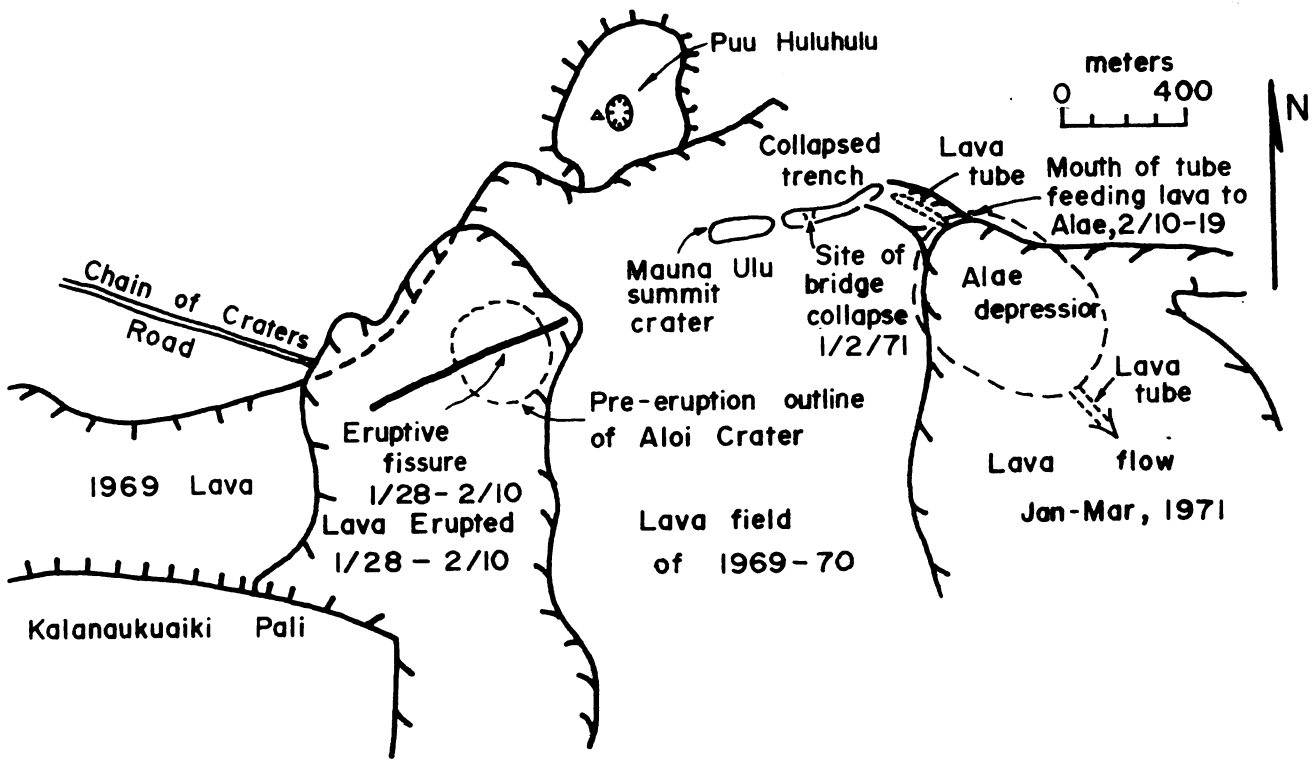

Figure 2.--Sketch map showing relative location of major events in the Mauna Ulu-Alae area, January to March 1971. All locations and lava flow outlines are approximate.

January-March 1971 leveling at Kilauea and tabulated comparisons with previous data

by

R. T. Okamura and D. A. Swanson

An extensive leveling survey was conducted at Kilauea in January, February, and early March 1971. A line was run from the Hilo tide gage to Kilauea summit along Highway 11, and from the summit to Kupapau tide gage and BM 10 at Kalapana Protestant Church via two routes, the Chain of Craters road and the Kalapana trail. In addition, numerous benchmarks in the summit area were occupied. Figure 3 shows the location of all benchmarks used. Precise locations for benchmarks established in 1958 or earlier are given in a report by Yamamoto (1957-1958), which can be obtained from either the Topographic Division of the U.S.G.S. or from the Volcano Observatory. Locations of benchmarks installed since 1958, including reset older benchmarks, are on file at the Volcano Observatory.

Two crews working simultaneously were used for the Hilo-Kilauea summit run and in the summit area; one crew did the rest. Each crew used a Zeiss Ni2 pendulum level and yard rods with invar strips. In general, procedures as outlined by Karren (1959) and the U. S. Geological Survey (1966) were followed in the field. For most of the leveling, the same rod was sighted first from each setup (that is, foresights were made before backsights about half the time) in order to minimize small systematic errors, a procedure suggested by J. P. Church. Both levels were peg-tested at least once a day to a tolerance of 0.003 ft, and both seemed to be quite stable. Foresights and backsights were generally balanced. The pendulum housing was tapped before each reading, quite vigorously during rainy or misty periods when the pendulum has a greater chance of sticking. The three-wire method of observation was used exclusively. In almost every case, the same rod was used for a foresight and the accompanying backsight, thereby cancelling any rod index errors; when different rods were used, a rod-index correction was made if significant.

Field books are on file at the Volcano Observatory. The notes were completely checked and recomputed in the office as the leveling progressed and at a subsequent time. Major discrepancies in elevation differences when compared with previous leveling were immediately checked, and in only one case was an error in the 1971 leveling detected; thus the large elevation differences indicate either errors in the previous leveling or more generally, real vertical displacement. Orthometric corrections were applied, using the technique given by the U. S. Geological Survey (1966), based on the Hilo datum. These corrections were small, reaching a maximum of 0.045 ft at Hilina triangulation station.

Rod pairs T232964-T232965 and T232966-T232967 were used; these rods were loaned by the Topographic Division of the U.S.G.S., courtesy of J. P. Church. Six months after the field work, the rods were checked for length by the Topographic Division in Washington, D. C. using a calibrated

invar tape known to be accurate throughout within 1 part in 30,000. The invar in the tape is the same as that of the rods, so temperature corrections were unnecessary. That part of each rod between the 0.2 and 3.9 yard graduations was checked; the error between the surface of the footplate and the 0.2 graduation, the rod index error, was also measured. The length of the calibration tape was corrected for the 4 pounds of tension applied to it during measurement of the rod. Two measurements of each rod interval were made, each by a different individual, and the results were averaged.

The results of these tests are shown in Table 1 and Figure 4. All four rods are too long, so that the true height above the ground is more than the rod reading and a positive correction must be added to the reading. The error is not proportional to the length of the rods; if it were, a rod correction could be computed by multiplying the difference of elevation between two benchmarks by a constant based on the mean excess length. Because the error is not proportional, each rod reading should be corrected individually. This was done for several typical benchmark intervals, but was too time-consuming to be done for all the data.

The method of Karren (1959) was used for making the rod corrections. The average backsight and foresight per interval were computed in yards by dividing the sum of the thread readings by the product of the number of setups times 3 (to convert from feet to yards). The mean rod correction for the average backsight was obtained from the appropriate graph (Figure 4, A or B), as was the mean correction for the average foresight. The difference between the mean corrections was then computed, with due regard to the signs. Since the rods are all long, the sign of the correction for an uphill interval is positive if the backsight correction is more than the foresight correction and negative if less; for downhill intervals, the sign of the correction is positive if the foresight correction is more than the backsight correction and negative if less. If the signs are positive, then the difference in elevation between the backsight and foresight benchmarks is increased; if the signs are negative, the difference in elevation is decreased. Usually the signs are positive, because the upper part of the rods generally is in error by more than the lower part. Once the difference in backsight and foresight corrections had been obtained, this difference was multiplied by the number of instrument setups to give the total correction to be applied to the elevation of the foresight benchmark. The results using this method checked closely with those from the intervals for which each rod reading was corrected individually.

As an example of this method, assume that the raw difference in elevation going from BM 1 to BM 2 is -169.058 ft, BM 1 being higher than BM 2. There were 26 setups between the benchmarks, and the sum of the backsight and foresight thread readings is 63.309 ft and 232.367 ft, respectively. Thus, the average backsight and foresight readings, in yards, are .812 and 2.979, respectively. Rod pair T232966-T232967 was used, and Figure 4B shows that the mean correction to the average backsight is .00070 ft, and to the average foresight is .00115 ft. The difference between these corrections is .00045 ft, and the sign is

positive since the foresight correction is greater than the backsight correction and the route is downhill. The number of setups (26) times the difference in corrections (+.00045) is .012, and this added to the difference in elevation of 169.058 gives a final difference of 169.070, which means that BM 2 is 169.070 ft below BM 1.

No average backsight or foresight during the leveling was significantly less than 0.2 yd, the datum for the rod calibration; the average shots slightly less than 0.2 yd were considered to have no error. No average sight was more than 3.9 yds.

Rod corrections significantly reduced the closure error in the several circuits in the network. For example, the long, 28.36 mi loop defined by the Kalapana trail and the Chain of Craters road closed -0.215 ft before rod corrections and -0.150 ft after corrections.

The rod corrections are based on the assumption that the rods did not change length during the leveling. There is no way to check this, but consideration of the type of rod makes this assumption seem reasonable. No corrections for length changes because of varying temperature were applied during the leveling, but these corrections would be minor because of the very small coefficient of expansion of the invar.

Closure adjustments were made after correcting for rod error by applying a correction proportional to the distance from the start of the circuit. Elevations on spur lines are based on the adjusted elevation at the tie point.

All loops closed to within second order tolerance (0.035 ft times the $\sqrt{\text{length of section in miles}}$). Many short, unclosed spur lines were run, and the long line from Hilo to the summit was also not closed; these lines are technically of third-order accuracy. However, many selected portions of the Hilo-summit run were releveled, both in flat and steep terrain, and comparison of the results suggests that this leveling is of second-order quality, despite the lack of a closed loop.

Table 2 lists the elevations of all benchmarks in the 1971 leveling network before and after rod corrections. The datum is USC&GS tidal benchmark E 2 in Hilo, which was assumed to have an elevation of 7.936 ft, in order to facilitate comparison with earlier work (Rappleye, 1929; Karren, 1959). Recent measurements between BM 4, the USC&GS primary tidal benchmark a short distance from E 2, suggest that the elevation of E 2 should be lowered by 0.016 ft to an elevation of 7.920 ft. Since E2 is located on busy Pier 1, which is subject to considerable heavy truck traffic, it is not surprising that it should subside; moreover, benchmark F 2, located farther out on the pier, is known to be subsiding (Karren, 1959; table 3 of this paper). However, BM 4 is located in the concrete footpad for a large water tower, and it seems likely that it may change elevation slightly as a result of the water load in the tower, although level lines run periodically by the USC&GS to a nearby tide gage suggest that such movement is small. Probably this spurious change would

be in the sense of lowering its elevation and all elevations based on it, although the water level in the tank may fluctuate and cause the elevation to do likewise. In short, the datum E 2 is probably slowly subsiding but this cannot be proved and in any event would not seriously affect any comparison of the 1971 survey to previous surveys.

Table 3 shows a comparison in meters of first-order leveling in 1926, second- and third-order leveling in 1957-58, and the present leveling. The data from the previous surveys are taken from Rappleye (1929), Karren (1959), and Yamamoto (1957-58). Several benchmarks were reset after 1958; data for transferring the reset elevation to the original elevation are listed in Table 8.

In 1965, R. W. Decker supervised a leveling crew that installed and occupied many benchmarks along the Chain of Craters road from near Kilauea summit to BM 10, at the Kalapana Protestant Church. The notebooks are filed at the Volcano Observatory. The equipment was similar to that used in 1971. The invar rods (numbers 299 and 315) were not checked for length errors. These same rods have been used by the Volcano Observatory since then and in April 1971 were calibrated by the Topographic Division in the same manner as described earlier. Table 4 and Figure 5 give the results for the pair 299-315, as well as the pair 260838-260839, a frequently used pair of rods at the Volcano Observatory but not used in any leveling quoted in this report. It is not known how much, if any, rods 299 and 315 were in error in 1965. On the assumption that the corrections in 1971 were applicable in 1965, Decker's leveling has been examined and rod corrections applied, using the method described earlier. Table 5 shows a comparison of the final 1971 and 1958 elevations with the 1965 elevations before and after rod corrections, using the 1958 U.S.G.S. elevation of 10.812 ft at BM 10 as the datum.

In February 1921, R. M. Wilson leveled from Keaau (BM 359.3) to Volcano House Flag via Kalapana. Over the course of the next year he leveled in the vicinity of the summit of Kilauea, and in January-February 1922 he ran a line from Keaau to Crater Hotel (since destroyed), which allowed closure of the circuit containing the February 1921 line. This leveling is discussed by Wilson (1935) and Karren (1959); the notebooks and related memoranda are on file at the Topographic Division of the U.S.G.S. in Menlo Park, California. The leveling is probably of poor quality for the reasons given by Karren (1959). In particular, the problem of incorrect rod length is of utmost importance. The wooden rods used in 1921-22 were long and changed length repeatedly (Wilson, 1935). Wilson applied a proportional correction based on the most recently measured length of the rods for a particular period of leveling. This method is valid only if the error of a rod is proportional to its length, a dubious assumption and one that would give somewhat erroneous results if applied to the 1958 and 1971 leveling. However, this type of correction for Wilson's rods is probably better than no correction at all.

We have recomputed the 1921 leveling between BM 10 (Kalapana Protestant Church) and BM 2738, south of Makaopuhi Crater. This leveling was done between February 4 and 9, 1921. The rod lengths were measured

on February 8, apparently under field conditions of humidity and temperature. The tape Wilson used for the measurement of the rods was later found to be long by .0008 ft in 9 ft; that is, at 9 ft the tape read only 8.9992 ft. Wilson realized this but did not take it into account when making his rod corrections. We have recomputed the rod corrections based on the corrected tape. Thus, as measured on February 8, 1921, rod A 9 was long by 0.0076 ft in 9 ft and rod 42 was long by 0.0051 in 9 ft. The mean of these errors is +0.00635 ft/9 ft, which is the rod correction to be applied proportionally to the 1921 raw data between BM's 10 and 2728. In addition, we recomputed Wilson's collimation corrections more precisely than he had done, taking into account curvature and refraction.

Table 6 shows the 1921 raw data and our corrections. Table 7 compares the 1921, 1958, and 1971 elevations holding BM 10 at the 1958 elevation of 10.812 ft.

The 1921-22 line from Keaau via Kalapana closed 0.488 ft low at Crater Hotel relative to the direct Keaau-Crater Hotel line. After Wilson's rod and collimation corrections, the closure was 1.940 ft low. Karren (1959) used this to cast doubt on the reliability of Wilson's method of correction, which should have reduced the closure error. However, it is important to take into account the timing of the surveys. The line via Kalapana was run in February 1921 during continuous eruption in Halemaumau; this is typically a time of summit stability, a conclusion based on knowledge acquired over the last 20 years. Beginning in March 1921, the magma column withdrew in Halemaumau, and throughout the next year it fluctuated greatly in height. This time, clearly one of instability in the magma column, could well have been accompanied by substantial ground deformation. The direct run from Keaau to Crater Hotel was not made until January-February 1922, almost a full year after the 1921 leveling, and it is quite possible that the summit area was considerably higher than in early 1921. In this regard, it is notable that a flank eruption occurred in Makaopuhi Crater in May 1922, shortly after the 1922 survey; usually such flank eruptions are preceded by long periods of summit uplift. Thus, the closure error in Wilson's circuit may not be as bad as it seems, although it still should be emphasized that the 1921-22 leveling was of poor quality and should be used with caution. We feel that the differences between the 1921, 1958, and 1971 surveys along the short Kalapana trail are large enough to indicate important vertical displacements. These displacements will be interpreted by Swanson and colleagues in future publications.

We thank Jack P. Church of the Topographic Division of the U.S.G.S. for his interest, advice and patience in dealing with all our questions and requests. Virtually all members of the Volcano Observatory took part on survey crews, and the Kilauea Job Corps contributed rodmen at times. CDR Moran, Ensign Lilley and Mr. Stanley Shibuya of the Coast and Geodetic Survey (then ESSA) showed us the Hilo tide gage and nearby benchmarks.

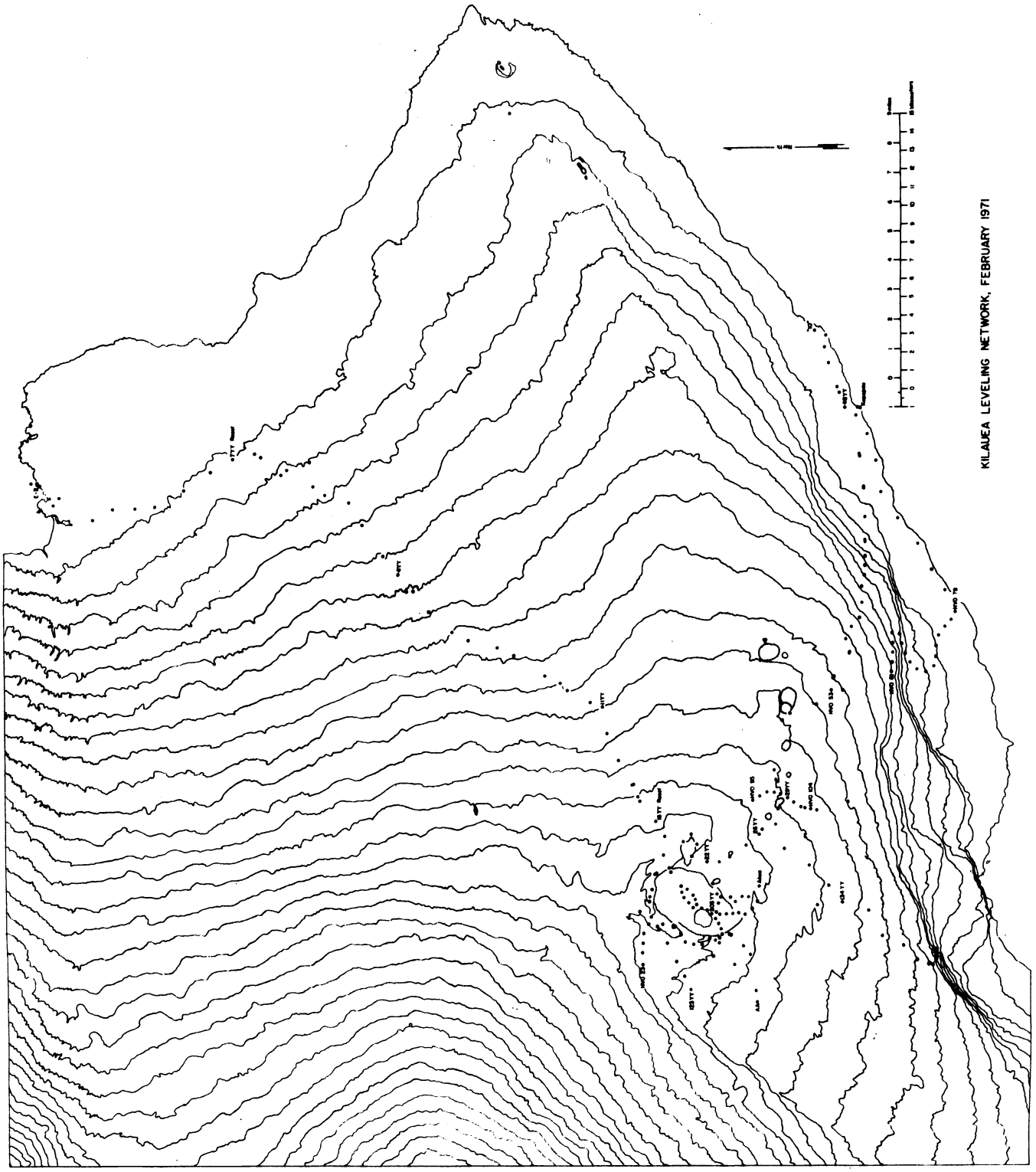

Figure 3.--Location of all benchmarks and leveling routes used in the January-March 1971 leveling on Kilauea.

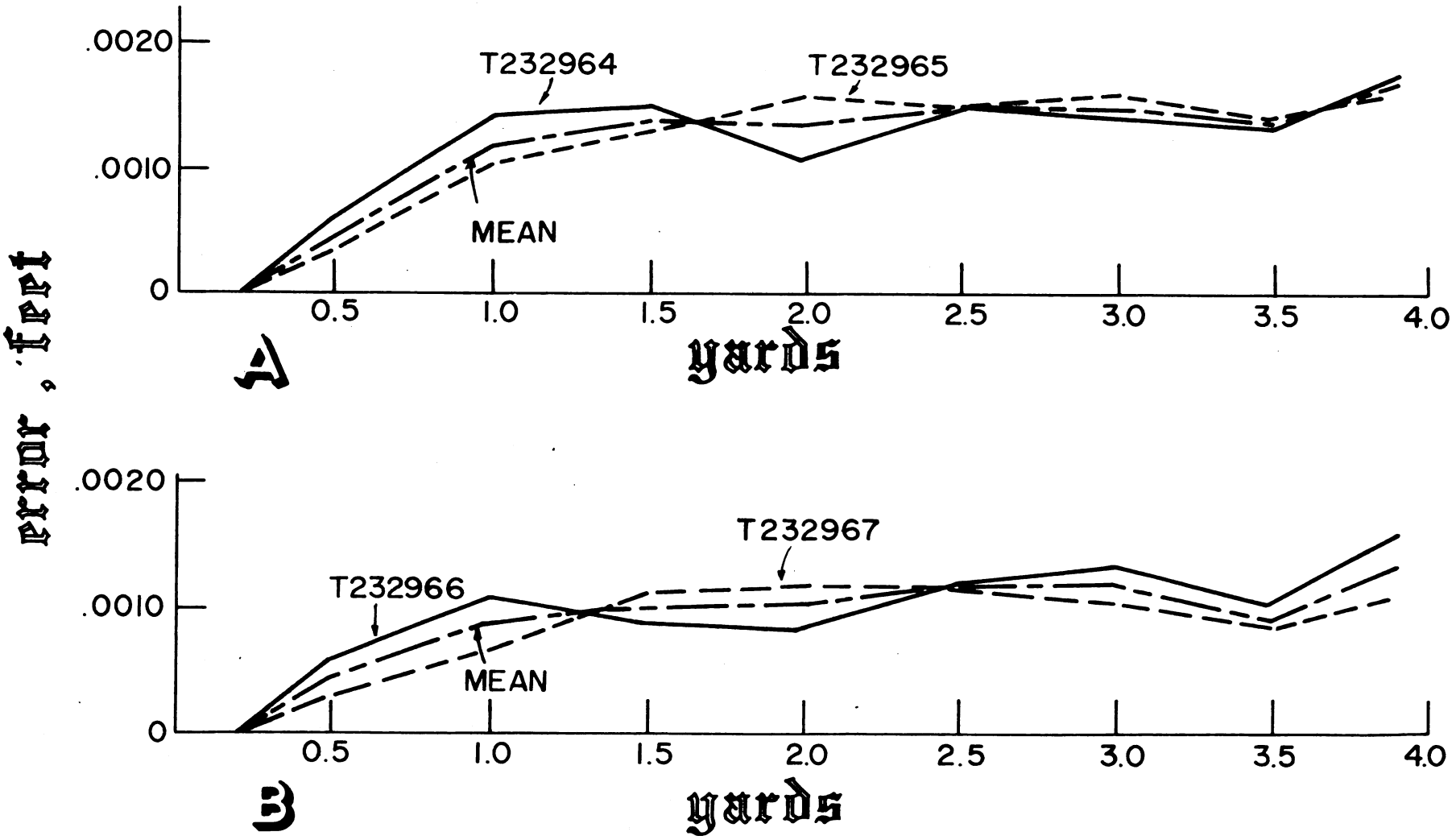

Figure 4.--Graphs used in determining rod corrections for rod pairs T232964-T232965 and T232966-T232967. These rods were used in the 1971 leveling. See text and Table 1.

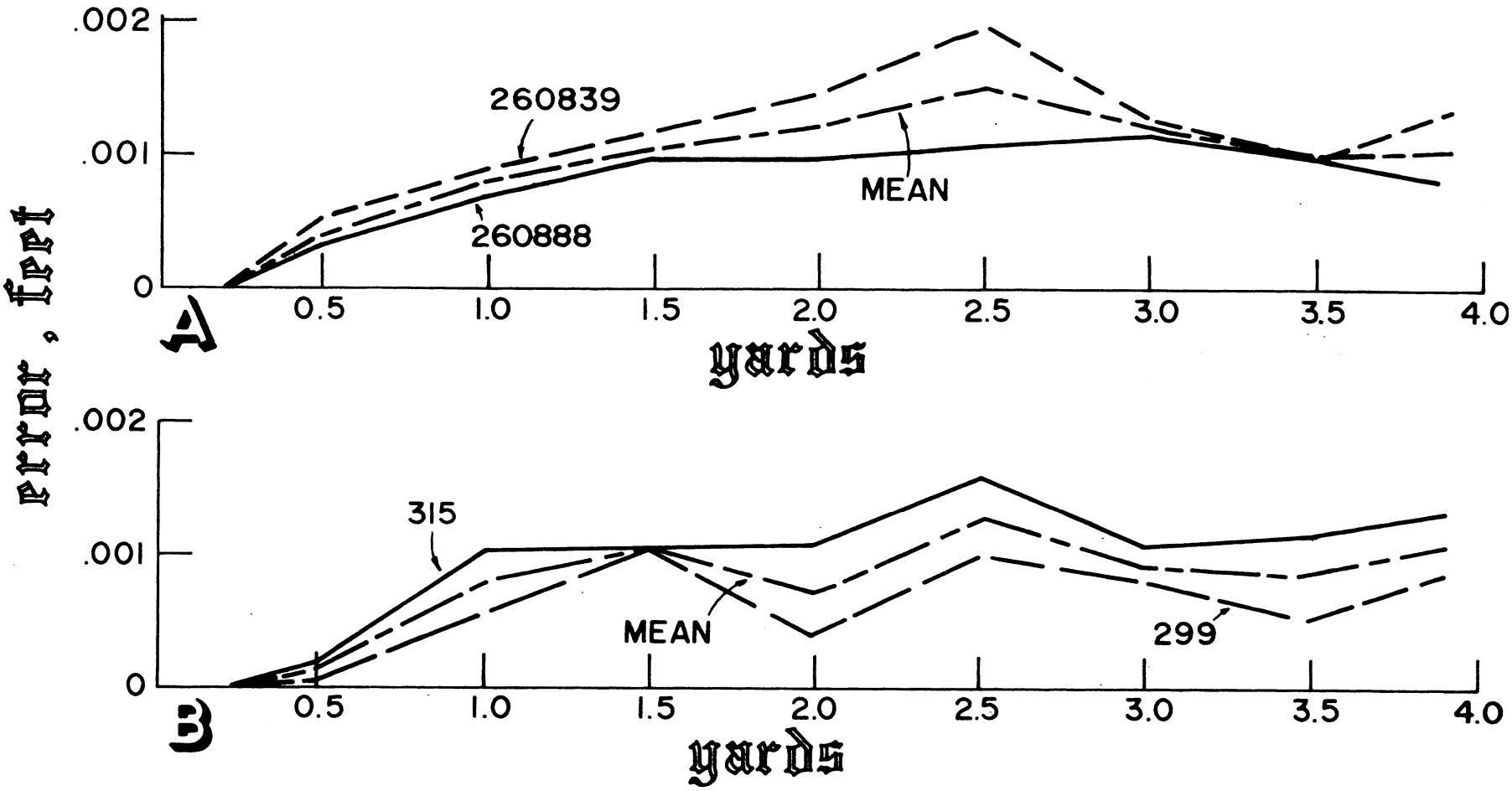

Figure 5.--Graphs used in determining rod corrections for rod pairs 260838-260839 and 299-315. These rods are currently used at the Volcano Observatory, and 299-315 were the rods used during the 1965 leveling by R. W. Decker. See text and Table 4.

Table 1.--Data for correcting rods used in 1971 leveling.

Calibrated at 73°F on August 5, 1971.

Correction in feet.

Rod reading, in yards	T232964	T232965	T232966	T232967
0.2	0	0	0	0
0.5	+.00064	+.00032	+.00060	+.00027
1.0	+.00141	+.00113	+.00108	+.00071
1.5	+.00153	+.00130	+.00090	+.00113
2.0	+.00114	+.00158	+.00086	+.00122
2.5	+.00150	+.00150	+.00118	+.00120
3.0	+.00140	+.00158	+.00132	+.00107
3.5	+.00130	+.00142	+.00105	+.00085
3.9	+.00178	+.00165	+.00160	+.00112
Rod index error	+.00150	+.00125	+.00125	+.00100

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation for E 2 of 7.936 ft.

B.M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
U.S.E. Pier 1	7.518	7.518	2.291
F 2	7.656	7.656	2.334
E 2	7.936	7.936	2.419
D 2	8.444	8.444	2.574
A-100 1967	11.683	11.683	3.561
5.83	5.959	5.959	1.816
5.79	5.922	5.922	1.805
TBM Airport	31.194	31.196	9.509
3YY 1957	42.631	42.632	12.994
4YY 1957	110.415	110.423	33.657
5YY 1957	147.788	147.799	45.049
B 2 (1926)	198.095	198.111	60.384
6YY 1957 reset	244.683	244.701	74.585
A 2 (1926)	277.894	277.913	84.708
7YY 1957 reset 1971	278.391	278.410	84.860
Z 1 (1926) reset 1963	327.776	327.798	99.913
359.3	359.373	359.398	109.545
8YY 1957	561.091	561.135	171.034
Keaau Trig.	604.630	604.676	184.306
1 YY 1958	650.995	651.046	198.439
Y 1 (1926)	690.352	690.406	210.436
2 YY	881.717	881.793	268.771

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation for E 2 of 7.936 ft (cont'd).

B. M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
3 YY	1043.480	1043.575	318.082
1266	1266.366	1266.486	386.026
4YY	1397.859	1398.002	426.112
W1 reset 1948	1530.474	1530.637	466.539
5YY	1723.855	1724.044	525.490
2002	2002.347	2002.586	610.389
V1 (1926) reset 1967	2119.361	2119.618	646.061
6YY 1958 reset 1967	2155.467	2155.725	657.066
7YY 1958 reset 1967	2224.713	2224.979	678.175
U 1 (1926) reset 1967	2358.677	2358.962	719.013
8YY	2474.910	2475.210	754.445
9YY	2486.815	2487.115	758.074
10YY	2681.077	2681.410	817.295
11YY	2751.352	2751.697	838.719
12YY	2892.887	2893.255	881.866
13YY	3157.061	3157.471	962.399
14YY	3417.383	3417.828	1041.756
15YY	3413.454	3413.899	1040.558
S 1 (1926)	3521.804	3522.262	1073.588
3565	3565.646	3566.105	1086.951
16YY 1958 reset 1968	3722.791	3723.271	1134.855
17YY 1958 reset 1962	3826.939	3827.433	1166.604
90YY 1958 reset 1962	3874.696	3875.194	1181.161

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation for E 2 of 7.936 ft (cont'd).

B.M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
94YY 1968 reset 1962	4022.820	4023.328	1226.313
95YY	4000.798	4001.305	1219.600
NPS 3999.67	3999.936	4000.443	1219.337
120YY	3931.079	3931.580	1198.348
121YY	3807.601	3808.088	1160.708
122YY	3696.974	3697.450	1126.985
123YY	3641.223	3641.694	1109.991
96YY	3992.377	3992.884	1217.033
HVO 25	3965.225	3965.729	1208.757
HVO 24	3967.226	3967.730	1209.366
P 1 (1926)	3950.444	3950.947	1204.251
HVO 23	3907.481	3907.980	1191.155
HVO 26	4026.672	4027.182	1227.487
HVO 27	4079.219	4079.735	1243.506
4076	4076.717	4077.232	1242.743
Uwekahuna Trig.	4087.947	4088.463	1246.166
HVO 28	4007.244	4007.750	1221.565
203YY	3943.546	3944.047	1202.148
HVO 29	3880.106	3880.600	1182.809
204YY	3779.009	3779.489	1151.991
117YY	3743.231	3743.705	1141.084
118YY	3737.945	3738.419	1139.472

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation for E 2 of 7.936 ft (cont'd).

B. M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
Cracks Trig.	3724.737	3725.209	1135.446
Pali Trig.	3747.965	3748.439	1142.526
Cone Peak Trig.	3653.344	3653.811	1113.684
127YY	3363.073	3363.518	1025.202
Aa Trig.	3348.858	3349.302	1020.869
Sand Hill Trig.	3701.048	3701.519	1128.225
HVO 119	3701.349	3701.820	1128.317
129YY	3605.813	3606.279	1099.196
Nose Trig.	3551.511	3551.973	1082.644
HVO 30	3726.012	3726.485	1135.835
HVO 31	3654.057	3654.521	1113.900
HVO 32	3645.417	3645.881	1111.267
HVO 33	3671.096	3671.564	1119.095
205YY	3639.191	3639.657	1109.370
Sand Spit Trig.	3647.991	3648.457	1112.052
HVO 36	3625.505	3625.970	1105.198
111YY	3620.212	3620.677	1103.585
HVO 37	3602.469	3602.933	1098.176
112YY	3563.990	3564.449	1086.446
HVO 38	3484.704	3485.157	1062.278
113YY	3495.116	3495.570	1065.452
Ahua Kam. Trig.	3557.093	3557.554	1084.345

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation E 2 of 7.936 ft (cont'd).

B. M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
114YY	3547.446	3547.906	1081.404
HVO 39	3600.229	3600.693	1097.493
115 YY	3647.003	3647.470	1111.751
HVO 40	3687.742	3688.213	1124.170
Keanakakoi Trig.	3690.675	3691.146	1125.064
HVO 41	3621.144	3621.609	1103.869
HVO 42	3617.573	3618.038	1102.780
HVO 43	3695.532	3695.995	1126.541
HVO 44	3550.431	3550.890	1082.313
110YY	3551.064	3551.523	1082.506
HVO 45	3538.785	3539.243	1078.763
109YY	3525.477	3525.934	1074.707
108YY	3501.321	3501.777	1067.344
HVO 46	3531.093	3531.550	1076.419
HVO 47	3545.097	3545.555	1080.687
HVO 48	3567.491	3567.951	1087.514
HVO 49	3592.660	3593.121	1095.185
HVO 34	3632.759	3633.225	1107.409
HVO 35	3636.795	3637.261	1108.639
TBM (nail)	3661.893	3662.362	1116.290
HVO 10	3674.048	3674.517	1119.995
22YY	3721.623	3722.096	1134.497

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation for E 2 of 7.936 ft (cont'd).

B. M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
23YY	3641.624	3642.089	1110.111
24YY	3623.314	3623.779	1104.530
25YY	3522.036	3522.490	1073.657
26YY	3431.371	3431.818	1046.020
3390	3384.639	3385.080	1031.774
27YY	3283.439	3283.866	1000.924
28YY	3270.688	3271.115	997.038
29YY	3231.605	3232.030	985.125
131YY	3303.091	3303.527	1006.917
132YY	3272.655	3273.090	997.640
133YY	3218.705	3219.137	981.195
Ohale (3314)	3312.014	3312.451	1009.637
134YY	3153.364	3153.793	961.278
135YY	2927.731	2928.128	892.495
136YY	2829.199	2829.591	862.461
137YY	2627.677	2628.040	801.028
138YY	2465.853	2466.202	751.700
139YY	2282.624	2282.950	695.845
Hilina Trig.	2249.428	2249.752	685.726
HVO 98	3244.530	3244.955	989.064
HVO 97	3249.183	3249.608	990.482
3269	3267.797	3268.224	996.157

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation for E 2 of 7.936 ft (cont'd).

B. M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
HVO 96	3330.516	3330.949	1015.275
HVO 95	3393.067	3393.506	1034.343
HVO 99	3211.252	3211.675	978.920
HVO 101	3189.968	3190.390	972.433
HVO 103	3200.689	3201.113	975.701
HVO 104	3152.139	3152.559	960.902
HVO 105	3076.556	3076.968	937.862
2746	2749.355	2749.746	838.124
Q 1 (1926)	4015.413	4015.920	1224.055
93YY	3999.886	4000.391	1219.322
HVO 143	3984.558	3985.062	1214.649
92YY	3943.562	3944.059	1202.152
3973	3972.645	3973.143	1211.016
Vol. H. Flag (Spike)	3970.208	3970.705	1210.273
Observatory Trig.	3979.664	3980.162	1213.156
HVO 87	3953.306	3953.801	1205.121
18YY	3874.308	3874.799	1181.041
19YY	3917.767	3918.259	1194.288
20YY	3834.953	3835.434	1169.043
21YY	3763.791	3764.267	1147.351
3440	3443.585	3444.031	1049.743
Puu Huluhulu Trig. R.M.1	3441.803	3442.249	1049.200

Table 2.--1971 elevations, before and after rod corrections,

based on 1958 elevation for E 2 of 7.963 ft (cont'd).

B. M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
P.H. Trig., top of pipe	3445.440	3445.887	1050.308
T-129A	3089.507	3089.911	941.807
T-12	3040.183	3040.579	926.770
120	3011.776	3012.169	918.111
34YY	2999.746	3000.139	914.444
Makaopuhi Wall	2922.912	2923.297	891.023
2728	2736.818	2737.193	834.298
HVO 53	2558.602	2558.963	779.973
2503	2505.862	2506.216	763.896
36YY	2504.982	2505.336	763.628
2302	2305.397	2305.738	702.790
37YY	2299.777	2300.118	701.077
38YY	2305.060	2305.401	702.688
39YY	2136.936	2137.262	651.439
40YY	1919.966	1920.278	585.302
1638	1641.108	1641.399	500.299
41YY	1441.268	1441.549	439.385
42YY	1252.100	1252.371	381.723
1082	1083.045	1083.303	330.191
43YY	927.983	928.231	282.925
44YY	559.861	560.084	170.714
557	558.375	558.598	170.261

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation for E 2 of 7.936 ft (cont'd).

B. M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
352	352.045	352.258	107.368
45YY	168.186	168.389	51.325
167	167.620	167.823	51.153
46YY	76.326	76.523	23.324
64	64.278	64.474	19.652
48YY	19.745	19.935	6.076
34	34.884	35.074	10.691
49YY	41.580	41.770	12.732
50YY	42.990	43.180	13.161
51YY	32.312	32.502	9.907
10	10.930	11.120	3.389
Hakuma Trig.	61.815	62.008	18.900
HVO 86	15.120	15.309	4.666
HVO 13	10.266	10.455	3.187
Kupapau Trig.	24.298	24.487	7.464
HVO 85	37.046	37.234	11.349
HVO 84	34.573	34.758	10.594
HVO 83	42.630	42.813	13.049
HVO 82	73.003	73.184	22.307
HVO 81	62.057	62.236	18.970
HVO 80	65.178	65.354	19.920
HVO 79	46.219	46.392	14.140

Table 2.--1971 elevations, before and after rod corrections, based on 1958 elevation for E 2 of 7.936 ft (cont'd).

B. M.	Elevation before rod correction ft	Final elevation after rod correction ft	m
HVO 78	83.057	83.230	25.369
HVO 77	113.787	113.962	34.736
HVO 76	148.346	148.523	45.270
HVO 75	160.542	160.718	48.987
HVO 74	264.774	264.962	80.761
HVO 73	374.518	374.716	114.214
HVO 72	465.154	465.358	141.841
HVO 71	566.265	566.478	172.663
HVO 70	660.760	660.982	201.468
HVO 69	787.779	788.012	240.187
HVO 68	913.911	914.158	278.636
HVO 67	1031.888	1032.145	314.598
HVO 66	1146.323	1146.591	349.482
HVO 65	1300.593	1300.875	396.507
HVO 64	1429.747	1430.043	435.878
HVO 162	1383.985	1384.291	421.933
HVO 63	1530.564	1530.873	466.611
HVO 62	1655.097	1655.414	504.571
HVO 61	1781.349	1781.678	543.057
HVO 54	2489.681	2490.037	758.965

Table 3. Comparison of elevations, in meters, for leveling surveys of 1926, 1958, and 1971. Datum is benchmark E 2, near the Hilo tide gage.

B.M.	1926	1958	1971	1926-1958	1958-1971	1926-1971
U.S.E. Pier 1		2.306	2.291		-.015	
F 2	2.432	2.350	2.334	-.082	-.016	-.098
E 2	2.419	2.419	2.419	0	0	0
D 2	2.566	2.573	2.574	+.007	+.001	+.008
5.83	1.804	1.808	1.816	+.004	+.008	+.012
5.79	1.792	1.798	1.805	+.006	+.007	+.013
3YY 1957		12.975	12.994		+.019	
4YY 1957		33.635	33.657		+.022	
5YY 1957		45.022	45.049		+.027	
B 2 (1926)	60.390	60.358	60.384	-.032	+.026	-.006
6YY 1957		74.473	74.483		+.010	
A 2 (1926)	84.682	84.673	84.708	-.009	+.035	+.026
Z 1 (1926)	100.011	99.995	100.018	-.016	+.023	+.007
359.3	109.522	109.521	109.545	-.001	+.024	+.023
8YY 1957		171.013	171.034		+.021	
Keaau Trig.		184.383	184.306		-.077	

Table 3, continued

B.M.	1926	1958	1971	1926-1958	1958-1971	1926-1971
1YY 1958		198.418	198.439		+.021	
Y 1 (1926)	210.424	210.410	210.436	-.014	+.026	+.012
2YY 1958		268.748	268.771		+.023	
3YY		318.059	318.082		+.023	
1266	386.014	386.009	386.026	-.005	+.017	+.012
4YY		426.094	426.112		+.018	
W 1 reset 1948	466.539	466.520	466.539	-.019	+.019	0
5YY		525.483	525.490		+.007	
2002	610.400	610.385	610.389	-.015	+.004	-.011
V 1 (1926)	646.199	646.042	646.034	-.157	-.008	-.165
6YY		658.092	658.080		-.012	
7YY		685.043	685.023		-.020	
U 1 (1926)	715.571	715.558	715.557	-.013	-.001	-.014
8YY		754.450	754.445		-.005	
9YY		758.079	758.074		-.005	
10YY		817.280	817.295		+.015	
11YY		838.694	838.719		+.025	
12YY		881.839	881.866		+.027	
13YY		962.364	962.399		+.035	

Table 3, continued

B.M.	1926	1958	1971	1926-1958	1958-1971	1926-1971
14YY		1041.734	1041.756		+.022	
15YY		1040.537	1040.558		+.021	
S 1 (1926)	1073.548	1073.554	1073.588	+.006	+.034	+.040
3565		1086.917	1086.951		+.034	
16YY		1134.856	1134.897		+.041	
17YY		1165.843	1165.797		-.046	
90YY		1182.063	1182.119		+.056	
94YY		1226.322	1226.449		+.127	
95YY		1219.455	1219.600		+.145	
120YY		1198.202	1198.348		+.146	
121YY		1160.573	1160.708		+.135	
122YY		1126.863	1126.985		+.122	
123YY		1109.887	1109.991		+.104	
96YY		1216.909	1217.033		+.124	
P 1 (1926)	1204.155	1204.202	1204.251	+.047	+.049	+.096
4076		1242.540	1242.743		+.203	
Uwekahuna Trig.		1245.979	1246.166		+.187	
203YY		1201.925	1202.148		+.223	
204YY		1151.671	1151.991		+.320	

Table 3, continued

B.M.	1926	1958	1971	1926-1958	1958-1971	1926-1971
117YY		1140.696	1141.084		+.388	
118YY		1139.072	1139.472		+.400	
Cracks Trig.		1135.033	1135.446		+.413	
Pali Trig.		1142.200	1142.526		+.326	
Cone Peak Trig.		1113.327	1113.684		+.357	
127YY		1025.004	1025.202		+.198	
Aa Trig.		1020.729	1020.869		+.140	
Sand Hill Trig.		1127.754	1128.225		+.471	
129YY		1098.765	1099.196		+.431	
Nose Trig.		1082.249	1082.644		+.395	
205YY		1109.450	1109.370		-.080	
Spit Trig.		1111.734	1112.052		+.318	
111YY		1103.146	1103.585		+.439	
112YY		1085.972	1086.446		+.474	
113YY		1064.902	1065.452		+.550	
Ahua Kam. Trig.		1084.107	1084.345		+.238	
114YY		1080.835	1081.404		+.569	
115YY		1111.274	1111.751		+.477	
Keanakakoi Trig.		1125.034	1125.064		+.030	

Table 3, continued

B.M.	1926	1958	1971	1926-1958	1958-1971	1926-1971
110YY		1082.738	1082.506		-.232	
109YY		1074.900	1074.707		-.193	
108YY		1067.186	1067.344		+.158	
22YY		1134.256	1134.497		+.241	
23YY		1109.902	1110.111		+.209	
24YY		1104.259	1104.530		+.271	
25YY		1073.385	1073.657		+.272	
26YY		1045.782	1046.020		+.238	
3390		1032.333	1031.774		-.559	
27YY		1002.136	1000.924		-1.212	
28YY		997.354	997.038		-.316	
29YY		985.125	985.125		0	
131YY		1009.048	1006.917		-2.131	
132YY		998.426	997.640		-.786	
133YY		983.087	981.195		-1.892	
134YY		960.337	961.278		+.941	
135YY		892.034	892.495		+.461	
136YY		862.168	862.461		+.293	
137YY		800.900	801.028		+.128	

Table 3, continued

B.M.	1926	1958	1971	1926-1958	1958-1971	1926-1971
138YY		751.642	751.700		+.058	
139YY		695.827	695.845		+.018	
3269		995.889	996.157		+.268	
Q 1 (1926)	1223.962	1223.995	1224.055	+.033	+.060	+.093
93YY		1219.200	1219.322		+.122	
92YY		1202.017	1202.152		+.135	
3973	1210.833	1210.861	1211.016	+.028	+.155	+.183
Observatory Trig.		1212.978	1213.156		+.178	
18YY		1180.943	1181.041		+.098	
19YY		1194.188	1194.288		+.100	
20YY		1168.934	1169.043		+.109	
21YY		1147.242	1147.351		+.109	
3440		1048.827	1049.743		+.916	
34YY		911.711	914.444		+2.733	
2728		832.547	834.298		+1.751	
2503		762.650	763.896		+1.246	
36YY		762.380	763.628		+1.248	
2302		701.964	702.790		+.826	
37YY		700.254	701.077		+.823	

Table 3, continued

B.M.	1926	1958	1971	1926-1958	1958-1971	1926-1971
38YY		701.778	702.688		+.910	
39YY		650.722	651.439		+.717	
40YY		584.772	585.302		+.530	
1638		499.828	500.299		+.471	
41YY		438.967	439.385		+.418	
42YY		381.379	381.723		+.344	
1082		329.887	330.191		+.304	
43YY		282.640	282.925		+.285	
44YY		170.465	170.714		+.249	
557		170.014	170.261		+.247	
352		107.188	107.368		+.180	
45YY		51.195	51.325		+.130	
167		51.023	51.153		+.130	
46YY		23.232	23.324		+.092	
64		19.559	19.652		+.093	
48YY		5.964	6.076		+.112	
34		10.584	10.691		+.107	
49YY		12.625	12.732		+.107	
50YY		13.061	13.161		+.100	

Table 3, continued

B.M.	1926	1958	1971	1926-1958	1958-1971	1926-1971
51YY		9.814	9.907		+.093	
10		3.296	3.389		+.093	
Hakuma Trig.		18.807	18.900		+.093	
Kupapau Trig.		7.390	7.464		+.074	

Table 4.--Data for correcting rods used for most leveling at Kilauea since 1965.

Rods 299 and 315 were used during the 1965 leveling.

Calibrated at 74°F on April 15, 1971

Correction in feet

Rod reading, in yards	299	315	260838	260839
0.2	0	0	0	0
0.5	+.0001	+.0002	+.0003	+.0005
1.0	+.0006	+.0011	+.0007	+.0009
1.5	+.0011	+.0011	+.0010	+.0012
2.0	+.0004	+.0011	+.0010	+.0015
2.5	+.0010	+.0016	+.0011	+.0020
3.0	+.0008	+.0011	+.0012	+.0013
3.5	+.0006	+.0012	+.0010	+.0010
3.9	+.0009	+.0013	+.0008	+.0014
Rod index error	+.0019	+.0009	+.0013	+.0013

Table 5.--Observed and corrected July 1965 elevations between BM 10 and 35 YY, and comparison to 1958 and 1971 elevations

The 1958 elevation of BM 10 was used as datum.

BM	July 1965 elevations				Feb. 1971	1971-1965	1958	1965-1958
	Elevation before rod correction	Elevation after rod correction	Corrected elevation[1/]	Corrected elevation, meters	Adjusted elevation, meters	Difference in elevation	Adjusted elevation, meters	Difference in elevation
10	10.812 ft	10.812 ft	-	3.296	3.296	0	3.296	0
51YY	32.185	32.182	-	9.809	9.813	+.004	9.814	-.005
50YY	42.836	42.832	-	13.055	13.068	+.013	13.061	-.006
49YY	41.406	41.402	-	12.619	12.638	+.019	12.625	-.006
48YY	19.558	19.557	-	5.961	5.983	+.012	5.964	-.003
HV086	14.940	14.939	-	4.553	4.573	+.020		
HV013	10,083	10,079	-	3.072	3.093	+.021		
T.G.1	2.999	2.995	-	0.913	0.933	+.020		
Kupapau Trig.	24.165	24.163	-	7.365	7.370	+.005	7.390	-.025
HV085	36.877	36.872	-	11.239	11.255	+.016		
HV084	34.366	34.361	-	10.473	10.501	+.028		
83	42.358	42.351	-	12.909	12.956	+.047		
82	72.776	72.765	-	22.179	22.213	+.034		
81	61.845	61.836	-	18.848	18.876	+.028		
80	64.956	64.946	-	19.796	19.826	+.030		

Table 5.--Observed and corrected July 1965 elevations between BM 10 and 35 YY, and comparison to 1958 and 1971 elevation

The 1958 elevation of BM 10 was used as datum.

(cont'd)

BM	July 1965 elevations				Feb. 1971	1971-1965	1958	1965 1958
	Elevation before rod correction	Elevation after rod correction	Corrected elevation[1/]	Corrected elevation, meters	Adjusted elevation, meters	Difference in elevation	Adjusted elevation, meters	Difference in elevation
HV079	46,026	46,019		14,027	14,047	+.020		
78	82,907	82,896		25,267	25,275	+.008		
77	113,627	113,617		34,631	34,642	+.011		
76	147.264	147,258	148.178	45,165	45,176	+.011		
75	159.463	159.455	160.375	48.882	48.893	+.011		
74	263.713	263.719	264.639	80.662	80.667	+.005		
73	373.464	373.484	374.404	114.119	114.120	+.001		
72	464.120	464.148	465.068	141.753	141.748	-.005		
71	565.154	565.189	566.109	172.550	172.569	+.019		
70	659.573	659.614	660.534	201.331	201.374	+.043		
69	786.541	786.594	787.514	240.035	240.093	+.058		
68	912.666	912.729	913.649	278.481	278.542	+.061		
67	1030.615	1030.685	1031.605	314.434	314.505	+.071		
66	1145.024	1145.105	1146.025	349.309	349.388	+.079		
65	1299.246	1299.343	1300.263	396.321	396.414	+.093		

Table 5.--Observed and corrected July 1965 elevations between BM 10 and 35 YY, and comparison to 1958 and 1971 elevation

The 1958 elevation of BM 10 was used as datum.
(cont'd)

BM	July 1965 elevations				Feb. 1971	1971-1965	1958	1965-1958
	Elevation before rod correction	Elevation after rod correction	Corrected elevation[1]	Corrected elevation, meters	Adjusted elevation, meters	Difference in elevation	Adjusted elevation, meters	Difference in elevation
HV064	1428.434	1428.545	1429.465	435.702	435.785	+.083		
63	1529.262	1529.383	1530.303	466.437	466.518	+.081		
62	1653.794	1653.926	1654.846	504.398	504.478	+.080		
61	1780.041	1780.183	1781.103	542.881	542.963	+.082		
60	1915.446	1915.598	1916.518	584.156	(584.242)[2]	(+.086)		
C/L21	2035.239	2035.402	2036.322	620.672	(620.759)	(+.087)		
HV059	2077.999	2078.165	2079.085	633.706				
58	2173.884	2174.057	2174.977	662.934				
57	2289.899	2290.080	2291.000	698.298				
56	2365.548	2365.740	2366.660	721.359	(721.624)	(+.265)		
55	2405.818	2406.013	2406.933	733.635	(734.010)	(+.375)		
54	2486.755	2486.961	2487.881	758.308	758.872	+.564		
53	2555.082	2555.296	2556.216	779.136	779.881	+.745		
52	2628.200	2628.421	2629.341	801.425				

Table 5.--Observed and corrected July 1965 elevations between BM 10 and 35 YY, and comparison to 1958 and 1971 elevatior

The 1958 elevation of BM 10 was used as datum.
(cont'd)

BM	July 1965 elevations: Elevation before rod correction	Elevation after rod correction	Corrected elevation[1/]	Corrected elevation, meters	Feb. 1971 Adjusted elevation, meters	1971-1965 Difference in elevation	1958 Adjusted elevation, meters	1965 1958 Difference in elevation
HV051	2750.470	2750.702	2751.622	838.696				
50	2833.909	2834.149	2835.069	864.131				
35YY	2912.230	2912.478	2913.398	888.005			887.523	+.482

1/ The rod corrected difference in elevation between HVO 77 and HVO 76 was 34.561 ft in 1971; the 1965 data indicate a difference of 33.641. The benchmarks are only 0.4 miles apart, and no evidence of ground cracking could be found between them. The benchmarks had not been installed when the 1965 leveling was initially done; elevations were assigned to nearby nails, and when the benchmarks were installed a few days later, their elevations were determined by leveling to the nail. There are several nails near HVO 76; the elevation difference between two of them is nearly the same as the difference between the 1965 and 1971 readings. Thus all elevations from HVO 76 to 35YY have been raised by 0.920 ft, the difference between the 1965 and 1971 readings.

2/ Elevations in parentheses were obtained in October 1970, during leveling between HVO 53 and Kupapau triangulation station. This leveling was not done as carefully as that in February 1971, but comparison of the results indicates very close agreement.

Table 6.--1921 raw data, collimation and rod corrections, and resulting elevation differences.

All data in feet

Date	Benchmark interval	Raw elevation difference	Collimation error per 100 ft	Backsight-foresight imbalance	Collimation correction	Rod correction	Final elevation difference
Feb. 4	10-43	32.557	-.0111	-296	+.033	+.023	32.613
do	43-rock	-3.465	do	-17	+.002	-.002	-3.465
Feb. 5	rock-34	-5.281	-.0089	-12	+.001	-.004	-5.284
do	34-27	-7.432	do	+185	-.016	-.005	-7.453
do	27-64	36.870	do	+315	-.028	+.026	36.868
do	64-167	103.110	do	+240	-.021	+.073	103.162
do	167-352	184.112	do	+385	-.034	+.131	184.209
do	352-rock	202.199	do	-223	+.020	+.144	202.363
Feb. 8	rock-557	3.591	-.0206	-34	+.007	+.003	3.601
do	557-1082	524.140	do	+364	+.075	+.373	524.438
do	1082-1638	557.129	do	+892	-.184	+.396	557.341
do	1638-2093	455.684	do	-236	+.049	+.324	456.057
Feb. 9	2093-2302	206.631	-.0123	+157	-.019	+.147	206.759
do	2302-2503	201.006	do	-224	+.028	+.143	201.177
do	2503-2728	226.876	do	-408	+.050	+.161	227.087

Table 7.--Comparison of 1921, 1958, and 1971 corrected elevations between Kalapana and BM 2728.

Datum is BM 10, located at Kalapana Protestant Church, with 1958 elevation of 10.812 ft.

BM	1958		1971		1921		1958-1921	1971-1958	1971-1921
	ft	m	ft	m	ft	m	m	m	m
10	10.812	3.296	10.812	3.296	10.812	3.296	0	0	0
51YY	32.197	9.814	32.194	9.813				0	
50YY	42.850	13.061	42.872	13.067				+.006	
49YY	41.420	12.625	41.462	12.638				+.013	
34	34.723	10.584	34.766	10.597	34.676	10.569	+.015	+.013	+.028
Kupapau	24.246	7.390	24.179	7.370				-.020	
48YY	19.567	5.964	19.627	5.982				+.018	
64	64.171	19.559	64.166	19.558	64.091	19.535	+.024	-.001	+.023
46YY	76.219	23.232	76.215	23.230				-.002	
167	167.399	51.023	167.515	51.059	167.253	50.979	+.044	+.036	+.080
45YY	167.962	51.195	168.081	51.231				+.036	
352	351.666	107.188	351.950	107.275	351.462	107.126	+.062	+.087	+.149
557	557.787	170.014	558.290	170.167	557.426	169.904	+.110	+.153	+.263
44YY	559.268	170.465	559.776	170.620				+.155	
43YY	927.294	282.640	927.923	282.831				+.191	
1082	1082.304	329.887	1082.995	330.098	1081.864	329.753	+.134	+.211	+.345

Table 7.--Comparison of 1921, 1958, and 1971 corrected elevations between Kalapana and BM 2728. Datum is BM 10, located at Kalapana Protestant Church, with 1958 elevation of 10,812 ft (cont'd).

BM	1958 ft	1958 m	1971 ft	1971 m	1921 ft	1921 m	1958-1921 m	1971-1958 m	1971-1921 m
42YY	1251.240	381.379	1252.063	381.630				+.251	
41YY	1440.176	438.967	1441.241	439.291				+.324	
1638	1639.853	499.828	1641.091	500.206	1639.205	499.631	+.197	+.378	+.575
40YY	1918.541	584.772	1919.969	585.208				+.436	
39YY	2134.909	650.722	2136.955	651.345				+.623	
38YY	2302.418	701.778	2305.094	702.594				+.816	
37YY	2297.418	700.254	2299.811	700.984				+.730	
2302	2303.026	701.964	2305.431	702.697	2302.021	701.657	+.307	+.733	+1.040
36YY	2501.242	762.380	2505.030	763.535				+1.155	
2503	2502.126	762.650	2505.910	763.803	2503.198	762.976	-.326	+1.153	+.827
2728	2731.448	832.547	2736.888	834.205	2730.285	832.193	+.354	+1.658	+2.012

Figures in column 9 may differ by 0.001 m from those listed in Table 3 because of rounding off during conversion of elevations from feet to meters.

Table 8.--Differences in elevation between original and reset benchmarks, 1958-1971.

New Benchmark	Amount by which reset benchmark is higher (+) or lower (-) than original benchmark, in feet
6YY 1957 reset 1962	+ .335
Z 1 (1926) reset 1963	- .346
V 1 (1926) reset 1967	+ .089
6YY 1958 reset 1967	- 3.327
7YY 1958 reset 1967	-22.468
U 1 (1926) reset 1967	+11.339
16YY 1958 reset 1968	- .136
17YY 1958 reset 1962	+ 2.648
90YY 1958 reset 1962	- 3.142
94YY 1958 reset 1962	- .447
205YY 1958 reset 1973*	- .411
7YY 1957 reset 1970	(BM destroyed before reset data could be obtained)
3565 (1912) reset 1972	Reset data unavailable

*Reset after surveys described in this report.

SEISMIC SUMMARY

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 9. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 10. The location of each seismograph station is listed in Table 12, along with a description of the equipment at each station.

Table 9.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea.

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
January 1			Fluctuating at low levels near eruptive site on the upper east rift	1	19	483	20	117	22	1	
2	5m			3	13	773	14	149	25	4	
3		2m		4	5	579	30	55?	58	1	
4	21m	2m		3	10	560	12	20	48	4	
5				2?	(?)	399?	6?	14?	5?	(?)	Jan. 5-22 frequent electrical storms, heavy rain and wind
6					1	394?	2	69?	(?)		
7	30m			2		529	9	138	61?	5	
8				3	(?)	473?	3	143	31?	3?	
9		3m				311	4	100	23	5	
10				2?		129?	3?	63?	19?	2?	
11	30m			2		130?	8	69?	28	(?)	
12					2	151?	10	55	29	(?)	
13				2	4	106	14	48	24	2?	
14				9?	2	85?	17?	8?	6?	1?	
15				3?		(?)	3?	4?	3?	1?	
16						65	13	88	9	1?	Jan. 16-24 many "L-P quakes" near Makaopuhi
17	26m					58?	5?	225?	2?		
18						101?	3?	400?	3?	6?	
19				1		41?	6	518	7?	4	
20	5m				2?	64?	9?	376?	6?	8?	
21					2	112?	5?	258	25	10	
22					2	194	17	212	16	1	
23				3		74	12	300	13	4	
24					1	126	8	286?	7	6	
25				2	6	368	15	58	20	4	
26				4	18	582	6	44	17	1	
27						76?	2?	43?	2?	1?	
28						(?)	4?	188?	5?	(?)	
29					5?	104?	6	18?	6		
30				2	1	227	14	23?	20	9?	
31				2		134	12	40	12	14	

Earthquake count taken primarily from Develocorder 16-mm film records, and secondarily from smoke records

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
February 1			Fluctuating at low levels near eruptive site on the upper east rift	3		50	4	46	7	4	
2	8m			4	1	370	9	24	11	9	
3				3		206	19	92	4	9	
4				4	4	181	17	45	6	3	
5				4		185	10	26	4	3	
6				3		237	8	40	8	5	
7				1		286	9	25	3	3	
8	6m			1		423	9	24?	1	3	
9				1		316	8	14?	10	3	
10				1		178	12	73	2	4	
11					5	172	11	45	9	10	
12						154	17	43	17	6	
13				3	3	143	28	83	8	9	
14		5m		1	4	130	6	45	8	13	
15				2	3	62	6	57	10	2	
16				2		108	17	80	15	5	
17				1		163	12	94	13	1	
18						164	11	130	14	5	
19	13m			2		111	11	88	21	5	
20				3		94	5?	69	9		
21				2		121	9?	93	8	1	
22				1?		128?	4?	202?	2?		
23	30m			2		98	10	164	12?	1	
24				1	2	190	6	152	6	1	
25				1	1	193	6	165		(?)	
26				1	4	167	9	145	14	2	
27					2	189	15	129	14	6	
28				2	1	151	14	88	20	4	

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow					
March 1			Fluctuating at low levels near eruptive site on the upper east rift	1	5	176	10	130	15	3	
2				3		153	7	103	6	5	
3					1	165	5	105	9		
4					2	226	18	115	4	9	
5				2		172	7	72	33	2	
6				2		170	15	80	19	1	
7				4		158	5?	48	9	1	
8					3	215	12?	67	20		
9						198	9	48	3	6	
10				1		283	10	56	3	8	
11				1		208	14	61	17	3	
12					3	173	9	54	16	7	
13				1	26	265	8	68	8	11	
14	40m			4	4	220	23	64	11	6	
15						134?	15?	36?	4?	2?	
16	40m			2	2	118	17	54	1?	6	
17	4m			1	1	159	4?	67	14	4	
18				2		125	7?	76	18	4	
19	8m			2	6	209	16	33	9	5	
20						183	17	50	14	6	
21	30m			3		176	12	47	9?	5	
22	14m					244?	15	32	3	5	
23						336	18	75	7	4	
24						292	21	37	14	8	
25	60m	7m		(?)		256	(?)	34	5	1	
26	4m	3m		3	2	270	7?	31	8	2	
27	16m			2	3?	230	12	31	14	6	
28				2		252	6	51	8	7	
29	2m			2	7	233	7	84	4	(?)	
30	16m			1	3	267	17	67	12	(?)	
31					27	226	19	61	23	(?)	

Table 10 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	EPICENTER	FOCAL DEPTH
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ DEPTH or 5 km
B	≥ 6	≤ 150°	≤ 2 x DEPTH or 10 km
C	≥ 6	≤ 225°	≤ 50 km
	≥ 4	≤ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1971		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	1	1	55	11.7	19-25.4	155-16.3	1.7	1.3	12	175	1.6	0.08	0.3	0.2	0.06	B
	1	2	16	16.3	19-12.5	155-24.0	29.8*		11	310	13.7	0.33	3.4		0.11	D
	1	2	23	36.2	19- 9.6	155-25.0	8.0*		10	258	19.1	0.49	3.2		0.13	D
	1	2	29	3.9	18-57.3	155-19.8	8.0*		12	278	42.6	1.00	6.4		0.21	D
	1	2	29	22.7	19-12.1	155-25.8	8.0*		8	236	15.6	0.76	5.9		0.29	D
	1	3	20	11.0	19- 9.8	155-29.5?	40.8	2.5	16	244	16.2	0.33	2.1	2.9	0.15	C
	1	3	20	53.1	19- 8.3	155-31.0	38.8		13	259	16.1	1.04	4.9	8.5	0.14	D
	1	3	23	43.5	19- 6.1	155-23.3	8.0*		11	265	26.0	0.54	3.2		0.13	D
	1	5	43	21.2	19- 8.5	155-24.2	8.0*		9	252	21.6	0.58	3.6		0.16	D
	1	5	44	16.7	19- 5.4	155-23.5	15.0*		12	255	27.3	0.50	3.5		0.18	D
	1	5	45	45.0	19-18.7	155-30.8	8.0*		5	156	13.1	0.11	1.3		0.07	C
	1	7	20	54.9	19-15.6	155-33.9	3.2		8	175	5.7	0.18	2.2	1.7	0.15	C
	1	10	26	43.9	19-19.3	155-15.9	5.5		10	178	4.7	0.25	1.5	1.5	0.23	C
	1	18	6	12.7	19-21.0	155-24.4?	8.6	2.2	16	117	2.4	0.11	0.9	0.6	0.18	B
	1	20	31	5.2	19-26.4	155-16.9	3.1		7	297	2.1	0.41	1.7	1.8	0.07	C
	1	21	55	25.4	19- 2.0	155-20.7?	11.3*		13	283	29.7	1.04	6.6		0.12	D
	1	23	3	38.7	19-11.1	155-38.5?	10.4*		8	306	7.4	0.57	4.3		0.24	D
	2	0	41	29.3	19-24.0	155-16.0	2.9	0.9	7	211	1.8	0.11	0.8	2.4	0.05	C
	2	1	4	32.3	19-18.5	155-16.6	6.5		11	190	3.8	0.20	1.5	1.0	0.19	C
	2	1	25	3.8	19-18.3	155-16.2	6.2	2.1	17	196	4.3	0.15	1.0	0.7	0.20	C
	2	1	52	17.0	19-24.2	155-23.7	7.4	1.6	15	117	7.1	0.09	0.7	0.6	0.15	B
	2	3	23	7.1	19-19.0	155-16.6	7.1		10	175	4.0	0.13	0.9	0.9	0.12	C
	2	4	11	17.6	19-46.6	156- 7.4?	3.9	3.0	14	280	35.5	0.52	4.7	3.8	0.12	D
	2	4	48	44.5	19-26.0	155-24.4	8.0*	2.0	14	182	7.1	0.05	0.4		0.07	C
	2	6	9	12.4	19-13.3	155-34.7	5.3		7	233	5.1	0.64	6.3	4.0	0.12	D
	2	7	5	49.4	19-28.3	155-14.6?	8.0*	2.1	10	265	7.5	0.52	4.7		0.49	D
	2	7	12	25.5	19-24.2	155-23.9	9.7		11	179	7.4	0.12	1.0	1.4	0.11	C
	2	7	24	55.3	19-22.4	155-18.2	1.7		6	128	3.1	0.08	0.4	0.3	0.03	B
	2	12	46	52.1	19-23.8	155-17.3	2.0	2.3	15	90	1.1	0.04	0.2	0.2	0.07	A
	2	13	25	27.9	19-23.9	155-15.9	1.9	0.4	7	210	1.8	0.18	1.0	0.4	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 2	18	47	22.2	19-29.0	155-16.0?	8.0*	1.7	8	321	7.3	0.33	4.7		0.39	D
2	22	7	26.8	19-25.1	155-26.6	8.0*	0.8	14	211	10.4	0.35	2.1		0.29	D
3	0	56	49.9	19-19.8	155-25.3?	8.5		12	141	3.6	0.12	1.1	0.7	0.16	B
3	1	33	39.3	19- 9.3	155-26.1	8.0*	1.2	9	248	20.7	0.51	3.4		0.15	D
3	3	33	57.9	19-24.4	155-17.3?	1.7	0.5	9	118	0.7	0.04	0.4	0.2	0.07	B
3	3	51	8.4	19-23.6	155-17.6	1.8	1.2	10	86	1.4	0.06	0.4	0.3	0.08	A
3	3	52	15.0	19-23.6	155-17.5?	1.8	0.0	7	141	1.2	0.03	0.2	0.2	0.03	B
3	4	22	0.5	19-58.1	155-50.1?	8.0*	2.1	10	260	15.8	1.67	9.7		0.73	D
3	4	26	59.9	19-17.9	155-13.6	5.3	1.8	16	202	7.9	0.25	1.4	1.1	0.23	C
3	4	40	52.9	19-18.7	155-13.9	4.6	0.9	9	212	6.2	0.33	1.8	1.9	0.22	C
3	5	8	11.7	19-18.4	155-13.3	8.0*	0.7	9	223	7.2	0.26	1.6		0.16	C
3	5	12	26.8	19-23.3	155-17.4	2.3	1.2	10	80	1.1	0.07	0.5	2.1	0.11	B
3	5	22	3.1	19-23.5	155-17.4	1.7	0.0	7	144	1.0	0.04	0.4	0.2	0.03	B
3	5	41	16.1	19-28.9	155-14.5?	8.0*	1.5	7	323	8.4	1.67	11.7		0.52	D
3	5	43	21.6	19-10.8	155- 7.7?	0.0	1.2	9	265	21.1	0.44	8.6	55.1	0.38	D
3	5	46	2.6	19-19.1	155-16.4	5.3	0.8	13	175	4.5	0.14	1.0	0.9	0.18	C
3	6	0	1.2	19-16.7	155-13.7	8.0*	1.1	9	251	9.0	0.27	1.6		0.11	D
3	6	14	24.5	19-24.9	155-17.2	7.3	0.5	7	147	0.3	0.65	1.3	3.4	0.04	B
3	6	14	38.9	19-24.6	155-17.2	7.5	0.5	6	171	1.7	0.21	0.8	1.0	0.02	B
3	6	15	13.2	19-24.5	155-17.3	7.6	1.1	7	160	0.4	0.27	0.6	1.5	0.02	B
3	6	15	35.8	19-25.2	155-17.1	8.3	0.8	6	220	1.0	0.50	2.3	3.0	0.05	C
3	6	16	28.8	19-25.0	155-17.1	8.5	1.0	6	205	1.2	0.15	0.6	1.1	0.01	B
3	8	8	18.9	19-18.7	155-13.8	4.5	0.9	9	212	6.3	0.36	2.0	2.0	0.23	C
3	8	27	9.1	19-18.4	155-13.6	8.0*	0.7	8	221	7.0	0.23	1.5		0.14	C
3	8	33	35.4	19-18.4	155-13.3	5.5	1.0	11	204	7.2	0.27	1.6	1.5	0.22	C
3	8	34	5.3	19-18.2	155-13.6	6.3	1.4	16	201	7.3	0.20	1.2	0.8	0.21	C
3	9	37	52.2	19-23.7	155-16.9	10.5	1.3	7	164	0.5	0.31	2.0	2.4	0.06	C
3	14	8	3.1	19-24.8	155-18.1	20.9*	1.6	8	166	1.1	0.16	5.3		0.20	D
3	15	3	35.6	19-23.9	155-16.3?	1.8	0.2	7	194	1.4	0.17	1.1	0.5	0.11	C
3	16	17	12.0	19-21.7	155-16.8	28.7	1.2	12	118	2.0	0.20	1.3	1.9	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 3	18	12	18.7	19-22.7	155-26.6	7.9	1.5	12	126	7.4	0.09	0.6	0.5	0.09	B
3	21	6	29.4	19-27.3	155-18.7	24.2*	1.9	8	295	4.0	0.38	7.1		0.20	D
3	22	1	56.0	19-15.1	155-22.7	30.9	1.3	10	209	8.8	0.46	2.1	4.0	0.10	C
3	22	35	30.5	19-21.6	155-12.2	2.1	0.5	7	162	1.8	0.14	0.7	0.5	0.05	B
4	2	6	44.9	19-30.4	155-14.9?	8.0*	1.7	9	300	10.4	1.70	9.6		0.59	D
4	2	7	31.1	19-23.8	155-17.2?	1.7	0.2	7	128	1.1	0.11	0.7	1.6	0.08	B
4	2	56	28.5	19-23.3	155-26.2	0.2*	1.0	13	126	7.6	0.17	1.1		0.25	C
4	3	43	10.4	19-25.2	155-11.1?	8.0*	2.2	11	293	9.6	0.90	5.5		0.62	D
4	3	58	48.5	19-15.5	155-22.0?	2.0*	1.0	7	330	15.7	2.21	46.8		0.51	D
4	5	17	34.4	19-20.4	155-14.1	6.4	0.9	14	174	3.4	0.13	1.0	0.7	0.19	C
4	5	29	47.8	19-29.4	155-54.3	9.8*	1.8	8	283	40.2	0.84	5.4		0.11	D
4	6	27	28.3	19-20.5	155-14.2	6.1	0.8	16	169	3.0	0.12	0.9	0.7	0.18	C
4	7	5	10.8	19-21.5	155-13.1	11.5	1.0	7	157	3.9	0.15	0.6	1.3	0.03	B
4	7	19	47.9	19-19.4	155-27.6?	8.1	1.2	11	144	7.6	0.12	1.0	0.9	0.17	B
4	8	32	4.8	19-25.3	155-17.2	2.3		8	207	0.7	0.08	0.5	0.6	0.06	B
4	13	55	28.8	19-24.8	155-15.5	1.4	0.2	9	191	2.6	0.04	0.1	0.1	0.02	B
4	17	13	32.6	19-24.4	155-16.5	0.5	0.8	11	151	1.3	0.23	0.6	0.4	0.16	C
4	17	26	24.3	19-21.0	155- 5.2	4.3	1.3	12	202	8.3	0.26	2.2	1.3	0.22	C
4	17	51	28.4	19-24.3	155-25.8	8.0*	1.4	11	155	8.7	0.04	0.4		0.06	C
4	18	13	53.8	19-58.1	155-18.9?	0.1*	2.1	9	257	25.6	0.34	2.7		0.20	D
4	19	1	23.8	19-28.2	155-18.4?	0.2*	0.9	8	320	5.3	0.82	3.6		0.25	D
4	19	10	35.8	19-14.7	155-32.5?	3.3	2.0	11	197	8.1	0.31	2.9	1.8	0.18	C
4	19	26	45.6	19- 6.1	155-24.8?	27.8	1.9	12	265	24.4	0.57	3.4	5.0	0.13	D
4	20	3	15.8	19-23.8	155-16.0	3.3	0.2	7	203	1.6	0.16	0.7	1.3	0.05	B
4	21	16	39.7	19-24.1	155-16.8	2.2	1.1	12	118	1.3	0.05	0.4	0.2	0.10	B
4	21	26	32.0	19-24.0	155-16.5	2.8	-0.1	8	178	1.2	0.07	0.4	0.8	0.05	B
4	21	49	20.8	19-23.8	155-16.9	2.3	2.3	16	74	0.7	0.04	0.3	0.5	0.10	B
4	23	12	2.8	19-19.3	155-13.3	9.2	1.4	10	207	5.9	0.12	1.1	1.2	0.08	C
4	23	53	30.0	19-21.8	155-18.1	24.2	1.7	13	96	3.7	0.30	1.3	2.8	0.09	B
5	0	4	5.6	19-23.5	155-17.6	7.1	1.4	9	86	1.5	0.22	0.6	1.5	0.05	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 5	1	5	9.3	19-23.8	155-17.1?	2.4	0.0	7	138	0.8	0.05	0.4	0.9	0.04	B
5	1	20	2.8	19-23.8	155-15.9	3.2	0.2	7	209	1.8	0.22	1.0	2.0	0.07	C
5	1	27	48.2	19-20.4	155-11.2	13.4	1.3	9	213	3.9	0.33	1.2	2.4	0.06	C
5	2	0	28.8	19-20.2	155-15.8	31.6	1.8	13	158	3.1	0.24	1.5	2.2	0.11	C
5	2	12	7.2	19-24.3	155-17.5	1.3	0.7	10	109	0.7	0.06	0.3	0.3	0.09	A
5	2	17	58.3	19-23.0	155-26.0	8.0*	1.1	10	149	7.1	0.07	0.5		0.09	C
5	4	56	25.3	19-21.1	155-10.2	11.0	1.3	6	229	2.1	1.39	5.3	9.4	0.10	D
5	6	37	18.2	19-18.4	155-13.2	8.0*	1.3	9	223	7.2	0.17	1.1		0.10	C
5	7	10	9.6	19-23.8	155-16.7	3.0	0.9	9	161	0.7	0.18	0.7	1.4	0.08	B
5	9	34	23.4	19-20.7	155-11.3	7.0	2.0	15	203	3.6	0.15	1.0	0.5	0.15	C
5	11	45	56.1	19-31.3	155-17.4?	2.6*	1.8	7	332	11.0	1.76	7.3		0.28	D
6	3	52	51.5	19-24.4	155-16.4?	1.5	1.0	9	211	1.4	0.45	1.9	0.8	0.23	C
6	4	10	35.5	19-23.6	155-17.0	2.3	1.9	12	103	0.6	0.05	0.3	0.8	0.08	A
6	22	33	15.6	19-18.7	155- 7.7	5.3	1.9	13	213	7.3	0.32	1.8	1.2	0.23	C
6	22	58	51.4	19-23.7	155-15.5	4.0	1.1	8	170	2.4	0.15	0.8	1.5	0.10	B
7	5	55	30.1	19-21.0	155-10.4	7.9	2.1	7	185	2.4	0.13	1.5	0.5	0.08	C
7	13	55	48.1	19-25.7	155-16.2	1.9	1.4	12	180	2.0	0.17	0.6	0.4	0.10	B
7	14	1	4.6	19-21.7	155-10.0	9.4	1.4	11	179	0.8	0.10	1.1	1.0	0.09	C
7	17	25	1.5	19-21.2	155-12.6	12.5	1.2	11	171	2.5	0.18	0.7	1.4	0.06	B
7	18	0	48.9	19-24.0	155-17.0	2.0	0.7	12	103	1.1	0.04	0.3	0.2	0.08	A
7	19	5	22.9	19-27.4	155-14.4?	8.0*	1.1	7	276	6.4	0.16	3.0		0.21	D
7	20	13	11.2	19-25.1	155-16.1	1.2	0.9	7	269	1.7	0.44	1.4	0.6	0.11	C
7	22	15	7.8	19-24.3	155-16.3	2.9	1.1	6	210	1.6	0.01	0.1	0.1	0.00	B
7	23	6	9.5	19-13.8	155-27.6	8.0*	1.7	10	213	14.1	0.30	2.5		0.20	C
8	1	0	50.4	19-28.2	155-15.2	2.8*		6	317	6.8	5.53	21.0		0.14	D
8	1	41	20.3	19-24.7	155-16.2	1.1	0.7	11	169	1.5	0.16	0.6	0.5	0.14	C
8	1	46	34.4	19-24.3	155-16.2	0.5	0.9	11	161	1.8	0.24	0.5	0.5	0.13	C
8	1	49	1.5	19-24.3	155-16.6	1.6	0.4	8	140	1.2	0.05	0.4	0.2	0.05	B
8	2	51	5.6	19-23.3	155-13.0?	2.1	0.8	7	197	1.6	0.20	1.6	6.8	0.11	C
8	3	0	46.0	19-24.5	155-16.2	3.6	1.3	7	223	1.6	0.17	0.6	0.9	0.03	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 8	4	5	50.7	19-14.5	155- 5.4?	36.4*	2.1	16	233	16.0	0.15	1.3		0.11	D
8	8	30	57.8	19-21.6	155-14.0	11.7	1.0	11	147	2.3	0.08	1.1	0.7	0.10	B
8	11	21	49.5	19-18.9	155-11.4	10.3	1.4	10	251	6.5	0.47	2.3	3.2	0.10	C
8	11	48	51.6	19-27.3	155-15.3	30.4	1.9	15	103	5.4	0.19	1.0	1.9	0.11	B
8	14	18	58.1	19-24.1	155-17.1	2.2	0.5	6	137	1.3	0.04	0.3	0.2	0.03	B
8	14	28	0.9	19-10.9	155-36.8	6.6	2.1	11	288	7.5	0.38	3.9	2.6	0.17	D
8	18	55	2.7	19-20.2	155-12.6	8.0	1.1	14	185	4.3	0.10	0.9	0.4	0.13	C
8	19	55	35.6	19-25.7	155-17.6?	2.5*	0.2	6	279	0.6	1.07	5.1		0.33	D
8	20	29	15.9	19-20.2	155- 9.2	7.7	1.8	15	196	3.7	0.12	0.9	0.4	0.10	C
8	20	31	51.9	19-34.9	155-39.7	8.3	2.3	7	306	30.1	1.55	7.9	3.8	0.04	D
8	22	13	24.4	19-23.6	155-17.2	2.2	0.0	6	138	0.7	0.05	0.4	0.2	0.03	B
8	22	32	31.2	19-22.0	155-26.2	1.6	1.5	11	144	6.1	2.19	1.0	8.3	0.18	C
9	0	56	35.9	19-29.5	155-14.8?	8.0*	1.2	9	272	9.1	1.36	9.6		0.70	D
9	11	14	45.4	19-23.3	155-17.8	1.3	1.1	13	58	1.7	0.09	0.4	0.5	0.14	B
9	13	41	34.5	19-22.0	155-12.8	3.4	1.2	8	144	1.0	0.17	1.0	2.0	0.11	B
9	17	8	8.6	19-28.7	155-15.5?	11.5	1.8	7	320	7.1	1.66	14.3	11.0	0.32	D
9	18	0	27.9	19-26.4	155-16.2?	3.4*	0.1	6	298	3.0	0.66	3.2		0.19	D
9	19	11	36.6	19-23.6	155-17.6	1.7	0.9	11	81	1.4	0.07	0.4	0.4	0.11	B
9	22	7	1.1	19-29.5	155-16.8?	8.0*	1.4	7	324	7.7	0.65	6.5		0.41	D
9	22	29	27.5	19-21.1	155-13.0	7.3	1.2	15	168	2.8	0.10	0.9	0.5	0.16	C
9	22	44	35.8	19-21.1	155-10.5	2.2*	1.4	11	212	2.2	0.44	2.3		0.21	D
10	12	43	35.6	20-15.1	155-14.5?	63.2*	2.9	18	282	53.8	1.94	20.1		2.07	D
10	15	26	13.3	19-23.6	155-17.2	2.4	0.8	6	138	0.8	0.02	0.1	0.2	0.01	B
10	15	51	36.8	19-19.5	155-16.1	33.6	2.5	16	170	2.5	0.24	1.4	2.2	0.11	C
10	21	58	42.8	19-28.1	154-56.6	2.9	2.1	11	168	5.7	0.15	1.6	1.5	0.14	C
11	2	56	3.4	19-23.8	155-23.6	9.8	2.0	8	161	6.9	0.11	1.1	1.5	0.11	C
11	8	55	10.9	19-18.5	155-12.8	8.0*		8	227	7.6	0.22	1.4		0.12	D
11	11	24	18.5	19-21.5	155- 3.8	7.5	2.4	13	260	10.6	0.39	2.0	0.9	0.12	C
11	11	28	35.7	19-21.0	155- 3.7	7.7	2.3	14	262	10.8	0.41	2.1	1.0	0.13	C
11	13	2	35.4	19-33.1	155-38.0?	0.6*	2.2	9	286	26.4	1.36	6.8		0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971-	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 11	15	41	41.8	19-14.2	155-33.3	8.0*		8	206	6.7	0.21	2.1		0.15	C
11	17	28	48.3	19-23.8	155-23.1	7.0	2.0	15	122	5.9	0.13	1.0	0.9	0.20	C
11	18	46	31.5	19-19.0	155-13.0	10.3	1.4	10	215	6.6	0.10	0.8	0.8	0.07	B
11	21	3	57.3	19-19.6	155-15.8	6.5	2.0	15	173	2.9	0.12	0.9	0.6	0.16	C
11	21	30	2.1	19-25.0	155-27.6?	8.0*	1.4	7	179	11.6	1.02	8.5		0.99	D
11	23	1	29.3	19-18.3	155-13.0	8.0*		8	229	7.7	0.19	1.2		0.09	D
12	1	34	7.6	19-20.7	155-12.4	7.4	1.6	15	185	3.3	0.11	0.8	0.4	0.12	C
12	2	54	49.4	19-18.4	155-12.3	13.8		7	234	8.0	0.26	1.7	2.2	0.06	C
12	5	19	38.9	19-14.2	155-10.0	8.0*		8	293	14.5	0.62	3.3		0.07	D
12	5	45	51.2	19-19.5	155-13.9	8.3		14	195	4.9	0.14	1.0	1.3	0.12	C
12	7	1	4.1	19- 8.8	155-24.5	8.0*		11	251	21.1	0.62	3.8		0.18	D
12	7	1	28.7	19- 7.6	155-23.9	8.0*	2.2	10	257	23.2	0.64	3.9		0.17	D
12	7	3	26.7	19- 6.1	155-23.9	8.0*	2.1	6	277	26.0	1.43	8.3		0.17	D
12	7	3	54.2	19-10.0	155-25.5	8.0*	2.1	7	255	19.2	0.88	5.7		0.17	D
12	7	4	26.0	19- 8.9	155-23.9	8.0*	2.1	12	251	20.9	0.60	3.7		0.21	D
13	1	56	0.3	19-24.4	155-22.8	7.6	2.1	16	99	5.6	0.08	0.7	0.6	0.15	B
13	3	3	40.8	19-19.6	155-15.3?	8.3		11	177	3.7	0.16	1.3	1.3	0.14	C
13	3	52	57.7	19-19.8	155-15.7	5.3	1.4	12	170	3.8	0.19	1.3	1.1	0.21	C
13	3	53	53.3	19-20.8	155-12.2?	6.9	1.8	15	185	3.3	0.13	0.9	0.5	0.15	C
13	4	16	46.1	19-19.9	155-11.3	8.0*		10	223	4.9	0.20	1.3		0.11	C
13	4	33	12.5	19- 9.3	154-47.8	26.8*	2.6	12	335	45.2	8.67	53.0		0.22	D
13	7	40	34.7	19-19.9	155-11.2	8.0*	1.8	12	224	4.8	0.15	0.9		0.10	C
13	7	48	29.6	19-21.9	155-42.9	6.1	2.5	11	285	16.4	0.30	1.6	0.9	0.05	C
13	13	48	26.7	19-19.4	155- 9.2	8.0*	1.5	10	273	5.2	0.63	3.4		0.14	D
13	15	30	14.3	19-20.8	155-13.0	7.4	0.9	12	226	3.2	0.19	1.1	0.5	0.12	C
13	17	1	0.5	19-20.7	155- 9.6	8.8	1.2	8	190	2.5	0.11	1.2	1.2	0.07	C
13	17	47	56.1	19-21.6	155- 9.4	7.9	1.3	11	184	1.2	0.09	1.0	0.3	0.09	B
13	17	58	36.0	19-22.6	155- 3.6	17.5*	1.8	9	338	10.9	0.49	3.9		0.09	D
13	18	36	51.6	19-31.4	155-36.1	8.0*	2.2	12	275	22.5	0.80	4.5		0.18	D
13	19	41	18.9	19-14.3	155-33.3?	2.4*	1.6	12	204	6.7	0.18	1.5		0.21	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 13	21	50	8.1	19-20.1	155-10.9	8.4	1.4	12	227	4.3	0.28	1.5	2.4	0.09	C
14	2	42	3.5	19-20.8	155- 3.1	0.3*	2.0	15	210	12.0	0.26	1.7		0.15	C
14	4	55	26.6	19-17.2	155-15.4	10.7	2.1	15	203	5.8	0.17	1.4	1.3	0.16	C
14	7	26	56.8	19-27.6	155-42.4	9.6*	2.6	10	285	25.1	0.47	2.9		0.07	D
14	9	19	19.9	19-32.1	155-11.4	11.2	2.2	15	143	16.4	0.09	0.8	1.4	0.10	B
14	10	13	14.5	19-22.6	155-25.6	8.0*	1.8	11	142	6.0	0.07	0.6		0.09	C
14	11	30	21.4	19-23.4	155-25.5	8.0*	1.8	14	146	7.1	0.07	0.5		0.09	C
14	17	13	10.5	19-31.2	155-21.1	19.5		8	272	4.7	0.77	3.0	5.7	0.04	D
14	18	38	4.9	19-32.1	155-11.9	9.1	2.7	18	74	15.9	0.06	0.6	1.4	0.11	B
14	18	45	43.7	19-30.7	155-12.5	7.9	1.0	11	296	13.3	0.59	3.2	1.5	0.07	D
14	20	54	11.0	19-20.9	155-16.1	7.7	0.8	10	214	2.7	0.13	0.9	0.4	0.06	B
14	21	1	18.4	19-34.8	156-15.7	8.0*	2.3	9	350	92.1	0.86	18.5		0.29	D
14	21	53	57.0	19-31.9	155-10.8	7.1	1.7	13	182	17.0	0.10	0.8	0.5	0.07	B
15	2	9	5.4	19-23.5	155-42.0?	6.7*	2.4	9	279	18.1	0.50	2.9		0.13	D
15	9	33	54.1	19-45.5	155-27.9	13.4*	2.6	12	206	2.6	0.13	2.6		0.08	C
15	9	38	7.8	19-32.1	155-11.2	8.0*	1.8	13	178	16.6	0.07	0.9		0.09	C
15	10	27	13.9	19-31.9	155-10.6	8.0*	1.8	14	184	17.0	0.05	0.7		0.08	C
15	18	38	18.9	19-24.9	155-23.4	8.0*		9	182	6.8	0.09	0.7		0.09	C
15	18	47	16.7	19-25.4	155-28.9	8.0*		5	276	12.8	0.85	4.9		0.09	D
16	12	58	28.5	19-23.1	155-25.4	8.0*	1.8	10	143	6.5	0.09	0.7		0.11	C
16	13	55	8.6	19-17.4	155-35.7	8.0*	2.3	12	196	5.3	0.15	1.6		0.12	C
16	17	54	18.4	19-25.0	155-29.8	9.0	2.2	13	198	14.5	0.20	1.6	3.3	0.15	C
16	18	10	20.2	20- 6.1	155-24.4	11.1*	3.2	17	246	31.6	0.55	4.1		0.17	D
17	23	57	30.2	19-25.1	155-28.0	8.0*	1.6	10	141	11.9	0.07	0.6		0.10	C
18	6	30	40.4	19- 8.7	155-25.7	8.0*	1.7	9	252	21.6	0.79	4.9		0.21	D
18	19	1	21.3	19-16.4	155- 6.8?	0.0	2.9	14	221	11.7	9.62	2.6	17.7	0.26	C
18	19	7	28.4	19-15.9	155-10.2?	0.0	1.8	12	217	11.4	9.19	4.7	35.0	0.27	D
18	19	10	8.6	19-20.0	155-11.1	5.6	2.5	14	227	4.5	0.23	1.4	0.7	0.15	C
19	0	40	45.9	20- 2.4	155-24.9	8.8	3.6	12	230	29.0	0.35	2.3	2.9	0.12	C
19	8	9	25.8	19-27.8	155-10.5	29.3		6	283	13.2	1.20	7.5	6.5	0.08	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 19	10	8	44.4	20-38.3	156- 8.1	8.0*	3.5	14	333	81.1	4.31	25.3		0.10	D
19	18	1	45.1	19-23.5	155-24.2?	9.4	1.5	9	117	6.3	0.14	1.0	1.2	0.14	B
19	18	43	29.9	19-50.3	155-17.9	11.4	1.9	10	232	17.9	0.23	2.1	1.5	0.06	C
19	18	56	12.1	19-30.2	155-15.1	25.0	1.6	13	129	9.9	0.16	0.9	1.9	0.09	B
19	19	57	53.1	19-23.8	155-26.1	8.5	1.7	11	127	8.2	0.08	0.8	2.2	0.10	B
20	0	41	27.0	19-18.6	155- 9.9?	8.0*	1.2	11	260	6.5	0.33	3.1		0.36	D
20	5	5	56.8	19-19.3	155-11.0	8.0*	1.3	8	215	5.6	0.25	1.8		0.13	C
20	7	8	23.8	19-19.5	155-15.5	9.6	1.4	11	191	3.4	0.22	2.0	1.9	0.24	C
20	14	1	16.8	19-21.5	155-24.9	11.2	1.9	5	164	9.9		0.0		0.02	D
20	19	51	19.2	19-14.3	155-27.2	2.3		10	218	12.9	0.22	1.5	1.4	0.11	C
20	20	26	9.8	19-23.5	155-17.3	17.8		9	109	0.9	0.19	0.9	1.8	0.06	A
20	20	27	52.5	19-23.4	155-17.3	18.7		8	112	0.9	0.37	1.4	3.5	0.07	B
21	3	12	27.3	19-22.1	155-19.9	17.7	1.3	6	243	2.9	0.86	5.0	7.0	0.06	D
21	3	51	26.9	19-21.8	155-22.2	8.0		6	142	3.5	0.25	1.2	2.5	0.05	B
21	7	26	23.4	19-25.8	155-53.8	18.5*	3.1	10	285	35.5	0.58	3.7		0.10	D
21	10	27	6.4	19-18.7	155-12.1	9.2	1.1	8	245	7.0	0.22	1.3	2.1	0.06	C
21	14	22	35.6	19-22.6	155-27.8	8.0*	1.8	11	162	9.0	0.16	1.4		0.18	C
21	20	1	20.9	19-22.3	155-13.2	2.6	0.5	8	147	1.3	0.11	0.7	1.4	0.07	B
21	20	13	7.6	19-21.4	155-15.6	8.2	0.7	8	138	1.0	0.06	0.5	0.7	0.05	B
22	0	10	50.8	19-22.4	155-29.8	0.5*	1.7	12	142	12.1	0.13	0.9		0.17	C
22	0	44	54.6	19-20.8	155-29.6	6.7	1.5	9	134	11.1	0.17	1.5	1.3	0.16	B
22	1	20	0.4	19-20.3	155-12.8	6.0	1.1	15	182	4.1	0.16	1.1	0.8	0.21	C
22	1	20	18.1	19-18.8	155-14.5	6.0	0.9	13	206	5.6	0.23	1.3	0.9	0.18	C
22	5	59	50.0	19-22.0	155- 9.0	8.7	1.1	12	181	1.4	0.04	0.5	0.5	0.03	B
22	6	30	50.2	19- 0.7	155- 0.5?	34.1*	2.3	14	314	42.8	2.14	14.7		0.23	D
22	9	14	40.4	19-23.3	155-35.2	4.6	2.7	16	185	15.9	0.28	1.6	1.6	0.17	D
22	15	6	1.9	19-19.8	155-11.4	11.0	1.1	12	293	5.3	0.63	2.8	2.7	0.08	D
22	17	14	5.3	19-20.6	155-12.8	5.1	0.9	14	183	3.6	0.18	1.2	1.0	0.20	C
23	3	47	55.3	19- 5.8	155-43.4	1.0	3.0	17	298	20.0	0.34	1.8	1.2	0.10	C
23	5	35	59.5	19-19.8	155-25.7	4.4	2.3	16	141	4.2	0.13	1.0	1.0	0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 23	11	53	11.4	19-22.5	155-23.8	6.7	2.0	15	125	4.3	0.13	1.0	0.8	0.21	C
23	15	41	4.6	19-19.1	155-12.9	10.2	0.8	11	213	6.4	0.32	1.5	2.5	0.11	C
23	17	9	15.7	19-20.0	155-25.2?	8.6	1.8	15	138	3.3	0.12	0.9	0.8	0.16	B
23	17	36	35.3	19-19.5	155-14.1	6.7	1.1	17	187	4.8	0.13	0.9	0.6	0.17	C
23	18	14	23.8	19-24.9	155-17.9	3.0	0.9	13	79	0.9	0.04	0.3	0.8	0.08	A
23	18	31	5.6	19-18.5	155- 7.6?	0.0	1.5	16	211	7.7	6.52	1.6	12.2	0.24	C
23	18	40	9.3	19-20.1	155-15.5	31.2	1.7	15	166	3.2	0.18	1.0	1.5	0.08	C
23	18	45	32.6	19-21.9	155-15.6	28.9	2.0	13	113	0.5	0.23	1.1	2.1	0.08	B
23	23	8	9.7	19-20.8	155- 2.4?	0.0	2.1	16	212	13.1	5.13	1.9	9.6	0.20	C
24	2	12	37.5	19-17.7	155-50.4	8.6	3.5	16	267	23.8	0.62	4.6	2.5	0.11	D
24	4	13	59.4	19-19.0	155-13.7	6.0	2.4	19	194	5.9	0.17	1.1	0.7	0.22	C
24	6	54	14.2	19-19.7	155-12.3	5.7	1.3	15	191	5.2	0.17	1.2	0.8	0.19	C
24	12	7	4.5	19-18.8	155-25.2	7.7	1.9	12	154	4.3	0.10	0.7	0.6	0.10	B
24	23	55	57.3	19-21.1	155-24.5	10.7	1.7	12	116	2.6	0.13	1.3	1.9	0.19	B
25	0	34	15.9	19-19.4	155-13.0	4.0	1.5	11	206	5.9	0.28	1.6	1.8	0.22	C
25	0	55	19.2	19-26.3	155-45.0	0.9	2.5	13	253	25.2	2.97	3.0	9.7	0.16	D
25	6	9	3.4	19-17.2	155- 3.6	0.3*	2.2	11	233	14.1	0.59	3.4		0.25	D
25	7	31	57.4	19-25.1	155-24.1	8.0*	0.6	8	198	7.5	0.11	0.8		0.09	C
25	14	45	21.2	19-18.1	155-20.4	5.1	1.0	10	164	3.1	0.14	1.0	1.0	0.15	C
25	15	24	49.1	19-10.7	155-39.1	5.8	1.7	9	307	8.5	0.40	2.4	1.3	0.12	C
26	1	1	40.8	19-24.4	155-16.3	13.7	2.1	17	54	1.6	0.05	0.5	0.7	0.08	B
26	3	4	36.9	19-30.6	155-11.6	8.0	1.8	16	112	14.2	0.05	0.5	1.7	0.09	B
26	6	2	31.4	19-20.4	155-12.6	7.8	2.7	17	182	4.0	0.10	0.7	0.4	0.13	C
26	6	7	46.2	19-18.9	155-26.3	4.6	1.3	10	152	5.8	0.16	1.3	2.0	0.20	C
26	7	35	9.8	19-11.1	155-35.7	5.7	1.8	13	273	7.5	0.29	2.0	1.5	0.12	C
26	10	25	22.8	19-21.6	155-24.3	6.2		12	112	3.0	0.12	1.1	1.3	0.18	B
26	13	54	43.1	19-33.0	155-10.8	8.0*		8	280	20.0	0.67	3.6		0.09	D
26	14	5	8.5	19-20.6	155-17.9	28.1		14	66	1.3	0.40	1.5	3.6	0.11	B
26	15	44	33.1	19-39.9	155- 3.9	7.9	2.0	18	211	27.4	0.87	1.4	5.7	0.16	C
26	15	50	37.1	19-40.1	155- 3.5	8.0*	3.1	15	212	27.2	0.10	0.7		0.08	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 26	18	18	24.1	19- 8.9	155-37.3	7.3		8	299	11.0	1.03	5.5	2.4	0.10	D
26	20	9	53.1	20- 5.4	155-31.2?	46.0*	2.2	18	310	34.9	0.82	7.6		0.25	D
27	0	0	7.4	19-20.7	155-18.3	27.3	1.4	13	68	1.9	0.67	2.3	5.8	0.11	B
27	1	4	59.7	19-22.6	155-17.7	13.2	0.6	10	65	2.2	0.26	0.8	2.0	0.05	A
27	1	25	48.1	19-20.2	155- 1.7?	0.0	2.1	17	219	14.7	3.30	1.2	6.2	0.12	C
27	1	34	58.7	19-20.2	155-11.7	7.7	0.7	11	208	4.5	0.25	1.4	2.4	0.09	C
27	1	38	53.5	19-20.6	155- 9.6?	7.3	0.8	12	258	2.7	0.26	1.5	0.7	0.14	C
27	10	50	14.1	19-21.0	155-23.4	6.0		9	183	1.4	0.14	0.9	0.9	0.09	B
27	22	39	58.9	19- 9.1	155-33.3	7.8*	2.3	6	274	12.6	1.22	7.1		0.15	D
27	23	19	33.5	19-18.4	155-16.8	8.1	1.0	11	190	3.3	0.14	1.1	1.1	0.10	C
28	3	50	58.1	19-21.1	155-12.1	8.2	1.7	11	180	2.8	0.11	0.9	0.4	0.11	C
28	22	5	1.8	19-19.9	155-12.2?	7.9	1.0	9	259	4.9	0.67	3.4	4.1	0.12	D
29	2	36	47.1	19-21.2	155-13.7	6.1	2.8	15	159	3.0	0.13	1.0	0.8	0.18	C
29	6	4	57.7	19-20.0	155-13.8	11.0	1.2	9	185	4.3	0.17	0.7	1.5	0.06	B
29	6	20	31.9	19-23.3	155-29.6?	6.1	2.2	16	123	12.5	0.11	0.8	0.8	0.15	B
29	9	42	5.3	19-24.0	155-26.0	8.0*	1.0	13	155	8.5	0.08	0.6		0.10	C
29	13	34	47.8	19-18.5	155-15.0	9.9	1.0	11	207	5.2	0.28	1.4	2.2	0.11	C
29	23	1	34.3	19-22.1	155-24.0	7.3	0.9	13	112	3.8	0.12	1.1	1.3	0.20	B
29	23	49	20.3	19-25.7	155-22.7	8.0*	0.5	7	166	4.9	0.07	0.6		0.06	C
30	0	5	11.8	19-20.2	155-13.0	4.7	0.9	12	189	5.0	0.20	1.1	1.3	0.18	C
30	0	10	17.5	19-20.1	155-16.9	7.1	0.8	11	148	0.9	0.07	0.6	0.4	0.08	B
30	0	24	52.8	19-22.7	155-11.5	11.4	1.6	7	331	7.7	1.08	9.6	10.5	0.20	D
30	6	22	21.6	19-19.0	155-46.5	6.1	1.7	10	310	18.1	0.75	4.0	1.5	0.06	D
30	10	21	26.8	19-21.0	155-29.4	3.6	2.4	15	134	10.8	0.19	1.4	2.0	0.21	C
30	11	25	36.3	19-20.7	155-19.7	2.4*	1.3	9	102	4.1	0.04	0.3		0.07	B
30	23	55	30.3	19-24.4	155-16.0	13.3	1.8	16	104	2.0	0.06	0.7	0.5	0.10	B
31	0	51	12.8	19-19.0	155-13.0	9.2	1.8	15	214	6.5	0.13	0.9	1.2	0.09	C
31	4	47	53.6	19-20.1	155-11.8	8.2		10	206	4.5	0.26	1.6	2.8	0.10	C
31	13	27	59.9	19-26.5	155-46.5	3.8	2.4	11	260	27.0	0.75	4.9	3.1	0.17	D
31	16	5	58.0	19-19.9	155-11.0?	5.3	1.3	10	244	4.7	0.63	3.2	1.9	0.23	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 31	21	8	24.5	19-18.3	155-10.2	4.4	1.9	16	206	7.1	0.26	1.3	1.1	0.17	C
FEB 1	2	0	37.9	19-20.6	155-14.4	6.2	1.5	17	166	2.8	0.12	0.8	0.6	0.18	C
1	2	17	9.9	19-24.9	155-25.6	8.0*	1.6	14	127	9.5	0.05	0.4		0.09	C
1	5	56	3.5	19-20.8	155-25.1?	8.5	1.3	13	128	3.3	0.12	0.9	0.7	0.16	B
1	13	46	47.4	19-40.6	156-15.3	11.1	3.0	16	291	70.1	0.52	9.0	16.2	0.25	D
1	15	15	34.7	19-20.3	155-12.6	10.4	0.8	7	192	5.4	0.13	0.5	1.2	0.02	B
1	15	46	58.3	19-21.7	155- 3.4?	2.9	1.9	13	260	11.3	0.75	2.1	2.2	0.19	C
1	16	31	4.4	19-21.9	155-17.9	26.8	2.7	18	72	3.4	0.16	1.0	1.5	0.10	A
1	22	56	38.4	20-13.1	155-59.5	3.2*	2.8	14	324	36.9	0.31	2.4		0.12	D
1	23	54	39.9	19-28.7	155-15.9	26.8	2.1	11	170	6.7	0.18	1.2	1.8	0.08	C
2	2	0	4.4	19-18.7	155- 9.9	4.6	1.1	9	208	6.3	0.34	2.1	1.8	0.16	C
2	3	21	28.3	19-24.6	155-30.8	8.0*	1.5	11	156	16.3	0.12	0.9		0.14	C
2	4	9	46.9	19-17.8	155-16.9	31.8	2.2	19	197	3.0	0.19	1.1	1.5	0.11	C
2	4	58	4.1	19-13.9	155-31.0	3.9	1.5	10	209	10.9	0.26	2.3	1.2	0.17	C
2	8	3	36.8	19-13.7	155-28.1?	3.7	2.2	13	213	14.6	0.38	2.8	1.7	0.19	C
2	8	46	38.8	19-23.8	155-17.4	18.2	1.0	9	113	1.3	0.19	0.9	1.9	0.07	A
2	8	48	10.6	19-28.9	155-17.3	28.7*	1.5	6	316	7.8	0.09	1.4		0.02	D
2	8	48	40.2	19-23.9	155-17.3	17.7		8	116	1.3	0.19	0.9	1.9	0.06	A
2	8	49	41.1	19-25.5	155-17.8	22.1		8	285	1.6	0.28	2.9	2.0	0.08	D
2	9	27	30.1	19-19.7	155-13.7?	5.5	1.6	15	193	4.8	0.31	1.9	1.5	0.32	D
2	9	32	42.2	19-21.0	155-29.2?	7.2	1.9	13	133	10.5	0.09	0.8	0.6	0.11	B
2	10	59	48.7	19-20.2	155-12.4	13.5		8	198	5.8	0.09	0.6	0.9	0.03	B
2	11	31	16.8	19-13.2	155-22.1	29.0		11	314	13.1	1.41	6.8	8.4	0.11	D
2	12	40	3.2	19-15.3	155-34.9	8.0*	2.2	9	184	3.9	0.13	2.5		0.12	C
2	13	9	27.6	19-28.7	155-13.7	18.6		7	282	9.1	0.76	4.8	4.6	0.07	D
2	14	19	39.9	19-20.1	155-17.4	6.0	0.8	11	160	0.0	0.08	0.5	0.5	0.07	B
2	17	6	53.3	19-18.2	155-14.0	14.6		10	221	6.9	0.09	0.5	0.8	0.03	B
2	17	10	35.3	19-19.4	155-10.6	2.3*		10	244	5.2	0.54	2.5		0.22	D
2	20	8	28.7	19-37.1	155- 6.0	8.0*	2.2	6	353	29.7	0.77	17.6		0.17	D
2	21	46	39.0	19-17.0	155- 0.7	29.0		17	237	18.5	0.26	1.2	2.5	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 2	23	49	57.7	19-12.4	155-28.6?	31.5		10	237	15.5	0.28	2.3	1.6	0.07	C
3	1	56	4.9	19-20.8	155- 1.9	5.8	3.7	21	215	14.0	0.22	1.5	1.1	0.21	C
3	12	35	23.5	19-19.6	155-13.6	15.1		8	196	6.6	0.12	0.6	1.2	0.03	B
3	14	43	2.1	19-22.8	155-22.2	7.6	1.8	15	107	4.7	0.05	0.4	0.4	0.09	A
3	15	6	12.2	19-20.7	155-13.9	6.2	1.0	12	169	3.2	0.18	1.2	0.9	0.20	C
3	15	10	49.1	19-23.9	155-17.9	10.7	1.0	14	75	1.6	0.03	0.3	0.3	0.04	A
3	17	2	56.3	19-19.9	155-11.6?	8.0*		8	216	5.1	0.48	3.4		0.25	C
3	20	29	13.2	19-19.8	155-12.4	8.0*	0.9	10	205	4.9	0.13	0.9		0.10	C
3	21	20	48.4	19-19.6	155-12.5	5.7	1.5	14	192	5.4	0.19	1.2	0.9	0.20	C
3	22	40	43.3	19-24.8	155-25.9	8.0*	2.1	13	159	9.6	0.07	0.5		0.09	C
4	4	7	57.8	19-19.6	155-11.4?	8.2	0.8	12	225	5.3	0.17	1.1	0.4	0.10	C
4	4	56	50.8	19-26.1	155-26.5	8.0*	1.5	9	204	8.9	0.08	0.6		0.06	C
4	5	44	13.4	19-20.6	155-13.4	9.2	0.8	12	178	4.1	0.16	0.9	1.5	0.09	C
4	11	47	3.7	19-17.8	155-26.5	5.6	1.4	8	166	7.2	0.22	2.1	2.2	0.20	C
4	12	11	32.9	19-31.4	155-13.8	28.2	2.9	17	124	12.9	0.26	1.2	2.7	0.13	B
4	15	0	36.7	19-16.3	154-58.2?	0.1*	2.5	14	289	23.0	0.50	3.1		0.21	D
4	15	38	29.8	19-21.9	155-24.6	7.1	0.9	10	115	3.9	0.14	1.3	1.5	0.19	B
4	16	31	21.4	19-19.0	155-12.2	5.2	1.0	10	223	7.1	0.37	2.1	1.3	0.22	C
4	16	53	21.9	19-24.2	155-30.2	0.1*	1.2	12	151	14.1	0.14	0.9		0.18	C
4	16	54	43.4	20- 3.6	155-27.7	2.2	1.7	11	234	25.1	4.70	4.9	14.8	0.26	D
4	17	3	32.5	19-20.2	155-12.1	6.2	1.0	14	186	4.3	0.14	1.0	0.6	0.16	C
4	17	13	22.1	19-18.3	155-17.2	29.8	1.5	10	194	2.6	0.38	1.7	3.4	0.07	C
4	18	18	32.5	19-19.3	155-14.3	30.3	2.2	17	188	4.9	0.26	1.5	2.1	0.13	C
4	19	46	33.9	19-20.9	155-12.5	0.7	0.5	6	194	2.9	0.14	0.5	0.5	0.04	B
4	21	33	44.0	19-19.2	155- 9.1	5.8	0.8	12	205	5.6	0.34	2.1	1.4	0.23	C
5	0	45	8.1	19-25.8	155-26.7?	8.2	1.6	15	208	9.6	0.11	0.7	0.4	0.09	C
5	3	20	56.7	19-27.3	155-16.7	21.4	1.7	10	307	3.8	0.09	1.5	0.8	0.04	C
5	3	22	57.8	18-55.2	155- 2.2	2.3	1.9	19	287	51.0	0.74	9.6	11.9	0.21	D
5	7	50	55.9	19-19.5	155- 6.9?	5.5	1.7	17	207	7.1	0.38	2.3	1.6	0.33	D
6	5	6	52.7	19-19.8	155-16.9	6.1	1.0	11	187	1.1	0.13	1.0	0.6	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 6	7	20	32.6	19-23.5	155- 2.8	2.1	1.8	14	257	12.5	0.80	3.4	2.6	0.25	D
6	7	55	24.1	19-32.6	155- 9.6	27.2	3.5	19	82	19.2	0.23	1.1	3.0	0.13	B
6	14	9	24.0	19-23.9	155-24.4	8.0*	1.0	10	206	7.2	0.17	1.1		0.12	C
6	14	29	55.1	19-18.5	155-15.1	13.3	0.8	7	207	5.0	0.31	1.3	2.4	0.05	C
6	16	9	29.4	19- 0.3	155-24.1	5.0*	1.7	12	299	34.0	0.42	2.3		0.18	D
6	16	12	45.4	19-21.8	155-10.6?	12.0	1.4	8	176	1.5	0.35	2.2	2.6	0.07	C
6	19	41	37.1	19-23.1	155- 7.7?	1.3	1.4	12	176	4.2	0.24	2.0	2.3	0.26	C
7	1	56	34.5	19-22.3	155-27.4?	6.2	1.1	13	129	8.2	1.35	1.3	4.7	0.23	C
7	5	8	10.0	19-22.4	155-29.7?	3.3	1.7	13	142	12.0	0.17	1.6	5.0	0.18	B
7	7	38	2.4	19-49.0	155-22.4	21.2	1.7	9	281	9.7	0.46	3.1	3.3	0.09	D
7	8	52	11.1	19-47.8	155-23.8?	25.0	1.9	17	210	6.6	0.33	2.0	6.4	0.11	C
7	8	57	53.6	19-21.2	155- 1.7?	0.0	1.5	14	213	14.3	5.95	2.2	11.4	0.21	C
7	12	41	6.5	19-11.5	155-24.5?	8.0*		12	233	15.8	0.81	5.6		0.60	D
7	16	44	4.8	19-53.7	155-20.4	28.5	1.5	14	297	17.7	0.73	3.7	4.6	0.05	D
7	17	5	26.5	19-23.2	155-37.1	8.0*	2.2	8	243	15.3	0.24	1.6		0.08	D
7	20	0	42.3	19-24.0	155-24.5	6.1	2.2	14	138	8.3	0.13	0.9	0.8	0.14	B
7	22	32	2.1	19-19.4	155- 0.8?	39.9		10	229	16.6	0.45	2.5	4.2	0.06	C
7	22	37	59.9	19-47.8	155-22.8	20.6	1.4	14	208	8.3	0.43	2.2	4.4	0.10	C
8	0	49	28.0	19-21.2	155-11.4	3.5	0.9	10	187	3.2	0.24	1.5	1.7	0.17	C
8	0	58	6.7	19-24.1	155-24.4	2.9	1.5	11	206	7.5	0.15	0.8	1.3	0.11	C
8	3	9	24.9	19-50.1	155-23.4	26.0	1.5	17	168	9.4	0.12	0.7	1.7	0.08	B
8	4	13	36.9	19-55.3	155-20.6	5.2		12	244	19.7	0.54	2.3	2.1	0.06	C
8	8	35	44.4	19-21.5	155-11.7	6.8	2.3	16	171	2.3	0.09	0.8	0.5	0.15	C
8	9	29	52.4	19-23.1	155-12.2?	0.7	1.5	10	145	4.6	2.78	1.3	10.4	0.22	C
8	22	4	38.5	19-20.4	155- 7.7	7.5	3.3	17	199	4.9	0.25	1.7	0.8	0.21	C
9	0	58	30.6	19-15.8	155- 4.1?	0.0	2.0	12	241	15.4	2.08	4.2	22.2	0.28	D
9	5	36	36.3	19-19.9	155-15.6	6.2	0.8	13	168	3.3	0.16	1.0	0.8	0.16	C
9	7	41	10.6	19-22.9	155-17.2?	3.0	1.0	8	77	1.1	0.42	2.1	4.4	0.23	B
9	17	3	40.7	19-47.5	155-22.3	13.8	2.2	14	262	30.7	0.19	1.7	1.9	0.05	C
9	19	54	11.8	19-26.2	155-29.0	8.0*	2.0	16	150	12.1	0.06	0.5		0.09	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 9	22	35	25.4	19-20.3	155- 6.7?	0.0	2.1	16	203	6.5	4.80	1.3	9.0	0.15	C
9	22	45	12.0	19-19.2	155-14.9	5.5		12	192	4.6	0.20	1.2	1.0	0.17	C
10	0	32	3.1	19-24.1	155-16.9	15.2	1.2	13	112	1.3	0.06	0.5	0.7	0.06	A
10	3	10	3.4	19-21.2	155-10.8	3.9	0.6	9	202	2.5	0.17	1.1	1.1	0.10	C
10	14	46	21.6	19-22.9	155-22.7	5.1	0.5	12	158	5.1	0.07	0.5	0.7	0.09	B
10	18	19	59.5	19-25.9	155-14.4	30.3	1.8	13	112	6.2	0.22	1.1	2.1	0.09	B
10	18	42	55.1	19-20.6	155-11.1?	8.2	1.3	12	185	3.5	0.09	0.7	0.5	0.09	C
10	23	25	24.0	19-18.9	155-13.2	3.1	0.9	11	215	6.5	0.31	1.6	2.1	0.22	C
11	0	1	14.3	19-20.0	155-17.4	6.1	1.1	9	162	0.2	0.10	0.6	0.5	0.06	B
11	0	25	18.0	19-18.7	155-12.5	8.0*	0.8	8	225	7.5	0.20	1.3		0.10	C
11	2	39	7.7	19-20.6	155-13.5	6.0	0.9	12	175	3.8	0.20	1.3	1.0	0.20	C
11	9	18	24.4	19-20.2	155-11.9	8.9	0.7	12	205	4.4	0.16	0.8	1.3	0.06	B
11	10	56	35.0	19-15.0	155-33.9?	2.8	2.4	12	188	5.7	0.16	1.7	1.2	0.12	C
11	11	22	51.8	19-21.6	155- 9.4	7.6	1.2	12	281	1.1	0.17	1.2	0.4	0.07	C
11	11	26	0.4	19-20.6	155-10.5?	13.0	1.9	10	227	3.1	0.76	2.7	9.4	0.21	D
11	12	28	51.7	20-59.5	155-44.1?	13.2	3.5	20	336	59.1	0.24	3.8	5.2	0.11	D
11	17	12	56.1	19-20.7	155-12.3	8.0*		8	187	5.2	0.08	0.7		0.06	C
11	17	17	1.4	19-19.4	155- 7.4	2.4	2.0	18	206	6.4	0.22	1.2	1.3	0.20	C
11	17	54	9.5	19-17.2	155-27.0	4.7		10	171	8.6	0.19	1.5	2.0	0.19	C
11	21	3	38.4	19-26.7	155-23.4	8.0*	1.6	14	170	5.0	0.10	0.8		0.12	C
12	0	3	4.8	19-17.8	155- 0.1	4.1	2.1	13	241	18.7	0.30	1.9	1.3	0.15	C
12	10	4	44.5	19-17.9	155-15.5	6.2		13	210	5.3	0.25	1.5	0.9	0.22	C
12	21	14	59.3	19-24.4	155-23.6	8.0*	1.6	13	187	6.9	0.08	0.5		0.09	C
12	22	40	32.7	19-18.2	155-15.5	6.7	1.0	11	198	4.8	0.11	0.8	0.5	0.10	B
13	0	6	42.3	19-24.9	155-25.3	6.0	1.7	13	223	9.3	0.28	1.4	1.0	0.17	C
13	0	31	20.3	19-19.6	155-16.0	7.1	1.6	16	170	2.7	0.09	0.7	0.4	0.12	C
13	2	29	49.5	19-21.0	155-28.4	8.0*	1.9	11	174	9.0	0.10	1.0		0.11	C
13	3	8	18.6	19-35.8	155-11.3	25.7*		13	292	22.0	0.16	1.2		0.04	D
13	4	38	32.1	19-12.7	155-55.9?	0.1	3.1	17	292	33.2	0.50	7.4	2.6	0.18	D
13	5	6	55.8	19-20.7	155-23.2	7.2	1.7	12	159	1.0	0.13	1.0	0.5	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 13	6	59	48.9	19-11.9	155-31.7	3.3	1.7	11	241	10.9	0.46	2.7	1.2	0.13	D
13	9	8	44.2	19-20.6	155-12.6?	6.7	2.1	15	179	3.5	0.12	1.0	0.6	0.15	C
13	9	40	34.3	19-23.9	155-24.1	8.2	3.6	19	102	6.9	0.06	0.6	1.1	0.14	B
13	10	18	41.2	19-19.3	155-12.9	7.3	1.7	9	210	6.3	0.19	1.3	0.8	0.12	C
13	11	4	3.1	19-17.5	155-25.7	9.4	1.9	10	170	6.5	0.21	1.8	3.0	0.21	C
13	11	37	19.1	19-28.1	155-17.1?	5.9	1.6	8	316	5.2	1.67	10.1	8.6	0.36	D
13	13	23	45.1	19-19.0	155-25.2?	6.8	1.9	11	151	4.0	0.18	1.6	2.5	0.22	C
13	15	59	24.8	19-25.1	155-15.1	20.3	2.5	16	86	3.3	0.11	0.8	1.2	0.11	B
13	16	0	19.8	19-54.7	155-21.9	8.0*	2.0	14	286	36.0	0.71	4.3		0.08	D
13	17	49	1.3	19-20.9	155-12.4	7.5	2.0	15	177	2.9	0.07	0.6	0.3	0.10	C
13	18	33	33.0	19-19.8	155-18.4	21.7		12	114	1.8	0.50	1.7	4.3	0.10	B
14	1	49	11.9	19-20.6	155-11.7	7.7	1.3	9	184	3.8	0.09	0.9	1.2	0.07	B
14	2	2	5.0	19-19.8	155-11.7	6.7	1.6	14	192	5.2	0.14	1.0	0.6	0.15	C
14	2	26	19.6	19-23.9	155-17.3	19.2		12	116	1.3	0.15	0.8	1.4	0.07	A
14	2	28	45.6	19-24.1	155-17.2	19.6	1.8	14	90	1.1	0.18	0.9	1.7	0.09	A
14	11	25	2.2	19-23.8	155-16.8	7.5	1.3	8	160	0.7	0.06	0.5	0.3	0.03	B
14	11	27	2.5	19-24.9	155-16.5	9.9	1.6	10	178	0.9	0.14	0.6	1.0	0.05	B
14	12	3	36.0	19-23.8	155-23.5	5.4	1.6	14	127	6.7	0.09	0.6	0.8	0.13	B
14	12	7	31.7	19-21.9	155-21.8?	0.0		9	131	4.2	2.26	1.0	4.5	0.22	C
14	15	31	50.8	19-20.1	155- 5.2	1.5	2.4	16	208	8.9	0.54	1.5	2.0	0.19	C
14	16	35	32.2	19-19.4	155-16.0	6.8	2.0	17	174	2.8	0.10	0.7	0.5	0.15	C
14	22	14	56.3	19-19.1	155-15.0	7.1	1.9	17	188	4.6	0.13	0.9	0.6	0.17	C
15	2	13	11.2	19-19.0	155-12.9	8.0*	0.7	11	197	6.6	0.14	1.0		0.12	C
15	4	2	51.4	19-17.4	155-21.2	36.7	1.9	16	247	4.6	0.21	1.5	1.5	0.11	C
15	4	32	54.4	19-11.0	155-31.9?	3.1	2.4	15	246	11.6	0.52	2.9	1.6	0.16	D
15	6	13	0.0	19-19.4	155-14.8	5.6	1.6	17	214	4.5	0.15	1.0	0.7	0.20	C
15	7	13	34.5	19-19.6	155-11.6	2.0*	2.0	6	241	5.6	0.31	1.6		0.09	D
15	7	28	33.6	19-20.4	155-12.2	5.6	1.5	12	194	3.8	0.19	1.3	0.8	0.18	C
15	12	59	51.5	19-19.2	155-12.5	5.4	1.8	11	219	6.9	0.27	1.6	1.3	0.19	C
15	17	10	9.4	19-18.4	155-27.4	5.5	1.9	15	156	7.9	0.14	1.2	1.2	0.23	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 15	18	27	26.7	19-23.8	155-24.9	8.0*	1.0	9	217	7.3	0.11	0.7		0.07	C
15	18	43	41.4	19-20.1	155-11.7	9.7	1.2	8	210	4.6	0.11	0.5	1.0	0.03	B
16	3	20	54.7	19-21.5	155-13.6	7.0	1.0	15	152	2.7	0.06	0.5	0.3	0.10	B
16	5	4	43.9	19-24.2	155-17.6	8.0	1.2	9	106	0.9	0.06	0.4	0.3	0.04	A
16	5	5	47.3	19-23.7	155-16.8	8.2	1.3	10	155	0.6	0.06	0.4	0.4	0.03	B
16	15	22	2.8	19-19.7	155- 4.6?	1.3	2.5	15	212	14.8	3.20	2.9	11.4	0.26	D
16	16	8	59.7	19-21.2	155-25.0?	6.8	3.1	18	120	3.6	0.12	1.2	1.9	0.23	B
16	16	44	22.4	19-37.4	155- 8.0	5.8	2.0	17	97	11.8	0.18	1.1	2.4	0.14	B
16	17	51	57.5	18-59.2	155-12.8	31.9	2.2	15	297	36.1	0.32	2.9	3.5	0.12	D
16	20	50	28.9	19- 7.1	155-38.2	5.1	2.4	14	265	14.5	0.87	3.6	2.7	0.14	D
16	21	3	5.8	19- 5.3	155-39.9?	5.3	3.4	22	269	18.4	0.79	4.2	2.9	0.36	D
16	21	36	58.3	19-23.4	155-26.4	5.8	1.9	14	127	8.1	0.12	0.8	1.1	0.15	B
16	22	41	34.9	19-49.1	155-51.2?	13.6*	2.2	8	297	41.6	0.63	3.8		0.21	D
16	23	8	13.2	19-22.1	155-25.3?	3.8	1.2	12	118	4.9	0.15	1.4	2.7	0.19	B
17	0	2	17.4	19-22.1	155-27.4	1.5	1.0	13	128	8.0	0.54	0.9	2.0	0.17	B
17	0	3	35.7	19-22.2	155-27.4	1.2	1.1	14	128	8.0	0.56	0.9	2.1	0.18	B
17	2	13	29.2	19-21.1	155-11.8	7.7	1.4	15	178	2.8	0.07	0.6	0.3	0.10	B
17	4	17	36.0	19-24.8	154-48.0?	41.5*	2.0	11	308	12.1	0.15	1.5		0.08	D
17	10	20	54.9	19-22.4	155-28.2	8.0*	1.8	14	163	9.4	0.13	1.2		0.17	C
17	11	58	56.7	19-19.2	155-15.0	6.6	1.7	15	192	4.5	0.16	1.0	0.7	0.18	C
17	11	59	57.9	19-20.9	155-14.1	5.9	1.9	18	161	2.6	0.14	1.0	0.8	0.23	C
17	12	39	18.7	19-22.7	155-22.5	8.0	1.4	14	153	4.7	0.07	0.6	0.4	0.10	B
17	17	12	51.4	19-15.9	155-13.5	8.0*	1.5	11	263	9.7	0.41	2.3		0.14	D
17	19	25	9.9	19-24.6	155-25.0	6.3	2.0	18	124	8.7	0.14	0.9	0.9	0.22	C
17	19	33	23.7	19- 0.3	155-18.0	34.1	2.6	12	289	24.3	1.44	7.3	8.3	0.11	D
17	19	33	27.4	18-50.3	155-15.5?	8.0*	2.7	16	288	106.4	0.77	4.9		0.26	D
17	19	37	20.3	19-19.8	155-15.6	8.5	1.5	15	162	3.3	0.13	0.9	1.3	0.14	C
18	0	54	42.5	19-20.4	155-12.8	5.7	1.8	18	168	3.9	0.15	1.1	0.8	0.21	D
18	4	34	20.7	19- 8.9	155-34.1	7.0	3.0	18	234	11.0	0.35	2.2	1.0	0.16	C
18	7	8	59.1	19-25.3	155-22.7	8.0*	0.8	11	167	5.5	0.08	0.6		0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 18	13	57	30.4	19-21.0	155-11.2	10.2		8	195	3.1	0.19	0.9	1.6	0.04	B
18	17	44	2.4	19-14.6	155-17.8	8.7	1.2	10	299	6.4	1.20	6.2	3.4	0.10	D
18	17	44	34.8	19-18.8	155-16.4	6.9	1.7	14	183	2.9	0.11	0.8	0.6	0.14	C
18	18	27	33.0	19-17.6	156- 9.2	53.6*	2.3	15	309	35.0	0.37	3.0		0.11	D
18	18	30	37.9	19-22.6	155-22.5	6.4	1.5	12	156	4.6	0.17	0.5	1.8	0.10	B
18	21	53	15.1	19-25.6	155-24.4	8.0*	1.6	13	183	7.4	0.06	0.5		0.07	C
19	1	57	20.5	19-21.4	155-49.3?	6.7	2.8	17	211	20.9	0.91	5.3	16.3	0.17	D
19	11	17	48.9	19-19.7	155-15.2	34.0	2.2	13	177	3.9	1.44	5.1	12.1	0.22	D
19	18	37	19.7	19-19.8	155-24.6	8.1	2.0	16	107	2.3	0.08	0.8	1.3	0.16	B
19	18	56	43.9	19-27.5	155-46.7	11.3	3.3	16	150	16.5	0.11	1.9	3.1	0.14	B
19	20	39	26.0	19-19.7	155-24.4	9.2	1.5	13	141	2.2	0.11	1.0	1.5	0.15	B
19	20	48	44.6	19-20.3	155-10.5?	8.6	0.9	9	234	3.6	0.26	1.6	1.2	0.12	C
19	21	44	53.7	19-47.1	155-46.3?	0.0	3.5	22	243	32.7	0.40	3.6	0.9	0.19	D
20	6	11	18.3	19-25.8	155-29.0	8.0*	1.4	10	198	12.4	0.08	0.6		0.06	C
21	18	56	53.7	19-31.3	155-43.3	9.7	2.2	12	184	21.0	0.20	2.4	2.9	0.15	C
22	1	1	37.3	19-26.2	155-22.1?	0.0	1.4	12	119	6.2	2.38	3.1	4.2	0.56	C
22	1	2	50.7	19-25.2	155-27.0	2.8	2.5	19	76	10.6	0.19	1.1	1.7	0.26	B
22	11	23	9.6	19-22.1	155-30.1	8.0*	2.0	11	177	12.5	0.12	1.1		0.12	C
22	19	51	55.7	19-22.0	155-14.9	20.0	1.8	13	133	0.7	0.28	1.1	2.5	0.08	B
22	20	41	22.0	19-23.0	155-51.1?	2.2*	2.7	13	213	16.8	0.14	1.3		0.13	C
22	23	47	40.4	19-17.6	155-10.4?	8.0*		9	265	8.3	0.48	4.0		0.34	D
23	1	43	23.8	19- 9.3	155-34.8	9.1	2.4	17	230	11.1	0.25	1.8	1.1	0.16	C
23	16	48	54.7	19-19.7	155-16.7	9.3	1.2	9	195	1.5	0.20	0.9	1.5	0.04	B
23	23	20	5.8	19-43.3	155-44.3?	2.2	2.3	9	271	30.1	0.44	10.7	10.3	0.13	D
23	23	44	6.8	19-21.2	155-24.4?	8.7	1.2	15	111	2.7	0.10	0.8	0.6	0.16	B
24	1	2	42.3	19- 8.2	155-24.4	30.5	2.3	18	236	6.5	0.51	3.0	3.9	0.20	D
24	3	19	27.0	19-21.3	155-20.7?	8.0*	1.1	13	96	5.0	0.23	2.3		0.49	C
24	4	44	40.6	19-24.6	155-26.2	8.0*	1.4	14	130	9.5	0.06	0.5		0.09	C
24	7	48	46.8	19-19.3	155- 9.3	8.0*	1.6	9	272	5.3	0.72	4.0		0.14	D
24	11	4	8.4	19-20.9	155-43.4	5.2		10	290	15.6	0.45	2.2	1.1	0.06	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 24	18	25	14.2	19-18.9	155-15.0	9.7		13	197	4.7	0.16	1.1	1.6	0.13	C
24	20	20	48.9	19-24.5	155-17.2	8.9	1.4	9	120	0.6	0.12	0.5	0.9	0.03	A
24	21	41	22.4	19-18.8	155-12.7	10.8		10	222	7.2	0.29	1.2	2.4	0.07	C
25	2	4	56.4	19-20.7	155-11.4	4.0		8	203	3.9	0.22	1.4	1.3	0.09	C
25	4	43	2.6	19-20.2	155-19.4?	6.4	2.1	15	70	3.5	0.05	0.5	0.5	0.10	B
25	7	42	52.1	19-12.3	155-28.1?	8.0*		11	117	5.2	0.23	2.2		0.33	C
25	10	44	2.5	19-18.6	155-13.2	8.0*		9	221	7.0	0.19	1.3		0.12	C
25	12	26	3.7	19-46.4	155-30.7?	17.9*	1.8	9	250	5.6	7.42	0.0		0.29	D
25	17	13	23.2	19-20.9	155-17.9	25.2	1.3	13	78	1.8	0.39	1.4	3.4	0.08	B
25	18	53	58.1	19-18.5	155-13.1	8.2	1.3	9	220	8.0	0.22	1.6	2.6	0.12	C
25	20	0	22.9	19-22.7	155-23.1	6.8	1.1	13	166	4.6	0.10	0.7	0.8	0.11	C
26	1	51	40.3	19-22.6	155-23.2	3.6	1.2	12	110	4.4	0.11	0.9	1.5	0.17	B
26	2	53	25.6	19-20.8	155-11.1	7.4	1.6	12	204	3.3	0.15	1.1	0.5	0.12	C
26	2	55	28.9	19-21.0	155-11.0	7.9	1.8	13	202	2.9	0.15	1.2	0.5	0.11	C
26	6	27	31.8	19-21.3	155-10.5	10.9	1.2	8	209	1.9	0.30	1.3	2.2	0.05	C
26	6	53	15.0	20- 3.6	156-15.3?	0.1	3.5	22	303	58.1	0.29	7.9	2.3	0.17	D
26	9	12	57.8	19-20.8	155-29.4?	8.1	0.7	9	133	10.8	0.15	1.0	1.0	0.10	B
26	10	16	21.3	19-13.8	155-27.4	8.0*	1.5	10	122	8.0	0.17	1.7		0.24	C
26	11	8	48.0	19-24.2	155-29.0	8.0*	1.2	16	144	12.4	0.07	0.6		0.11	C
26	19	50	47.1	19-18.2	155-13.5	5.5	1.5	10	225	7.4	0.36	1.9	1.2	0.19	C
26	22	16	45.2	19-21.9	155- 4.2	17.6*	1.6	10	332	9.8	0.32	2.6		0.07	D
27	11	20	5.3	19-21.5	155-19.1	1.8*	1.2	9	82	3.9	0.04	0.3		0.07	B
27	12	58	6.7	19-25.1	155-17.6	12.5	1.7	13	114	0.5	0.12	0.5	0.9	0.06	A
27	22	48	5.9	19-28.1	155-27.8	8.0*	1.8	14	147	8.5	0.06	0.4		0.07	C
28	9	3	27.5	19-21.1	155-24.1?	7.4	1.6	12	110	2.1	0.14	1.1	1.1	0.19	B
28	14	8	10.0	19-20.2	155-13.4	5.6	1.8	18	171	4.4	0.17	1.1	0.9	0.24	D
28	19	36	38.2	19-20.2	155-12.8	6.2	1.7	19	168	4.3	0.12	0.9	0.6	0.19	C
28	19	38	53.7	19-20.4	155-13.2	6.2	1.8	18	166	4.0	0.13	1.0	0.8	0.20	C
28	19	57	36.5	19-23.4	155- 1.0?	0.0	2.0	13	199	15.5	6.77	2.2	12.9	0.24	C
28	20	23	2.0	19-55.4	155-45.0	12.7*	2.3	17	275	34.4	0.47	3.0		0.11	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 28	22	53	13.8	19-25.5	155-24.1	6.9	1.7	13	179	8.1	0.15	1.1	0.9	0.15	C
1	0	59	5.7	19-19.9	155-13.2	9.7	1.1	10	193	5.0	0.25	1.3	2.2	0.11	C
1	5	19	4.5	19-25.4	154-58.0?	0.1	1.6	11	198	10.4	4.98	1.4	9.4	0.14	C
1	7	53	9.9	19-17.8	155-15.0	6.2	1.6	14	187	5.9	0.19	1.2	0.9	0.19	C
1	16	11	23.5	19-25.9	155-25.5	8.0*	1.0	11	195	8.1	0.11	0.7		0.09	C
1	21	46	25.5	19-25.9	155-27.2	8.0*	1.1	11	212	9.9	0.10	0.7		0.07	C
1	21	49	42.7	19- 9.0	155-37.0	8.9	2.3	17	235	10.9	0.28	1.9	1.1	0.14	C
1	21	56	55.4	20-10.6	155-35.6	8.0*	2.4	11	289	19.5	1.04	6.6		0.15	D
2	1	17	14.6	19-52.0	155-29.1	8.0*	1.8	10	208	29.0	0.22	3.7		0.09	C
2	2	25	42.9	19-22.0	155-23.8?	6.8	1.7	14	111	3.4	0.07	0.7	1.3	0.12	B
2	5	3	29.4	19-24.4	155-23.5	8.0*	1.6	15	185	6.8	0.09	0.6		0.10	C
2	12	57	60.0	19-19.5	155-11.5	8.0*	1.7	10	225	5.7	0.32	2.1		0.17	C
2	15	51	20.9	19-20.8	155-23.7	5.9	1.3	8	216	1.3	0.52	1.8	3.3	0.09	C
2	19	1	27.2	19-17.7	155- 8.5?	8.0*	2.0	6	286	8.4	3.17	16.9		0.34	D
2	21	35	40.8	19-23.2	155-28.1?	5.4	2.0	16	103	10.0	0.11	1.1	3.0	0.17	B
3	4	5	51.3	19-20.6	155-13.2	8.7	1.2	10	178	4.2	0.17	1.0	1.8	0.09	C
3	11	2	12.8	19-20.4	155-12.7	4.7		12	189	3.9	0.25	1.4	1.5	0.24	C
3	14	59	40.7	19-29.9	155-50.3?	0.0	2.6	14	145	9.1	5.46	2.0	29.0	0.17	C
3	15	32	37.9	19- 7.2	155-18.0	26.8	2.4	14	256	17.7	0.65	3.3	5.0	0.10	D
4	0	53	1.1	19-17.0	155-29.5?	8.0*		11	169	13.9	0.31	3.5		0.33	D
4	3	41	56.3	19-16.4	155-19.2	14.4	2.0	13	280	3.0	0.65	3.8	5.0	0.24	D
4	6	38	21.2	19-20.0	155-10.8	8.2		9	232	4.2	0.36	1.7	2.6	0.07	C
4	12	39	51.2	19-25.2	155-25.6	8.0*		8	228	9.3	0.20	1.3		0.09	D
4	16	34	5.9	19-23.8	155- 1.6?	0.0	2.4	19	183	14.7	6.98	2.3	13.1	0.34	D
4	16	49	34.7	19-20.5	155-24.6	6.1		12	109	2.3	0.13	1.1	1.1	0.19	B
4	18	36	33.1	19-20.5	155- 6.4	1.8	2.4	18	186	6.7	1.31	1.1	4.6	0.16	C
4	20	48	54.3	19-23.5	155-22.7	8.7	1.6	16	111	5.3	0.09	0.8	1.7	0.13	B
4	23	22	33.2	19-11.9	155-51.9?	44.5*	2.7	13	254	36.1	1.14	24.1		1.77	D
5	2	54	52.1	19-22.3	155-24.0	6.4	1.8	14	113	4.0	0.09	0.9	1.1	0.17	B
5	5	52	6.1	19-23.7	155-25.5	8.0*		11	229	7.5	0.18	1.1		0.11	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 5	20	28	7.6	19-18.0	155-13.6	6.3	2.8	20	178	7.6	0.27	1.6	1.1	0.29	C
5	20	33	15.1	19-18.2	155-14.8	9.8	1.3	9	215	5.7	0.32	1.6	2.6	0.11	C
6	3	2	25.3	19-25.1	155-52.6	10.3	2.6	17	212	12.1	0.18	1.9	1.4	0.13	C
6	3	28	9.9	19-20.3	155-26.6	3.4	1.5	12	135	5.9	0.14	1.1	2.1	0.19	B
6	11	8	27.8	19-38.8	155-36.4	8.7	2.0	8	159	21.6	0.09	1.0	1.8	0.07	C
6	11	27	33.9	19-24.0	155-25.0	8.0*	1.1	10	219	7.7	0.14	0.9		0.08	C
6	12	50	32.0	19-53.6	155-27.2?	14.2*	2.2	8	328	12.4	0.63	5.4		0.18	D
6	13	36	2.2	19-19.6	155- 8.9	7.3	2.2	15	202	5.0	0.21	1.4	0.6	0.15	C
6	14	1	5.7	19-21.3	155-19.4	21.7	2.0	13	82	4.0	0.20	1.2	1.7	0.11	B
6	17	55	0.3	19-23.4	155-25.6	8.3	1.5	12	210	7.3	0.12	0.8	0.4	0.09	B
6	21	38	58.3	19-17.5	155-15.0?	8.4	1.1	12	216	6.5	0.22	1.6	1.6	0.16	C
6	21	49	1.3	19-23.6	155-23.8	8.0*	1.1	11	193	6.4	0.20	1.3		0.19	C
7	9	53	51.0	19-17.7	155-18.8	31.0	3.3	20	161	0.6	0.15	0.9	1.3	0.10	B
7	19	55	50.8	19-17.3	155-16.2	31.7	1.8	17	173	4.5	0.15	0.8	1.4	0.09	B
7	22	7	37.5	19-19.9	155- 9.7	5.5	1.6	11	197	4.1	0.24	1.6	1.0	0.17	C
8	12	44	28.6	19-21.3	155-13.9	6.6	2.0	17	149	2.6	0.10	0.8	0.6	0.16	B
8	14	23	27.1	18-49.1	155-14.4	8.0*	2.8	13	293	53.8	1.26	7.8		0.18	D
8	14	23	31.4	19- 1.7	155-20.3?	47.4	3.8	20	267	19.6	0.31	1.8	3.3	0.17	C
8	17	2	14.2	19-23.3	155-25.6	2.3	2.1	16	70	7.0	0.12	0.8	1.4	0.18	B
8	21	21	50.7	19-26.6	155-22.6	10.5	1.7	12	163	3.8	0.17	0.7	1.7	0.07	B
8	21	24	20.4	19-13.6	155-26.1	8.0*		10	143	8.3	0.17	1.8		0.23	C
8	23	9	27.0	19-20.1	155-10.9	7.9		12	192	4.2	0.10	0.8	0.4	0.10	B
8	23	11	1.1	19-16.5	155-14.2	11.4	1.2	10	253	8.1	0.33	2.6	1.1	0.13	D
9	2	4	1.6	19-23.4	155-25.0	6.5	1.7	11	201	6.6	0.27	1.7	2.0	0.23	C
9	4	22	58.2	19-20.5	155-12.8	6.2	1.8	19	168	3.7	0.11	0.9	0.6	0.19	C
9	16	20	23.9	19-27.3	155-36.2	8.0*	2.6	9	254	22.9	0.24	1.5		0.08	D
9	21	52	24.9	19-24.4	155-29.0	8.0*		11	236	12.6	0.20	1.2		0.09	D
9	21	53	50.2	19-15.1	155-26.2	2.4		10	139	10.7	0.07	0.6	1.2	0.09	B
9	23	51	8.0	19-27.9	155-37.0	8.0*	2.6	11	260	23.9	0.22	1.4		0.09	D
10	5	39	5.2	19-20.1	155- 2.8?	0.0	1.4	14	217	12.7	6.85	2.4	13.1	0.20	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 10	8	18	34.9	19-13.0	155-32.0	4.4	2.3	16	161	9.6	0.11	0.9	0.9	0.12	C
10	8	19	32.4	19-12.8	155-32.1	4.0		12	165	9.5	0.12	1.0	0.9	0.10	C
10	12	13	37.5	19-26.7	155-57.7?	8.0*		10	266	9.3	0.47	6.6		0.59	D
10	13	40	6.2	19-19.1	155-13.8	5.2	0.9	13	204	5.6	0.24	1.3	1.1	0.20	C
10	14	55	3.4	19-26.9	155-24.9	8.0*	1.7	12	186	6.1	0.07	0.5		0.08	C
10	15	14	42.1	19-19.2	155-13.9	5.5		13	202	5.4	0.23	1.3	1.0	0.19	C
10	15	35	5.4	19-10.4	155-32.2	6.2	2.4	16	212	7.8	0.27	2.2	1.4	0.18	C
10	16	26	50.0	19-20.9	155-16.0	7.2		11	182	2.0	0.15	1.0	0.6	0.09	C
10	20	18	43.2	19-20.7	155-10.9	4.9	1.0	14	212	3.3	0.24	1.4	1.0	0.18	C
10	20	30	5.6	19-24.1	155-16.4?	2.0		7	193	1.5	0.12	0.8	0.3	0.09	C
11	5	15	9.5	19-22.4	155-18.6	15.9		10	76	3.1	0.24	0.9	2.4	0.06	B
11	11	39	46.0	19-20.1	155-12.5	10.5	1.6	9	198	5.8	0.25	1.2	2.0	0.08	C
11	17	7	49.1	19-22.9	155-22.0	5.4	1.1	10	145	4.2	0.16	0.5	1.8	0.09	B
11	18	41	35.9	19-24.7	155-26.1	8.0*	1.5	12	129	9.6	0.06	0.5		0.10	C
11	19	31	39.7	19-21.5	155-11.3	6.2	1.7	15	177	2.8	0.07	0.6	0.4	0.11	C
12	5	14	51.8	19-16.6	155-23.2	8.0*	1.5	13	139	6.6	0.08	0.8		0.13	C
12	8	29	1.6	19-23.6	155-35.8	8.0*	2.1	12	234	16.2	0.33	2.2		0.16	D
12	10	13	50.9	19-22.1	155-25.0	6.8	1.7	15	117	4.7	0.13	1.1	1.5	0.21	B
12	10	43	13.5	19-18.1	155-16.6	6.8	2.5	18	167	3.5	0.13	1.0	0.6	0.21	C
12	17	51	40.5	19-25.1	155-23.5	8.0*	1.6	14	131	6.7	0.06	0.4		0.08	C
13	4	2	56.4	19-18.1	155- 8.4	3.0	2.0	11	210	7.8	0.42	2.0	2.2	0.19	C
13	14	47	6.0	20- 6.5	155-37.1	21.7	1.9	14	267	12.0	0.35	2.3	2.1	0.09	C
13	16	30	51.2	19-13.9	155-29.7	21.6	1.6	12	121	8.7	0.23	1.0	2.6	0.09	B
13	19	36	19.2	19-23.1	155- 3.9	8.0*	1.3	11	190	10.6	0.10	1.5		0.10	C
13	22	49	36.3	19-19.0	155-12.0	4.9	1.6	15	177	6.8	0.20	1.2	1.1	0.21	C
13	23	28	9.7	19-19.2	155-15.1	5.1	0.9	12	190	4.3	0.23	1.3	1.3	0.21	C
13	23	40	31.9	19-29.6	155-16.8?	8.0*	1.7	9	325	7.9	0.41	4.1		0.38	D
14	0	48	43.2	19-20.8	155-13.9	30.2	1.7	15	158	3.1	0.19	1.1	1.7	0.12	C
14	9	47	38.4	19-20.0	155-12.4	5.2	1.7	12	201	4.5	0.20	1.2	0.9	0.17	C
14	10	13	38.5	19-17.4	155-15.3	6.1	1.7	18	188	5.9	0.19	1.2	0.9	0.23	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 14	10	59	3.6	19-20.7	155-13.8	6.0		9	169	3.3	0.19	1.4	1.0	0.16	C
14	14	39	48.2	19-27.5	155-12.0?	8.0*	2.2	7	321	10.0	3.41	20.2		0.57	D
14	16	7	2.1	19-17.5	154-58.9	7.6	1.9	9	246	23.1	0.86	4.8	6.0	0.16	D
14	16	25	49.4	19-26.3	155-26.2	8.0*	1.7	13	201	8.2	0.16	1.1		0.16	C
14	17	18	55.5	19-19.7	155- 0.6	4.3	2.1	14	227	16.6	0.34	2.3	1.1	0.14	C
14	17	19	55.1	19-23.1	155-10.0	28.4	2.2	19	105	1.9	0.17	1.1	1.5	0.12	B
14	17	21	13.9	19-20.9	155- 0.3	6.5	1.2	10	221	16.8	0.42	3.1	1.4	0.12	C
14	18	5	45.3	19-17.4	155- 5.8?	0.0	2.4	18	203	11.1	6.45	1.4	12.1	0.23	C
14	19	7	58.4	19-27.3	155-40.8	0.2*	2.4	13	122	23.7	0.09	0.7		0.14	C
14	19	30	22.6	19-21.3	155- 3.7	0.0	2.6	17	191	10.8	5.16	1.2	9.7	0.15	C
14	20	11	30.3	19-20.3	155- 3.3?	4.0	2.1	16	214	12.0	0.33	2.2	1.6	0.30	C
14	23	41	36.8	19-20.8	155-25.0	2.3	2.3	17	78	10.8	0.08	0.6	0.9	0.16	B
15	0	23	33.1	19-15.2	155-26.1?	2.8		14	127	10.5	0.58	1.1	2.1	0.21	C
15	1	57	0.6	19-23.4	155-17.1	12.3	1.7	13	77	0.5	0.09	0.6	0.7	0.09	A
15	4	2	10.9	19-21.6	155-23.4	4.9		9	176	2.6	0.14	0.9	1.1	0.13	C
15	4	4	24.6	19-21.6	155-23.3	4.8		9	170	2.6	0.12	0.8	1.0	0.11	C
15	4	20	39.7	19-20.9	155-24.3	6.1	1.5	13	118	2.1	0.13	1.1	1.3	0.20	B
15	4	48	21.5	19-19.0	155- 7.5?	4.1	1.6	13	212	7.0	0.36	2.0	1.9	0.21	C
15	5	22	0.0	19-21.5	155-24.2	4.5	2.1	15	157	2.8	0.14	1.0	1.1	0.18	C
15	7	2	50.0	19-24.7	155-23.2	8.0*	1.5	11	178	6.3	0.06	0.5		0.07	C
15	8	32	3.5	19-20.3	155-21.2	3.3		9	133	3.7	0.13	0.9	1.6	0.14	B
15	11	57	50.6	19-14.2	155-27.4	8.0*		10	120	8.7	0.11	1.2		0.17	B
15	13	51	5.6	19-18.8	155-16.4	8.4	1.6	14	168	3.1	0.14	1.1	1.6	0.17	C
15	17	31	9.4	19-21.7	155-25.0	8.0		9	238	4.1	0.35	2.8	1.5	0.14	D
15	21	48	9.8	19-16.7	155-21.9	3.8	1.8	17	150	6.2	0.12	0.9	1.1	0.18	C
16	20	17	43.8	19-26.4	154-54.4	4.4		7	229	5.1	0.50	3.3	3.1	0.09	D
16	20	53	33.0	19-50.7	155-33.5	13.1	3.4	24	142	25.4	0.19	0.7	2.2	0.13	B
16	21	7	47.8	19-50.0	155-33.7	11.3	1.8	9	164	26.3	0.13	2.1	2.1	0.09	C
16	21	53	16.4	19-17.1	155-22.3	8.0*	1.9	13	139	5.9	0.15	1.3		0.19	C
17	3	7	9.3	19-32.2	156- 5.3	8.0*		11	346	73.5	0.15	2.8		0.06	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 17	3	12	7.8	19-26.4	155-24.1	5.6	2.1	17	161	6.3	0.12	0.8	0.6	0.14	C
17	3	56	14.8	19- 8.8	155-26.2	33.8		17	231	3.3	0.65	2.8	5.1	0.13	D
17	7	20	21.5	19-22.7	155-25.2	8.0*	1.8	7	285	5.6	0.56	3.0		0.07	D
17	14	45	14.3	19-25.1	155-28.7?	2.0	1.8	11	273	12.9	0.30	1.2	2.0	0.14	C
17	17	36	49.4	19-50.6	155-34.1	14.4*	1.8	13	166	25.0	0.06	1.7		0.12	C
17	18	46	45.2	19-26.6	155-15.2?	5.4	1.2	8	306	4.4	1.03	6.0	5.7	0.24	D
17	21	34	35.7	20-26.4	155-26.6?	78.5*	3.3	8	308	127.1	4.63	50.4		1.35	D
17	21	36	44.9	19-50.4	155-48.9	39.9	2.1	13	235	24.4	0.53	2.7	4.1	0.09	D
17	22	41	10.7	19-21.3	155- 7.4	8.0*	1.6	15	143	8.3	0.15	1.6		0.27	C
17	23	2	56.3	19-19.1	155-13.5	9.4	1.5	11	206	5.8	0.17	1.0	1.7	0.10	C
18	0	9	29.9	19-20.6	155-19.8	3.5	1.5	14	108	4.4	0.08	0.5	0.8	0.11	B
18	7	14	12.2	19-21.1	155-16.2	7.2	1.3	10	167	2.0	0.14	1.0	0.6	0.08	C
18	7	16	0.8	19-20.9	155-15.0	8.3	1.4	12	154	1.8	0.09	0.6	0.9	0.09	C
18	10	56	45.9	19-19.8	155-15.9	8.7	1.9	13	159	2.7	0.13	1.0	1.5	0.15	C
18	22	57	7.4	19-22.9	155- 1.9	2.8	1.9	13	144	5.9	0.16	1.1	1.5	0.22	C
19	1	18	24.3	19-21.9	155-12.2	7.9	1.6	12	135	1.3	0.10	1.3	0.6	0.18	B
19	1	46	10.3	19-24.1	155-25.4	7.0	1.3	14	226	8.0	0.20	1.1	0.5	0.13	C
19	4	1	41.8	19-18.9	155-13.5	6.5	2.2	19	173	6.2	0.12	0.9	0.7	0.21	C
19	6	35	48.6	19-21.1	155-12.9	8.4	1.8	16	134	2.7	0.12	1.0	1.8	0.17	C
19	6	38	39.8	19-37.8	155-39.3	13.0*	2.2	11	281	31.6	1.05	6.8		0.20	D
19	10	35	43.3	19-20.4	155-14.0	8.6		11	174	3.4	0.15	1.1	1.7	0.14	C
19	10	41	38.1	19-17.3	155-29.7?	2.1	1.7	11	219	12.4	0.37	2.6	4.2	0.23	C
19	15	40	48.0	19-20.6	155-12.7	8.1	1.5	16	138	3.5	0.11	0.9	1.7	0.15	B
19	16	53	44.9	19-19.6	155-24.1	7.8	1.8	14	165	1.8	0.12	0.9	1.6	0.14	C
20	3	48	21.3	19-25.2	155-37.8?	0.2*	1.8	11	282	26.8	0.60	2.9		0.19	D
20	4	38	52.0	19-31.2	155-40.5	1.1	2.6	17	181	26.0	0.36	1.3	1.3	0.13	C
20	6	36	53.0	19-20.1	155- 8.6	7.4		12	166	4.4	0.15	1.4	0.7	0.18	C
20	10	3	9.3	19-18.8	155-15.7	9.6		10	195	3.9	0.27	1.4	2.2	0.12	C
20	11	55	3.9	19-25.3	155-15.1?	0.0	1.4	9	242	3.3	1.03	1.8	1.4	0.32	D
20	13	13	58.6	19-20.8	155- 9.3?	8.1	1.9	16	138	2.5	0.09	0.9	1.7	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 20	15	35	4.5	19-20.6	155-12.3	10.1		15	151	3.5	0.08	0.5	0.9	0.08	B
20	15	45	25.6	19-14.4	155-10.4	38.9		14	273	15.9	0.20	2.2	1.6	0.10	C
20	18	20	50.5	19-23.3	155-24.4	8.0*	1.7	16	208	6.0	0.19	1.1		0.16	C
20	19	7	59.8	19-19.9	155- 9.2	7.6		14	168	4.2	0.12	1.1	0.6	0.16	C
20	23	17	41.7	19-21.0	155-12.9	8.3	1.7	17	134	2.9	0.07	0.7	1.2	0.12	B
21	7	3	58.9	19-24.3	155-17.0?	0.8	0.7	9	146	1.1	0.29	1.0	0.9	0.24	C
21	7	26	52.6	19-21.6	155-28.3	5.3	2.2	18	113	9.1	0.12	0.8	0.9	0.15	B
21	10	9	55.1	19-37.3	155- 8.7	8.0*		13	264	15.6	0.23	1.3		0.12	D
21	14	15	4.5	19-21.7	155- 4.9?	7.9	2.1	10	127	4.9	0.14	1.0	2.2	0.14	C
21	22	7	16.4	19-21.1	155-20.1	25.3	1.6	14	96	4.8	0.24	1.6	1.8	0.13	B
21	22	37	58.9	19-24.1	155-15.8	2.2*	0.9	8	222	2.2	0.20	1.2		0.12	C
22	0	28	9.9	19-55.5	155-36.0?	12.8*	2.7	17	172	15.8	0.07	1.5		0.11	C
22	1	28	15.7	19-51.7	155-27.0	6.8	2.3	16	166	32.2	0.32	1.4	2.5	0.17	C
22	4	21	58.6	19-22.4	155-23.6	5.7		13	190	4.1	0.10	0.6	0.5	0.08	B
22	5	53	32.0	19-23.9	155-17.1	16.6	2.6	20	34	1.1	0.07	0.6	0.9	0.11	B
22	6	36	31.2	19-10.2	155-26.1	29.1	1.9	10	199	3.4	0.48	2.1	4.0	0.06	C
22	6	38	17.0	19-10.0	155-26.4	31.3		13	191	2.7	0.46	2.1	3.7	0.08	C
22	6	41	59.9	19-10.6	155-24.8	28.5		10	205	5.8	0.44	2.0	3.8	0.07	C
22	16	32	26.6	19-20.1	155-25.6?	6.6	1.8	10	181	4.0	0.15	1.2	1.6	0.15	C
22	18	54	56.5	19-22.8	155-23.9	8.0*	2.2	13	169	5.0	0.08	0.6		0.10	C
22	19	43	57.6	19-12.1	155-34.5	3.7	2.3	12	278	12.6	0.42	2.2	1.4	0.15	C
23	0	58	40.4	19-20.6	155-13.0	7.3	1.5	16	168	3.6	0.11	0.9	0.6	0.15	C
23	4	39	49.8	19-19.9	155-13.3	8.0*	1.7	15	143	5.0	0.07	0.6		0.12	C
23	9	14	19.5	19-20.8	155-19.6	1.8*		10	99	4.0	0.07	0.4		0.10	B
23	22	10	55.0	19-22.0	155-23.6	6.7	2.3	19	89	3.3	0.07	0.5	0.4	0.13	B
24	1	32	25.0	19-24.3	155-36.4	9.1	2.3	14	201	24.1	0.25	1.7	3.0	0.12	C
24	3	32	12.6	19- 3.1	155- 8.4	12.5		17	260	32.5	0.63	3.4	7.1	0.17	D
24	16	20	32.1	19-20.5	155- 7.7?	8.3		15	158	4.8	0.13	1.0	2.1	0.13	C
24	18	30	11.4	19-22.4	155-22.9	7.4	1.6	17	86	4.1	0.07	0.5	0.4	0.12	B
24	18	48	53.6	19-23.9	155-25.7	8.0*	1.8	16	233	8.0	0.27	1.6		0.14	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 24	19	46	19.0	19-15.3	155-21.0	8.0*		15	154	6.4	0.16	1.3		0.20	C
24	21	43	52.5	19-17.3	155-24.1	4.0	1.7	13	158	5.6	0.16	1.2	1.6	0.20	C
24	23	57	21.7	19-19.1	155- 6.8	7.9	2.2	17	186	6.9	0.16	1.4	0.9	0.18	C
25	12	57	14.7	19-19.4	155- 7.8	8.0*	2.2	12	178	6.1	0.12	1.2		0.12	C
25	13	50	30.0	19-15.6	155-23.1	8.0*	2.0	11	154	13.0	0.15	1.7		0.18	C
25	18	46	25.8	19-24.2	155-15.9	1.7	0.9	10	113	2.1	0.12	0.5	0.4	0.09	B
25	20	40	4.4	19-12.9	155-22.4	8.0*	2.0	10	185	11.4	0.24	2.3		0.22	C
26	0	47	40.8	19-24.8	155-17.3	7.7	1.2	8	96	0.5	0.03	0.3	0.2	0.02	A
26	0	48	32.6	19-24.2	155-17.3	5.8	1.1	8	122	1.4	0.08	0.4	0.5	0.03	B
26	5	37	0.4	19-22.2	154-59.7	8.3	2.2	13	191	7.1	0.29	2.5	3.2	0.27	C
26	7	32	10.9	19-19.8	155-13.1	8.0*	1.6	12	162	5.2	0.09	0.8		0.13	C
26	11	18	30.9	19-52.1	155-39.8	13.6*	2.1	20	135	18.5	0.06	0.7		0.12	C
26	19	37	35.6	19- 9.9	155-17.0?	13.9*	1.8	10	215	19.0	0.27	2.1		0.22	C
26	19	58	34.9	19-11.1	155-20.8	47.2	2.5	13	193	12.7	0.73	2.6	6.2	0.12	C
26	20	7	24.8	19-19.6	155-15.8	27.9	2.1	13	150	3.0	0.32	1.3	2.8	0.09	B
26	20	8	12.9	19-11.6	155-21.0?	61.9		14	188	12.4	1.76	5.2	14.5	0.19	D
26	21	0	55.3	19-19.9	155-10.6	7.9	1.9	14	165	4.3	0.10	0.9	0.4	0.11	C
26	21	28	26.2	19-20.8	155- 8.3	8.6	2.0	13	154	3.5	0.10	1.0	1.9	0.13	C
26	22	39	12.8	19-26.6	155-11.5?	8.0*	1.3	15	138	8.8	0.17	1.6		0.36	C
27	0	12	26.3	19-21.6	155-29.9	4.4	2.0	13	121	11.9	0.18	1.1	1.6	0.15	B
27	2	16	49.4	19-20.9	155-10.9	7.6	1.9	12	185	3.0	0.09	0.9	1.0	0.09	B
27	3	58	20.7	19- 9.1	155-38.3	5.1	1.2	11	314	18.4	0.48	4.4	3.3	0.16	D
27	6	33	34.9	19-20.5	155-12.9	8.3	1.8	15	151	3.7	0.07	0.6	1.0	0.10	B
27	10	36	51.4	19-19.2	155-10.8	8.0*	1.9	12	176	5.6	0.13	1.1		0.15	C
27	14	50	53.9	18-51.7	155- 6.0	8.0*	2.5	15	293	50.6	1.03	6.4		0.14	D
27	17	19	17.3	19-13.0	155-18.6	38.1	2.4	15	183	9.2	0.19	1.4	1.7	0.10	C
27	18	44	58.9	19-19.0	155-38.1	2.9	2.1	11	278	25.0	1.61	7.0	4.5	0.30	D
27	22	30	34.2	19-41.8	155-18.1	36.7	2.2	15	288	23.9	0.23	1.5	2.2	0.09	C
27	23	4	51.4	19-45.9	156-15.7	15.9*	2.8	15	294	44.8	0.40	2.9		0.17	D
28	1	51	27.0	19-25.1	155-23.5	8.0*	1.7	12	168	7.2	0.14	1.0		0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 28	2	3	0.7	19-25.4	155-23.8	8.0*	1.6	13	172	7.8	0.21	1.5		0.22	D
28	14	35	7.0	19-20.6	155-11.6	8.2	1.9	14	155	4.0	0.06	0.6	1.0	0.10	B
28	17	2	57.4	19-20.1	155-10.6	8.0	3.0	19	146	4.0	0.12	0.8	0.6	0.15	B
28	17	45	10.4	19-23.5	155-25.0	6.3	2.5	18	94	6.8	0.09	0.6	0.6	0.12	B
29	5	7	25.0	20- 6.3	155-35.6?	8.0*	2.6	7	338	70.7	1.10	13.5		0.36	D
29	5	11	59.3	19-19.7	155- 8.6	9.2	1.9	12	171	4.8	0.09	0.7	1.3	0.08	B
29	6	40	39.8	19-22.9	155-21.9	6.7	2.1	18	79	5.6	0.07	0.6	0.5	0.13	B
29	7	6	27.5	19-21.5	155- 3.1?	8.2	2.2	13	122	3.0	0.11	1.3	0.9	0.14	B
29	10	5	47.3	19-27.6	155-25.0	5.5	2.2	15	206	5.1	0.17	1.0	0.8	0.15	C
29	11	40	9.8	19-34.9	155-20.2	20.1	2.2	16	210	10.9	0.29	1.8	3.1	0.12	C
29	16	54	3.3	19-19.8	155-18.1	25.5	1.9	12	106	1.3	0.17	1.3	1.4	0.11	B
29	17	44	4.2	19-25.1	155-17.1	14.0		14	163	0.4	0.08	0.7	0.7	0.09	B
30	3	7	10.4	19-27.4	155-33.6	8.0*		8	321	18.5	1.84	9.1		0.06	D
30	4	37	34.6	20- 4.7	156-35.0	3.0	3.8	22	321	83.8	0.28	14.7	15.9	0.18	D
30	9	10	3.5	19-18.9	155-15.9	9.1	1.9	10	189	3.5	0.21	1.1	1.7	0.10	C
30	9	14	22.2	19-21.0	155-23.3	6.3	1.7	11	177	1.5	0.33	1.0	2.3	0.10	C
30	9	15	44.3	19-21.1	155-23.2	6.1	1.7	11	173	1.6	0.34	1.0	2.4	0.10	C
30	10	45	32.6	19-26.0	155-24.2	8.0*	1.7	15	181	6.9	0.15	1.0		0.18	C
31	0	17	42.9	19-59.6	156- 1.7?	1.5*		16	331	34.6	0.32	2.0		0.17	D
31	1	8	56.6	20-16.5	156-13.4	13.9*	3.7	21	317	54.5	0.21	1.6		0.13	D
31	5	58	37.1	19-19.6	155-15.8	6.6	1.9	13	174	3.0	0.13	0.8	0.7	0.15	C
31	6	50	56.1	19-13.9	155-11.7	43.0	2.3	11	275	14.2	0.27	2.6	2.0	0.08	D
31	10	41	25.3	19-22.6	155-23.3	7.0		14	180	4.4	0.12	0.7	0.6	0.11	C
31	22	24	36.3	19-24.1	155-17.6?	7.5	1.3	10	102	1.1	0.21	2.1	1.4	0.31	C

Table 11.--Felt Earthquakes

Date	Time H	M	S	Magnitude	Felt Report
Jan. 19	00	40	45.9	3.6	Honokaa, Kamuela, Kainaliu
Feb. 3	01	56	04.9	3.7	Keaau, Mt. View, Hilo, Kalapana
8	22	04	38.5	3.3	Volcano
11	12	28	51.7	3.5	Kealakekua
13	09	40	34.3	3.6	Volcano
16	16	08	59.7	3.1	Kapapala
19	18	56	43.9	3.3	Kamuela, Kapapala
19	21	44	53.7	3.5	Kapapala, Honokaa, Kealakekua
Mar. 16	20	53	33.0	3.4	Paauilo, Honokaa, Kukuihaele
28	17	02	57.4	3.0	Hilo
30	04	37	34.6	3.8	Kohala, Kamuela
31	01	08	56.6	3.7	Kamuela

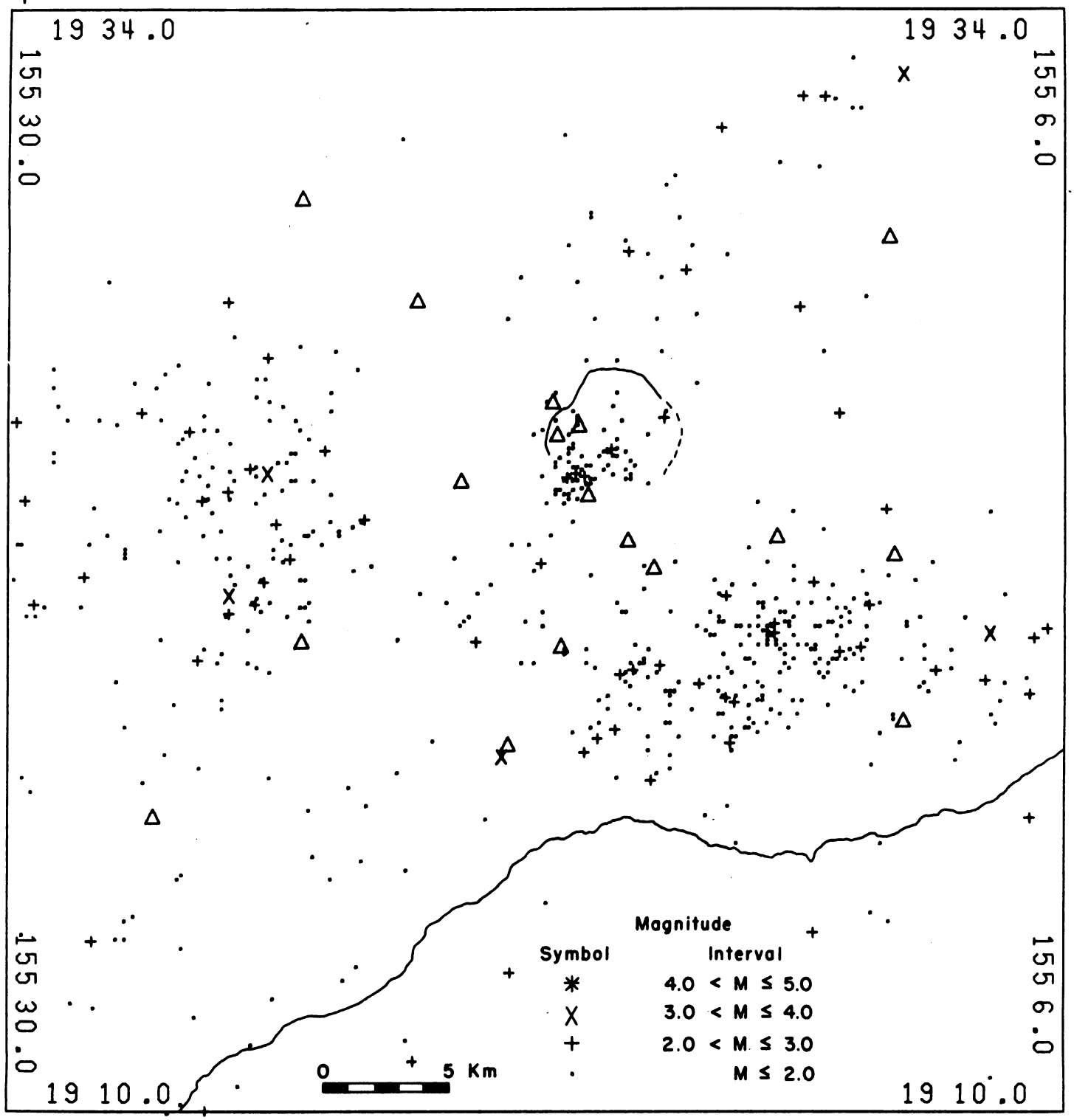

Figure 6.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

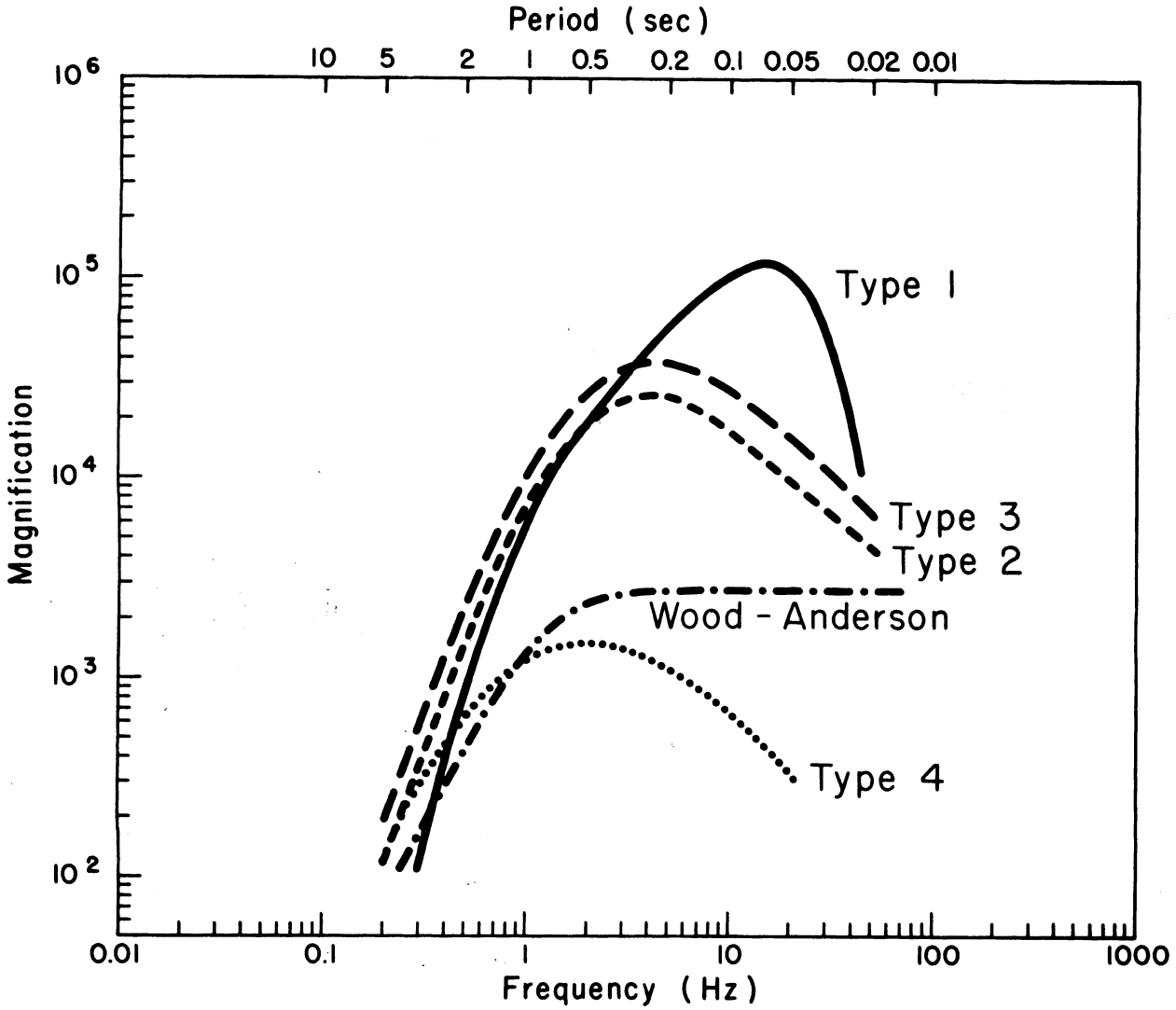

Figure 7.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 12. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
EAST KOAE	EKO	19 22.17	155 14.99	1009	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	Installed 3/23/71
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
MAUNA LOA	MLO	19 29.80	155 23.30	2010	3	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	Installed 3/4/71
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	Installed 2/17/71
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	Installed 3/10/71
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	Installed 3/2/71
WEST PIT	WPT	19 24.70	155 17.50	1115	3	1.34			
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KAMUELA	KAM	20 1.90	155 42.00	740	2	0.7			
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

Seismic System Response

Magnitudes calculated by a modified version of "HYPOLAYR" are based on record amplitudes reduced to the equivalent amplitude that would have been read on the seismogram from a Wood-Anderson seismograph if located at the site of the more sensitive seismometer or seismograph (Eaton and others, 1970). Table 14 lists the four different instrument responses that are used for the HVO seismometer network. The values given are the log (base 10) values for the ratios of unit responses for types 1, 2, 3, and 4 to the response of the Wood-Anderson seismometer. Figure 7 is a graphic comparison of the four different responses to the response of the Wood-Anderson seismograph. The telemetered systems (Type 1 & 3) unit response curves are determined from the calculated output of a standard 1 sec. period geophone whose output has been set, using a resistor network for 0.5 volts/cm/sec. (0.8 critical damping) and the measured electronics response of the system. The peak response for the electronics is very close to 5 Hz, hence to determine the total electronic gain of a specific station and ultimately the system magnification a 5 Hz sine wave calibration signal is periodically applied at the seismometer input of the preamp/VCO to verify the sensitivity of the electronics at individual stations during routine maintenance.

The 5 Hz calibration signal put in at 10, 100, and 1000 microvolts rms levels is reduced to a 10 microvolt equivalent for use as the calibration factor or CAL. The CAL factor represents the peak to peak value of the sine wave record (read on a film reader with 20X magnification) produced by the 5 Hz signals (in millimeters). Each system response in Table 14 and Figure 7 assumes a station calibration factor of 1.0 (normal CAL for a gain of 1000X). To obtain the approximate magnifications for each station at frequencies above 3 Hz the log (base 10) value of CAL and the log (base 10) of 2800 are added to the unit log response values from Table 14. For example, at 10 Hz MLO has an approximate magnification of 1,230,000 [log (base 10) 2800 + log (base 10) 67.61 + log (base 10) 6.5 = 1,230,470X].

Response curves and magnifications for systems 2 and 4 are determined from similar calculated or experimental values. Where the responses of amplifiers are poorly known the instrument types are not listed. Zeros correspond to Wood-Anderson torsion seismographs.

Table 13.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

Table 14.--System Response Arrays - Log Magnification.

FREQ.	PERIOD	TYPE 1	TYPE 2	TYPE 3	TYPE 4
0.013	79.432	0.0	0.0	0.0	0.0
0.016	63.095	0.0	0.0	0.0	0.0
0.020	50.118	0.0	0.0	0.0	0.0
0.025	39.810	-1.300	-0.690	-0.450	-0.290
0.032	31.623	-1.060	-0.580	-0.350	-0.200
0.040	25.119	-0.870	-0.480	-0.250	-0.110
0.050	19.952	-0.620	-0.380	-0.150	-0.030
0.063	15.849	-0.390	-0.290	-0.050	0.050
0.079	12.589	-0.140	-0.180	0.040	0.120
0.100	10.000	0.250	-0.080	0.140	0.180
0.126	7.943	0.300	0.020	0.240	0.230
0.158	6.310	0.390	0.120	0.330	0.260
0.200	5.012	0.500	0.210	0.430	0.270
0.251	3.981	0.600	0.300	0.510	0.280
0.316	3.162	0.700	0.390	0.600	0.260
0.398	2.512	0.790	0.470	0.670	0.230
0.501	1.995	0.880	0.540	0.740	0.190
0.631	1.585	0.960	0.620	0.790	0.120
0.794	1.259	1.040	0.680	0.840	0.050
1.000	1.000	1.100	0.740	0.890	-0.030
1.259	0.794	1.150	0.780	0.940	-0.100
1.585	0.631	1.210	0.840	1.000	-0.160
1.995	0.501	1.280	0.900	1.060	-0.200
2.512	0.398	1.360	0.950	1.110	-0.240
3.162	0.316	1.450	0.980	1.140	-0.280
3.981	0.251	1.540	0.990	1.150	-0.330
5.012	0.200	1.630	0.970	1.140	-0.390
6.310	0.158	1.710	0.930	1.110	-0.460
7.943	0.126	1.780	0.870	1.060	-0.530
10.000	0.100	1.830	0.780	1.000	-0.620
12.589	0.079	1.800	0.700	0.920	-0.710
15.849	0.063	1.780	0.620	0.840	-0.800
19.952	0.050	1.680	0.540	0.750	-0.890
25.119	0.040	1.510	0.460	0.660	-0.990
31.623	0.032	1.340	0.370	0.570	-1.090
39.810	0.025	0.0	0.290	0.470	-1.190
50.118	0.020	0.0	0.210	0.370	-1.290
63.095	0.016	0.0	0.130	0.0	0.0
79.432	0.013	0.0	0.0	0.0	0.0
99.999	0.010	0.0	0.0	0.0	0.0

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 17.

Table 15.--Tilt Coordinates at Uwekahuna,

January, February, and March 1971

Date	N-S	E-W	Date	N-S	E-W
Jan. 3	546	354	Feb. 21	544	366
10	545	353	28	544	367
17	545	360	Mar. 7	545	366
24	544	359	14	545	369
31	544	359	21	545	370
Feb. 7	544	361	28	546	371
14	543	365			

Table 16.--Tilt coordinates and changes at bases around Kilauea caldera. (See Fig. 4)

Tilt Base		Date (1970)	*Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1970)
Uwekahuna	(U on Fig. 8)	27 Apr.	614.8	397.5	1.42	S67.0Deg.E	25 Jan.
Tree Molds	(TM)	26 Apr.	533.9	478.3	0.54	S10.6Deg.W	25 Jan.
Sand Spit	(SS)	27 Apr.	1026.2	610.7	2.20	S35.8Deg.E	26 Jan.
Mehana	(M)	26 Apr.	597.6	590.1	1.02	N24.9Deg.W	25 Jan.
Keamoku	(Kea)	26 Apr.	570.8	442.8	0.82	N28.8Deg.E	2 Feb.
Ahua Kamokukolau	(Kam)	27 Apr.	505.6	501.9	3.67	N 3.1Deg.W	26 Jan.
Kipuka Nene	(KN)	28 Apr.	289.1	502.0	0.18	N11.3Deg.N	3 Feb.
Hilina Pali	(HP)	Not occupied this epoch					
Kapapala Ranch	(Kap)	Not occupied this epoch					

* See Table 8, HVO Summary 60.

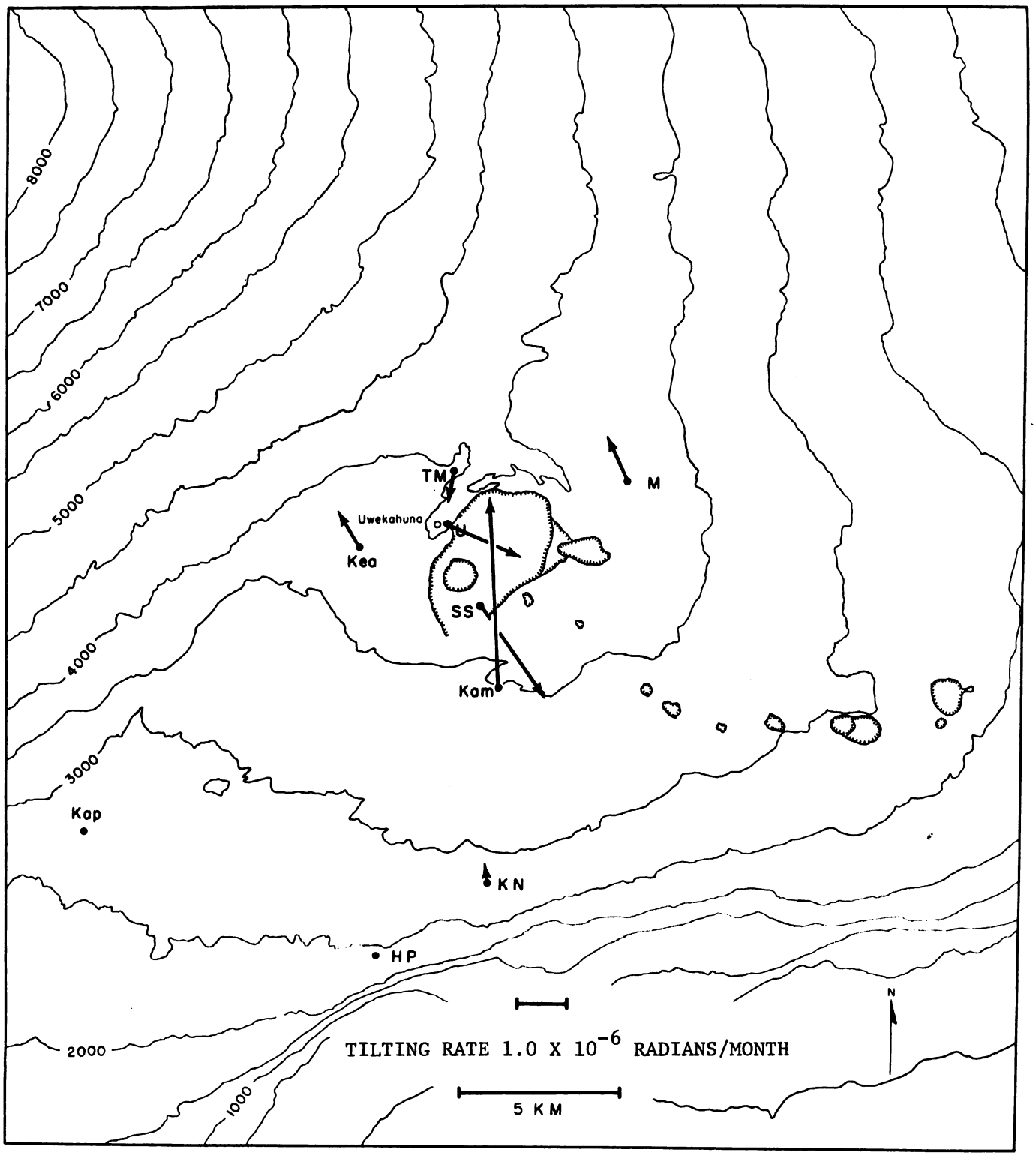

Figure 8.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 16 for explanation of abbreviations.

Table 17.--U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N. Deg. Min.	Long. W. Deg. Min.			
Tree Molds	TM	19 - 26.3	155 - 17.3	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19 - 24.1	155 - 16.8	---do---	25.40	Equilateral triangle.
Keamoku	Kea	19 - 25.1	155 - 19.0	---do---	47.55	do
Ahua Kamokukolau	Kam	19 - 22.7	155 - 16.6	---do---	50.79	do
Kipuka Nene	KN	19 - 19.4	155 - 16.7	---do---	47.73	do
Hilina Pali	HP	19 - 18.2	155 - 18.6	---do---	47.73	do
Kapapala Ranch	Kap	19 - 20.5	155 - 23.8	---do---	50.79	do
Mehana	M	19 - 26.2	155 - 14.3	---do---	25.00	do
Uwekahuna	U	19 - 25.5	155 - 17.4	---do---	50.79	do
Uwekahuna Vault		19 - 25.4	155 - 17.6	Daily	3.48	NS. and EW.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

Summary 62

April, May, and June 1971

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INTRODUCTION

Summary No. 62 is the sixth in a series of summaries produced through the cooperative efforts of the Hawaiian Volcano Observatory and the U. S. Geological Survey's National Center for Earthquake Research (NCER). Seismic data collected by Observatory personnel are processed in Menlo Park by the use of a number of different but readily available computer facilities. Earthquake data are received by NCER in the form of computer coded data sheets that include most of the pertinent seismogram readings for each event. For preliminary processing the data are punched on computer cards. Cards are listed and checked, and detected errors are corrected prior to actual processing for hypocenter locations using a modified version of the location program HYPOLAYR (Eaton, 1969). The first computer outputs are sent back to the Observatory for the verification of input earthquake data. Errors in the original input are corrected and the data reprocessed with the location program.

During what may be a final run for earthquake locations, appropriate output cards from the location program are obtained for further data processing with other computer programs; e.g., epicenter-hypocenter computer plots and first motion plots. The input deck and output cards are stored for further analysis. In addition, for earthquakes since 1969, hypocenter cards for each located earthquake are kept on file. During a year an attempt is made to locate 3000-6000 earthquakes. Up to 100,000 computer cards are manipulated several times before satisfactory preliminary hypocenter solutions are obtained. It is estimated that there is less than a one per cent error in data cards in the manipulation of this large amount of earthquake data. Figure 1 illustrates in flow chart form the most important steps in the Hawaiian earthquake data processing.

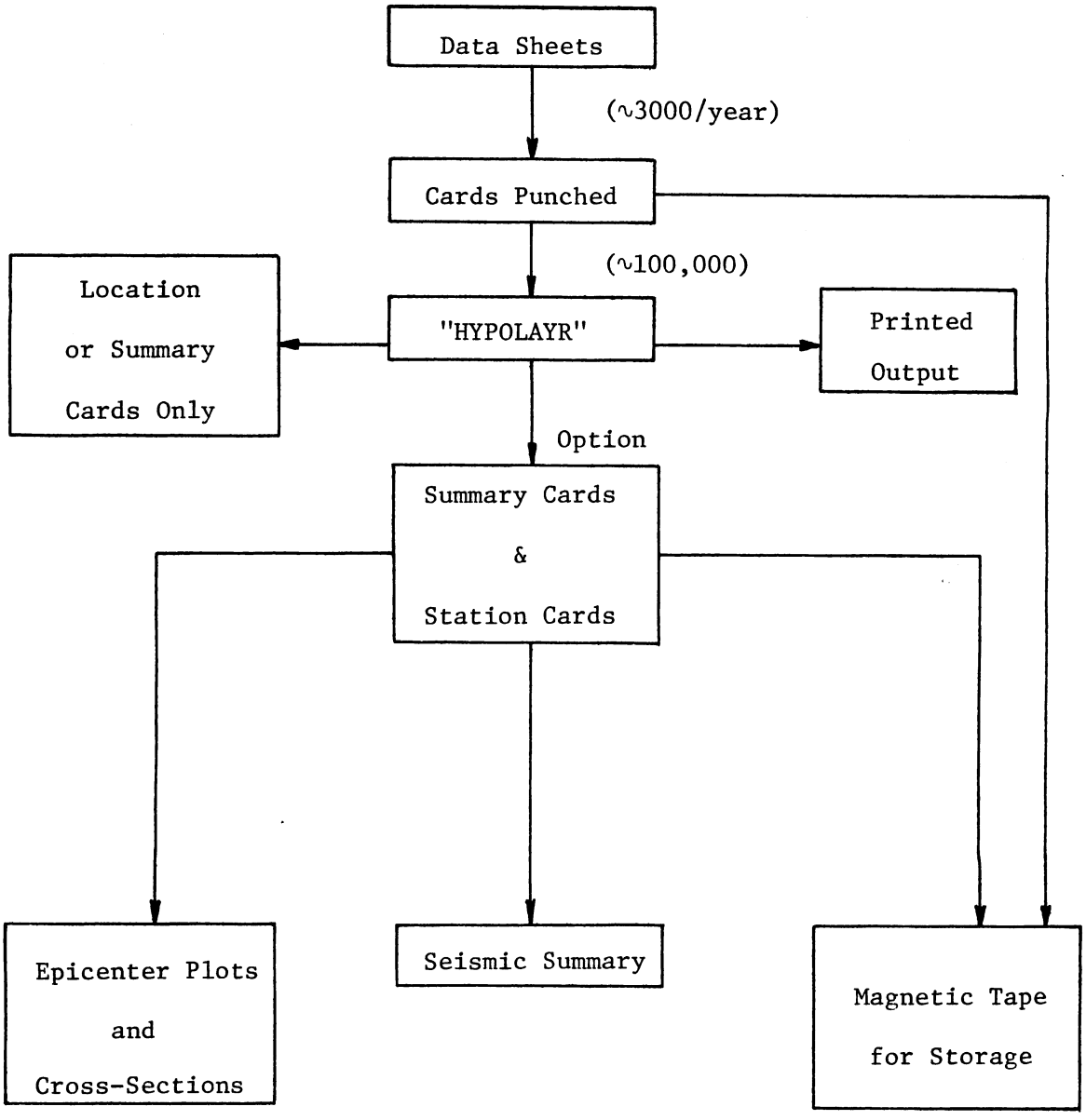

Figure 1.--Flow Chart for Hawaiian Earthquake Data Processing.

CHRONOLOGICAL SUMMARY

April-June 1971 (2nd quarter of 1971)

The Mauna Ulu eruption continued throughout this quarter, entering its third year of continuous activity on May 24. The main features of the first two years of eruption were described by Swanson and others (1971). In May the eruption appeared as vigorous as it had during the preceding several months, but June marked the onset of decreased intensity of eruption that continued about 4 months to the eventual cessation of eruption at Mauna Ulu late in 1971.

The ever-narrowing bridge between the summit crater and the trench on the east flank finally collapsed by April 13. The trench part of the resulting composite collapse feature was about 430 m long and 40 to 60 m wide at the time the bridge collapsed, and the rubble-strewn floor of the trench was 15 to 50 m below the rim. The part occupied by the summit crater was somewhat shorter and wider than the trench, resulting in a crudely keyhole-shape in plan view for the overall collapse structure. Throughout this quarter the width of the collapsed area grew by repeated rock falls from the steep, unstable walls, and a nearly rectangular depression, about 100 m by 600 m, eventually formed.

During most of the quarter, lava continued to flow from the continuously circulating lake in the summit crater beneath the rubble-strewn floor of the trench and then through the tube leading into Alae. Similarly, lava was simultaneously fed from Alae into the tube system leading to the seacoast of Kealakomo. However, during the latter part of the quarter, this entire system began to dry up. Lava ceased flowing into the sea at Kealakomo on May 14. The tube system south of Alae remained active into early June, but thereafter no flowing lava could be seen through skylights in the tubes, suggesting cessation of activity there, too. Meanwhile, the surface of the lake in the crater at Mauna Ulu dropped from about 60 to 75 meters below the crater rim, and by the end of the quarter, this lake, the only remaining visible molten lava, showed signs of stagnation.

Between March and May tube-fed lava flows reaching the sea added about 470,000 m^2 of new land to the island. On April 19 a team of divers examined the underwater part of the lava delta while the lava was actively flowing; detailed observations are reported by Moore and others (1973).

Summit ground deformation during this quarter was slight. During the first month, tilt measured at Uwekahuna decreased a few microradians, then levelled off during May, and began a slow but persistent increase in about mid-June.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea.

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
April 1	18m		Fluctuating at low levels near eruptive site on the upper east rift	6	2	286	17	54	15	(?)	
2				(?)	(?)	148?	2?	16?	11?	1?	Electrical storm; instruments off 10 hours.
3						231?	6	32	7?	(?)	
4					5	251	5	22	9	(?)	
5	12m					168	14	46	10	2?	
6						257	8	42	7	4?	
7					(?)	315	8	16	4	2	Very small LP quakes on WPT?
8				2	1?	247	10	40	11	1?	
9				1	1?	213	2?	30	20	1	
10				8	16	281	12	35	12	1	
11				3		295	7	8	10	3	
12				2		238	5?	21	6	1	
13				1	4	158	12	46	16		
14					9?	198	9	20	8	2	
15				(?)	3?	67?	7?	7?	1?	1?	Electrical storm; instruments off.
16				(?)	(?)	(?)	(?)	56	7?	6	"
17				4?		555	3?	41	10	5	Shallow summ-quakes pick-up at 1300.
18				(?)	(?)	164?	(?)	37?	(?)	6	Electrical storm; instruments off.
19				2		120?	6?	33	5?	1	
20				(?)	(?)	238	6?	30		2	
21				2	5	238?	10	19	18	2	
22	8m			2	2	245	12	30	17	2	
23				5?		126?	5?	15?	8?	3	
24	10m			1	6?	297?	7	37?	18	15?	Flurry of interim depth summit quakes.

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
April 25			Fluctuating at low levels near eruptive site on the upper east rift	(?)	10?	230	6	31	17	2	
(Cont.) 26				(?)	18	312	(?)	33	16	5	Second develo-corder installe
27				18?	(?)	250	5	37	2	2	
28		30m		7	17	335	15	36	10	2	
29				12	48?	825	29	31	14	3	
30		10m		5	99	1000	7	11	21	2	
May 1		20m		3	645	1128	6?	23	22	1	
2		11m		1?	7?	1520	10?	38	18	--	Very small LP caldera quakes.
3		14m		1?	3?	172?	31	37	8	1	
4		4		4?	2?	159	19	26?	5	7	
5				5?	3?	195	21	30	6	7	
6				3?	22?	184	24	44	6	8	
7				2	2	149	19	46	17	5	
8	25m			51	17	190	14	40	8	8	
9	7m			4	27	221	14	48	11	1	
10	102m				3?	257	18	60	6	7	
11	120m			1	10	260?	13	65	15	9	
12	20m			3	30?	384	19	31	12	11	
13	15m			1?	28?	332?	30	64	18	1	
14		10		2	25?	362	13	23	28	1	
15		5		3	11?	414	18	15?	21	1	
16					5?	715	21	51	12	4	
17				2	6?	906	16	27	20		Strong rockslide at Mauna Ulu.
18				2	6	1474	9	21	12	3	
19				2	16	1158	14	38	8	2	
20				2	21	917	21	40	23	8	
21				3	15?	1039	13	51	22	5	
22				2	192	587	21	90	13	5	
23				3	51	573	20	25	28	1	
24					(?)	528	17	33	10	11	

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
May 25	9m			2	35	537	14	50	8	8	
(Cont.) 26				5	(?)	686	10	55	7	8	
27				1	1?	1392	19	97	15	9	
28				3	4	931	16	37	21	3	
29	70m	3m		7	2	633	9	32	40	2	
30				3	2	764	18	15?	31	4	
31				10	--	1403?	17	69	11	14	
June 1				3		1576	15?	31	33	7	
2	50m			1	2	1813	12	105	20	12	
3				3	4	2865	14	76	29	6	
4					12	840?	8	47	34	12	Strong wind for several days.
5				3		437?	12	35	57	8	
6				3	5	547?	5?	42	18		
7	6m				6	1651	19	81?	21	8	
8		15m		2	2	2212	14	43	45	4	
9				1	3	1021	9	37	36	2	
10				2	5	1512	14	57	20	11	
11				2?		4233?	10	74	17	14	Strong flurry near OTL 00-03 hours.
12				2		1240	17	78	25	10	
13						671	8	58	53	11	
14				6	21	514	92	79	35	3	
15	15m?			1		207	65	93	61	13	
16				2?		67?	31?	54?	46?	10?	Film record lost 7 hours.
17				2	3	85?	48?	34?	44	3	Strong winds continue.
18				3		110?	8	57	31	2	
19				2	50	146?	13	33	22	2	
20				7	9	137?	22	41	13	3	
21					11	126?	38	71	18	6	
22					16	154?	26	68	20	6	

Low level tremor on the upper east rift

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
June 23			Low level tremor on the upper east rift		32	157?	7	84	25	5	
(Cont.) 24				2	32	208?	17	66	18	17	
25				2	43	260?	19	75	33	4	
26				2	30	161?	27	81	30	4	
27				2	25	204?	20	87	16	6	
28	35m	11m		3	18	365	22	101	16	5	
29					17	300	42	86	30	4	
30				1?	10?	265?	14?	104?	25?	8?	Film record lost 5 hours.

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	Excellent	Good
B	Good	Fair
C	Fair	Poor
D	Poor	Poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥8	≤120°	≤DEPTH or 5 km
B	≥6	≤150°	≤2 X DEPTH or 10 km
C	≥6	≤225°	≤50 km
	≥4	≤180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤1.0	≤2.0	≤0.10	≤0.25
B	≤2.5	≤5.0	≤0.20	≤0.50
C	≤5.0		≤0.30	≤0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1971		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	1	0	52	6.8	19-19.9	155-15.8	6.2		11	159	2.9	0.13	1.1	1.0	0.17	C
	1	1	22	17.3	19-25.0	155-26.6	6.9		12	210	10.6	0.19	1.1	0.7	0.14	C
	1	1	32	21.9	19-19.1	155-13.7	5.6	2.1	14	170	5.7	0.17	1.1	1.3	0.21	C
	1	2	54	22.8	19-19.2	155-14.8?	12.3	1.8	14	165	4.9	0.21	1.1	2.0	0.17	C
	1	4	52	36.3	19-24.6	155-23.7	8.0*	1.6	13	189	7.6	0.13	0.9		0.10	C
	1	6	2	27.9	19-21.2	155-14.6	8.7	1.6	12	133	1.6	0.08	0.6	1.0	0.09	B
	1	9	21	16.4	19-21.9	155-11.9	8.0	1.5	10	184	3.0	0.12	0.9	0.4	0.08	C
	1	10	21	43.0	19-24.0	155-25.4	8.0*		12	227	8.0	0.17	1.1		0.10	D
	1	11	4	52.6	19-23.1	155-23.7	8.0*		16	167	5.4	0.12	0.9		0.15	C
	1	12	26	51.1	19-19.0	155- 8.7	8.0*	1.9	11	183	6.0	0.14	1.3		0.13	C
	1	14	28	58.4	19-15.1	155-29.9	23.4		10	222	10.9	0.48	2.3	4.3	0.09	C
	1	14	41	50.9	19-19.7	155- 8.9	8.5		13	172	4.7	0.11	0.9	2.1	0.11	C
	1	17	3	39.9	19-21.9	155-23.3	6.7	2.3	18	88	3.0	0.10	0.8	0.7	0.13	B
	1	17	21	3.1	19-22.0	155-23.5	6.2		14	142	3.3	0.09	0.6	0.5	0.10	C
	1	19	16	52.2	19-19.6	155-16.0	7.1	2.2	16	139	2.7	0.09	0.8	0.6	0.16	C
	1	19	32	46.5	19-21.1	155-16.1	29.9	1.7	12	122	2.0	0.22	1.5	1.8	0.11	B
	1	19	37	16.3	19-21.6	155-15.4	30.7	2.0	12	123	0.5	0.22	1.5	1.9	0.10	B
	1	20	0	49.1	19-21.0	155-16.1	28.8		16	123	2.0	0.23	0.9	2.1	0.10	B
	1	21	12	48.4	19-21.1	155-15.8	28.9		16	126	1.7	0.20	0.8	1.9	0.09	B
	1	22	19	31.8	19-21.0	155-15.9	29.9	2.0	15	125	1.8	0.24	1.0	2.2	0.10	B
	1	23	23	9.8	19-22.4	155-16.1	22.5	1.8	14	82	0.3	0.21	0.9	1.9	0.08	A
	2	2	33	59.5	19-19.6	155- 7.6	8.4		14	242	6.0	0.29	1.8	2.7	0.11	C
	2	3	36	36.9	19-20.5	155-34.5?	0.3	1.5	10	318	26.1	5.61	6.0	26.9	0.20	D
	2	5	21	49.9	19-18.8	155-10.8	0.9	2.3	17	158	6.3	2.21	1.2	8.1	0.30	C
	2	5	56	14.5	19-19.7	155- 7.7	8.0*		14	172	5.7	0.11	0.9		0.11	C
	2	6	4	35.3	19-22.3	155-25.7	8.0*		16	188	5.8	0.11	0.7		0.12	C
	2	9	14	22.3	19-42.9	155-43.5	45.8	2.6	12	313	42.8	0.17	1.6	2.7	0.05	C
	2	10	49	10.2	19-19.1	155- 7.7	8.0*	1.9	13	184	6.7	0.15	1.2		0.17	C
	2	11	29	14.7	19-24.3	155-16.0?	2.0	0.7	8	220	2.0	0.42	1.4	0.7	0.10	C
	2	12	30	32.5	19-22.7	155-22.7	6.1	1.6	13	162	4.8	0.12	0.7	0.7	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 2	17	41	17.7	19-20.5	155-13.7	8.9	1.8	13	138	3.7	0.10	0.8	1.4	0.14	B
3	9	3	32.0	19-21.6	155-12.4	8.6	1.6	11	131	1.8	0.09	0.8	1.3	0.11	B
3	12	48	37.9	19-20.3	155-13.0	7.4	1.8	10	177	4.2	0.18	1.7	0.7	0.17	C
3	21	45	3.2	19-16.9	155- 5.4	8.0*	2.0	13	243	7.0	0.51	3.3		0.29	D
3	23	27	36.9	19-27.9	155-41.3?	0.0	2.7	12	160	25.3	9.77	2.4	18.4	0.25	C
4	0	34	15.3	19-21.6	155-22.9?	3.9	1.5	6	162	2.7	0.06	0.4	0.5	0.02	C
4	1	34	33.6	19-14.2	155-14.4	8.0*	2.1	9	274	14.2	0.64	3.6		0.26	D
4	2	34	9.5	19-42.1	155-35.5	11.6*	2.4	10	335	31.2	0.34	3.8		0.12	D
4	20	49	41.5	19-11.9	155-32.0	7.6	2.2	14	190	8.5	0.25	2.5	2.5	0.19	C
4	22	57	44.7	19-21.3	155-13.3	7.3	2.9	16	132	2.7	0.09	0.8	0.5	0.16	C
5	5	52	5.8	19-22.5	155-10.0	31.0	3.1	18	82	0.8	0.14	0.8	1.2	0.07	A
5	6	10	58.8	19-23.0	155-21.5?	8.0*	1.4	9	135	6.0	0.18	1.5		0.22	C
5	7	34	22.6	19-23.0	155-22.1?	3.9	1.3	9	149	5.5	0.66	0.8	2.3	0.11	B
5	8	35	21.8	19-23.7	155-17.1	14.9	1.6	12	77	0.9	0.07	0.6	0.8	0.07	A
5	19	45	24.2	19-23.4	155-12.0	5.0		11	108	1.3	0.24	1.3	3.1	0.21	B
6	2	46	52.5	19-20.5	154-59.1?	8.5		9	228	6.8	0.31	3.5	2.3	0.21	D
6	5	10	28.6	19-22.2	155-23.3	4.2	1.5	11	181	3.7	0.16	0.8	1.3	0.12	C
6	8	7	12.1	19-19.9	155-12.1	8.0*		11	227	5.6	0.21	1.4		0.09	D
6	8	9	45.3	19-24.4	155-25.0	8.0*		8	218	8.3	0.12	0.8		0.06	C
6	9	19	8.6	19-15.6	155-21.6	8.0*		12	148	9.0	0.12	1.0		0.15	C
6	23	51	5.2	19-19.9	155-11.6	9.0	1.7	14	164	5.1	0.09	0.7	1.3	0.09	C
7	1	13	27.5	19-24.1	155-17.4	1.3	1.0	10	119	1.1	0.09	0.5	0.5	0.13	B
7	3	42	27.6	19-23.3	155-21.6	4.4	2.0	16	138	3.3	0.11	0.7	0.8	0.16	C
7	4	37	55.8	19-19.5	155-15.6?	8.4		10	177	3.3	0.23	1.5	2.2	0.17	C
7	7	48	26.4	19-23.5	155-25.1	8.0*	2.3	17	184	6.9	0.14	0.9		0.13	C
7	7	54	38.7	19-19.8	155-12.6	8.0*	1.7	11	204	5.1	0.20	1.4		0.18	C
7	11	35	2.9	19-24.0	155-25.9	4.4	1.8	11	236	8.4	0.18	0.9	0.7	0.08	C
7	16	37	1.6	19-23.3	155-25.2	8.0*	1.6	11	225	6.6	0.27	1.6		0.14	C
7	23	40	44.8	19-18.9	155-16.3	8.5	1.5	11	184	2.9	0.25	1.5	2.1	0.17	C
8	0	33	21.1	19-24.7	155-27.8	7.4	1.7	11	220	11.4	0.20	1.2	0.7	0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 8	18	45	33.6	19- 5.2	155-27.7	28.0		14	316	7.9	1.15	5.4	7.5	0.11	D
8	23	21	12.4	19-23.9	155-24.1	8.0*	1.5	15	199	6.9	0.16	1.0		0.13	C
9	2	3	38.9	19-22.1	155-17.1	26.8	2.0	16	89	2.1	0.21	0.9	2.0	0.10	A
9	2	24	2.4	19-21.0	155-14.7	23.6	1.0	15	150	1.7	0.15	0.8	1.4	0.08	B
9	6	11	58.3	19-14.9	155-29.4	2.4	2.3	14	216	10.3	0.26	1.5	1.2	0.16	C
9	11	24	41.9	19-23.7	155-21.3	8.0*	1.6	12	187	6.9	0.08	0.6		0.07	C
10	2	3	11.6	19-20.4	155- 7.3	5.4	2.1	14	161	5.4	0.16	1.1	1.2	0.16	C
10	7	22	47.6	19-18.8	155- 8.5	8.0*		10	186	6.5	0.11	1.0		0.11	C
10	9	24	3.3	19-22.4	155-23.9	7.2	1.7	16	169	4.2	0.10	0.7	0.5	0.13	C
10	9	37	22.0	19-12.9	155-19.9	43.3	2.4	11	220	9.7	1.77	4.7	14.7	0.11	C
10	9	37	32.9	19-19.3	155-17.8	31.4	2.3	17	125	1.7	0.22	1.2	1.9	0.11	B
10	12	39	1.9	19-16.9	154-56.6?	21.2*		10	304	12.3	5.03	0.0		0.36	D
10	15	52	37.2	19-23.8	155-26.4	7.8	2.0	17	101	8.5	0.07	0.5	0.9	0.09	A
10	15	57	12.1	19-19.8	155- 4.6?	7.9	2.3	13	176	2.9	0.15	1.5	1.1	0.17	C
10	18	54	32.9	19-19.6	155-15.7	29.4	2.2	16	140	3.1	0.23	1.1	2.2	0.11	B
10	23	29	51.4	19-20.1	155-10.9	8.4		11	163	4.2	0.08	0.8	1.3	0.06	C
10	23	59	48.3	19-26.0	154-56.1	4.7		10	186	7.2	0.13	1.1	1.0	0.11	C
11	0	38	33.1	19-36.3	155- 4.1	40.0	2.7	17	185	11.2	0.37	1.6	2.9	0.09	C
11	1	14	49.2	19-29.5	155-35.1	5.2		13	287	20.6	0.60	2.5	1.3	0.08	C
11	1	15	23.1	19-31.6	155-37.3	8.0*		12	300	24.8	0.51	3.0		0.09	D
11	4	27	25.5	19-25.1	155-25.8	8.0*	2.4	16	200	9.8	0.17	1.1		0.13	C
11	7	5	6.9	19-19.6	155-15.9	6.9		14	161	2.8	0.09	0.7	0.6	0.13	C
11	10	39	19.4	19-16.5	155-27.5	6.1	2.0	10	194	10.0	0.23	1.7	1.1	0.18	C
11	11	2	34.7	19-19.6	155-13.3	8.0*	1.4	12	164	5.3	0.11	0.9		0.16	C
11	12	36	57.6	19-22.1	155-23.4	6.5	1.5	10	162	3.5	0.10	0.8	0.7	0.13	C
11	13	35	11.4	19-20.7	155-16.8	25.5	1.8	17	119	1.4	0.20	0.9	1.9	0.11	B
11	15	25	41.1	19-20.2	155-17.3	8.0	1.3	8	157	0.2	0.03	0.3	0.2	0.03	B
11	17	31	44.8	19-36.6	155-16.0	8.0*	1.8	12	253	17.9	0.55	3.2		0.29	D
11	18	48	37.2	19-24.3	155-24.2?	0.9	2.6	18	90	7.7	0.32	2.5	4.2	0.41	C
11	23	46	19.6	19-16.3	155-13.7	8.0*	1.9	12	172	9.1	0.18	1.3		0.18	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 12	2	42	43.8	19-26.5	155-23.0	8.0*	2.2	14	172	6.0	0.10	0.8		0.12	C
12	3	14	39.9	19-20.5	155- 8.4	5.8	3.2	20	142	3.9	0.15	1.2	0.9	0.22	C
12	3	56	26.5	19-18.1	155-14.4	9.1	1.5	11	196	6.5	0.15	1.1	1.8	0.09	C
12	8	25	55.4	19-20.5	155-11.9	9.5	1.8	17	140	3.8	0.08	0.6	1.0	0.09	B
12	9	13	18.9	19- 6.0	155-21.8	24.6	2.0	12	266	12.5	0.41	2.2	4.6	0.15	C
12	10	33	5.1	19-19.8	155-12.4	6.3	2.3	18	146	5.0	0.13	1.0	0.9	0.23	C
12	17	43	26.1	19-20.3	155-12.4?	7.6	2.7	19	142	4.1	0.09	0.8	1.3	0.17	B
12	18	24	50.6	19-20.1	155-26.6?	0.0	2.1	14	192	13.8	7.41	1.4	14.0	0.25	C
12	20	55	15.4	19-18.0	155- 6.3	8.0*	1.9	12	210	6.9	0.32	2.4		0.29	C
12	22	25	7.1	19-20.9	155- 6.6	7.8	2.0	18	136	5.9	0.11	1.0	0.7	0.16	C
13	10	24	20.5	19-19.1	155- 8.9	8.0*		9	181	5.8	0.13	1.2		0.12	C
13	10	29	15.3	19-19.5	155-11.0	8.0*		11	171	5.2	0.10	0.9		0.12	C
13	10	57	22.7	19-19.7	155-11.1	5.7	1.9	12	148	4.9	0.11	0.9	0.8	0.15	B
13	17	47	28.1	19-18.5	155-15.1?	7.7	1.7	16	179	5.0	0.18	1.1	2.0	0.18	C
14	0	34	20.9	19-24.3	155-26.9	5.9	2.1	16	209	9.8	0.26	1.4	1.1	0.21	C
14	1	9	53.3	19-35.4	155-18.9	34.5		9	253	12.8	0.60	2.9	4.3	0.07	D
14	1	48	8.4	19-24.9	155-16.3	14.2	1.7	15	120	1.2	0.06	0.5	0.7	0.08	A
14	3	42	53.5	19-21.1	155-24.8	6.4	1.8	13	175	3.1	0.13	0.8	0.8	0.14	C
14	10	2	31.9	19-11.9	155-36.2	4.1	3.1	17	210	15.2	0.34	2.1	2.5	0.15	C
14	12	0	17.4	19-16.3	155-23.9	3.0	1.7	10	159	7.2	0.15	1.3	2.3	0.16	C
14	12	56	6.4	19-19.4	155-13.5	28.6	2.3	12	182	5.5	0.25	1.2	2.3	0.08	C
14	18	44	1.2	19-21.0	155-13.6	8.6	1.7	14	165	3.3	0.12	0.8	1.2	0.13	C
15	6	2	51.4	19-17.7	155- 7.9?	8.0*	1.7	12	254	8.7	1.50	11.8		1.42	D
15	11	56	21.4	19-24.3	155-29.0	7.5	2.3	16	118	12.5	0.15	0.7	0.9	0.10	B
15	12	5	13.3	19-24.3	155-28.9?	7.5	2.5	18	109	12.4	0.09	0.6	0.5	0.11	B
15	13	32	8.5	19-23.9	155-29.4	7.5	2.4	17	231	12.7	0.37	1.7	1.3	0.16	C
15	19	18	6.6	19-20.7	155-11.8	9.3	2.0	14	139	3.6	0.08	0.6	1.1	0.09	B
16	16	14	46.1	19-23.6	155-17.3	12.7	2.1	11	65	0.9	0.06	0.8	0.5	0.10	A
16	17	43	44.8	19-24.7	155-16.4	13.3	2.0	9	120	2.5	0.07	0.8	0.8	0.08	A
16	18	0	59.8	19- 4.3	155-38.8?	5.4	2.7	11	333	21.4	2.24	17.7	10.3	0.82	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 16	19	46	19.2	19-58.6	155-35.2?	15.8	2.6	13	182	13.3	0.68	5.0	7.1	0.42	D
17	1	8	30.3	18-53.6	155- 4.6	43.8	3.2	17	289	50.3	0.46	3.6	8.6	0.24	D
17	9	50	51.3	19-21.4	155-18.0	30.4	2.1	14	89	2.7	0.26	1.1	2.4	0.08	B
17	14	39	0.6	19-24.6	155-50.1	1.2	2.6	13	318	47.7	0.53	4.3	2.3	0.22	D
18	3	54	20.4	19-20.7	155-13.0	9.8	1.5	14	148	3.5	0.06	0.3	0.6	0.05	B
18	4	53	58.3	19- 6.4	155-37.3?	14.0*	2.4	10	326	17.4	0.91	6.3		0.33	D
18	7	29	47.6	19-20.5	155-12.6	3.5	1.5	12	152	3.7	0.07	0.5	0.8	0.04	B
18	12	54	3.6	19-19.7	155-10.7	2.5	2.3	7	150	13.6	0.25	1.5	1.8	0.16	B
19	3	27	54.9	19-22.0	155- 6.3?	0.0	2.5	8	116	7.0	0.95	2.0	1.7	0.32	C
19	9	33	4.6	19-20.9	155-18.1	33.3	2.7	11	78	2.0	0.13	0.7	1.2	0.05	A
19	18	41	15.7	19-24.9	155-21.?	7.1	2.2	12	172	3.5	0.16	1.2	0.6	0.16	C
19	20	19	13.7	19-24.8	155-22.0	6.4	2.5	11	177	4.0	0.16	1.1	0.7	0.13	C
20	3	20	33.1	19-18.3	155- 6.0?	0.0	2.3	7	198	9.6	1.09	2.8	1.8	0.25	C
20	6	52	46.9	19-21.8	155-15.0	8.0*	1.8	6	126	7.0	0.24	2.1		0.21	C
20	7	56	40.7	19-23.2	155-12.5	8.0*	1.6	8	175	5.1	0.05	0.5		0.05	C
21	0	6	22.8	19-12.8	155-26.1	2.6	3.5	14	136	6.8	0.11	0.9	0.9	0.15	B
21	0	14	25.1	19- 9.6	155-25.4	8.0*	2.1	7	232	4.3	0.41	4.2		0.14	D
21	0	24	11.4	19-14.7	155-29.5?	0.0	2.5	10	182	10.0	0.04	2.2	18.8	0.22	C
21	0	35	0.9	19-10.2	155-26.1	8.0*	2.0	7	205	3.4	0.20	3.0		0.12	C
21	2	40	32.0	19-20.5	155-11.8	9.1	1.9	11	140	3.9	0.11	1.0	1.9	0.12	B
21	3	40	26.8	19-10.5	155-26.3	8.2	2.0	10	193	3.2	0.55	4.6	5.8	0.18	C
21	6	29	12.4	19- 9.7	155-26.1	9.1	2.2	11	224	3.0	0.39	2.9	4.6	0.17	C
21	10	47	0.1	19-20.2	155- 9.0	8.7	1.9	12	146	3.8	0.11	1.2	2.2	0.13	B
21	11	43	43.8	19-19.8	155- 7.6	8.0*	2.0	11	183	8.1	0.07	0.7		0.07	C
21	13	0	5.8	19-26.9	155-12.3?	8.0*	1.7	12	141	9.0	0.18	1.7		0.30	C
21	23	35	2.1	19-20.1	155- 8.5	8.9		8	178	4.4	0.07	0.6	1.1	0.04	B
21	23	35	6.3	19-21.3	155- 8.9	8.0*	2.0	11	133	6.6	0.09	1.0		0.15	C
22	15	41	10.1	19-22.7	155-26.5	6.0	2.0	15	197	12.0	0.19	1.0	0.9	0.15	C
23	2	8	48.2	19-24.0	155-17.2	13.3	1.5	12	71	1.3	0.04	0.3	0.3	0.03	A
23	2	38	16.0	19-14.6	155-11.3	34.5		13	227	14.3	0.26	2.4	2.3	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 23	3	9	56.5	19-19.8	155-15.0	9.2	1.6	11	177	3.7	0.17	1.0	1.6	0.10	C
23	6	16	33.6	19-19.8	155-11.2	8.0*		10	221	4.9	0.17	1.2		0.09	C
23	16	23	14.1	19-22.9	155-26.5?	0.0	1.9	11	259	11.9	0.48	2.0	1.4	0.13	C
23	17	25	24.4	19-24.1	155-23.2	8.8	2.0	14	215	6.2	0.14	0.8	1.6	0.08	B
24	5	13	18.8	19-20.0	155- 8.8	9.1	1.9	8	167	4.3	0.11	0.9	1.7	0.08	B
24	13	5	28.5	19-29.6	155-16.3	8.0*	1.9	8	324	8.0	0.82	5.4		0.23	D
24	14	33	44.8	19-20.9	155-13.2	6.7		10	170	4.0	0.10	0.9	0.8	0.11	C
24	20	9	14.1	19-22.3	155-15.1	28.9	2.5	15	104	0.9	0.17	1.0	1.6	0.06	A
24	21	15	7.6	19-20.3	155- 7.6	9.6		11	162	5.0	0.12	0.9	1.6	0.09	B
24	21	25	25.0	19-56.6	155-33.2	8.0*		9	333	63.7	3.76	22.3		0.07	D
24	21	42	8.6	19-19.9	155- 7.9	5.4	2.7	17	151	5.2	0.14	1.0	1.0	0.21	C
24	22	2	8.5	19-21.4	155-24.5	8.0*	1.6	10	297	9.4	0.85	4.4		0.08	D
24	23	49	12.9	19-22.8	155-22.8?	5.3	1.4	9	288	5.7	0.57	2.7	0.9	0.10	D
25	0	29	58.0	19-23.1	155-16.0	11.0	1.6	11	87	1.4	0.10	0.5	0.9	0.05	A
25	4	19	13.4	19-20.9	155-12.4	12.7	1.7	9	179	5.1	0.14	0.4	1.1	0.03	B
25	7	21	56.9	19-19.9	155-12.9	8.0*		10	197	5.5	0.14	1.1		0.13	C
25	7	50	15.5	19-21.2	155-12.6	11.1		8	168	4.9	0.21	0.8	1.9	0.05	B
25	8	3	1.7	19-22.5	155-15.2	9.9	4.0	20	87	1.3	0.06	0.6	0.6	0.14	B
25	8	9	0.2	19-23.6	155-16.1	13.1		7	168	1.3	0.17	1.9	1.1	0.09	C
25	8	14	49.6	19-22.8	155-16.0	11.7		10	94	0.7	0.15	0.7	1.3	0.07	A
25	9	41	20.0	19-19.2	155-15.8	8.5	1.0	9	182	3.3	0.24	1.6	2.0	0.14	C
25	16	27	31.1	19-18.4	155-23.7	6.8	2.0	11	154	10.2	0.27	1.0	0.7	0.08	B
25	19	59	12.6	19-26.6	155-21.5	7.6	1.5	11	234	2.3	0.13	0.8	0.4	0.08	C
25	20	10	33.7	19-22.1	155-16.1	33.9	2.2	16	97	0.6	0.26	1.2	2.3	0.09	B
25	20	50	13.3	19-24.6	155-17.8	1.8	0.8	8	102	0.5	0.05	0.4	0.2	0.06	A
25	22	4	0.7	19-19.6	155-13.4	8.0*	1.6	10	197	5.2	0.14	1.0		0.12	C
25	23	37	9.9	19-27.4	155-21.4	7.9	1.5	11	269	1.3	0.29	1.8	1.1	0.10	C
25	23	39	1.9	19-26.6	155-21.7	7.6	1.3	11	241	2.5	0.18	1.2	0.4	0.09	C
25	23	56	13.1	19-23.3	155-16.3	24.2	4.5	20	60	0.8	0.19	1.3	2.0	0.15	C
26	0	23	49.3	19-23.2	155-15.8	23.9	2.8	19	60	1.5	0.09	0.7	1.0	0.10	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 26	0	35	11.6	19-25.9	155-14.1	8.0*	1.1	11	141	6.4	0.21	1.8		0.30	C
26	0	40	42.4	19-22.9	155-17.1	18.4	1.7	11	92	1.1	0.20	0.9	1.9	0.06	A
26	0	42	32.8	19-23.3	155-15.8	26.1	2.0	11	106	1.6	0.19	1.3	1.9	0.08	B
26	0	47	39.5	19-23.4	155-16.1	18.2	1.5	11	96	1.2	0.15	0.7	1.5	0.05	A
26	0	50	33.3	19-23.4	155-16.2	18.8	1.3	11	93	1.0	0.20	0.9	2.0	0.06	A
26	0	53	10.4	19-22.2	155-16.8	17.5	1.5	12	96	1.6	0.16	0.7	1.5	0.06	A
26	1	5	59.7	19-24.1	155-16.8	13.1	1.6	10	93	1.3	0.04	0.4	0.4	0.03	A
26	1	8	8.9	19-23.3	155-16.4	25.2	2.7	16	60	0.7	0.13	0.8	1.2	0.10	A
26	2	1	42.3	19-23.7	155-15.4	17.6	1.5	11	109	2.5	0.14	0.7	1.4	0.05	A
26	2	40	28.4	19-22.9	155-16.7	17.8	1.8	13	85	0.9	0.12	0.6	1.1	0.05	A
26	3	5	17.6	19-23.2	155-16.9	21.2	1.5	12	82	0.3	0.21	0.9	1.9	0.06	A
26	4	1	54.6	18-55.2	155-39.5?	47.4*	2.8	10	314	33.3	1.13	14.2		0.70	D
26	4	40	53.3	19-22.6	155-16.0	26.8	2.7	18	66	0.5	0.13	0.8	1.2	0.10	B
26	10	42	28.7	19-22.7	155-15.5	10.9	1.6	16	89	0.9	0.06	0.5	0.6	0.09	B
26	12	21	47.1	19-23.0	155-15.7	11.2	1.5	12	94	1.1	0.05	0.5	0.5	0.06	A
26	13	40	26.0	19-23.4	155-16.7	19.9	1.6	8	103	0.1	0.24	1.1	2.3	0.05	B
26	13	58	15.9	19-24.4	155-15.4	3.3	0.8	6	248	3.0	0.07	0.3	0.6	0.01	C
26	14	38	54.4	19-23.7	155-16.8	20.9	1.4	12	86	2.2	0.31	1.8	2.8	0.13	B
26	16	34	38.7	19-22.6	155-15.3	10.0	1.5	13	91	1.2	0.09	0.6	0.9	0.08	A
26	17	6	0.2	19-23.3	155-15.2	8.5		11	104	2.0	0.10	0.8	1.2	0.11	B
26	17	20	42.6	19-24.3	155-17.2?	0.7	0.4	9	128	0.9	0.16	0.6	0.5	0.16	B
26	17	46	13.7	19-21.7	155-17.7	27.2		16	83	3.1	0.12	0.8	1.2	0.09	A
27	1	40	5.8	19-11.1	155-22.4	4.5	1.7	11	206	10.1	0.19	1.5	0.9	0.13	C
27	2	16	32.6	19-12.1	155-37.4	3.2	2.6	15	212	17.5	0.36	2.7	2.7	0.18	C
27	2	32	53.2	19-22.7	155-15.0	19.9	1.8	12	103	1.7	0.18	0.9	1.8	0.06	A
27	2	35	49.2	19-22.4	155-15.0	21.0	1.8	12	110	1.2	0.23	0.9	2.1	0.07	B
27	2	59	25.5	19-20.4	155-12.2	9.9	1.3	10	195	3.9	0.08	0.5	0.7	0.05	B
27	4	13	52.9	19-24.4	155-18.2	6.5	1.1	8	111	1.4	0.18	0.6	1.2	0.05	A
27	4	52	41.3	19-24.2	155-16.2	4.4	0.9	8	207	1.8	0.14	0.7	0.9	0.05	B
27	4	52	58.0	19-20.5	155-14.2	8.7	1.3	12	170	3.1	0.14	0.9	1.4	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 27	4	59	48.6	19-22.4	155-17.6	8.2	1.2	6	196	2.2	0.20	1.3	1.5	0.04	C
27	5	20	16.0	19-24.4	155-17.6	9.6	1.4	8	109	0.6	0.18	0.9	1.4	0.04	A
27	5	32	30.4	19-24.4	155-17.6	8.2	1.2	9	107	0.6	0.05	0.4	0.4	0.03	A
27	5	42	7.1	19-23.7	155-17.5	7.1	1.0	7	136	1.4	0.35	0.6	2.1	0.03	B
27	5	49	15.2	20- 7.3	155-56.4?	13.6*	2.7	10	317	27.1	1.25	10.5		0.32	D
27	7	6	45.8	19-12.4	155-24.1	6.8	1.5	6	183	8.4	0.13	3.0	1.1	0.06	C
27	7	22	54.9	19-19.5	155-15.6	6.9	1.6	14	164	3.4	0.10	0.8	0.5	0.14	C
27	9	9	40.2	19-20.1	155- 8.4	9.0		7	166	4.4	0.04	0.3	0.6	0.02	B
27	11	54	27.7	19-20.0	155-16.3	24.1		17	135	2.0	0.14	1.0	1.5	0.13	B
27	15	56	17.0	19-22.0	155- 4.7?	0.5		14	111	5.0	2.03	1.0	7.7	0.23	B
27	16	37	25.3	19-19.3	155-48.0	5.8	2.5	13	278	20.7	1.12	5.8	2.3	0.18	D
27	16	54	27.2	19-15.4	155-15.9	23.7	2.1	18	202	6.7	0.23	1.5	1.9	0.12	C
27	17	17	45.6	19-20.3	155-15.0	25.4	1.5	14	165	2.7	0.19	1.1	1.6	0.09	C
27	18	6	16.5	19-40.2	156-17.6?	5.6	3.4	24	278	42.4	0.42	3.9	3.0	0.17	D
27	18	36	16.5	18-57.3	155-31.0?	29.3	2.2	13	304	16.0	0.30	2.3	2.7	0.12	C
27	20	51	15.9	19-25.9	155-29.3	5.9		15	151	12.7	0.19	1.0	1.0	0.18	C
27	20	59	18.9	19-25.1	155-16.3	21.8	1.2	13	75	2.3	0.16	1.0	1.9	0.12	B
27	22	55	38.9	19-23.9	155-16.9	13.3	1.5	19	69	0.9	0.05	0.6	0.4	0.12	B
27	23	55	52.2	19-45.1	155-21.6?	31.7	2.2	20	91	10.9	0.24	1.0	2.5	0.08	B
28	0	49	15.2	19-10.0	155-21.8?	0.0	2.1	17	197	10.8	0.39	1.6	0.8	0.22	C
28	0	59	33.8	19-22.3	155-16.3	16.6	1.9	15	90	0.8	0.18	1.2	1.7	0.12	B
28	1	18	50.4	18-54.3	155-31.9	33.7	2.3	18	264	16.4	0.83	4.2	5.8	0.15	D
28	1	40	6.7	19-25.5	155-15.9	21.1	1.8	9	127	2.9	0.30	1.3	3.2	0.10	B
28	2	55	22.0	19-18.0	155-15.6	22.4	1.4	12	226	4.9	0.38	1.8	3.0	0.09	C
28	3	0	17.1	19-10.6	155-22.8	0.7	2.5	19	201	9.1	0.48	1.3	1.0	0.20	C
28	3	36	47.4	19- 7.6	155-20.3?	0.0	2.1	17	210	13.7	6.71	2.0	12.3	0.21	C
28	8	9	53.3	19- 7.7	155-19.8?	0.0	2.5	21	192	14.5	5.15	1.3	9.5	0.21	C
28	8	17	28.1	19- 8.4	155-20.5	3.2	2.0	17	206	13.0	0.23	1.2	1.0	0.18	C
28	10	58	23.7	19-10.3	155-21.3	7.0	2.4	19	176	11.6	0.35	2.2	1.7	0.27	D
28	11	40	8.2	19- 8.7	155-20.1?	0.0	2.3	21	188	13.8	0.40	1.1	0.8	0.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 28	13	1	22.0	19-21.7	155-16.3	24.5	1.4	12	112	1.5	0.14	0.8	1.4	0.07	A
28	16	18	2.7	19-17.1	155-13.5	2.6	1.6	17	229	8.8	0.35	1.7	1.3	0.29	D
28	17	15	20.2	19-14.9	155-15.8	24.5	2.1	19	197	7.5	0.20	1.4	1.8	0.13	C
28	19	28	38.1	19-23.1	155-16.7	12.6	1.8	19	67	0.5	0.05	0.7	0.4	0.13	B
29	1	54	34.6	19-20.0	155-16.C?	8.1		12	178	2.5	0.13	1.3	1.1	0.15	C
29	2	39	28.6	19-18.5	155-12.7?	0.C	1.7	17	202	7.6	6.52	1.5	12.2	0.26	C
29	3	15	45.2	19-14.5	155-19.2	36.9		13	189	6.4	0.25	1.5	2.2	0.11	C
29	4	10	53.8	19-26.9	155-12.8?	8.C*	1.4	10	235	8.3	2.37	15.3		0.98	D
29	5	37	19.1	19- 8.8	155-38.3	4.4	2.4	18	182	11.5	0.18	1.4	1.2	0.21	C
29	6	22	59.5	18-57.6	155-30.9	30.8	2.6	20	239	16.0	0.25	1.6	2.5	0.12	C
29	17	35	48.9	19- 1.0	155-21.1?	24.3	2.4	17	234	19.7	0.38	2.5	4.0	0.14	D
29	21	37	47.8	19-20.6	155-24.3	6.7	2.1	20	80	1.9	0.09	0.8	0.7	0.19	B
29	21	44	43.4	19-21.5	155-23.1	5.2	1.5	12	165	2.4	0.12	0.9	0.8	0.13	C
29	22	58	16.7	19-22.8	155-16.3	24.3		15	75	1.0	0.17	1.0	1.6	0.11	B
29	23	35	16.3	19-21.4	155-16.3	23.4	1.9	18	117	1.8	0.14	1.0	1.4	0.13	B
30	1	29	39.5	19-19.0	155- 7.6?	0.0	2.0	19	190	10.7	4.57	1.1	8.5	0.20	C
30	4	44	22.2	19- 4.6	155-17.0	19.6		18	229	21.0	0.40	2.4	6.3	0.23	D
30	5	10	33.3	19-24.1	155-17.7	9.5	1.6	11	7C	1.1	0.09	0.5	0.8	0.05	A
30	5	16	31.1	19-29.9	155-49.6	6.4	2.6	14	268	35.3	0.41	6.3	8.1	0.13	D
30	6	25	24.2	19-22.3	155-24.4	5.7	1.6	16	115	4.3	0.11	0.8	0.9	0.19	B
30	7	50	45.2	19-23.2	155-25.1	6.4	1.7	17	12C	6.3	0.11	0.8	0.8	0.17	B
30	8	38	24.9	19- 8.2	155-19.9	5.0	2.4	16	226	14.1	0.26	1.4	1.0	0.15	C
30	10	55	44.5	19-23.2	155-16.5	12.0	1.5	16	67	0.6	0.07	0.8	0.7	0.14	B
30	11	24	38.1	19-22.2	155-16.4	24.4	1.9	15	93	1.C	0.11	0.7	1.1	0.09	A
30	12	36	13.6	19-20.0	155-18.3	27.2	1.7	10	106	1.6	0.04	0.4	0.4	0.01	A
30	12	38	26.8	18-54.6	155-30.3	16.5*		14	307	27.9	0.53	3.8		C.19	D
30	18	24	2.9	19-19.4	155-15.8	6.2		14	183	3.2	0.14	1.0	0.8	0.17	C
30	20	23	0.8	18-60.0	155-30.7	29.3		15	298	18.3	0.30	2.0	3.0	0.15	C
MAY 1	1	15	15.5	19-22.5	155-17.6	7.1	2.5	9	192	2.1	0.19	1.3	0.8	0.10	C
1	1	44	40.0	19-18.5	155-25.0	4.4		12	158	4.4	0.18	1.4	1.4	0.24	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY	1	4	41	30.0	19-24.3	155-17.6	1.0		9	97	0.7	0.06	0.3	0.4	0.09	A
	1	5	5	29.8	19- 8.4	155-20.1?	0.0	2.1	17	188	13.7	5.94	1.4	11.0	0.20	C
	1	7	27	59.7	19-19.3	155-12.6?	0.1	1.4	14	199	5.9	4.09	1.8	7.7	0.29	D
	1	9	58	1.6	19-20.9	155-13.1	12.4	1.3	9	172	4.3	0.20	0.8	1.6	0.05	B
	1	10	53	16.8	19-18.8	155-16.7	10.2	1.2	8	199	2.8	0.06	0.3	0.4	0.02	B
	1	11	8	14.1	19-19.9	155- 8.8	8.7	1.4	10	168	4.4	0.08	0.8	1.4	0.08	B
	1	13	3	29.3	19-27.9	155-16.4?	8.0*	1.3	10	310	5.0	0.17	2.3		0.36	D
	1	16	50	56.0	18-57.8	155-30.3	28.7	2.4	14	301	17.0	0.59	3.7	3.9	0.15	D
	1	18	39	53.1	19-25.6	155-51.8?	4.6*	2.2	11	202	12.1	0.17	2.0		0.22	C
	1	22	2	28.7	18-56.5	155-31.5	30.1	2.4	17	249	15.5	0.30	2.0	3.0	0.14	C
	1	23	55	54.1	19-20.9	155-14.4	9.1	1.2	12	160	2.3	0.12	0.8	1.2	0.10	C
	2	0	25	23.5	19-24.5	155-15.6	3.5	0.6	6	247	2.7	0.06	0.2	0.3	0.01	C
	2	1	33	26.4	20- 4.5	155-54.0	26.7*	2.7	12	316	21.4	0.48	3.3		0.08	D
	2	3	24	56.0	18-59.0	155-30.4	28.9	2.3	16	299	19.8	0.47	2.6	4.0	0.15	D
	2	6	42	33.9	19-19.9	155- 9.1	9.0	1.6	11	168	4.3	0.11	1.0	1.9	0.11	C
	2	8	22	22.0	19-20.0	155-12.9?	2.4	1.5	22	142	4.6	0.45	0.9	1.7	0.30	C
	2	8	33	38.5	19-19.1	155-14.0	10.2	1.6	9	203	5.5	0.28	1.9	2.6	0.14	C
	2	11	39	2.4	19- 3.1	155-30.3	25.8		13	288	12.6	1.27	6.9	6.9	0.14	D
	2	14	36	26.7	18-55.6	155-32.2	30.1		13	308	14.8	2.03	11.0	8.7	0.14	D
	2	14	39	15.7	19-21.9	155-11.7	6.2	2.0	20	128	1.8	0.09	0.9	0.7	0.23	C
	2	18	32	57.8	19-28.5	155-49.2	10.3	2.8	15	155	11.8	0.13	2.4	3.7	0.15	C
	2	19	39	10.2	19-30.9	155-42.5	9.4	2.5	15	130	22.4	0.09	0.9	1.4	0.11	B
	2	22	30	5.7	19-23.9	155-15.3	34.9		17	87	2.8	0.17	0.8	1.6	0.08	A
	3	0	25	27.6	18-58.8	155-33.4	31.6		20	229	11.5	0.45	2.2	3.9	0.16	C
	3	0	39	29.7	19-29.6	156- 6.9?	48.0*	2.9	17	282	20.5	1.22	8.5		0.27	D
	3	0	41	49.6	19-20.8	155-14.8	8.4		13	137	2.0	0.07	0.6	0.9	0.09	B
	3	1	1	35.3	19- 2.3	155-29.9	25.7		16	290	13.8	1.19	6.5	6.3	0.14	D
	3	4	15	10.5	19-49.0	155-21.9	24.8	2.4	11	128	8.4	0.40	2.0	5.0	0.09	B
	3	8	2	28.3	19-11.4	155-19.9	38.6	2.5	17	194	12.2	0.55	2.5	4.4	0.19	C
	3	12	13	59.6	19- 0.1	155-29.6	27.8		17	282	17.6	0.85	4.7	4.7	0.14	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 3	13	5	37.0	19-19.1	155-15.8	6.1		13	186	3.4	0.16	1.2	0.8	0.20	C
3	14	3	9.1	19-10.4	155-20.9	33.6	2.5	16	177	12.3	0.52	2.3	5.3	0.24	C
3	15	36	34.9	19-22.1	155-12.5	3.9		9	131	0.8	0.04	0.3	0.6	0.05	B
3	17	4	35.6	19-10.1	155-36.1	5.2	2.3	15	121	9.0	0.12	0.9	1.0	0.17	B
3	20	27	49.9	18-55.0	155-32.2	35.6	2.8	21	250	15.4	0.52	2.7	3.8	0.13	D
3	21	28	1.9	19-20.7	155-25.4?	3.8	1.8	11	129	3.9	0.65	1.5	2.3	0.25	C
3	21	30	13.3	19-21.2	155-26.0?	0.6	1.8	9	130	5.1	3.64	1.7	13.6	0.24	C
3	21	30	49.5	19-21.8	155-23.0	3.2	1.6	8	175	2.9	0.09	0.6	0.9	0.08	B
4	0	22	48.4	19-51.0	155-37.2?	23.7*		12	284	18.6	3.74	23.3		0.14	D
4	7	16	8.5	19-22.2	155-16.8	19.1		16	89	1.5	0.14	1.0	1.4	0.14	B
4	10	23	20.6	19-26.9	155-15.3	25.3	2.3	20	52	4.8	0.13	0.8	1.5	0.11	B
4	11	36	41.7	19-19.3	155-14.9	30.1		14	179	5.5	0.19	1.2	1.9	0.09	C
4	15	13	34.3	19-14.4	155-19.7	25.9		18	180	6.8	0.17	1.2	1.7	0.11	C
4	21	57	51.0	19-22.2	155-17.1	20.1		14	85	2.1	0.12	0.7	1.1	0.08	A
4	23	51	23.9	19-27.1	155-30.3?	4.1	2.1	19	160	13.1	2.38	1.5	8.3	0.27	D
5	0	38	45.8	19-24.4	155-17.0	8.9	1.5	12	83	1.0	0.04	0.2	0.3	0.03	A
5	2	46	28.6	19-21.8	155-27.6	3.0	2.0	19	128	8.1	0.13	0.8	1.2	0.21	C
5	5	59	17.4	20- 4.1	155-18.8	7.8	2.8	21	253	19.9	0.39	2.5	2.5	0.21	D
5	7	34	2.4	19-16.1	155-24.3	0.2*	1.8	16	128	7.8	0.07	0.6		0.13	C
5	9	0	37.0	19-23.9	155-16.1	1.9	1.0	11	150	1.6	0.08	0.4	0.2	0.09	B
5	11	1	33.6	19-20.5	155-12.3	7.5		12	153	5.2	0.11	1.0	0.6	0.15	C
5	11	57	39.7	19-21.2	155-28.3	7.9	2.8	23	71	9.0	0.16	0.8	1.1	0.17	B
5	13	16	26.4	19-49.4	155-54.0	27.6		19	272	33.6	0.24	1.6	1.5	0.08	C
5	15	24	10.1	19-21.6	155-14.1	32.7	2.5	24	128	2.1	0.16	1.0	1.5	0.14	B
5	15	26	3.2	19-15.1	155-22.1?	8.1	1.9	19	150	8.0	0.36	2.5	2.0	0.49	C
5	16	7	34.1	19-18.4	155-25.6	3.3	1.7	17	108	4.4	0.11	0.8	1.2	0.21	B
5	16	49	14.9	19-19.5	155-11.1	4.9		13	171	5.3	0.20	1.5	1.3	0.25	C
5	18	50	38.0	19-23.4	155-16.7	13.1		14	85	0.2	0.05	0.6	0.5	0.09	A
5	18	53	31.6	19-24.0	155-16.8	12.1		17	77	1.1	0.05	0.6	0.5	0.10	A
5	22	18	3.1	20- 4.2	155-30.1	38.8		11	312	25.9	1.05	5.5	5.7	0.08	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 6	3	24	2.3	19-18.3	155-11.3	32.5		13	236	7.5	0.36	1.6	2.8	0.07	C
6	5	40	19.1	19-26.7	155-28.1?	2.5		12	237	10.2	0.54	3.4	7.7	0.33	D
6	9	6	11.6	19-27.4	155-15.0	36.0		11	122	9.9	0.22	1.1	2.2	0.10	B
6	9	50	50.2	19-17.0	155-20.1	47.2		17	145	3.1	0.69	1.6	6.0	0.12	C
6	10	7	42.8	18-56.4	155-32.3	35.1		18	239	14.2	0.54	2.5	4.3	0.11	C
6	14	23	42.9	19-12.5	155-23.9	26.7		13	181	9.0	0.21	1.5	2.0	0.15	C
6	17	42	25.0	19- 9.3	155-38.4	6.0	2.7	20	136	10.5	0.16	1.2	1.0	0.21	C
6	18	32	53.3	19-27.0	155-25.5	8.0*	1.6	10	191	6.4	0.27	2.0		0.19	D
6	21	1	52.7	19-16.6	155- 0.3	34.4		17	227	7.7	0.39	1.8	3.1	0.11	C
6	21	5	5.1	19-58.4	155-21.9	11.4	3.3	26	265	9.6	0.17	1.2	0.7	0.10	C
6	22	56	1.4	19-10.9	155-30.5	43.1		11	159	13.7	0.48	1.9	4.7	0.09	C
6	23	4	23.6	19-21.0	155-25.9?	2.2		13	126	4.8	0.19	1.4	2.2	0.27	C
7	0	54	12.4	19-26.6	155-26.4	8.0*	1.7	13	217	8.0	0.15	0.9		0.10	C
7	2	14	38.1	19-17.1	155- 4.1	37.5		15	220	5.6	0.22	1.2	1.7	0.07	C
7	3	34	13.4	19-18.8	155-15.0	5.8	2.6	23	148	4.8	0.12	0.9	0.7	0.23	C
7	8	42	58.6	19-20.6	155-24.4	6.4	1.8	19	109	2.1	0.13	1.0	0.9	0.23	B
7	9	18	38.5	19-17.7	155- 3.1	30.7		17	247	4.0	0.24	1.2	1.8	0.06	C
7	10	21	26.0	19-20.2	155-15.7	6.8	1.4	15	140	2.9	0.09	0.7	0.6	0.16	B
7	13	1	27.6	19-21.0	155-12.3	5.1		15	146	2.7	0.16	1.3	1.1	0.25	C
7	19	53	45.0	19-16.3	155-20.4	24.1		15	216	4.2	0.20	1.4	1.5	0.13	C
8	5	10	59.1	19-21.3	155-14.8	28.1	3.1	23	147	1.4	0.12	0.8	1.1	0.13	B
8	7	8	23.6	19-19.4	155-15.5	6.5		16	181	3.5	0.15	1.0	0.7	0.20	C
8	7	58	31.9	19-27.1	155-25.6	8.0*		11	168	6.5	0.09	0.7		0.09	C
8	10	53	38.2	19- 1.7	155-29.9	25.9		13	292	14.9	1.47	8.0	7.5	0.16	D
8	15	11	29.9	19-23.7	155-25.8	3.5	1.6	17	125	7.8	0.18	1.2	1.8	0.28	C
8	16	18	40.9	19-20.8	155- 6.8?	0.9	2.4	24	138	5.8	0.66	1.6	1.2	0.37	C
8	16	49	33.1	19-18.5	155-11.9	8.0*	1.7	14	184	7.5	0.09	0.7		0.11	C
8	22	16	31.8	19-53.0	155-16.4	43.4	2.7	25	222	7.4	0.19	1.0	1.8	0.10	C
8	22	47	38.8	19-15.4	155- 8.9	34.8		17	201	12.5	0.17	1.0	1.4	0.07	B
9	2	43	9.5	19-19.6	155-16.0	5.9	1.7	16	161	2.5	0.11	0.8	0.6	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 9	2	59	4.0	19-25.0	155-25.8	5.6	1.7	17	169	9.9	0.18	1.1	1.3	0.22	C
9	6	57	2.4	19-26.4	155-24.5	8.0*	1.7	11	182	6.5	0.09	0.7		0.09	C
9	7	28	53.1	19-24.0	155-17.9	9.3	1.4	11	76	1.4	0.11	0.5	1.0	0.05	A
9	13	54	37.1	19-44.8	155-53.3?	30.3		14	292	45.3	0.44	2.7	1.9	0.09	D
9	17	1	26.9	19-27.6	155-17.1	26.5	2.3	20	105	4.1	0.13	0.8	1.3	0.10	B
9	20	12	14.5	19-20.6	155-12.2?	7.3	1.9	18	151	3.5	0.10	1.0	1.5	0.18	C
9	21	29	35.9	19-53.6	155-30.0	25.0	2.7	22	179	13.2	0.13	0.8	1.8	0.09	B
10	0	58	11.0	19-22.4	155-25.8	6.1		15	121	6.1	0.14	1.0	1.2	0.19	B
10	3	53	45.3	19-21.1	155-25.9?	0.7	1.7	13	117	4.8	3.61	0.9	13.7	0.19	B
10	7	34	43.8	19-15.5	155- 7.3?	23.0		15	224	13.0	2.47	9.9	19.6	0.24	D
10	12	55	1.8	19-11.8	155-30.9	44.9		15	85	6.8	0.57	2.4	5.3	0.12	B
10	14	23	15.3	19-20.8	155- 7.1?	0.7	1.8	17	153	5.3	2.11	1.4	7.9	0.27	D
10	14	30	54.4	19-20.5	155- 7.2?	0.4		17	158	5.5	2.18	1.5	8.1	0.30	C
10	18	24	31.8	19-11.1	156-19.4?	5.9		18	328	56.3	0.38	17.1	10.1	0.18	D
10	19	39	24.7	19-18.1	155-46.7	6.0	2.6	18	230	17.8	0.62	2.7	2.3	0.16	D
10	19	46	21.2	19-32.4	154-53.3?	8.0*		15	276	6.4	0.44	4.4		0.36	D
10	20	2	22.4	19-24.9	155-22.8?	8.1	1.7	20	115	5.8	0.08	0.7	0.6	0.16	B
10	20	15	39.9	19-13.9	155-23.4	28.3		11	174	11.2	0.15	1.1	1.3	0.08	C
10	22	19	5.0	19- 5.3	155-22.6	37.3		20	255	12.1	0.35	2.4	2.6	0.20	D
10	23	11	28.9	19-21.3	155- 4.3	18.0		10	253	9.8	0.46	3.0	3.2	0.09	D
11	0	28	47.8	19-11.0	155-16.0	34.5		15	232	13.7	0.28	2.0	2.3	0.15	C
11	0	30	13.8	19-14.0	155-17.3?	36.5		17	205	7.6	0.22	2.0	2.1	0.12	C
11	0	36	22.5	19-12.7	155-22.6	27.0		12	192	11.1	0.25	1.7	2.1	0.12	C
11	1	17	8.2	19-26.3	155-39.0	2.8		12	266	21.3	0.37	1.8	0.9	0.09	C
11	4	26	1.5	19-17.6	155-10.4?	0.0	2.3	20	172	8.3	7.56	1.4	14.2	0.32	D
11	6	2	12.1	19-25.8	155-22.5	7.0	1.6	19	149	4.6	0.10	0.8	0.6	0.18	C
11	8	31	8.5	19-17.1	155-11.3?	0.0		16	236	9.5	2.67	2.5	23.7	0.36	D
11	9	14	40.3	18-57.1	155-30.6	29.9		18	303	23.4	0.44	2.6	4.6	0.18	D
11	14	27	56.3	19-11.5	155-22.5	27.8		17	203	10.1	0.22	1.4	2.1	0.17	C
11	14	46	58.3	19-20.7	155-13.4	4.9		19	146	3.7	0.14	1.0	1.1	0.28	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 11	16	8	31.8	19-23.5	155-22.6	5.0	1.4	13	159	5.2	0.17	1.3	1.4	0.19	D
11	19	50	27.4	19-19.4	155-13.9	9.9		14	196	5.0	0.12	0.7	1.0	0.07	B
11	20	16	53.5	19-14.3	154-55.8	31.8		13	286	16.2	0.30	2.2	3.0	0.12	C
12	0	32	56.1	19-18.9	155-12.9	29.2		10	218	8.0	0.91	4.8	7.0	0.14	C
12	0	42	8.5	19-24.0	155-17.3	16.8		12	78	1.3	0.09	0.5	1.0	0.06	A
12	5	3	37.9	19-22.0	155-26.9	2.9	1.7	15	125	7.1	0.14	1.0	1.8	0.23	C
12	7	50	6.8	19-45.8	155- 4.5	42.4	3.1	26	211	5.0	0.22	1.3	1.7	0.13	C
12	9	28	18.1	19-45.7	156-26.3	8.0*	3.1	20	306	60.4	0.16	1.3		0.09	D
12	9	52	57.7	19-18.9	155- 8.1?	0.0	1.8	15	183	6.6	5.01	1.8	9.3	0.31	D
12	14	23	8.8	19-19.3	155- 9.3?	3.6	2.7	17	157	5.2	0.18	1.2	1.0	0.22	C
12	18	4	46.0	19-24.8	155-24.4	6.1		12	185	8.3	0.15	1.1	1.0	0.16	C
12	19	29	28.1	19-13.8	155-16.0?	8.0*	1.7	12	278	9.0	0.56	3.3		0.31	D
12	19	30	46.3	19-17.8	155-14.7	5.8	2.1	15	214	6.3	0.34	1.9	1.3	0.29	D
12	21	26	33.2	19-21.4	155-25.1	6.6	1.6	17	115	3.9	0.14	1.1	1.0	0.23	B
12	21	31	40.5	19-11.6	156-14.4	3.7	2.8	16	301	49.2	0.31	4.4	4.4	0.11	D
12	21	48	40.3	19-19.6	155-18.0	6.4	1.1	10	148	1.4	0.08	0.6	0.4	0.07	B
12	22	33	6.3	19-14.8	155-22.4?	0.0	1.8	21	149	8.8	0.67	1.1	1.2	0.27	C
12	23	44	11.9	19-24.1	155-45.6?	8.0*		10	296	22.5	3.68	21.4		0.93	D
13	0	50	41.6	19-24.2	155-17.4	9.5	1.6	12	76	0.9	0.08	0.5	0.7	0.06	A
13	3	30	56.5	19-17.8	155-12.0?	0.0	1.7	16	231	8.8	1.69	2.1	22.0	0.34	D
13	3	53	1.2	19-23.8	155-23.4	4.9	1.6	12	171	6.4	0.11	0.8	0.9	0.12	C
13	4	19	47.3	19-25.7	155-26.5	3.4	1.6	10	221	9.4	0.22	1.1	1.2	0.11	C
13	5	24	59.8	19-18.5	155-15.6	9.9	1.5	9	203	4.4	0.30	1.6	2.4	0.12	C
13	9	50	23.5	19-19.5	155- 9.9?	5.6		15	172	4.8	0.25	1.8	1.3	0.31	D
13	10	30	46.6	19-12.6	155-30.3	29.2		20	75	7.1	0.19	1.1	2.1	0.13	B
13	13	9	36.8	19-11.8	155-26.4	4.7	2.3	22	142	5.1	0.12	1.0	0.8	0.22	C
13	13	29	52.5	19-19.9	155-11.7?	2.7		14	213	4.9	0.66	1.9	2.1	0.34	D
13	13	31	50.8	19-20.5	155-12.3	5.4		13	191	3.7	0.38	2.5	1.8	0.30	D
13	20	29	6.1	19-54.9	156-13.2	8.2	4.1	28	207	53.8	0.42	2.1	6.1	0.21	D
13	23	24	4.3	19-23.7	155-17.3	13.7		14	57	1.0	0.06	0.5	0.6	0.07	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 14	1	52	14.0	19-18.2	155-23.9	27.9		16	112	3.9	0.14	0.9	1.6	0.11	B
14	5	13	43.7	19-19.4	155-12.6?	2.2	1.7	20	149	5.7	0.59	1.1	2.0	0.33	C
14	6	28	6.4	19-15.2	155-26.1?	0.0	2.0	14	127	10.4		1.4	14.8	0.27	C
14	7	0	1.2	19-27.2	155-25.6	21.2		14	192	6.3	0.25	1.7	2.5	0.12	C
14	7	10	57.3	19-28.4	155-59.7?	8.0*	2.8	17	294	9.4	0.43	3.6		0.30	D
14	7	13	26.9	19-19.9	155-13.6?	4.4	1.6	17	173	4.6	0.23	1.5	1.7	0.33	D
14	7	14	59.0	19-49.9	155-16.1	2.6		15	200	10.1	0.30	1.6	2.6	0.14	C
14	8	57	0.6	19-24.4	155-17.0	9.3		7	149	0.9	0.07	0.3	0.5	0.01	B
14	10	37	22.8	19-19.4	155-15.3	7.3	1.5	14	167	3.9	0.12	0.9	0.6	0.18	C
14	10	56	13.7	19-23.8	155-17.6	9.1	1.3	9	137	1.5	0.10	0.7	0.8	0.04	B
14	11	27	5.0	19-24.2	155-17.7	7.1	1.1	9	118	1.0	0.22	1.0	1.4	0.07	A
14	11	46	45.4	19-19.8	155-11.9	7.2	1.6	14	213	5.2	0.28	1.8	0.9	0.20	D
14	11	47	20.3	19-19.1	155-11.2?	7.1	1.7	18	176	6.0	3.99	1.4	7.5	0.25	D
14	11	50	41.3	19-24.5	155-17.7	7.9		8	108	0.5	0.10	1.0	0.9	0.05	A
14	12	45	38.1	19-24.5	155-17.3	8.6	1.2	8	160	0.5	0.05	0.4	0.4	0.02	B
14	13	24	56.3	19-24.2	155-17.1	8.8	1.2	9	134	1.2	0.07	0.6	0.6	0.04	B
14	15	1	45.9	19-20.2	155-12.2	9.0	1.6	13	200	4.3	0.14	0.9	1.3	0.08	C
14	15	19	6.6	19-15.6	155-18.9	22.4	2.0	11	274	4.4	0.65	3.2	4.2	0.11	D
14	19	24	44.5	19-20.8	155-23.7	6.7	1.6	17	107	1.2	0.14	1.0	0.8	0.22	B
14	19	51	58.0	19-17.9	155-14.1	8.0*	1.4	11	227	7.1	0.22	1.4		0.16	D
14	22	18	33.9	19-24.5	155-17.0	8.5	1.5	13	83	0.8	0.06	0.5	0.6	0.05	A
14	23	7	15.6	19-31.7	155-50.4	13.2	2.6	17	149	8.6	0.08	1.7	2.6	0.09	B
15	3	10	35.7	19-20.1	155-13.3	9.3	1.0	9	188	4.7	0.21	1.2	2.0	0.09	C
15	4	16	12.4	19-20.1	155-18.1	29.2	2.1	15	102	1.2	0.15	0.9	1.5	0.09	A
15	5	15	58.4	19- 9.3	155-34.5	1.6	2.0	11	146	11.3	3.31	2.3	12.1	0.29	C
15	6	38	12.0	19-18.9	155-16.1?	8.3	1.2	12	187	3.2	0.26	1.5	2.2	0.17	C
15	8	54	43.1	19-29.6	155-43.6	0.5*	2.4	11	333	35.5	0.18	4.4		0.22	D
15	14	43	28.8	19-24.6	155-17.6	9.6		8	98	0.3	0.08	0.6	0.7	0.03	A
15	19	46	50.0	19-38.2	155-53.4	22.9		18	229	13.4	0.53	2.7	6.3	0.09	D
15	21	27	50.2	18-58.8	155-33.6	33.0	2.6	21	229	11.1	0.35	1.8	3.3	0.19	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	22	1	47.1	19-47.8	155- 7.9	41.7	2.5	22	209	9.6	0.38	1.4	3.3	0.10	C
15	23	40	35.9	19-24.1	155-17.9?	0.0	-0.0	6	126	1.4	0.43	0.8	1.0	0.13	B
16	0	54	46.3	19-26.7	155-31.3?	0.0		14	165	15.2	1.04	1.7	20.7	0.25	D
16	2	50	19.0	19-18.7	155-13.6	10.0	1.5	10	214	6.4	0.19	1.1	1.7	0.10	C
16	5	40	40.9	19-20.1	155-16.9	5.3		13	165	0.8	0.18	1.4	1.1	0.20	D
16	6	4	54.0	19-19.1	155-13.4?	8.1	1.4	12	208	6.0	0.18	1.1	1.9	0.12	C
16	16	17	34.9	18-56.3	155-28.1	14.1*		16	301	21.2	0.37	2.5		0.25	D
16	19	29	56.8	19-19.6	155-25.5	4.3	2.9	22	88	4.1	0.11	0.9	0.9	0.23	B
16	22	41	21.3	19-18.8	155-13.3?	4.5	1.7	19	153	6.6	0.22	1.4	1.4	0.30	D
16	22	45	50.0	19-11.0	155-32.0	5.6		14	102	7.8	0.18	1.3	1.4	0.24	B
17	2	30	46.5	18-53.4	155-33.1	39.9	2.8	21	284	31.2	0.76	4.3	3.9	0.14	D
17	3	57	31.5	19-20.6	155-12.9	5.6		14	180	3.4	0.15	1.0	0.7	0.17	C
17	11	57	54.5	19-18.1	155-21.1	8.0*	2.0	7	256	5.5	0.60	3.9		0.20	D
17	16	29	36.4	20- 4.5	155-16.9	8.6	2.3	16	256	21.5	1.01	5.1	4.9	0.23	D
17	18	38	23.3	19-22.6	155-28.3	4.6	2.1	19	73	9.8	0.11	0.7	0.9	0.17	B
17	19	59	44.6	19-24.8	155-27.0?	8.0	2.9	22	76	10.8	0.09	0.5	0.6	0.13	B
17	21	53	56.3	19-20.1	155- 7.6	2.8	2.0	17	165	5.4	0.17	1.1	1.3	0.22	C
17	22	3	31.8	19-24.2	155-17.4	5.5	0.9	6	146	1.0	0.50	1.3	3.3	0.06	B
17	22	4	11.8	19-23.5	155-17.6	7.7	1.2	7	147	1.2	0.35	0.5	2.1	0.02	B
18	6	25	25.5	19-18.3	155-13.6	10.7	1.5	9	223	7.1	0.39	1.9	3.0	0.11	C
18	7	11	26.7	19-19.8	155-37.0	8.0	2.3	14	127	7.6	0.17	1.1	1.1	0.14	B
18	10	13	54.3	18-56.8	155-12.1?	39.3*		11	305	36.2	0.66	5.2		0.11	D
18	11	55	23.9	19-38.9	155- 9.1?	8.0*	1.9	10	323	29.1	4.20	27.3		1.02	D
18	12	54	16.3	19-20.3	155- 7.1	8.0*	1.8	8	163	5.9	0.11	1.1		0.11	C
18	15	29	34.2	19-25.3	155-24.6	8.0*	1.9	14	186	8.6	0.11	0.8		0.10	C
18	16	25	57.7	19-26.9	155-49.7	7.6	2.5	15	174	12.6	0.26	3.6	5.3	0.14	C
18	19	19	5.4	19-24.3	155-17.3	0.9	0.7	9	116	0.8	0.07	0.4	0.5	0.11	B
18	19	38	4.8	19-27.7	155-14.8?	8.0*	1.2	9	261	6.5	0.65	5.8		0.52	D
18	21	29	5.0	19-20.1	155-12.5	8.9	1.6	14	199	4.4	0.13	0.8	1.2	0.09	C
18	22	6	36.0	19-24.0	155-16.8	2.1	0.7	10	163	1.2	0.08	0.6	0.3	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 18	22	16	32.9	19-19.1	155-11.3	8.0*	1.8	11	228	6.2	0.19	1.3		0.09	D
18	23	0	26.5	19-21.2	155-17.5	27.8	2.0	17	79	2.1	0.13	1.0	1.3	0.11	B
19	2	6	44.2	19-24.8	155-28.6	2.5		14	186	12.6	0.23	1.1	1.9	0.17	C
19	0	21	44.3	19- 4.9	155-29.5	22.9	2.2	15	195	9.0	0.27	1.8	3.1	0.13	C
19	8	55	11.4	19- 3.5	155-29.6	24.5	2.4	15	285	11.5	1.07	5.8	5.9	0.13	D
19	14	15	32.8	19-19.4	155- 8.4	8.0*	1.5	8	176	5.5	0.16	1.4		0.13	C
19	16	47	33.5	19-26.4	155-25.6	8.0*	1.6	10	194	7.4	0.08	0.6		0.07	C
19	17	0	17.4	19-22.9	155-23.2?	8.0*	1.5	9	261	6.3	2.49	13.8		0.90	D
19	17	44	53.4	19-26.7	155-23.9	5.6	1.8	14	192	5.8	0.13	0.8	0.8	0.13	C
19	18	2	28.1	19-58.8	155-27.9	46.9*		6	310	16.2	0.05	0.7		0.02	D
19	18	44	53.7	19-21.0	155-12.8	1.2		7	191	2.7	0.28	0.9	0.8	0.08	B
19	18	45	38.0	19-16.7	155-24.1?	0.0	1.8	14	130	6.7	4.80	0.7	9.2	0.15	C
19	19	31	43.8	19-19.8	155-26.1	6.4	1.8	12	140	5.0	0.14	1.1	0.9	0.15	B
19	19	59	48.0	19-24.3	155-17.0?	0.6	0.6	8	144	1.1	0.08	0.3	0.2	0.10	B
19	21	9	22.5	19-26.2	155-16.1?	3.2*	0.7	9	233	2.9	0.43	2.4		0.38	D
19	22	39	19.7	19-23.8	155-18.0	9.7	1.6	8	137	1.8	0.23	1.5	1.9	0.07	B
20	3	55	59.0	19-27.8	155-16.1?	8.0*	1.1	7	318	5.1	0.28	4.3		0.27	D
20	4	3	39.3	19- 4.0	155-29.6	25.0	2.3	16	284	10.5	0.97	5.2	5.6	0.12	D
20	4	37	49.1	19-49.6	155-29.9	15.9	2.1	13	259	6.6	0.35	2.5	2.1	0.07	C
20	5	53	52.6	19-23.9	155-21.4	7.4	1.3	14	137	3.0	0.05	0.4	0.3	0.09	B
20	5	56	21.5	19-23.5	155-21.6	6.6		10	140	3.4	0.31	0.8	2.8	0.13	B
20	6	14	12.6	19-23.8	155-16.8	10.2	1.7	11	113	0.8	0.06	0.3	0.5	0.03	A
20	9	48	20.6	19-24.4	155-25.3	2.3		9	223	8.5	0.18	0.9	1.4	0.09	B
20	11	55	55.2	19-21.4	155-25.7	5.6		11	136	4.7	0.14	1.0	1.2	0.16	B
20	13	8	36.1	19-26.1	155-25.0	7.1	1.6	15	164	7.4	0.13	0.9	0.6	0.14	C
20	13	30	29.5	19-23.9	155-39.0?	1.8	2.2	12	203	28.4	1.90	2.2	13.3	0.18	C
20	13	33	19.6	19-24.3	155-17.6	0.7	0.5	9	99	0.8	0.15	0.4	0.3	0.11	B
20	13	38	51.1	19-19.9	155-11.8	8.0*	1.9	12	163	5.0	0.09	0.8		0.10	C
20	13	51	55.7	19-23.7	155-17.8	4.0	0.8	9	96	1.6	0.11	0.5	1.0	0.06	A
20	18	12	33.8	19-15.7	155-12.3	8.0*	1.6	7	269	11.8	0.42	2.4		0.09	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 20	18	56	37.5	19-29.2	155-16.1?	8.0*	1.4	9	322	7.5	0.43	4.7		0.36	D
20	22	15	6.9	19-19.0	155-15.4	5.3	1.3	11	191	4.1	0.24	1.5	1.3	0.23	C
20	22	42	13.1	19-20.6	155-13.9	6.8	1.1	9	172	3.4	0.14	1.1	0.8	0.12	C
20	22	56	57.9	19-24.0	155-16.4?	1.8		8	188	1.5	0.15	0.8	0.4	0.11	C
20	23	16	47.8	19-23.4	155-17.1	5.4		8	106	0.3	1.06	2.3	7.1	0.20	B
20	23	37	31.6	19-20.6	155-13.3	9.2	1.5	13	176	3.5	0.13	0.8	1.2	0.10	C
21	0	13	31.4	19-21.0	155-12.8	8.5		15	144	2.7	0.08	0.8	1.0	0.11	B
21	0	41	57.7	19-25.8	155-21.9	6.9	1.6	16	109	4.0	0.07	0.6	0.5	0.12	B
21	1	2	36.7	19-20.6	155- 8.1?	7.1	1.8	12	232	4.1	0.35	2.1	1.1	0.17	C
21	3	46	13.9	18-59.7	155-10.4	15.2*		16	256	35.6	0.42	2.9		0.15	D
21	4	3	56.1	19-22.5	155- 6.6	8.0*	2.0	10	185	5.6	0.22	2.3		0.20	C
21	5	50	51.6	19-22.8	155-18.4	10.2	1.4	9	196	2.7	0.21	1.2	1.6	0.06	C
21	6	18	3.0	19-20.7	155- 9.6?	7.8		16	154	2.6	0.11	1.2	0.6	0.17	C
21	6	25	39.5	19-32.4	155-13.4	1.8*	1.6	8	336	15.0	0.74	4.4		0.22	D
21	6	56	6.8	19-29.2	155-12.3?	8.0*	1.3	6	344	11.5	1.12	10.5		0.24	D
21	7	20	43.2	19-20.9	155-13.5	11.0	0.9	8	169	3.3	0.14	0.7	1.2	0.04	B
21	8	8	28.3	19-19.6	155-11.3	8.0*		15	170	5.3	0.08	0.7		0.11	C
21	16	31	27.9	19-24.4	155-28.8	4.2	1.9	19	143	12.4	0.12	0.7	0.8	0.16	B
21	17	16	20.6	19- 0.7	155-30.1	27.3		15	295	16.7	1.33	7.2	6.7	0.13	D
21	19	2	37.4	19-44.7	155-33.3	32.4	2.6	22	97	10.8	0.20	0.9	2.7	0.13	B
22	4	15	2.5	19-20.9	155-11.8?	8.0		14	189	3.3	0.11	0.9	0.4	0.11	C
22	7	5	9.9	19-19.7	155- 3.8?	0.0	2.1	14	199	11.5	7.25	1.6	13.6	0.18	C
22	7	18	8.4	19-24.5	155-26.1	4.0	2.2	16	130	9.4	0.12	0.8	1.1	0.18	B
22	10	2	26.9	19- 2.9	155-24.2	41.5		15	220	13.8	0.60	2.9	5.7	0.15	C
22	11	35	9.2	19-24.7	155-16.9	1.2	1.5	13	92	0.4	0.07	0.4	0.3	0.13	B
22	11	41	34.3	19-21.2	155- 7.4	4.4	2.1	19	132	4.5	0.10	0.7	0.8	0.15	C
22	14	7	55.6	19-22.9	155-22.4	5.7	1.4	12	152	4.9	0.12	0.8	0.8	0.16	C
22	18	25	55.0	19-21.0	155- 7.2	2.7	2.1	17	149	4.9	0.11	0.9	1.2	0.16	C
22	23	8	17.5	19-24.2	155-17.1?	1.1	1.1	12	137	1.1	0.15	0.8	0.8	0.22	C
23	0	22	54.3	19-24.0	155-26.7	2.3	2.6	14	86	12.4	0.16	0.9	1.4	0.20	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 23	1	38	15.6	19-31.6	155-41.8?	12.6*		16	287	31.8	0.91	5.9		0.18	D
23	5	59	6.9	19-23.9	155- 0.7	6.4		14	154	8.3	0.18	1.6	1.3	0.24	C
23	7	30	6.3	19- 2.4	155-30.5	26.5		12	291	13.8	1.14	6.0	6.5	0.11	D
23	7	46	15.6	19-19.6	155- 9.4	7.5		11	171	4.6	0.14	1.3	0.7	0.15	C
23	7	47	36.0	19-20.4	155- 9.1	4.6	1.8	17	143	3.3	0.13	1.0	1.0	0.20	C
23	7	59	6.5	19-26.0	155-17.3	11.0	1.5	7	291	1.2	0.76	2.4	4.6	0.03	C
23	8	2	47.2	19- 0.8	155-30.4	27.9		15	295	16.7	1.22	6.6	6.2	0.12	D
23	11	55	33.8	19-21.0	155-13.4	7.6	1.5	14	143	3.0	0.10	1.0	0.6	0.18	B
23	12	0	28.2	19-24.6	155-18.7	10.5	1.4	6	202	2.2	0.19	0.9	1.3	0.02	B
23	12	3	50.3	19-25.4	155-17.2	7.6	1.1	8	122	1.0	0.03	0.6	0.4	0.04	B
23	12	17	14.1	19-23.7	155-16.7	8.7	1.3	10	83	0.7	0.08	0.6	0.8	0.06	A
23	12	37	20.7	19-24.2	155-18.2	4.6	1.1	9	69	2.4	0.20	0.8	1.7	0.11	B
23	12	51	24.5	19-24.3	155-17.8	10.2	1.3	7	119	0.9	0.45	1.0	3.3	0.03	B
23	13	48	6.7	19-25.4	155-17.2	7.7	1.1	11	122	0.7	0.08	0.7	0.7	0.10	B
23	13	56	25.6	19-23.1	155-18.1	4.7	1.3	7	124	2.0	0.13	0.5	1.1	0.05	B
23	14	5	2.7	19-23.9	155-17.4	8.5		6	181	1.4	0.13	1.1	1.3	0.04	C
23	15	1	5.3	19-24.0	155-17.6	9.1		8	120	1.4	0.03	0.2	0.3	0.01	A
23	15	31	13.6	19-24.4	155-16.7	7.1	1.1	10	92	1.1	0.10	1.0	0.9	0.10	B
23	15	44	57.1	19-24.1	155-17.6	9.4	1.6	8	121	1.2	0.08	0.6	0.7	0.03	B
23	18	54	58.9	19-24.3	155-17.5	9.4	1.3	10	99	0.7	0.08	0.5	0.7	0.04	A
23	20	31	51.0	19-24.9	155-17.2	9.3	1.3	9	188	0.7	0.19	1.3	1.5	0.09	C
23	20	40	38.4	19- 0.6	155-29.8	27.1	2.3	14	294	16.8	1.25	6.8	6.3	0.13	D
23	21	25	32.9	19-21.1	155-25.4	4.0	2.1	16	144	11.0	0.16	1.1	1.2	0.21	C
23	21	39	13.1	19-24.8	155-27.8	5.7	1.7	12	224	11.5	0.30	1.6	1.2	0.16	C
23	22	18	27.1	19-25.1	155-28.5	4.5	1.3	11	227	12.5	0.38	1.9	2.4	0.13	C
23	22	26	35.4	19-24.2	155-17.4	7.5	1.1	8	110	1.0	0.05	0.6	0.3	0.04	A
24	0	12	7.1	19-20.5	155-16.5?	6.4	1.0	7	203	1.8	0.30	1.6	0.9	0.08	C
24	5	58	19.3	19-49.0	155-20.2	12.0	2.0	15	132	8.2	0.08	1.8	2.5	0.07	B
24	6	27	56.5	19-30.3	155-17.8?	7.1	1.4	17	97	7.1	0.09	0.8	1.7	0.17	B
24	7	22	22.4	19-24.0	155-16.4	8.7		8	188	1.5	0.14	1.0	1.1	0.04	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 24	16	20	57.5	19-13.0	155-36.8?	8.2	2.4	15	124	3.5	0.13	0.9	0.9	0.16	B
24	16	20	57.5	19-13.0	155-36.8?	8.2	2.4	15	124	3.5	0.13	0.9	0.9	0.16	B
24	17	14	51.9	19-25.1	155-28.C	8.C*		7	265	12.0	0.34	1.9		C.07	D
25	2	25	39.9	19-25.2	155-15.5?	0.1	0.7	9	235	2.8	0.73	1.4	0.9	C.25	D
25	12	16	47.0	19-21.9	155-22.6	5.3	1.6	18	106	3.4	0.13	0.9	0.8	C.22	C
25	20	17	15.9	19-20.0	155-17.3	27.6		14	133	9.0	0.19	0.9	1.8	0.12	B
26	1	24	59.1	19-38.7	156- 7.9	41.C		17	261	26.1	0.54	2.7	4.2	0.11	D
26	2	28	46.2	19-15.5	155-10.C?	2.4		12	268	13.6	2.04	4.4	21.7	0.21	D
26	3	33	1.7	19-18.0	155- 7.4	8.C*		12	262	8.7	0.39	2.2		C.09	D
26	9	2	59.2	19- 1.2	155-29.5	25.8*		13	292	15.5	0.42	3.3		C.13	D
26	12	56	9.7	19- 1.5	155-15.6	45.9	3.8	24	226	26.1	0.41	2.1	3.2	C.16	C
26	15	39	8.7	19-20.9	155-13.6	37.8		12	159	3.4	0.44	1.9	3.9	0.10	C
26	22	37	2.4	19-25.2	155-23.6	8.C*	1.6	16	156	6.8	0.C8	0.6		0.11	C
26	23	22	20.(	19-21.5	155-19.5	4.7		8	105	4.0	0.13	0.2	1.6	0.04	A
27	2	7	43.6	19-20.9	155- 7.2	8.C*		11	168	5.C	C.09	1.2		0.11	C
27	3	26	51.8	19-21.5	155-14.C	6.2	1.5	17	147	2.3	0.11	0.8	0.6	0.18	B
27	7	15	8.1	19-17.1	155-17.3	28.3		17	152	2.9	0.17	1.0	1.7	0.10	C
27	7	19	19.9	19-19.9	155-45.1?	9.9*	2.5	13	279	16.7	1.24	7.4		0.14	D
27	1C	39	36.5	19-59.1	155-39.C	37.8*		1C	320	30.2	0.54	3.9		0.10	D
27	18	26	49.6	19-16.7	155-23.8	4.0		14	141	6.6	0.1C	0.8	1.4	0.16	B
27	18	40	8.2	19-16.3	155-23.7	2.9		19	13C	7.2	0.11	0.9	1.2	C.21	C
27	20	40	26.6	19-16.8	155-14.C	8.0*	1.5	8	247	8.4	0.73	4.4		0.24	D
28	1	27	39.3	19-29.9	155-51.4	6.5	2.9	19	129	7.3	0.19	2.2	3.1	0.18	C
28	1	46	3.9	19-24.5	155-17.1	1.0		10	136	0.8	0.07	0.4	0.4	0.11	B
28	4	33	50.8	19-21.9	155-23.6	6.6		16	72	3.1	0.07	0.6	0.6	0.14	B
28	7	3	52.0	19-22.9	155- 9.C?	8.3		9	204	2.1	0.18	2.8	1.7	0.14	C
28	9	11	5.1	19-27.9	155-18.2?	7.9	1.2	7	316	4.6	1.16	6.8	3.8	0.22	D
28	13	55	55.4	19-43.4	155- 1.1?	8.0*	1.9	11	215	7.3	0.41	3.7		0.56	D
28	15	20	32.3	19-20.2	155-12.4	6.3	1.8	10	196	4.2	0.12	0.8	0.5	0.08	C
28	15	25	21.5	19-22.7	155-16.1	2.0	0.7	7	128	0.6	0.10	0.8	0.4	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 28	20	25	0.6	19-19.0	155-20.7?	8.0*		6	324	10.4	1.94	13.7		0.50	D
28	23	11	28.6	19-19.9	155- 7.3	8.0*	1.6	11	181	6.0	0.12	1.1		0.12	C
29	0	29	7.8	19-22.5	155- 3.1	8.0*		13	121	4.8	0.15	1.3		0.25	C
29	1	9	30.8	19-21.0	155-14.0	6.4	1.6	15	179	2.7	0.14	1.1	0.7	0.18	C
29	1	51	20.3	19-28.6	155-14.2?	8.0*	1.4	9	322	8.3	0.97	6.3		0.52	D
29	2	13	27.6	19-20.7	155- 8.1	8.1	1.6	12	196	4.0	0.21	2.0	2.7	0.16	C
29	2	36	25.4	19-30.0	155-28.5	3.7	1.8	17	98	9.1	0.15	1.0	1.5	0.24	B
29	2	42	8.3	19-30.0	155-21.9?	8.0*	1.5	9	238	2.5	3.98	26.3		0.98	D
29	2	47	15.3	19-25.2	155-24.3	8.0*		8	201	7.6	0.11	0.7		0.07	C
29	2	54	52.3	19-21.0	155-13.8	29.4	2.3	22	154	3.1	0.11	0.7	1.0	0.10	B
29	6	52	38.8	19-24.7	155-23.9	8.0*	1.4	15	60	7.6	0.03	0.3		0.07	B
29	8	4	14.2	19-19.5	155-16.1	6.1	1.5	12	170	2.5	0.13	1.0	0.7	0.16	C
29	8	5	54.5	19-13.2	155-29.1?	0.0		10	99	7.1	0.70	1.2	20.5	0.24	B
29	9	17	39.0	19-19.8	155-11.7	5.6	2.2	22	147	5.2	0.12	0.9	0.7	0.23	C
29	10	38	1.8	19-19.5	155-12.3	8.0*	1.6	12	167	5.5	0.08	0.7		0.11	C
29	12	50	7.1	19-10.8	155-30.0	48.5	2.8	18	94	4.4	0.65	2.5	5.9	0.23	B
29	13	2	45.2	19- 6.1	155-26.0	46.2	2.8	20	184	7.1	0.37	1.7	3.3	0.14	C
29	13	5	20.0	19- 8.6	155-27.6	41.0		12	247	1.8	0.32	2.1	2.1	0.10	C
29	13	8	47.9	19- 7.7	155-28.5	34.8		10	180	3.5	0.70	2.7	7.0	0.18	C
29	13	23	50.2	18-55.7	155-11.0?	8.0*		7	266	39.1	2.12	14.1		0.31	D
29	13	33	55.6	19- 8.3	155-28.6	37.7		17	164	2.6	0.32	1.6	3.3	0.12	C
29	13	35	28.1	19-11.3	155-25.9	28.5		12	159	4.7	0.41	1.6	3.4	0.06	C
29	13	35	44.3	19-11.6	155-25.9	26.9		9	167	5.1	0.49	2.2	4.2	0.08	C
29	13	56	23.7	19-24.2	155-17.3	0.9	1.0	10	116	1.0	0.09	0.5	0.7	0.14	B
29	14	47	19.8	19-21.5	155- 3.3	7.3		10	116	3.1	0.18	2.0	1.4	0.20	B
29	16	39	3.6	19-20.1	155-44.6	6.4		10	276	16.4	0.82	4.3	1.4	0.11	D
29	17	21	13.9	19-21.4	155- 5.9	8.0*	1.8	9	136	5.9	0.16	1.7		0.28	C
29	20	12	13.6	19-22.7	155-14.3	4.9	1.3	12	145	2.4	0.14	0.6	1.2	0.10	B
29	22	1	11.1	19-23.0	155-16.9	13.9	2.2	24	61	0.8	0.06	0.6	0.8	0.12	B
29	23	0	17.5	19-27.6	155-44.4	5.5	2.6	20	118	15.2	0.13	0.9	1.2	0.20	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 30	2	13	57.9	19-25.6	155-15.0?	0.0	0.6	9	246	3.7	0.67	1.0	1.4	0.17	C
30	3	31	37.5	19-24.3	155-17.3	0.4	0.2	9	114	0.8	0.07	0.3	0.2	0.10	A
30	3	34	26.6	19-19.1	155- 9.2	8.4	1.5	10	238	5.7	0.37	2.5	3.5	0.13	C
30	4	23	57.3	19-18.8	155-12.9	10.6	1.4	11	219	6.8	0.38	1.7	2.9	0.12	C
30	4	27	19.0	19-20.0	155-10.7	7.8	1.7	11	232	4.2	0.34	2.7	1.1	0.18	D
30	6	18	1.3	19-28.0	155-14.9?	8.0*	1.3	9	317	6.7	0.33	3.8		0.39	D
30	6	29	52.7	19-21.8	155-14.1	29.5		16	127	2.0	0.21	1.0	1.9	0.09	B
30	6	34	23.8	19-24.5	155-24.9	8.0*	1.2	14	194	8.4	0.08	0.6		0.07	C
30	7	27	48.7	19-25.7	155-15.3	22.2	2.1	24	77	3.4	0.10	0.7	1.1	0.13	B
30	10	8	39.8	19-19.7	155- 7.9	4.3	2.0	17	172	5.5	0.17	1.2	1.3	0.24	C
30	10	36	57.0	19-25.6	155-16.0?	3.2*	0.7	10	229	2.2	0.36	2.0		0.34	D
30	14	25	35.1	19-21.1	155-13.4	9.2	1.6	10	164	3.6	0.27	1.5	2.5	0.14	C
30	15	27	2.8	19-21.9	155-54.6	8.0*	2.6	11	311	33.3	0.25	1.6		0.08	D
30	21	26	32.0	19- 2.4	155-20.5	28.4	2.4	21	215	18.3	0.27	1.5	3.0	0.14	C
30	22	1	45.4	19-21.1	155-28.2	3.1	1.8	15	84	8.7	0.10	0.7	1.3	0.18	B
30	23	19	20.7	19-17.4	155-27.3	5.0	1.9	16	93	8.6	0.07	0.6	0.7	0.15	B
30	23	31	47.6	19-20.6	155-11.7	7.0	1.6	18	154	3.9	0.11	1.0	0.6	0.20	C
31	0	28	36.6	19-21.3	155-25.9?	6.7	1.7	15	74	5.0	0.14	1.3	3.3	0.27	C
31	0	57	50.5	19-21.0	155-12.6	13.0	1.4	10	174	4.9	0.19	0.7	1.5	0.05	B
31	1	7	42.2	19-21.9	155-25.1	7.6		13	68	4.4	0.10	0.8	0.6	0.15	B
31	2	37	6.4	19-26.9	155-14.3?	8.0*	0.9	9	262	6.0	0.51	4.5		0.43	D
31	2	58	12.4	19-29.0	155-17.4?	8.0*	1.3	8	322	6.7	0.58	5.1		0.42	D
31	4	53	11.6	19-27.3	155-14.7?	8.0*	1.0	10	259	6.0	0.54	4.4		0.47	D
31	5	36	21.1	19-23.3	155-16.5	14.5	1.6	18	67	0.6	0.09	0.8	1.1	0.14	B
31	6	35	34.0	19-24.1	155-16.8	7.9	1.2	8	181	1.4	0.05	0.5	0.3	0.03	B
31	6	55	59.1	19-22.2	155-25.9?	7.4		18	107	5.8	0.19	1.4	1.2	0.30	C
31	13	34	58.9	19-13.9	155-28.5?	8.4	2.3	21	96	8.2	0.12	0.7	1.1	0.15	B
31	13	58	31.8	19-14.0	155-28.3?	8.2	2.8	23	98	8.3	0.14	0.8	1.3	0.18	B
31	17	4	18.7	19-24.2	155-24.4	3.4	1.5	15	130	7.6	0.15	1.0	2.0	0.23	C
31	17	30	3.1	19-24.2	155-24.9	1.7		10	208	7.9	2.22	1.2	8.0	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 31	20	20	43.8	19-24.1	155-17.2	17.7		13	92	1.2	0.17	0.8	1.6	0.08	A
31	21	31	11.8	19-24.3	155-17.3	1.0	0.7	10	118	0.9	0.06	0.4	0.4	0.09	A
1	0	23	54.2	19-13.0	155-27.3?	0.0	2.2	23	116	6.5	4.45	0.9	8.4	0.24	B
1	0	48	41.5	19-13.1	155-27.8?	0.0		17	120	6.7	5.69	0.9	10.8	0.23	B
1	1	58	3.5	19-20.0	155-12.4	5.8		11	201	4.6	0.25	1.5	1.0	0.19	C
1	3	19	10.4	19- 9.1	155-29.3	29.8		14	176	17.4	0.34	1.6	3.7	0.14	C
1	9	19	10.6	19-24.2	155-17.3	0.5	0.3	9	122	0.9	0.08	0.3	0.2	0.10	B
1	11	4	2.7	19-24.5	155-16.5?	0.5	0.5	8	162	0.8	0.13	0.5	0.3	0.12	C
1	14	1	59.2	19-18.8	155-15.7?	8.5		11	193	3.8	0.24	1.5	2.1	0.16	C
1	15	50	8.6	19- 4.9	154-50.9?	8.0*		17	293	34.9	2.46	15.2		0.38	D
1	16	56	1.9	19-27.4	155-16.5?	8.0*	1.2	7	320	4.1	1.65	10.4		0.39	D
1	17	13	26.9	19-24.3	155-15.1	1.8	0.8	6	257	3.4	0.20	0.6	0.4	0.02	C
1	18	5	0.6	19-20.0	155- 9.4	8.4	1.0	8	166	4.0	0.07	0.7	1.3	0.06	B
1	18	59	38.3	19-25.1	155-17.3	2.2	0.7	8	176	0.6	0.06	0.5	0.2	0.06	B
1	19	1	44.1	19-23.8	155-16.8	12.7		15	88	0.8	0.05	0.6	0.5	0.09	B
1	19	38	60.0	19-24.3	155-17.2	0.6	1.0	9	129	0.9	0.07	0.3	0.2	0.08	B
1	21	14	40.0	19-24.1	155-22.8?	8.4	1.5	17	113	5.5	0.08	0.8	1.8	0.14	B
1	21	53	34.5	19-53.9	155-17.1?	17.9*		7	318	45.8	1.27	9.2		0.33	D
1	23	6	40.0	19-23.7	155-10.7?	1.4	1.1	11	108	3.3	0.31	1.1	1.2	0.18	B
1	23	55	47.3	19-24.2	155-15.8	3.0		8	222	2.2	0.16	0.7	1.4	0.06	B
2	1	16	38.3	19-21.3	155-10.8	36.4		12	194	9.2	0.25	1.8	2.1	0.14	C
2	1	30	49.0	19-19.6	155-13.2	4.5		18	188	5.5	0.23	1.4	1.4	0.28	C
2	3	8	55.4	19-12.6	155-33.6	4.6		17	101	7.5	0.14	1.0	1.0	0.20	B
2	4	3	26.3	19-21.4	155-13.8	6.8	2.2	21	148	2.6	0.06	0.5	0.3	0.14	B
2	4	14	19.8	19-21.2	155- 6.2	1.9	2.0	18	197	11.6	0.43	1.1	1.6	0.17	C
2	4	35	28.1	19-29.5	155-16.1?	8.0*	1.3	8	323	8.0	0.45	4.7		0.36	D
2	6	3	20.1	19-24.0	155-17.2	2.1	0.6	8	130	1.2	0.03	0.3	0.1	0.05	B
2	7	7	42.1	19-24.3	155-17.3	1.0	0.6	9	121	0.9	0.07	0.4	0.4	0.10	B
2	9	30	37.2	19-19.6	155-16.1	6.1	1.9	20	139	2.5	0.09	0.7	0.6	0.19	B
2	9	44	10.8	19-25.3	155-17.2	2.1	0.7	9	205	0.7	0.06	0.5	0.5	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 2	11	20	8.9	19-27.6	155-14.2?	8.0*	1.5	8	314	7.0	0.29	3.3		0.25	D
2	11	40	51.6	19-24.3	155-17.0	0.5	0.6	9	152	1.0	0.10	0.4	0.2	0.10	B
2	12	10	6.1	19-20.8	155-13.4	6.3		11	172	3.9	0.23	1.5	1.2	0.21	C
2	14	36	9.9	19-22.4	155-22.5	4.0		11	149	4.2	0.12	0.9	1.2	0.15	B
2	17	28	36.4	19-18.8	155-11.5	4.2	2.0	18	156	6.6	0.13	0.8	0.9	0.20	C
2	20	31	43.2	19-28.1	155-14.9?	0.5*	1.6	8	317	6.8	0.32	2.0		0.19	D
2	21	50	43.6	19-21.0	155- 7.4?	7.1	2.0	15	149	4.7	0.11	1.1	1.5	0.14	B
2	21	57	10.6	19- 8.6	155-27.2	36.0	2.4	14	180	2.0	0.36	1.9	3.4	0.13	C
2	21	58	10.8	19- 8.3	155-26.8	37.2	2.4	15	184	3.0	0.43	2.2	4.0	0.14	C
2	23	19	36.1	19-18.8	155- 9.6?	0.0	1.7	14	184	6.0	1.62	1.8	22.1	0.28	C
2	23	43	42.2	19-19.0	155-12.9	14.8		9	215	6.4	0.16	0.9	1.4	0.04	B
3	2	8	21.3	19-28.6	155-16.5	4.1	1.2	8	318	6.2	0.36	2.2	4.5	0.07	C
3	2	45	2.0	19-39.7	155-39.5	13.7*		15	243	24.8	0.21	1.5		0.13	D
3	4	42	41.4	19-20.9	155-11.7	8.4		13	181	3.4	0.07	0.6	0.9	0.03	B
3	5	27	19.8	19-21.1	155-15.3	27.4		20	130	1.3	0.18	1.2	1.7	0.19	B
3	5	41	5.2	19-28.0	155-15.9	8.0*	1.4	8	315	5.6	0.78	4.5		0.24	D
3	5	58	37.1	19-25.1	155-22.8	7.6	2.2	16	158	6.0	0.09	0.7	0.4	0.11	C
3	6	45	37.8	19-16.2	155-26.7	8.0*		10	140	12.6	0.07	1.0		0.10	C
3	6	46	10.9	19-16.2	155-26.8	8.0*		9	140	12.5	0.09	1.2		0.12	C
3	7	19	1.6	19-19.6	155-15.7	5.8		15	163	3.2	0.13	1.0	0.9	0.19	C
3	8	3	8.2	19-13.9	155-28.4	5.4		14	106	8.2	0.09	0.9	0.8	0.15	B
3	10	25	0.3	19-24.7	155-23.4	8.0*		8	223	6.8	0.15	0.9		0.07	C
3	10	50	35.9	19-18.8	155- 8.3?	0.0	1.9	17	185	6.7	5.39	1.2	10.2	0.21	C
3	13	39	17.6	19-27.7	155-15.8?	0.5	1.9	9	313	5.3	0.91	2.5	2.0	0.21	D
3	13	50	27.7	19-28.8	155-16.2?	8.0*	1.9	8	320	6.7	0.33	3.8		0.34	D
3	13	51	50.8	19-24.3	155-17.4	0.9	0.8	8	108	0.8	0.10	0.5	0.7	0.13	B
3	13	55	58.2	19-28.6	155-16.9	8.0*	1.7	7	319	6.9	0.87	5.4		0.26	D
3	14	23	9.7	19-14.9	155-22.1	1.2	2.1	14	167	10.0	0.49	1.1	1.9	0.18	C
3	15	14	16.8	19-10.8	155-26.7	7.7	2.2	13	175	3.2	0.19	2.8	2.2	0.16	C
3	15	41	18.0	19-24.4	155-16.3?	1.4	0.7	8	212	1.6	0.11	0.5	0.3	0.05	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 3	15	47	21.5	19-27.3	155-27.9	2.3	1.7	16	98	9.4	0.08	0.5	0.8	0.12	B
3	17	9	51.6	19-18.8	155-15.4	5.6	1.5	13	196	4.3	0.20	1.3	0.8	0.23	C
3	17	37	27.7	19-23.2	155- 4.1?	0.0		11	101	6.4	0.31	1.0	12.0	0.22	B
3	19	18	5.4	19-13.2	155-27.8	3.4	2.2	15	118	6.9	0.11	0.9	1.0	0.17	B
3	23	17	11.4	19-29.4	155-15.8?	8.0*	2.2	8	323	8.0	0.47	5.3		0.38	D
3	23	23	31.6	19-53.0	155-35.7	31.5	2.6	25	227	18.2	0.19	1.0	1.9	0.12	C
4	0	35	43.7	19-22.8	155-16.1	22.1		11	141	0.8	0.29	1.5	2.5	0.10	B
4	4	11	36.7	19-27.0	155-15.0?	8.0*	1.8	10	267	5.2	0.23	3.3		0.42	D
4	8	0	26.6	19-27.2	155-14.4	8.0*	1.9	8	309	6.2	0.72	4.0		0.20	D
4	8	36	10.9	19-20.4	155- 7.2	8.0*	1.8	13	159	5.5	0.07	0.7		0.10	C
4	8	55	26.2	19-24.3	155-15.4	2.8		7	199	1.4	0.05	0.3	0.5	0.02	B
4	11	55	57.9	19-19.8	155-15.9	7.7		14	159	2.6	0.08	0.7	0.5	0.15	C
4	18	34	16.9	19-23.3	154-56.4	5.2		6	183	7.4	0.12	1.0	3.9	0.05	B
4	19	43	59.9	19-19.9	155-10.0	8.2	2.0	10	167	4.0	0.09	0.8	1.4	0.08	B
4	21	39	24.4	19-25.3	155-22.3?	8.0*	1.4	8	225	5.4	3.34	20.5		0.91	D
4	22	22	0.2	19-25.2	155-17.1	2.2	0.3	8	205	0.5	0.07	0.5	0.5	0.05	B
4	23	50	41.2	19-23.9	155-15.8	1.7		7	219	2.3	0.20	0.9	0.5	0.09	B
4	23	55	41.2	19-18.5	155-25.1	7.5	2.3	19	101	4.5	0.09	0.7	0.6	0.16	B
5	0	53	11.3	19-20.8	155-14.4	6.8	0.7	9	142	2.5	0.09	0.6	0.5	0.07	B
5	1	37	11.3	19-23.5	155-17.5?	8.0*	1.7	7	146	1.0	1.09	9.7		0.50	C
5	1	52	7.3	19-20.4	155- 8.3?	8.1	1.6	6	160	4.0	0.37	4.0	2.7	0.19	C
5	2	51	3.5	19-26.1	155-15.5	6.2	1.0	8	287	3.5	0.66	3.3	2.7	0.14	D
5	3	25	24.6	19-25.1	155-17.5	4.3	2.0	14	82	0.7	0.06	0.5	0.6	0.13	B
5	4	20	2.6	19-18.2	155-13.5	8.0*	1.2	9	225	7.3	0.23	1.5		0.13	C
5	4	34	2.5	19-23.3	155-17.4?	2.1	0.6	8	134	1.1	0.10	0.5	1.4	0.08	B
5	6	15	55.0	19-18.6	155-15.4	10.0	1.7	11	201	4.4	0.24	1.2	1.9	0.10	C
5	9	3	45.2	19-17.4	155- 2.6	29.8		8	257	23.7	0.55	2.9	4.2	0.09	D
5	9	32	56.1	19-19.6	155-13.6	9.8		10	196	5.1	0.25	1.3	2.1	0.10	C
5	11	30	15.4	19-19.6	155-15.9?	6.9		12	173	2.8	0.17	1.1	0.8	0.17	C
5	11	44	29.5	19-22.6	155- 3.3	8.0*	2.2	14	177	5.0	0.14	1.0		0.17	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 5	14	55	6.3	19-49.7	156-34.9	8.0*		8	329	77.2	3.82	22.8		0.08	D
5	15	16	19.1	19-24.5	155-24.5?	7.9	1.6	17	83	8.2	0.06	0.5	0.6	0.11	B
5	15	29	29.5	19-20.4	155-10.1	7.1	1.7	15	159	3.1	0.13	1.2	0.8	0.19	C
5	16	48	25.6	19-23.6	155-17.0	3.9	2.7	20	50	0.3	0.07	0.6	0.7	0.19	B
5	17	26	6.7	19-28.7	155-15.7?	8.0*	1.6	8	319	6.9	0.32	4.3		0.38	D
5	23	10	56.6	19-23.8	155-17.0	2.0	0.9	10	110	0.9	0.03	0.2	0.1	0.04	A
6	1	11	5.3	19-14.2	155-28.9?	7.5	2.6	20	91	8.9	0.06	0.6	1.4	0.13	B
6	3	6	54.3	19-21.4	155-13.7	6.3	1.4	15	154	2.6	0.12	0.9	0.7	0.18	C
6	5	0	57.5	19-23.1	155-24.4	7.3	1.6	20	59	5.7	0.08	0.6	0.6	0.16	B
6	8	13	38.8	19-24.4	155-17.6	7.8	1.2	11	73	0.6	0.02	0.3	0.2	0.04	A
6	11	32	18.7	19-19.9	155- 9.0	9.2		8	168	4.3	0.07	0.6	1.2	0.05	B
6	12	51	45.6	19-42.6	155-46.3	15.8*		9	209	26.3	0.22	1.8		0.16	C
6	13	51	31.7	19-44.1	155-45.2	10.2	2.6	19	153	29.6	0.11	1.1	1.6	0.15	C
6	14	19	5.5	19-25.8	155-14.7	30.3	2.9	24	40	4.4	0.13	0.8	1.4	0.14	B
6	19	4	42.0	19-24.2	155-16.3	1.8		7	198	1.8	0.06	0.3	0.2	0.04	B
6	20	32	56.1	19-58.7	155-32.2	14.9*	2.5	24	289	18.2	0.26	1.7		0.14	D
6	20	38	23.8	19-23.1	155-22.7	8.0*		9	165	5.4	0.09	0.7		0.09	C
6	22	17	42.5	19-28.5	155-16.8?	8.0*	1.6	8	318	5.8	0.30	4.3		0.35	D
6	23	10	22.9	19-23.4	155-18.9?	8.0*	1.2	8	181	1.5	1.89	11.7		0.56	D
6	23	58	34.7	19-56.9	155-34.3	9.7	2.4	15	189	16.2	0.12	1.8	1.6	0.10	C
7	6	16	7.4	19-24.1	155-16.4	2.1		8	190	1.6	0.03	0.2	0.1	0.02	B
7	6	52	2.3	19-19.6	155- 8.7?	4.4		13	174	5.1	4.53	1.6	8.4	0.27	C
7	6	52	21.7	19-20.8	155- 9.0	4.9	1.7	18	139	2.8	0.11	0.9	0.8	0.17	C
7	6	53	33.4	19-20.0	155- 9.1?	8.1		13	166	4.0	0.17	1.4	0.8	0.14	C
7	7	59	58.0	19-24.1	155-16.6	2.3	0.4	6	178	1.4	0.08	0.5	1.3	0.04	B
7	19	54	32.1	19-25.2	155-16.9?	1.7	0.8	10	178	0.6	0.10	0.7	1.2	0.11	C
7	20	26	55.2	19-25.3	155-25.4	8.0*	1.8	15	69	9.2	0.07	0.7		0.12	B
7	21	10	24.1	19-29.8	155-14.2	8.0*	1.6	8	327	10.1	0.82	5.3		0.25	D
7	21	27	42.9	19-26.0	155-16.3?	3.2*	1.1	8	228	2.4	0.33	2.1		0.28	D
7	22	27	7.6	19-23.9	155-17.1	1.7	0.8	9	139	1.0	0.05	0.4	0.3	0.07	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 8	0	2	10.8	19-29.0	155-15.2	8.0*	1.5	8	322	7.8	0.79	4.8		0.24	D
8	0	48	46.9	19-11.3	155-32.3	6.5	2.2	9	98	8.5	0.08	0.7	0.7	0.09	A
8	1	6	17.8	19-12.8	155- 7.5	40.3		17	234	17.5	0.16	1.1	1.1	0.08	C
8	1	57	17.7	19-24.4	155-17.2	0.7	0.5	9	123	0.7	0.08	0.3	0.2	0.07	B
8	2	47	2.6	19-24.1	155-16.8	2.8	1.7	13	78	1.3	0.06	0.4	0.8	0.11	B
8	4	25	6.3	19-19.9	155-12.3	4.2	1.6	14	233	4.7	0.42	2.2	1.6	0.26	D
8	6	21	2.2	19-21.0	155-13.9	6.1		15	162	2.8	0.12	0.9	0.6	0.17	C
8	7	46	40.2	19-23.8	155-17.2?	1.1		7	130	0.9	0.40	1.4	3.2	0.12	B
8	7	54	32.1	19-19.6	155-12.4	14.2		8	211	6.3	0.15	0.9	1.4	0.04	B
8	8	1	4.6	19-29.2	155-15.7?	8.0*	2.0	8	322	7.7	1.34	8.8		0.49	D
8	8	47	55.3	19-24.0	155-16.4?	2.2*		7	189	1.6	0.05	0.4		0.04	C
8	9	49	26.4	19-26.6	155-14.7?	5.9	1.2	6	317	5.1	0.99	4.1	3.6	0.09	D
8	12	20	5.3	19-19.1	155-16.0	6.8	1.5	15	144	3.2	0.11	0.9	0.7	0.19	B
8	12	38	11.2	19-34.6	155-17.0?	8.0*	2.0	8	340	14.1	2.90	18.5		0.58	D
8	14	40	42.9	19-24.1	155-17.5	1.2	1.0	10	109	1.1	0.07	0.4	0.4	0.10	B
8	14	58	1.5	19-29.6	155-14.9?	8.0*	1.4	8	325	9.1	0.53	5.8		0.35	D
8	15	24	2.2	19-29.9	155-16.2?	8.0*	1.4	7	330	8.7	0.55	6.0		0.37	D
8	15	31	38.3	19-35.5	155-11.2?	8.0*	1.9	6	350	21.8	4.43	49.4		0.86	D
8	16	6	58.3	19-24.2	155-16.3	2.1		8	202	1.7	0.09	0.5	0.2	0.05	B
8	17	3	40.6	19-29.4	155-14.9?	8.0*	1.4	5	340	8.8	4.04	25.4		0.49	D
8	17	53	31.0	19-21.0	155-23.8?	8.1		14	93	1.7	0.10	0.8	0.6	0.14	B
8	19	44	35.9	19-26.8	155-52.1	6.9	2.6	16	195	9.9	0.17	2.7	3.1	0.15	C
8	20	14	46.7	19-23.9	155-17.8	1.3	0.5	8	131	1.5	0.04	0.2	0.2	0.05	B
8	21	23	51.5	19-30.3	155-15.6?	8.0*	1.5	7	327	9.8	1.42	9.3		0.53	D
8	23	10	37.1	19-23.9	155-16.5	3.2	0.8	10	179	1.1	0.13	0.6	1.1	0.08	B
9	1	39	28.4	19-24.2	155-17.5?	0.5	0.3	9	118	1.0	0.15	0.4	0.3	0.12	B
9	2	24	40.4	19-24.4	155-16.5	1.8	0.8	9	197	1.2	0.05	0.3	0.1	0.05	B
9	2	25	32.8	19-24.2	155-17.0?	1.6	0.5	8	104	1.3	0.06	0.5	0.3	0.10	B
9	4	39	3.6	19-18.7	155-13.3	8.0*		12	218	6.7	0.17	1.1		0.13	C
9	4	52	53.3	19-21.7	155-15.4	11.0		11	133	0.2	0.16	0.9	1.5	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 9	5	32	24.4	18-54.3	155-10.5	12.3*	3.9	25	254	41.4	0.38	2.5		0.16	D
9	5	46	13.5	19-25.5	155-19.6?	8.0*	1.2	8	320	3.5	1.16	6.9		0.37	D
9	6	47	55.4	19-24.2	155-16.6	2.2		8	178	1.5	0.04	0.3	0.1	0.04	B
9	7	6	36.8	19-23.8	155-17.3	2.0		8	128	1.2	0.03	0.3	0.1	0.03	B
9	8	6	3.6	19-24.3	155-16.8	1.9	0.8	11	124	1.2	0.07	0.5	0.3	0.09	B
9	9	37	18.4	19-25.8	155-15.7	6.1	1.0	8	277	2.8	0.86	4.1	3.4	0.18	D
9	12	21	54.0	19-20.5	155-14.7	9.2		9	165	2.6	0.15	1.1	1.6	0.11	C
9	15	37	37.3	19-19.3	155-13.7	9.0		11	202	5.5	0.18	1.2	1.8	0.12	C
9	15	40	33.3	19-24.1	155-17.9	1.8	1.3	12	79	1.3	0.03	0.2	0.2	0.07	A
9	16	21	22.3	19-18.5	155-13.4	8.0*		9	220	7.5	0.27	1.9		0.18	C
9	16	59	47.3	19-23.6	155-16.9?	2.5	0.7	7	149	0.4	1.39	6.2	6.1	0.26	C
9	18	0	4.6	19-24.3	155-17.1	3.1		7	132	1.0	0.11	0.6	1.1	0.05	B
9	21	13	35.1	19-24.1	155-15.3	1.6	0.8	9	234	3.0	0.21	0.7	0.4	0.06	C
9	21	55	14.2	19-25.4	155-16.0	4.6	0.9	8	258	2.0	0.43	1.9	1.7	0.08	C
9	23	3	15.9	19-23.6	155-13.7?	8.0*	1.6	10	276	4.4	0.64	4.5		0.52	D
10	0	1	38.3	19-18.6	155-26.0	3.2	1.8	16	107	5.6	0.10	0.8	1.1	0.19	B
10	3	14	50.1	19-20.6	155-11.2	8.7		9	207	3.7	0.28	1.5	2.2	0.07	C
10	3	23	26.6	19-23.3	155-14.5	1.4		8	162	3.0	0.10	0.5	0.4	0.08	B
10	4	34	7.2	19-15.0	155-20.8	9.7	1.9	17	167	6.6	0.09	0.9	1.0	0.15	C
10	4	49	20.6	19-31.0	155-15.3?	12.9*		7	331	11.7	1.79	19.7		0.49	D
10	9	17	17.2	19-25.0	155-16.0	0.3	1.5	13	167	1.8	0.38	0.6	0.7	0.14	C
10	14	54	25.8	19-24.0	155-16.9	2.1	1.7	13	112	1.1	0.06	0.4	1.1	0.10	B
10	15	56	29.4	19-22.8	155-24.6	6.4	1.8	15	108	5.3	0.10	0.7	0.7	0.16	B
11	1	10	55.4	19-27.4	155-32.4	8.0*		10	135	7.2	0.14	1.3		0.20	C
11	2	11	19.7	19-24.2	155-16.0	2.0	0.8	9	216	2.0	0.11	0.5	0.2	0.05	B
11	3	16	56.3	19-26.6	155- 5.9?	14.2	2.1	7	332	19.1	1.71	32.9	22.9	0.36	D
11	4	27	32.7	19-19.2	155-13.8?	6.8	2.3	20	171	5.4	0.10	0.8	1.3	0.17	C
11	5	22	4.1	19-28.3	155-51.1	4.7	2.5	15	171	9.1	0.10	0.9	0.8	0.10	C
11	5	26	26.1	19-43.5	155-14.8	14.0*		8	197	20.9	0.19	2.5		0.13	C
11	7	1	7.3	19-23.9	155-16.8	2.1	1.8	17	70	1.0	0.08	0.5	0.3	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 11	7	7	8.2	19-24.4	155-16.3	2.2*	0.7	8	213	1.6	0.02	0.1		0.02	C
11	7	24	23.2	19-29.4	155-10.8?	8.0*	2.1	10	331	13.7	1.04	6.3		0.25	D
11	8	49	7.8	19-23.9	155-17.2	2.0		8	130	1.2	0.02	0.3	0.1	0.03	B
11	9	38	22.7	19-24.1	155-17.3?	2.3	0.5	7	124	1.1	0.07	0.5	0.4	0.03	B
11	10	31	7.1	19-23.9	155-17.1?	2.2		8	134	1.1	0.07	0.5	0.2	0.07	B
11	10	45	7.2	19-23.9	155-17.7	2.1	0.6	6	132	1.6	0.04	0.3	0.2	0.03	B
11	13	3	43.6	19-23.9	155-17.0	2.0	0.9	10	143	0.9	0.06	0.5	0.3	0.09	B
11	13	37	11.9	19-24.7	155-15.1	4.3	1.1	7	267	3.4	0.14	0.5	0.6	0.01	C
11	15	11	26.4	19-28.0	155-15.2?	8.0*	1.8	9	317	6.4	0.22	4.0		0.34	D
11	15	27	40.4	19-28.2	155-15.6?	8.0*	1.3	8	316	6.3	0.29	4.5		0.42	D
11	15	53	9.6	19-23.0	155-25.9	4.6	1.6	16	71	6.9	0.09	0.8	1.3	0.20	B
11	16	25	19.9	19-24.3	155-17.2	0.5	0.3	8	129	1.0	0.10	0.4	0.2	0.09	B
11	17	12	7.0	19-23.6	155-17.6	0.8*	0.7	8	142	1.4	0.05	0.2		0.08	C
11	17	12	23.4	19-23.6	155-17.6?	1.6		8	142	1.4	0.10	0.6	1.4	0.09	B
11	17	12	38.9	19-23.6	155-17.6	0.8*		8	145	1.4	0.05	0.2		0.06	C
11	17	23	39.5	19-23.8	155-17.4?	0.7	0.8	8	134	1.3	0.48	1.6	4.2	0.17	B
11	17	29	45.9	19-23.8	155-16.9	4.2	3.0	25	36	0.7	0.05	0.5	0.4	0.18	B
11	17	54	26.4	19-23.4	155-17.5?	1.1	0.8	7	152	1.3	0.20	0.5	0.4	0.09	C
11	17	55	55.7	19-24.0	155-17.4?	2.4	0.6	8	125	1.4	0.09	0.6	0.5	0.07	B
11	18	0	44.9	19-23.5	155-17.3	2.2	0.9	7	143	0.9	0.06	0.4	0.2	0.05	B
11	18	9	5.4	19-28.7	155-16.3?	8.0*	2.2	8	319	6.5	0.34	3.9		0.34	D
11	18	29	58.6	19-24.1	155-17.5?	1.2	1.1	12	105	1.1	0.07	0.6	0.3	0.12	B
11	18	34	17.0	19-23.5	155-17.2	2.1	0.9	7	140	0.7	0.06	0.4	0.2	0.06	B
11	18	43	6.5	19-23.4	155-17.3	2.2	0.7	6	146	0.8	0.06	0.5	0.9	0.03	B
11	19	1	41.5	19-23.5	155-17.1	2.3	1.0	7	140	0.6	0.07	0.6	1.0	0.05	B
11	19	6	41.2	19-24.6	155-16.6?	0.8	0.2	7	212	0.9	0.86	2.1	0.7	0.20	C
11	19	7	2.2	19-23.3	155-17.4	2.2		7	153	1.1	0.15	1.0	2.7	0.13	C
11	19	11	13.3	19-23.7	155-17.6	0.8*		8	141	1.5	0.06	0.3		0.10	C
11	19	17	40.5	19-23.1	155-25.0?	7.6	1.9	20	60	6.2	0.06	0.6	1.3	0.14	B
11	19	20	8.8	19-23.4	155-17.0	3.3	1.7	14	63	0.3	0.06	0.3	0.7	0.08	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 11	19	21	27.5	19-23.2	155-17.4	2.2		8	158	1.1	0.12	0.5	0.4	0.08	B
11	19	26	26.9	19-23.7	155-16.9	3.4	2.2	20	44	0.5	0.05	0.4	0.5	0.14	B
11	19	26	41.9	19-23.4	155-17.3	1.8		7	146	0.8	0.07	0.6	0.3	0.06	B
11	19	32	26.7	19-23.8	155-17.0	2.5		8	143	0.8	0.04	0.4	0.8	0.05	B
11	19	43	18.3	19-23.8	155-17.1	2.2	0.6	8	138	0.9	0.03	0.3	0.1	0.04	B
11	19	44	44.3	19-23.0	155-17.6?	0.3		8	170	1.5	2.33	0.7	5.0	0.14	C
11	19	45	21.6	19-25.7	155-12.9	26.0	2.0	8	304	7.3	0.81	13.8	6.9	0.17	D
11	20	2	17.1	19-23.3	155-17.1	2.5		9	92	0.5	0.05	0.5	0.9	0.07	A
11	20	25	37.5	19-23.4	155-17.0	2.4		7	141	0.4	0.06	0.5	0.2	0.05	B
11	20	27	1.2	19-23.4	155-17.1	2.0	0.7	9	95	0.6	0.07	0.5	0.4	0.06	A
11	20	30	55.3	19-23.0	155-17.6	0.9	0.8	10	99	1.6	0.05	0.2	0.4	0.06	A
11	20	33	20.8	19-23.4	155-16.6	3.9	2.2	19	46	0.4	0.05	0.4	0.5	0.13	B
11	20	37	32.9	19-23.6	155-17.2	2.8		7	135	0.8	0.18	0.9	1.6	0.09	B
11	20	42	31.4	19-23.0	155-17.5	1.7		9	122	1.4	0.11	0.5	0.4	0.10	B
11	20	43	41.8	19-23.7	155-17.5	1.6	0.9	11	95	1.3	0.04	0.4	0.3	0.07	A
11	20	45	58.5	19-23.8	155-17.3	1.9		7	131	1.2	0.07	0.6	0.3	0.06	B
11	20	47	44.8	19-22.0	155-27.7?	8.0*	2.1	12	178	14.4	0.68	6.7		0.70	D
11	20	51	22.0	19-23.7	155-17.3	2.0	0.6	7	134	1.1	0.06	0.4	0.2	0.05	B
11	20	52	6.2	19-23.7	155-17.1	2.7	1.5	13	71	0.8	0.07	0.4	0.9	0.09	B
11	20	55	11.7	19-23.1	155-17.6?	0.8*		9	168	1.5	0.07	0.3		0.09	C
11	21	14	20.0	19-23.6	155-17.0	2.3		7	149	0.4	0.06	0.6	0.2	0.05	B
11	21	15	9.4	19-23.1	155-17.4	1.3	0.8	12	63	1.2	0.09	0.4	0.5	0.13	B
11	21	15	56.6	19-27.4	155-12.8?	2.3*	1.6	9	292	9.3	0.84	3.6		0.34	D
11	21	26	16.3	19-23.8	155-17.2	2.7		7	130	1.0	0.06	0.5	2.1	0.07	B
11	21	27	59.4	19-23.1	155-17.5	1.7	1.1	11	63	1.3	0.05	0.3	0.3	0.08	A
11	21	28	35.7	19-23.4	155-17.3	1.8		7	146	0.8	0.07	0.5	0.3	0.06	B
11	21	37	3.8	19-23.6	155-17.0	1.9	1.0	12	73	0.5	0.04	0.4	0.2	0.09	A
11	21	44	20.9	19-23.1	155-17.4	1.7	1.1	12	91	1.2	0.09	0.5	0.4	0.09	A
11	22	15	1.8	19-23.7	155-17.0?	2.1		7	138	0.6	0.06	0.5	0.2	0.06	B
11	22	16	19.8	19-23.4	155-17.3	2.2		8	147	1.0	0.09	0.5	0.3	0.07	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 11	22	17	59.5	19-23.2	155-17.6	1.7		8	160	1.4	0.10	0.6	0.4	0.08	B
11	22	26	10.9	19-23.3	155-17.5	1.9		7	157	1.3	0.13	0.9	0.7	0.09	B
11	22	26	36.3	19-23.6	155-17.2	2.2		7	139	0.8	0.04	0.3	0.8	0.04	B
11	22	26	59.6	19-23.2	155-17.1	2.4	0.8	8	155	0.7	0.07	0.5	1.1	0.06	B
11	22	28	21.0	19-23.4	155-17.9	0.6	0.6	9	84	2.0	0.23	0.4	0.4	0.10	A
11	22	29	47.7	19-23.3	155-17.2	2.5		8	149	0.7	0.06	0.4	0.9	0.07	B
11	22	31	9.5	19-23.2	155-17.6	1.7	0.7	8	163	1.5	0.14	0.7	0.6	0.10	B
11	22	31	59.8	19-23.3	155-17.5	1.7		8	154	1.3	0.13	0.7	0.6	0.10	B
11	22	34	59.4	19-23.5	155-17.1	1.9		7	141	0.6	0.06	0.5	0.2	0.05	B
11	22	35	13.8	19-23.2	155-17.6	1.7		8	160	1.4	0.13	0.7	0.6	0.10	B
11	22	37	46.5	19-23.5	155-17.2?	1.5		7	142	0.7	0.17	0.9	2.0	0.08	B
11	22	41	16.8	19-15.7	154-59.6	12.7	1.8	16	253	21.4	0.58	2.9	4.0	0.11	D
11	22	41	54.0	19-25.1	155-15.6?	17.5*		7	256	2.5	0.38	8.8		0.20	D
11	22	42	7.6	19-24.1	155-16.8	2.0	1.6	14	77	1.3	0.06	0.4	0.2	0.11	B
11	22	46	27.8	19-23.5	155-16.8	1.8	1.3	15	69	0.2	0.03	0.2	0.1	0.07	A
11	22	47	8.9	19-23.3	155-17.4	2.2		8	155	1.2	0.09	0.5	1.6	0.08	B
11	22	48	52.0	19-23.1	155-17.1	2.2	1.1	14	58	0.8	0.04	0.3	1.0	0.09	A
11	22	58	21.5	19-19.9	155- 7.6	1.0		12	168	5.6	2.16	1.2	8.2	0.18	C
11	22	59	28.6	19-23.2	155-17.4?	2.8		9	159	1.2	0.10	0.3	1.1	0.11	C
11	23	1	12.3	19-23.5	155-17.1	2.3		6	141	0.6	0.04	0.3	0.1	0.02	B
11	23	1	47.6	19-23.6	155-17.2	2.3	0.8	7	138	0.7	0.03	0.2	0.5	0.03	B
11	23	2	18.9	19-23.4	155-17.5	1.8		7	152	1.2	0.12	0.8	0.7	0.08	B
11	23	3	30.1	19-23.4	155-17.1	2.3		8	142	0.6	0.06	0.3	0.2	0.05	B
11	23	4	26.8	19-23.5	155-17.2	1.9		8	95	0.7	0.05	0.4	0.2	0.05	A
11	23	8	19.5	19-23.0	155-17.5	1.0	0.7	10	110	1.4	0.06	0.3	0.6	0.08	A
11	23	10	10.1	19-23.7	155-17.3?	0.9		8	135	1.0	0.16	0.8	2.8	0.15	B
11	23	17	59.9	19-23.4	155-17.2	1.8	1.0	11	84	0.7	0.06	0.4	0.3	0.07	A
11	23	24	38.2	19-23.6	155-17.1	2.2		7	136	0.6	0.06	0.5	0.2	0.06	B
11	23	28	14.7	19-23.4	155-17.0	2.3		8	95	0.4	0.03	0.3	0.5	0.04	A
11	23	29	51.4	19-23.2	155-17.5	1.4	0.7	12	60	1.2	0.06	0.4	0.4	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 11	23	36	6.8	19-23.4	155-17.3	1.9		8	95	0.9	0.04	0.3	0.2	0.04	A
11	23	38	17.7	19-23.2	155-17.6?	1.8		8	160	1.4	0.12	0.7	0.5	0.10	C
11	23	38	59.1	19-23.0	155-17.6?	0.6	0.7	9	111	1.5	0.07	0.4	0.7	0.09	B
11	23	42	5.1	19-23.1	155-17.5	1.3	0.8	11	57	1.3	0.07	0.4	0.5	0.09	A
11	23	42	35.7	19-23.4	155-17.1	2.3		8	92	0.5	0.04	0.4	0.7	0.04	A
11	23	42	53.9	19-23.2	155-17.5	1.2		9	92	1.2	0.06	0.3	0.4	0.07	A
11	23	44	21.4	19-23.4	155-17.3?	1.6	0.7	10	95	0.9	0.08	0.5	0.5	0.10	B
11	23	45	39.5	19-23.3	155-17.5	1.5		8	157	1.2	0.10	0.6	0.5	0.09	B
11	23	46	29.0	19-23.6	155-16.9	2.6		6	141	0.5	0.09	0.6	1.0	0.03	B
11	23	47	34.0	19-23.4	155-17.2	2.6		8	147	0.7	0.04	0.3	0.7	0.05	B
11	23	52	42.5	19-23.6	155-17.0	2.1		8	130	0.5	0.06	0.4	0.2	0.06	B
11	23	54	51.9	19-24.0	155-17.0	3.3	2.2	17	64	1.2	0.05	0.4	0.5	0.11	B
11	23	56	16.5	19-23.3	155-17.8	1.8		7	162	1.7	0.24	1.1	0.9	0.13	C
11	23	57	16.0	19-23.4	155-16.9	2.2	0.8	8	143	0.3	0.07	0.7	1.0	0.08	B
11	23	58	29.0	19-23.4	155-17.0	1.7	1.1	12	94	0.4	0.06	0.5	0.3	0.11	B
12	0	0	54.8	19-23.4	155-17.3	1.9		7	146	0.8	0.07	0.5	0.2	0.05	B
12	0	1	4.4	19-23.2	155-17.2	1.9	0.7	12	87	0.8	0.05	0.4	0.2	0.07	A
12	0	2	18.0	19-23.6	155-17.0	2.3		7	136	0.5	0.05	0.5	0.8	0.05	B
12	0	3	17.7	19-23.4	155-17.3	2.2	0.8	8	148	0.8	0.07	0.5	1.1	0.09	B
12	0	4	19.0	19-23.5	155-17.0	2.4		8	110	0.4	0.03	0.3	0.4	0.04	A
12	0	5	25.2	19-23.0	155-17.6	1.5		8	170	1.6	0.08	0.4	0.4	0.09	B
12	0	5	57.5	19-23.3	155-17.4?	2.3		8	153	1.0	0.12	0.6	0.4	0.09	C
12	0	6	18.8	19-23.4	155-17.4	1.3	0.7	10	74	1.1	0.04	0.3	0.3	0.06	A
12	0	7	26.1	19-23.5	155-17.1	2.1	1.3	14	96	0.6	0.03	0.2	0.6	0.06	A
12	0	8	50.3	19-23.4	155-16.8	2.5	1.6	16	52	0.1	0.04	0.3	0.6	0.09	A
12	0	10	2.6	19-23.3	155-17.3	1.8		8	152	0.9	0.07	0.6	0.4	0.08	B
12	0	10	26.4	19-23.3	155-17.3	2.4	0.8	8	151	0.8	0.06	0.5	1.2	0.08	B
12	0	10	43.1	19-23.6	155-17.1	2.1		7	137	0.6	0.07	0.6	0.2	0.07	B
12	0	11	36.8	19-23.4	155-17.2	1.9		7	144	0.8	0.08	0.5	0.3	0.06	B
12	0	11	50.4	19-23.4	155-17.2	2.5	0.8	9	84	0.7	0.05	0.4	0.9	0.07	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 12	0	12	56.7	19-23.3	155-17.5	1.9		7	155	1.2	0.19	1.1	0.9	0.11	C
12	0	13	31.8	19-23.4	155-17.6	1.5	0.7	13	67	1.3	0.06	0.3	0.3	0.11	B
12	0	14	30.2	19-18.5	155-40.2?	8.0*	3.2	18	297	29.7	7.63	51.5		4.65	D
12	0	15	20.4	19-23.1	155-17.6	1.5		8	165	1.6	0.07	0.4	0.4	0.08	B
12	0	15	58.1	19-23.4	155-17.1	2.5	0.8	7	94	0.6	0.05	0.3	0.7	0.04	B
12	0	17	0.9	19-23.1	155-17.4	1.5	1.1	13	58	1.2	0.04	0.2	0.2	0.07	A
12	0	18	40.7	19-23.5	155-17.1	2.3	0.7	8	97	0.6	0.04	0.3	0.6	0.04	A
12	0	19	16.5	19-23.5	155-17.1	2.3		5	141	0.6		0.0		0.02	D
12	0	19	45.4	19-24.8	155-13.7?	8.0*	1.6	12	268	5.8	0.34	3.1		0.65	D
12	0	21	4.3	19-23.2	155-17.6	1.6		8	161	1.4	0.08	0.4	0.4	0.10	B
12	0	21	33.0	19-23.2	155-17.3	1.4	1.0	11	98	1.0	0.05	0.3	0.3	0.08	A
12	0	23	17.8	19-23.3	155-17.3	1.9		8	153	1.0	0.06	0.4	0.3	0.06	B
12	0	24	25.3	19-23.2	155-17.6	1.8		8	163	1.4	0.11	0.6	0.4	0.09	B
12	0	24	35.4	19-23.5	155-17.1?	2.2		7	138	0.6	0.08	0.6	0.3	0.07	B
12	0	25	36.2	19-23.4	155-17.1	3.7	1.9	16	60	0.5	0.04	0.3	0.5	0.09	A
12	0	27	50.9	19-23.5	155-17.1	2.1		7	139	0.6	0.06	0.5	0.2	0.05	B
12	0	28	30.3	19-23.5	155-17.1?	2.0		7	139	0.6	0.07	0.6	0.4	0.07	B
12	0	30	9.3	19-23.3	155-17.4	2.2		8	151	1.1	0.13	0.6	0.4	0.11	C
12	0	30	32.9	19-23.3	155-17.4?	2.4		8	153	1.1	0.09	0.5	0.3	0.08	C
12	0	30	36.5	19-24.2	155-16.6	6.3		9	181	1.4	0.35	1.4	2.0	0.12	C
12	0	31	22.7	19-23.4	155-17.3?	3.2		7	150	0.9	1.49	1.8	8.6	0.10	C
12	0	31	48.3	19-23.6	155-16.9	2.1	0.7	8	140	0.4	0.06	0.5	0.2	0.07	B
12	0	31	53.8	19-23.2	155-16.9	2.8	1.8	12	65	0.4	0.06	0.4	1.0	0.09	A
12	0	34	38.0	19-25.5	155-14.6?	2.2*		7	281	4.3	0.64	3.0		0.21	D
12	0	36	5.9	19-23.5	155-17.0	2.4		7	138	0.5	0.06	0.5	0.8	0.05	B
12	0	38	19.8	19-23.4	155-17.1	1.9		8	92	0.6	0.03	0.3	0.2	0.04	A
12	0	39	27.8	19-23.6	155-16.9	2.7	2.0	16	66	0.3	0.03	0.2	0.5	0.07	A
12	0	40	34.0	19-23.2	155-17.4	1.7		9	104	1.2	0.08	0.5	0.3	0.08	A
12	0	41	2.9	19-23.5	155-17.1	2.5		7	139	0.5	0.06	0.5	0.8	0.05	B
12	0	42	13.7	19-23.2	155-17.6	1.8		8	161	1.4	0.13	0.7	0.5	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 12	0	43	32.8	19-23.4	155-17.1?	1.8		7	143	0.6	0.11	0.7	1.4	0.06	B
12	0	44	27.4	19-23.6	155-17.1	2.2		7	138	0.7	0.05	0.5	0.8	0.05	B
12	0	44	40.9	19-23.2	155-16.1?	2.2		7	179	1.3	0.24	1.5	3.9	0.13	C
12	0	46	2.8	19-23.2	155-17.3?	0.6	1.7	16	55	0.9	0.10	0.4	0.5	0.16	B
12	0	48	53.0	19-23.2	155-17.5	2.3		8	159	1.3	0.09	0.6	1.7	0.10	B
12	0	49	18.0	19-23.2	155-16.9?	1.5	1.9	13	64	3.1	0.22	0.7	0.8	0.14	B
12	0	51	35.0	19-23.4	155-17.4	1.8		7	151	1.0	0.11	0.7	0.6	0.07	B
12	0	52	10.4	19-23.6	155-17.3?	2.2		7	138	0.9	0.06	0.4	0.3	0.05	B
12	0	52	19.8	19-23.1	155-17.6	0.8*		7	167	1.6	0.09	0.4		0.10	C
12	0	54	13.9	19-23.4	155-16.9	2.3	1.0	8	139	0.2	0.07	0.7	1.0	0.08	B
12	0	56	44.9	19-23.2	155-17.5?	0.5	0.7	10	83	2.8	0.26	0.4	0.5	0.12	B
12	0	56	56.5	19-23.1	155-17.2?	1.6	1.7	14	58	3.4	0.13	0.5	0.6	0.16	B
12	0	59	21.7	19-23.5	155-17.1	2.1		7	139	0.6	0.06	0.5	0.2	0.05	B
12	1	1	49.4	19-23.4	155-17.2	1.9	0.7	8	93	0.8	0.05	0.4	0.2	0.04	A
12	1	2	4.8	19-23.2	155-17.3	1.2	1.0	12	91	2.8	0.04	0.2	0.2	0.06	A
12	1	3	5.7	19-23.4	155-17.5	1.6	0.7	11	72	1.2	0.05	0.3	0.3	0.08	A
12	1	3	14.9	19-23.4	155-17.2	3.3	1.5	13	99	2.4	0.08	0.6	1.2	0.15	B
12	1	5	2.1	19-23.5	155-16.9	3.0	2.0	15	66	2.4	0.05	0.3	0.8	0.09	B
12	1	7	13.9	19-23.5	155-17.0	1.8	0.7	11	102	0.5	0.05	0.4	0.2	0.08	A
12	1	8	5.9	19-23.1	155-17.1	0.8	1.0	8	100	3.1	0.04	0.2	0.3	0.05	A
12	1	9	45.5	19-23.0	155-17.6	1.1	0.8	8	112	1.5	0.06	0.3	0.6	0.07	A
12	1	10	9.7	19-23.4	155-16.9	2.4	2.1	16	49	2.5	0.03	0.3	0.6	0.08	B
12	1	12	19.0	19-22.8	155-17.5	1.6	2.0	12	82	4.2	0.30	0.7	1.2	0.21	B
12	1	14	0.2	19-23.1	155-17.4	1.3		10	84	3.0	0.06	0.2	0.3	0.06	A
12	1	14	44.0	19-23.3	155-17.3	3.5	2.3	19	52	2.9	0.07	0.6	0.7	0.21	B
12	1	16	9.7	19-23.4	155-17.3	1.1	0.7	9	97	0.9	0.04	0.3	0.3	0.06	A
12	1	18	34.9	19-23.1	155-17.3	1.7	2.1	16	58	2.7	0.12	0.5	0.5	0.13	B
12	1	21	14.0	19-23.2	155-17.5	1.2	1.8	11	79	3.2	0.11	0.4	0.5	0.09	B
12	1	22	24.8	19-23.6	155-16.4?	7.0	1.8	9	86	2.7	0.16	1.1	1.4	0.17	B
12	1	23	7.3	19-23.5	155-17.2	2.2*	1.2	10	81	3.6	0.08	0.6		0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 12	1	23	59.3	19-23.2	155-17.4	1.3	1.1	11	87	2.7	0.04	0.2	0.2	0.06	A
12	1	24	56.8	19-23.7	155-16.6	3.2	1.9	15	81	2.3	0.10	0.7	1.5	0.18	B
12	1	27	39.6	19-23.2	155-17.2	5.0	2.1	13	55	3.1	0.06	0.5	0.6	0.11	B
12	1	29	9.5	19-23.3	155-16.9	2.9	2.1	15	63	0.3	0.05	0.4	0.7	0.13	B
12	1	29	52.2	19-24.1	155-17.4	6.6	1.1	9	82	1.6	0.28	1.0	2.1	0.14	B
12	1	31	30.6	19-23.3	155-16.9	1.5		10	104	2.7	0.06	0.4	0.3	0.08	A
12	1	33	4.4	19-23.8	155-16.8	2.6	2.4	19	42	2.1	0.04	0.4	0.6	0.13	B
12	1	34	56.0	19-23.1	155-17.3	1.4	1.4	16	58	1.0	0.09	0.4	0.4	0.14	B
12	1	35	49.7	19-23.4	155-16.9	2.1*	1.5	13	64	2.6	0.05	0.4		0.12	B
12	1	37	41.1	19-23.3	155-17.1	1.1		6	125	2.6	0.04	0.3	0.4	0.03	B
12	1	38	51.1	19-23.2	155-17.4	1.7	1.2	12	61	1.0	0.05	0.3	0.3	0.08	A
12	1	40	5.9	19-23.6	155-16.8	1.9	1.5	15	69	2.4	0.09	0.5	0.4	0.13	B
12	1	42	46.3	19-23.4	155-16.9	3.5	1.5	14	65	2.5	0.08	0.4	1.2	0.12	B
12	1	43	54.1	19-23.8	155-17.3	7.5	1.2	7	121	1.7	1.05	1.8	6.7	0.10	C
12	1	44	31.8	19-23.3	155-17.4	1.7	0.7	9	88	1.0	0.04	0.3	0.3	0.07	A
12	1	45	12.4	19-23.3	155-17.3	1.7	1.0	7	115	2.5	0.04	0.3	0.2	0.03	B
12	1	46	27.7	19-23.5	155-17.0	1.9		8	115	0.5	0.06	0.4	0.3	0.07	A
12	1	46	50.0	19-23.1	155-17.5	0.9	0.7	8	109	1.4	0.08	0.4	0.8	0.08	A
12	1	49	0.1	19-23.3	155-17.0	2.3*	0.8	9	133	2.6	0.04	0.4		0.08	C
12	1	50	1.1	19-23.8	155-16.8	3.6	2.2	19	46	2.1	0.05	0.4	0.5	0.16	B
12	1	50	25.7	19-23.4	155-17.1	1.7		9	96	2.6	0.08	0.5	0.4	0.07	B
12	1	51	21.6	19-23.1	155-17.4?	1.7		5	162	2.9		0.0		0.05	D
12	1	52	1.5	19-23.4	155-17.3	1.6	1.2	13	88	2.5	0.07	0.3	0.3	0.08	A
12	1	53	0.8	19-23.4	155-17.1	1.6		7	130	2.4	0.09	0.8	0.7	0.07	B
12	1	55	35.6	19-23.2	155-17.3	0.9		7	100	2.8	0.03	0.2	0.2	0.03	B
12	1	56	58.0	19-23.2	155-17.5	0.9*		6	160	2.8	0.06	0.2		0.06	C
12	1	57	16.9	19-23.4	155-16.9?	1.4	2.2	19	51	2.5	0.07	0.5	1.1	0.19	B
12	1	58	32.1	19-23.5	155-17.0	1.8	0.7	8	102	2.4	0.03	0.2	0.1	0.03	A
12	1	59	8.1	19-23.4	155-17.3	1.7		6	146	2.4	0.06	0.5	0.4	0.03	B
12	2	0	3.0	19-23.3	155-17.0	3.2	1.1	12	60	2.6	0.09	0.4	1.5	0.10	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 12	2	1	17.6	19-23.4	155-16.8	1.8	1.8	17	51	2.4	0.10	0.5	0.4	0.14	B
12	2	2	44.1	19-23.4	155-17.3	1.7	1.0	12	76	0.8	0.07	0.5	0.4	0.10	A
12	2	5	4.9	19-23.4	155-17.1	1.8	0.7	8	143	2.5	0.05	0.3	0.2	0.04	B
12	2	5	37.8	19-23.6	155-17.1	2.0		7	137	0.6	0.06	0.5	0.2	0.06	B
12	2	6	6.8	19-23.6	155-16.8	1.3	1.2	13	111	2.4	0.10	0.6	0.5	0.16	B
12	2	7	7.3	19-23.6	155-16.7	3.9	1.9	15	73	2.4	0.05	0.3	0.6	0.08	B
12	2	7	52.9	19-23.1	155-17.4	1.3	0.7	8	104	3.0	0.03	0.2	0.2	0.03	A
12	2	8	27.8	19-23.7	155-16.7?	1.7	2.8	22	42	2.3	0.13	0.5	0.5	0.16	B
12	2	9	48.7	19-23.4	155-17.3	1.1	0.7	8	97	2.9	0.11	0.5	0.7	0.10	B
12	2	10	51.9	19-23.1	155-17.4	1.1	1.5	11	85	2.9	0.05	0.2	0.3	0.06	A
12	2	12	6.6	19-24.1	155-16.8	2.0	1.4	14	74	1.2	0.06	0.4	0.2	0.11	B
12	2	12	40.1	19-23.4	155-17.2	1.8		6	145	2.4	0.04	0.3	0.2	0.03	B
12	2	14	23.7	19-23.2	155-17.3	1.0*		6	155	2.7	0.08	0.4		0.07	C
12	2	16	8.7	19-23.3	155-17.3	1.6		6	154	2.6	0.06	0.4	0.3	0.03	B
12	2	16	15.9	19-23.7	155-16.5	3.4	2.9	19	51	2.3	0.06	0.5	0.6	0.15	B
12	2	13	52.6	19-23.6	155-17.1	0.5	1.1	11	133	2.1	0.30	0.3	0.6	0.08	B
12	2	22	5.2	19-23.5	155-17.3	2.5		7	142	0.8	0.06	0.5	0.9	0.05	B
12	2	24	13.6	19-23.8	155-16.7	1.9	1.7	16	78	0.7	0.06	0.4	0.3	0.12	B
12	2	25	41.4	19-23.4	155-17.5	2.1	0.7	9	79	1.3	0.08	0.4	0.3	0.08	A
12	2	25	53.5	19-36.3	155- 3.4?	3.0*		7	347	31.7	1.53	10.9		0.23	D
12	2	26	45.7	19-23.5	155-17.2	2.5		6	141	0.7	0.05	0.5	0.9	0.03	B
12	2	27	21.4	19-23.0	155-17.5	1.4	1.1	11	57	1.4	0.06	0.3	0.4	0.09	A
12	2	28	30.7	19-23.7	155-17.0	2.1		7	138	0.6	0.06	0.6	0.3	0.07	B
12	2	28	58.8	19-23.0	155-17.5	1.7	0.8	9	123	1.4	0.08	0.4	0.3	0.09	B
12	2	34	31.6	19-23.1	155-17.6	1.6		8	165	1.5	0.08	0.4	0.4	0.08	B
12	2	34	53.5	19-23.8	155-17.1	1.9	1.3	16	60	0.8	0.08	0.5	0.3	0.13	B
12	2	36	15.5	19-23.8	155-17.4	2.2	0.6	7	109	1.2	0.07	0.5	0.4	0.05	B
12	2	36	55.5	19-23.3	155-17.4	1.6	0.7	8	100	1.0	0.07	0.4	0.3	0.06	A
12	2	37	44.4	19-23.5	155-17.2	1.9	0.7	8	105	0.7	0.06	0.5	0.4	0.06	A
12	2	40	6.1	19-23.2	155-17.3	3.7	1.8	16	55	0.9	0.05	0.3	0.6	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 12	2	41	33.2	19-23.6	155-17.2?	2.0		7	138	0.7	0.07	0.5	0.3	0.07	B
12	2	46	2.5	19-23.3	155-17.2	2.4		7	96	0.7	0.03	0.3	0.6	0.03	B
12	2	48	11.3	19-23.4	155-17.5	1.6	1.0	11	75	1.2	0.06	0.3	0.4	0.10	A
12	2	59	36.6	19-23.9	155-17.0	3.1	1.2	15	63	1.0	0.07	0.4	0.9	0.11	B
12	3	0	28.1	19-23.9	155-17.1?	2.1		6	136	1.1	0.04	0.4	0.2	0.03	B
12	3	17	40.4	19-23.1	155-17.7?	1.3		8	169	1.7	0.55	1.9	3.9	0.18	C
12	3	21	24.4	19-23.6	155-17.4?	1.9		6	139	1.1	0.07	0.4	0.5	0.06	B
12	3	23	28.2	19-23.6	155-17.2	2.0		7	138	0.8	0.05	0.5	0.2	0.06	B
12	3	28	25.2	19-23.4	155-17.3	1.8		7	146	0.8	0.07	0.5	0.3	0.06	B
12	3	30	58.9	19-23.4	155-17.6	1.7		8	151	1.4	0.08	0.4	0.5	0.09	B
12	3	33	54.0	19-18.5	155-13.4	8.0*		14	203	7.0	0.14	1.0		0.13	C
12	3	45	6.7	19-23.1	155-17.6	1.7		8	166	1.6	0.12	0.6	0.5	0.08	B
12	3	52	53.8	19-24.0	155-17.3?	1.7		7	121	1.7	0.11	0.7	1.7	0.09	B
12	4	1	49.9	19-17.5	155-15.9?	20.2*		8	322	8.0	2.64	30.5		0.56	D
12	4	16	12.0	19-23.5	155-17.5	1.6	0.5	10	80	1.3	0.06	0.3	0.4	0.09	A
12	4	30	56.7	19-23.6	155-17.1	2.1		7	133	0.7	0.07	0.6	0.3	0.07	B
12	4	34	29.5	19-23.7	155-17.6	1.5		8	141	1.5	0.07	0.3	0.5	0.09	B
12	4	37	12.1	19-21.0	155-23.5?	1.1*		8	329	8.4	1.12	4.9		0.35	D
12	4	49	53.4	19-23.8	155-17.3	2.0		8	131	1.2	0.05	0.3	0.2	0.06	B
12	4	58	23.7	19-23.7	155-17.6	1.6		8	139	1.5	0.05	0.3	0.4	0.07	B
12	5	19	5.7	19-22.8	155-14.3	5.7	1.6	13	121	2.6	0.07	0.5	0.6	0.10	B
12	5	21	51.6	19-23.9	155-16.6	2.0	0.6	10	169	1.0	0.09	0.6	0.3	0.10	C
12	5	23	2.9	19-23.1	155-17.4	1.8	1.1	14	59	1.2	0.06	0.3	0.2	0.07	A
12	5	36	8.6	19-23.7	155-16.8	2.7	1.5	15	70	0.6	0.06	0.4	1.0	0.12	B
12	5	39	36.5	19-23.4	155-17.6	1.7		8	154	1.4	0.09	0.6	0.4	0.09	B
12	5	53	20.6	19-24.0	155-17.1	2.7		8	137	1.3	0.04	0.2	0.4	0.03	B
12	5	53	22.3	19-22.0	155-16.1?	0.9	2.6	18	108	1.5	0.44	4.3	5.1	0.76	C
12	5	58	43.4	19-19.1	155-17.9?	9.9*		8	296	6.7	1.61	10.6		0.46	D
12	6	3	28.0	19-23.6	155-17.2	1.9		8	111	0.8	0.05	0.4	0.3	0.05	A
12	6	14	25.4	19-33.2	155-13.4	16.8*	2.2	9	299	16.2	1.95	13.6		0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 12	6	18	8.9	19-23.5	155-17.9	1.2		8	151	1.9	0.13	0.6	1.2	0.15	C
12	6	34	16.9	19-23.0	155-17.5	1.3	0.8	9	109	1.4	0.06	0.3	0.4	0.07	A
12	6	41	26.7	19-23.4	155-17.4?	1.5		7	149	1.0	0.22	0.6	0.5	0.11	B
12	6	49	25.1	19-23.1	155-17.6	0.8*		8	168	1.6	0.07	0.3		0.09	C
12	7	1	9.4	19-23.6	155-17.1	2.0	0.7	9	120	0.7	0.05	0.4	0.2	0.07	A
12	7	1	30.5	19-23.7	155-17.1	2.0	0.6	8	135	0.7	0.03	0.3	0.2	0.04	B
12	7	16	57.8	19-23.6	155-17.4	1.5	1.1	13	87	1.1	0.08	0.4	0.4	0.14	B
12	7	32	26.9	19-25.7	155-15.0?	8.0*		9	281	3.7	0.24	2.5		0.31	D
12	8	17	22.4	19-23.9	155-26.3	8.0*		10	157	8.6	0.11	0.9		0.13	C
12	8	33	47.2	19-22.5	155-13.3	2.6		7	161	1.3	0.10	0.7	1.4	0.06	B
12	9	32	50.1	19-23.9	155-17.3	2.2	1.4	15	52	1.3	0.05	0.3	0.9	0.08	B
12	9	55	58.0	19-24.0	155-17.2?	2.1		7	126	1.3	0.05	0.4	0.2	0.05	B
12	10	9	59.3	19-24.1	155-17.3	2.2		8	120	1.2	0.05	0.4	0.3	0.06	A
12	10	28	18.1	19-23.5	155-17.4	1.5	0.6	10	87	1.0	0.02	0.1	0.1	0.03	A
12	10	52	30.2	19-19.8	155-12.0	5.1	1.9	20	173	5.1	0.18	1.1	0.9	0.24	C
12	11	14	22.5	19-23.4	155-17.2	2.4		6	145	0.7	0.10	0.7	1.3	0.04	B
12	11	52	58.2	19-20.5	155-11.1	8.9		12	155	3.7	0.08	0.6	1.0	0.08	B
12	12	2	6.9	19-18.5	155-18.5?	16.0*	2.0	8	305	8.3	2.10	20.5		0.49	D
12	13	7	8.9	19-23.6	155-17.2	2.1		7	136	0.9	0.07	0.5	0.2	0.06	B
12	13	13	20.0	19-23.0	155-17.5	1.5	0.8	10	64	1.4	0.06	0.3	0.4	0.09	A
12	13	34	3.1	19-23.0	155-17.6	1.6		8	173	1.7	0.09	0.4	0.4	0.09	B
12	13	42	6.6	19-23.1	155-17.4	1.0	0.7	8	104	1.2	0.06	0.4	0.6	0.07	A
12	14	0	44.0	19-24.0	155-17.4?	2.4		7	124	1.3	0.13	0.8	0.4	0.09	B
12	14	16	43.1	19-24.0	155-17.0	2.6		5	146	1.1		0.0		0.01	D
12	14	40	12.1	19-23.3	155-17.5	1.7	0.7	8	157	1.2	0.06	0.4	0.3	0.05	B
12	14	48	13.4	19-23.9	155-17.3	2.1		8	124	1.3	0.05	0.4	0.3	0.05	B
12	15	27	34.8	19-23.3	155-17.1	2.3	0.9	6	149	0.6	0.04	0.3	0.6	0.02	B
12	15	41	13.3	19-23.1	155-17.3	2.4	0.9	8	159	1.0	0.05	0.4	1.0	0.05	B
12	15	55	17.9	19-23.9	155-16.6	2.7	0.7	7	171	1.0	0.20	0.9	1.7	0.08	B
12	16	5	13.6	19-23.3	155-17.1	2.3		6	148	0.6	0.04	0.3	0.6	0.02	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 12	16	10	C.9	19-23.2	155-17.7	2.9		6	162	1.7	0.17	0.9	3.1	0.07	C
12	16	13	4.6	19-23.0	155-17.4	1.6	0.8	9	105	1.2	0.09	0.5	0.4	0.07	A
12	16	53	39.9	19-23.C	155-17.5	1.3	0.8	13	58	1.4	0.07	0.3	0.4	0.10	B
12	16	55	49.7	19-23.2	155-29.3	4.1		12	105	11.9	0.10	0.7	1.1	0.16	B
12	17	32	16.6	19-23.5	155-17.3	1.8	1.7	17	52	0.8	0.07	0.4	0.3	0.11	B
12	17	42	39.4	19-23.6	155-17.1	2.3	1.3	13	96	0.7	0.05	0.4	1.1	0.09	B
12	18	58	7.3	19-23.0	155-17.5	1.3	0.8	12	59	1.4	0.05	0.2	0.3	0.07	A
12	19	19	54.1	19-23.8	155-17.2?	2.1		8	128	1.1	0.05	0.4	0.2	0.05	B
12	19	31	19.3	19-23.7	155-17.5	1.5	0.6	9	94	1.4	0.05	0.3	0.3	0.08	A
12	20	21	17.6	19-23.7	155-17.5	1.7		8	93	1.4	0.04	0.2	0.2	0.05	A
12	20	24	15.3	19-23.7	155-17.4	1.5	0.9	10	98	1.3	0.05	0.3	0.3	0.08	A
12	20	37	7.7	19-23.7	155-17.4	1.9	1.3	7	136	1.1	0.04	0.3	0.2	0.04	B
12	21	6	1.9	19-23.8	155-16.2	2.5	0.9	7	189	1.2	0.22	1.2	2.2	0.09	C
12	21	10	43.1	19-23.8	155-17.5	1.4	1.0	8	133	1.5	0.06	0.3	0.4	0.07	B
12	21	22	7.8	19-23.9	155-17.3	2.C		8	120	1.3	0.03	0.3	0.2	0.03	A
12	22	7	4.9	19-23.7	155-17.3	1.7	0.9	10	113	1.0	0.04	0.4	0.3	0.06	A
12	22	26	34.9	19-23.2	155-17.2	1.8	0.7	9	87	0.8	0.05	0.3	0.2	0.05	A
12	22	33	6.7	19-23.2	155-17.3?	8.3	1.3	8	157	1.0	0.18	0.7	3.0	0.17	C
12	22	49	32.9	19-24.C	155-15.1	C.9	0.8	11	171	3.2	0.06	C.3	0.3	0.07	B
12	22	51	1.8	19-23.4	155-17.1	2.3		6	144	C.5	0.05	0.4	0.2	0.03	B
12	23	0	19.8	19-23.7	155-17.9?	0.0	2.0	15	65	1.9	0.35	0.6	0.7	0.28	B
12	23	12	51.1	19-23.1	155-17.4	1.7	0.8	13	57	1.2	0.07	0.3	0.3	0.08	B
12	23	36	10.6	19-18.3	155-14.8	32.2	1.9	19	169	5.7	0.18	1.1	1.7	0.12	C
12	23	38	2.7	19-24.7	155-16.6?	0.2		8	214	C.9	3.00	7.5	16.4	0.54	D
13	0	7	53.9	19-23.6	155-17.4	1.7	1.2	14	84	1.2	0.06	0.4	0.3	0.11	B
13	0	33	9.6	19-23.6	155-17.4?	0.8*		7	142	1.1	0.09	0.5		0.10	C
13	1	14	54.2	19-23.9	155-17.3	2.0		8	118	1.2	0.04	0.3	0.2	0.04	A
13	1	15	17.6	19-23.9	155-17.4	2.1		8	128	1.4	0.05	0.3	0.3	0.05	B
13	1	39	57.2	19-23.7	155-17.1	2.C		8	125	0.8	0.04	0.4	0.2	0.06	B
13	1	51	16.2	19-23.7	155-16.9	2.C	0.8	7	143	C.6	0.06	0.5	0.2	0.07	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 13	1	53	23.1	19-23.2	155-17.2?	2.0	0.8	6	153	C.8	0.12	0.8	0.4	0.07	C
13	2	24	46.2	19-23.1	155-17.6	1.6	0.5	9	166	1.5	0.06	C.3	0.3	0.07	B
13	2	48	37.1	19-23.8	155-17.3?	2.3	0.9	9	129	1.1	0.07	0.4	0.3	0.08	B
13	3	2	1.3	19-23.2	155-17.4	2.2	0.8	7	160	1.1	0.12	0.6	0.4	0.07	B
13	3	21	25.0	19-23.6	155-17.1	2.0	2.0	17	49	0.6	0.07	0.5	0.3	0.13	B
13	3	26	27.2	19-23.9	155-17.2?	1.4	0.6	8	131	1.1	0.16	0.5	0.4	0.18	B
13	6	9	28.1	19-23.5	155-17.3	1.7	1.6	17	50	1.0	0.07	C.4	0.3	C.11	B
13	6	31	48.1	19-23.1	155-17.6?	0.7	1.0	11	66	1.5	0.07	0.4	0.6	0.11	B
13	6	34	53.0	19-23.0	155-17.4	1.4	0.8	9	108	1.3	0.06	0.4	0.4	0.08	A
13	6	49	39.7	19-23.1	155-17.6	1.6	0.7	8	164	1.5	0.06	0.3	0.3	0.06	B
13	7	41	53.0	19-23.4	155-17.1?	2.3		8	146	0.6	0.07	0.4	0.2	0.06	B
13	7	46	34.7	19-23.0	155-17.5	1.4	0.8	11	59	1.5	0.06	0.3	0.4	0.09	A
13	8	3	5.4	19-23.9	155-17.2?	2.1		8	130	1.2	0.07	0.4	0.2	0.06	B
13	8	5	4.5	19-23.7	155-17.2?	2.0	0.8	7	131	0.9	0.06	0.4	1.2	0.06	B
13	9	8	13.6	19-23.4	155-17.6?	5.5*		8	151	1.4	0.27	1.9		0.20	C
13	9	34	55.4	19-24.0	155-17.2	2.0		7	126	1.3	0.04	0.3	0.2	0.04	B
13	10	22	25.5	19-23.8	155-17.0	2.0	2.0	19	47	C.8	0.08	0.4	0.3	0.14	B
13	10	57	3.9	19-23.6	155-16.9	1.8		7	142	0.5	0.11	1.1	0.6	0.12	B
13	11	3	24.6	19-24.2	155-17.2	2.0		7	125	1.1	0.13	0.6	2.3	0.06	B
13	11	8	41.2	19-23.8	155-17.4	2.0	0.8	8	135	1.3	0.06	0.5	0.3	0.06	B
13	11	9	42.3	19-23.1	155-17.2	1.8	1.1	13	57	0.9	0.06	0.4	0.3	0.09	A
13	11	11	58.0	19-24.0	155-16.9	2.1	1.5	13	81	1.2	0.05	0.4	0.2	0.08	A
13	11	17	51.3	19-23.9	155-17.2	2.1	2.1	18	55	1.1	0.08	0.5	0.3	0.14	B
13	11	28	7.6	19-24.0	155-17.2	2.1		7	127	1.3	0.01	0.1	0.1	0.02	B
13	13	1	50.8	19-22.9	155-17.6	1.7		7	179	1.8	0.15	0.7	0.5	0.06	B
13	14	5	51.2	19-46.6	156- 2.0	3.2*	2.3	12	315	55.5	0.43	3.2		0.21	D
13	15	16	43.8	19-37.8	155-23.4	41.3	2.4	14	238	14.8	0.47	2.0	3.7	0.09	C
13	15	59	15.6	19-22.9	155-14.3	2.0		6	163	2.7	0.07	0.4	0.3	0.03	B
13	16	27	25.9	19-26.4	155-12.1?	8.0*	1.7	10	285	9.0	1.24	7.2		0.64	D
13	16	49	32.5	19-24.1	155-17.1	2.1		9	134	1.3	0.03	0.3	0.2	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 13	18	35	23.1	19-17.1	155-21.9	8.0*		11	143	6.0	0.12	1.1		0.14	C
13	18	36	36.0	19-22.6	155-13.4	2.4	1.0	8	176	1.6	0.11	0.7	1.6	0.07	B
13	19	36	26.0	19-23.9	155-16.7?	4.0		7	161	0.9	0.17	1.5	6.3	0.13	C
13	19	51	7.2	19-25.6	155-14.6?	1.4*		7	284	4.4	1.81	44.2		0.24	D
13	20	20	29.8	19-23.5	155-17.4	1.4	0.9	9	97	1.1	0.06	0.3	0.4	0.08	A
13	20	22	9.6	19-23.8	155-17.0	2.1		7	138	0.9	0.03	0.4	0.1	0.04	B
13	20	42	14.5	19-22.4	155-18.2	1.4	1.2	10	84	3.1	0.09	0.3	0.4	0.08	A
13	21	12	39.3	19-23.9	155-17.4?	1.5		7	128	1.3	0.23	1.0	4.5	0.13	B
13	21	38	35.8	19-23.9	155-17.4	2.0		8	130	1.3	0.04	0.3	0.2	0.05	B
13	23	23	33.8	19-24.0	155-17.3	2.0		9	124	1.4	0.04	0.3	0.2	0.05	B
13	23	48	51.9	19-23.8	155-17.3	2.0		7	131	1.0	0.06	0.5	0.2	0.06	B
14	0	10	12.6	19-23.9	155-17.2	2.0	1.3	14	96	1.2	0.05	0.4	0.2	0.10	A
14	1	32	7.6	19-23.5	155-17.0	2.6	0.4	7	137	0.5	0.07	0.6	1.0	0.07	B
14	1	33	6.7	19-23.9	155-17.2?	1.7		7	127	1.1	0.12	0.7	1.6	0.08	B
14	1	50	14.6	19-23.8	155-17.2?	2.1		7	130	1.0	0.25	0.5	1.7	0.04	B
14	2	19	50.9	19-23.8	155-17.3?	2.0		7	131	1.1	0.03	0.3	0.1	0.03	B
14	2	29	43.8	19-23.5	155-17.6	1.6	0.7	8	149	1.3	0.07	0.4	0.5	0.09	B
14	6	22	26.3	19-23.8	155-17.2	2.1		8	130	1.0	0.06	0.5	0.2	0.07	B
14	7	31	37.2	19-23.8	155-17.1?	0.4		9	132	1.0	0.82	1.9	6.0	0.29	C
14	8	1	59.1	19-34.9	155-10.8?	16.2*	2.0	7	341	21.4	4.53	42.3		0.75	D
14	9	44	28.5	19-24.1	155-25.8	8.0*	1.7	15	85	8.4	0.06	0.6		0.10	B
14	15	20	42.4	19-23.1	155-17.4	1.8	1.1	13	96	1.1	0.06	0.4	0.3	0.09	A
14	15	59	28.1	19-23.9	155-25.0	2.4	1.5	17	76	7.4	0.10	0.7	1.5	0.20	B
14	19	12	36.7	19-20.6	155-13.8	5.2		9	222	3.4	0.28	1.8	1.2	0.17	C
14	19	51	15.1	19-21.5	155-26.3	3.0	1.7	17	73	5.8	0.10	0.8	1.5	0.21	B
14	21	34	12.6	19-17.2	155-22.4	3.0	2.0	19	135	5.7	0.08	0.6	1.0	0.17	B
14	23	32	53.5	19-22.9	155-25.2	3.7	2.2	20	68	6.1	0.10	0.7	1.0	0.20	B
14	23	39	25.5	19-24.5	155-18.0	12.6		11	84	1.8	0.09	0.4	0.8	0.05	A
15	0	13	36.1	19-19.6	155-23.3	7.0		8	245	1.1	0.35	2.0	2.3	0.07	C
15	0	43	22.9	19-23.3	155-17.4	1.7		8	87	1.0	0.04	0.3	0.2	0.04	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 15	1	31	11.5	19-21.4	155- 6.3?	0.0	2.2	20	182	11.1	3.77	1.0	7.1	0.16	C
15	1	49	15.0	19-23.7	155-17.5	1.7		8	139	1.3	0.05	0.3	0.2	0.04	B
15	2	39	22.9	19-24.0	155-28.7	7.1	2.3	21	94	11.8	0.09	0.5	0.6	0.12	B
15	2	44	21.2	19-22.7	155-28.9	4.3	1.9	19	113	10.9	0.13	0.9	1.0	0.22	B
15	3	33	57.5	19-23.4	155-28.4	3.6	1.8	16	132	10.8	0.12	0.8	1.2	0.19	B
15	3	35	5.4	19-23.5	155-28.6	4.1	1.8	16	132	11.1	0.13	0.9	1.2	0.21	C
15	4	8	43.7	19-23.6	155-17.2	2.1		7	135	0.8	0.06	0.5	0.2	0.05	B
15	4	30	55.5	19-17.6	155-15.7	28.6	2.2	21	169	5.1	0.14	0.9	1.3	0.12	C
15	5	18	1.4	19-19.6	155- 9.5	7.0		11	201	4.7	0.28	2.0	1.1	0.18	C
15	5	19	59.1	19-22.6	155-18.2	1.8		7	124	2.9	0.08	0.4	0.4	0.05	B
15	5	45	13.4	19-12.9	155- 1.3	15.0*		13	237	22.5	0.47	3.5		0.23	D
15	5	50	52.7	19-19.0	155- 8.4?	3.0		14	209	6.2	0.37	2.0	1.6	0.23	C
15	7	30	28.0	19-20.6	155-20.1	0.8		11	109	4.8	0.07	0.3	0.4	0.08	A
15	8	43	46.0	19-37.1	155- 6.9	2.5*	1.8	5	345	29.4	2.37	13.6		0.17	D
15	10	32	14.1	19-24.0	155-15.7	3.6	1.5	13	161	2.2	0.07	0.3	0.7	0.07	B
15	13	4	20.9	19-23.1	155-17.4	1.8		7	105	1.2	0.06	0.4	0.4	0.06	B
15	14	23	9.7	19-17.7	155-21.5	8.0*	0.9	9	131	5.0	0.15	1.3		0.17	C
15	14	36	28.3	19-18.4	155-13.5	8.0*		8	221	7.5	0.27	2.0		0.17	C
15	15	16	34.9	19-22.3	155-18.1	1.6		7	126	3.1	0.04	0.2	0.2	0.03	B
15	16	29	11.1	19-17.3	155-12.9	8.0*	1.6	12	207	9.4	0.20	1.4		0.18	C
15	16	33	8.8	19-21.1	155-19.7	2.1*	1.3	8	92	4.5	0.08	0.6		0.12	B
15	16	44	43.4	19-22.0	155-18.8	2.3*		7	155	3.6	0.04	0.3		0.04	C
15	17	12	25.3	19-25.4	155-23.5	8.0*	1.5	12	172	6.3	0.08	0.7		0.11	C
15	17	40	35.0	19-25.0	155-23.3	5.6	1.4	12	170	6.6	0.12	0.9	1.1	0.15	C
15	18	49	25.9	19-22.5	155-23.3?	5.8	1.5	10	120	4.3	0.17	1.3	3.1	0.16	B
15	19	27	46.0	19-19.9	155-11.2	8.0*	1.2	10	225	4.8	0.19	1.2		0.09	C
15	20	19	9.6	19-22.0	155-13.1	2.8		6	155	1.4	0.14	1.1	1.9	0.06	C
15	20	47	1.5	19-21.1	155-19.1	2.3*	1.3	10	85	3.5	0.05	0.4		0.09	B
15	20	55	2.1	19-22.2	155-18.2	0.9		7	155	3.3	0.06	0.3	0.3	0.05	B
15	21	19	42.4	19-21.2	155-24.5?	8.1	1.7	14	112	2.8	0.11	0.9	0.7	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 15	21	23	11.5	19-22.3	155-18.2	1.4		11	68	3.2	0.06	0.3	0.3	0.07	A
16	0	1	55.6	19-10.5	155-30.2	38.8		13	163	14.6	0.41	1.5	4.2	0.11	C
16	2	11	20.0	19-24.2	155-16.6	19.9		12	101	1.4	0.15	0.7	1.6	0.07	A
16	7	7	2.6	19-22.5	155-15.9	27.7	2.3	24	51	0.2	0.13	0.9	1.3	0.14	B
16	8	11	18.4	19-20.3	155- 7.9	0.6		11	163	4.7	0.10	0.7	1.4	0.07	B
16	9	20	18.6	19-41.3	156- 5.0	38.1*	2.9	17	290	25.2	0.23	1.6		0.08	D
16	11	32	52.2	19-21.1	155-26.3	2.4	1.7	14	74	5.5	0.11	0.8	1.7	0.20	B
16	11	44	26.6	19-21.1	155-19.4	2.0*	1.1	8	89	3.9	0.06	0.5		0.10	B
16	12	1	25.1	19- 5.3	155-26.0	26.8	2.1	12	215	8.4	0.43	2.5	4.1	0.15	C
16	13	58	19.3	19-23.6	155-26.6?	0.0	1.6	13	74	8.5	5.23	0.7	9.9	0.17	B
16	15	59	6.5	19-21.4	155-23.1	5.6		10	162	2.3	0.14	1.1	0.9	0.14	C
16	16	0	32.7	19-20.5	155-18.9	3.2	0.9	5	92	2.8		0.0		0.00	D
16	16	38	30.4	19-21.1	155-19.3	1.9*		8	88	3.7	0.04	0.3		0.07	B
16	16	45	24.9	19-21.1	155-19.2	2.0	0.8	8	86	3.6	0.19	0.6	0.8	0.19	A
16	16	50	56.2	19-37.8	155-58.7	10.7	3.0	11	273	13.6	0.41	2.3	1.7	0.09	C
16	17	58	35.1	19-16.2	154-59.9	33.0		15	230	8.7	0.47	2.4	3.6	0.14	C
16	20	30	21.3	19-20.9	155-12.6	7.9	1.6	12	147	3.0	0.11	1.2	0.6	0.17	B
16	20	31	53.1	19- 9.6	155-35.3	6.1	2.6	17	116	10.3	0.13	0.8	0.8	0.14	B
16	21	19	56.6	19-22.6	155-22.6?	1.0		9	160	4.6	0.14	1.0	2.0	0.15	C
16	21	31	29.6	19-25.1	155-29.4	6.1	1.8	13	129	13.7	0.11	0.8	0.7	0.14	B
16	21	42	27.6	19-25.8	155-26.0	5.0	2.1	14	104	8.8	0.06	0.4	0.5	0.10	A
16	21	43	44.0	19-11.3	155-32.4	5.1	2.2	14	99	8.7	0.17	1.1	1.2	0.23	B
16	22	45	46.0	19-19.0	155-15.5	5.7	1.5	13	191	3.8	0.15	1.0	0.7	0.16	C
16	23	12	25.0	19-20.6	155-19.9	0.4	1.0	8	108	4.5	1.00	0.4	2.1	0.07	B
17	0	8	55.7	19-22.3	155-14.2	22.0	1.5	12	131	3.0	0.18	1.1	1.7	0.10	B
17	11	34	36.0	19-26.6	155-27.6	7.2	2.3	15	85	7.8	0.07	0.5	0.5	0.09	B
17	12	41	20.6	19-20.6	155-19.9	1.6*	1.3	7	110	4.6	0.06	0.4		0.07	C
17	15	43	20.5	19-19.2	155-13.1	8.0*	1.6	15	170	6.1	0.08	0.6		0.11	C
17	15	56	12.9	19-20.1	155-15.8	7.7	1.5	19	136	2.8	0.05	0.5	0.3	0.12	B
17	16	27	23.8	19-20.1	155-19.7?	2.1*	1.3	8	116	4.0	0.05	0.4		0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 17	17	39	33.9	19-23.8	155-24.8	5.5		12	105	7.2	0.10	0.8	1.3	0.17	B
17	19	34	44.4	19-20.5	155-19.4	2.1*	1.3	9	102	3.7	0.04	0.3		0.07	B
17	22	41	0.3	19-13.8	155-26.3	4.7	2.0	16	146	13.0	0.10	0.7	0.6	0.13	B
17	22	42	14.8	19-23.7	155-17.1	2.6	0.5	7	133	0.8	0.04	0.3	0.7	0.04	B
17	23	51	19.7	19-12.3	155-26.1	4.2	2.3	16	141	6.0	0.10	0.8	0.8	0.18	B
18	0	58	16.6	19-24.1	155-24.0	4.8	1.5	12	195	7.3	0.13	0.8	0.9	0.12	C
18	1	23	41.0	19-22.7	155-23.1	7.1		7	175	4.7	0.29	0.7	2.3	0.07	C
18	1	50	51.2	19-20.6	155-19.8	2.0*	1.2	10	106	4.2	0.05	0.3		0.07	B
18	4	1	0.3	19-16.2	155-24.0	2.6	1.8	18	129	7.4	0.10	0.7	1.1	0.19	B
18	4	8	46.3	19-19.9	155-17.4	7.9		8	148	0.3	0.12	0.3	0.8	0.03	B
18	4	10	28.7	19-16.2	155-24.0	2.6	1.8	19	129	7.4	0.09	0.7	1.0	0.17	B
18	4	13	30.4	19-16.8	155-23.8	3.0		9	160	6.3	0.15	1.3	2.2	0.16	C
18	4	14	28.7	19-16.4	155-23.9	2.6		11	153	7.1	0.10	0.8	1.3	0.10	C
18	4	32	33.9	19-17.4	155-22.4	8.0*		10	262	5.4	0.47	2.7		0.15	D
18	4	45	41.9	19-18.9	155-21.6	8.0*		5	257	5.4	2.25	13.6		0.28	D
18	5	34	45.3	19-20.3	155-19.1	1.7		6	100	3.0	0.13	0.4	0.5	0.03	B
18	6	53	39.9	19-22.4	155-18.2	2.1*		8	126	3.0	0.05	0.4		0.06	C
18	7	6	21.6	19-51.5	155-41.4	42.5		14	271	25.8	0.70	3.3	4.9	0.10	D
18	14	30	10.1	19-23.1	155-16.5	12.8	1.8	19	67	0.7	0.05	0.7	0.5	0.14	B
18	17	52	33.1	19-22.3	155-23.1	8.0		11	116	3.9	0.07	0.6	0.5	0.09	B
19	0	46	15.9	19-18.1	155-13.4	8.0*	1.7	13	188	7.5	0.12	0.9		0.14	C
19	1	3	22.0	19-17.6	155-13.0	8.0*		9	239	5.0	0.28	1.8		0.13	D
19	4	11	3.4	19-20.3	155-13.2	8.2	1.6	12	153	4.2	0.10	0.9	1.7	0.14	C
19	4	27	44.5	19-25.2	155-23.1	8.0*	1.5	7	176	6.1	0.04	0.3		0.03	C
19	4	45	45.1	19-25.6	155-22.8	8.0*	1.4	8	168	5.1	0.11	0.9		0.10	C
19	9	10	40.3	19-19.7	155-18.6?	3.4		7	108	2.3	0.37	1.3	2.2	0.12	B
19	11	15	54.6	19-18.7	155-13.6	8.0*		7	214	7.1	0.24	2.0		0.16	C
19	14	16	7.2	19-23.1	155-24.0	8.0*	1.6	12	68	5.5	0.08	0.7		0.12	B
19	16	4	35.6	19-20.6	155- 8.0	8.7		11	156	4.2	0.10	1.2	1.8	0.11	C
19	20	5	57.0	19-19.4	155-13.9	8.0*		13	146	6.2	0.09	0.8		0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 19	21	57	26.4	19-16.5	155-21.4	2.2		10	160	5.5	0.22	1.6	2.4	0.26	C
19	22	31	33.0	19-23.6	155-23.1	3.5	1.4	13	112	6.0	0.09	0.7	1.0	0.13	B
19	22	38	27.8	19-18.9	155- 7.1?	0.0	3.4	22	161	7.5	7.68	1.6	14.4	0.39	D
19	22	43	42.7	19-19.8	155- 7.7	8.0*		7	172	5.7	0.12	1.2		0.12	C
19	22	48	17.7	19-20.3	155-12.1	5.0	1.8	21	141	4.1	0.11	0.8	0.7	0.23	C
19	23	30	2.7	19-23.0	155-17.4	2.7		7	107	1.2	0.04	0.3	1.1	0.03	B
19	23	58	21.0	19-24.6	155-24.0	7.1	2.1	23	60	7.7	0.09	0.7	0.6	0.18	B
20	0	48	15.2	19-19.5	155- 7.4	6.4	2.0	11	177	6.3	0.18	1.5	0.9	0.18	C
20	1	12	44.1	19-19.1	155- 8.7	4.0	2.3	21	161	5.9	0.15	0.9	1.0	0.25	C
20	2	12	33.6	19-49.8	155-41.6	3.4	2.5	8	225	25.2	0.12	0.7	0.5	0.03	B
20	3	13	39.3	19-20.4	155-12.2	6.1	1.9	19	141	4.0	0.11	0.9	0.7	0.22	C
20	4	33	28.9	19-20.8	155-12.5	9.9		10	180	3.1	0.11	0.7	1.0	0.07	B
20	6	53	28.2	19-20.6	155-19.6	2.3*		9	103	3.9	0.06	0.4		0.08	B
20	7	58	41.9	19-20.4	155-11.8	10.7	1.0	9	203	4.1	0.13	1.0	1.0	0.07	B
20	9	56	4.4	19-19.8	155-13.3	8.0*	1.2	11	160	5.2	0.13	1.1		0.19	C
20	13	36	12.0	19-23.7	155-16.5	14.0	2.6	23	52	0.8	0.04	0.5	0.6	0.10	B
20	14	7	44.7	19-19.7	155-16.7	8.7		6	177	1.4	0.02	0.2	0.2	0.01	B
20	14	10	14.6	19-23.3	155-16.8	14.4	1.4	11	80	2.3	0.10	0.9	1.3	0.10	A
20	15	35	7.6	19-22.6	155- 3.9	3.4		9	160	5.3	0.14	1.0	1.3	0.13	C
20	16	46	2.0	19-17.3	155-27.3?	1.6	1.9	14	99	8.8	0.10	1.0	2.2	0.20	B
20	17	24	53.3	19-18.8	155-13.9	8.0*	1.4	10	209	6.0	0.17	1.2		0.15	C
20	18	33	50.7	19-23.6	155-17.0	2.0		8	141	0.5	0.06	0.5	0.3	0.08	B
20	18	37	23.5	19-23.5	155-16.8	11.8	1.3	18	68	0.1	0.07	0.8	0.6	0.14	B
20	18	57	17.5	19-23.6	155-16.5	14.2	1.5	17	122	0.6	0.06	0.6	0.7	0.09	B
20	19	12	17.2	19- 9.4	155-27.8	30.9		14	180	0.2	0.30	1.6	3.1	0.14	C
20	20	24	11.4	19-23.7	155-16.8	2.6		8	149	0.5	0.05	0.4	0.7	0.05	B
20	22	39	43.7	19-19.7	155-13.7	6.0	1.8	20	168	4.7	0.16	1.1	0.8	0.24	D
21	2	58	17.4	19-24.4	155-14.7	1.0	0.3	8	262	4.1	0.26	0.7	0.4	0.05	C
21	6	12	25.9	19-23.5	155-16.4	13.2	1.3	14	85	0.7	0.06	0.8	0.6	0.10	B
21	6	35	38.7	19-15.4	155-15.4	19.8	1.5	13	233	7.3	0.59	3.3	4.4	0.19	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 21	6	46	11.1	19-21.3	155- 7.6	2.7		12	146	8.5	0.10	0.8	1.5	0.12	B
21	9	21	40.6	19-22.4	155-25.5	5.6	1.9	10	72	5.6	0.09	0.7	0.7	0.11	B
21	10	45	41.1	19-23.4	155-24.5?	0.6		12	74	6.3	2.20	0.8	8.3	0.19	B
21	13	17	53.8	19-17.9	155-48.0	5.0	2.5	15	247	19.9	0.46	1.9	1.5	0.11	C
21	18	24	23.0	19-20.1	155-19.4	1.9		11	112	3.5	0.13	0.4	0.5	0.08	A
21	21	10	37.0	19-19.4	155- 8.6	2.8		12	178	5.5	0.21	1.4	1.4	0.22	C
21	21	19	5.5	19-21.5	155-28.1	4.5		15	84	8.7	0.08	0.7	0.9	0.15	B
21	22	39	56.4	19-22.9	155-22.3?	4.1	1.3	10	164	4.8	1.88	0.9	3.6	0.14	C
21	23	29	25.9	19-19.7	155- 7.5	2.2	2.8	19	155	5.9	0.15	0.9	1.2	0.21	C
21	23	43	6.4	19-19.3	155-12.2?	8.0*		11	280	5.8	7.19	35.3		0.24	D
22	0	13	56.0	19-20.4	155-19.3	5.3	1.5	12	102	3.4	0.07	0.4	0.6	0.09	A
22	1	2	10.4	19-20.7	155-19.4	1.9*	1.3	11	97	3.7	0.04	0.2		0.06	B
22	1	26	24.2	19-23.1	155-22.5?	2.6	1.4	12	168	5.0	1.17	0.6	2.2	0.11	C
22	2	36	57.4	19-22.9	155-22.7	8.0*		8	163	5.1	0.08	0.7		0.09	C
22	3	53	27.3	19-23.3	155-22.8	3.3		9	168	5.5	0.11	0.8	1.4	0.12	C
22	5	12	52.6	19-23.1	155-22.4?	2.7		11	168	4.9	1.34	0.7	2.6	0.13	C
22	5	25	4.8	19-23.1	155-23.7?	3.0	2.3	18	65	5.4	0.07	0.5	0.8	0.17	B
22	6	21	31.7	19-23.5	155-22.2?	0.0	1.2	9	166	6.4	6.37	0.7	12.1	0.10	C
22	6	24	10.9	19-23.3	155-21.4?	2.8		13	83	3.0	0.39	0.9	1.4	0.21	B
22	7	12	17.3	19-23.9	155-23.7?	0.0	1.5	13	120	6.8	4.10	0.4	7.8	0.09	B
22	10	9	40.1	19-21.7	155- 6.9	3.6	1.9	17	124	5.1	0.13	1.0	1.0	0.18	C
22	10	18	8.7	19-15.9	155-32.0	3.4	2.6	20	177	9.2	0.21	1.5	1.3	0.27	D
22	14	14	28.1	19-23.4	155-22.9	8.0*	1.6	11	171	5.7	0.09	0.7		0.10	C
22	16	22	4.3	19-23.4	155-22.9	8.0*	1.9	12	119	6.0	0.08	0.7		0.13	B
22	21	2	48.1	19-24.8	155-24.8	6.4	1.7	18	102	8.8	0.10	0.7	0.7	0.18	B
22	21	37	31.1	19-23.3	155-22.6?	0.8	1.3	12	162	5.1	1.58	0.6	5.9	0.13	C
23	0	5	8.0	19-24.6	155-24.4	5.9	2.1	19	91	8.4	0.09	0.7	0.6	0.14	B
23	0	53	52.9	19-20.5	155-19.7	3.5		6	108	4.1	0.36	0.7	4.8	0.04	B
23	1	17	52.5	19-17.0	155- 6.2	44.8	2.6	23	194	7.9	0.19	1.0	1.5	0.10	B
23	4	59	46.9	19-20.4	155-19.4	1.9	1.3	9	105	3.6	0.15	0.5	0.6	0.08	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 23	5	16	42.5	19-20.4	155-19.7	1.8*		9	109	4.0	0.04	0.3		0.06	B
23	5	20	49.0	19-22.6	155-26.7?	0.0		15	105	7.4	5.38	0.7	10.3	0.18	B
23	6	11	16.7	19-18.7	155-13.8	6.7		14	152	6.3	0.15	1.2	0.9	0.22	C
23	7	35	11.2	19-23.3	155-28.9	4.1		12	192	11.3	0.19	1.4	1.7	0.18	C
23	9	6	0.3	19-23.9	155-17.1?	1.0	0.5	8	133	1.1	0.30	1.1	2.4	0.11	B
23	14	19	[illegible]	19-17.[illegible]	155-12.9	8.0*		8	241	8.9	0.20	1.3		0.08	D
23	14	53	29.8	19-20.[illegible]	155-20.4?	2.7		8	118	5.1	0.19	0.5	2.6	0.08	B
23	14	59	22.8	19-20.4	155-19.6	5.0	1.4	9	107	4.0	0.07	0.4	0.6	0.09	A
23	16	46	5.4	19-22.4	155-18.4	0.9	0.9	10	132	3.3	0.07	0.3	0.4	0.07	B
23	17	41	11.7	19-18.3	155-10.0	9.0*		10	253	7.1	0.30	1.8		0.10	D
23	21	55	2[illegible]	19-21.4	155-25.7	3.9	1.7	16	72	4.8	0.12	1.0	1.4	0.20	C
23	21	56	50.4	19-22.1	155-25.4	5.7	2.1	16	69	5.4	0.10	0.7	0.9	0.17	B
23	22	7	58.6	19-22.4	155-25.6?	0.4	1.6	16	75	5.7	1.94	1.0	7.1	0.20	B
23	22	10	7.1	19-21.6	155-25.1	7.0	3.3	21	67	4.1	0.10	0.8	0.7	0.20	B
24	2	41	56.0	19-21.4	155-19.8	8.0*		5	139	4.9	0.15	1.4		0.12	C
24	2	51	40.3	19-18.6	155-14.8	5.2	1.5	13	207	5.4	0.18	1.2	0.8	0.18	C
24	2	54	10.5	19-20.4	155-19.4	5.2		12	104	3.6	0.08	0.4	0.6	0.08	A
24	5	57	25.4	19-20.9	155-12.1	6.3	1.2	9	149	3.1	0.11	0.9	1.0	0.12	B
24	7	26	15.7	19-19.0	155-15.8	10.1	1.5	9	186	3.4	0.21	1.2	1.8	0.11	C
24	13	53	46.0	19-19.6	155-15.1	9.2		12	180	4.0	0.18	1.1	1.6	0.13	C
24	14	11	4.6	19-20.3	155-17.[illegible]	8.2	1.3	8	165	0.8	0.12	0.6	1.0	0.03	B
24	14	14	1.4	19-18.0	155-50.1	4.1	2.8	12	244	23.5	0.57	2.3	2.0	0.12	C
24	16	41	6.2	19-24.4	155-17.4	8.1	1.5	6	154	0.6	1.16	2.2	6.3	0.04	C
24	17	17	34.2	19-23.1	155-23.3	8.0*	1.4	7	180	5.3	0.07	0.5		0.05	C
24	19	19	41.5	19-57.4	155-31.0	23.4	2.5	20	282	19.6	0.54	3.1	3.4	0.10	D
24	19	35	42.6	19-24.6	155-25.3	8.0*	1.6	16	72	8.9	0.05	0.5		0.10	B
24	20	27	24.5	19-22.9	155-25.4	8.0*		10	261	6.3	0.31	1.7		0.08	D
24	20	31	59.7	19-19.1	155-16.1	9.1		9	180	2.9	0.25	1.6	2.4	0.13	C
24	22	7	51.2	19-20.3	155-12.8	8.0*	0.9	6	189	6.3	0.15	1.5		0.10	C
24	22	53	17.0	19-21.6	155-13.7	13.4	1.1	7	150	2.8	0.20	0.6	1.7	0.03	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 24	22	57	57.4	19-24.2	155-17.4	8.5	1.3	9	115	1.0	0.07	0.6	0.6	0.04	A
25	4	31	39.4	19-22.7	155-18.5	0.6*	0.5	7	153	2.7	0.13	0.5		0.14	C
25	4	56	34.6	19-23.3	155-17.1?	2.8	0.8	8	95	0.6	0.03	0.2	0.4	0.02	B
25	5	14	33.0	19-21.2	155-24.9	34.7	1.7	10	247	3.4	0.93	3.2	7.2	0.07	D
25	6	36	17.3	19-22.8	155-23.2	9.3	1.5	8	221	6.3	0.23	1.6	3.5	0.09	C
25	6	51	3.1	19-20.1	155-19.3	5.0	1.9	11	109	3.4	0.08	0.4	0.6	0.08	A
25	10	4	51.4	19-24.4	155-22.0	8.7		11	94	4.3	0.07	0.5	1.5	0.10	A
25	11	42	49.1	19-26.0	155-26.8	7.6	2.4	20	70	9.3	0.09	0.6	0.6	0.15	B
25	12	1	17.2	19-24.4	155-17.2	8.4	1.4	12	70	0.6	0.02	0.2	0.2	0.03	A
25	12	41	3.9	19-19.4	155-13.1	8.0*	1.5	12	186	5.8	0.12	0.9		0.12	C
25	14	35	53.6	19-19.8	155- 8.1	8.0*	2.1	14	171	5.2	0.16	0.9		0.10	C
25	15	15	22.9	19-24.5	155-17.3	9.7	1.2	12	80	0.5	0.03	0.2	0.3	0.03	A
25	17	22	11.6	19-20.9	155- 6.4	8.0*	1.9	12	150	6.3	0.10	1.0		0.13	C
25	17	54	40.4	19-22.7	155-22.2	2.2*		7	148	4.7	0.09	0.6		0.10	C
25	19	22	9.4	19-24.0	155-17.8	8.8		13	60	1.4	0.03	0.3	0.4	0.04	A
25	19	35	30.8	18-51.1	154-54.5	8.0*	2.3	14	298	55.1	1.14	7.0		0.13	D
25	19	46	11.3	19-19.9	155-19.6	5.6	2.2	18	65	3.8	0.15	0.4	0.4	0.11	B
25	20	54	28.9	19-24.3	155-17.3	9.4	1.3	11	78	0.9	0.05	0.3	0.4	0.04	A
25	21	52	23.6	19-23.6	155-17.6	1.7	0.7	8	143	1.4	0.06	0.3	0.4	0.08	B
25	22	17	18.7	19-24.3	155-17.4	8.3	1.2	12	77	0.8	0.03	0.2	0.3	0.04	A
25	23	18	23.6	19-22.6	155- 7.4	13.0	1.4	9	207	4.2	0.10	1.4	0.4	0.05	C
25	23	32	53.9	19-23.5	155- 2.9	5.5	2.1	11	187	6.4	0.21	1.4	1.1	0.16	C
26	0	20	36.7	19-24.1	155-17.3	8.3		11	119	1.2	0.05	0.5	0.5	0.04	A
26	0	28	34.4	19-10.5	155-27.0	36.7	2.3	19	152	2.5	0.27	1.3	2.7	0.13	C
26	1	16	11.5	19-20.5	155-19.6	2.0*	1.3	11	104	3.8	0.04	0.3		0.07	B
26	1	29	36.7	19-20.2	155-11.7	8.0	1.7	15	143	4.5	0.09	0.9	1.7	0.13	B
26	2	3	3.6	19-23.8	155-17.1	8.7	1.3	12	82	0.9	0.05	0.4	0.5	0.05	A
26	2	33	27.0	19-10.5	155-16.1	37.0	2.5	19	190	14.5	0.25	1.4	2.5	0.13	C
26	4	58	11.6	19-24.6	155-24.0?	8.0*	3.0	14	136	7.8	0.38	2.9		0.60	C
26	5	24	30.3	19-24.4	155-17.6	9.4	1.3	11	73	0.5	0.05	0.4	0.5	0.04	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 26	9	48	7.5	19-10.8	155-16.9	36.6	2.4	20	185	13.5	0.22	1.2	2.2	0.11	C
26	10	12	41.2	20-13.5	155-34.4	54.9	3.5	20	287	25.3	0.93	4.4	5.9	0.13	D
26	11	57	54.9	19-20.7	155-19.1	5.3		6	92	3.1	0.10	0.2	0.9	0.01	B
26	13	42	2.3	19-23.7	155-18.1	9.7	1.3	8	145	2.2	0.12	0.9	1.0	0.03	B
26	16	49	28.1	19-18.3	155-49.1?	4.7	3.4	21	179	22.0	0.16	1.1	1.0	0.15	C
26	19	28	36.2	19-23.8	155-24.2?	0.0	2.2	15	71	6.9	5.70	0.7	10.9	0.17	B
26	20	58	41.5	19-20.5	155-13.8?	15.4		9	210	4.3	0.59	2.2	10.6	0.24	D
26	21	24	29.2	19-24.0	155- 0.9	4.9		8	149	8.4	0.19	1.6	1.8	0.21	C
26	21	31	54.2	19-23.7	155-24.9	1.4	1.3	8	211	7.1	2.63	1.5	9.4	0.15	C
26	22	42	7.8	19-23.7	155-17.3?	2.0	0.6	7	134	1.1	0.03	0.2	0.1	0.02	B
26	23	0	49.4	19-23.5	155-17.6	1.7	0.7	11	73	1.4	0.08	0.5	0.5	0.13	B
27	1	27	53.9	19-22.0	155-18.2	1.5	1.0	9	78	3.6	0.08	0.3	0.4	0.08	A
27	1	42	28.1	19-24.1	155-23.4?	0.1	2.0	12	114	6.5	5.26	0.5	10.0	0.10	B
27	2	17	15.2	19-24.0	155-23.8?	0.0		11	122	7.1	4.64	0.5	8.8	0.09	C
27	2	20	30.4	19-24.0	155-23.8	8.0*	2.6	13	70	7.1	0.07	0.6		0.12	B
27	2	20	54.1	19-24.2	155-24.3	3.7	3.2	10	74	7.5	0.12	0.9	1.7	0.20	B
27	2	22	43.5	19-23.8	155-24.1	8.0*		7	199	6.8	0.06	0.4		0.04	C
27	2	23	58.0	19-23.9	155-23.5?	0.0	1.5	11	118	6.7	4.77	0.5	9.1	0.08	B
27	2	41	59.1	19-23.4	155-27.1	5.2	1.7	13	96	8.9	0.12	1.0	1.5	0.21	B
27	5	58	36.0	19-24.2	155-24.4	8.0*		9	205	7.6	0.13	0.9		0.09	C
27	8	6	36.7	19-23.2	155-17.5	0.8*	0.7	8	103	1.2	0.07	0.3		0.09	B
27	9	3	1.8	19-24.6	155-25.3	8.0*	1.7	15	72	8.9	0.04	0.3		0.08	B
27	10	19	25.4	19-24.1	155-25.8	6.1	1.9	20	68	8.3	0.09	0.7	0.7	0.19	B
27	11	2	19.6	19-20.1	155- 6.4	8.0*		10	166	6.1	0.09	1.2		0.11	C
27	11	25	47.1	19-24.7	155-24.6	6.6	1.9	17	129	8.7	0.14	1.0	1.0	0.19	C
27	13	6	40.9	19-20.4	155-19.4	2.1*		10	103	3.6	0.04	0.3		0.07	B
27	14	39	43.2	19-19.6	155-14.1	8.1		17	144	4.5	0.09	0.7	1.5	0.14	B
27	17	34	8.5	19-21.5	155- 1.0?	7.3	2.2	15	185	4.4	0.23	1.7	1.0	0.24	C
27	17	44	13.5	19-19.4	155-25.0	7.8	1.7	7	283	3.3	0.56	3.5	1.0	0.04	D
27	18	0	56.4	19-23.7	155-17.0	2.6	1.4	13	62	0.7	0.07	0.4	1.1	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 27	22	30	33.9	19-20.3	155-13.2	8.2	1.6	17	154	4.3	0.08	0.6	1.2	0.12	C
27	22	57	26.6	19-28.1	155-35.6	8.0*	2.3	9	318	21.8	1.65	8.2		0.08	D
27	23	55	51.0	19-23.2	155-17.2	2.4		7	152	0.8	0.06	0.5	0.9	0.05	B
28	0	5	57.6	19-23.4	155-17.7?	0.0	1.5	12	89	1.5	0.39	0.7	0.8	0.32	C
28	0	14	17.1	19-20.0	155-16.7	19.4		14	130	1.2	0.46	2.0	3.7	0.17	B
28	1	5	39.4	19-22.9	155- 2.6	6.8	2.1	15	129	5.5	0.13	1.1	0.8	0.18	B
28	4	44	7.4	19-13.7	155-28.2	23.6	2.3	16	200	7.7	0.50	2.5	4.2	0.15	C
28	8	12	57.8	19-19.6	155- 5.9	6.7	2.0	14	179	5.3	0.19	1.9	0.9	0.20	C
28	8	15	26.8	19-21.9	155- 6.8?	7.3		14	132	5.3	4.65	1.9	8.8	0.40	C
28	9	15	47.8	19-18.9	155-13.3?	7.8	2.4	21	152	6.5	0.10	0.7	0.4	0.14	C
28	10	23	20.1	19-19.2	155-13.5	8.6	2.2	17	172	5.7	0.08	0.7	0.3	0.11	C
28	10	37	32.9	19-23.5	155-17.3	1.4	1.3	11	90	1.0	0.03	0.2	0.2	0.06	A
28	15	26	42.3	19-20.2	155-19.9	2.0*		10	117	4.3	0.06	0.4		0.09	B
28	18	40	57.9	19-23.4	155-17.2	2.4		5	143	0.4	0.05	0.4	0.5	0.04	B
28	22	13	2.3	19-23.7	155-16.7	3.2	1.9	17	76	0.7	0.05	0.3	0.6	0.10	B
28	22	29	0.8	19-23.7	155-17.4	1.5	0.9	8	134	1.0	0.09	0.5	0.3	0.07	B
28	22	58	11.5	19-19.0	155-13.6	8.0*	1.7	12	194	5.9	0.15	1.0		0.14	C
29	2	37	0.3	19-23.9	155-17.0	2.2	0.7	7	139	0.9	0.03	0.3	0.6	0.03	B
29	3	3	13.4	19-23.0	155-17.3	1.9	0.3	8	165	1.0	0.13	0.7	0.4	0.09	B
29	3	25	1.1	19-22.7	155-17.5?	0.9	1.0	9	102	1.6	0.16	0.3	0.3	0.08	B
29	4	46	27.1	19-23.9	155-15.5	2.0*	0.9	8	229	2.8	0.15	0.7		0.26	D
29	4	49	23.6	19-23.4	155-17.1	1.9	0.8	8	94	0.3	0.06	0.4	0.3	0.05	A
29	5	7	21.8	19-23.1	155-17.3	1.5	1.0	11	91	2.7	0.04	0.2	0.2	0.06	A
29	6	7	40.9	19-22.3	155-18.1	2.6		6	127	2.9	0.04	0.1	0.9	0.01	B
29	6	33	6.5	19-23.6	155-17.4	1.7	0.9	12	85	1.0	0.05	0.4	0.3	0.09	A
29	6	49	25.2	19-12.5	154-32.3?	22.9		8	327	64.0		50.6	43.8	1.29	D
29	8	13	8.1	19- 7.9	155-31.6	30.0		15	155	7.2	0.31	1.6	3.2	0.15	C
29	14	19	58.2	19-23.9	155-23.1	7.5	1.7	15	107	6.0	0.05	0.4	0.3	0.08	A
29	14	41	25.0	19-23.9	155-17.2	2.1	0.7	8	129	1.0	0.03	0.3	0.2	0.03	B
29	14	49	36.2	19-22.3	155-12.0?	8.1		13	131	1.3	0.08	1.2	0.6	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 29	15	3	54.9	19-23.6	155-22.5	4.3	1.4	15	161	5.0	0.13	0.8	1.1	0.17	C
29	15	17	14.6	19-20.7	155- 5.7	3.1		12	152	5.1	0.12	1.3	1.0	0.15	C
29	16	50	54.4	19-24.5	155-16.8	9.0	1.4	11	175	0.8	0.20	1.3	1.5	0.09	C
29	17	33	17.9	19-23.9	155-17.2	2.2	0.7	8	129	1.1	0.04	0.4	0.2	0.05	B
29	18	8	23.0	19-19.6	155-12.9	8.7	1.8	17	165	5.2	0.08	0.7	1.1	0.12	C
29	20	21	53.2	19-24.2	155-25.8?	0.0		12	144	8.6	6.50	0.8	12.4	0.15	C
30	1	56	1.9	19-20.5	155-13.0	4.6		15	183	3.7	0.18	1.1	1.0	0.21	C
30	5	36	56.4	19-22.6	155- 5.7?	0.0	1.8	17	113	7.0	6.17	0.9	11.8	0.22	B
30	10	1	51.9	19-22.8	155-17.3?	2.4		6	110	1.3	0.09	0.5	0.3	0.05	B
30	14	12	46.2	19-34.2	155-43.3	5.2	2.4	8	245	16.7	0.40	1.9	1.2	0.06	C
30	14	40	27.7	19-23.6	155-28.9	4.5	1.8	18	83	11.6	0.10	0.7	0.8	0.20	B
30	15	27	7.0	19-20.0	155-12.6	5.4	1.5	18	143	4.5	0.13	0.9	0.9	0.24	C
30	16	22	12.0	19-20.7	155-10.8	5.1		8	154	3.2	0.07	0.6	0.5	0.07	B
30	16	30	15.9	19-20.6	155-14.5	26.0		11	135	2.6	0.21	1.0	2.1	0.08	B
30	17	49	44.5	19-34.5	155-20.9	8.0*		8	184	9.7	0.18	2.3		0.16	C
30	21	25	15.4	19-22.1	155-24.2	7.1		18	86	3.8	0.09	0.7	0.6	0.17	B
30	22	18	47.3	19-20.7	155-19.5	1.7		10	99	3.8	0.12	0.3	0.5	0.06	A
30	22	33	13.1	19-23.4	155-25.4	5.7	1.9	19	63	6.9	0.08	0.6	0.7	0.17	B

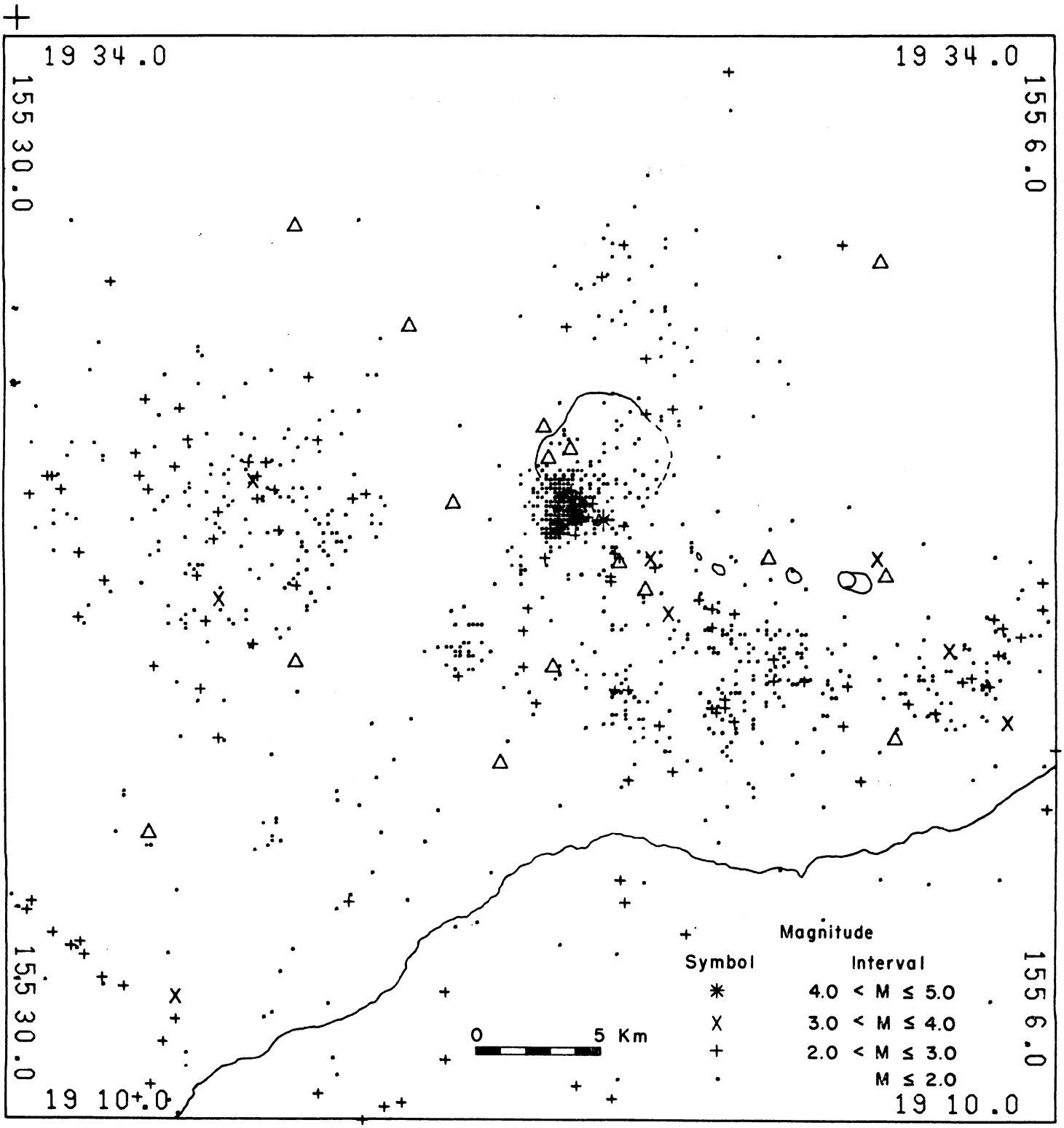

Figure 2.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 3.--Felt Earthquakes

Date	Time H	Time M	Time S	Magnitude	Felt Report
Apr. 4	22	57	44.7	2.9	Volcano
21	00	06	22.8	3.5	Kapapala
25	08	03	01.7	4.0	Eastern half of the island
25	23	56	13.1	4.5	Island-wide
28	08	09	53.3	2.5	Kapapala
May 5	05	59	17.4	2.8	Paauilo
6	21	05	05.1	3.3	Kamuela
8	05	10	59.1	3.1	Volcano
13	20	29	06.1	4.1	Northwestern parts of the island
16	19	29	56.8	2.9	Kapapala
28	01	27	39.3	2.9	Kealakekua
June 5	16	48	25.6	2.7	Volcano
11	17	29	45.9	3.0	Volcano
12	02	16	15.9	2.9	Volcano
26	10	12	41.2	3.5	Kamuela

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
EAST KOAE	EKO	19 22.17	155 14.99	1009	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	Installed 5/26/71
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WEST PIT	WPT	19 24.70	155 17.50	1115	3	1.34			
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KAMUELA	KAM	20 1.90	155 42.00	740	2	0.7			
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

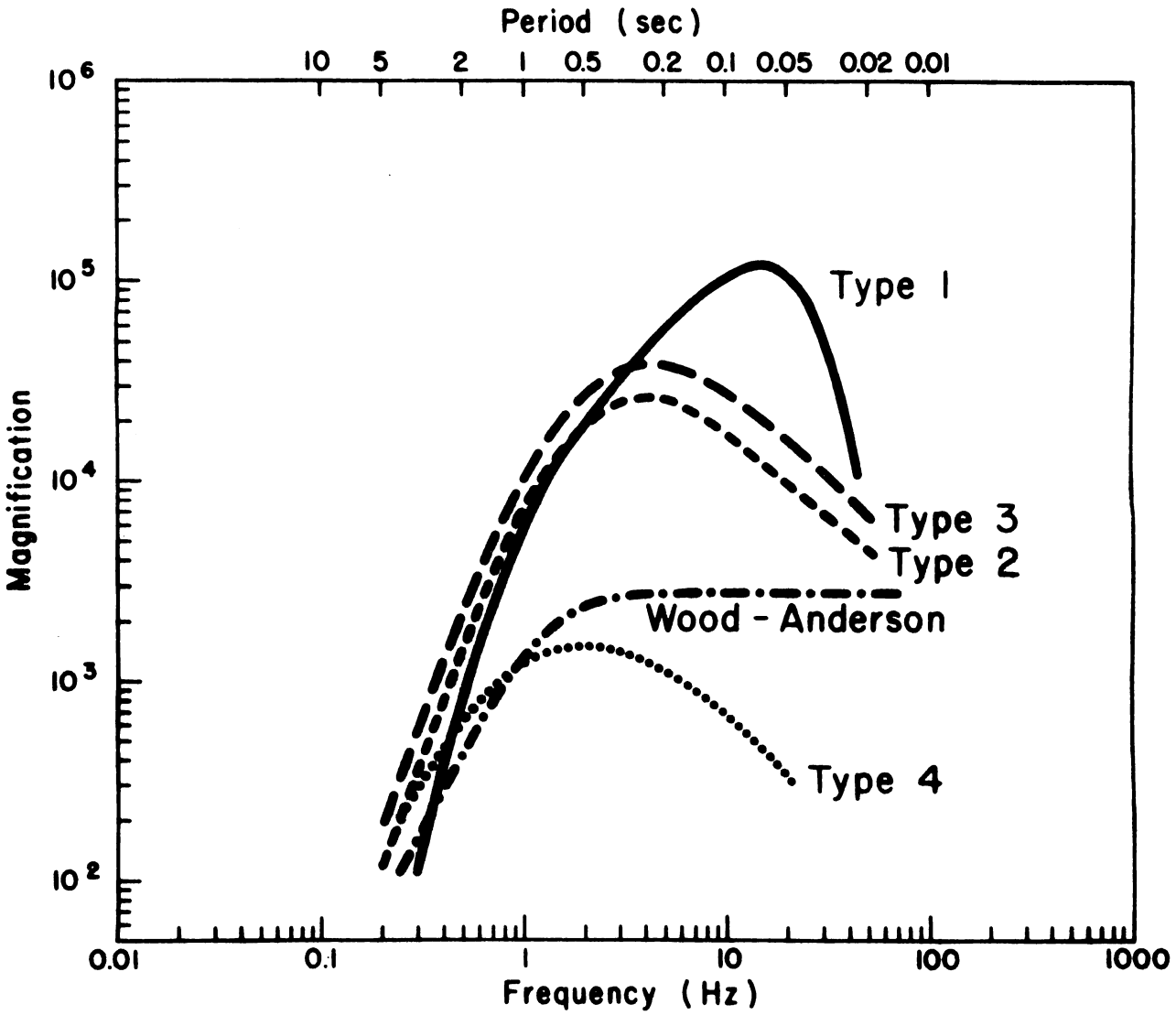

Figure 3.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 5.--Description of Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 17, Summary 61.

Table 6.--Tilt Coordinates at Uwekahuna, April, May, and June 1971

Date	N-S	E-W	Date	N-S	E-W
Apr. 4	546	370	May 23	548	369
11	546	371	30	546	367
18	547	372	June 6	549	365
25	547	370	13	550	365
May 2	547	370	20	554	375
9	548	371	27	558	374
16	547	371			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See Fig. 4)

Tilt Base		Date (1971)	*Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1971)
Uwekahuna	(U on Fig. 4)	15 June	624.8	386.6	9.06	N47.5Deg.W	27 Apr.
Tree Molds	(TM)	16 June	538.9	477.0	3.04	N14.6Deg.W	26 Apr.
Sand Spit	(SS)	15 June	1039.8	587.4	16.52	N59.7Deg.W	27 Apr.
Mehana	(M)	24 June	595.7	594.4	2.39	S66.7Deg.E	26 Apr.
Keamoku	(Kea)	16 June	579.7	433.3	7.66	N46.9Deg.W	26 Apr.
Ahua Kamokukolau	(Kam)	15 June	473.1	490.2	21.15	S19.8Deg.W	27 Apr.
Kipuka Nene	(KN)	17 June	286.9	496.7	3.44	S67.5Deg.W	28 Apr.
Hilina Pali	(HP)	17 June	457.4	493.4	0.84	N80.8Deg.W	3 Feb.
Kapapala Ranch	(Kap)	24 June	484.0	521.0	0.63	S19.2Deg.W	2 Feb.

* See Table 8, HVO Summary 61.

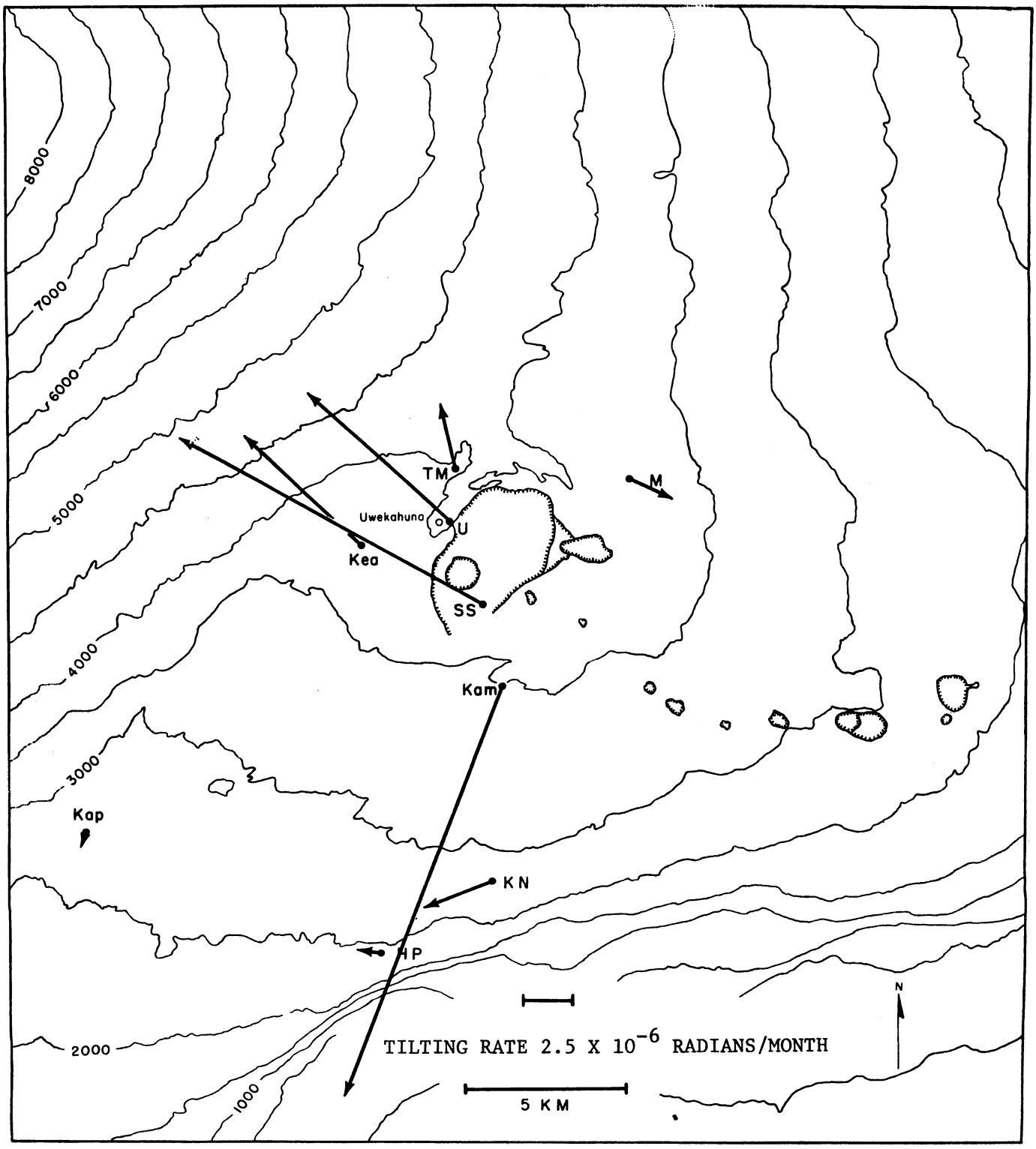

Figure 4.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 7 for explanation of abbreviations.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

Summary 63

July, August, and September 1971
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Chronological Summary
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Summary of eruptive events

Declining activity at Mauna Ulu and tumescence centered in the south part of Kilauea Caldera marked the beginning of this quarter. Flow within lava tubes to Kilauea's south flank had ceased in May, and in early June the lava lake in Mauna Ulu's crater had begun to grow more sluggish and to drop in level. By July 1, the level of the lava had fallen to a point about 75 m below the crater rim. The level continued to drop at a remarkably constant rate and by the end of September stood at about 145 m below the rim. At this level, remaining lava was confined to two small, sluggish pools separated by a N-S septum. Discontinuous but persistent collapse of the crater walls added growing piles of blocky rubble to the crater floor. The lethargic volcanic behavior and the withdrawal of the lava column suggested that the eruption at Mauna Ulu was dying. As activity at Mauna Ulu waned, the summit area of Kilauea underwent considerable tumescence and several swarms of small earthquakes occurred, culminating in two brief eruptions. The first of these was a 10-hour eruption on August 14 both within and along the south rim of the summit caldera. On September 24, a second eruption broke out on the floor of the summit caldera, which, during the following 5 days, migrated into the southwest rift zone--the first activity along this rift since 1920.

The August 14 eruption was immediately preceded by strong harmonic tremor that began at 07:52. At 08:55 lava fountains burst from new ENE-trending fissures a few hundred meters SE of Halemaumau on the caldera floor. Fountaining quickly spread eastward along en echelon fissures that extended a total of about 1.8 km. The east end of this line of fissures lay on the crater rim, resulting in a two-tiered line of fountains as high as 75 m and cascades over the caldera wall. During the 10-hour eruption, about 9.5×10^6 m^3 of new lava covered an area of 2.1 km^2 on the south and east parts of the floor of the caldera.

After this eruption, Kilauea's summit began to re-inflate. This inflation continued throughout the following six weeks and was again accompanied by several seismic swarms. At about 18:50 on September 24, continuous harmonic tremor began, and at 19:20 fountaining commenced along fissures on the caldera floor just southwest of Halemaumau and soon reached 50 m in height. Some lava cascaded over the western wall of Halemaumau, but most flowed southward across the southwestern caldera floor. At about 19:50, fissures opened within Halemaumau, and these fountains reached 30 m in height. Within a few minutes cracks of the southwest rift zone began to open on the rim of the caldera; fountaining broke out there at 20:05 and began to move down the rift zone. When the line of fountains reached a length of about 150 m, it migrated downrift about 1 km, issuing thin flows that covered several thousand square meters. Meanwhile the flow on the caldera floor moved about 3 km to the south across the caldera rim and down a dry stream bed, flooding an instrument vault (Outlet Vault) and destroying seismometers, tiltmeters, and some equipment for magnetic studies. Eruptive activity declined about 23:00 and nearly stopped by midnight, although mild activity in Halemaumau persisted until the following evening.

During the early morning of September 25, the floor of Halemaumau began to subside, presumably because stored lava was draining into newly opened underground conduits. At about 09:45, new fissures opened along the southwest rift about 4 km SW of the caldera rim ($1\frac{1}{2}$ km SW of Cone Peak). Fountains issued from these fissures for about half an hour and then ceased when other fissures opened several hundred meters downrift. Thereafter a line of fountains as much as 1 km long migrated downrift, but activity gradually declined during the early afternoon after a nearly continuous line of vents had formed along a fissure about 1.6 km long. Meanwhile the floor of Halemaumau subsided a total of 45 m, reaching a depth of 90 to 100 m below the crater rim by late afternoon when the subsidence essentially ended. Because of declining activity at both Halemaumau and along the SW rift late on September 25, it seemed that the eruption might be ending. However, early on September 26, new fountains broke out several kilometers farther downrift on the southwest flank of Mauna Iki. Again the fountains migrated downrift, and by midday they had advanced about 2 km SW of Mauna Iki, marking the limit of the southwestward advance. Meanwhile fountains again broke out approximately 3 km uprift, and sporadic fountains continued for several days, migrating almost at random up and down the rift zone along an 8-km span. All activity finally ceased on September 29. During the 5-day long eruption, about 8×10^6 m^3 of the erupted lava remained on the surface of the ground, and an undetermined but large amount drained into cracks and lava tubes along the rift zone. About 4.0 km^2 of land was covered by the new flows. As the eruption ended, inflation of Kilauea's summit region began anew. It is notable that the sluggish lava pond in Mauna Ulu remained apparently unaffected during the August and September eruptions and simply continued to drop steadily to ever lower levels.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit Long-period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea.

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
July 1				2	10	307	7	83	39	7	WWVH radio change in format.
2				5	8	484	19	165	41	3	
3		2m		4	7	469	53	92	15	22	
4		7m		2	4	304	29	174	34	2	Strong wind.
5		11m			6	311	23	130	21	5	
6					4	238	11	79	36	3	
7		10m		2	5	302	14	60	23	10	KOH installed.
8	4m			2	5	347	15	52	38	12	
9				2	7	356	2?	82	42	10	
10				2	1	367	12	52	44	3	
11				1	3	373	20	56	32	1	
12					3	422?	7	33	25	1	
13		4m		2	12	1192	17	89	31	2?	
14					3	933	20	200	20	(?)	EKO signal switched to PHH on smoke recorder.
15					3	647	18	191	25	2?	
16		7m		3	26	624	31	217	35	(?)	
17				1	62	714	13	178	25	5	
18		10m?		2	92	492	12	40	62	4	
19		14m?			160?	537	28	195	69	1?	
20		10m?		1	124	474	38	162	54	(?)	
21		30m?		3	51	310	8	53	158	(?)	
22		20m		3	7	221	9	108	187	(?)	
23		20m		2	27	242	12	87	243	(?)	
24		20m		2	(?)	337	13	100	108	(?)	
25					37	580	19	169	187	(?)	
26		10m		1	72	385	10	21?	117	(?)	
27		10m		2	123	462	12	67	193	5	
28		15m		3	70	739	28	44	137		
29	25m	15m?			96	3852	11	218?	263	1	
30					33	828	35	125	96		
31	10m			8	46	491	16	88	74		Strong wind.

Low level tremor on the upper east rift.

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow					
August 1			Strong tremor August 14-15 summit eruption; weak to sporadic tremor on the upper east rift remainder of the month.	3	42	(?)	6	31?	65		NPT - out.
2					49	394	8	94	57?	1	
3					19	373	16	37	40	4	
4				1	115	829	17	202	81	1?	
5		20m		7	174	903	32?	225	209		
6		15m			181	558	12?	86?	59?	17	
7		10m		2	106	807	5	61?	34?	2	
8		15m		1	92	2334	8	71	65	10	
9				4	70	4937	22	161	96	7	
10		15m		2	70	3683	22	67	71	7	
11		25m		2	96	2222	2	57	123	1	
12		5m		1	99	2034	6	85	204	12	
13	7m	12m		1	87	1583	8	117	199	11	
14				4	197?	230?	4?	47?	37?	5	Summit Eruption.
15				20	446	266?	7	91	61	5	
16				5	202	566	9	91	54	9	
17				4	30	449	9	57	64	3	
18				2	26	423	9	54	64	8	
19				--	50	345	3	54	51	5	
20				1	45	606	14	94	35	7	
21		5m		3?	(?)	321?	18?	130?	(?)	(?)	
22	5m			3	27	571	12	139	20	11	
23		6m		1	47	471	4	120	19	5	
24	4m	9m		3	79	759	17	153	30	2	
25		15m		1	124	541	15	79	48	1	
26		12m		1	54	535	21	81	39	12	
27		6m			243	732	11	161	29	10	
28		60m?			257	454	13	123	66	7	
29		8m		1	140	673	9	215	14	4	
30		9m		2	134	461?	11	62	29	3	
31		10m		1	54	518	8	121	18	8	

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes							
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow					
September 1					104	742	15	154	29	9	
2				3	108	996	20	230	20	2	
3				4	54	889	21	154	25	5	
4				2	25	800	17	75	22	1	
5	11m			2	38	769	20	72	20	6	
6	15m			1	115	1789	31	126	70	8	
7	15m			4	339	787	24	88	81	5	
8		10m			258	656	12	75	143		
9				3	92	642	16	88	89	9	
10		14m			172	1300	27	152	62	13	
11		5m			207	1134	30	234	69	17	
12		15m?		3	100	788	14	75	44	3	
13				2	53	597	10	120	66	6	
14				2	34	687	21	182	57	18	
15				2	44	672	208*	274	48	41	*Offshore (PPL) quakes included.
16					25	757	11	91	68	2	41-PPL quakes.
17	4m				34	1026	10?	226	162	13	79-PPL quakes.
18		10m		1	35	1031	9	171	147	5	28-PPL quakes.
19		15m			109	1279	35*	204	62	11	*Offshore (PPL) quakes included.
20				2	150	1507	40*	291	208	6	*Offshore (PPL) quakes included.
21				2	38	597	20	108	100	5	5-PPL quakes.
22				1	67	1101	18	172	124	8	
23	18m				61	1396	41	368	244	10	
24				1?	21?	1560?	804?	83?	28?	13	Summit/SW rift eruption.
25	49m				7?	1730?	1431?	32?	(?)	1	
26	(?)				(?)	1218?	97?	43?	1?	3	Several summit stations out.
27					1132?	1491?	159?	49?	13?	9	
28				1	265?	1500?	80?	73?	30?	4	Halemaumau rockslide increase.
29	45m			1	99?	2419?	122?	133?	40?	3	
30		10m		2	93?	2181?	210?	44?	10?	4	WLG-new station installed.

Strong to moderate tremor September 24-27 and weak tremor about 5 days thereafter--summit/SW rift eruption; sporadic weak tremor on upper east rift remainder of the month.

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i / NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	EPICENTER	FOCAL DEPTH
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥8	≤120°	≤DEPTH or 5 km
B	≥6	≤150°	≤2 X DEPTH or 10 km
C	≥6	≤225°	≤50 km
	≥4	≤180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤1.0	≤2.0	≤0.10	≤0.25
B	≤2.5	≤5.0	≤0.20	≤0.50
C	≤5.0		≤0.30	≤0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

$DATA

SUMMARY OF SEISMIC EVENTS

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 1	16	9	9.6	19-23.9	155-17.0	2.1	0.6	8	141	1.0	0.04	0.4	0.2	0.06	B
1	17	31	54.3	19-23.6	155-17.3	2.3		7	140	0.8	0.08	0.5	1.0	0.06	B
1	18	48	37.3	19-32.9	155-16.0	42.2	1.9	15	115	12.8	0.30	0.9	3.0	0.10	B
1	20	36	49.4	19-20.4	155-11.0	9.5		10	159	3.9	0.08	0.7	1.1	0.08	B
1	21	5	28.7	19-23.0	155-24.9	3.6		14	83	5.9	0.10	0.8	1.3	0.19	B
1	21	5	40.0	19-23.1	155-23.5	7.6	1.5	18	57	5.3	0.07	0.6	0.6	0.16	B
1	21	7	8.6	19-23.0	155-23.9	7.6	1.6	15	69	5.2	0.07	0.6	0.5	0.15	B
1	21	9	9.0	19-18.8	155-15.9	9.5		8	192	3.5	0.27	1.6	2.5	0.11	C
1	21	11	13.1	19-23.2	155-24.5	6.1	1.5	16	60	6.0	0.09	0.7	0.8	0.17	B
1	23	11	37.9	19-20.5	155-11.2	8.0	1.3	10	186	3.8	0.09	0.9	1.1	0.09	B
2	1	5	15.1	19-20.1	155-18.0	5.4	1.4	11	110	1.1	0.15	0.6	1.3	0.10	A
2	2	39	38.9	19-22.6	155-22.5?	1.7		9	157	4.6	0.16	0.6	0.6	0.11	C
2	2	53	28.9	19-17.4	155-29.3	6.6	1.6	12	148	11.8	0.11	1.1	1.0	0.14	B
2	10	18	27.3	19-18.9	155-24.4	5.3		15	155	3.1	0.12	0.9	0.8	0.18	C
2	17	44	23.8	19-18.1	155-16.9	26.6		19	147	3.0	0.15	1.0	1.5	0.12	B
2	19	58	44.4	19-22.3	155-23.4	5.9	2.2	21	57	3.9	0.08	0.7	0.7	0.19	B
2	20	10	27.6	19-19.6	155- 8.1	3.5	2.0	20	156	5.6	0.15	1.0	1.0	0.21	C
2	22	49	46.1	19-24.0	155-16.9	3.9	2.2	18	68	1.1	0.04	0.3	0.4	0.10	A
2	23	1	16.6	19-10.6	155-37.6	7.6	2.5	14	130	8.0	0.19	1.1	1.1	0.16	B
2	23	38	15.3	19-20.1	155-19.6	2.3*	1.3	10	115	3.8	0.06	0.4		0.09	B
3	0	35	28.3	19-18.4	155-14.4	6.4		13	216	6.2	0.23	1.3	1.0	0.20	C
3	1	26	43.0	19-18.7	155- 7.1?	0.0		17	214	7.9	5.72	1.6	10.7	0.22	C
3	1	30	12.2	19-24.0	155-17.2	2.0	1.2	14	93	1.3	0.05	0.3	0.2	0.08	A
3	2	7	11.3	19-24.9	155-27.5	6.4		17	112	11.3	0.10	0.7	0.6	0.17	B
3	2	39	39.2	19-41.6	156- 3.8?	1.0	2.9	21	268	24.2	0.90	7.4	5.5	0.37	D
3	2	41	26.1	19-24.1	155-17.1	2.2	0.7	8	141	1.3	0.04	0.4	0.2	0.05	B
3	4	20	20.1	19-20.9	155-13.6	6.1		13	166	3.3	0.18	1.2	1.0	0.19	C
3	6	33	10.5	19-20.7	155- 8.0	9.4		10	156	4.1	0.09	0.7	1.3	0.07	B
3	7	40	55.2	19-17.9	155-13.3	11.6		11	233	8.1	0.24	1.4	1.9	0.10	C
3	7	46	32.7	19-18.9	155-13.8	5.3		12	208	6.0	0.27	1.6	1.0	0.20	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 3	8	14	41.6	19-21.2	155-19.7	16.5		12	87	4.5	0.19	1.1	2.1	0.12	B
3	9	16	15.5	19-24.2	155-24.2?	3.1	3.8	25	50	7.6	0.07	0.6	C.5	0.17	B
3	10	27	0.1	19-23.6	155-16.9	1.9	1.2	13	106	0.4	0.05	0.4	C.2	0.09	B
3	11	11	46.4	19-23.2	155-17.4?	1.2	1.0	11	102	0.8	0.17	0.4	C.3	0.13	B
3	12	6	59.6	19- 9.2	155-27.6	30.6		12	182	19.7	0.33	1.7	3.6	0.14	C
3	12	15	47.5	19-40.4	155-59.7?	C.1	3.0	17	291	47.0	0.62	7.4	2.5	0.26	D
3	12	36	14.9	19-24.2	155-23.1	6.5	1.5	17	166	6.0	0.12	0.8	C.6	0.14	C
3	16	24	27.4	19-22.2	155-23.9	5.7	1.7	14	77	3.9	0.09	0.7	1.0	0.17	B
3	17	44	9.3	19-24.0	154-56.6	40.1	2.6	17	204	10.7	0.36	1.7	2.8	0.10	C
3	18	28	25.5	19-18.7	155-13.3	30.9	2.3	22	149	6.8	0.12	0.7	1.2	0.10	B
3	20	37	59.3	19-19.1	155-15.3	6.2	1.9	21	145	4.1	0.10	0.8	C.6	0.19	C
3	22	29	23.2	19-23.9	155-17.1	2.1	0.7	8	134	1.0	0.03	0.3	C.2	0.04	B
3	22	35	58.3	19-21.4	155-24.1	8.0	1.7	15	96	2.7	0.09	0.7	0.6	0.15	B
3	23	37	50.3	19-23.9	155-17.2	2.1	0.7	8	132	1.0	0.07	0.6	C.4	0.08	B
4	0	49	45.0	19-23.9	155-16.8	2.8	2.0	17	73	1.0	0.04	0.3	0.6	0.09	B
4	3	54	21.3	19-23.3	155- 5.1?	0.0	2.5	21	138	7.4	3.33	0.7	6.3	0.15	C
4	4	29	6.9	18-53.9	155-18.3	17.8*		10	295	25.7	0.85	5.4		0.11	D
4	4	45	9.7	19-22.9	155-18.4?	0.1	3.1	23	51	2.7	1.28	1.5	2.5	0.44	C
4	4	49	22.6	19-23.8	155-17.3	2.0		8	123	0.9	0.05	0.4	0.2	0.06	B
4	4	56	13.7	19-18.9	155-11.3	2.5	2.0	20	179	6.6	0.20	1.1	1.5	0.27	C
4	5	42	14.8	19-24.3	155-24.0	6.8	1.6	17	118	7.6	0.08	0.6	C.6	0.14	B
4	6	34	28.8	19-24.0	155-23.4	5.2		12	172	6.5	0.13	1.0	1.0	0.16	C
4	6	56	5.6	19-24.2	155-23.2	5.6		13	169	6.2	0.13	1.0	1.2	0.16	C
4	7	58	35.4	19-36.9	156- 3.5	40.0	3.0	24	279	17.9	0.29	2.0	1.8	0.15	C
4	9	41	21.6	19-21.3	155-16.6	27.3		18	114	2.5	0.13	0.8	1.2	0.10	A
4	9	43	29.4	19-24.0	155-23.6	5.4		12	175	6.9	0.14	1.0	1.0	0.17	C
4	19	29	59.9	19-23.0	155-26.9	5.6	1.8	18	72	12.6	0.12	0.8	1.1	0.21	B
4	22	10	5.6	19-23.4	155-16.9	2.3	1.3	12	81	0.0	0.05	0.4	0.8	0.09	A
4	22	13	7.9	19-23.0	155-17.4	1.6	1.2	13	58	1.0	0.06	0.3	0.3	0.09	A
4	23	27	13.9	19-17.7	155-13.0	5.2	2.0	17	181	8.6	0.24	1.3	1.2	0.21	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	5	0	16	44.5	19-18.8	155-13.3?	7.7	3.3	22	152	6.6	0.09	0.7	0.4	0.14	C
	5	0	23	25.2	19-19.3	155-13.7	8.0*	1.6	16	171	5.5	0.09	0.7		0.13	C
	5	0	36	38.0	19-18.4	155-13.6	5.7		13	176	7.4	0.19	1.2	1.0	0.17	C
	5	1	5	1.4	19-20.5	155-19.5	1.9*	1.4	12	103	3.7	0.04	0.3		0.07	B
	5	1	32	17.7	19-18.3	155-13.7	5.8		14	176	7.0	0.17	1.1	C.9	0.16	C
	5	1	41	45.9	19-16.9	155-12.5	4.5	1.9	17	211	10.3	0.35	1.7	1.7	0.25	C
	5	2	9	11.2	19-23.9	155-17.3	1.9	1.5	14	90	1.1	0.04	0.3	C.2	0.07	A
	5	3	7	30.5	19-19.4	155-13.4	7.3	1.7	17	183	5.6	0.13	1.0	C.6	0.17	C
	5	3	34	52.4	19-18.5	155-13.8	8.0*		12	174	7.0	0.19	1.5		0.22	C
	5	4	21	31.0	19-18.8	155-13.6	6.5		18	174	6.3	0.15	1.0	C.7	0.18	C
	5	4	28	47.8	19-17.5	155-13.3	6.1	2.2	18	181	8.7	0.21	1.3	1.0	0.22	C
	5	4	56	17.7	19-18.2	155-13.4	7.2	1.7	16	177	7.4	0.16	1.1	C.7	0.19	C
	5	5	45	0.1	19-18.4	155-13.6	8.0*		10	221	6.9	0.18	1.2		0.13	C
	5	8	50	24.8	19-16.0	155-12.9	4.1		13	236	11.0	0.36	1.7	1.2	0.14	C
	5	9	11	28.5	19-19.6	155-13.7	7.3	1.7	19	145	5.0	0.09	0.8	C.5	0.15	C
	5	9	54	20.0	19-23.7	155-17.3	1.6	1.3	12	87	C.9	0.05	0.3	C.2	0.09	A
	5	10	53	56.8	19-19.1	155-13.7	6.3		11	205	5.7	0.25	1.7	1.0	0.19	C
	5	11	58	39.8	18-53.8	155- 8.9	8.0*		14	268	44.1	0.47	3.1		0.14	D
	5	12	10	47.6	19-19.3	155-12.9	6.4		10	210	5.9	0.22	1.6	1.0	0.15	C
	5	13	31	10.4	19-19.1	155-13.5	7.3	2.2	21	149	5.8	0.10	0.8	0.5	0.16	C
	5	13	35	6.5	19-18.5	155-13.6	4.9		9	219	6.8	0.38	2.1	2.1	0.21	C
	5	13	37	47.0	19-19.7	155-13.4	8.0	1.6	16	178	5.1	0.12	1.0	C.5	0.13	C
	5	13	38	21.7	19-18.8	155-13.6	5.8	2.0	20	151	6.2	0.13	0.9	C.7	0.23	C
	5	14	22	28.8	19-18.8	155-13.3	8.0*		12	214	6.5	0.16	1.1		0.13	C
	5	14	54	0.8	19-17.7	155-13.5	8.0*		10	234	8.1	0.19	1.2		0.11	D
	5	17	3	59.9	19-19.0	155-13.9	9.1		10	194	5.7	0.15	1.4	1.6	0.13	C
	5	19	31	49.0	19-35.0	156- 9.9?	17.1*		11	331	26.4	4.48	26.9		0.13	D
	5	19	52	8.5	19-18.7	155-26.7?	C.0		14	153	6.5	5.66	1.0	1C.8	0.21	C
	5	19	52	42.3	19-22.4	155-17.6	5.9		8	111	2.1	0.77	1.6	5.9	0.17	B
	5	20	54	35.7	19-19.2	155-13.7	5.9		14	203	5.5	0.19	1.1	0.8	0.17	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 5	22	47	28.0	19-23.6	155-22.7	7.0	1.9	20	59	5.3	0.06	0.5	C.5	0.15	B
5	23	45	44.0	19-18.1	155-13.1?	8.1	2.2	20	159	7.8	0.08	0.5	C.3	0.10	C
6	1	5	6.C	19-45.1	155- 3.6	17.3*		17	212	27.4	0.17	1.4		0.14	C
6	1	27	7.2	19-19.4	155- 8.0	4.2		17	177	5.8	0.19	1.3	1.4	0.25	C
6	4	50	45.5	20- 3.5	155-46.9	16.4		17	307	9.0	0.46	3.1	1.7	0.12	D
6	5	47	9.5	19-18.1	155- 6.9	2.3	1.9	12	255	9.0	0.42	1.9	1.3	0.14	C
6	7	12	57.1	19-19.4	155- 8.8	3.7	1.8	17	176	5.3	0.17	1.2	1.2	0.21	C
6	11	34	35.4	19-18.6	155-12.3	8.0*		11	229	7.2	0.43	2.9		0.24	D
6	11	38	45.0	19-24.6	155-24.0	6.6		12	194	7.7	0.14	0.9	0.8	0.12	C
6	11	55	40.5	19-23.8	155-13.0	15.6		12	171	2.5	0.21	1.7	2.3	0.16	C
6	21	53	7.4	19-18.6	155-13.3	8.3	1.7	14	154	6.8	0.08	0.8	1.7	0.11	C
7	0	15	57.3	19-24.1	155-16.5	3.1	2.3	18	109	1.4	0.05	0.4	C.5	0.12	B
7	0	53	20.2	19-23.8	155-17.2	1.7	0.7	9	124	1.1	0.05	0.5	0.3	0.07	B
7	1	16	39.3	19-24.6	155-16.9?	2.0		7	175	0.7	0.66	1.7	7.0	0.17	C
7	1	39	50.6	19-23.8	155-17.4	1.7	1.1	8	108	1.3	0.04	0.3	0.3	0.06	A
7	4	22	54.3	19-20.7	155-19.4	2.1*	1.3	10	97	3.7	0.04	0.3		0.07	B
7	7	26	3.9	19-20.6	155-19.4	2.0*		10	100	3.7	0.06	0.4		0.10	B
7	10	3	30.0	19-23.9	155-17.2?	2.0	0.6	7	130	1.1	0.03	0.3	C.2	0.03	B
7	13	18	32.4	19-24.2	155-17.4?	2.2	0.5	7	114	1.0	0.06	0.4	0.3	0.04	B
7	20	16	48.5	19-37.6	156- 5.2	38.4	4.1	27	254	21.1	0.23	1.3	2.6	0.14	C
7	20	34	49.2	19-23.5	155-17.4	1.6	0.6	11	86	1.0	0.05	0.3	C.3	0.08	A
7	21	33	12.8	19-21.2	155-25.8	5.2	2.2	24	74	4.7	0.09	0.7	C.7	0.23	B
7	21	53	51.1	19-20.3	155-13.7	8.2		16	165	4.0	0.08	0.6	1.1	0.12	C
8	3	14	34.6	19-22.0	155-11.8?	8.2	1.3	11	134	1.6	0.10	1.3	C.6	0.17	B
8	9	46	19.5	19-22.0	155-25.0	6.1	1.9	20	67	4.5	0.08	0.6	0.7	0.17	B
8	11	50	13.8	20- 0.4	155-29.1	8.0	2.6	15	214	19.7	0.23	2.0	2.6	0.22	C
8	12	50	33.1	19-23.8	155-17.2?	2.1		7	130	1.0	0.25	0.5	1.7	0.04	B
8	16	37	26.9	19-18.1	155-19.3?	8.0*	1.9	15	174	5.0	0.22	1.7		0.31	D
8	17	1	41.3	19-16.5	155-12.8	0.7	2.5	23	174	10.4	0.40	1.0	0.7	0.27	C
8	18	49	51.7	19-17.8	155-13.1?	5.9	2.8	21	155	8.6	0.11	0.9	1.7	0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 8	19	36	10.6	19-20.6	156-16.3?	17.1*	2.9	13	318	41.7	0.52	4.6		0.18	D
8	19	42	35.2	19-18.2	155-15.6	6.5	1.5	11	231	4.8	0.28	1.6	0.9	0.16	C
8	21	4	17.6	19-18.1	155-15.5	6.5	1.3	9	233	5.0	0.30	1.8	1.4	0.14	C
9	0	44	57.3	19- 8.7	155-22.5	30.3	1.9	13	237	9.4	0.44	2.4	2.8	0.11	C
9	0	45	41.0	19- 9.4	155-22.3	27.9	1.6	15	211	9.8	0.39	1.9	3.0	0.11	C
9	0	46	50.9	19- 9.2	155-20.5	24.7	1.6	10	235	13.0	0.44	2.4	3.8	0.09	C
9	3	55	37.0	19-20.9	155- 7.9	5.7		9	163	3.9	0.14	1.2	1.2	0.12	C
9	5	41	43.8	19-20.0	155-19.2	5.6		12	132	3.1	0.06	0.5	C.7	0.09	B
9	6	25	53.0	19-24.0	155-17.1	2.2		8	134	1.3	0.04	0.3	0.2	0.04	B
9	7	34	26.3	19-23.9	155-17.2	2.0		8	129	1.1	0.03	0.3	C.1	0.04	B
9	7	43	4.4	19-21.7	155-25.4?	8.0	1.7	18	68	4.6	0.12	0.7	C.8	0.15	B
9	9	55	0.1	19-18.0	155-13.3	8.0*		9	204	8.2	0.10	0.7		0.07	C
9	10	15	57.4	19-12.1	155-25.4	19.2	2.1	12	166	6.6	0.34	1.9	3.1	0.11	C
9	11	33	21.1	19-20.3	155-19.4	5.0	1.7	12	121	3.4	0.10	0.4	1.4	0.09	B
9	11	39	33.6	19-20.0	155- 9.0?	8.9		7	179	4.1	0.35	3.4	1.8	0.23	C
9	14	13	56.8	19-18.1	155-13.1	8.0*	2.0	15	160	8.2	0.07	0.6		0.11	C
9	14	25	58.1	19-17.7	155-12.6	8.0*	1.7	10	238	9.4	0.33	2.1		0.15	D
9	15	53	27.2	19-18.8	155-13.2	8.0*	1.7	13	152	6.9	0.08	0.7		0.10	C
9	17	35	45.8	19-23.9	155-17.3	1.9	0.6	8	128	1.2	0.08	0.7	C.3	0.08	B
9	17	46	22.1	19-27.5	155-15.3	8.0*	1.3	11	269	5.6	0.66	3.8		0.29	D
9	18	36	3.2	19-20.3	155-19.6	1.6	1.2	8	110	3.9	0.26	0.7	1.0	0.12	B
9	19	44	28.6	19-17.8	155-12.7	8.0*	1.7	11	195	8.7	0.22	1.6		0.16	C
9	20	20	52.2	19-27.9	155-23.5	7.3	2.1	20	73	3.4	0.09	0.7	0.6	0.19	B
9	22	16	14.3	19-18.8	155-18.6	7.0		10	134	1.5	0.08	0.7	C.4	0.08	B
9	23	44	14.2	19-18.6	155-13.1	7.9	1.7	18	155	7.3	0.12	0.7	C.8	0.11	C
10	0	6	16.5	19-19.8	155-19.7	4.9	1.4	13	125	3.8	0.15	1.0	1.1	0.19	B
10	1	22	4.1	19-21.5	155-59.2?	1.5	2.7	17	240	19.1	0.50	4.4	2.9	0.30	D
10	1	58	13.8	19-22.2	155- 6.3?	0.4	1.8	17	130	6.1	1.84	1.4	6.8	0.31	C
10	2	48	23.1	19-20.8	155- 5.9	8.0*		10	150	5.6	0.16	1.6		0.21	C
10	2	52	54.6	19-23.7	155-17.1	2.1		7	135	0.7	0.05	0.5	0.2	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 10	8	15	35.3	19-13.1	155- 4.9	38.5	2.4	20	212	13.1	0.22	1.2	1.8	0.10	C
10	9	53	40.2	19-23.3	155-17.3	1.8	0.7	8	98	0.8	0.06	0.4	0.3	0.05	A
10	16	50	40.1	18-49.5	155- 8.7	25.6		19	268	50.0	0.36	2.8	8.5	0.17	D
10	18	5	35.9	19-24.0	155-16.6	3.1	2.2	16	87	1.2	0.06	0.4	0.9	0.12	B
10	22	14	50.4	19-19.8	155- 8.0	8.0*		11	172	5.3	0.11	1.1		0.14	C
10	23	31	19.7	19-23.7	155-17.1	2.3		7	137	0.8	0.05	0.4	0.2	0.04	B
11	1	47	27.6	19-10.9	155-22.6	31.5	2.3	15	177	14.7	0.25	1.6	2.6	0.14	C
11	4	49	41.1	19-23.8	155-24.2	5.0	2.1	19	72	6.9	0.09	0.8	0.8	0.21	B
11	4	57	0.1	19-23.7	155-17.2	2.1		7	131	0.9	0.04	0.3	0.1	0.04	B
11	5	21	16.8	19-18.1	155-13.4	8.0*		12	208	7.6	0.13	0.9		0.10	C
11	5	49	18.0	19-19.8	155-12.7	8.0*	1.2	10	203	5.0	0.17	1.3		0.16	C
11	10	29	1.7	19-23.6	155-24.6	4.7		11	193	6.6	0.18	1.1	1.2	0.17	C
11	10	31	25.6	19-23.9	155-17.2?	1.7	0.5	7	131	1.1	0.12	0.7	1.5	0.07	B
11	11	55	47.5	19-21.4	155-26.0	5.2	2.0	18	73	5.2	0.09	0.8	1.0	0.21	B
11	12	35	14.6	19-23.8	155-17.2	2.2	0.6	7	131	1.1	0.07	0.5	1.0	0.05	B
11	16	54	28.7	19-23.3	155-26.0	3.0	1.6	15	126	7.5	0.14	0.9	1.6	0.19	B
11	18	45	22.4	19- 9.2	155-40.6	4.0	2.9	17	151	12.1	0.21	1.3	1.4	0.18	C
11	19	54	4.2	19-25.3	155-51.9	3.0	2.1	15	206	12.5	0.28	1.7	1.6	0.14	C
11	23	25	12.5	19-19.4	155-13.6	8.0*		17	170	5.3	0.07	0.5		0.11	C
11	23	28	26.9	19-23.6	155-23.2	6.2	2.9	24	51	6.1	0.10	0.8	0.7	0.22	B
12	2	10	19.3	19-23.9	155-17.1?	2.0	0.6	7	133	1.2	0.04	0.4	0.3	0.05	B
12	2	46	15.1	19-21.5	155-13.1	11.7	1.2	12	156	2.0	0.12	0.5	1.0	0.05	B
12	5	49	40.3	19-23.4	155-17.2	2.1	0.7	9	94	0.7	0.04	0.4	0.8	0.07	A
12	6	38	27.8	19-20.6	155-12.6	9.9	1.5	9	184	3.5	0.17	0.7	1.5	0.05	B
12	7	4	45.5	19-23.8	155-17.3	1.7	0.9	9	90	1.2	0.03	0.2	0.2	0.05	A
12	9	16	56.2	19-28.8	155-15.2?	8.0*	1.3	8	321	7.6	0.62	6.3		0.55	D
12	13	25	3.3	19-23.7	155-17.3	1.8	0.6	8	135	1.0	0.08	0.7	0.3	0.09	B
12	13	25	9.1	19-23.7	155-17.5	1.8	0.9	9	97	1.3	0.05	0.4	0.3	0.07	A
12	13	29	4.0	19-19.3	155-19.8?	4.7	1.5	7	302	8.2	1.62	36.0	68.5	0.41	D
12	14	29	16.2	19-24.7	155-13.2	11.8*	1.5	7	294	6.2	0.74	6.4		0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 12	15	14	51.3	19-22.8	155-24.4	8.0*	1.6	8	211	5.2	0.15	1.0		0.09	C
12	21	11	54.8	19-23.9	155-17.1	2.5		7	136	1.0	0.06	0.5	1.1	0.05	B
12	21	42	44.6	19-22.9	155-17.3?	2.8		7	107	1.3	0.05	0.2	C.6	0.02	B
13	0	31	37.1	19-21.1	155-11.0	12.2	1.4	9	199	2.8	0.31	1.1	2.2	0.05	C
13	1	8	55.6	19-23.4	155-17.1	1.8	0.8	10	91	0.5	0.06	0.4	0.2	0.08	A
13	1	12	15.4	19-24.0	155-17.2	2.2	0.6	8	132	1.2	0.03	0.3	C.2	0.04	B
13	7	26	51.9	19-23.9	155-17.3	2.1		7	127	1.2	0.04	0.4	C.2	0.04	B
13	8	30	50.6	19-18.1	155-10.4	32.0		11	241	7.4	0.50	2.2	4.0	0.09	C
13	10	35	55.2	19-23.7	155-17.3	2.2	2.2	18	51	1.0	0.10	0.5	C.4	0.15	B
13	10	40	26.0	19-23.7	155-17.6	1.8	1.7	14	78	1.4	0.04	0.2	C.2	0.06	A
13	10	59	12.4	19-21.1	155-17.9	27.8	2.3	20	62	2.1	0.13	0.7	1.3	0.10	A
13	11	10	1.3	19-22.6	155-17.1	2.0	1.6	14	72	1.5	0.08	0.4	C.3	0.11	B
13	11	30	50.4	19-23.6	155-16.8	3.3	1.8	15	72	0.4	0.07	0.4	C.8	0.10	B
13	13	3	51.2	19-22.9	155-17.2	2.8		7	105	1.1	0.02	0.1	C.3	0.01	B
13	13	29	36.2	19-23.0	155-17.4	1.1	1.2	11	95	1.3	0.07	0.4	0.5	0.12	B
13	13	29	59.4	19-23.3	155-17.3	1.8	1.0	9	100	0.9	0.04	0.3	C.2	0.04	A
13	13	31	20.6	19-23.1	155-17.5	1.6	1.2	11	63	1.3	0.06	0.3	0.3	0.07	A
13	16	17	43.5	19- 1.4	155-55.2	18.2*		11	311	27.2	2.32	14.8		0.15	D
13	22	20	31.1	19-23.4	155-17.4	1.9	0.7	7	147	1.0	0.05	0.4	0.2	0.04	B
14	1	25	19.6	19-23.7	155-17.1	2.1		7	132	0.8	0.05	0.4	C.2	0.05	B
14	1	51	41.3	19-23.7	155-17.1?	2.2		7	133	0.7	0.08	0.6	0.3	0.05	B
14	2	9	16.6	19-23.4	155-17.4	1.5	1.2	12	70	1.1	0.06	0.4	0.4	0.11	B
14	2	29	22.5	19-23.9	155-17.3	1.9		8	123	1.3	0.03	0.3	C.2	0.04	B
14	4	4	12.4	19-19.4	155-15.1	5.3		14	185	4.3	0.18	1.1	C.9	0.20	C
14	4	36	55.7	19-49.1	155-11.3?	1.8*		7	351	45.1	3.36	13.0		0.21	D
14	5	8	34.1	19-23.2	155-17.1	1.9	0.8	13	87	0.7	0.05	0.3	C.2	0.08	A
14	5	13	41.6	19-22.3	155-19.0?	2.8*		6	236	2.8	2.50	11.4		0.32	D
14	5	14	11.8	19-23.8	155-17.1	2.0	2.1	16	60	0.9	0.08	0.5	C.3	0.13	B
14	5	16	20.7	19-24.0	155-16.9	2.8		4	153	1.2		0.0		0.00	D
14	5	21	12.5	19-22.3	155-17.3?	2.6*		7	195	2.0	0.48	3.1		0.28	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 14	6	13	55.1	19-23.5	155-17.0	2.3		6	134	0.2	0.03	0.3	C.1	0.02	B
14	7	8	22.6	19-23.4	155-17.2	2.4		6	147	0.4	0.03	0.2	0.3	0.02	B
14	8	43	38.2	19-23.6	155-17.0	2.1	2.4	19	64	0.5	0.06	0.5	C.9	0.15	B
14	9	8	34.7	19-18.0	155-10.3?	4.7		14	262	7.5	0.64	3.0	1.2	0.21	D
14	9	58	21.1	19-23.9	155-17.2	1.9	0.6	9	129	1.0	0.03	0.3	0.2	0.05	B
14	10	54	59.6	19-30.9	155-40.9	7.9	2.4	14	232	9.9	0.26	1.4	C.8	0.13	C
14	18	17	1.5	19-24.0	155-17.0	2.1	0.6	8	146	1.1	0.03	0.4	C.2	0.05	B
14	22	4	44.6	19-18.4	155-48.9?	1.1	2.8	21	240	21.7	0.74	1.7	5.0	0.14	C
14	22	24	22.6	19-20.1	155-19.5	5.6	2.3	21	69	3.6	0.06	0.5	C.5	0.14	B
15	2	7	39.6	19-20.7	155-19.7	2.1*	1.3	12	101	4.2	0.04	0.2		0.06	B
15	7	52	16.1	19-23.0	155-25.0	5.3	2.5	19	79	11.3	0.08	0.6	C.9	0.18	B
15	11	36	0.4	19-25.2	155-23.0	8.0*	1.6	18	72	5.9	0.07	0.7		0.15	B
15	17	23	57.8	19-24.3	155-17.1	1.5	1.1	10	137	1.1	0.12	1.0	C.6	0.16	B
15	17	58	37.8	18-56.1	155-25.2	35.3		12	261	25.2	0.82	3.7	7.0	0.12	D
15	19	7	56.6	19-44.8	156-11.9	45.5	3.0	22	272	38.3	0.58	2.9	4.3	0.10	D
15	20	56	45.6	19-18.6	155- 8.6	2.9	1.8	18	185	6.7	0.19	1.2	1.2	0.23	C
15	22	19	5.1	19-22.3	155-22.9	8.0	1.5	14	109	4.0	0.08	0.6	C.5	0.12	B
15	22	47	37.5	19-24.3	155-23.8?	8.0	1.6	22	62	7.2	0.07	0.6	0.5	0.17	B
16	1	15	42.9	19-27.4	155-14.3?	8.4	1.5	18	87	6.5	0.07	0.5	C.4	0.12	B
16	4	37	27.6	19-23.9	155-25.4	7.9	2.3	21	61	7.8	0.09	0.6	C.6	0.15	B
16	8	27	17.2	19-24.9	155-16.5	1.1	1.0	9	177	0.9	0.12	0.6	C.4	0.09	B
16	11	8	35.9	19-23.4	155-17.2	2.0		8	146	0.4	0.05	0.4	C.2	0.06	B
16	15	35	40.1	19-22.0	155-13.9	10.2	1.5	10	148	2.5	0.26	1.7	3.0	0.18	B
16	17	38	23.8	19-21.0	155- 7.9?	0.0	2.2	21	136	8.8	2.87	0.6	5.4	0.14	C
16	20	44	39.1	19-13.8	155- 7.4	39.0		17	209	13.7	0.23	1.2	1.8	0.09	C
17	3	13	14.1	19-21.9	155-25.0	4.5	1.9	19	69	9.9	0.09	0.7	1.0	0.19	B
17	4	5	16.4	19-25.3	155-16.7	1.7	1.4	13	122	0.8	0.09	0.5	C.3	0.11	B
17	8	24	26.1	19-23.2	155-28.9	8.1	2.6	22	65	11.2	0.14	0.6	1.0	0.13	B
17	10	15	25.4	19-23.2	155-17.2	3.9	1.3	14	55	0.6	0.06	0.4	0.7	0.10	A
17	12	33	32.0	19-21.4	155-24.0	7.9	1.9	21	52	2.5	0.10	0.7	C.7	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 17	22	36	1.0	19-21.2	155-25.7	5.0	1.8	22	74	4.7	0.08	0.6	0.7	0.18	B
18	1	28	10.6	19-19.2	155-13.9	8.0*	1.7	18	171	5.4	0.08	0.6		0.12	C
18	4	20	11.4	19-20.4	155- 9.1	4.6	2.1	21	144	3.4	0.11	0.8	0.6	0.17	B
18	8	1	32.1	19-24.2	155-17.0?	1.9	1.2	8	154	1.2	0.20	1.6	0.9	0.21	C
18	8	6	11.0	19-18.7	155- 9.0	3.1	1.9	18	165	6.5	0.17	1.0	1.1	0.20	C
18	12	11	58.3	19-23.4	155-17.1	2.3		6	144	0.2	0.05	0.5	0.7	0.03	B
18	17	25	57.0	19-19.0	155-15.6	7.1	1.8	17	145	3.7	0.07	0.5	0.4	0.12	B
18	17	38	23.9	19-23.4	155-17.2	2.1	0.7	9	84	0.5	0.04	0.3	0.2	0.05	A
18	18	29	48.9	19-20.0	155-12.6	8.9	1.1	12	161	4.6	0.11	0.9	1.7	0.11	C
18	21	28	3.4	19-22.8	155-17.5	1.0	0.8	12	63	1.5	0.06	0.3	0.4	0.10	A
18	21	39	9.2	19-20.1	155- 8.9	7.5	1.4	9	164	3.9	0.15	1.5	0.8	0.16	C
18	21	40	32.9	19-24.0	155-17.1	1.9	0.5	7	136	1.2	0.07	0.4	1.0	0.05	B
19	1	16	18.1	19-19.8	155-12.0	9.3	1.5	13	210	5.0	0.16	0.9	1.5	0.09	C
19	1	30	28.9	19-23.9	155-16.8	2.2	1.6	15	73	1.0	0.05	0.4	1.5	0.11	B
19	1	33	6.3	19-23.9	155-17.0?	0.0	2.4	13	64	1.0	0.59	0.9	1.1	0.22	B
19	1	38	43.3	19-21.0	155-19.1?	6.0*		6	271	5.1	4.05	19.7		0.40	D
19	1	45	40.4	19-19.6	155-12.4	8.9	1.4	14	209	5.2	0.17	1.0	1.7	0.09	C
19	2	34	49.4	19-24.1	155-17.0	2.1	0.6	9	107	1.3	0.03	0.3	0.1	0.04	A
19	3	4	14.8	19-23.9	155-17.1	2.0	0.6	8	135	1.0	0.03	0.3	0.1	0.03	B
19	3	19	28.7	19-20.0	155-12.2	9.3	1.2	10	204	4.6	0.11	0.7	1.1	0.07	B
19	3	27	17.5	19-23.7	155-17.2?	1.1	0.5	7	128	1.8	0.14	0.7	1.4	0.13	B
19	4	14	32.0	19-19.7	155-14.1	8.0*	1.6	15	159	5.7	0.10	0.8		0.14	C
19	4	49	6.8	19-18.7	155-18.5	24.1	1.8	14	119	1.3	0.36	1.9	2.8	0.11	B
19	5	8	12.6	19-20.9	155-11.1	9.2		6	200	3.2	0.22	1.2	2.2	0.03	C
19	5	50	25.8	19-23.9	155-16.9	2.0	0.9	13	110	1.0	0.07	0.5	0.3	0.11	B
19	5	50	29.8	19-24.1	155-16.3	2.8	2.3	10	112	1.7	0.09	0.7	1.4	0.14	B
19	6	1	54.2	19-19.8	155-13.5	8.0*	1.5	15	160	4.9	0.10	0.7		0.15	C
19	6	26	38.8	19-23.0	155-17.5	2.4	0.7	7	169	1.2	0.10	0.6	1.8	0.06	B
19	6	28	19.7	19-23.4	155-17.0	2.8		9	88	0.2	0.08	0.5	1.0	0.08	A
19	7	34	50.3	19-20.5	155-19.1	4.3	1.3	12	96	3.0	0.16	0.5	1.3	0.09	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 19	8	26	19.6	19-23.9	155-16.0?	2.1	1.3	12	152	2.0	0.09	0.4	0.7	0.07	C
19	8	59	8.6	19-23.1	155-17.1	3.5	1.5	15	62	0.6	0.05	0.3	C.6	0.09	A
19	12	23	24.5	19-23.7	155-16.4	11.6	1.4	10	176	1.1	1.71	5.1	11.9	0.22	D
19	12	46	21.0	19-23.6	155-17.1	2.2	0.7	10	101	0.4	0.03	0.2	0.1	0.04	A
19	13	22	28.0	19-19.5	155-25.9	4.7		14	110	4.7	0.08	0.6	C.8	0.14	B
19	17	13	45.9	19-23.5	155-17.1	10.0		9	80	0.3	0.27	1.5	2.2	0.14	B
19	19	26	33.2	19-23.2	155-17.3	1.3	0.9	9	157	0.7	0.09	0.5	0.5	0.11	C
19	19	39	17.6	19-22.1	155-24.3	3.6	1.5	17	85	4.0	0.08	0.6	C.9	0.16	B
19	21	24	35.4	19-19.8	155- 9.9	4.9		12	168	4.2	0.15	1.1	1.3	0.14	C
19	22	48	40.7	19-24.6	155-17.1	10.4		11	82	0.7	0.04	0.2	0.3	0.03	A
19	23	56	34.9	18-59.2	155-24.7	13.6*		19	236	26.7	0.25	1.9		0.13	D
20	0	20	50.3	19-23.3	155-14.8	2.7		10	163	2.5	0.07	0.3	1.8	0.06	B
20	1	54	38.6	19-22.9	155-14.7	2.1		9	145	2.2	0.09	0.4	C.3	0.06	B
20	2	41	18.4	19-23.1	155-15.1	2.8	1.1	11	148	2.0	0.07	0.5	3.9	0.10	B
20	4	59	14.6	19-53.1	155-26.1	7.7	2.5	14	246	9.7	0.61	4.1	1.0	0.19	D
20	9	33	16.3	19-19.1	155-15.8	6.1		15	162	3.4	0.11	0.8	C.6	0.17	C
20	11	18	16.6	19-13.7	155-22.3	0.5*		12	204	10.2	0.20	1.1		0.17	C
20	11	21	11.1	19-13.9	155-22.3	0.7*	2.6	19	156	9.9	0.10	0.7		0.15	C
20	13	38	5.1	19-21.7	155-25.6?	7.7		11	118	4.9	0.11	0.8	0.7	0.13	B
20	15	39	35.2	19-13.9	155-22.5	0.7*	1.9	11	187	11.8	0.11	0.8		0.12	C
20	20	19	23.9	19- 6.7	155-27.5	14.0*	2.3	18	188	22.6	0.15	1.4		0.17	C
20	20	40	28.0	19-20.1	155-19.1	6.4	1.7	14	104	3.0	0.20	0.6	1.6	0.11	B
20	20	51	52.7	19-19.6	155-11.5	6.C	1.6	16	168	5.4	0.13	1.0	0.8	0.20	C
20	21	5	33.2	19-15.0	155-22.9	3.3		11	167	9.3	0.09	0.8	1.5	0.12	C
20	21	8	9.4	19-14.8	155-22.7	8.0*		9	172	9.3	0.05	0.7		0.05	C
20	22	35	15.0	19-18.9	155-15.8	9.1		12	190	3.6	0.23	1.3	2.1	0.14	C
20	23	57	48.8	19-11.2	155-31.7	6.4		13	97	7.4	0.11	0.9	C.9	0.13	B
21	0	43	19.5	19-25.3	155-15.2	26.0		12	93	4.2	0.16	0.9	1.6	0.08	A
21	1	32	32.0	19-20.7	155-13.0	7.8	1.5	17	178	3.3	0.10	0.8	C.4	0.13	C
21	4	30	13.3	20- 0.4	155-25.5	3.2*		9	325	25.2	0.39	3.0		0.11	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 21	5	18	25.6	19-21.0	155- 6.3	8.0*		8	180	6.2	0.09	1.7		0.08	C
21	5	51	44.7	19-23.6	155-17.8	1.3		7	103	1.6	0.04	0.2	0.3	0.04	B
21	8	26	4.4	19-20.6	155-19.2	2.1*		13	97	3.3	0.08	0.5		0.12	B
21	8	29	42.9	19-19.2	155-15.9?	8.7		10	180	3.0	0.25	1.5	2.5	0.13	C
21	8	57	52.6	19-25.1	155-25.0	6.6	1.9	13	91	9.2	0.06	0.5	0.6	0.10	B
21	11	36	7.9	19-29.7	155-17.7?	2.5	1.2	6	327	7.9	1.40	3.8	3.4	0.15	D
21	12	11	22.8	19-27.9	155-16.0?	8.0*	1.6	7	314	5.4	0.28	4.8		0.36	D
21	12	27	54.0	19-24.9	155-16.3?	2.8	0.9	7	237	1.2	1.17	4.9	4.7	0.21	D
21	14	48	55.6	19-27.0	155-12.1	8.0*	1.3	10	143	8.5	0.15	1.3		0.18	C
21	19	21	36.5	19-15.8	155-17.6	5.8	2.0	15	163	4.4	0.09	0.6	0.5	0.10	C
21	19	25	11.0	19-23.5	155-14.6?	0.8	1.9	16	96	3.0	2.75	0.6	10.5	0.17	B
21	19	26	44.1	19-23.4	155-14.8	3.3	1.4	11	109	2.6	0.08	0.4	1.5	0.08	A
21	20	19	57.9	19-44.2	155-56.7?	0.0		12	271	24.1		52.6	57.0	0.57	D
21	20	31	5.7	19-21.1	155-18.9	2.9	1.0	8	85	3.1	0.09	0.3	2.5	0.05	B
21	20	32	20.0	19-23.5	155-14.4	1.3	0.5	9	164	3.3	0.11	0.5	0.4	0.10	B
21	20	40	10.8	19-21.0	155- 6.3	8.0*	1.8	15	146	6.3	0.10	1.0		0.12	C
21	21	30	4.1	19-23.8	155-14.6	1.4	0.3	8	186	3.4	0.10	0.4	0.4	0.06	B
21	22	48	20.9	19-23.5	155-15.1	1.1	0.9	6	177	2.5	0.02	0.1	0.1	0.01	B
21	22	57	28.3	19-24.0	155-14.4	2.2*		9	182	3.9	0.07	0.4		0.07	C
21	23	6	10.1	19-18.0	155-22.7?	12.3		6	256	4.3	1.75	10.1	10.6	0.12	D
21	23	37	17.9	19-23.1	155-15.1	2.5		10	145	1.8	0.07	0.5	2.1	0.09	B
22	0	56	12.1	19-19.0	155- 7.9	6.7	1.6	13	185	6.7	0.19	1.4	0.8	0.20	C
22	1	11	54.0	19-23.3	155-14.8	2.1*	1.0	9	166	2.6	0.05	0.3		0.06	C
22	2	8	37.0	19-50.3	155-51.8?	42.9*	3.6	20	268	102.3	0.26	2.1		0.13	D
22	2	50	38.7	19-24.1	155-17.6	9.0	0.9	10	104	1.1	0.08	0.4	0.7	0.03	A
22	4	14	38.6	19-20.1	155-14.3	8.6	1.0	12	179	3.7	0.15	1.0	1.6	0.14	C
22	4	45	24.4	19-20.1	155-13.2	8.7	1.4	16	156	4.4	0.11	0.8	1.4	0.14	C
22	5	30	4.8	19-23.2	155-15.0	2.2*	0.6	10	152	2.2	0.06	0.5		0.09	C
22	5	35	19.0	19-23.5	155-14.9	4.0	1.4	10	160	2.7	0.07	0.3	0.8	0.04	B
22	5	53	50.7	19-19.5	155-11.9	9.1	1.2	14	169	5.6	0.10	0.8	1.4	0.09	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 22	7	21	4.7	19-19.0	155- 8.0	8.0*	2.2	10	185	6.6	0.22	1.8		0.22	C
22	7	22	16.3	19-21.6	155- 5.5	8.0*	1.8	9	130	5.4	0.16	1.5		0.20	C
22	10	12	29.9	19-22.8	155-14.6	4.7	1.2	12	146	2.2	0.12	0.5	1.0	0.08	B
22	17	26	17.6	19-23.3	155-14.4	2.6	1.1	11	162	3.1	0.07	0.3	2.5	0.07	C
22	18	29	44.9	19-19.7	155-14.3	8.0*	1.6	15	158	5.5	0.06	0.5		0.09	C
22	19	3	47.7	19-20.8	155-27.1	4.8		13	100	6.7	0.09	0.8	1.2	0.18	B
22	20	38	26.3	19-23.1	155-14.5	1.6		8	164	2.8	0.11	0.5	0.4	0.08	B
22	21	39	30.0	19-20.1	155-15.2	12.0	0.9	9	168	3.2	0.10	0.4	0.8	0.03	B
22	21	43	35.7	19-22.7	155-26.1?	6.0		15	67	6.7	0.09	0.7	0.8	0.15	B
22	21	49	15.0	19-21.3	155- 7.7	7.4		8	145	3.9	0.13	1.4	0.8	0.12	B
22	22	7	14.8	19-23.2	155-14.9	2.0		11	153	2.3	0.11	0.4	0.4	0.08	B
22	22	52	28.6	19-20.1	155-19.7?	1.3	0.8	8	117	4.0	0.34	0.9	5.2	0.08	B
22	23	24	36.9	19-24.1	155-15.5?	1.8	0.8	7	236	2.8	0.54	1.8	1.1	0.10	C
23	0	59	31.4	19-23.2	155-14.9	2.7		9	158	2.3	0.14	0.6	2.7	0.08	C
23	2	8	54.9	19-20.3	155-12.0	9.1	1.0	12	202	4.2	0.18	1.1	1.7	0.10	C
23	2	49	30.4	19-22.8	155-15.0	2.0		7	151	1.8	0.08	0.4	0.2	0.05	B
23	3	1	33.0	19-23.3	155-14.9	4.7	1.4	12	108	2.4	0.16	0.6	1.7	0.15	B
23	3	4	26.3	19-23.7	155-14.7	0.9	0.3	9	183	3.3	0.10	0.5	0.4	0.09	B
23	4	15	21.2	19-19.9	155-11.5	8.0*	0.6	11	217	4.9	0.14	1.0		0.10	C
23	5	34	31.2	19-23.5	155-24.7	8.9	1.6	15	77	6.6	0.06	0.6	0.9	0.13	B
23	6	24	23.3	19-23.5	155-14.7	1.9		7	173	2.9	0.32	1.0	1.0	0.09	C
23	6	30	59.6	19-24.2	155-14.6?	1.2	0.9	10	127	4.0	0.14	0.5	0.6	0.13	B
23	7	41	9.4	19-22.9	155-16.2	0.9		10	118	1.1	0.10	0.6	0.7	0.16	B
23	7	43	53.8	19-22.9	155-14.4	3.6		6	165	2.9	0.13	0.5	1.4	0.03	B
23	8	10	45.2	19-23.6	155-14.9?	1.0	0.9	5	182	2.7		0.0		0.02	D
23	15	19	17.1	19-23.7	155-14.7	4.1	1.4	11	118	3.1	0.04	0.2	0.5	0.03	A
23	15	56	32.3	19-23.5	155-14.8	2.3*	1.0	10	171	2.8	0.06	0.4		0.07	C
23	16	39	6.6	19-23.9	155-16.2	3.4	0.8	8	196	1.6	0.18	0.8	1.5	0.08	B
23	16	53	20.6	19-20.1	155-19.7	2.0*	1.3	11	181	4.0	0.09	0.5		0.09	C
23	17	3	56.3	19-20.0	155-19.6	2.4*	1.4	9	120	3.9	0.05	0.3		0.07	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 23	17	41	31.8	19-23.6	155-14.8	1.3	1.3	10	164	2.9	0.07	0.3	C.3	0.08	B
23	18	43	19.2	19-24.3	155-25.0	8.0*	1.6	13	132	8.1	0.10	0.8		0.14	C
23	20	21	39.1	19-23.6	155-14.6	1.5	0.6	8	183	3.2	0.06	0.3	C.2	0.03	B
23	20	31	57.9	19-23.6	155-14.8	2.3*	1.0	11	163	2.9	0.07	0.5		0.11	C
23	20	42	55.2	19-23.2	155-14.6	5.3	1.7	16	107	2.7	0.08	0.4	C.8	0.10	A
23	21	1	54.1	19-23.4	155-15.0	1.9	1.0	10	156	2.4	0.11	0.5	0.4	0.08	B
23	21	9	44.6	19-23.6	155-14.7	1.6		7	182	3.1	C.15	0.5	C.5	0.05	B
23	21	37	45.6	19-21.5	155-13.0	11.6	0.8	11	138	1.9	0.09	0.6	C.9	0.06	B
23	22	41	43.1	20- 1.0	155-45.5	8.4*	2.6	15	318	40.8	1.51	9.0		0.11	D
23	22	46	30.7	19-23.5	155-14.8	2.2*		9	173	2.8	0.07	0.4		0.08	C
23	22	50	59.3	19-20.2	155-19.6	6.4	2.7	16	114	3.9	0.07	0.4	0.4	0.09	A
23	23	13	42.8	19-24.2	155-16.2	2.2*	1.0	12	107	1.9	0.03	0.2		0.06	B
23	23	19	39.6	19-23.6	155-17.0	2.3		6	136	0.4	0.05	0.4	0.2	0.03	B
24	0	9	49.0	19-23.2	155-14.7	2.1*		9	164	2.6	0.07	0.5		0.08	C
24	0	19	3.9	19-13.6	155-20.6?	8.8	1.9	17	206	8.7	0.24	1.2	C.8	0.14	C
24	0	40	38.3	19-23.5	155-14.6	1.6	1.0	12	113	3.0	C.07	0.3	C.3	0.07	A
24	0	56	49.1	19-21.6	155- 7.1	11.3	0.8	10	137	4.7	0.12	0.8	1.4	0.06	B
24	1	12	27.6	19-11.2	155-41.4	7.3		11	204	10.2	0.21	1.3	C.9	0.11	C
24	1	25	33.5	19-23.5	155-15.8	19.5		14	100	2.1	0.13	0.6	1.2	0.05	A
24	1	34	18.1	19-24.1	155-15.4	1.2	0.8	10	168	3.0	0.15	0.6	C.5	0.11	C
24	1	44	14.6	19-16.7	155-24.3	2.5	1.8	14	185	6.7	0.18	1.0	2.4	C.19	C
24	1	58	2.1	19-23.3	155-15.0?	1.7	1.0	11	153	2.3	0.08	0.5	4.4	0.11	C
24	2	10	10.0	19-23.7	155-14.6	2.3*		11	168	3.3	0.05	0.3		0.07	C
24	2	45	55.1	19-19.4	155-13.6	9.1	1.6	15	199	5.2	0.13	0.8	1.2	0.10	C
24	2	57	39.4	19-24.1	155-16.4	2.0	0.6	8	189	1.6	0.08	0.5	0.2	0.07	B
24	3	27	19.8	19-22.9	155-14.3	1.4	1.1	10	153	2.8	0.07	0.3	C.3	0.07	B
24	6	42	18.1	19-22.8	155-14.1	4.1	1.2	13	115	5.1	0.13	0.6	1.6	0.12	B
24	6	45	3.3	19-23.5	155-14.7	2.0*		9	175	2.9	0.06	0.3		0.06	C
24	7	46	28.9	19-23.4	155-14.5	1.7	0.0	9	175	3.0	0.09	0.4	0.4	0.06	B
24	10	23	54.2	19-23.9	155-16.0	2.2*	0.7	9	207	1.9	0.14	0.8		0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 24	10	51	37.7	19-23.7	155-14.7	5.1		7	259	3.2	0.27	0.9	1.3	0.03	C
24	12	33	18.0	19-40.1	155- 3.5	2.8	2.2	8	251	18.2	0.39	2.0	1.7	0.08	C
24	12	42	1.3	19-24.1	155-16.3	2.2*	1.0	14	155	1.7	0.06	0.4		0.14	C
24	13	11	50.5	19-20.9	155-12.2	8.6		7	184	3.0	0.03	0.3	0.4	0.01	B
24	13	41	10.6	19-18.6	155-15.2	13.8	1.5	8	226	4.7	0.11	0.6	0.9	0.02	C
24	13	45	51.6	19-23.9	155-14.8	1.5	0.7	9	185	3.3	0.15	0.5	0.4	0.07	B
24	14	37	25.9	19-23.1	155-14.4	4.4		8	172	2.8	0.35	1.2	2.6	0.11	C
24	15	39	12.4	19-21.9	155-29.1	4.6	1.8	15	100	10.7	0.08	0.7	C.8	0.15	B
24	16	57	47.1	19-21.9	155-29.3	5.2	1.9	16	93	11.0	0.08	0.7	0.7	0.17	B
24	17	15	33.4	20- 3.2	155-47.9	8.0*	2.8	20	284	10.6	0.53	3.3		0.11	D
24	19	51	27.1	19-17.2	155-13.3	8.0*	1.5	10	243	9.0	0.23	1.5		0.10	D
24	22	4	52.7	19-24.3	155-15.4	1.6	0.6	8	240	3.0	0.30	1.0	C.5	0.07	C
24	23	22	59.8	19-23.4	155-17.2	2.2	0.7	8	94	0.4	0.04	0.4	C.6	0.06	A
24	23	26	38.0	19-20.0	155-11.9	9.4		10	208	4.7	0.11	0.8	1.0	0.06	B
25	0	27	6.9	19-20.7	155-19.9	8.5	0.9	10	106	4.5	0.12	0.6	1.3	0.08	A
25	2	37	25.1	20- 6.9	155-25.9?	C.5	1.4	11	306	37.1	1.79	12.0	33.2	0.14	D
25	4	46	42.6	19-17.6	155-27.6	4.3	1.9	13	165	9.0	0.11	0.8	0.8	0.15	C
25	6	17	47.5	19-23.5	155-15.0	1.7		9	161	2.7	0.16	0.5	C.5	0.08	B
25	6	28	47.3	19-23.2	155-14.9	4.7	1.1	11	152	2.3	0.18	0.7	1.6	0.11	C
25	7	2	32.6	19-20.2	155- 7.7	9.4	1.0	8	164	5.1	0.13	0.9	1.8	0.07	B
25	10	25	25.8	19-20.0	155-11.8	7.0	2.0	18	162	4.8	0.12	0.9	C.6	0.19	C
25	10	36	27.1	19-20.1	155-11.7	5.9	2.0	17	160	4.6	0.14	1.1	0.8	0.22	C
25	11	29	21.5	19-16.0	155-17.2	3.8	1.7	17	193	4.3	0.21	1.1	1.2	0.18	C
25	13	36	30.1	19-20.6	155-25.5	3.1	2.2	16	131	11.8	0.09	0.7	1.0	0.15	B
25	15	28	18.1	19-23.4	155-15.0	2.2	1.7	17	79	2.4	0.11	0.4	0.4	0.12	B
25	15	29	3.5	19-23.5	155-14.9	2.2*	1.0	12	110	2.6	0.03	0.2		0.06	B
25	16	38	58.8	19-23.2	155-14.9	4.7	1.4	12	106	2.3	0.13	0.6	1.3	0.10	B
25	17	10	13.8	19-22.9	155-16.5	2.3	1.2	10	73	1.1	0.08	0.5	C.3	0.13	B
25	18	25	34.9	19-23.5	155-14.7	1.5	1.0	10	175	2.9	0.06	0.3	C.2	0.06	B
25	23	28	28.9	19-22.3	155-25.3	4.4	1.6	17	98	5.3	0.09	0.7	C.9	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 25	23	47	30.0	19-20.7	155-14.2	4.8		13	197	2.8	0.21	1.2	C.9	0.18	C
26	2	13	11.0	19-18.4	155-24.8?	8.2	2.6	15	158	4.2	0.08	0.7	C.4	0.11	C
26	2	19	1.2	19-19.9	155-19.5	4.0	2.1	18	96	3.7	0.08	0.6	C.7	0.14	B
26	2	20	57.6	19-18.1	155-25.6	3.1	2.0	17	178	14.7	0.12	0.8	C.8	0.14	C
26	4	24	45.8	19-23.1	155-25.6	4.2		14	155	6.8	0.11	0.8	1.2	0.15	C
26	5	1	55.7	19-26.0	155-28.6	7.5		12	149	11.7	0.06	0.5	C.4	0.08	B
26	6	38	23.5	19-25.7	155-56.3	7.5	2.6	16	248	10.3	0.49	4.8	3.2	0.16	D
26	9	30	57.2	19-23.2	155-16.8	4.5	2.2	15	67	0.5	0.08	0.5	C.7	0.13	B
26	11	2	21.3	19-23.3	155-14.7	2.0	1.0	10	164	2.6	0.13	0.4	0.4	0.07	B
26	11	4	6.4	19-22.8	155-14.6	1.4	0.4	8	148	2.2	0.07	0.4	C.3	0.07	B
26	14	47	28.4	19-24.4	155-17.6	2.5	0.5	9	109	0.6	0.21	0.6	1.2	0.07	A
26	14	52	56.8	19-24.0	155-16.5	2.0		7	179	1.3	0.13	0.8	C.4	0.09	B
26	15	5	39.9	19-18.4	155-13.3	8.0*		10	228	7.2	0.14	0.9		0.08	D
26	15	8	50.5	19-26.5	155-25.5	8.3	3.1	17	117	7.1	0.08	0.7	1.3	0.12	B
26	18	18	30.1	19-24.2	155-16.6	2.1		10	145	1.5	0.03	0.2	C.1	0.04	B
26	18	27	38.5	19-27.9	155-16.0?	8.0*	1.6	8	314	5.5	0.21	3.7		0.31	D
26	18	56	42.4	19-23.5	155-17.3	1.1	0.6	10	93	0.8	0.05	0.3	0.3	0.08	A
27	0	40	18.9	19-28.5	155-16.3?	8.0*	1.3	8	318	6.2	0.29	4.4		0.36	D
27	4	14	35.7	19-23.5	155-16.7	2.6	1.1	12	80	0.4	0.05	0.4	C.8	0.08	A
27	4	55	17.0	19-15.6	155-10.8?	0.0	1.6	16	262	12.9	9.16	3.2	16.4	0.26	D
27	6	31	53.2	19-22.6	155-14.3	2.2*	1.2	8	150	2.2	0.05	0.4		0.06	C
27	8	41	13.1	19-24.1	155-15.6	2.5		6	234	2.8	0.11	0.5	1.8	0.02	C
27	9	16	20.9	19-25.1	155-24.5	3.8	1.5	12	119	8.2	0.09	0.7	1.1	0.15	B
27	11	41	54.9	19-23.7	155-16.9	2.2		7	143	0.5	0.05	0.5	0.2	0.06	B
27	14	21	20.2	19-20.7	155-13.2	9.6	1.6	13	199	3.4	0.16	1.0	1.3	0.10	C
27	18	32	36.7	19-23.2	155-14.9	3.1		8	160	2.3	0.21	0.8	2.7	0.07	C
27	18	48	39.0	19-19.9	155-16.0	7.1		13	182	2.5	0.12	0.8	C.5	0.13	C
27	19	46	49.1	20- 0.2	155-44.0	13.0	2.4	14	254	4.7	1.04	9.3	5.9	C.08	D
27	20	25	47.4	19-19.6	155-14.7	12.7	1.6	10	212	4.2	0.27	0.9	1.9	0.05	B
27	20	28	59.4	19-24.3	155-15.8	2.1*	1.2	12	115	2.3	0.06	0.4		0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 27	20	54	28.0	18-57.8	155-16.5?	8.0*	2.2	12	253	37.4	0.73	5.1		0.18	D
27	21	53	24.9	19-23.2	155-14.3	C.2	0.5	9	169	3.1	0.34	0.2	0.7	0.04	B
27	22	27	32.1	19-24.1	155-15.5?	1.8	0.2	8	231	2.8	0.22	0.8	C.4	0.07	C
28	0	26	54.7	19-23.4	155-15.1	0.8	1.2	11	107	2.3	0.35	0.1	C.7	0.05	A
28	3	17	35.7	19-23.7	155-17.2	2.3		7	130	0.7	0.05	0.4	C.2	0.04	B
28	4	39	55.8	19-23.1	155-14.6	5.3	1.8	15	106	2.7	0.07	0.4	C.7	0.08	A
28	4	43	6.6	19-23.7	155-14.7	1.3	1.C	10	183	3.3	0.09	0.4	C.3	0.08	B
28	4	58	44.8	19-23.6	155-17.6	1.8	0.9	13	80	1.2	0.06	0.3	0.3	0.08	A
28	6	34	50.9	19-23.4	155-14.6	1.8		8	170	2.9	0.15	0.5	0.5	0.06	B
28	6	35	41.2	19-23.8	155-14.6	1.7		8	186	3.4	0.11	0.5	C.4	0.09	B
28	6	58	55.1	19-23.5	155-14.6	3.8	1.6	13	110	3.0	0.07	0.3	0.9	0.07	A
28	7	8	25.0	19-23.5	155-14.7	2.1*	1.0	8	177	3.0	0.04	0.3		0.04	C
28	7	37	5.8	19-23.4	155-14.8	5.3	1.6	14	109	2.7	0.09	0.4	C.8	0.08	B
28	8	29	1.7	19-23.6	155-14.4	2.1*		8	184	3.3	0.05	0.3		0.04	C
28	8	59	25.9	19-23.0	155-26.3	4.9	2.0	18	73	7.4	0.08	0.7	C.8	0.20	B
28	10	17	29.2	19-29.7	155-12.8	12.3	1.7	12	273	11.6	0.71	4.8	3.2	0.21	D
28	12	7	15.5	19-20.1	155-15.0	10.7		10	147	3.2	0.06	0.4	C.6	0.04	B
28	12	14	16.6	19-19.6	155- 5.6?	C.6	2.5	16	178	4.6	1.19	1.0	4.4	0.17	C
28	12	24	18.6	19-19.7	155-13.2	8.0*	1.6	12	162	5.1	0.12	1.0		0.17	C
28	12	25	4.1	19-22.3	155-13.9	4.5	1.3	10	143	2.1	0.19	1.0	1.8	0.14	B
28	13	9	7.5	19-23.3	155-14.3	2.7	1.1	9	113	3.2	0.09	0.4	2.2	0.07	B
28	14	59	34.6	19-24.1	155-24.0	8.0*	1.5	11	120	7.3	0.10	0.8		0.13	B
28	15	32	20.6	19-20.3	155-14.4	25.2	2.3	18	137	3.2	0.14	0.9	1.4	0.10	B
28	17	10	54.9	19-23.2	155-14.5	1.7		8	169	2.9	0.06	0.3	C.3	0.04	B
28	17	20	50.5	19-26.4	155-24.1	2.3	1.4	13	106	6.4	0.08	0.6	1.2	0.15	B
28	19	28	20.9	19-22.3	155-13.2	5.0	1.1	10	157	1.0	0.14	0.8	1.2	0.10	C
28	20	1	27.6	19-20.0	155-16.5	6.8	1.3	15	135	1.6	0.08	0.7	0.5	0.13	B
28	20	15	9.7	19-22.1	155- 5.7	2.8	3.4	17	121	6.4	0.11	0.8	1.0	0.15	B
28	21	27	21.5	19-29.3	155-27.8	C.4*	1.9	10	186	8.0	0.13	1.1		0.13	C
28	21	30	49.8	19-22.4	155-23.1	5.7	1.8	21	54	4.0	0.09	0.8	0.8	0.21	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 28	22	11	34.0	19-23.8	155-17.5?	1.9	0.6	7	133	1.2	0.05	0.3	0.3	0.05	B
28	22	53	53.1	19-20.5	155-14.5	8.5	1.3	13	191	2.8	0.14	0.9	1.2	0.11	C
28	23	22	28.7	19-23.6	155-15.4	1.7		8	163	2.4	0.13	0.6	0.5	0.10	B
29	0	17	16.5	19-23.6	155-15.0	2.9	1.0	10	172	2.8	0.11	0.4	1.8	0.06	B
29	1	14	34.9	19-21.3	155-17.0	23.0	1.7	17	101	2.3	0.14	0.9	1.3	0.11	B
29	1	30	6.9	19-24.5	155-17.4	8.2	1.2	10	99	0.4	0.10	0.9	0.9	0.07	A
29	1	30	58.4	19-23.3	155-16.2	8.4	1.3	13	85	1.4	0.06	0.4	0.7	0.08	A
29	2	22	24.5	19-22.3	155-23.3	6.6	1.8	13	62	3.8	0.08	0.8	0.7	0.15	B
29	2	49	44.2	19-24.3	155-17.3	0.8	0.9	12	92	0.9	0.05	0.3	0.3	0.09	A
29	3	31	52.7	19-22.1	155-23.6	4.5	1.9	19	73	7.5	0.11	0.8	1.1	0.24	B
29	4	6	19.9	19-23.8	155-17.1	2.1	0.6	9	136	0.8	0.03	0.3	0.1	0.04	B
29	4	46	57.0	19-26.2	155-14.6?	8.0*	1.6	12	255	4.8	0.34	3.0		0.62	D
29	5	23	58.9	19-23.1	155-14.4	0.9	1.1	9	168	2.9	0.04	0.2	0.2	0.04	B
29	5	42	42.4	19-23.4	155-14.6?	0.1		9	173	3.0	1.53	0.7	3.2	0.14	C
29	5	51	36.9	19-24.1	155-17.1	2.1		8	134	1.3	0.05	0.5	0.2	0.06	B
29	6	0	32.1	19-23.9	155-17.7?	1.6	0.3	8	130	1.5	0.06	0.2	0.4	0.07	B
29	6	3	47.6	19-22.9	155-14.3	1.9	1.1	7	156	2.6	0.10	0.4	0.4	0.04	B
29	6	9	28.0	19-23.5	155-14.8	2.2*	0.8	8	173	2.8	0.04	0.2		0.03	C
29	6	35	1.4	19-29.5	155-16.8?	8.0*	1.4	8	324	7.7	0.56	5.7		0.49	D
29	7	14	39.4	19-22.7	155-14.2	1.6		6	176	2.6	0.15	1.0	0.6	0.07	B
29	7	18	56.3	19-23.4	155-17.4?	3.2		7	149	0.7	2.49	4.8	13.2	0.14	C
29	7	23	58.4	19-23.9	155-16.2	1.8		8	150	1.6	0.11	0.6	0.4	0.11	B
29	7	46	21.1	19-23.3	155-17.2?	2.4		7	151	0.5	0.06	0.5	0.8	0.05	C
29	9	6	29.4	19-25.9	155- 1.7	30.3		19	215	8.7	0.27	1.4	2.1	0.08	C
29	9	20	15.0	19-23.2	155-17.3	1.4	1.0	9	92	2.8	0.02	0.1	0.1	0.03	A
29	9	22	56.1	19-23.6	155-17.2	1.8	0.9	11	96	0.6	0.05	0.4	0.2	0.07	A
29	9	42	18.7	19-23.8	155-17.4	1.2	0.5	10	117	1.1	0.06	0.4	0.4	0.11	B
29	9	59	13.0	19-23.6	155-14.8	3.7	1.8	10	114	2.9	0.07	0.3	1.0	0.06	A
29	10	1	25.7	19-23.3	155-14.7	4.1	1.1	10	108	2.7	0.14	0.6	1.4	0.09	B
29	10	2	38.1	19-23.2	155-14.8	4.3	1.6	12	107	2.5	0.11	0.5	1.3	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 29	12	56	3.2	19-24.2	155-17.9	1.8	0.5	12	81	1.2	0.04	0.2	C.2	0.07	A
29	13	13	25.6	19-23.5	155-17.4	1.5	0.6	12	88	0.8	0.05	0.3	0.3	0.08	B
29	13	27	36.5	19-25.3	155-15.6?	0.2	1.3	9	172	2.5	2.55	1.0	4.9	0.13	C
29	14	42	36.9	19-56.4	155-40.5?	C.8		13	189	10.6	6.64	2.4	23.3	0.09	C
29	14	57	47.3	19-23.4	155-17.1	2.3		6	142	0.3	0.04	0.4	0.5	0.03	B
29	15	4	58.1	19-22.6	155-14.6	4.4	1.2	11	122	1.9	0.09	0.5	C.9	0.08	B
29	15	14	23.8	19-31.3	155-10.4?	2.0*	1.7	7	337	16.5	1.70	7.0		0.23	D
29	15	44	58.0	19- 6.1	155-28.1	37.1	2.5	10	193	6.2	0.58	2.6	5.6	0.15	C
29	17	9	4.0	19-24.4	155-17.0	0.7	0.8	10	118	0.8	0.08	0.3	C.2	0.10	A
29	17	27	52.8	19-24.1	155-16.4	2.2	1.1	11	95	1.5	0.08	0.5	3.4	0.11	B
29	17	38	30.7	19-28.4	155-17.2	5.6	1.1	8	317	5.5	1.17	6.9	5.3	0.24	D
29	17	41	47.0	19-22.8	155-14.5?	1.2	1.1	7	151	2.3	0.10	0.6	C.6	0.08	C
29	18	3	35.9	19-24.0	155-17.5	2.0	0.5	8	118	1.2	0.07	0.6	C.3	0.08	A
29	19	3	5.7	19-30.1	155-16.1?	8.0*	1.9	8	327	9.1	0.69	6.4		0.43	D
29	19	17	22.9	20- 6.6	155-49.9	8.0*	3.3	17	147	16.2	0.08	0.9		0.11	C
29	19	34	40.8	19-28.3	155-16.1?	8.0*	1.3	8	317	6.0	0.23	4.0		0.34	D
29	19	48	59.8	19-18.6	155-13.6	8.0*	1.3	13	224	6.7	0.21	1.3		0.13	C
29	19	53	9.3	19-23.8	155-17.3?	3.3		8	128	1.0	0.14	0.4	1.6	0.12	B
29	20	43	37.9	19-23.6	155-17.1	3.5	1.5	14	56	0.6	0.06	0.4	0.7	0.12	B
29	20	44	57.3	19-23.2	155-17.2	1.8	1.1	10	89	0.6	0.07	0.4	C.3	0.07	A
29	21	21	6.4	19-23.1	155-14.8	2.2*		8	157	2.4	0.06	0.5		0.07	C
29	21	24	38.1	19-23.4	155-15.2	4.0		8	159	2.2	0.21	0.7	2.0	0.06	B
29	22	3	5.6	19-23.5	155-15.5	1.5	0.9	8	219	2.1	0.26	1.1	C.7	0.13	C
29	22	20	33.4	19-23.6	155-17.0	2.3	0.7	7	137	0.3	0.08	0.6	C.3	0.07	B
29	22	50	13.6	20- 8.4	155-50.6	21.4*		8	326	56.6	2.58	15.6		0.08	D
29	23	12	46.1	19-24.0	155-17.3?	2.C		7	124	1.3	0.03	0.3	C.2	0.03	B
29	23	15	2.9	19-23.5	155-15.1	0.2	1.7	13	109	2.4	0.29	0.4	C.6	0.11	B
29	23	36	15.C	19-23.5	155-14.4?	C.0	1.0	9	180	3.3	0.85	0.4	1.7	0.09	C
3C	0	3	48.3	19-18.5	155-13.9	8.C*		9	224	6.5	0.19	1.2		0.11	C
30	0	12	53.1	19-17.3	155-15.0	7.2	2.2	19	160	6.5	0.13	0.9	C.6	0.17	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 30	0	27	51.5	19-16.1	155-13.6	6.2	1.4	15	211	9.5	0.35	1.9	1.4	0.21	C
30	0	57	42.4	19-23.3	155-17.3	1.9		9	87	0.7	0.04	0.3	0.2	0.05	A
30	1	0	10.6	19-24.0	155-17.2?	2.0		7	130	1.2	0.02	0.3	0.1	0.03	B
30	1	31	8.8	19-24.0	155-17.2?	2.0		7	129	1.2	0.02	0.2	0.1	0.03	B
30	1	39	44.1	19-23.7	155-17.5	1.7	1.3	13	85	1.1	0.05	0.4	0.2	0.08	A
30	1	53	30.9	19-23.7	155-15.1	3.9		7	177	2.9	0.05	0.2	0.6	0.01	B
30	4	3	28.3	19-23.7	155-17.1?	2.3		7	134	0.7	0.05	0.3	0.2	0.03	B
30	4	6	26.0	19-11.4	155- 5.9	41.4		13	231	16.4	0.43	2.1	3.4	0.10	C
30	4	14	36.4	19-23.3	155-17.2	1.8	1.0	8	85	0.5	0.04	0.3	0.2	0.04	A
30	4	56	2.1	19-17.4	155-14.6	7.7	1.7	14	224	6.9	0.32	1.9	0.7	0.21	C
30	5	24	24.6	19-24.3	155-11.9?	8.0*	1.8	11	288	7.4	0.49	3.3		0.39	D
30	5	46	30.4	19-24.6	155-17.0	8.2		10	84	0.6	0.05	0.4	0.5	0.04	A
30	10	19	18.0	19-23.4	155-17.4	1.8	1.3	12	83	0.8	0.06	0.4	0.3	0.08	A
30	11	20	33.5	19-17.3	155-23.2?	1.9	2.3	15	179	5.4	0.44	0.9	1.3	0.16	C
30	12	1	13.6	18-52.6	155-18.6	8.5		13	258	39.2	0.53	5.6	7.1	0.12	D
30	17	23	32.0	19-23.9	155-16.8	3.6	2.6	16	73	1.8	0.05	0.4	0.6	0.12	B
30	17	30	9.3	19-23.2	155-17.5	2.3	0.8	10	118	1.1	0.08	0.4	1.2	0.09	A
30	19	9	13.4	19-24.0	155-17.?	2.1	0.7	7	129	1.3	0.03	0.3	0.1	0.04	B
30	21	41	35.9	19-23.8	155-17.1	2.0	1.0	10	137	0.9	0.03	0.3	0.1	0.05	B
30	22	45	50.1	19-27.2	155-43.4?	7.3		11	288	13.1	0.92	5.4	1.4	0.10	D
31	0	44	33.4	19- 0.9	155-20.1?	0.1	2.4	15	223	31.7	7.88	4.4	33.2	0.25	D
31	5	42	8.0	19-20.3	155-25.3	4.0	1.9	19	103	3.5	0.10	0.8	0.9	0.22	B
31	7	49	13.8	19-19.9	155-12.9	6.0		15	160	4.7	0.17	1.1	1.1	0.23	C
31	8	35	40.8	19-18.4	155-13.2	8.0*	1.8	14	204	7.2	0.13	0.9		0.12	C
31	11	37	59.9	19-21.4	155-15.2	7.7	3.0	23	126	0.8	0.07	0.6	0.3	0.15	C
31	17	3	30.8	19-18.5	155-13.2	8.0	2.0	16	200	7.1	0.16	1.1	0.5	0.13	C
31	17	31	47.9	19-31.7	155-12.1	7.8	1.8	17	120	14.9	0.07	0.5	1.3	0.08	A
31	18	10	16.8	19-14.3	155-11.7	6.4	2.0	17	215	13.9	0.17	0.9	0.6	0.11	C
AUG 1	1	38	23.3	19-29.3	155-51.9	7.9	3.6	22	142	6.9	0.08	1.2	1.8	0.11	B
1	1	40	25.3	19-25.3	155-24.3	8.0*	2.1	10	201	7.6	0.22	1.4		0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 1	4	59	51.2	19-13.3	155-10.3	4.1	2.5	15	228	17.0	0.49	2.2	1.8	0.20	C
1	8	25	58.8	19-19.6	155-11.6	3.7	2.2	19	168	5.5	0.18	1.1	1.4	0.28	C
1	9	55	31.7	19-21.6	155-14.1	8.5	1.0	9	131	2.1	0.13	1.4	1.7	0.14	B
1	12	8	19.4	19-18.9	155-13.9	8.0*	1.7	9	218	5.9	0.18	1.2		0.12	C
1	15	49	4.1	19-18.6	155-12.8	8.0*	2.4	12	181	7.1	0.12	0.9		0.11	C
1	18	57	49.5	19-19.5	155-16.5	8.7	1.5	11	182	1.9	0.15	0.9	1.3	0.08	C
1	19	4	54.4	19-18.0	155-12.9	8.0*	1.9	14	190	8.1	0.12	0.8		0.11	C
1	19	10	44.4	19-18.3	155-13.2	8.0*	1.7	13	185	7.4	0.11	0.8		0.11	C
1	19	13	27.9	19-18.8	155-15.4	9.1		13	169	4.2	0.14	0.8	1.4	0.11	C
1	22	6	42.0	19-22.8	155-14.5	3.1		7	157	2.3	0.09	0.4	0.8	0.03	B
1	23	37	26.1	19-17.6	155-13.3	5.5	2.1	18	163	8.6	0.16	1.0	0.9	0.22	C
2	0	57	0.0	19-21.1	155- 4.9	4.0	2.0	15	135	4.1	0.12	1.2	1.1	0.18	B
2	2	30	5.1	19-21.7	155-24.5	7.1	1.8	10	127	3.5	0.07	0.7	0.6	0.09	B
2	5	20	50.0	19-21.4	155-25.1	7.9	2.5	19	66	3.9	0.11	0.7	0.7	0.17	B
2	7	58	39.0	19-19.3	155-14.8	5.1	1.4	10	163	4.8	0.19	1.1	1.4	0.18	C
2	14	7	59.8	20- 7.9	155-51.6	8.0*	2.9	21	291	20.1	0.58	3.6		0.11	D
2	14	9	31.0	20- 9.9	155-51.0	8.0*	2.9	11	314	59.1	1.55	9.3		0.10	D
2	18	29	31.9	19-26.6	155-26.2	7.5	1.7	13	214	7.8	0.14	0.9	0.4	0.09	B
2	20	23	0.7	19-16.4	155-13.9	5.2		13	231	9.1	0.49	2.4	1.6	0.20	C
2	21	43	36.3	19-48.7	155-51.1	4.4	2.8	19	248	33.2	0.58	1.8	4.4	0.08	C
3	1	50	30.7	20- 4.1	155-16.6?	5.2	2.1	15	248	21.0	1.50	2.4	8.6	0.12	D
3	7	45	35.4	19-14.2	155-12.3	4.9	1.9	13	215	13.1	0.28	1.4	1.1	0.17	C
3	9	26	44.1	19-25.7	155-51.2	8.0*	2.2	12	220	12.4	0.30	3.6		0.13	C
3	12	43	3.0	19-19.2	155-15.6	5.3	1.4	10	202	3.6	0.28	1.8	1.3	0.23	C
3	13	28	6.4	19-14.6	155-11.3	8.1	2.0	17	184	14.3	0.19	1.2	3.2	0.11	C
3	13	29	36.1	19-15.6	155-11.2	8.0*	1.9	9	231	12.9	0.37	2.5		0.15	D
3	14	9	14.9	19-18.5	155-13.1?	5.6	3.8	22	150	7.1	0.20	1.2	1.0	0.32	C
3	14	48	48.6	19-17.6	155-12.7	8.0*	1.9	10	197	8.9	0.18	1.3		0.15	C
3	15	33	34.9	19-18.7	155-13.4	8.0*	1.6	12	178	6.6	0.11	0.8		0.12	C
3	16	7	27.5	19-18.7	155-13.9	8.0*	1.5	12	178	6.2	0.12	0.9		0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 3	17	22	2.1	19-23.6	155-17.4	1.7	0.6	11	101	1.0	0.05	0.4	C.3	0.08	A
4	1	36	44.7	20- 7.1	155-51.2	8.0*	4.2	22	145	18.7	0.07	0.9		0.11	C
4	6	33	29.2	19-23.4	155-17.0	2.6	0.8	9	98	0.2	0.01	0.1	0.2	0.02	A
4	9	16	14.3	19-19.6	155-10.7	8.0*		13	171	6.3	0.12	1.1		0.15	C
4	10	57	30.1	19-20.2	155-14.3	5.9		13	197	3.5	0.25	1.7	1.0	0.21	C
4	12	34	10.4	19-22.9	155-16.4	3.4	1.0	12	113	1.2	0.10	0.5	1.1	0.10	A
4	19	56	45.9	19-16.2	155-23.4?	0.0		13	166	7.3	1.44	2.0	21.5	0.27	C
4	20	30	19.3	19-19.6	155- 9.4?	0.0		16	173	7.8	6.25	1.1	11.9	0.23	C
4	20	53	31.8	19-20.8	155- 6.3	8.0*		13	152	6.1	0.11	1.1		0.12	C
4	21	36	2.6	19-23.3	155-14.3?	0.0		9	174	3.2	0.58	0.3	1.2	0.06	C
4	21	44	56.9	19-21.4	155-19.3	2.2*		10	96	4.2	0.06	0.4		0.10	B
4	23	48	59.0	19-19.0	155-13.2	8.0*		13	221	6.4	0.17	1.1		0.11	C
5	2	19	45.2	19-18.2	155-13.3	6.3		11	230	7.4	0.43	2.4	1.6	0.23	D
5	2	21	34.1	19-48.4	155- 1.9	42.6	1.5	19	231	11.2	0.37	1.5	3.3	0.08	C
5	3	4	34.9	19-25.1	155-17.0	2.7	0.7	9	175	0.4	0.05	0.4	0.5	0.05	B
5	3	38	22.5	19-18.4	155-15.3	13.3		10	179	4.8	0.07	0.8	C.8	0.06	B
5	5	43	50.6	19-26.0	155-17.9	6.0	1.0	8	287	1.2	0.58	2.0	2.9	0.12	C
5	7	52	54.5	19-21.3	155-26.1	5.7	2.0	18	73	5.3	0.12	0.9	1.1	0.18	B
5	10	9	13.6	19-25.5	155-16.2	1.6	0.9	10	189	1.8	0.14	0.6	0.4	0.09	B
5	11	16	11.0	20-40.3	156- 5.4?	6.7	2.3	21	196	19.8	2.80	17.1	69.2	0.22	D
5	13	17	14.5	19-25.3	155-23.6	6.3	1.7	16	132	6.5	0.10	0.7	0.7	0.16	B
5	15	35	20.5	19-29.5	155-50.6	1.3*	2.0	14	310	35.8	0.06	1.0		0.09	D
5	16	55	29.9	19-25.4	155-27.5	7.4	1.7	16	152	10.9	0.12	0.8	C.6	0.14	C
5	16	56	10.6	19-28.5	155-42.9?	13.2*		13	289	27.1	0.34	2.2		0.22	D
5	17	46	34.2	19-27.7	155-13.2?	8.0*	1.7	9	318	8.5	1.77	11.1		0.49	D
5	18	14	28.6	19-16.1	155-18.2	30.0	2.8	22	155	3.4	0.15	1.0	1.5	0.14	C
5	18	21	47.9	19-15.9	155-18.1	29.0	2.4	22	157	4.0	0.15	1.0	1.5	0.14	C
5	18	46	24.1	19-22.7	155-22.2	2.6		12	147	4.7	0.06	0.4	0.6	0.08	B
5	18	55	3.5	19-22.5	155-22.5	4.1	1.6	16	148	4.4	0.08	0.7	0.7	0.16	B
5	19	4	35.6	19-24.2	155-17.7	1.9	0.4	8	112	1.0	0.04	0.3	0.2	0.05	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 5	19	33	33.7	19-18.4	155-15.9	5.9	2.3	18	149	4.0	0.17	1.2	C.9	0.25	C
5	20	30	53.6	19-23.8	155-21.4	6.4		12	137	3.0	0.06	0.4	C.4	0.06	B
5	21	46	32.3	19-22.6	155-22.5	6.2	1.4	17	108	4.6	0.09	0.7	C.7	0.16	B
5	21	51	22.9	19-22.6	155-22.1	2.7		12	145	4.7	0.08	0.6	C.8	0.11	B
5	23	20	34.2	19-22.9	155-14.3?	2.0	1.7	17	112	2.7	0.05	0.4	1.0	0.12	B
5	23	45	4.2	19-23.4	155-14.6	1.5		9	173	2.9	0.08	0.4	C.4	0.06	B
5	23	58	34.2	19-23.4	155-16.4	12.2	1.5	16	67	0.9	0.09	0.7	C.8	0.12	B
6	0	4	37.8	19-25.0	155-17.0?	2.1	1.3	15	74	C.2	0.07	0.6	C.8	0.14	B
6	0	49	13.3	19-24.2	155-17.8	1.8	1.1	12	67	1.0	0.02	0.1	C.1	0.04	A
6	1	8	32.4	19-40.4	156- 3.3?	8.0*	3.3	13	314	65.7	3.39	82.4		0.67	D
6	1	9	48.9	19-23.3	155-14.7	2.1*		9	168	2.7	0.07	0.5		0.08	C
6	1	11	47.5	19-23.1	155-14.9	3.2		8	155	2.2	0.19	0.7	2.0	0.06	B
6	1	12	53.8	19-23.3	155-14.8	2.8	1.0	10	163	2.5	0.09	0.4	1.9	0.06	B
6	1	19	33.6	19-20.4	155-25.0	8.5	1.7	15	132	3.0	0.10	0.9	0.6	0.15	B
6	2	19	55.4	19-18.9	155-10.8?	0.0		16	230	7.3	7.27	1.8	13.5	0.26	D
6	7	6	12.9	19-23.4	155-14.8	2.6		9	169	2.7	0.05	0.2	1.4	0.04	B
6	9	36	11.2	19-20.4	155-15.9?	6.8	1.2	10	135	2.6	0.28	1.2	2.5	0.19	C
6	11	3	28.6	19-25.2	155-21.8	6.7	1.6	15	147	4.5	0.12	0.8	C.7	0.15	B
6	11	54	25.7	19-23.8	155-14.7	1.6		8	188	3.3	0.08	0.3	0.3	0.05	B
6	12	27	13.3	19-23.5	155-14.8	1.9		9	175	2.8	0.09	0.3	C.3	0.04	B
6	13	18	1.5	19-18.9	155-13.7	8.0*	1.6	12	174	6.0	0.10	0.7		0.12	C
6	13	23	27.3	19-23.1	155-14.4	1.7	1.1	9	168	2.9	0.10	0.4	C.4	0.08	B
6	14	5	5.4	19-21.0	155-11.5	10.9		10	148	3.3	0.07	0.5	C.8	0.04	B
6	15	36	21.3	19-23.6	155-14.9	3.6	1.0	11	113	2.8	0.09	0.4	1.4	0.08	A
6	17	37	10.4	19-22.0	155-29.3	7.6	2.2	21	73	11.0	0.15	0.7	1.0	0.14	B
6	17	48	19.1	19-12.3	155-26.4?	3.2*		7	341	24.0	5.13	94.9		0.57	D
6	18	19	1.9	19-19.6	155-16.5	9.4	1.4	9	163	1.8	0.12	0.8	1.1	0.06	B
6	19	9	11.6	19-20.8	155-10.8	8.0		10	153	3.1	0.02	0.2	C.3	0.02	B
6	21	40	24.4	19-23.6	155-14.7	1.4	1.0	10	178	3.1	0.08	0.3	C.3	0.07	B
6	22	23	39.5	19-24.3	155-17.6	0.8	0.7	13	99	0.8	0.06	0.3	0.3	0.09	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 6	22	36	11.4	19-43.9	156-10.4	43.6*	2.3	14	307	35.3	0.32	2.3		0.08	D
6	23	3	51.3	19-13.4	155-11.2	8.0*	1.6	13	206	15.5	0.18	1.1		0.13	C
7	0	30	29.0	19-20.8	155-11.7	8.2	1.1	12	151	3.6	0.05	0.5	C.8	0.07	B
7	0	55	29.8	19-17.8	155-13.3	8.0*	1.4	11	234	8.2	0.31	1.9		0.18	D
7	1	17	55.7	19-42.8	155-45.7	14.9*	2.3	11	152	27.2	0.11	1.0		0.14	C
7	3	36	51.8	19-19.0	155-15.9	9.3	1.6	13	187	3.4	0.21	1.1	1.9	0.12	C
7	6	13	1.5	19-24.6	155-16.1	0.9	0.9	14	117	1.7	0.09	0.3	C.4	0.10	B
7	11	55	37.9	19-25.8	155-22.7	8.0*	1.4	13	166	4.9	0.09	0.7		0.10	C
7	13	24	46.4	19-23.2	155-14.2	3.3		11	112	3.1	0.05	0.3	C.8	0.05	A
7	13	25	20.7	19-27.2	155-43.0	4.8	2.2	13	153	22.8	0.16	1.0	2.0	0.07	B
7	14	37	22.9	19-21.3	155- 8.7?	4.1	2.0	20	147	2.5	0.23	1.8	1.8	0.35	C
7	15	26	38.3	19-18.1	155-19.6	4.3	1.1	13	160	1.7	0.15	1.0	1.0	0.18	C
7	15	58	49.4	19-30.2	155-15.4	2.9*	1.3	8	328	9.7	0.27	1.4		0.08	D
8	0	18	35.3	19-28.4	155-17.2?	5.2	0.8	8	318	5.6	1.21	7.3	7.5	0.25	D
8	1	4	11.5	19-23.2	155-17.3	1.8	1.0	10	88	0.7	0.05	0.3	0.2	0.07	A
8	3	36	21.8	19-24.2	155-17.0	2.0	1.0	8	148	1.3	0.03	0.3	C.1	0.04	B
8	4	27	13.6	19-24.2	155-16.7	2.1	-0.0	11	125	1.4	0.04	0.3	0.2	0.06	B
8	5	24	33.3	19-23.4	155-17.1	1.9	0.7	10	84	0.3	0.04	0.3	C.2	0.07	A
8	6	44	40.5	19-23.3	155-12.8	7.3	1.4	11	177	1.5	0.51	1.4	3.4	0.17	C
8	6	55	21.4	19-20.1	155-15.1	6.3	1.7	20	160	3.1	0.10	0.8	C.6	0.20	C
8	7	9	40.4	19-28.1	155-11.4	8.0*	1.7	12	169	11.5	0.21	1.7		0.22	C
8	7	25	2.5	19-24.1	155-16.6?	1.9	0.6	9	182	1.5	0.10	0.7	C.3	0.10	C
8	7	36	54.7	19-20.4	155-19.0	2.0*		8	96	2.9	0.03	0.2		0.04	B
8	9	11	47.6	19-24.2	155-16.2	1.9		9	210	2.0	0.06	0.3	0.1	0.04	B
8	9	55	8.2	19-26.8	155-15.1?	8.0*	1.6	10	264	4.9	0.44	3.0		0.39	D
8	12	26	14.6	19-18.9	155-22.7?	8.0*	2.5	12	254	7.3	2.98	17.2		1.13	D
8	12	32	57.3	19-20.7	155-11.5	9.9	1.1	10	199	3.8	0.13	1.0	1.1	0.08	B
8	13	15	18.4	19-23.8	155-16.5	2.0	2.3	18	83	1.0	0.06	0.3	0.3	0.11	B
8	13	27	31.2	19-23.8	155-17.1	2.1	0.6	7	138	0.7	0.03	0.3	0.1	0.04	B
8	13	40	51.6	19-24.1	155-17.1?	2.6*	0.7	6	141	1.3	0.13	0.9		0.09	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 8	13	42	20.7	19-23.8	155-17.2?	2.1		7	131	0.9	0.05	0.4	0.9	0.04	B
8	14	0	50.9	19-24.0	155-14.5	1.5		7	266	3.8	0.25	0.8	0.5	0.04	C
8	16	33	8.4	18-55.1	155-16.5	26.0*	2.4	19	252	41.6	0.30	2.3		0.18	D
8	17	31	19.6	19-23.4	155-17.0	2.2	0.7	8	110	0.1	0.05	0.4	0.2	0.05	A
8	20	5	10.1	19-22.7	155-17.4	2.4		9	100	1.5	0.04	0.3	0.9	0.04	A
8	20	27	12.7	19-24.0	155-17.2	2.1		8	132	1.2	0.02	0.3	0.1	0.04	B
8	20	52	15.3	19-20.2	155-11.1	15.1*	1.7	7	342	8.0	0.94	8.9		0.14	D
8	22	31	47.9	19-22.5	155-17.1	3.3	1.5	14	81	1.7	0.06	0.3	0.9	0.08	A
8	23	4	27.2	19-23.9	155-17.4	2.0	0.6	9	88	1.2	0.03	0.3	0.1	0.04	A
8	23	14	12.3	19-23.9	155-17.1	2.1	0.6	8	131	1.1	0.03	0.3	0.2	0.03	B
8	23	16	41.3	19-24.3	155-24.0	6.5	1.5	16	181	7.6	0.13	0.9	0.7	0.16	C
8	23	19	11.8	19-23.6	155-17.5	2.0	0.8	7	144	1.1	0.11	0.6	0.4	0.08	B
9	0	44	13.7	19-22.9	155-17.4	1.9		8	171	1.2	0.12	0.5	0.3	0.07	B
9	0	53	16.3	19-22.6	155-17.4	2.8		10	104	1.7	0.04	0.2	0.6	0.03	A
9	1	4	13.3	19-23.9	155-17.3?	2.1		7	120	1.2	0.04	0.4	0.2	0.04	B
9	1	7	20.7	19-24.0	155-16.9	2.0	1.1	14	69	1.1	0.04	0.2	0.1	0.07	A
9	1	31	30.8	19-24.1	155-16.9	2.7		8	114	1.4	0.07	0.4	0.8	0.05	A
9	1	32	4.7	19-24.1	155-16.9	2.1	0.5	12	110	1.3	0.04	0.3	0.1	0.07	A
9	1	55	38.9	19-24.6	155-16.7	3.2	1.5	13	107	0.9	0.06	0.3	0.7	0.08	A
9	2	14	44.5	19-24.3	155-17.5	1.2	0.8	10	106	0.8	0.05	0.3	0.3	0.09	A
9	2	49	49.8	19-23.1	155-16.6?	2.2	1.9	16	67	0.7	0.16	0.7	0.6	0.19	C
9	2	55	53.4	19-23.7	155-16.5	3.5	2.5	13	82	2.5	0.06	0.3	0.8	0.09	A
9	2	59	15.7	19-22.8	155-17.3	2.2		9	110	1.2	0.05	0.2	0.2	0.04	A
9	3	1	58.2	19-23.9	155-16.9	2.0	2.0	17	70	1.0	0.07	0.4	0.3	0.11	B
9	3	57	32.5	19-26.8	155-15.6?	8.0*	1.5	8	303	4.3	0.17	2.5		0.22	D
9	4	4	58.1	19-24.3	155-17.0?	0.6	0.3	8	146	1.1	0.10	0.4	0.2	0.10	B
9	4	12	25.4	19-22.7	155-14.2	3.7	1.2	13	121	2.6	0.12	0.6	1.6	0.11	B
9	4	20	50.3	19-23.5	155-16.7	2.0	0.7	14	74	0.5	0.05	0.3	0.2	0.10	A
9	5	49	55.1	19-22.8	155-17.3?	3.4		6	110	1.3	0.05	0.3	1.3	0.03	B
9	6	20	35.3	19-28.1	155-15.7?	8.0*	1.3	8	316	6.0	0.23	4.2		0.38	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG	9	6	25	39.8	19-26.4	155-22.6?	8.0*	2.0	11	207	4.1	2.97	16.5		1.03	D
	9	6	28	15.6	19-29.5	155-15.8?	8.0*	0.5	8	323	8.1	0.42	5.2		0.37	D
	9	6	30	22.5	19-23.9	155-17.2?	2.1		7	128	1.0	0.03	0.2	C.1	0.02	B
	9	6	32	22.7	19-29.4	155-16.4?	8.0*	1.4	8	324	7.8	0.61	5.7		0.44	D
	9	6	34	9.3	19-28.1	155-16.3?	8.0*	1.3	8	316	5.5	0.27	3.5		0.33	D
	9	6	36	19.2	19-23.0	155-17.4	1.9	0.8	7	168	1.1	0.15	0.7	0.5	0.07	B
	9	6	42	3.0	19-28.4	155-15.7?	8.0*	1.0	8	318	6.5	0.26	4.3		0.34	D
	9	6	53	49.9	19-28.3	155-15.8?	8.0*	1.0	8	317	6.2	0.26	4.3		0.35	D
	9	6	54	38.9	19-23.9	155-16.7?	C.8*		7	165	1.0	0.18	0.9		0.21	C
	9	7	9	48.1	19-22.6	155-17.6	1.1		10	107	1.9	0.06	0.3	C.4	0.08	A
	9	7	48	8.4	19-24.1	155-17.4	2.0	0.7	8	116	1.2	0.03	0.3	0.2	0.04	A
	9	8	4	15.4	19-23.4	155-17.1	2.6	0.7	6	142	0.2	0.04	0.3	0.5	0.02	B
	9	8	5	55.9	19-23.4	155-17.1	2.5		7	96	0.3	0.03	0.3	C.4	0.03	B
	9	9	15	57.1	19-24.1	155-17.1?	2.1		7	135	1.3	0.04	0.4	0.2	0.04	B
	9	9	31	21.0	19-24.0	155-16.6?	0.9	0.0	6	178	1.4	1.06	4.6	36.9	0.17	C
	9	9	44	24.2	19-22.8	155-17.2	2.8	1.0	9	95	1.2	0.05	0.4	1.8	0.08	A
	9	9	45	51.2	19-23.9	155-17.4	2.0	0.7	9	89	1.3	0.03	0.3	C.2	0.05	A
	9	10	9	54.9	19-23.8	155-16.6?	0.9	0.0	7	171	1.1	0.26	1.9	8.9	0.16	C
	9	10	32	44.7	19-23.5	155-17.2	2.3		6	139	0.5	0.02	0.2	C.3	0.02	B
	9	10	54	0.6	19-20.8	155-22.4?	11.3	0.9	8	166	2.0	2.10	5.1	39.0	0.45	D
	9	11	1	34.3	19-24.9	155-16.8?	2.8*		7	212	0.3	0.82	3.9		0.29	C
	9	11	21	27.8	19-23.4	155-17.2?	2.0		7	147	0.4	0.08	0.5	0.3	0.06	B
	9	11	25	54.C	19-24.2	155-16.7	1.3	1.7	16	88	1.4	0.05	0.3	C.2	0.09	B
	9	11	53	29.0	19-22.9	155-17.4	2.3	0.9	8	110	1.2	0.04	0.2	C.1	0.03	A
	9	12	17	16.2	19-22.9	155-17.3	3.1		9	95	1.1	0.08	0.3	1.0	0.04	A
	9	12	26	59.8	19-23.8	155-16.8	3.6	2.0	15	72	0.9	0.07	0.3	C.7	0.10	B
	9	12	59	42.6	19-24.2	155-17.3	2.8	1.2	9	91	1.1	0.12	0.5	1.0	0.07	A
	9	13	6	56.1	18-24.8	155-29.1	8.0*	3.0	18	319	65.8	2.35	14.1		0.14	D
	9	13	24	59.5	19-21.8	155-12.2	11.0	1.0	9	155	1.4	0.13	0.5	1.0	0.04	B
	9	13	50	26.1	19-19.4	155-11.5	8.0*		14	224	5.9	0.16	1.0		0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 9	13	55	36.7	19-23.9	155-16.9	3.2	1.8	15	71	1.0	0.06	0.3	C.7	0.09	A
9	14	3	8.6	19-23.2	155-17.1	2.3	0.8	8	86	0.4	0.02	0.2	C.4	0.03	A
9	14	5	25.5	19-23.5	155-17.5	1.5	0.9	11	85	1.0	0.05	0.3	0.2	0.08	A
9	14	18	48.3	19-23.9	155-18.1	1.3	1.1	13	59	1.7	0.05	0.2	C.2	0.09	A
9	14	25	39.5	19-22.9	155-17.3	2.1	0.8	8	109	1.2	0.03	0.3	0.7	0.04	A
9	14	25	50.9	19-25.0	155-16.9	1.4	2.5	18	74	0.3	0.09	0.5	C.3	0.16	B
9	14	58	45.1	19-23.8	155-17.3	2.0		8	124	1.0	0.02	0.2	C.1	0.03	B
9	15	12	31.4	19-32.2	155-12.2?	13.9*	1.9	7	336	15.8	3.87	30.5		0.63	D
9	15	18	49.8	19-24.6	155-17.1?	3.3*		7	141	0.6	0.08	0.6		0.08	C
9	15	59	6.2	19-20.2	155-18.7	4.2	1.5	13	92	2.3	0.15	0.6	1.8	0.11	B
9	16	4	14.2	19-23.4	155-17.1	2.5		6	142	0.3	0.02	0.2	C.3	0.01	B
9	16	15	50.9	19-25.6	155-16.7	2.1	0.5	10	126	1.5	0.08	0.4	C.2	0.07	B
9	17	41	36.7	19-23.4	155-17.2	2.2		6	146	0.4	0.03	0.2	C.1	0.02	B
9	18	2	58.1	19-13.1	155-10.1	8.2	2.8	19	198	16.5	0.23	1.3	2.5	0.12	C
9	18	32	19.9	19-20.4	155- 8.4	9.4		13	161	4.0	0.10	0.8	1.4	0.10	C
9	18	59	40.4	19-17.7	155-21.8	8.0*		10	247	5.4	0.24	1.4		0.08	D
9	19	13	14.1	19-23.9	155-15.8	2.0	1.2	12	157	2.2	0.05	0.2	C.2	0.05	B
9	19	45	4.6	19-20.3	155-18.6?	8.0*	1.9	9	271	6.1	0.57	21.4		0.75	D
9	19	45	46.1	19-20.7	155-13.8	7.4		15	144	3.3	0.08	0.7	C.5	0.14	B
9	19	46	45.1	19-24.5	155-16.9	1.1	0.7	10	135	0.8	0.06	0.4	C.3	0.10	B
9	20	45	22.4	19-24.3	155-17.2?	C.4	0.4	9	129	0.9	0.09	0.4	C.2	0.10	B
9	20	47	28.3	19-24.2	155-17.8	1.7	0.7	9	85	1.1	0.02	0.1	C.1	0.03	A
9	20	53	31.7	19-25.7	155-16.8	2.0	0.8	12	127	1.6	0.08	0.4	0.2	0.09	B
9	21	10	39.5	19-19.8	155-12.6	8.2		14	163	4.9	0.12	0.9	1.9	0.16	C
9	21	17	30.3	19-23.3	155-14.5	1.5	1.0	11	110	2.9	0.12	0.6	C.6	0.13	B
9	22	12	30.5	19-23.8	155-17.2	2.2	0.7	9	128	1.0	0.03	0.2	C.1	0.04	B
9	22	22	24.0	19-28.9	155-15.7?	8.0*	1.5	8	321	7.2	0.30	4.7		0.38	D
9	22	23	45.1	19-23.7	155-17.4	1.8	0.7	8	137	1.1	0.07	0.5	0.3	0.07	B
9	23	43	28.4	19-20.6	155-25.3	8.0	1.8	17	130	3.5	0.12	0.8	C.6	0.16	B
9	23	55	49.7	19-21.2	155-17.3	27.8		16	106	3.3	0.16	0.9	1.4	0.10	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 10	1	3	23.9	19-23.7	155-17.4	1.9	0.7	11	90	1.0	0.03	0.2	C.1	0.05	A
10	1	10	32.6	19-23.8	155-17.4	1.7	0.7	9	87	1.1	0.04	0.3	C.2	0.05	A
10	1	34	44.5	19-18.7	155-15.4	9.4		15	200	4.4	0.19	1.0	1.5	0.12	C
10	1	50	18.0	19-23.9	155-17.1	2.0		7	132	1.0	0.05	0.4	1.0	0.05	B
10	1	51	39.0	19-23.2	155-17.3	1.6		7	155	2.8	0.04	0.2	0.1	0.02	B
10	2	29	14.7	19-22.6	155-17.6	1.5		8	123	1.8	0.07	0.3	C.4	0.07	B
10	2	32	57.5	19-23.7	155-16.8	2.0	0.8	13	72	0.7	0.05	0.4	0.2	0.10	B
10	3	14	45.9	19-19.2	155-13.1	0.3	1.6	14	234	6.0	0.59	2.1	2.9	0.21	D
10	3	29	20.0	19-23.7	155-17.2	1.8	1.1	13	53	1.9	0.07	0.3	0.3	0.08	A
10	3	30	16.3	19-23.7	155-17.4?	2.0	0.6	7	137	1.1	0.04	0.2	C.3	0.05	B
10	3	33	11.3	19-23.9	155-17.2	2.0	0.7	8	125	1.0	0.02	0.2	C.1	0.03	B
10	3	46	50.1	19-23.7	155-26.2?	0.0	1.6	14	140	8.2	8.68	0.9	16.5	0.20	C
10	4	2	8.2	19-24.0	155-16.7	2.8	1.8	15	83	1.3	0.06	0.3	C.8	0.10	A
10	4	6	39.3	19-23.9	155-16.9	2.1	1.5	15	66	1.0	0.05	0.3	0.2	0.09	A
10	4	11	58.6	19-23.7	155-16.8	2.7	2.0	15	73	0.7	0.06	0.4	1.1	0.12	B
10	4	25	25.2	19-24.1	155-24.6	9.7	2.8	21	69	7.6	0.08	0.8	1.1	0.17	B
10	4	34	9.7	19-23.5	155-17.1	2.4		6	142	0.4	0.04	0.3	0.5	0.02	B
10	4	37	51.8	19-24.4	155-17.7	1.6	1.4	11	66	1.9	0.11	0.5	C.5	0.12	B
10	4	57	33.5	19-23.6	155-17.0	2.1		7	139	0.5	0.05	0.4	0.2	0.05	B
10	4	57	46.9	19-24.2	155-22.8	6.1	1.4	14	168	5.5	0.10	0.6	C.7	0.12	C
10	5	8	45.2	19-17.2	155-18.0	18.8		14	243	1.8	0.48	2.6	3.3	0.16	D
10	5	42	17.4	19-20.4	155-17.6	29.3		16	87	0.8	0.19	1.3	1.7	0.12	B
10	6	9	58.2	19-23.1	155-15.2	3.2	1.0	7	229	1.8	0.46	1.6	2.9	0.07	C
10	6	19	46.6	19-25.9	155-16.0?	3.2*	1.2	10	231	2.5	0.34	2.0		0.36	D
10	6	37	10.5	19-23.6	155-17.0	2.3		7	139	0.4	0.06	0.6	C.9	0.05	B
10	7	11	54.0	19-24.8	155-16.7	1.2	0.9	10	172	0.6	0.08	0.4	0.2	0.07	B
10	7	32	36.3	19-22.7	155-23.6	8.0*		11	190	4.7	0.09	0.7		0.09	C
10	7	43	33.1	19-24.2	155-16.0	1.2	1.1	11	169	2.2	0.18	0.7	0.6	0.15	C
10	8	12	26.3	19-20.5	155-14.1?	8.0*	3.0	6	302	9.9	2.09	12.7		0.88	D
10	8	15	59.6	19-21.1	155-18.8	2.1*		9	165	3.1	0.05	0.3		0.05	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 10	9	33	49.7	19-20.0	155-14.9	9.2	1.1	11	194	3.5	0.15	0.9	1.3	0.09	C
10	9	42	53.3	19-24.3	155-16.6	2.2	1.6	13	97	1.4	0.05	0.3	C.9	0.08	A
10	9	59	31.9	19-21.8	155-18.8	2.1*	1.1	12	82	3.9	0.04	0.3		0.09	B
10	10	23	39.8	19-24.0	155-17.2	2.1	0.8	9	96	1.2	0.03	0.3	C.1	0.05	A
10	10	32	27.9	19-26.0	155-24.3	8.0*	2.0	12	204	7.0	0.17	1.1		0.14	C
10	10	45	53.3	19-24.0	155-17.2	2.1		6	128	1.2	0.02	0.2	C.1	0.01	B
10	10	50	33.3	19-23.5	155-16.6	2.2	1.6	13	76	0.6	0.06	0.3	0.2	0.08	A
10	11	0	40.7	19-19.0	155-15.9	9.4	1.6	14	162	3.4	0.11	0.7	1.1	0.10	B
10	11	18	45.1	19-22.3	155-17.5	2.1*	1.0	12	111	2.3	0.06	0.5		0.12	B
10	11	23	1.7	19-23.5	155-17.1	2.6		7	140	0.4	0.04	0.3	0.4	0.03	B
10	11	30	30.9	19-23.0	155-16.8	2.2	0.8	12	103	0.7	0.08	0.4	C.3	0.09	B
10	11	32	56.5	19-23.8	155-17.2	1.8	0.6	10	129	0.8	0.03	0.3	0.2	0.06	B
10	11	41	57.9	19-21.8	155-16.3	3.4		7	128	1.3	0.09	0.4	C.9	0.05	B
10	11	54	3.8	19-33.0	155-12.2?	14.4*		7	337	17.1	4.15	33.6		0.67	D
10	12	22	32.5	19-23.9	155-16.8	3.3	2.1	16	72	0.9	0.06	0.4	0.8	0.11	B
10	12	31	11.9	19-23.7	155-17.0	2.2		7	138	0.6	0.05	0.5	C.2	0.05	B
10	12	31	11.9	19-23.7	155-16.9	2.2		7	146	0.7	0.05	0.5	0.2	0.05	B
10	12	37	53.1	19-24.1	155-17.0	2.1		8	147	1.3	0.04	0.4	C.2	0.05	B
10	12	39	16.9	19-23.8	155-16.6	1.9	2.5	18	69	1.0	0.09	0.6	C.4	0.18	B
10	12	40	45.9	19-23.4	155-17.8	1.3	0.6	7	154	1.4	0.07	0.3	0.5	0.05	B
10	12	41	12.8	19-23.8	155-17.3	1.9	1.2	11	96	1.0	0.04	0.3	C.2	0.06	A
10	12	55	11.4	19-23.6	155-17.3	1.7	0.6	8	104	0.7	0.06	0.4	C.4	0.09	A
10	13	4	57.7	19-23.6	155-14.9	3.1		7	174	2.8	0.10	0.4	1.6	0.03	B
10	13	20	41.8	19-23.8	155-17.0	2.5	0.7	8	139	0.7	0.03	0.2	C.4	0.02	B
10	13	27	51.3	19-23.6	155-17.0	1.8	1.0	12	105	0.3	0.06	0.5	C.3	0.12	B
10	13	40	50.3	19-23.9	155-17.2	2.2	0.6	8	131	1.0	0.01	0.1	0.0	0.01	B
10	14	9	9.6	19-27.2	155-16.3	5.6		7	307	3.9	2.75	10.0	7.5	0.14	D
10	14	10	41.0	19-23.7	155-17.2	1.3	0.9	7	128	1.9	0.03	0.2	0.3	0.04	B
10	14	24	20.1	19-24.1	155-14.9	0.8	0.9	10	192	3.6	0.13	0.5	0.5	0.10	C
10	15	24	33.7	19-14.1	155- 6.7	42.8	2.4	22	204	12.6	0.26	1.4	2.1	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 10	15	29	32.2	19-24.0	155-16.9	2.1	1.2	11	109	1.1	0.04	0.4	0.2	0.07	A
10	16	8	22.0	19-24.1	155-17.8	1.9	0.5	8	126	1.3	0.05	0.3	C.3	0.05	B
10	16	44	8.9	19-26.4	155-17.9?	2.5*		7	299	2.0	1.23	5.6		0.36	D
10	16	44	54.3	19-23.9	155-17.0	2.1	0.6	7	144	0.9	0.04	0.3	C.2	0.05	B
10	17	28	35.2	19-23.7	155-17.3?	2.1		7	132	0.9	0.06	0.5	C.2	0.05	B
10	17	41	59.5	19-24.1	155-14.8	1.6		8	193	3.7	0.06	0.2	C.2	0.02	B
10	18	28	54.1	19-23.9	155-17.3	2.0	0.6	8	122	1.2	0.02	0.2	C.1	0.03	B
10	18	36	6.3	19-23.4	155-17.1	2.1	0.7	9	99	0.3	0.04	0.3	0.2	0.05	A
10	18	54	0.2	19-23.8	155-17.9?	2.0	0.6	8	138	1.8	0.64	1.8	5.0	0.14	B
10	19	15	2.1	19-23.7	155-17.7	1.4	0.7	8	138	1.4	0.05	0.2	C.4	0.06	B
10	20	3	27.3	19-23.8	155-17.2	2.0	1.4	13	95	0.9	0.03	0.2	C.1	0.06	A
10	20	10	9.6	19-23.6	155-17.4	1.7	0.6	10	86	1.0	0.04	0.2	0.2	0.07	A
10	20	28	23.0	19-20.4	155-11.1	9.8		8	214	4.0	0.16	0.9	1.6	0.04	B
10	20	39	56.6	19-24.1	155-16.4	2.0	0.4	7	192	1.6	0.08	0.4	0.2	0.05	B
10	20	55	4.3	19-20.0	155-19.0?	6.8	1.5	13	103	2.9	0.21	0.6	1.7	0.11	B
10	21	20	3.5	19-24.1	155-17.3	1.9	1.1	10	123	1.3	0.04	0.4	C.2	0.06	B
10	21	20	41.1	19-23.7	155-16.4?	1.8	0.2	8	132	1.0	0.11	0.8	0.5	0.14	B
10	21	28	6.2	19-19.3	155-13.4	14.0	1.1	10	205	5.8	0.14	0.9	1.2	0.05	B
10	21	41	60.0	19-23.4	155-17.5?	0.6	0.9	10	100	0.9	0.14	0.8	C.9	0.20	B
10	22	8	1.8	19-23.9	155-16.1	2.2*	0.5	7	202	1.8	0.10	0.6		0.05	C
10	22	8	35.8	19-23.9	155-17.3?	2.0		7	205	1.2	0.01	0.1	0.0	0.01	C
10	22	18	10.3	19-23.7	155-17.6?	1.9*		6	139	1.3	0.13	0.6		0.06	C
10	22	31	33.1	19-18.8	155-16.7	31.4	1.8	23	143	2.6	0.15	0.9	1.4	0.13	B
10	22	35	26.3	19-23.9	155-17.1	2.0	1.1	10	106	1.0	0.03	0.3	C.1	0.05	A
10	22	40	4.9	19-18.3	155-17.4	27.9	2.0	19	166	2.3	0.19	1.2	1.8	0.12	C
10	22	44	41.7	19-23.9	155-16.7?	1.9	0.9	9	164	1.0	0.27	1.3	2.1	0.23	C
10	22	56	58.0	19-28.6	155-11.6	25.3	2.0	8	327	11.7	0.91	16.3	11.2	0.19	D
10	22	59	15.6	19-21.0	155- 8.6	5.3	1.5	17	152	3.0	0.12	0.9	C.9	0.19	C
10	23	39	14.6	19-23.4	155-17.6	1.4	0.5	8	152	1.2	0.09	0.4	0.6	0.10	B
10	23	43	9.0	19-25.4	155-17.2	6.4	2.0	14	168	0.7	0.11	0.5	C.7	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 10	23	52	28.2	19-25.6	155-11.9	13.4*	1.7	7	312	8.9	1.38	10.3		0.17	D
11	0	3	54.3	19-24.3	155-16.7	1.6	1.1	10	177	1.3	0.07	0.5	0.2	0.06	B
11	0	8	57.1	19-23.7	155-17.3	1.4	1.2	12	91	0.8	0.11	0.7	C.5	0.18	B
11	0	33	43.3	19-24.0	155-16.6	2.0	1.2	13	127	1.2	0.08	0.5	0.3	0.11	B
11	0	55	17.9	19-24.2	155-17.5	0.7	0.6	8	111	1.0	0.09	0.4	C.9	0.10	A
11	0	59	21.6	19-23.8	155-17.0	2.3		7	143	0.7	0.07	0.4	C.8	0.05	B
11	1	5	6.8	19-24.1	155-17.6	0.4	1.2	13	76	1.1	0.09	0.2	C.2	0.07	A
11	1	28	54.3	19-24.6	155-15.5?	0.0	1.5	12	170	2.7	0.33	0.6	C.6	0.13	C
11	1	44	59.8	19-25.0	155-17.9	4.2	1.0	10	163	0.9	0.15	0.5	C.8	0.04	B
11	1	54	15.4	19-24.1	155-15.5	1.4	1.4	9	180	2.9	0.08	0.4	0.3	0.06	B
11	2	5	31.6	19-25.6	155-17.7	5.0	0.5	7	270	0.3	0.37	1.2	1.7	0.03	C
11	2	13	59.1	19-23.9	155-16.0	2.9	1.1	11	151	1.9	0.08	0.4	1.2	0.07	B
11	2	25	10.3	19-28.8	155-14.4?	8.0*	1.9	10	270	8.4	0.93	10.6		0.65	D
11	2	36	34.9	19-23.7	155-17.1	2.3		7	136	0.6	0.05	0.4	C.2	0.04	B
11	2	44	26.9	19-24.1	155-16.5	1.9	0.9	10	145	1.5	0.03	0.2	C.1	0.05	B
11	2	48	11.8	19-21.3	155-19.4	2.4*	1.2	11	84	4.1	0.05	0.4		0.09	B
11	2	50	47.9	19-31.0	155-59.7	6.6	3.0	16	280	7.6	0.35	2.0	C.9	0.18	C
11	3	3	59.9	19-25.1	155-17.8	4.9	1.5	11	78	0.7	0.10	0.5	C.7	0.06	A
11	3	6	7.1	19-21.1	155-18.9	4.1	0.4	8	86	3.2	0.15	0.3	1.9	0.05	A
11	3	12	12.1	19-23.9	155-15.8	3.0		7	215	2.2	0.16	0.7	1.7	0.05	B
11	3	13	8.6	19-23.8	155-17.4?	2.1		7	132	1.2	0.04	0.2	C.3	0.04	B
11	3	19	52.6	19-23.8	155-17.1	2.4	1.7	14	96	0.8	0.06	0.3	C.8	0.09	A
11	3	41	11.8	19-24.7	155-17.3	2.0	0.6	9	80	0.4	0.15	0.7	1.0	0.07	A
11	3	44	24.4	19-23.4	155-17.2	1.9	0.7	8	98	0.4	0.04	0.3	0.2	0.05	A
11	3	48	52.8	19-24.1	155-16.1	1.7		8	208	2.0	0.11	0.5	C.3	0.06	B
11	4	22	14.9	19-23.7	155-17.1	3.6	2.9	18	73	0.6	0.06	0.5	0.6	0.17	B
11	4	43	46.1	19-23.8	155-17.1	2.0	0.7	7	137	0.8	0.05	0.4	0.2	0.06	B
11	5	27	19.6	19-24.0	155-17.8	1.8	0.3	8	129	1.5	0.07	0.4	0.3	0.06	B
11	5	48	1.9	19-20.6	155-18.0?	0.3	1.2	9	202	1.5	4.33	0.0	86.2	1.12	D
11	6	44	37.6	19-19.1	155-10.3	8.0*	1.0	10	253	5.7	0.20	1.1		0.07	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 11	6	49	52.8	19-24.2	155-17.8	1.8	0.7	9	117	1.0	0.04	0.2	0.2	0.05	A
11	6	57	30.9	19-28.5	155-16.7?	8.0*	1.2	8	319	6.0	0.31	3.7		0.36	D
11	7	24	48.1	19-28.0	155-15.6?	8.0*	1.8	8	315	5.9	0.20	3.9		0.31	D
11	7	27	43.0	19-28.0	155-15.4?	8.0*	2.8	8	315	6.1	0.22	4.1		0.37	D
11	7	29	58.0	19-29.6	155-16.3?	8.0*	1.7	8	324	8.1	0.48	4.8		0.37	D
11	7	32	55.1	19-28.7	155-17.5?	8.0*	1.6	9	301	6.0	0.48	4.6		0.41	D
11	7	42	22.6	19-24.0	155-15.4	1.2		7	235	3.0	0.20	0.7	0.5	0.07	C
11	7	46	33.8	19-28.4	155-16.0?	8.0*	1.2	8	318	6.2	0.28	3.7		0.35	D
11	7	51	28.9	19-24.2	155-17.6	2.0		8	115	1.0	0.07	0.5	0.4	0.09	A
11	8	35	47.4	19-24.3	155-17.6	2.6		5	106	0.7		0.0		0.02	D
11	8	47	44.8	19-24.5	155-16.7	4.2		8	193	0.9	0.48	1.6	2.5	0.08	C
11	8	48	22.2	19-24.3	155-15.8	2.2*		6	231	2.5	0.10	0.6		0.03	D
11	8	51	58.0	19-28.3	155-15.7?	8.0*	1.3	7	317	6.3	0.36	4.2		0.31	D
11	9	14	16.3	19-23.7	155-17.1	2.2		7	132	0.7	0.02	0.2	0.1	0.02	B
11	9	14	41.0	19-25.4	155-17.0	4.1		7	279	0.9	0.42	1.2	2.1	0.09	C
11	9	28	25.8	19-23.5	155-15.1	2.7	0.7	6	240	2.5	0.08	0.3	1.0	0.01	C
11	9	43	13.9	19-21.7	155-32.5	10.1	2.0	15	120	13.6	0.05	0.5	1.1	0.08	A
11	9	49	50.4	19-28.3	155-16.3?	5.0	1.4	8	317	5.9	1.18	7.4	10.0	0.26	D
11	9	54	54.6	19-24.2	155-16.4	3.1	0.7	7	194	1.6	0.06	0.3	0.5	0.02	B
11	10	0	37.2	19-37.8	155- 7.6	3.2*	1.8	6	346	28.8	1.02	8.4		0.13	D
11	10	36	9.7	19-23.8	155-17.5	1.7		8	135	1.2	0.05	0.3	0.3	0.07	B
11	10	44	2.1	19-21.9	155-23.9	6.9	1.6	8	201	3.3	0.37	2.1	3.5	0.13	C
11	10	48	32.1	19-20.4	155-16.9	8.0		7	165	1.1	0.13	0.6	1.1	0.03	B
11	10	53	27.2	19-24.1	155-16.0	1.9	0.7	8	166	2.1	0.06	0.3	0.2	0.05	B
11	11	30	1.6	19-24.2	155-17.2	1.0	0.4	8	126	1.1	0.08	0.4	0.7	0.11	B
11	11	36	8.7	19-25.2	155-17.6	4.6	1.1	8	172	1.0	0.10	0.5	0.6	0.04	B
11	13	56	38.1	19-16.5	155- 7.1	8.0*		8	241	9.6	0.74	5.1		0.25	D
11	14	7	57.3	19-23.8	155-15.9?	2.5	0.8	7	208	2.0	0.58	2.8	7.7	0.18	C
11	14	12	42.9	19-31.2	155-14.8?	8.5	1.6	7	331	12.3	0.83	7.3	11.1	0.12	D
11	15	20	29.7	19-24.2	155-17.8	1.8	0.7	9	86	1.0	0.03	0.2	0.2	0.06	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 11	15	28	32.4	19-22.1	155-21.8	9.1		7	134	4.4	0.52	2.3	5.6	0.15	C
11	15	30	56.4	19-24.2	155-16.4	2.0	0.7	7	194	1.6	0.10	0.5	0.3	0.05	B
11	15	35	47.3	19-24.3	155-17.8	1.7	0.4	7	118	1.0	0.07	0.3	0.4	0.06	B
11	15	36	22.5	19-25.4	155-17.7	4.5	0.8	7	260	1.4	0.35	1.2	1.4	0.02	C
11	16	14	38.4	19-29.5	155-14.6	14.1	1.7	8	325	9.2	0.81	7.6	6.6	0.17	D
11	16	24	7.4	19-24.1	155-15.5	4.7	1.8	11	176	2.9	0.18	0.7	1.3	0.10	B
11	16	26	2.2	19-23.6	155-17.0	2.4		6	140	0.5	0.01	0.1	0.1	0.00	B
11	16	34	7.6	19-22.7	155- 4.1	3.2	2.2	16	155	5.5	0.17	1.0	1.2	0.22	C
11	17	38	9.5	19-24.2	155-15.8?	1.3		6	224	2.4	0.24	1.3	5.0	0.09	C
11	18	5	37.9	19-25.2	155-17.7	4.5	1.2	10	83	0.5	0.06	0.3	0.4	0.04	A
11	18	22	53.4	19-25.4	155-17.6	4.6	1.0	9	95	0.1	0.04	0.2	0.3	0.02	A
11	18	26	45.0	19-27.2	155-17.8	12.6*		5	327	4.6	0.39	4.1		0.07	D
11	19	10	54.7	19-28.0	155-15.9?	8.0*	1.3	7	320	5.6	0.22	3.6		0.29	D
11	20	26	8.3	19-24.1	155-16.8	3.0	0.8	8	168	1.4	0.13	0.6	1.1	0.05	B
11	20	39	57.5	19-24.1	155-14.6	1.3		6	267	3.9	0.38	1.2	0.9	0.04	C
11	20	42	53.9	19-17.0	155-16.5	12.5		8	284	6.0	0.65	2.9	3.3	0.05	D
11	21	0	47.6	19-19.7	155-24.7	8.0*	2.4	8	190	11.5	0.38	3.8		0.29	C
11	21	2	6.2	19-20.4	155-17.2	29.3	2.1	20	122	0.7	0.10	0.6	1.0	0.08	B
11	21	4	19.6	19-22.7	155-10.2?	8.0*	1.6	7	320	9.1	1.42	11.0		0.38	D
11	21	16	39.9	19-23.7	155-16.9	2.4	0.7	7	143	0.6	0.03	0.3	0.4	0.02	B
11	21	23	45.7	19-23.8	155-17.1	2.1	0.6	7	132	0.8	0.03	0.3	0.1	0.04	B
11	21	28	4.6	19-23.3	155-17.2	2.2	0.8	6	151	0.5	0.07	0.5	0.2	0.03	B
11	21	33	44.2	19-23.6	155-14.7	4.2		6	257	3.1	0.31	1.0	1.7	0.03	C
11	21	37	14.4	19-19.6	155-19.7?	9.8*	1.6	6	317	8.4	6.15	31.1		0.07	D
11	21	53	6.1	19-23.8	155-17.8	7.8	1.5	6	138	1.6	0.71	0.9	4.1	0.03	B
11	21	56	12.4	19-23.7	155-17.2	14.3	1.7	11	57	0.8	0.08	0.6	0.8	0.06	A
11	22	16	10.0	19-25.5	155-17.5	4.9	1.1	7	196	0.2	0.10	0.4	0.6	0.02	B
11	22	24	3.2	19-24.2	155-16.0	2.1		7	216	2.2	0.12	0.6	0.3	0.05	B
11	22	25	13.6	19-25.3	155-15.9	1.9		8	218	2.1	0.04	0.2	0.1	0.02	B
11	22	46	24.4	19-22.1	155- 6.0	3.2	2.0	17	129	6.8	0.09	0.7	0.7	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 11	23	9	12.6	19-17.0	155-12.7	8.0*		8	260	10.0	0.26	1.5		0.06	D
11	23	29	26.9	19-25.6	155-17.5	7.6		7	278	0.4	0.47	2.1	1.9	0.09	C
11	23	40	53.5	19-21.4	155-18.3?	4.3*		5	287	4.3	1.28	6.3		0.10	D
11	23	45	24.2	19-25.3	155-19.9	12.0	1.5	8	233	2.9	1.63	5.5	11.0	0.16	D
11	23	57	38.2	19-24.1	155-17.7	2.0	0.4	6	125	1.2	0.07	0.6	C.4	0.05	B
12	0	6	10.6	19-24.0	155-17.2	2.0		7	130	1.2	0.04	0.4	C.2	0.05	B
12	0	7	43.6	19-24.3	155-17.9	1.7	0.4	9	83	1.1	0.04	0.2	0.2	0.06	A
12	0	15	20.9	19-24.3	155-16.3	2.0		8	208	1.7	0.07	0.4	C.2	0.04	B
12	0	20	29.9	19-24.9	155-17.3	16.1	1.6	7	141	1.2	0.20	1.1	1.7	0.04	B
12	0	25	16.8	19-23.5	155-17.0	3.0		6	157	0.3	0.23	1.3	2.3	0.10	C
12	0	26	54.6	19-22.4	155-20.3	C.1	1.1	9	150	2.7	0.53	0.9	1.0	0.11	B
12	0	27	39.4	19-24.1	155-15.9	1.9	1.1	13	160	2.2	0.10	0.5	C.3	0.10	C
12	0	30	42.9	19-23.3	155-15.1	2.2		9	234	2.2	0.21	1.0	2.5	0.09	C
12	0	31	50.2	19-14.2	155-20.0?	8.0*	2.2	14	231	11.8	1.51	9.9		0.98	D
12	0	33	33.6	19-24.2	155-16.4	2.1		7	194	1.6	0.04	0.3	C.1	0.02	B
12	0	36	52.9	19-23.7	155-14.8	3.0	1.0	8	184	3.2	0.07	0.3	1.3	0.03	B
12	0	42	49.3	19-24.1	155-17.5?	2.0		7	116	1.1	0.45	2.1	3.5	0.22	C
12	0	43	45.4	19-22.3	155-23.6?	8.2	1.6	11	190	4.0	0.32	0.8	2.6	0.09	C
12	0	47	22.3	19-23.7	155-14.8	1.5		8	183	3.1	0.05	0.2	C.2	0.04	B
12	0	54	47.4	19-27.3	155-13.9?	7.3		8	312	7.0	0.87	4.9	6.3	0.17	D
12	0	58	33.4	19-25.6	155-17.5	4.5	C.8	7	278	0.4	0.38	1.3	1.6	0.04	C
12	1	1	30.1	19-23.7	155-15.1	2.1		6	252	2.7	0.15	0.7	3.1	0.02	C
12	1	3	56.4	19-23.8	155-15.1	1.9	0.9	9	176	2.9	0.16	0.5	0.4	0.06	B
12	1	6	48.4	19-23.4	155-15.6	2.9		7	208	1.8	0.24	0.9	1.9	0.05	B
12	1	18	25.8	19-26.2	155-17.8	5.9		6	294	1.5	1.34	3.7	5.6	0.04	D
12	1	21	8.2	19-23.2	155-15.8	2.2		7	198	1.5	0.23	1.1	C.5	0.08	C
12	1	22	16.6	19-23.8	155-15.1	1.5	0.2	8	241	2.9	0.26	0.9	C.4	0.07	C
12	1	37	17.7	19-23.4	155-15.0	1.0	0.9	9	165	2.5	0.05	0.2	0.3	0.05	B
12	2	29	3.3	19-23.5	155-17.4	3.0		6	142	0.8	0.08	0.4	C.9	0.03	B
12	2	29	6.8	19-23.8	155-16.9	2.1	1.2	11	109	0.8	0.03	0.2	C.1	0.05	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 12	2	33	42.4	19-23.5	155-17.1	2.3	0.3	6	137	0.3	0.06	0.5	C.2	0.04	B
12	2	38	7.4	19-23.4	155-15.0	1.0	0.9	9	164	2.4	0.04	0.2	C.2	0.04	B
12	2	49	51.9	19-23.9	155-16.1	1.9	0.1	7	204	1.8	0.17	0.8	C.5	0.10	B
12	2	50	39.9	19-23.9	155-16.6	2.5	-0.0	6	173	1.2	0.11	0.7	1.4	0.05	B
12	2	52	17.0	19-20.9	155-12.8	14.2	1.2	6	193	4.7	0.27	0.9	2.0	0.02	B
12	2	52	31.9	19-24.1	155-16.4	1.8	0.6	8	192	1.7	0.11	0.7	C.3	0.08	B
12	3	4	4.8	19-24.2	155-16.3	1.9	0.6	9	161	1.9	0.06	0.4	C.2	0.06	B
12	3	26	33.8	19-24.1	155-14.4	1.2		7	271	4.1	0.20	0.6	C.3	0.03	C
12	3	53	11.0	19-21.3	155- 8.6	10.4	1.1	9	160	2.6	0.07	0.8	C.7	C.03	B
12	4	2	17.8	19-25.7	155-17.3	6.4	1.0	7	290	0.8	1.41	3.6	6.1	0.04	D
12	4	4	49.3	19-24.1	155-15.8	1.7	1.0	10	162	2.4	0.15	0.7	C.5	C.13	C
12	4	12	28.0	19-24.2	155-16.4?	1.1		7	193	1.7	0.44	2.1	9.3	0.16	C
12	4	13	11.8	19-23.5	155-16.6	2.8	0.1	7	160	0.7	0.04	0.3	C.4	0.02	B
12	4	20	25.8	19-23.2	155-14.8?	C.6	2.6	17	86	2.4	0.32	0.5	C.6	0.14	B
12	4	22	58.6	19-23.3	155-15.C	1.1	1.6	11	152	2.2	0.04	0.2	C.2	0.05	B
12	4	24	52.6	19-23.6	155-15.5	1.2	-0.0	8	161	2.3	0.13	0.6	C.5	0.10	B
12	4	29	17.3	19-23.7	155-17.6	1.6	0.5	8	139	1.3	0.04	0.2	C.3	0.04	B
12	4	29	47.3	19-24.0	155-17.4?	C.9		8	119	1.3	0.24	0.8	2.6	0.15	B
12	5	8	24.1	19-24.1	155-16.4	2.0	0.6	8	192	1.7	0.12	0.6	C.3	0.07	B
12	5	9	54.4	19-23.7	155-17.3	2.0	0.6	8	122	0.9	0.02	0.2	C.1	0.03	B
12	5	18	27.0	19-23.5	155-16.8	3.6		7	147	0.3	0.11	0.4	C.9	0.04	B
12	5	37	59.6	19-20.6	155- 7.4?	7.4	1.5	17	160	5.0	4.51	2.0	8.4	0.43	D
12	5	38	36.6	19-24.0	155-16.6	1.5	1.2	9	139	1.4	0.04	0.3	C.2	0.06	B
12	5	46	33.3	19-24.9	155-17.9	3.5		8	153	0.8	0.26	0.9	1.6	0.05	B
12	5	57	20.7	19-24.3	155-16.6?	0.3	C.9	12	138	1.4	0.88	0.4	1.8	0.12	B
12	6	2	34.2	19-24.0	155-16.5	1.8	0.6	10	135	1.4	0.06	0.5	C.3	0.10	B
12	6	14	52.5	19-23.6	155-16.7	2.2	0.7	6	157	0.6	0.07	0.6	C.3	0.03	B
12	6	15	10.2	19-24.6	155-16.1	2.5	0.7	8	196	1.7	0.23	0.9	1.8	0.08	B
12	6	30	12.6	19-23.8	155-16.4	2.2		7	179	1.2	0.11	0.7	C.4	0.08	B
12	6	30	59.1	19-19.8	155-13.0	2.4	1.8	16	217	6.7	0.35	1.6	1.6	C.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 12	6	53	29.7	19-24.1	155-16.6?	C.9		8	139	1.4	0.27	0.6	C.6	0.17	B
12	7	1	26.1	19-22.9	155-17.3	3.0	0.9	7	106	1.1	0.04	0.2	0.5	0.02	B
12	7	23	14.3	19-23.9	155-14.8	1.3		8	255	3.5	0.22	0.7	C.4	0.06	C
12	8	12	42.1	19-23.6	155-16.9	2.6		7	142	0.4	0.05	0.4	C.6	0.04	B
12	9	6	17.8	19-23.2	155-16.6	3.7	2.6	16	73	0.7	0.06	0.5	C.7	0.13	B
12	9	28	52.8	19-25.0	155-18.0	4.3	1.3	11	86	1.0	0.07	0.3	C.6	0.04	A
12	9	35	14.3	19-23.8	155-15.0	2.8	0.7	7	181	3.0	0.10	0.4	2.7	0.04	C
12	9	44	14.9	19-23.4	155-15.2	C.7	0.9	10	153	2.2	1.09	0.5	2.3	0.14	C
12	9	45	8.7	19-24.1	155-16.7	2.5	1.1	11	126	1.3	0.08	0.4	1.0	0.08	B
12	9	48	41.3	19-22.5	155-15.3	2.6	1.0	8	126	1.1	0.16	1.1	2.9	0.11	B
12	10	8	52.8	19-24.5	155-15.3	2.1*		7	246	3.0	0.13	0.6		0.04	D
12	10	17	54.6	19-23.4	155-15.1	0.9	0.9	11	155	2.4	0.07	0.3	C.3	0.08	C
12	10	55	57.5	19-23.4	155-16.2	17.1	1.6	11	128	1.2	0.11	0.7	1.1	0.06	B
12	11	28	3.8	19-24.4	155-15.4	2.6	0.9	7	250	2.9	0.09	0.4	C.9	0.01	C
12	11	51	47.8	19-17.6	155-16.6?	17.2*		7	318	8.1	3.17	34.4		0.57	D
12	12	44	13.5	19-23.6	155-16.5	2.8		8	122	0.8	0.03	0.2	C.4	0.03	B
12	12	59	17.7	19-24.3	155-16.2	2.1	0.6	8	170	1.7	0.09	0.5	0.4	0.06	B
12	13	31	46.3	19-24.3	155-16.0	5.8	1.0	8	173	2.1	0.62	1.7	4.1	0.15	C
12	13	32	12.6	19-23.8	155-16.1	3.0	0.9	9	196	1.6	0.20	0.9	1.8	0.11	C
12	14	41	41.9	19-24.0	155-15.3	5.4	1.2	11	165	3.0	0.29	1.1	2.5	0.16	C
12	14	45	49.1	19-23.9	155-16.7	2.2		9	128	1.0	0.15	0.8	C.5	0.11	B
12	14	56	17.2	19-23.5	155-16.9	4.2	0.6	9	144	0.3	0.30	0.9	2.1	0.10	B
12	15	18	47.7	19-23.7	155-15.1	2.2*	1.0	10	162	2.8	0.04	0.3		0.07	C
12	15	34	54.9	19-24.1	155-17.9	1.5	0.6	6	128	1.3	0.15	0.3	1.4	0.04	B
12	15	42	25.4	19-24.0	155-18.2	1.8	C.7	9	124	1.8	0.07	0.5	C.4	0.10	B
12	16	8	14.7	19-24.2	155-16.1	2.0	0.5	7	167	2.0	0.02	0.1	C.1	0.02	B
12	16	9	24.2	19-23.8	155-16.6	2.7	0.3	6	170	1.1	0.09	0.5	1.0	0.03	B
12	16	14	4.5	19-22.9	155-16.5	1.3		7	112	1.1	0.11	0.7	C.7	0.13	B
12	16	14	39.4	19-23.9	155-15.1	3.3		9	182	3.2	0.25	0.9	3.6	0.12	C
12	16	28	58.3	19-24.1	155-15.9	1.6	0.7	7	217	2.2	0.17	0.8	C.4	0.07	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 12	16	41	2.5	19-20.8	155-14.3	12.4	1.2	8	184	2.6	0.13	0.7	1.1	0.03	B
12	16	42	29.0	19-25.5	155-14.6?	3.2*		8	284	4.4	0.84	3.8		0.29	D
12	18	40	13.1	19-24.1	155-17.9	1.8	0.8	10	81	1.4	0.08	0.5	C.4	0.14	B
12	18	44	9.6	19-23.4	155-14.9	4.3	0.9	10	166	2.5	0.25	0.8	2.1	0.12	C
12	18	59	9.8	19-23.7	155-15.0	5.1	1.6	11	164	2.9	0.15	0.5	1.2	0.07	B
12	20	2	9.4	19-25.4	155-17.7	4.1	0.6	8	146	0.2	0.07	0.3	C.4	0.03	B
12	20	42	26.9	19-20.4	155-12.1	12.0	1.4	10	213	3.8	0.16	0.7	1.2	0.04	B
12	20	53	19.7	19-18.7	155-13.7?	7.4	2.4	18	177	6.4	0.15	1.0	C.6	0.17	C
12	20	59	25.9	19-24.8	155-17.4	3.5	0.6	7	89	0.3	0.30	1.4	2.1	0.12	B
12	21	13	20.2	19-24.2	155-17.6	1.8	0.8	10	98	1.0	0.02	0.2	C.1	0.04	A
12	21	33	34.7	19-14.9	155-10.4	7.6	2.1	16	215	13.3	0.16	0.9	C.5	0.10	C
12	21	34	39.4	19-23.7	155-15.1	1.3	0.3	8	174	2.9	0.10	0.4	0.4	0.06	B
12	21	34	55.7	19-24.6	155-16.4	1.9	0.4	9	176	1.2	0.06	0.4	0.2	0.06	B
12	21	42	19.6	19-25.2	155-17.7	4.8	1.1	9	88	0.4	0.05	0.2	C.3	0.02	A
12	22	0	35.6	19-17.2	155-13.2?	0.0	2.2	18	189	9.0	7.15	1.4	13.4	0.25	C
12	22	9	26.9	19-23.8	155-17.0	1.7	0.7	8	110	0.8	0.10	0.8	C.5	0.14	B
12	22	32	21.8	19-25.0	155-17.6	3.7	0.2	6	119	0.6	0.37	1.1	2.2	0.04	B
12	22	34	16.3	19-23.4	155-16.1	1.5	0.3	9	136	1.5	0.12	0.7	C.5	0.15	B
12	22	36	5.1	19-24.0	155-15.0?	1.0		10	171	3.3	0.11	0.5	C.4	0.11	C
12	23	10	39.2	19-23.6	155-15.5	1.5		9	158	2.2	0.10	0.5	C.4	0.09	B
12	23	20	31.9	19-23.1	155-17.7?	2.3		7	170	1.5	1.94	5.3	5.8	0.21	D
12	23	43	35.4	19-24.3	155-17.3	2.8	0.1	6	125	0.9	0.05	0.2	0.4	0.01	B
12	23	47	24.2	19-24.5	155-18.0	2.1	0.7	9	76	0.9	0.04	0.3	C.8	0.04	A
12	23	55	34.6	19-23.6	155-16.0	2.6	-0.1	7	194	1.6	0.12	0.7	1.5	0.05	B
13	0	1	2.7	19-24.1	155-16.5	2.0	0.0	7	185	1.5	0.06	0.5	6.2	0.06	C
13	0	1	26.9	19-24.3	155-16.2	2.0	0.6	7	210	1.8	0.05	0.3	0.1	0.02	B
13	0	12	58.3	19-23.7	155-14.7	1.5	0.5	9	180	3.2	0.10	0.4	C.4	0.07	B
13	0	22	31.4	19-23.6	155-14.8	2.2*		8	177	2.9	0.05	0.3		0.05	C
13	0	54	8.4	19-23.5	155-17.0	2.3	0.5	8	137	0.3	0.05	0.4	0.8	0.05	B
13	0	54	40.3	19-23.5	155-14.7	1.3	0.8	9	175	3.0	0.11	0.5	C.4	0.09	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 13	1	13	38.0	19-23.7	155-14.6	1.8		9	183	3.3	0.25	0.7	C.7	0.09	B
13	1	15	0.7	19-23.6	155-14.7	1.6	0.6	8	176	3.0	0.06	0.3	C.3	0.04	B
13	1	15	42.6	19-23.1	155-14.7	6.4	2.0	14	150	2.4	0.06	0.4	C.5	C.08	B
13	1	16	42.7	19-23.1	155-14.5	1.8		7	164	2.7	0.09	0.5	0.4	0.05	B
13	1	17	6.8	19-22.9	155-14.8	4.5		10	150	2.2	0.24	0.8	1.9	0.11	B
13	1	18	23.3	19-23.3	155-14.9	5.1	1.4	11	155	2.4	0.18	0.7	1.6	0.10	C
13	1	20	6.5	19-23.8	155-14.7	1.2		8	187	3.3	0.06	0.3	C.2	0.05	B
13	1	20	23.1	19-23.6	155-14.8	1.5	0.0	8	176	2.9	0.08	0.3	0.2	0.03	B
13	1	20	44.1	19-23.4	155-14.7	1.8	C.6	10	158	2.7	0.10	0.3	C.3	0.06	B
13	1	21	27.1	19-23.7	155-14.6	1.3	0.3	8	186	3.3	0.09	0.4	0.3	0.06	B
13	1	24	31.4	19-23.3	155-15.1	4.7	1.2	11	151	2.2	0.16	0.6	1.4	0.09	C
13	1	27	21.3	19-23.4	155-15.3	3.8	1.2	11	150	2.1	0.12	0.5	1.3	0.10	B
13	1	29	36.4	19-23.7	155-14.8	1.0	1.1	10	165	3.1	0.08	0.3	C.3	0.09	B
13	1	31	40.9	19-23.6	155-14.8	1.0		8	166	3.0	0.08	0.3	C.4	0.08	B
13	1	31	54.1	19-23.6	155-14.8	C.8	0.7	10	164	3.0	0.09	0.4	C.4	0.09	B
13	1	37	13.3	19-23.4	155-14.9	1.6		8	166	2.5	0.35	1.3	1.3	0.11	C
13	1	43	12.8	19-23.5	155-14.9	1.6	0.5	8	246	2.7	0.35	1.1	C.7	0.07	C
13	1	44	23.1	19-20.2	155-19.7	2.4*		11	175	4.0	0.09	0.5		0.09	C
13	1	53	22.4	19-23.9	155-16.0?	2.2*		7	203	1.8	0.09	0.6		0.07	C
13	1	59	39.4	19-23.7	155-16.1?	1.2		7	193	1.6	0.14	0.8	0.5	0.10	C
13	2	3	25.4	19-23.9	155-16.4	0.8*	0.3	8	184	1.3	0.14	0.6		0.15	C
13	2	8	22.3	19-23.7	155-14.9	1.0	0.9	10	165	3.0	0.08	0.3	0.4	0.09	B
13	2	10	15.0	19-22.8	155-22.0	4.9		9	144	4.3	0.16	0.5	2.1	0.08	B
13	2	11	59.5	19-25.2	155-17.5	4.2	1.0	9	136	0.4	0.08	0.4	0.5	0.04	B
13	2	24	25.4	19-23.8	155-16.9	2.7	0.7	6	146	0.7	0.02	0.1	C.2	0.01	B
13	2	45	58.6	19-19.1	155-11.2	9.9	1.7	13	251	6.0	0.26	1.3	1.7	0.07	C
13	3	6	22.7	19-23.4	155-14.7	1.8	0.3	9	170	2.8	0.19	0.7	C.6	0.09	B
13	3	39	46.9	19-23.5	155-14.7	1.4	0.7	9	175	2.9	0.11	0.5	C.4	0.09	C
13	4	6	28.0	19-24.0	155-17.2?	2.1		8	127	1.2	0.05	0.4	0.2	0.08	B
13	4	24	24.3	19-22.8	155-37.5?	8.0*		6	349	35.2	7.2C	0.0		1.39	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 13	4	37	15.1	19-24.1	155-16.3	1.7	1.1	11	146	1.7	0.05	0.3	C.2	0.07	B
13	4	59	13.1	19-24.3	155-14.2	1.1	0.8	7	281	4.6	0.38	1.0	0.6	0.05	C
13	5	31	0.2	19-24.1	155-16.3	1.9	0.7	9	147	1.7	0.05	0.3	C.2	0.06	B
13	6	2	47.0	19-23.7	155-16.9	2.4	0.6	7	143	0.5	0.08	0.6	1.0	0.05	B
13	6	46	59.4	19-23.7	155-16.8	2.2	0.3	7	149	0.6	0.02	0.2	C.4	0.03	B
13	6	53	47.4	19-23.1	155-14.7	4.6	1.8	12	152	2.4	0.13	0.6	1.2	0.08	C
13	6	55	41.7	19-23.7	155-14.2	2.5*	0.9	7	275	3.8	0.37	1.6		0.05	D
13	6	56	14.7	19-19.2	155-16.1?	5.6	0.9	8	259	2.8	1.44	4.5	7.2	0.23	D
13	7	13	13.8	19-24.6	155-20.5?	8.0*		7	314	5.3	0.71	6.3		0.29	D
13	7	24	56.3	19-23.6	155-17.3	1.9	1.4	13	88	0.8	0.07	0.4	C.3	0.10	B
13	8	2	51.0	19-23.3	155-17.9?	C.9	0.6	8	165	1.8	0.27	1.6	21.6	0.24	C
13	8	12	15.4	19-27.3	155-17.6	7.6	1.2	9	276	3.5	0.21	1.2	C.4	0.06	C
13	8	20	45.8	19-24.2	155-17.4	C.6	0.6	11	85	1.0	0.08	0.3	C.2	0.10	B
13	8	47	1.1	19-23.9	155-17.3	2.1		8	120	1.1	0.04	0.4	C.3	0.06	A
13	10	0	45.2	19-23.9	155-16.4?	2.2*		7	181	1.3	0.11	0.7		0.07	C
13	10	39	28.8	19-23.4	155-16.8	5.7		7	112	0.2	0.26	C.8	1.7	0.05	B
13	11	21	31.7	19-24.5	155-17.4	2.3		8	99	0.4	0.08	0.5	1.0	0.06	A
13	11	41	34.9	19-24.0	155-17.4	2.C		7	121	1.3	0.06	0.5	C.3	0.05	B
13	11	46	20.6	19-23.6	155-14.6	0.8		8	168	3.1	0.08	0.3	C.4	0.07	B
13	12	9	26.9	19-23.8	155-16.7	2.4		7	159	0.9	0.03	0.3	C.4	0.02	B
13	13	25	58.8	19-42.6	156- 6.5?	18.7*	2.9	24	247	28.4	0.44	3.3		0.32	D
13	13	55	53.9	19-23.8	155-17.0	2.0	1.8	16	63	0.7	0.08	0.4	0.3	0.12	B
13	14	28	29.2	19- 9.8	155-45.2	4.9	2.2	12	229	17.0	0.53	3.2	1.6	0.18	D
13	15	23	56.5	19-20.1	155- 9.2	5.9	1.7	15	165	3.9	0.13	1.1	C.8	0.18	C
13	17	1	31.7	19-23.6	155-11.1	26.3	2.2	20	108	3.5	0.15	1.0	1.5	0.13	B
13	17	12	40.8	19-24.3	155-15.4	1.8	0.8	8	248	3.1	0.11	0.4	C.2	0.03	C
13	19	29	43.9	19-23.8	155-15.3	1.5	0.2	8	172	2.8	0.11	0.4	0.3	0.06	B
13	19	50	51.6	19-18.2	155-13.9	5.2	1.6	16	187	7.1	0.17	1.0	C.9	0.17	C
13	20	14	8.4	19-23.2	155-14.9	2.0	1.0	11	153	2.4	0.11	0.4	0.4	0.08	B
13	20	47	11.2	19-10.5	155-19.2	31.5	2.3	12	202	13.8	0.39	2.1	4.2	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 13	20	52	46.9	19-12.4	155-18.9	41.0	2.4	19	214	10.2	0.33	1.6	2.5	0.10	C
13	20	53	52.7	19-11.5	155-19.7?	55.2	2.7	20	175	12.1	1.03	4.2	8.9	0.32	D
13	20	54	55.9	19-24.8	155-17.5	4.7		10	86	0.2	0.19	0.8	1.3	0.09	A
13	20	59	55.9	19-23.1	155-16.6	2.5		8	116	0.8	0.09	0.8	1.7	0.10	B
13	21	1	49.8	19-24.3	155-15.3	C.9	0.8	11	174	3.2	0.20	0.7	C.8	0.13	C
13	21	9	42.6	19-23.5	155-14.7	1.4	0.0	8	177	3.0	0.09	0.4	0.4	0.06	B
13	21	17	26.7	19-12.0	155-32.8?	4.1		14	141	9.3	0.24	1.6	2.2	0.17	B
13	21	33	6.8	19-24.1	155-16.9?	2.1	-0.2	10	120	1.2	0.06	0.6	C.3	0.11	B
13	21	54	56.0	19-23.5	155-14.8	1.4	0.5	10	173	2.8	0.11	0.4	0.4	0.09	C
13	22	14	12.2	19-21.8	155-16.1	4.6		8	124	1.1	0.33	1.1	2.4	0.12	B
13	22	20	1.9	19-23.6	155-14.7	1.2		9	176	3.0	0.11	0.5	0.5	0.10	C
13	22	25	28.5	19-22.4	155-28.9?	7.4	2.1	18	89	10.6	0.12	0.8	C.9	0.20	B
13	22	29	3.5	19-23.4	155-14.8	2.1*		9	169	2.7	0.05	0.3		0.05	C
13	22	34	48.6	19-23.3	155-15.1	2.3*	1.0	11	151	2.2	0.06	0.4		0.10	C
13	22	36	51.5	19-24.3	155-17.3	0.8	0.7	12	84	0.8	0.06	0.3	C.3	0.09	A
13	22	42	6.1	19-23.5	155-14.7	1.4		9	171	2.8	0.09	0.4	C.4	0.08	B
13	22	45	29.2	19-24.1	155-17.9	1.6		8	122	1.2	0.07	0.5	C.4	0.07	B
13	23	2	9.1	19-23.5	155-17.1	2.5	0.5	6	141	0.4	0.03	0.2	C.4	0.02	B
13	23	7	56.7	19-24.1	155-18.0	1.7		8	125	1.4	0.05	0.4	C.3	0.07	B
13	23	22	46.0	19-18.0	155- 6.7	8.0*	1.7	11	257	9.3	0.56	3.3		0.19	D
13	23	49	49.3	19-23.9	155-15.8	3.4	1.2	12	157	2.2	0.10	0.4	1.0	0.08	B
13	23	53	24.3	19-23.4	155-14.7	1.5		9	173	2.9	0.10	0.5	0.4	0.08	B
14	0	42	27.1	19-23.7	155-14.8	C.9	C.9	11	166	3.1	0.08	0.3	C.3	0.10	B
14	1	24	4.6	19-24.0	155-14.7	0.9	0.9	11	175	3.6	0.13	0.5	C.6	0.11	C
14	1	24	31.6	19-18.4	155-14.6	5.9	1.6	14	210	5.9	0.20	1.2	0.8	0.18	C
14	1	29	40.4	19-18.9	155-17.7	6.2		13	157	2.3	0.18	1.2	1.0	0.21	C
14	1	32	29.8	19-23.9	155-14.8?	C.8	0.9	11	172	3.4	0.15	0.6	0.6	0.14	C
14	1	52	44.3	19-23.5	155-15.6?	1.4	0.3	9	148	2.2	0.11	0.5	C.5	0.12	B
14	2	1	1.9	19-23.6	155-17.1?	2.3		7	134	0.5	0.06	0.4	0.2	0.05	B
14	2	47	4.7	19-24.1	155-15.8	1.7	1.2	15	112	2.4	0.14	0.6	C.5	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 14	2	58	34.1	19-23.9	155-16.6	1.9	0.6	11	125	1.1	0.06	0.4	C.3	0.10	B
14	3	46	39.9	19-24.3	155-16.4	2.0	0.6	10	150	1.6	0.05	0.4	C.2	0.05	B
14	4	3	50.7	19-23.3	155-17.2	2.3		9	68	0.5	0.06	0.3	C.2	0.06	A
14	4	20	13.3	19-24.3	155-17.7	1.1	1.1	12	92	0.8	0.07	0.4	0.4	0.12	B
14	4	23	55.0	19-23.5	155-14.8	5.1	1.6	15	109	2.8	0.10	0.5	1.1	0.12	B
14	4	27	29.5	19-23.3	155-16.2	1.5	0.5	9	127	1.4	0.11	0.8	C.5	0.17	B
14	4	40	33.9	19-24.0	155-17.6	1.7	1.2	13	70	1.3	0.06	0.4	C.3	0.11	B
14	4	49	29.5	19-17.8	155-13.8	8.0*	0.8	8	231	7.6	0.19	1.2		0.09	D
14	4	51	15.4	19-23.9	155-17.1	1.9	1.1	13	99	0.9	0.04	0.3	0.2	0.07	A
14	5	19	32.9	19-18.8	155-15.4	11.9		9	197	4.2	0.20	0.9	1.6	0.06	B
14	5	23	3.2	19-23.4	155-14.4	C.9		7	164	3.1	0.11	0.4	0.6	0.07	B
14	5	25	52.4	19-23.4	155-17.1	2.4		8	92	0.3	0.04	0.3	C.5	0.04	A
14	5	34	55.9	19-23.7	155-14.8	1.0		11	167	3.1	0.08	0.3	C.3	0.10	B
14	5	53	41.5	19-24.2	155-16.1	1.8		8	209	2.0	0.09	0.4	C.2	0.05	B
14	6	36	38.3	19-19.1	155-14.1	8.0*		15	191	5.4	0.14	1.0		0.17	C
14	6	44	4.6	19-24.0	155-14.8	1.1	1.5	16	70	3.5	0.12	0.5	C.5	0.15	B
14	7	11	25.1	19-22.3	155-27.3?	0.0	2.0	17	112	8.1	5.81	0.8	11.0	0.21	B
14	7	24	49.2	19-23.9	155-14.9	4.8		10	185	3.2	0.22	0.7	1.4	0.07	B
14	7	29	35.6	19-22.8	155-14.8	3.3	1.1	12	142	2.0	0.09	0.5	1.1	0.09	B
14	7	44	30.7	19-23.6	155-25.5?	9.3	2.0	17	84	7.3	0.06	0.5	1.8	0.12	B
14	7	50	29.1	19-21.8	155-19.6?	8.0*		6	305	5.5	1.05	12.4		0.38	D
14	7	50	58.8	19-19.0	155-16.8?	8.0*		6	326	5.8	2.76	22.5		0.63	D
14	7	52	26.1	19-23.8	155-17.1	1.6		7	136	2.1	0.05	0.4	C.4	0.04	B
14	7	57	32.2	19-24.0	155-16.3	1.5	1.3	13	101	1.7	0.10	0.5	C.4	0.16	B
14	8	1	34.6	19-23.7	155-16.7	1.7		9	116	2.3	0.10	0.4	0.5	0.06	A
14	8	4	32.4	19-23.5	155-17.2?	2.3		13	95	0.4	0.08	0.5	1.1	0.13	B
14	8	5	58.1	19-24.0	155-16.4	2.1	1.3	12	137	1.4	0.10	0.5	C.4	0.11	B
14	8	7	41.3	19-23.9	155-17.3	1.8		10	120	1.2	0.04	0.3	0.2	0.07	A
14	8	9	8.1	19-24.0	155-17.2?	2.1		8	129	1.5	0.10	0.7	C.5	0.10	B
14	8	9	35.0	19-23.7	155-16.8	2.5*		7	133	3.5	0.11	0.8		0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 14	8	21	48.1	19-23.5	155-15.2?	3.1		13	97	2.4	0.17	1.6	2.1	0.36	C
14	8	25	24.9	19-24.0	155-17.8	6.9		7	187	1.4	0.29	3.0	1.3	0.13	C
14	8	27	37.1	19-16.2	155-14.9?	8.0*		13	194	8.4	0.95	7.4		1.28	D
14	8	41	41.3	19-24.3	155-16.6	1.6		9	98	1.4	0.16	0.9	C.7	0.20	B
14	8	43	28.9	19-24.4	155-16.3	1.3		7	170	1.5	0.21	1.1	C.7	0.13	C
14	8	46	35.0	19-23.6	155-12.1?	8.0*		6	266	7.0	0.95	10.0		0.96	D
14	8	50	24.6	19-24.5	155-16.1	1.4		9	130	1.8	0.17	0.8	C.8	0.17	B
14	8	50	56.4	19-26.7	155-16.4	3.2		6	274	3.5	0.62	2.7	3.6	0.07	D
14	8	51	47.5	19-23.8	155-17.3?	0.3		8	123	1.8	0.53	0.8	1.2	0.19	C
14	8	52	25.1	19-24.2	155-15.7?	0.0		15	71	2.6	0.64	1.0	1.2	0.28	C
14	8	53	37.1	19-24.6	155-16.9?	1.9		8	127	0.6	0.07	0.7	C.5	0.08	B
14	8	55	16.9	19-23.6	155-17.6?	0.0		9	104	2.1	0.42	0.6	1.0	0.16	B
14	20	52	1.3	19-23.9	155-16.5?	1.8		8	176	1.2	0.13	0.9	C.4	0.11	C
15	1	22	40.7	19-14.0	155-22.2?	0.0		20	156	9.6	7.63	1.4	14.4	0.28	D
15	2	30	2.8	19-19.9	155-14.3?	10.3		10	179	3.9	0.17	1.5	2.4	0.13	C
15	4	5	46.3	19-22.6	155-27.7	6.7	2.3	19	86	8.9	0.13	0.8	C.9	0.21	B
15	4	46	46.3	19-24.0	155-17.0?	1.4		8	145	1.2	0.09	0.7	0.5	0.13	B
15	7	52	44.3	19-17.8	155-12.9	8.0*		9	270	8.6	0.58	3.2		0.13	D
15	10	18	31.0	19-22.0	155-24.5?	8.9	1.6	8	219	3.9	0.47	1.4	3.3	0.10	C
15	12	1	20.8	19-19.4	155-15.8	11.7	1.6	8	177	3.1	0.09	0.4	0.8	0.03	B-
15	13	57	2.0	19-21.4	155-29.6	4.6	1.9	16	96	11.2	0.10	0.7	C.8	0.17	B
15	15	36	7.9	19-19.3	155-15.2?	42.3	4.9	28	142	4.2	0.20	1.8	1.4	0.28	C
15	15	48	20.9	19-20.0	155-16.3	30.8	2.6	25	136	1.9	0.11	0.7	1.0	0.10	B
15	15	52	34.4	19-19.6	155-17.2	26.4		14	149	1.0	0.27	1.4	2.3	0.12	B
15	15	57	56.1	19-27.5	155-19.2	8.0*		8	163	8.3	0.20	1.6		0.19	C
15	15	58	18.2	19-19.9	155-16.5	27.2		11	136	1.6	0.23	1.1	2.3	0.10	B
15	16	8	52.8	19-19.2	155-16.6	28.9	2.1	16	150	2.1	0.26	1.3	2.3	0.11	B
15	16	15	11.9	19-20.1	155-16.5	28.4		18	133	1.5	0.23	1.4	2.3	0.16	C
15	16	16	22.4	19-19.1	155-16.6	29.4		17	154	2.4	0.25	1.3	2.2	0.12	C
15	17	17	27.0	19-25.3	155-23.9	21.8	1.9	15	77	7.0	0.10	0.7	1.2	0.10	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 15	18	36	18.0	19-19.6	155-16.5	30.9		21	138	1.8	0.11	0.6	1.1	0.08	B
15	21	31	58.5	19-20.1	155-17.1	27.4	1.5	11	124	0.6	0.20	1.0	1.9	0.08	B
15	22	18	37.4	19-18.9	155-11.6?	8.5	3.9	24	150	6.7	0.53	4.7	10.1	0.52	C
15	22	47	29.2	19-18.3	155-13.1	8.0*	1.1	11	185	7.5	0.09	0.7		0.09	C
15	22	58	40.4	19-18.4	155-13.1	8.0*	1.2	9	225	7.3	0.20	1.3		0.10	C
15	23	28	46.8	19-18.5	155-13.2	8.0	2.2	18	155	7.2	0.09	0.6	0.4	0.12	C
15	23	31	55.1	19-20.1	155-20.0	1.7*	0.8	8	123	4.5	0.06	0.4		0.08	C
15	23	35	0.7	19-17.8	155-13.2	8.0*		11	235	8.3	0.22	1.4		0.13	D
16	0	50	41.4	19-18.3	155-13.2	8.1	1.7	15	180	7.3	0.10	0.8	1.9	0.10	C
16	0	55	28.6	19-18.2	155-13.1	8.0*	1.2	8	230	7.8	0.21	1.3		0.10	D
16	1	5	14.0	19-19.1	155-13.4?	0.2	1.5	16	173	6.1	4.13	1.7	27.0	0.34	D
16	1	56	49.9	19-18.1	155-13.2	8.0*	1.2	9	230	7.8	0.23	1.4		0.11	D
16	2	4	31.8	19-18.0	155-12.9	8.0*		9	234	8.2	0.19	1.2		0.09	D
16	2	6	27.9	19-18.6	155-13.8	8.0*		10	215	6.5	0.19	1.3		0.14	C
16	2	42	11.6	19-21.1	155-15.9	28.0	1.7	11	124	2.4	0.36	1.2	3.3	0.08	B
16	2	44	31.3	19-23.9	155-25.1	7.3	2.0	22	74	7.6	0.11	0.8	0.7	0.19	B
16	6	49	38.8	19-20.1	155-12.7	9.8	1.1	14	158	4.4	0.11	0.7	1.2	0.09	C
16	7	22	18.1	19-18.0	155-16.7	33.7	1.6	9	171	3.3	0.38	1.7	3.6	0.08	C
16	9	29	2.9	19-20.0	155-21.1?	0.0		7	142	3.9	3.68	1.5	7.7	0.08	C
16	11	56	22.8	19-10.6	155-43.2?	61.8*	2.9	25	166	13.3	2.46	27.6		2.64	D
16	15	11	43.3	19-19.7	155-16.4	10.0		8	179	1.9	0.06	0.3	0.5	0.02	B
16	16	0	5.2	19-44.7	156-20.3?	8.5	3.0	14	321	72.2	5.58	46.4	19.0	1.97	D
16	18	10	0.5	19-24.5	155-22.2	10.1	1.5	12	155	4.5	0.23	1.0	2.4	0.13	C
16	18	44	59.8	19-21.1	155- 7.0	8.0*	1.3	8	147	5.2	0.16	1.7		0.21	C
16	19	46	4.8	19-21.6	155- 9.7	13.7	1.5	12	142	1.0	0.08	1.1	0.6	0.12	B
16	20	14	9.1	19-20.8	155-25.3	3.7	2.0	20	98	3.6	0.10	0.8	1.0	0.21	B
16	22	40	32.9	19-15.9	155-22.0?	0.0	1.8	18	148	8.3	5.27	0.8	9.9	0.17	C
16	23	34	29.6	19-10.9	155-44.8	3.8	2.1	14	191	15.3	0.20	1.1	1.0	0.12	C
17	0	49	55.6	19-34.3	155-44.1	8.3	1.9	21	93	16.9	0.09	0.8	1.5	0.16	B
17	1	30	47.8	19-14.7	155-22.4?	0.0	2.2	21	163	8.9	6.11	1.2	11.5	0.25	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 17	3	45	49.2	19-24.2	155-15.9	2.6	0.8	6	224	2.4	0.22	0.8	1.4	0.02	B
17	3	48	4.6	19-24.2	155-16.2	1.9	0.6	8	208	1.9	0.12	0.6	C.3	0.05	B
17	4	47	44.6	19- 6.0	155-20.3?	8.0*	1.8	11	299	22.3	2.03	12.0		0.61	D
17	4	55	42.9	19-16.6	155-12.4?	C.2	2.2	17	235	10.8	1.22	2.8	20.5	0.29	D
17	5	26	57.2	19-18.1	155-21.7	8.0*	1.2	8	231	4.7	0.08	0.5		0.03	D
17	5	33	15.9	19-18.6	155-15.1	12.1		12	205	4.9	0.14	0.5	1.1	0.05	B
17	5	55	17.3	19-18.7	155-15.2	13.1		10	200	4.6	0.11	0.4	C.8	0.02	B
17	6	27	37.4	19-27.5	155-41.4?	9.0	1.9	15	124	10.1	0.56	0.8	4.2	0.13	B
17	14	47	17.9	19-23.8	155-25.9?	8.7	2.0	17	85	8.0	0.08	0.7	3.0	0.14	B
17	18	12	50.8	19-19.0	155-17.7	30.0	2.1	19	134	2.2	0.15	0.9	1.4	0.10	B
17	18	28	11.9	19-17.1	155-25.4	8.0*	1.3	11	191	15.1	0.16	1.4		0.18	C
17	20	8	36.0	19-22.0	155- 9.2	11.7	1.4	8	186	1.1	0.19	1.6	1.7	0.07	C
17	22	17	10.2	19-20.0	155-13.5?	9.5	1.6	18	156	4.6	4.78	1.8	8.9	0.32	D
17	22	18	29.0	19-21.1	155-13.4	13.1	1.3	9	165	2.8	0.12	0.5	1.0	0.03	B
17	22	44	4.8	19-19.5	155- 8.4	8.0*		7	175	5.4	0.08	0.9		0.06	C
17	23	23	27.4	19-19.1	155-11.2	8.0*	1.5	13	177	6.0	0.10	0.8		0.10	C
18	0	2	30.0	19-25.0	155-13.6	8.0*	0.8	7	291	6.0	0.87	4.7		0.09	D
18	1	1	36.3	19-26.5	155-17.5	7.1	1.4	7	299	2.0	0.72	2.1	2.9	0.03	C
18	1	30	51.9	19-20.9	155-12.1	10.3	1.0	11	182	2.9	0.13	0.6	1.0	0.04	B
18	2	40	59.6	19-21.2	155-12.8	5.7	1.5	16	168	2.3	0.13	1.0	C.8	0.21	C
18	3	49	19.5	19-19.4	155-17.4	29.7	2.1	17	150	1.3	0.19	1.1	1.6	0.10	B
18	4	23	6.5	19-20.5	155-16.6	27.3	1.8	16	123	1.5	0.21	1.1	2.0	0.12	B
18	4	44	44.4	19-23.1	155-11.4	8.0*	1.2	5	209	3.4	0.17	2.5		0.06	D
18	7	13	31.1	19-22.9	155-24.5	8.0*	1.3	10	214	5.4	0.13	0.9		0.09	C
18	10	17	4.6	19-21.5	155-17.3	23.1		8	104	2.6	0.57	1.5	5.3	0.08	B
18	11	45	54.5	19-20.7	155-11.1	13.7		7	305	4.2	0.19	1.1	1.1	0.02	C
18	14	0	24.6	19-19.4	155-16.7	9.8		7	203	1.8	0.14	0.6	1.0	0.02	B
18	14	4	12.4	19-14.3	155- 6.8?	58.1		13	238	12.3	1.78	6.6	13.3	0.20	D
18	17	21	17.5	19-20.6	155- 7.3	8.0*		8	168	5.2	0.15	1.6		0.15	C
18	17	38	52.1	19-24.0	155-17.0	17.5	2.4	24	62	1.2	0.18	1.5	2.2	0.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 18	18	21	15.6	19-24.1	155-24.7	9.6	1.9	17	64	7.6	0.04	0.4	C.9	0.08	A
19	1	20	58.5	19-22.8	155-3C.C?	C.0	1.9	13	94	12.7	2.18	1.2	23.0	0.23	B
19	1	30	40.1	19-42.4	155-15.1?	10.6*	2.1	15	191	22.4	0.51	5.6		0.61	D
19	2	52	29.4	18-52.8	155-16.7	8.0*	2.4	16	306	46.5	0.82	5.0		0.09	D
19	2	58	53.0	18-47.3	155- 8.1	8.0*	2.2	14	318	59.5	2.15	12.9		0.11	D
19	20	37	45.0	19-23.7	155-16.2	16.1	1.7	19	86	1.4	0.06	0.5	C.7	0.09	A
19	20	50	7.2	19-24.1	155-28.3	5.4	2.3	21	84	11.4	0.08	0.6	0.8	0.20	B
20	10	51	40.2	19-22.6	155-22.8	7.0		12	115	4.5	0.06	0.5	C.7	0.09	A
20	13	32	9.9	19-22.5	155-24.5	6.5		13	131	4.7	0.11	0.9	1.1	0.18	B
20	14	33	26.4	19-21.3	155-12.5	11.8		11	141	2.1	0.09	0.6	1.0	0.06	B
20	18	40	41.5	19-46.4	156- 3.3?	C.3	2.8	20	254	24.6	0.41	2.0	1.1	0.13	C
20	19	31	28.3	19-14.1	155-35.8	6.2		14	109	2.7	0.17	1.4	1.1	0.23	B
20	21	41	58.5	19-22.8	155-16.5	13.2	1.5	22	66	1.3	0.04	0.6	C.4	0.12	B
20	23	29	43.4	19- 9.0	155-26.0	24.9	2.2	19	235	3.4	0.48	2.4	3.7	0.13	C
20	23	55	51.7	19-25.5	155-27.2	3.7		15	117	10.4	0.09	0.6	C.9	0.15	B
20	23	57	26.9	19-18.9	155-12.9	8.0*		10	217	6.5	0.17	1.1		0.11	C
21	1	42	36.8	19-23.8	155-24.0?	5.8		12	153	6.8	0.10	0.9	1.2	0.13	C
21	3	3	17.5	19-19.6	155-15.9	30.1	2.1	23	139	2.9	0.15	0.9	1.4	0.13	B
21	3	24	52.1	19-22.3	155-23.5?	8.2	1.6	14	111	3.9	0.08	0.6	C.6	0.13	B
21	3	56	19.0	19-19.3	155- 8.0?	4.3	1.8	17	178	6.1	0.15	1.1	1.1	0.19	C
21	10	0	5.1	19-22.3	155-22.8	5.5		10	158	4.0	0.13	1.0	1.1	0.16	C
21	10	31	53.0	19-21.7	155-26.0	8.0*		5	258	5.5	0.61	3.6		0.20	D
21	12	23	9.6	19-15.0	155-22.9	8.0*	1.6	8	237	7.1	0.15	1.1		0.06	D
21	12	51	51.1	19-26.4	155-27.1?	0.0	1.8	15	70	9.1	3.04	1.2	24.8	0.28	C
21	13	46	22.0	19-20.2	155-16.3	9.5		7	192	1.9	0.11	0.4	0.8	0.01	B
21	13	50	38.4	19-19.8	155-14.7	13.0		8	208	3.9	0.23	C.8	1.6	0.03	B
21	14	28	4.8	19-23.7	155-25.0	8.0*	2.0	5	220	7.0	0.39	2.7		0.13	D
21	16	14	13.6	19-11.5	155-35.8	8.0*		5	143	6.7	0.16	1.6		0.09	C
21	17	53	15.6	19-27.1	155-48.9	11.3		6	218	23.0	0.40	3.1	3.4	0.09	C
21	18	35	27.0	19-19.3	155- 8.0	8.0*		10	179	6.0	0.16	1.5		0.17	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 21	19	3	6.1	19-10.7	155-32.3	8.0*		10	156	11.4	0.10	1.0		0.13	C
21	20	4	33.8	19-21.4	155-23.8	5.2	1.4	14	99	2.3	0.13	1.1	1.4	0.22	B
21	20	13	10.8	19-24.2	155-26.1	5.9		13	114	9.0	0.11	0.8	1.4	0.20	B
21	20	32	55.5	19-21.6	155-23.8	8.3	1.3	7	200	2.8	0.32	1.7	3.0	0.06	C
21	21	6	39.7	19-21.7	155-16.6	32.0*	1.3	7	122	1.8	0.02	0.9		0.03	C
21	21	42	0.3	18-53.7	155-14.1	6.8	2.3	11	312	37.8	0.29	2.4	2.9	0.11	C
22	1	40	52.4	19-33.0	155-51.4	13.7*	2.5	8	224	15.4	0.30	2.6		0.11	C
22	1	49	12.8	19-19.5	155-55.3?	8.0*	2.6	10	326	33.1	1.08	6.4		0.11	D
22	3	11	45.0	19-19.8	155-15.0	12.3	1.3	8	177	3.7	0.12	0.6	1.0	0.03	B
22	5	19	49.9	19-11.9	155-27.6?	0.0	2.0	15	172	17.1	4.29	1.1	8.2	0.16	C
22	6	25	0.8	19-21.3	155-14.4	8.3	1.3	8	150	1.8	0.13	1.0	1.5	0.08	B
22	9	6	43.5	19-22.3	155-24.5?	9.6	0.9	7	218	4.4	0.35	1.0	2.6	0.06	C
22	12	29	19.3	19-23.8	155-16.5	3.0	0.8	7	180	1.1	0.25	1.2	2.1	0.11	C
22	14	41	17.3	19-23.8	155-16.1	2.4	1.2	12	145	1.7	0.10	0.6	2.5	0.11	B
22	15	2	50.5	19-24.0	155-25.8	8.0*		10	234	8.2	0.25	1.5		0.12	D
22	16	19	17.2	19-13.2	155-21.9	21.0*		5	317	13.1	1.31	11.3		0.16	D
22	18	11	2.8	19-22.6	155-22.9	4.9	1.9	16	169	4.5	0.17	1.0	1.1	0.17	C
22	19	46	58.6	19-14.5	155-26.1?	4.8	2.2	17	122	3.6	0.11	0.9	0.9	0.20	C
22	20	32	52.4	19-20.1	155- 6.8	8.0*	1.7	12	166	6.5	0.13	1.3		0.15	C
22	20	50	19.3	19-12.1	155- 8.7	35.9	2.2	19	211	17.6	0.25	1.4	2.1	0.10	C
22	21	57	19.7	19-21.1	155- 7.1?	0.0	2.3	19	147	7.6	5.56	1.2	10.5	0.23	C
23	0	6	43.0	19-19.8	155-15.5	36.9	1.7	14	150	3.4	0.51	1.6	4.5	0.09	B
23	1	38	23.2	19-24.1	155-15.8	2.0		7	221	2.4	0.13	0.6	0.3	0.05	B
23	3	11	47.7	19-24.2	155-15.9	2.0		8	218	2.3	0.16	0.6	0.3	0.05	B
23	4	7	20.8	19-20.3	155- 9.3	9.3	0.9	11	162	3.5	0.06	0.5	0.9	0.06	B
23	4	22	35.5	19-19.7	155- 9.3	8.9		12	171	4.5	0.07	0.6	1.2	0.07	B
23	4	55	28.6	19-25.9	155-12.7	25.2		14	97	6.5	0.12	0.6	1.3	0.08	A
23	7	15	58.4	19- 9.4	155-27.8	33.3	2.9	22	175	13.1	0.27	1.3	2.6	0.13	C
23	7	56	42.8	19-19.9	155-13.1	10.0		11	195	4.8	0.30	1.5	2.5	0.12	C
23	12	15	8.8	19-19.7	155- 2.5	10.4	2.5	14	220	0.8	0.34	2.6	3.7	0.18	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 23	14	33	33.0	19-22.5	155-22.6	6.1		8	158	4.5	0.28	0.7	2.6	0.10	C
23	22	21	28.2	19-17.9	155-12.9	8.0*	1.1	9	236	8.4	0.18	1.1		0.08	D
23	23	53	39.0	19-23.9	155-16.5	2.1	0.7	9	140	1.3	0.09	0.6	C.4	0.11	B
24	2	31	49.3	19-22.8	155-22.2?	2.0*		8	150	4.7	0.07	0.5		0.09	C
24	3	14	1.8	19-24.0	155-16.4?	2.2	0.5	7	189	1.5	0.12	0.9	C.5	0.10	C
24	8	13	36.9	19-14.5	155-32.0?	C.6		13	247	11.7	1.52	1.5	5.2	0.10	D
24	17	44	52.1	19-19.6	155- 7.3	8.0*		10	185	6.3	0.08	0.8		0.07	C
24	19	11	18.6	19-19.4	155-17.1?	6.6		10	171	1.4	0.25	1.3	3.0	0.18	D
24	22	20	15.7	19-22.6	155-22.4	1.2		9	155	4.7	0.27	0.8	1.4	0.10	B
24	23	57	32.0	19-23.3	155-26.4	4.3	2.4	22	73	7.9	0.09	0.7	0.8	0.21	B
25	0	12	50.8	19-23.9	155-16.0	2.1*	0.7	7	208	2.0	0.15	0.8		0.05	C
25	0	14	46.3	19-18.8	155-13.1	12.6	1.2	10	217	6.7	0.32	1.3	2.6	0.08	C
25	0	20	2.4	19-18.6	155- 6.5?	C.0	1.9	17	213	8.6	6.77	1.9	12.6	0.26	C
25	2	17	14.7	19-20.8	155-10.9	8.4	0.9	9	210	3.0	0.07	0.5	0.6	0.03	B
25	2	17	50.1	19-25.9	155-15.2	24.6	1.2	15	79	3.7	0.15	0.8	1.8	0.10	A
25	2	26	5.8	19-24.1	155-16.2	1.9		8	200	1.8	0.12	0.7	C.3	0.08	B
25	2	45	38.4	19-22.2	155-27.3	4.6	2.2	20	115	13.6	0.10	0.8	0.9	0.20	B
25	3	28	12.1	19-18.0	155-14.6?	0.0		16	222	6.3	6.68	1.5	12.6	0.23	C
25	5	26	12.8	19-24.5	155-17.3	6.3	0.9	9	117	0.6	0.15	0.6	C.9	0.05	A
25	6	0	56.9	19-17.7	155-14.9	9.6		13	227	6.3	0.28	1.5	2.3	0.14	C
25	6	5	57.1	19-19.4	155- 8.3	8.0*	1.2	11	178	5.7	0.21	1.8		0.23	C
25	6	50	51.6	19-38.4	155- 8.2	11.6		11	191	16.9	0.09	0.7	C.8	0.07	B
25	7	0	23.3	19-24.9	155-16.4	10.9	1.2	7	180	1.1	0.18	0.8	1.5	0.05	B
25	7	6	36.1	19-13.2	155-17.4	34.4	1.9	12	236	12.7	0.47	2.1	3.6	0.08	C
25	7	11	11.5	19-14.5	155-17.4	33.7	1.6	12	228	6.7	0.66	3.0	5.0	0.11	D
25	7	12	30.6	19-16.0	155-18.4	32.7	1.7	13	177	3.7	0.28	1.6	2.7	0.13	C
25	8	0	2.9	19-20.6	155- 4.5	5.5	2.1	12	143	3.1	0.19	1.6	1.2	0.26	C
25	8	47	54.2	19-23.7	155-16.9	5.8		10	110	0.6	0.18	0.7	1.3	0.09	A
25	9	42	51.1	19-12.7	155-29.4?	C.0	2.2	13	153	14.1	6.25	1.2	11.9	0.20	C
25	10	1	16.8	19-24.3	155-16.3	3.0	0.7	6	207	1.6	0.10	0.4	C.8	0.02	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 25	10	17	34.5	19-23.1	155-23.9?	8.0*	1.9	9	266	7.4	2.80	15.7		0.94	D
25	10	35	27.0	19-32.6	155-41.3	8.2	2.3	13	148	22.4	0.07	0.7	C.9	0.08	B
25	10	59	26.1	19-23.5	155-17.4	12.7*	1.5	6	146	0.8	0.01	0.3		0.01	C
25	13	18	23.3	19-47.2	156- 1.4	49.8	3.0	21	254	22.3	0.51	2.3	4.0	0.11	C
25	13	21	44.2	19-24.5	155-16.4	13.8	1.5	14	117	1.2	0.04	0.4	C.5	0.05	A
25	16	54	40.8	19-19.7	155-12.0	16.6		9	214	5.2	0.21	1.9	1.7	0.08	C
25	16	57	13.6	19-25.9	155-29.8	8.0*	1.2	8	285	13.4	0.82	4.4		0.11	D
25	17	29	46.4	19-20.9	155-12.9	9.1		7	175	2.9	0.11	0.6	1.2	0.03	B
25	17	39	8.8	19-21.7	155-11.1	9.0		7	172	2.4	0.32	1.8	2.7	0.06	C
25	19	30	23.0	19-19.2	155-26.2?	1.2		13	147	5.4	0.17	1.3	2.4	0.24	C
25	21	21	14.7	19-21.1	155-22.9?	2.4		9	153	1.8	0.15	1.0	1.2	0.11	C
25	22	29	42.7	19-23.6	155-27.6?	0.0	1.7	11	97	9.7	7.87	0.8	15.0	0.18	B
25	23	52	59.5	19-25.4	155-28.5	7.2	1.8	19	80	12.1	0.08	0.6	C.6	0.15	B
26	0	34	41.3	19-21.1	155- 3.3	8.0*	1.5	13	208	11.5	0.30	2.4		0.24	C
26	0	50	53.5	19-19.5	155-11.7	8.0*	1.0	9	223	5.7	0.18	1.2		0.10	C
26	1	11	17.8	19-20.5	155-15.3	4.4	1.4	13	158	2.5	0.15	1.0	1.1	0.21	C
26	1	12	39.4	19-19.9	155-15.2	12.0	1.4	11	172	3.4	0.08	0.3	0.7	0.03	B
26	1	29	44.C	19-20.4	155-12.7	4.6	1.8	17	189	3.8	0.20	1.2	C.9	0.25	C
26	2	52	18.9	19-24.1	155-15.9	1.9		7	214	2.1	0.19	0.9	C.4	0.07	B
26	3	48	14.2	19-23.7	155-29.4?	3.6	1.8	13	99	12.5	2.74	1.3	24.1	0.21	B
26	4	22	34.4	19-24.3	155-17.9	8.2	0.7	8	120	1.0	0.29	1.0	2.2	0.05	B
26	4	44	12.5	19-24.1	155-17.8	7.0	1.0	9	89	1.2	0.14	0.5	C.9	0.04	A
26	6	4	18.5	19-24.4	155-17.6	7.1	1.1	9	91	0.6	0.11	0.4	0.7	0.03	A
26	6	42	43.5	19-24.7	155-18.7	9.7	1.3	6	220	2.1	1.22	3.3	8.0	0.04	C
26	7	6	12.0	19-24.4	155-19.4	12.9	1.9	8	215	1.4	1.03	2.6	7.2	0.08	C
26	7	49	7.2	19-23.6	155-17.5	5.8	1.0	8	139	1.1	0.41	1.4	2.7	0.11	B
26	8	0	57.7	19-24.3	155-18.4	5.7	1.0	11	74	1.7	0.07	0.3	C.5	0.04	A
26	8	50	21.7	19-22.1	155-18.9	11.2		6	240	3.2	0.95	3.8	6.5	0.08	D
26	9	25	58.6	19-28.1	155-16.5?	8.0*	1.3	8	316	5.3	0.24	3.6		0.32	D
26	11	34	35.3	19-19.8	155-17.1	8.6	1.5	7	181	0.9	0.13	0.6	1.0	0.02	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 26	12	33	41.5	19-26.9	155-16.2	21.7	2.2	14	137	3.6	0.12	0.8	1.3	0.08	B
26	12	38	8.4	19-21.5	155-28.5?	C.0	1.8	10	131	9.4	9.81	1.2	18.6	0.18	C
26	19	43	0.4	19-19.8	155-23.8?	6.5	2.6	17	138	1.1	0.15	1.4	1.9	0.24	C
26	19	45	40.0	19-20.6	155-24.4	3.0		11	238	2.1	0.26	1.4	1.4	0.16	C
26	19	51	16.7	19-21.4	155-24.9	2.8	1.5	15	179	3.5	0.18	1.2	1.7	0.23	C
26	20	24	48.2	19-26.4	155-17.1	13.4	2.1	6	298	2.8	0.54	1.7	3.2	0.01	C
26	21	10	56.6	19-20.4	155-23.6	7.9	1.6	11	136	C.6	0.08	0.7	C.5	0.11	B
26	21	33	45.6	19-20.2	155-11.9?	8.0	2.5	19	159	4.4	0.08	0.7	0.4	0.13	C
26	23	45	34.9	19-23.8	155-16.8?	6.1		7	153	C.8	0.23	0.8	4.0	0.16	C
27	1	32	20.4	19-20.7	155-10.4	9.6	1.7	7	228	2.8	0.23	1.1	2.0	0.03	C
27	1	48	29.9	19-19.3	155-13.2	8.0*	1.6	12	205	5.8	0.11	0.8		0.10	C
27	1	56	36.5	19-24.0	155-23.5	3.4	1.0	11	185	6.7	0.12	0.8	1.4	0.12	C
27	2	13	41.4	19-24.1	155-23.6	4.6	1.2	11	175	6.8	0.13	0.9	1.2	0.15	C
27	3	3	40.7	19-26.0	155-23.8	8.0*	1.5	12	175	6.2	0.06	0.4		0.07	C
27	3	24	21.8	19-26.8	155-16.3	4.0	0.9	8	303	3.4	0.70	3.8	4.6	0.21	D
27	3	51	57.9	19-21.1	155-10.9	8.7		6	202	2.7	0.12	0.8	1.2	0.02	B
27	4	42	38.8	19-22.5	155-18.9	19.2*	1.7	7	87	2.6	0.02	0.7		0.03	C
27	5	7	11.1	19-25.3	155-23.7	8.0*	1.6	10	190	6.8	0.07	0.5		0.06	C
27	5	19	4.7	19-23.1	155-15.7	24.0		10	96	2.2	0.20	0.9	1.9	0.05	A
27	6	43	18.4	19-19.4	155- 8.1	2.8	1.9	13	178	5.8	0.19	1.3	2.0	0.20	C
27	10	19	53.6	19-19.4	155-11.7	8.0*	1.8	10	225	5.9	0.19	1.3		0.10	C
27	12	10	5.5	19-22.8	155- 6.1	12.8	1.9	10	220	6.6	0.10	1.3	0.4	0.05	C
27	16	28	48.0	19-18.2	155-23.4	8.0*	1.7	7	169	12.0	0.16	2.0		0.14	C
27	17	20	23.8	19-20.7	155-19.7	2.4*	1.2	10	102	4.2	0.05	0.3		0.08	B
27	18	0	35.5	19-21.4	155-23.3	6.6	1.4	9	181	2.2	0.39	1.1	2.8	0.10	C
27	18	8	20.6	19-20.5	155-12.3	3.2		10	153	3.7	0.25	1.5	8.0	0.20	C
27	18	36	57.5	19-23.8	155-16.4	1.6	0.8	9	140	1.3	0.08	0.5	C.4	0.11	B
27	20	8	30.2	19-24.5	155-17.9	8.9	1.2	6	131	0.8	0.88	2.4	6.4	0.05	C
27	21	16	4.8	19-24.3	155-25.0?	C.0	1.5	16	105	8.1	5.14	0.6	9.8	0.13	B
27	21	42	38.2	19-24.5	155-17.3	6.7	1.0	6	164	0.5	1.86	3.8	10.3	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 27	22	42	35.2	19-24.7	155-17.8	9.0	1.5	6	137	0.5	0.38	1.1	2.7	0.02	B
27	22	59	58.0	19-24.5	155-17.6	10.7	1.5	7	113	0.4	0.31	0.6	2.3	0.02	B
28	0	48	15.8	19-25.3	155-16.6	13.7	1.5	8	243	1.0	0.56	1.3	3.8	0.03	C
28	0	51	40.8	19-24.8	155-17.7	9.8	1.4	6	128	0.4	0.31	0.8	2.2	0.02	B
28	1	21	43.0	19-23.6	155-17.9?	5.4	1.9	8	115	1.7	0.99	3.2	8.8	0.46	C
28	1	24	59.2	19-24.5	155-17.5	8.8	1.2	7	144	0.4	0.06	0.3	0.5	0.01	B
28	1	27	50.4	19-24.6	155-17.7	8.2	1.3	6	125	0.4	0.34	0.9	2.4	0.02	B
28	1	38	43.6	19-24.5	155-17.4	9.0	1.3	6	103	0.4	0.42	1.2	3.1	0.02	B
28	2	10	53.3	19-25.0	155-25.7	8.0*	1.7	13	199	9.7	0.10	0.7		0.08	C
28	2	52	31.5	19-24.6	155-17.8	7.7	1.2	9	75	0.6	0.42	1.2	2.6	0.09	B
28	4	55	29.1	19-28.8	155-17.4	21.4	2.0	8	321	6.3	1.29	4.7	9.2	0.04	D
28	5	0	30.4	19-23.3	155-17.6	6.2	0.9	8	103	1.1	0.28	0.5	1.9	0.04	A
28	5	0	56.9	19-31.3	155-20.0	23.2*	2.0	6	337	6.9	0.77	8.9		0.12	D
28	5	9	47.0	19-24.8	155-25.1	8.0*	1.6	5	219	9.0	0.24	1.7		0.08	D
28	5	18	38.3	19-24.4	155-17.4	8.7	1.3	9	106	0.6	0.08	0.5	0.6	0.02	A
28	5	40	47.2	19-24.2	155-17.8	6.7	1.2	7	118	1.0	0.54	0.9	3.2	0.05	B
28	5	45	4.6	19-23.1	155-18.3	5.4	1.1	6	182	2.4	0.40	0.7	2.8	0.04	C
28	7	2	39.9	19-24.5	155-17.3	9.1	1.2	6	113	0.5	0.62	1.8	4.4	0.03	B
28	7	7	15.3	19-23.1	155-17.8	3.4	0.8	6	170	1.5	0.27	1.4	3.0	0.10	C
28	7	16	46.9	19-24.3	155-17.7	6.8	1.0	8	110	0.9	0.22	0.4	1.3	0.02	A
28	7	24	21.1	19-23.9	155-18.0	5.1	0.9	10	112	1.8	0.35	1.0	2.3	0.11	B
28	7	37	46.7	19-24.3	155-15.8	2.0	0.7	6	231	2.4	0.04	0.2	0.1	0.01	C
28	7	50	21.8	19-20.7	155-20.1	1.8*	1.3	11	108	4.8	0.06	0.4		0.09	B
28	8	15	45.1	19-24.1	155-16.0	4.2	0.9	11	168	2.1	0.16	0.6	1.1	0.08	B
28	8	20	0.8	19-24.4	155-24.9?	7.3	2.2	21	86	8.2	0.11	0.5	0.8	0.12	B
28	8	53	56.0	19-23.2	155-17.7?	4.1		9	120	1.4	0.19	1.0	3.1	0.15	B
28	9	2	18.1	19-21.2	155-24.2	7.8	1.5	7	228	2.5	0.47	2.9	3.3	0.10	D
28	12	0	58.2	19-19.6	155-11.6	8.0*	1.5	8	223	5.7	0.16	1.1		0.06	C
28	12	53	11.9	19-17.0	155- 8.9	8.0*	1.1	8	213	9.6	0.21	1.5		0.12	C
28	15	15	31.4	19-18.5	155-13.7	8.0*	0.8	10	217	6.6	0.20	1.4		0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 28	15	31	43.6	19-24.3	155-16.7	8.5	1.2	10	134	1.2	0.07	0.5	0.6	0.05	B
28	16	35	51.6	19-24.0	155-17.4	7.1	1.1	6	118	1.3	0.64	1.1	3.7	0.03	B
28	16	43	53.3	19-24.6	155-28.1?	0.0	2.1	19	131	12.8	4.69	0.9	8.9	0.20	C
28	19	12	44.4	19-21.8	155-28.1	0.5*	1.6	12	84	8.9	0.10	0.7		0.18	B
28	19	23	28.5	19-28.5	155-15.6?	8.0*	0.9	8	318	6.7	0.35	3.8		0.30	D
28	19	51	31.3	19-24.0	155-17.6	6.0	0.9	11	105	1.3	0.17	0.7	1.2	0.08	A
28	20	5	2.1	19-23.1	155-17.3	5.3	1.0	8	103	0.9	0.20	0.4	1.4	0.03	A
28	21	5	36.3	19-18.3	155-13.6	8.0*	1.2	10	223	7.1	0.20	1.4		0.14	C
28	21	9	11.2	19-24.0	155-17.7	1.8	0.6	8	126	1.3	0.03	0.2	0.2	0.04	B
28	21	17	34.6	19-24.4	155-17.1	8.8	1.3	7	138	0.9	0.35	0.9	2.6	0.03	B
28	23	31	23.9	19-23.0	155-17.6	5.1	1.0	6	113	1.3	0.90	1.7	6.4	0.10	C
29	0	6	4.6	19-24.2	155-17.1	9.9	1.3	8	140	1.2	0.28	0.7	2.1	0.02	B
29	0	58	54.3	19-25.6	155-13.0?	3.1	1.4	5	303	7.2		0.0		0.05	D
29	3	22	44.9	19-17.9	155-13.0	8.0*		6	234	8.2	0.18	1.1		0.06	D
29	7	24	31.2	19-23.7	155-16.5	3.5	0.8	9	171	1.0	0.21	0.8	1.7	0.09	B
29	8	10	43.0	19-19.9	155-11.6	8.0*		7	216	5.1	0.03	0.3		0.02	C
29	8	43	34.7	19-24.2	155-16.5	7.8		10	150	1.6	0.11	1.2	0.7	0.10	B
29	9	22	28.4	19-24.3	155-28.1	4.1		13	134	11.3	0.10	0.8	1.5	0.17	B
29	9	33	57.0	19-21.6	155- 8.3	10.9	1.3	10	179	2.8	0.19	1.7	2.0	0.08	C
29	11	29	44.1	19-24.1	155-17.2	2.1		7	128	1.2	0.02	0.2	0.1	0.02	B
29	14	53	19.1	19-24.2	155-16.0	3.0	0.8	6	229	2.2	0.14	0.6	1.0	0.02	C
29	16	4	24.2	19-12.4	155-28.0?	0.8*		13	119	5.4	0.13	1.1		0.25	B
29	18	15	17.6	19-24.1	155-16.1	2.0	0.7	9	166	2.0	0.08	0.5	0.3	0.07	B
29	19	33	37.6	19-24.1	155-15.9?	1.8	0.6	8	217	2.2	0.29	1.1	0.7	0.13	C
29	19	35	44.2	19-24.1	155-15.9	1.7		8	215	2.2	0.18	0.8	0.4	0.08	B
29	20	10	24.5	19-24.3	155-16.3	2.0	0.6	10	153	1.7	0.05	0.4	0.3	0.06	B
29	21	48	10.3	19-20.3	155- 8.3	7.5	1.5	13	161	4.2	0.10	1.0	0.6	0.12	C
29	21	51	28.9	19-46.6	155-28.8	7.1	1.9	12	236	2.4	0.21	2.1	1.1	0.10	C
29	22	22	4.3	19-18.1	155-15.5	11.9		11	213	4.9	0.21	0.8	1.7	0.07	B
29	22	33	38.2	19-24.3	155-23.3?	8.5		13	148	6.3	0.07	0.6	0.4	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 29	22	39	8.4	19-23.9	155-15.8	3.0	1.3	14	155	2.2	0.08	0.4	1.2	0.09	C
29	23	11	21.8	19-24.2	155-17.9	5.5	1.2	9	119	1.3	0.10	0.3	C.6	0.03	A
29	23	14	0.6	19-23.6	155-18.0	1.5	0.6	8	101	2.0	0.10	0.5	0.7	0.11	B
29	23	16	18.6	19-24.5	155-17.8	10.7	1.2	8	127	0.7	0.56	1.3	4.0	0.04	B
29	23	48	19.9	19-20.0	155- 7.6	8.0*	1.0	10	167	5.4	0.08	0.9		0.09	C
29	23	53	52.5	19-21.0	155-12.7	10.6	C.9	10	174	2.8	0.13	0.5	1.1	0.04	B
30	1	20	54.2	19-20.1	155-12.9	8.2	1.1	12	193	4.4	0.13	0.9	1.4	0.11	C
30	2	6	30.7	19-21.4	155-24.7	6.7	1.6	18	65	3.2	0.11	1.0	1.0	0.23	C
30	3	22	56.7	19-19.8	155-12.8	8.0	1.5	11	199	4.9	0.15	1.1	1.8	0.12	C
30	7	47	47.2	19-20.0	155-16.9	29.9	2.1	20	128	0.8	0.12	0.6	1.2	0.08	B
30	9	0	14.8	19-20.6	155-13.3	7.5	1.7	17	148	3.6	0.08	0.7	C.4	0.13	B
30	9	7	43.9	19-15.7	155-19.2	8.0*	1.3	8	213	13.2	0.39	2.9		0.25	C
30	9	11	55.6	19-24.0	155-17.4	7.5	1.1	9	113	1.4	0.14	0.5	C.9	0.05	A
30	9	49	3.9	19-23.0	155-23.6	7.8	1.9	20	60	5.3	0.08	0.6	C.5	0.15	B
30	11	25	55.1	19-23.1	155-16.9	14.7	1.6	11	63	0.5	0.13	1.0	1.6	0.11	B
30	12	12	58.6	19-20.7	155-43.4	6.1	2.3	8	265	15.4	0.60	3.6	1.0	0.06	D
30	15	11	23.3	19-23.5	155-16.9	11.8	1.5	20	65	0.2	0.05	0.6	0.5	0.12	B
30	15	21	11.2	19-20.4	155-13.4	5.9	1.5	19	150	4.0	0.11	0.8	0.7	0.22	C
30	17	13	45.8	19-23.0	155-28.3	8.0*	1.8	9	191	10.1	0.09	0.9		0.08	C
30	17	19	27.5	19-23.8	155-18.3	4.9		7	143	2.3	0.44	0.9	3.0	0.06	B
30	20	58	59.8	19-19.3	155-10.5	8.0*	1.4	11	175	5.3	0.10	0.9		0.10	C
30	22	48	26.2	19-23.8	155-17.8	4.8	0.9	7	137	1.7	0.32	C.8	2.4	0.07	B
30	23	7	58.3	19-24.1	155-18.0	7.7	1.2	9	125	1.4	0.05	0.5	C.3	0.04	B
30	23	34	5.5	19-25.4	155-16.5	15.0*	1.6	7	250	1.2	0.04	0.8		0.02	D
30	23	34	18.1	19-24.1	155-16.4	2.0	0.9	9	192	1.6	0.06	0.3	0.1	0.04	B
31	0	29	59.6	19-23.5	155-17.3	4.6	0.8	7	145	0.6	0.15	0.4	1.1	0.03	B
31	0	39	9.6	19-23.9	155-18.1	7.5		9	93	1.8	0.15	0.5	1.0	0.04	A
31	1	41	49.3	19-24.6	155-17.3	7.4	1.1	8	108	0.5	0.20	0.7	1.2	0.05	A
31	5	58	9.8	19-23.2	155- 1.4	8.0*	2.0	8	151	6.6	0.12	1.1		0.15	C
31	7	24	55.1	19-24.1	155-28.1?	C.0		9	151	13.4	0.26	1.2	19.5	0.17	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 31	7	43	24.3	19-46.5	155-22.5	29.4	2.5	20	117	8.7	0.21	0.9	2.2	0.08	B
31	10	25	42.6	19-23.5	155-35.7	4.7	2.4	13	133	16.0	0.10	0.6	C.7	C.10	B
31	10	29	13.2	19-19.4	155-14.5	8.8		14	163	4.6	0.13	0.9	1.6	0.14	C
31	14	4	17.9	19-18.7	155-14.2?	C.8	1.8	16	151	6.2	2.11	1.0	7.9	0.25	C
31	14	55	37.0	19-19.6	155-20.2?	8.9		8	143	4.2	0.29	1.8	1.9	0.20	B
31	23	15	8.2	19-24.0	155-17.1?	C.4	0.7	8	136	1.1	0.95	2.2	6.7	0.28	C
1	1	4	46.7	19-21.5	155-18.5	12.0	1.1	14	78	3.2	0.06	0.8	C.6	0.11	B
1	1	17	7.3	19-17.2	155-26.9?	C.0	2.0	16	103	8.4	5.32	0.8	1C.1	0.19	B
1	2	20	18.9	19-17.4	155-46.7?	8.0	2.1	17	238	17.5	0.36	2.2	1.5	0.13	D
1	4	7	45.9	19-20.1	155-16.C	8.3	1.1	14	159	2.4	0.11	0.9	1.2	0.13	C
1	5	37	1C.3	19-21.6	155-24.0?	1C.3	2.5	27	46	2.9	0.20	2.2	2.8	0.41	C
1	6	7	48.7	19- 5.4	154-56.6	50.9*	2.3	18	293	29.0	0.29	2.7		0.13	D
1	9	32	10.9	19-20.4	155-17.6	5.5		11	88	0.7	0.12	0.7	C.6	0.08	A
1	9	33	24.5	19-21.8	155-24.9	5.9	1.6	14	103	4.1	0.11	0.8	C.9	0.18	B
1	19	56	39.3	19-12.7	155- 2.1	37.0	2.1	23	222	13.4	0.23	1.2	1.8	0.11	C
1	20	33	49.9	19-23.6	155-14.7	1.2		10	175	3.0	0.08	0.3	C.3	0.08	B
1	21	29	18.4	19-18.3	155-14.9	14.2		8	237	5.5	0.34	1.2	2.4	0.05	C
1	21	29	47.1	19-21.0	155- 7.0?	0.0	2.5	18	149	7.5	5.32	0.9	1C.1	0.19	C
1	21	35	37.1	19-24.2	155-15.4	1.0	0.9	10	184	3.1	0.24	0.8	C.8	0.13	C
2	0	42	45.4	19-24.6	155-16.4?	2.2*		7	215	1.1	0.23	1.2		0.13	C
2	4	54	24.7	19-22.9	155-22.0	2.4		14	146	4.3	0.12	0.7	1.4	0.15	C
2	7	24	42.7	19-23.1	155-25.4	3.2	1.6	21	68	6.6	0.09	0.6	1.0	0.21	B
2	8	20	8.8	19-23.2	155-26.0?	0.0	1.6	14	92	7.3	7.15	0.8	13.6	0.20	B
2	17	9	24.9	19-24.0	155-24.5	8.0*	1.6	17	75	7.3	0.07	0.6		0.13	B
2	17	15	29.1	19-21.3	155- 6.9?	0.0	1.9	22	129	7.4	3.48	0.8	6.6	0.19	C
2	17	53	56.4	19-25.6	155-16.0?	3.2*	1.2	10	230	2.3	0.36	2.0		0.31	D
2	20	54	4.6	19-22.7	155- 0.4	5.5		13	173	6.8	0.20	1.6	1.3	0.24	C
2	23	45	12.8	19-27.2	155-15.6?	0.2	0.9	8	309	4.8	0.92	2.4	1.9	0.20	C
3	2	4	56.3	19-20.5	155-11.9	9.4		13	196	3.8	0.28	1.3	2.2	0.11	C
3	3	0	40.6	19-19.6	155-13.7	12.9		10	195	5.0	0.16	0.6	1.3	0.05	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 3	3	44	42.1	19-23.6	155-17.5	1.6	0.8	11	87	1.1	0.06	0.4	0.4	0.10	B
3	3	52	17.7	19-22.0	155-24.9?	0.0		17	73	9.7	4.29	0.6	8.1	0.18	B
3	3	58	29.1	19-21.9	155-24.0	7.8		12	160	3.5	0.07	0.5	0.4	0.08	B
3	10	30	5.7	19-20.9	155-15.6	25.2		14	130	2.9	0.13	0.9	1.4	0.08	B
3	12	16	20.8	19-25.7	155-21.8	4.3	1.3	14	134	4.0	0.09	0.7	1.1	0.18	B
3	12	20	2.3	19-15.0	155- 5.6	37.3		18	217	10.1	0.29	1.5	2.2	0.09	C
3	14	40	29.9	19-20.6	155-13.1	31.9		20	137	3.4	0.17	0.9	1.7	0.10	B
3	15	15	14.2	19-20.0	155-12.3	9.0		12	160	4.6	0.12	0.9	1.6	0.10	C
3	18	7	32.2	19-19.9	155-12.0	8.0		10	266	4.9	0.68	3.5	3.9	0.12	D
3	18	11	53.4	19-23.9	155-23.7	7.4	1.6	19	116	6.9	0.09	0.7	0.5	0.16	B
4	0	38	57.3	19-22.4	155-22.8	6.5		11	109	4.2	0.07	0.6	0.7	0.12	B
4	4	20	10.1	19-24.5	155-26.6	2.2		13	154	9.8	0.09	0.6	1.1	0.12	C
4	6	57	1.7	19-20.5	155-11.6	12.5		10	202	4.1	0.22	0.9	1.7	0.05	B
4	9	10	53.2	19- 8.4	155-21.9	35.2		14	203	18.5	0.34	1.9	3.1	0.13	C
4	11	59	40.1	19-18.6	155-12.1?	0.4		15	179	7.1	2.28	1.3	8.3	0.29	C
4	12	31	6.9	19-18.5	155- 9.1?	0.0	1.8	14	189	6.7	7.02	1.7	13.3	0.29	C
4	12	55	31.9	19-19.7	155-11.9	4.1	1.8	18	147	5.2	0.15	1.0	1.3	0.25	C
4	15	43	40.7	19-23.6	155-17.2	2.2		7	133	0.6	0.04	0.4	0.1	0.04	B
4	22	21	31.5	19- 0.6	155-26.1	37.4		17	226	16.6	0.58	2.8	4.6	0.14	D
4	23	9	6.9	19-33.4	155- 4.9	40.0		13	150	6.2	0.28	1.0	2.7	0.07	B
5	5	28	11.0	19-19.5	155-12.1	3.9	1.7	18	148	5.5	0.16	1.0	1.4	0.28	C
5	7	33	43.8	19-18.4	155-10.6	3.9		13	187	6.9	0.21	1.3	1.6	0.23	C
5	7	35	40.3	19-19.1	155-13.8	8.0*		9	204	5.6	0.15	1.0		0.12	C
5	11	2	3.7	18-51.7	155-12.1	8.0*	1.8	19	268	49.7	0.45	2.9		0.14	D
5	15	38	39.2	19-28.4	155-48.1	8.0	1.9	15	152	13.5	0.79	1.0	5.8	0.15	C
5	19	13	36.0	19- 7.9	155-19.1?	60.0*		16	229	15.7	0.17	2.6		0.11	D
5	19	23	23.7	18-44.8	155-11.1	8.0*	2.7	8	321	54.3	5.12	30.8		0.18	D
5	19	33	16.4	19-21.0	155- 6.2	8.0*	1.8	16	147	6.1	0.08	0.9		0.12	C
5	22	41	44.3	19-24.0	155-26.9	6.6	2.0	17	106	9.5	0.11	0.7	0.6	0.14	B
6	3	24	25.7	19-25.4	155-17.6	4.6	1.0	7	263	0.1	0.24	0.7	1.1	0.03	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 6	9	34	57.5	19-21.8	155- 7.2?	3.2	2.4	17	135	4.6	0.17	1.4	1.9	0.30	C
6	10	1	19.4	19-24.1	155-16.3	2.0	0.8	9	197	1.8	0.05	0.3	0.1	0.04	B
6	11	25	16.9	19-24.0	155-17.8?	0.2	0.9	12	86	1.5	0.49	0.9	1.2	0.28	C
6	11	42	52.0	19-23.9	155-16.8	2.3	0.8	10	156	1.0	0.09	0.6	1.5	0.10	C
6	11	56	58.1	19-23.9	155-15.9	3.4	1.6	15	107	2.1	0.07	0.3	0.9	0.09	B
6	13	19	51.6	19-24.2	155-17.5	0.7	0.9	11	107	0.9	0.06	0.3	0.5	0.11	B
6	13	52	1.4	19-24.4	155-15.3	2.4*		6	251	3.0	0.10	0.5		0.03	D
6	15	12	14.9	19-19.5	155-16.8	9.2		8	198	1.6	0.11	0.5	0.8	0.02	B
6	15	14	23.6	19-20.1	155- 6.9	8.0*		11	166	6.3	0.14	1.3		0.14	C
6	17	47	57.3	19-23.7	155-17.5	1.9	0.7	9	100	1.2	0.06	0.4	0.3	0.08	A
6	19	0	5.6	19-23.9	155-17.4	1.5	1.1	11	85	1.3	0.09	0.5	0.4	0.14	B
6	19	16	45.5	19-24.0	155-16.3	2.1	0.7	9	143	1.6	0.04	0.3	0.2	0.05	B
6	20	33	34.4	19-47.0	155- 9.8	13.0*		16	197	22.2	0.16	1.3		0.13	C
6	20	46	25.1	19-23.9	155-15.5	2.0	1.8	20	70	2.6	0.18	0.5	0.6	0.16	B
6	23	22	57.2	19-23.2	155-15.1	2.8	1.1	11	149	2.0	0.07	0.4	1.5	0.08	B
6	23	34	3.3	19-24.0	155-17.2	2.0	0.7	7	128	1.2	0.03	0.3	0.1	0.03	B
6	23	39	40.0	19-23.6	155-17.3	1.8	1.4	13	91	0.7	0.03	0.2	0.1	0.06	A
7	0	11	18.1	19-24.0	155-28.9	3.5	2.0	19	82	12.1	0.09	0.6	1.0	0.19	B
7	0	27	21.3	18-42.4	155- 4.4	8.0*		14	303	64.7	1.89	11.7		0.18	D
7	0	33	48.1	18-59.7	155-12.8	11.6*		12	278	32.1	0.64	4.1		0.15	D
7	0	57	7.2	19-35.9	155-48.4	9.8	2.1	13	173	10.4	0.11	1.3	1.7	0.11	C
7	3	41	19.9	19-22.7	155-22.5	3.7		12	207	5.2	0.19	1.1	1.1	0.14	C
7	4	35	17.5	19-19.6	155-10.9	8.0*		11	236	5.0	0.23	1.4		0.10	D
7	6	16	50.5	19-23.4	155-17.0	1.2	1.4	12	102	0.1	0.08	0.5	0.4	0.16	B
7	7	5	53.6	19-23.4	155-17.4?	3.4*		7	147	0.8	0.16	1.3		0.11	C
7	8	35	13.8	19-23.9	155-17.1	2.2	0.6	9	138	1.0	0.02	0.2	0.1	0.04	B
7	8	59	2.0	19-40.6	155-56.8?	8.5*	2.0	12	208	17.5	0.51	3.8		0.45	D
7	9	26	23.5	19-18.4	155-15.0	13.9	1.4	9	208	5.2	0.13	0.8	1.2	0.04	B
7	12	20	38.7	19-24.2	155-16.1	1.9	0.6	7	212	2.0	0.14	0.6	0.3	0.05	B
7	12	46	45.0	19-24.1	155-17.7	1.5	0.7	9	92	1.2	0.04	0.2	0.2	0.06	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 7	12	50	11.2	19-24.0	155-15.7	2.1*	0.7	7	224	2.5	0.14	0.8		0.06	C
7	12	51	24.1	19-23.2	155-16.1	1.5	1.1	10	94	1.5	0.11	0.6	C.5	0.18	B
7	14	6	45.4	19-23.5	155-17.4	1.7	0.7	10	86	0.9	0.C5	0.3	C.3	0.08	A
7	14	22	36.4	19-24.3	155-15.7	5.9	1.4	14	120	2.5	0.07	0.6	C.6	0.12	B
7	14	54	25.0	19-42.3	154-54.9	8.0*	2.7	7	280	27.0	0.50	3.4		0.07	D
7	15	48	23.3	19-23.6	155-14.6	1.5		7	184	3.2	0.07	0.3	0.3	0.03	B
7	17	44	23.0	19-23.7	155-17.3	2.5		7	136	0.9	0.09	0.4	1.2	0.06	B
7	18	14	43.4	19-23.7	155-17.1	2.6	1.7	16	60	0.6	0.C6	0.4	1.1	0.10	B
7	18	46	4.4	19-23.5	155-16.8	13.2	1.5	18	69	0.4	0.04	0.5	0.3	0.09	A
7	19	51	52.0	19-18.9	155-14.8	13.8	1.5	9	200	5.0	0.24	0.9	1.9	0.06	B
7	19	56	7.3	19-18.0	155-13.3	5.2	3.7	29	154	7.9	0.16	0.9	0.8	0.28	C
7	20	6	53.8	19-60.0	155-44.7	0.5	2.5	19	150	14.6	0.23	0.9	C.4	0.12	B
7	20	30	12.8	19-18.6	155-13.8	8.0*	1.4	11	215	6.5	0.20	1.4		0.17	C
7	20	55	22.1	19-18.4	155-13.4	5.7	1.6	19	156	7.1	0.12	0.8	0.7	0.19	C
7	20	59	9.6	19-24.1	155-26.2	3.9	1.6	18	76	8.7	0.09	0.7	1.1	0.18	B
7	21	19	45.8	19-18.7	155-13.5	12.9	1.1	9	248	6.5	0.30	1.1	2.0	0.05	C
7	21	41	36.C	19-24.0	155-17.3	2.0		8	125	1.3	0.C3	0.3	C.1	0.04	B
7	22	31	29.7	19-23.6	155-14.7	1.1		9	177	3.1	0.09	0.4	C.4	0.08	B
8	0	52	23.5	19-37.0	155- 3.4?	2.0*	2.2	7	347	32.6	2.81	11.1		0.23	D
8	0	56	36.4	19-23.9	155-17.3	4.5	0.8	7	123	1.1	0.41	1.1	2.8	0.07	B
8	0	59	18.0	19-24.4	155-17.2	3.7	0.6	7	128	0.9	0.10	0.4	C.7	0.03	B
8	1	0	28.3	19-23.9	155-17.3	3.6	0.7	7	122	1.2	0.17	0.5	1.3	0.05	B
8	1	5	41.3	19-23.6	155-16.3	16.7	2.3	21	69	1.2	0.10	0.9	1.2	0.14	B
8	1	45	46.4	19-24.7	155-24.1	4.2	1.4	15	182	8.0	0.16	1.0	1.5	0.14	C
8	2	22	33.2	19-18.3	155-12.7	13.9	1.6	9	231	7.7	0.14	1.0	1.1	0.05	C
8	2	44	50.1	19-23.9	155-17.3?	2.0		7	125	1.1	0.C3	0.3	C.1	0.04	B
8	2	50	54.3	19-24.2	155-17.7	1.9		8	116	1.0	0.C3	0.3	0.2	0.05	A
8	3	9	48.9	19-16.6	155-19.0	26.7	1.6	16	194	2.5	0.33	2.4	2.9	0.15	C
8	4	24	3.7	19-23.7	155-17.2?	3.4	1.0	7	130	0.8	0.13	0.5	1.4	0.11	B
8	4	34	38.9	19-18.5	155-13.5	8.0*	1.1	13	203	6.8	0.14	1.0		0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 8	4	43	1.5	19-25.0	155-16.0?	7.1	1.1	10	190	1.7	0.30	1.7	2.2	0.15	C
8	5	23	25.4	19-24.0	155-17.0	3.8		8	147	1.2	0.13	0.5	1.0	0.05	B
8	5	23	47.6	19-23.7	155-17.4	3.2		6	136	1.0	0.18	0.8	1.8	0.06	B
8	5	24	23.5	19-23.9	155-17.6	7.2		7	130	1.5	0.21	1.3	1.6	0.07	B
8	5	29	14.1	19-23.6	155-17.6	2.0		7	141	1.2	0.11	0.7	C.4	0.09	B
8	6	18	11.6	19-24.0	155-17.7	1.7	1.0	13	66	1.3	0.C6	0.4	C.3	0.11	B
8	6	45	29.5	19-24.3	155-14.6	8.9		7	264	4.2	2.50	9.8	14.0	0.16	D
8	10	29	47.9	19-42.3	155- 7.5	26.9	2.4	19	183	23.1	0.23	1.0	3.1	0.10	C
8	12	2	46.4	19-26.2	155-24.0	6.2	2.0	16	73	6.4	0.14	1.2	1.2	0.23	C
8	12	38	5.5	19-19.6	155-11.1	8.0*	1.5	9	169	5.2	0.C7	0.6		0.07	C
8	12	45	26.7	19-2C.7	155-11.6	8.6		6	198	3.7	0.19	2.1	1.8	0.07	C
8	14	52	16.1	19-23.9	155-16.7	2.0	0.6	11	129	1.1	0.06	0.4	0.2	0.09	B
8	15	16	35.4	19-22.9	155-29.0	5.3	2.0	17	65	11.2	0.C8	0.6	C.7	0.18	B
8	17	42	18.8	19-44.5	155- 6.2?	2.1*	2.3	7	349	40.4	1.41	11.9		0.18	D
8	18	31	12.8	19-24.1	155-17.1	2.5		7	133	1.2	0.C3	0.2	C.5	0.02	B
8	18	33	48.0	19-24.4	155-23.6	7.7	1.9	21	72	6.9	0.06	0.5	C.5	0.15	B
8	19	37	58.0	19-23.6	155-14.7	1.3	1.0	9	179	3.1	0.C9	0.4	C.3	0.07	B
8	19	52	11.0	19-23.8	155-14.8	1.2		9	180	3.1	0.C9	0.4	C.4	0.07	B
8	20	13	16.5	19-15.8	155-20.5	8.0*	1.8	15	152	5.1	0.21	1.7		0.28	C
8	23	37	1.4	19-24.1	155-17.6	1.8	0.4	10	99	1.1	0.C3	0.2	C.1	0.05	A
8	23	44	33.8	19-23.2	155-14.8	2.0	1.0	10	153	2.4	0.C8	0.4	C.3	0.06	B
9	0	39	23.7	19-21.3	155-23.6	6.4	1.9	15	109	2.1	0.10	0.9	C.8	0.17	B
9	0	52	17.2	19-18.3	155-13.3	8.0*		9	226	7.5	0.21	1.3		0.10	D
9	1	21	51.3	19-23.6	155-17.5	2.1	0.5	6	144	1.0	0.02	0.1	C.1	0.01	B
9	1	31	17.9	19-23.2	155-14.9	2.1	1.0	11	152	2.2	0.C5	0.3	3.0	0.07	C
9	1	33	57.2	19-23.3	155-14.6	1.9	1.0	10	159	2.8	0.11	0.4	C.4	0.07	B
9	1	46	59.1	19-24.5	155- 9.1	5.0		11	155	4.7	0.13	1.0	1.2	0.12	C
9	2	27	16.6	19-23.1	155-14.8	2.2		10	157	2.3	0.15	0.5	0.4	0.08	B
9	2	43	18.8	19-23.5	155-14.7	1.6		9	175	3.0	0.10	0.4	C.4	0.07	B
9	3	19	7.1	19-23.3	155-14.6	4.7	1.5	12	110	2.8	0.C8	0.3	C.8	0.06	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 9	3	20	26.2	19-23.6	155-14.9	1.2	0.9	11	162	2.8	0.09	0.4	C.4	0.11	C
9	3	24	27.3	19-23.0	155-15.0?	2.5	1.4	16	110	1.9	0.17	0.6	C.6	0.15	B
9	3	54	43.4	19-23.4	155-14.9	1.6	1.0	11	157	2.6	0.14	0.5	C.5	0.11	C
9	3	55	28.9	19-23.4	155-14.9	3.1	1.0	11	157	2.5	0.05	0.2	C.9	0.04	B
9	4	30	32.0	19-28.9	155-17.4?	8.0*	1.3	8	321	6.4	0.41	4.0		0.27	D
9	4	31	25.7	19-17.8	155-13.7	8.0*	1.0	12	231	7.7	0.25	1.5		0.14	D
9	6	13	1.4	19-25.4	155-15.9	8.6	1.2	8	260	2.1	0.87	5.0	4.4	0.18	D
9	6	21	51.5	19-22.9	155-15.9	3.0	1.3	12	84	0.9	0.13	0.8	1.9	0.16	B
9	7	24	2.6	19- 9.0	155-39.5?	4.5	2.1	8	325	20.4	0.58	5.4	4.6	0.14	D
9	9	25	8.9	19-23.4	155-16.9	3.9	2.6	19	72	0.1	0.08	0.7	0.8	0.22	B
9	10	0	33.8	19-23.6	155-24.6?	6.9	1.8	15	78	6.6	0.08	0.7	1.2	0.14	B
9	10	6	42.6	19-21.5	155-12.8	13.9		9	158	4.4	0.12	0.7	1.1	0.04	B
9	10	45	0.4	19-24.0	155-17.8	1.5	0.7	9	105	1.4	0.03	0.2	C.2	0.05	A
9	11	30	51.7	19-25.3	155-19.2?	8.9	1.5	10	226	2.8	1.05	3.2	5.9	0.28	D
9	11	42	0.2	19-18.8	155-14.7	5.8	1.6	11	202	5.3	0.30	1.7	1.2	0.24	C
9	12	37	2.3	19-23.6	155-17.2	2.4	1.2	8	133	0.7	0.09	0.7	1.4	0.08	B
9	14	4	56.1	19-23.8	155-14.3	2.3*		7	273	3.8	0.31	1.4		0.05	D
9	17	49	10.4	19-23.3	155-14.9	4.4		10	161	2.4	0.23	0.8	1.9	0.10	C
9	17	57	6.6	19-23.5	155- 2.0	8.0*		6	138	6.8	0.22	2.2		0.19	C
9	18	53	26.4	19-23.7	155-14.7	1.4	0.7	8	185	3.2	0.06	0.2	C.2	0.04	B
9	18	55	4.1	19-20.0	155-12.9	5.7		16	158	4.5	0.15	1.0	C.9	0.24	C
9	19	3	28.0	19-19.8	155-12.9	5.8	1.2	14	163	5.0	0.16	1.2	1.0	0.24	C
9	19	26	52.6	19-23.7	155-17.5	1.8	1.2	13	83	1.1	0.09	0.5	C.4	0.12	B
9	19	42	40.0	19-23.9	155-17.4	1.9		8	122	1.2	0.03	0.3	0.1	0.04	B
9	20	27	52.5	19-24.2	155-17.7	1.8	0.6	9	119	1.0	0.03	0.3	C.2	0.05	A
9	21	10	3.6	19-23.7	155-15.5	1.5		8	225	2.5	0.13	0.5	0.3	0.06	B
9	21	41	9.0	19-17.9	155-59.6	8.0*	2.0	16	300	25.7	1.19	7.3		0.15	D
9	21	50	8.5	19-20.7	154-51.7?	8.0*	1.8	8	348	41.4	2.63	13.5		0.21	D
9	22	14	52.3	19-19.5	155-12.3	4.3	1.9	21	148	5.4	0.13	0.8	C.9	0.24	C
9	23	28	55.1	19-24.0	155-17.0	2.0		8	140	1.2	0.03	0.3	C.1	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 10	2	5	C.7	19-19.9	155-12.8	4.1	1.8	20	187	4.7	0.19	1.1	1.1	0.27	C
10	2	7	16.2	19-23.9	155-17.2?	1.7		7	128	1.1	0.11	0.7	1.7	0.08	B
10	2	45	46.1	19-24.5	155-23.1	2.6	1.4	14	176	6.2	0.13	0.7	1.6	0.11	C
10	4	28	8.8	19-23.9	155-17.2	2.0	0.8	8	129	1.0	0.04	0.3	0.2	0.06	B
10	4	37	58.4	19-21.9	155- 6.5?	0.0	1.5	12	131	7.3	7.70	0.9	14.7	0.19	C
10	5	18	39.7	18-54.2	155-11.1	13.5*		17	263	45.8	0.45	3.0		0.15	D
10	6	7	3.6	19-35.1	155- 7.4?	8.0*	1.3	12	224	24.4	0.86	6.4		0.44	D
10	7	15	1.2	19-22.5	155-26.0	8.3		14	113	6.3	0.08	0.8	2.0	0.11	B
10	9	21	56.6	19-23.6	155-17.4	1.4	1.3	12	87	0.9	0.08	0.4	0.4	0.13	B
10	11	38	18.8	19-24.0	155-17.7	1.3	1.1	10	95	1.3	0.04	0.2	0.2	0.07	A
10	12	9	18.1	19-37.6	156- 7.7?	38.1	2.2	16	265	24.6	0.37	2.6	1.7	0.13	D
10	12	27	30.8	19-23.7	155-17.3	1.8	1.3	11	91	0.9	0.04	0.3	0.2	0.06	A
10	17	38	21.4	19-23.6	155-22.1	7.7	2.4	22	58	4.2	0.05	0.5	0.4	0.16	B
11	0	34	58.0	19-26.3	155-29.1	6.6		16	111	12.0	0.06	0.5	0.4	0.10	B
11	5	15	54.1	19-23.1	155-23.8	7.1	1.6	18	127	5.5	0.09	0.6	0.5	0.17	B
11	5	30	13.2	19-19.7	155-10.5	5.1	2.2	24	150	4.5	0.13	0.8	0.7	0.25	C
11	5	37	3.5	19-24.2	155-17.9	1.8	0.4	8	118	1.1	0.02	0.1	0.1	0.03	A
11	10	2	53.2	19-23.8	155-16.8	1.9	1.7	14	114	0.8	0.07	0.5	0.3	0.15	B
11	11	33	13.6	19-18.9	155-15.5	6.0		13	194	4.1	0.17	1.2	0.9	0.21	C
11	16	0	34.1	19-23.6	155-16.9	3.2	3.1	21	48	0.5	0.06	0.5	0.6	0.18	B
11	19	23	21.7	19-24.5	155-17.3?	2.4*	0.5	7	113	0.6	0.18	1.1		0.11	C
12	1	34	5.7	19-13.2	155-27.6	29.3		16	122	6.8	0.54	2.3	4.8	0.12	B
12	4	40	47.0	19-24.3	155-17.5	1.3	1.2	12	101	0.8	0.05	0.3	0.3	0.10	B
12	5	59	1.0	19-21.5	155- 7.4	8.0*		9	178	8.4	0.15	2.2		0.14	C
12	6	55	24.7	19-26.2	155-16.3	10.2	1.5	8	292	2.7	0.73	4.6	3.4	0.16	D
12	8	31	2.9	19-24.2	155-17.3	4.6		7	119	0.9	0.08	0.2	0.5	0.01	B
12	9	0	42.4	19-20.5	155-10.1	9.6		8	158	3.0	0.12	1.2	1.8	0.05	C
12	9	6	59.7	19-23.6	155-17.2	2.0		9	95	0.6	0.05	0.3	0.2	0.06	A
12	10	8	9.6	19-24.2	155-17.1	3.5	0.9	7	135	1.1	0.04	0.2	0.3	0.01	B
12	11	2	35.9	19-23.8	155-14.6	1.5		7	188	3.3	0.02	0.1	0.1	0.01	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 12	12	9	56.6	19-23.9	155-17.5	2.2	0.6	8	104	1.4	0.07	0.5	C.3	0.08	A
12	12	31	7.6	19-20.2	155-11.8	6.9	1.6	18	159	4.5	0.11	0.9	0.6	0.21	C
12	13	0	49.8	19-18.8	155-15.2	9.9		12	199	4.5	0.16	0.9	1.3	0.10	B
12	14	9	56.3	19-19.0	155-15.2	12.4		10	193	4.4	0.13	0.5	1.0	0.03	B
12	14	58	30.4	19-18.1	155-23.8?	4.1	2.0	19	112	4.0	2.42	0.7	4.6	0.20	B
12	15	36	33.7	19-17.9	155-25.5	6.8	2.3	20	106	5.7	0.13	1.1	1.0	0.25	B
12	18	14	58.2	19-18.9	155-13.5	8.9	1.6	19	152	6.3	0.06	0.5	1.2	0.10	C
12	19	18	11.5	19-24.2	155-17.6	1.9	0.5	8	116	1.0	0.04	0.3	C.3	0.06	A
12	20	21	55.0	19-22.7	155-17.4	2.7	0.9	11	66	1.4	0.04	0.2	C.7	0.04	A
12	21	26	40.4	19-12.3	155-32.7?	6.4	2.2	10	247	9.9	6.25	4.8	2C.0	0.20	D
12	22	10	25.7	19-23.3	155-17.2	2.5		6	151	0.5	0.05	0.4	C.6	0.03	B
12	22	12	8.9	19-26.0	155-19.1	10.5	1.4	11	259	2.8	0.97	4.8	5.0	0.26	D
12	23	3	48.0	19-23.8	155-17.0	2.1		7	139	0.7	0.04	0.4	C.2	0.05	B
13	0	8	32.5	19-24.7	155-22.6	4.9	1.3	16	148	5.5	0.08	0.6	C.7	0.13	B
13	0	23	45.2	19-22.5	155-14.2	1.9	1.2	8	150	2.4	0.11	0.8	C.5	0.09	B
13	0	45	58.7	19-23.7	155-15.1	1.4		9	163	2.8	0.15	0.6	C.6	0.11	C
13	1	13	27.7	19-20.8	155-17.4	27.0	1.7	21	122	4.1	0.12	0.7	1.2	0.11	B
13	1	14	57.7	19-23.7	155-17.1	2.1	0.4	7	136	0.6	0.06	0.5	0.2	0.07	B
13	3	40	3.3	19-23.6	155-17.2	2.5	0.8	6	138	0.6	0.05	0.4	C.6	0.03	B
13	4	12	20.0	19-23.1	155-17.3	2.3	0.6	7	158	0.7	0.08	0.5	0.2	0.05	B
13	5	12	50.9	19-19.4	155-11.1	7.2		6	236	5.4	0.10	1.0	C.7	0.02	C
13	6	13	11.3	19-19.6	155-16.8	9.1	1.0	7	192	1.3	0.10	0.4	C.7	0.01	B
13	6	22	36.7	19-14.6	155- 8.8	8.0*		8	298	13.9	1.22	6.3		0.12	D
13	6	46	29.7	19-23.7	155-17.1	2.7	1.0	6	136	0.7	0.03	0.2	C.4	0.01	B
13	8	36	39.3	19-23.9	155-17.2?	1.3	0.5	7	128	1.1	0.13	0.9	2.7	0.12	B
13	8	51	57.0	19-20.2	155- 7.6	8.0*		10	164	5.2	0.07	0.7		0.09	C
13	10	18	20.9	19-23.4	155-17.0	2.4		6	143	0.2	0.04	0.4	0.5	0.03	B
13	10	33	37.3	19-23.9	155-17.0	2.0	0.6	8	142	1.0	0.04	0.4	C.2	0.05	B
13	10	58	33.9	19-24.0	155-17.1?	2.1		7	132	1.1	0.03	0.3	0.1	0.04	B
13	12	13	8.5	19-23.4	155-17.5	23.9	2.3	26	52	1.1	0.15	1.0	1.6	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 13	12	39	52.7	19-17.4	155-22.0	5.8	2.2	21	136	5.7	0.08	0.7	0.7	0.18	C
13	14	39	12.3	19-21.4	155-25.4	4.4	1.9	18	115	4.3	0.09	0.7	0.9	0.20	B
13	16	0	35.8	19-24.6	155-28.0	4.3	1.7	19	80	11.5	0.08	0.6	0.8	0.16	B
13	16	34	38.0	19-16.2	155-17.9	29.2	2.4	23	155	7.3	0.12	0.7	1.2	0.11	C
13	18	31	27.8	19-24.2	155-17.5	3.6		7	111	1.0	0.15	0.5	1.1	0.04	B
13	20	41	27.4	19-22.7	155-17.3	3.2		7	113	1.5	0.07	0.3	0.8	0.03	B
14	1	12	58.1	19-20.1	155-19.7	2.1*		13	118	4.0	0.06	0.4		0.09	B
14	1	37	39.4	19-19.2	155-14.7	9.2		9	193	4.9	0.28	1.9	2.9	0.16	C
14	2	5	18.2	19-18.5	155-13.9	8.0*		9	247	6.6	0.61	3.6		0.22	D
14	2	41	22.8	19-22.8	155-17.1	3.0		9	103	1.1	0.03	0.3	0.9	0.04	A
14	3	13	19.5	19-12.2	155-25.4	2.8	2.1	19	151	6.6	0.14	1.0	1.1	0.21	C
14	6	7	12.4	19-24.2	155-29.7	5.4	1.8	19	93	13.5	0.08	0.6	0.7	0.18	B
14	11	30	32.7	19-21.4	155- 1.0?	9.9		12	187	4.3	0.39	3.2	6.6	0.26	C
14	11	34	35.8	19-22.6	155-17.0	13.9	1.7	21	72	1.4	0.09	0.8	1.1	0.17	B
14	13	48	29.8	19-17.6	155-13.0	0.6*	1.6	12	196	8.6	0.25	1.4		0.27	C
14	19	49	56.4	19-44.3	155-57.8	9.0	2.4	22	215	14.2	0.21	1.8	2.8	0.22	D
14	23	30	53.1	19-17.3	156-27.9	8.0*	2.4	22	306	62.8	1.69	10.3		0.16	D
15	0	22	40.9	19-19.9	155-20.3	1.5		10	136	4.6	0.15	0.4	0.7	0.06	B
15	0	29	53.2	19-19.8	155-12.1?	8.6	2.1	16	163	4.9	0.17	1.4	0.7	0.17	D
15	0	58	19.9	19- 9.0	155-36.4?	8.0*		10	313	15.1	1.06	6.8		0.15	D
15	1	2	21.1	19-19.7	155- 8.5	3.3	2.0	22	184	5.0	0.19	1.0	1.0	0.20	C
15	1	20	49.4	19-19.1	155-15.4	5.8		13	190	4.0	0.19	1.2	0.9	0.20	C
15	2	7	20.8	19-22.5	155-14.3	3.6	1.2	11	141	2.2	0.14	0.7	1.7	0.10	B
15	2	32	46.0	19-18.1	155-13.9?	0.0	1.8	20	176	7.1	8.62	1.4	16.2	0.35	D
15	5	34	35.0	19-19.3	155- 3.8	27.0		10	210	2.0	0.72	2.6	5.9	0.08	C
15	5	47	25.9	19-24.0	155-22.6?	0.9	1.4	12	164	5.1	1.53	0.6	5.7	0.12	C
15	8	34	1.1	19-19.5	155-12.3	8.0*	1.7	13	149	5.5	0.07	0.6		0.12	C
15	10	24	23.1	19-22.3	155- 6.6	4.0	2.2	21	114	5.7	0.11	0.8	1.1	0.24	B
15	14	8	32.6	19-13.9	155-26.0	1.4	2.2	20	127	8.8	0.39	0.9	1.4	0.24	C
15	15	33	13.1	19-42.1	155-57.0	12.2	2.8	23	174	20.1	0.13	1.1	1.0	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 15	16	6	8.1	19-29.5	155-34.9?	7.5	2.1	17	193	1.9	0.17	1.2	1.4	0.14	C
15	22	52	9.7	18-52.4	155-16.4	4.9		13	288	37.4	1.81	4.7	9.8	0.12	D
15	23	8	8.1	18-52.3	155-16.9	C.2*		15	256	37.1	0.32	2.1		0.13	D
15	23	10	57.2	18-53.3	155-16.3	8.9	2.3	18	253	36.2	0.41	1.9	2.4	0.12	C
15	23	54	5.2	19-18.7	155-14.8?	1.7		15	204	5.2	0.23	1.2	1.9	0.26	C
16	C	26	48.8	19-21.0	155- 9.6	7.8		15	187	2.0	0.18	1.5	C.7	0.15	C
16	1	20	27.9	18-56.4	155-17.0	9.5		18	279	30.9	0.59	3.4	2.5	0.13	D
16	2	29	39.1	18-55.5	155-15.9	16.6*	2.4	21	281	33.3	0.33	2.2		0.16	D
16	2	41	45.7	18-55.9	155-16.9	9.4		16	281	31.7	0.67	3.8	2.6	0.13	D
16	2	58	38.0	18-55.4	155-17.0	9.5		16	282	32.3	0.72	4.1	2.7	0.14	D
16	3	52	3.6	18-53.4	155-16.5	9.4	2.3	19	252	35.7	0.42	2.1	2.5	0.13	C
16	4	4	55.9	18-53.0	155-16.5	4.4	2.9	26	254	36.4	1.55	3.2	1C.6	0.20	D
16	5	2	40.6	18-55.8	155-26.5	27.7		19	240	24.2	0.44	2.3	4.8	0.14	C
16	5	18	2.7	18-50.0	155-16.4	2.1*	2.6	18	293	41.1	0.92	5.6		0.14	D
16	6	13	3.2	18-54.2	155-17.4	8.8		8	268	33.6	1.33	6.5	6.0	0.14	D
16	6	22	43.2	18-51.6	155-16.3	4.3		14	296	38.7	2.45	6.4	12.0	0.12	D
16	6	52	14.6	18-53.7	155-16.0	1C.4*		12	286	35.8	0.74	4.6		0.14	D
16	7	0	3.5	18-52.0	155-16.9	C.9*		10	263	37.6	0.49	3.1		0.14	D
16	11	5	57.2	19-22.0	155-13.1	6.1	1.5	11	130	4.9	0.C6	0.6	C.6	0.07	B
16	14	22	25.0	18-53.5	155-16.9	8.4		14	252	35.3	0.50	2.4	3.0	0.12	C
16	14	38	21.4	18-52.6	155-15.4	2.0*		14	255	38.0	0.35	2.3		0.15	D
16	14	43	9.0	18-53.8	155-18.0	11.8*		7	255	33.8	0.85	6.0		0.19	D
16	15	13	37.7	19-18.6	155-14.5	9.7	1.5	12	209	5.8	0.20	0.9	1.6	0.08	B
16	19	26	36.9	19-22.7	155-26.7	3.6	1.7	18	75	7.6	0.C8	0.6	1.2	0.18	B
16	22	26	42.5	19-22.5	155-24.0	5.6	1.4	20	113	4.4	0.C9	0.7	C.7	0.18	B
17	1	21	26.1	19-18.2	155-15.3	9.1	1.9	12	181	5.1	0.14	0.9	1.5	0.11	C
17	1	51	56.8	19-20.4	155-12.8	9.2	1.1	12	186	3.8	0.15	0.7	1.2	0.07	B
17	3	44	48.6	19-23.9	155-17.8	1.7		8	133	1.6	0.C3	0.2	0.2	0.05	B
17	4	41	10.1	19-24.1	155-15.3	1.3	0.8	8	239	3.1	0.18	0.7	C.3	0.06	C
17	5	55	C.9	18-56.1	155-18.1?	6.4	2.4	18	242	30.1	0.77	4.9	7.2	0.38	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 17	6	6	20.9	18-58.8	155-19.9?	14.5*	2.4	15	232	24.1	0.45	3.3		0.31	D
17	6	58	5.4	19- 2.8	155-20.6?	12.5*		11	286	17.7	0.98	6.2		0.23	D
17	9	25	17.4	18-56.3	155-17.5?	12.6	2.7	25	242	30.4	0.31	1.7	6.8	0.16	D
17	10	30	48.4	18-57.9	155-16.5?	23.1*	2.5	19	295	37.2	0.50	3.3		0.18	D
17	12	13	41.8	19-24.9	155-24.9?	0.0	1.5	12	102	9.2	0.13	1.0	19.3	0.20	B
17	12	48	8.5	19-25.8	155-29.1	6.7	1.8	20	83	12.5	0.08	0.6	C.5	0.16	B
17	14	29	8.8	19-23.7	155-15.7	2.2		6	214	2.2	0.48	2.1	1.2	0.06	C
17	15	47	1.6	19-23.4	155-14.5	1.6	0.9	8	174	3.1	0.05	0.2	C.2	0.03	B
17	16	20	10.7	19-23.4	155-14.6	2.9		13	108	2.9	0.08	0.4	1.4	0.08	A
17	16	27	6.9	19-23.3	155-14.9	1.9	1.0	10	155	2.4	0.13	0.5	0.4	0.09	B
17	16	27	33.5	19-23.3	155-14.6	4.1	1.4	11	157	2.8	0.07	0.3	C.7	0.05	B
17	16	40	10.2	19-23.4	155-15.0	2.2*		9	156	2.4	0.06	0.5		0.08	C
17	16	58	50.9	19-23.6	155-14.8	1.0	0.8	9	167	3.0	0.09	0.4	C.5	0.09	B
17	18	18	9.3	19-23.0	155-14.6	1.5	0.4	10	152	2.5	0.08	0.4	C.3	0.10	B
17	19	2	35.8	19-23.8	155-16.8	1.9	0.9	10	154	0.8	0.03	0.3	0.1	0.04	B
17	19	25	20.0	19-18.5	155-13.0	8.0*	1.4	9	223	7.2	0.16	1.0		0.09	C
17	20	10	24.5	18-53.0	155-15.9	8.6	2.6	21	253	37.0	0.41	1.9	2.4	0.12	C
17	20	29	7.8	18-58.1	155-17.0	11.3	2.6	23	275	28.4	0.37	2.9	3.3	0.21	D
17	20	34	24.9	18-59.6	155-16.0?	8.0	2.6	19	232	27.6	0.50	4.3	12.5	0.25	D
17	20	35	18.5	18-55.0	155-16.1	6.8	2.2	16	288	33.9	1.25	3.2	6.7	0.08	D
17	20	36	11.6	19-30.3	155-11.8?	4.7	1.7	20	73	13.6	0.22	1.4	5.0	0.29	B
17	20	49	45.1	18-55.8	155-16.1	8.0		19	251	32.7	0.34	1.7	1.9	0.10	C
17	21	9	49.8	19-29.1	155-14.8	15.1		15	97	8.4	0.12	1.0	2.5	0.11	B
17	21	16	22.7	19-33.6	155-15.6?	3.2*	1.5	7	337	15.5	9.98	74.1		0.18	D
17	21	36	16.4	19-20.8	155-12.8	11.8	0.8	9	177	3.2	0.31	1.1	2.5	0.07	C
17	22	2	19.7	18-53.9	155-16.3	9.2	2.5	17	257	35.2	0.39	1.9	2.1	0.10	C
17	23	8	6.3	19-21.9	155-13.5	1.9	1.1	9	145	2.1	0.05	0.3	0.2	0.05	B
17	23	21	5.0	19-23.0	155-14.5	1.3	0.4	10	153	2.7	0.06	0.3	0.3	0.07	B
17	23	45	17.3	19-23.9	155-15.9	3.2	0.9	11	159	2.0	0.08	0.4	0.9	0.07	B
17	23	59	41.0	19-23.2	155-17.9	1.8		7	169	1.7	0.11	0.5	0.4	0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 18	0	7	14.6	19-23.9	155-17.1	2.0	0.9	8	137	1.0	0.04	0.4	0.1	0.05	B
18	0	37	35.6	19-23.7	155-16.8	2.0	0.6	7	152	0.7	0.06	0.5	0.2	0.06	B
18	0	44	55.6	19-23.7	155-14.9	1.4		9	175	3.0	0.13	0.5	0.4	0.07	B
18	0	49	22.6	19-24.5	155-17.3	3.4	1.3	13	73	0.5	0.04	0.2	0.4	0.05	A
18	1	29	26.3	19-24.5	155-17.6	2.0	0.9	10	91	0.5	0.07	0.7	0.4	0.11	B
18	2	54	55.5	18-57.6	155-16.2	10.5	2.1	19	276	30.1	0.28	1.7	1.5	0.12	C
18	2	56	30.0	18-57.5	155-15.9?	10.8	2.4	19	277	30.4	0.35	2.2	1.9	0.16	C
18	3	1	0.7	18-53.6	155-16.0	7.7	2.5	16	258	36.0	1.53	2.3	9.0	0.12	D
18	3	3	38.2	19- 2.4	155-19.6	13.8*	2.1	17	265	19.5	0.82	5.3		0.28	D
18	3	4	13.1	18-52.9	155-16.8	6.7	2.0	12	293	36.2	2.43	6.3	11.9	0.13	D
18	3	6	18.3	18-53.0	155-16.4	8.0*	2.1	20	254	36.4	0.36	2.4		0.13	D
18	3	8	4.9	18-57.3	155-17.4	8.9		15	282	29.0	0.68	3.6	2.1	0.12	D
18	3	8	15.8	18-25.7	155-15.8	8.0*		10	339	83.6	6.70	39.3		0.08	D
18	3	12	41.2	18-51.9	155-16.8	10.1*		15	298	37.8	0.80	5.0		0.11	D
18	3	18	59.7	18-54.9	155-17.1	7.4		15	253	33.0	0.89	1.8	5.2	0.11	D
18	3	19	53.5	18-54.4	155-16.4	8.6	2.1	19	249	34.3	0.44	2.1	2.7	0.13	C
18	3	21	5.3	18-54.0	155-15.9	6.7	2.1	18	251	35.5	0.78	1.6	4.7	0.11	C
18	3	22	6.3	18-53.7	155-16.1	6.8	2.2	20	251	35.7	1.10	1.6	6.7	0.10	D
18	3	25	3.1	18-54.1	155-16.4	8.2	2.1	18	250	34.8	0.32	1.5	2.0	0.10	C
18	3	28	20.7	18-53.5	155-16.3	5.5	2.2	17	258	35.8	1.09	2.2	7.3	0.10	D
18	3	35	55.0	18-54.2	155-16.0	8.3	2.1	19	250	35.1	0.35	1.7	2.2	0.11	C
18	3	37	2.3	18-54.0	155-16.4	8.6	2.3	19	250	34.9	0.38	1.8	2.3	0.11	C
18	3	40	45.2	19-23.9	155-16.2	1.9		7	195	1.6	0.12	0.7	0.3	0.07	B
18	3	43	25.6	19- 1.1	155-13.8?	7.8	2.4	26	267	29.2	0.87	5.3	4.9	0.39	D
18	3	44	25.0	19- 3.6	155-34.9?	67.4*		8	334	16.3	0.79	15.6		0.37	D
18	3	47	59.9	19- 0.1	155-17.3?	13.5*	2.2	24	229	25.5	0.70	5.0		0.35	D
18	3	50	41.8	19-17.6	155-19.3?	8.0*	1.4	11	162	1.5	4.73	26.6		1.38	D
18	3	51	8.2	18-53.4	155-16.6	8.2	2.7	19	252	35.7	0.48	2.2	2.9	0.12	C
18	3	52	45.7	18-55.0	155-17.6?	0.1	2.1	20	246	32.3	1.20	6.0	2.5	0.37	D
18	3	54	30.0	19-23.3	155-17.1	1.9		8	147	0.2	0.05	0.4	0.2	0.05	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 18	3	56	2.7	18-58.5	155-17.0	10.5	2.2	22	235	27.8	0.23	1.4	2.0	0.14	C
18	4	13	41.5	18-59.4	155-17.8?	10.6	1.9	12	292	25.6	0.46	2.6	1.6	0.10	D
18	4	16	11.8	19-29.8	155-51.5?	5.2	1.7	11	273	27.2	0.41	4.5	4.4	0.25	D
18	4	38	37.2	18-53.5	155-16.5	8.0*		15	292	35.6	0.39	2.4		0.09	D
18	4	39	8.3	18-55.4	155-17.5	10.5	2.6	22	245	31.8	0.32	1.8	2.5	0.15	D
18	5	5	31.8	18-56.2	155-16.7	9.3	2.0	16	280	31.4	0.18	1.1	1.0	0.09	C
18	5	10	24.0	18-53.9	155-16.2	8.0*	2.7	18	250	42.7	0.21	1.5		0.10	D
18	6	7	12.6	19-24.1	155-15.3	1.6		7	239	3.2	0.20	0.7	0.4	0.05	C
18	6	11	21.7	19-24.0	155-15.2	1.1		7	239	3.2	0.13	0.4	0.3	0.04	C
18	6	31	52.5	19-23.8	155-16.9	1.8	0.6	11	112	0.8	0.07	0.6	0.4	0.13	B
18	6	35	26.1	19-23.9	155-17.1	2.1	0.6	7	135	1.0	0.02	0.2	0.1	0.03	B
18	7	21	2.9	18-59.1	155-17.1?	16.0*	2.8	27	233	35.0	0.48	3.3		0.31	D
18	7	27	29.5	18-59.7	155-17.8	10.0	1.7	10	291	25.3	0.38	2.3	1.8	0.08	C
18	7	59	22.9	19-23.0	155-14.6	2.0		10	150	2.4	0.09	0.4	0.3	0.06	B
18	10	12	8.9	19-23.2	155-14.9	2.0		9	153	2.3	0.11	0.4	0.4	0.06	B
18	12	11	46.4	18-56.0	155-17.9?	11.6	2.5	19	247	30.5	0.41	2.4	3.1	0.16	D
18	12	35	19.8	19-24.1	155-17.4?	2.0		7	113	1.1	0.08	0.5	1.8	0.06	B
18	13	43	34.0	18-54.6	155-15.9?	11.3	2.5	23	249	34.7	0.44	3.0	8.3	0.20	D
18	13	49	6.2	18-55.8	155-18.2?	24.6*	2.7	25	244	30.5	0.27	1.9		0.17	D
18	13	55	53.5	18-56.0	155-17.5	14.1*	2.7	22	243	30.9	0.14	1.0		0.12	D
18	14	29	3.3	19-22.9	155-23.3?	8.3	2.1	24	53	5.0	0.08	0.6	0.6	0.17	B
18	14	41	19.8	18-57.1	155-17.0	11.0	2.9	25	278	29.7	0.38	2.7	2.6	0.18	D
18	16	24	20.6	19-24.7	155-17.4	2.0		8	83	0.2	0.04	0.4	0.2	0.06	A
18	17	43	39.9	19-23.4	155-15.2	2.3		9	153	2.2	0.12	0.4	0.4	0.06	B
18	17	53	31.3	19-23.5	155-16.8?	2.1		7	147	0.4	0.05	0.5	0.2	0.06	B
18	18	11	37.4	19-23.5	155-14.7	1.4		9	173	3.0	0.10	0.4	0.4	0.07	B
18	18	25	7.4	19-19.3	155-11.5	8.0*		13	173	5.9	0.07	0.5		0.07	C
18	18	48	48.4	19-23.9	155-17.1	2.1	0.6	7	139	1.1	0.03	0.3	0.1	0.04	B
18	18	48	57.2	19-23.9	155-17.1	2.1	1.5	12	100	1.0	0.03	0.2	0.6	0.05	A
18	18	59	55.2	19-23.8	155-17.1	7.0	1.1	8	136	0.8	0.23	0.9	1.4	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 18	19	24	6.0	19-23.9	155-17.3?	1.5		8	125	1.1	0.15	0.8	3.1	0.14	B
18	19	24	54.7	19-24.0	155-17.0?	1.8	0.5	7	146	1.2	0.15	0.7	1.5	0.08	B
18	19	35	0.5	19-20.0	155-26.8	5.7	1.8	14	137	6.2	0.11	0.9	C.9	0.19	B
18	19	47	10.4	19-24.3	155-17.3	2.4	1.2	12	80	0.7	0.C3	0.2	C.5	0.05	A
18	20	15	41.4	19-23.7	155-16.9?	2.0	2.4	17	69	2.1	0.10	0.5	C.4	0.16	B
18	20	35	21.3	19-23.8	155-16.9	2.1	0.6	7	149	0.8	0.C3	0.3	C.1	0.03	B
18	20	46	54.5	18-57.7	155-17.3	8.8	2.2	16	280	28.5	0.72	3.8	2.2	0.14	D
18	22	3	13.7	19-24.3	155-18.5	3.1	0.7	9	112	1.9	0.C6	0.3	C.8	0.06	A
18	22	27	8.3	19-24.7	155-17.6	5.1	1.1	8	118	0.2	0.25	0.9	1.8	0.05	A
18	22	39	42.3	19-22.8	155-17.3	2.1		9	110	1.2	0.C6	0.3	C.2	0.05	A
18	22	49	2.4	19-23.8	155-16.9	2.4	0.7	7	146	0.7	0.C5	0.5	C.9	0.05	B
18	23	2	25.1	19-23.2	155-17.2	2.3		7	153	0.6	0.C7	0.4	C.2	0.04	B
18	23	25	29.7	19-23.7	155-17.1	2.0	0.9	10	136	0.7	0.C4	0.4	0.2	0.07	B
18	23	44	15.7	19-23.2	155-17.3	1.9	0.9	7	155	0.7	0.11	0.6	C.4	0.07	B
19	0	8	2.3	19-23.5	155-14.9	1.3		9	162	2.8	0.09	0.4	C.4	0.10	B
19	0	21	55.6	19-23.2	155-17.3	1.8		12	89	0.7	0.C6	0.4	C.2	0.07	A
19	0	38	15.3	19-22.0	155-23.4	10.6	1.6	8	326	7.1	0.61	4.5	3.2	0.11	D
19	1	1	13.7	19-24.0	155-17.4	2.1	0.8	8	119	1.3	0.C3	0.3	C.2	0.05	A
19	1	22	49.1	18-52.7	155-16.0	0.6*	2.6	16	301	37.4	1.07	6.6		0.19	D
19	1	26	33.1	19-22.6	155-26.7?	0.0	1.7	17	126	7.4	0.34	1.1	19.6	0.23	C
19	1	50	8.0	19-23.6	155-17.3	1.9		9	136	0.7	0.C4	0.4	C.1	0.05	B
19	2	51	22.5	19-22.4	155-23.0?	8.4		7	221	6.2	0.40	1.6	4.8	0.09	C
19	3	22	48.3	19-22.9	155-17.2?	2.2		8	107	1.1	0.C5	0.3	C.2	0.04	B
19	3	28	11.7	19-23.2	155-14.7	1.7	1.0	11	154	2.6	0.07	0.3	C.3	0.09	B
19	3	34	28.9	19-23.9	155-17.3	1.9		8	123	1.1	0.C5	0.4	C.2	0.06	B
19	3	55	20.8	19-23.0	155-17.2	2.4		6	162	0.8	0.C8	0.7	1.2	0.05	B
19	3	59	12.0	19-20.7	155- 6.0	8.0*		9	167	5.6	0.19	3.5		0.20	C
19	4	3	33.0	19-23.9	155-17.1	2.0		8	133	0.9	0.C4	0.4	C.2	0.05	B
19	4	10	37.2	19-23.9	155-17.2?	1.4		7	126	1.0	0.13	0.9	2.5	0.12	B
19	4	15	46.2	19-23.8	155-17.2?	3.8		8	128	0.8	0.16	0.5	2.0	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 19	4	18	4.8	19-23.1	155-17.4	1.7		7	165	1.0	0.14	0.7	C.5	0.08	B
19	4	20	42.1	19-22.9	155-17.4?	1.6		7	171	1.2	0.26	0.8	2.2	0.07	C
19	4	31	53.2	18-53.8	155-16.0	5.9		15	304	35.6	3.98	10.5	17.1	0.14	D
19	4	32	43.0	18-53.7	155-16.9	7.7	2.5	21	251	34.9	1.78	3.3	12.5	0.17	D
19	4	57	22.7	19-24.2	155-17.5	C.9	0.8	11	102	0.9	0.C4	0.2	C.2	0.06	A
19	5	1	51.3	19- 3.8	155-14.4	25.1*		10	320	27.1	1.49	10.0		0.12	D
19	5	7	48.5	19- 2.9	155-16.4?	14.2*	2.7	29	220	23.6	0.68	4.8		0.53	D
19	5	53	28.2	19-19.6	155-11.5	2.0*		8	222	5.4	0.29	1.5		0.14	C
19	5	59	18.0	19-23.2	155-17.4	2.3		7	160	0.9	0.C7	0.5	1.1	0.06	B
19	6	3	30.0	19-22.9	155-17.3	2.8		7	1C7	1.1	0.C5	0.3	C.7	0.03	B
19	6	8	37.4	19-23.0	155-16.9?	1.8		6	157	0.7	0.C7	0.7	1.1	0.06	C
19	6	19	39.8	19-48.5	155-15.2	13.5	2.2	20	166	13.1	0.C8	1.1	1.4	0.11	C
19	6	25	8.7	19-23.7	155-17.0	2.0		7	140	0.5	0.C6	0.6	0.3	0.07	B
19	6	32	3.9	19-23.7	155-17.1	2.2	0.9	7	132	0.7	0.C3	0.2	C.4	0.02	B
19	6	44	41.3	19-23.4	155-17.1	1.9		8	145	0.4	0.C5	0.4	C.2	0.06	B
19	7	17	37.4	19-23.9	155-17.8	1.8	0.8	11	83	1.7	0.C7	0.4	C.4	C.10	B
19	7	18	23.7	19-23.3	155-17.2	2.6		7	152	0.5	0.C6	0.4	C.7	0.03	B
19	7	25	C.9	19-23.7	155-16.9	2.5		6	147	0.6	0.C6	C.5	C.7	0.04	B
19	7	30	12.9	19-23.4	155-17.1	2.4	0.8	8	92	0.3	0.C4	0.3	C.5	0.04	A
19	7	32	11.6	19-21.5	155-13.7?	7.1		7	202	2.6	0.81	2.9	3.8	0.15	C
19	7	53	1.4	19-19.5	155-1C.2	8.0*	1.7	11	172	4.9	0.C9	0.7		C.10	C
19	8	19	51.7	19-12.9	155-32.8	4.7		18	90	8.4	0.14	1.0	1.0	0.23	B
19	10	0	48.3	19-13.4	155-33.8	6.6	3.1	26	93	6.4	C.15	1.1	1.1	0.27	B
19	11	38	47.6	18-55.7	155-16.0	9.9	2.6	26	245	32.9	0.56	3.2	4.4	0.30	D
19	13	36	46.4	19-24.2	155-17.7	C.4	1.0	10	90	1.0	0.11	0.3	0.3	0.08	B
19	14	9	56.7	19-22.4	155-17.2	2.0	1.6	16	74	1.8	0.11	0.5	C.4	0.14	B
19	15	51	28.8	19-18.5	155-12.4?	C.0		17	179	7.3	0.81	1.4	20.5	0.33	D
19	20	13	25.6	19-54.7	155-26.9	36.9*	2.2	24	224	11.2	0.11	1.0		0.09	C
19	20	18	16.2	19-23.0	155-17.5	1.6	0.8	9	109	1.2	0.C7	0.4	C.3	0.07	A
19	20	58	37.7	19-13.7	155-23.1	36.9	2.0	20	213	8.0	0.35	1.7	2.7	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 19	21	18	36.4	19-29.6	155-21.6	8.7		18	86	3.0	0.11	1.1	1.6	0.19	B
19	22	46	50.1	19-23.9	155-16.7	2.8	0.7	11	122	1.0	0.08	0.4	1.0	0.08	B
20	0	12	7.1	19-23.1	155-16.9?	2.2	0.8	10	102	0.5	0.10	0.6	0.4	0.13	B
20	0	26	43.9	19-23.3	155-17.4	1.7	0.8	12	70	0.8	0.05	0.3	0.3	0.07	A
20	1	33	9.2	19-23.6	155-18.4	4.5	1.2	13	60	2.3	0.23	1.0	2.3	0.23	B
20	2	53	55.6	19-23.8	155-17.1	2.0	0.7	8	135	0.8	0.03	0.3	0.1	0.04	B
20	4	21	43.8	18-59.0	155-17.2?	14.2*	2.7	27	233	26.9	0.58	4.2		0.34	D
20	6	1	59.2	19-23.6	155-16.9	3.2	1.8	15	67	0.5	0.06	0.4	0.6	0.10	B
20	7	22	20.0	19-23.2	155-17.2	1.9	0.8	12	55	0.6	0.06	0.4	0.3	0.08	B
20	7	27	32.8	19-23.5	155-17.4	1.8	0.8	12	88	0.8	0.05	0.4	0.3	0.08	A
20	8	44	56.3	19- 3.1	155-19.0?	6.6		17	216	19.6	0.43	1.7	1.8	0.19	C
20	8	54	23.2	19-20.2	155-14.0	12.0	1.7	11	151	3.7	0.09	0.5	0.9	0.05	B
20	9	32	33.7	19-24.3	155-17.4	2.0	1.0	12	71	0.7	0.03	0.2	0.1	0.04	A
20	10	5	39.8	19-21.0	155-16.4	29.4		15	120	2.4	0.21	0.9	1.9	0.08	A
20	10	15	59.4	19-18.6	155-46.8	6.0	2.5	12	242	18.3	0.52	2.2	1.8	0.12	C
20	11	12	58.8	19-23.1	155-17.2	1.9	0.8	13	57	0.7	0.05	0.3	0.2	0.09	A
20	11	45	32.9	19-27.4	155-10.9?	8.0*	1.6	10	312	9.6	2.00	10.8		0.50	D
20	12	1	23.6	19-18.4	155-14.6	13.6		10	212	5.7	0.07	0.5	0.6	0.03	B
20	12	7	29.4	18-58.6	155-17.8	9.7		16	278	26.8	0.46	2.4	1.4	0.09	C
20	14	26	55.3	19-24.4	155-15.8	2.0		7	237	2.4	0.09	0.5	0.2	0.02	C
20	14	39	40.4	19-24.2	155-12.3?	8.0*	2.1	11	291	6.8	0.63	4.6		0.68	D
20	14	46	31.0	19-23.7	155-16.9	2.0		7	143	0.7	0.05	0.4	0.2	0.05	B
20	15	4	0.7	19-23.9	155-14.8?	1.2		8	190	3.4	0.14	0.5	2.6	0.05	C
20	15	47	16.6	19-23.3	155-14.7	2.0	1.0	10	165	2.6	0.14	0.5	0.4	0.07	B
20	15	50	45.9	19-23.9	155-16.3	1.5		8	145	1.4	0.13	0.7	0.5	0.13	B
20	18	41	0.7	19-23.0	155-17.0	2.2	1.1	14	90	0.8	0.05	0.3	1.0	0.09	A
20	19	11	7.6	19-23.1	155-17.1	2.3	1.3	14	65	0.6	0.04	0.3	1.0	0.10	B
20	19	37	14.4	19-23.2	155-17.5	1.8	0.7	8	119	1.0	0.06	0.4	0.3	0.06	A
20	20	13	40.8	19-16.9	155-15.8	28.8	2.1	14	188	5.3	0.15	0.9	1.5	0.07	B
20	22	57	51.5	19-24.1	155-15.2	3.5	1.4	16	113	3.3	0.07	0.4	1.2	0.10	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 20	23	16	9.4	19-23.7	155-14.9	1.1	0.9	12	161	3.0	0.06	0.3	0.3	0.08	B
20	23	45	44.1	19-23.7	155-17.1	2.3		7	136	0.6	0.05	0.4	0.2	0.04	B
21	0	35	12.8	19-23.1	155-17.2	2.2		7	159	0.7	0.06	0.4	0.2	0.04	B
21	1	22	22.0	19-23.0	155-17.3	1.9		10	92	0.9	0.06	0.4	0.2	0.08	A
21	2	10	54.1	19-23.7	155-17.0	2.4		7	139	0.5	0.06	0.4	0.7	0.04	B
21	2	18	51.0	19-24.4	155-17.5	1.1	1.2	14	64	0.6	0.04	0.2	0.2	0.09	A
21	2	45	17.0	19-23.5	155-17.1	2.0		7	139	0.4	0.05	0.5	0.2	0.06	B
21	2	56	8.4	19-22.8	155-17.2	2.6	0.9	9	108	1.3	0.03	0.3	1.7	0.04	A
21	3	22	27.0	19-23.4	155-15.2	2.2		10	153	2.2	0.08	0.5	5.3	0.09	C
21	4	21	32.9	19-23.1	155-17.6	1.7	1.4	14	55	1.3	0.07	0.3	0.3	0.10	B
21	5	39	7.6	19-23.5	155-14.6	1.5		9	175	3.0	0.08	0.4	0.3	0.06	B
21	7	9	55.8	19-18.9	155-10.8	1.8	2.0	21	158	6.2	0.64	1.0	2.4	0.27	C
21	7	14	28.1	19-19.6	155-11.9	5.4	1.6	12	216	5.3	0.27	1.7	1.0	0.21	C
21	9	22	54.9	19-12.6	154-53.3?	19.4*	2.5	13	312	21.6	2.50	16.6		0.36	D
21	10	1	21.9	19-22.8	155-17.2	3.0		8	107	1.2	0.04	0.2	0.5	0.03	A
21	12	18	15.9	19-18.9	155- 8.4	7.0	2.3	16	185	6.3	0.19	1.5	0.7	0.18	C
21	12	31	33.5	19-24.1	155-16.9	2.1	1.8	13	115	1.4	0.03	0.2	0.1	0.05	A
21	16	51	13.3	19-23.8	155-14.8	1.0		9	183	3.2	0.09	0.4	0.4	0.08	B
21	17	59	15.7	19-23.5	155-17.7	1.3	0.6	7	148	1.4	0.07	0.3	0.5	0.07	B
21	18	49	22.5	19-23.8	155-17.1	2.0		7	137	0.8	0.05	0.4	0.2	0.06	B
21	20	52	43.1	19-24.4	155-17.5	9.1	0.9	11	97	0.6	0.05	0.3	0.4	0.03	A
21	20	53	60.0	19-22.3	155-17.8	3.6	1.0	12	69	2.5	0.32	1.1	4.8	0.24	C
21	21	37	2.2	19-19.4	155-10.7	10.9	1.7	13	228	5.3	0.23	1.3	1.7	0.09	C
21	21	56	5.6	19- 5.9	155-25.4	36.6		16	200	7.9	0.84	4.5	7.5	0.26	D
22	0	6	40.5	19-23.2	155-14.4	1.6		11	158	3.0	0.11	0.5	0.4	0.10	C
22	1	25	12.9	19-19.3	155- 5.8?	2.3	1.7	22	211	8.7	0.67	1.6	2.3	0.30	D
22	2	40	57.5	19-22.9	155-17.1	2.5		7	165	0.9	0.07	0.5	0.9	0.05	B
22	3	2	34.0	19-19.4	155- 7.5	7.0	2.3	17	178	6.4	0.15	1.1	0.6	0.17	C
22	3	57	47.6	19-23.8	155-17.7?	3.1		7	139	1.5	0.31	1.4	2.2	0.29	C
22	4	12	56.8	19-15.0	155-15.4	25.8	2.1	21	202	7.8	0.21	1.3	1.8	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 22	4	29	55.0	19-24.0	155-17.8	1.8	0.5	8	126	1.3	0.03	0.1	0.1	0.03	B
22	5	54	57.1	19- 6.9	155-25.5	31.9	2.0	23	181	6.4	0.32	1.7	3.0	0.17	C
22	5	55	49.0	19- 6.6	155-25.3	33.7	2.4	13	198	7.0	0.41	2.3	3.9	0.15	C
22	5	56	10.7	19- 6.6	155-25.3?	34.3	2.4	17	183	6.9	0.26	1.4	2.6	0.12	C
22	5	56	44.5	19- 7.1	155-25.4	34.1		15	197	6.2	0.38	2.2	3.5	0.15	C
22	5	57	11.7	19- 6.5	155-24.7	30.1	2.4	16	200	7.9	0.36	2.2	3.6	0.15	C
22	5	57	56.7	19- 5.8	155-23.9	41.2		16	195	9.8	0.31	2.3	2.5	0.16	C
22	5	58	56.9	19- 9.2	155-26.4	31.8		14	180	2.7	0.48	2.8	4.9	0.22	C
22	5	59	32.5	19- 6.5	155-25.7	36.0	2.5	16	197	6.7	0.42	2.0	3.9	0.16	C
22	6	0	44.6	19- 8.0	155-25.9	36.5	2.4	13	189	4.4	0.48	2.5	4.5	0.15	C
22	6	1	26.6	19- 7.5	155-25.5	35.7	2.7	19	178	5.5	0.26	1.3	2.8	0.11	C
22	6	39	11.9	19-24.0	155-17.1	2.1		7	135	1.2	0.02	0.2	0.1	0.03	B
22	7	44	47.5	18-39.3	155- 8.8	8.0*		19	307	65.1	1.08	6.6		0.12	D
22	8	35	2.3	19-25.9	155-25.3	8.0*	2.2	18	159	8.0	0.12	0.9		0.15	C
22	11	46	33.6	19- 0.1	155-17.0?	3.9*	2.9	11	295	25.8	0.58	3.0		0.15	D
22	12	6	22.8	19-21.9	155-18.2?	3.3		6	231	3.6	4.42	19.4	23.8	0.30	D
22	17	56	19.8	19-23.6	154-58.7	4.4		9	183	10.1	0.14	1.1	1.1	0.10	C
22	20	53	42.1	19-19.5	155-25.6	5.1	1.9	20	89	4.2	0.08	0.7	0.7	0.20	B
22	22	1	13.1	19-19.1	155-26.3	4.9		15	111	5.1	0.10	0.9	1.1	0.22	B
22	22	23	51.3	19-21.4	155- 8.4?	0.0	1.6	16	146	7.7	3.88	0.8	7.4	0.15	C
23	0	5	42.6	19-24.0	155-52.1	2.0	2.0	17	215	14.5	0.47	2.3	1.6	0.24	C
23	0	16	47.0	19-23.5	155-18.4	22.5	1.3	21	46	2.3	0.08	0.6	0.9	0.09	A
23	1	18	43.6	19-17.4	155- 9.3?	0.0	1.9	19	212	8.7	6.14	1.6	11.3	0.23	C
23	1	44	14.2	19-24.2	155-16.6	7.9	1.5	11	138	1.4	0.09	1.0	0.5	0.14	B
23	2	48	28.7	19-23.4	155-17.3?	2.3		8	150	0.7	0.08	0.4	0.3	0.07	B
23	3	31	57.2	19-23.2	155-14.9	3.6	1.2	11	158	2.2	0.17	0.7	1.7	0.11	C
23	3	53	22.8	19-12.4	155-11.1	49.8	2.5	21	214	16.6	0.28	1.4	2.4	0.14	C
23	4	16	56.0	19-14.5	155- 2.4	37.1	2.1	17	240	19.1	0.20	1.6	1.5	0.10	C
23	4	23	15.7	19-18.9	155-14.2	9.9	1.3	13	206	5.8	0.14	1.0	1.2	0.11	C
23	8	46	53.7	19-23.2	155-16.9	13.3	1.7	22	64	0.3	0.04	0.6	0.4	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 23	8	50	17.2	19-21.2	155-13.5	12.8		10	160	2.7	0.13	0.5	1.0	0.03	B
23	12	1	10.9	19-23.2	155-24.6	4.6	1.5	17	156	5.9	0.09	0.6	0.8	0.15	C
23	12	14	6.7	18-49.7	155-15.8	8.0*	2.7	17	264	45.7	0.47	3.1		0.17	D
23	13	4	40.6	19-26.8	155-11.3	8.0*		9	139	8.3	0.16	1.5		0.20	C
23	13	34	13.5	19-20.3	155-19.4	3.0	2.0	17	89	3.4	0.06	0.4	0.7	0.10	B
23	15	48	47.8	19-23.1	155-17.6	1.7		10	78	1.3	0.05	0.3	0.3	0.08	A
23	15	58	57.9	19-24.2	155-17.9	1.8	1.0	11	82	1.1	0.03	0.2	0.1	0.06	A
23	16	27	13.3	19- 8.7	155-25.8	25.7		16	185	3.9	0.33	2.1	3.7	0.19	C
23	16	35	10.6	19- 8.7	155-25.1	33.7	2.0	25	173	5.1	0.24	1.2	2.3	0.14	C
23	18	27	1.4	19-21.1	155-27.7	4.0	2.0	23	58	7.9	0.09	0.7	0.8	0.22	B
23	18	31	22.5	19-24.1	155-17.8	2.0	1.3	13	62	1.1	0.03	0.2	0.2	0.05	A
23	18	35	24.3	19-23.7	155-14.7	1.5		8	185	3.2	0.07	0.3	0.3	0.04	B
23	18	43	15.9	19-23.6	155-14.7	1.7		9	176	3.0	0.19	0.7	0.6	0.08	B
23	18	47	44.5	19-23.6	155-14.9	2.1*		9	173	2.8	0.09	0.5		0.09	C
23	21	2	31.1	19-23.3	155-14.5	3.0	1.2	13	158	3.0	0.05	0.3	0.7	0.07	B
23	21	11	23.6	19-25.5	155-14.4?	8.0*		6	298	4.8	0.39	2.5		0.09	D
23	21	47	26.5	19-23.7	155-17.0	2.4	2.4	21	32	0.5	0.05	0.4	0.7	0.16	B
23	23	41	5.7	19-23.2	155-15.3	3.3	1.3	13	146	1.9	0.07	0.5	0.8	0.11	B
24	0	37	13.8	19-25.0	155-23.9	5.4		13	154	7.4	0.10	0.8	1.1	0.15	C
24	1	20	42.3	19-23.3	155-15.1	4.4	1.2	12	152	2.2	0.14	0.6	1.3	0.10	C
24	1	38	10.3	19-23.7	155-14.8	1.0		10	166	3.1	0.08	0.3	0.3	0.09	B
24	1	43	6.6	19-23.7	155-14.6	1.3		10	181	3.2	0.08	0.3	0.3	0.07	B
24	1	44	14.3	19-23.4	155-14.8	3.7	1.4	16	108	2.6	0.05	0.3	0.6	0.08	B
24	2	2	27.5	19-23.5	155-14.7	1.7		10	175	3.0	0.17	0.5	0.5	0.07	B
24	2	5	11.0	19-23.2	155-15.0	4.0	1.1	12	149	2.1	0.10	0.5	1.1	0.09	B
24	6	11	37.5	19-21.4	155- 6.8	4.2		16	140	5.4	0.13	1.0	1.1	0.19	B
24	6	45	33.5	19-23.4	155-14.8	1.4		10	160	2.8	0.10	0.4	0.4	0.09	B
24	10	36	48.5	19-21.1	155-12.2	12.1		8	261	2.7	0.37	1.3	2.3	0.04	C
24	10	57	17.9	19-20.1	155-12.7	9.5		11	196	4.4	0.27	1.4	2.3	0.11	C
24	12	3	10.2	19-18.6	155-13.1	8.0*		6	221	7.1	0.20	1.4		0.07	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 24	12	58	16.6	19-19.3	155-17.1	10.1		6	196	1.6	0.30	1.1	2.2	0.02	C
24	13	18	31.3	19-24.7	155-16.3	4.9	1.4	8	230	1.2	0.67	2.5	3.0	0.15	C
24	14	28	29.9	19-20.5	155-12.9	10.2	1.6	14	151	3.5	0.08	0.5	C.9	0.07	B
24	15	0	13.5	19-22.6	155-13.2	4.3	1.7	16	118	1.0	0.07	0.5	C.8	0.12	B
24	15	27	22.7	19-23.8	155-16.9	2.2		5	173	0.7		0.0		0.02	D
24	16	2	22.2	19-25.9	155-28.2	8.0*		8	154	13.5	0.10	1.2		0.11	C
24	17	28	38.9	19-24.1	155-16.8	3.1	2.1	15	75	1.3	0.06	0.3	C.6	0.09	A
24	18	11	20.8	19-19.8	155-24.4	7.8		8	171	2.1	0.13	1.2	C.7	0.11	C
24	18	18	20.7	19-10.0	154-59.4	15.0*		19	276	28.7	0.26	2.1		0.21	D
24	18	40	46.7	19-24.2	155-17.4	1.3	0.5	10	108	0.9	0.05	0.3	C.3	0.09	A
24	18	56	15.0	19-24.2	155-17.4	C.9		10	84	0.9	0.06	0.3	C.4	0.09	A
24	18	58	54.9	19-24.2	155-17.6?	0.0	0.9	10	90	1.6	0.24	0.5	C.6	0.16	B
24	19	0	19.6	19-24.0	155-18.1	C.3	1.0	9	102	1.7	0.49	0.8	1.0	0.22	B
24	19	5	45.6	19-24.2	155-17.1	C.9	1.5	12	96	1.3	0.12	0.5	C.6	0.17	B
24	19	6	21.7	19-24.3	155-17.5	C.1	1.6	13	71	1.4	0.15	0.4	C.3	0.14	B
24	19	12	14.6	19-24.4	155-17.9	8.6	2.3	8	90	2.0	0.14	1.0	2.3	0.12	B
24	19	14	9.9	19-24.5	155-17.1?	0.0		8	113	4.4	2.98	0.8	5.8	0.14	B
24	19	22	28.9	19-24.1	155-17.8	4.9		11	104	4.6	0.06	0.5	0.7	0.12	B
24	22	8	19.7	19-23.4	155-17.6	1.6		10	131	3.6	0.17	0.6	C.6	0.10	B
24	23	12	55.8	19-23.4	155-17.7	3.9	1.5	6	139	3.6	0.07	0.4	1.1	0.03	B
24	23	32	44.0	19-23.4	155-17.7	1.3	1.2	6	139	3.5	0.44	1.5	1.6	0.16	B
24	23	40	11.2	19-24.0	155-18.2	1.8		5	137	2.7		0.0		0.06	D
24	23	53	32.3	19-20.7	155-13.8?	C.6	3.2	15	182	7.4	0.38	1.0	1.4	0.21	C
25	0	1	42.0	19-23.4	155-17.4	1.4	1.2	6	141	3.8	0.29	1.0	1.1	0.09	B
25	0	30	12.3	19-24.4	155-17.5?	2.3	1.7	7	144	1.3	0.23	1.0	C.9	0.11	B
25	0	52	42.7	19-18.9	155-19.0?	C.0*		7	218	8.0	0.12	0.7		0.08	C
25	1	5	13.4	19-23.4	155-17.8	3.5	1.2	7	140	3.3	0.08	0.5	1.3	0.06	B
25	1	7	27.7	19-23.1	155-18.3	4.9	1.5	8	198	2.7	0.19	1.2	1.1	0.14	C
25	1	21	0.2	19-23.4	155-18.0	3.9	1.7	7	207	3.1	0.17	0.7	1.3	0.06	B
25	1	42	21.8	19-23.6	155-17.6	3.2	1.4	7	136	2.6	0.04	0.3	C.7	0.03	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 25	1	46	45.4	19-23.6	155-17.6	4.8		9	137	2.6	0.08	0.6	0.7	0.10	B
25	1	48	41.9	19-23.6	155-17.4?	2.4	1.6	10	137	2.5	0.18	0.5	0.7	0.10	B
25	1	49	35.6	19-23.8	155-17.3?	2.8	1.9	9	135	2.2	0.09	0.8	1.6	0.14	B
25	2	2	22.4	19-23.4	155-17.7?	1.6	1.8	8	131	3.0	0.10	0.8	2.2	0.14	B
25	2	7	47.4	19-23.9	155-18.2	4.4	1.7	7	130	2.7	0.08	0.4	0.8	0.05	B
25	2	9	3.6	19-21.6	155-13.8	0.2	2.1	10	164	7.0	0.37	0.8	0.7	0.14	C
25	2	30	10.2	19-16.2	155-17.1?	8.0*	2.3	6	287	14.5	3.07	18.3		1.07	D
25	2	43	41.6	19-23.1	155-17.7?	2.8	1.4	7	145	3.6	0.22	0.4	0.8	0.04	B
25	2	49	16.4	19-23.2	155-15.8?	8.0*	2.0	7	281	3.7	0.29	2.9		0.30	D
25	2	52	11.2	19-22.0	155-17.0?	5.2	1.6	7	254	5.4	1.47	4.7	5.8	0.25	D
25	2	57	40.4	19-23.5	155-17.6	3.8	1.7	7	137	2.7	0.09	0.5	1.1	0.06	B
25	3	1	38.0	19-22.0	155-13.7?	0.3	2.8	20	125	6.8	0.74	1.6	2.6	0.43	C
25	3	10	52.1	19-22.3	155-17.5?	0.2	1.2	7	239	4.6	0.67	1.9	1.8	0.17	C
25	3	13	10.0	19-23.6	155-17.7	3.9	1.7	7	137	2.7	0.08	0.5	1.1	0.05	B
25	3	15	53.7	19-23.6	155-18.0	1.9	1.1	7	200	2.9	0.15	1.1	0.8	0.07	C
25	3	23	4.5	19-23.6	155-17.8?	2.3	1.1	8	135	2.7	0.11	0.4	0.4	0.06	B
25	3	26	54.0	19-23.3	155-18.1	2.3*	1.0	7	205	2.9	0.13	0.7		0.09	C
25	3	29	34.6	19-21.9	155-16.6?	8.0*	1.6	6	263	5.5	2.72	15.1		0.29	D
25	3	33	8.0	19-23.5	155-18.0	1.7	1.5	8	137	3.0	0.10	0.4	0.4	0.05	B
25	3	34	31.9	19-22.7	155-15.2?	0.0	2.3	12	136	5.1	1.93	0.7	3.7	0.14	B
25	3	43	50.1	19-24.4	155-16.8	1.0	2.7	16	106	1.0	0.20	0.7	0.7	0.20	B
25	3	47	5.6	19-22.3	155-17.4	1.1	1.6	7	228	4.8	0.27	0.8	0.7	0.06	C
25	3	50	55.0	19-23.3	155-17.7	4.8	1.5	8	141	3.2	0.07	0.5	0.6	0.07	B
25	4	1	9.2	19-23.1	155-17.7	4.2	2.0	12	135	3.6	0.09	0.7	0.8	0.15	B
25	4	3	37.3	19-23.4	155-17.5?	1.6	1.5	10	140	2.9	0.26	0.9	0.9	0.15	B
25	4	6	32.0	19-23.7	155-18.1	0.8	1.2	7	134	2.8	2.08	0.9	4.1	0.14	B
25	4	14	9.0	19-23.2	155-18.0	4.1	1.4	7	141	3.2	0.03	0.2	0.4	0.02	B
25	4	20	10.3	19-23.6	155-17.6	3.5	1.5	7	136	2.6	0.06	0.3	0.9	0.04	B
25	4	24	12.9	19-22.7	155-15.2	2.1*		5	155	5.0	0.09	0.7		0.05	C
25	4	27	46.8	19-23.9	155-17.5	2.0	1.4	8	133	2.1	0.08	0.4	0.3	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 25	4	29	14.4	19-23.6	155-17.6	3.9	1.6	7	137	2.7	0.08	0.4	1.0	0.04	B
25	4	31	48.2	19-22.9	155-17.2	2.0*	1.3	5	240	3.7	0.07	0.4		0.02	D
25	4	32	41.1	19-23.4	155-17.6	1.2	1.6	9	140	3.0	0.27	0.9	0.9	0.16	B
25	4	37	48.2	19-23.0	155-17.6	1.0	1.0	7	227	3.7	0.46	1.4	1.3	0.16	C
25	4	38	38.2	19-25.8	155-21.4	4.1	1.7	6	140	3.6	0.17	0.6	2.3	0.04	B
25	4	40	41.4	19-23.1	155-18.0	3.1	1.5	7	143	3.1	0.06	0.3	1.2	0.03	B
25	4	44	36.9	19-23.2	155-17.9	3.9	1.6	7	141	3.2	0.05	0.3	0.7	0.02	B
25	4	45	55.5	19-19.2	155-19.4	8.0*	2.2	9	176	7.0	0.19	1.6		0.21	C
25	5	6	23.4	19-26.4	155-22.7	2.8	1.6	6	166	4.2	0.44	1.2	7.8	0.08	C
25	5	9	41.0	19-24.2	155-17.0	1.3	1.5	8	129	1.3	0.15	0.6	0.6	0.12	B
25	5	24	4.3	19-23.3	155-18.1	4.2	1.6	6	139	2.8	0.08	0.4	1.0	0.03	B
25	5	25	16.9	19-22.1	155-18.4	1.9	2.1	9	158	5.8	0.34	0.8	1.2	0.10	C
25	5	30	19.9	19-21.4	155-18.9?	8.3	2.6	6	169	7.2	4.02	6.8	15.6	0.55	D
25	5	40	39.1	19-23.3	155-17.4	2.3	1.5	7	141	3.0	0.24	0.8	0.8	0.09	B
25	5	41	12.8	19-19.5	155-18.0	3.5	2.0	8	155	8.4	0.12	0.8	1.2	0.09	B
25	5	44	45.1	19-25.5	155-16.2	2.6	1.3	7	132	1.8	0.10	0.8	1.7	0.08	B
25	5	58	14.3	19-22.9	155-15.3	0.5	1.9	11	150	6.2	0.60	1.2	1.1	0.20	B
25	5	59	12.1	19-24.2	155-17.4	4.4	1.5	6	149	1.4	0.15	0.9	1.2	0.05	B
25	6	15	49.2	19-25.2	155-23.8?	0.0	1.8	9	134	7.7	0.69	1.1	1.3	0.18	B
25	6	22	1.4	19-23.6	155-17.7?	0.9	1.6	8	135	2.7	0.22	1.5	3.3	0.27	C
25	6	30	13.6	19-24.7	155-17.5	1.2	1.5	8	121	1.0	0.12	0.7	0.5	0.14	B
25	6	33	21.2	19-20.8	155-10.4	19.0	2.5	12	157	2.5	0.32	2.3	3.8	0.26	C
25	6	56	25.2	19-12.1	155-11.5	36.8	2.4	15	198	18.7	0.35	1.7	3.5	0.18	C
25	6	59	25.2	19-18.7	155-18.6?	8.0*		5	265	8.7	0.35	4.5		0.19	D
25	7	5	32.8	19-23.3	155-18.2	3.5	1.5	6	203	2.8	0.05	0.2	0.5	0.01	B
25	7	8	24.9	19-22.9	155-19.6	2.4	1.1	7	194	1.4	0.10	0.6	1.5	0.05	B
25	7	22	29.5	19-21.5	155-20.2?	0.0	2.0	10	144	4.2	2.24	1.1	4.3	0.22	C
25	7	23	53.8	19-24.6	155-17.1	3.7	1.6	8	139	0.5	0.11	0.8	0.9	0.09	B
25	7	35	35.9	19-23.5	155-17.5?	0.9	1.3	9	138	2.8	0.20	1.3	3.0	0.27	C
25	7	36	0.6	19-22.9	155-17.4?	0.8	1.4	8	147	3.7	2.82	1.4	10.7	0.21	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 25	7	40	13.2	19-22.0	155-19.1?	2.4	2.1	7	157	6.6	0.47	2.1	4.8	0.19	C
25	8	3	34.1	19-23.6	155-17.9?	2.4	1.7	10	136	2.9	0.26	0.8	C.9	0.15	C
25	8	12	9.3	19-25.0	155-23.3	4.2	3.0	6	109	8.8	0.16	1.4	2.2	0.12	B
25	9	32	14.5	19-19.3	155-19.2?	C.0	2.3	15	151	7.4	0.49	0.8	C.9	0.17	C
25	10	16	31.5	19-22.6	155-20.0	5.1	2.2	7	139	6.6	0.C8	0.9	C.6	0.08	B
25	11	24	58.9	19-17.6	155-19.4	3.5	1.7	12	195	8.3	0.16	0.9	1.0	0.15	C
25	12	29	34.0	19-19.9	155-19.1	4.0	2.1	16	143	7.0	0.C8	0.6	C.6	0.15	B
25	12	53	59.2	19-18.3	155-19.9?	C.0	3.C	20	152	6.8	0.37	0.8	C.7	0.22	C
25	13	35	8.0	19-26.2	155-26.2	C.7	2.3	13	115	8.3	0.26	0.4	C.4	0.09	B
25	13	37	35.4	19-26.6	155-27.3	C.3	2.4	10	142	9.3	0.45	0.9	C.7	0.16	B
25	13	39	30.5	19-24.4	155-24.3	6.9	3.0	14	102	7.9	0.14	1.1	C.9	0.21	B
25	13	56	6.7	19-20.8	155-19.8	6.3	1.9	9	154	5.3	0.08	0.7	C.5	0.09	B
25	14	47	25.2	19-16.5	155-16.5	1.1	1.8	8	162	15.6	1.22	0.7	4.5	0.09	C
25	15	42	40.5	19-19.9	155-19.0	3.8	2.3	16	143	7.2	0.C9	0.6	C.7	0.15	B
25	15	50	29.3	19-25.1	155-25.5?	C.0	1.7	9	76	9.4	0.98	1.3	20.9	0.24	B
25	16	25	45.6	19-25.3	155-21.2	6.1	2.4	13	122	4.3	0.11	1.1	C.9	0.23	C
25	17	0	34.5	19-22.6	155-20.5?	C.0	1.9	7	130	14.1	1.10	2.4	1.8	0.30	C
25	17	42	43.8	19-25.2	155-23.6	4.7	1.8	7	251	6.7	0.63	3.5	2.8	0.20	D
25	19	7	56.7	19-19.6	155-19.0	1.5	2.0	16	172	7.6	0.32	0.8	1.1	0.15	C
25	19	25	43.4	19-20.9	155-21.6	5.9	1.8	7	143	3.3	0.C6	0.7	C.5	0.07	B
25	19	38	39.3	19-20.6	155-20.8	4.5	1.8	6	214	4.4	0.13	0.7	1.2	0.02	B
25	20	16	32.6	19-21.1	155-19.5	8.0*	1.7	7	213	4.9	0.34	2.7		0.17	C
25	20	26	26.1	19-23.6	155-25.2	1.7	2.0	14	69	7.0	0.28	0.6	C.9	0.14	B
25	20	43	45.7	19-21.1	155-19.1	8.0*	1.5	6	239	4.9	0.65	4.3		0.18	D
25	20	46	12.2	19-20.0	155-19.2	8.0*		5	258	6.9	1.10	6.9		0.15	D
25	20	59	4.8	19-19.7	155-19.2	4.0	2.0	16	148	7.2	0.11	0.7	0.8	0.15	B
25	21	3	20.4	19-20.7	155-21.0	6.9	1.7	8	174	4.1	0.23	1.8	1.2	0.16	C
25	21	36	3.C	19-21.2	155-19.7	2.4	1.5	7	209	4.6	0.47	2.5	19.9	0.14	C
25	21	56	20.2	19-14.2	155-17.0?	16.0*	2.0	6	318	15.7	1.10	9.4		0.23	D
25	21	59	23.5	19-24.6	155-24.0	8.0*	1.7	6	195	7.7	0.10	0.7		0.07	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 25	22	6	0.6	19-24.6	155-23.1	8.0*	1.9	6	175	6.1	0.16	1.2		0.11	C
25	22	19	58.8	19-23.3	155-23.1	8.0*		4	174	5.7		0.0		0.01	D
25	22	27	10.7	19-23.6	155-27.0	0.6	2.2	10	86	9.0	0.38	0.6	C.7	0.11	B
25	22	30	49.9	19-23.9	155-27.2	C.5	1.4	10	146	9.6	0.73	1.3	1.3	0.19	C
25	22	31	31.5	19-23.9	155-26.1	2.4	2.4	13	114	8.5	0.10	0.6	1.1	0.15	B
25	22	37	46.6	19-23.6	155-27.1	2.8	1.4	10	144	9.1	0.23	1.7	2.1	0.25	C
25	22	41	59.4	19-22.8	155-24.7	7.3	3.2	14	99	5.3	0.C9	C.9	C.7	0.16	B
25	22	44	9.5	19-23.5	155-27.2?	C.8	1.9	10	144	9.1	0.44	0.8	C.8	0.13	B
25	22	48	47.0	19-21.6	155-22.4	1.3	1.9	10	126	3.0	0.39	1.4	1.7	0.24	C
25	22	58	18.9	19-21.0	155-21.4	3.2	1.5	7	189	3.6	0.19	1.1	2.9	0.08	C
25	22	59	59.3	19-17.8	155-19.7	8.0*		5	240	7.7	0.43	2.7		0.10	D
25	23	2	13.3	19-22.7	155-23.7	1.5	1.8	12	159	4.7	0.41	1.0	1.3	0.24	C
25	23	5	29.8	19-23.3	155-26.1	3.3	1.9	11	126	7.4	0.15	1.2	1.6	0.20	C
25	23	7	45.5	19-19.1	155-16.3?	8.0*	1.8	6	281	10.4	0.67	4.2		0.33	D
25	23	18	28.3	19-24.2	155-24.9	C.9	2.2	12	72	8.0	0.49	1.0	C.8	0.21	B
25	23	26	52.6	19-20.4	155-20.2	C.6	1.9	11	134	5.4	1.59	0.6	3.0	0.10	B
25	23	29	59.3	19-20.6	155-20.8	6.2	1.9	9	129	4.5	0.C4	0.4	C.4	0.06	B
25	23	36	22.9	19-21.4	155-22.5	4.1		6	164	2.6	0.40	2.4	5.4	0.14	C
25	23	44	6.5	19-20.4	155-20.5	1.1	1.8	8	155	4.9	0.50	1.4	1.9	0.15	C
25	23	46	33.9	19-21.6	155-22.3	3.0	1.9	6	135	3.2	0.24	1.2	7.2	0.12	C
25	23	48	9.5	19-20.4	155-22.0?	C.0	1.9	9	146	7.2	1.32	2.4	2.4	0.38	C
25	23	51	10.7	19-26.2	155-25.9	1.2	2.4	16	76	8.0	0.30	0.6	1.0	0.16	B
25	23	56	4.4	19-19.1	155-19.3	1.7	1.9	11	177	7.3	0.93	1.4	3.5	0.28	C
25	23	57	29.4	19-20.8	155-21.0	4.6	1.9	6	148	4.2	0.07	0.3	1.0	0.03	B
26	0	8	21.8	19-22.1	155-22.6	3.2	2.0	9	141	3.8	0.10	1.0	1.4	0.15	B
26	0	21	44.6	19-20.6	155-20.6	6.9	1.9	9	152	4.7	0.07	0.6	C.5	0.07	B
26	0	23	54.7	19-20.8	155-20.3	2.2	1.7	7	152	5.3	0.04	0.3	0.6	0.03	B
26	C	27	30.1	19-21.9	155-23.3?	3.0	1.9	10	117	3.1	0.17	1.6	2.2	0.27	B
26	0	29	56.6	19-18.2	155-2C.8	7.2	2.2	10	182	10.9	0.22	1.7	1.3	0.24	C
26	0	52	43.4	19-2C.4	155-2C.4?	C.9	1.9	9	155	5.0	3.23	1.6	12.3	0.24	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 26	1	0	45.3	19-15.6	155-19.6?	0.0	2.0	14	177	10.7	0.23	0.6	C.4	0.12	C
26	1	6	33.9	19-26.9	155-26.6	C.9	2.1	14	73	7.9	0.30	0.5	C.6	0.13	B
26	1	21	5.6	19-20.2	155-2C.4	C.2	2.1	11	133	5.1	3.00	1.1	5.7	0.19	C
26	1	28	36.1	19-22.6	155-14.6	C.8	2.0	9	153	6.0	0.41	1.0	1.6	0.13	C
26	2	8	10.0	19- 7.6	155-20.6?	45.5	2.6	14	236	13.2	0.92	4.0	9.4	0.39	D
26	2	27	42.2	18-37.8	155-2C.C?	8.0*	2.8	5	356	78.4	7.44	0.0		3.00	D
26	2	36	44.9	19-23.7	155-25.1	C.4	1.7	9	143	7.2	0.53	1.C	C.9	0.14	B
26	2	37	33.2	19-15.5	155-21.C?	C.0	2.0	11	165	9.6	5.44	0.9	1C.3	0.16	C
26	2	55	25.9	19-26.3	155-25.4	1.8	1.8	10	182	7.4	0.26	0.7	C.9	0.11	C
26	2	56	47.8	19-23.2	155-24.4	2.4	3.4	15	78	5.8	0.11	0.8	1.2	0.19	B
26	2	58	23.7	19-21.6	155-25.1?	8.C*	2.9	4	354	10.2		0.0		0.07	D
26	3	0	12.5	19-21.3	155-22.9	8.8	2.0	11	111	2.1	0.13	1.5	2.4	0.24	B
26	3	4	8.3	19-21.6	155-19.4	2.4*	1.3	7	163	4.0	0.09	0.5		0.08	C
26	3	4	54.8	19-21.3	155-2C.7?	1.1	1.6	9	143	4.8	C.93	2.5	3.2	0.32	C
26	3	12	3.C	19-16.2	155-22.5	8.0*		9	165	7.4	0.20	1.6		0.23	C
26	3	25	24.1	19-23.4	155-25.C?	2.3	2.2	15	67	6.5	0.18	1.2	1.6	0.30	B
26	3	27	33.7	19-26.3	155-24.4	8.0*		6	185	6.7	0.25	2.0		0.16	C
26	3	36	36.7	19-16.3	155-21.8?	C.0		10	157	7.6	0.30	1.5	19.6	0.26	C
26	3	54	19.2	19-21.5	155-19.5	4.5	1.8	5	164	4.1		0.0		0.01	D
26	4	4	24.4	19-24.2	155-24.8	4.4	2.0	9	143	7.9	0.21	1.6	2.3	0.20	C
26	4	11	39.6	19-23.8	155-24.1?	C.5	1.8	11	134	6.9	0.90	1.8	1.6	0.37	C
26	4	23	59.3	19-23.5	155-22.C?	0.0	1.3	7	149	4.1	0.75	1.4	1.4	0.20	B
26	4	33	41.9	19-15.3	155-19.8?	C.0	2.5	18	159	11.0	0.28	0.7	C.5	0.17	C
26	4	47	38.3	19-15.8	155-21.4	8.0*		6	164	8.7	0.20	1.9		0.15	C
26	4	55	23.5	19-16.8	155-23.C?	C.4*	2.2	10	131	6.2	0.11	0.9		0.17	C
26	5	37	55.1	19-23.8	155-27.C	3.3	1.4	8	163	12.7	C.23	1.9	2.4	0.21	C
26	5	59	45.0	19-23.9	155-27.2	4.0	2.0	9	166	12.9	0.22	1.7	1.8	0.22	C
26	6	18	2.0	19-17.9	155-27.2?	8.0*	2.5	7	283	21.2	1.99	17.0		2.55	D
26	6	28	3.4	19-17.1	155-24.9	9.8	2.4	6	143	3.4	0.28	3.9	4.7	0.22	C
26	8	15	11.0	19-16.5	155-22.9	8.0*		6	148	6.9	0.18	1.9		0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 26	8	22	57.5	19-17.6	155-23.1?	3.9	1.6	10	154	4.9	0.13	1.2	1.0	0.16	C
26	9	28	14.5	19-14.6	155-20.7?	C.0	2.0	14	168	11.0	6.20	1.3	11.5	0.23	C
26	12	41	11.4	19-14.5	155-21.1	C.4	2.3	12	168	10.4	0.43	0.8	C.8	0.15	C
26	15	16	46.6	19-22.1	155-22.7?	1.3	2.6	10	108	3.6	0.42	1.5	1.8	0.26	B
26	15	35	18.3	19-23.9	155-24.5?	C.0	2.5	14	100	7.1	0.60	0.9	1.1	0.22	B
26	15	59	33.9	19-25.5	155-27.4	2.0	2.1	11	152	10.6	0.59	1.2	2.0	0.20	C
26	17	42	52.3	19-23.5	155-23.9?	C.0		6	195	6.2	7.72	3.0	15.4	0.20	C
26	17	47	26.6	19-13.4	155-20.1?	C.0	3.0	18	164	8.8	0.77	1.2	1.4	0.26	C
26	23	9	56.4	19-13.9	155-19.9?	0.0		9	223	7.7	9.03	2.1	17.0	0.22	C
27	1	6	57.2	19-15.4	155-20.6?	C.7	1.9	14	183	5.8	0.62	1.5	2.0	0.27	C
27	2	42	40.3	19-21.6	155-24.0	7.0	1.6	12	62	2.9	0.10	0.9	C.8	0.19	B
27	2	54	58.3	19-21.7	155-23.5?	7.4	2.2	15	49	2.8	0.C9	0.8	C.9	0.21	B
27	4	34	51.6	19-20.2	155-20.1	3.9		12	74	4.7	0.09	0.7	C.9	0.17	B
27	5	44	50.8	19-14.6	155-20.5	1.8	1.7	14	162	7.0	0.52	1.2	1.9	0.25	C
27	7	2	8.7	19-15.0	155-20.5	C.3		12	177	6.4	0.66	1.5	1.3	0.25	C
27	7	25	36.8	19-16.8	155-23.4	C.7*	2.3	8	181	6.3	0.20	1.3		0.15	C
27	9	16	51.2	19-22.5	155-19.5	1.7	1.3	8	96	2.3	0.27	1.0	1.1	0.18	B
27	9	44	22.3	19-15.8	155-22.1	2.9	2.4	13	144	7.3	0.14	1.2	1.7	0.24	C
27	11	40	27.1	19-15.0	155-20.9	6.7	1.9	13	154	6.7	0.C8	0.7	C.6	0.12	C
27	12	38	39.3	19-18.2	155-12.5	6.8	1.7	12	159	8.4	0.12	0.9	C.7	0.16	C
27	14	2	41.2	19-18.0	155-23.2	7.7	1.7	9	117	4.1	0.17	1.7	1.1	0.22	B
27	14	11	8.1	19-15.5	155-22.0	2.2	2.3	12	147	7.4	0.19	1.4	1.8	0.26	C
27	14	30	48.9	19-15.2	155-22.1	C.5*	2.1	11	149	8.0	0.10	0.8		0.19	C
27	15	9	30.6	19-22.4	155-24.1	6.0	1.5	9	127	4.3	0.13	1.0	1.0	0.15	B
27	15	53	52.8	19-22.7	155-22.7	1.0	1.6	7	164	4.7	0.20	0.7	C.8	0.09	B
27	16	0	58.9	19-18.1	155-14.9	8.3	1.5	7	211	5.8	0.30	2.5	3.8	0.14	C
27	16	16	30.8	19-12.3	155-18.4?	0.0	1.9	9	215	10.4	9.C8	2.0	17.2	0.20	C
27	16	42	0.6	19-16.5	155-22.8	3.0	1.2	8	135	6.9	0.11	1.0	1.7	0.12	B
27	16	59	8.0	19-15.6	155-21.9	C.7	1.9	15	146	7.1	5.41	0.9	1C.2	0.21	C
27	17	3	4C.3	19-20.6	155-19.6	5.3		8	118	4.0	0.C6	0.5	C.4	0.06	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 27	17	10	33.0	19-15.8	155-22.7	4.2		9	140	7.0	0.10	1.0	1.2	0.14	B
27	17	28	49.9	19-17.1	155-23.1?	8.0*	1.0	6	133	5.8	0.29	3.4		0.31	C
27	19	37	24.3	19-16.2	155-22.3?	0.0	2.2	18	139	7.2	0.37	0.7	0.7	0.19	B
27	19	41	39.8	19-15.3	155-19.8	8.0*	1.7	5	255	5.4	1.26	8.0		0.24	D
27	20	6	21.2	19-22.5	155-23.0?	0.8	1.7	10	118	4.3	0.25	0.6	1.0	0.12	B
27	20	12	6.9	19-16.6	155-22.4	2.3	1.7	13	136	6.7	0.11	0.8	1.4	0.17	B
27	20	26	6.3	19-25.3	155-26.0	2.3	1.8	13	77	9.6	0.09	0.6	1.2	0.16	B
27	20	48	34.6	19-16.1	155-22.0	1.9	2.9	20	156	6.8	0.35	0.9	1.2	0.22	C
27	21	13	29.1	19-14.2	155-23.3	8.0*	1.7	10	149	7.2	0.13	1.3		0.23	C
27	21	22	32.3	19-12.5	155-21.9?	0.0	1.8	12	164	11.1	4.42	0.7	8.3	0.13	C
27	21	50	29.4	19-21.4	155-24.0?	7.6	1.7	9	110	2.4	0.12	1.2	1.0	0.17	B
27	21	50	50.3	19-22.4	155-23.1	6.6	1.8	10	174	4.1	0.21	1.4	1.1	0.17	C
27	21	54	39.0	19-21.3	155-23.1?	8.5	1.3	9	107	2.0	0.07	0.8	0.7	0.12	B
27	22	50	2.8	19-25.8	155-24.9	8.0*	2.1	12	99	8.2	0.08	0.7		0.13	B
27	22	51	31.8	19-16.7	155-22.8	5.3	2.0	12	134	6.5	0.07	0.6	0.6	0.11	B
27	22	53	46.4	19-12.7	155-21.9?	0.0	1.9	16	163	10.8	5.72	1.0	10.7	0.20	C
27	23	52	39.6	19-15.0	155-21.9	0.5	2.2	18	151	7.9	0.49	0.8	0.9	0.20	C
27	23	54	59.5	19-20.6	155-11.8?	0.0	2.1	13	139	9.8	0.65	1.1	1.2	0.23	C
28	0	9	24.1	19-25.3	155-27.0?	0.0	3.0	16	62	10.5	4.15	0.6	7.8	0.15	B
28	1	3	20.7	19-16.6	155-20.5?	3.2	1.7	11	146	4.1	0.12	0.9	1.6	0.16	C
28	1	13	7.6	19-25.6	155-22.9	5.4	2.2	13	123	5.4	0.10	0.8	0.9	0.18	B
28	1	57	15.8	19-21.8	155-23.3	7.0	2.0	16	49	2.9	0.07	0.7	0.6	0.17	B
28	2	24	4.1	19-14.2	155-20.6?	0.0	3.1	20	159	7.8	3.70	0.8	6.9	0.19	C
28	2	28	17.9	19-25.7	155-25.8?	0.0	1.9	10	105	8.7	6.39	0.7	12.2	0.16	B
28	2	50	13.1	19-22.9	155-24.9	4.2	2.6	16	68	5.7	0.07	0.6	0.8	0.13	B
28	3	15	28.3	19-16.0	155-22.3	1.4	1.6	16	141	7.3	1.55	0.8	5.7	0.19	C
28	3	19	1.1	19-16.9	155-23.1	0.7*	1.7	9	134	6.0	0.11	0.9		0.19	C
28	3	19	58.7	19-16.7	155-22.3	8.0*	1.6	8	147	6.8	0.16	1.5		0.21	C
28	3	32	47.8	19-16.9	155-23.3	4.4	1.6	10	133	6.0	0.07	0.7	1.0	0.12	B
28	4	0	54.0	19-22.5	155-23.9	7.0	3.4	17	48	4.4	0.08	0.8	0.7	0.19	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 28	4	4	5.3	19-20.8	155-18.1	6.1	1.0	8	75	1.7	0.14	0.5	1.2	0.06	A
28	4	5	15.8	19-15.7	155-21.5?	C.0	1.8	14	147	6.5	6.45	0.8	12.2	0.18	C
28	4	9	24.7	19-23.1	155-23.5?	C.0	2.1	13	158	5.4	1.59	0.6	3.0	0.13	C
28	5	19	47.7	19-19.6	155-19.2	6.2	1.5	8	117	3.3	0.12	0.7	C.8	0.08	A
28	6	1	17.7	19-12.8	155-21.4	4.5	1.5	11	182	10.7	0.17	1.1	1.1	0.15	C
28	7	21	16.0	19-13.4	155-21.6?	C.C	1.5	15	167	9.9	5.76	0.9	1C.9	0.18	C
28	7	23	17.0	19-25.8	155-24.1?	8.2	2.1	11	175	6.9	5.18	2.5	18.9	C.41	D
28	9	26	42.6	19-17.5	155-15.1	7.5		7	216	6.3	0.36	2.8	1.1	0.17	C
28	10	9	12.7	19-14.6	155-21.8	C.1	2.6	20	155	8.4	0.38	0.8	C.7	0.20	C
28	12	42	7.7	19-20.0	155-19.2	7.0	1.8	8	109	3.2	0.13	1.0	C.9	0.14	B
28	13	7	40.4	19-20.3	155- 8.2	4.6	2.1	11	163	4.5	C.13	1.1	1.0	0.17	C
28	14	47	19.1	19-14.6	155-22.4	3.5	1.8	10	176	8.2	0.C8	0.7	1.0	0.09	B
28	17	34	26.8	19-15.0	155-22.C?	C.C	2.0	13	150	8.1	6.32	0.9	12.0	0.20	C
28	17	53	39.9	19-15.0	155-21.9	8.0*		11	168	7.9	0.10	0.9		0.13	C
28	18	7	6.1	19-19.6	155-12.8	7.6	1.3	13	147	5.3	0.09	0.9	C.6	0.10	B
28	19	17	13.1	19-20.3	155-17.7	26.5	1.8	17	73	0.6	0.17	1.0	1.7	0.12	B
28	20	33	17.0	19-2C.6	155-19.7	1.8*		7	104	4.1	0.06	0.4		0.08	C
28	23	C	0.2	19-14.7	155-21.7	C.8	2.3	19	166	8.2	0.44	1.0	C.8	0.22	C
29	0	58	47.5	19-14.5	155-21.7?	C.0	2.0	13	173	8.2	0.59	1.2	1.1	0.20	C
29	1	38	48.3	19-14.2	155-21.3?	C.0	2.5	14	172	8.4	5.49	0.8	10.4	0.15	C
29	2	0	18.5	19-13.6	155-22.2?	0.0		10	179	9.4	6.75	1.0	12.9	0.14	C
29	2	6	3.6	19-12.8	155-21.2?	0.0	2.4	14	193	10.5	5.33	0.9	1C.1	0.16	C
29	2	13	22.2	19-13.2	155-21.4?	0.0	2.7	21	180	1C.1	0.37	0.9	C.6	0.21	C
29	3	7	6.5	19-14.6	155-21.9?	0.0	2.2	18	155	8.5	0.35	0.6	C.6	0.13	C
29	4	19	55.3	19-14.5	155-21.9	8.0*	1.3	8	171	8.5	0.20	1.8		0.19	C
29	4	25	22.8	19-15.9	155-2C.9	3.1		12	149	5.5	0.13	1.0	1.5	0.18	B
29	4	41	45.4	19-13.8	155-21.3?	0.0	2.5	21	165	9.0	0.37	1.0	0.7	0.22	C
29	4	58	2.0	19-15.9	154-56.7	43.7	2.7	21	234	13.1	0.43	2.2	2.9	0.12	C
29	6	10	56.8	19-12.4	155-18.5	C.2	2.5	27	174	10.3	0.34	0.8	C.6	0.24	C
29	6	19	58.4	19-13.0	155-21.4?	C.0	2.1	18	162	10.4	4.29	0.7	8.1	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 29	6	26	32.4	19-13.4	155-18.6	3.4		13	179	8.3	0.19	1.1	1.2	0.20	C
29	6	39	6.7	19-12.5	155-21.5?	C.0	2.0	12	195	11.2	6.63	1.2	12.6	0.18	C
29	7	0	16.6	19-22.6	155-24.2	6.9	2.1	22	66	4.6	0.07	0.6	C.5	0.19	B
29	8	9	30.5	19-22.4	155-22.2	5.5	1.2	8	146	4.5	0.26	1.5	2.2	0.19	B
29	8	40	18.0	19-19.8	155- 7.9	3.4	1.8	15	171	5.4	0.15	1.1	1.1	0.21	C
29	10	16	21.6	19-15.4	155-22.1	3.7	2.3	14	147	7.7	0.07	0.6	C.8	0.11	B
29	12	3	2.0	19-18.9	155-14.3	3.5	2.4	16	174	5.8	0.17	1.0	1.4	0.24	C
29	16	7	24.2	19-21.6	155-23.3?	8.0	1.9	12	117	2.6	0.06	0.6	C.5	0.10	B
29	16	38	38.5	19-16.3	155-20.8	5.0	2.2	18	147	4.9	0.09	0.7	C.6	0.15	B
29	18	34	15.9	19-23.2	155-25.6	6.8	1.4	16	123	6.8	0.13	1.0	C.9	0.22	C
29	19	43	8.8	19-19.2	155-14.8	28.8	1.4	18	164	4.9	0.14	0.9	1.3	0.09	B
29	19	50	52.3	19-16.1	155-22.4?	0.0	2.0	17	140	7.5	3.75	0.6	7.1	0.13	C
29	19	56	4.5	19-16.2	155-22.8	C.6*		14	137	6.8	0.08	0.7		0.15	C
29	22	13	14.6	19-14.4	155-22.3	C.7*	1.8	12	154	8.6	0.10	0.8		0.16	C
29	22	19	53.6	19-21.6	155-22.9?	7.5		15	106	2.6	0.08	0.6	C.7	0.16	B
29	22	26	56.1	19-15.4	155-20.3	2.7	3.1	24	153	5.6	C.12	0.7	C.9	0.19	C
29	23	27	19.0	19-16.0	155-21.2?	3.5	1.7	17	147	5.8	1.48	0.7	5.5	0.17	C
30	1	11	52.3	19-30.8	155-41.7	1.7	2.2	20	107	23.7	1.33	0.8	4.8	0.14	B
30	1	16	25.9	19-24.9	155-24.7?	5.5	1.8	17	76	8.6	0.75	C.9	2.8	0.22	C
30	1	22	25.3	19-20.6	155-19.5	3.7		8	100	3.8	0.13	0.3	2.3	0.05	B
30	1	22	28.6	19-16.8	155-21.7	C.1	2.3	12	168	6.9	0.42	0.9	C.8	0.13	C
30	1	34	55.2	19-16.9	155-20.8?	3.9		11	158	4.3	0.11	0.8	C.9	0.11	C
30	1	42	59.5	19-16.4	155-20.0	1.8	1.7	16	163	3.8	1.19	0.7	4.4	0.17	C
30	1	50	41.4	19-17.0	155-20.5	6.1	1.5	12	160	3.7	0.09	0.7	C.7	0.12	C
30	2	21	18.6	19-16.7	155-22.5	8.0*	1.5	7	135	6.5	0.21	2.1		0.27	C
30	2	31	35.4	19-17.8	155-22.0	8.0*	1.3	9	166	5.0	0.14	1.1		0.13	C
30	2	48	28.2	19-14.0	155-21.4?	0.0	2.8	23	158	8.8	3.89	0.8	7.3	0.19	C
30	3	1	30.5	19-22.3	155-25.2	1.7		16	118	5.0	0.63	0.7	2.3	0.23	B
30	3	40	12.0	19-14.0	155-21.4	0.3	2.4	22	159	8.8	0.44	0.8	C.8	0.18	C
30	3	43	21.6	19-25.2	155-28.1?	7.1	2.2	23	63	12.0	0.08	0.6	C.6	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 30	3	47	25.8	19-12.4	155-19.1	8.0*	1.8	7	230	10.2	0.23	1.9		0.07	D
30	4	22	0.2	19-18.7	155-13.6	8.0*	1.6	8	214	7.1	0.22	1.6		0.13	C
30	4	46	16.7	19-14.8	155-22.1	8.0*	1.2	9	180	8.5	0.11	1.0		0.11	C
30	4	57	50.1	19-20.2	155- 7.5	8.0*	2.0	10	164	5.3	0.13	1.3		0.16	C
30	5	14	38.5	19-21.0	155-22.7?	8.3		14	104	1.7	0.10	1.0	0.8	0.19	B
30	5	19	41.2	19-15.5	155-21.1?	2.3	2.7	24	151	6.3	0.11	0.7	0.8	0.20	C
30	5	57	58.2	19-16.4	155-21.6	4.9	1.7	17	142	5.9	0.06	0.6	0.6	0.12	B
30	6	36	26.8	19-15.9	155-20.8	8.0*	1.8	11	181	5.3	0.13	1.2		0.16	C
30	7	12	33.7	19-18.0	155-14.6	8.0*	1.7	15	188	6.3	0.13	0.9		0.13	C
30	8	9	37.6	19-14.7	155-22.1?	0.0	2.4	20	153	8.7	3.76	0.7	7.1	0.18	C
30	8	11	58.9	19-21.2	155-17.1	32.2	2.6	24	99	2.1	0.20	1.2	2.0	0.16	B
30	8	37	14.7	19-14.9	155-21.8	0.8	2.4	24	153	9.1	0.31	0.6	0.6	0.17	C
30	9	14	56.3	19-14.4	155-21.5?	0.0	2.5	19	156	8.4	4.26	0.7	8.0	0.18	C
30	10	54	47.1	19-20.3	155-19.9	6.1	1.7	13	86	4.5	0.08	0.6	0.7	0.13	B
30	12	48	9.8	19-17.5	155-16.6	27.2		17	207	3.7	0.20	1.1	1.6	0.09	C
30	12	50	56.2	19-19.1	155-15.1	5.7	2.6	20	143	4.4	0.12	0.8	0.7	0.22	C
30	16	4	25.9	19-14.6	155-22.4?	0.0	2.2	16	151	8.2	4.25	0.6	8.0	0.12	C
30	17	32	39.4	19-18.6	155-13.1	0.0	2.1	18	181	7.2	0.72	1.2	1.2	0.28	C
30	17	44	27.2	19-14.0	155-21.9?	0.0	2.5	22	157	9.3	4.33	0.7	8.2	0.19	C
30	17	46	29.3	19-14.2	155-21.6?	0.0	2.7	23	157	8.8	3.60	0.6	6.8	0.15	C
30	18	49	28.9	19-14.3	155-21.3	0.8	2.5	28	157	8.2	0.42	0.8	0.8	0.23	D
30	19	9	2.0	19-17.9	155-12.9	8.0*		10	236	8.5	0.44	2.9		0.27	D
30	19	17	31.7	19-14.6	155-22.0	0.2*	1.8	12	180	8.6	0.13	0.9		0.16	C
30	21	27	19.9	19-15.3	155-20.4?	0.0	2.4	22	167	10.4	3.08	0.6	5.8	0.15	C
30	21	28	24.2	19-15.3	155-19.8?	0.0	3.8	17	155	10.9	0.78	2.1	1.4	0.35	D
30	22	45	31.5	19-16.4	155-20.6	2.5	2.0	19	147	4.4	0.09	0.6	1.2	0.16	B

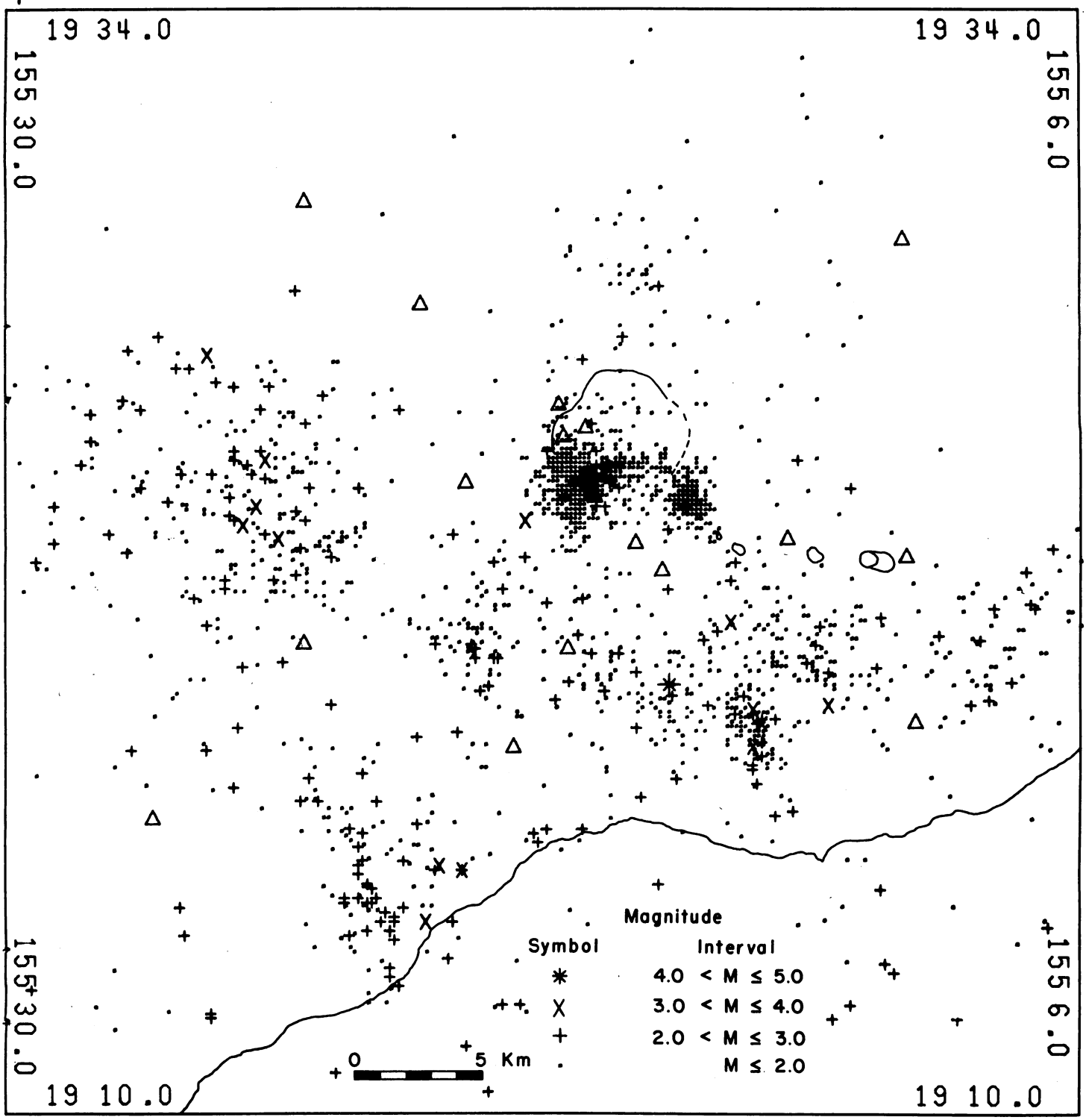

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 3. Felt earthquakes

Date	Time H	M	S	Magnitude	Felt report
Jul 2	17	26	04.5[1]	4.5	Hilo, Kamuela
3	09	16	15.5	3.8	Hilo, Volcano, Pahala
5	00	16	44.5	3.3	Hilo
7	20	16	48.5	4.1	Island-wide
8	19	36	10.6	2.9	Captain Cook
25	13	36	30.1	2.2	Kapapala
26	15	08	50.5	3.1	Kapapala
28	20	15	09.7	3.4	Hilo, Kurtistown, Kapapala
30	17	23	32.0	2.6	Hawaiian Volcano Observatory
Aug 1	01	38	23.3	3.6	Kealakekua
3	14	09	14.9	3.8	Volcano, Hilo
4	01	36	44.7	4.2	Kealakekua, Kamuela, Kohala, Kapapala
5	18	14	28.6	2.8	Kapapala
9	13	55	36.7	1.8	Hawaiian Volcano Observatory
9	14	25	50.9	2.5	Hawaiian Volcano Observatory
10	08	12	26.3	3.0	Volcano
10	12	39	16.9	2.5	Hawaiian Volcano Observatory
11	02	50	47.9	3.0	Kealakekua, Honokahau, Kainaliu
11	04	22	14.9	2.9	Hawaiian Volcano Observatory
12	04	20	25.8	2.6	Volcano
15	15	36	07.9	4.9	Island-wide
15	22	18	37.4	3.9	Hilo, Volcano, Pahoa, Kurtistown, Kapapala
18	17	38	52.1	2.4	Volcano
Sep 1	05	37	10.3	2.5	Kapapala
6	20	46	25.1	1.8	Hawaiian Volcano Observatory
7	19	56	07.3	3.7	Hilo, Volcano
9	09	25	08.9	2.6	Hawaii National Park
11	16	00	34.1	3.1	Volcano
26	02	56	47.8	3.4	Hilo, Kapapala
26	17	47	26.6	3.0	Kapapala
27	20	48	34.6	2.9	Kapapala
28	00	09	24.1	3.0	Kapapala
28	04	00	54.0	3.4	Hilo, Kapapala
28	04	09	24.7	2.1	Kapapala
29	04	41	45.4	2.5	Kapapala
29	06	10	56.8	2.5	Kapapala
30	01	22	28.6	2.3	Kapapala
30	17	46	29.3	2.7	Kapapala
30	21	28	24.2	3.8	Kapapala, Volcano

[1] Not listed in Summary of Seismic Events; preliminary location 19°45'N., 153°50'W., at 13 km depth.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
EAST KOAE	EKO	19 22.17	155 14.99	1009	3				Discontinued 9/24/71
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	3				Installed 9/29/71
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	Installed 8/18/71
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			Relocated 9/30/71
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				Installed 9/30/71
WEST PIT	WPT	19 24.70	155 17.50	1115	3	1.34			Destroyed 9/24/71
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KAMUELA	KAM	20 1.90	155 42.00	740	2	0.7			
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

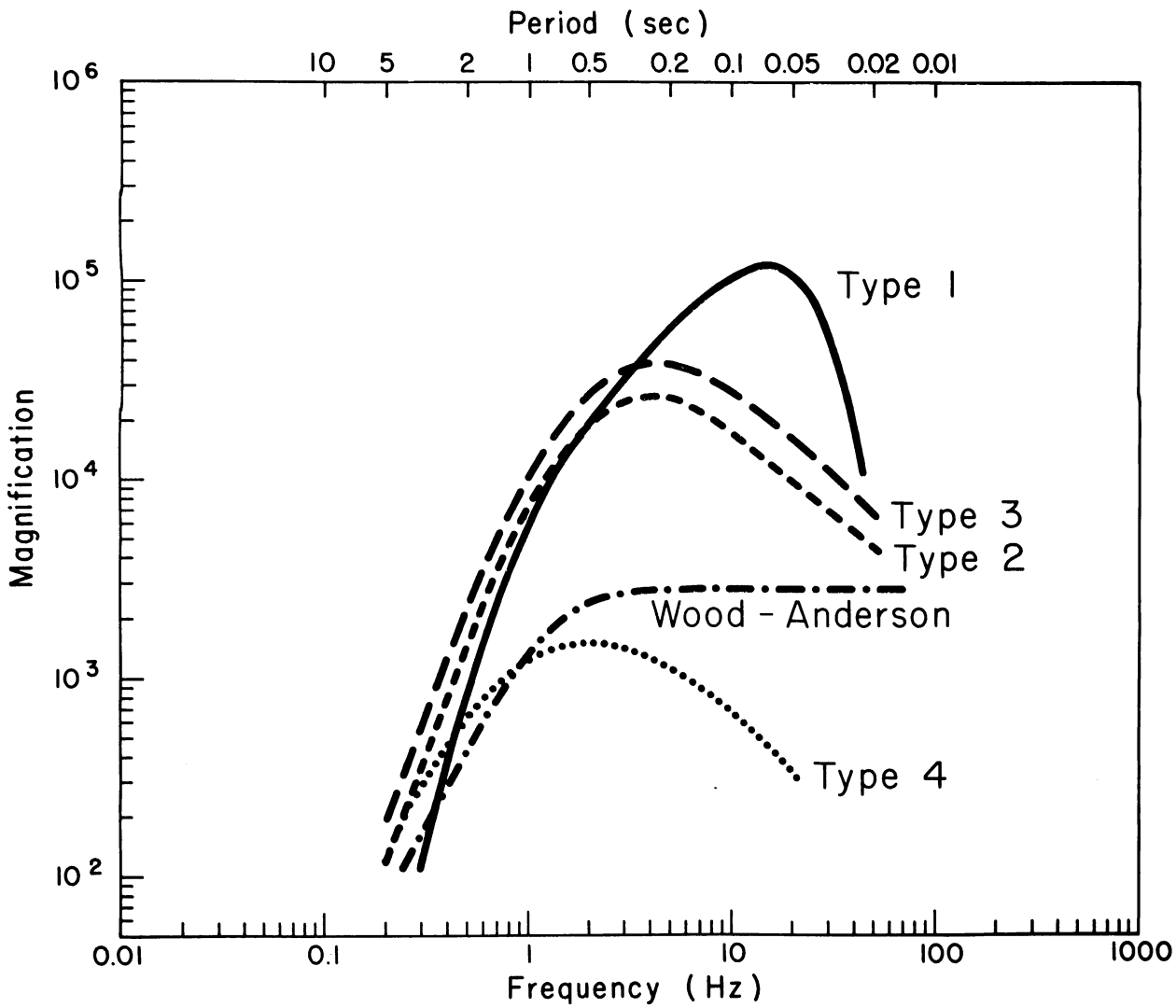

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 5.--Seismic Instrumentation

1. Seismometers

EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer

EV-17H- Same as above, but horizontal component

HS-10 - Hall-Sears 0.5 sec. period moving coil seismometer

HVO-2 - 0.8 sec. period moving coil seismometer

2. Seismographs

HVO-1 - Vertical-component electromagnetic seismograph with a peak magnification of about 20,000 at 0.25 sec. period.

15-90 - Press-Ewing System: 3-component long period Press-Ewing seismograph system with pendulum and galvanometer periods of 15 and 90 seconds, respectively.

EV-17/3.5 cps galv., EV-17H/3.5 cps galv., etc.: Short period electromagnetic seismographs composed of the seismometers and galvanometers indicated. Response similar to HVO-1. Poorly calibrated.

3. Amplifier and signal transmission systems

System I: HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over "hard" wire to HVO, HVO-built solid state amplifier and galvanometer driver.

System II: Develco or Teledyne seismic preamplifier--voltage controlled oscillator, signal transmission on audio FM carrier over "hard" wire or FM radio link to HVO, discriminator.

Geotech PTA: Short period Geotech photo-tube amplifier.

4. Timing systems

RMS-USGS: Crystal-controlled chronometer employing solid-state binary dividers to produce minute and hour marks. Typical drift rates are a few milliseconds per day.

TS-100: Sprengnether crystal controlled chronometer. Output and performance characteristics are similar to those of RM-USGS.

5. Telemetered system response

The peak magnification of the standard telemetered systems (System II, with the film strip magnified 20 times for viewing) is about 2×10^5 at a period of 0.1 second, the response falls off 6 db/octave. (Figure .)

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 17, Summary 61.

Table 6.--Tilt Coordinates at Uwekahuna

July, August, and September 1971

Date	N-S	E-W	Date	N-S	E-W
July 4	561	371	Sept. 5	585	358
11	562	369	12	591	357
18	564	364	19	597	350
25	567	363	26	628	348
Aug. 1	570	359			
8	573	357			
15	580	359			
22	581	361			
29	583	360			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 4)

Tilt base	Date (1971)	1/ Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading (1971)
Uwekahuna (U on fig. 4)	30 Sep	693.8	375.3	15.66 N 9.3°W	15 Jun
Tree Molds (TM)	30 Sep	554.5	488.3	5.45 N35.9°E	16 Jun
Sand Spit (SS)	Unable to be read this epoch				
Mehana (M)	1 Oct	599.6	593.4	1.22 N14.4°W	24 Jun
Keamoku (Kea)	29 Sep	764.3	249.5	74.73 N44.9°W	16 Jun
Ahua Kamokukolau (Kam)	1 Oct	445.6	528.3	13.05 S54.2°E	15 Jun
Kipuka Nene (KN)	5 Oct	282.7	501.3	1.70 S47.6°E	17 Jun
Hilina Pali (HP)	5 Oct	455.6	493.3	0.49 S 3.2°W	17 Jun
Kapapala Ranch (Kap)	29 Sep	483.6	519.9	0.36 S70.0°W	24 Jun

1/ See Table 8, HVO Summary 60

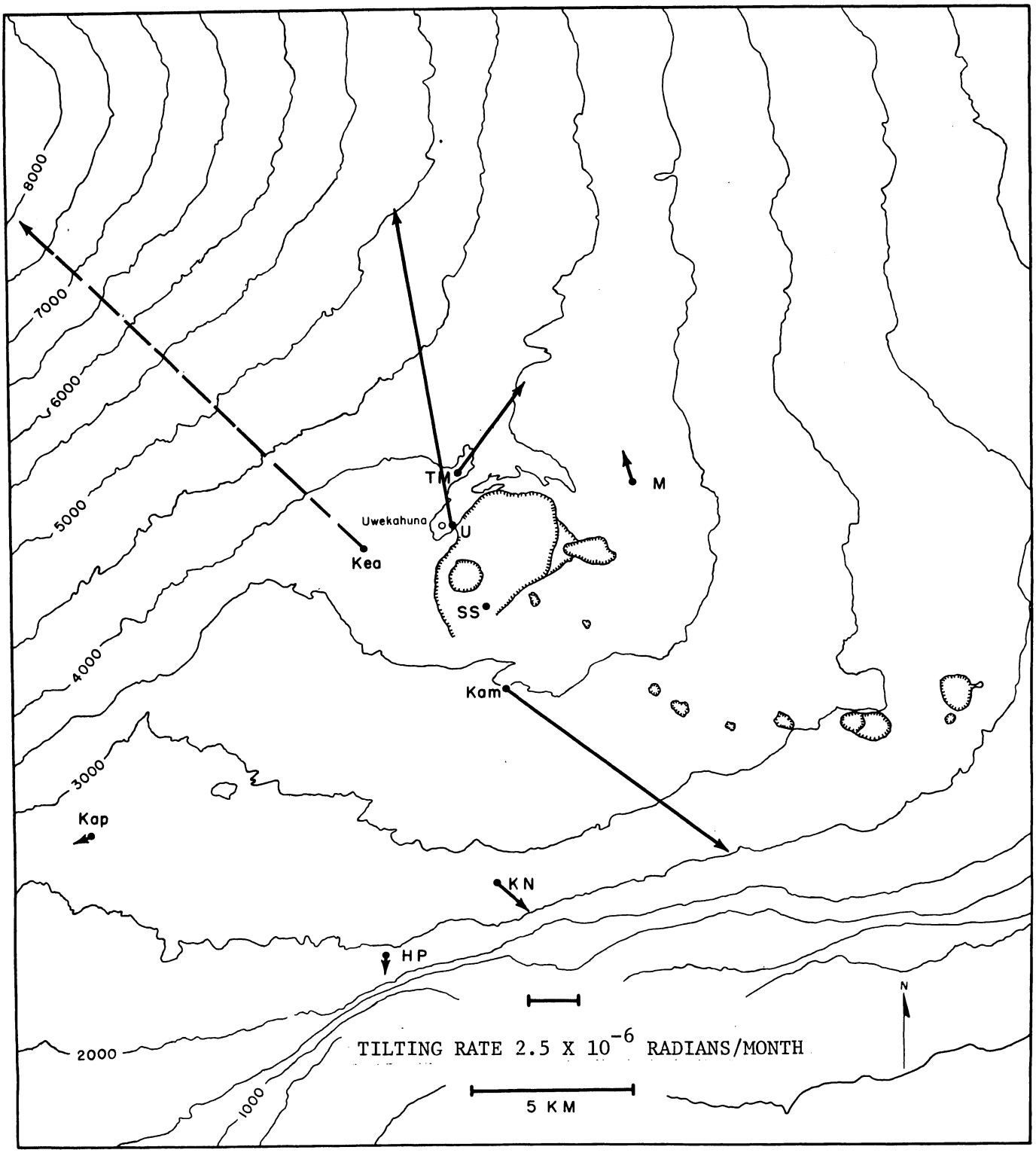

Figure 3.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 7 for explanation of abbreviations.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 64

October, November, and December 1971

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CHRONOLOGICAL SUMMARY

There was no eruptive activity at Kilauea during this quarter, but a long continuous summit inflation followed the September eruption at the summit and southwest rift zone. Extremely numerous shallow caldera earthquakes continued to accompany this inflation. In addition, earthquake swarms were frequent in the eastern part of the Hilina fault system, the lower southwest rift zone, and offshore from the intersection of these zones. A major swarm occurred on December 23-29 that caused a temporary break in the otherwise steady inflation.

Mauna Ulu had continued to contain a quietly degassing lava pond that dropped to successively lower levels through the eruptions of August and September elsewhere on Kilauea. A persistent very heavy fume cloud prevented frequent observations at Mauna Ulu, but lava was audible and occasionally visible low in its summit crater through mid-October. After that time, however, the crater was quiet, and by early November occasional clear views showed that the lava had completely drained, leaving the rubbly crater floor about 180 m deep.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit Long-Period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
Oct. 1		60m		2	131	3002[1/]	46	74	19	3		Shallow summit quake count include disturbances from cooling lava flows at OTL, WLG stations.
2		10m		2	86	2311	49	53	24			
3				4	102	2232	36	73	17	3		
4	22m			1	68	1738	?	58	40	1		
5				2?	75	1851	29	80?	17	2		
6				2	54	1624	48	64	19	1		
7				3?	69	1344	57	51	12?	2		
8					42	2726	189	122?	19	3		Numerous rockfalls at Halemaumau during October.
9				3	25	3019	154	371	27	10		
10				2	32	3173	167	443	32	12		
11		195m			69	1432	67	146	24	5	188	
12				4	38	1100	46	197	15	1	61	
13				2	42	1002	28	217	14	5	15	
14					28	1351	68	266	18	1	?	
15		10m		1	43	1345	43	163	13	8		
16				1	46	1609	36	249	13	4		
17					30	2824	69	237	36	11		
18				1	41	1996	52	620	49	11		
19				1	36	1941	37	304	38	6		
20				1	40	1597	29	290	50	4	3	
21				2	22	1512	30	256	51	2		
22					13	1184	41	212	22			
23				1	33	1897	97	187	21	1		
24				2	76	1819	71	291	32	12		
25	6m			1	32	1541	43	421	18	5		
26	3m				42	1962	88	871?	46	14		
27	12m			1	32	1437	22	195?	31	11		
28				1	72	1693	26	157	15	2		
29				1	86	1711	25	119	12	2	3	
30				3	32	1597	26	70	21			
31				2	37	1326	34	68	11	6		

Low level tremor on the upper east rift, and sporadic summit bursts early in the month.

Some quakes included in SW Rift/Kaoiki count.

[1/] Develocorder count from NPT, OTL, WLG stations.

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes									
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
Nov. 1				1	47	1368	36	126	22	3	77[1/]	Frequent rockfalls at Halemaumau and Mauna Ulu throughout the month.
2	57m				18	1933	40	410	33	11	256?	
3				1	21	1194	30	103?	15	4	19	
4				?	?	?	36?	285?	?	?	?	
5				2	22	2743	52	336	25	2	10	
6				1	24	3579	79	244	14	2	8	
7				2	8?	1058?	33?	120?	18?			
8					14	1547?	31	91?	14			
9				3	54	2458	37	24	19	5	2?	
10					14?	867?	27?	44?	6			
11				2	16	1912	26	50	3			
12		8m		1	24	1577	40	52	14	1		
13				2	58	1580	37	78	22	1		
14				2	19	1626	21	106	18	1		
15					9	2056	277	112	37	3		
16					74	2342	64	137	35	2		
17					23	1857	21	55	2	1		
18	42m				32	2620	36	177?	20	1	358?	
19	40m			1	29	2469	34	144	11		182?	
20		7m			66?	2480?	34	99	18		85?	
21	8m				25	1586	58	35	10		?	
22				1	17	1096	31	58	18		3?	
23				1	27	1303	36	40	7		1?	
24					32	1550	26	64	14	1	2	
25					24	1955	24	112	38	6	1	
26				2	23	1219	29	86	10	7		
27				3	35	2134	28	239	37		13	
28		?			16	1227	35	100	33	4		
29				1	16	2194	35	123	23	2	109	
30				1	39	2015	25	71	20	1	24	

Very weak tremor on the upper east rift throughout the month.

[1/] Some offshore PPL quakes included with SW Rift/Kaoiki count.

Date (1971)	Tremor (m = minutes h = hours)			Earthquakes									
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili[1/]	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
Dec. 1	45m			2	54	2123	36	79	15	1	9	Frequent rock falls at Mauna Ulu and Halemaumau during the month.
2					7	2006	22	110	13	2	14	
3		4m		1	24	2853	88	247	45	6	1	
4	89m	5m			33	3121	53	287	96	6		
5				4	54	2171	19	145?	55	3	2	
6	30m			1	39	2151?	33	252	50	10		
7	39m	9m			50	1987	32	327	41	15	278?	
8					34	1475	34	345	43	2	115	
9	50m			1	3?	1759	12?	120?	34	1	68?	
10				2	15	1552	12	81	14		31?	
11					46	1352	8	54	37		5?	
12				2	24	1384	15	77	57	6	50	
13	12m			1	26	1424	32	105	52	7	60	
14				2	41	1905	41	194	78	11	88?	
15				1	33	1935	65	219	33	2	197?	
16	14m	13m			137	2635	47	328	90	18	100?	
17				2	130	2793	48	480	108	5	472	
18					65	2912	38	591	86	15	584	
19		10m?		1	103	1538	37	175	56	1	231	
20	30m	5m		2	61	1829	64	87	40	4	115	
21	?			2	52	2379	54	374?	62	8	766?	
22		45m			80?	1423	98*	342*	208*		166?	*Hilina quakes included.
23					28	1510	298*	373	199	12	76	
24		60m		2	61	1667	217*	227	153	4	85	
25					10	1675	504*	308	151	4	100	
26				2	37	1311	1084*	168	91	1	73	
27					54	1137	1283*	197	74		28	
28				1	29	1466	936*	131	118		62	
29				2	18	1447	237*	101	159	6	87	
30				3	121	2410	253*	452	121	12	181	
31					61	2202	82*	455	254	14	221	

Sporadic weak bursts of tremor on the upper east rift throughout the month.

[1/] Some lower SW Rift/west Hilina quakes included with Offshore PPL count.

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i /NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	EPICENTER	FOCAL DEPTH
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	$\geq$ 8	$\leq$ 120°	$\leq$ DEPTH or 5 km
B	$\geq$ 6	$\leq$ 150°	$\leq$ 2 x DEPTH or 10 km
C	$\geq$ 6	$\leq$ 225°	$\leq$ 50 km
	$\geq$ 4	$\leq$ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	$\leq$ 1.0	$\leq$ 2.0	$\leq$ 0.10	$\leq$ 0.25
B	$\leq$ 2.5	$\leq$ 5.0	$\leq$ 0.20	$\leq$ 0.50
C	$\leq$ 5.0		$\leq$ 0.30	$\leq$ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

* RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1971		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	1	0	29	7.8	19-15.4	155-22.1	0.4*	1.8	13	169	7.7	0.12	0.9		0.19	C
	1	0	41	59.3	19-15.4	155-21.6?	2.9	2.1	20	162	7.0	0.48	0.8	1.8	0.19	C
	1	1	26	4.7	19-15.7	155-20.3	8.0*	1.8	11	195	5.2	0.24	2.0		0.23	C
	1	1	37	21.7	19-14.5	155-22.2?	0.0	1.9	14	179	8.7	5.77	0.9	11.0	0.17	C
	1	2	11	59.6	19-15.6	155-20.3	0.7	2.0	20	168	9.7	0.26	0.6	0.5	0.14	C
	1	2	41	21.8	19-15.4	155-20.4	0.2	1.6	22	168	5.7	0.40	0.9	0.7	0.24	C
	1	2	53	35.8	19-15.3	155-22.1?	0.0	1.3	18	147	7.9	5.75	0.9	10.9	0.20	C
	1	4	59	56.3	19-14.0	155-21.6?	0.0	2.7	27	157	8.9	0.29	0.6	0.5	0.16	C
	1	15	1	54.4	19-14.3	155-22.2?	0.0	2.6	20	155	8.8	0.98	2.3	1.8	0.40	D
	1	16	5	31.6	18-53.3	155-11.4	12.7*	2.4	10	265	41.5	0.59	4.0		0.17	D
	1	16	18	50.0	19-15.5	155-22.1?	0.0	1.6	17	146	7.6	0.42	0.7	0.8	0.18	B
	1	20	9	33.4	19-13.5	155-21.6?	0.0	2.2	23	160	9.7	0.46	0.7	0.8	0.17	C
	1	23	27	36.1	19-22.1	155-24.3	6.3	1.6	15	114	3.9	0.10	0.8	0.8	0.19	B
	1	23	28	14.6	19-20.0	155-14.6	29.9	1.8	22	138	4.9	0.13	0.8	1.3	0.11	B
	2	0	52	48.5	19-20.1	155-11.7	5.8	1.4	16	144	4.7	0.09	0.7	0.6	0.16	B
	2	0	55	45.9	19-21.6	155-23.7	6.4	1.5	17	110	2.7	0.08	0.7	0.7	0.15	B
	2	2	13	36.8	19-24.5	155-22.2?	8.0*	1.2	8	238	4.6	1.64	8.7		0.38	D
	2	2	23	2.6	19-19.9	155-18.8	25.4	2.1	15	84	2.5	0.16	0.8	1.7	0.10	A
	2	11	38	10.1	19-15.1	155-22.5?	0.0	1.7	14	146	7.7	5.62	1.0	12.6	0.21	C
	2	19	29	52.3	19-14.6	155-22.3?	0.0	2.3	22	152	8.5	0.50	0.8	0.9	0.21	C
	2	19	40	46.4	19-14.2	155-22.5?	0.0	1.9	16	154	8.4	7.58	1.1	14.4	0.21	C
	2	19	46	31.2	19-19.5	155-12.0	5.9	1.4	15	149	5.5	0.13	1.0	0.9	0.22	C
	2	19	47	18.7	19-15.0	155-22.9?	0.0	1.8	17	146	7.2	6.27	0.9	11.9	0.18	C
	2	20	7	33.9	19-21.9	155-24.6?	7.4	3.2	22	69	4.0	0.09	0.7	0.6	0.17	B
	2	20	17	17.3	19-14.6	156-12.6	1.8	2.3	14	301	62.1	0.39	6.3	2.9	0.10	D
	2	20	23	44.7	19-15.3	155-23.0?	0.0	2.1	12	142	6.8	3.39	0.5	6.4	0.08	C
	2	20	30	18.9	19-12.7	155-21.2?	3.4	1.9	12	176	10.7	0.18	1.5	3.0	0.18	C
	2	21	6	59.4	19-22.1	155-25.0	6.1	1.5	16	116	4.5	0.09	0.8	0.8	0.17	B
	2	23	6	40.7	19-18.5	155- 8.4	5.6	1.3	11	192	7.1	0.22	1.5	1.1	0.20	C
	2	23	34	26.6	19-15.1	155-22.5?	0.0	1.8	14	147	8.6	5.64	0.9	10.7	0.18	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 3	1	5	10.8	19-20.3	155- 5.5	2.0	1.8	17	190	8.3	0.50	1.1	1.8	0.20	C
3	4	16	11.8	19-22.3	155-24.1	6.7	1.7	19	66	4.1	0.10	0.7	0.7	0.20	B
3	7	20	4.3	19-23.8	155-22.4?	3.2		11	158	4.7	0.14	0.9	1.1	0.14	C
3	7	43	37.4	19-21.3	155- 7.4	5.4	1.2	12	145	4.5	0.11	0.9	0.9	0.17	B
3	13	14	41.3	19-19.6	155-12.0	3.6	2.3	23	148	5.3	0.15	0.9	1.0	0.28	C
3	17	19	1.1	19-11.6	155-20.3?	0.0	2.2	18	191	12.1	5.13	1.2	9.6	0.20	C
3	19	2	38.8	19-19.0	155-12.3	17.7	1.6	8	223	6.4	0.52	2.6	4.0	0.08	C
3	19	36	0.1	19-20.6	155-11.2	12.1	1.2	8	154	3.5	0.31	1.9	3.4	0.10	C
3	19	53	12.3	19-21.5	155-20.9?	5.4	1.3	7	104	4.6	1.72	2.1	5.0	0.24	C
4	3	31	47.6	19-38.3	154-57.9	46.3	2.4	24	210	15.8	0.24	1.4	1.8	0.16	C
4	3	51	38.1	19-19.7	155-10.2	4.1	1.8	17	170	4.5	0.15	1.0	1.1	0.21	C
4	4	10	26.7	19-24.2	155-23.8?	6.0	2.2	23	49	7.2	0.09	0.8	2.0	0.22	B
4	4	46	19.9	19- 1.5	156- 5.3?	9.5	3.5	28	298	55.2	0.39	2.7	8.7	0.22	D
4	5	0	48.6	19-24.2	155-27.6?	7.5	2.9	20	89	10.5	0.09	0.9	1.8	0.17	B
4	5	39	29.1	19-16.3	155-22.1?	8.0*	1.5	9	155	6.8	0.22	1.8		0.23	C
4	5	53	1.3	19-18.9	155-13.3	8.0*		10	214	7.5	0.18	1.2		0.10	C
4	10	25	5.0	19-19.5	155-12.2	8.0*	1.4	10	215	5.5	0.14	1.0		0.10	C
4	14	41	7.5	19-15.6	155-29.4	8.0*		7	215	11.6	0.32	2.5		0.17	C
4	14	41	26.8	19-13.4	155-22.8	8.0*		9	176	11.5	0.25	2.5		0.24	C
4	15	58	33.8	19-22.7	155-17.2	15.3	1.3	18	80	1.3	0.05	0.5	0.7	0.09	B
4	18	13	20.1	19-18.8	155-16.0	9.1		10	210	3.4	0.28	1.5	2.2	0.10	C
4	20	5	22.6	19-25.4	155-14.6	8.0*	1.5	8	127	10.3	0.15	1.3		0.20	C
4	20	15	42.7	19-20.3	155-12.6	9.3	0.9	11	156	4.0	0.11	0.8	1.5	0.09	B
4	20	45	22.1	19-20.5	155- 8.6	5.8	2.2	21	143	3.7	0.11	0.8	0.7	0.20	B
5	0	3	13.2	19-18.7	155-15.0	9.1	1.6	14	190	4.9	0.12	0.9	1.7	0.11	C
5	0	47	49.4	19-11.3	155-20.1?	0.0	2.2	20	201	12.6	0.70	1.5	1.2	0.24	C
5	2	55	42.2	19-19.6	155-16.1	6.0	2.2	16	160	2.4	0.09	0.8	0.6	0.15	C
5	3	42	7.0	19-18.6	155-16.1?	8.0	1.3	16	167	3.6	0.09	0.8	1.2	0.14	C
5	3	45	33.3	19-21.5	155-20.6?	0.0	1.7	10	99	4.4	1.14	0.5	2.3	0.13	B
5	5	42	29.7	19-20.5	155-13.5	6.3	1.5	18	150	3.9	0.11	0.8	0.7	0.20	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 5	17	0	46.7	19-15.7	155-22.3?	0.0	1.7	17	190	7.6	0.49	1.0	0.9	0.19	C
5	18	39	41.3	19-20.4	155-11.6	6.6	2.2	21	141	4.1	0.10	0.8	0.6	0.20	C
5	19	57	16.6	19-22.4	155-23.4	4.0	1.6	12	153	4.0	0.12	0.8	1.6	0.19	C
5	20	6	39.0	19-20.3	155- 7.6	8.0*	1.9	12	161	5.1	0.12	1.1		0.13	C
5	20	41	27.1	19-24.1	155-16.0	1.8	0.7	7	105	2.1	0.10	0.5	0.5	0.08	B
6	2	48	9.6	19-11.6	156-16.9?	8.3	2.4	17	294	52.3	1.05	28.2	58.0	0.43	D
6	6	13	18.5	19-18.3	155-11.3	8.0*		12	188	7.4	0.11	0.8		0.10	C
6	6	40	56.2	19-14.6	155-17.6	3.9		13	173	6.4	0.14	0.9	1.0	0.14	C
6	8	26	22.0	19-18.2	155-15.2	9.6		11	236	5.2	0.47	2.2	3.0	0.11	C
6	9	20	48.1	19-20.5	155-24.9	7.6		10	125	2.9	0.17	1.5	1.1	0.19	B
6	10	14	28.1	19-21.3	155-24.5	8.6		10	165	2.9	0.12	0.8	1.8	0.10	C
6	11	9	45.4	19-20.3	155-18.4	28.3	2.1	16	86	1.8	0.21	1.0	2.0	0.11	B
6	12	55	1.8	19-18.5	155-15.5	4.9	2.2	21	150	4.4	0.16	1.0	0.9	0.29	C
6	14	0	34.9	19-19.1	155- 8.8	8.0*	1.8	9	182	5.9	0.15	1.3		0.14	C
6	18	24	9.1	19-20.0	155-11.5?	6.5		11	216	4.9	0.47	2.6	4.3	0.13	C
6	18	46	3.6	19-19.9	155- 9.5	8.3	1.8	12	167	4.0	0.08	0.8	1.5	0.10	B
6	18	58	50.8	19-16.2	155-21.8	8.0*	1.6	14	157	6.5	0.08	0.7		0.13	C
6	19	6	38.8	19-16.1	155-21.7	8.0*	1.5	13	163	6.4	0.10	0.9		0.16	C
6	20	8	38.5	19-22.0	155-18.5	25.0	2.7	28	53	3.8	0.13	0.9	1.3	0.17	B
6	20	23	21.4	19-11.6	155-21.4	8.0*	2.2	8	225	11.9	0.12	0.8		0.07	C
6	20	24	57.0	19-16.7	155-22.0	8.0*	1.2	11	149	6.3	0.10	1.0		0.16	C
6	20	25	36.0	19-17.5	155-21.6	8.0*	1.1	10	136	5.2	0.15	1.2		0.18	C
7	8	1	50.6	19-21.0	155- 7.6	11.4	1.7	9	164	4.4	0.19	1.4	2.2	0.08	C
7	9	34	4.2	19-19.2	155-11.8	8.0*	1.3	11	174	6.2	0.10	0.8		0.10	C
7	9	41	33.8	19-19.4	155- 6.9	8.0*		11	191	7.0	0.23	2.0		0.21	C
7	9	43	11.6	19-20.0	155- 0.7?	9.0	2.1	13	225	3.9	0.24	2.5	1.6	0.21	C
7	13	10	30.1	19-21.6	155-20.9	1.9*	1.3	7	108	4.4	0.05	0.4		0.08	C
7	13	16	12.2	19-18.0	155-13.3	8.0*		10	231	8.1	0.32	2.1		0.18	D
7	16	41	52.3	19-20.6	155-14.7	6.8		9	163	4.0	0.19	1.2	1.2	0.15	C
7	20	16	17.2	19-35.3	155-52.8	31.9	2.3	15	209	8.7	0.27	1.3	2.4	0.08	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 7	21	51	47.4	19-17.9	155-14.9	10.4	2.0	10	222	6.1	0.37	1.7	2.9	0.10	C
8	1	14	0.8	19-22.6	155-23.1	1.0	1.4	9	173	4.5	0.31	1.1	1.8	0.11	C
8	3	23	40.9	19-18.9	155- 8.7	3.2	2.1	19	164	6.3	0.14	0.8	0.9	0.20	C
8	6	50	49.8	19-22.7	155-43.4?	8.9	2.1	14	197	18.1	0.28	1.6	2.7	0.16	C
8	13	1	27.7	19-24.4	155-18.1	5.6	1.3	8	103	2.1	0.12	0.8	0.8	0.08	A
8	19	20	57.5	19-17.4	155-14.9	1.4	2.0	18	185	9.3	1.23	0.8	4.4	0.17	C
8	19	45	35.0	19-19.4	155-11.3	9.3		10	247	5.5	0.38	1.9	3.1	0.09	C
8	22	38	32.3	19-22.8	155-22.4	5.6		7	154	5.0	0.26	0.7	2.6	0.07	C
9	0	9	1.2	19- 9.9	155-33.9	3.3	2.2	18	120	10.5	0.16	1.1	1.2	0.24	B
9	0	17	36.5	19-14.5	155-17.2	1.2	2.9	27	176	10.3	0.33	0.8	1.1	0.23	C
9	0	30	13.7	19-16.1	155-18.8	7.6	2.5	13	196	11.0	0.16	0.9	0.9	0.08	C
9	2	29	49.5	19-25.1	155-27.3	4.6	1.8	18	82	11.2	0.12	0.8	1.3	0.23	B
9	3	32	40.5	19-18.0	155-12.6	8.0*		12	249	8.3	0.24	1.4		0.09	D
9	5	58	54.0	19-14.5	155-17.3	0.3	2.4	27	176	10.4	0.34	0.8	0.6	0.22	C
9	7	2	20.3	19-14.3	155-17.5?	3.2	2.0	21	176	10.7	0.45	0.7	1.7	0.16	C
9	7	15	44.9	19-19.4	155-16.4	6.0		12	209	2.2	0.22	1.5	0.8	0.16	C
9	14	22	13.1	19-24.0	155-16.0	14.3	2.3	24	61	2.4	0.05	0.5	0.7	0.11	B
9	14	53	17.6	19-18.6	155-15.7?	4.3	2.2	22	148	7.1	0.10	0.6	0.7	0.20	B
9	15	42	11.4	19-20.8	155-23.5	7.7	2.3	19	64	1.2	0.06	0.6	0.4	0.13	B
9	17	48	12.2	19-19.0	155-16.9	8.4		14	172	2.2	0.13	1.0	1.6	0.16	C
9	23	47	40.4	19-25.6	155-24.4	2.4	1.5	16	91	7.5	0.11	0.7	1.8	0.20	B
10	2	29	40.3	19-19.5	155-14.2	8.0*		15	193	5.7	0.13	0.9		0.16	C
10	2	44	24.2	19-25.6	155-26.6	6.6	1.3	14	106	9.6	0.12	0.9	0.8	0.20	B
10	8	18	37.5	19-18.0	155-15.3	3.4	1.8	19	199	8.2	0.15	0.8	0.8	0.14	C
10	8	31	30.8	19-20.2	155- 7.5	8.0*		10	176	5.4	0.07	0.7		0.08	C
10	9	31	58.9	19-25.1	155-22.5	8.0*	1.4	11	95	5.5	0.04	0.4		0.07	B
10	12	17	31.5	19-21.1	155-20.8?	0.8	1.3	9	123	4.6	1.39	0.7	2.8	0.14	B
10	19	41	18.4	19-22.3	155-23.5	7.0	2.0	22	72	3.9	0.06	0.6	0.5	0.17	B
11	2	39	4.8	19-17.8	155-12.6	2.9	2.3	20	163	8.5	0.13	0.8	0.9	0.21	C
11	5	23	44.7	19-19.8	155-11.3	2.8	1.3	18	179	6.6	0.19	1.0	1.6	0.25	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 11	13	28	4.4	19-15.4	155-18.1	8.0*		12	165	8.8	0.14	1.2		0.20	C
11	15	13	33.4	19-22.3	155-24.8	4.0		15	61	4.7	0.09	0.8	1.4	0.21	B
11	16	3	10.3	19-20.4	155-11.1?	8.0		11	163	3.7	0.14	1.3	0.7	0.14	C
11	19	56	2.4	19-38.2	155-12.3	8.0*	1.6	16	80	15.4	0.05	0.5		0.13	B
11	20	41	26.1	18-53.9	155-14.7	13.5*	2.4	13	252	36.9	0.45	3.2		0.23	D
11	21	1	10.0	18-51.8	155-12.7	8.0*	2.6	16	259	42.2	0.28	1.9		0.10	D
11	21	20	27.7	18-54.0	155-14.1	14.9*	2.9	21	252	37.5	0.19	1.3		0.12	D
11	21	24	59.3	18-55.8	155-15.8	14.3*	2.4	15	245	32.9	0.38	2.6		0.27	D
11	21	56	11.2	18-55.7	155-14.2?	7.8*	2.9	20	247	35.0	0.36	2.5		0.23	D
11	21	58	31.1	18-51.1	155-12.9	2.9	2.6	12	261	42.8	1.43	2.3	8.3	0.10	D
11	22	2	31.5	18-50.1	155-12.5	8.0*	2.2	16	264	44.8	0.37	2.4		0.11	D
11	22	52	2.6	18-54.5	155-18.3	12.7*	2.5	9	275	32.4	0.80	5.5		0.17	D
11	23	0	43.5	18-48.1	155-10.5	1.3	2.2	13	269	49.9	0.54	4.6	3.2	0.14	D
11	23	3	38.5	18-49.5	155-12.1	8.0*		12	266	46.2	0.43	2.9		0.11	D
11	23	4	14.7	18-54.8	155-15.3	13.5*	3.2	24	249	35.0	0.19	1.3		0.15	D
11	23	6	49.1	18-41.1	155-11.4	8.0*		7	311	59.9	3.35	20.6		0.13	D
11	23	7	18.4	18-50.8	155-12.3	12.1	2.6	12	262	44.1	0.48	3.5	9.3	0.15	D
11	23	20	40.0	19-18.5	155-15.3	9.0		10	228	4.8	0.28	1.5	2.2	0.10	C
11	23	28	5.4	18-49.3	155-12.8	8.0*	2.6	11	265	45.6	0.53	3.6		0.14	D
12	1	38	14.3	18-56.5	155-13.6?	14.5*	2.3	18	279	34.7	0.43	2.9		0.23	D
12	1	38	53.5	18-57.5	155-14.5	10.1	3.0	17	276	32.2	0.41	3.0	3.4	0.20	D
12	1	45	19.5	18-54.5	155-11.6	3.9	2.5	8	283	39.7	1.97	5.6	10.3	0.10	D
12	2	19	27.8	19- 1.3	155-13.1?	1.5	2.5	22	266	30.1	0.35	1.7	0.8	0.19	C
12	2	28	18.2	19-22.3	155-25.0	8.0*		7	230	4.9	0.21	1.3		0.08	D
12	2	43	46.1	18-52.4	155-13.4?	21.3	2.5	21	258	40.5	0.48	3.6	8.5	0.20	D
12	2	49	17.7	18-55.5	155-14.5	9.8	2.4	25	247	34.9	0.32	2.0	2.8	0.21	D
12	3	1	34.9	18-55.4	155-14.4	13.9*	2.5	18	247	35.2	0.33	2.3		0.21	D
12	3	2	12.0	18-51.8	155-13.8	0.9*	2.6	9	258	41.0	0.61	4.1		0.17	D
12	3	12	34.4	18-53.1	155-14.9	10.4*	2.6	11	261	37.8	0.55	3.8		0.16	D
12	3	47	3.8	18-47.5	155-12.1	1.3	2.7	14	270	49.1	0.58	4.9	3.0	0.20	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 12	4	27	30.7	18-56.2	155-18.6	11.5*	2.5	12	246	29.4	0.36	2.6		0.13	D
12	4	49	8.5	18-50.0	155-12.3	8.0*	2.2	14	264	45.2	0.47	3.1		0.16	D
12	5	54	50.1	18-53.8	155-13.1	8.1	2.5	9	253	38.9	0.93	4.6	5.5	0.19	D
12	6	45	2.9	19-23.8	155-22.8	8.0*	1.5	12	102	5.4	0.05	0.4		0.09	B
12	7	10	9.9	19-21.3	155-20.8	8.0*		7	100	4.8	0.16	1.4		0.20	C
12	7	41	25.4	19-23.7	155-22.8	8.0*	1.2	9	167	5.3	0.09	0.7		0.11	C
12	7	42	43.6	19-19.3	155-14.6	9.7	1.7	9	193	5.2	0.24	1.4	2.6	0.12	C
12	8	33	59.7	19-19.3	155-13.3	8.0*	1.5	13	205	5.9	0.13	0.9		0.11	C
12	8	49	29.9	18-52.6	155-13.5?	21.2	3.5	25	256	40.2	0.33	3.1	5.8	0.18	D
12	10	15	9.7	18-52.5	155-13.6?	22.7	2.9	18	256	40.0	0.42	2.6	7.3	0.13	D
12	10	19	0.8	18-49.3	155-12.7	8.0*	2.6	14	265	45.8	0.50	3.4		0.17	D
12	10	35	10.3	19-26.6	155-25.7	7.6	1.9	16	93	7.3	0.08	0.6	0.5	0.13	B
12	12	16	57.9	18-55.8	155-14.0?	8.7*	2.6	14	246	35.2	0.36	2.5		0.21	D
12	12	52	54.9	18-51.2	155-13.7	8.4*	2.6	10	267	41.9	0.79	5.4		0.16	D
12	18	26	5.5	18-49.6	155-11.7	8.0*	2.5	14	265	46.5	0.56	3.7		0.16	D
12	18	30	16.0	18-52.3	155-12.1?	9.5	2.8	22	258	42.0	0.41	2.6	11.6	0.19	D
12	18	35	55.5	19-20.8	155- 8.9	5.2	2.1	14	139	7.2	0.10	0.8	0.8	0.15	B
12	19	9	17.5	18-52.7	155-12.0	7.5		11	257	41.6	1.82	2.9	10.7	0.13	D
12	22	8	27.8	18-53.0	155-12.9	2.0*		12	264	40.1	0.52	3.4		0.18	D
12	23	52	54.4	19-24.2	155- 2.1?	0.0	2.0	18	131	8.1	4.51	1.0	8.5	0.22	C
13	0	29	46.2	18-59.4	155-13.8?	7.5		15	242	31.0	1.37	3.1	7.7	0.24	D
13	2	22	22.7	19-19.2	155-13.6	1.0	2.5	20	148	6.2	0.45	0.8	1.6	0.22	C
13	4	18	4.0	19-19.2	155-20.6?	8.0*	1.1	10	170	5.1	0.28	2.3		0.33	D
13	4	37	15.6	19-22.1	155-22.6	6.0	1.4	13	135	3.6	0.12	0.9	1.1	0.19	B
13	4	59	42.7	19-24.5	155-18.6	11.9	1.1	11	96	2.3	0.03	0.4	0.3	0.06	A
13	7	44	14.2	19-24.4	155-16.9	0.6	0.7	8	74	0.8	0.12	0.3	0.3	0.08	A
13	8	5	46.4	19-19.0	155-13.7	8.0*		13	193	6.7	0.14	1.0		0.14	C
13	8	16	5.9	18-52.7	155-12.0	3.7		14	265	41.6	2.20	3.7	12.5	0.15	D
13	8	38	42.9	19-24.1	155-16.1?	2.0	1.9	14	63	2.0	0.09	0.5	0.4	0.18	B
13	12	2	35.1	19-18.8	155- 9.7	4.3	1.7	10	196	6.0	0.20	1.3	1.8	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	13	12	31	5.6	19-20.4	155-17.3	4.9	1.3	8	142	0.5	0.16	1.1	1.3	0.15	B
	13	15	13	1.4	18-50.4	155-14.5	1.2*	2.6	11	269	42.3	0.72	4.6		0.17	D
	13	17	37	54.2	18-54.1	155-13.3	8.5	2.5	15	253	38.3	0.43	2.1	2.6	0.12	C
	13	19	30	19.5	19-38.5	155- 5.7	11.4	2.2	13	248	15.6	0.25	1.6	0.9	0.09	C
	13	20	14	59.2	19-21.2	155-20.5	8.0*	1.4	9	97	4.8	0.13	1.2		0.20	B
	13	20	17	20.7	19-18.6	155-15.4?	6.8	1.6	20	148	4.4	0.09	0.7	0.6	0.15	B
	14	2	2	33.7	19-38.2	155- 3.8	23.5	2.3	16	179	14.7	0.23	1.1	3.7	0.13	C
	14	3	4	37.7	19-10.7	155-19.9?	0.0	2.0	19	178	13.6	5.42	1.0	10.2	0.18	C
	14	3	51	38.9	19-20.4	155-18.9	5.9	1.4	12	93	2.7	0.18	0.6	1.5	0.10	A
	14	10	43	14.4	18-44.9	155-13.3	8.0*		10	307	61.8	1.66	10.2		0.12	D
	14	16	53	54.8	19-21.2	155-20.7	8.0*		8	98	4.8	0.15	1.3		0.21	B
	14	22	44	28.5	19-29.8	155-13.8	23.4	2.1	26	56	8.6	0.07	0.4	0.9	0.10	B
	14	22	53	30.4	19-29.5	155-13.9	23.7	1.9	25	55	8.1	0.06	0.4	0.8	0.09	A
	15	1	32	25.5	19-10.0	155-37.5	3.6	2.4	17	246	9.1	0.40	1.9	1.1	0.17	C
	15	5	38	27.9	19-23.5	155-23.2	3.2	1.9	21	114	6.1	0.13	0.9	1.1	0.24	B
	15	5	48	57.2	19-21.6	155-20.7	0.5		8	102	4.3	1.17	0.5	2.3	0.08	B
	15	6	53	21.1	18-50.9	155-13.4	1.7*		13	290	42.8	0.80	5.0		0.16	D
	15	12	51	16.8	19-20.8	155-19.4	1.8*	1.3	7	96	3.7	0.05	0.4		0.08	C
	15	15	30	3.8	19-22.7	155-24.6	7.0		18	64	5.2	0.08	0.6	0.6	0.18	B
	15	18	30	45.7	19-22.7	155-23.7?	1.5	1.3	9	191	4.7	0.30	1.1	1.5	0.11	C
	15	18	36	5.2	19-22.3	155-25.0	8.0*	1.4	9	135	4.9	0.07	0.6		0.08	C
	15	19	30	11.0	19-19.7	155- 9.5	4.3	1.6	16	152	4.4	0.15	1.0	1.0	0.19	C
	15	20	12	1.7	19-19.3	155-14.5	8.0*	1.5	12	193	5.3	0.17	1.2		0.14	C
	15	22	39	42.8	19-20.0	155-10.5?	8.1		16	164	4.0	0.10	0.8	0.5	0.11	C
	16	2	21	24.0	19-23.3	155-24.8	1.8	1.5	13	173	6.3	1.46	0.7	5.4	0.13	C
	16	2	43	56.9	19-18.6	155-13.3?	0.0	1.6	17	217	7.3	4.35	1.0	8.1	0.14	C
	16	3	52	1.6	19-20.2	155-17.2	30.2	1.7	18	120	0.4	0.16	0.9	1.5	0.10	B
	16	5	0	4.2	19-20.3	155-19.4	6.0	1.4	13	78	3.5	0.11	0.4	1.1	0.08	A
	16	5	24	1.9	19-22.5	155-22.8?	1.1	1.2	11	108	4.3	0.13	0.4	0.5	0.10	B
	16	5	48	53.0	19-22.9	155-26.4	8.0	1.7	18	73	7.4	0.05	0.5	1.4	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 16	14	8	7.3	19-20.1	155-17.5	7.6	1.0	7	136	0.2	0.05	0.4	0.3	0.03	B
16	14	26	57.8	19-21.6	155-20.8	1.3	1.3	8	105	4.2	0.20	0.5	0.7	0.08	A
16	18	39	48.9	19-22.2	155-22.9	5.9	2.1	21	94	3.8	0.08	0.6	0.6	0.19	B
16	18	53	50.3	19-22.6	155-29.8?	0.0	1.4	12	97	12.1	9.39	1.0	17.9	0.24	B
16	19	8	43.6	19-20.9	155- 6.1	8.0*	1.5	9	147	5.9	0.15	1.5		0.23	C
16	19	27	11.9	19-19.4	155-15.1	8.9	1.3	13	158	4.2	0.09	0.6	1.2	0.08	C
16	22	34	52.9	19-16.5	155-11.8	8.0*	2.3	15	177	10.8	0.17	1.1		0.18	C
17	2	24	2.9	19-20.5	155-13.2	9.6	1.2	11	179	3.7	0.22	1.0	2.0	0.09	C
17	5	51	37.1	19-53.8	155-32.7	36.0	2.1	19	136	15.6	0.39	2.1	4.7	0.20	C
17	6	59	18.1	19-24.0	155-25.2	7.0	1.5	17	66	7.7	0.09	0.7	0.7	0.18	B
17	15	57	2.6	19-23.5	155- 4.6	3.4	1.8	20	149	7.2	0.11	0.7	0.7	0.17	B
17	19	0	3.9	19- 0.6	155-12.5	13.0*		18	285	31.5	0.56	3.6		0.13	D
17	22	28	21.5	19-21.4	155-14.4	27.8		14	145	3.1	0.16	0.9	1.5	0.10	B
18	0	45	51.4	19-18.8	155-13.1	8.0*		10	217	7.8	0.19	1.2		0.11	C
18	2	32	13.8	19-21.9	155-24.2?	6.1		12	149	3.6	0.19	1.5	2.5	0.21	C
18	8	18	38.7	19-39.4	155-30.0	28.6	1.9	18	103	14.4	0.17	0.7	2.2	0.08	B
18	10	21	38.5	19-22.1	155-18.2	32.4	2.3	19	69	3.2	0.19	1.0	1.8	0.10	B
18	16	2	28.3	19-20.0	155- 9.1	4.8		13	166	4.1	0.15	1.2	1.0	0.17	C
18	16	2	42.6	19-19.5	155- 9.2	3.8	2.0	21	154	4.8	0.14	0.9	1.0	0.22	C
18	16	31	40.0	19-19.6	155-14.1?	2.0		18	192	5.9	0.20	1.1	1.4	0.24	C
18	16	44	26.4	19-25.7	155-27.7?	7.1	1.9	20	74	10.8	0.14	0.7	1.1	0.15	B
18	17	1	4.4	19-21.0	155-23.7?	7.1		14	61	1.7	0.08	0.8	1.0	0.18	B
18	18	56	2.1	19-20.4	155- 8.0	5.0	2.6	22	144	4.5	0.13	0.9	0.7	0.22	C
18	22	1	1.5	19-18.1	155-12.4	2.6	1.7	20	161	9.5	0.16	0.9	1.5	0.26	C
18	23	48	9.1	19-49.3	155-38.7	6.6	1.8	12	160	20.0	0.39	1.8	2.5	0.21	C
19	1	31	25.4	19-21.9	155-24.5	7.2	2.8	21	95	3.8	0.08	0.7	0.6	0.19	B
19	1	35	4.9	19-22.8	155-26.2	5.3	1.9	21	72	7.0	0.09	0.6	0.9	0.19	B
19	3	11	28.0	19-30.1	155-47.3	5.6	2.1	18	198	19.8	0.17	1.1	0.8	0.13	C
19	11	3	32.3	19-20.8	155-16.0	28.1	2.1	18	127	2.7	0.11	0.6	1.1	0.09	B
19	11	30	26.7	19-13.7	155-22.0?	0.0	1.9	17	158	9.6	6.02	0.9	11.3	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 19	12	0	10.2	19-18.8	155-13.5	8.3	1.6	17	176	6.8	0.08	0.6	1.4	0.10	C
19	12	19	59.3	19-19.4	155-13.7	8.0*	1.5	9	199	5.8	0.18	1.4		0.16	C
19	15	22	34.2	19-18.9	154-52.0	38.6	2.7	25	253	18.5	0.26	1.4	1.9	0.11	C
19	17	6	55.4	19-23.2	155-26.2	8.0*	1.3	11	80	7.6	0.05	0.5		0.09	B
19	21	4	54.1	19-18.1	155-14.4	8.0*		12	222	6.5	0.19	1.3		0.14	C
19	22	42	38.8	19-19.6	155-13.7	8.0*	1.1	10	193	5.5	0.14	1.0		0.12	C
19	23	18	56.2	18-59.4	155-28.7	34.4	2.9	28	217	18.6	0.23	1.3	2.2	0.15	C
20	2	40	31.2	19-19.6	155-15.9	6.1	1.4	14	161	5.1	0.08	0.6	0.5	0.12	C
20	2	56	2.4	19-19.2	155-15.6	6.3	1.3	14	183	3.5	0.12	0.8	0.6	0.14	C
20	3	7	26.3	19-19.5	155-15.7	6.4		15	164	3.2	0.08	0.7	0.5	0.12	C
20	3	49	19.8	19-20.2	155-14.6	3.6	1.7	18	149	4.7	0.14	0.8	1.4	0.23	C
20	7	59	36.5	19-19.2	155- 9.2	8.0*	2.1	12	179	5.5	0.12	1.0		0.15	C
20	17	28	34.3	19-17.0	155-16.4	3.7	2.1	23	158	6.0	0.12	0.7	0.8	0.18	C
20	18	29	37.1	19-19.1	155-15.4	6.3	1.6	13	189	3.9	0.13	0.9	0.7	0.14	C
20	18	58	32.4	18-56.5	155-25.8	28.6	2.6	22	237	24.3	0.37	2.0	3.3	0.13	C
21	0	16	14.6	19-19.2	155-14.1	8.0*		11	168	6.0	0.14	1.1		0.17	C
21	0	26	20.6	19-18.3	155-13.6	8.0*	1.2	10	222	7.4	0.23	1.5		0.14	C
21	0	27	56.1	19-18.3	155-13.7	8.0*	1.0	9	222	7.4	0.20	1.4		0.13	C
21	0	41	8.5	19-20.3	155- 7.7	8.0*	1.6	12	162	5.0	0.10	1.0		0.13	C
21	6	27	38.4	19-21.9	155-26.3	7.2	1.6	13	144	6.1	0.16	1.1	0.9	0.15	C
21	7	11	13.2	19-24.3	155-16.3	3.9	0.8	8	125	1.6	0.21	0.8	1.7	0.09	B
21	8	47	6.2	19-20.2	155- 7.7	8.0*	2.0	8	164	5.1	0.17	1.6		0.17	C
21	9	38	17.3	19-18.4	155-15.6	3.7	2.2	13	177	5.4	0.18	1.1	1.4	0.22	C
21	10	9	57.8	19-15.5	155-18.0	7.2	1.5	12	195	4.6	0.15	0.9	0.6	0.13	C
21	10	24	47.9	19-23.2	155-23.7	7.0	1.7	19	114	5.7	0.10	0.8	0.7	0.20	B
21	11	26	20.3	19-22.0	155-25.4?	7.4	1.7	13	131	4.9	0.19	1.1	1.3	0.20	B
21	11	47	40.8	19-23.4	155-27.3?	7.1	2.0	12	260	9.1	0.53	2.4	1.8	0.24	D
21	13	50	13.1	19-19.7	155-11.1	8.0*		11	168	5.0	0.10	0.9		0.11	C
21	17	19	13.0	19-22.0	155-15.3	26.5	1.7	13	118	1.4	0.15	0.8	1.5	0.07	A
21	23	4	11.8	19-18.9	155-13.3	8.0*	1.3	14	176	6.7	0.09	0.6		0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 21	23	39	25.7	20-21.5	155-56.9?	42.3*	2.4	15	335	31.0	0.40	4.1		0.22	D
22	1	22	52.7	19-19.7	155-15.4?	7.8		10	174	3.5	0.28	1.6	2.8	0.19	C
22	2	6	59.4	19-18.4	155-18.9	19.3	1.4	11	138	0.9	0.45	1.8	3.7	0.09	B
22	5	55	35.8	19-19.0	155-13.6	8.0*	1.5	16	150	6.5	0.09	0.8		0.15	C
22	6	45	49.2	19-19.5	155-15.4	5.9	1.4	14	166	3.6	0.11	0.8	0.7	0.13	C
22	7	30	10.9	19-20.8	155-14.4	7.0	1.3	10	191	4.0	0.21	1.1	0.9	0.13	C
22	9	48	51.7	19-20.0	155-13.8	5.8	1.6	20	156	4.9	0.11	0.8	0.7	0.21	C
22	16	28	52.4	19-20.7	155-19.1	5.2	1.5	9	165	3.2	0.06	0.4	0.4	0.04	B
22	17	16	15.2	19-24.4	155-25.4	3.8	1.5	18	107	8.6	0.09	0.6	1.0	0.18	B
22	19	38	31.6	19-25.3	155-40.3	6.1		9	242	10.5	0.44	2.9	1.2	0.09	D
22	20	29	28.5	19-36.1	155-50.8	37.3*		9	316	28.8	0.36	2.8		0.06	D
23	12	21	43.0	19-23.4	155-26.1	8.0*	1.7	11	151	7.6	0.07	0.6		0.08	C
23	16	34	10.4	19-14.7	155-22.1	0.4*	1.3	11	152	8.6	0.11	0.8		0.15	C
23	17	40	16.5	19-26.3	155-45.4	4.5	1.9	11	295	25.5	1.07	4.8	2.7	0.10	D
23	20	23	2.6	19-24.1	155-16.2	2.0	0.8	7	99	1.9	0.06	0.4	0.2	0.05	B
23	21	30	1.8	19-44.9	156-10.3	0.2	2.7	15	270	35.6	0.33	3.6	1.2	0.12	D
24	1	12	31.5	19-52.7	155-31.2	21.2	2.3	22	208	12.5	0.24	1.4	2.7	0.12	C
24	1	39	7.9	19-16.6	155-22.4	6.1	2.0	18	146	6.8	0.11	0.9	0.8	0.21	C
24	2	7	6.1	19-17.0	155-22.8	5.7	2.2	22	132	6.0	0.09	0.8	0.8	0.24	C
24	3	12	0.2	19-15.1	155-20.5	5.6	2.2	21	155	6.2	0.10	0.7	0.6	0.17	C
24	3	34	4.3	19-11.6	155-18.7	30.4	2.4	16	199	11.7	0.21	1.2	2.3	0.10	C
24	9	5	38.9	19-16.3	155- 8.6	33.5		11	224	10.9	0.58	2.2	4.7	0.08	C
24	17	18	2.4	19-24.3	155-16.4	1.9	0.6	8	72	1.5	0.16	1.1	0.9	0.20	B
24	18	53	38.6	18-53.5	155- 9.2	8.0*	2.6	21	267	44.1	0.39	2.5		0.12	D
24	19	24	6.4	19-14.6	155-28.0	5.9	1.9	12	110	4.0	0.10	1.0	0.8	0.16	B
24	21	21	11.6	19-24.3	155-25.9	8.0*		14	110	8.9	0.06	0.6		0.12	B
24	22	36	19.2	19-18.6	155- 9.5	3.2		13	184	6.4	0.19	1.2	1.4	0.21	C
25	0	1	43.3	19-14.9	155-20.6?	2.3	2.0	22	155	6.6	0.15	0.9	1.4	0.22	C
25	1	8	16.2	19-16.9	155-16.2	31.8	2.2	21	170	4.7	0.17	1.0	1.6	0.12	C
25	1	20	48.3	19-21.3	155-20.8	8.0*		9	99	4.8	0.11	1.0		0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 25	5	47	24.4	19-19.3	155-11.6	5.4		13	173	6.0	0.18	1.2	1.2	0.21	C
25	6	0	4.7	19-20.1	155- 9.8	8.2	2.8	21	142	3.7	0.09	0.6	0.5	0.13	B
25	8	52	53.0	19-17.7	155-13.9	8.0*		11	232	7.6	0.24	1.6		0.15	D
25	10	28	28.6	19-19.0	155-13.8	7.3	2.7	21	146	6.6	0.10	0.8	0.6	0.15	C
25	10	34	10.5	19-18.1	155-12.8	8.0*	1.6	8	234	8.1	0.30	1.9		0.11	D
25	10	34	28.4	19-19.6	155-13.6	8.0*	1.8	17	145	5.6	0.06	0.5		0.10	C
25	13	47	58.1	19-22.4	155-24.4	4.2	2.0	23	75	4.5	0.09	0.6	0.9	0.22	B
25	14	44	0.0	19-18.8	155-16.8	6.6	1.3	10	183	2.7	0.17	1.1	0.8	0.15	C
25	15	49	27.7	19-21.8	155-18.7	4.6		10	84	3.9	0.12	0.4	1.3	0.07	A
25	16	2	16.9	19-19.3	155- 8.8	8.0*	1.3	10	178	5.4	0.09	0.7		0.09	C
25	20	34	37.8	19-24.3	155-24.5	8.0*	1.3	13	208	7.9	0.20	1.3		0.15	C
25	21	40	23.2	19-19.7	155-13.9	8.0*	1.2	12	160	5.5	0.09	0.7		0.11	C
25	23	23	43.6	19-23.2	155-26.2	8.0*	1.4	9	152	7.5	0.09	0.7		0.09	C
26	1	51	31.2	19-19.9	155-14.0	8.0*	1.5	17	142	5.2	0.07	0.6		0.13	C
26	2	15	18.4	19-18.1	155-14.4	8.0*		11	219	6.4	0.22	1.4		0.16	C
26	2	16	19.7	19-17.7	155-13.9	8.0*	1.1	9	232	7.5	0.28	1.8		0.12	D
26	5	44	46.7	19-19.7	155-11.9?	7.6	1.6	11	216	5.2	0.19	1.1	0.7	0.11	C
26	6	54	16.3	19-19.3	155-12.0	8.0*	1.5	10	221	5.9	0.20	1.3		0.10	C
26	19	28	45.6	19-16.4	155- 3.8	29.7		13	240	6.6	0.61	2.7	5.0	0.09	D
27	0	12	30.6	19-22.0	155-23.9	7.2	2.2	15	96	3.4	0.10	0.9	0.7	0.18	B
27	1	13	22.9	19-24.7	155-23.0	8.0*		11	106	6.0	0.06	0.5		0.10	B
27	2	41	28.5	19-24.4	155-17.3	1.0	0.7	7	78	1.0	0.12	0.6	0.8	0.14	B
27	2	51	55.9	19-24.6	155-17.0	8.4		10	89	0.5	0.06	0.4	0.5	0.06	A
27	2	53	28.7	19-24.6	155-16.9	8.7	1.4	13	72	0.6	0.05	0.4	0.5	0.06	A
27	4	1	28.1	19-26.9	154-51.9	8.5		15	271	4.5	0.37	2.6	1.1	0.14	D
27	4	49	6.0	19-27.3	154-52.2	8.8		14	269	3.6	0.35	2.6	1.1	0.15	D
27	5	21	24.1	19-18.1	155- 7.7?	0.0	2.0	14	195	8.2	0.76	2.3	1.6	0.31	D
27	5	24	23.3	19-20.3	155- 7.4	4.0		13	163	5.5	0.16	1.6	1.5	0.20	C
27	10	57	7.8	19-19.0	155-13.9	1.7	1.5	16	205	6.4	0.54	1.0	2.2	0.21	C
27	15	1	21.3	19-25.7	155-24.3?	9.4	1.8	21	85	7.3	0.07	0.6	0.8	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 27	18	19	41.7	19-18.6	155-24.5	5.3	1.6	12	130	3.6	0.10	1.0	0.9	0.17	B
27	19	11	38.9	19-24.4	155-16.9	8.5	1.3	14	56	1.0	0.05	0.4	0.6	0.07	A
27	19	26	40.0	19-24.6	155-16.6	8.8		13	93	0.9	0.07	0.5	0.7	0.07	A
27	19	29	58.1	19-19.4	155-12.0	8.0*	1.7	13	172	5.8	0.11	0.9		0.14	C
27	19	41	37.4	19-20.1	155-13.7	6.0	1.3	11	171	4.8	0.10	0.8	0.7	0.13	C
27	20	35	47.6	19-21.4	155-25.7	8.0*	1.6	15	71	4.8	0.07	0.7		0.15	B
28	1	55	58.0	19-23.6	155-16.8	16.9		16	71	2.4	0.06	0.4	0.7	0.07	A
28	8	14	7.9	19-18.7	155-16.0	9.2	1.2	11	191	3.4	0.24	1.6	2.5	0.17	C
28	10	9	55.3	19-24.5	155-16.8	0.6	0.5	8	74	0.8	0.11	0.3	0.2	0.08	A
28	10	40	24.0	19-20.6	155- 6.8	8.0*	1.9	12	156	6.0	0.10	1.1		0.15	C
28	12	19	54.8	19-19.9	155- 8.1	8.7	1.8	14	169	5.0	0.13	1.0	2.3	0.10	C
28	14	29	51.6	19-21.5	155-15.5	25.4	1.3	12	121	1.7	0.17	0.9	1.8	0.09	B
28	21	6	46.1	19-22.5	155-24.1?	5.5		10	205	4.5	0.37	2.1	3.8	0.13	C
28	22	33	45.6	19-18.0	155-13.2	8.0*	1.5	10	231	8.2	0.29	1.9		0.16	D
28	22	38	3.2	19-18.9	155-13.9	8.0*	1.1	11	208	6.6	0.19	1.3		0.15	C
29	1	33	11.7	19-24.5	155-24.4	8.0*	1.3	14	176	8.2	0.08	0.6		0.10	C
29	3	49	31.3	19-21.1	155- 6.9	3.9	1.8	16	146	5.4	0.13	1.1	1.2	0.20	C
29	7	33	40.6	19-20.3	155- 7.1	8.0*	1.1	9	163	5.9	0.11	1.1		0.12	C
29	13	8	1.1	19-19.1	155-11.5	8.0*	1.6	12	175	6.1	0.10	0.8		0.10	C
29	14	53	25.6	19-16.4	155-49.7	5.8	2.4	19	207	22.3	0.37	1.6	1.6	0.18	C
29	15	30	50.7	19-20.6	155-13.7	8.4	1.2	11	137	3.9	0.13	1.2	2.3	0.18	B
29	21	37	31.9	18-59.5	155-17.4	31.3	2.8	27	230	26.1	0.35	1.9	3.1	0.16	C
30	6	36	57.6	19-26.0	155-20.4?	3.0	1.0	14	97	3.0	0.23	0.8	0.9	0.23	B
30	6	40	56.2	19-10.5	155-30.1?	5.2	1.9	17	124	4.3	0.15	1.1	0.9	0.18	B
30	7	52	13.1	19-18.9	155-11.6	1.4	2.7	22	156	6.6	0.40	0.8	1.5	0.26	C
30	17	12	23.5	19-22.3	155-22.4	5.4	1.5	12	152	4.1	0.17	1.0	1.1	0.19	C
30	20	31	16.7	19-24.2	155-16.7	13.3	1.9	18	56	1.4	0.05	0.6	0.5	0.09	B
31	2	34	33.3	19-18.9	155-13.3	8.0*	1.7	13	213	6.6	0.13	0.8		0.10	C
31	5	10	13.5	19-19.8	155-16.3	5.3	1.6	17	141	1.9	0.11	0.8	0.8	0.16	C
31	7	15	9.2	19-24.5	155-17.4?	1.4	0.2	8	98	1.0	0.04	0.2	0.3	0.05	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 31	8	7	57.5	19-23.8	155-15.5?	1.0	0.9	9	77	2.6	0.09	0.4	0.6	0.11	B
31	8	25	18.6	19-24.1	155-16.1	1.8	0.6	7	104	2.1	0.06	0.3	0.3	0.06	B
31	16	20	28.5	19-23.6	155-24.0?	7.9	2.4	21	81	6.4	0.07	0.6	0.5	0.15	B
31	20	36	35.4	19-19.7	155-14.1	8.0*	1.6	19	143	5.7	0.07	0.6		0.13	C
31	23	45	8.6	19-21.1	155- 5.3?	7.7		10	138	4.7	0.06	0.5	0.4	0.07	B
NOV 1	5	43	19.1	19-20.9	155-18.8	26.5	2.4	25	56	2.8	0.14	0.8	1.4	0.14	B
1	6	27	33.9	19-18.5	155-12.8	8.0*	1.7	8	227	7.4	0.31	2.1		0.14	D
1	8	16	17.4	19-21.2	155-45.0	5.1	1.5	14	225	21.8	0.26	1.3	1.2	0.11	C
1	11	58	46.6	19-59.2	155-44.7	9.1	2.2	20	176	16.0	0.10	1.0	1.6	0.11	C
1	16	42	57.2	19-20.4	155-18.7?	7.1	0.6	9	89	2.4	0.10	0.8	0.6	0.12	B
1	17	35	5.9	19-20.2	155-18.9	23.3	1.7	15	80	2.7	0.20	1.2	2.0	0.13	B
1	18	11	1.4	19-21.5	155-13.5	29.6	2.1	18	135	2.4	0.17	1.0	1.6	0.11	B
1	20	25	7.7	19-21.6	155-15.1?	5.7	1.3	12	124	2.0	0.12	1.0	0.9	0.17	B
1	23	10	18.6	19-19.4	155-15.5	6.5	1.5	14	180	3.5	0.12	0.8	0.7	0.12	C
2	1	19	30.1	19-21.7	155-22.8	7.7	1.5	15	90	2.8	0.06	0.7	0.5	0.15	B
2	3	26	47.2	20-14.2	155- 5.8	20.6*	2.5	19	293	46.2	0.31	2.1		0.14	D
2	4	26	32.9	18-58.4	155-20.2	12.8*	2.4	17	235	24.6	0.30	2.2		0.16	D
2	4	32	52.9	18-53.1	155-17.1	8.0*	2.6	11	280	35.7	0.22	1.4		0.05	D
2	4	37	7.2	18-53.1	155-17.7	6.3	2.4	14	257	35.1	1.26	2.6	8.3	0.11	D
2	5	26	33.2	18-56.3	155-20.4	10.5	2.2	11	267	27.7	0.24	1.4	1.3	0.07	C
2	17	36	17.3	18-49.4	155-15.8	2.1*		11	300	42.7	0.91	5.6		0.11	D
2	19	16	21.7	19-19.7	155-10.7?	7.9		11	238	4.7	0.20	1.3	0.5	0.09	C
2	19	47	27.7	19-21.8	155-23.1	8.6		14	59	2.9	0.05	0.5	1.1	0.08	A
2	21	46	13.4	18-53.8	155-17.3	10.4		10	278	34.4	0.99	4.8	3.9	0.09	D
2	21	47	15.2	19-24.2	155-25.6	7.3	1.7	21	58	8.3	0.07	0.5	0.5	0.16	B
2	21	55	49.8	18-59.0	155-19.2?	7.4	2.3	19	245	24.7	0.61	5.0	20.8	0.26	D
3	5	12	31.5	19-19.0	155-15.3	5.9	1.3	16	193	4.3	0.13	0.9	0.6	0.15	C
3	5	15	1.6	19-19.7	155-11.4	5.2	1.7	19	168	5.3	0.13	0.9	0.8	0.21	C
3	6	31	19.1	19-20.3	155-13.4	6.3		12	183	4.3	0.19	1.2	1.0	0.16	C
3	11	22	55.4	19-19.3	155-10.0	8.0*		13	176	5.2	0.13	1.0		0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 3	11	58	30.4	19-20.9	155- 6.6	3.9	1.8	18	134	6.0	0.11	0.9	1.0	0.21	C
3	16	17	51.2	19-24.2	155-16.1	11.4	1.4	18	88	2.1	0.04	0.5	0.4	0.10	A
3	16	53	46.6	19-22.6	155-25.3	8.0*	1.3	12	94	5.6	0.08	0.7		0.14	B
3	17	1	2.8	18-55.8	155-19.4?	11.4	2.5	10	260	29.3	0.99	5.1	4.3	0.16	D
3	19	38	44.3	19-13.1	155-27.1	13.8*	1.8	8	160	17.4	0.21	3.0		0.26	C
3	21	17	37.8	19-23.0	155-23.5	7.9	1.3	22	53	5.3	0.07	0.6	0.5	0.18	B
4	3	21	9.3	19-18.5	155-12.8	8.0*	1.6	8	227	7.4	0.28	1.9		0.13	D
4	4	40	25.1	19-21.1	155- 7.2	7.9	2.4	20	133	4.9	0.07	0.6	0.4	0.11	B
4	20	53	12.1	19-22.1	155-23.6	9.4	0.5	11	121	3.5	0.09	0.6	1.6	0.10	B
4	22	48	7.0	19-22.6	155-22.6	2.1*	1.3	11	114	4.5	0.08	0.5		0.13	B
4	22	50	38.6	19-22.4	155-23.1?	9.2	1.4	13	118	4.1	0.20	1.5	2.8	0.27	B
5	3	41	30.3	19-22.7	155-26.8	0.9	1.5	14	154	7.7	2.58	1.1	9.7	0.21	C
5	7	45	22.1	19-23.7	155-17.4	13.4	1.6	18	68	1.1	0.03	0.4	0.3	0.09	A
5	9	30	27.8	19-11.1	155-16.3	41.2	1.9	17	187	10.3	0.26	1.1	2.3	0.09	C
5	12	17	19.8	19- 3.1	155-23.5	30.8	2.3	20	220	14.1	0.33	1.8	3.0	0.14	C
5	12	24	38.4	19-20.7	155-15.9	31.2		21	129	2.8	0.12	0.7	1.2	0.10	B
5	12	25	50.1	19-18.4	155-15.5	6.4		17	150	4.6	0.08	0.6	0.6	0.12	B
5	20	13	31.3	19-22.8	155- 3.7	1.5	1.9	23	108	5.6	0.37	0.7	1.3	0.20	B
5	22	41	58.5	18-57.2	155-18.4	42.3		13	252	28.1	0.81	3.8	7.2	0.15	D
6	1	17	9.3	18-48.2	155-13.1	8.0*		18	276	47.1	0.59	3.8		0.14	D
6	1	20	58.5	19-24.5	155-17.2	1.0	0.7	9	64	0.8	0.07	0.4	0.6	0.12	B
6	2	8	28.4	19-22.9	155-26.4	4.5	2.1	21	78	7.4	0.10	0.8	1.2	0.26	B
6	4	19	35.0	19-21.1	155- 7.3	3.7		13	148	4.8	0.13	1.0	1.0	0.18	B
6	7	12	16.5	19-22.1	155- 2.7	4.8	2.0	20	134	4.1	0.15	1.1	0.9	0.24	C
6	9	10	11.4	19-12.6	155-27.3	6.9	2.7	24	118	5.7	0.08	0.7	0.5	0.16	B
6	10	28	22.6	19-29.9	155-41.3?	7.6	2.3	21	145	9.3	0.07	0.6	0.8	0.11	B
6	14	33	49.7	19-17.3	155-22.4	4.7		17	132	5.6	0.07	0.6	0.7	0.15	B
6	14	52	21.5	19-19.5	155-13.4	7.4	2.8	21	146	5.6	0.08	0.6	0.5	0.14	C
6	16	22	9.7	19-16.8	155-21.6	5.7	2.0	19	139	7.0	0.09	0.8	0.7	0.18	C
7	4	8	8.3	19-23.9	155-16.4	12.3	2.0	22	51	1.4	0.05	0.5	0.4	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 7	4	24	14.7	19-22.9	155- 5.6?	3.4	1.7	17	127	7.2	0.12	0.8	0.9	0.15	C
7	4	54	40.1	19-19.8	155-12.1	5.8		14	211	5.1	0.19	1.1	0.8	0.16	C
7	4	55	8.1	19-20.0	155- 9.8	8.3		11	165	3.8	0.15	1.3	2.4	0.12	C
7	7	37	28.2	19-25.6	155-28.0	7.3	1.7	20	111	11.3	0.11	0.7	0.7	0.15	B
7	9	1	27.1	19-20.8	155-18.9	4.5		9	86	2.9	0.10	0.3	1.3	0.05	A
7	13	24	57.2	19-20.9	155-25.3	5.2	0.9	9	130	3.7	0.15	0.8	2.4	0.11	B
7	19	52	46.2	19-24.9	155-17.2	9.1	1.5	11	105	0.4	0.25	1.5	2.0	0.18	B
8	1	42	11.0	19-21.9	155-24.3	8.0*	1.6	6	241	8.7	0.35	2.2		0.10	D
8	10	53	13.7	19-26.8	155-29.4	7.3	2.2	24	69	12.1	0.12	0.7	1.0	0.19	B
8	19	23	40.1	19-18.3	155-16.4	6.5	2.0	22	146	3.7	0.07	0.6	0.5	0.15	B
8	21	5	32.1	19-20.3	155-11.6	6.4	1.6	13	209	4.5	0.15	1.1	0.6	0.15	C
8	22	35	8.4	19-22.4	154-57.9	24.5		12	292	17.7	0.89	4.9	4.9	0.09	D
9	1	39	4.5	19-10.4	155-30.3	36.4		14	106	4.6	0.29	1.3	2.8	0.10	B
9	2	14	24.9	19-21.9	155-25.9	3.2	1.5	12	121	5.7	0.10	0.7	1.4	0.14	B
9	3	45	41.7	19-21.7	155-26.4	3.5	1.7	15	74	6.0	0.08	0.6	1.0	0.15	B
9	5	29	36.4	19-19.6	155-15.5	5.8		15	196	3.4	0.15	1.0	0.5	0.14	C
9	7	3	19.3	19-22.0	155-25.7	3.2	2.1	21	70	10.5	0.10	0.7	0.9	0.21	B
9	7	58	34.1	19-21.7	155-26.9?	0.0	1.8	12	76	6.8	7.61	0.8	14.5	0.19	B
9	17	28	2.7	19-19.1	155-13.8	8.0*		11	204	6.5	0.17	1.2		0.15	C
9	17	37	3.9	19-19.4	155- 9.1	4.2		15	176	5.1	0.20	1.3	1.5	0.24	C
9	18	30	6.6	19-21.7	155- 1.6	6.5	2.4	19	168	4.1	0.21	1.5	1.0	0.27	C
9	23	26	15.6	19-21.5	155-16.6	31.2	2.2	23	111	2.1	0.19	1.1	1.8	0.15	B
10	1	20	11.4	19-23.7	155-22.6	8.0*	1.5	17	60	5.1	0.04	0.4		0.11	B
10	2	12	20.5	19-26.1	155-24.7	5.5	2.0	18	94	7.2	0.08	0.6	0.7	0.16	B
10	3	12	24.8	19-24.9	155-16.9	1.2	1.1	8	115	0.2	0.07	0.4	0.3	0.09	A
10	3	43	36.0	19-23.6	155-17.0	12.1		16	63	2.4	0.05	0.5	0.5	0.09	A
10	7	7	47.4	20- 3.2	155-38.6?	0.0	2.4	26	180	16.5	0.54	2.0	1.0	0.25	C
10	9	13	44.5	19-20.6	155-29.6	4.8	2.5	22	85	11.1	0.18	1.3	1.3	0.30	B
10	15	20	21.1	19-20.1	155- 7.3	8.0*		13	166	5.7	0.13	1.2		0.16	C
11	1	53	38.7	19-23.1	155-24.6	7.2	1.8	20	85	5.8	0.08	0.6	0.5	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 11	2	57	57.6	19-23.4	155-29.9?	4.8	2.0	19	116	13.0	0.17	1.2	3.8	0.21	B
11	5	48	48.6	19-48.9	155-22.1	24.3	2.0	18	129	8.8	0.38	1.7	3.9	0.10	B
11	18	2	22.7	19-22.3	155-24.4	8.5	1.4	14	84	4.3	0.07	0.6	1.7	0.11	B
11	20	19	10.6	19-17.9	155-13.9	8.0*	1.3	11	228	7.4	0.22	1.3		0.11	D
11	21	3	59.4	19-22.4	155-23.2?	8.1	2.5	24	63	4.1	0.07	0.6	0.5	0.17	B
12	0	3	26.2	19-20.5	155-12.3	8.9	1.4	13	153	3.6	0.10	0.7	1.4	0.09	C
12	3	25	38.6	19-20.7	155-28.2?	7.9	1.9	14	151	8.3	0.12	0.8	0.7	0.12	C
12	7	26	52.5	19-22.3	155-15.9	36.0	1.9	12	120	0.2	0.34	1.5	3.0	0.09	B
12	8	51	49.3	19-25.8	155-27.1	8.0*		11	109	9.9	0.03	0.3		0.05	B
12	10	32	24.4	19-23.5	155-23.8	8.0*	1.6	10	128	6.2	0.09	0.7		0.12	C
12	15	46	25.6	19-19.6	155-14.6	8.0*	1.5	8	186	5.0	0.14	1.0		0.10	C
12	16	52	11.8	19-19.3	155-13.7	8.0*	1.6	13	201	6.1	0.12	0.8		0.10	C
13	0	12	25.7	19-14.6	155-22.0	8.9	1.9	16	170	8.6	0.08	0.8	1.8	0.13	C
13	1	53	44.3	19-20.1	155-12.0	7.0	3.0	20	144	4.6	0.10	0.8	0.6	0.17	C
13	4	2	32.4	19-22.5	155-26.6	8.0*	1.4	10	152	7.3	0.10	0.8		0.12	C
13	4	49	13.7	19-20.0	155-13.7?	8.0	1.8	18	155	4.8	0.08	0.6	0.4	0.12	C
13	7	59	37.7	19-50.9	155-32.2	25.6		16	248	11.1	0.33	1.8	2.8	0.08	C
13	17	33	29.5	20- 7.5	155-18.9?	45.6	2.3	13	317	26.2	0.65	4.7	7.8	0.24	D
13	20	45	26.2	19-19.6	155-13.9	8.0*	1.5	16	162	5.7	0.08	0.6		0.11	C
13	23	4	12.7	19-18.6	155-21.9?	6.6	1.7	16	111	3.8	0.07	0.6	0.7	0.13	B
13	23	52	17.5	19-20.6	155-12.4	9.7	1.2	14	153	3.6	0.12	0.8	1.4	0.10	C
14	1	6	19.9	19-19.6	155-11.0	8.0*		14	169	5.0	0.07	0.6		0.09	C
14	8	14	43.5	19-22.5	155- 3.6?	8.0*	2.1	9	167	5.0	0.30	2.2		0.28	C
14	10	0	14.2	19-23.3	155-25.6	7.9	1.9	19	82	7.1	0.11	0.7	0.7	0.15	B
14	12	25	41.5	19-22.5	155- 6.1?	3.6	1.8	15	123	6.5	0.12	0.9	0.8	0.16	B
14	12	27	11.3	19-20.4	155- 6.9	7.7	3.5	22	138	5.8	0.08	0.6	0.5	0.13	B
14	12	39	38.4	19-20.2	155- 6.9	8.0*		6	163	6.1	0.18	1.8		0.14	C
14	13	39	10.1	19-22.0	155-23.4	9.0	1.7	14	64	3.4	0.08	0.6	1.5	0.11	B
14	14	17	42.9	19-19.9	155-13.5	27.9	2.2	22	140	5.0	0.17	1.0	1.8	0.14	B
14	16	4	13.8	19-20.4	155- 7.1	8.0*		13	159	5.7	0.10	0.9		0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 14	16	19	37.5	19-21.6	155- 0.3?	10.1	2.3	13	256	5.6	0.64	5.2	2.2	0.29	D
14	17	17	16.1	19-20.3	155- 7.9	9.5		11	162	4.6	0.10	0.7	1.4	0.07	B
14	19	43	24.5	19-22.0	155-18.4	1.5	1.1	10	74	3.5	0.07	0.3	0.3	0.09	A
14	21	11	9.1	19-20.2	155- 7.1	8.0*		13	164	5.8	0.06	0.6		0.08	C
15	1	29	14.8	19-48.1	155-18.0	11.8*		9	337	35.0	0.25	2.5		0.07	D
15	2	24	1.9	19-21.2	155-23.3?	7.3		9	181	1.8	0.55	2.8	4.4	0.13	C
15	2	52	10.3	19-19.5	155-11.5	8.0		12	225	5.7	0.18	1.2	0.5	0.09	C
15	2	59	39.3	19-18.9	155- 9.3	3.5	1.8	15	182	6.1	0.17	1.1	1.2	0.19	C
15	4	55	28.1	19-21.0	155- 5.5	3.1	1.9	18	144	5.0	0.14	1.1	1.1	0.21	C
15	5	33	32.1	18-50.6	155-26.1	14.4*		18	284	28.7	0.25	1.8		0.13	D
15	5	36	58.3	19-19.0	155-13.4	8.0*		10	246	6.5	0.26	1.6		0.10	D
15	6	55	20.7	19-22.9	155-23.1	8.0*		13	173	5.0	0.14	1.0		0.16	C
15	10	31	31.2	19-19.1	155-14.8	10.3		10	195	4.9	0.24	1.3	2.2	0.11	C
15	15	50	44.7	19-20.8	155-19.3	2.4*		9	95	3.6	0.04	0.3		0.07	B
15	16	11	17.7	19-22.0	155-24.2	7.8		8	213	3.6	0.18	1.3	0.7	0.09	C
15	17	58	6.9	19-14.4	154-54.2?	2.7*	2.5	11	346	30.8	1.87	13.5		0.41	D
15	18	25	39.0	19-20.5	155-19.6	2.1*		9	105	3.9	0.04	0.3		0.06	B
15	19	33	11.1	19-16.2	155-12.3?	0.0	2.2	19	216	11.5	0.52	1.2	0.9	0.21	C
15	20	40	31.0	19-24.1	155-16.0	3.2	1.7	15	61	2.0	0.05	0.4	0.7	0.10	B
15	22	8	43.9	19-22.3	155-24.3?	6.9		9	212	4.3	0.38	1.9	3.6	0.13	C
15	22	29	13.4	19-24.3	155-23.6	8.0*		12	187	6.9	0.11	0.7		0.10	C
15	22	40	6.2	19-19.2	155-13.1	8.0*		11	208	6.0	0.11	0.7		0.08	C
15	22	52	13.5	19-22.5	155-47.4?	10.7	2.4	23	156	21.2	0.12	1.0	1.7	0.18	C
16	0	7	41.9	19-16.6	155-21.5	8.0*		14	159	5.6	0.12	1.0		0.18	C
16	0	24	20.9	19-17.3	155-22.3	5.4		17	134	5.6	0.08	0.8	0.9	0.18	B
16	0	27	30.3	19-16.5	155-21.6	5.1	2.7	23	141	5.8	0.10	0.8	0.8	0.21	C
16	0	33	45.8	19-16.3	155-22.3	8.0*		9	208	7.1	0.14	1.0		0.09	C
16	0	46	2.0	19-16.4	155-21.6	8.0*	1.8	17	158	5.9	0.09	0.8		0.16	C
16	0	57	48.0	19-17.2	155-22.5?	4.1		15	135	5.8	0.11	1.0	1.0	0.20	B
16	1	48	41.9	19-16.6	155-21.9	4.1	1.9	19	153	6.2	0.11	0.8	1.3	0.20	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 16	1	53	16.9	19-16.3	155-21.7	8.0*		13	205	6.2	0.14	1.1		0.14	C
16	2	3	32.7	19-16.8	155-21.9	8.0*		13	148	6.0	0.11	1.0		0.17	C
16	2	7	11.3	19-16.2	155-21.4	2.0	1.9	21	161	8.2	0.30	0.7	1.1	0.19	C
16	2	12	53.5	19-15.7	155-21.8	8.0*		12	226	7.0	0.20	1.3		0.13	D
16	2	13	26.7	19-16.9	155-21.7?	1.7		13	212	6.7	0.15	0.8	1.9	0.14	C
16	2	16	46.7	19-16.4	155-21.3?	2.1	1.9	22	157	7.8	0.10	0.6	0.8	0.17	C
16	2	26	29.7	19-17.6	155-22.0	8.0*		10	251	5.3	0.51	2.9		0.16	D
16	2	33	2.9	19-16.5	155-21.5	8.0*		14	159	5.7	0.12	1.0		0.18	C
16	2	34	25.6	19-16.4	155-22.3	8.0*		10	204	7.0	0.28	2.0		0.18	C
16	2	37	34.7	19-16.1	155-21.7	8.0*		13	208	6.4	0.15	1.1		0.15	C
16	2	37	59.1	19-16.0	155-21.8	8.0*		11	208	6.6	0.18	1.4		0.16	C
16	2	40	7.3	19-15.9	155-22.3	8.0*		8	288	7.4	1.08	5.7		0.13	D
16	2	41	30.1	19-16.3	155-21.1	8.0*	1.8	19	161	5.3	0.09	0.7		0.15	C
16	2	44	40.0	19-16.9	155-22.5	8.0*	1.7	7	189	6.3	0.04	0.4		0.04	C
16	2	46	43.2	19-16.9	155-21.7	8.0*		14	168	6.8	0.10	1.0		0.14	C
16	2	54	38.0	19-17.2	155-22.7	8.0*		9	179	5.7	0.19	1.4		0.15	C
16	3	52	43.9	19-16.0	155-21.9	8.0*		9	286	6.8	0.96	5.1		0.14	D
16	4	13	35.2	19-15.4	155-21.3	8.0*		13	236	6.7	0.23	1.4		0.18	D
16	4	15	1.3	19-18.9	155-21.3	3.7		8	195	4.4	0.10	0.5	0.7	0.06	B
16	4	20	55.0	19-17.1	155-21.1?	7.6	3.0	23	139	4.6	0.09	0.7	0.6	0.18	B
16	4	22	34.5	19-16.1	155-21.3	1.0	2.0	18	145	8.4	1.69	0.6	6.3	0.15	C
16	4	23	40.2	19-16.0	155-22.2	8.0*		8	214	7.2	0.16	1.2		0.09	C
16	4	24	2.5	19-17.0	155-22.2	2.8	1.7	19	142	6.2	0.10	0.8	1.1	0.20	B
16	4	25	29.5	19-16.8	155-22.5	8.0*		8	192	6.4	0.05	0.4		0.04	C
16	4	25	54.6	19-16.4	155-21.4	4.9	2.7	22	143	7.8	0.09	0.7	0.7	0.18	C
16	4	27	15.7	19-17.1	155-21.9	6.6		14	142	5.9	0.09	0.8	0.6	0.17	B
16	4	27	32.5	19-17.8	155-21.6	3.2		5	154	5.3		0.0		0.03	D
16	4	29	4.7	19-17.2	155-22.7	8.0*		9	179	5.6	0.15	1.1		0.13	C
16	4	31	0.6	19-17.1	155-22.1	8.0*		19	140	6.1	0.11	0.9		0.19	C
16	4	32	42.5	19-17.2	155-22.7	8.0*		9	181	5.7	0.13	1.0		0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 16	4	34	44.5	19-16.9	155-22.3	8.0*		8	191	6.4	0.07	0.6		0.06	C
16	4	36	52.4	19-16.6	155-22.6	8.0*		13	196	6.7	0.21	1.4		0.21	C
16	4	39	33.3	19-17.4	155-22.6	4.3		8	173	5.3	0.15	1.0	1.4	0.11	C
16	4	42	43.6	19-17.4	155-22.4	8.0*		11	175	5.4	0.13	1.0		0.13	C
16	4	44	31.7	19-15.4	155-21.8	8.0*		13	234	7.4	0.17	1.1		0.13	D
16	4	48	26.0	19-17.0	155-22.3	4.4		16	140	6.1	0.12	1.0	1.1	0.21	C
16	4	49	33.3	19-16.7	155-21.8	8.0*		13	152	6.0	0.12	1.0		0.20	C
16	4	52	3.7	19-20.6	155-20.8?	1.1		9	120	4.4	0.56	1.5	21.6	0.22	B
16	5	1	59.4	19-16.4	155-22.4?	8.0*		18	151	7.1	0.14	1.2		0.24	C
16	5	4	3.4	19-16.0	155-21.9	8.0*		13	208	6.8	0.16	1.2		0.15	C
16	5	4	38.2	19-16.5	155-21.8	8.0*		8	274	6.1	0.88	4.8		0.16	D
16	5	26	56.7	19-17.7	155-21.6	6.9	2.5	20	131	5.2	0.09	0.8	0.6	0.21	C
16	5	29	14.4	19-16.6	155-21.5	8.0*		9	271	5.7	0.68	3.8		0.15	D
16	5	29	21.2	19-16.3	155-21.5	2.3	2.0	21	142	7.8	0.12	0.8	1.3	0.22	C
16	5	30	58.4	19-17.3	155-21.4	8.0*		8	253	5.0	0.46	2.7		0.12	D
16	5	55	8.6	19-15.5	155-22.2	8.0*		10	227	7.8	0.24	1.6		0.14	D
16	6	31	9.9	19-22.4	155-23.1?	6.9		12	109	4.0	0.12	1.1	2.0	0.19	B
16	6	35	20.6	19-17.1	155-22.1	8.0*		12	141	6.1	0.07	0.7		0.11	C
16	6	39	33.9	19-15.4	155-22.0	8.0*		13	230	7.5	0.21	1.4		0.12	D
16	7	26	47.3	19-17.3	155-22.4?	2.7	1.7	17	135	5.6	0.13	1.0	1.4	0.22	C
16	7	31	33.8	19-17.3	155-22.2	8.0*		5	261	5.7	0.27	1.6		0.04	D
16	8	22	4.1	19-45.0	155-49.4?	8.9*	2.1	12	280	27.2	0.47	2.9		0.11	D
16	8	44	26.3	19-24.2	155-16.1?	1.3	1.2	9	102	2.1	0.46	0.6	1.7	0.11	B
16	10	8	57.3	19-20.4	155-13.2	2.8	2.0	18	181	3.8	0.18	1.0	1.5	0.25	C
16	15	39	6.6	19-22.4	155-23.6	7.8	1.9	19	81	4.0	0.12	0.8	0.7	0.19	B
16	15	49	59.8	19-20.9	155-12.7	9.5		8	175	2.8	0.15	0.8	1.6	0.05	B
16	17	27	12.6	19-17.6	155-16.4?	9.0	1.7	11	226	4.0	0.28	1.7	2.3	0.14	C
16	17	28	4.3	19-19.9	155- 8.8?	4.5	1.7	15	168	4.4	0.13	1.0	0.9	0.18	C
16	18	41	15.4	19-18.7	155- 9.8	3.9		14	186	6.3	0.19	1.1	1.3	0.21	C
16	22	29	5.5	19-18.0	155- 5.4	8.0*		12	270	10.8	0.60	3.4		0.10	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 16	23	27	33.9	19-21.1	155- 7.6	2.9	2.1	17	148	8.4	0.09	0.6	0.8	0.14	B
17	1	23	12.6	19-21.8	155-18.1?	2.0	1.6	12	161	3.5	0.12	0.9	1.4	0.13	C
17	1	45	6.3	19-22.2	155-18.1	1.7		8	87	3.1	0.07	0.3	0.4	0.08	A
17	3	26	0.3	18-59.3	155-28.4	25.6	2.6	24	284	18.9	0.42	2.8	5.0	0.21	D
17	4	10	12.4	19-15.1	154-55.0	13.5*	2.5	18	243	25.7	0.41	3.1		0.28	D
17	5	42	1.5	19-20.7	155-19.6	3.6		8	101	4.0	0.21	0.6	3.7	0.07	B
17	6	41	27.8	19-22.4	155- 8.2?	8.0	2.3	14	217	2.8	0.16	1.2	0.5	0.12	C
17	7	52	26.3	19-17.3	155-15.2	8.0*		13	234	6.2	0.21	1.3		0.12	D
17	8	1	4.8	19-15.1	155- 8.6	35.2		12	319	17.9	0.25	2.4	1.3	0.07	C
17	9	2	29.0	19-19.6	155- 8.6	5.1		11	174	5.1	0.15	1.1	1.2	0.15	C
17	9	3	0.9	19-24.9	155-17.0	1.9		8	146	0.1	0.11	0.8	0.4	0.13	B
17	19	35	22.0	19-18.9	155-10.1	3.6	1.7	14	181	5.9	0.17	1.1	1.4	0.20	C
17	20	36	11.3	19-24.9	155-23.3	8.0*	1.5	13	89	6.7	0.04	0.3		0.07	B
18	2	25	17.9	19-20.5	155-11.6	9.2	1.8	13	203	4.1	0.10	0.6	0.9	0.07	B
18	5	46	15.6	19-25.2	155-16.3	1.6	0.8	8	118	1.2	0.10	0.6	0.5	0.11	B
18	8	39	50.3	19-20.0	155- 8.8?	4.6	2.2	16	167	4.2	0.13	0.9	0.9	0.15	C
18	10	21	10.4	19-25.3	155-24.4	8.0*	1.9	16	83	7.7	0.06	0.6		0.11	B
18	12	4	53.6	19-59.6	155-20.9	11.6	2.7	18	223	11.4	0.26	1.8	1.7	0.17	C
18	15	39	53.3	19-20.9	155-13.6	8.1	1.5	17	142	3.2	0.09	0.8	0.5	0.15	B
18	16	44	32.4	18-49.0	155-16.1	8.0*	2.6	16	272	43.1	0.44	2.9		0.12	D
18	17	4	45.8	18-51.1	155-14.9?	20.3	2.8	25	260	40.8	0.33	2.6	6.3	0.16	D
18	17	30	35.9	18-51.0	155-16.3	5.3	2.6	15	265	39.8	1.80	3.9	11.2	0.15	D
18	17	37	53.7	18-57.6	155-18.4	12.4*	2.5	17	241	27.5	0.30	2.2		0.15	D
18	17	59	21.1	18-54.4	155-17.1	15.4*	2.8	20	254	33.6	0.25	1.7		0.16	D
18	18	8	50.8	18-54.1	155-15.8	26.7*	3.1	27	251	35.4	0.27	1.9		0.20	D
18	18	54	39.2	19-15.9	155-22.1	0.5	2.1	22	142	8.1	0.45	0.7	0.8	0.18	B
18	19	12	22.4	18-54.9	155-18.3	28.1*	2.6	17	251	31.9	0.34	2.7		0.22	D
18	20	17	58.2	18-51.9	155-16.2	8.2	2.6	18	263	38.4	0.70	3.3	3.5	0.16	D
18	21	6	20.6	18-52.7	155-17.7	1.5*		15	293	35.7	0.67	4.1		0.09	D
19	3	11	55.3	19-21.8	155-28.6	5.4	1.8	16	88	9.8	0.09	0.7	0.9	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 19	6	1	12.0	19-20.0	155- 8.9	6.4	1.8	14	166	4.1	0.14	1.1	0.8	0.17	C
19	7	52	53.1	19-20.2	155-24.8	6.9	1.7	11	105	2.6	0.10	0.9	0.8	0.14	B
19	9	7	52.9	18-58.2	155-15.9?	7.4		14	242	29.6	0.64	3.3	4.0	0.22	D
19	10	56	36.5	19-24.8	155-24.9	8.0*	1.6	17	101	8.9	0.07	0.6		0.12	B
19	12	44	29.1	18-51.2	155-16.7	0.6	2.6	13	272	39.0	0.51	4.6	1.6	0.15	D
19	14	14	18.7	19-21.3	155-16.8	28.3	2.1	20	123	2.4	0.19	1.1	1.7	0.11	B
19	16	58	12.4	18-52.6	155-17.4	8.0*	2.6	16	293	36.1	0.37	2.3		0.07	D
19	18	45	6.0	19-18.7	155- 8.9	3.0	1.8	14	184	6.4	0.20	1.2	1.6	0.22	C
19	22	4	25.6	18-51.1	155-16.0	1.1*	2.6	17	278	39.8	0.61	3.8		0.13	D
20	1	6	21.8	18-47.8	155-14.4	8.0*	2.5	17	275	46.5	0.53	3.4		0.13	D
20	13	8	23.0	19-24.0	155-15.7	4.2	1.7	13	69	2.5	0.09	0.4	0.9	0.10	B
20	14	45	19.7	19-25.1	155-35.7	4.4	2.5	13	242	7.8	0.21	1.2	0.7	0.09	C
20	17	7	29.0	19-18.1	155-15.0	9.2	1.8	16	210	5.6	0.12	0.9	1.0	0.11	C
20	17	28	5.7	19-20.3	155-28.0?	6.4		14	82	7.6	0.11	1.1	2.8	0.19	B
20	22	53	19.4	19-19.9	155-13.0	10.6		13	218	4.7	0.13	0.7	1.2	0.07	B
21	0	8	53.1	19-22.9	155- 5.6?	3.9		13	127	7.2	0.10	0.8	0.7	0.13	B
21	0	23	24.8	19-26.3	155-25.9	8.0*		14	129	7.9	0.05	0.5		0.09	C
21	0	32	22.7	19-23.0	155- 3.8	2.6		9	163	5.9	0.10	0.6	1.4	0.09	B
21	6	30	24.5	19-19.8	155-15.9	5.9		14	186	2.7	0.13	0.8	0.6	0.13	C
21	8	12	23.9	19-20.5	155- 8.2	9.1		12	171	4.1	0.07	0.6	1.0	0.06	B
21	13	9	53.9	19-24.6	155-16.6	4.5	1.3	11	95	0.9	0.14	0.7	1.2	0.13	B
21	17	23	3.6	19-17.0	155-22.3	8.0*	1.5	18	134	6.1	0.09	0.8		0.17	C
21	17	45	1.5	19-19.6	155-13.6	6.4	1.4	19	144	5.4	0.07	0.5	0.5	0.14	B
21	17	46	12.3	19-18.6	155-13.8	0.7	2.1	21	153	6.8	0.32	0.8	0.6	0.22	C
21	17	56	32.0	19-17.1	155- 2.8	30.0	1.8	17	254	5.2	0.28	1.7	1.7	0.09	C
21	20	43	41.9	19-15.9	155-22.1	2.1	2.4	23	142	8.1	0.26	0.6	0.9	0.17	B
21	21	11	47.1	19-16.1	155-22.5	0.6*	1.3	15	140	7.3	0.09	0.7		0.17	C
21	21	30	50.2	19-16.8	155-23.5	3.1	1.8	16	134	5.7	0.09	0.8	2.0	0.19	B
21	22	17	49.5	19-16.7	155-23.4	3.5	1.7	17	129	5.7	0.10	0.9	1.6	0.22	C
21	23	19	38.8	19-20.6	155- 7.3	4.3	1.7	18	140	5.1	0.12	0.9	1.0	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 22	0	44	7.7	19-21.0	155-13.7	8.6		12	203	3.3	0.30	1.5	2.2	0.10	C
22	4	47	42.1	19-24.3	155-17.2	1.8	0.3	8	91	1.1	0.04	0.3	0.2	0.05	A
22	12	34	28.0	19-21.1	155-54.6?	1.1	1.6	13	209	18.8	0.51	4.5	5.4	0.30	C
22	14	27	36.9	19-14.6	155-28.5	6.6	2.2	12	106	4.6	0.08	0.8	0.6	0.14	B
22	19	37	18.3	19-20.7	155-13.3	7.6	1.5	17	148	3.5	0.08	0.7	0.4	0.14	B
22	23	8	0.3	19-23.2	155-14.9	4.4		11	105	2.3	0.19	0.6	1.6	0.09	B
23	3	6	13.8	19-20.5	155-12.9	9.1	1.4	13	182	3.5	0.21	1.0	1.9	0.09	C
23	4	44	31.6	19-24.0	155-15.6	4.3		9	128	2.6	0.34	1.0	2.6	0.12	B
23	9	16	15.4	19-19.5	155-16.4	8.8	1.2	6	184	2.1	0.27	1.3	2.3	0.05	C
23	9	43	17.0	19-13.8	155- 6.8	38.2	2.7	26	205	13.1	0.17	1.0	1.4	0.10	B
23	17	15	30.4	19-24.2	155-16.1	2.2*		8	99	2.0	0.03	0.3		0.05	B
23	19	57	17.9	19-25.0	155-28.4	7.6	1.8	20	185	12.5	0.12	0.8	0.6	0.13	C
23	20	18	9.6	19-20.0	155-25.1	10.8	1.8	12	124	3.2	0.10	0.7	1.4	0.10	B
24	4	48	52.9	19-24.1	155-16.0	1.8	0.7	8	104	2.2	0.10	0.6	0.4	0.10	A
24	8	38	0.8	19-23.2	155-24.7	8.0*	1.8	17	136	6.1	0.08	0.6		0.12	C
24	11	47	30.9	19-19.6	155-14.4	8.0*	1.6	16	158	5.3	0.07	0.6		0.12	C
24	16	52	57.0	19-20.0	155- 7.9	8.7		16	168	5.2	0.08	0.7	1.5	0.08	C
24	16	53	41.0	19-19.9	155- 8.3	7.7		15	169	4.9	0.11	1.0	0.6	0.14	C
24	22	9	23.6	19-22.8	155- 1.0	8.0*	1.9	14	162	6.4	0.19	1.5		0.22	C
24	23	1	7.8	19-24.3	155-16.1	1.9	0.9	9	98	1.9	0.06	0.4	0.4	0.08	A
25	1	7	17.4	19-20.3	155-12.9	9.4	1.0	11	189	4.0	0.24	1.2	2.2	0.10	C
25	5	17	46.8	19-24.9	155-23.5	8.0*	1.5	13	162	7.0	0.08	0.6		0.09	C
25	6	8	30.9	19-24.2	155-16.1	2.0		8	100	2.0	0.05	0.3	0.2	0.05	A
25	7	48	41.6	19-24.2	155-15.9	3.0	0.7	6	110	2.4	0.10	0.3	1.2	0.02	B
25	9	24	51.6	19-23.4	155-30.2	6.7	1.9	15	188	13.5	0.19	1.1	0.9	0.17	C
25	10	51	21.3	19-20.6	155-19.6	3.1	1.4	10	105	4.0	0.15	0.5	4.4	0.07	B
25	11	9	28.8	19-24.7	155-16.6	1.1	0.5	9	100	0.7	0.06	0.3	0.3	0.10	A
25	14	30	5.5	19-21.0	155- 8.3	7.5	2.1	20	135	3.3	0.08	0.7	0.5	0.14	B
25	17	16	10.9	19-23.3	155-14.8	2.1*		7	104	2.5	0.03	0.2		0.04	C
25	18	8	1.8	20- 1.9	155-22.0	10.0	2.9	17	227	15.9	0.26	1.7	1.3	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 25	20	46	15.0	19- 9.3	155-20.9	27.6	2.6	22	182	12.3	0.16	1.1	2.2	0.12	C
25	20	53	45.8	19-24.2	155-16.0?	2.8	0.7	6	163	2.2	0.14	0.6	1.1	0.09	C
25	22	6	33.8	19-21.8	155- 8.9	7.9	2.0	17	172	1.6	0.10	0.9	0.5	0.12	C
26	0	7	25.9	19-21.7	155-18.7	11.5	0.8	8	84	3.7	0.19	1.7	1.6	0.13	B
26	0	22	37.1	19-23.2	155-24.5	8.0*	1.2	14	173	6.0	0.09	0.6		0.10	C
26	0	28	56.6	19-19.0	155-15.0	5.0	1.3	12	195	4.7	0.19	1.2	1.1	0.18	C
26	1	34	46.1	19-20.3	155-12.9	9.5	1.5	13	155	4.0	0.12	0.8	1.5	0.09	C
26	11	51	45.0	19-37.3	155-50.6	14.7	2.7	21	148	7.4	0.16	1.1	2.9	0.16	B
26	12	58	33.1	19-20.7	155-13.1	8.1	2.4	19	147	3.3	0.06	0.5	0.3	0.11	B
26	14	12	56.9	19-20.3	155-11.8	6.7	3.0	19	142	4.3	0.08	0.7	0.5	0.15	B
26	14	37	28.2	19-19.3	155-15.2	6.1	1.5	12	186	4.2	0.15	0.9	0.8	0.15	C
26	17	17	18.3	19-23.4	155-16.3	15.0	2.2	24	54	1.1	0.06	0.5	0.7	0.11	B
26	18	7	10.9	19-23.9	155-16.6	18.2	1.3	16	51	2.0	0.11	0.9	1.2	0.11	B
26	19	3	37.9	19-48.8	155-22.5	27.7	2.0	18	135	9.1	0.22	1.0	2.1	0.09	B
26	19	43	15.9	19-23.8	155-16.2	16.7	1.8	14	94	2.5	0.07	0.5	0.7	0.06	A
26	21	32	47.5	19-24.3	155-14.8?	8.2	0.9	12	85	1.0	0.10	0.8	0.6	0.13	B
26	21	38	13.5	19-24.1	155-16.1	2.0		8	101	2.0	0.08	0.5	0.3	0.07	A
26	23	3	1.5	19-24.0	155-15.6	3.2	1.6	13	70	2.6	0.09	0.4	1.2	0.10	B
27	0	12	36.5	19-20.2	155-49.0?	2.6	2.2	12	270	23.0	1.67	3.1	9.4	0.10	D
27	0	27	37.9	19-20.3	155-11.7	9.0	1.3	9	204	4.2	0.18	0.9	1.8	0.06	B
27	12	12	5.2	19-25.4	155-24.6	8.0*	1.8	13	83	8.4	0.05	0.5		0.11	B
27	14	52	15.9	19-23.3	155-16.1	16.6	2.1	21	67	1.5	0.07	0.6	0.9	0.12	B
27	21	27	22.3	19-17.9	155-12.7	3.7	2.2	19	193	8.4	0.20	1.1	1.1	0.23	C
28	0	4	24.3	19-16.6	155-12.0	8.0*		10	261	10.8	0.45	2.5		0.15	D
28	3	17	58.0	19-30.3	155-17.5	24.4		12	233	7.5	0.25	1.3	1.9	0.06	C
28	3	28	54.6	19-16.6	155-19.4	1.9	1.8	19	166	9.6	0.36	0.6	1.3	0.11	C
28	6	17	56.2	19-14.4	155-16.5	13.4*		9	231	16.0	0.20	1.5		0.09	D
28	6	19	7.8	19-19.0	155-15.5	11.8		8	191	3.9	0.17	0.7	1.4	0.05	B
28	6	22	16.0	19-21.3	155-25.2	4.1	2.1	20	74	9.3	0.10	0.9	1.3	0.28	B
28	6	49	39.7	19-20.8	155-24.7?	8.8	1.8	18	87	2.7	0.06	0.6	0.5	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 28	8	39	40.1	19-22.9	155-27.3	8.0*	1.8	12	160	8.6	0.11	0.8		0.12	C
28	9	42	48.7	19-19.4	155-11.8	8.0*	1.9	9	222	5.8	0.15	1.0		0.06	C
28	14	44	32.8	19-24.3	155-16.2	1.9	0.9	11	72	1.8	0.06	0.3	0.3	0.09	A
28	16	13	6.4	19-19.6	155-14.1	8.0*	1.4	13	191	5.8	0.13	0.9		0.13	C
28	19	25	27.6	19-23.2	155-14.9	4.4	1.1	13	104	2.3	0.09	0.4	0.9	0.08	A
28	20	10	54.0	19-23.4	155-29.8	7.8	1.7	15	185	16.4	0.14	1.2	1.0	0.14	C
28	20	57	27.3	19-23.2	155-14.7	3.6	0.8	8	108	2.6	0.07	0.2	0.7	0.03	A
28	22	41	19.3	19-21.0	155- 5.8	5.5	3.1	19	130	5.4	0.10	0.7	0.6	0.15	B
29	1	35	28.9	19- 2.6	155- 8.2	23.3	1.9	20	235	33.2	0.31	2.4	8.0	0.15	D
29	6	53	39.4	19-20.9	155-10.9?	7.4	1.6	15	151	2.9	0.09	0.8	0.6	0.14	C
29	7	21	48.8	19-20.3	155-13.0	6.8	1.1	10	155	4.0	0.12	1.0	0.8	0.15	C
29	7	56	53.9	19-18.6	155-12.9	3.0	1.9	18	155	7.1	0.15	0.8	1.4	0.21	C
29	7	58	21.6	19-19.4	155-12.9	6.5	2.3	20	148	5.6	0.10	0.8	0.6	0.18	C
29	8	36	2.5	19-18.6	155-13.8	8.0*	1.6	13	153	6.9	0.10	0.8		0.14	C
29	9	14	57.1	19-25.1	155-27.4	7.4	1.5	17	107	11.3	0.09	0.6	0.5	0.12	B
29	10	56	55.8	18-52.5	155-17.8	3.4	2.3	15	260	36.1	1.29	2.7	8.4	0.11	D
29	11	6	21.8	18-52.5	155-17.6	8.0*	2.4	10	260	36.1	0.40	2.6		0.10	D
29	11	28	38.5	19-18.4	155-13.4?	9.4	1.9	18	156	7.6	0.07	0.6	1.6	0.11	C
29	12	22	31.4	18-49.9	155-15.4	1.2*	2.5	14	269	42.2	0.75	4.7		0.19	D
29	14	57	19.4	19-43.3	156- 3.7?	0.2	2.3	14	255	23.6	0.43	2.7	1.0	0.19	D
29	15	18	9.5	19-21.0	155-16.0	31.1	2.2	17	125	2.6	0.14	0.7	1.2	0.07	B
29	15	43	58.4	19-22.3	155- 4.3	5.1	2.2	19	147	5.0	0.14	0.9	0.8	0.19	B
29	16	7	42.8	18-51.1	155-16.5	1.3*	2.4	13	265	39.3	0.38	2.4		0.11	D
29	16	46	42.0	18-59.6	155-19.7	13.1*	1.9	12	245	23.2	0.35	2.6		0.12	D
29	19	3	27.0	19-19.5	155-10.8	8.0*	2.0	15	172	5.1	0.10	0.8		0.12	C
29	22	8	26.6	19-18.3	155-15.1	12.1	1.3	12	211	5.2	0.14	0.5	1.1	0.04	B
29	22	33	15.4	19- 3.9	155-21.7	15.8	2.1	12	259	14.9	0.79	5.1	12.1	0.25	D
29	22	35	50.1	18-50.7	155-16.1	0.8*	2.2	12	297	40.4	1.09	6.7		0.18	D
29	23	21	7.1	18-56.7	155-19.1	11.7*	2.3	13	242	28.2	0.33	2.4		0.15	D
30	4	3	38.9	19-19.5	155-16.0	6.3	1.9	19	162	2.7	0.09	0.7	0.6	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 30	4	4	11.1	19-19.5	155-15.8	6.4	1.5	16	164	3.0	0.08	0.6	0.5	0.12	C
30	7	31	58.5	19-24.5	155-24.8	8.0*	1.4	12	214	8.3	0.12	0.7		0.08	C
30	9	32	50.7	18-50.6	155-15.0?	0.0	2.4	20	261	41.5	0.32	2.4	0.9	0.13	C
30	9	40	28.1	18-50.7	155-15.0	0.5	2.7	22	261	41.3	0.40	2.9	1.2	0.16	D
30	10	9	48.2	19-19.4	155-13.4	8.0*	1.3	14	167	5.8	0.10	0.7		0.14	C
30	13	12	20.7	18-51.1	155-16.1	8.1	2.6	16	259	39.8	0.62	3.0	3.4	0.16	D
30	14	53	12.6	19-24.0	155-16.3	2.6	1.2	12	57	1.6	0.09	0.4	1.1	0.10	B
30	15	45	17.3	19-29.3	155-53.9	7.9	2.4	24	169	4.2	0.11	1.4	1.2	0.14	C
30	20	11	47.6	19- 1.4	155-17.0	12.7*	2.1	12	227	24.2	0.41	3.1		0.23	D
30	22	26	48.1	19-19.5	155-12.6	8.0*	1.4	9	210	5.4	0.15	1.1		0.11	C
30	22	30	8.7	19-25.1	155-16.7	2.9	0.9	12	122	0.7	0.08	0.4	0.8	0.09	B
1	4	22	44.5	19-19.6	155-14.1	8.0*	1.4	16	183	5.7	0.11	0.8		0.14	C
1	9	0	35.9	19-18.0	155-13.0	8.1	2.1	14	183	8.3	0.10	0.7	1.9	0.08	C
1	12	2	2.1	18-52.7	155-14.1	0.9*	2.6	19	256	39.4	0.41	2.7		0.15	D
1	12	4	31.0	19-22.9	155- 4.6	3.7	1.7	10	109	6.2	0.10	0.8	1.2	0.15	B
1	12	5	25.2	19-24.2	155-16.1	1.3	0.9	9	101	2.1	0.11	0.6	0.7	0.13	B
1	12	20	43.5	19-24.1	155-16.1	1.2	0.6	10	64	2.0	0.11	0.6	0.7	0.16	B
1	13	52	14.6	19-18.1	155-14.3	8.0*	1.5	11	221	6.6	0.22	1.5		0.16	C
1	16	12	24.9	19-26.2	155-43.4	7.0	2.0	17	142	13.6	0.18	0.9	1.0	0.17	B
1	16	47	18.9	18-52.1	155-16.0	7.6	2.6	15	263	38.2	0.48	2.3	2.5	0.10	C
1	22	26	11.0	19-23.7	155-16.2?	1.4	0.5	7	106	1.4	1.27	3.1	9.7	0.16	C
2	0	0	36.4	19-25.1	155-24.3?	0.0	1.8	8	197	7.7	8.73	1.3	16.5	0.15	C
2	5	9	21.0	19-20.4	155-13.0	9.2	1.2	11	186	3.8	0.23	1.1	2.2	0.10	C
2	5	40	8.7	19-19.4	155-13.4	9.5	3.6	22	144	5.7	0.04	0.4	0.5	0.09	B
2	5	51	47.8	19-18.1	155-12.8	8.0*	1.6	9	233	7.9	0.24	1.5		0.10	D
2	5	52	14.4	19-17.1	155-11.9	8.0*	1.5	12	206	10.0	0.19	1.4		0.17	C
2	5	53	48.0	19-20.0	155-14.5	8.0*	1.7	16	185	5.0	0.09	0.7		0.11	C
2	6	5	3.8	19-20.1	155-13.4	7.3	2.3	19	141	4.6	0.08	0.7	0.5	0.14	B
2	6	18	29.3	19-25.7	155-26.1	7.7	1.7	16	132	8.9	0.11	0.7	0.7	0.14	B
2	15	4	4.6	19-19.2	155-15.9	6.8	1.9	15	181	3.2	0.11	0.8	0.6	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 2	15	4	51.2	19-22.6	155-24.4	8.0*	1.8	17	131	4.8	0.07	0.6		0.12	C
2	22	1	9.7	19-21.1	155- 7.9	8.0	1.8	16	193	3.8	0.16	1.2	0.6	0.14	C
3	0	12	3.6	19- 8.7	155-38.8	5.1	2.1	16	189	11.8	0.16	1.3	0.9	0.13	C
3	3	19	33.1	19-24.3	155-16.3	3.1	0.7	9	90	1.7	0.18	0.6	1.7	0.09	A
3	7	36	18.7	19-19.1	155- 8.9	8.0*	1.8	13	181	5.7	0.10	0.8		0.12	C
3	12	24	39.5	19-24.3	155-16.3	2.0	1.0	9	74	1.6	0.05	0.3	0.2	0.06	A
3	13	5	51.7	19-24.2	155-16.2	12.3	1.6	18	62	1.9	0.04	0.5	0.4	0.09	A
3	16	2	14.0	19-17.9	155-14.4?	0.0	2.3	21	182	8.7	0.28	0.6	0.5	0.14	C
3	18	5	17.3	19-23.4	155-14.9	3.2	1.2	11	99	2.5	0.06	0.3	1.0	0.05	A
3	22	4	55.7	19-21.8	155- 8.4?	8.1	2.6	18	138	2.5	0.06	0.5	0.3	0.09	B
3	23	37	56.2	19-20.1	155- 8.2?	5.0	1.7	18	166	4.7	0.12	0.9	0.9	0.15	C
3	23	53	51.6	19-24.2	155-16.2	1.9	0.8	13	68	1.9	0.10	0.5	0.4	0.16	B
4	4	7	34.7	19-19.0	155-12.7	8.0*		13	217	6.3	0.15	0.9		0.09	C
4	4	25	5.9	20- 0.6	155-20.5	0.8	2.5	19	294	28.1	0.25	2.1	0.6	0.14	C
4	4	26	40.3	19-19.8	155-12.3	5.4		17	190	4.9	0.15	1.0	0.7	0.18	C
4	5	46	24.3	19-16.2	155-23.6	0.1	1.9	19	143	5.5	0.49	0.8	1.0	0.20	C
4	7	26	15.1	19-19.0	155-21.2?	0.7	1.4	14	190	4.2	1.46	0.6	5.6	0.10	C
4	7	48	17.3	19-16.5	155-22.1?	8.0*		9	276	6.6	1.00	5.3		0.16	D
4	7	49	31.3	19-16.6	155-22.0?	0.0	2.0	19	183	7.0	0.53	0.9	1.1	0.19	C
4	8	3	49.3	19-15.8	155-22.0?	8.0*		10	289	7.2	1.95	10.0		0.16	D
4	10	6	22.2	19-24.2	155-16.1	3.1	0.8	6	99	2.0	0.04	0.1	0.4	0.01	B
4	10	51	58.5	19-23.4	155-14.9	3.8		7	103	2.6	0.09	0.2	0.9	0.03	B
4	11	23	32.6	19-20.4	155-19.0	6.8	1.4	14	71	2.9	0.13	0.4	1.2	0.10	A
4	14	16	14.1	19- 6.0	156-15.5	17.8*	2.5	19	282	58.5	0.29	2.0		0.15	D
4	17	0	38.3	19-23.3	155-15.1	4.0	1.1	11	105	2.2	0.13	0.5	1.4	0.10	A
4	23	1	0.7	19-24.1	155-10.4	16.1	1.8	8	326	7.0	0.47	4.2	4.7	0.11	D
5	0	26	30.2	19-19.7	155-15.2	5.9		18	164	3.9	0.09	0.7	0.6	0.16	C
5	0	33	54.5	19-20.1	155-13.1	5.4		17	157	4.3	0.12	0.9	0.8	0.21	C
5	5	27	31.7	19-24.0	155-23.4	9.5	1.5	16	115	6.4	0.05	0.4	1.1	0.09	A
5	5	31	1.3	19-22.8	155-14.6?	2.2*	1.1	13	116	2.4	0.17	1.1		0.29	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 5	5	55	17.9	19-23.4	155-14.9	1.4	1.0	10	101	2.5	0.09	0.4	0.5	0.13	B
5	7	44	39.4	19-18.7	155-11.4	3.3	2.3	19	202	6.9	0.24	1.3	1.1	0.27	C
5	9	28	51.6	19-27.2	155-24.8	8.0*		8	219	5.4	0.13	0.8		0.08	C
5	9	31	11.4	19-23.2	155-14.6	3.5	1.2	9	109	2.6	0.20	0.6	2.2	0.09	B
5	9	56	20.7	19-23.1	155-14.6	2.1*		10	107	2.5	0.05	0.3		0.07	B
5	10	0	1.0	19-28.4	155-18.1?	8.0*	2.3	8	298	5.6	0.24	3.3		0.32	D
5	14	33	51.4	19-22.3	155- 3.8	3.1	2.7	18	161	4.6	0.12	0.7	0.8	0.14	C
5	14	47	11.5	19-20.6	155-14.4	24.5	3.6	28	134	4.5	0.12	0.8	1.2	0.15	B
5	17	27	33.2	19-22.4	155-17.5	12.1		11	88	2.1	0.13	1.0	1.1	0.14	B
6	0	2	2.3	19-24.9	155-17.2	1.0	1.8	12	107	0.3	0.05	0.3	0.3	0.11	B
6	0	2	54.3	19-27.7	155-18.0?	8.0*	1.7	7	289	4.2	0.63	4.8		0.39	D
6	0	4	4.4	19-24.8	155-17.1	1.5	2.3	21	36	0.2	0.09	0.5	0.4	0.19	B
6	2	39	30.7	19-19.8	155-12.2	8.3	1.6	12	209	5.0	0.25	1.3	2.7	0.10	C
6	3	5	44.1	19-23.7	155-15.2	1.5	0.2	8	91	2.4	0.05	0.2	0.3	0.05	A
6	3	25	45.2	19-20.2	155- 9.0	7.0	2.3	22	146	3.7	0.10	0.8	0.5	0.19	B
6	4	35	54.5	19-23.2	155-14.5	2.6		9	110	2.8	0.04	0.2	1.4	0.03	A
6	7	31	26.9	19-21.0	155- 8.1?	0.0	1.9	17	151	8.5	4.27	0.9	8.1	0.18	C
6	7	35	7.5	19-23.4	155-15.2	3.8	1.0	11	100	2.2	0.15	0.6	1.7	0.11	B
6	7	53	41.0	19-19.0	155- 9.0	3.4	1.8	16	179	5.8	0.16	1.0	1.1	0.20	C
6	11	23	0.2	19- 5.7	155-22.7	39.6		17	195	11.5	0.28	1.3	2.9	0.11	C
6	15	54	50.2	19-26.8	154-53.9	14.1*	2.3	14	220	4.0	0.14	1.2		0.09	C
6	16	34	43.9	19-21.0	155-12.6	13.0		11	175	2.7	0.22	0.7	1.7	0.05	B
6	19	22	4.9	19-18.9	155-16.1	9.2	1.7	17	144	3.2	0.06	0.5	0.8	0.09	B
6	20	20	2.6	19-17.0	155-15.1	12.7		11	242	6.5	0.22	0.9	1.6	0.05	C
6	21	1	46.3	19-21.0	155-10.7	8.1	1.8	13	171	2.5	0.09	0.8	0.4	0.10	C
6	22	35	24.5	19-17.3	155-15.1	12.1		11	236	6.4	0.18	0.7	1.4	0.05	C
7	1	8	59.2	19-24.7	155-17.2?	2.0	0.8	9	84	0.5	0.09	0.7	0.4	0.13	B
7	7	56	19.3	19-32.3	155-40.6	2.8	3.0	18	135	23.8	0.10	0.6	1.1	0.10	B
7	8	26	20.9	19-19.6	155-14.1	8.0*		14	160	5.8	0.05	0.4		0.07	C
7	10	8	25.3	19-22.7	154-56.6	5.5	2.9	22	219	12.2	0.20	1.6	1.3	0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 7	16	46	5.2	19-24.9	155-16.9	8.9	1.2	14	114	0.1	0.07	0.5	0.7	0.08	A
7	18	26	26.5	19-17.3	155-14.6	9.4		13	235	7.0	0.29	1.4	2.3	0.09	C
7	18	38	34.4	19-23.0	154-53.5	6.0		16	250	10.9	0.32	2.2	1.1	0.17	C
7	19	42	4.7	19-21.7	155-18.7	2.3*		10	81	3.7	0.05	0.4		0.10	B
8	1	59	34.5	19-24.8	155-24.4	2.7	1.4	15	205	8.3	0.24	1.2	1.6	0.17	C
8	2	37	18.9	18-43.4	155-13.1	8.0*	2.9	11	326	54.6	0.49	3.8		0.17	D
8	2	38	30.5	18-51.9	155-15.1?	0.1	2.7	19	289	39.5	0.42	3.8	1.4	0.18	D
8	4	11	39.3	18-51.8	155-15.3?	0.0	2.5	22	258	39.4	0.43	3.2	1.3	0.18	D
8	4	12	22.4	18-52.3	155-15.4?	0.1	2.8	17	288	38.6	0.47	5.4	1.9	0.19	D
8	6	8	35.4	18-51.1	155-15.6?	0.0	2.7	20	260	40.1	0.35	2.5	1.0	0.15	D
8	6	25	37.7	18-59.2	155-20.7	13.3*		12	288	22.8	0.92	5.9		0.14	D
8	8	41	38.9	18-58.2	155-22.1?	9.8	2.5	7	263	23.2	0.93	5.7	3.8	0.12	D
8	10	14	53.6	19-20.3	155-16.7	5.8	1.4	14	126	1.3	0.10	0.7	0.8	0.15	B
8	10	36	38.5	18-50.0	155-16.6?	5.6	2.8	17	262	41.1	0.67	3.2	3.6	0.16	D
8	12	17	56.8	19-21.0	155- 6.8	7.8	3.4	20	133	5.7	0.06	0.6	0.4	0.11	B
8	13	7	14.8	19-25.0	155-16.8	1.8	0.7	8	118	0.4	0.09	0.6	0.4	0.12	B
8	13	55	3.9	19-19.5	155-14.8	8.0*	1.6	14	159	4.8	0.12	0.9		0.17	C
8	14	58	49.9	18-50.2	155-16.3	1.3*		9	280	40.9	0.52	3.3		0.13	D
8	15	59	28.5	19-22.1	155-23.8	7.5	1.7	19	123	3.6	0.08	0.7	0.5	0.16	C
8	18	12	46.9	19-23.3	155-14.8	2.1	0.9	9	105	2.6	0.06	0.3	0.2	0.06	A
8	18	29	29.2	18-49.2	155-17.1	0.3*	2.1	20	264	42.0	0.43	2.7		0.14	D
8	19	51	47.0	19-20.7	155-13.4	7.5	1.8	19	146	3.5	0.08	0.8	0.5	0.16	B
8	22	35	55.1	19-17.2	155-14.8	13.1		11	237	6.8	0.24	0.9	1.8	0.06	C
9	2	3	1.9	19-23.1	155-24.0	7.4	3.5	20	154	5.6	0.11	0.8	0.5	0.17	C
9	2	15	57.1	19-19.6	155- 7.8	5.4	4.3	21	156	5.8	0.15	0.9	0.8	0.25	C
9	2	24	47.3	19-19.3	155- 7.6	5.9	2.5	21	160	6.4	0.14	0.9	0.7	0.22	C
9	2	29	48.7	19-20.4	155- 6.7	8.0*	2.1	13	161	6.2	0.06	0.6		0.09	C
9	2	43	47.1	19-19.8	155- 7.4	8.0*	1.7	14	172	6.0	0.09	0.8		0.10	C
9	3	19	38.7	19-19.5	155- 5.7	0.2	2.7	18	194	13.3	0.42	1.2	0.7	0.22	C
9	3	48	51.5	19-20.3	155- 7.4	5.5	2.3	19	163	5.3	0.13	1.0	0.9	0.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 9	4	8	39.5	19-23.8	155-23.8	8.0*	1.5	10	165	6.7	0.15	1.3		0.17	C
9	7	22	26.7	19-21.1	155-24.9	9.9		11	170	3.3	0.26	1.3	3.0	0.16	C
9	9	24	42.3	19-24.1	155-25.4	3.3	2.3	20	88	8.1	0.08	0.5	0.8	0.16	B
9	9	43	27.8	19-20.4	155- 7.5	4.3	1.8	17	160	5.0	0.11	0.9	0.7	0.17	C
9	12	13	56.8	19-35.3	156-16.4	13.9*	2.8	19	282	37.7	0.24	1.8		0.14	D
9	14	33	26.9	19-20.0	155-14.6	8.0*		10	151	5.0	0.11	0.9		0.16	C
9	21	9	2.1	19-17.3	155- 7.4?	0.0		11	259	9.8	9.89	3.2	18.2	0.23	D
10	1	5	56.1	19-23.5	155-15.0	1.9		6	186	2.5	0.06	0.5	0.2	0.02	B
10	3	48	12.2	19-21.9	155-18.4	0.4	1.1	11	76	3.8	0.52	0.7	2.0	0.15	B
10	3	59	15.6	18-53.1	155-17.1	8.7		12	300	35.7	1.29	6.7	3.5	0.11	D
10	7	47	1.0	19-11.5	155-27.3	33.2		14	137	3.9	0.47	1.9	4.0	0.10	B
10	7	47	41.9	19- 9.6	155-26.8	38.3		13	207	1.9	0.34	1.7	2.9	0.09	C
10	7	51	23.4	19- 9.6	155-24.2	32.0		12	221	6.4	0.56	2.3	4.6	0.08	C
10	9	52	41.2	19-20.8	155- 7.4	7.5	1.8	14	153	4.9	0.13	1.2	0.8	0.15	C
10	12	24	8.9	19-22.2	155-23.8	10.2		8	196	3.7	0.48	1.8	4.0	0.09	C
10	16	11	3.0	19-21.2	155-23.1	7.6	2.3	22	61	1.9	0.08	0.8	0.6	0.23	B
10	17	55	16.9	19-24.1	155-15.7	4.6	1.0	10	68	2.5	0.20	0.6	1.5	0.08	A
10	18	35	46.4	19-20.0	155- 6.9	8.0*	1.9	12	180	7.0	0.06	0.5		0.06	C
10	23	39	49.8	19-24.1	155-15.8	1.7	0.7	8	117	2.4	0.08	0.4	0.5	0.10	A
11	0	30	57.0	19-18.8	155-12.0	2.7	2.3	20	178	6.8	0.17	1.0	1.1	0.25	C
11	1	6	37.5	19-19.1	155-20.4	4.2	1.5	8	168	3.6	0.10	0.6	0.8	0.07	B
11	1	33	39.6	19-23.3	155-14.8	5.0	1.6	14	100	2.6	0.09	0.4	0.9	0.09	B
11	2	7	17.5	19-19.1	155- 8.9	4.4	1.6	14	179	5.8	0.10	0.7	0.7	0.13	C
11	4	58	15.6	19-22.1	155-23.3	6.7		8	180	3.4	0.40	1.1	3.1	0.10	C
11	13	17	37.8	19-21.7	155-24.1	6.9	1.7	13	63	3.1	0.06	0.5	0.6	0.11	B
11	16	38	14.0	19-19.7	155-14.6	7.5		11	184	4.9	0.16	1.1	0.8	0.17	C
11	17	39	5.9	19-20.4	155- 7.7	7.6	1.5	14	161	4.8	0.10	1.0	0.6	0.14	C
11	21	17	29.8	19-23.1	155-15.3	1.0	1.5	12	109	1.7	0.07	0.3	0.4	0.12	B
11	21	57	1.5	19-24.4	155-22.6	3.0	1.3	12	164	5.3	0.17	1.0	2.1	0.18	C
12	7	4	24.8	19-19.5	155- 8.9	3.5	1.7	19	174	5.0	0.15	0.9	1.0	0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 12	8	30	45.5	19-24.7	155-24.3	8.0*	1.3	10	201	8.2	0.18	1.1		0.14	C
12	8	49	58.7	19-22.3	155-22.6?	5.2		10	158	4.0	0.23	1.4	2.6	0.13	C
12	9	51	19.4	19-24.1	155-15.8	1.7		8	117	2.4	0.08	0.4	0.5	0.10	A
12	13	24	45.3	19-22.6	155-24.7	4.1		9	219	5.1	0.25	1.4	1.1	0.14	C
12	14	30	3.0	19-22.3	155-24.3	6.6	1.8	15	128	4.2	0.11	0.8	0.9	0.19	B
12	20	49	21.3	19-23.2	155-15.2	4.0	1.1	12	104	2.0	0.12	0.5	1.4	0.10	A
12	20	49	43.8	19-23.6	155-15.1	3.0	1.0	12	94	2.4	0.22	0.8	3.0	0.15	B
12	20	55	7.9	19- 8.3	154-57.8?	15.6*	2.0	15	283	32.2	0.44	3.1		0.22	D
12	20	57	43.2	19-23.4	155-14.7	4.7	2.1	15	98	2.4	0.08	0.4	0.8	0.08	B
12	21	20	5.8	19-23.4	155-14.8	2.1	1.0	9	103	2.6	0.07	0.4	0.3	0.08	A
12	23	18	34.7	19-20.3	155-13.2	6.9	1.6	13	152	4.0	0.11	0.9	0.7	0.15	C
12	23	41	17.3	19-23.1	155-14.7	2.1	0.3	8	129	2.5	0.11	0.5	0.5	0.05	B
13	2	23	27.0	19-23.3	155-14.8	1.6	0.8	9	105	2.5	0.07	0.3	0.3	0.10	A
13	3	21	56.3	18-53.2	155-17.6	8.3	2.2	17	252	35.1	0.38	2.6	3.2	0.13	D
13	4	16	29.0	19-23.0	155-14.4	1.7	0.7	9	115	2.8	0.09	0.5	0.4	0.11	B
13	6	26	36.7	19-23.3	155-15.1	4.2	1.3	13	102	2.2	0.13	0.6	1.4	0.13	B
13	6	46	27.3	19-23.3	155-14.7	2.5	1.0	9	106	2.6	0.10	0.4	5.2	0.07	B
13	7	54	2.4	18-57.3	155-21.2	12.6*	2.4	15	248	25.3	0.35	2.5		0.12	D
13	8	40	13.3	19-23.5	155-14.9	1.2		11	97	2.4	0.10	0.5	0.5	0.15	B
13	10	53	51.9	18-53.6	155-15.7	7.6	2.5	17	291	36.3	0.34	3.6	4.3	0.14	D
13	11	47	36.8	19-19.2	155-15.4	8.1	2.4	19	162	3.9	0.06	0.5	0.3	0.11	C
13	11	55	5.9	19-16.6	155-23.2	2.7	1.5	12	140	6.2	0.09	0.8	1.8	0.14	B
13	13	49	27.4	19-21.2	155-19.1	2.4*	1.5	9	84	3.6	0.03	0.3		0.06	B
13	17	52	54.4	19-23.4	155-23.9	4.0*	1.5	16	129	6.1	0.07	0.6		0.13	C
13	18	18	45.7	19-19.9	155-29.6	7.8	2.2	18	156	8.3	0.17	1.1	0.9	0.17	C
13	19	55	36.9	19-22.0	155-18.5	1.5	0.5	9	77	3.7	0.06	0.3	0.3	0.07	A
13	20	49	13.9	19-20.1	155-13.7	8.0*	1.5	15	155	4.8	0.09	0.7		0.14	C
13	21	2	7.7	19-24.2	154-59.5	7.1	2.0	12	166	10.0	0.14	1.3	1.1	0.14	C
13	21	6	41.1	19-21.8	155-18.1	4.3	1.4	13	70	3.4	0.10	0.3	1.2	0.10	A
13	22	40	28.9	19-19.6	155-11.8	8.0*		6	218	5.4	0.15	1.1		0.07	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 14	0	4	44.1	19-24.3	155-16.4	1.5	0.5	7	87	1.5	0.04	0.2	0.2	0.04	B
14	1	8	38.4	18-49.6	155-16.0	2.2*	2.6	9	270	42.1	0.74	4.7		0.16	D
14	1	37	13.9	19-18.5	155-12.6	8.0*	1.5	11	227	7.2	0.20	1.2		0.10	D
14	2	20	21.2	19- 0.1	155-18.5	10.3		10	246	23.9	0.52	3.0	2.3	0.12	D
14	3	46	41.2	19- 7.7	155-26.8	35.2	1.9	9	200	3.8	0.50	3.6	4.8	0.11	C
14	3	51	26.7	19-11.3	155-25.4	26.2	2.0	11	178	5.4	0.55	2.4	4.9	0.09	C
14	3	52	59.2	19-16.7	155-30.6	8.0*	2.0	10	159	6.8	0.15	1.4		0.20	C
14	3	56	17.2	19- 7.3	155-26.1?	38.8	1.8	16	177	5.0	0.38	1.6	3.7	0.15	C
14	4	5	28.6	19-12.6	155-37.2?	7.4	2.0	15	127	4.3	0.15	1.3	1.7	0.21	C
14	4	24	48.5	19-24.1	155-15.7	1.8	1.0	9	67	2.5	0.03	0.1	0.1	0.04	A
14	5	10	57.3	19-20.8	155- 7.0	8.0*	1.3	10	153	5.5	0.07	0.7		0.09	C
14	5	24	43.1	18-54.1	155-18.6	6.8	2.6	13	266	32.7	1.84	3.8	11.3	0.14	D
14	6	5	1.0	18-36.1	155- 9.4	8.0*	2.2	10	300	68.2	2.00	12.3		0.22	D
14	7	32	2.7	19-21.5	155- 4.2	5.3	1.5	11	139	3.7	0.21	1.7	1.3	0.20	C
14	8	5	32.8	19-21.8	155-23.3?	8.1	3.3	20	118	3.0	0.06	0.5	0.4	0.14	B
14	10	21	38.3	18-49.6	155-24.5	10.3	2.8	22	266	32.0	0.22	1.6	1.7	0.12	C
14	10	27	10.2	19-23.2	155-14.8	4.1	1.4	11	105	2.4	0.21	0.7	1.8	0.09	B
14	10	31	22.4	19-19.6	155- 8.9?	3.9	1.8	14	173	4.9	0.18	1.5	1.1	0.22	C
14	14	49	2.5	19-19.8	155-13.8	7.2	1.5	18	158	5.3	0.10	0.8	0.5	0.15	C
14	19	27	1.3	19-21.4	155-15.6	26.1	2.9	25	123	1.8	0.12	0.8	1.3	0.14	B
14	20	25	27.3	19-21.7	155-25.0	3.5	1.6	16	109	4.1	0.09	0.6	1.2	0.16	B
14	20	50	45.1	19-25.3	154-45.1	5.8		15	322	15.9	1.25	5.8	2.5	0.12	D
15	0	32	49.9	19-19.3	155-15.5	5.6		17	183	3.7	0.14	0.9	0.7	0.17	C
15	3	5	39.8	19-19.8	155-18.4	32.1	3.2	20	113	1.9	0.16	0.9	1.4	0.10	A
15	5	26	44.5	18-51.2	155-16.4?	9.6	2.7	17	265	39.3	0.57	3.7	13.7	0.25	D
15	7	44	51.0	19-18.5	155- 9.0	3.8	1.9	20	186	6.8	0.18	1.1	1.1	0.23	C
15	8	42	36.8	19-24.2	155-27.9?	7.9	3.2	25	81	10.8	0.09	0.5	0.6	0.17	B
15	8	58	20.2	19-22.0	155-23.9	6.8		14	111	3.4	0.10	0.8	0.9	0.20	B
15	17	20	7.8	19-19.7	155-38.2?	0.0	2.2	20	164	9.1	3.60	0.8	5.8	0.18	C
15	23	40	18.2	19-24.8	155-17.1	0.9	0.5	9	75	0.3	0.12	0.6	0.8	0.20	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 16	6	54	0.1	19-20.6	155- 8.3	3.9	1.9	17	158	3.8	0.14	1.0	0.9	0.20	C
16	9	26	31.0	19-22.2	155- 6.1	4.1		17	123	6.5	0.10	0.7	0.7	0.14	B
16	11	34	54.6	19-20.3	155-19.3	5.4	2.4	20	69	3.3	0.05	0.4	0.4	0.12	B
16	12	17	5.3	19-22.2	155-23.7	6.2		13	112	3.7	0.09	0.8	0.9	0.17	B
16	16	52	16.5	18-56.4	155-16.8	8.4		15	299	30.9	3.42	8.7	14.0	0.18	D
16	17	27	44.8	19-24.1	155-15.8	1.8	0.7	7	116	2.3	0.03	0.2	0.2	0.03	B
16	19	18	22.1	20- 3.6	155-35.9	49.3	2.8	22	193	20.4	0.47	2.0	4.3	0.11	C
16	20	16	52.5	19-13.1	155-10.2?	35.0		10	254	16.5	0.21	1.6	2.0	0.04	C
16	21	49	53.7	18-55.4	155-15.7	9.1	2.6	20	282	33.7	0.28	2.0	2.3	0.13	C
16	22	7	48.7	19-22.8	155-10.9?	8.0*		11	125	10.6	0.25	2.3		0.33	C
17	1	18	22.6	19-20.4	155-19.4	4.3	1.3	14	117	3.6	0.11	0.8	1.1	0.18	B
17	1	22	59.3	19-19.0	155-12.4	3.2	1.9	21	153	6.4	0.13	0.8	1.1	0.22	C
17	2	3	18.7	19-20.4	155-12.9	5.9	1.8	16	184	3.9	0.17	1.0	0.8	0.18	C
17	2	51	43.3	19-22.1	155-17.7	3.6	1.2	13	83	2.7	0.07	0.3	1.0	0.08	A
17	8	16	1.3	19-24.4	155-16.9	9.7	1.6	12	59	1.0	0.07	0.5	0.7	0.06	A
17	8	51	1.6	18-49.3	155-15.9	1.8*		20	271	42.8	0.40	2.5		0.12	D
17	8	59	47.5	19-23.8	155-24.9	8.2	2.3	23	121	7.2	0.11	0.7	0.7	0.18	C
17	10	19	26.2	19-20.3	155-19.2	6.4	1.5	11	102	3.1	0.09	0.5	0.6	0.08	A
17	11	0	22.2	19-23.4	155-14.7	2.1*	1.0	8	105	2.5	0.03	0.2		0.05	B
17	11	34	23.8	19-19.3	155-15.6	6.0		11	182	3.5	0.15	0.9	0.7	0.13	C
17	14	22	35.2	19-18.8	155-13.2	8.0*		10	235	7.0	0.26	1.7		0.12	D
17	19	53	5.0	18-49.9	155-16.2	1.4*	2.6	18	281	41.6	0.71	4.4		0.15	D
17	20	9	17.9	18-53.7	155-17.9	15.1*	2.7	22	251	34.0	0.29	2.1		0.18	D
17	20	10	43.6	18-51.3	155-18.6	3.0		15	284	37.3	1.88	4.4	10.4	0.13	D
17	20	12	21.7	18-51.2	155-17.1	1.7*	2.6	16	264	38.7	0.51	3.2		0.15	D
17	21	8	21.3	18-49.7	155-18.3	1.9*	2.6	16	275	40.1	0.44	2.7		0.10	D
17	21	11	29.4	18-52.2	155-17.1	15.6*	2.7	22	255	37.0	0.32	2.2		0.20	D
17	21	32	46.4	18-53.8	155-18.0	18.0*	2.6	21	250	33.8	0.31	2.2		0.18	D
17	23	22	24.4	19-23.2	155-14.8	1.9	1.3	17	108	2.3	0.13	0.5	0.5	0.19	B
17	23	27	8.2	19-20.5	155-20.0	3.2	1.6	18	77	4.6	0.05	0.4	0.8	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 17	23	40	16.5	19-23.3	155-14.5	3.5	2.2	19	102	2.5	0.05	0.4	0.6	0.12	B
18	1	54	59.6	19-20.8	155-19.2	3.4		10	91	3.4	0.06	0.2	1.1	0.03	A
18	2	10	43.6	19-20.2	155-19.1	5.0	1.5	14	84	3.0	0.08	0.6	0.7	0.11	B
18	2	53	39.6	18-57.9	155-17.1	10.6	2.7	22	276	28.5	0.28	1.7	1.4	0.14	C
18	2	57	29.9	18-52.0	155-16.0	9.5*	3.2	20	289	38.4	0.71	4.4		0.14	D
18	2	59	49.8	19- 4.1	155-19.9?	4.6	2.3	18	259	17.1	0.60	3.2	3.5	0.34	D
18	3	1	35.9	18-58.8	155-20.9	9.4	2.4	17	289	23.2	0.41	2.5	2.1	0.17	C
18	6	25	55.0	19-20.2	155-19.9?	5.3	1.4	10	118	4.3	0.21	1.0	2.1	0.09	B
18	7	18	1.0	18-54.1	155-20.9	10.6		11	275	31.0	0.52	3.0	2.3	0.09	D
18	8	14	33.5	19-17.9	155-15.2	9.0		11	219	5.5	0.18	0.9	1.6	0.07	B
18	10	45	59.4	19-21.9	155- 3.3	2.9	2.1	18	174	3.8	0.23	1.3	1.4	0.25	C
18	13	0	21.1	18-50.5	155-19.1	1.5*		16	278	38.4	0.76	4.7		0.19	D
18	13	29	0.7	18-53.7	155-18.9	8.0*		9	315	33.1	0.76	4.6		0.08	D
18	14	55	53.3	18-46.8	155-15.6	18.8*	2.8	16	289	47.0	0.32	2.2		0.12	D
18	17	37	15.3	19-20.7	155-13.7	6.4		15	169	3.9	0.09	0.7	0.5	0.13	C
18	18	25	45.9	19-20.8	155-19.0	5.1	1.3	11	89	3.1	0.13	0.3	1.1	0.05	A
18	19	8	43.3	19-18.8	155- 7.1	1.1	1.9	19	210	7.7	1.42	1.1	5.0	0.18	C
18	20	13	54.3	19-32.7	155- 5.4	15.7	2.2	19	165	5.3	0.06	0.5	1.1	0.07	B
18	20	16	24.9	19-19.8	155-15.6	5.3	1.4	12	191	3.1	0.18	1.0	0.9	0.14	C
18	20	23	17.4	19-19.1	155- 7.9	2.3		16	184	6.5	0.21	1.3	1.8	0.22	C
18	23	46	9.8	18-51.3	155-18.6	15.2*	3.0	22	258	37.2	0.23	1.6		0.14	D
19	0	41	31.4	19-19.4	155-11.4	5.2		15	197	5.7	0.18	1.1	0.9	0.17	C
19	2	24	45.7	18-49.4	155-17.8?	14.8	2.8	18	294	41.2	0.52	3.7	5.3	0.20	D
19	3	9	43.7	18-43.2	155-18.1	8.0*	2.9	19	280	51.5	0.72	4.5		0.17	D
19	3	25	49.9	19-25.2	155-28.3	2.6	1.9	20	89	12.2	0.17	0.9	1.7	0.23	B
19	3	29	34.7	18-55.8	155-22.2?	2.5		17	244	27.2	1.38	2.8	8.1	0.21	D
19	3	39	34.2	18-50.7	155-17.9	0.1*		9	277	38.9	0.62	3.8		0.12	D
19	5	34	5.4	19-24.5	155-24.6?	0.0	1.4	15	159	8.2	7.23	0.8	13.7	0.15	C
19	5	46	4.3	19- 7.2	155- 7.5	42.3	2.5	24	223	27.8	0.23	1.3	1.7	0.09	C
19	6	35	38.5	19-19.1	155-15.5	8.8		9	238	3.9	0.21	1.2	1.3	0.05	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 19	7	20	25.9	19-18.9	155-12.2	3.1		12	242	6.7	0.36	1.8	1.9	0.19	C
19	8	32	51.1	19-20.4	155-19.0	6.4		12	95	2.8	0.06	0.3	0.4	0.06	A
19	8	35	58.3	19-20.8	155-19.2	4.0	1.8	10	106	5.3	0.12	0.3	1.7	0.06	A
19	9	9	58.8	18-45.1	155-17.1	11.0	2.7	13	291	47.5	0.49	8.0	16.0	0.13	D
19	9	11	34.8	18-50.6	155-18.5	3.8	2.5	17	265	38.5	1.63	3.6	10.3	0.17	D
19	9	15	36.5	18-49.8	155-17.8	2.5	2.9	17	263	40.5	0.34	2.6	3.5	0.12	D
19	9	19	37.9	18-48.1	155-18.3	8.0*	3.1	16	268	42.9	0.37	2.4		0.12	D
19	9	26	14.5	18-52.1	155-20.2	8.5	2.6	13	259	34.9	0.54	3.2	3.0	0.14	D
19	10	13	35.1	18-49.7	155-17.4	0.9*	3.9	24	263	40.9	0.39	2.5		0.14	D
19	11	1	33.9	18-49.5	155-17.8	2.9	3.2	21	264	40.9	0.30	2.3	3.2	0.12	C
19	11	7	29.9	18-52.6	155-20.2	9.4	2.6	8	283	33.9	0.63	3.5	2.2	0.07	D
19	13	46	58.6	18-47.3	155-17.0	8.0*	2.7	13	276	45.3	0.66	4.3		0.15	D
19	15	0	24.3	18-50.5	155-19.6	7.2		6	288	38.0	1.68	3.9	8.6	0.04	D
19	19	15	23.9	19-20.3	155-13.4	7.3	1.1	11	202	4.4	0.11	0.8	0.4	0.09	B
19	20	14	10.8	19-23.6	155-14.6	5.7	1.4	14	96	2.1	0.07	0.5	0.6	0.11	B
20	0	6	53.0	19-10.8	155-20.3?	36.6	2.4	15	177	15.3	0.17	1.4	1.7	0.12	C
20	0	10	22.8	19-17.7	155-20.7	31.6	2.2	8	232	3.6	1.06	4.1	8.3	0.09	D
20	1	18	22.5	18-41.0	155-16.9	8.0*	3.1	17	284	55.9	0.53	3.4		0.11	D
20	1	19	42.7	18-52.6	155-22.4	8.9	2.9	16	257	32.7	0.31	1.9	2.0	0.10	C
20	1	27	29.4	18-53.0	155-22.9	9.2	2.6	14	255	31.6	0.46	2.8	2.6	0.13	D
20	1	41	10.7	18-52.6	155-22.3	10.8*	2.6	11	279	32.7	0.71	4.8		0.13	D
20	1	43	14.0	18-44.0	155-18.6	8.0*	3.0	17	278	46.4	0.70	4.5		0.18	D
20	1	45	19.6	18-53.3	155-23.5	9.9	2.6	15	254	30.7	0.45	2.8	2.4	0.11	D
20	1	49	12.5	18-48.9	155-17.8	0.2	3.6	23	265	41.9	0.37	2.8	1.1	0.14	D
20	1	53	54.0	18-50.8	155-19.4	2.1*	2.6	11	287	37.6	0.94	5.8		0.18	D
20	1	54	33.6	18-55.4	155-23.7	8.6	3.5	14	242	27.1	0.34	2.0	2.0	0.13	C
20	2	1	55.1	18-51.4	155-21.8	8.6	2.6	14	304	35.1	1.19	6.0	3.1	0.09	D
20	2	7	54.2	18-49.7	155-22.1	8.0*	2.5	14	288	35.6	0.46	2.9		0.09	D
20	2	11	39.3	19- 7.9	155-24.5	9.5	1.9	11	255	6.6	0.60	4.1	2.9	0.26	D
20	2	18	45.1	18-44.4	155-16.5	7.0*	2.7	15	277	49.1	0.48	3.1		0.11	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 20	4	12	53.0	18-45.2	155-17.3	8.0*	3.0	18	274	47.0	0.59	3.8		0.16	D
20	4	21	32.0	18-53.0	155-22.8	14.1*	2.6	17	255	31.7	0.33	2.2		0.13	D
20	4	26	9.6	18-55.9	155-25.2	11.1	2.5	13	241	25.5	0.56	3.8	3.4	0.23	D
20	5	37	0.5	18-52.1	155-21.2	1.5*		11	281	34.1	0.48	3.0		0.12	D
20	5	39	54.4	18-53.8	155-22.9	6.6	2.4	14	252	30.2	1.23	2.3	7.5	0.13	D
20	5	42	4.3	18-53.9	155-22.1	3.6	2.5	9	252	30.5	1.06	2.3	5.1	0.10	D
20	5	43	8.5	18-48.5	155-17.3?	22.4*	3.2	20	267	42.9	0.38	2.6		0.20	D
20	5	46	6.8	18-58.7	155-28.1?	15.3	2.5	15	223	20.0	0.58	4.0	5.6	0.31	D
20	5	48	17.7	18-49.2	155-19.5	2.0*	2.2	6	293	40.1	1.16	7.0		0.13	D
20	7	36	6.5	18-54.2	155-24.1	9.9	2.5	14	250	29.1	0.47	3.0	2.8	0.16	D
20	7	42	2.7	19-20.2	155-11.3?	7.5	1.7	20	144	4.3	0.07	0.6	0.4	0.14	B
20	8	30	24.3	19-21.1	155-19.0	4.0	1.6	13	84	3.4	0.06	0.2	0.8	0.04	A
20	8	48	17.0	19-16.9	155-21.7	8.0*	1.7	16	137	5.7	0.08	0.8		0.17	C
20	9	43	18.0	18-41.6	155-15.1?	0.5*	3.8	21	282	54.1	0.33	2.2		0.18	D
20	10	19	10.3	19-20.6	155-11.9	8.5	2.2	19	136	3.6	0.06	0.6	0.9	0.12	B
20	12	32	4.3	19-14.7	155-17.6	16.3	2.3	11	303	6.2	0.72	4.7	5.5	0.22	D
20	12	39	41.3	19-22.9	155-22.8	6.7	1.4	17	91	5.6	0.11	0.8	0.7	0.18	B
20	15	44	28.4	19-20.0	155-13.6	8.0*		13	157	4.8	0.09	0.7		0.14	C
20	22	2	39.5	19-18.9	155-13.3	8.9	2.0	20	152	6.6	0.04	0.4	0.8	0.08	B
20	22	10	48.9	18-50.7	155-19.6	8.0*	3.6	9	264	37.6	0.33	2.2		0.09	D
20	22	50	14.1	19-17.3	155-22.8?	1.2	1.7	15	130	5.5	0.10	0.8	1.1	0.17	B
20	23	39	6.2	19-22.1	155-23.9	7.2	1.6	16	124	3.7	0.09	0.7	0.6	0.18	B
21	2	15	17.0	18-57.8	155-23.6	9.6	2.5	13	293	22.8	1.75	8.9	4.8	0.18	D
21	2	20	22.7	19-19.4	155-13.8	8.0*	1.6	14	189	6.0	0.17	1.2		0.18	C
21	2	50	54.4	19-21.5	155- 7.9	8.7	1.8	13	189	3.6	0.09	0.8	1.2	0.08	B
21	3	50	10.3	19-20.9	155-11.8	8.1	1.6	17	148	3.1	0.08	0.8	1.3	0.13	B
21	4	39	2.1	18-45.5	155-17.9	8.0*	2.7	14	280	45.8	0.70	4.5		0.15	D
21	5	14	16.0	19-19.8	155-11.8	6.7	1.6	18	147	5.2	0.09	0.7	0.6	0.16	B
21	5	29	27.0	19-19.7	155-16.2	5.9	1.5	18	138	2.2	0.08	0.7	0.6	0.16	B
21	9	27	48.3	18-48.7	155-18.8	18.5*	3.3	21	266	41.5	0.27	1.9		0.14	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 21	9	34	0.0	18-52.7	155-17.2	5.2	3.5	23	288	36.2	0.32	2.9	3.7	0.14	D
21	9	51	1.9	18-52.8	155-20.8?	32.5*	3.1	22	253	33.3	0.31	2.5		0.18	D
21	10	38	50.6	18-48.4	155-18.1	3.7	2.8	9	293	42.5	2.65	6.3	13.2	0.10	D
21	10	43	50.8	18-52.7	155-16.6	6.3	3.2	23	288	36.8	0.37	3.4	4.3	0.16	D
21	11	51	8.9	19-18.5	155-12.0	2.9	1.8	18	180	7.3	0.18	1.0	1.4	0.24	C
21	12	7	17.9	18-45.4	155-18.4	8.0*	2.8	17	274	45.2	0.63	4.0		0.18	D
21	12	46	13.4	18-54.0	155-23.2	1.7	2.7	13	260	29.8	3.13	3.2	9.6	0.19	D
21	14	17	22.1	18-45.8	155-18.1	8.0*	3.1	14	279	45.3	0.62	4.0		0.14	D
21	16	29	16.6	19-19.9	155-16.6	24.7	2.1	20	135	1.5	0.11	0.7	1.1	0.10	B
21	21	7	57.0	19-25.9	155-25.9	5.3	1.7	17	164	8.4	0.08	0.5	0.5	0.10	B
21	22	55	16.6	18-48.5	155- 8.7?	0.8		15	297	51.3	1.17	10.9	3.2	0.19	D
22	1	22	9.4	19- 8.7	155-39.2	3.2	2.5	18	158	12.1	0.14	0.9	0.8	0.15	C
22	1	35	8.6	19-23.3	155-22.9	5.2	1.5	15	143	5.7	0.10	0.8	1.2	0.19	B
22	1	48	8.7	18-40.2	155-12.0	8.0*	2.9	15	309	60.1	2.08	12.8		0.19	D
22	7	23	3.4	18-57.9	155-27.1	12.5*		18	285	35.9	0.65	4.2		0.14	D
22	8	37	30.7	19-22.4	155-18.9	8.1		8	89	2.7	0.21	1.0	2.4	0.10	B
22	9	5	7.3	19-16.9	155-13.2	8.0*	1.1	11	209	9.5	0.15	1.0		0.11	C
22	13	24	55.4	19-17.3	155-12.9	8.0*	1.7	15	166	9.5	0.09	0.7		0.13	C
22	14	30	23.9	18-48.7	155-18.0	3.7	2.6	17	266	42.1	0.37	2.9	3.9	0.14	D
22	14	40	55.8	18-47.5	155-17.5?	0.0	3.0	19	269	44.5	0.31	2.6	1.0	0.13	D
22	14	49	18.1	18-53.6	155-26.8	8.0*		12	262	25.0	0.65	4.7		0.22	D
22	16	10	42.1	18-51.4	155-19.4	7.7	2.6	13	262	36.6	0.27	1.7	1.6	0.08	C
22	16	41	34.5	19-16.3	155-13.8	8.0*	1.8	17	172	9.0	0.09	0.6		0.11	C
22	16	56	10.8	18-52.1	155-19.9	7.6	2.6	13	260	34.9	1.52	3.1	9.7	0.14	D
22	16	57	38.2	18-54.4	155-23.0	12.5*	2.5	11	249	29.1	0.39	2.9		0.15	D
22	17	1	13.9	19-19.1	155-14.0	8.0*		11	169	6.2	0.10	0.8		0.12	C
22	17	12	43.7	18-51.0	155-21.3	6.9	2.9	11	263	35.8	1.40	3.0	8.8	0.11	D
22	17	43	13.4	19-18.1	155-13.3	8.0*	1.7	16	188	8.1	0.11	0.8		0.10	C
22	18	32	43.6	19-19.4	155-15.1	7.6		14	160	4.2	0.09	0.7	0.5	0.11	C
22	18	36	14.7	19-18.4	155- 8.2	8.0*	1.9	14	195	7.4	0.08	0.6		0.08	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC	22	18	59	22.1	19-17.2	156-20.1	16.4*	2.4	17	276	75.5	0.20	1.5		0.13	D
	22	19	0	50.7	19-17.5	155-13.6	8.0*	1.7	19	162	8.2	0.08	0.6		0.13	C
	22	19	2	21.6	19-17.8	155-13.5	8.0*	1.7	18	161	8.0	0.06	0.5		0.09	C
	22	19	18	38.5	19-20.5	155-19.4	2.1	1.1	7	102	3.6	0.25	0.7	1.0	0.09	B
	22	19	18	57.6	19-17.8	155-13.5	8.0*	2.0	19	161	8.1	0.05	0.4		0.09	C
	22	19	38	49.2	19-17.9	155-13.9	8.0*		13	159	7.3	0.07	0.6		0.10	C
	22	19	44	14.6	19-19.6	155-10.0	7.6	1.2	10	229	4.5	0.15	0.9	0.4	0.07	C
	22	19	50	25.4	19-17.6	155-13.4	8.0*	1.6	10	236	8.3	0.19	1.2		0.08	D
	22	19	55	33.3	19-17.8	155-14.3	8.0*	1.4	10	227	6.9	0.22	1.5		0.13	D
	22	20	8	23.3	19-17.9	155-14.7	8.0*	1.6	10	222	6.2	0.28	1.8		0.15	C
	22	20	13	41.6	19-18.4	155- 8.2	8.0*	1.9	15	194	7.4	0.09	0.7		0.10	C
	22	20	23	13.5	19-20.8	155-18.8	4.4		12	84	2.8	0.14	0.4	1.8	0.08	A
	22	20	24	0.9	19-18.3	155- 7.1	8.0*	1.3	11	200	8.0	0.15	1.2		0.12	C
	22	20	35	25.4	19-18.1	155-14.2	8.0*	1.1	13	223	6.8	0.20	1.3		0.14	C
	22	20	40	24.2	19-19.7	155-13.7	8.0*	1.6	17	144	5.4	0.10	0.8		0.19	C
	22	20	41	29.3	19-18.5	155-14.5	8.0*	1.6	14	211	5.9	0.16	1.0		0.13	C
	22	20	46	59.1	19-18.3	155-14.4	8.0*	1.4	13	218	6.3	0.18	1.1		0.14	C
	22	20	56	45.0	19-20.1	155- 9.5	9.2	1.1	13	164	3.6	0.08	0.6	1.2	0.08	B
	22	20	57	59.9	19-16.2	155-12.0	8.0*	0.9	11	219	11.6	0.28	1.9		0.19	C
	22	20	58	29.2	19-27.0	155-27.1	7.4	2.2	22	117	8.5	0.10	0.6	0.5	0.14	B
	22	21	2	35.6	19-18.7	155-13.7	8.0*	1.6	13	214	7.0	0.18	1.1		0.14	C
	22	21	15	51.9	19-18.6	155- 8.6	7.6	1.8	20	167	6.8	0.07	0.5	0.4	0.10	C
	22	21	24	23.0	19-17.5	155-13.7	8.0*	1.6	10	237	8.1	0.27	1.6		0.11	D
	22	21	37	8.9	19-17.8	155-13.9	8.0*	1.7	17	159	7.4	0.08	0.6		0.12	C
	22	21	50	6.6	19-16.9	155-12.5	8.0*	1.4	10	248	10.2	0.32	1.9		0.15	D
	22	22	29	39.0	19-17.6	155-14.8	8.0*		12	228	6.5	0.13	0.9		0.08	D
	22	22	31	14.9	19-18.3	155-14.7	10.2	1.4	11	213	5.7	0.14	0.7	1.3	0.07	B
	22	22	39	22.5	19-17.4	155-13.1	8.0*	1.5	12	242	8.9	0.24	1.3		0.11	D
	22	22	49	13.3	19-14.6	155-14.0	8.0*		9	274	10.2	0.76	4.2		0.16	D
	22	22	53	13.5	19-17.9	155-13.4	8.0*	1.9	11	191	8.1	0.15	1.1		0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 22	22	56	2.4	19-19.1	155-15.6	7.9	1.6	18	144	3.6	0.07	0.6	0.4	0.13	B
22	22	57	17.6	19-12.3	155-12.5	8.0*	1.3	9	244	15.0	0.46	2.8		0.18	D
22	23	1	40.0	19-18.4	155-15.0	5.5		13	181	5.2	0.14	1.0	0.9	0.16	C
22	23	10	4.7	19-19.1	155-13.8	8.0*	1.2	13	148	6.4	0.10	0.8		0.14	C
22	23	23	45.1	19-18.2	155- 8.2	10.0	2.6	20	174	7.7	0.06	0.5	0.8	0.07	B
22	23	26	25.0	19-18.0	155-13.8	8.0*		12	194	7.4	0.10	0.7		0.09	C
22	23	43	39.7	19-16.7	155-14.2	8.0*	1.7	17	167	8.1	0.10	0.7		0.13	C
23	0	16	31.6	19-16.9	155-12.8	8.0*	0.8	9	208	10.0	0.08	0.5		0.05	C
23	0	36	29.5	19-16.9	155-14.9	9.6	1.5	10	244	6.9	0.33	1.8	2.7	0.13	C
23	0	39	7.9	19-18.1	155-14.9	8.0*	1.6	13	185	5.8	0.13	0.9		0.13	C
23	0	57	28.0	19-18.3	155-23.6	3.7	1.5	13	115	3.6	0.09	1.0	1.5	0.19	B
23	1	12	1.0	19-16.5	155-14.5	8.0*		10	251	7.7	0.30	1.7		0.11	D
23	1	40	15.9	19-17.7	155-13.6	8.0*	1.7	10	236	8.1	0.37	2.3		0.19	D
23	1	57	10.4	19-17.6	155-14.9	9.8	1.7	14	229	6.4	0.19	1.0	1.7	0.09	C
23	2	4	6.8	19-16.9	155-14.6	13.5		9	245	7.3	0.11	0.8	0.3	0.04	C
23	2	10	24.3	19-20.3	155-19.5	5.9	1.4	12	109	3.7	0.18	0.5	1.4	0.08	A
23	2	19	53.1	19-19.4	155-10.1	8.0*	1.7	13	201	5.0	0.10	0.7		0.08	C
23	3	34	27.4	19-16.5	155- 7.1	8.0*	1.5	14	229	9.6	0.24	1.7		0.18	D
23	3	37	37.8	19-23.4	155-26.9?	7.3	1.8	15	159	8.7	0.15	0.8	0.9	0.13	C
23	4	2	17.9	18-54.4	155-13.1	12.4	2.1	17	298	38.0	0.39	7.6	15.6	0.18	D
23	4	8	34.1	18-47.4	155-16.8?	0.0	3.1	25	270	45.2	0.35	3.0	1.1	0.14	D
23	4	12	16.5	18-56.4	155-18.8	10.1	2.4	20	280	29.0	0.84	4.7	3.0	0.18	D
23	4	47	31.9	19-17.5	155-13.4	8.0*	2.2	21	164	8.5	0.05	0.4		0.08	C
23	4	54	53.4	19-17.6	155-13.4	8.0*	1.7	20	163	8.4	0.05	0.4		0.09	C
23	5	47	23.9	19-24.7	155-16.8?	1.7	0.4	8	97	0.5	0.09	0.6	0.4	0.12	B
23	5	59	28.9	18-52.7	155-21.2	9.5	2.6	16	256	33.2	0.54	3.4	3.1	0.19	D
23	6	45	18.5	19-18.0	155-13.3	8.8	2.0	20	159	8.2	0.05	0.4	1.2	0.09	B
23	6	52	38.9	19-16.0	155-21.4	8.0*	1.8	19	146	6.1	0.10	0.9		0.18	C
23	6	59	10.1	19-20.3	155-19.7	2.9	1.5	10	113	4.0	0.15	0.4	3.0	0.07	B
23	7	55	12.8	19-19.4	155-11.7	8.0*		13	170	5.8	0.08	0.6		0.09	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 23	7	56	54.4	19-18.0	155-21.2?	6.9	1.7	8	227	4.6	0.83	2.3	5.5	0.10	D
23	8	27	3.8	19-20.6	155- 7.2	8.0*		12	158	5.4	0.06	0.6		0.07	C
23	8	27	54.3	19-17.3	155-15.0	8.0*		14	187	6.6	0.11	0.8		0.12	C
23	9	11	8.4	19-13.9	155-19.5	4.0	2.5	22	172	7.6	0.16	0.9	1.0	0.21	C
23	9	34	11.6	19-18.4	155- 1.7?	9.4		13	238	3.6	0.30	3.0	1.6	0.24	D
23	9	38	30.2	19-15.1	155-22.3?	0.0		17	174	8.1	0.55	1.0	1.1	0.21	C
23	9	39	41.0	19-13.1	155- 9.9	8.0*	2.0	16	213	16.6	0.17	1.0		0.14	C
23	9	52	53.1	19-15.1	155-49.5	8.7		11	314	21.8	0.32	3.3	2.3	0.11	D
23	10	56	36.2	19-18.9	155-13.4	8.8	1.8	16	175	6.7	0.08	0.6	0.9	0.09	C
23	11	33	51.7	19-14.7	155-19.5	8.4	2.4	18	159	6.1	0.11	0.8	1.5	0.15	C
23	11	35	29.4	19-14.3	155-19.4	8.0*	1.9	18	169	7.0	0.21	1.6		0.23	C
23	11	52	14.2	19-14.2	155-18.8	8.0*		16	194	6.9	0.14	1.0		0.13	C
23	12	17	40.1	19-19.4	155-11.2	8.0*	1.9	16	169	5.3	0.06	0.5		0.08	C
23	13	40	25.1	19-20.5	155- 4.0?	6.5		8	148	2.2	0.55	4.2	3.0	0.22	C
23	13	54	44.8	19-14.5	155-10.5	8.0*		13	241	14.1	0.22	1.4		0.12	D
23	14	11	11.8	19-11.9	155-18.4	6.4	2.2	18	177	11.2	0.14	0.8	0.7	0.16	C
23	14	45	19.6	19-22.6	155- 6.8?	0.0	1.8	12	130	8.3	8.48	1.0	15.2	0.19	C
23	15	14	23.5	19-15.9	155-21.5	8.0*		14	162	6.3	0.08	0.7		0.10	C
23	15	32	25.5	19-22.3	155-24.9	6.2	2.1	18	67	4.8	0.07	0.6	0.6	0.14	B
23	15	33	50.7	19-16.2	155-22.4	0.3*		14	154	7.5	0.12	0.9		0.20	C
23	15	46	11.1	19-15.1	155-20.2	8.1	1.8	19	159	6.0	0.08	0.7	1.6	0.13	C
23	16	32	15.9	19-11.8	155-16.1	2.7	2.0	18	201	12.2	0.30	1.5	2.1	0.24	C
23	17	0	38.5	19-14.2	155-20.9?	0.0	1.9	20	158	11.0	5.07	0.7	9.6	0.17	C
23	17	37	24.9	19-13.0	155-19.3	8.0*		12	202	9.2	0.16	1.2		0.11	C
23	18	2	7.3	19-14.1	155-20.6?	2.5	2.4	22	159	11.4	0.34	0.6	1.2	0.17	C
23	18	9	58.6	19-14.4	155-20.6	7.7	1.8	20	158	7.4	0.11	0.8	0.6	0.13	C
23	18	12	3.8	19-14.7	155-21.2?	0.0		16	184	10.1	5.44	0.9	10.3	0.16	C
23	18	29	45.6	19-14.6	155-20.0	5.2	1.9	19	164	6.6	0.11	0.7	0.7	0.14	C
23	18	51	28.0	19-18.3	155-13.8	8.0*	1.7	14	192	7.1	0.08	0.6		0.08	C
23	19	13	23.6	19-16.8	155-13.0	1.0	2.6	23	171	9.8	0.33	0.8	1.1	0.23	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 23	19	21	45.4	19- 0.1	155-18.3	31.5		15	242	32.9	0.43	2.4	4.5	0.12	C
23	20	12	35.9	19-15.9	155-21.0	8.0*	1.7	18	166	5.7	0.10	0.9		0.15	C
23	20	14	52.5	19- 8.5	155-18.3	8.0*		11	283	17.4	0.73	3.8		0.12	D
23	20	19	24.2	19-15.4	155-20.8	0.7		16	172	6.1	0.47	1.0	0.9	0.18	C
23	20	21	46.8	19-11.0	155-18.0	2.7	2.4	21	182	12.9	0.13	0.7	0.8	0.14	C
23	20	29	17.6	19-13.9	155-20.1	1.6	3.1	20	224	8.0	0.42	1.4	1.1	0.21	C
23	20	30	53.4	19-14.3	155-20.4	1.4	2.9	17	220	7.5	0.48	1.4	1.5	0.17	C
23	20	43	45.9	19-23.2	155-14.4	4.6	1.2	12	102	2.7	0.16	0.6	1.5	0.10	B
23	21	18	22.5	19-18.3	155-14.0	5.9		16	214	7.9	0.17	1.0	0.7	0.15	C
23	21	27	51.6	19-18.5	155-14.3	8.0*		14	185	6.2	0.09	0.6		0.10	C
23	21	41	1.9	19-10.8	155-17.9	1.3	2.7	23	183	13.2	1.13	0.9	3.9	0.19	C
23	21	51	4.4	19-19.5	155-13.5	7.9		18	170	5.7	0.08	0.6	0.4	0.10	C
23	21	54	22.1	19-18.2	155-13.4	8.0*		10	227	7.9	0.23	1.4		0.12	D
23	21	57	41.6	19-37.3	155-44.7?	8.0*	2.5	15	258	34.9	5.58	0.0		7.67	D
23	21	59	46.4	19-10.9	155-20.1?	0.0		18	197	13.3	0.50	1.1	0.9	0.20	C
23	22	2	18.8	18-51.3	155-19.6	15.2*	4.0	27	258	36.6	0.24	1.6		0.16	D
23	22	52	8.2	19-19.9	155-15.4	9.2		10	227	3.6	0.16	0.8	1.1	0.04	C
23	22	55	41.7	19-18.0	155-14.1	9.2		12	252	6.9	0.48	2.2	3.0	0.10	C
23	23	32	22.7	19-15.5	155-19.7	8.0*		14	204	4.9	0.11	1.0		0.11	C
23	23	54	8.8	19-15.8	155-22.?	4.2	1.8	16	144	7.5	0.09	0.8	1.2	0.17	B
24	0	20	11.0	19-14.5	155-19.1	5.2	2.0	23	161	6.5	0.12	0.8	0.8	0.18	C
24	0	24	49.2	19-16.5	155-21.5	0.7		16	159	5.6	0.48	0.8	0.9	0.18	C
24	0	30	1.8	19-20.1	155-19.6	4.1		11	114	3.9	0.18	0.5	2.4	0.07	B
24	0	52	53.5	19-14.5	155-18.9	4.8		17	198	6.4	0.19	1.1	0.9	0.17	C
24	1	26	46.3	19-15.0	155-19.2?	0.0	2.5	20	230	5.6	0.93	3.6	1.9	0.42	D
24	1	31	20.5	19-10.5	155-19.8?	0.0	2.1	15	247	14.0	6.55	2.1	12.0	0.17	D
24	1	34	8.1	19-16.1	155-21.3	8.0*	1.8	14	212	5.8	0.18	1.4		0.15	C
24	1	59	39.4	18-48.3	155-17.2	8.0*	2.3	13	279	44.4	0.73	4.8		0.14	D
24	2	5	37.1	19-10.9	155-20.2	0.4	2.5	25	176	13.3	0.32	0.7	0.6	0.18	C
24	2	8	56.2	19-15.6	155-21.4	8.0*	1.8	14	219	6.5	0.18	1.4		0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 24	2	14	29.6	19-18.9	155-10.0	4.0	1.8	17	179	5.9	0.17	1.0	1.0	0.21	C
24	2	46	19.8	19-21.6	155-23.9	6.7		12	110	2.8	0.10	1.0	1.2	0.18	B
24	2	57	28.3	19-18.4	155-13.4	6.2	1.7	21	180	7.6	0.11	0.7	0.6	0.16	C
24	3	14	25.7	18-53.5	155-12.4	6.2	2.4	19	263	40.2	1.84	3.0	10.6	0.14	D
24	4	3	5.6	19-19.5	155-13.3	8.0*		10	201	7.0	0.11	0.8		0.09	C
24	4	19	2.6	19-17.4	155-20.0	5.3		13	196	2.6	0.21	1.2	1.2	0.17	C
24	4	30	50.0	19-14.6	155-11.0	8.0*		12	196	14.7	0.14	0.9		0.12	C
24	4	54	22.8	19-17.9	155-21.3	8.0*		7	234	4.7	0.08	0.5		0.03	D
24	6	1	34.3	19-25.8	155-16.2	2.0	1.1	10	136	1.1	0.05	0.3	0.2	0.06	B
24	6	18	24.8	18-46.1	155-16.8	8.0*	2.3	17	273	46.9	0.57	3.7		0.16	D
24	6	36	1.2	19-10.4	155-17.9	1.2	1.9	17	207	14.0	1.60	1.3	5.5	0.19	C
24	6	56	21.3	18-49.5	155-17.5	2.3		18	270	41.2	1.28	3.0	8.0	0.13	D
24	7	6	10.9	19-11.4	155-20.5	2.7		12	215	13.4	0.18	1.0	1.0	0.11	C
24	7	8	19.0	19-23.1	155-14.3	3.6	1.3	10	112	2.9	0.07	0.3	0.9	0.05	A
24	7	20	38.2	19-10.4	155-16.5	8.0*		13	236	14.4	0.33	2.0		0.16	D
24	7	35	20.6	18-44.5	155-17.1	8.0*		9	302	48.1	1.57	9.9		0.15	D
24	7	42	36.9	19-22.3	155-23.7?	7.4	1.5	19	112	3.9	0.08	0.6	0.6	0.17	B
24	7	45	0.1	19-23.3	155-14.5	2.0*		9	107	2.6	0.06	0.4		0.08	B
24	8	0	56.8	18-46.6	155-17.7	18.0*	3.9	24	271	45.3	0.26	1.7		0.16	D
24	8	7	46.2	19-23.3	155-14.8	5.0	1.6	14	103	2.6	0.11	0.5	1.1	0.11	B
24	8	8	31.7	19-23.2	155-14.8	3.2	2.4	17	104	2.5	0.05	0.4	0.7	0.12	B
24	8	9	38.2	18-51.9	155-18.4	13.7*	3.0	23	256	36.5	0.35	2.4		0.19	D
24	8	17	17.0	19-10.5	155-18.5?	0.0		17	182	13.8	4.80	0.9	9.0	0.17	C
24	8	22	1.1	19-21.7	155-18.9	2.0*	1.1	8	110	3.9	0.05	0.4		0.08	B
24	8	31	30.4	19-14.6	155- 7.1	20.2*		7	321	20.6	1.15	8.3		0.10	D
24	8	39	46.5	19- 9.8	155-20.1	8.0*		12	248	13.7	0.45	2.9		0.19	D
24	8	48	16.5	19-26.1	155-18.9	1.8*		8	152	4.0	0.22	1.5		0.25	C
24	11	21	42.3	19-24.6	155-16.9?	1.8	0.4	8	71	0.7	0.10	0.7	0.5	0.14	B
24	11	43	40.0	19-19.7	155-13.3?	8.2	1.6	19	145	5.1	0.06	0.5	0.3	0.11	B
24	12	7	27.7	19-12.4	155-21.3?	0.0	1.6	15	178	11.3	6.39	1.1	12.0	0.21	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 24	12	9	17.1	19-24.1	155-16.1	2.9	0.5	6	106	2.0	0.04	0.1	0.6	0.01	B
24	12	20	12.9	19-15.4	155-22.3	3.7		13	169	8.0	0.11	0.9	1.5	0.17	C
24	12	54	41.8	19-14.6	155-21.5	1.5	1.8	20	155	8.0	1.37	0.8	5.0	0.17	C
24	12	55	20.3	19-14.6	155-21.8?	0.0	1.6	15	154	8.3	6.25	1.0	11.8	0.21	C
24	12	59	45.1	19-14.4	155-15.2?	0.0	1.5	14	236	11.1	8.49	2.2	15.5	0.21	D
24	13	30	4.6	19-24.1	155-15.9	2.4		6	113	2.2	0.07	0.2	1.9	0.02	B
24	14	29	39.9	19-24.1	155-15.8	2.0	0.6	6	117	2.5	0.01	0.1	0.1	0.01	B
24	14	52	55.7	19-14.7	155-21.3?	0.0	1.7	15	157	7.7	6.44	0.9	12.3	0.20	C
24	15	9	58.2	19-20.4	155-19.2	4.3	1.9	21	69	3.1	0.04	0.3	0.4	0.11	B
24	15	20	39.3	19-21.7	155-25.4	4.5	1.6	14	116	4.6	0.12	0.9	1.3	0.20	B
24	15	47	20.9	19-20.3	155-19.5	5.4	0.7	12	109	3.7	0.09	0.5	0.6	0.09	A
24	16	2	53.6	19-24.1	155-16.0	1.8	0.7	7	107	2.2	0.10	0.5	0.4	0.07	B
24	16	3	34.5	19-24.2	155-16.1?	2.3	0.7	7	99	2.0	0.06	0.3	0.4	0.06	B
24	16	11	11.7	19-10.5	155-20.1?	0.0	3.9	21	178	13.8	4.37	1.1	8.1	0.21	C
24	16	13	47.9	19-12.9	155-22.1	8.1	2.8	14	162	10.4	0.10	0.7	0.5	0.10	B
24	16	15	13.8	19-11.8	155-21.1	4.6	2.2	21	169	12.2	0.14	0.8	0.8	0.18	C
24	16	27	8.8	19-10.9	155-20.3?	0.0	2.0	20	176	13.3	4.76	0.9	8.9	0.16	C
24	16	35	35.8	19-11.3	155-20.1?	0.0	2.0	15	175	12.6	5.25	1.0	9.9	0.18	C
24	16	46	35.0	19-23.5	155-17.0	16.1	1.7	18	61	0.2	0.05	0.5	0.6	0.07	A
24	16	52	49.5	19-11.7	155-22.6	7.7	0.7	13	180	10.1	0.16	1.2	1.0	0.17	C
24	16	55	35.3	19-23.1	155-14.5	2.0		9	111	2.8	0.08	0.3	0.3	0.08	A
24	17	11	50.9	19-11.7	155-20.5	8.0*		13	211	11.9	0.21	1.7		0.19	C
24	17	35	51.2	19-11.1	155-20.3?	0.0	2.2	19	175	13.6	4.48	0.9	8.4	0.16	C
24	17	38	10.9	19-10.9	155-20.4?	0.0	4.1	23	175	13.4	4.56	1.0	8.5	0.21	C
24	17	43	6.8	19-13.3	155-20.7	8.0*	1.3	8	214	9.3	0.20	1.6		0.13	C
24	17	56	19.4	19-11.1	155-19.9	2.2	2.9	22	176	12.8	0.17	0.9	1.0	0.19	C
24	18	16	34.2	19-19.9	155- 9.1	7.7	2.1	18	168	4.2	0.09	0.7	0.5	0.13	C
24	18	25	57.9	19-11.5	155-20.9?	0.0	2.0	14	189	12.6	6.47	1.3	12.1	0.21	C
24	18	35	41.8	19-12.3	155-21.7?	7.9	0.6	11	196	11.6	0.24	1.5	2.0	0.18	C
24	19	9	18.0	19-14.9	155-21.8?	0.0	1.9	19	153	9.0	3.89	0.7	7.3	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 24	19	46	50.2	19-11.6	155-22.0	6.7	2.2	18	175	11.0	0.15	1.1	0.8	0.18	C
24	19	51	40.5	19-13.4	155-22.8?	0.0	1.9	13	176	8.8	6.66	1.1	12.7	0.20	C
24	19	54	42.8	19-10.7	155-20.4?	0.0	3.3	23	177	13.2	4.67	1.0	8.7	0.21	C
24	20	5	4.2	19-10.4	155-20.5	2.8		13	197	13.0	0.19	1.1	1.3	0.14	C
24	20	21	58.4	19-15.2	155-21.5	0.7*	1.8	16	152	9.4	0.08	0.7		0.14	C
24	20	31	35.1	19-11.1	155-20.7	4.4	1.9	18	174	12.9	0.15	0.9	0.8	0.16	C
24	20	47	30.3	19-10.7	155-17.7	2.4	3.3	25	184	13.5	0.15	0.8	0.8	0.17	C
24	20	51	15.1	19-19.3	155-12.8	7.2	1.6	20	150	5.8	0.11	0.8	0.6	0.15	C
24	20	53	37.6	19-16.3	155-22.6	0.3*	1.7	16	137	7.2	0.08	0.7		0.17	C
24	21	0	12.0	19-12.5	155-21.1?	0.0	1.8	21	166	10.9	5.63	0.9	10.6	0.20	C
24	21	35	34.1	19-24.0	155-15.8	1.6		7	120	2.3	0.09	0.5	0.5	0.08	B
24	21	36	2.5	19-12.4	155-21.3	0.7*	2.2	20	166	11.3	0.10	0.7		0.15	C
24	21	38	22.7	19-12.6	155-21.1	0.4*	1.9	18	166	10.8	0.10	0.7		0.15	C
24	22	29	59.5	19-25.3	155-16.9	2.7	0.5	7	163	0.8	0.15	0.6	1.1	0.06	B
24	22	39	7.6	19-10.9	155-17.7?	2.1	2.?	13	205	13.1	0.18	0.9	1.0	0.12	C
24	22	40	7.2	19-10.4	155-21.6	1.6	1.9	17	175	11.2	1.57	1.1	5.5	0.22	C
24	23	4	30.9	19-24.0	155-15.7	1.7	0.8	9	69	2.5	0.04	0.2	0.2	0.06	A
24	23	20	55.1	19-16.8	155-22.9	3.8	1.7	15	132	6.4	0.10	0.9	1.5	0.19	B
25	0	10	36.9	19-10.0	155-15.8	13.9*	2.1	18	217	15.6	0.26	1.9		0.19	C
25	0	11	14.5	19-11.1	155-20.3?	0.0	2.3	22	175	13.0	4.49	0.9	8.4	0.17	C
25	0	59	42.8	19-11.4	155-21.4	4.9		16	193	11.9	0.14	0.9	0.6	0.12	C
25	1	7	45.0	19-12.2	155-21.2	5.0	2.0	17	181	11.6	0.22	1.3	1.1	0.23	C
25	1	11	38.6	19-15.2	155-21.8	0.7*	1.7	16	150	7.5	0.11	0.8		0.16	C
25	1	12	60.0	19-15.3	155-22.0	3.7	1.7	19	148	7.8	0.09	0.8	1.1	0.15	B
25	1	13	39.5	19-12.5	155-21.3	6.2	2.3	21	165	11.1	0.14	0.9	0.8	0.19	C
25	1	20	5.9	19-22.3	155-18.0	2.3*	0.4	10	79	2.8	0.04	0.3		0.06	B
25	1	23	12.7	19-20.5	155-19.3	5.1	0.9	12	74	3.3	0.13	0.4	1.5	0.08	A
25	1	24	10.1	19-11.1	155-20.3	0.3*	0.7	13	216	13.0	0.16	0.9		0.11	C
25	1	26	41.9	19-20.1	155- 9.9	8.8	1.5	12	165	3.7	0.08	0.6	1.2	0.08	B
25	1	40	33.3	19-11.1	155-20.7?	0.0	2.7	22	174	12.9	4.17	0.8	7.8	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 25	3	4	38.0	19-10.8	155-20.8?	0.0	2.4	24	175	12.7	3.54	0.8	6.6	0.17	C
25	3	15	4.4	19-10.6	155-21.0?	0.0	2.0	21	175	12.2	6.14	1.0	11.5	0.19	C
25	3	22	49.9	19-14.6	155-21.6	0.5*	0.5	8	173	8.0	0.14	1.1		0.15	C
25	4	46	16.3	18-53.8	155-19.4	11.5*	2.5	15	254	32.6	0.35	2.5		0.14	D
25	4	49	17.2	19-21.9	155-18.3	4.7	1.5	14	73	3.6	0.09	0.3	1.1	0.10	A
25	5	0	39.9	19-13.1	155-21.6	2.1	2.8	22	162	13.5	0.15	1.0	1.3	0.21	C
25	5	16	1.7	19-13.7	155-22.2	8.0*	0.6	12	177	9.3	0.15	1.3		0.18	C
25	5	39	30.1	19- 9.4	155-15.1	9.6	1.8	20	198	16.8	0.11	0.7	1.1	0.08	C
25	6	11	46.3	19-15.7	155-22.1	5.5	1.8	16	144	7.4	0.08	0.7	0.7	0.16	B
25	6	54	14.4	19-20.4	155-19.5	4.8	1.4	11	106	3.7	0.14	0.4	1.5	0.06	A
25	8	4	46.6	18-53.8	155-19.3	10.3	2.5	15	267	32.8	0.69	3.5	3.0	0.13	D
25	8	43	22.0	19-23.4	155-14.9	2.8		9	102	2.5	0.12	0.4	2.2	0.07	B
25	8	46	11.4	19-16.7	155-22.2	5.4	1.7	19	137	6.7	0.10	0.9	0.8	0.21	C
25	8	51	22.6	19-24.1	155-15.9	1.9	0.7	7	113	2.3	0.03	0.2	0.2	0.04	B
25	10	9	2.6	19-12.4	155-20.8	0.5*		14	200	11.0	0.29	1.7		0.28	D
25	10	11	57.1	19-14.8	155-20.4?	12.6*		9	303	6.6	1.17	7.1		0.16	D
25	10	24	38.8	19-11.6	155-20.3?	0.0	2.8	19	198	12.1	4.60	1.0	8.6	0.16	C
25	10	34	11.8	19- 7.7	155-13.0?	0.1	3.0	18	236	21.4	8.97	2.4	16.3	0.22	D
25	10	36	20.5	19- 9.8	155-21.4	8.0*		10	243	11.3	0.29	1.9		0.12	D
25	10	37	24.6	19- 9.0	155-15.5	8.9		12	225	17.5	0.18	1.1	2.1	0.08	C
25	10	39	13.1	19- 8.8	155-15.0	8.0	2.7	18	227	18.1	0.12	0.8	0.9	0.08	C
25	11	1	12.0	19-10.5	155-19.9	0.3*		12	225	14.0	0.24	1.3		0.16	C
25	11	1	54.2	19-14.6	155-22.1	4.3		13	179	8.7	0.11	0.8	1.0	0.15	C
25	11	3	53.2	19-10.2	155-20.9	5.9	2.3	16	204	12.3	0.21	1.3	1.0	0.17	C
25	11	11	17.6	19-15.0	155-21.7	4.0	1.9	15	169	7.7	0.12	1.0	1.2	0.19	C
25	11	15	18.9	19-14.5	155-21.3	2.8	2.8	17	156	10.0	0.13	0.9	1.3	0.17	C
25	11	19	24.5	19-15.1	155-19.8	9.2	1.8	18	157	5.6	0.08	0.7	1.7	0.14	C
25	12	8	48.7	18-52.4	155-22.8	10.1		11	280	32.4	0.56	3.1	2.2	0.08	D
25	12	15	18.3	19-13.8	155-21.2?	0.0	2.9	21	159	9.0	4.47	0.7	8.4	0.16	C
25	12	25	39.1	19-14.8	155-21.8	0.4*	1.8	11	183	8.0	0.13	1.0		0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 25	12	34	16.6	19-12.4	155-25.9	8.0*	2.7	3	176	6.3		0.0		0.00	D
25	13	4	48.0	19-15.2	155-21.4	5.0	2.4	21	152	7.1	0.09	0.7	0.7	0.16	C
25	13	18	34.3	19-16.3	155-21.9	7.4	2.2	16	146	6.4	0.12	1.0	0.6	0.14	C
25	13	31	17.0	19-15.4	155-22.2	4.0	1.7	17	146	7.9	0.08	0.7	1.1	0.16	B
25	13	32	39.6	19-15.5	155-22.0	5.1	1.7	12	170	7.5	0.11	0.9	0.9	0.16	C
25	13	33	59.5	19-15.8	155-22.1	8.0*	1.8	11	144	7.3	0.15	1.5		0.26	C
25	14	4	42.4	19-15.0	155-21.6	4.5	2.0	15	228	7.5	0.20	1.1	0.9	0.12	C
25	14	16	24.3	19-27.1	154-53.6	5.6		13	224	3.3	0.21	1.6	0.8	0.13	C
25	14	54	23.1	19-23.8	155-15.3	4.1	1.7	13	84	2.4	0.11	0.5	1.2	0.12	B
25	14	55	12.2	19-23.9	155-15.3	3.1	1.3	11	88	2.2	0.10	0.5	1.9	0.11	B
25	15	3	35.3	19-12.9	155- 5.5	5.2	2.2	15	225	13.8	0.28	1.3	1.1	0.12	C
25	15	31	23.8	19-14.6	155-24.3	8.0*	1.9	11	139	5.4	0.10	1.1		0.16	C
25	15	35	27.3	19-18.8	155-15.2	9.1		12	197	4.5	0.12	0.7	1.2	0.08	B
25	16	47	10.0	19-20.4	155-12.0	9.5		11	196	3.8	0.15	0.8	1.5	0.07	B
25	17	24	0.5	19- 7.9	155-15.0	5.7	2.5	22	205	19.7	0.28	1.0	1.4	0.13	C
25	17	29	36.3	19- 9.0	155-15.1	9.2	2.5	20	226	17.7	0.15	0.9	1.7	0.10	C
25	17	36	10.2	19-10.2	155-15.2	9.7	2.2	18	233	15.6	0.22	1.3	1.3	0.12	C
25	17	38	21.9	19-19.6	155-13.6	8.0*		13	187	5.5	0.12	0.9		0.14	C
25	17	38	50.4	19-17.3	155-22.3	8.0*		11	179	5.6	0.07	0.7		0.08	C
25	17	41	53.8	19-16.3	155-22.2	0.6*		10	207	7.0	0.15	0.9		0.13	C
25	17	43	26.7	19-15.5	155-22.4	4.2		12	166	7.7	0.12	0.9	1.7	0.17	C
25	17	48	53.3	19-15.5	155-22.5	4.6		11	165	7.6	0.13	1.2	1.8	0.18	C
25	18	1	27.9	19-11.4	155-27.4?	0.0		9	239	17.7	3.72	4.7	25.4	0.32	D
25	18	14	26.7	19-14.8	155-22.8	0.8*	1.8	12	172	9.3	0.11	0.9		0.15	C
25	18	22	37.4	19-15.7	155-22.4	8.0*		12	162	7.6	0.04	0.4		0.05	C
25	18	25	26.8	19-24.1	155-15.7	0.6*		5	118	2.5	0.04	0.2		0.03	C
25	18	26	45.9	19-14.9	155-22.2	8.0*		8	178	8.4	0.17	1.5		0.15	C
25	18	28	21.1	19-15.3	155-21.7	1.1		11	176	7.4	2.34	0.9	8.8	0.10	C
25	18	31	50.9	19-15.6	155-19.9?	6.9		16	175	4.8	0.11	0.8	0.5	0.13	C
25	18	47	0.3	19-11.1	155-20.9?	0.0	2.1	16	173	12.5	5.98	1.1	11.2	0.20	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 25	18	56	9.1	19-15.6	155-21.8	5.2		15	163	7.0	0.10	0.9	1.0	0.17	C
25	19	11	57.9	19-20.4	155-19.4	5.3	2.1	13	76	3.5	0.14	0.4	1.5	0.08	A
25	19	40	40.3	19-15.6	155-22.1	5.6	1.8	17	168	7.5	0.09	0.8	0.7	0.16	C
25	20	7	34.2	19-13.4	155-21.5	1.3	1.9	19	160	9.9	1.92	0.9	7.0	0.16	C
25	20	25	12.4	19-25.9	155-24.9	8.0*	1.6	13	163	7.7	0.07	0.5		0.10	C
25	20	35	20.4	19-25.4	155-24.1	8.0*	1.7	13	197	7.1	0.15	1.0		0.12	C
25	20	42	27.0	19-18.6	155-16.6	10.6		7	243	3.2	0.04	0.2	0.3	0.01	C
25	20	46	7.6	19-11.4	155-20.8	8.0*	1.7	14	210	12.7	0.15	1.1		0.12	C
25	20	54	41.8	19-14.9	155-22.4	8.0*		7	175	8.0	0.06	0.7		0.07	C
25	21	0	39.2	19-13.7	155-21.8?	0.0	1.7	17	158	9.7	5.61	1.0	10.6	0.21	C
25	21	7	46.2	19-14.3	155-22.0	3.1		8	183	9.0	0.15	1.5	2.1	0.13	C
25	21	9	37.7	19-14.4	155-21.8	0.5*	1.7	18	156	8.6	0.10	0.7		0.15	C
25	21	35	24.1	19-17.4	155-22.4	4.6		11	175	5.4	0.14	0.9	1.3	0.14	C
25	21	36	8.8	19-22.6	155-17.4	13.4		12	83	1.6	0.06	0.7	0.5	0.09	B
25	22	33	12.5	19-15.3	155-21.9?	0.1*		16	175	7.7	0.12	0.8		0.17	C
25	22	39	25.4	19-15.3	155-22.1	0.1*		13	172	7.9	0.12	0.8		0.17	C
25	22	55	30.9	19-19.8	155-11.9	7.8		12	213	5.1	0.27	1.5	3.0	0.10	C
25	23	11	53.3	19-10.6	155-21.2	6.4		13	293	14.3	0.79	3.6	1.0	0.12	D
25	23	23	37.8	19-12.7	155-20.1	4.6		13	206	10.1	0.21	1.3	1.1	0.15	C
26	0	12	53.6	19-21.3	155-18.9	4.0		12	80	3.4	0.12	0.4	2.2	0.09	B
26	1	14	0.8	19-13.9	155-20.9	1.1	4.1	24	159	8.5	1.03	0.8	3.7	0.20	C
26	1	19	46.7	19-15.0	155-22.4	2.9	1.8	19	148	7.9	0.11	0.8	1.5	0.18	B
26	1	21	28.6	19-14.9	155-22.6	0.7*		13	218	7.6	0.23	1.3		0.20	C
26	1	22	38.8	19-13.6	155-21.9?	0.0	2.0	19	183	9.8	6.30	1.2	11.8	0.22	C
26	1	26	37.9	19-13.2	155-21.1?	0.0	2.3	19	162	9.8	7.18	1.1	13.6	0.24	C
26	1	29	26.1	19-13.5	155-21.1	0.9	2.5	20	171	9.4	1.42	0.9	5.1	0.19	C
26	1	30	4.9	19-17.6	155-23.9	4.8	2.3	9	175	12.4	0.14	1.7	1.3	0.12	C
26	1	35	50.1	19-14.5	155-21.7?	0.0	2.3	15	157	8.4	6.92	1.0	13.1	0.17	C
26	1	43	30.6	19-14.0	155-22.1?	0.0	2.0	16	156	9.1	5.18	0.9	9.8	0.19	C
26	1	47	31.9	19-14.0	155-22.2?	0.0	1.7	20	156	9.0	4.52	0.7	8.6	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 26	1	48	27.9	19-14.1	155-21.2?	0.0	1.7	15	188	8.5	5.73	1.0	10.9	0.16	C
26	1	49	46.5	19-13.9	155-22.0	8.0*	1.7	13	160	9.5	0.13	1.0		0.17	C
26	1	49	54.3	19-14.0	155-21.8	8.0*		11	197	11.7	0.11	1.1		0.10	C
26	1	53	36.1	19-11.7	155-34.3	4.4	1.5	12	210	7.8	0.21	1.5	1.0	0.16	C
26	1	56	9.7	19-14.8	155-22.1	7.4	2.5	18	163	8.4	0.07	0.7	0.4	0.13	C
26	2	3	4.9	19-12.5	155-21.0	8.0*		11	219	10.9	0.19	1.7		0.12	C
26	2	10	19.8	19-25.1	155-23.8	8.0*		8	191	7.1	0.16	1.1		0.11	C
26	2	10	55.1	19-15.3	155-22.7?	0.0		16	164	8.7	5.58	0.9	10.6	0.18	C
26	2	11	49.6	19-15.6	155-21.4	8.0*		13	177	6.5	0.10	1.0		0.13	C
26	2	12	40.2	19-15.2	155-22.6?	0.0		14	167	7.4	5.79	0.9	11.0	0.18	C
26	2	22	37.9	19-14.8	155-21.8?	0.0	1.9	18	170	8.1	5.92	0.9	11.3	0.19	C
26	2	37	29.3	19-14.0	155-21.4?	0.0	3.4	22	173	8.7	3.09	0.7	5.8	0.15	C
26	2	41	25.9	19-15.0	155-21.6	0.5*		13	180	7.5	0.14	0.9		0.17	C
26	2	46	22.8	19-19.0	155-13.6	8.0*		14	217	6.6	0.12	0.7		0.09	C
26	2	47	18.8	19-14.2	155-21.6?	0.0	2.1	16	177	8.7	5.13	0.8	9.8	0.15	C
26	2	54	38.2	19-13.9	155-21.6?	0.0	3.0	20	173	9.2	3.86	0.8	7.3	0.18	C
26	2	58	29.1	19-15.2	155-22.5?	0.0		14	169	7.6	5.29	0.8	10.1	0.16	C
26	2	59	19.8	19-13.9	155-21.9?	0.0	2.4	19	168	9.3	4.19	0.9	7.9	0.16	C
26	3	4	49.6	19-15.0	155-22.4	4.3	2.3	19	160	8.0	0.12	0.9	1.1	0.20	C
26	3	6	48.6	19-15.3	155-21.8?	0.0	1.7	17	176	7.3	6.07	0.9	11.6	0.19	C
26	3	37	37.9	19-14.9	155-21.5?	0.0		17	180	7.5	6.18	1.0	11.8	0.19	C
26	3	51	33.0	19-15.3	155-22.8	4.6	1.7	16	144	7.2	0.09	0.8	0.9	0.17	B
26	3	55	6.6	19-19.7	155-14.0	8.0*		12	205	5.6	0.11	0.7		0.09	C
26	3	56	11.9	19-15.1	155-22.2	3.9		16	174	8.2	0.12	1.0	1.6	0.20	C
26	4	12	36.2	19-14.5	155-22.5?	0.0	1.7	14	178	8.2	6.57	1.1	12.5	0.23	C
26	4	22	52.8	19-14.8	155-22.1?	0.0	1.7	18	178	8.5	5.71	0.9	10.8	0.20	C
26	4	24	42.0	19-14.1	155-22.4?	0.0	1.7	19	156	8.7	4.91	0.9	9.3	0.20	C
26	4	26	38.9	19-14.6	155-22.4	8.0*		14	178	8.2	0.10	0.9		0.12	C
26	4	28	40.4	19-13.6	155-21.9?	0.0		18	183	9.9	7.61	1.2	14.4	0.25	C
26	4	35	56.3	19-13.5	155-22.1	8.0*	2.0	13	197	9.6	0.13	1.1		0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 26	4	41	6.8	19-14.1	155-21.1?	0.0	1.8	17	202	8.3	6.42	1.2	12.2	0.19	C
26	4	56	34.0	19-16.3	155-21.8	5.0		10	210	6.4	0.21	1.3	1.1	0.15	C
26	5	13	58.3	19-15.3	155-21.7?	0.0		18	175	7.2	6.07	0.9	11.6	0.18	C
26	5	15	2.3	19-15.4	155-22.4	1.2	2.3	19	146	7.8	1.01	0.7	3.7	0.16	B
26	5	17	53.4	19-15.8	155-22.3	4.2		12	162	7.7	0.13	1.1	1.9	0.19	C
26	5	27	59.7	19-15.5	155-22.7	0.8*		15	163	7.3	0.11	0.8		0.17	C
26	5	30	25.9	19-14.7	155-21.6	8.0*		15	189	7.9	0.11	0.9		0.13	C
26	5	37	1.2	19-13.6	155-20.8?	0.0	2.2	22	161	8.9	4.30	0.8	8.1	0.20	C
26	5	38	29.6	19-13.3	155-21.3?	0.0	2.3	18	207	9.7	6.32	1.3	11.7	0.20	C
26	5	47	24.2	19-22.6	155-23.2?	0.8		13	142	4.4	2.18	0.9	8.1	0.20	C
26	5	48	21.3	19-13.7	155-21.9?	0.0		13	187	9.7	7.44	1.6	14.1	0.22	C
26	5	51	28.3	19-15.8	155-21.6	4.6		14	224	6.5	0.21	1.2	1.0	0.16	C
26	5	53	42.5	19-18.5	155-20.8?	2.7*		10	198	3.9	0.17	0.8		0.10	C
26	5	58	55.7	18-46.7	155-16.8	8.0*		12	283	46.4	0.68	4.4		0.12	D
26	5	59	38.6	19-14.6	155-21.5	6.9		14	183	8.1	0.15	1.3	0.8	0.20	C
26	6	9	43.2	19-16.1	155-21.9	0.5*		12	215	6.7	0.20	1.2		0.16	C
26	6	18	13.2	19-16.0	155-22.0	0.4*		9	217	6.9	0.23	1.4		0.15	C
26	6	33	31.0	19-15.5	155-22.8?	0.0		13	209	7.1	8.55	1.5	15.3	0.22	C
26	6	52	58.8	19-15.9	155-21.5	1.7	1.7	16	162	8.5	2.05	0.8	7.7	0.15	C
26	7	19	37.0	19-13.3	155-21.8?	0.0		16	160	10.3	7.09	1.2	13.3	0.21	C
26	7	49	38.1	19-18.6	155-14.9	9.3		12	206	5.2	0.21	1.0	1.8	0.08	C
26	7	50	3.9	19-14.0	155-21.1?	0.0	2.5	22	159	8.6	4.83	0.8	9.1	0.19	C
26	7	55	25.7	19-19.2	155-13.1	8.0*		12	211	6.1	0.12	0.8		0.09	C
26	7	56	12.8	19-14.9	155-21.8?	0.0	1.7	19	178	7.9	5.65	0.9	10.7	0.20	C
26	7	57	35.2	19-14.3	155-21.7?	0.3	2.2	22	155	8.6	4.15	0.8	7.8	0.22	C
26	8	5	43.5	19-15.1	155-21.4	3.0*	1.7	15	211	7.1	0.18	1.3		0.16	C
26	8	18	44.5	19-17.9	155-15.3	5.2	2.2	20	155	5.5	0.14	0.9	0.8	0.21	C
26	8	23	29.3	19-20.5	155-18.8	4.6	1.5	12	90	2.6	0.16	0.5	2.0	0.09	A
26	8	27	34.7	19-12.3	155-21.0?	0.0	1.8	18	186	11.2	5.30	0.9	10.0	0.17	C
26	8	39	52.3	19-14.8	155-21.4?	0.0	1.8	17	182	7.7	6.49	1.1	12.4	0.20	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 26	8	41	30.8	19-15.4	155-21.7	8.0*		12	209	7.2	0.17	1.3		0.14	C
26	8	42	20.5	19-14.8	155-21.2	8.0*		11	232	7.4	0.23	1.7		0.14	D
26	8	51	5.2	19-13.4	155-22.0?	0.0	1.9	19	160	9.9	5.33	0.8	10.1	0.17	C
26	8	55	13.0	19-13.7	155-21.9	2.6	2.7	20	162	9.7	0.12	0.8	0.9	0.17	C
26	9	36	44.0	19-10.8	155-21.5	8.0*		10	211	11.4	0.13	1.1		0.11	C
26	10	8	53.7	19-15.4	155-22.6	5.3	2.0	16	144	7.3	0.10	0.9	0.8	0.20	B
26	10	9	29.8	19-15.5	155-22.8	5.7	2.3	19	142	7.1	0.09	0.8	0.6	0.19	C
26	10	20	55.9	19-15.0	155-22.5?	0.0	1.8	18	148	7.8	5.72	0.8	10.8	0.19	C
26	10	45	10.8	19-20.3	155-12.9	9.6	1.6	10	189	4.1	0.28	1.3	2.5	0.11	C
26	10	58	18.9	19-11.7	155-20.8	0.5*		16	171	12.2	0.10	0.7		0.16	C
26	11	2	42.3	19-14.8	155-21.9	5.2		14	169	8.2	0.09	0.8	0.7	0.15	C
26	11	9	35.1	19-17.7	155-11.1?	0.0	2.3	20	169	8.4	6.00	0.9	11.4	0.24	C
26	11	16	33.9	19-13.5	155-20.9	2.5	2.8	23	161	9.2	0.15	0.9	1.0	0.20	C
26	11	24	6.2	19-10.9	155-20.1?	0.0	4.5	25	176	13.8	3.89	0.9	7.2	0.21	C
26	11	29	11.7	19-13.8	155-21.9	0.2	2.1	19	158	9.5	4.49	0.6	8.5	0.13	C
26	11	33	50.2	19-10.3	155-20.6?	0.0	2.6	23	178	12.8	4.25	1.0	7.9	0.20	C
26	11	34	50.1	19-14.0	155-19.0	2.9	2.5	19	164	7.4	0.25	1.5	2.3	0.29	D
26	11	40	16.6	19-15.4	155-22.6	2.9		16	144	7.4	0.10	0.8	1.3	0.16	B
26	11	45	17.8	19-12.1	155-21.3	0.5*	2.0	15	167	11.9	0.09	0.7		0.14	C
26	11	47	41.4	19-11.2	155-21.1	4.8	1.7	15	173	12.2	0.12	0.8	0.7	0.12	C
26	11	48	9.9	19-11.2	155-21.1	4.6	2.1	16	173	12.3	0.16	0.9	0.9	0.15	C
26	12	1	6.8	19-14.9	155-22.3	4.0		17	149	8.1	0.09	0.7	0.9	0.17	B
26	12	14	4.7	19-15.5	155-22.1	5.1	1.7	14	146	7.6	0.11	0.9	0.8	0.19	B
26	12	22	6.4	19-15.6	155-22.4	5.5	1.8	16	144	7.7	0.10	0.9	0.8	0.19	B
26	12	25	1.2	19-10.8	155-20.4	3.5	3.4	22	176	13.4	0.18	1.0	1.0	0.20	C
26	12	27	45.8	19-11.3	155-21.8	6.6	2.6	17	189	11.2	0.12	0.9	0.7	0.12	C
26	12	38	46.3	19-13.8	155-21.6	0.8		19	158	9.2	1.26	0.7	4.6	0.11	C
26	13	18	37.5	19-15.7	155-21.8	5.3	1.9	17	146	7.0	0.11	1.0	0.9	0.22	C
26	13	19	30.9	19-15.3	155-21.6	6.9	1.9	15	150	7.2	0.11	0.9	0.7	0.19	B
26	13	20	38.8	19-15.5	155-21.9	5.3	1.9	10	147	7.4	0.14	1.5	1.4	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 26	13	24	44.9	19-14.0	155-20.1?	0.0	2.6	23	161	12.2	4.20	0.9	7.9	0.22	C
26	13	44	26.1	19-15.2	155-22.3	5.7	1.5	12	147	8.1	0.10	0.8	0.8	0.15	B
26	13	52	12.0	19-14.8	155-21.7	3.1	2.5	21	153	7.9	0.11	0.8	1.3	0.18	C
26	13	54	30.5	19-15.6	155-21.6	4.5		19	148	6.8	0.12	0.9	1.0	0.21	C
26	14	1	12.3	19-12.4	155-21.3	0.5*	1.9	19	166	11.2	0.11	0.8		0.18	C
26	14	4	19.4	19-15.6	155-21.5?	8.1	2.4	21	148	6.7	0.12	0.9	0.7	0.19	C
26	14	5	21.7	19-15.8	155-22.0	8.0	2.0	17	145	7.0	0.11	0.9	0.7	0.16	B
26	14	30	40.5	19-15.3	155-21.8	3.7	2.1	20	149	7.4	0.11	0.9	1.1	0.20	C
26	14	31	21.9	19-16.9	155-23.2	5.3	1.8	18	130	6.1	0.09	0.8	0.7	0.19	B
26	14	48	8.6	19- 9.6	155-13.5	9.3	2.2	16	202	17.9	0.19	1.2	1.6	0.13	C
26	15	16	19.2	19-10.7	155-20.1?	0.0	2.7	21	177	13.6	4.96	1.0	9.2	0.19	C
26	15	18	12.8	19-15.0	155-22.0	5.1	2.0	14	150	8.0	0.12	1.0	0.9	0.19	B
26	15	32	31.5	19-14.8	155-22.2?	0.0	2.0	17	162	8.4	4.55	0.8	8.6	0.18	C
26	16	7	49.1	19-15.1	155-21.4?	7.3	3.5	19	194	7.2	0.21	1.4	0.9	0.22	C
26	16	14	55.9	19-15.9	155-22.0	3.6	1.9	13	144	7.0	0.11	1.0	1.2	0.16	B
26	16	15	17.4	19-14.2	155-20.9?	0.0	2.6	22	158	8.0	4.52	0.7	8.6	0.18	C
26	16	24	44.1	19-12.7	155-20.7?	0.0	3.2	24	166	10.3	3.91	0.8	7.3	0.20	C
26	16	30	26.2	19-14.3	155-21.8?	0.0	2.1	18	156	8.9	4.09	0.9	11.5	0.17	C
26	16	36	33.7	20- 5.2	156-10.6?	8.0*	2.8	20	320	56.6	2.42	0.0		5.13	D
26	16	37	35.8	19-18.4	155-19.9	7.1	3.4	16	187	0.9	0.15	0.9	0.5	0.12	C
26	16	39	55.4	19-14.0	155-20.8	2.2	3.3	24	159	8.3	0.15	0.9	1.1	0.22	C
26	16	48	46.3	19-14.2	155-21.5	2.6	2.3	20	157	8.6	0.15	0.9	1.4	0.21	C
26	16	58	53.2	19-15.3	155-22.6?	3.5	2.0	18	145	7.4	0.10	0.8	1.1	0.17	B
26	17	1	23.9	19-15.0	155-21.8	4.7		19	152	7.8	0.12	0.9	1.0	0.21	C
26	17	11	59.3	19-15.7	155-22.3	0.4*	1.9	15	143	7.8	0.07	0.6		0.15	C
26	17	14	28.5	19-14.6	155-21.1	0.8	2.5	20	156	10.4	3.66	0.6	5.9	0.13	C
26	17	15	59.1	19-14.2	155-20.9	3.3	2.6	20	158	11.8	0.12	0.9	0.9	0.16	C
26	17	26	38.7	19-14.7	155-21.9?	0.0	2.2	18	153	8.3	5.62	0.8	10.6	0.17	C
26	17	32	35.1	19-15.5	155-22.1	5.3	1.3	12	145	7.6	0.12	1.0	0.9	0.19	B
26	17	44	21.3	19-14.6	155-22.1?	0.0	2.5	19	153	8.7	4.98	0.8	9.4	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 26	17	57	41.6	19-20.0	155-11.6	8.7		15	145	4.8	0.09	0.7	2.0	0.12	B
26	18	1	49.3	19-14.2	155-21.3	4.5	2.0	15	161	8.3	0.16	1.3	1.2	0.19	C
26	18	3	45.6	19-14.8	155-21.9	1.1	1.9	17	153	8.2	1.63	0.8	5.9	0.16	C
26	18	9	49.6	19-14.6	155-20.8?	0.1	1.6	15	156	7.3	7.83	1.1	14.8	0.19	C
26	18	16	30.0	19-14.8	155-22.3?	0.0	1.7	19	151	8.3	5.14	0.7	9.7	0.15	C
26	18	23	32.1	19-22.1	155-14.4	25.4	2.2	18	123	2.6	0.21	1.1	1.9	0.12	B
26	18	35	53.6	19-16.3	155-22.6	7.5	2.2	13	144	7.3	0.07	0.8	0.4	0.10	B
26	18	41	13.4	19-14.9	155-21.5?	0.0	2.3	22	154	9.5	0.42	0.6	0.8	0.17	C
26	18	44	47.6	19-12.1	155-20.9?	0.0	2.7	23	168	11.4	0.62	1.0	1.1	0.22	C
26	19	33	50.3	19-13.5	155-22.0?	0.0		21	163	10.1	7.97	1.8	14.9	0.35	D
26	19	35	12.5	19-16.2	155-21.9?	2.0	0.7	18	142	7.8	0.10	0.8	1.0	0.18	B
26	19	37	29.7	19-14.0	155-21.5	2.0	2.2	21	158	10.1	0.34	0.7	1.2	0.17	C
26	20	12	28.6	19-15.8	155-22.2	0.5*	1.4	18	144	7.4	0.09	0.7		0.18	C
26	20	31	27.6	19-14.2	155-22.6?	0.0	1.5	15	154	8.3	6.03	0.9	11.4	0.20	C
26	20	48	28.2	19-15.5	155-21.7?	0.9	2.1	20	150	7.0	0.52	1.1	1.0	0.26	C
26	20	57	28.5	19-16.1	155-21.9?	0.0	1.9	19	156	8.0	4.06	0.7	7.7	0.17	C
26	21	11	45.3	19-13.0	155-20.6?	0.0	2.9	22	159	8.5	4.85	1.0	9.1	0.20	C
26	21	28	40.1	19-13.7	155-20.0?	0.0	2.6	20	182	12.7	4.71	1.1	8.8	0.21	C
26	21	31	28.0	19-14.2	155-20.5	3.7	3.8	20	176	7.7	0.12	0.8	0.7	0.14	C
26	21	34	24.8	19-14.4	155-21.2?	0.0	2.4	18	171	7.9	5.36	1.1	10.1	0.23	C
26	21	38	23.8	19-14.5	155-20.9?	0.0	2.2	19	172	10.7	0.31	0.6	0.6	0.10	C
26	21	41	59.2	19-14.8	155-21.3?	0.0	1.9	18	168	7.5	4.72	0.9	8.9	0.18	C
26	21	46	45.8	19-14.2	155-20.4	3.1	3.7	21	177	7.7	0.14	0.9	0.9	0.18	C
26	21	51	30.2	19-13.9	155-21.2?	0.0	2.3	20	175	10.7	0.40	0.7	0.7	0.14	C
26	21	53	0.8	19-14.2	155-20.2	3.3	2.8	18	177	12.0	0.14	0.8	1.0	0.13	C
26	22	5	6.8	19-17.2	155-22.3	8.0*	1.6	14	136	5.8	0.08	0.8		0.12	C
26	22	11	9.9	19-16.1	155-22.9	5.8	1.9	14	151	6.7	0.09	0.8	0.7	0.16	C
26	22	23	23.6	19-13.9	155-20.9	0.9	2.2	22	170	8.4	0.40	0.8	1.4	0.20	C
26	22	26	43.0	19-15.5	155-23.1?	0.0	1.9	14	157	6.4	3.11	1.1	5.0	0.21	C
26	22	31	43.7	19-13.6	155-21.2	0.3	3.0	24	160	9.2	0.44	0.9	0.8	0.24	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 26	22	34	36.9	19-14.6	155-22.3?	0.0	2.0	18	178	8.4	6.63	1.0	12.6	0.24	C
26	22	42	20.8	19-14.8	155-22.1?	0.0	1.9	16	163	8.4	4.68	0.7	8.9	0.10	C
26	22	47	52.3	19-22.5	155-14.0	12.7		11	133	2.3	0.98	2.9	6.9	0.18	C
26	22	55	36.2	19-13.7	155-21.5?	0.0	2.1	22	159	9.4	0.47	0.8	0.9	0.20	C
26	22	56	36.2	19-14.4	155-21.7?	0.0	1.6	19	143	5.1	5.08	0.8	9.6	0.18	C
26	23	17	59.6	19-13.2	155-20.7	0.3	3.0	26	164	9.5	0.30	0.7	0.6	0.20	C
26	23	28	17.4	19-13.9	155-21.3?	0.0	2.0	17	159	8.9	6.22	1.0	11.7	0.21	C
26	23	32	50.2	19-14.1	155-21.6	4.0	2.2	17	157	9.9	0.13	0.9	1.1	0.20	C
26	23	34	56.7	19-13.3	155-21.2	3.2	2.1	22	162	9.7	0.14	0.9	1.1	0.21	C
26	23	36	6.3	19-15.6	155-20.7	4.1	2.5	20	152	9.7	0.09	0.7	0.8	0.13	C
26	23	36	49.6	19-13.6	155-20.3?	8.5	3.5	18	163	13.0	0.11	0.9	1.9	0.15	C
26	23	39	35.4	19-14.1	155-20.5	3.5	2.0	20	160	7.9	0.14	0.9	1.0	0.21	C
26	23	40	35.8	19-15.8	155-21.6?	0.0	1.9	20	146	8.6	3.97	0.6	7.5	0.15	C
26	23	46	2.1	19-16.2	155-22.4	7.6	1.9	18	140	7.5	0.12	1.0	0.7	0.20	B
26	23	46	51.9	19-14.8	155-21.2	2.6	1.8	20	154	10.6	0.11	0.7	1.0	0.16	C
26	23	50	11.3	19-16.3	155-21.7	8.0*	1.9	13	142	6.2	0.10	1.0		0.17	C
26	23	50	37.6	19-15.9	155-21.5	0.9		18	146	8.5	0.91	0.6	3.3	0.12	B
27	0	1	40.8	19-15.4	155-21.3	2.2	1.7	22	150	9.4	0.10	0.7	1.0	0.17	B
27	0	3	43.1	19-16.0	155-21.4?	0.0	1.9	20	145	8.4	4.09	0.6	7.8	0.16	C
27	0	8	43.6	19-15.8	155-21.6?	0.0	1.9	21	146	8.6	3.69	0.6	7.0	0.15	C
27	0	17	46.7	19-14.2	155-21.3	5.2	2.0	16	157	10.3	0.12	0.9	0.8	0.16	C
27	0	37	41.7	19-14.6	155-22.0	3.3	2.0	18	153	8.6	0.15	1.1	1.5	0.26	C
27	0	39	49.8	19-14.9	155-21.5	8.0*		15	213	7.6	0.18	1.3		0.14	C
27	0	41	36.7	19-14.1	155-21.5?	0.0	2.4	22	157	10.1	4.25	0.8	8.0	0.21	C
27	0	45	4.5	19-14.5	155-20.7	4.0	2.0	22	157	7.3	0.13	0.9	0.9	0.20	C
27	0	47	7.0	19-14.2	155-21.7	5.1	2.0	16	157	9.6	0.12	0.9	0.8	0.17	C
27	0	49	11.0	19-14.9	155-21.2?	0.0	1.9	20	154	7.1	5.80	0.8	11.0	0.19	C
27	0	51	32.3	19-14.6	155-22.6	4.6	2.0	12	151	7.9	0.11	0.9	0.9	0.16	C
27	0	53	14.6	19-17.0	155-21.4	4.5	1.8	20	196	6.8	0.10	0.9	0.9	0.22	C
27	1	5	12.4	19-14.0	155-21.9?	0.0		21	157	9.3	5.39	0.9	10.2	0.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 27	1	8	40.3	19-16.6	155-22.4	2.4		18	136	6.8	0.10	0.8	1.2	0.18	B
27	1	30	37.3	19-16.4	155-22.6	2.7		18	148	7.1	0.10	0.8	1.3	0.20	B
27	1	32	46.9	19-15.8	155-21.9	0.0		21	145	8.5	3.77	0.6	7.1	0.15	C
27	1	34	54.9	19-14.7	155-20.9	2.9	1.9	22	156	7.3	0.13	0.9	1.2	0.20	C
27	2	13	17.9	19-14.5	155-21.6	4.5	1.9	16	155	9.5	0.12	0.9	0.9	0.17	C
27	2	26	30.9	19-13.2	155-21.3?	0.0	2.0	18	162	11.2	5.88	1.0	11.0	0.15	C
27	2	27	15.7	19- 9.0	155-16.5	3.3	2.4	20	225	17.0	0.24	1.2	0.8	0.15	C
27	2	47	14.6	19-15.9	155-22.2	2.6	2.2	21	142	7.4	0.11	0.8	1.2	0.22	C
27	2	54	51.9	19-16.6	155-21.0?	0.0	1.8	18	144	7.8	4.46	0.7	8.5	0.16	C
27	3	2	50.4	19-16.8	155-20.5	4.6	2.5	20	145	8.1	0.08	0.6	0.7	0.13	C
27	3	7	19.2	19-16.4	155-20.4	4.2	2.7	23	148	4.2	0.11	0.8	0.9	0.19	C
27	3	45	19.1	19-19.8	155-14.4	8.0*		11	202	5.3	0.16	1.1		0.14	C
27	3	52	35.3	19-15.0	155-20.9?	0.0	2.1	21	166	6.7	0.43	0.7	0.8	0.17	C
27	3	56	48.6	19-15.9	155-22.6	2.8	1.8	18	153	7.3	0.09	0.7	1.0	0.16	C
27	4	2	15.2	19-13.6	155-21.2?	0.0	2.0	17	185	9.2	5.54	1.0	10.5	0.16	C
27	4	27	29.0	19-15.7	155-20.4	1.0	2.2	18	166	9.6	1.21	0.9	4.4	0.16	C
27	4	31	40.5	19-15.0	155-21.9?	0.0	1.9	18	163	7.8	4.66	0.8	8.8	0.16	C
27	4	34	24.0	19-13.4	155-21.9?	0.0	2.0	19	170	10.1	5.64	1.0	10.6	0.21	C
27	4	36	32.8	19-16.5	155-21.7	8.0*		12	156	6.0	0.11	1.0		0.16	C
27	4	37	50.1	19-37.1	155-32.3?	16.0*		11	110	20.8	0.34	3.6		0.49	C
27	4	40	45.4	19-11.3	155-21.1?	0.0	2.6	24	172	12.3	0.47	0.9	0.9	0.19	C
27	4	46	21.6	19-16.8	155-22.0	6.2	2.2	21	137	6.2	0.09	0.8	0.7	0.20	B
27	4	50	20.3	19-15.4	155-20.7	3.0	2.6	23	153	5.9	0.11	0.7	0.9	0.17	C
27	4	59	44.1	19-14.5	155-22.0	6.3	2.2	17	155	8.6	0.12	1.0	0.7	0.21	C
27	5	2	58.4	19-15.1	155-22.0?	0.0	1.9	20	150	7.9	4.24	0.7	8.0	0.18	C
27	5	11	22.7	19-15.2	155-20.9	4.7	2.1	22	154	6.5	0.10	0.7	0.7	0.16	C
27	5	16	14.6	19-19.2	155-15.5	6.6		15	185	3.7	0.11	0.7	0.6	0.13	C
27	5	44	14.2	19-13.9	155-21.6?	0.0	2.0	21	158	9.1	4.83	0.8	9.1	0.20	C
27	5	44	38.5	19-10.6	155-20.0?	0.0	2.6	20	178	13.8	5.43	1.1	10.1	0.19	C
27	5	49	39.3	19-13.9	155-22.8?	0.0	2.0	18	154	8.2	5.94	0.9	11.2	0.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 27	5	57	2.0	19-13.9	155-21.9	2.7	1.9	17	158	9.4	0.14	1.0	1.5	0.22	C
27	6	2	11.6	19- 9.7	155-20.0?	0.0	2.2	17	202	13.8	4.91	1.1	9.2	0.15	C
27	6	7	35.6	19-25.0	155-25.4	7.4	1.7	16	77	9.5	0.09	0.7	0.6	0.16	B
27	6	15	46.6	19-14.0	155-22.5?	0.0	2.1	17	172	8.6	5.75	0.9	10.9	0.20	C
27	7	3	5.8	19-16.2	155-21.0	0.9	1.8	16	146	8.4	1.34	0.6	5.0	0.12	C
27	7	4	16.4	19-14.8	155-22.2?	0.0	2.5	23	152	8.5	0.28	0.6	0.5	0.15	C
27	7	22	37.8	19-13.9	155-21.1	0.6	3.5	26	159	8.7	0.39	0.8	0.7	0.19	C
27	7	25	24.7	19-13.3	155-21.6?	0.0	2.3	20	170	10.0	0.43	0.8	0.8	0.16	C
27	7	47	48.7	19-13.9	155-21.9	1.8	2.5	20	157	9.5	1.11	0.6	4.1	0.14	C
27	8	9	45.1	19-15.0	155-21.8	1.1	2.2	23	151	7.7	0.36	0.8	1.3	0.20	C
27	8	15	31.7	19-15.4	155-22.4?	0.0	1.9	17	146	7.8	5.56	0.8	10.5	0.17	C
27	8	20	42.8	19-15.3	155-21.8	1.3	1.9	20	149	8.9	1.23	0.7	4.5	0.19	B
27	8	54	29.6	19-16.6	155-22.7	5.6		13	134	6.6	0.08	0.8	0.8	0.14	B
27	8	57	42.5	19-14.4	155-21.9	0.7*	2.0	14	172	8.8	0.11	0.8		0.19	C
27	9	3	48.4	19-16.6	155-22.6	5.9	1.7	18	135	6.7	0.09	0.9	0.8	0.20	B
27	9	4	33.9	19-14.8	155-22.1	5.3		12	152	8.4	0.08	0.8	0.8	0.13	C
27	9	6	6.2	19-16.6	155-23.1	4.8	1.9	15	132	6.3	0.08	0.8	1.0	0.18	B
27	9	29	29.9	19-16.5	155-22.1	7.0	1.8	17	139	6.6	0.08	0.7	0.5	0.16	B
27	9	39	45.6	19-16.4	155-22.3	8.0*	2.3	15	139	7.1	0.09	0.9		0.15	C
27	9	54	48.5	19-15.7	155-22.4	0.8	1.9	19	143	7.6	1.42	0.7	5.2	0.16	C
27	9	57	49.9	19-15.4	155-22.2	5.4	1.8	18	146	7.8	0.08	0.7	0.6	0.16	B
27	10	4	12.1	19-15.0	155-21.8	4.9	2.4	21	151	7.7	0.09	0.7	0.8	0.17	C
27	10	25	35.3	19-15.7	155-22.1	4.4	2.0	20	137	6.5	0.09	0.8	1.1	0.20	C
27	10	31	5.9	19-15.7	155-21.3	4.6	2.0	21	149	6.3	0.09	0.7	0.8	0.17	B
27	11	13	46.1	19-16.3	155-22.2	5.9	2.2	19	140	7.5	0.08	0.7	0.6	0.16	B
27	11	23	34.8	19-14.8	155-22.2	3.8	2.4	18	152	8.5	0.11	0.9	1.3	0.20	C
27	11	27	53.8	19-16.3	155-22.7	4.9	1.9	15	137	6.9	0.09	0.9	0.9	0.18	B
27	11	42	48.1	19-17.1	155-21.9	8.0*		11	143	5.9	0.09	0.9		0.14	C
27	12	9	16.0	19-14.4	155-22.1?	2.3	2.3	18	155	8.9	1.61	0.9	5.9	0.19	C
27	13	12	55.6	19-14.9	155-23.1	3.8	2.1	16	145	6.8	0.09	0.8	1.0	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 27	13	14	54.5	19-15.8	155-22.3?	0.0	2.5	21	143	7.5	4.37	0.6	8.3	0.15	C
27	14	6	10.6	19-15.5	155-22.2	5.1	2.6	21	146	7.8	0.09	0.7	0.7	0.16	B
27	14	9	1.9	19-19.0	155-13.5	8.5	1.5	14	173	6.5	0.08	0.7	1.3	0.10	C
27	15	5	47.3	19-15.5	155-22.1?	2.9	3.1	21	146	7.7	0.37	0.7	1.3	0.18	B
27	15	9	14.4	19-15.3	155-22.0?	0.0	2.4	21	148	7.6	5.01	0.7	9.5	0.17	C
27	15	11	51.0	19-14.8	155-21.7?	0.0	4.6	22	153	7.9	0.47	0.8	0.9	0.18	C
27	15	20	28.2	19-15.4	155-21.9	5.6	2.1	18	148	7.4	0.12	1.0	0.9	0.21	C
27	15	21	40.7	19-15.4	155-21.7	6.3	2.1	17	149	8.9	0.10	0.8	0.7	0.17	B
27	15	37	53.4	19-15.2	155-23.1	6.2	2.3	19	143	6.7	0.09	0.8	0.6	0.19	B
27	15	42	26.6	19-15.3	155-22.5	0.7*	2.3	12	169	7.7	0.10	0.7		0.15	C
27	15	43	17.7	19-15.1	155-21.7	1.7	2.1	18	151	7.5	1.33	0.7	4.8	0.15	C
27	15	57	42.1	19-16.0	155-22.3	1.3	2.5	20	141	7.3	1.34	0.7	4.9	0.17	B
27	15	59	31.0	19-15.6	155-22.3	4.2		15	144	7.7	0.09	0.8	1.2	0.17	B
27	15	59	51.0	19-15.3	155-22.6?	0.0		14	145	7.6	7.85	1.1	14.9	0.20	C
27	16	3	30.7	19-15.5	155-21.9	4.9	2.7	21	147	7.3	0.08	0.7	0.7	0.16	B
27	16	9	28.0	19-15.9	155-22.2	1.4	2.3	19	142	7.3	1.31	0.7	4.8	0.17	B
27	16	11	49.8	19-17.1	155-22.6	5.4		14	133	5.9	0.07	0.7	0.6	0.14	B
27	16	13	9.5	19-15.0	155-22.9?	0.0	3.4	23	145	7.1	0.42	0.7	0.8	0.19	B
27	16	17	49.5	19-14.5	155-22.6	0.9	1.9	14	151	7.9	2.07	0.9	7.6	0.19	C
27	16	26	45.0	19-16.9	155-22.4	5.3	2.0	19	134	6.3	0.08	0.7	0.8	0.18	B
27	16	47	49.4	19-25.4	155-14.8?	8.0*		7	126	9.1	2.72	72.1		1.58	C
27	16	51	47.7	19-16.4	155-21.1	3.1	2.3	18	145	5.2	0.08	0.6	0.9	0.13	B
27	16	56	37.0	19-17.0	155-22.6	7.2	1.7	16	133	6.0	0.10	1.0	0.6	0.18	B
27	17	0	44.4	19-15.1	155-22.9	1.5	2.6	18	156	7.0	0.37	0.6	1.4	0.14	C
27	17	4	37.0	19- 6.8	155-31.7?	8.0*	2.5	15	264	17.7	0.44	5.3		0.56	D
27	17	6	34.4	19-15.2	155-22.7	3.2		10	145	8.7	0.21	1.8	2.8	0.17	C
27	17	9	54.2	19-15.5	155-21.7	3.9	4.0	21	148	7.1	0.09	0.7	0.7	0.16	B
27	17	21	23.0	19-14.8	155-21.9	8.0*	1.8	12	183	8.2	0.10	0.9		0.10	C
27	17	23	48.2	19-16.7	155-22.4	0.5*	1.8	17	136	6.7	0.08	0.8		0.18	C
27	17	26	36.0	19-17.1	155-23.4	4.9	1.6	16	127	5.6	0.07	0.7	0.9	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC	27	17	29	12.1	19-17.2	155-22.8	5.7	2.2	16	130	5.7	0.06	0.7	0.6	0.15	B
	27	17	29	52.2	19-17.3	155-21.9	5.4	2.1	20	134	5.9	0.08	0.8	0.6	0.20	B
	27	17	42	36.9	19-16.7	155-21.9	5.5	2.0	18	138	6.9	0.11	1.0	1.0	0.22	C
	27	17	45	18.7	19-17.2	155-23.1	4.6		15	128	5.5	0.08	0.8	1.1	0.17	B
	27	17	48	25.9	19-15.7	155-21.5	2.5		15	147	6.5	0.09	0.7	1.1	0.12	B
	27	17	52	26.0	19-16.2	155-22.2	4.2	1.8	14	140	7.1	0.07	0.7	1.0	0.14	B
	27	17	53	41.9	19-14.3	155-22.0	2.3	2.3	18	155	9.1	0.12	0.8	1.5	0.14	C
	27	18	1	32.0	19-15.8	155-22.3	0.5*	1.7	12	161	7.6	0.13	1.0		0.21	C
	27	18	4	10.8	19-14.9	155-20.9	3.7	2.6	19	156	10.6	0.10	0.8	1.1	0.12	C
	27	18	9	17.6	19-17.1	155-22.5	5.9	1.7	18	133	5.8	0.08	0.8	0.7	0.18	B
	27	18	18	13.2	19-16.9	155-22.0	7.6	2.5	19	136	6.2	0.08	0.7	0.5	0.15	B
	27	18	21	7.6	19-15.7	155-21.4?	0.0	2.3	22	148	8.9	3.52	0.6	5.7	0.17	C
	27	18	25	45.5	19-15.5	155-20.8?	0.0	2.3	21	153	9.8	3.53	0.6	5.7	0.13	C
	27	18	29	2.4	19-14.6	155-21.4?	0.9	2.1	21	155	9.8	0.44	0.7	0.8	0.18	C
	27	18	30	2.5	19-16.9	155-22.2	4.4	1.8	19	135	6.4	0.07	0.7	0.9	0.17	B
	27	18	33	37.2	19-15.7	155-21.5	8.0*		14	175	6.5	0.13	1.3		0.16	C
	27	18	37	4.3	19-15.8	155-22.0	0.6*	1.8	18	145	8.3	0.09	0.7		0.18	C
	27	18	40	43.9	19-16.8	155-22.4	6.6	1.7	20	134	6.5	0.09	0.9	0.7	0.23	C
	27	18	45	43.3	19-15.0	155-21.7	0.1	2.3	20	152	9.2	0.42	0.7	0.8	0.17	C
	27	18	55	27.4	19-15.6	155-20.4?	0.0	2.0	17	152	9.8	5.29	0.7	10.0	0.15	C
	27	18	57	51.1	18-49.9	155-19.1	6.5	3.3	23	263	40.2	1.03	2.3	6.6	0.13	D
	27	19	3	50.1	19-16.1	155-21.4	6.2	3.5	20	145	8.3	0.07	0.6	0.5	0.13	B
	27	19	9	10.0	19-16.9	155-22.0	5.9	2.2	19	136	6.2	0.09	0.9	0.7	0.19	C
	27	19	9	56.3	19-15.2	155-21.1?	8.1	3.1	12	153	10.0	0.31	1.6	2.0	0.27	C
	27	19	12	45.4	19-17.3	155-22.8?	5.6		16	130	5.3	0.08	0.8	0.8	0.18	B
	27	19	17	41.6	19-16.7	155-22.4	1.1	2.1	18	136	6.6	1.21	0.6	4.5	0.15	B
	27	19	19	30.5	19-15.4	155-22.2	7.5		20	147	7.9	0.11	0.8	0.6	0.18	B
	27	19	29	8.6	19-16.2	155-21.3	1.7	2.0	18	194	8.1	0.40	0.8	1.2	0.14	C
	27	19	33	53.1	19-16.1	155-22.1	1.4		19	142	8.0	1.41	0.7	5.2	0.16	C
	27	19	34	12.8	19-13.6	155-22.2	2.9		12	158	12.3	0.18	1.3	2.0	0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 27	19	36	4.0	19-15.2	155-21.9	2.8	2.0	19	150	7.7	0.12	0.9	1.4	0.19	C
27	19	45	9.5	19-18.3	155-23.7	4.7		14	110	3.5	0.11	1.1	1.4	0.21	B
27	19	54	8.9	19-17.2	155-22.6	5.3	1.7	19	131	5.6	0.08	0.8	0.7	0.19	B
27	19	58	8.1	19-17.1	155-22.7	5.3	1.8	18	131	5.8	0.08	0.8	0.7	0.18	B
27	20	24	45.1	19-14.9	155-23.4	0.8*		15	143	6.5	0.08	0.7		0.17	C
27	20	28	17.6	19-16.1	155-22.1	5.8	2.7	20	142	7.0	0.09	0.8	0.7	0.16	C
27	20	31	40.6	19-14.8	155-21.4	8.0*	1.7	12	172	7.6	0.08	0.7		0.09	C
27	20	32	34.5	19-15.5	155-21.9	2.9	2.2	20	147	8.6	0.11	0.8	1.4	0.19	B
27	20	33	30.2	19-16.4	155-22.7	4.2	1.7	19	135	7.0	0.10	0.9	1.4	0.23	C
27	20	35	18.0	19-15.2	155-21.8?	2.6	1.8	19	150	7.5	0.47	0.7	1.8	0.18	B
27	20	44	40.6	19-12.9	155-21.2	5.5	2.0	17	174	10.4	0.14	0.9	0.7	0.17	C
27	20	45	50.3	18-53.1	155-15.8?	5.8	2.0	16	253	37.0	1.53	2.2	9.2	0.13	D
27	20	47	18.1	19-17.0	155-23.4?	2.7		12	127	5.8	0.10	0.9	1.2	0.18	B
27	21	2	15.8	19-15.0	155-21.9?	0.0	1.8	18	151	8.0	5.15	0.8	9.7	0.16	C
27	21	9	2.5	19-15.6	155-21.8?	1.6	2.0	20	148	8.8	0.11	0.8	1.3	0.18	B
27	21	29	50.3	19-17.7	155-22.7	6.5		11	125	4.7	0.04	0.4	0.5	0.06	B
27	21	40	58.8	19-15.6	155-21.6	2.0	2.2	21	148	9.0	0.38	0.7	1.3	0.19	B
27	21	42	38.4	19-17.0	155-22.6	5.3		17	133	6.1	0.08	0.8	0.7	0.19	B
27	22	3	52.7	19-16.7	155-22.6	3.8		19	135	6.5	0.10	0.9	1.4	0.23	C
27	22	13	10.3	19-15.7	155-21.9	0.3	1.9	21	146	8.6	0.46	0.7	0.8	0.18	C
27	22	26	36.6	19-13.4	155-21.9?	0.0	2.1	20	160	10.1	5.89	0.9	11.1	0.17	C
27	22	30	55.5	19-16.5	155-21.3	6.2	2.7	20	143	7.7	0.07	0.6	0.5	0.14	B
27	22	36	46.8	19-16.3	155-21.9	8.0*	2.1	18	157	6.5	0.07	0.6		0.13	C
27	22	39	34.1	19-15.7	155-22.4	3.2	1.7	18	143	7.6	0.09	0.7	1.2	0.16	B
27	22	41	54.1	19-15.8	155-22.3	3.0	1.9	18	143	7.6	0.10	0.8	1.4	0.18	B
27	22	44	16.2	19-16.0	155-21.8?	0.0	1.7	19	144	8.2	5.42	0.7	10.3	0.16	C
27	22	45	37.1	19-14.1	155-22.6?	0.0	2.2	21	154	8.3	6.87	1.0	13.0	0.23	C
27	22	48	8.2	19-16.8	155-23.2	5.4		19	131	6.2	0.08	0.8	0.8	0.20	B
27	22	50	29.8	19-15.4	155-21.9	2.0	2.2	23	148	7.5	0.31	0.7	1.1	0.19	C
27	22	58	4.0	19-13.6	155-21.1	3.0	1.8	16	160	9.1	0.15	1.0	1.6	0.17	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 27	22	59	11.8	19-14.2	155-22.7	5.6		12	153	8.0	0.11	1.0	0.9	0.16	C
27	23	7	14.4	19-15.5	155-22.1	8.0*		11	169	7.7	0.10	1.0		0.11	C
27	23	7	41.7	19-13.3	155-22.1	3.3	2.5	20	160	9.9	0.11	0.7	1.0	0.16	C
27	23	22	42.2	19-16.8	155-23.2	4.7	1.7	19	130	6.1	0.08	0.8	1.0	0.20	B
27	23	31	58.2	19-15.4	155-22.1	0.0	2.0	18	147	7.7	0.44	0.7	0.8	0.16	B
27	23	33	34.5	19-16.0	155-22.5	5.7		15	156	7.4	0.10	0.9	0.9	0.18	C
27	23	35	33.0	19-14.1	155-21.4	0.3*		14	187	8.6	0.13	0.8		0.14	C
28	0	4	0.4	19-15.8	155-21.5?	0.8	1.9	17	147	8.7	1.70	0.8	6.3	0.16	C
28	0	9	19.7	19-15.6	155-22.2?	0.0		19	145	8.1	5.53	0.8	10.5	0.17	C
28	0	20	23.2	19-16.9	155-22.7	6.3		19	140	6.3	0.09	1.0	0.7	0.21	C
28	0	34	4.1	19-16.6	155-22.1	0.8*		14	201	6.6	0.21	1.1		0.18	C
28	0	39	3.8	19-17.0	155-22.6	6.1		17	139	6.1	0.10	0.9	0.8	0.20	C
28	0	56	11.6	19-13.1	155-21.8?	0.0	2.7	22	161	10.4	0.44	0.7	0.8	0.18	C
28	1	24	5.9	19-16.0	155-21.8	8.0*	1.7	17	159	6.7	0.09	0.8		0.15	C
28	1	28	39.1	19-15.6	155-20.7	8.0*		15	210	5.7	0.13	0.9		0.11	C
28	1	43	45.6	19-16.0	155-21.9	8.0*	1.8	14	204	6.8	0.13	1.0		0.13	C
28	1	54	37.3	19-15.7	155-21.7?	2.4	2.1	19	159	8.8	0.34	0.7	1.2	0.15	C
28	1	58	41.7	19-14.2	155-22.5	0.2	2.5	19	165	8.4	0.41	0.7	0.7	0.15	C
28	2	7	31.5	19-16.0	155-22.1	8.0*		12	207	7.0	0.18	1.5		0.18	C
28	2	7	47.7	19-16.4	155-23.1	5.0	1.7	17	152	6.4	0.12	0.9	0.9	0.18	C
28	2	10	11.3	19-18.4	155-24.0?	2.6		11	137	3.5	0.32	1.0	1.1	0.16	B
28	2	38	39.9	19-23.7	155-15.2	1.7		9	88	2.4	0.07	0.3	0.3	0.09	A
28	2	57	38.5	19-15.8	155-21.7	8.0*		14	162	6.7	0.10	1.0		0.14	C
28	3	5	30.6	19-14.1	155-22.7?	0.9	2.2	21	154	8.3	0.43	0.7	0.8	0.18	C
28	3	16	38.4	19-15.7	155-21.5?	0.0	0.7	17	160	8.8	5.31	0.7	10.1	0.14	C
28	3	18	11.0	19-15.6	155-20.9	4.3	2.8	19	203	6.0	0.17	0.9	0.9	0.15	C
28	3	49	36.6	19-14.7	155-23.3?	3.0	2.1	19	145	6.8	0.10	0.9	1.2	0.18	B
28	4	5	42.5	19-15.3	155-21.3	8.0*	0.8	13	183	6.8	0.11	1.0		0.12	C
28	4	10	29.8	19-15.9	155-21.7	6.5	2.8	18	189	6.6	0.13	0.9	0.6	0.16	C
28	4	16	7.9	19-12.8	155-21.1	3.5	0.8	17	183	10.5	0.13	0.8	1.1	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 28	4	26	36.9	19-15.2	155-21.5?	0.0	1.8	17	152	7.1	5.73	0.7	10.9	0.16	C
28	4	33	54.1	19-15.3	155-22.2	4.0	2.3	19	146	7.9	0.12	0.9	1.5	0.22	C
28	4	35	38.5	19-15.3	155-21.2	8.0*	0.9	15	170	6.6	0.11	1.0		0.13	C
28	4	38	30.9	19-15.4	155- 2.3	9.5	1.5	15	248	8.5	0.31	2.0	1.5	0.12	C
28	5	9	59.1	19-15.4	155-22.2	6.8	1.8	19	147	7.8	0.08	0.8	0.5	0.17	B
28	5	19	30.9	19-19.8	155-11.7	9.6		14	183	5.2	0.07	0.5	0.8	0.06	B
28	5	23	51.4	19-14.1	155-22.6	4.5	2.5	20	154	8.3	0.09	0.8	0.8	0.16	C
28	5	26	13.6	19-19.2	155-15.3	6.0	0.2	11	188	4.1	0.17	1.0	0.9	0.15	C
28	5	39	56.6	19-23.3	155-15.0	2.0		11	102	2.3	0.05	0.2	0.2	0.07	A
28	6	10	57.8	19-16.5	155-22.6	0.8	1.4	16	135	6.9	0.41	0.6	0.8	0.15	B
28	6	15	48.6	19-26.3	155-15.1	29.9	1.7	18	136	1.8	0.13	0.9	1.2	0.08	B
28	6	21	18.1	19-13.4	155-22.1	3.5	2.5	18	158	9.7	0.18	1.1	1.3	0.17	C
28	6	22	35.2	19-16.8	155-23.5	6.1	1.3	16	129	5.7	0.10	1.0	0.8	0.21	C
28	6	35	1.2	19-19.9	155-16.0	6.4	0.7	12	164	2.5	0.12	0.8	0.7	0.13	C
28	6	44	30.8	19-14.5	155-23.2?	0.0	2.0	20	148	7.1	5.67	0.8	10.7	0.19	C
28	6	54	8.0	18-50.4	155-19.2	8.3		17	265	38.5	0.54	3.3	2.9	0.16	D
28	7	15	22.7	19-16.3	155-22.8	3.1		18	136	6.8	0.10	0.8	1.3	0.19	B
28	9	50	53.2	19-13.1	155-20.9?	2.9	2.7	23	164	9.9	0.55	0.9	2.0	0.23	C
28	10	9	13.3	19-25.5	155-16.1	1.9	1.5	11	126	0.7	0.06	0.4	0.2	0.09	B
28	10	58	32.6	19-15.1	155-23.3	4.0	2.2	17	141	6.4	0.09	0.8	1.0	0.16	B
28	12	3	19.9	19-20.7	155-19.3	3.4	1.4	10	95	3.6	0.11	0.3	3.6	0.06	B
28	13	18	0.6	19-15.4	155-21.9?	0.0	2.1	19	148	8.5	4.17	0.7	7.9	0.17	C
28	13	55	10.8	19-16.5	155-23.6	5.1	1.9	13	130	5.5	0.09	0.9	0.9	0.19	B
28	14	37	30.7	19-17.3	155-14.9	8.0*	1.7	13	218	6.6	0.15	1.0		0.12	C
28	16	20	6.0	19-14.2	155-21.0	2.5	3.7	21	158	8.1	0.12	0.7	1.0	0.16	C
28	16	25	20.6	19-15.1	155-21.5?	0.0	2.4	20	152	7.2	0.49	0.8	0.9	0.19	C
28	16	26	32.4	19-14.3	155-21.2?	0.0	2.6	20	157	10.3	0.37	0.6	0.7	0.15	C
28	16	33	44.1	19-15.1	155-21.4?	0.0		17	152	9.6	4.29	0.7	8.1	0.17	C
28	16	49	54.2	19-14.9	155-21.4?	0.0	1.8	20	154	9.7	3.53	0.6	6.7	0.13	C
28	16	50	55.9	19-15.5	155-21.8?	0.0	1.8	17	148	7.1	5.70	0.8	10.8	0.20	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 28	16	59	11.1	19-14.0	155-21.5?	2.4	4.6	23	158	8.9	0.38	0.6	1.4	0.15	C
28	17	9	29.4	19-14.4	155-20.9	2.1	3.3	25	157	7.7	0.23	0.6	0.8	0.16	C
28	17	12	54.6	19-14.1	155-20.7	1.8	2.6	24	159	8.0	0.32	0.7	1.2	0.18	C
28	17	15	38.3	19-14.8	155-21.3	4.6	2.8	20	154	9.9	0.11	0.8	0.9	0.16	C
28	17	19	6.7	19-14.0	155-20.3	2.6	3.0	23	161	7.8	0.15	0.9	1.1	0.21	C
28	17	21	22.7	19-15.5	155-21.7	6.9	2.7	20	148	6.9	0.08	0.7	0.5	0.17	B
28	17	23	54.8	19-14.4	155-22.3?	0.0	2.3	16	165	8.6	5.78	0.9	10.9	0.17	C
28	17	26	6.0	19-14.0	155-22.8?	0.0	2.5	20	154	8.2	5.93	0.9	11.2	0.19	C
28	17	28	23.0	19-14.0	155-21.4?	0.0	2.1	20	158	10.4	4.52	0.8	8.5	0.18	C
28	17	33	54.9	19-14.8	155-22.8?	0.0	2.0	16	147	7.4	5.07	0.7	9.6	0.16	C
28	17	36	47.7	19-15.6	155-22.3	5.3		18	144	7.8	0.10	0.9	0.9	0.22	C
28	17	42	14.9	19-14.0	155-22.9?	0.0	1.9	18	153	8.0	5.36	1.0	10.1	0.22	C
28	17	43	9.6	19-14.3	155-21.3?	0.0	1.8	17	157	10.2	4.91	0.8	9.3	0.20	C
28	17	47	27.0	19-14.6	155-21.2	2.6	2.5	20	156	10.3	0.11	0.7	1.0	0.17	C
28	17	52	29.2	19-13.1	155-21.3	0.2	2.8	26	162	10.1	0.27	0.7	0.5	0.18	C
28	17	56	18.6	19-13.7	155-22.4?	0.0	2.2	19	156	9.1	5.28	0.9	10.0	0.22	C
28	17	58	46.0	19-13.9	155-22.7?	0.0	2.3	20	155	8.3	5.48	1.0	10.3	0.24	C
28	18	0	55.2	19-15.9	155-21.7	4.8		15	145	6.6	0.09	0.7	0.7	0.15	B
28	18	2	12.5	19-15.9	155-22.9	2.6	1.9	18	139	6.8	0.13	0.9	1.3	0.24	C
28	18	6	43.4	19-14.1	155-21.3?	0.0	2.0	20	157	10.4	3.99	0.6	7.5	0.16	C
28	18	8	4.6	19-14.5	155-22.8?	0.0	2.5	23	150	7.7	0.45	0.7	0.8	0.19	B
28	18	20	55.4	19-13.9	155-22.9?	0.0	2.0	16	155	8.1	5.75	1.0	10.8	0.22	C
28	18	21	35.4	19-13.2	155-22.0?	0.0	2.8	22	160	10.1	4.06	0.8	7.6	0.18	C
28	18	25	30.5	19-14.8	155-23.4?	0.0	2.0	14	144	6.5	4.87	0.7	9.2	0.15	C
28	18	29	58.9	19-15.1	155-23.0	2.6	2.0	18	144	9.2	0.10	0.8	1.2	0.15	B
28	18	35	31.4	19-15.9	155-21.5	7.9	2.3	21	147	6.3	0.08	0.6	0.4	0.14	B
28	20	16	5.8	19-15.0	155-22.3	2.7	1.9	12	149	8.1	0.13	0.9	1.3	0.18	B
28	20	26	10.6	19-14.8	155-22.1	4.2	2.0	14	152	8.4	0.14	1.1	1.2	0.22	C
28	20	37	17.1	19-15.5	155-21.5?	0.0	1.9	18	149	6.8	4.81	0.8	9.1	0.19	C
28	20	54	42.1	19-16.7	155-20.7	2.7	1.8	17	145	4.2	0.08	0.6	0.7	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC	28	21	15 7.7	19-13.8	155-22.7	2.9	2.5	21	156	8.5	0.11	0.7	1.0	0.17	C
	28	21	27 15.0	19-16.2	155-23.6	4.0	1.8	14	132	5.4	0.09	0.8	1.3	0.16	B
	28	21	39 22.8	19-16.6	155-23.3	3.6	0.7	11	140	6.0	0.12	1.0	2.1	0.19	B
	28	21	49 13.3	19-16.2	155-23.8	4.8	1.8	15	131	5.1	0.08	0.8	0.9	0.17	B
	28	21	56 14.2	19-14.1	155-22.6?	0.0	2.7	27	154	8.3	0.37	0.9	0.7	0.23	C
	28	22	5 17.5	19-15.9	155-22.8	3.4	1.8	15	139	7.0	0.10	0.8	1.1	0.19	B
	28	22	14 5.4	19-14.5	155-22.9?	0.0	2.0	16	150	7.6	4.72	0.8	8.9	0.18	C
	28	22	26 18.4	19-16.6	155-23.2?	2.6		14	140	6.1	3.01	1.0	5.8	0.22	C
	28	22	58 1.3	19-16.4	155-20.3	1.7	1.8	19	149	4.1	0.93	0.6	3.5	0.14	B
	28	23	19 4.7	19-13.2	155-22.5?	0.0	2.3	17	159	9.4	4.87	0.9	9.2	0.20	C
	28	23	23 25.0	19-15.9	155-23.2	3.3	1.8	15	137	6.2	0.11	0.9	1.3	0.22	C
	28	23	23 55.7	19-15.9	155-23.6	5.7	1.9	12	133	5.6	0.08	0.9	0.8	0.16	B
	28	23	46 25.9	19-15.6	155-22.9	4.4		13	157	6.7	0.12	0.9	1.8	0.19	C
	28	23	48 27.1	19-15.2	155-22.0?	0.0	1.9	16	162	8.6	4.69	0.8	8.9	0.17	C
	29	0	26 21.8	19-15.2	155-21.3	2.7	2.1	21	152	9.8	0.10	0.7	1.0	0.16	C
	29	0	30 18.1	19-13.4	155-22.6	5.3	2.1	17	175	9.1	0.13	1.0	0.8	0.19	C
	29	0	42 1.9	19-14.0	155-21.1?	0.8	4.0	26	159	8.4	0.44	0.8	1.5	0.22	C
	29	0	49 33.1	19-14.0	155-22.7	0.6*	1.9	17	170	8.2	0.10	0.8		0.17	C
	29	1	1 8.8	19-14.3	155-20.6	3.1	2.9	23	159	7.7	0.15	0.9	1.1	0.22	C
	29	1	8 58.4	19-14.6	155-21.9?	0.0	2.2	22	155	8.6	0.47	0.7	0.9	0.20	C
	29	1	19 14.4	19-14.8	155-21.0	2.8	2.2	21	156	10.4	0.10	0.7	0.9	0.15	C
	29	1	20 20.7	19-14.4	155-21.3?	0.0	2.0	19	157	8.0	5.28	0.9	10.0	0.23	C
	29	1	22 20.5	19-14.7	155-21.0?	0.0	1.8	18	167	10.5	4.37	0.8	8.3	0.16	C
	29	1	30 19.6	19-14.9	155-21.1?	0.2	1.9	21	154	10.1	1.13	0.7	4.1	0.16	C
	29	1	33 39.4	19-15.1	155-22.2	0.8*	1.9	12	174	8.2	0.11	0.7		0.14	C
	29	1	34 16.9	19-15.4	155-22.4	0.6*	0.8	14	167	7.8	0.10	0.7		0.14	C
	29	1	38 41.7	19-13.8	155-20.5	0.7	4.6	24	161	11.8	0.43	0.7	0.8	0.17	C
	29	1	46 24.4	19-13.4	155-20.8	1.0	2.9	24	162	11.7	0.31	0.7	1.1	0.19	C
	29	1	48 56.2	19-15.4	155-21.0	5.1	1.9	21	152	6.2	0.10	0.7	0.8	0.17	C
	29	1	49 59.3	19-14.9	155-21.5?	0.0	1.9	22	154	7.6	5.07	0.8	9.6	0.23	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 29	1	50	46.9	19-15.0	155-22.6	0.3*	1.9	12	170	7.6	0.13	0.9		0.19	C
29	1	51	51.9	19-15.3	155-22.4	6.7	2.0	16	146	7.7	0.10	0.9	0.7	0.20	B
29	1	53	17.5	19-14.5	155-20.3	3.4	2.8	19	158	11.5	0.16	1.0	1.1	0.19	C
29	1	54	30.0	19-14.0	155-21.5	3.3	2.7	21	158	10.2	0.11	0.7	1.0	0.16	C
29	1	57	24.0	19-14.5	155-20.2?	0.7	2.5	24	158	6.9	0.41	0.7	1.5	0.19	C
29	2	0	10.8	19-14.6	155-21.9?	0.0	2.0	22	155	8.5	3.88	0.6	7.3	0.16	C
29	2	9	25.1	19-14.8	155-20.9	4.0	1.9	18	156	7.0	0.12	0.9	0.9	0.20	C
29	2	10	37.0	19-15.5	155-21.8?	0.0	1.9	21	148	8.7	4.47	0.7	8.5	0.18	C
29	2	20	20.8	19-14.6	155-22.5?	0.0	1.1	15	167	8.1	6.97	1.1	13.3	0.22	C
29	2	30	11.1	19-14.9	155-22.2	0.3*	1.9	16	167	8.4	0.13	1.0		0.20	C
29	2	35	58.3	19-14.6	155-21.1	1.3	1.8	12	186	10.4	2.70	1.1	10.1	0.15	C
29	2	43	13.0	19-12.8	155-21.1?	0.0	2.0	19	183	10.3	5.27	0.9	10.0	0.18	C
29	2	51	15.0	19-14.9	155-21.4	0.9	2.4	24	154	7.4	0.36	0.8	1.3	0.22	C
29	2	53	12.3	19-13.9	155-21.4	2.6	2.4	20	158	10.3	0.13	0.8	1.1	0.16	C
29	2	56	0.6	19-13.9	155-20.8	1.5	2.1	22	159	8.4	1.56	1.0	5.6	0.21	C
29	3	1	34.4	19-11.0	155-20.8?	0.0		18	174	12.7	5.33	1.0	10.0	0.19	C
29	3	3	43.5	19-13.5	155-21.7?	0.0	2.2	19	160	9.8	4.67	0.7	8.8	0.17	C
29	3	10	37.1	19-13.8	155-21.9	0.5*	2.0	19	158	9.5	0.07	0.6		0.13	C
29	3	30	20.4	19-14.0	155-21.9?	0.0	2.0	14	182	9.3	8.30	1.4	15.6	0.24	C
29	3	36	31.3	19-16.0	155-20.7	8.0*	1.9	16	167	5.2	0.09	0.8		0.12	C
29	3	49	6.2	19-13.4	155-22.3	2.9	2.0	14	183	9.5	0.14	1.0	1.2	0.17	C
29	3	52	39.5	19-13.0	155-22.2?	0.0	2.0	14	197	10.1	5.50	1.2	10.4	0.19	C
29	3	57	49.3	19-20.0	155-13.4	7.9		14	190	4.7	0.07	0.5	0.3	0.08	B
29	4	1	7.6	19-13.3	155-21.2	0.6	3.4	22	162	11.2	0.31	0.7	0.6	0.16	C
29	4	12	25.0	19-14.8	155-22.1	6.3	1.9	20	168	8.3	0.10	0.9	0.6	0.18	C
29	4	13	34.6	19-13.8	155-21.3?	0.0	2.1	19	159	8.9	5.00	0.8	9.4	0.16	C
29	4	15	19.0	19-13.4	155-21.9?	0.0	2.2	20	160	10.1	5.40	0.9	10.2	0.20	C
29	4	21	21.0	19-14.6	155-20.5?	0.0	1.9	16	217	6.9	7.38	1.5	13.9	0.21	C
29	4	35	4.6	19-14.1	155-20.9	0.1	2.9	23	175	8.2	0.37	0.9	0.7	0.18	C
29	4	52	59.9	19-15.5	155-21.0	0.3	2.4	23	151	9.5	0.46	0.7	0.9	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 29	4	54	41.5	19-13.6	155-21.4?	0.0	2.0	20	160	9.3	5.36	0.8	10.1	0.20	C
29	5	4	23.6	19-13.5	155-21.3?	0.0	2.0	19	161	9.5	5.51	0.9	10.4	0.19	C
29	5	11	7.0	19-14.9	155-22.1	6.7	2.0	16	150	8.2	0.09	0.8	0.6	0.17	B
29	5	11	28.1	19-14.4	155-21.3?	1.1	2.6	22	157	8.1	4.26	0.7	8.1	0.16	C
29	5	12	55.1	19-14.6	155-21.3?	0.0	2.4	23	155	7.9	0.40	0.6	0.7	0.16	C
29	5	29	3.4	19-13.5	155-21.7?	0.0	2.0	16	205	9.9	6.24	1.2	11.7	0.20	C
29	5	51	39.8	19-15.1	155-22.0?	0.0	1.9	20	162	7.9	4.95	0.8	9.4	0.20	C
29	5	56	33.4	19-14.9	155-20.8	2.2	1.9	20	167	10.7	0.11	0.7	1.1	0.15	C
29	6	2	31.6	19-15.7	155-21.2?	0.0	1.9	19	163	9.1	3.52	0.6	6.7	0.13	C
29	6	8	48.6	19-14.3	155-21.2	0.0	2.3	22	168	8.2	0.50	0.8	0.9	0.19	C
29	6	17	7.5	19-13.3	155-20.7	1.2	3.3	20	173	12.0	1.01	0.7	3.6	0.15	C
29	6	19	42.9	19-14.4	155-21.5?	0.0	2.7	23	166	8.3	0.44	1.0	0.8	0.24	C
29	6	23	42.9	18-50.5	155-21.2	9.2		11	272	36.3	0.83	4.9	3.7	0.15	D
29	6	50	9.2	19-14.2	155-20.6?	0.0	2.0	20	159	11.4	4.30	0.8	8.1	0.20	C
29	7	1	48.8	19-13.5	155-22.2	2.5	2.3	20	158	9.5	0.13	0.8	1.2	0.19	C
29	7	57	35.6	19-15.5	155-20.8	3.5	1.9	17	152	5.9	0.13	1.0	1.6	0.19	C
29	8	2	27.4	19-15.4	155-21.3?	0.0	1.5	20	151	6.6	4.56	0.7	8.6	0.18	C
29	8	5	35.1	19-13.2	155-22.7	4.0	2.2	20	159	9.2	0.10	0.7	0.8	0.17	C
29	8	8	40.2	19-15.3	155-21.6	6.1	1.5	17	151	7.1	0.11	0.9	0.8	0.20	C
29	8	52	2.2	19-15.4	155-22.9	0.8*		8	160	8.8	0.12	1.2		0.16	C
29	9	43	25.9	19-15.0	155-22.4	0.2*		15	148	7.9	0.12	0.9		0.20	C
29	9	59	56.2	19-23.4	155-14.8	2.1*	0.8	8	101	2.5	0.04	0.3		0.05	B
29	10	23	9.2	18-49.2	155-19.1	2.1*	3.0	20	264	40.5	0.54	3.4		0.17	D
29	10	42	7.9	19-14.4	155-23.3	5.5		11	171	7.1	0.11	1.0	0.9	0.14	C
29	11	44	32.5	19-13.1	155-22.8?	0.0	2.2	17	175	9.2	7.70	1.2	14.6	0.25	C
29	11	49	28.2	19-19.5	155- 9.4	8.0*	1.8	8	269	4.9	0.74	4.1		0.15	D
29	12	20	43.0	19-23.6	155-15.2	1.7	0.9	8	100	2.5	0.02	0.1	0.1	0.03	A
29	12	47	49.5	19-14.6	155-23.5	3.5	2.0	14	144	6.5	0.10	0.8	1.3	0.16	B
29	12	55	47.3	19-13.1	155-22.5?	0.0	2.0	15	159	9.6	7.51	1.2	14.2	0.25	C
29	12	59	39.1	19-13.8	155-23.2	6.6		12	178	7.8	0.15	1.3	0.9	0.20	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 29	13	0	29.9	19-13.9	155-23.3	5.2	1.9	12	168	7.6	0.11	0.9	0.8	0.15	C
29	13	0	42.1	19-13.4	155-22.3	2.6	2.8	19	158	9.5	0.13	0.9	1.1	0.19	C
29	13	12	43.3	19-13.9	155-23.1	2.8	2.0	16	154	7.9	0.15	1.1	1.3	0.22	C
29	13	22	36.7	19-14.1	155-23.3?	0.0	2.0	18	150	7.3	4.93	0.7	9.3	0.18	C
29	14	27	37.5	19-20.6	155-18.8	26.8		21	66	2.7	0.12	0.8	1.3	0.11	B
29	15	31	25.0	19-23.3	155-14.6	2.9	1.1	7	106	2.6	0.18	0.5	1.9	0.05	B
29	15	54	39.7	19-23.3	155-14.5	3.6	1.2	9	110	2.5	0.11	0.4	1.2	0.05	A
29	16	2	29.1	19-23.2	155-14.8	2.2*	1.2	11	105	2.4	0.06	0.4		0.11	B
29	17	14	25.1	19-14.2	155-23.7	0.0	2.2	15	146	6.6	8.06	1.1	15.3	0.23	C
29	17	20	48.4	19-15.9	155-22.1	1.0	1.9	18	142	7.3	1.25	0.8	4.6	0.17	C
29	17	24	59.1	19-14.5	155-22.3	3.6	1.9	14	152	8.4	0.15	1.1	1.4	0.24	C
29	17	37	21.9	19-13.6	155-22.4?	0.0	2.0	21	156	9.2	4.68	0.8	8.8	0.18	C
29	17	55	8.2	19-13.8	155-21.3?	0.0	2.8	23	159	9.0	4.68	0.9	8.8	0.19	C
29	18	3	32.9	19-13.6	155-20.1?	0.0		18	163	8.5	5.97	1.1	11.2	0.23	C
29	18	8	59.7	19-15.2	155-22.0	3.6		15	149	7.8	0.13	1.0	1.3	0.21	C
29	18	37	24.4	19-21.9	155-18.4	2.0*	1.2	10	75	3.6	0.04	0.3		0.07	B
29	18	54	26.9	19-13.3	155-22.4	0.8*		11	188	9.4	0.21	1.4		0.24	C
29	20	10	2.6	19-13.9	155-21.4?	0.0	2.0	18	158	8.9	9.25	1.4	17.4	0.22	C
29	20	14	22.7	19-14.0	155-23.2	6.9		15	152	7.6	0.09	0.9	0.6	0.17	C
29	20	57	49.1	19-21.0	155- 6.5	8.0*	2.4	17	146	6.2	0.09	0.9		0.13	C
29	23	48	2.2	19-14.9	155-21.6?	0.0	1.8	18	153	7.7	4.39	0.7	8.3	0.18	C
30	0	37	15.7	19-22.1	155-18.3	1.0	-0.4	9	137	3.4	0.12	0.5	0.5	0.11	B
30	2	49	39.5	18-51.3	155-20.0	11.0*	2.7	19	258	36.3	0.36	2.4		0.16	D
30	2	54	15.2	19-17.0	155-20.8	2.9	1.3	17	142	7.4	0.12	0.9	1.1	0.19	B
30	3	7	49.3	19-10.7	155-21.1?	0.0	2.1	18	175	12.1	5.79	1.1	10.9	0.21	C
30	4	17	49.5	19-18.4	155-14.3	8.0*	1.0	11	215	6.2	0.17	1.1		0.11	C
30	8	13	33.5	19-23.2	155-14.4	2.0	0.5	11	103	2.8	0.05	0.3	0.3	0.09	A
30	9	41	52.9	18-54.6	155-17.6	5.7	2.4	20	252	32.9	1.26	2.8	7.3	0.20	D
30	10	34	56.2	19-15.1	155-22.7	0.3*	2.0	13	168	7.4	0.12	0.9		0.18	C
30	11	41	45.4	19-18.5	155-23.9?	3.6	1.7	13	134	3.2	0.41	0.8	1.4	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1971	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 30	12	31	33.5	19-15.8	155-21.8?	0.5	2.4	20	146	8.5	0.95	0.6	3.5	0.15	B
30	13	7	38.2	19-22.4	155-18.0	1.4	1.2	12	76	2.6	0.11	0.5	0.5	0.17	B
30	15	53	2.6	19-22.8	155- 3.3?	4.5	2.0	17	117	5.3	0.19	1.5	1.2	0.30	C
30	20	40	48.1	19-23.9	155-15.3	3.8	1.9	17	82	2.2	0.07	0.5	0.8	0.14	B
30	22	32	20.6	18-48.5	155-19.0	2.2*	3.6	26	267	41.5	0.43	2.7		0.14	D
30	23	9	0.8	18-48.6	155-19.0	1.3*	2.7	24	266	41.3	0.47	3.0		0.15	D
30	23	29	17.6	18-44.1	155-18.8	8.0*	2.8	15	289	46.1	0.84	5.4		0.15	D
30	23	52	56.5	19-19.6	155-12.4	3.6		15	216	5.2	0.24	1.2	1.2	0.18	C
31	0	12	5.3	19-19.6	155- 9.0	3.8		17	172	4.8	0.16	1.1	1.0	0.21	C
31	0	22	30.9	19-13.9	155-22.6	0.2*	2.2	13	157	11.7	0.10	0.8		0.13	C
31	1	12	53.1	19-20.1	155-12.2	6.1	1.6	20	158	4.3	0.10	0.7	0.6	0.19	C
31	5	18	34.5	19-25.5	155-15.4	28.2	2.0	22	95	0.5	0.13	0.8	1.3	0.13	B
31	6	57	34.8	19-24.3	155-17.4	0.9	0.6	7	97	1.2	0.07	0.4	0.7	0.07	B
31	8	23	5.6	19-23.7	155-14.9	2.3	1.0	12	94	2.1	0.12	0.4	0.5	0.10	B
31	8	34	2.6	19-17.7	155-16.3	27.9	2.1	18	198	4.1	0.30	1.7	2.2	0.13	C
31	9	11	43.7	19-19.7	155- 7.0?	0.7	2.9	24	156	6.6	5.62	1.3	10.6	0.34	D
31	12	21	12.3	19-19.1	155-15.9	5.7	1.8	21	165	3.3	0.11	0.8	0.7	0.18	C
31	14	1	32.7	19-13.8	155-22.2?	0.0	2.1	22	156	9.9	5.81	1.2	10.9	0.28	D
31	14	36	25.0	19-14.4	155-22.8?	0.0	2.1	22	151	7.8	4.68	0.8	8.8	0.22	C
31	15	33	48.6	19-22.9	155-14.7	3.0	2.6	23	112	2.3	0.06	0.5	0.7	0.17	B
31	15	39	13.0	19-23.2	155-14.6	4.2	1.4	13	104	2.7	0.11	0.4	1.2	0.09	A
31	17	13	22.8	19-16.9	155-23.5	4.6	1.7	13	128	6.2	0.10	0.9	1.0	0.15	B
31	18	30	41.5	19-24.9	155-16.4	1.8	1.7	17	103	1.0	0.07	0.4	0.3	0.13	B
31	18	51	31.7	19-24.7	155-16.4	1.3	0.4	10	92	1.1	0.04	0.2	0.2	0.06	A
31	19	52	22.6	19-19.5	155- 8.5	3.5	2.1	20	175	5.3	0.17	1.1	1.1	0.26	C
31	20	8	52.3	18-45.9	155-18.8	8.0*	2.9	18	274	44.2	0.53	3.4		0.15	D
31	20	39	24.1	19-19.9	155-13.2	5.8	1.7	18	159	4.8	0.11	0.8	0.6	0.17	C
31	21	1	43.2	19-19.3	155- 9.7	3.3	1.8	20	176	5.2	0.18	1.1	1.1	0.24	C
31	22	41	55.1	19-11.6	155-30.7	5.3	2.0	19	87	6.3	0.14	1.0	1.0	0.22	C
31	23	8	18.5	19-23.4	155-14.8	3.2	1.0	12	100	2.5	0.07	0.3	1.1	0.07	A

Table 3. Felt earthquakes

Date	Time H	M	S	Magnitude	Felt report
Oct 11	23	04	14.7	3.2	Kapapala
12	08	49	29.9	3.5	Kapapala
29	14	53	25.6	2.4	Captain Cook
Nov 14	12	27	11.3	3.5	Hilo, Volcano
Dec 2	05	40	08.7	3.6	Hilo, Volcano, Glenwood, Pahoa
5	14	47	11.5	3.6	Volcano
6	00	02	02.3	1.8	Hawaii National Park
9	02	15	57.1	4.3	Hilo, Volcano, Mt. View, Kulani Camp
14	08	05	32.8	3.3	Kapapala
20	01	49	12.5	3.6	Kapapala
20	04	12	53.0	3.0	Kapapala
20	05	43	08.5	3.2	Kapapala
23	20	29	17.6	3.1	Kapapala
23	20	30	53.4	2.9	Kapapala
23	22	02	18.8	4.0	Kapapala, Hilo, South Kona
24	08	00	56.8	3.9	Kapapala
24	16	11	11.7	3.9	Kapapala
24	16	13	47.9	2.8	Kapapala
24	17	38	10.9	4.1	Kapapala, Hilo, South Kona
24	17	56	19.4	2.9	Kapapala
24	19	54	42.8	3.3	Kapapala
24	20	47	30.3	3.3	Kapapala
25	05	00	39.9	2.8	Kapapala
26	01	14	00.8	4.1	Hilo, Kapapala, South Kona
26	01	22	38.8	2.0	Kapapala
26	01	26	37.9	2.3	Kapapala
26	01	29	26.1	2.5	Kapapala
26	01	30	04.9	2.3	Kapapala
26	01	35	50.1	2.3	Kapapala
26	01	43	30.6	2.0	Kapapala
26	01	56	09.7	2.5	Kapapala
26	02	22	37.9	1.9	Kapapala
26	02	37	29.3	3.4	Kapapala
26	02	54	38.2	3.0	Kapapala
26	02	59	19.8	2.4	Kapapala
26	03	04	49.6	2.3	Kapapala
26	04	22	52.8	1.7	Kapapala
26	04	24	42.0	1.7	Kapapala
26	04	35	56.3	2.0	Kapapala
26	11	16	33.9	2.8	Kapapala
26	11	24	06.2	4.5	Hilo, Kealakekua, Kapapala, South Kona, Naalehu
26	16	07	49.1	3.5	Kapapala, South Kona

Table 3. Felt earthquakes--Continued

Date	Time H	M	S	Magnitude	Felt report
Dec 26	16	24	44.1	3.2	South Kona
26	16	37	35.8	3.4	South Kona
26	16	39	55.4	3.3	South Kona
26	18	44	47.6	2.7	Kapapala
26	21	31	28.0	3.8	Kapapala, Hilo
26	21	46	45.8	3.7	Kapapala, Hilo, South Kona
26	22	31	43.7	3.0	Kapapala
27	02	27	15.7	2.4	Kapapala
27	07	22	37.8	3.5	Kapapala
27	15	11	51.0	4.6	Pahala, Volcano, Kapapala, Mt. View, Hilo, South Kona
27	16	13	09.5	3.4	Glenwood
27	17	09	54.2	4.0	Kapapala, Hilo, South Kona, Volcano, Mt. View
28	16	20	06.0	3.7	Glenwood
28	16	59	11.1	4.6	Island-wide
29	00	42	01.9	4.0	Kapapala, Hilo, Paauilo
29	01	38	41.7	4.6	Hilo, Paauilo, Volcano, Kapapala
29	04	01	07.6	3.4	Kapapala
29	06	17	07.5	3.3	Kalapana
29	10	23	09.2	3.1	Volcano, Kapapala, Kealakekua

Many felt earthquakes last week of December--Hilina/SW Rift swarm.

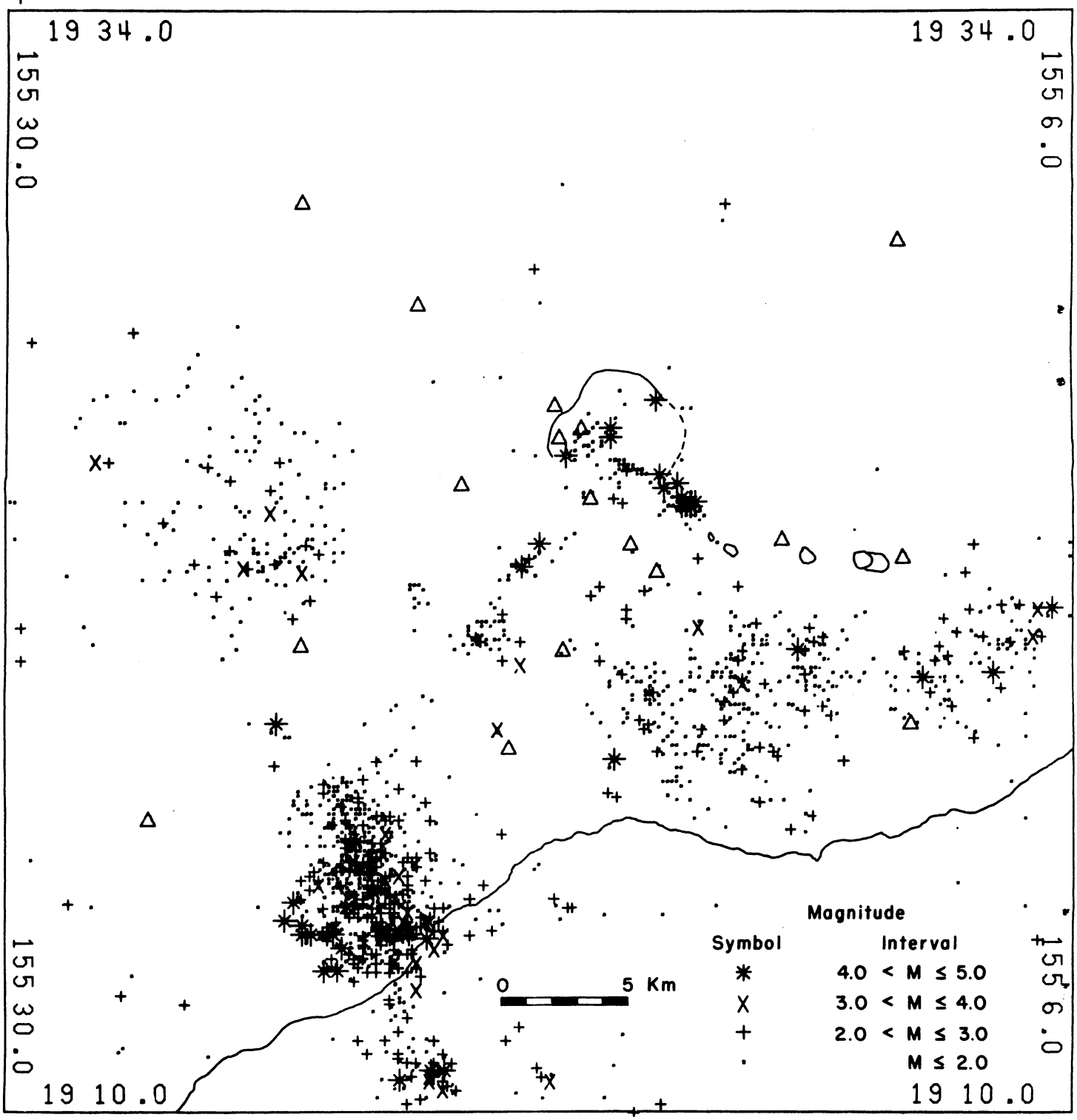

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

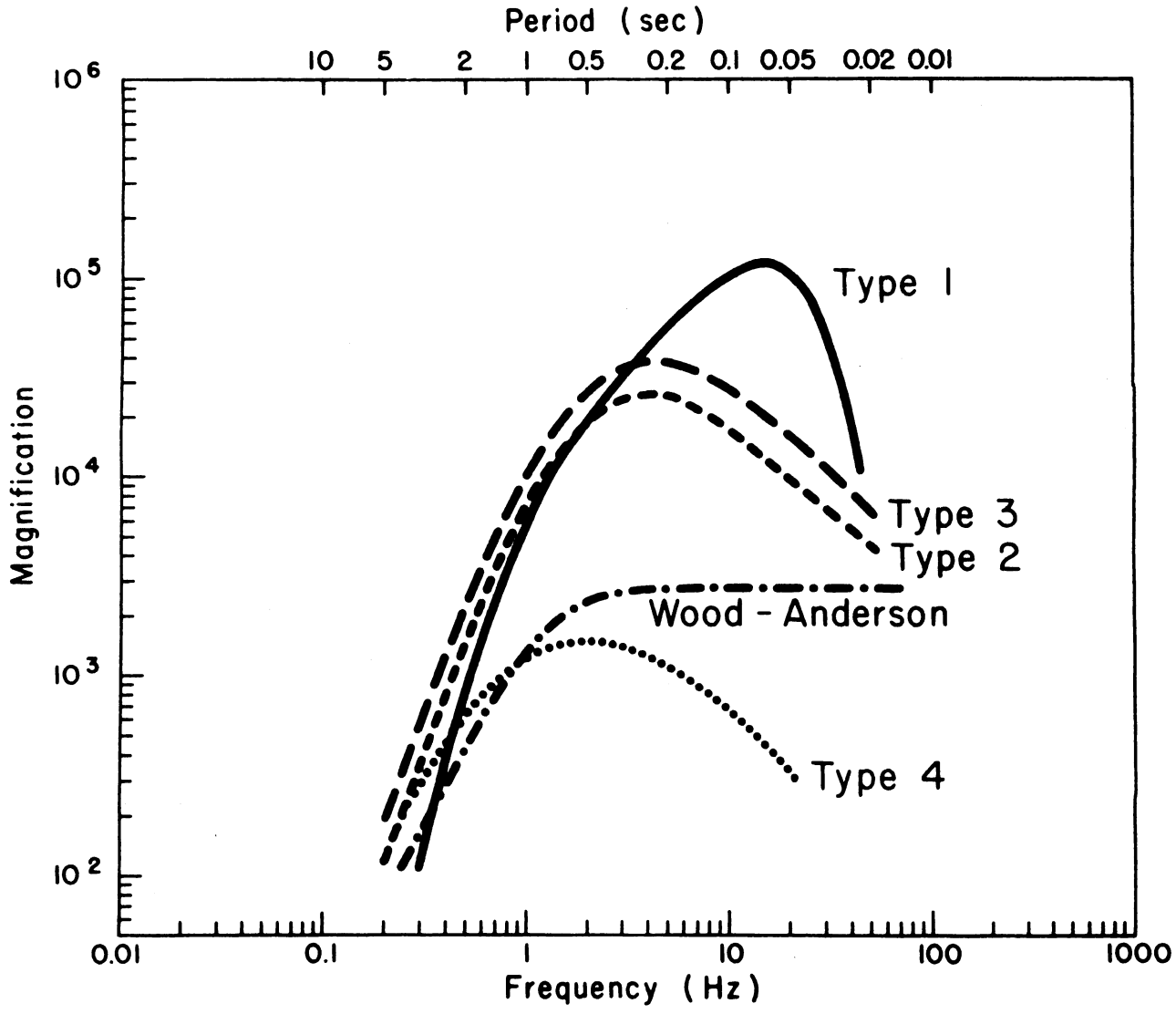

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KAMUELA	KAM	20 1.90	155 42.00	740	2	0.7			Discontinued 10/31/71
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 17, Summary 61.

Table 6.--Tilt Coordinates at Uwekahuna, October, November, and December 1971

Date	N-S	E-W	Date	N-S	E-W
Oct. 3	690	353	Dec. 5	712	330
10	692	350	12	716	329
17	693	345	19	718	327
24	696	343	26	718	327
31	700	339			
Nov. 7	700	339			
14	705	335			
21	709	331			
28	711	329			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 4)

Tilt base	Date (1972)	1/ Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading (1971)
Uwekahuna (U on fig. 4)	19 Jan	751.9	346.3	17.55 N26.5°W	30 Sep
Tree Molds (TM)	19 Jan	584.6	482.4	8.29 N11.1°W	30 Sep
Sand Spit (SS)	20 Jan	1047.7	725.8	18.99 N86.7°E	15 Jun
Mehana (M)	19 Jan	609.0	599.9	3.12 N34.7°E	1 Oct
Keamoku (Kea)	20 Jan	791.9	210.5	12.68 N54.7°W	29 Sep
Ahua Kamokukolau (Kam)	20 Jan	339.0	540.2	28.99 S 6.4°E	1 Oct
Kipuka Nene (KN)	27 Jan	277.3	501.1	1.42 S 2.1°W	5 Oct
Hilina Pali (HP)	27 Jan	454.7	493.1	0.32 S 9.5°W	5 Oct
Kapapala Ranch (Kap)	26 Jan	481.3	521.3	0.68 S31.3°E	29 Sep

1/ See Table 8 HVO Summary 60

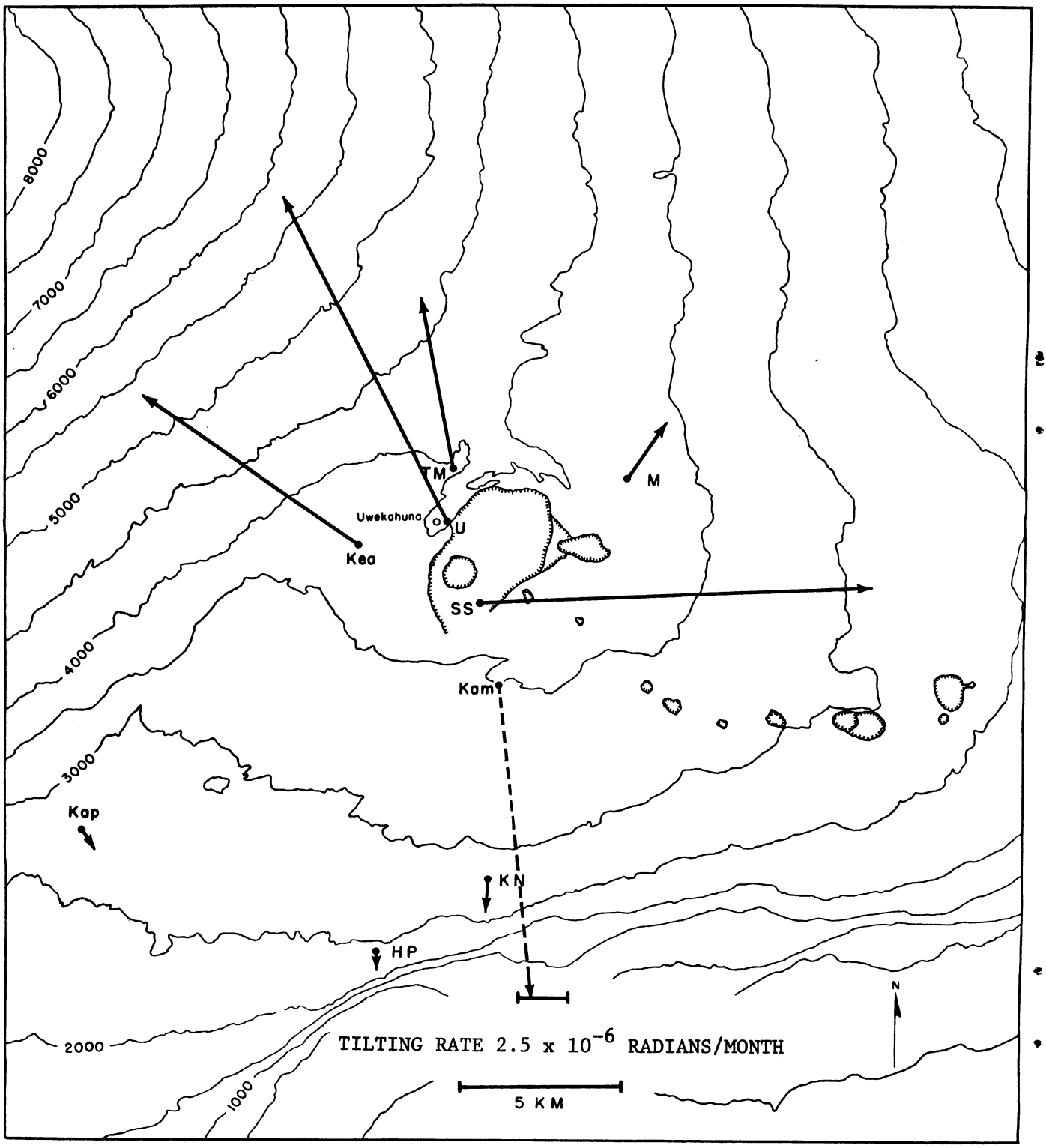

Figure 3.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 7 for explanation of abbreviations.

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☆ GPO 692-963

Hawaiian Volcano Observatory
1972 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 65
January, February, and March 1972
By Marie S. Onouye, Arnold T. Okamura, and Robert Y. Koyanagi
Chronological Summary By Robert L. Christiansen

Summary 66
April, May, and June 1972
By Akira Yamamoto, John C. Forbes, and Maurice K. Sako
Chronological Summary By Robert L. Christiansen

Summary 67
July, August, and September 1972
By John D. Unger, Robert Y. Koyanagi, and Arnold T. Okamura
Summary of Eruptive Events By Donald W. Peterson

Summary 68
October, November, and December 1972
By Patricia Stevenson, Robert Y. Koyanagi, and Arnold T. Okamura
Summary of Eruptive Events By Donald W. Peterson

Open-File Report 2007-1332
U.S. Department of the Interior
U.S. Geological Survey

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U.S. Geological Survey
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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 65

January, February, and March 1972

By

Marie S. Onouye, Arnold T. Okamura,

and Robert Y. Koyanagi

Chronological Summary

By

Robert L. Christiansen

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CHRONOLOGICAL SUMMARY

The long inflation that followed a summit and southwest-rift eruption in late September 1971 continued through January 1972. High levels of shallow caldera seismic activity accompanied the inflation, and on January 21 a brief but intense earthquake swarm occurred near the intersection of the east rift zone with the caldera rim, near Keanakakoi. Harmonic tremor and a brief deflation with this swarm suggest that it marked the reopening of the east rift zone, which had been inactive since mid-October and which probably had not been connected to the summit magma reservoir system since June 1971.

Eruptive activity resumed on the east rift zone on February 4 or 5 with the quiet reentry of lava into the summit crater of Mauna Ulu. From this slow beginning, the new Mauna Ulu eruption increased in vigor for several days, filling the summit crater to the level of the sill between it and the eastern trench by the morning of February 7. Low fountaining became apparent at a vent within the eastern part of the summit crater, and it became progressively higher as the eruption continued. The lava that cascaded into the eastern trench rose to a sufficient height to force open the old lava tube between the trench and Alae Crater, then flowed through the tube to partly fill the shallow subsidence bowl that earlier had formed in the lava fill above the buried crater.

A talus dam partly blocked flowage through the eastern trench of Mauna Ulu, causing the lava to cascade over the obstruction and then build a rampart across it by spattering and episodic overflow. This dam continued to build higher, ultimately exceeding the elevation of the sill between the trench and the summit crater. The entire fissure trough of Mauna Ulu thus became a single lava lake as eruption continued and the eastern levees grew higher. Circulation and cycles of rising and falling lava-lake levels took on patterns much like those of the active lava-lake periods of the 1969-1971 Mauna Ulu eruption.

A second vent opened within the area of the former trench on February 8 and slowly became the principal source of lava; at the first vent fountaining eventually became inconspicuous as it became higher and more voluminous at the second. The lava level in the main summit crater began to drop, and by February 17 the flow pattern had reversed, lava cascading westward from the trench across the sill into the summit crater. A day later harmonic tremor declined, the summit pool crusted over, and the lava fountain in the trench became progressively lower through February 21, when all surface activity ceased.

Activity resumed on February 24 with a second phase of moderate fountaining from the first-active vent in Mauna Ulu's summit crater (vent A), followed shortly by simultaneous fountaining at the vent in the trench (vent B). Within a day the lava lake filled the entire Mauna Ulu fissure trough and overflowed at several points. A major flow developed that extended around the north side of Kane Nui O Hamo and into Napau Crater before it stopped. Once again, vent B gradually became dominant over vent A, fountaining reaching 60 m or more, and a spatter cone built around vent B to a height of 25 m. Once again, as in the first phase, vent A ceased to erupt actively, and by March 5 the lava level in the former summit crater had dropped more than 30 m so that lava again cascaded westward across the sill between the trench and the crater. Vent B declined shortly later, and by March 9 the lava level in the trench too was below the sill level. By March 10 vent B was only weakly active. A resurgence of activity occurred at both vents in mid-March and began a series of alternating major overflows and drainbacks of the lava lake. New flows covered all of the Mauna Ulu shield except at its westernmost end.

On March 18 a series of shallow local earthquakes occurred, a substantial deflation ensued at the Kilauea summit, and the lava lake drained abruptly by several tens of meters. A new fissure formed on the west flank of the shield and erupted briefly; two new vents broke out in the area of Alae. One vent (vent C) was within the remnant Alae subsidence bowl and rapidly filled it. Overflow and marginal spatter bagan to build levees around the margins of this pond, which soon became an actively circulating lava lake. The vent outside the new Alae lava lake (vent D) fed a flow that cascaded into Makaopuhi Crater. The new vents peaked on about March 20 and died on March 23 or 24. Activity continued in Mauna Ulu, but the lava lake did not rise substantially, as lava apparently continued to drain underground both to Alae and to the west. At times lava could be seen through a hole on the west side of Mauna Ulu to be flowing westward toward the fissure that had erupted briefly on March 18.

When the activity at Alae declined and ceased, the continuing moderate deflation at Kilauea's summit reversed; a slight inflation began even though moderate fountaining and lava-lake activity continued at Mauna Ulu.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit Long-Period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
Jan. 1	45m			?	?	?	?	?	?	?		Some Hilina quakes included
2				1	77	1618	38	198	133	6	29	in Offshore PPL
3				2	67	1495	68	267	97	6	62	count.
4					367	1354	44	324	85	6	53	
5	8m			1	76	1408	31	180	40	9	29	
6					?	1249	?	?	?	?	?	
7					56	1728	23	103	42	7	150	
8				2	124	2094	26	178	53	4	41	
9					69	2735	25	161	82	4	19	
10				2	51	2231	10	165	214		31?	Increase of earthquakes
11		5m			482	2967	24	330	286	12	72	near Kokoolau
12					171	3814	38	385	365	11	165	crater.
13	41m			1	79	3069	41	441	267	22	137	
14	10m				69	2569	53	575	188	12	115	
15					76	2112	44	493	138	15	159	
16				1	60	2139	45	437	128	12	85	
17					54	2296	64	398	157	31	112	
18				5	32	2330	34	200	244	6	148	
19	17m	8m			36	2215	24	367	194	3?	25	
20				1	64	3490	24	626	74	5	93	
21				4	69	2428	25	205	209	5	110	
22				2	29	2798	41	191	155	8	101	
23	?			42	93	2426	72	299	212	7	172	
24	?			5?	69?	699?	35?	142?	173?	2?	45	
25	100m	13m		4	51	1610	36	192	188	4	67	
26		5m		11	26	2295	61	170	329	2	69	
27	39m			8	106	2329	16	1190?	15	10	24	Several rock-falls at Mauna
28				1	64	3044	21	395	497	22	120	Ulu.
29				5	78	2677	36	421	217	17	131	
30				3	34	2235	42	214	142	4	59	
31				4	37	1369	34	213	12	3	71	

Sporadic weak tremor on the upper east rift and summit region throughout the month.

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow						
Feb. 1		?		4	65	1630	37	157	59	6	41	
2	44m				43?	1820?	31?	233?	157?	8	79?	
3				18	118	1876	26	610?	164	10	76	
4				4?	16?	926?	19?	?	49?	?	?	Upper East Rift quakes masked by tremor.
5			Renewal of low level tremor on the upper east rift throughout the month.	3	14	1391	20	123	50	3	31	
6	25m				3?	699?	20?	36	19?		98?	
7				1	2?	695?	13?	56?	43?		39	
8				3	5	1096	28	19	57	15	208	
9					9	820	24	28	16		135	
10				3	2	977	7	18	35	7	89	
11					11	881?	8?	6	24	28	38?	
12				2	2	669?	15	9	24	5	56	
13	24m				3	741?	12	3	11	4	56?	
14					2	508	15	25	12		40	
15				1	6	819	28	22	3		97	
16					7	740	17	22	4		125	
17					14	1085	106	46	9	2	79	
18					19	850	16	49	23	1	76	
19					9	973	8	66	39		71	
20				1	27	941	15	77	42	1	146	
21				?	12?	261?	5?	22?	12?	3?	22?	
22				5?	6?	473?	9?	25?	11?	2?	44?	
23					17	1315	8	44	32		97	
24	8m				?	688	9	20	45	4	55	
25				1		483	10	4	20		75	
26				2	8	451	10	2	23	6	52	
27					2	262?	15?	5	25	15	37	
28				1	1	369	8	6	15	4	63	
29				2	15	444?	8?	19	11?	13	25	

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow						
Mar. 1				1	60	471	14	14?	5	2	22	
2					64	502	16	13?	14		97	
3					157	483	17	29?	11	7?	21	
4					40?	234?	5?	5?	14?	1	27	
5		4m		1	88	395	19	10?	22	1	33	
6	?				27	536	13	53	13		70	PHH adjusted.
7					62	610	32	39	7	2	97	
8					35	607	19	25	19	4	96	
9				1	35	732	8	27	11	4	89	
10	34m			4	15	707	28	29	33	4	56	
11				3	8	634	25	10	19		71	
12				3	3	672	32	14	19	3	66	
13					19	740	10	27	11	1	41	
14				2	10	644	25	28	14	1	101	
15					13	698	27	29	25	1	64	
16				4	38	682	18	25	12		72	
17	40m				44	812	7	51	16	4	19	
18				1	3	661?	9	697?	23		13	
19					1	360?	8	27	2?		38	
20					1500?	201?	29	33	1?		38	Very small LP quakes.
21					2000?	394?	34	30?	6?		36	
22					144?	292?	23	128	8?	5	21	
23					105?	419	13	27	10	1	28	
24	33m				146	657	52	36	27	2	52?	
25					38	754	15	70	26	2	86	
26				10	12	329	21	45	6	1	46	
27					114?	630?	47	74	21	4	24?	
28				1	172	533	38	26	21	4	21	
29				1	119	537	37	29	18	5	148?	
30					128	553	37	30	17	17	31?	
31				2	114	586	33	81	13	11	91?	

Low to moderate tremor on the upper east rift throughout the month.

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	EPICENTER	FOCAL DEPTH
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ DEPTH or 5 km
B	≥ 6	≤ 150°	≤ 2 x DEPTH or 10 km
C	≥ 6	≤ 225°	≤ 50 km
	≥ 4	≤ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1972		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	1	0	48	0.6	19-19.0	155-13.6?	0.0	1.6	18	195	6.6	7.76	1.3	14.6	0.27	C
	1	0	54	41.4	19-19.5	155-15.3	6.5	2.0	21	163	3.8	0.10	0.8	0.6	0.17	D
	1	1	32	55.0	18-49.2	155-19.3	1.7*	2.6	20	264	40.4	0.48	3.0		0.17	D
	1	5	17	56.2	19-18.6	155-15.0	6.3	1.5	18	204	5.0	0.14	0.9	0.6	0.17	C
	1	6	7	21.8	19-18.5	155-15.3	9.0	1.2	15	205	4.8	0.11	0.8	1.4	0.10	C
	1	8	18	29.6	19-23.3	155-14.7	2.2*	1.2	9	106	2.6	0.04	0.3		0.05	B
	1	8	19	6.3	19-23.8	155-15.9?	3.6	1.2	7	119	2.0	0.28	1.5	9.4	0.18	C
	1	13	16	3.4	19-17.9	155-22.9	3.2	2.2	10	164	4.4	0.24	1.8	2.2	0.27	C
	1	15	55	46.6	19-17.1	155- 6.9?	0.0	2.5	10	288	18.5	0.63	3.2	1.0	0.22	D
	1	18	46	8.6	19-21.5	155-28.2	2.7	2.8	13	60	8.8	0.14	1.0	1.5	0.24	C
	2	7	59	7.3	19-13.2	155-33.3	5.6	2.9	21	91	7.3	0.14	1.0	1.0	0.24	C
	2	10	13	8.4	19-23.2	155-14.6	3.0	0.8	10	104	2.7	0.06	0.2	1.1	0.04	A
	2	10	18	49.3	19-19.8	155-15.6	7.7	1.6	17	140	3.3	0.05	0.5	0.3	0.10	B
	2	11	8	56.7	19-19.8	155- 7.5	8.0*	1.5	13	171	5.9	0.12	1.1		0.12	C
	2	11	55	27.9	19-24.1	155-16.4	3.3	0.6	11	64	1.7	0.08	0.3	0.9	0.07	A
	2	12	31	40.3	19-20.1	155- 8.9	8.8	1.5	15	165	4.0	0.08	0.7	1.4	0.09	B
	2	13	4	24.1	19-24.1	155-16.0	1.8	0.7	7	107	2.0	0.06	0.4	0.3	0.07	B
	2	14	20	3.8	18-52.9	155-16.8?	14.8*	1.9	13	259	36.2	0.35	2.4		0.18	D
	2	15	46	33.6	19-23.8	155-15.4	3.2	0.9	12	79	2.5	0.13	0.6	1.9	0.13	B
	2	16	12	39.6	19-14.3	155-22.1	1.7	1.1	13	172	9.0	2.31	1.0	8.5	0.19	C
	2	17	25	22.5	19-16.8	155-21.8	3.8	1.8	18	138	6.0	0.11	0.9	1.3	0.19	C
	2	18	1	23.2	19-18.8	155- 8.5	8.0*	0.6	11	187	6.5	0.19	1.5		0.18	C
	2	18	34	30.6	19-23.8	155-25.6	8.0*	1.0	19	149	7.7	0.11	0.8		0.16	C
	2	19	55	11.3	19-19.9	155-16.1	6.3	0.8	17	137	2.4	0.07	0.6	0.5	0.13	B
	2	20	1	39.7	19-19.8	155-10.7	9.0	0.6	13	166	4.3	0.07	0.6	1.1	0.07	B
	2	21	30	24.3	19-18.3	155-14.3	8.0*	2.2	20	153	6.3	0.07	0.6		0.14	C
	2	21	33	42.8	19-18.7	155-14.5	8.0*	1.0	15	181	5.7	0.10	0.7		0.12	C
	2	21	35	36.3	19-24.3	155-25.9	8.0*	1.0	15	155	8.8	0.06	0.5		0.08	C
	2	22	26	36.7	19-24.6	155-16.3	0.2	0.1	7	91	1.3	0.07	0.2	0.2	0.06	B
	2	23	11	56.9	19-23.7	155-14.8	3.8	0.8	13	90	1.9	0.07	0.3	0.9	0.09	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	3	2	38 27.9	19-23.2	155-14.7	2.1*	0.4	9	109	2.6	0.04	0.3		0.06	B
	3	2	50 42.9	20- 2.5	155-38.9?	33.0*	1.6	14	271	36.1	0.27	1.9		0.09	D
	3	2	55 41.5	19-18.2	155-23.4	7.2	1.1	16	113	3.7	0.06	0.7	0.4	0.11	B
	3	3	35 26.9	19-48.8	155-39.8	14.8*	1.6	12	108	21.7	0.18	1.9		0.27	C
	3	3	59 18.8	19-18.7	155-17.5	29.8	1.8	22	142	2.5	0.12	0.7	1.2	0.11	B
	3	4	51 52.8	19-24.0	155-15.7	1.9	0.6	8	125	2.5	0.04	0.2	0.2	0.05	B
	3	5	7 3.4	19-20.3	155- 6.9	8.0*	1.1	15	162	6.1	0.12	1.0		0.14	C
	3	5	27 5.6	19-19.4	155-15.4	6.3	0.8	14	181	3.7	0.12	0.8	0.7	0.12	C
	3	7	14 19.7	19-20.9	155-19.2	4.0	0.7	10	90	3.5	0.09	0.3	1.4	0.04	A
	3	7	16 40.2	19-21.9	155-18.1	5.1	0.8	13	71	3.5	0.07	0.4	0.6	0.10	A
	3	7	51 32.8	18-55.6	155-24.6	10.5	1.9	12	243	26.3	0.40	2.7	2.5	0.16	D
	3	9	43 3.7	19- 9.2	155-15.6	9.3	1.4	18	224	17.1	0.14	0.9	1.8	0.08	C
	3	10	50 2.6	19-20.3	155-19.0	6.2	1.1	16	73	2.8	0.04	0.3	0.4	0.09	A
	3	12	19 19.1	18-43.3	155-16.2	8.0*	2.5	20	280	50.7	0.64	4.0		0.16	D
	3	12	46 14.8	18-47.4	155-17.3	8.0*	2.3	20	269	44.9	0.61	3.9		0.21	D
	3	14	31 20.7	19-11.2	155- 4.6	36.7	1.9	15	239	16.3	0.15	0.9	1.2	0.05	C
	3	17	51 55.5	19-15.9	155-21.4	4.1	2.8	23	147	8.6	0.12	0.8	0.9	0.22	C
	3	19	40 45.6	19-23.5	155- 3.0	0.1	1.9	13	120	6.6	6.02	1.0	11.5	0.21	C
	3	21	4 27.8	19-17.1	155-14.1	6.0	2.4	16	205	8.0	0.24	1.3	1.0	0.16	C
	3	21	35 33.5	19-17.9	155-14.3	5.8	1.6	16	216	6.7	0.18	1.1	0.7	0.16	C
	3	21	36 16.0	19-18.8	155-14.6	4.6	1.2	15	204	5.5	0.17	1.0	1.0	0.17	C
	3	21	45 59.4	19-18.4	155-14.3	6.3	1.0	18	211	6.2	0.15	1.0	0.6	0.15	C
	3	21	47 30.3	19-23.2	155-25.9	7.9	1.6	18	71	7.2	0.10	0.6	0.8	0.12	B
	3	21	49 2.0	19-17.9	155-14.1	6.2	1.6	18	218	7.0	0.19	1.1	0.7	0.16	C
	3	21	59 11.6	19-26.6	155-13.5	32.2	1.9	13	235	3.9	0.41	2.2	2.9	0.11	C
	3	22	22 36.9	18-48.3	155-20.5	2.1*	2.6	24	268	39.3	0.52	3.3		0.17	D
	3	22	39 33.7	19-16.4	155-22.7	0.4	1.7	18	135	7.0	5.32	0.8	10.1	0.19	C
	3	22	40 35.6	19-15.9	155-22.0?	0.0	1.8	18	159	8.2	5.34	0.7	10.2	0.17	C
	3	23	12 28.0	19-16.0	155-22.0	2.3	1.7	18	159	8.1	0.11	0.8	1.2	0.19	C
	3	23	40 18.2	19-17.0	155-22.9	5.8	1.8	15	146	6.0	0.11	1.0	0.9	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	3	23	56 34.0	19-23.2	155-14.3	3.9	0.9	13	102	2.7	0.03	0.2	0.4	0.06	A
	4	1	50 29.3	19-23.5	155-25.4	2.7	1.6	17	68	7.2	0.11	0.8	1.7	0.24	C
	4	1	59 51.7	19-15.5	155-14.3	0.6*	1.2	10	265	13.1	0.86	3.6		0.24	D
	4	2	18 47.7	19-19.4	155-11.7	4.8	1.6	19	172	5.9	0.13	0.8	0.8	0.19	C
	4	5	37 26.3	19-19.2	155-46.7	6.2	1.9	15	243	18.5	0.59	2.6	2.0	0.15	D
	4	5	43 34.0	18-46.0	155-13.3	8.0*	2.8	14	273	50.4	0.75	4.8		0.17	D
	4	7	0 33.7	19-20.5	155-11.0	8.3	2.7	18	156	3.5	0.07	0.6	0.4	0.09	C
	4	7	8 35.6	19-23.5	155-14.6	2.3*	0.7	9	107	2.3	0.08	0.6		0.11	B
	4	11	36 35.1	19-10.9	155-27.1	35.5	2.7	22	146	2.9	0.23	1.1	2.2	0.13	B
	4	12	8 55.4	19-23.0	155-14.7	3.0	1.4	15	112	2.4	0.06	0.4	0.8	0.12	B
	4	17	50 57.6	19-23.8	155-25.0?	0.0	1.3	15	106	7.2	9.75	0.9	18.6	0.20	C
	4	20	40 0.9	18-50.9	155-20.3	8.8	2.6	20	263	36.9	0.57	3.4	2.9	0.19	D
	4	21	57 8.6	19-20.4	155-12.1	4.3	0.1	13	195	3.8	0.21	1.2	1.1	0.20	C
	5	0	37 9.5	18-52.3	155- 8.9	18.6*	2.2	15	312	50.4	0.41	3.0		0.12	D
	5	1	13 6.0	18-54.8	155-18.6	11.4*	2.2	20	250	31.6	0.36	2.4		0.17	D
	5	1	36 11.8	19-17.6	155- 0.1	8.0*	1.9	12	242	6.5	0.30	2.1		0.12	D
	5	2	6 31.7	19- 9.2	155-15.1	2.7	2.0	20	225	17.3	0.29	1.3	1.1	0.17	C
	5	3	1 2.9	19-15.8	154-59.7	5.4	1.8	13	253	9.5	0.79	3.7	2.1	0.16	D
	5	3	8 8.0	19-25.8	155-27.3?	7.5	1.3	17	71	10.2	0.08	0.7	0.6	0.15	C
	5	5	35 3.8	19-16.4	155-22.7	3.8	1.7	15	185	7.0	0.16	1.1	1.2	0.20	C
	5	9	2 24.2	19-19.4	155-13.5	5.5	1.7	17	167	5.9	0.14	0.9	0.9	0.21	C
	5	10	33 38.1	19-10.1	155-20.5	43.4	1.5	15	208	12.9	0.60	2.7	4.9	0.14	C
	5	11	25 27.6	18-46.3	155-15.7	8.0*	2.6	12	290	47.9	0.52	3.4		0.09	D
	5	22	55 23.8	19-22.6	155-23.8	2.4	1.4	14	148	4.6	0.13	0.8	1.7	0.17	B
	5	22	57 51.8	19-22.7	155-24.3	5.9	1.8	21	52	5.0	0.07	0.7	0.8	0.19	B
	6	0	9 44.8	19-18.5	155-13.6	6.4	1.6	19	198	7.3	0.16	1.0	0.7	0.18	C
	6	0	12 43.4	19-18.9	155-13.9	6.2	1.2	15	208	6.6	0.18	1.1	0.7	0.17	C
	6	2	47 25.0	18-52.8	155- 9.9	7.8	1.8	23	259	44.1	0.40	2.6	3.5	0.15	D
	6	6	38 52.1	19-18.5	155-13.6?	6.1		17	199	7.3	0.17	1.0	0.7	0.18	C
	6	11	32 25.0	19-19.6	155-15.2	6.0	0.7	14	179	4.0	0.10	0.6	0.6	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	6	16	44	15.3	19-16.0	155-22.2	0.6*	1.7	16	141	7.3	0.12	1.0		0.25	C
	6	23	9	3.6	18-49.8	155-17.9	1.2*	3.0	27	263	40.4	0.43	2.8		0.18	D
	7	1	49	18.3	19-24.2	155-25.4	4.0	1.9	21	72	8.3	0.10	0.8	1.1	0.25	C
	7	2	16	22.4	18-46.5	155-17.4	8.0*	2.3	19	272	45.7	0.56	3.6		0.17	D
	8	2	20	30.9	19-23.7	155-24.1	8.0*	1.2	11	199	6.6	0.11	0.7		0.09	C
	8	8	10	46.3	19-19.7	155-15.6	6.4	0.7	14	174	3.3	0.11	0.7	0.6	0.12	C
	8	8	30	24.1	19- 9.9	155-36.1	3.2	1.6	14	105	9.4	0.13	1.0	1.2	0.21	C
	8	9	52	8.3	19-20.7	155- 9.2	8.4	2.1	17	140	2.8	0.07	0.7	1.4	0.11	B
	8	13	49	26.9	18-44.8	155-17.9	8.0*	2.6	16	276	46.7	0.53	3.4		0.12	D
	8	14	13	26.2	19-23.7	155-26.0	7.8	1.2	19	130	8.1	0.09	0.7	0.5	0.15	B
	8	15	27	16.2	19-25.1	155-14.1	30.8	2.8	28	58	0.8	0.11	0.6	1.1	0.11	B
	8	16	32	3.4	18-49.5	155-16.3	1.9*	2.1	14	264	42.1	0.42	2.8		0.14	D
	8	16	34	39.0	19-25.2	155-13.7	29.4	1.5	25	83	1.4	0.11	0.7	1.1	0.11	B
	8	20	15	4.2	19-22.2	155-23.0	5.1	1.0	14	143	3.7	0.12	0.9	1.0	0.19	C
	8	23	32	37.5	19-19.4	155-13.9	8.0*	1.0	11	196	6.0	0.10	0.8		0.10	C
	9	2	17	45.3	19-19.6	155- 9.8	8.1	0.9	14	172	4.6	0.08	0.7	1.5	0.08	B
	9	3	23	7.7	19-21.3	155- 1.9?	11.2	1.6	13	167	3.1	0.14	1.1	1.4	0.12	C
	9	4	10	44.8	19-19.9	155- 9.1	7.7	0.7	12	168	4.2	0.11	1.0	0.6	0.13	C
	9	7	39	28.2	19-19.6	155-10.5	8.8	1.0	13	170	4.7	0.08	0.6	1.3	0.08	B
	9	8	0	24.9	18-53.8	155-10.6	12.3*	3.4	28	255	41.9	0.34	2.2		0.15	D
	9	8	5	23.3	18-53.5	155- 9.8	8.0*	2.1	22	257	43.4	0.32	2.1		0.13	D
	9	15	32	3.9	19-25.1	155-16.4	2.0	0.6	9	114	1.1	0.05	0.4	0.2	0.07	A
	9	15	38	22.2	19-24.7	155-16.3	1.6	0.8	8	99	1.2	0.04	0.3	0.2	0.05	A
	9	16	19	59.3	19-19.9	155- 7.4	8.0*	1.4	12	170	5.9	0.14	1.4		0.19	C
	9	16	23	0.9	19-24.3	155-17.3	1.2	0.3	7	97	1.3	0.06	0.3	0.3	0.07	B
	9	17	30	6.0	19-24.1	155-15.9	1.8	0.5	8	63	2.3	0.05	0.3	0.3	0.08	A
	9	19	0	43.1	19-25.1	155-16.9	1.3	2.6	19	120	0.4	0.07	0.4	0.3	0.13	B
	9	20	11	15.1	18-56.0	155-21.0	8.7	2.2	12	295	27.6	1.28	6.5	3.7	0.15	D
	9	23	18	40.5	19-25.0	155-16.4	1.1	0.4	9	110	1.0	0.06	0.3	0.3	0.09	A
	10	0	2	46.2	19-26.2	155-15.6?	0.3	0.8	9	205	1.3	0.63	0.8	1.3	0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 10	2	17	3.1	19-24.5	155-16.3	0.8	0.5	12	84	1.4	0.05	0.2	0.3	0.09	A
10	2	22	24.4	19-24.2	155-15.9	1.6	0.7	10	71	2.4	0.07	0.4	0.4	0.09	B
10	3	9	11.0	19-24.0	155-15.6	4.0	2.0	13	81	2.6	0.08	0.4	0.9	0.08	B
10	3	28	27.4	19-25.6	155-16.6	2.1	0.4	10	126	1.5	0.06	0.4	0.2	0.08	B
10	5	38	14.1	19-18.6	155-16.1?	8.4	0.9	10	195	3.5	0.20	1.6	0.8	0.18	C
10	6	21	49.2	19-18.8	155-19.1	29.1	1.3	20	71	1.7	0.14	0.9	1.5	0.10	A
10	6	32	48.7	19-24.6	155-15.5?	2.1	0.3	11	74	1.6	0.15	0.8	1.9	0.17	B
10	7	36	16.1	19-13.0	155- 2.5?	38.6	1.6	18	244	12.8	0.29	1.7	2.2	0.10	C
10	8	50	20.4	19-24.5	155-16.9	0.6	0.2	8	73	0.8	0.10	0.2	0.2	0.07	A
10	9	56	1.7	19-25.2	155-17.0	1.9	0.6	10	121	0.6	0.08	0.5	0.3	0.13	B
10	10	13	5.0	19-25.6	155-14.4	31.1	1.3	21	95	1.8	0.10	0.6	1.0	0.08	A
10	14	47	38.7	18-44.9	155-16.9	8.0*	3.8	26	276	47.9	0.55	3.5		0.16	D
10	14	50	15.8	19-19.4	155- 8.7	8.0*	1.8	15	176	5.4	0.10	0.7		0.11	C
10	15	41	49.9	19-15.6	155-17.4	53.6	2.5	23	159	4.9	0.45	1.8	3.9	0.15	C
10	19	53	14.9	19-20.1	155- 8.9	7.6		16	165	4.0	0.10	0.9	0.5	0.14	C
10	21	5	58.8	19-25.7	155-16.6	2.7	0.8	7	206	1.6	0.22	0.9	1.5	0.07	B
10	21	27	37.3	19-23.4	155-14.6	3.4	0.8	9	108	2.4	0.21	0.6	2.4	0.10	B
10	22	44	32.3	19-23.3	155-14.5	2.9	0.9	9	109	2.6	0.17	0.6	3.5	0.10	B
11	0	2	42.9	19-23.3	155-14.8	1.6	1.1	10	104	2.6	0.09	0.5	0.4	0.13	B
11	3	48	26.7	18-51.1	155-19.5	10.8*	1.8	15	263	37.0	0.44	2.9		0.15	D
11	4	34	45.1	19-23.8	155-15.4	1.7	0.8	9	148	2.5	0.07	0.4	0.3	0.08	B
11	4	36	25.8	18-48.9	155-17.4	8.0*	2.9	19	271	42.2	0.47	3.1		0.15	D
11	6	9	15.4	19-23.6	155-14.6	3.8	0.3	13	92	2.0	0.06	0.3	0.8	0.07	A
11	8	7	39.2	19-23.0	155-14.8	2.5	0.6	10	111	2.3	0.08	0.3	1.4	0.07	A
11	8	29	43.0	18-51.4	155-16.4?	3.6	2.6	19	299	39.0	1.86	10.9	9.3	0.14	D
11	10	28	59.4	19-25.6	155-16.6	2.1	0.6	11	151	1.4	0.05	0.4	0.2	0.08	B
11	10	31	29.7	19-22.0	155-18.4	2.0*	1.0	12	76	3.7	0.04	0.3		0.08	B
11	12	43	6.0	19-25.6	155-16.5	2.4	0.9	12	126	1.5	0.04	0.3	0.8	0.06	B
11	13	47	44.9	19-25.6	155-16.5	2.1	0.9	10	126	1.5	0.05	0.3	1.2	0.06	B
11	14	53	28.8	19-22.6	155- 3.5?	0.0	1.4	20	111	5.0	5.21	1.7	10.1	0.34	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 11	16	53	4.5	19-23.8	155-14.8	3.9	1.2	13	88	1.8	0.06	0.3	0.7	0.08	A
11	17	58	24.2	19-23.6	155-14.6	3.6	0.6	13	91	2.0	0.09	0.4	1.1	0.10	A
11	18	1	39.6	19-23.0	155-14.2	4.2	1.1	15	109	2.9	0.09	0.6	0.9	0.12	B
11	19	12	44.6	19-17.9	155-16.4?	9.2	1.3	11	217	3.9	0.27	1.6	2.3	0.14	C
11	23	27	45.1	19-22.0	155-17.9	4.3	1.1	11	75	3.1	0.12	0.5	1.5	0.11	B
12	0	10	29.0	19-23.6	155-15.1	2.1	1.0	10	94	2.3	0.09	0.4	0.4	0.07	A
12	0	17	25.1	19-23.5	155-26.2	5.5	1.0	16	104	7.9	0.14	1.1	1.5	0.22	C
12	3	29	14.5	19-19.2	155-13.8	8.0	2.2	23	145	6.3	0.08	0.6	0.4	0.14	C
12	3	55	33.0	19-23.6	155-15.2	4.0	1.2	14	91	2.5	0.09	0.4	1.1	0.10	B
12	4	59	54.4	19-22.9	155-22.6	8.0*	1.6	11	143	5.2	0.12	1.0		0.16	C
12	6	3	50.8	19-13.6	155-21.3?	0.0	1.8	20	160	9.4	5.88	1.2	11.1	0.28	D
12	6	25	55.1	19-22.5	155-14.9	6.9	1.0	11	123	1.7	0.53	1.2	4.0	0.20	C
12	6	41	57.2	19-20.1	155- 7.3?	0.8	1.7	19	203	5.7	1.40	1.4	4.9	0.21	C
12	7	22	56.1	19-23.3	155-14.6	3.5	1.0	11	101	2.6	0.08	0.4	1.1	0.07	A
12	8	7	4.0	19-24.0	155-15.6	3.0	0.9	13	70	2.5	0.09	0.4	1.6	0.10	B
12	13	35	0.7	19-19.4	155-13.1	6.1	1.6	21	168	5.8	0.11	0.7	0.6	0.18	C
12	17	32	8.6	19-14.4	155-21.9?	0.0	1.6	21	155	8.7	5.60	1.1	10.6	0.28	C
12	18	59	42.5	19-23.6	155-14.7	3.3		10	97	2.2	0.13	0.5	1.7	0.09	A
12	20	34	16.9	18-48.1	155-17.9	8.0*	2.6	23	267	43.2	0.37	2.4		0.13	D
12	21	25	13.6	19-18.0	155-13.8	2.6	2.4	25	154	7.5	0.13	0.7	0.9	0.20	C
12	21	31	15.0	19-19.2	155-12.4	3.2	1.9	24	150	6.0	0.14	0.9	1.1	0.25	C
12	22	9	7.3	19-19.9	155-11.3	4.9	1.5	22	164	4.7	0.13	0.9	0.8	0.23	C
12	23	54	24.2	19-22.9	155-14.4	4.3	0.8	15	116	2.8	0.06	0.4	0.6	0.08	B
13	1	22	10.3	19-23.2	155-14.9	3.5	0.0	11	104	2.3	0.06	0.2	0.8	0.05	A
13	1	25	26.1	19-23.1	155-15.1	2.6	2.0	24	108	1.8	0.07	0.5	0.8	0.20	B
13	2	7	57.4	19-22.3	155-17.9	3.3	1.3	16	75	2.6	0.03	0.3	0.5	0.08	A
13	4	4	16.1	19-21.8	155-24.9	8.3	1.3	19	61	4.0	0.07	0.6	0.5	0.15	B
13	5	8	56.8	19-25.4	155-16.7	3.0	1.0	14	123	1.1	0.06	0.4	0.6	0.09	B
13	6	44	5.4	18-48.4	155-17.4	8.0*	3.1	25	267	43.0	0.45	3.0		0.17	D
13	6	47	18.2	18-52.0	155-19.5	8.0*	2.0	20	260	35.4	0.25	1.6		0.10	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 13	8	3	58.4	19-23.4	155-15.0?	0.4	0.8	10	99	2.4	0.21	0.5	0.5	0.17	B
13	8	6	26.9	19-19.1	155-13.3	5.3	1.6	21	150	6.3	0.11	0.8	0.7	0.18	C
13	8	25	19.2	19-20.4	155-12.2	8.3	2.1	18	141	3.9	0.07	0.6	1.3	0.11	B
13	13	22	37.4	19-22.8	155-22.8	8.0*	1.5	17	116	4.9	0.10	0.8		0.18	B
13	13	57	42.9	19-18.8	155-13.1?	0.6	0.7	16	194	6.8	3.51	1.4	6.6	0.29	C
13	13	59	32.2	18-47.8	155-17.4	8.0*	4.3	27	268	44.0	0.34	2.2		0.13	D
13	16	23	2.3	19-25.3	155-24.9	8.0*	1.2	16	64	8.4	0.04	0.3		0.08	C
13	18	16	9.0	19-19.7	155-10.9	4.9	1.4	17	169	4.8	0.16	1.1	1.0	0.24	C
13	18	44	19.3	19-21.9	155- 7.0?	0.1	1.5	19	132	5.1	0.13	1.3	2.0	0.22	C
13	20	7	51.3	18-46.8	155-17.3	8.0*	3.0	26	271	45.6	0.44	2.9		0.15	D
14	0	29	16.2	18-47.9	155-20.6	1.3*	2.7	26	269	39.6	0.45	2.9		0.17	D
14	0	40	6.0	19-53.3	155-31.7	30.7	2.1	16	134	13.9	0.17	1.0	2.2	0.10	B
14	3	24	24.9	19-31.0	155-54.4	9.5	2.6	23	110	1.6	0.12	1.2	1.2	0.17	B
14	3	31	42.4	19-19.5	155-12.2	2.6	1.2	21	169	5.6	0.14	0.8	1.1	0.23	C
14	4	41	44.6	18-51.6	155-19.6	8.6	2.6	23	257	36.1	0.43	2.6	2.5	0.18	D
14	7	3	9.0	18-52.9	155-17.0	8.2	2.4	13	287	36.1	0.79	4.4	2.8	0.12	D
14	11	55	33.6	19-20.2	155- 7.2?	2.2	2.1	19	163	5.8	0.26	0.8	0.8	0.19	C
14	12	16	29.7	19-23.8	155-14.8	3.2	1.1	12	89	1.9	0.07	0.4	1.6	0.09	A
14	12	23	39.2	18-46.9	155-16.8	8.0*	3.0	16	277	46.1	0.56	3.6		0.14	D
14	14	35	40.7	19-22.4	155-23.1	8.0	2.1	20	93	4.0	0.06	0.6	1.2	0.15	B
14	14	48	26.1	19-17.1	155-22.8	3.6		16	131	5.9	0.08	0.8	1.0	0.18	B
14	16	26	49.9	19-22.1	155-23.4	7.7	1.8	15	153	3.6	0.09	0.7	0.4	0.12	C
14	16	33	10.0	19-23.3	155-14.7	4.8	1.1	13	102	2.7	0.10	0.4	1.0	0.09	A
14	22	28	3.7	19-24.9	155-23.4?	8.2	1.4	21	60	6.8	0.07	0.6	0.5	0.15	B
14	22	29	7.4	19- 9.8	155-41.3	3.2	2.7	21	128	11.9	0.12	0.8	0.8	0.16	C
15	3	45	12.6	19-18.8	155-15.5	6.0	1.5	22	168	4.1	0.11	0.8	0.6	0.18	C
15	4	30	24.9	19-23.4	155- 3.0	2.1	2.2	25	120	6.4	0.48	0.8	1.7	0.21	C
15	4	56	35.7	19-23.3	155-15.2	0.6	0.7	13	103	2.0	0.81	0.3	1.7	0.12	B
15	5	35	7.5	18-52.6	155-16.6?	0.0	2.4	23	255	36.9	0.41	2.2	1.0	0.18	C
15	7	31	1.4	19-22.6	155-24.4	8.1	1.3	21	52	4.7	0.07	0.6	0.5	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	15	12	2 12.3	19-21.0	155- 6.3	8.0*	1.7	14	147	6.2	0.11	1.1		0.14	C
	15	13	52 59.2	19-23.6	155-14.9	2.5	0.1	12	95	2.2	0.09	0.5	2.2	0.11	B
	15	13	56 51.9	19-13.2	155-32.9	31.1		22	77	8.1	0.22	1.1	2.5	0.14	B
	15	14	13 55.1	19-13.5	155-33.1	30.7	2.3	27	75	7.4	0.20	1.0	2.3	0.17	B
	15	14	57 28.4	19-13.8	155-33.8	34.1	1.5	14	103	6.2	0.22	1.0	2.4	0.08	B
	15	16	52 6.3	19-15.2	155- 0.4	34.2	1.1	24	221	9.8	0.24	1.4	1.9	0.12	C
	16	2	55 59.8	19-15.4	155-22.9?	0.0	1.3	18	141	8.8	4.43	0.8	8.4	0.19	C
	16	3	45 56.0	19-18.7	155-21.3?	1.9	1.2	15	108	4.5	0.07	0.4	0.8	0.11	B
	16	4	1 18.9	19-18.9	155- 8.4	2.9	2.0	23	163	6.3	0.16	0.9	1.0	0.23	C
	16	4	11 29.6	18-48.3	155-15.5?	0.2	2.7	22	268	44.7	0.36	2.8	1.1	0.15	D
	16	4	22 30.9	20- 1.0	155-18.2	8.6	1.9	19	232	14.6	0.49	2.7	2.8	0.16	D
	16	15	1 59.4	19-19.6	155-11.9	5.5	2.0	22	148	5.4	0.11	0.8	0.7	0.21	C
	16	18	25 59.4	19-16.1	155-22.8	3.7	1.9	23	137	6.9	0.09	0.7	0.8	0.20	B
	16	18	54 51.4	19-15.2	155-23.7?	0.0	1.0	14	207	9.2	7.22	1.6	13.6	0.25	C
	16	21	10 53.5	19-19.7	155-15.2	5.7	1.7	22	140	4.0	0.07	0.5	0.5	0.15	B
	16	21	17 14.0	19-19.4	155-15.1	6.8	1.6	22	143	4.1	0.07	0.5	0.4	0.13	B
	16	23	20 27.1	18-52.0	155-16.5	3.9	2.4	21	256	38.0	0.30	1.7	2.5	0.13	C
	17	1	38 51.2	18-47.8	155-17.5	1.0	2.5	24	268	43.9	0.32	2.7	1.8	0.14	D
	17	2	53 6.8	19-15.6	155-22.7?	0.0	2.1	22	155	7.2	3.91	0.7	7.4	0.19	C
	17	2	55 23.7	19-15.8	155-23.2?	2.8	1.5	17	160	6.3	2.34	0.9	4.4	0.19	C
	17	3	0 37.9	19-20.5	155-13.8	5.6	1.4	16	174	4.2	0.11	0.8	0.6	0.15	C
	17	4	13 33.3	19-24.7	155-14.6?	2.0	1.0	14	73	0.4	0.18	0.5	0.4	0.15	B
	17	8	4 13.1	19-18.2	155-23.6	2.8	2.9	22	112	3.7	0.08	0.6	0.8	0.19	B
	17	11	23 19.3	18-48.1	155-18.0	8.0*	2.6	23	267	43.1	0.36	2.4		0.12	D
	17	11	55 26.8	19-18.3	155-24.1	2.5	1.2	14	108	3.8	0.06	0.6	1.1	0.14	B
	17	17	6 11.0	19-20.5	155-13.7	5.7	0.7	21	149	4.1	0.09	0.7	0.6	0.19	B
	17	19	23 4.6	19-19.7	155-46.2?	4.2	2.6	20	113	12.6	0.19	1.1	2.1	0.12	C
	17	19	56 35.9	18-47.4	155-17.4	8.0*	2.4	23	269	44.7	0.49	3.2		0.17	D
	18	0	24 52.0	19-21.5	155-14.9	6.6	0.8	22	127	2.4	0.08	0.7	0.5	0.20	C
	18	3	7 15.5	19-22.9	155-14.3	1.2	0.7	14	112	2.9	0.07	0.3	0.3	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	18	12	8	0.3	19-19.1	155-15.4	6.4	0.1	15	205	3.9	0.21	1.3	0.7	0.18	C
	18	12	32	25.7	19-18.4	155-12.3?	0.0	0.9	18	180	7.5	5.48	1.0	10.3	0.23	C
	18	14	49	50.0	19-18.6	155-11.2	2.3	0.8	17	180	6.7	0.20	1.1	1.4	0.23	C
	18	16	37	41.0	19-26.4	155-29.0	4.1	1.8	14	83	11.7	0.10	0.7	1.4	0.19	C
	18	16	38	43.5	19-26.6	155-28.6	7.0	3.1	24	46	11.0	0.07	0.5	0.5	0.14	B
	18	17	22	23.9	19-23.0	155-14.4	1.9	1.7	19	109	2.8	0.12	0.5	0.4	0.17	B
	18	18	52	51.4	19-23.2	155-14.8?	2.2	1.1	18	105	2.4	0.11	0.4	0.5	0.15	B
	18	19	1	7.5	19-23.5	155-17.6?	13.5	1.9	23	53	1.2	0.05	0.7	0.4	0.14	B
	18	19	3	2.1	19-23.3	155-14.6	4.0	1.0	11	102	2.5	0.13	0.5	1.2	0.06	A
	18	20	43	36.9	19-21.1	155-15.1	7.8	2.9	25	131	2.8	0.06	0.6	0.3	0.14	C
	18	21	51	5.0	19-23.4	155-14.7	2.5	1.1	11	100	2.5	0.10	0.4	4.0	0.08	B
	18	21	52	5.0	19-23.3	155-14.4	4.5	0.5	11	106	2.6	0.08	0.4	0.8	0.06	A
	19	3	18	48.9	19-18.1	155-12.9	6.0	1.0	13	232	8.0	0.30	1.7	0.9	0.19	C
	19	6	37	42.4	19-33.5	155- 6.6	40.6	1.8	21	144	7.8	0.19	0.8	1.8	0.09	B
	19	7	48	41.4	19-19.3	155-12.1	8.0*	1.4	15	172	6.0	0.08	0.6		0.08	C
	19	8	37	11.1	19-19.3	155-14.7	8.0*	1.0	14	191	5.0	0.07	0.4		0.06	C
	19	12	22	10.4	19-23.5	155-14.9	5.4	1.9	16	97	2.4	0.07	0.4	0.7	0.08	B
	19	13	9	23.5	19-19.8	155-14.2	8.0*	1.4	11	158	5.6	0.07	0.6		0.09	C
	19	13	11	16.2	19-19.6	155-13.9	8.0*	1.0	15	160	5.7	0.08	0.6		0.11	C
	19	13	12	43.9	19-19.6	155-14.4	8.0*	1.1	13	160	5.4	0.09	0.7		0.13	C
	19	13	18	35.2	19-24.6	155-16.0	1.3	1.0	15	69	1.7	0.06	0.3	0.3	0.11	B
	19	15	35	4.2	19-10.4	155-34.1	40.2	2.0	19	106	9.7	0.21	0.8	2.1	0.10	B
	19	17	52	13.4	18-58.9	155-26.4	36.9	-0.2	24	223	23.8	0.38	1.9	3.3	0.15	C
	19	18	11	4.7	18-52.9	155- 7.1	8.0*	-0.5	24	261	47.6	0.50	3.2		0.17	D
	19	19	4	14.8	19-24.6	155-16.7?	1.8	-0.6	8	91	0.7	0.08	0.5	0.4	0.11	B
	19	19	6	11.7	19-23.4	155-14.7	2.1*	-0.2	9	103	2.5	0.05	0.3		0.07	B
	19	19	29	36.6	19-23.3	155-14.7	5.2	-1.4	15	102	2.6	0.08	0.4	0.8	0.07	A
	19	19	34	29.2	19-23.3	155-14.9	2.1*		10	104	2.5	0.04	0.3		0.08	B
	19	19	36	42.2	19-23.3	155-14.6	5.0		13	100	2.5	0.05	0.2	0.5	0.05	A
	19	19	38	49.1	19-23.3	155-14.7	4.9		15	100	2.6	0.07	0.3	0.7	0.08	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 19	19	40	9.4	19-23.4	155-14.9	2.1	-7.7	10	103	2.5	0.06	0.3	0.3	0.08	A
19	19	42	38.1	19-23.2	155-15.1	2.6	-0.8	11	104	2.1	0.07	0.3	4.3	0.09	B
19	19	45	6.8	19-23.6	155-15.1	3.9	-7.7	13	96	2.5	0.07	0.3	0.8	0.08	A
19	19	49	2.9	19-23.4	155-14.8	4.4	-7.8	11	100	2.5	0.09	0.3	0.9	0.06	A
19	19	58	23.2	19-23.3	155-14.8	2.0	-0.2	10	104	2.5	0.06	0.3	0.2	0.07	A
19	20	18	4.1	19-11.0	155-31.1	46.4	1.6	21	100	6.4	0.35	1.5	3.3	0.14	B
19	20	22	7.4	19-11.8	155-29.6	43.3		21	78	5.2	0.36	1.6	3.3	0.14	B
19	20	37	22.9	18-46.7	155-16.1	8.0*	-0.4	21	271	47.0	0.42	2.7		0.13	D
19	21	36	47.6	19-23.4	155-14.6	4.3	0.3	13	99	2.5	0.06	0.3	0.7	0.07	A
19	21	55	11.2	19-24.0	155-15.7	1.8	-1.2	8	125	2.5	0.06	0.3	0.4	0.07	B
19	21	57	32.4	19-24.0	155-15.6	1.8	-1.0	10	71	2.6	0.03	0.2	0.1	0.06	A
19	22	19	19.1	19-23.7	155-14.8	4.8	-0.1	10	91	2.0	0.13	0.4	1.1	0.07	A
19	22	34	26.4	19-24.2	155-16.2	1.7	-0.3	12	66	1.9	0.05	0.3	0.3	0.09	B
19	22	50	16.0	19-20.0	155-11.3	8.4	1.2	13	145	4.6	0.09	0.8	1.7	0.11	B
19	23	45	32.0	19-18.5	155-15.8	8.3	1.5	18	174	4.0	0.09	0.7	1.2	0.13	C
20	0	54	7.8	19-23.3	155-14.9	2.4	0.5	9	194	2.5	0.13	0.5	2.5	0.06	C
20	5	42	59.1	18-52.5	155-16.7	6.2	1.7	20	255	37.0	1.23	2.4	8.0	0.15	D
20	6	59	8.1	19-50.6	155-18.8?	5.9	1.9	11	176	6.0	0.19	1.4	2.3	0.09	C
20	10	42	55.6	19-23.1	155-14.7	2.1		10	107	2.5	0.08	0.3	0.3	0.06	A
20	10	47	0.8	19-23.1	155-14.4	4.3		10	106	2.9	0.05	0.2	0.5	0.03	A
20	10	51	43.7	19-23.8	155-14.9	3.7	-0.2	8	90	1.9	0.10	0.3	0.9	0.04	A
20	11	42	39.6	18-37.3	155-14.6	8.0*	-4.2	15	291	59.8	1.12	7.0		0.19	D
20	12	4	50.7	18-43.6	155-16.3	8.0*	-4.6	16	285	50.3	0.67	4.3		0.14	D
20	12	14	59.0	18-44.9	155-15.7	8.0*	-4.4	14	282	49.8	0.60	3.9		0.14	D
20	12	36	56.9	18-44.4	155-15.8	8.0*	1.8	16	283	50.1	0.61	3.9		0.14	D
20	13	35	32.4	18-50.3	155-18.2	27.8*	-4.4	15	267	39.3	0.43	3.2		0.22	D
20	13	44	28.6	19-19.4	155-13.7	8.0*	1.9	13	166	5.9	0.07	0.5		0.09	C
20	14	27	8.4	19-23.7	155-15.1	1.1	1.9	11	91	2.2	0.06	0.2	0.4	0.08	A
20	15	25	25.8	18-51.7	155-16.8	6.5	-0.5	12	263	38.2	1.37	2.9	8.8	0.11	D
20	16	4	6.9	19- 8.1	155-41.5?	2.9	0.7	17	137	14.7	0.21	1.4	1.5	0.30	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 20	16	43	49.8	19-24.0	155-15.8	1.5	0.7	9	64	2.3	0.07	0.3	0.4	0.10	B
20	16	58	19.0	19-24.8	155-16.7?	1.8	0.3	7	105	0.5	0.04	0.2	0.2	0.04	B
20	17	15	22.8	19-24.1	155-16.0	3.2	0.9	7	107	2.2	0.06	0.1	0.6	0.02	B
20	17	16	56.2	19-23.6	155-15.1	2.8	0.8	10	96	2.4	0.09	0.4	1.6	0.08	A
20	18	8	44.6	19-23.6	155-15.3	2.1*	0.4	11	88	2.5	0.04	0.3		0.08	B
20	18	23	19.7	19-23.8	155-15.3	1.7	0.7	9	84	2.3	0.07	0.3	0.3	0.09	A
20	18	57	49.2	19-23.7	155-15.1	2.0	0.8	10	89	2.3	0.15	0.6	0.6	0.11	B
20	21	33	41.7	19-25.3	155-16.2	1.8	-0.1	9	124	0.9	0.06	0.4	0.3	0.09	B
20	22	4	42.2	19-19.8	155-12.9	8.2	1.6	19	145	5.0	0.07	0.5	0.3	0.11	B
20	23	18	3.8	19-23.9	155-15.4?	6.1	1.0	8	145	2.4	2.19	0.8	4.5	0.18	B
20	23	27	13.9	19-24.0	155-15.6	1.7	0.6	7	131	2.5	0.06	0.3	0.3	0.06	B
20	23	28	26.7	19-23.4	155-14.9	1.3	0.7	9	100	2.5	0.07	0.3	0.4	0.10	B
20	23	44	13.8	19-23.3	155-14.8	2.1*	0.9	9	104	2.6	0.04	0.3		0.06	B
21	0	37	14.3	19-25.9	155-16.1	7.3	1.4	7	235	1.0	2.98	6.5	15.3	0.20	D
21	0	37	40.4	19-23.0	155-14.2	3.4	0.5	7	255	3.1	1.07	3.2	5.6	0.06	D
21	0	46	12.7	19-23.9	155-14.9	4.1	1.2	13	87	1.8	0.05	0.2	0.6	0.06	A
21	0	47	41.4	19-24.0	155-15.4	4.9	2.1	15	85	2.2	0.09	0.4	0.9	0.12	B
21	1	8	12.2	19-24.3	155-15.8	2.2*	0.6	10	77	2.2	0.03	0.2		0.06	B
21	1	8	59.6	19-24.2	155-16.0	1.6	0.4	11	62	2.2	0.04	0.2	0.2	0.06	A
21	1	9	37.7	19-23.3	155-14.5	1.9	1.0	11	100	2.6	0.07	0.3	0.3	0.08	A
21	1	12	7.9	19-24.1	155-15.8	2.2*	0.7	11	65	2.4	0.03	0.2		0.06	B
21	1	15	33.3	19-24.2	155-16.1?	2.4	0.5	7	99	2.0	0.03	0.2	0.3	0.04	B
21	1	17	58.7	19-24.0	155-15.5	2.2*	0.7	7	135	2.4	0.07	0.5		0.08	C
21	1	18	46.3	19-24.1	155-15.8	2.2	0.8	7	114	2.4	0.04	0.2	0.2	0.02	B
21	1	21	5.0	19-24.0	155-15.9	1.7	0.7	9	66	2.6	0.03	0.2	0.2	0.04	A
21	1	21	59.0	19-23.9	155-15.8	2.2*	0.9	7	123	2.2	0.08	0.5		0.09	C
21	1	22	1.1	19-24.1	155-15.6	4.7	2.1	16	71	2.4	0.08	0.4	0.8	0.11	B
21	1	25	58.5	19-24.9	155-15.0	4.2	0.9	8	162	1.2	0.31	0.9	1.8	0.07	B
21	1	26	27.5	19-23.8	155-15.3	1.6	0.4	8	156	2.5	0.08	0.4	0.3	0.07	B
21	1	26	39.7	19-24.0	155-14.9	4.9	0.8	15	83	1.6	0.11	0.5	1.1	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 21	1	31	33.8	19-24.1	155-15.9	2.1	0.9	12	63	2.3	0.06	0.2	0.2	0.06	A
21	1	34	4.3	19-24.1	155-15.9	2.2*	0.7	7	113	2.3	0.04	0.2		0.04	C
21	1	34	37.0	19-24.1	155-15.8	2.0	0.2	7	118	2.4	0.05	0.3	0.2	0.04	B
21	1	35	55.7	19-24.1	155-15.9	2.1	1.0	8	61	2.2	0.04	0.2	0.2	0.05	A
21	1	37	37.9	19-24.1	155-15.7	3.6	0.6	12	76	2.5	0.05	0.2	0.5	0.05	A
21	1	38	26.1	19-24.1	155-15.9	1.7	0.7	8	111	2.3	0.06	0.4	0.3	0.08	A
21	1	39	24.6	19-24.1	155-15.8	2.3*	0.4	7	114	2.3	0.03	0.2		0.04	C
21	1	40	19.6	19-23.9	155-15.7	2.3*	0.7	7	128	2.4	0.08	0.5		0.08	C
21	1	40	24.3	19-24.1	155-15.0	5.0	0.8	12	80	1.5	0.18	0.7	1.5	0.13	B
21	1	40	44.8	19-24.3	155-15.9	2.2*	0.5	8	104	2.2	0.06	0.5		0.09	B
21	1	41	2.1	19-24.1	155-15.9	1.7	0.8	8	110	2.3	0.06	0.4	0.3	0.08	A
21	1	41	14.1	19-24.2	155-15.8	3.5	1.1	11	80	2.3	0.07	0.3	0.9	0.08	A
21	1	42	28.4	19-24.0	155-15.9	2.2*	0.6	11	62	2.1	0.03	0.2		0.06	B
21	1	43	14.9	19-24.1	155-15.8	2.2*	0.6	8	112	2.4	0.04	0.3		0.05	B
21	1	49	35.7	19-24.0	155-15.5	2.1*	0.6	8	135	2.5	0.06	0.4		0.06	C
21	2	5	18.7	19-24.2	155-16.1?	1.6	-0.0	7	100	2.0	0.21	0.6	3.1	0.08	B
21	2	13	46.4	19-24.2	155-16.2	2.2*	0.2	7	95	1.9	0.03	0.2		0.03	C
21	2	23	7.8	19-23.8	155-15.3	3.3	1.1	8	84	2.4	0.13	0.4	1.5	0.05	A
21	4	34	30.8	19-24.0	155-15.6	1.8	0.9	9	69	2.6	0.05	0.3	0.2	0.07	A
21	5	25	12.8	19-23.6	155-15.0	2.7	1.0	9	94	2.3	0.10	0.3	2.1	0.06	B
21	6	22	7.0	19-24.5	155-23.5	8.0*	0.6	13	185	6.8	0.09	0.6		0.09	C
21	6	22	56.6	19-24.0	155-15.7	1.7	0.9	8	69	2.4	0.05	0.3	0.3	0.07	A
21	7	9	21.9	19-25.9	155-16.0	3.4	0.5	10	177	0.9	0.10	0.5	0.9	0.08	B
21	8	58	20.4	19-23.6	155-15.2	2.1*	0.7	9	95	2.5	0.04	0.3		0.06	B
21	9	21	49.5	18-53.4	155-20.9	11.0*	1.8	16	254	32.2	0.35	2.4		0.13	D
21	9	28	20.6	18-46.3	155-16.3	8.0*	4.0	28	272	47.4	0.54	3.5		0.16	D
21	10	19	39.5	19-23.9	155-14.9	4.6	0.7	12	87	1.8	0.04	0.2	0.4	0.03	A
21	12	24	40.0	19-23.3	155-14.7	2.1*	1.1	9	106	2.7	0.05	0.3		0.07	B
21	12	37	14.5	19-23.3	155-14.6	2.1*	1.1	9	107	2.7	0.04	0.3		0.06	B
21	13	26	46.3	19-24.0	155-15.4	4.7	0.6	15	75	2.3	0.12	0.5	1.2	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 21	13	31	50.2	19-23.3	155-14.8	2.2*	0.9	9	105	2.5	0.06	0.4		0.08	B
21	17	5	6.6	19-23.2	155-14.5	5.5	2.5	16	103	2.7	0.06	0.4	0.6	0.10	B
21	17	20	18.0	19-20.4	155-11.8	7.7	0.9	13	156	4.1	0.09	0.8	0.5	0.12	C
21	17	52	28.9	19-19.0	155-15.2	6.7	1.3	21	146	4.3	0.08	0.6	0.5	0.14	B
21	18	31	32.9	19-23.4	155-14.6	4.4	0.4	14	97	2.4	0.07	0.3	0.8	0.08	A
21	18	36	11.6	19-23.3	155-14.7	2.0	0.7	9	104	2.6	0.06	0.3	0.2	0.07	A
21	18	36	37.2	19-12.8	155- 4.2	46.2	2.3	25	216	13.3	0.29	1.5	2.1	0.12	C
21	19	27	36.7	19-23.2	155-14.3	5.5	1.0	16	104	2.8	0.06	0.4	0.6	0.10	B
21	19	47	50.8	19-23.9	155-15.5	1.7	0.3	10	76	2.4	0.04	0.2	0.2	0.06	A
21	21	24	53.6	19-23.2	155-15.1	0.9	0.2	12	104	2.1	0.05	0.2	0.3	0.08	A
21	21	38	27.2	19-23.6	155-14.9	2.8	0.6	12	95	2.2	0.10	0.5	2.4	0.13	B
21	21	43	6.8	19-23.3	155-14.6	5.4	1.0	16	102	2.6	0.08	0.4	0.8	0.09	A
21	23	25	21.1	19-23.3	155-15.1	1.5	0.5	12	103	2.1	0.07	0.3	0.3	0.10	B
21	23	28	51.3	19-23.2	155-15.1	1.5	0.7	13	104	2.1	0.06	0.3	0.3	0.10	B
21	23	32	9.4	19-23.1	155-15.1	1.2	1.1	9	109	2.0	0.06	0.3	0.4	0.09	A
22	0	8	19.7	19-20.8	155-17.6	25.3	1.6	25	70	1.3	0.12	0.8	1.2	0.14	B
22	0	17	50.6	19-21.0	155-17.6	24.9	1.5	22	73	1.8	0.11	0.7	1.2	0.11	B
22	2	26	15.2	19-23.1	155-14.3	3.6	0.8	11	106	2.9	0.07	0.3	1.0	0.06	A
22	2	38	46.1	19-21.0	155-12.2	8.1	1.3	20	135	2.8	0.08	0.7	0.4	0.15	B
22	2	56	52.9	19-20.1	155-11.6	8.1	0.7	12	161	4.8	0.07	0.6	1.1	0.06	C
22	4	4	53.6	19-23.7	155-15.2	1.9	0.8	9	88	2.3	0.06	0.3	0.2	0.08	A
22	7	7	6.8	19-23.3	155-14.7	2.0	1.0	9	104	2.6	0.13	0.5	0.5	0.07	A
22	7	57	9.5	19-13.7	155-22.7	2.5	2.8	25	156	8.5	0.13	0.8	0.9	0.21	C
22	10	5	19.7	18-49.1	155-17.9	1.7*	2.3	16	270	41.5	0.58	3.7		0.16	D
22	11	25	41.9	19-24.3	155-17.3	1.5	0.3	9	97	1.2	0.05	0.3	0.3	0.08	A
22	12	40	18.8	19-13.9	155-22.6	3.0	3.2	25	156	8.6	0.12	0.7	0.8	0.19	C
22	12	59	30.4	19- 9.9	155-37.3?	0.0	1.6	14	120	20.9	4.73	2.6	27.8	0.44	D
22	13	12	5.9	19-24.4	155-27.7	7.1	1.4	17	58	10.9	0.07	0.5	0.5	0.11	B
22	13	35	47.2	19-13.3	155-22.8?	0.0	1.8	20	157	8.9	6.29	1.1	11.9	0.28	C
22	14	37	32.2	19-19.4	155- 8.9	8.0*	1.5	14	176	5.2	0.10	0.7		0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	22	15	22 23.4	18-49.6	155-17.3?	29.4*	2.6	22	202	4.1	0.32	2.3		0.19	C
	22	15	46 19.0	18-38.7	155-15.1	8.0*	2.3	14	288	57.4	1.18	7.4		0.19	D
	22	16	20 48.9	19-34.8	155- 8.1	10.7*	1.6	9	334	21.6	5.99	29.5		0.13	D
	22	17	51 52.1	19-23.6	155-14.8	5.0	1.6	15	94	2.2	0.08	0.4	0.8	0.08	B
	22	19	25 0.1	19-23.5	155-15.0	1.4	0.7	10	99	2.5	0.06	0.3	0.3	0.10	B
	22	20	2 33.2	19-22.9	155-14.4	2.7	1.0	11	112	2.9	0.08	0.3	2.1	0.07	B
	22	20	5 19.4	18-50.6	155-16.1	1.7*	2.8	24	277	40.6	0.61	3.8		0.17	D
	22	20	45 16.2	19-16.2	155-22.1	3.7	1.3	24	140	6.9	0.13	1.0	1.1	0.23	C
	22	20	52 1.6	19-16.9	155-22.7	3.4	1.5	22	132	6.2	0.10	0.7	0.9	0.20	C
	22	22	10 28.7	19-22.9	155-14.4	5.7	0.5	14	114	2.8	0.07	0.5	0.6	0.09	B
	23	1	59 58.9	19-23.8	155-15.8	1.1	0.7	9	71	2.1	0.04	0.2	0.3	0.05	A
	23	2	26 45.7	19-25.5	155-16.1	1.5	0.4	7	154	0.7	0.08	0.5	0.3	0.07	B
	23	5	6 33.4	19-20.6	155-11.7?	8.2	1.1	17	154	3.9	0.09	0.7	0.5	0.12	C
	23	7	5 48.9	20- 8.3	155-51.2	28.2	2.3	27	278	7.8	0.25	1.5	2.3	0.12	C
	23	8	13 34.7	19-19.5	155-15.5	7.3	2.0	21	142	3.5	0.06	0.5	0.4	0.12	B
	23	11	46 25.8	19-25.6	155-16.5	2.6	0.5	10	126	1.4	0.05	0.4	0.9	0.07	B
	23	13	31 19.1	19-21.1	155-17.8	25.7	2.3	27	62	2.0	0.10	0.7	1.1	0.13	B
	23	13	53 27.4	19-16.5	155-22.3	2.9	1.2	17	137	6.9	0.11	0.8	1.2	0.20	C
	23	14	25 5.3	19-25.6	155-16.8	3.7	0.9	12	130	1.3	0.09	0.5	0.8	0.10	B
	23	16	15 54.8	19-25.6	155-16.5	2.5	0.6	12	152	1.4	0.04	0.3	0.7	0.07	B
	23	18	28 49.9	19-18.9	155-20.4	6.5	1.2	16	144	3.6	0.13	1.0	0.7	0.18	C
	23	18	46 55.9	18-51.1	155-17.3?	10.8	2.5	21	259	38.6	0.42	2.4	3.2	0.18	D
	23	18	56 36.3	19-13.7	155-22.1?	0.0	1.6	22	158	9.4	4.75	1.0	8.9	0.24	C
	23	19	23 16.7	18-47.6	155-15.5	8.0*	3.4	26	269	45.9	0.48	3.1		0.17	D
	23	19	29 20.2	19-18.0	155-11.0?	7.9	1.4	11	187	7.8	0.58	3.5	4.1	0.47	D
	23	19	34 14.6	18-48.7	155-16.6	8.0*	2.4	22	263	43.3	0.52	3.4		0.18	D
	23	19	52 36.2	19-25.7	155-16.5?	1.9	0.5	10	126	1.6	0.09	0.4	0.3	0.07	B
	23	20	2 9.1	18-46.9	155-15.2	8.0*	2.4	20	271	47.2	0.60	3.9		0.17	D
	23	20	3 59.8	18-42.6	155- 9.3	8.0*	2.0	15	293	59.4	1.31	8.2		0.19	D
	23	20	5 48.4	18-50.8	155-19.5	7.2	2.6	13	277	37.5	2.01	4.7	11.4	0.14	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 23	20	18	24.4	18-51.6	155-18.4	6.8	2.6	14	262	36.9	1.29	2.8	8.1	0.12	D
23	20	47	19.7	19-18.6	155-14.4	7.9	1.8	19	152	5.9	0.07	0.5	0.4	0.12	C
23	20	49	13.0	19-25.6	155-16.9	2.0	0.6	14	124	1.2	0.08	0.5	0.3	0.13	B
23	20	56	53.6	19-25.4	155-16.6	3.1	0.9	15	123	1.1	0.07	0.4	0.7	0.10	B
23	21	39	28.4	19-21.9	155-25.4	6.8	1.3	17	117	4.8	0.10	0.8	0.7	0.19	B
23	21	50	41.7	19-21.6	155-25.8?	0.1	1.1	23	68	5.1	1.51	0.8	5.6	0.26	C
23	22	30	32.4	19-21.2	155-17.6	21.0	1.0	12	103	3.7	0.16	1.0	1.7	0.12	B
23	22	32	30.2	19-21.1	155-17.8	21.0	1.3	15	74	1.9	0.14	1.0	1.5	0.13	B
23	22	58	13.0	19-21.3	155-17.7	21.1	1.4	15	70	2.3	0.14	0.9	1.5	0.11	B
23	23	8	12.4	19-21.1	155-18.2	24.4	1.3	21	46	2.3	0.11	0.7	1.2	0.12	B
24	0	7	42.2	19-21.1	155-18.1	23.3	1.1	15	69	2.2	0.15	1.0	1.6	0.13	B
24	1	4	53.5	19-21.5	155-17.9	25.7	2.1	25	66	2.7	0.10	0.7	1.0	0.12	B
24	1	7	44.3	19-23.4	155-15.2?	1.9	1.6	20	98	2.3	0.06	0.5	0.9	0.16	B
24	2	2	28.0	19-20.5	155-14.1	3.4	0.9	14	195	4.4	0.23	1.3	1.5	0.24	C
24	2	4	12.8	19-25.6	155-16.5	2.8	1.3	11	125	1.5	0.06	0.4	0.9	0.09	B
24	2	13	36.3	19-25.3	155-16.1	2.0	0.6	10	124	1.7	0.09	0.5	0.3	0.08	B
24	2	17	52.4	19-17.5	155-12.7?	0.0	1.7	20	183	9.2	7.86	1.4	14.8	0.29	C
24	2	28	35.6	19-18.7	155-15.6	5.8	1.8	20	168	4.1	0.10	0.7	0.6	0.16	C
24	3	5	50.5	19-21.9	155-25.1	6.8	1.6	17	115	4.5	0.08	0.8	0.7	0.16	B
24	4	6	9.2	19-28.3	155-53.3	6.9	1.7	13	236	22.7	1.44	2.2	10.2	0.11	D
24	4	46	41.0	19-21.3	155-18.2	24.0	2.1	21	68	2.5	0.11	0.8	1.1	0.11	B
24	4	59	14.7	19-20.6	155-19.2	4.3	0.7	14	73	3.3	0.04	0.4	0.4	0.08	A
24	4	59	59.1	19-18.7	155-15.3	5.5	1.0	19	148	4.4	0.12	0.8	0.8	0.21	C
24	7	12	56.2	19-29.2	155-39.8	3.0	1.6	17	98	26.9	0.14	0.8	1.2	0.15	C
24	9	22	35.1	19-21.2	155-18.2	23.3	2.0	19	52	2.5	0.11	0.7	1.2	0.10	B
24	18	37	44.0	19-16.0	155-22.6	1.0	1.8	20	140	7.3	1.44	0.9	5.3	0.22	C
24	19	48	55.6	19-21.5	155-18.1	22.7	2.0	21	58	2.9	0.08	0.6	0.8	0.09	B
25	5	21	22.1	19-20.6	155-13.1	6.4	1.7	17	149	3.5	0.11	0.9	0.8	0.20	B
25	5	49	49.7	18-50.6	155-16.7	6.2	2.0	18	261	40.0	1.66	3.6	10.5	0.16	D
25	7	59	31.2	19-23.2	155-14.8	2.1	0.9	8	107	2.5	0.12	0.5	0.4	0.07	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 25	8	43	29.4	19-24.7	155-16.6?	0.9	0.3	8	141	0.8	0.14	0.4	0.3	0.11	B
25	9	18	34.0	19-24.1	155-15.8	1.9	0.8	7	118	2.4	0.09	0.5	0.5	0.09	B
25	10	30	19.6	18-50.0	155-15.8	1.5*	2.2	18	269	41.8	0.68	4.3		0.19	D
25	10	32	3.3	19-22.1	155-16.9	19.5	1.5	14	93	1.9	0.16	0.9	1.5	0.09	A
25	13	9	32.3	19-19.9	155-14.3	8.0*	1.0	12	182	5.5	0.12	0.9		0.14	C
25	13	48	39.5	19-23.5	155-29.0?	7.5	2.7	26	41	11.7	0.12	0.6	0.8	0.20	C
25	14	51	50.8	19-24.9	155-17.0	1.7	0.5	9	144	0.0	0.06	0.4	0.2	0.08	B
25	15	48	57.6	19- 8.4	155-30.3	45.0	1.8	19	158	4.8	0.43	1.8	4.1	0.17	C
25	19	24	57.9	19-23.5	155-14.4	5.0	0.7	11	103	2.2	0.10	0.4	0.9	0.07	A
25	20	1	14.2	19-25.4	155-16.2	2.0	0.4	9	125	1.7	0.10	0.4	0.3	0.07	B
25	20	21	49.8	19-23.4	155-14.9	3.4	0.4	10	99	2.5	0.08	0.4	1.1	0.06	A
25	20	40	35.2	19-24.6	155-16.5	1.3	0.4	10	139	1.0	0.04	0.3	0.2	0.07	B
25	21	22	8.3	19-19.6	155-11.4	8.6	1.1	13	169	5.3	0.09	0.7	1.5	0.08	C
25	22	3	12.1	19-24.8	155-16.4	1.4	0.6	8	155	1.1	0.02	0.1	0.1	0.03	B
25	23	41	13.9	19-21.0	155-17.1	25.8	1.4	16	118	1.7	0.32	2.2	3.0	0.20	C
26	1	1	12.5	19-23.9	155-15.1	2.8	1.1	8	102	1.9	0.16	0.5	1.6	0.07	A
26	5	52	13.2	18-45.9	155-14.6	8.0*	2.7	23	273	49.4	0.69	4.4		0.22	D
26	7	15	6.7	19-23.4	155-14.9	1.4	0.6	9	101	2.5	0.07	0.4	0.4	0.11	B
26	7	28	48.8	19-21.7	155-17.8	25.7	2.3	23	79	3.1	0.18	1.1	1.5	0.14	B
26	9	8	5.9	19-23.4	155-15.1	2.2*	0.9	10	100	2.3	0.06	0.5		0.11	B
26	9	26	36.5	19-23.6	155-14.9	2.9	0.9	7	95	2.2	0.18	0.6	1.8	0.07	B
26	9	38	15.3	19-24.5	155-16.4	1.1	0.4	10	136	1.3	0.06	0.3	0.3	0.09	B
26	9	39	15.2	19-24.6	155-16.2	1.4	0.6	13	116	1.5	0.08	0.4	0.4	0.13	B
26	11	42	22.0	19-22.7	155-26.2	6.6	1.0	21	52	6.9	0.10	0.8	0.8	0.21	C
26	15	52	39.6	19-23.7	155-14.7	5.4	1.0	16	90	1.9	0.08	0.4	0.8	0.10	B
26	18	0	22.1	19-23.2	155-14.5	3.7	0.8	11	104	2.8	0.08	0.3	1.0	0.06	A
26	20	18	51.0	19-19.6	155- 9.1	8.7	1.3	14	173	4.8	0.09	0.7	1.5	0.09	B
26	20	19	29.5	19-23.4	155-14.9	2.7	0.5	11	98	2.5	0.08	0.4	2.0	0.08	A
26	23	7	39.0	19-21.1	155-13.5	8.7	1.9	17	140	2.9	0.05	0.4	0.6	0.09	B
27	0	27	6.3	19-21.9	155-24.3?	1.2	0.9	14	126	3.6	0.18	1.1	2.2	0.27	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 27	0	29	44.1	19-25.6	155-16.5	2.1	0.7	11	125	1.4	0.05	0.3	0.2	0.07	B
27	2	36	26.2	19-23.3	155-14.4	1.8	1.1	11	104	2.6	0.09	0.5	0.4	0.13	B
27	2	40	1.8	19-23.4	155-14.4	1.4	0.6	11	102	2.5	0.11	0.5	0.5	0.16	B
27	2	41	5.9	19-23.2	155-14.3	1.9	1.1	11	108	2.8	0.08	0.4	0.4	0.12	B
27	2	43	33.0	19-15.2	155-21.4	2.8	2.7	25	152	9.6	0.11	0.7	0.8	0.18	C
27	2	58	60.0	19-15.5	155-22.3	2.0	1.5	20	144	7.9	1.19	0.7	4.3	0.19	B
27	3	13	16.0	19-15.9	155-22.8	2.6	1.6	21	139	6.9	0.11	0.8	1.1	0.21	C
27	3	54	50.2	19-15.7	155-22.6	0.5	1.8	22	142	7.4	5.60	1.0	10.6	0.25	C
27	4	1	56.7	19-16.5	155-23.4	3.3	1.2	21	131	5.7	0.10	0.8	1.1	0.22	C
27	5	21	40.4	18-51.9	155-15.8?	0.4	3.0	27	257	38.8	0.35	2.3	1.0	0.14	C
27	5	52	47.1	19-23.3	155-14.6	3.7	1.3	10	105	2.6	0.08	0.3	1.0	0.05	A
27	6	41	54.8	19-17.0	155-23.3	3.8	1.1	17	129	6.0	0.10	0.9	1.6	0.22	C
27	6	43	23.8	19-15.7	155-22.0	3.2	1.7	18	108	2.4	0.16	0.9	0.9	0.13	B
27	7	50	21.4	19-22.9	155-14.3	3.0	0.8	10	113	2.9	0.04	0.2	0.9	0.03	A
27	8	26	59.9	19-23.6	155-14.8	4.1	0.9	12	92	2.1	0.11	0.5	1.2	0.10	A
27	11	48	49.9	19-24.2	155-17.6	2.0	0.5	7	113	1.7	0.05	0.3	0.2	0.04	B
27	12	40	45.0	19-23.2	155-14.8	2.2*	1.1	9	110	2.4	0.04	0.3		0.06	B
27	13	53	1.3	19-23.8	155-15.5	3.0	1.3	15	81	2.6	0.09	0.5	1.8	0.11	B
27	15	34	1.2	19-22.5	155-22.4	6.8	1.0	16	151	4.6	0.11	0.8	0.7	0.16	C
27	15	45	13.6	19-23.3	155-14.7	4.7	1.6	11	105	2.6	0.07	0.3	0.7	0.05	A
27	15	46	52.3	19-23.4	155-14.9	2.1*	0.9	8	101	2.5	0.04	0.2		0.05	B
27	15	47	35.5	19-23.4	155-14.8	2.7	0.9	8	100	2.4	0.09	0.3	1.8	0.05	A
27	16	9	25.0	19-22.8	155-14.1	4.5	1.5	11	117	2.7	0.23	0.8	2.3	0.11	B
27	16	10	19.6	19-23.4	155-14.7	3.9	1.0	12	100	2.5	0.06	0.3	0.8	0.06	A
27	16	11	15.9	19-23.3	155-14.8	1.9	1.3	11	102	2.5	0.08	0.4	0.3	0.10	A
27	16	18	2.3	19-23.4	155-15.0	2.5	0.8	9	102	2.4	0.05	0.2	2.4	0.04	B
27	16	24	8.7	19-23.2	155-14.9	2.7	1.2	11	106	2.2	0.06	0.3	1.5	0.07	A
27	16	34	4.1	19-23.3	155-14.6	4.0	0.6	11	100	2.5	0.10	0.4	1.0	0.07	A
27	16	53	40.6	19-23.3	155-14.8	3.7	1.3	11	101	2.5	0.09	0.3	1.1	0.07	A
27	16	53	40.8	19-23.3	155-14.8	2.0	0.6	8	104	2.6	0.05	0.3	0.2	0.05	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 27	16	59	17.2	19-23.1	155-14.7	2.6	1.1	11	108	2.4	0.07	0.3	1.9	0.07	A
27	17	11	58.2	19-23.8	155-14.4	3.8	0.5	13	85	1.6	0.14	0.6	1.7	0.15	B
27	17	41	55.2	19-22.9	155-14.6?	5.8	1.0	16	113	2.5	0.09	0.4	0.9	0.11	B
27	18	18	59.4	19-23.2	155-14.9	2.1	0.7	9	114	2.4	0.09	0.4	0.4	0.05	A
27	18	41	15.2	19-23.3	155-14.7	2.1*	0.8	9	104	2.6	0.05	0.3		0.08	B
27	18	57	10.3	19-23.3	155-14.8	1.4	0.8	11	102	2.5	0.08	0.4	0.4	0.14	B
27	20	50	22.2	19-23.6	155-15.0	2.7	0.9	9	95	2.3	0.11	0.4	2.2	0.07	B
27	21	32	4.0	19-26.0	155-16.7	3.7	0.8	7	247	1.9	0.35	1.3	1.7	0.07	C
28	0	58	26.1	19-23.4	155-14.9	3.0	0.7	9	102	2.5	0.14	0.5	2.2	0.08	B
28	1	6	29.2	19-23.1	155-14.6	2.8	0.9	9	113	2.7	0.10	0.3	2.0	0.06	A
28	1	58	13.2	19-23.3	155-14.7	2.1*	0.9	9	106	2.6	0.05	0.3		0.07	B
28	2	57	31.9	19-19.8	155-11.9	9.3	1.7	15	165	5.1	0.07	0.5	1.0	0.08	B
28	3	8	4.7	19-23.4	155-15.8	3.6	1.1	15	77	1.9	0.15	0.7	1.9	0.19	B
28	3	15	12.7	19-23.3	155-14.7	2.4	0.6	10	104	2.6	0.06	0.3	4.0	0.06	B
28	4	29	57.5	19-21.8	155-17.7	23.6	1.2	15	96	3.1	0.14	0.8	1.4	0.09	A
28	5	13	18.2	19-23.0	155-14.5	3.2	1.2	9	116	2.6	0.10	0.3	1.3	0.05	A
28	5	16	49.1	19-23.2	155-14.6	2.1*	0.7	10	109	2.7	0.04	0.3		0.07	B
28	5	19	58.3	19-23.3	155-15.0	2.5	0.7	9	111	2.3	0.06	0.3	1.4	0.04	A
28	5	40	14.7	19-23.2	155-14.7	2.7	0.8	10	109	2.5	0.06	0.3	2.4	0.06	B
28	5	54	37.9	19-23.3	155-14.7	2.1*	0.3	9	106	2.6	0.05	0.3		0.07	B
28	5	57	55.4	19-23.2	155-14.5	2.1*	0.6	7	107	2.7	0.05	0.4		0.07	C
28	6	13	46.4	19-23.0	155-14.4	3.1	0.6	10	109	2.8	0.09	0.4	1.6	0.07	A
28	6	17	34.9	19-23.4	155-14.8	2.5	0.8	9	103	2.6	0.08	0.3	1.8	0.06	A
28	6	19	54.7	19-23.0	155-14.5	3.0	1.0	8	114	2.8	0.10	0.3	1.3	0.04	A
28	6	20	33.4	19-22.9	155-14.7	2.0	0.8	10	112	2.4	0.08	0.3	0.3	0.07	A
28	6	21	38.9	19-23.3	155-14.8	2.0	0.9	6	117	2.5	0.03	0.1	0.1	0.01	B
28	6	27	15.3	19-23.3	155-14.3	2.1*	0.8	11	107	2.5	0.08	0.6		0.13	B
28	6	28	3.9	19-23.4	155-15.1	1.2	1.0	8	181	2.3	0.07	0.4	0.3	0.06	B
28	6	36	2.3	19-23.3	155-14.5	5.2	0.5	12	101	2.6	0.09	0.3	0.7	0.06	A
28	6	37	57.8	19-23.2	155-14.5	2.1*	1.0	9	109	2.8	0.04	0.3		0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 28	6	40	0.9	19-23.2	155-14.8	2.1*	1.0	10	107	2.5	0.04	0.3		0.08	B
28	6	41	11.5	19-23.1	155-14.7	5.2	1.2	14	108	2.4	0.06	0.4	0.5	0.08	B
28	6	42	4.9	19-23.1	155-14.7	2.1*	1.0	9	112	2.5	0.04	0.3		0.06	B
28	6	43	37.2	19-23.4	155-14.7	2.0	1.7	13	99	2.5	0.07	0.3	0.3	0.09	B
28	6	45	32.8	19-23.3	155-15.1	2.4	1.2	11	102	2.2	0.08	0.3	1.3	0.09	A
28	6	46	31.3	19-23.2	155-14.1	3.4	0.8	14	101	2.7	0.06	0.3	1.1	0.09	A
28	6	48	32.0	19-23.3	155-14.7	3.3	1.1	8	105	2.6	0.13	0.4	1.7	0.06	A
28	6	48	59.0	19-23.3	155-14.5	4.8	0.6	13	100	2.5	0.08	0.3	0.8	0.08	A
28	6	49	54.7	19-22.9	155-14.6	1.5	0.5	12	112	2.4	0.06	0.3	0.3	0.10	A
28	7	13	40.7	19-23.1	155-14.7	2.1*	0.9	9	110	2.5	0.04	0.3		0.06	B
28	7	14	32.6	19-23.2	155-14.6	2.6	0.8	9	108	2.7	0.17	0.6	2.9	0.09	B
28	7	15	59.9	19-23.4	155-14.9	2.0	1.2	11	100	2.4	0.10	0.3	0.4	0.07	A
28	7	19	9.6	19-23.0	155-14.3	4.6	1.9	13	110	3.0	0.20	0.8	2.2	0.21	B
28	7	21	26.0	19-23.1	155-14.6	2.3*	0.8	10	110	2.7	0.03	0.2		0.05	B
28	7	21	56.9	19-23.3	155-14.5	5.6	1.4	16	100	2.5	0.06	0.4	0.5	0.09	B
28	7	24	25.5	19-23.2	155-14.7	2.9	0.9	10	108	2.6	0.06	0.3	1.3	0.05	A
28	7	24	53.0	19-23.3	155-14.2	1.8	1.1	10	114	2.5	0.10	0.6	0.5	0.15	B
28	7	26	12.4	19-23.3	155-14.8	3.1	1.2	10	102	2.5	0.13	0.5	1.8	0.07	A
28	7	27	34.0	19-23.0	155-14.8	1.8	0.9	9	115	2.2	0.06	0.3	0.3	0.09	A
28	7	28	3.8	19-23.2	155-15.1	2.8	1.0	11	104	2.0	0.08	0.3	1.2	0.08	A
28	7	29	21.1	19-23.1	155-14.7	3.1	1.1	10	108	2.5	0.09	0.3	1.3	0.06	A
28	7	30	32.2	19-23.2	155-15.0	2.3*	0.8	11	106	2.2	0.03	0.2		0.07	B
28	7	31	13.0	19-23.1	155-14.8	1.6	0.5	10	113	2.3	0.08	0.4	0.3	0.11	B
28	7	32	1.7	19-23.1	155-14.8	2.0	0.8	10	108	2.2	0.09	0.3	0.3	0.07	A
28	7	33	18.9	19-23.4	155-14.6	1.2	0.7	11	99	2.5	0.12	0.5	0.6	0.17	B
28	7	34	15.7	19-23.1	155-14.7	2.1*	1.4	8	111	2.5	0.05	0.3		0.06	B
28	7	34	42.8	19-23.0	155-14.5	2.0	1.2	10	109	2.7	0.06	0.3	0.3	0.07	A
28	7	36	13.1	19-23.1	155-15.0	2.7	1.0	11	107	2.1	0.07	0.3	1.5	0.08	A
28	7	37	2.1	19-22.9	155-14.9	1.0	0.9	11	113	2.0	0.05	0.2	0.3	0.08	A
28	7	38	41.5	19-23.4	155-15.0	1.3	0.6	9	106	2.5	0.07	0.4	0.4	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 28	7	40	12.8	19-23.1	155-14.7	2.8	1.1	10	107	2.5	0.07	0.3	1.4	0.05	A
28	7	41	10.0	19-23.7	155-14.9	2.1*	1.2	9	93	2.1	0.05	0.3		0.07	B
28	7	44	36.7	19-23.2	155-14.8	2.1*	0.8	9	106	2.5	0.05	0.3		0.07	B
28	7	49	21.8	19-23.1	155-15.0	4.2	1.3	12	109	2.0	0.10	0.4	1.1	0.08	A
28	7	50	27.4	19-23.2	155-14.8	2.3*	0.7	8	122	2.5	0.07	0.5		0.07	C
28	7	50	38.7	19-23.4	155-15.0	2.1	0.8	9	103	2.4	0.12	0.5	0.5	0.08	A
28	7	50	54.4	19-21.2	155-10.0	12.2*	1.7	7	332	10.0	1.07	6.6		0.12	D
28	7	56	15.6	19-23.5	155-15.0	3.0	1.1	9	97	2.4	0.10	0.3	1.6	0.06	A
28	8	19	0.1	19-23.4	155-14.8	2.8		17	99	2.5	0.06	0.5	1.2	0.14	B
28	9	51	18.1	19-25.0	155-17.1	2.6	1.3	12	117	0.2	0.07	0.5	0.9	0.11	B
28	9	58	53.1	19-21.1	155-13.9	6.3	1.0	16	159	3.3	0.13	0.8	0.7	0.15	C
28	10	14	16.1	19-23.1	155-14.4	3.8	1.8	18	106	2.9	0.06	0.5	0.7	0.13	B
28	10	31	12.6	19-23.3	155-15.1	2.5	1.1	11	101	2.2	0.08	0.3	1.4	0.08	A
28	11	1	12.3	19-23.9	155-15.2	2.1	1.0	9	84	2.2	0.06	0.2	0.3	0.04	A
28	16	34	7.9	19-22.4	155-15.7	28.6		24	111	0.4	0.12	0.8	1.3	0.11	B
28	21	7	15.1	19-18.3	155-16.0	3.5	1.1	21	146	4.6	0.14	0.9	1.1	0.22	C
29	2	14	49.5	18-45.8	155-16.6	12.8	4.1	30	274	47.7	0.30	3.4	7.2	0.16	D
29	3	11	48.6	19-19.8	155-12.6?	3.6	1.6	24	146	4.9	0.15	1.0	1.3	0.31	C
29	3	57	16.7	19-20.4	155- 8.8	4.3	1.5	20	160	3.5	0.13	0.9	0.9	0.19	C
29	4	24	34.4	19-44.3	156- 9.0	47.7	3.1	27	251	33.2	0.38	1.8	2.9	0.10	C
29	5	30	12.8	19-19.9	155- 7.0?	0.1	2.5	28	147	6.4	4.87	1.2	9.1	0.29	C
29	9	10	28.4	18-48.4	155-21.0	0.4*	2.8	18	271	38.5	0.69	4.4		0.20	D
29	10	11	36.5	19-20.6	155-19.6	3.4	1.3	12	104	4.0	0.14	0.5	4.3	0.08	B
29	10	22	50.7	18-49.2	155-20.5	0.6*	2.8	13	281	38.5	0.77	4.8		0.16	D
29	16	0	52.6	18-52.1	155-19.0	6.7	2.7	17	260	35.7	1.22	2.6	7.6	0.13	D
29	16	24	53.4	19-19.0	155-13.4?	8.0	2.0	20	150	6.6	0.07	0.5	0.3	0.11	B
29	17	8	25.0	19-15.9	155-21.8	6.9	1.6	19	144	6.7	0.08	0.7	0.5	0.16	B
29	20	44	52.9	19-19.3	155- 8.3	1.0	2.0	23	159	5.8	1.25	0.9	4.5	0.24	C
29	22	49	16.6	19-20.5	155- 7.9	4.2	1.4	17	158	4.4	0.13	0.9	1.0	0.17	C
29	22	56	33.9	18-46.0	155-16.2	8.0*	2.8	25	273	48.0	0.49	3.2		0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 30	2	15	29.2	19-15.6	155- 8.5	35.3	1.1	13	235	12.2	0.37	1.8	2.7	0.08	C
30	3	2	34.4	18-53.5	155-16.1?	11.7	2.8	22	252	36.0	0.30	1.7	2.3	0.13	C
30	5	51	44.4	19-46.6	156- 4.8	37.8	2.2	21	240	27.2	0.32	1.7	2.9	0.10	C
30	6	57	56.8	19-23.8	155-14.8	5.0	1.9	16	87	1.8	0.07	0.4	0.7	0.09	A
30	14	19	50.2	19-22.1	155-25.4	8.0*	1.5	17	69	5.2	0.10	0.9		0.19	B
30	14	25	16.0	19-23.2	155-24.5	2.7	1.6	18	68	5.8	0.11	0.8	1.6	0.24	C
30	15	19	25.4	19-23.4	155-24.1	8.0*	1.5	19	70	6.1	0.09	0.8		0.16	C
30	16	37	44.3	19-20.0	155-15.2	6.6	0.7	15	139	3.9	0.09	0.8	0.7	0.16	B
30	17	38	52.9	19-18.5	155-14.8	6.7	1.1	18	151	5.5	0.10	0.7	0.6	0.16	C
30	21	18	52.0	19-20.4	155-18.9	6.5	0.7	12	71	2.7	0.14	0.5	1.4	0.10	A
30	22	28	30.6	19-10.5	155-22.4	43.1	1.6	20	179	9.7	0.27	1.2	2.6	0.11	C
31	0	35	23.9	19-23.2	155-24.0	9.3	1.3	19	68	5.6	0.04	0.4	1.0	0.09	B
31	1	49	5.1	19-10.4	155-36.4	8.5	1.5	17	99	8.3	0.09	0.9	1.2	0.16	B
31	2	22	40.0	19-19.6	155-14.3	8.0*	1.2	16	161	5.6	0.08	0.7		0.13	C
31	13	24	46.1	19-16.6	155-23.3	4.0	1.8	14	131	6.6	0.08	0.8	1.0	0.17	B
31	15	53	49.9	19-20.0	155-24.9	5.8	1.9	19	86	11.3	0.08	0.7	0.7	0.17	B
31	21	15	41.8	19-19.8	155- 8.4	8.0*	1.2	15	170	4.9	0.13	1.1		0.16	C
31	22	18	53.6	19-20.4	155-11.9?	7.5	1.3	18	141	4.1	0.08	0.7	1.4	0.14	B
FEB 1	3	5	57.1	19-20.9	155-16.2	34.8	1.5	19	123	2.6	0.12	0.8	1.2	0.08	B
1	10	32	54.9	19-14.4	155-20.9?	0.0	2.2	22	157	7.6	4.07	0.7	7.7	0.18	C
1	12	16	54.3	19-22.3	155-23.8	8.1	1.4	19	112	4.0	0.08	0.6	0.5	0.14	B
1	12	20	31.3	19-20.9	155- 8.3	6.4	1.5	18	137	3.4	0.10	0.8	0.7	0.19	B
1	13	52	37.1	18-49.1	155-18.3	0.1*	2.9	24	264	41.2	0.39	2.5		0.15	D
1	18	17	55.7	19-19.8	155- 8.4	8.0*	1.3	13	170	4.9	0.12	1.1		0.15	C
1	23	52	41.3	19-19.1	155-15.4	6.7	1.0	14	170	3.8	0.10	0.8	0.6	0.15	C
2	0	13	1.9	19-23.4	155-17.1	12.7	2.1	22	55	0.2	0.06	0.7	0.6	0.13	B
2	0	24	7.8	19-22.4	155-14.2	3.3	0.9	11	128	2.7	0.09	0.4	1.4	0.06	B
2	0	30	49.7	20-32.4	156-30.6	95.4*	2.5	17	326	88.9	0.95	6.9		0.15	D
2	1	50	56.8	19-21.9	155-18.0	4.6	1.2	15	74	3.4	0.04	0.3	0.4	0.09	A
2	2	7	53.4	19-21.1	155-20.1	31.9	1.7	23	57	4.8	0.14	0.9	1.5	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB	2	5	53 31.0	19-12.3	155-36.5?	10.1	3.3	19	227	5.0	0.15	1.2	0.7	0.10	C
	2	5	57 12.5	19-22.3	155-18.0	1.6	0.5	9	124	2.8	0.06	0.3	0.2	0.06	B
	2	7	51 43.1	19-22.0	155-10.6	5.2	1.3	13	159	1.4	0.19	1.1	0.8	0.16	C
	2	12	14 36.1	19-14.1	155- 8.0	37.0		18	204	14.0	0.28	1.5	2.2	0.11	C
	2	18	4 55.5	19-21.9	155-18.0?	1.7	1.0	20	75	3.2	0.16	0.4	0.6	0.12	B
	2	18	9 44.4	19-19.6	155- 7.6	1.7	2.0	20	174	6.1	1.08	1.0	3.9	0.20	C
	2	20	18 41.3	19-21.3	155-25.7?	7.9	1.5	21	74	4.7	0.09	0.6	0.6	0.16	B
	2	20	20 40.7	19-19.7	155-11.9	6.9	1.3	17	167	5.3	0.13	0.9	0.7	0.19	C
	2	20	29 48.4	19-22.3	155-23.9	8.0	2.2	21	51	4.0	0.08	0.6	0.6	0.15	B
	3	0	21 2.3	19-20.1	155-25.6	4.7	0.7	18	87	4.1	0.09	0.8	0.9	0.22	B
	3	1	2 11.3	19-25.9	155-47.4	5.4	1.9	21	145	20.3	0.17	1.1	1.2	0.19	C
	3	1	29 40.4	19-14.1	155- 8.3	36.8	1.5	14	202	14.2	0.17	0.9	1.4	0.07	B
	3	2	3 48.9	19-33.0	155- 7.4	8.0*	1.1	12	257	8.1	0.55	3.8		0.19	D
	3	5	11 19.1	19-13.9	155- 7.2	39.7	2.1	22	203	13.4	0.21	1.1	1.7	0.10	C
	3	6	43 12.9	19-18.8	155-13.0	5.9	1.7	21	154	6.8	0.12	0.8	0.7	0.18	C
	3	6	57 59.7	19-23.5	155-15.1	2.3*	0.7	10	99	2.4	0.04	0.3		0.07	B
	3	7	4 51.1	19-20.2	155-12.2	5.6	2.6	25	139	4.2	0.10	0.7	0.6	0.21	C
	3	8	45 16.5	18-42.9	155-19.5	8.0*	2.7	17	281	46.4	0.52	3.4		0.13	D
	3	9	57 48.5	19-19.0	155-12.1	8.0*	1.5	13	177	6.5	0.13	1.0		0.14	C
	3	12	10 12.5	19-22.4	155-13.3	6.0	0.9	13	123	1.1	0.08	0.5	0.7	0.11	B
	3	14	37 39.4	19-21.8	155-13.0	5.8	1.2	13	133	1.3	0.09	0.7	0.7	0.13	B
	3	16	26 34.8	19-23.5	155-24.4	7.1	1.9	24	55	6.4	0.08	0.7	0.6	0.20	B
	3	17	2 21.1	19-19.8	155-14.0	8.0*	1.1	18	142	5.4	0.07	0.5		0.12	C
	3	17	25 21.5	19- 8.8	155-27.8	36.4	1.6	14	177	1.3	0.32	1.6	3.3	0.11	C
	3	20	50 1.4	19-20.3	155-19.1	5.3	1.2	14	100	3.0	0.08	0.4	0.6	0.09	A
	4	0	23 21.0	19-22.0	155-18.4	1.5	0.8	10	75	3.6	0.12	0.3	0.4	0.07	A
	4	1	45 46.9	19-21.6	155-24.0?	8.2	2.1	20	60	2.9	0.07	0.6	0.5	0.16	B
	4	1	54 53.4	19-19.8	155-15.9	6.7	1.0	17	139	2.7	0.07	0.6	0.5	0.12	B
	4	1	57 14.4	18-56.6	155-26.8	33.6	3.0	24	236	23.4	0.33	1.8	2.8	0.14	C
	4	3	11 8.8	19-18.3	155-15.4?	8.1	1.5	18	179	4.8	0.09	0.7	0.4	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 4	3	25	6.7	19-19.6	155- 8.1	3.6	2.3	20	156	5.5	0.15	0.9	1.0	0.23	C
4	3	48	2.1	19-21.1	155-17.5	28.5	1.2	14	82	1.9	0.19	1.2	1.9	0.12	B
4	4	6	3.2	19-21.5	155-17.9	29.5	3.2	26	64	2.7	0.13	0.8	1.3	0.14	B
4	4	31	8.0	18-56.5	155-21.2?	42.0*	1.8	21	241	26.7	0.17	1.5		0.12	D
4	4	31	57.1	19-21.8	155-17.7	28.0	1.3	12	73	3.1	0.30	1.5	2.8	0.11	B
4	5	3	23.6	19-22.3	155-20.8?	8.0*	0.8	10	115	5.8	0.21	1.8		0.27	B
4	5	3	46.3	19-21.9	155-17.9	24.4	1.2	12	68	3.2	0.35	1.9	3.4	0.14	B
4	5	5	54.0	19-21.5	155-18.3	24.6	1.6	14	74	3.0	0.19	1.1	1.9	0.12	B
4	5	36	23.2	19-22.1	155-12.7	4.4	1.1	13	131	0.7	0.07	0.4	0.9	0.08	B
4	6	43	16.2	19-22.0	155-18.2	1.5	0.6	9	78	3.4	0.05	0.3	0.3	0.05	A
4	6	52	53.5	19-20.7	155- 7.4	3.7	2.2	18	139	5.1	0.12	0.9	0.9	0.16	C
4	7	5	27.1	20- 5.4	156-12.7	8.0*	1.6	13	319	97.9	2.30	13.8		0.11	D
4	7	50	29.6	19-21.5	155-18.2	25.1	1.7	14	72	2.9	0.19	1.0	1.8	0.11	B
4	13	10	42.1	19-17.0	155-13.5	29.4	2.6	22	160	8.9	0.15	0.9	1.5	0.13	C
4	15	36	27.7	19-21.8	155-17.6	6.2	0.8	14	77	3.0	0.09	0.6	0.7	0.15	B
4	16	14	26.9	19-28.8	155-11.6	8.0*	1.5	11	222	9.4	0.36	2.3		0.23	C
4	21	1	30.4	19-19.5	155-17.4	30.3	2.4	18	129	1.1	0.21	1.2	2.1	0.14	B
5	8	0	39.3	19-19.3	155-15.5	6.5	0.7	13	182	3.6	0.14	0.9	0.8	0.14	C
5	13	36	42.7	19-24.2	155-15.0	11.8	1.0	17	82	1.4	0.06	0.4	0.6	0.06	A
5	14	17	23.6	19-22.8	155- 2.7	8.0*	1.6	8	129	5.4	0.18	1.6		0.21	C
5	18	8	51.0	19-22.1	155-12.6	4.5	0.7	11	130	0.6	0.09	0.5	1.1	0.10	B
5	18	50	23.5	19-21.9	155-13.3	2.1	0.8	9	144	1.4	0.05	0.3	0.2	0.04	B
5	18	59	29.0	19-21.2	155-11.5	8.6	1.2	16	134	3.0	0.07	0.6	1.1	0.11	B
5	19	6	23.4	19-20.5	155-11.0	9.1	0.9	12	157	3.5	0.08	0.6	1.1	0.07	B
6	0	11	55.1	19-19.9	155-13.1	7.8	1.0	19	143	4.7	0.07	0.6	0.4	0.12	B
6	7	22	43.1	19-20.6	155-13.4	8.0*		13	148	5.5	0.08	0.7		0.11	C
6	8	26	46.4	19-24.2	155-16.1?	2.2	0.9	7	99	2.0	0.09	0.4	0.5	0.09	B
6	9	41	14.1	19-22.6	155-24.6?	8.2	2.3	22	68	4.9	0.08	0.5	0.5	0.13	B
6	11	47	55.6	19-22.3	155-12.9	5.7	0.6	11	139	0.5	0.05	0.4	0.4	0.06	B
6	13	50	15.6	18-50.1	155-16.8	5.2	2.2	12	262	40.8	1.30	2.9	8.1	0.13	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 6	23	21	19.8	19-19.9	155-13.2	7.6	1.3	15	159	4.8	0.10	0.8	0.6	0.15	C
6	23	26	10.3	18-46.8	155-17.8	8.0*	2.5	16	277	44.9	0.45	3.0		0.11	D
7	0	15	39.9	18-49.5	155-17.8?	0.3	2.6	21	264	41.0	0.68	4.6	20.2	0.21	D
7	0	57	21.2	18-44.5	155-15.8	4.9	2.3	16	302	49.9	0.42	7.4	7.8	0.14	D
7	16	24	32.7	19-25.9	155-27.5	7.5	1.5	20	113	10.3	0.10	0.6	0.6	0.14	B
7	17	3	30.1	19-20.5	155-12.6	7.5	2.1	20	140	3.7	0.09	0.8	0.5	0.16	C
7	17	35	47.1	19-21.8	155-12.4	5.4	0.6	12	135	1.2	0.08	0.5	0.7	0.11	B
7	18	1	36.7	19-22.1	155-13.0	6.0	0.9	14	129	0.9	0.06	0.5	0.5	0.09	B
7	18	16	0.6	19-18.3	155-14.5	8.0*	0.9	14	153	6.0	0.07	0.6		0.10	C
7	22	28	58.0	19-22.4	155-24.0	6.1	1.3	16	126	4.1	0.07	0.6	0.6	0.13	B
7	23	58	18.9	19-17.5	155-14.1	6.8	2.7	22	156	7.5	0.14	0.9	0.8	0.19	C
8	1	8	48.8	18-49.9	155-19.7	3.3	1.9	18	262	38.9	1.52	3.3	9.4	0.18	D
8	1	16	8.0	18-48.4	155-17.6	8.0*	2.8	19	266	42.8	0.45	3.0		0.14	D
8	1	42	39.7	19-19.8	155-12.0	4.1	2.4	20	147	5.1	0.15	1.0	1.3	0.28	C
8	1	45	9.1	19-21.2	155-13.1	7.6	1.2	14	156	2.4	0.09	0.9	0.6	0.13	C
8	1	58	23.9	19-19.6	155-15.4	8.0	2.6	20	139	3.5	0.06	0.5	0.4	0.13	B
8	5	56	55.7	19-18.6	155-14.6	8.0*	1.1	13	178	5.7	0.11	0.8		0.13	C
8	7	19	27.7	19-21.5	155-12.6	7.2	0.6	14	138	1.7	0.07	0.7	0.5	0.12	B
8	7	33	8.4	19-20.2	155-16.8	6.5	0.8	12	166	1.0	0.07	0.5	0.4	0.09	B
8	10	13	1.1	18-46.1	155-18.4	8.0*	2.7	16	273	44.7	0.52	3.4		0.14	D
8	14	22	35.0	19-22.4	155-25.5	8.0*	1.1	13	185	10.4	0.15	1.1		0.18	C
8	14	56	44.9	19-22.9	155-23.4	5.1	1.3	12	184	4.9	0.16	0.8	1.1	0.10	C
8	18	10	11.0	19-20.5	155-12.7	7.3	1.8	18	140	3.7	0.09	0.8	0.6	0.17	B
8	19	3	47.4	19-15.9	155-18.9	29.1	1.8	22	155	3.8	0.13	0.7	1.3	0.11	C
8	20	45	14.8	19-23.4	155-24.9	7.4	1.0	17	120	6.5	0.10	0.7	0.5	0.17	B
8	23	10	34.2	18-49.3	155-18.3	8.0*	2.6	14	264	41.0	0.31	2.0		0.10	D
8	23	18	19.1	19-21.8	155-24.8	4.1	2.4	23	66	4.0	0.09	0.8	0.9	0.26	B
8	23	20	9.2	19-21.7	155-24.9	4.5	1.9	21	67	4.0	0.08	0.7	0.9	0.21	B
8	23	27	49.8	18-43.5	155-17.4	8.0*	2.3	12	290	48.7	0.98	6.2		0.14	D
8	23	29	1.6	18-47.1	155-17.8	8.0*	2.5	13	270	44.4	0.61	4.0		0.16	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 8	23	30	29.7	18-49.1	155-18.4	8.0*	2.6	13	265	41.2	0.28	1.8		0.09	D
8	23	35	8.9	18-48.4	155-17.9	8.0*	2.6	15	267	42.8	0.34	2.2		0.11	D
9	0	28	57.1	18-48.7	155-17.2	8.0*	2.4	18	266	42.7	0.53	3.5		0.16	D
9	2	54	17.5	19-22.5	155-28.1	4.2	1.8	17	133	9.4	0.11	0.7	1.2	0.17	B
9	3	6	20.9	19-13.8	155-27.5	8.6	1.5	21	110	5.0	0.06	0.8	1.0	0.16	B
9	4	51	54.9	19-13.3	155- 6.8	38.0	1.7	15	206	17.0	0.25	1.4	2.2	0.11	C
9	6	3	6.7	18-48.3	155-17.8	8.0*	2.6	14	267	42.9	0.38	2.5		0.12	D
9	7	3	44.6	18-52.6	155-20.9	5.1	2.5	17	257	33.5	1.33	2.8	8.7	0.14	D
9	18	54	16.9	18-51.2	155-18.6	17.0*	2.9	16	259	37.4	0.37	2.5		0.21	D
10	3	13	6.9	18-46.2	155-17.5	8.0*	2.7	14	273	45.9	0.41	2.7		0.11	D
10	9	22	55.4	19-20.0	155-14.7	8.0*	0.7	13	150	4.8	0.11	0.8		0.16	C
10	13	0	10.4	19-14.9	155- 4.6	42.9	2.5	20	226	9.6	0.23	1.2	1.7	0.08	C
10	15	12	33.9	19- 6.0	155-14.2	6.0		12	247	23.4	1.96	3.6	11.3	0.22	D
10	15	54	27.8	19-24.1	155-24.4	4.3	1.2	15	130	7.4	0.14	0.9	1.3	0.22	C
10	17	1	22.4	18-47.3	155-17.5	8.0*	2.7	17	270	44.8	0.48	3.2		0.15	D
10	23	17	22.3	19-14.2	155- 7.2	40.5	2.8	21	202	12.9	0.27	1.5	2.3	0.14	C
11	4	53	8.7	18-50.9	155-16.7	1.8*	2.6	14	260	39.6	0.47	3.1		0.16	D
11	7	51	40.5	19-16.5	155-18.1	26.3	2.1	16	188	2.8	0.20	1.4	1.9	0.13	C
11	11	31	3.6	19-18.8	155-12.1	2.6	1.7	21	177	6.8	0.18	1.0	1.3	0.26	C
12	9	38	29.3	19-21.3	155-23.8	6.1	2.0	18	55	2.3	0.09	0.9	0.9	0.21	C
12	18	18	48.9	19-20.5	155-17.2	32.7	2.5	22	115	0.7	0.15	0.9	1.5	0.13	B
12	19	52	57.1	19-21.7	155-15.1	23.8	1.7	16	123	1.9	0.13	0.9	1.3	0.10	B
12	22	40	54.6	19-23.2	155-28.1	4.5	1.8	21	57	10.1	0.09	0.7	1.0	0.21	C
12	23	28	27.5	18-59.8	155-14.1	30.2	2.6	21	240	34.5	0.37	2.1	3.7	0.13	C
13	5	23	37.5	19-19.7	155-17.0	7.1	0.6	11	171	1.0	0.09	0.7	0.4	0.09	C
13	12	26	2.9	19-25.5	155-29.2	6.7	2.3	18	68	13.0	0.09	0.7	0.7	0.17	B
13	17	55	47.9	19-20.3	155- 8.9	3.5	2.7	23	145	10.5	0.12	0.8	0.8	0.21	C
14	4	10	3.7	19-25.6	155-50.6	5.0	2.4	13	172	18.0	0.22	1.8	3.0	0.11	C
14	11	12	54.9	19-19.4	155-14.7	4.6	1.0	17	168	4.9	0.12	0.8	0.9	0.18	C
15	3	7	16.8	18-44.0	155-17.2	8.0*	2.5	16	278	48.5	0.78	5.0		0.19	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 15	3	18	4.5	18-41.1	155-17.6	8.0*	2.2	15	284	51.1	0.98	6.2		0.19	D
15	16	0	25.4	19-18.8	155-15.5	9.3	2.1	15	148	4.2	0.07	0.5	1.1	0.09	B
15	16	36	35.8	18-52.0	155-16.9	2.8	2.1	12	262	37.6	1.21	2.8	7.5	0.11	D
15	22	11	4.5	19-24.4	155-25.7	5.5	1.5	13	169	8.8	0.12	0.7	1.1	0.13	C
15	23	2	0.9	19-20.1	155- 7.1	8.0*	1.5	13	167	6.1	0.11	1.0		0.12	C
16	2	51	59.4	19-18.9	155-13.9	8.0*	1.2	14	207	6.4	0.14	0.9		0.12	C
16	3	52	31.6	19-20.0	155-13.7	8.0*	1.0	12	156	5.9	0.08	0.6		0.10	C
16	6	5	33.4	19-22.3	155-28.9?	8.6	3.1	25	59	10.6	0.13	0.6	1.0	0.17	C
16	11	14	42.9	18-49.7	155-19.2?	28.4*	3.4	24	268	39.5	0.43	2.9		0.20	D
17	12	41	26.2	18-46.5	155-17.2	8.0*	2.8	17	278	46.0	0.66	4.2		0.17	D
17	13	17	56.6	19-22.1	155-24.7	7.8	4.0	24	54	4.3	0.09	0.6	0.7	0.16	B
17	16	42	23.5	19-23.0	155-23.8?	7.9	2.5	22	97	5.2	0.07	0.5	0.5	0.14	B
17	18	35	0.7	19-22.6	155-25.8	4.8	1.3	17	53	6.3	0.07	0.6	0.8	0.17	B
17	20	29	50.9	19-23.0	155-24.7	6.2	2.3	18	99	5.7	0.08	0.6	0.7	0.14	B
18	2	15	49.2	19-20.1	155-12.1	7.9	1.2	13	160	4.5	0.09	0.7	0.4	0.10	C
18	4	28	47.2	18-48.6	155-19.6?	30.1*	3.3	24	266	40.4	0.43	2.9		0.22	D
18	4	34	18.6	18-45.8	155-19.0	34.2*	2.7	22	275	44.0	0.64	4.6		0.26	D
18	9	52	27.4	20- 2.4	155-46.3?	11.0	3.1	26	166	9.8	0.27	1.8	3.6	0.14	C
19	7	23	51.2	19-20.0	155-16.2	7.0	1.3	19	137	2.2	0.08	0.7	0.6	0.15	B
19	15	48	58.4	19-20.7	155-10.3	8.6	1.5	13	155	2.7	0.10	0.8	1.4	0.09	C
19	20	29	25.2	18-51.5	155-17.1	4.9	2.9	21	258	38.2	1.40	3.0	8.9	0.17	D
20	0	43	43.8	19-22.2	155-25.1	7.6	3.0	25	53	4.8	0.10	0.7	0.7	0.20	B
20	3	6	47.6	19-21.8	155- 8.5?	7.0	2.0	17	172	2.4	0.12	1.1	1.5	0.14	C
20	8	36	11.8	19-19.1	155-13.4	8.2	1.5	19	150	6.4	0.05	0.4	0.2	0.08	B
20	9	16	13.9	19-25.8	155-46.1	2.2*	2.6	17	307	40.5	0.57	3.4		0.11	D
20	10	18	57.5	19-18.7	155-13.2	6.9	1.3	17	154	7.0	0.13	0.9	0.7	0.16	C
20	10	40	0.9	19-17.7	155-49.8	8.3	2.6	25	126	5.3	0.11	1.1	1.5	0.18	B
20	12	6	35.6	19-20.9	155-14.0	27.1	1.6	21	133	3.7	0.12	0.8	1.3	0.11	B
21	1	3	51.8	18-47.8	155-17.3	15.3*	3.9	27	268	44.1	0.30	2.0		0.17	D
21	8	13	27.3	18-50.6	155-18.3	5.3	2.5	16	298	38.8	0.49	4.2	5.0	0.17	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 21	8	38	2.2	18-44.8	155-17.9	8.0*	2.7	21	282	46.7	0.65	4.1		0.16	D
21	11	40	16.8	19-18.4	155-15.1	8.8	0.5	14	180	5.1	0.13	0.9	1.8	0.12	C
21	13	26	7.1	18-58.8	155-17.9	12.6*	1.4	14	277	26.4	0.51	3.5		0.19	D
21	14	34	26.8	19-19.4	155-13.5	8.0*	1.1	17	170	5.7	0.08	0.6		0.11	C
21	17	33	33.6	19-19.2	155-11.8	8.0*	1.7	11	174	6.2	0.07	0.6		0.09	C
22	17	38	54.4	19-20.2	155-13.9	26.4	2.2	20	137	5.3	0.12	0.8	1.3	0.11	B
23	4	24	40.4	19-19.9	155-16.5	28.9	1.9	18	137	1.6	0.13	0.9	1.4	0.12	B
23	5	8	9.9	19-20.0	155-10.8	5.7	2.1	16	142	4.2	0.12	0.9	0.7	0.20	C
23	5	36	34.8	19-19.9	155-16.9	27.6	1.5	14	132	4.7	0.22	1.2	2.2	0.13	B
23	17	6	17.2	19-19.4	155-15.1	7.3	1.7	18	143	4.3	0.06	0.6	0.4	0.10	B
23	20	28	53.6	19-24.4	155-24.5	6.7	1.5	14	120	8.4	0.07	0.5	0.6	0.08	B
24	5	43	53.9	20- 0.5	155-51.6?	43.0	2.3	13	211	15.7	0.41	1.9	4.1	0.09	C
24	7	33	48.1	19-21.9	155- 6.4	8.0*	1.7	10	130	6.0	0.13	1.4		0.19	C
24	12	45	36.4	19-20.5	155-13.1	5.8	1.1	13	181	6.0	0.14	1.0	0.8	0.14	C
24	13	36	16.2	19-22.2	155- 5.6?	0.0	2.0	15	120	6.3	8.07	1.5	15.3	0.28	C
24	17	22	51.8	19-21.9	155- 6.4?	6.9	1.8	15	130	6.0	0.15	1.4	1.1	0.24	C
24	17	43	21.3	19-22.1	155-12.4	4.8	1.6	14	131	4.4	0.08	0.6	1.1	0.13	B
24	22	49	36.9	19- 1.7	155-41.9	34.3	3.9	25	179	6.3	0.26	1.4	2.3	0.13	C
25	9	2	19.0	18-50.9	155-17.1	1.6	2.8	13	259	39.1	0.29	2.0	1.4	0.10	C
25	16	58	47.0	19-20.0	155-15.4	27.8	2.3	20	138	3.5	0.15	1.1	1.6	0.13	B
25	22	7	52.8	18-48.4	155-18.5	0.9*	2.4	17	266	42.3	0.58	3.8		0.19	D
26	2	0	55.2	19-10.4	155-35.5	5.1	2.2	14	103	8.7	0.15	1.2	1.3	0.23	C
27	7	2	20.4	19-20.7	155-13.9	27.1	2.2	18	135	4.7	0.11	0.8	1.2	0.10	B
27	17	54	5.2	19-22.7	155-23.4	5.9	1.4	14	64	4.6	0.08	0.7	0.7	0.16	B
27	19	7	48.5	19-37.1	155-13.8	8.0*	2.0	15	135	21.4	0.06	0.6		0.13	C
27	21	45	50.1	19-58.6	155- 9.4	58.5		12	229	38.3	0.66	2.8	6.2	0.11	D
27	21	53	16.0	19-20.3	155-19.6	5.9	1.0	11	94	3.9	0.07	0.6	0.6	0.09	A
28	10	16	8.8	18-44.2	155-18.6	20.7*	3.0	17	283	46.3	0.40	2.7		0.17	D
28	11	33	9.6	19-18.2	155-17.3	6.3	1.9	19	146	2.3	0.12	0.9	0.7	0.22	C
28	13	11	31.0	19-24.3	155-26.0?	8.0*	1.8	14	70	9.0	0.24	2.0		0.39	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 28	18	4	22.2	18-42.2	155-18.7	8.0*	2.8	14	290	52.9	1.23	7.7		0.21	D
28	19	2	27.5	19-26.6	154-54.1	4.7	2.0	13	215	4.4	0.17	1.3	0.7	0.11	C
28	22	47	7.4	19-14.7	155-31.1	7.9	2.9	21	70	8.3	0.08	0.7	0.7	0.16	B
29	4	21	28.6	19-21.4	155-15.8	25.7	2.1	17	121	1.8	0.12	0.8	1.2	0.10	B
29	12	8	24.5	19-21.7	156-20.4	19.1*	5.0	25	242	50.3	0.32	2.3		0.20	D
29	12	50	52.6	19-20.6	156-22.8	10.3	3.3	24	278	54.1	0.57	3.3	9.7	0.17	D
29	18	13	58.7	19-24.9	155-26.7	4.4	1.6	23	61	10.9	0.10	0.7	0.9	0.22	C
29	21	14	49.8	19-20.9	155-13.9	27.0	1.4	16	133	4.5	0.12	0.8	1.3	0.09	B
29	21	40	50.3	19-23.0	155- 5.5	3.0	2.4	19	128	7.3	0.12	0.8	1.0	0.18	C
29	22	16	47.7	19-22.5	155- 9.2	5.4	1.0	10	123	1.3	0.10	0.7	1.0	0.11	B
MAR 1	3	30	18.7	19-21.1	156-26.3	8.0*	3.6	13	282	60.3	0.68	4.4		0.11	D
1	4	15	11.0	19-19.2	155-15.1	6.8	1.1	11	190	4.3	0.10	0.7	0.5	0.10	B
1	15	20	34.0	19-21.4	155-13.0	6.2	2.4	22	130	5.4	0.08	0.7	0.5	0.19	B
2	6	29	35.8	18-52.2	155-17.0	3.6	2.5	20	256	37.1	1.28	2.7	8.2	0.16	D
2	11	1	7.9	19-19.5	155-15.4	8.7	0.7	12	179	3.6	0.19	1.2	2.2	0.14	C
2	19	57	46.0	18-42.5	155-21.1	8.0*	2.7	17	282	44.8	0.61	3.9		0.15	D
3	2	32	56.4	19-19.6	156- 3.9	25.5	3.6	13	271	21.4	0.21	1.4	1.3	0.06	C
3	8	4	21.3	18-48.9	155-20.7	2.1*	2.6	16	278	38.5	0.51	3.2		0.15	D
3	8	9	2.8	18-48.2	155-22.2	22.5*	3.9	16	286	36.9	0.62	4.2		0.24	D
3	10	7	2.6	19-19.5	155- 8.9	7.0	1.1	12	174	5.1	0.15	1.3	0.8	0.17	C
3	11	31	54.0	18-48.6	155-20.4	1.6	2.6	21	271	39.3	0.49	3.4	2.4	0.17	D
3	11	49	21.1	19-28.6	155-52.3	6.1	2.5	23	188	23.3	0.74	1.1	5.4	0.16	C
4	16	28	34.4	19-19.4	155-15.4	7.2	1.7	16	180	3.7	0.10	0.7	0.5	0.12	C
4	16	49	40.6	19-25.9	155-25.3	8.0*	1.6	17	96	8.0	0.08	0.7		0.13	C
5	13	45	30.8	19-31.7	155-15.2	8.0*	1.2	10	202	12.2	0.32	2.2		0.24	C
5	16	5	44.8	19-15.5	155-27.3?	5.5	1.8	14	106	2.0	0.15	1.5	1.2	0.31	C
5	17	14	54.9	19-54.5	155-27.8	34.9	2.8	24	153	12.7	0.25	1.2	2.7	0.14	C
5	18	25	18.6	19-20.8	155- 6.4	8.0*	1.9	16	151	6.3	0.11	1.1		0.15	C
5	22	8	59.6	19-24.6	155-27.3	7.1	2.1	20	113	10.7	0.10	0.6	0.6	0.15	B
6	1	34	1.4	19-46.8	155-47.0	11.9	2.1	15	152	11.8	0.15	1.4	1.9	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 6	1	36	13.6	18-45.7	155-19.5	8.0*	2.6	20	274	43.4	0.62	4.0		0.14	D
6	7	27	56.6	19-23.2	155- 3.0?	8.2	1.2	14	120	6.1	0.18	1.5	1.4	0.26	B
6	10	34	15.4	19-17.9	155-23.6	1.5	1.5	14	117	4.3	1.32	0.8	4.8	0.17	B
6	16	59	54.7	19-20.4	155- 8.4	7.8	1.6	15	143	3.9	0.10	0.9	0.6	0.14	B
6	17	54	17.0	19-20.7	155-11.5	9.3	1.1	11	199	3.8	0.14	0.9	1.2	0.08	B
6	18	49	52.3	19-21.2	155-11.6	7.0	1.9	19	134	3.0	0.08	0.8	0.6	0.18	B
6	21	14	4.5	19-23.8	155-16.5	32.2	1.3	11	95	1.1	0.29	1.3	2.6	0.08	B
7	7	8	50.2	19-21.7	155-24.7	7.7	2.3	13	169	3.7	0.15	1.3	0.8	0.13	C
7	7	40	3.8	19-19.9	155-12.1	9.2		12	209	4.9	0.14	0.9	1.3	0.09	B
7	16	48	43.4	19-19.0	155-13.2	8.0*	1.1	12	212	7.6	0.15	1.0		0.10	C
7	18	7	6.8	18-45.5	155-20.4	8.0*	2.7	14	275	42.3	0.43	2.8		0.09	D
8	0	7	7.8	18-45.4	155-19.9	8.0*	3.1	21	275	43.1	0.57	3.6		0.16	D
8	1	53	15.0	19-19.2	155-15.4	7.4	1.8	19	166	3.9	0.09	0.7	0.5	0.14	C
8	1	54	45.3	19-19.3	155-15.6	8.8	1.6	13	178	3.4	0.15	1.1	1.6	0.14	C
8	6	25	6.1	18-56.1	155-17.0	9.7	1.6	12	248	31.2	0.64	3.3	3.5	0.14	D
8	7	11	26.7	18-43.3	155-19.1	6.7	3.2	20	280	46.6	0.42	4.5	5.8	0.15	D
8	7	45	8.9	18-48.8	155-22.1	1.9*	2.3	17	267	36.5	0.56	3.6		0.18	D
8	9	8	25.8	19-20.0	155-10.6	6.7	1.7	19	146	3.9	0.11	0.9	0.7	0.18	B
8	16	50	11.6	18-43.4	155-20.4	11.6	2.8	16	281	44.8	0.31	2.8	6.9	0.10	D
8	19	3	7.6	19-51.5	155-36.4	23.0	2.6	25	114	27.9	0.19	1.1	3.7	0.14	B
8	21	6	27.6	19-25.1	155-22.1	7.0	1.6	17	140	4.9	0.10	0.8	0.7	0.16	C
8	21	27	50.0	19-23.0	155-26.9	3.6	1.3	14	141	8.2	0.15	1.0	1.7	0.23	C
8	23	52	12.8	19-17.8	155-22.2	6.1	1.1	17	134	4.8	0.11	1.0	0.8	0.22	C
9	3	11	51.6	18-48.1	155-20.4	29.4*	3.5	24	268	39.7	0.47	3.3		0.25	D
9	3	38	50.3	18-47.9	155-19.9	1.3*	2.9	19	268	40.7	0.57	3.6		0.18	D
9	6	13	45.1	18-44.6	155-18.7	8.0*	2.4	18	282	45.7	0.87	5.5		0.19	D
9	9	9	58.4	19- 8.1	155-14.4	36.5	1.4	17	206	19.5	0.33	2.3	3.7	0.17	C
9	15	53	20.9	18-50.4	155-19.5	8.5	2.0	14	261	38.1	0.41	2.6	2.5	0.12	D
9	21	53	18.1	19-17.4	155-13.7	5.8	2.2	19	174	9.6	0.17	1.0	1.0	0.16	C
10	3	13	2.2	19-16.9	155-50.9	10.5	3.9	22	110	3.0	0.11	1.2	1.2	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 10	4	17	56.0	18-41.6	155-19.3	8.0*	2.6	14	283	48.3	0.77	4.9		0.16	D
10	6	11	17.2	19-22.1	155- 8.5	5.0	1.5	16	133	2.3	0.11	1.0	0.9	0.19	C
10	8	8	52.4	19-20.4	154-57.6	29.7	2.0	10	294	21.1	1.02	5.3	5.9	0.08	D
10	14	26	35.7	19-19.8	155-17.2	6.0	0.7	13	165	0.6	0.10	0.8	0.5	0.12	C
10	16	5	33.7	18-52.1	155-18.6	8.2	2.7	17	261	36.1	0.41	2.5	2.2	0.11	C
10	16	13	16.3	19-22.6	155-22.8	6.0	1.3	12	158	4.5	0.12	0.8	0.7	0.13	C
10	18	16	10.2	19-56.1	155-27.7	28.8	2.0	16	169	13.3	0.19	1.4	2.3	0.11	C
11	2	48	47.8	19-46.7	155-48.1	13.6*	2.2	13	248	35.9	0.36	2.5		0.14	D
11	8	2	37.3	19-19.8	155-45.5?	6.4	2.6	12	184	13.7	0.31	2.9	2.8	0.19	C
11	8	25	42.6	19-19.2	155-15.6	8.0	1.3	17	185	3.6	0.11	0.8	1.2	0.12	C
11	8	47	31.5	19-24.5	155-23.4	3.2	1.2	13	165	6.7	0.16	1.0	2.4	0.21	C
11	10	0	1.7	20- 7.1	155-52.5	30.3	2.5	17	263	10.0	0.92	4.7	7.1	0.12	D
11	21	24	18.5	19-24.8	155-23.4	7.8	1.6	18	98	6.7	0.09	0.7	0.6	0.17	B
12	5	51	19.9	19- 9.0	155-39.4	4.1	2.3	19	159	11.6	0.16	1.2	1.0	0.16	C
12	8	40	38.5	19-19.4	155-16.1	7.3	1.4	19	142	2.7	0.10	0.8	0.5	0.16	C
12	9	32	55.3	19-20.7	155-13.8	6.1	1.1	13	171	4.9	0.15	1.0	0.8	0.17	C
12	10	55	55.5	19-26.6	155-24.6	2.7	1.1	10	199	6.2	0.14	0.8	1.7	0.10	B
12	12	16	28.6	19-20.9	155-11.7	7.4	1.4	15	136	3.8	0.10	1.0	0.6	0.18	B
12	17	4	39.8	19-20.8	155-14.1	6.4	1.8	18	157	4.4	0.10	0.8	0.6	0.16	C
12	18	19	25.1	19-19.5	155- 8.6	3.4	1.7	17	174	5.3	0.17	1.1	1.2	0.22	C
12	19	58	48.2	18-41.3	155-20.0	8.0*	3.1	24	285	47.7	0.57	3.6		0.13	D
12	20	30	3.4	18-12.7	155-20.1	8.0*	2.0	14	334	105.6	9.85	58.0		0.18	D
12	20	51	16.5	19-54.9	155-33.3	32.6*	2.0	12	272	18.0	0.18	1.6		0.07	D
12	21	14	8.3	19-18.9	155-25.2	5.6	1.3	10	141	4.2	0.14	1.4	1.2	0.21	C
12	23	29	59.4	19-18.5	155-15.9	6.1	1.3	14	200	4.9	0.15	0.9	0.8	0.14	C
12	23	37	56.3	19-20.7	155-13.9	6.0	0.8	10	169	4.7	0.22	1.5	1.2	0.21	C
13	2	16	14.3	19-20.8	155-12.3	5.9	2.2	23	164	3.1	0.14	1.0	0.7	0.24	C
13	2	34	45.8	19-18.9	155- 8.1?	0.0	2.2	21	208	6.6	5.18	1.3	9.7	0.24	C
13	4	47	10.6	19- 9.2	155-30.0	26.4	1.8	14	171	16.2	0.27	1.6	3.4	0.13	C
13	9	48	36.5	19-26.4	155-26.6	7.2	1.0	19	110	8.5	0.12	0.8	0.7	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR	13	20	16 58.8	19-19.3	155- 8.6	8.0*	1.9	16	178	5.5	0.11	0.9		0.14	C
	13	21	48 7.2	19-19.8	155-14.0	6.5	1.7	19	167	5.9	0.12	0.8	0.7	0.18	C
	13	22	22 1.0	19-18.8	155-13.6	8.0*	1.0	10	213	7.1	0.17	1.2		0.13	C
	13	23	24 52.4	19-19.5	155-14.0	8.0*	0.8	14	187	6.0	0.11	0.9		0.14	C
	14	0	42 34.4	19-12.4	155-27.5	6.2	2.2	20	126	5.4	0.11	1.0	0.8	0.22	C
	14	2	10 55.1	18-49.7	155-18.7	1.6*	2.5	16	277	39.9	0.77	4.8		0.19	D
	14	8	54 29.9	19-19.9	155-17.7	28.7	2.2	17	116	0.6	0.20	1.0	1.7	0.11	B
	14	11	8 58.9	19-47.4	155-40.9	13.6*	2.8	24	110	20.0	0.08	0.8		0.15	C
	14	11	45 25.1	19-18.8	155-13.6?	8.0*	1.3	10	213	7.0	0.27	1.9		0.16	C
	14	16	43 32.8	19- 5.0	155-22.0	26.9	2.0	22	199	13.3	0.25	1.5	2.6	0.15	C
	14	17	13 0.8	19-18.1	155-15.6	5.9	2.1	19	171	4.9	0.15	1.0	0.8	0.17	C
	14	19	12 15.8	19-20.8	155- 7.2	3.9	1.6	15	153	5.2	0.16	1.3	1.4	0.21	C
	14	22	13 6.4	19-19.1	155- 8.6	1.4	2.0	21	179	5.8	1.34	1.0	4.9	0.24	C
	14	23	18 44.2	19-19.4	155- 8.7	6.7	2.3	22	175	5.3	0.16	1.1	0.7	0.22	C
	15	9	48 43.3	19-20.0	155-12.9	5.7	1.7	18	142	6.5	0.10	0.8	0.8	0.19	B
	15	11	30 57.1	19-21.7	155-24.3?	7.3	1.2	14	112	3.3	0.12	0.9	0.9	0.19	B
	15	11	48 10.2	19-18.7	155-15.0?	9.1	1.0	14	201	4.9	0.14	0.9	1.7	0.11	C
	15	12	22 23.9	19-22.3	155-26.7?	0.0	1.8	11	116	7.1	0.57	1.1	20.1	0.19	C
	15	18	53 41.2	19-51.9	155-33.3	30.1	2.1	16	158	37.3	0.22	1.2	3.6	0.08	C
	15	19	11 37.8	18-50.5	155-19.4	7.6	2.4	17	276	38.1	2.73	5.6	14.5	0.19	D
	16	1	37 21.4	18-53.1	155-17.7	9.0	2.8	24	252	35.1	0.32	1.7	2.3	0.15	C
	16	3	7 27.5	19-19.8	155-15.1?	2.0	1.1	15	177	4.1	0.25	1.4	1.9	0.22	C
	16	5	1 14.9	19-23.6	155-23.1?	7.7	1.4	16	95	5.9	0.06	0.6	1.3	0.13	B
	16	5	22 43.3	19-23.3	155-23.6	5.7		16	114	5.7	0.07	0.6	0.7	0.16	B
	16	5	48 30.9	19-19.3	155-15.6	9.2	2.0	15	183	3.5	0.10	0.7	1.1	0.09	B
	16	9	2 17.7	18-54.3	155-13.1	8.2	2.7	14	259	38.1	0.70	3.4	3.6	0.16	D
	16	13	12 1.8	19-11.5	155-32.4?	3.2	2.1	15	98	8.8	0.20	1.4	1.7	0.31	C
	16	17	30 45.1	19-21.0	155-24.3	5.5	1.2	14	147	2.3	0.09	0.7	0.8	0.16	B
	16	23	24 38.7	19-17.0	155-18.0	30.7	1.4	14	183	5.8	0.32	2.1	3.3	0.13	C
	17	3	46 16.3	19-22.3	155-23.1	6.7	1.2	18	109	3.9	0.08	0.6	0.6	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 17	4	37	55.9	18-48.8	155-18.0	5.8	2.3	16	266	41.9	1.50	3.3	9.4	0.14	D
17	5	48	19.0	19-19.9	155-17.9	28.0	2.4	27	110	0.9	0.12	0.8	1.3	0.14	B
17	21	19	2.7	19-18.8	155-15.3?	9.3	0.7	14	199	4.5	0.20	1.2	2.1	0.12	C
18	8	8	57.3	19-15.7	155-33.7	1.3	2.5	21	72	12.3	0.77	1.0	2.8	0.26	C
18	9	45	40.1	19-20.4	155-25.6	7.9	2.3	23	81	4.1	0.07	0.8	1.3	0.18	B
18	11	48	27.2	19-25.1	155-23.9	3.7	0.6	16	135	7.2	0.14	0.9	1.3	0.19	B
18	15	6	57.9	19-19.8	155-15.5	7.4	2.0	19	162	3.4	0.10	0.8	0.6	0.15	C
18	16	9	27.9	19-20.3	155-11.3	9.0	0.6	12	212	4.2	0.13	0.8	1.5	0.08	B
18	18	0	33.2	19-20.2	155-12.4	8.0*	1.7	13	197	5.6	0.08	0.6		0.09	C
18	18	44	36.7	19-22.2	155-12.2	0.9		7	141	0.9	0.10	0.6	0.5	0.06	B
18	19	17	36.1	19-21.2	155-12.1	0.0	1.5	11	174	2.5	0.85	1.2	1.4	0.20	C
18	19	28	1.0	19-21.9	155-12.0	1.8	1.2	12	153	1.5	0.17	0.7	0.5	0.11	C
18	19	32	24.6	19-22.6	155-12.2	1.3		7	146	0.8	0.07	0.5	0.3	0.06	B
18	19	34	5.0	19-21.9	155-11.9	1.7	0.3	8	152	1.7	0.14	0.7	0.5	0.12	C
18	19	36	54.0	19-22.2	155-12.5	1.5		6	153	0.5	0.11	0.7	0.3	0.04	B
18	19	39	11.5	19-22.1	155-12.1	1.4		7	146	1.2	0.06	0.4	0.3	0.04	B
18	19	41	4.3	19-22.2	155-12.3	1.2	-0.0	8	142	0.8	0.10	0.6	0.4	0.09	B
18	19	49	53.4	19-21.9	155-12.2	1.1	1.6	11	154	4.1	0.20	0.8	0.8	0.13	C
18	19	52	13.0	19-21.7	155-12.8?	0.3	0.6	10	154	1.4	2.84	1.0	5.6	0.19	C
18	20	7	47.1	19-21.6	155-12.8	0.5	1.1	9	157	1.6	0.47	0.9	0.8	0.14	C
19	7	3	52.2	19-10.0	155-14.6	40.2	1.7	21	198	16.3	0.28	1.6	2.5	0.14	C
19	8	15	24.7	19-20.7	155-15.9?	8.8	1.1	11	146	2.9	0.14	1.1	0.9	0.16	B
19	13	6	45.8	19-19.7	155-11.6	10.4	1.2	13	168	5.4	0.11	0.7	1.2	0.09	B
19	13	51	3.2	19-18.8	155-10.3	8.0*	1.6	13	196	6.1	0.10	0.8		0.10	C
19	14	39	7.1	19-23.1	155-23.9	7.3	2.2	18	115	5.5	0.10	0.8	0.7	0.19	B
20	2	0	26.9	19-18.6	155- 6.6	0.0	2.5	17	196	8.6	0.58	1.0	1.2	0.19	C
20	9	32	20.6	19-22.9	155-24.3	5.9	1.9	19	98	5.2	0.08	0.7	0.7	0.16	B
20	9	56	21.4	19-13.9	155-23.5	6.2	2.2	17	151	7.3	0.11	1.0	0.7	0.18	C
20	12	22	9.4	19-19.7	154-56.7	35.5	2.1	14	283	10.8	0.24	1.6	1.1	0.06	C
20	14	32	26.1	19-20.3	155-12.0	7.0	3.0	21	141	5.0	0.09	0.8	0.5	0.19	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 20	14	49	45.7	19-19.8	155-11.8	8.0*	0.7	11	164	8.6	0.10	0.8		0.10	C
20	15	18	48.6	19-24.2	155-24.4	4.1	1.3	13	187	7.7	0.14	0.9	1.4	0.14	C
20	18	14	51.9	19-22.0	155-22.9	6.2	1.1	13	149	3.4	0.12	1.0	0.9	0.18	B
20	18	56	3.0	19-20.6	155-13.1?	8.1	1.3	16	149	5.9	0.08	0.7	0.5	0.12	B
21	9	37	14.7	19-30.9	155-42.3?	2.9	2.0	14	111	23.8	0.30	1.3	3.1	0.14	C
21	16	27	51.4	19- 8.5	156- 8.1	10.6	2.0	12	313	52.5	0.36	4.1	6.8	0.15	D
21	21	32	50.6	19-22.6	155-23.1	7.5	1.8	19	93	4.4	0.06	0.6	0.5	0.16	B
21	23	7	29.1	19-19.1	155-10.9	8.0*	0.6	14	177	5.7	0.12	1.0		0.14	C
22	5	32	6.3	19-20.4	155-13.8	9.3	1.3	13	165	5.2	0.08	0.7	1.1	0.08	B
22	7	33	11.3	18-47.2	155-16.7	8.0*	2.0	18	276	45.5	0.85	5.4		0.21	D
22	9	10	24.0	18-50.8	155-21.1	9.0	1.2	12	271	36.3	0.69	3.8	3.4	0.09	D
22	16	12	36.9	19-19.3	155-16.4	7.9	1.4	13	190	2.4	0.12	1.0	0.4	0.11	C
22	17	2	19.9	19-17.3	155-13.9?	7.0	1.2	10	227	8.1	0.66	3.3	2.3	0.21	D
22	19	29	27.0	19-19.7	155-15.9	7.2	1.1	16	147	2.8	0.14	1.0	0.6	0.14	B
23	2	18	59.9	19-19.1	155- 7.7?	1.8	2.0	23	189	6.7	0.22	1.1	1.1	0.22	C
23	3	31	28.9	19-20.6	155-12.5	3.8	1.2	14	184	5.4	0.22	1.4	1.4	0.26	C
23	5	29	20.7	19-18.1	155-21.4	5.7	1.2	11	129	5.0	0.13	1.0	0.9	0.15	B
23	10	51	17.5	19-19.7	155-12.5	8.0*	1.4	10	206	7.8	0.22	1.4		0.12	C
23	15	13	17.2	19-19.8	155-15.1	9.2	2.3	11	195	4.1	0.12	0.7	1.0	0.06	B
24	0	35	54.2	19-19.0	155-15.7	8.2	1.0	13	189	3.6	0.17	1.4	0.7	0.17	C
24	6	40	20.8	19-27.9	155-44.6	7.6	1.3	16	126	25.8	0.11	0.9	1.6	0.14	C
24	8	13	59.7	19-21.8	155-22.9	5.0	1.3	8	166	3.0	0.16	0.8	1.3	0.09	B
24	12	23	45.8	19-19.1	155-13.4	8.0*	1.7	6	208	7.2	0.22	1.9		0.12	C
24	13	4	28.4	19-27.1	155-26.9	4.2	1.3	10	233	8.1	0.18	0.9	0.8	0.08	C
24	13	20	57.4	19-19.8	155-13.1	7.7	2.3	16	181	6.9	0.09	0.6	1.5	0.10	C
24	15	44	14.4	19-19.5	155-15.4	8.5	1.1	12	180	3.7	0.18	1.2	2.0	0.14	C
24	15	47	6.2	19-24.9	155-23.6	4.8	0.9	10	188	7.2	0.15	1.0	1.0	0.16	C
24	19	20	37.9	19-18.2	155-15.2	6.9	2.4	22	152	5.2	0.12	0.9	0.6	0.18	C
24	19	27	1.4	19-23.1	155- 2.7?	2.1	1.5	17	127	5.9	0.15	1.0	1.4	0.24	C
24	20	17	31.8	19-22.6	155-23.2	5.3	1.1	10	168	4.5	0.16	1.1	1.4	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 24	20	38	13.9	19-25.6	155-26.9	7.6	1.6	22	110	9.9	0.11	0.7	0.7	0.17	B
24	21	40	38.8	19-20.5	155-11.2?	4.6	1.0	13	187	3.7	0.26	1.7	1.3	0.23	C
25	0	59	57.1	18-52.9	155-18.7	8.2	2.3	14	265	34.6	0.71	4.1	3.2	0.13	D
25	3	35	6.9	19-16.6	155-22.3	8.0*	1.1	11	200	6.9	0.24	1.8		0.19	C
25	3	56	54.0	19-17.4	155-21.8	2.9	1.0	15	136	5.6	0.10	0.7	1.1	0.16	B
25	6	45	34.4	19-20.7	155-12.8	7.2	1.2	16	180	5.7	0.11	0.8	0.5	0.14	C
25	7	25	24.3	19-19.1	155-17.0	29.4	1.0	18	160	1.9	0.24	1.5	2.2	0.15	C
25	10	37	18.4	20- 0.8	155-32.1	47.0	2.7	26	187	24.3	0.30	1.3	2.8	0.10	C
25	11	40	59.9	19-16.3	155-23.3	2.2	0.9	17	134	6.0	0.09	0.7	1.0	0.17	B
25	22	9	0.5	18-51.8	155-17.1	4.1	3.5	24	257	37.7	1.23	2.5	8.0	0.16	D
25	23	51	20.7	19-30.2	155-11.4	8.0*	0.8	15	182	11.5	0.12	1.0		0.14	C
26	0	31	41.5	18-59.2	155-17.5?	8.2	1.5	15	259	26.3	0.77	4.3	3.8	0.23	D
26	2	11	54.0	19-20.3	155- 8.1	8.0	0.3	10	235	4.6	0.36	2.5	2.9	0.13	C
26	3	10	47.8	19-19.4	155-15.9	6.4	0.1	11	176	2.9	0.15	1.0	0.8	0.14	C
26	6	28	18.8	19-22.4	155-22.8	5.4	0.6	8	163	4.2	0.27	0.8	2.7	0.10	C
26	6	54	37.4	19-15.2	155-28.0	8.8	1.4	16	142	3.2	0.08	1.0	1.2	0.18	B
26	10	58	49.4	19-22.6	155-27.3	8.0*		9	158	8.4	0.23	1.9		0.29	C
26	11	23	25.9	18-50.8	155-19.6	8.1	2.5	14	264	37.5	0.49	2.9	2.6	0.12	D
26	13	34	22.2	18-48.1	155-17.5	8.0*	2.4	15	280	44.2	0.65	4.2		0.14	D
26	14	54	47.5	18-52.9	155-18.3	8.5	2.7	12	253	39.5	0.43	4.8	6.5	0.11	D
26	21	43	15.8	19-21.5	155-17.0	27.0		10	148	2.5	0.42	2.1	3.3	0.09	B
26	22	12	6.0	19-20.6	155-15.7	31.4		12	150	3.1	0.37	1.8	3.0	0.10	B
27	0	59	6.9	19-20.6	155-10.8	5.2	2.2	13	220	3.2	0.23	1.4	1.0	0.18	C
27	2	22	25.7	19-19.4	155-17.6	28.6	2.3	13	145	1.4	0.27	1.3	2.6	0.10	B
27	4	11	4.1	19-21.8	155-27.9	0.1*		11	129	8.5	0.15	1.0		0.23	C
27	5	50	3.7	19-26.6	155-24.3	2.5		10	195	6.2	0.20	1.0	2.0	0.13	C
27	6	1	1.4	21- 1.7	156-15.3	38.1*	4.1	13	321	29.0	0.49	3.9		0.27	D
27	9	56	35.8	19-19.4	155-12.5	2.7	2.1	21	149	5.6	0.15	0.9	1.2	0.24	C
27	11	18	13.7	19-19.1	155- 8.0?	4.6	1.3	15	181	6.4	3.81	1.5	7.1	0.25	C
27	12	50	25.5	19-18.9	155- 7.6	8.0*	1.2	10	188	7.1	0.27	2.5		0.24	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 27	14	31	23.5	19-18.7	155-12.5	1.8	2.3	23	150	6.9	0.34	0.8	1.1	0.23	C
27	15	6	14.0	19-20.5	155- 6.8	8.0*	1.5	7	159	6.1	0.08	1.1		0.07	C
27	16	24	17.8	19-10.8	155-27.0	32.0	1.9	13	238	18.5	0.60	2.8	4.7	0.11	D
27	17	0	8.2	19-19.6	155-11.5	5.4	1.0	14	168	5.4	0.16	1.1	1.0	0.22	C
27	22	47	57.9	19- 4.7	155- 8.1?	15.3*	1.9	20	241	29.4	0.37	2.8		0.31	D
28	0	6	53.4	19-18.5	155-13.4	8.0*	1.2	9	220	7.6	0.15	1.0		0.08	C
28	4	23	15.2	19-20.5	155-13.6?	2.2	1.0	11	176	5.3	0.60	1.3	1.8	0.22	C
28	6	4	6.2	19-11.5	155-27.9	8.0*	1.3	8	168	18.0	0.20	3.1		0.21	C
28	6	29	14.7	19-22.9	155-24.4	8.0*	0.9	8	208	5.4	0.15	1.0		0.10	C
28	7	10	15.2	19-20.5	155-13.0	8.0*	0.7	12	183	6.2	0.11	0.8		0.11	C
28	7	15	58.6	19-20.5	155-12.0	8.0*	1.2	8	196	4.7	0.12	1.0		0.08	C
28	7	28	32.6	19-24.9	155-16.5	13.3	1.7	14	103	0.8	0.05	0.5	0.5	0.05	A
28	12	27	51.7	19-19.9	155-11.6	8.0*	1.1	12	164	5.0	0.09	0.8		0.12	C
28	23	18	35.9	19-19.7	155-13.8	3.7	1.4	19	165	6.1	0.19	1.1	1.3	0.25	C
28	23	18	46.9	18-53.7	156-36.8	3.0	3.2	20	325	100.2	0.25	10.5	11.4	0.12	D
29	0	2	14.9	19-22.1	155-10.2	5.4	1.2	13	144	0.6	0.15	1.1	1.3	0.17	C
29	1	20	27.7	18-52.2	155-10.9?	5.4*	1.9	17	269	49.5	0.30	2.1		0.18	D
29	3	18	44.6	19-23.5	155-15.3	1.6	1.0	8	170	2.4	0.08	0.4	0.3	0.07	B
29	3	44	26.3	19-18.8	155-12.7	8.0*	1.2	13	178	7.8	0.10	0.7		0.12	C
29	4	0	51.3	19-17.6	155-13.9	8.0*	1.2	12	233	7.6	0.23	1.3		0.11	D
29	4	47	44.9	19-19.0	155- 8.5	8.0*	1.4	12	286	6.2	0.95	4.9		0.18	D
29	6	27	25.1	19-22.9	155-14.5	0.0	0.8	11	119	2.6	0.28	0.4	0.5	0.11	B
29	8	21	56.8	19-21.6	155-24.8	7.8	1.6	18	96	3.6	0.13	0.9	0.8	0.20	B
29	9	14	48.7	19-26.6	155-27.3	4.8	2.0	10	237	9.2	0.33	1.7	1.3	0.11	C
29	9	16	2.1	19-28.8	155-29.7	8.0*	2.0	7	304	11.4	0.61	3.2		0.04	D
29	9	16	13.4	19-27.1	155-26.3	7.4	2.2	20	70	7.3	0.10	0.7	0.6	0.15	B
29	9	46	38.0	19-19.9	155-15.1	7.3	1.5	16	150	4.1	0.10	0.8	0.6	0.17	B
29	10	12	19.7	19-27.9	155-26.9	7.6	1.7	14	170	7.2	0.13	0.9	0.6	0.10	C
29	10	20	29.1	19-26.7	155-30.0	8.0*	1.8	7	295	13.1	0.89	4.6		0.09	D
29	13	43	23.1	19- 4.8	155-22.2	12.6*	1.6	16	201	25.1	0.18	1.7		0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 29	14	35	57.6	19-19.4	155-15.6	6.3	1.0	12	179	3.4	0.14	0.9	0.8	0.15	C
29	15	58	9.8	19-45.9	155-29.3?	7.0	2.0	20	215	20.6	0.33	3.2	4.4	0.27	D
29	16	41	4.1	19-19.9	155-15.6	8.6	1.4	12	168	3.2	0.16	1.0	1.8	0.11	C
29	19	23	4.1	19-26.5	155-25.7	5.5		16	235	7.4	0.29	1.4	0.8	0.17	C
29	19	55	59.0	19- 0.9	155-14.3	47.0	2.7	23	230	32.4	0.37	1.9	2.9	0.14	C
29	20	5	38.8	19-11.8	155-14.4	44.5	1.9	16	189	13.7	0.42	2.0	4.5	0.14	C
29	20	59	18.7	18-59.4	155-13.8	14.7*		17	236	38.7	0.35	2.5		0.20	D
30	0	6	40.4	19-20.8	155- 7.8	7.4	1.4	16	152	4.3	0.13	1.3	0.8	0.20	C
30	1	15	5.7	18-46.9	155-14.2	8.0*	2.4	17	283	50.2	1.03	6.7		0.21	D
30	1	29	58.0	18-54.1	155-19.9	8.8	3.0	14	248	36.2	0.21	2.6	3.9	0.13	D
30	1	32	46.6	18-46.6	155-15.6	8.0*	2.6	16	272	48.5	0.76	5.0		0.21	D
30	1	48	18.3	18-43.6	155-17.3	8.0*	2.7	14	290	48.7	0.93	6.0		0.14	D
30	1	49	57.4	19-23.3	155-23.1	7.9	2.4	19	54	5.7	0.05	0.5	0.3	0.12	B
30	1	58	40.2	18-48.3	155-18.0	8.0*	3.1	19	321	54.7	0.36	2.4		0.10	D
30	2	1	9.5	18-51.3	155-20.4	18.2*	2.1	9	274	36.9	0.60	4.2		0.11	D
30	2	8	10.4	18-48.9	155-20.4	12.9*		13	281	38.9	0.86	5.7		0.14	D
30	2	13	18.8	18-50.9	155-21.6?	17.3*	2.5	13	272	35.5	0.35	2.3		0.13	D
30	2	17	21.3	18-48.7	155-16.9	8.0*	2.3	15	278	44.7	0.65	4.4		0.14	D
30	2	40	56.9	18-48.7	155-16.7	8.0*	2.8	19	266	44.9	0.46	3.0		0.14	D
30	3	7	40.2	18-47.4	155-16.8	8.0*	2.4	18	281	45.8	0.67	4.4		0.14	D
30	3	52	45.4	18-48.9	155-17.9	8.0*	2.7	19	266	42.8	0.49	3.2		0.17	D
30	4	37	21.2	19-17.8	155-27.5	6.4	1.6	13	112	2.8	0.10	1.1	0.8	0.20	B
30	4	51	9.1	19-12.0	155-27.2	8.0*	1.5	13	228	8.2	0.26	1.8		0.16	D
30	5	43	34.0	19-20.3	155-13.2	8.0*	0.9	11	152	6.0	0.07	0.7		0.11	C
30	7	12	18.9	19-20.6	155-11.2	9.0	1.1	8	207	3.6	0.11	0.8	1.2	0.05	B
30	7	31	35.6	18-51.2	155-17.3?	2.1*	2.6	15	264	42.2	0.44	2.9		0.15	D
30	8	53	48.3	18-48.1	155-17.9	8.0*	2.6	17	273	43.5	0.61	4.0		0.16	D
30	9	30	44.4	18-49.3	155-18.1	8.0*	2.4	15	270	42.2	0.67	4.5		0.19	D
30	14	1	15.3	19-17.7	155-23.8?	0.8	1.3	14	132	4.7	1.68	0.7	6.3	0.16	C
30	14	2	49.9	18-55.1	155-30.5	20.9	3.9	23	246	17.9	0.41	2.4	4.6	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 30	19	14	1.3	19-19.5	155-10.2	9.3	1.7	12	172	4.7	0.08	0.6	1.4	0.07	B
30	23	40	17.1	19-20.9	155-12.9?	7.9	2.0	18	146	2.9	0.06	0.6	0.9	0.11	B
31	2	55	59.9	19-18.7	155-13.7	8.0*	1.0	10	215	7.0	0.21	1.5		0.17	C
31	5	15	41.4	19-19.3	155-16.4	6.2	1.4	17	150	2.2	0.11	0.9	0.7	0.20	B
31	16	20	34.9	19-20.8	155- 5.6	6.7	4.1	20	147	5.0	0.10	0.8	0.6	0.15	B
31	18	19	25.3	19-20.0	155- 5.1	3.1	1.7	15	209	9.2	0.29	1.8	1.7	0.22	C
31	18	44	59.9	19-22.3	155-25.1	8.0*	1.8	11	136	5.0	0.07	0.6		0.09	C
31	18	53	58.8	19-22.9	155- 6.3	4.1	3.1	18	114	6.5	0.13	1.1	1.3	0.26	C
31	23	10	22.2	19-43.4	155-33.7	27.6*	2.0	11	140	31.0	0.98	6.6		0.10	C

Table 3. Felt earthquakes

Date	Time H	M	S	Magnitude	Felt report
Jan 9	19	00	43.1	2.6	Hawaii National Park
13	13	59	32.2	4.3	Kapapala
16	18	25	59.4	1.9	Kapapala
17	08	04	13.1	2.9	Kapapala
21	01	34	04.3	1.7	Hawaii National Park
23	19	23	16.7	2.1	Kapapala, South Kona
Feb 2	05	53	31.0	3.3	Kapapala, Hawaii National Park, Kealakekua
10	03	13	06.9	2.7	Kainaliu
16	06	05	33.4	3.1	Kapapala
16	11	14	42.9	3.4	Kapapala
17	13	17	56.6	4.0	Kapapala, Hilo, Volcano, Honokaa
18	09	52	27.4	3.1	Kamuela
21	01	03	51.8	3.9	Kapapala
24	22	49	36.9	3.9	Kainaliu, Captain Cook, Kealakekua
28	22	47	07.4	2.9	Kapapala
29	12	08	24.5	5.0	Kainaliu, Captain Cook, Kapapala, Island of Oahu
Mar 3	08	09	02.8	3.9	Captain Cook, Kapapala
9	03	11	51.6	3.5	Kapapala
10	03	13	02.2	3.9	Milolii, Captain Cook, Kainaliu, South Kona
27	06	01	01.4	4.1	Island of Maui
30	14	02	49.9	3.9	Kainaliu, Naalehu, Volcano, Captain Cook
31	16	20	34.9	4.1	Volcano, Glenwood, Hilo, Papaikou, Kalapana

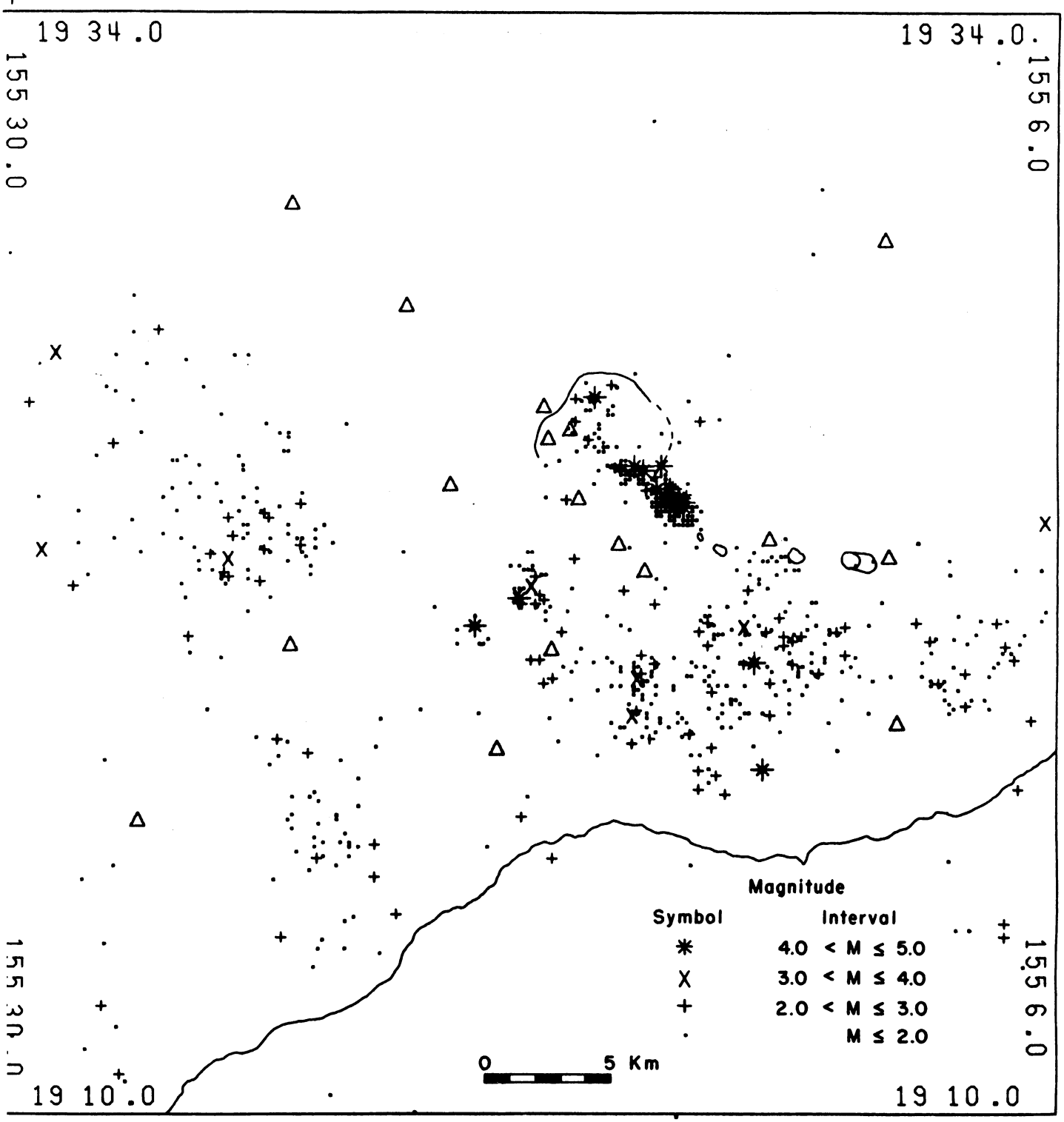

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAAPUNA	KAA	19 15.98	155 52.28	524	1	5.5	1020	RF12	Installed 1/4/72
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			System 1 3/7-29/72
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

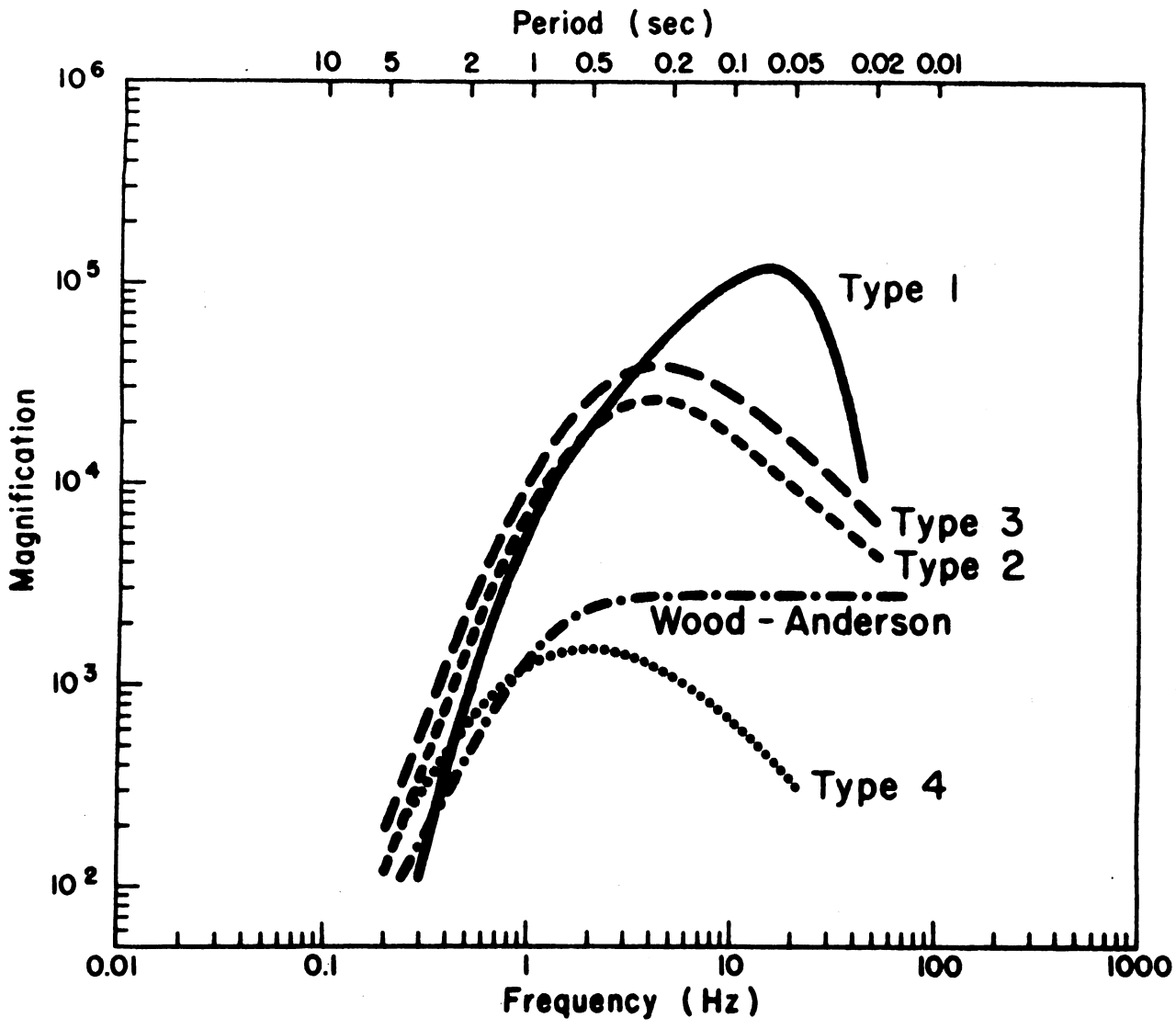

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 7. The field tilt bases were not measured during this quarter.

Table 6.--Tilt Coordinates at Uwekahuna,

January, February, and March 1972

Date	N-S	E-W	Date	N-S	E-W
Jan. 2	719	326	Mar. 5	728	326
9	721	326	12	728	325
16	723	324	19	728	328
23	724	320	26	726	332
30	727	316			
Feb. 6	730	316			
13	729	319			
20	729	318			
27	729	319			

Table 8. --U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N. Deg. Min.	Long. W. Deg. Min.			
Tree Molds	TM	19 - 26.3	155 - 17.3	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19 - 24.1	155 - 16.8	---do---	25.40	Equilateral triangle.
Keamoku	Kea	19 - 25.1	155 - 19.0	---do---	47.55	do
Ahua Kamokukolau	Kam	19 - 22.7	155 - 16.6	---do---	50.79	do
Kipuka Nene	KN	19 - 19.4	155 - 16.7	---do---	47.73	do
Hilina Pali	HP	19 - 18.2	155 - 18.6	---do---	47.73	do
Kapapala Ranch	Kap	19 - 20.5	155 - 23.8	---do---	50.79	do
Mehana	M	19 - 26.2	155 - 14.3	---do---	25.00	do
Uwekahuna	U	19 - 25.5	155 - 17.4	---do---	50.79	do
Uwekahuna Vault		19 - 25.4	155 - 17.6	Daily	3.48	NS. and EW.

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Hamilton, R. M., B. E. Smith, J. C. Hall, and J. H. Healy, 1969, Summary of seismic activity in the Pahute Mesa area, Nevada Test Site, December 1968 - June 30, 1969: U. S. Atomic Energy Comm. (USGS-474-58): Springfield, Va., Clearinghouse for Federal Sci. and Tech. Inf., 63 p.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 66

April, May, and June 1972

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Chronological Summary

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CHRONOLOGICAL SUMMARY

The Mauna Ulu eruption that began in February continued through the quarter. The level of activity at Mauna Ulu increased in early April, and vents C and D at Alae, which had become dormant in late March, resumed their activity on April 3. The lava lake at Alae again became active, and a small shield built over vent D before it declined and extinguished later in the month. The principal active vents at the beginning of this renewed activity were A in the main Mauna Ulu crater and C at Alae. Each fed an actively circulating lava lake that showed short-period rise-and-fall cycles of the "gas-piston" type that were described in the 1969-1971 Mauna Ulu eruption. Vent A gradually disappeared as a source of fountaining. New vents became active in the trench near the former vent B from time to time and flooded the trench with flowing lava that cascaded from the trench into the crater. Each of these vents seemed to be a temporary manifestation of a continuing feeder in the vicinity of vent B. Most of the flowage westward from the trench into the crater was in a lava tube beneath a crusted surface in the trench and through the septum between it and the main crater.

This pattern progressed to a stable configuration with the level about the same in the trench and the crater, but with lava visible in the trench only when holes collapsed in its generally crusted roof. The lava lake in the crater remained at a more-or-less constant level about 20-30 m below the rim. No overflows occurred from Mauna Ulu during the remainder of the life of this stable eruptive pattern, but Alae overflowed almost constantly to produce a growing shield with an active lava lake at its crest, directly over the old crater.

The stability of this eruptive pattern was remarkable. The volume of lava flowing westward from the trench to the crater of Mauna Ulu varied slightly, as did the level of the lava lake in the main crater. The rate of flow of vent C at Alae also varied within rather small limits. Minor inflations and deflations caused tilt changes of a few microradians at the summit of Kilauea. The entire eruptive system seemed to be in a steady-state condition in which inflow determined the output of a master feeder in the vicinity of vent B in the Mauna Ulu trench, the lava lake in the main crater acted as a local reservoir, and overflow from Alae balanced total inflow to the system.

During May some islands appeared in the Alae lava lake, similar to "epimagma" islands described by Jaggar in Halemaumau early in the century. These islands grew and coalesced over a period of about a month, separating the Alae lava lake into two main compartments. One of these, fed directly by the vent, continued to build its levees and

to overplace its growing shield at a greater rate than the other, which was fed by overflow from the first. Thus, the two segments of the lava lake developed distinctly different levels. By the end of the quarter, the Alae shield was more than 30 m high above the early 1972 surface, and its summit was more than 100 m above the pre-1969 rim of Alae Crater. In late June overflows from Alae once again, as in March of this year, cascaded into Makaopuhi Crater. The deep western pit of Makaopuhi began to fill as this flow continued into the next quarter.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 KM, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit Long-Period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes									
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow						
April 1					50	796	13	57	14		101	
2					20	199?	13	22	4	4	4?	
3					89	188?	6	37	5	3	61	
4					122	152?	10	20	9		22	
5				1	69	467	46	44	20	4	12	
6					26	251?	12	74	6		5	
7				15	45	343	27	56	15	2	195?	
8	9m			13	45	394	20	67	13	4	37	
9				4	4	282?	16	21	3	2	12	
10				10	12	221?	33	23	2		69	
11				4	?	301?	27	49	3	1	157	
12				1	28	614	11	30	6		52	
13					4	329?	17	54	4		11	
14					32	614	11	64	15		20	
15					31	400?	15	47	5		10	
16					?	?	?	?	?		?	
17				1	1?	131?	14	31	11		23	
18					17	334	18	79	28	3	54	
19					110	446	72	11	6		91	
20					19	429	71	42	12		10	
21				1	38	352	42	30	7	1	25	
22				2	54	348	30	13	11	1	16	
23					72	353	48	76	16		3	
24				1	204?	346	8?	53	5		1	
25				7	56	327?	22	24	10		315?	
26				1	141	303	29	37	4	1	42?	
27					211	308	14	44	3		?	
28	159m				134	457	11	23	8	1	38	
29	60m				188	339	21	37	5	1	24	
30					298	330	36	56	9	4	8?	

Low to moderate tremor on the upper east rift throughout the month.

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
May 1				3	261	465	31	32	47	5	1	
2				1	163	421	25	29	5	6	10	
3					337	370	35	31	9	2	1	
4					527	343	34	30	7		1	
5					493?	363	27	17	6	1	6	
6				3	230	316	29	21	3	3	158?	
7					169	294	17	33	2		1?	
8					163	239	16	24	5		5	
9					118	298	35	23	9		4	
10					84	229	16	?	?		6	
11	?				50?	152?	35	37	3		?	
12	5m	20m			49	495	9	26	10		4	
13	30m			1	66	466	19	17	8	3	3	
14				1	239?	362	24	41	12			
15				1	413	354	40	14	4		3	
16				2	293	365	58	17	16		1	
17					91	392	48	15	24			
18				2	232	403	35	27	7	1	1	
19				3	54	507	29	27	13		3	
20	36m			1	85	453	32	23	19	1	8	
21		104m			135	413	33	15	5			
22					115	408	41	11	3	2	1	
23				1	60	306	46	23	15		1	
24					162	273	19	17	10	2	325	
25	45m	?			271	453	32	114	16	5	71?	
26		14m		4	110	375	10	52	12	1	38	
27		30m			115	384	15	24	3		28	
28					231	394	31	26	12		?	
29					136	415	51?	24	17	6	13	
30		7m			70	683	20	39	12	1	9	
31		23m			210	599	34	46	16	1	9	

Low level tremor on the upper east rift throughout the month.

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
June 1					111	512	22	53	7	2	7	
2		14m		2	134	662	42	80	15	3	8	
3				1	97	577	62	65	9	11	10	
4					26?	374?	6?	10?	14?		6?	
5					19	413	16	19	8		8	
6		2m			11	453	26	23	12	1	17	
7				1	22	491	12	28	7		?	
8				2	29	441	16	23	5	1	16	
9					28	442	22	24	13	2	20	
10				1	33	520	21	29	18	3	3	
11		60m		2	112	484	14	42	12	1	10	
12	40m	30m		2	61	578	22	28	14	3	18?	
13	30m	5m		4	52	467	19	40	8	1	8	
14	80m				61	513	24	45	16	7	8	
15	25m				42	433	21	58	13	2	5?	
16		7m			80	356	43	64	8	4	10	
17		4m		1	175	407	52	147	13	6	1	
18				2	49	462	26	96	12	7	13?	
19				2	34	482	24	107	17	12?	2	
20					39	604	12	123	14	3	2	
21				2	66	738	21	170	20	6?		
22				2	53	358	38	162	15	4		
23					89	805	13	199	37	9?		
24	80m			1	72	663	37	239	23	3		
25					52	767	30	252	23			
26					26	641	19	253	?			
27	83m	9m			83	266?	39	137	3	1	14?	
28				2	74	238	24	130	8		4	
29				1	57	473	21	225	4	3	3	
30				1	104	289	22	159	6	4	2	

Low level tremor on the upper east rift throughout the month.

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	EPICENTER	FOCAL DEPTH
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ DEPTH or 5 km
B	≥ 6	≤ 150°	≤ 2 x DEPTH or 10 km
C	≥ 6	≤ 225°	≤ 50 km
	≥ 4	≤ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 1	2	11	32.5	19-22.6	155-18.6	15.6	1.2	9	73	2.8	0.17	0.7	1.8	0.05	A
1	2	39	1.1	19-23.1	155-16.3	20.5	1.4	12	70	1.4	0.20	0.8	2.0	0.08	A
1	3	45	57.7	19-23.2	155-25.8	2.9	1.3	13	193	7.1	0.18	0.9	1.5	0.15	C
1	4	38	20.6	18-50.3	155-20.8	10.8*		15	265	37.0	0.41	2.8		0.12	D
1	5	1	41.8	19-21.1	155-24.4	8.7	2.2	19	108	2.5	0.05	0.7	1.1	0.13	B
1	8	16	30.3	18-54.6	155-20.4	14.1*	2.4	14	250	35.1	0.42	3.1		0.17	D
1	8	25	51.4	18-44.9	155-15.4	8.0*	2.7	12	301	50.3	1.24	7.9		0.12	D
1	8	29	45.0	18-50.5	155-18.2	1.6*	3.0	21	260	41.1	0.48	3.2		0.16	D
1	8	34	45.0	18-54.1	155-22.3	9.3	2.3	11	250	32.2	0.30	3.6	4.1	0.10	D
1	8	58	48.4	18-49.2	155-18.0	8.0*	2.6	19	264	42.4	0.47	3.1		0.15	D
1	9	30	9.5	19-19.7	155-11.6	8.0*	0.3	12	166	5.3	0.10	0.8		0.11	C
1	9	52	13.3	18-49.9	155-18.7	1.3*	2.5	16	262	40.9	0.39	2.6		0.11	D
1	10	58	14.4	19-18.6	155-13.4	8.3	1.6	16	179	7.5	0.11	0.8	2.0	0.13	C
1	13	40	42.5	19-19.9	155- 7.4	8.0	1.3	14	170	5.9	0.16	1.6	1.0	0.18	C
1	14	25	15.9	19-21.3	155- 7.8?	2.4	1.8	16	145	8.9	0.33	0.6	1.2	0.12	B
1	14	58	12.2	19-19.5	155- 7.0	7.8	1.9	16	178	6.9	0.17	1.6	0.9	0.21	C
1	16	36	38.8	19-20.9	155-11.2?	7.7	2.0	17	150	3.2	0.37	3.4	5.3	0.62	C
1	16	39	43.2	19-22.3	155-23.6	8.0*	0.8	10	230	7.3	0.37	2.3		0.18	D
1	19	19	23.9	19-18.7	155-16.0	8.5	1.2	16	170	3.6	0.12	0.9	1.3	0.12	C
1	22	31	36.0	19-22.7	155-22.9	3.5	0.8	12	169	4.6	0.17	1.1	1.4	0.17	C
2	1	27	33.6	19-25.1	155-50.8	6.0	1.9	14	136	17.1	0.22	3.1	3.9	0.18	C
2	7	53	50.6	19-21.8	155- 2.6	7.7	0.4	12	137	3.6	0.19	2.1	1.5	0.22	C
2	8	40	19.6	19-18.2	155-16.7	9.0	0.8	15	201	3.4	0.19	1.3	1.7	0.14	C
2	14	39	45.5	19-22.5	155-24.6	8.0*		7	218	4.9	0.20	1.4		0.11	C
2	21	22	13.3	19-19.8	155-12.6	3.6		10	203	6.4	0.29	1.6	2.0	0.20	C
3	6	20	56.7	19-19.6	155- 7.4	8.0*		11	186	7.8	0.20	1.8		0.21	C
3	10	28	1.6	18-48.4	155-19.6	10.1*		12	271	40.6	0.60	4.1		0.13	D
3	11	20	31.7	18-47.0	155-17.4	8.0*	2.5	9	282	45.3	0.57	3.7		0.08	D
3	11	57	32.7	19-25.5	155-28.7	7.3	2.2	17	91	12.3	0.13	0.7	0.8	0.14	B
3	12	5	49.9	18-45.8	155-16.0	8.0*	2.2	9	300	48.4	1.53	9.8		0.12	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	4	4	51 7.1	19-20.9	155-13.2	8.0*		10	170	5.4	0.10	0.8		0.10	C
	4	5	2 10.7	19-21.7	155-12.4	4.9	2.3	13	157	4.6	0.19	1.2	2.0	0.27	C
	4	7	26 8.3	19-24.9	155-25.9	8.0*		8	235	9.8	0.18	1.1		0.07	D
	4	8	34 18.6	19-19.6	155-17.8	6.3		10	170	1.0	0.14	0.8	0.6	0.09	B
	4	16	15 7.9	18-46.7	155-17.5	8.0*	2.2	10	283	45.4	0.57	3.7		0.09	D
	4	23	18 50.3	18-44.5	155-17.3	8.0*	2.6	15	277	47.8	0.57	3.6		0.14	D
	5	10	23 34.6	19-19.4	155- 8.5	2.7	2.1	19	177	5.5	0.17	1.0	1.2	0.22	C
	5	15	17 30.3	19-21.2	155-23.8	6.6	1.3	12	103	2.0	0.08	0.6	0.5	0.11	B
	5	15	34 14.7	19-22.8	155-16.5	17.4	1.1	16	71	1.3	0.10	0.8	1.2	0.11	B
	5	19	23 53.5	19-20.4	155-19.5	3.0	1.0	15	105	3.7	0.10	0.7	1.2	0.16	B
	5	19	38 53.9	19-19.7	155-15.8	5.3	1.3	17	170	2.8	0.14	1.0	0.8	0.18	C
	6	2	35 4.2	19-14.5	155-30.7?	0.0	2.1	18	201	11.2	0.57	1.7	1.1	0.21	C
	6	19	37 57.1	19-25.6	155-24.5	8.0*	1.1	11	184	7.5	0.08	0.6		0.08	C
	6	23	31 37.8	19-33.6	155- 4.5	21.0	1.9	16	119	6.2	0.19	1.0	2.4	0.14	B
	7	2	12 50.4	19-20.5	155-12.9	4.8	1.6	11	183	6.1	0.18	1.0	1.3	0.16	C
	7	2	14 55.3	19-21.0	155-14.2	10.5	1.4	9	236	3.9	0.34	1.5	2.2	0.06	C
	7	2	45 16.1	19-20.6	155- 8.8?	7.2	1.6	12	229	3.4	0.30	2.1	1.9	0.16	C
	7	4	8 40.3	19-21.2	155-12.8?	7.9	1.4	14	167	5.3	0.10	0.8	1.3	0.12	C
	7	4	31 50.1	19-20.9	155-13.9	5.7	1.6	12	163	4.4	0.21	1.2	1.4	0.21	C
	7	4	40 58.3	19-18.1	155-27.5?	8.4	1.5	12	95	3.4	0.13	1.2	1.0	0.18	B
	7	4	41 46.8	19-22.3	155-11.8?	1.7	1.5	11	138	3.5	0.19	1.4	2.7	0.28	C
	7	6	34 48.7	19-21.5	155-24.7?	7.1		10	113	3.4	0.14	1.3	2.3	0.19	B
	7	10	26 39.1	19-19.2	155-12.4?	0.0	1.7	20	174	6.9	6.02	1.1	11.3	0.25	C
	7	18	41 30.1	19-23.6	155-24.4	5.4	1.8	18	99	6.6	0.11	0.8	0.9	0.20	B
	8	1	3 43.5	19-17.8	155-17.0	30.0	3.9	26	167	2.9	0.17	1.1	1.5	0.13	C
	8	1	49 12.2	19-17.4	155-17.8	30.7	2.7	18	171	1.8	0.16	0.9	1.5	0.09	B
	8	3	45 47.7	18-47.2	155-15.6	8.0*	2.7	20	270	46.5	0.51	3.3		0.13	D
	8	3	52 33.7	18-49.9	155-17.6?	21.3	2.8	22	262	40.4	0.42	2.7	7.1	0.14	D
	8	4	30 28.2	18-50.9	155-17.4	14.2*	3.0	22	259	39.0	0.43	2.9		0.17	D
	8	5	2 14.5	18-49.2	155-17.3	7.8	2.8	18	264	41.8	1.83	3.1	10.2	0.13	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	8	5	5 1.8	18-52.2	155-18.8	16.5*	2.7	19	255	35.6	0.29	1.9		0.19	D
	8	7	46 6.2	19-22.3	155- 5.5?	0.0		16	123	6.4	3.59	1.1	7.1	0.19	C
	8	8	3 16.5	19-17.3	155-17.6	30.0	3.1	27	149	2.2	0.13	0.8	1.2	0.13	B
	8	9	47 6.9	19-17.6	155-18.1	28.8	2.2	23	147	1.2	0.18	1.1	1.7	0.14	B
	8	19	40 57.7	19-22.3	155- 6.3	7.5	2.5	20	111	6.3	0.10	0.9	0.7	0.16	B
	8	19	55 12.2	19-19.1	156-23.1	8.5	2.9	22	279	53.6	0.42	4.5	10.3	0.16	D
	8	20	8 32.0	19-19.3	155-13.4	8.0*	1.5	14	205	7.2	0.12	0.8		0.11	C
	8	23	48 45.9	19-18.3	155-17.3	29.3		17	166	2.4	0.17	1.0	1.7	0.09	B
	9	0	45 45.9	19-17.9	155-17.4	29.2		16	168	2.1	0.18	1.1	1.7	0.10	C
	9	3	32 39.4	19-19.0	155-17.2	25.4	1.9	15	147	2.1	0.22	0.9	1.9	0.08	B
	9	4	42 20.2	19-18.8	155-17.3	26.1	1.7	15	152	2.4	0.24	1.0	2.1	0.09	C
	9	6	31 17.9	19-19.6	155- 8.7	8.5	1.9	14	173	4.9	0.11	0.9	2.1	0.11	C
	9	8	3 25.3	19-20.1	155-13.4?	0.7	1.4	17	155	6.0	2.03	1.0	7.7	0.26	C
	9	9	42 9.7	19-24.6	155-24.5	8.0*	0.2	10	208	8.3	0.12	0.8		0.08	C
	9	9	52 23.5	19-19.8	155-17.2	6.7	0.9	10	166	0.7	0.12	0.8	0.6	0.10	B
	9	11	29 17.8	19-17.4	155-16.9	32.2	3.2	23	151	3.1	0.15	1.0	1.5	0.14	C
	9	14	12 13.0	19-20.1	155-17.0	23.0		12	142	0.7	0.27	1.1	2.3	0.08	B
	9	15	33 6.3	19-20.6	155-12.3?	7.4	2.8	17	151	3.4	0.09	0.8	1.4	0.16	C
	9	16	41 40.4	19-20.8	155- 7.4	4.8	2.3	14	153	4.8	0.19	1.4	1.4	0.26	C
	9	18	1 45.0	19-18.6	155-15.4	9.7	1.7	14	188	4.4	0.09	0.7	0.7	0.08	B
	9	23	13 21.6	18-45.6	155-20.0?	5.1*	2.8	17	299	42.8	0.57	3.6		0.27	D
	10	5	19 53.0	18-48.8	155-18.9	2.5	3.1	14	271	41.2	1.22	2.9	7.0	0.11	D
	10	21	59 11.0	19-20.8	155-24.7	7.6	2.0	10	124	2.6	0.06	0.6	0.5	0.09	B
	10	23	20 50.4	19-21.1	155-24.2	5.1	1.6	10	158	2.2	0.12	0.7	1.2	0.12	C
	10	23	32 16.2	19-19.4	155-11.8	2.7	2.8	24	170	5.8	0.17	1.0	1.0	0.29	C
	10	23	35 24.6	19-20.2	155-12.0	8.5		12	204	4.3	0.11	0.7	1.2	0.08	B
	11	11	24 51.4	19-22.9	155-28.3	4.9	2.8	19	51	10.0	0.12	0.9	1.3	0.24	C
	11	12	40 16.4	19-24.0	155- 2.3	1.2	2.3	17	128	7.7	0.64	1.1	2.3	0.21	C
	11	13	32 49.9	18-50.4	155-17.5	1.8*	3.0	20	267	39.6	0.48	3.0		0.16	D
	11	21	34 59.5	19-20.5	155-15.9	8.1	1.1	12	132	2.7	0.07	0.6	0.4	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 11	21	39	45.0	19-22.9	155-24.5	6.7		11	155	5.4	0.11	0.8	1.1	0.14	C
11	23	8	56.3	18-48.5	155-19.1	8.8	3.2	19	272	41.3	0.52	6.1	13.1	0.22	D
11	23	54	22.1	19-19.9	155- 8.3	3.1	2.1	20	169	4.8	0.20	1.2	1.3	0.28	C
11	23	58	37.6	18-46.3	155-15.0	8.0*	2.9	13	310	58.7	1.11	6.9		0.15	D
12	0	23	56.0	19-20.2	155-12.5	7.5	1.6	13	196	5.8	0.20	1.3	3.0	0.13	C
12	0	47	18.2	19-30.6	155-37.1?	10.3	2.1	16	142	24.2	0.54	1.2	4.0	0.21	C
12	1	32	29.3	19-21.7	155-16.1	5.7		10	190	1.3	0.17	1.1	0.8	0.13	C
12	4	25	30.8	19-24.2	155-24.2	8.1	1.7	17	69	7.5	0.07	0.7	1.8	0.13	B
12	4	48	28.9	19-24.1	155-24.1	8.0*		13	170	7.4	0.08	0.6		0.09	C
12	4	49	19.6	19-23.9	155-23.7	4.6	1.4	14	163	6.9	0.11	0.7	1.4	0.16	C
12	4	53	19.9	19-24.1	155-23.4	4.6		11	182	6.5	0.15	0.9	1.7	0.13	C
12	5	59	11.2	19-21.2	155- 7.7?	0.0	2.5	19	147	8.8	0.58	1.2	1.1	0.24	C
12	6	9	25.5	19-25.5	155-25.2	8.1	1.6	14	192	8.6	0.09	0.6	0.3	0.09	B
12	8	27	52.3	19-20.6	155-19.4	4.0	0.3	9	99	3.6	0.27	0.8	3.7	0.11	B
12	14	37	24.0	18-53.1	155-18.6	9.8	2.1	13	257	34.3	0.77	3.9	3.8	0.16	D
12	20	59	27.6	19-20.2	155-19.4	4.9	1.5	20	128	3.5	0.05	0.5	0.5	0.12	B
13	2	28	59.1	19-45.8	156- 2.9	2.9	2.4	18	234	23.5	0.24	1.0	0.9	0.09	C
13	5	50	36.3	19-19.7	155- 7.9?	6.9	2.4	21	154	5.6	4.24	1.5	7.8	0.35	D
13	10	5	22.2	19-20.6	155-12.9	12.5	1.5	11	180	6.1	0.17	0.6	1.4	0.05	B
13	11	40	2.0	19-25.1	155-23.6	4.8	1.6	11	186	6.8	0.15	1.0	1.4	0.15	C
13	16	59	45.0	19-19.5	155-13.5	6.1	1.5	15	198	6.8	0.20	1.2	1.0	0.19	C
13	18	10	5.6	19-19.9	155-14.1	4.5	1.9	13	183	5.6	0.23	1.2	1.6	0.22	C
13	20	44	47.9	19-19.8	155-15.3	5.4	1.4	9	172	3.7	0.22	1.4	1.4	0.18	C
14	0	0	58.3	19-20.9	155-24.5?	8.0	0.7	10	120	2.5	0.13	1.2	1.0	0.16	B
14	1	5	42.6	18-50.6	155-18.2	13.3	3.1	20	276	49.8	0.48	4.7	9.9	0.18	D
14	4	30	42.7	19-18.9	155-13.7	4.9	1.2	8	209	6.8	0.35	2.1	1.9	0.20	C
14	4	46	4.6	19-19.3	155-13.8	5.6	1.6	11	201	6.4	0.28	1.6	1.4	0.23	C
14	6	0	26.5	19-18.4	155-13.2	8.0*	1.9	8	224	8.0	0.21	1.4		0.12	C
14	21	11	10.5	18-49.6	155-17.0	2.2	1.9	18	263	41.4	1.41	3.2	9.0	0.14	D
15	1	47	2.4	18-52.5	155-17.7	9.5	3.1	22	255	36.0	0.52	2.5	2.8	0.14	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 15	2	19	20.2	19-18.3	155- 7.0	3.9	3.5	22	212	8.5	0.34	1.7	1.3	0.23	C
15	5	38	16.1	19-30.9	155-59.5	0.2	2.3	20	223	25.0	0.61	2.1	1.5	0.24	C
15	6	10	43.1	19-19.1	155-13.7	8.0*	1.1	11	205	6.7	0.15	1.0		0.12	C
15	6	13	6.7	19-56.4	155-37.7	13.7*	2.0	19	137	25.0	0.20	1.8		0.28	C
15	9	27	34.2	19-23.6	155-25.2?	8.1	0.9	17	102	7.1	0.08	0.6	0.5	0.12	B
15	14	30	55.7	19-35.1	155-22.6	10.2	1.2	15	103	9.9	0.09	0.9	1.3	0.16	B
15	18	11	2.6	19-22.7	155-24.3	6.6	1.1	16	116	4.9	0.11	0.8	0.7	0.15	B
16	5	33	18.4	19-23.5	155-24.0	4.9	1.1	12	152	6.3	0.14	1.0	1.7	0.20	C
16	8	40	27.8	19-46.1	155-51.5	16.6	2.6	23	178	9.1	0.17	1.3	3.3	0.17	C
16	11	25	36.0	19- 9.6	155-41.7	3.8	0.8	9	131	12.7	0.16	1.2	1.5	0.19	C
16	17	48	43.8	19-19.5	155- 6.5	8.0*		12	178	6.3	0.18	1.6		0.21	C
16	18	40	33.2	19-19.5	155-16.6	9.6	1.4	7	216	1.7	0.10	0.5	0.7	0.02	B
17	9	42	4.2	19-18.5	155-13.1	9.7	2.8	16	156	7.4	0.05	0.4	0.6	0.07	B
17	17	10	44.5	18-49.9	155-16.0?	5.6*	2.5	11	321	41.7	1.08	6.5		0.13	D
17	20	16	19.8	18-50.4	155-19.2	8.5	3.3	21	260	38.3	0.41	2.4	2.2	0.14	C
17	23	41	37.2	19-19.6	155-16.1	9.7	1.5	7	231	2.4	0.22	0.9	1.4	0.02	C
18	1	26	48.0	19-25.1	155-17.2	13.4	1.3	13	119	0.5	0.04	0.4	0.5	0.05	A
18	2	6	10.4	18-34.1	155-10.5	3.9*	2.4	10	334	82.3	9.14	54.3		0.13	D
18	7	58	26.6	19-18.0	155- 8.6?	0.1	1.6	10	250	7.8	2.01	3.4	22.4	0.25	D
18	10	38	58.8	19-19.6	155-11.8	8.0*	1.7	11	168	5.7	0.09	0.7		0.08	C
18	13	23	38.0	19-17.8	155-13.0	6.4	2.7	24	162	8.6	0.12	0.8	0.6	0.19	C
18	13	31	38.1	19-18.5	155-13.2	8.6	1.4	14	196	8.0	0.10	0.8	1.5	0.09	C
18	15	9	15.2	19-17.8	155-12.8	8.0*	0.8	9	239	9.1	0.34	2.1		0.12	D
18	15	10	34.6	19-18.4	155-13.1	8.0*	0.9	9	228	8.1	0.34	2.1		0.12	D
18	17	8	49.5	19-24.2	155-22.8	9.6	0.8	10	168	5.5	0.21	0.9	2.4	0.10	C
18	17	26	50.1	19-19.2	155-16.4	9.4	0.9	10	175	2.4	0.33	1.9	3.0	0.13	C
18	19	33	13.3	19-18.1	155-13.1	8.0*	0.9	10	230	8.4	0.22	1.5		0.13	D
18	19	54	49.4	19-17.7	155-12.8	8.0*	0.9	8	239	9.3	0.35	2.3		0.14	D
18	20	43	11.8	19-18.2	155-13.0	8.0*	1.1	11	200	8.4	0.16	1.1		0.10	C
18	23	21	3.9	19-24.1	155-27.5?	1.8	2.9	22	109	10.3	1.43	1.6	10.3	0.33	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 18	23	58	38.6	19-23.1	155-26.0	8.0*	0.6	13	195	7.2	0.15	1.0		0.13	C
19	0	18	7.8	19-22.5	155- 8.8?	7.9	1.4	19	178	2.0	0.14	1.3	0.7	0.17	C
19	7	29	20.1	18-49.0	155-16.0	2.0*	2.6	14	265	43.1	0.52	3.3		0.15	D
19	8	41	55.7	19-23.4	155-25.0	8.1	1.4	11	121	6.7	0.07	0.5	0.4	0.07	B
19	9	58	59.7	18-53.3	155-19.9	10.1	1.6	11	279	33.0	1.09	5.5	4.1	0.10	D
19	10	5	2.1	18-48.3	155-17.1	8.0*	3.1	16	273	43.4	0.51	3.3		0.14	D
19	10	16	39.7	18-57.7	155-38.8	43.6	3.9	26	263	3.0	0.52	2.5	3.7	0.13	D
19	10	35	21.8	19-20.3	155- 8.2	4.3		13	163	4.4	0.18	1.3	1.4	0.19	C
19	12	1	20.9	18-45.0	155-14.1	8.0*	2.7	14	288	51.2	1.50	9.3		0.20	D
20	0	20	5.3	19-19.4	155-24.5	5.9	1.2	11	112	2.6	0.10	0.8	0.9	0.15	B
20	7	55	11.7	19-24.4	155-24.5	8.0*		9	207	8.0	0.15	1.0		0.10	C
20	15	1	41.7	19-11.5	155-21.2	5.3	2.7	17	171	12.3	0.15	1.0	0.8	0.17	C
20	16	55	15.1	20- 0.8	155-33.6	42.0		14	198	26.3	0.83	3.8	8.6	0.20	C
20	17	42	26.2	19-23.4	155-26.2	8.0*	1.0	9	199	7.8	0.10	0.7		0.07	C
20	22	0	46.9	19-19.0	155-15.3	10.7	1.5	10	193	4.2	0.15	0.7	1.3	0.06	B
20	22	2	32.9	19-32.9	156-16.1	4.6	2.4	11	298	52.1	0.58	10.6	13.2	0.16	D
21	1	2	11.5	19-16.9	155-22.8	4.1	1.7	17	188	6.2	0.14	1.0	1.2	0.20	C
21	1	3	6.2	19-16.9	155-22.7	4.5	2.4	15	187	6.2	0.15	1.0	1.2	0.20	C
21	1	6	5.0	19-17.3	155-22.7	4.5	1.2	10	177	5.4	0.16	0.9	1.7	0.14	C
21	1	37	51.5	19-16.9	155-22.5	5.1	2.4	17	188	6.2	0.12	0.9	0.8	0.17	C
21	4	49	56.6	18-49.6	154-47.1	8.0*	2.6	8	333	71.9	2.09	71.5		0.20	D
21	10	5	32.4	19-19.6	155- 9.3	3.8	2.5	21	173	4.7	0.16	1.0	1.1	0.23	C
21	11	20	58.5	18-50.2	155-18.1	5.2	3.2	23	262	39.6	1.18	2.6	7.4	0.15	D
21	13	41	17.7	19-24.3	155-23.4	8.6		11	171	6.6	0.08	0.7	1.3	0.10	B
21	19	15	11.6	19-19.9	155-12.0	5.7	2.2	19	163	5.5	0.14	1.0	0.9	0.22	C
21	23	47	25.6	20- 5.3	155-31.8	53.4*	2.3	11	317	34.8	0.42	3.5		0.09	D
22	1	47	11.4	19-22.8	155-24.6?	8.1	2.0	18	99	5.4	0.08	0.5	0.5	0.11	B
22	1	52	22.5	19-23.1	155-24.0	6.2	1.6	11	185	5.4	0.12	0.8	1.0	0.11	C
22	2	28	2.9	19-21.1	155-14.0	6.3	1.4	14	159	4.1	0.19	1.1	1.1	0.20	C
22	4	48	23.1	19-10.2	155-36.5	6.3	2.3	17	101	8.7	0.18	1.0	1.1	0.23	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 22	13	20	44.2	19-23.6	155-16.7	14.4		16	72	2.6	0.04	0.4	0.6	0.06	A
23	3	24	12.0	19-19.5	155-15.7	6.1	1.4	15	177	3.2	0.18	1.1	0.9	0.17	C
23	5	54	18.0	19-23.5	155-17.5	16.3		11	99	1.0	0.07	0.5	0.9	0.06	A
23	8	35	58.4	19-18.6	155-13.5	9.2	1.8	14	216	7.4	0.13	0.9	1.4	0.10	C
23	12	25	39.6	19-21.2	155-14.0	12.7	1.8	8	155	4.0	0.14	0.5	1.1	0.03	B
23	12	29	34.4	18-53.6	155-18.2	8.0*		10	263	39.4	0.69	4.7		0.12	D
23	13	47	15.2	19-20.3	155-12.9	8.0*	1.9	8	189	6.2	0.12	1.0		0.10	C
23	14	7	3.2	19-24.6	155-48.6?	0.0	1.8	10	121	17.1	4.65	0.8	8.8	0.08	C
23	19	6	39.4	19-20.4	155-12.6?	8.0*	2.0	8	210	5.7	0.33	2.4		0.17	C
23	19	22	36.3	19-20.8	155-11.7	9.6	2.2	11	194	4.0	0.12	0.7	1.2	0.07	B
23	21	8	26.4	19-20.5	155-11.5	9.2	1.4	8	221	4.2	0.13	0.7	1.2	0.04	B
23	21	47	17.2	19-20.8	155-11.6	9.1	1.4	9	194	3.9	0.11	0.6	1.2	0.05	B
23	22	23	34.8	19-17.6	155- 8.1	8.0*	1.8	7	254	16.9	0.46	2.9		0.11	D
24	4	31	29.9	19-16.1	155-24.2	0.9	2.2	14	151	7.7	1.57	1.0	5.7	0.18	C
24	16	16	41.7	19-19.8	155-12.1	8.0*	1.8	7	211	5.7	0.14	1.1		0.07	C
24	22	5	43.5	19-20.3	155- 9.2	8.3	2.0	8	228	3.5	0.22	1.6	1.7	0.07	C
24	22	29	49.8	19-21.0	155- 8.2	9.5	1.8	9	229	3.5	0.21	1.5	1.6	0.08	C
25	6	0	48.5	19-38.8	155-15.1	33.3	1.9	16	183	21.8	0.22	1.3	2.3	0.10	C
25	6	25	4.9	19-57.9	155-46.8	8.0*	2.3	17	294	39.4	0.25	1.6		0.10	D
25	6	43	31.2	19-20.4	155-11.6	5.0	2.4	11	207	4.4	0.28	1.7	1.7	0.21	C
25	6	44	24.3	19-20.4	155-11.8	8.0*	1.6	11	201	4.7	0.09	0.7		0.08	C
25	10	15	6.5	20- 2.6	155-45.7?	9.7*	2.1	13	157	9.5	0.08	1.2		0.11	C
25	12	55	21.5	19-19.4	155- 1.2?	2.5	2.1	15	227	15.9	0.31	1.7	1.3	0.18	C
25	17	39	36.9	19-21.9	155-17.3	23.8	1.6	11	109	2.6	0.19	1.1	1.8	0.09	B
25	21	39	52.8	19-17.3	155-47.0	6.1	2.2	16	143	9.6	0.13	1.7	1.4	0.16	B
25	22	18	34.5	19-20.7	155- 7.3	3.6	1.0	12	156	5.1	0.16	1.2	1.6	0.16	C
25	22	49	38.0	19-58.5	155-53.7	13.1*	2.6	16	217	20.9	0.16	1.2		0.11	C
26	2	35	4.2	19-19.0	155-18.1	31.9	1.3	14	138	2.1	0.20	1.1	1.8	0.08	B
26	3	33	20.4	18-52.8	155-17.5	8.3		11	286	35.8	0.86	4.7	2.9	0.10	D
26	3	47	48.9	18-53.5	155-17.5	10.4*	2.2	15	256	34.7	0.44	3.1		0.16	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 26	4	13	43.4	19-10.7	155-22.1	24.0	1.7	14	207	13.3	0.25	2.1	2.8	0.18	C
26	4	48	23.4	18-52.4	155-16.0	5.2	2.7	13	256	37.8	1.58	3.4	10.1	0.15	D
26	5	46	19.8	18-51.5	155-17.8	8.0*	2.7	10	270	37.7	0.31	2.0		0.08	D
26	5	49	29.4	18-51.8	155-17.3	8.0*	2.1	11	288	48.4	0.82	5.3		0.10	D
26	6	25	36.8	18-54.6	155-20.0	9.8	2.5	10	275	30.8	0.33	1.9	1.2	0.04	C
26	6	29	41.5	18-51.2	155-16.8	3.4	3.0	16	258	38.9	1.54	3.6	9.2	0.13	D
26	6	35	53.0	18-52.0	155-17.1	4.5	3.0	15	275	37.5	2.10	4.1	11.3	0.14	D
26	6	45	24.9	18-56.4	155-21.5	8.8	2.8	10	266	32.6	0.87	5.3	3.0	0.13	D
26	6	48	0.9	18-53.4	155-18.7	8.7	2.7	11	280	33.8	0.87	4.9	3.1	0.12	D
26	7	3	23.9	18-52.6	155-17.7	8.3	2.5	13	268	36.0	0.53	3.0	2.2	0.09	D
26	7	10	15.8	18-57.0	155-16.4	4.1	3.0	18	265	30.5	0.49	2.4	3.2	0.21	D
26	8	53	53.9	19-21.4	155-16.7	24.4		17	110	2.4	0.12	0.8	1.2	0.10	B
26	9	34	11.2	19-24.4	155-24.8	8.0*	1.7	8	213	8.1	0.08	0.5		0.05	C
26	9	42	2.4	19-22.4	155-24.3?	6.0	1.0	8	210	4.4	0.35	2.0	3.5	0.10	C
26	10	4	10.9	19-20.0	155-11.5	8.0*		9	162	4.8	0.05	0.4		0.05	C
26	12	12	31.4	19-32.4	155- 6.5	8.0*	2.2	9	228	6.2	0.12	0.9		0.06	D
26	18	43	15.9	19-22.1	155-23.5?	8.0	1.8	9	121	3.6	0.10	0.7	1.1	0.10	B
26	20	46	58.9	19-19.9	155- 6.8	10.1	1.5	9	255	6.7	0.24	1.6	1.4	0.06	C
26	23	9	27.3	19-18.7	155-13.5	8.0*	1.6	8	216	7.3	0.15	1.1		0.10	C
27	0	33	37.0	18-53.3	155-17.4	8.2		12	282	35.1	0.69	3.8	2.5	0.10	D
27	5	53	39.6	19-22.4	155-22.8	7.2	1.4	7	164	4.1	0.42	1.0	3.2	0.07	C
27	7	18	35.1	19-21.5	155-15.2	28.7		12	138	2.0	0.19	1.0	1.7	0.06	B
27	7	38	57.2	19-19.4	155-15.7	6.4	1.9	15	179	3.2	0.15	1.0	0.7	0.17	C
27	8	4	38.1	19-18.6	155-11.7	11.8	2.2	10	228	7.3	0.27	2.3	2.0	0.18	C
27	11	3	23.8	19-19.5	155-13.9	6.4	1.8	16	163	6.3	0.13	0.9	0.8	0.18	C
27	12	41	2.9	19-20.4	155-11.4	8.1	2.1	7	209	4.2	0.09	0.6	1.2	0.04	B
27	18	59	40.2	19-21.9	155-24.2	7.1	2.2	18	126	3.6	0.09	0.8	0.6	0.17	B
27	22	53	57.6	19-26.8	155-24.5	8.0*	1.5	12	161	5.9	0.04	0.3		0.05	C
28	6	18	48.3	19-23.7	155-25.1?	0.0	1.6	12	176	7.1	8.87	0.8	16.9	0.14	C
28	9	2	36.7	19-20.4	155-12.5	8.0*	1.1	11	155	5.5	0.10	0.8		0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 28	14	10	45.4	19-19.2	155-13.6	5.8	1.6	21	148	6.8	0.12	0.9	0.7	0.22	C
28	19	15	22.3	19- 6.1	155-26.0	37.0	2.0	17	197	7.0	0.25	1.3	2.4	0.10	C
28	20	21	54.9	19-18.1	155-21.6	5.6	1.5	14	158	4.9	0.10	0.7	0.7	0.14	C
28	20	32	24.1	19-19.0	155-16.0	7.8	1.4	12	185	3.2	0.18	1.4	0.7	0.17	C
28	22	14	55.8	19-22.3	155-14.8	28.9	1.8	17	127	2.0	0.17	0.9	1.5	0.08	B
28	22	35	1.9	19-18.8	155-15.6	9.6	1.2	10	194	3.9	0.28	1.5	2.6	0.11	C
29	0	4	17.3	19- 8.6	155-33.5	45.1	1.9	15	132	10.0	0.71	2.9	6.4	0.18	C
29	1	58	5.1	19-20.0	155- 1.4?	0.0	2.2	11	229	15.2	4.41	1.6	8.2	0.13	D
29	6	23	30.0	20- 3.9	155-32.8	51.8	2.5	25	202	25.3	0.39	1.6	3.4	0.10	C
29	7	8	24.0	19-16.6	155-34.0?	8.0*	1.5	10	177	19.9	0.42	4.9		0.38	D
29	8	27	53.7	19-23.3	155- 4.0	0.4	2.5	23	161	6.6	0.51	0.9	0.9	0.23	C
29	16	29	48.7	19-24.4	155-24.9	8.0*	1.5	16	162	8.2	0.09	0.6		0.10	C
29	19	9	2.4	19- 5.7	155-28.3	37.5	2.3	21	180	7.1	0.26	1.3	2.4	0.12	C
29	19	39	53.4	18-54.7	155-18.8	23.3	3.1	21	247	37.8	0.34	1.8	8.7	0.17	D
29	21	50	12.1	19-11.2	155-31.4?	41.6	1.8	17	96	7.0	0.34	3.3	2.8	0.14	B
30	1	46	19.9	19-28.1	155-28.6?	0.0	1.5	20	121	9.8	6.48	1.0	12.1	0.20	C
30	3	22	15.5	19-19.3	155-14.1	8.0*	0.9	13	197	6.0	0.15	1.0		0.14	C
30	3	50	13.7	19-16.5	155- 0.9	34.9	2.0	16	225	7.3	0.47	2.1	4.1	0.12	C
30	7	29	27.9	19-13.0	155-18.2	25.3	1.7	23	172	9.3	0.15	1.0	1.7	0.13	C
30	10	30	18.4	19-23.1	155-23.2	8.0*	1.6	7	178	5.3	0.09	0.7		0.08	C
30	17	16	8.4	19-20.8	155-14.3	6.1	2.2	13	161	4.1	0.22	1.3	1.1	0.20	C
30	17	36	12.2	19-25.7	155-13.8	35.0	1.9	7	146	12.6	0.24	1.0	2.3	0.04	B
30	17	51	7.8	19-20.3	155-12.7	8.0*	1.6	8	192	6.0	0.12	0.9		0.09	C
30	22	41	51.6	19-22.0	155-24.7	7.9	1.5	10	131	4.2	0.07	0.7	0.5	0.08	B
MAY 1	2	6	44.8	19-20.2	155-12.0	8.0*	1.8	9	202	5.1	0.13	1.0		0.10	C
1	3	31	53.9	19-19.8	155-14.1	6.4	1.7	15	185	5.7	0.18	1.1	0.9	0.19	C
1	5	9	49.6	19-23.8	155-27.9?	7.6	2.0	16	145	10.5	0.09	0.7	3.0	0.11	B
1	9	52	27.2	19-19.3	155-12.7	3.7	2.1	13	213	7.2	0.23	1.3	1.3	0.18	C
1	9	55	34.3	19-18.1	155-13.8	13.4	1.6	7	226	7.4	0.20	1.3	1.6	0.05	C
1	14	24	2.9	19-18.6	155- 9.2	1.9	1.9	12	185	6.5	1.95	1.5	7.2	0.23	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 1	15	31	38.3	19-16.5	155-11.7	8.0*	1.4	8	265	10.7	0.56	3.3		0.15	D
1	15	46	10.8	19-19.0	155-14.1	12.4		10	204	6.1	0.25	1.0	1.9	0.06	B
1	18	6	12.2	19-18.4	155-18.3	9.8	1.1	8	184	0.9	0.22	0.9	1.5	0.03	B
1	21	49	28.6	19-18.9	155-14.3	7.0	2.7	19	171	5.9	0.15	1.0	0.7	0.16	C
1	22	17	29.4	19-19.5	155-15.0	11.8		7	240	4.4	0.34	1.4	2.2	0.04	C
1	22	30	15.5	19-18.8	155-14.5	9.7	0.9	10	206	5.6	0.33	1.7	3.3	0.14	C
1	23	18	47.0	19-50.1	156- 7.4	48.8	3.2	18	251	34.0	0.41	1.9	3.2	0.09	C
1	23	28	7.4	19-19.5	155-14.8	11.3		7	242	4.6	0.35	1.4	2.1	0.04	C
2	0	3	14.2	19- 6.7	155-30.9?	25.7*	1.4	13	182	21.3	0.15	2.9		0.18	C
2	0	48	48.8	19-18.4	155-14.2	12.1	1.9	10	216	6.5	0.22	0.9	1.7	0.06	B
2	0	51	8.2	19-20.6	155-24.0	8.3	1.0	9	173	1.4	0.14	1.1	1.8	0.11	C
2	2	22	6.6	19-22.4	155-16.7	23.8	1.3	9	107	1.5	0.32	1.4	3.0	0.07	B
2	2	56	18.3	19-25.0	155-27.0	8.0*	1.1	8	249	11.1	0.18	1.1		0.05	D
2	5	4	2.5	19-23.6	155-16.5	39.1	2.2	9	106	0.9	0.71	1.9	6.1	0.06	B
2	5	18	35.6	19-22.7	155-25.3	8.0*	0.9	10	167	5.8	0.10	0.9		0.11	C
2	5	56	30.6	19-19.6	155-15.1	11.1	1.5	8	235	4.1	0.18	0.7	1.2	0.03	C
2	5	58	22.8	19-19.9	155-15.4	10.3	1.8	6	248	3.5	0.33	1.3	2.0	0.02	C
2	6	5	10.6	19-19.0	155-13.8	8.0*	0.8	8	208	6.7	0.14	1.0		0.10	C
2	6	25	20.5	19-19.0	155-13.4	8.0*		7	211	7.3	0.15	1.1		0.08	C
2	7	39	54.4	19-25.8	155-15.2	29.6	3.0	23	49	1.1	0.15	0.9	1.5	0.13	B
2	7	55	6.4	19-23.7	155-22.9	8.0*	1.4	13	119	5.5	0.05	0.4		0.10	B
2	9	31	50.3	19-19.8	155-11.7	8.0*	1.6	7	216	5.2	0.17	1.2		0.08	C
2	18	10	29.6	19-20.9	155- 8.1	10.5	1.6	9	157	3.7	0.17	1.3	2.1	0.08	C
2	22	39	15.3	19-26.0	155-27.0	8.0*	1.0	12	113	11.5	0.04	0.4		0.06	C
2	23	56	10.2	19-22.4	155-22.7	5.6	1.1	7	186	4.1	0.12	0.9	0.9	0.08	B
2	23	56	50.4	19-22.4	155-22.4	1.9*	1.1	6	176	4.3	0.10	0.6		0.07	C
3	2	27	4.8	19-21.8	155-14.7	10.4		7	149	2.4	0.17	0.9	1.5	0.05	B
3	2	43	45.5	19-24.2	155-17.1	13.4	1.4	16	87	1.5	0.06	0.6	0.8	0.10	A
3	14	34	37.8	19-24.8	155-24.0	7.8	3.0	20	63	7.7	0.09	0.7	0.6	0.18	B
3	15	36	29.3	19-19.5	155-16.3	10.2		7	215	2.3	0.16	0.7	1.1	0.02	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 3	17	42	39.6	19-22.5	155-22.5	6.5	0.9	9	156	4.4	0.25	0.6	2.2	0.09	C
3	20	9	56.0	19-22.6	155-29.2	8.0*	1.8	11	157	11.2	0.04	0.4		0.05	C
3	21	47	54.6	19-19.2	155-15.4	6.1	0.9	11	185	3.8	0.26	1.4	1.7	0.18	C
4	1	7	28.0	19-27.7	155-29.5	8.0*	0.6	7	288	11.5	0.32	1.7		0.04	D
4	2	16	33.7	19-19.1	155-17.7	16.2	0.6	9	187	2.0	0.39	1.7	3.4	0.07	C
4	3	34	29.0	19-24.2	155-23.3	8.8	1.3	14	170	6.4	0.09	0.8	1.2	0.12	C
4	7	25	42.3	19-29.1	155-20.1	17.2	1.1	8	290	2.9	0.92	3.9	6.6	0.08	D
4	7	51	18.5	19-25.7	155-25.2	8.0*	1.7	11	127	8.3	0.05	0.5		0.08	C
4	11	32	12.0	19-18.6	155- 7.6	8.0*	1.8	7	202	7.5	0.09	0.8		0.05	C
4	16	27	54.4	19-22.8	155-25.9	8.0*	1.6	11	117	6.6	0.06	0.5		0.08	B
4	20	13	2.5	19-21.0	155-23.8	8.0	0.4	9	212	1.6	0.15	1.2	0.6	0.09	C
4	21	10	58.1	19-19.4	155-13.2	8.0*	1.2	10	204	7.2	0.12	0.8		0.10	C
4	21	47	38.5	19-23.0	155-25.8	8.0*	0.9	8	239	6.8	0.21	1.3		0.08	D
5	1	35	15.3	19-25.7	155-22.5	8.0*	0.8	8	162	4.8	0.09	0.8		0.10	C
5	2	0	31.0	19-23.9	155-17.4	12.5	0.7	10	112	1.2	0.14	0.6	1.2	0.07	A
5	6	33	58.1	19-20.8	154-53.9	26.9*	2.3	7	342	28.0	1.38	9.8		0.08	D
5	12	53	20.5	19-59.3	155-48.0	3.2*	2.5	13	201	15.6	0.12	1.2		0.10	C
5	21	44	21.9	19-23.0	155-22.4?	0.7	0.8	11	156	4.9	2.26	0.7	8.6	0.13	C
6	3	7	18.7	19-10.2	155-10.3	35.5	2.0	13	263	20.4	0.56	3.1	3.6	0.10	D
6	7	38	8.9	19-19.7	155- 9.1	4.2	1.5	17	171	4.5	0.17	1.2	1.3	0.24	C
6	10	34	10.0	19-22.3	155-23.0?	8.2		10	117	3.9	0.08	0.5	0.9	0.09	B
6	14	27	15.4	19-11.0	155-20.0	40.7	1.2	14	177	13.1	0.20	1.0	1.9	0.08	B
6	16	7	25.3	19-21.1	155-23.4	12.0	1.8	11	137	1.7	0.17	2.0	1.9	0.22	C
6	19	29	0.7	18-49.8	155-15.3	2.1*	2.8	22	263	42.5	0.42	2.7		0.15	D
6	20	0	50.4	18-49.6	155-15.0	8.0*	2.9	16	263	43.1	0.43	2.9		0.14	D
7	3	48	9.2	19-24.3	155-17.2	13.4	1.3	12	59	1.2	0.16	0.6	1.3	0.06	A
7	16	1	14.7	19-18.1	155-11.5	2.6	1.3	9	191	7.8	0.36	2.2	3.8	0.22	C
7	20	12	26.7	19-20.7	155-10.2	9.6	1.2	9	238	2.6	0.21	1.4	1.1	0.08	C
7	20	56	18.4	19-18.5	155- 4.9?	0.0	2.9	19	218	10.9	6.04	2.0	11.2	0.27	C
7	22	57	35.5	19-23.4	155-27.1	8.0*	2.0	9	128	8.9	0.04	0.4		0.06	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 8	16	9	7.4	19- 7.9	155-38.3	0.7*		9	179	13.2	0.15	1.5		0.13	C
8	22	53	59.2	19-24.7	155-26.0	8.0*	1.6	15	111	9.5	0.05	0.4		0.08	C
8	23	14	45.9	19-22.5	155-24.4?	8.6	2.4	19	51	4.6	0.08	0.6	0.5	0.14	B
8	23	20	3.1	19-19.9	155-12.6	8.0*	1.3	8	199	6.3	0.12	0.9		0.09	C
8	23	27	19.4	19-24.7	155-15.6	19.3	1.0	13	91	3.8	0.12	0.7	1.3	0.09	A
9	0	9	9.2	19-19.7	155-16.2	9.9	1.5	6	227	2.3	0.19	0.7	1.3	0.01	C
9	0	18	34.1	18-51.9	155-17.3	8.0*	2.7	12	269	37.3	0.35	2.3		0.09	D
9	0	31	35.1	19-21.0	155-13.9	5.0	0.7	15	162	4.4	0.17	1.0	1.1	0.20	C
9	3	43	8.0	19-27.4	155-16.1	26.8	1.0	13	105	4.6	0.20	1.0	2.0	0.11	B
9	22	59	49.9	19-20.6	155- 8.2	10.1	0.8	10	168	4.0	0.10	0.9	1.3	0.06	B
9	23	6	22.5	19-21.8	155-25.7	8.9	0.1	8	251	5.1	0.44	2.4	3.3	0.09	C
9	23	45	46.4	19-19.6	155- 6.1	8.0*	0.6	9	187	5.7	0.25	2.6		0.23	C
10	0	43	27.2	19-22.4	155-22.0	2.1*	0.9	9	89	4.7	0.10	0.7		0.16	B
10	3	35	5.4	19-17.4	155-21.7	8.0*	1.3	8	251	5.5	0.43	2.5		0.13	D
10	5	18	9.4	19-23.7	155-26.2?	0.0	2.1	15	83	8.2	0.63	0.8	1.2	0.23	C
10	7	22	31.8	19-11.4	155-27.0	7.8	2.7	15	148	3.8	0.09	0.9	0.6	0.14	B
10	9	7	35.7	19-12.6	155-27.1	3.8	0.8	10	137	5.9	0.19	1.6	2.3	0.23	C
10	22	0	33.8	18-52.4	155-17.9	9.8	1.9	11	267	36.1	0.64	3.0	2.8	0.08	D
11	0	13	34.2	19-20.0	155-11.0	8.1	0.9	7	226	4.3	0.16	1.2	0.6	0.06	C
11	8	4	13.3	19-20.6	155- 8.8	9.2	1.3	8	227	3.2	0.23	1.7	1.7	0.09	C
11	18	28	34.4	19-22.1	155-24.1	6.3	0.5	8	195	3.9	0.16	1.1	1.1	0.11	C
11	18	38	23.4	19-11.1	155-32.4	6.8	3.0	20	100	8.6	0.14	1.0	0.9	0.22	C
11	18	43	4.2	19-14.9	155-24.3	8.0*	0.7	9	172	15.5	0.20	2.7		0.20	C
11	19	36	41.7	19-18.9	155-14.7	11.2	1.6	10	200	5.2	0.19	0.8	1.6	0.07	B
11	19	46	55.2	19-20.1	155-11.9	8.0*	1.5	9	206	5.1	0.13	1.0		0.09	C
11	23	33	30.1	19- 9.2	155-36.1	34.2	2.1	15	152	10.7	0.33	1.3	3.3	0.09	C
12	14	3	58.9	19-17.4	155-24.4?	4.0	1.0	14	118	5.6	0.12	1.0	1.0	0.19	C
12	15	21	22.6	19-29.8	155-46.2	6.3	1.2	13	191	18.0	0.55	1.1	4.1	0.09	C
12	15	44	43.3	19-19.8	155-15.1	6.7	0.7	17	141	4.1	0.09	0.8	0.7	0.16	B
12	16	8	23.1	19-20.2	155-16.1	9.6	1.4	9	207	2.3	0.17	0.8	1.2	0.05	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY	12	20	16 31.1	19-54.8	155-57.4?	17.8*	2.1	12	312	54.3	1.07	6.7		0.14	D
	13	20	16 16.6	19-22.3	155-25.5	8.0*	1.4	11	139	5.4	0.06	0.5		0.08	C
	13	20	37 9.1	19-22.8	155-24.9	8.0*	0.9	13	137	5.5	0.08	0.7		0.11	C
	13	20	47 24.4	19-25.4	155-28.9	7.2	1.1	20	193	12.6	0.19	1.3	0.9	0.18	C
	13	21	52 22.9	19-25.6	155-28.8	7.3	0.8	11	195	12.3	0.16	1.0	0.7	0.10	C
	14	0	26 13.6	19-25.6	155-23.4	8.0*	0.6	16	130	5.9	0.08	0.6		0.14	C
	14	1	11 51.3	19-24.9	155-25.8	8.0*	1.3	14	158	9.6	0.07	0.5		0.09	C
	14	9	39 52.5	19-35.3	155- 8.8	8.0*		10	249	12.8	0.20	1.1		0.06	D
	14	12	33 46.3	19-25.4	155-15.6	17.6	0.9	10	126	4.4	0.26	1.3	3.2	0.12	B
	14	13	15 18.8	19-23.0	155-25.6	8.0*	1.5	11	145	6.5	0.07	0.6		0.10	C
	14	16	49 10.6	19-19.6	155- 7.1	8.0*	0.6	6	187	6.7	0.14	1.4		0.08	C
	14	18	1 33.1	19-25.4	155-27.2	8.0*	1.0	9	223	10.7	0.15	0.9		0.07	C
	14	19	22 53.2	19-19.6	155- 7.6	25.7	0.7	8	253	6.1	0.86	5.1	6.3	0.11	D
	14	19	34 48.0	19-21.2	155-14.4	11.9	1.5	9	152	3.4	0.13	0.5	1.0	0.03	B
	14	20	3 35.9	19-22.9	155-24.3	8.0*	1.7	13	132	5.4	0.07	0.6		0.12	C
	15	2	4 45.7	19-20.8	155- 4.9	0.4	2.1	15	251	8.9	7.20	2.0	13.2	0.13	D
	15	2	45 47.7	19-32.7	155- 6.3	8.0*	0.8	8	236	6.3	0.24	1.7		0.09	D
	15	4	5 36.0	19-28.7	155-15.7	25.3	3.3	23	66	5.9	0.15	1.0	1.7	0.14	B
	15	5	4 27.8	19-19.6	155-16.0	8.8	2.7	18	161	2.7	0.07	0.6	0.9	0.12	C
	15	18	56 36.3	19-20.0	155-11.0	11.2	1.1	13	227	4.4	0.31	1.3	2.2	0.08	C
	15	23	26 57.3	19-21.2	155-17.9	26.6	2.4	20	63	2.2	0.11	0.8	1.3	0.11	B
	16	2	17 13.1	19-16.6	155-22.2	6.1	2.8	25	137	6.7	0.08	0.7	0.6	0.19	C
	16	6	34 20.8	19-23.4	155-27.5	7.8	1.4	9	231	9.5	0.17	1.2	0.7	0.06	C
	16	14	17 33.5	19-19.2	155-18.4	6.5	1.8	9	146	2.2	0.17	1.3	1.0	0.13	B
	16	18	7 23.5	19-23.6	155-25.1?	4.1	2.8	18	76	7.1	0.11	1.0	4.6	0.22	C
	17	0	41 17.3	19-19.4	155-16.4	9.4	1.3	7	227	2.2	0.06	0.3	0.4	0.01	C
	17	1	47 20.8	19-21.1	155-28.6	0.6*	0.8	10	124	9.4	0.10	0.8		0.14	C
	17	2	49 3.7	19-22.4	155-26.8?	0.0	2.0	14	76	7.4	1.76	0.8	22.5	0.20	C
	17	2	50 8.0	19-23.6	155-16.3	17.6	1.8	8	106	1.1	0.97	3.7	8.8	0.17	B
	17	5	33 28.9	19-18.7	155-15.2	11.8	0.4	9	200	4.6	0.15	0.6	1.2	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 17	6	53	59.2	19-26.3	155-27.1	8.0*	0.4	10	141	9.3	0.06	0.6		0.07	C
17	12	11	4.5	19-18.0	155-15.8	9.8	0.6	9	268	4.8	0.63	3.4	3.3	0.09	D
17	16	6	54.3	19-22.3	155-23.4	9.5	0.4	9	184	3.9	0.30	1.2	2.8	0.08	C
17	16	9	43.6	19-25.6	155-27.8	8.0*	2.0	16	76	11.1	0.06	0.5		0.11	C
17	16	41	9.7	19-19.2	155-13.5	13.7		8	204	7.0	0.12	1.0	0.6	0.05	B
17	21	58	20.1	19-22.7	155-24.6	8.0*	0.8	9	134	5.2	0.08	0.6		0.08	C
17	23	26	10.9	20- 0.9	155-14.1	58.3	1.6	16	227	17.9	0.71	3.1	5.8	0.13	D
18	2	13	35.6	19-19.9	155-16.6	8.9		7	208	1.4	0.10	0.6	0.8	0.02	B
18	5	23	26.9	19-32.2	155- 9.9	6.5		14	127	11.3	0.11	0.8	0.9	0.14	B
18	6	15	1.4	19-20.0	155-14.8	5.9	2.2	16	164	4.5	0.12	0.9	0.8	0.18	C
18	12	5	21.8	19-17.6	155-10.8?	0.0	2.5	16	191	9.5	4.30	1.0	8.1	0.19	C
18	12	47	13.9	19-18.3	155-14.8	10.6		9	214	5.6	0.16	0.7	1.3	0.05	B
18	17	1	40.2	19-21.7	155-16.4	25.0	0.8	9	124	1.7	0.37	1.6	3.3	0.09	B
18	17	19	10.1	19-20.3	155-19.2	26.7		16	126	3.1	0.14	0.9	1.4	0.11	B
18	19	0	29.2	19- 9.8	155-37.4	6.8	2.7	16	128	9.4	0.16	1.0	0.8	0.14	B
18	22	27	14.0	19-21.2	155- 4.9	6.2	3.1	21	118	4.3	0.14	1.1	0.7	0.19	B
18	22	49	22.6	19-23.6	155-23.5	8.0*	-0.0	7	184	6.3	0.11	0.8		0.08	C
19	0	2	52.3	19-27.9	155-52.3	7.1	1.7	13	187	8.0	0.13	2.7	2.9	0.10	C
19	0	51	11.6	19-22.1	155-25.0?	7.8	1.1	8	233	4.5	0.24	1.2	0.9	0.08	C
19	2	56	55.1	18-44.0	155-29.2	13.8*		17	298	47.1	1.27	7.9		0.15	D
19	5	50	6.7	19-18.8	155- 8.3	8.0*	1.0	9	244	6.7	0.38	2.4		0.15	D
19	6	11	34.5	19-20.1	155-12.2?	8.1	1.2	13	203	5.5	0.19	1.4	0.7	0.13	C
19	10	11	55.9	19-20.1	155-13.1	5.6	0.8	14	157	6.5	0.13	0.9	0.9	0.20	C
19	20	37	30.7	19-19.4	155-11.6	5.0	1.1	16	172	5.9	0.23	1.4	1.2	0.27	C
20	8	0	9.4	19-19.5	155-15.8	24.1	2.7	23	140	3.0	0.11	0.7	1.1	0.11	B
20	12	29	50.8	19-24.4	155-17.1	10.2	1.0	16	58	1.0	0.03	0.3	0.3	0.05	A
20	13	17	7.5	19-23.9	155-17.2	10.2	1.3	17	54	1.1	0.08	0.7	0.7	0.11	B
20	18	46	11.7	19-51.4	155-34.1	26.3	1.6	24	205	14.3	0.25	1.2	2.5	0.10	C
21	5	10	49.6	19-21.9	155-24.0?	8.3	1.7	13	62	3.3	0.08	0.7	0.5	0.12	B
21	7	13	32.8	19-20.6	155-24.0?	8.4	1.4	15	92	1.3	0.07	0.8	0.6	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 21	10	12	24.7	19-22.1	155-23.9	8.0	0.2	7	201	3.7	0.41	2.3	4.3	0.09	C
21	18	52	29.2	19-40.8	156-20.5	46.5*	3.3	18	321	47.4	0.42	3.0		0.08	D
21	22	48	18.4	19-22.3	155-25.1	8.0*	0.5	11	136	5.0	0.08	0.6		0.10	C
22	1	56	27.7	19-17.9	155- 4.6	34.6	2.5	12	266	12.0	0.61	2.4	4.6	0.06	C
22	2	12	0.3	19-19.7	155-13.1	8.0*	0.5	8	220	6.9	0.18	1.2		0.09	C
22	5	37	3.9	19- 9.6	155-35.3?	5.9	3.1	18	201	10.3	0.25	1.8	1.8	0.20	C
22	7	59	16.6	19-27.9	155-27.2	8.0*		7	268	7.6	0.63	3.5		0.12	D
22	11	48	36.2	19-21.5	155-12.6	8.0*		8	160	6.0	0.07	0.6		0.05	C
22	12	12	24.2	19-22.4	155-23.7	8.6	0.6	9	158	4.0	0.11	0.7	1.8	0.09	B
22	19	30	9.6	19-23.4	155-28.4	8.0*	1.4	10	142	10.8	0.07	0.6		0.06	C
22	19	56	21.5	19-24.0	155-24.9	8.2	2.3	16	74	7.5	0.06	0.4	0.4	0.08	A
23	11	2	44.2	19-19.6	155-16.2	9.7	1.6	7	229	2.3	0.11	0.6	0.8	0.02	C
23	14	50	18.8	19-21.1	155-13.9	6.6	2.0	15	159	3.3	0.11	0.7	0.6	0.13	C
23	16	35	19.0	19-21.3	155-23.9	5.0	0.2	7	212	2.3	0.42	1.5	3.0	0.08	C
23	17	48	45.2	19-17.2	155-18.3	30.1		14	170	1.6	0.23	1.3	2.2	0.10	C
23	18	48	54.0	19-22.2	155- 4.7	6.3	1.3	8	138	5.3	0.17	1.3	1.2	0.17	B
23	20	34	38.9	19-28.8	156- 1.6?	8.0*	2.8	11	310	44.8	3.62	25.8		1.33	D
23	21	15	31.3	19-20.4	155-13.3	4.5	1.3	13	181	5.8	0.19	1.1	1.1	0.18	C
23	22	12	29.6	19-22.9	155-23.4?	7.3	2.0	14	66	4.9	0.06	0.7	1.4	0.13	B
23	22	36	39.8	19-22.8	155-22.8	8.0*	0.2	8	166	4.8	0.10	0.8		0.10	C
23	23	23	20.9	19-12.2	155-28.0	8.0*	0.9	9	121	4.9	0.17	1.6		0.23	C
24	0	39	13.3	19-36.8	155-14.4	8.0*	1.4	12	142	20.3	0.10	0.8		0.12	C
24	2	6	42.4	19-23.7	155-22.9	8.0*	0.7	8	170	5.6	0.06	0.5		0.06	C
24	5	55	13.2	19-50.2	155-39.6	11.8		11	111	22.1	0.13	1.1	1.4	0.14	B
24	9	23	15.4	19-20.8	155- 5.5	3.1		13	147	4.7	0.11	0.8	0.9	0.14	B
24	15	45	25.1	18-52.9	155-18.0	9.8		14	258	35.1	0.61	3.0	3.0	0.13	D
24	16	10	38.1	18-51.8	155-17.4	9.3		14	262	37.4	0.55	2.7	2.6	0.11	D
24	17	41	58.4	18-50.9	155-15.7	0.4*	2.5	17	260	40.5	0.50	3.2		0.13	D
24	18	8	0.9	18-51.4	155-16.8	7.3		12	271	38.6	2.73	5.3	13.9	0.12	D
24	18	37	36.5	18-52.3	155-18.2	9.5	2.9	15	260	35.9	0.66	3.2	3.3	0.14	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 24	19	27	4.7	19-19.6	155- 8.5	4.0	2.5	20	172	5.0	0.18	1.1	1.1	0.24	C
24	19	39	20.8	19-22.5	155-22.9	1.8*	0.4	9	116	4.2	0.12	0.8		0.15	B
24	20	57	23.1	19-25.8	155-28.8	8.0*	1.0	11	81	12.1	0.03	0.2		0.05	C
24	21	55	25.8	19-18.1	155- 5.5?	0.3	1.3	10	272	10.6	3.03	3.8	8.7	0.16	D
24	22	10	27.1	19-54.2	155-56.4	15.4*	2.6	11	216	26.1	0.26	2.1		0.14	C
24	23	59	8.7	19-20.0	155-12.1	8.0*		7	205	5.5	0.14	1.1		0.08	C
25	4	12	33.6	18-51.7	155-17.5	1.7*		9	270	37.5	0.65	4.1		0.16	D
25	10	9	50.5	19-23.9	155-29.1	6.7	2.0	20	60	12.3	0.07	0.5	0.5	0.15	B
25	13	19	24.8	19-25.5	155-28.9	6.9	2.8	25	64	12.6	0.08	0.5	0.5	0.15	B
25	13	40	27.7	19-25.5	155-28.7	7.0	1.1	13	82	12.3	0.06	0.4	0.4	0.08	B
25	14	13	7.7	18-53.8	155-19.9	11.1*		11	266	32.2	0.70	4.9		0.16	D
25	15	34	15.7	19-19.0	155- 8.6	2.6	1.8	19	180	6.1	0.22	1.4	1.5	0.29	C
25	15	52	11.4	19-19.6	155- 8.5	5.8		13	173	5.2	0.20	1.5	1.2	0.21	C
25	17	11	19.5	19-24.5	155-17.3	10.7	1.0	13	62	0.9	0.07	0.4	0.6	0.04	A
25	17	21	26.7	19-24.5	155-17.3	10.4	1.0	9	70	1.0	0.11	0.5	0.9	0.04	A
25	18	29	48.5	18-50.4	155-16.3	2.2*	2.6	13	262	40.6	0.55	3.6		0.14	D
25	18	51	8.6	19-19.4	155-10.7	8.0*	1.4	13	173	5.2	0.12	0.9		0.13	C
25	21	27	9.3	19-24.3	155-17.9	9.1	1.1	8	105	3.3	0.13	0.8	1.6	0.08	A
25	21	28	24.6	19-18.4	155-14.7	12.6	1.2	8	212	5.7	0.23	0.9	1.8	0.05	B
25	21	33	57.7	19-20.8	155- 9.9	12.4	1.2	9	248	2.3	0.53	2.7	4.0	0.06	D
25	21	42	46.9	19-18.7	155-45.8	5.7	2.6	19	146	12.5	0.10	0.8	0.9	0.11	C
25	22	52	41.1	19-22.7	155-23.0	7.1	1.1	12	163	4.7	0.11	0.7	0.9	0.12	C
25	23	37	9.9	19-20.0	155-13.5	5.7	1.0	20	158	4.8	0.11	0.7	0.7	0.19	C
26	0	35	16.4	19-19.0	155-13.5	5.1	0.6	12	209	7.1	0.24	1.4	1.2	0.19	C
26	1	34	32.1	19-24.6	155-17.0	10.2	0.9	9	87	1.9	0.12	0.6	1.1	0.05	A
26	1	34	53.1	19-24.4	155-17.3	10.3	1.0	13	62	1.0	0.07	0.4	0.7	0.06	A
26	1	46	50.8	19-24.3	155-17.3	11.0	1.1	9	80	1.8	0.15	0.7	1.3	0.06	A
26	1	54	30.9	19- 9.0	155-27.4?	0.0	1.4	11	178	13.7	0.37	3.4	19.5	0.36	D
26	1	56	1.9	19-24.5	155-17.0	11.5	1.2	10	80	2.0	0.21	0.7	1.6	0.05	A
26	2	45	2.7	19-20.3	155-14.0	8.8	1.6	12	178	5.2	0.19	1.1	2.3	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 26	3	54	58.2	19-24.4	155-17.0	11.8	1.4	9	96	1.9	0.29	1.0	2.4	0.08	B
26	4	5	23.9	19-18.2	155-46.2	5.6	1.6	9	173	11.5	0.17	2.0	1.7	0.12	C
26	5	2	12.5	19-24.2	155-17.0	9.0	1.0	6	110	1.5	0.22	1.4	2.5	0.07	B
26	5	23	8.3	18-54.5	155-20.0	8.8	1.5	9	275	30.9	0.72	3.9	3.0	0.08	D
26	5	50	31.1	19-24.5	155-17.4	10.9	1.1	8	111	2.2	0.19	0.9	1.8	0.07	A
26	10	1	26.8	19-24.2	155-17.8	9.8	1.3	8	84	1.9	0.12	0.5	1.0	0.03	A
26	11	48	19.9	19-24.3	155-17.4	10.9	1.5	6	96	1.8	0.37	1.2	3.1	0.04	B
26	11	52	5.7	19-24.3	155-17.3	9.6	1.2	7	100	1.9	0.26	0.9	2.2	0.06	B
26	16	15	15.5	19-20.3	155-13.4	9.3	1.5	11	183	5.9	0.26	1.2	2.5	0.10	C
26	18	48	49.8	18-50.1	155-19.0	8.0*		9	267	39.1	0.22	1.4		0.05	D
26	19	6	55.5	19- 9.9	155-20.2	43.3	2.5	20	181	13.5	0.29	1.3	2.7	0.11	C
27	2	0	33.9	19-24.2	155-17.2	10.8	1.1	11	65	1.4	0.18	0.7	1.5	0.06	A
27	5	2	49.6	19-24.1	155-17.7	9.1	1.3	8	94	1.9	0.07	0.4	0.6	0.02	A
27	6	32	21.7	19-24.4	155-23.7	8.0*	0.6	12	189	7.1	0.10	0.7		0.10	C
27	7	6	45.7	19-18.1	155-47.1?	5.8	1.2	6	182	9.8	0.24	3.1	2.4	0.08	C
27	9	53	29.9	19-19.9	155-16.7	9.4		7	206	1.3	0.09	0.5	0.7	0.02	B
27	10	28	12.1	19-19.8	155-16.4	9.5		7	217	1.8	0.20	0.9	1.4	0.03	B
27	10	33	38.2	19-11.4	155-16.5	42.1	1.4	17	184	12.7	0.27	1.2	2.5	0.09	C
27	10	36	11.0	18-56.5	155-20.9	11.5	3.6	28	239	27.0	0.31	1.6	1.8	0.12	C
27	11	14	53.2	19-22.1	155-23.5	9.9	1.5	19	60	3.6	0.04	0.4	0.6	0.09	A
27	11	17	12.7	19-22.3	155-23.2	9.3	1.1	11	118	3.9	0.09	0.7	1.2	0.09	A
27	14	6	48.8	19-20.1	155- 7.8	9.4	1.2	10	166	5.1	0.20	1.5	2.8	0.13	C
27	14	33	28.2	19-19.9	155- 9.2	8.9	1.4	7	168	4.2	0.14	1.4	2.4	0.09	C
27	18	51	27.6	19-16.1	155-22.7?	0.1	1.5	17	192	7.7	9.53	2.2	17.4	0.19	C
27	22	2	14.6	19-20.5	155-11.9?	8.4	0.8	12	155	4.7	0.08	0.7	0.5	0.11	C
28	0	33	57.5	19-24.1	155-17.2	9.9	0.4	14	54	1.4	0.04	0.4	0.4	0.06	A
28	8	4	28.4	19-24.7	155-16.8	10.8	1.4	9	101	2.0	0.15	0.5	1.2	0.03	A
28	17	13	11.8	19-24.0	155-25.8	8.0*	1.6	10	196	8.2	0.14	0.9		0.09	C
28	20	57	24.2	19-19.9	155-16.6	8.9	0.3	8	210	1.4	0.14	0.7	1.0	0.03	B
28	22	31	2.2	19-22.7	155-25.2	6.2	2.1	19	68	5.8	0.09	0.7	0.8	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 29	2	10	27.1	19-14.7	155-20.1	33.6	1.2	10	218	11.1	0.85	3.1	7.2	0.10	C
29	2	59	27.8	19-16.7	155- 6.4?	0.0	1.7	9	266	11.6	2.21	3.6	22.4	0.22	D
29	8	30	16.4	19-22.2	155-25.0	8.0*	1.6	9	135	4.8	0.06	0.5		0.09	C
29	15	33	50.8	19-20.8	155-13.2	8.0*	1.5	9	174	5.6	0.11	0.9		0.10	C
29	17	16	23.6	19-20.1	155- 8.7	8.8	1.2	12	165	4.2	0.15	1.2	2.5	0.12	C
29	17	54	45.4	19-20.2	155-12.4	8.0*	0.4	9	198	5.7	0.12	1.0		0.11	C
29	21	55	0.6	19-28.6	155-25.3	7.1	2.0	13	167	4.1	0.10	0.7	0.5	0.11	C
30	1	6	3.8	19-18.5	155-12.9	20.1	1.1	8	225	8.4	1.00	3.7	8.3	0.10	C
30	7	19	2.8	19-20.3	155-11.3	5.2	1.6	19	159	4.2	0.17	1.1	0.9	0.25	C
30	9	12	55.5	19-23.0	155-29.5	3.0	0.6	16	64	12.0	0.14	0.9	1.6	0.23	C
30	9	46	34.4	19-30.1	155-57.8?	8.6	2.4	14	257	60.3	0.45	3.8	9.5	0.15	D
30	9	56	21.0	19-13.1	155-21.6	25.6*	1.7	6	316	13.3	0.31	3.0		0.05	D
30	19	10	7.1	19-19.3	155-10.2	8.0*	1.4	13	175	5.1	0.10	0.8		0.12	C
30	19	22	14.8	19-13.1	156-14.6	1.9	2.9	19	299	65.7	0.32	5.2	3.2	0.12	D
30	20	27	37.8	19-24.2	155-17.5	10.0	1.3	12	60	1.5	0.09	0.5	0.8	0.05	A
30	23	50	30.2	19-12.9	155-22.3	25.0	1.2	14	245	13.5	0.30	1.9	2.1	0.10	C
31	0	4	25.5	19- 9.7	155-22.0?	31.5	1.3	20	198	14.9	0.19	1.5	1.7	0.14	C
31	1	0	20.6	19-24.5	155-17.0	10.1	1.2	11	66	0.7	0.14	0.7	1.2	0.08	A
31	3	40	26.5	19-19.4	155-15.1	5.5	1.2	17	185	4.2	0.16	1.0	0.7	0.18	C
31	7	0	51.4	19-31.2	156-29.6	3.6	3.1	25	246	60.0	0.42	3.2	4.4	0.19	D
31	7	27	19.2	19-29.8	155-50.9	15.3*	2.7	12	226	25.6	0.23	1.7		0.12	D
31	9	55	7.3	19-20.6	155-17.5	4.9		13	131	0.9	0.10	0.8	0.6	0.12	B
31	18	11	24.7	19-19.7	155-15.8	5.6	0.7	15	170	2.9	0.14	0.9	0.7	0.17	C
31	19	28	22.2	19-25.4	155-17.4	10.0	0.9	9	195	0.3	0.15	0.7	1.0	0.03	B
31	19	29	16.0	19-24.3	155-16.6	8.3	0.8	10	81	2.6	0.06	0.5	0.8	0.06	A
31	19	30	30.5	19-24.5	155-17.0	7.9	0.7	12	75	0.7	0.04	0.5	0.3	0.07	A
31	21	55	19.3	19-19.6	155-13.3	4.4	1.1	12	200	7.0	0.28	1.6	2.1	0.24	C
31	22	9	12.0	19-19.3	155-25.9	5.7	1.2	12	94	4.8	0.14	1.5	1.5	0.24	B
31	22	22	40.3	19-24.3	155-16.9	9.9	1.5	13	74	1.7	0.15	0.9	1.1	0.10	A
JUN 1	2	20	48.6	19-55.8	155-31.6	37.0	2.1	14	232	19.6	0.54	2.4	4.7	0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN	1	4	36	12.0	19-18.1	155-14.5	11.4	1.1	10	219	6.3	0.20	0.8	1.6	0.06	B
	1	4	44	32.9	19-24.6	155-16.6	1.0	0.7	10	96	0.8	0.06	0.3	0.3	0.11	B
	1	5	23	19.8	19-24.3	155-17.7	14.6	1.2	10	73	1.6	0.09	0.7	1.0	0.06	A
	1	7	50	44.8	19-24.3	155-23.2	4.1	1.0	11	178	6.3	0.18	1.1	1.8	0.17	C
	1	9	44	36.4	18-53.5	155-19.6	8.9	2.7	12	255	32.8	0.53	3.3	3.4	0.14	D
	1	12	40	51.1	19-19.1	155-11.6	3.3	1.3	13	176	6.4	0.22	1.4	1.8	0.24	C
	1	13	32	55.8	19-19.2	155-10.6	8.0*	1.3	11	230	5.5	0.24	1.5		0.12	D
	1	20	57	3.9	19-18.7	155- 9.1	3.7	1.2	13	184	6.4	0.21	1.4	1.9	0.21	C
	1	22	0	7.0	19-24.5	155-29.0	7.3	2.0	20	87	12.7	0.08	0.6	0.6	0.14	B
	2	0	50	21.1	19-18.2	155-46.2	6.6	2.1	14	152	11.4	0.09	1.1	1.0	0.10	C
	2	1	14	7.4	19-17.1	155-23.0?	3.4	1.4	18	129	5.7	0.10	0.8	1.1	0.20	B
	2	3	21	31.1	19-24.6	155-16.7	9.7	1.2	12	82	0.8	0.15	0.7	1.2	0.06	A
	2	6	27	51.6	19-20.1	155-12.5?	4.1	1.1	11	198	6.0	0.24	1.3	1.8	0.20	C
	2	9	3	21.1	19-23.7	155-23.4	7.7	1.2	13	171	6.4	0.12	0.8	0.7	0.13	C
	2	9	51	56.6	19-13.8	155-25.5	3.5	2.1	20	134	5.2	0.12	1.0	1.1	0.23	C
	2	10	34	45.1	19-19.1	155-12.2	5.0	1.3	15	174	6.8	0.18	1.1	1.2	0.22	C
	2	10	37	8.5	19-27.8	155-29.0	5.8	1.7	11	219	10.6	0.27	1.4	1.0	0.13	C
	2	16	12	34.6	19-25.0	155-23.8?	6.7	2.2	22	61	7.2	0.09	0.7	0.7	0.21	C
	2	17	19	45.5	19-20.5	155-13.1	8.0*	1.5	11	181	6.0	0.13	1.0		0.12	C
	2	19	26	11.4	19-20.0	155-12.6?	5.4	1.3	11	290	7.4	0.24	1.4	1.2	0.18	C
	2	23	34	28.4	19-12.1	155-27.6	5.7	2.5	20	113	4.8	0.10	0.8	0.7	0.17	B
	3	3	25	47.7	20-33.7	155- 3.6	8.0*	2.4	10	326	80.1	3.21	19.1		0.10	D
	3	4	3	0.9	19-12.7	155-28.4	11.2	1.6	8	114	5.9	0.28	2.8	3.2	0.17	B
	3	4	3	53.1	19-21.6	155-26.0?	2.5	1.2	14	131	5.4	0.16	1.1	1.5	0.24	C
	3	5	51	39.7	20-10.4	155- 5.6	42.7*	2.1	8	304	40.8	0.59	4.2		0.08	D
	3	7	45	3.7	19-19.9	155-14.4	26.4	1.3	15	155	5.3	0.17	1.0	1.6	0.09	B
	3	11	11	9.1	19-24.0	155-24.9	7.0	2.3	21	78	7.6	0.10	0.8	0.8	0.21	C
	3	11	29	53.3	19-24.3	155-24.4?	0.0	1.1	12	201	7.7	0.54	1.1	1.2	0.17	C
	3	11	32	59.2	19-20.6	155- 8.3	6.0	1.8	18	157	3.8	0.12	1.0	0.8	0.19	C
	3	12	20	15.5	19-16.7	155-25.2	4.2		10	121	2.7	0.22	1.7	2.3	0.27	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 3	12	38	47.7	19-24.4	155-25.3	8.0*	1.6	13	150	8.6	0.07	0.5		0.07	C
3	12	52	10.8	19-24.3	155-22.7	3.3	1.7	16	62	5.4	0.11	0.8	1.8	0.19	B
3	13	11	52.6	19-24.1	155-26.2?	0.0	1.7	10	142	8.8	1.34	1.3	21.5	0.20	C
3	13	40	53.4	19-35.2	155-23.5	8.0*	1.2	11	163	9.9	0.13	2.3		0.22	C
3	16	13	30.2	19-28.7	155-52.9	8.5	2.9	23	161	6.2	0.08	0.9	1.0	0.11	C
3	17	19	11.6	19- 8.6	155-25.8	13.2*	1.9	12	190	21.3	0.16	2.0		0.15	C
3	17	48	8.2	19-23.6	155-26.6?	2.5	0.9	18	129	8.6	0.20	1.1	2.1	0.24	C
3	23	20	43.7	19-22.3	155-22.8	7.9	0.9	14	144	4.0	0.17	1.5	1.0	0.22	C
4	0	28	0.9	19-18.2	155-13.2	7.1	2.2	21	182	8.2	0.11	0.7	0.5	0.14	C
4	0	49	48.8	19-18.1	155-13.1	8.0*	1.4	16	171	6.2	0.11	0.7		0.11	C
4	9	5	41.9	19-18.9	155-13.2	8.0*	0.5	9	215	7.6	0.14	1.0		0.09	C
4	9	24	54.5	19-20.3	155- 7.9	7.7	1.2	14	162	4.8	0.15	1.4	0.9	0.16	C
4	17	43	59.0	19-18.8	155-14.0	8.0*		9	209	6.5	0.17	1.2		0.14	C
4	20	28	46.1	19-24.2	155-16.1	20.0	1.6	20	63	3.3	0.10	0.8	1.3	0.12	B
5	10	44	33.7	19-20.2	155-12.0	5.8	1.3	20	143	4.3	0.11	0.9	0.7	0.19	C
5	16	55	34.8	19-22.4	155-25.2	8.0*	1.7	9	233	5.2	0.20	1.2		0.12	D
5	21	8	42.2	19-21.0	155- 8.1	9.2	1.8	13	150	3.6	0.15	1.1	2.2	0.12	B
5	21	30	35.7	19-13.3	155-12.9	13.0	1.1	8	312	13.3	1.02	4.9	3.3	0.04	D
6	2	1	7.5	19-24.7	155-17.2	10.1	1.6	10	66	1.5	0.11	0.5	0.9	0.03	A
6	13	16	1.8	19-16.5	155-33.8?	2.6	2.6	21	108	16.6	0.24	1.3	1.5	0.30	C
7	3	35	55.1	19-24.8	155-17.1	9.0	1.0	13	69	0.3	0.08	0.5	0.8	0.06	A
7	4	16	59.9	19-24.0	155-22.4	9.4	1.0	16	111	4.8	0.05	0.4	0.9	0.09	A
7	7	18	46.7	19-21.6	155-28.4?	8.4	2.4	24	51	9.3	0.11	0.6	0.8	0.14	B
7	7	56	43.9	19-23.7	155-26.2?	8.0*	0.7	14	200	8.2	0.36	2.3		0.25	C
7	8	51	23.6	19-26.0	155-22.3	6.9	1.0	18	95	4.0	0.08	0.7	0.6	0.16	B
7	11	25	9.6	19-19.7	155- 9.2	10.0	1.0	10	171	4.6	0.16	1.2	2.3	0.10	C
7	13	43	39.2	19-20.6	155-25.7	7.5	2.0	15	79	4.3	0.08	0.7	0.6	0.15	B
7	15	50	8.4	19-18.1	155-13.3	5.6	2.4	22	158	8.1	0.15	0.9	0.9	0.23	C
7	17	57	48.5	19-20.1	155- 7.2	8.0*	1.1	10	167	5.9	0.09	0.9		0.10	C
7	17	58	29.6	19-19.0	155- 9.4	4.8	1.6	13	182	5.8	0.24	1.5	1.8	0.25	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN	8	0	7	2.0	19-18.9	155-13.3	8.0*	0.9	13	152	7.5	0.09	0.8		0.11	C
	8	0	26	38.0	19-22.8	155-24.7	7.2	0.7	20	53	5.3	0.07	0.6	0.6	0.15	B
	8	6	12	2.7	19-24.6	155-17.4	8.9	1.3	8	87	0.9	0.22	1.1	1.8	0.06	B
	8	9	55	22.4	19-20.1	155-11.1	5.6	2.5	22	161	4.2	0.15	1.0	0.8	0.26	C
	8	10	21	26.2	19-20.6	155-11.6?	8.1	0.7	17	154	3.9	0.09	0.7	0.4	0.12	C
	8	11	7	58.3	18-52.6	155-19.1?	8.0	2.9	12	259	34.8	0.27	1.9	2.6	0.09	C
	8	13	47	26.0	19-19.6	155-20.3	27.9	2.7	23	79	4.1	0.11	0.6	1.1	0.10	A
	9	3	37	51.7	19-22.4	155-24.7	9.2	0.9	21	51	4.7	0.05	0.6	1.4	0.12	B
	9	4	6	43.6	19-15.0	155-19.4	4.6	1.2	17	158	5.6	0.13	0.9	0.9	0.17	C
	9	14	8	44.8	19-12.1	155-24.1	8.0*	0.8	12	190	18.9	0.25	2.3		0.26	C
	9	19	28	28.6	18-45.5	155-36.2	20.0	1.8	21	302	25.5	0.26	3.0	7.9	0.16	D
	9	19	31	1.2	19-19.6	155-13.3	6.0	0.6	19	165	7.0	0.15	1.0	0.9	0.22	C
	10	0	6	12.3	19-19.1	155-14.0	8.0*	1.1	8	204	6.3	0.14	1.0		0.10	C
	10	0	6	26.1	19-19.4	155-14.3	6.4	1.0	18	192	5.6	0.15	1.0	0.7	0.19	C
	10	3	54	35.2	19-20.7	155-11.4	10.0	0.9	10	201	3.8	0.23	1.1	2.4	0.08	C
	10	4	3	41.9	19-18.4	155-15.7	6.0	1.8	23	149	4.3	0.12	0.8	0.7	0.19	B
	10	11	3	41.0	19-18.0	155-15.9	9.0	1.7	21	152	4.6	0.10	0.8	1.1	0.16	C
	10	11	43	22.2	19-17.8	155-15.5	9.4	1.2	8	274	5.4	1.46	7.3	6.8	0.15	D
	10	12	51	56.5	19- 9.5	155-40.9	2.7	2.2	13	126	11.9	0.17	1.3	1.5	0.24	C
	10	13	54	30.8	19-19.7	155-12.9	8.0*	1.0	11	201	6.8	0.11	0.8		0.09	C
	10	16	49	52.1	19-18.6	155-15.1	10.6	1.0	11	204	4.8	0.19	0.8	1.6	0.07	B
	10	18	22	42.9	19-22.8	155- 5.2?	0.0	1.1	11	134	6.7	9.61	1.1	18.4	0.20	C
	10	19	39	16.2	19-25.3	155-23.7	8.0*		10	190	6.6	0.15	1.1		0.12	C
	11	1	5	54.8	19-18.1	155-15.2	9.0	0.6	13	182	5.3	0.17	1.1	2.0	0.13	C
	11	1	7	27.6	19-20.1	155-12.4?	4.6	1.3	10	199	5.7	0.87	3.0	11.1	0.22	C
	11	2	41	22.6	19-17.5	155-15.0	9.9	0.7	14	231	6.4	0.23	1.2	1.9	0.10	C
	11	3	43	44.9	19-18.6	155-13.3	8.0*	0.6	11	220	7.7	0.21	1.5		0.15	C
	11	5	39	9.4	19-18.1	155-15.0?	6.0	0.8	15	210	5.6	0.22	1.3	0.8	0.18	C
	11	10	34	2.1	19-20.9	155- 7.9	7.5	3.2	24	132	4.1	0.11	0.9	0.6	0.21	C
	11	13	0	57.3	19-24.7	155-16.4	1.1	0.7	10	93	1.1	0.06	0.3	0.4	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 11	13	38	38.5	19-20.6	155-19.7	2.1	0.0	8	105	4.2	0.29	0.4	1.1	0.06	A
11	13	57	45.0	19-19.3	155-46.9	6.1	1.1	13	169	11.2	0.14	1.3	1.2	0.10	C
11	14	37	15.3	19-12.9	155-22.3	31.6	1.1	15	226	11.4	0.46	2.2	3.8	0.12	C
11	17	36	26.6	18-48.9	155-13.7?	4.9*	1.6	10	323	45.4	0.87	5.2		0.14	D
11	22	52	24.9	19-22.6	155-11.7	12.8	1.7	12	159	3.4	0.11	1.1	1.0	0.10	C
12	6	19	2.2	19- 9.7	155-31.5	6.3	1.9	19	124	6.4	0.13	0.9	0.8	0.17	B
12	13	12	52.9	19-15.4	155-26.6	6.2		13	113	1.9	0.10	1.1	0.8	0.20	B
12	16	6	38.3	19-12.6	155-33.3	6.3	2.7	21	98	7.8	0.12	0.9	0.9	0.19	C
12	16	35	52.6	19- 9.6	155-31.4	6.2	2.2	20	125	6.2	0.14	1.0	0.9	0.21	C
12	17	23	57.9	19-22.9	155-24.3	5.1		8	236	5.3	0.39	1.5	2.8	0.09	C
12	17	29	13.0	19-25.6	155-27.9	7.3	2.1	23	77	11.2	0.12	0.7	0.8	0.18	B
12	18	2	16.8	19-39.8	155-22.7	40.8	1.1	15	118	15.6	0.42	1.3	4.2	0.10	B
12	20	12	47.1	19- 9.4	155-31.4	6.2	2.3	17	130	6.2	0.14	0.9	0.8	0.17	C
13	1	44	2.6	19-19.1	155-30.4?	0.0	2.2	21	71	8.2	5.27	0.8	10.0	0.24	C
13	6	59	36.1	19-20.9	155-19.8	23.8	0.7	17	54	4.4	0.19	1.2	2.0	0.15	B
13	8	57	15.9	19-21.9	155-15.1	25.1		24	121	1.7	0.14	1.0	1.4	0.14	B
13	11	23	44.4	19-19.9	155-17.0	8.4	0.0	9	168	0.8	0.11	0.8	1.0	0.06	B
13	19	40	41.5	19-47.0	156- 9.9	5.3	1.2	14	306	67.7	0.25	6.4	7.2	0.11	D
13	20	19	52.7	19-19.3	155- 9.1	8.0*		13	178	5.4	0.08	0.6		0.08	C
13	22	28	11.9	19-23.6	155-23.4	8.0*	0.2	12	183	6.3	0.09	0.6		0.11	C
13	22	41	53.3	19-19.6	155-12.6	8.0*	0.5	13	166	6.7	0.11	0.9		0.13	C
14	3	3	8.7	19-20.3	155-17.7	5.6	1.0	14	75	0.7	0.11	0.7	0.9	0.14	B
14	4	23	18.4	19- 7.4	155-25.6	37.0	2.4	21	178	5.6	0.39	1.9	3.6	0.15	C
14	4	41	6.3	19-18.6	155-11.6	8.0*	1.0	9	252	7.0	0.33	2.0		0.11	D
14	7	54	20.1	19- 6.6	155-26.6	46.3	2.6	19	180	5.9	0.47	2.0	4.1	0.13	C
14	20	3	31.4	19-23.7	155-26.4?	8.1	1.4	19	73	8.4	0.07	0.5	0.5	0.12	B
14	20	6	28.8	19-22.5	155-26.1	3.6	1.1	21	72	6.4	0.10	0.7	1.2	0.23	C
14	20	14	24.1	19-23.0	155-26.5	8.2	0.9	15	74	7.6	0.14	0.8	1.0	0.15	B
14	23	33	2.4	19-19.4	155-11.5	8.0*	0.7	13	224	5.7	0.15	1.0		0.09	C
14	23	40	5.1	19-15.8	155-21.6	1.2	1.5	21	146	8.7	1.10	0.7	4.0	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 15	1	31	28.7	19-16.9	155-23.8	3.7	0.7	9	182	5.3	0.14	0.9	1.6	0.11	C
15	4	45	47.9	19-20.9	155-47.4?	6.2	2.5	19	129	12.4	0.10	0.7	0.7	0.13	C
15	6	5	7.0	19-20.8	155- 6.1	1.6	1.5	19	201	7.0	1.39	1.2	4.9	0.17	C
15	9	41	18.6	19-53.7	155-40.8?	9.2	2.3	15	122	27.8	0.48	5.5	11.5	0.34	D
15	12	40	25.2	19-26.1	155-45.4	13.4*	1.5	15	198	17.5	0.12	1.0		0.08	C
15	13	55	49.0	19-53.2	155-40.7	14.2*	2.5	21	121	25.8	0.10	0.9		0.12	C
15	22	36	30.8	19-19.6	155-11.8	3.4	0.9	19	168	5.4	0.18	1.1	1.6	0.28	C
16	14	40	10.3	19-19.0	155-25.2	6.3	1.9	12	110	4.0	0.10	0.8	0.7	0.13	B
16	15	6	21.7	19-18.9	155-24.9	6.1	2.2	14	115	3.8	0.10	0.8	0.6	0.15	B
16	18	59	11.0	19-19.7	155-11.4	8.0*	1.4	13	168	5.2	0.08	0.7		0.12	C
16	20	49	11.6	19-21.1	155-17.4?	2.6	1.1	11	135	1.8	0.17	1.2	1.6	0.19	B
17	6	7	59.2	19-19.4	155-12.6	4.0	1.3	11	212	6.8	0.26	1.5	1.9	0.20	C
17	15	8	7.4	19-22.1	155-25.8	2.7	2.2	21	71	5.5	0.11	0.8	1.4	0.26	C
17	16	18	51.7	19-22.7	155-22.1?	1.1		10	110	4.6	0.21	0.8	0.9	0.17	B
17	19	12	35.9	19-20.8	155-15.8	28.1	1.7	13	130	2.9	0.20	1.1	1.8	0.10	B
18	2	20	22.4	19-25.2	155-24.4	8.0*	1.2	14	184	7.6	0.07	0.5		0.07	C
18	4	29	34.7	19-20.8	155-12.5	8.1	1.4	14	203	3.1	0.27	1.8	0.7	0.17	C
18	5	55	22.1	19-23.0	155-24.0	8.0*	1.6	10	163	5.2	0.09	0.8		0.10	C
18	5	56	0.7	19-20.1	155- 8.8	4.6	1.6	18	165	4.0	0.15	1.0	1.1	0.22	C
18	11	0	22.0	19-23.7	155-18.7?	11.9	1.2	20	52	1.7	0.08	0.8	0.9	0.18	B
18	13	14	12.0	19-23.7	155-17.9	14.3	0.8	11	54	1.8	0.07	0.6	0.8	0.07	A
18	13	58	50.1	19-23.7	155-17.5	12.4	1.8	18	48	1.1	0.06	0.8	0.6	0.12	B
18	16	4	33.8	19-20.3	155- 9.5	10.6	0.2	8	161	3.3	0.12	0.9	1.8	0.05	B
18	16	11	15.7	19-23.6	155-17.3	13.3	0.8	14	50	0.8	0.04	0.5	0.4	0.08	A
18	21	8	9.0	19-23.3	155-26.2	0.8*	1.0	16	72	7.6	0.11	0.7		0.21	C
19	10	40	41.2	19-23.5	155-24.6	8.0*	1.2	17	73	6.5	0.08	0.7		0.15	B
19	13	23	46.3	19-18.8	155- 9.4	7.0		13	184	6.1	0.21	1.6	1.0	0.19	C
19	13	40	5.9	19-23.8	155-16.4	17.4	0.6	14	89	1.2	0.07	0.5	0.8	0.07	A
19	16	18	57.1	19-19.2	155- 8.6	8.0*	0.3	8	180	5.7	0.08	0.6		0.07	C
19	21	52	51.5	19-21.3	155-11.5	12.3	1.0	9	144	3.3	0.19	1.0	2.0	0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 19	22	2	58.4	19- 1.8	155-23.1	34.9		22	213	16.5	0.36	1.8	3.2	0.14	C
19	22	55	28.1	19-21.3	155-13.4	7.4	2.4	26	130	2.5	0.08	0.7	0.5	0.19	C
20	0	17	35.6	19-18.1	155-15.4	8.0*	0.5	7	213	5.7	0.18	1.2		0.10	C
20	5	6	13.5	19-21.7	155-24.5	10.0		10	128	3.5	0.13	0.8	1.9	0.10	B
20	5	53	25.3	19-19.4	155-11.5	2.9	2.4	24	152	5.7	0.19	1.1	1.3	0.27	C
20	5	55	16.5	19-20.8	155-12.0	7.3	0.7	16	181	4.4	0.13	1.0	0.6	0.15	C
20	6	0	12.5	19-20.5	155-11.3	5.1	1.5	20	155	3.8	0.11	0.9	0.8	0.23	C
20	10	56	7.4	19- 6.7	155-37.2	5.3	1.5	12	125	15.1	0.21	1.7	1.8	0.25	C
20	12	9	38.2	19-18.4	155- 8.4	3.3	0.8	14	190	7.4	0.22	1.5	1.6	0.23	C
20	16	8	27.5	19-23.4	155-28.1	7.8	0.8	16	83	10.3	0.13	0.6	0.9	0.12	B
20	22	19	31.8	19-20.1	155-12.4	5.7		23	143	4.3	0.12	0.9	0.7	0.24	C
21	1	17	38.8	19-19.9	155- 9.2	7.8	2.6	23	144	4.1	0.10	0.8	0.6	0.16	B
21	7	19	26.8	19-19.9	155-10.8	5.3	1.1	17	165	4.3	0.15	1.1	0.9	0.22	C
21	8	40	49.6	19-23.8	155-17.6	13.5	1.0	19	47	1.4	0.05	0.5	0.6	0.08	A
21	11	38	25.5	19-21.6	155- 2.2	7.4	3.6	24	153	3.4	0.13	1.0	0.8	0.16	C
21	15	18	56.8	19-28.8	155-15.5	23.9	0.9	16	166	6.2	0.11	0.8	1.1	0.07	B
21	16	31	10.4	19-18.9	155-13.5	6.5	2.3	22	151	6.7	0.14	0.9	0.7	0.21	C
21	18	3	45.2	19-20.1	155-11.1	12.2	1.5	10	221	4.2	0.34	1.3	2.9	0.08	C
21	20	14	8.5	19-26.6	155-52.6?	8.2	1.5	15	153	9.8	0.15	1.7	2.4	0.12	C
21	21	38	24.5	19-25.3	155-22.5	8.0*		12	163	5.3	0.06	0.5		0.07	C
21	23	45	41.8	19-19.6	155-12.6	3.1	1.1	18	166	5.3	0.17	0.9	1.2	0.21	C
22	1	4	51.7	19-17.6	155-13.9?	8.0*	1.7	13	196	7.7	0.35	2.3		0.32	D
22	2	49	53.9	19-25.1	155-25.0	8.0*	1.0	18	126	8.9	0.11	0.8		0.14	C
22	7	22	16.8	19-23.1	155-25.5	8.0	1.1	20	53	6.7	0.10	0.6	0.7	0.13	B
22	18	40	11.8	18-53.4	155-16.3	8.0*	2.2	12	272	45.5	0.76	5.2		0.14	D
22	19	7	39.5	19-22.8	155-22.4	8.0*	1.5	9	155	4.9	0.09	0.7		0.11	C
22	19	9	56.3	19-20.6	155-16.1	33.4	1.7	15	147	2.5	0.20	1.2	1.9	0.10	B
22	21	0	4.5	19-21.5	155-25.4?	0.8	1.3	14	97	4.4	2.18	1.0	8.1	0.23	B
23	0	2	49.2	19-59.1	155-37.3	14.2*	2.6	13	156	22.9	0.15	1.9		0.19	C
23	0	25	49.6	19-14.8	155-21.3?	0.0		15	214	7.4	9.20	1.6	17.5	0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 23	1	0	38.2	19-20.6	155-19.6	3.2	0.8	11	75	3.9	0.05	0.4	0.8	0.07	A
23	3	23	10.1	19-20.3	155-12.6	6.3		19	182	3.9	0.13	0.9	0.7	0.21	C
23	7	35	25.5	19-20.1	155- 5.2	3.6	1.9	12	208	8.9	0.26	1.8	1.3	0.20	C
23	13	53	6.7	19-20.1	155- 5.4?	0.0	1.9	17	208	8.6	6.88	1.7	12.8	0.23	C
23	21	20	36.0	19-19.4	155-14.7	9.3	0.7	8	189	4.9	0.28	1.9	3.1	0.13	C
23	21	46	54.9	19-19.9	155-14.3	8.0*	0.9	16	179	5.4	0.12	0.9		0.15	C
23	22	11	8.4	19-19.3	155-16.1	6.4	0.5	13	177	2.8	0.14	0.8	0.8	0.13	C
23	22	46	39.4	19-24.6	155-15.6	22.8	0.7	18	73	1.7	0.15	1.0	1.6	0.14	B
24	7	22	41.2	19-25.3	155-27.9	7.0	2.1	21	54	11.6	0.09	0.7	0.7	0.16	B
24	8	3	57.4	19-18.6	155-14.6?	8.3	0.3	12	209	5.6	0.27	1.5	2.7	0.15	C
24	9	3	50.1	19-27.1	155-22.3?	7.7	2.8	22	84	2.9	0.06	0.6	0.5	0.16	B
24	9	38	10.6	19-26.8	155-22.5?	7.7	1.4	16	80	3.4	0.09	0.7	1.3	0.14	B
24	11	28	9.8	19-19.2	155-18.4?	7.1	0.9	10	139	2.4	0.15	1.0	0.5	0.07	B
24	11	36	42.3	19-19.9	155-14.1	7.6	1.2	16	181	5.6	0.11	0.8	0.5	0.13	C
24	12	10	18.7	19- 2.8	155-27.0	51.4		16	201	12.4	0.76	3.4	6.3	0.18	C
24	20	31	36.8	19-22.6	155-22.4	6.5	1.0	11	152	4.7	0.11	0.6	0.8	0.09	B
25	0	55	23.2	19-20.1	155-16.1	8.9	0.8	10	158	2.4	0.25	1.6	2.7	0.12	C
25	1	43	0.5	19-21.1	155-14.0	5.9	0.9	18	157	4.0	0.12	0.9	0.7	0.21	C
25	6	19	59.9	19-22.2	155-25.6?	8.1	3.1	25	58	5.4	0.08	0.7	0.7	0.19	B
25	12	44	55.8	19-21.0	155-13.3	8.0*	0.9	12	167	5.2	0.11	0.9		0.13	C
25	16	30	29.0	19-14.4	155-22.2	7.2	1.0	10	180	8.8	0.14	1.1	0.7	0.12	C
25	18	27	50.1	19-18.5	155- 4.9	8.0*		10	262	10.8	0.76	4.5		0.20	D
25	19	57	31.2	19-16.7	155-30.4	5.2	0.9	7	145	6.4	0.20	1.9	2.2	0.18	B
25	22	37	7.9	18-56.1	155-14.1	13.0*	0.9	12	246	34.6	0.86	5.8		0.26	D
26	1	43	39.5	19-20.4	155-15.6	6.6	0.9	17	154	3.1	0.08	0.7	0.5	0.13	C
26	6	11	5.6	19-22.8	155-25.8?	7.7	2.1	20	52	6.5	0.08	0.6	0.7	0.14	B
26	7	40	29.1	19-19.6	155-16.3	9.7	1.4	8	214	2.1	0.14	0.7	1.0	0.03	B
26	9	41	0.3	19-30.7	155-47.4?	7.2	1.3	12	107	13.8	0.13	1.7	2.6	0.19	B
26	15	56	41.5	19-22.1	155-22.6	7.9	0.2	7	156	3.7	0.09	0.7	0.7	0.05	B
27	12	57	57.9	19-20.4	155-10.9	8.0	2.3	15	222	3.5	0.11	0.8	0.9	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 27	14	7	36.0	19-19.6	155- 8.3?	4.6	1.9	14	238	5.3	0.47	2.6	1.4	0.24	D
27	20	10	13.7	19- 8.9	155-20.6	25.3	1.4	12	222	17.1	0.19	1.9	2.9	0.09	C
27	22	28	26.5	19- 8.4	155-23.8	32.2	2.4	15	194	7.4	0.32	1.6	3.2	0.12	C
28	4	5	17.0	19-21.9	155-23.0	4.9	1.5	12	138	3.1	0.11	0.9	1.0	0.18	B
28	5	12	20.0	20-12.9	156- 8.8	8.0*	1.7	17	308	86.7	0.18	1.4		0.09	D
28	12	15	10.4	19- 1.6	155-21.7	29.3	3.1	22	217	18.2	0.23	1.2	2.3	0.11	C
28	14	36	51.9	19-15.6	155-32.0	4.0	2.2	16	83	9.0	0.13	1.0	1.2	0.24	C
28	17	7	20.3	19-19.3	155-15.3	6.4	1.1	16	160	4.0	0.12	0.8	0.6	0.15	C
28	22	41	49.9	19-50.8	155-23.0	26.6	2.6	24	151	6.3	0.28	1.5	2.6	0.11	C
29	0	5	6.5	19-20.4	155-13.0	4.7	0.8	16	152	6.2	0.13	0.9	1.1	0.21	C
29	4	0	6.9	19-55.2	155-27.7	41.6	2.8	25	228	12.9	0.15	0.9	1.4	0.09	C
29	17	58	8.5	19-22.1	155- 3.0	6.9	0.6	12	124	4.0	0.16	1.4	1.0	0.21	C
29	18	14	21.7	18-52.0	155-18.1	7.6	1.7	16	255	36.5	1.08	2.1	7.3	0.10	D
29	20	27	53.8	19-22.9	155- 2.4	8.0*	0.6	10	134	5.7	0.17	1.5		0.21	C
29	22	57	25.4	19-22.2	155-12.3	28.6	0.9	14	190	5.8	0.28	1.7	2.3	0.10	C
30	0	0	7.9	19-19.3	155-13.6	8.0*	0.4	11	202	6.9	0.19	1.3		0.17	C
30	7	0	32.4	19-19.5	155-15.8	6.2	1.0	17	164	3.0	0.11	0.8	0.6	0.18	C
30	7	33	51.8	19-20.3	155-12.4	8.0*	0.5	12	194	5.5	0.17	1.2		0.15	C
30	14	33	36.1	19-17.0	155-23.2	5.9		12	133	5.9	0.08	0.8	0.8	0.14	B
30	21	8	5.1	19-20.6	155-11.7	5.1	0.4	14	153	4.3	0.14	1.0	1.2	0.20	C

Table 3. Felt earthquakes

Date	Time H	M	S	Magnitude	Felt report
Apr 11	23	08	56.3	3.2	Kealakekua
19	10	16	39.7	3.9	Captain Cook, Kapapala, South Kona
May 2	07	39	54.4	3.0	Volcano
3	14	34	37.8	3.0	Kapapala
Jun 21	11	38	25.5	3.6	Hilo, Pahoa
24	09	03	50.1	2.8	Volcano

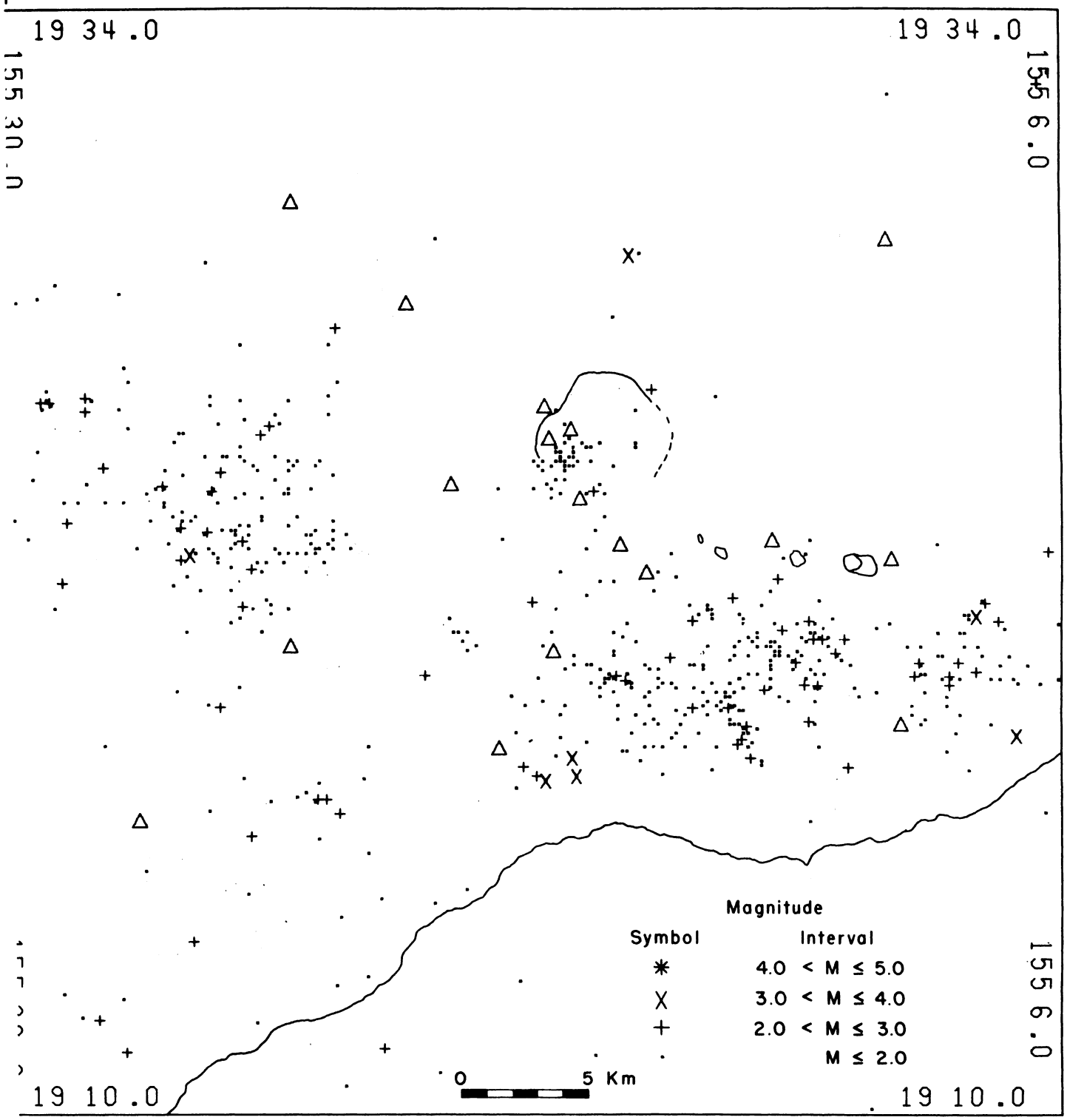

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		System 3 to 1 6/27/72
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAAPUNA	KAA	19 15.98	155 52.28	524	1	5.5	1020	RF12	
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

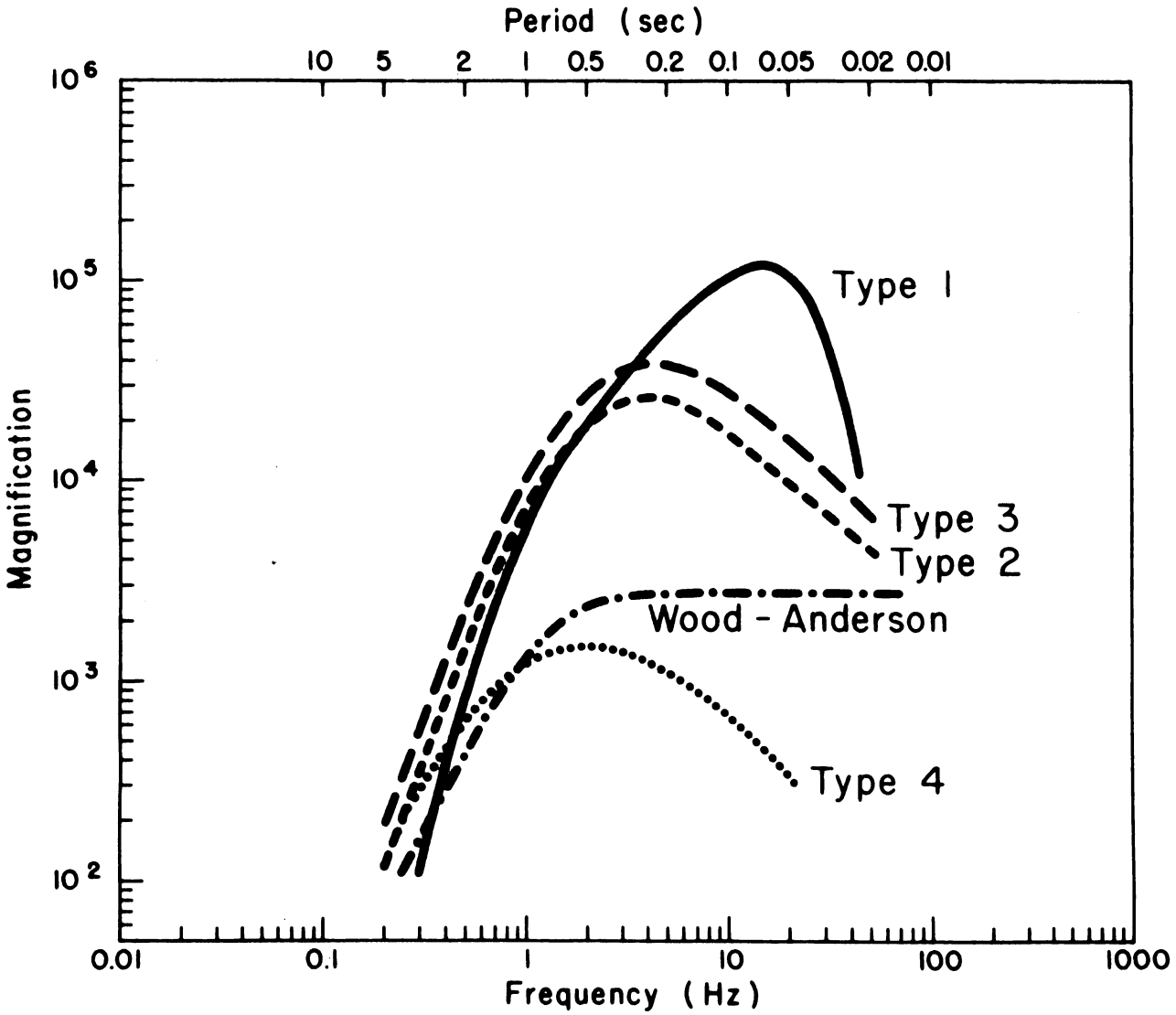

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 7, Summary 65.

Table 6.--Tilt Coordinates at Uwekahuna, April, May, and June 1972

Date	N-S	E-W	Date	N-S	E-W
April 2	728	326	June 4	728	330
9	727	327	11	728	330
16	727	329	18	728	333
23	727	330	25	729	329
May 7	726	329			
14	726	331			
21	727	333			
28	728	332			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 4)

Tilt base	Date (1972)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading (1972)
Uwekahuna (U on fig 4)	5 Jun	750.8	350.7	0.99 S76.0°E	19 Jan
Tree Molds (TM)	5 Jun	583.0	482.8	0.36 S14.0°E	19 Jan
Sand Spit (SS)	6 Jun	1040.6	721.9	1.76 S28.8°W	20 Jan
Mehana (M)	5 Jun	610.2	600.9	0.34 N39.8°E	19 Jan
Keamoku (Kea)	8 Jun	793.5	218.7	1.79 N79.0°E	20 Jan
Ahua Kamokukolau (Kam)	6 Jun	357.3	542.8	4.02 N 8.1°E	20 Jan
Kipuka Nene (KN)	7 Jun	278.3	499.4	0.45 N59.3°W	27 Jan
Hilina Pali (HP)	7 Jun	456.8	489.0	1.08 N59.7°W	27 Jan
Kapapala Ranch (Kap)	8 Jun	479.8	520.1	0.45 S38.7°W	26 Jan

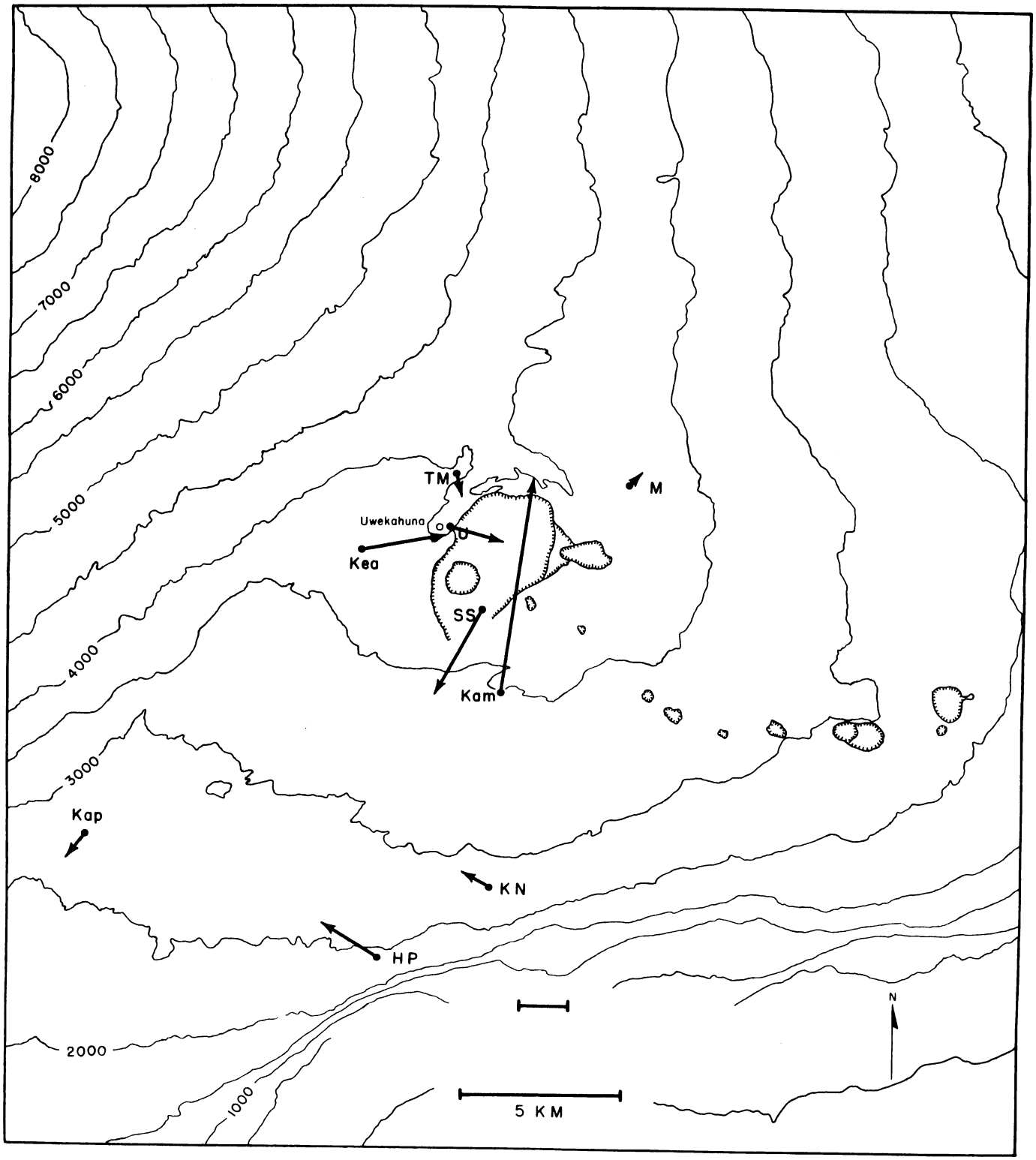

Figure 3.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 7 for explanation of abbreviations.

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UNITED STATES
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HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 67

July, August, and September 1972

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California

1977

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SUMMARY 67

July, August, and September 1972

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6. Tilt coordinates at Uwekahuna 26

Summary of Eruptive Events

Eruptive activity continued at Mauna Ulu and Alae on Kilauea's upper east rift zone throughout this quarter. The level of an active lava lake, approximately 80 by 150 m, in Mauna Ulu's summit crater fluctuated from 30 to 50 m below the crater rim. Lava normally entered the lake at its east end, and surface circulation in the lake generally was from east to west, although sometimes the circulation reversed and/or varied in complex ways. Low lava fountains (2 to 10 m high) commonly played on the lake surface, generally along its margins, but occasionally also in its central portions. The fountains developed and operated over areas where lava was descending into the depths of the lake in downward convective circulation. At times, two to four fountains at fixed locations on various parts of the lake, would operate steadily for several days with little change; at other times, the fountains continually shifted in location and number, with as many as a dozen active simultaneously.

An elongated trench or fissure trough extended ENE from the main crater. The combined length of the crater and trench was about 500 m, and maximum width was about 100 m. A septum about 10 m below the rim separated the main crater, containing the lava lake, from the trench. The major vent feeding the entire system was about 170 m east of the septum on the floor of the trench near its south wall. The crusted floor of the trench was actually a roof over a large lava-tube system through which lava flowed from the vent westward to feed the lava lake and eastward to ultimately emerge at Alae. Most of the time, the crusted floor of the trench blocked direct viewing of near-vent activity, but collapse of parts of the floor in September revealed the nature of the flow pattern.

The vent at Alae persistently fed lava into a multi-compartment lake at the summit of the lava shield growing over the site of former Alae Crater. Frequent lava overflows across the levees impounding the lake added height and breadth to the shield. But the lava lake was also being drained from below by lava tubes. One tube system fed flows that had been spilling into Makaopuhi Crater since June 20. These flows continued to fill Makaopuhi until about mid-August, and by the time they ended the western floor had been raised to within about 6 m of the eastern mezzanine. Meanwhile, from August 7 to 10, large and sustained rockfall flurries from the north and south walls of Makaopuhi's west pit appreciably modified its walls and floor. On August 9 and 10 lava was observed to erupt from an ENE-trending fissure on Makaopuhi's east pit; this brief outbreak may have begun as early as August 7.

As the inflow into Makaopuhi gradually waned and finally stopped, flows toward the southeast from Alae increased, and a new system of lava tubes developed. Tube-fed flows advanced southward and eastward beyond the earlier margins of the lava field, and eruption-caused fires devastated several thousand acres of forest. Much of Naulu Forest, the locality of many rare species of trees and shrubs, was overrun by lava.

On August 14 the front of the new flow descended Poliokeawe Pali, on August 15 it reached the base of Holei Pali, and by August 23 lava had advanced across the coastal flats and spilled into the ocean at Kaena Point. Lava continued to pour into the sea along a 2 km-wide front between Kaena Point and Kealakomo for the remainder of the quarter, and broad stretches of the coastal flat between the pali and the shore were covered by these tube-fed pahoehoe flows.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the mortheast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit								
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
Jul 1			Low level tremor on the upper east rift throughout the month	1	186	326	47	135	7	3		
2				3	125	241	20	98	9	6	1	
3					129	357	38	101	8	2	3	
4		10m		2	93	269	21	61	5	2	3	
5				1	150	254	34	58	7	2	2	
6		5m		1	178	227	16	60	12	16?	3	
7		20m			50	604	29	105	11	3	11	
8				1	34	718	25	73	5	4	4	
9					22	567	15	70	5	4		
10				2	187	269	22	37	13	1	1	
11					17	483	10	57	2	2	1	
12				3	163	230	36	30	12	6	1	
13		11m		1	85	352	10	46	3	2	4	
14				2	69	340	20	46	7	1	3?	
15				1	79	277	29	114	8	7		
16				1	24	418	18	72	10			
17					19	372	16	24	11		227	
18					45	372	14	42	14		81	
19					35	331	9	52	17	7	104	
20				4	30	317	13	38	11	4	188	
21					40	370	13	37	19	2	20	
22					63	401	12	33	15	2	21	
23					23	203	22	47	8		17	
24				4	147	303	30	39	5	2	?	
25	7m				284	322	12	46	5	1	19	
26		5m		1	178	383	22	43	9	3	7	
27					24	175	13	49	2	4	9	
28		7m			64	135	26	68	7	1	4	
29		5m		1	31	136	26	21	3	7	3	
30					135	183	21	27	6	5	?	
31					31	346	10	134	17	3	2	

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit								
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
Aug 1			Low to moderate tremor on the upper east rift throughout the month	1	55	324	33	45	5	4	3	
2		10m			24	340	2	55	4	2	2	
3				2	46	268	31	33	6	3		
4				1	27	344	8	72	9	2	2	
5				1	15	340	7	41	8		?	
6				1	48	408	38	76?1/	4		2	
7					77	297	48	178?1/	7			
8		13m		1	19	241	6	354?	14	1		
9					19	239	15	284?	8			
10					8	251	7	270?	10	1		
11		6m		1	23	364	6	156?	7			
12					7	325	3	651?	3	1		
13				1	29	333	34	78?	25			
14					18	316	31	40?	14			
15					11	258	12	38?	3	5		
16					19	224	8	76?	7	5		
17		7m			32	245	5	52?	7			
18				1	19?	305	12	31?	3?			
19		6m		2	22	298	36	71?	7			
20				1	93	408	64?	75?	6			
21					132	298	66?	30	7			
22		5m		1	12	246	7?	24	8	1		
23					5	295	79?	39	7			
24				2	15	271	21	30	11	3		
25					31	253	39	24	3	2	1	
26					7	283	26	27	16	5	2	
27	15m			1	48	271	23	23	3		5	
28		4m			6	221	32	27	4	2	2	
29				3	10	271	27	31	14	1	3	
30				2	11	273	12	43	10	1		
31				1	30	210	49?	20	8	1		

1/ Heavy rockfall activity at Makaopuhi Crater. Upper East Rift count for Aug 6-20 include rockfalls.

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit								
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
Sep 1			Low level tremor on the upper east rift throughout the month		26	264	24	34	3	1	1	
2	10m			1	15	229	8	16	1	4		
3				1	9	252	17	21	8			
4	56m	5m			30	241	36	78	14	1	?	
5	?				18	270	25	51	10	1	183	
6					4	150	30	15	6	1	251	
7	35m				33	368	27	34	6	3	27	
8		11m			41	317	17	23	7	3	12	
9				2	16	340	17	37	5	1	12	
10					13	324	27	96	6		4	
11				2	17	373	19	49	13	3	5	
12		12m		1	21	308	11	52	14	2		
13	38m?	5m			18	298	15	56	10	2	3	
14		15m		7	54	234	20	35	5	4	1	
15				1	52	261	24	38	8	5	3	
16		10m		1	25	207	18	33	6	8	2	
17		8m			40	287	12	22	2		3	
18		10m			49	305	13	29	12	1	1	
19		3m			36	276	26	23	11	3		
20	32m	3m			47	290	18	25	5	2		
21				1	53	252	37	43	10		18	
22	40m			4	26	324	12	36	1	5	4	
23		5m			7	369	17	29	5	1	2	
24		10m		1	20	253	15	12	8	2		
25					51	322	44	24	3	3	2	
26				4	23	425	50	27	13	1	3	
27					10	351	35	22	11	3		
28					22	473	39	35	13	2	2	
29	5m			2	34	372	26	25	13	1		
30				1	15	329	23	26	14	7		

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "*".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i^2 / NO \right]^{1/2}$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ DEPTH or 5 km
B	≥ 6	≤ 150°	≤ 2 x DEPTH or 10 km
C	≥ 6	≤ 225°	≤ 50 km
	≥ 4	≤ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

Table 2. Summary of Seismic Events

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	1	1	49 38.7	19-20.0	155-13.4	8.0*	1.8	12	157	6.3	0.09	0.7		0.11	C
	1	3	16 12.4	19-21.2	155-15.3	32.7	2.7	17	128	2.4	0.16	0.9	1.5	0.09	B
	1	3	24 43.9	19-25.4	155-24.1	8.0*	2.0	19	94	7.3	0.06	0.5		0.12	B
	1	14	26 18.5	19-15.5	155-22.3	6.0		13	168	7.9	0.18	1.4	1.2	0.24	C
	1	15	56 32.0	19-19.6	155- 7.7	1.2		16	175	5.9	2.70	1.3	10.3	0.23	C
	1	17	50 43.3	19-19.7	155-15.9	5.7		15	169	2.8	0.12	0.8	0.6	0.13	C
	1	19	4 28.1	18-53.9	155-11.7	12.9*		17	263	40.4	0.42	2.8		0.14	D
	1	23	46 26.0	19-18.0	155-23.9	4.0	1.6	14	127	4.2	0.06	0.6	0.7	0.13	B
	2	7	5 4.1	19-19.0	155- 7.9	3.4	1.9	14	185	6.7	0.22	1.6	1.6	0.24	C
	2	7	46 28.4	19-15.3	155-22.2?	0.0		13	172	8.0	9.46	1.3	18.1	0.24	C
	2	8	35 9.7	19-17.4	155-37.4	8.0*	1.5	10	220	22.2	0.45	3.3		0.27	C
	2	9	0 3.6	19-19.4	155-10.7	8.0*		14	173	5.1	0.10	0.9		0.12	C
	2	19	53 12.0	19-21.5	155-18.8	25.3	2.1	18	80	3.6	0.13	0.8	1.4	0.12	B
	2	20	0 12.7	19-20.6	155-14.4	8.7	1.7	10	236	4.2	0.36	2.0	2.2	0.10	C
	3	2	45 7.4	19-45.0	155- 1.4?	48.9	3.1	14	220	27.6	0.54	2.2	4.5	0.10	C
	3	3	20 51.5	19-20.3	155- 6.8?	8.0*	2.3	13	161	6.3	0.14	1.4		0.22	C
	3	5	42 1.6	19-50.2	155-50.9	0.7	1.3	21	275	53.2	0.63	4.0	1.1	0.16	D
	3	5	57 17.5	19-16.7	155-29.6	3.5	2.2	14	117	5.2	0.16	1.2	1.5	0.24	C
	3	10	15 13.3	19-22.8	155-26.2?	0.0		14	138	7.0	9.21	1.1	17.5	0.26	C
	3	10	41 47.0	19-19.5	155-25.8	5.3		12	126	4.5	0.12	1.0	1.2	0.19	B
	3	16	9 39.3	19-19.1	155-11.7	2.3	2.0	22	174	6.4	0.18	1.0	1.5	0.26	C
	3	20	28 7.9	19-19.2	155- 8.8	1.4	1.8	21	179	5.7	1.33	1.0	4.9	0.23	C
	4	7	20 56.6	19-19.9	155-24.5	7.1	1.8	21	101	2.1	0.08	0.8	0.6	0.20	B
	4	15	19 1.4	19-23.8	155- 1.0?	8.0*		11	150	7.9	0.15	1.3		0.17	C
	4	16	44 1.0	19-20.1	155-13.1	8.0*	2.0	10	191	6.5	0.15	1.1		0.12	C
	4	21	46 49.1	19-19.1	155-11.8	3.6	1.8	21	175	6.4	0.17	1.1	1.3	0.26	C
	4	22	59 18.2	19-24.3	155-16.0	11.9		12	89	3.4	0.08	0.7	0.8	0.12	B
	5	0	22 53.1	19-13.0	155-13.2	37.0		15	248	13.2	0.19	1.6	1.7	0.11	C
	5	2	21 36.6	19-12.1	155-21.4	40.2		13	167	11.8	0.36	1.5	3.7	0.09	C
	5	2	35 42.5	19-21.3	155- 6.4	8.0*	2.4	11	141	6.2	0.11	1.2		0.14	C
	5	5	10 35.6	19-19.5	155- 8.0	8.0*		13	176	5.7	0.11	1.0		0.10	C
	5	6	6 35.4	19-14.4	155-48.2	4.8	2.6	19	139	7.7	0.17	1.4	1.3	0.21	C
	5	7	15 17.6	19-25.8	155-49.8	8.7		15	241	18.6	0.28	2.0	1.5	0.13	C
	5	10	1 37.4	19-19.4	155-14.1	8.0*		11	165	6.0	0.11	0.8		0.12	C
	5	13	57 4.7	19-23.2	155-26.5?	7.9	1.8	12	95	8.0	0.09	0.7	0.6	0.12	B
	5	16	24 10.3	19-20.2	155-12.7	6.2	1.7	21	141	4.2	0.11	0.8	0.7	0.21	C
	5	17	51 32.5	19-20.2	155-13.0	5.8	1.7	18	156	4.2	0.15	1.1	0.9	0.25	C
	5	19	15 52.0	19-23.0	155-25.4	8.0*		9	233	6.4	0.19	1.2		0.09	D
	5	21	20 39.3	19-23.2	155-16.9	11.9	2.2	13	64	0.3	0.15	0.8	1.3	0.10	B
	5	23	2 37.1	19-18.1	155-23.7	3.7	2.4	22	114	4.0	0.06	0.5	0.6	0.16	B
	6	0	22 23.1	19-20.3	155-12.6	3.3		14	190	5.8	0.21	1.2	1.4	0.21	C
	6	1	21 28.3	19-20.5	155-13.4	4.6	1.9	14	178	5.6	0.19	1.1	1.2	0.20	C
	6	2	11 44.6	19-15.2	155- 0.2?	41.0		21	233	9.8	0.35	1.8	2.7	0.12	C
	6	4	37 0.8	19-15.3	155-22.1	3.1	1.9	16	174	7.8	0.13	0.9	1.2	0.19	C
	6	5	5 24.2	19-21.1	155- 7.6	7.7		14	148	4.3	0.10	1.1	0.8	0.13	B
	6	6	18 38.9	19-20.4	155-12.5	6.2		17	154	3.7	0.15	1.1	1.0	0.24	C
	6	9	5 18.5	19-30.3	155-35.3?	7.7	2.4	18	143	2.3	0.10	1.0	1.2	0.15	B
	6	9	28 33.3	19-23.2	155-26.1	7.8	1.7	16	71	7.4	0.13	0.7	0.9	0.15	B
	6	12	26 7.8	19-19.0	155-13.7	6.6	1.6	14	207	6.7	0.19	1.1	0.8	0.18	C
	6	14	45 10.5	19-31.9	155- 8.1?	0.0		11	212	8.1	6.33	1.1	12.0	0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	6	18	9 38.1	19-20.3	155- 8.0	5.5	1.8	21	162	4.5	0.14	1.0	0.8	0.21	C
	6	23	51 26.1	19-19.2	155- 9.4	3.2		14	179	5.4	0.20	1.3	1.5	0.23	C
	7	0	50 14.9	19-25.7	155-25.1	7.5	1.9	23	65	8.2	0.09	0.6	0.6	0.17	C
	7	8	40 53.5	19-22.9	155-25.6	8.0*		10	264	6.5	0.15	0.8		0.05	D
	7	13	46 50.3	19-25.2	155-21.9	16.3		9	148	4.7	0.96	3.1	10.0	0.18	C
	7	19	22 18.6	19-23.7	155-23.6?	7.9	1.4	20	55	6.4	0.06	0.6	0.4	0.14	B
	7	22	56 24.6	19-17.9	155-14.6	13.6	0.5	8	225	6.4	0.29	1.9	2.2	0.08	C
	7	23	25 13.3	19- 4.6	155- 2.5	15.4*	1.1	17	287	34.8	0.45	3.0		0.24	D
	8	4	11 21.8	19-19.3	155-14.5	8.0*	0.9	17	145	5.2	0.07	0.6		0.11	C
	8	6	15 41.9	19-18.5	155-13.1	5.4	1.5	21	155	7.4	0.14	0.9	0.9	0.22	C
	8	13	15 49.2	19-24.6	155-23.9?	8.4	1.3	22	59	7.5	0.07	0.6	0.5	0.15	B
	8	16	32 33.8	19-20.5	155-12.2	8.0*		9	192	5.1	0.25	1.9		0.20	C
	8	17	25 27.0	19-20.1	155-11.4?	7.3	0.1	13	162	4.5	0.14	1.1	1.8	0.14	C
	8	19	3 57.2	19-20.6	155-13.3	6.2	1.8	21	148	3.5	0.10	0.8	0.7	0.21	C
	9	0	2 26.6	19-18.6	155-15.0	11.5	0.3	10	206	5.1	0.18	0.7	1.5	0.06	B
	9	2	49 23.0	19-19.7	155- 9.0	6.3	0.2	12	171	4.6	0.16	1.2	0.9	0.17	C
	9	7	29 36.4	19-18.7	155-13.6	8.0*	0.6	12	178	7.1	0.15	1.1		0.16	C
	9	13	19 33.1	18-52.2	155-15.4	8.0*		12	263	44.8	0.51	3.5		0.14	D
	9	15	33 0.8	19-20.8	155- 9.8	5.2	0.9	13	153	2.4	0.14	1.1	1.0	0.17	C
	9	15	51 27.1	19-19.6	155-13.7	5.9	0.9	16	194	5.5	0.19	1.1	0.9	0.18	C
	9	20	7 46.0	19-17.9	155-14.2	13.2	0.8	8	226	6.9	0.28	1.0	2.2	0.05	C
	9	20	24 26.5	19-22.3	155-29.4	5.6	0.9	18	90	11.4	0.09	0.7	0.8	0.16	C
	9	23	52 42.3	19-23.6	155-25.2	8.0*	0.9	11	224	7.2	0.32	2.0		0.17	C
	10	1	58 12.6	19-20.4	155-13.0	5.7	0.9	18	186	3.8	0.15	1.0	0.7	0.20	C
	10	20	17 55.6	19-19.0	155-15.3	9.1	2.0	12	243	4.3	0.49	2.4	2.8	0.10	C
	11	7	19 15.0	19-19.4	155-15.5	6.2	1.9	13	182	3.6	0.17	1.1	0.9	0.18	C
	11	8	1 47.2	19-20.8	155-24.4	7.8	1.9	18	89	2.2	0.08	0.7	0.6	0.17	B
	11	9	6 38.5	19-19.2	155-13.7	8.0*	0.8	10	203	6.7	0.14	1.1		0.12	C
	11	12	35 31.3	19-20.0	155-10.8	9.6	0.8	14	164	4.1	0.11	0.8	1.5	0.10	C
	11	19	26 57.2	19-22.5	155-43.1	6.5	0.7	11	262	17.6	0.59	3.5	0.9	0.09	D
	11	20	25 18.3	19-19.6	155-13.9	8.0*	0.8	14	162	6.2	0.08	0.6		0.10	C
	11	22	4 53.9	19-20.3	155-12.3	8.0*	0.0	12	156	7.4	0.13	1.1		0.18	C
	12	4	8 52.7	19-22.4	155-25.2	4.0	1.4	17	93	5.3	0.14	0.9	1.2	0.20	B
	12	6	50 1.6	19-23.9	155-24.3	8.0*	0.8	13	131	7.1	0.06	0.5		0.08	C
	12	20	31 49.0	19-21.9	155-24.5?	6.2	3.3	26	50	3.7	0.07	0.8	1.4	0.22	B
	12	20	36 51.3	19-22.1	155-24.6	8.2	1.6	10	130	4.1	0.07	0.6	1.7	0.09	B
	12	23	3 43.8	19-19.3	155-16.1	30.1	2.7	23	141	2.8	0.18	1.1	1.8	0.14	B
	13	0	42 1.6	19-24.8	155-25.5	3.1	2.1	20	75	9.3	0.10	0.7	1.0	0.19	B
	13	5	54 39.4	19-19.1	155-14.1	11.1		12	215	6.1	0.31	1.6	2.4	0.11	C
	13	7	35 24.1	19-19.2	155-14.1	4.0	1.6	15	168	6.1	0.20	1.2	1.8	0.26	C
	13	16	46 10.5	19-22.5	155-23.4	6.4		11	152	4.2	0.10	0.6	0.8	0.12	C
	13	17	10 3.4	19-19.3	155- 8.9?	0.4		12	178	5.3	2.74	1.5	10.4	0.21	C
	13	18	59 11.9	19-19.8	155-12.3	8.0*		9	208	6.0	0.13	0.9		0.09	C
	13	20	52 42.0	19-19.0	155-13.0	8.0*	1.6	11	215	7.9	0.21	1.4		0.11	C
	13	21	12 4.5	19-19.7	155-16.6	10.0	1.6	9	205	1.6	0.15	0.7	1.1	0.03	B
	13	22	17 1.2	19-19.6	155-16.6	9.9	1.5	9	206	1.7	0.12	0.6	0.9	0.03	B
	14	8	39 17.6	19-19.1	155-13.5	8.0*		13	172	7.2	0.12	0.8		0.12	C
	14	9	36 57.5	19- 0.4	155-19.0	31.5	4.5	26	228	22.9	0.30	1.7	2.6	0.13	C
	14	9	40 16.7	19- 0.4	155-18.5	29.6	2.9	21	229	23.6	0.36	1.9	3.7	0.13	C
	14	11	32 38.8	19-19.9	155-45.7	8.1	2.6	15	228	17.7	0.26	1.6	1.7	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	14	18	50	30.8	18-45.6	154-52.9	21.9*	3.4	21	288	65.7	0.32	2.3		0.17	D
	14	21	23	45.4	19-24.3	155-24.4	6.3		13	172	7.8	0.11	0.7	0.7	0.13	C
	14	22	30	3.1	19-16.8	156-24.4	13.8*	3.3	28	300	74.8	0.27	2.0		0.21	D
	14	22	42	27.4	19-22.0	155-18.5	1.4		9	79	3.8	0.09	0.4	0.5	0.10	A
	14	23	24	58.3	19-20.3	155-13.9	7.5	1.5	20	151	4.6	0.12	0.9	0.6	0.21	C
	15	1	53	5.5	19-32.0	155-42.1?	5.3	2.5	14	156	11.9	0.72	1.2	5.4	0.14	C
	15	10	15	57.6	19-19.2	155-10.8	2.7	1.8	21	175	5.6	0.20	1.1	1.5	0.27	C
	15	11	21	35.6	19-24.8	155-25.8	0.4	1.7	17	75	9.5	0.50	0.7	1.0	0.19	B
	15	14	49	24.6	19-18.3	155-12.1	2.7	2.9	25	154	7.7	0.18	0.9	1.3	0.26	C
	15	15	1	49.7	19-19.9	155-12.1	6.8	2.7	23	145	4.8	0.11	0.8	0.6	0.20	C
	15	16	58	7.6	19-24.6	155-16.4	0.5	1.0	8	89	1.2	0.14	0.4	0.4	0.09	A
	15	22	17	55.9	19-25.5	155-20.0	10.9	1.4	18	91	3.4	0.05	0.5	0.5	0.08	A
	16	1	17	6.2	19-19.3	155-25.4	12.6	2.3	11	165	4.0	0.20	1.5	1.4	0.16	C
	16	9	47	49.2	20- 3.4	155-28.8	25.1	2.3	24	212	23.4	0.30	1.8	3.9	0.14	C
	16	10	51	50.0	19-19.6	155-16.6	9.7		9	208	1.8	0.15	0.7	1.1	0.04	B
	16	11	46	39.4	19-18.9	155-15.6	9.1	1.9	14	167	3.9	0.09	0.6	1.1	0.07	B
	16	13	33	11.2	19-19.9	155-11.4	9.2	1.2	12	182	4.9	0.08	0.6	1.3	0.07	B
	16	14	1	42.1	19- 0.4	155-18.6	12.7*	1.4	15	229	32.4	0.27	2.0		0.12	D
	16	17	49	49.3	19-24.5	155-38.5	40.9*	1.4	7	324	27.7	0.33	3.4		0.06	D
	16	20	29	10.6	19-23.8	155-25.6?	7.4	1.4	17	81	7.8	0.10	0.7	0.8	0.16	B
	16	21	53	50.6	19-19.5	155-13.8	8.0*	0.4	11	163	6.4	0.09	0.7		0.11	C
	16	23	24	46.1	19-24.1	155-28.2	4.6	1.3	20	82	11.2	0.09	0.7	1.0	0.20	C
	17	1	11	58.4	19-19.3	155-14.0	8.0*		9	198	6.2	0.22	1.6		0.18	C
	17	1	39	23.6	19-19.9	155-15.2	26.3		16	150	3.9	0.16	0.8	1.5	0.08	B
	17	8	58	54.6	19-22.9	155-22.0	4.7	1.0	11	146	4.4	0.14	0.9	1.1	0.16	B
	17	10	40	12.5	19-23.6	155-25.2?	8.2	2.1	21	67	7.0	0.08	0.6	0.5	0.14	B
	17	10	55	52.5	19-19.2	155- 8.7	8.0*	0.7	11	181	5.8	0.14	1.2		0.13	C
	17	11	51	19.0	19- 2.5	155-25.1	32.4		12	220	13.7	0.22	2.2	2.0	0.12	C
	17	17	13	47.5	19-21.2	155-16.3	6.0		10	132	2.4	0.11	0.6	0.7	0.11	B
	17	20	17	23.0	18-54.1	155-16.2	8.6	3.1	24	250	35.0	0.42	2.0	2.6	0.15	C
	17	20	31	36.6	18-52.6	155-15.6	6.4	2.0	13	268	37.9	2.26	3.9	12.3	0.14	D
	17	20	58	54.6	18-55.9	155-17.4?	12.3	2.8	15	248	31.1	0.36	2.1	2.8	0.17	C
	17	22	11	15.9	18-51.3	155-16.2	1.8	3.3	21	259	39.3	0.48	3.0	2.1	0.17	D
	17	23	19	19.9	18-50.8	155-17.5	1.4*	2.3	12	260	39.0	0.38	2.5		0.14	D
	17	23	51	3.0	18-51.1	155-17.8	4.7	2.2	16	259	38.3	1.01	2.1	6.4	0.11	D
	18	0	3	39.3	18-52.1	155-18.0	9.2	2.9	16	256	36.4	0.57	2.7	3.1	0.13	D
	18	0	17	7.2	18-54.4	155-19.1	8.7	3.1	18	248	31.8	0.29	2.0	2.5	0.16	C
	18	0	34	16.1	18-53.1	155-18.8	10.1	2.9	19	252	34.2	0.41	2.0	2.3	0.13	C
	18	1	6	38.6	18-51.0	155-17.9	6.0	2.9	15	259	38.3	1.12	2.3	7.6	0.11	D
	18	4	33	50.1	18-51.3	155-18.1	7.0	2.3	18	258	37.7	1.11	2.2	7.5	0.11	D
	18	6	23	38.5	18-50.7	155-17.6	10.8*	2.9	19	260	39.1	0.27	1.8		0.11	D
	18	9	7	3.0	18-53.4	155-19.4	15.5*	3.2	18	251	33.2	0.22	1.5		0.14	D
	18	9	14	17.2	18-48.3	155-17.1	8.0*	3.1	19	273	43.4	0.21	1.4		0.10	D
	18	19	52	41.5	18-51.4	155-18.2	8.0*		9	263	37.5	0.34	2.2		0.07	D
	18	19	55	5.1	19-18.7	155-13.4	8.0*	0.7	9	218	7.5	0.27	1.9		0.18	C
	18	21	29	52.1	19-19.6	155-12.0	5.9	2.0	19	168	5.5	0.15	1.1	1.0	0.24	C
	19	1	57	24.0	19-19.3	155-11.8?	4.8	1.2	19	173	6.2	0.21	1.4	1.4	0.26	C
	19	6	40	21.9	19-23.6	155-23.9	3.6	1.0	15	194	6.4	0.15	0.8	1.2	0.14	C
	19	10	40	1.1	19-20.5	155-19.5	4.0	1.1	12	77	3.8	0.14	0.4	2.4	0.09	B
	19	15	19	15.2	19-22.8	155-24.9	8.0*	1.0	11	136	5.5	0.10	0.9		0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	19	17	22 32.4	19-20.4	155- 7.4	3.8	2.1	19	160	5.2	0.15	1.1	1.1	0.20	C
	19	18	55 37.8	18-52.7	155-19.5	5.9	1.5	13	258	34.3	1.60	3.1	9.8	0.12	D
	19	19	9 9.7	18-54.6	155-21.6	9.8	2.5	8	262	29.5	0.70	4.1	3.3	*0.10*	*D*
	19	23	22 33.2	19-22.1	155-26.0	7.5	2.8	23	60	5.9	0.12	0.8	0.8	0.20	B
	20	1	20 44.6	19-23.2	155-21.9?	5.2	0.9	12	92	4.0	0.11	0.7	1.8	0.14	B
	20	4	56 57.8	19-20.4	155-13.8	5.9	1.3	22	150	5.3	0.12	0.9	0.8	0.23	C
	20	6	46 4.9	19-18.4	155-15.3	11.9		9	206	4.8	0.23	0.9	1.9	0.06	B
	20	7	3 37.0	18-49.1	155-17.2?	1.6*	2.6	12	265	42.1	0.66	4.3		0.20	D
	20	7	28 13.2	18-51.2	155-18.2	8.3	2.9	20	258	37.8	0.34	2.0	1.9	0.11	C
	20	8	7 42.2	19-20.2	155- 9.3	7.0	1.8	16	228	3.5	0.40	2.5	1.1	0.23	D
	20	12	17 38.2	18-51.6	155-18.6?	9.3	2.9	13	262	36.8	0.79	4.0	3.6	0.13	D
	20	13	17 16.3	18-51.7	155-17.4?	1.7*	2.6	13	263	37.7	0.52	3.4		0.18	D
	20	14	40 59.7	18-51.6	155-17.7	4.4	3.0	22	257	37.5	1.15	2.4	7.2	0.14	D
	20	15	43 48.8	19-21.5	155-25.6?	1.3	1.5	13	71	4.6	0.14	1.0	2.1	0.25	B
	20	17	20 44.0	18-51.5	155-18.2	8.0*	2.6	12	271	37.3	0.40	2.6		0.10	D
	20	17	25 23.4	18-50.7	155-17.6	8.0*	2.6	14	260	39.0	0.27	1.8		0.09	D
	20	17	39 50.5	19-25.7	155-14.7	30.0	3.2	30	39	1.8	0.12	0.7	1.3	0.13	B
	20	18	9 31.2	19-18.4	155-13.6	10.3	1.2	11	221	7.3	0.41	1.9	3.2	0.10	C
	20	19	37 52.7	18-51.3	155-18.0	5.0	2.8	16	258	37.8	1.40	2.9	9.3	0.13	D
	20	19	42 15.1	19-19.4	155-14.7	11.9		8	189	4.8	0.34	1.2	2.8	0.07	C
	20	21	50 2.1	18-53.2	155-17.4	8.4	2.5	14	258	35.2	0.71	3.4	3.7	0.14	D
	20	21	54 28.5	19-19.9	155- 9.0?	4.5	1.9	19	168	4.3	0.18	1.3	1.2	0.26	C
	20	23	59 44.4	18-52.6	155-19.0	8.4	2.1	15	259	34.9	0.53	3.2	3.1	0.15	D
	21	2	4 9.9	18-59.3	155-19.3	27.1	2.1	22	229	24.1	0.47	2.8	4.7	0.18	D
	21	3	2 55.0	19-20.0	155- 7.8	8.0*	1.4	11	167	5.1	0.10	0.9		0.12	C
	21	4	57 8.1	19-25.3	155-14.4	29.3	1.2	20	88	1.1	0.14	0.9	1.5	0.11	B
	21	7	52 59.1	19-21.1	155-24.7?	7.2	2.4	23	71	2.9	0.07	0.8	1.6	0.21	B
	21	21	27 12.4	19-23.1	155-23.6?	7.9	2.3	25	53	5.3	0.09	0.6	0.7	0.17	B
	22	0	43 42.2	19-22.7	155-23.3	8.1	2.7	27	42	4.6	0.08	0.6	0.6	0.16	B
	22	3	48 16.5	19-19.9	155-12.3	8.1	1.6	10	205	4.7	0.27	1.5	3.1	0.10	C
	22	6	24 37.4	19-20.1	155-12.1	7.6	3.1	25	140	4.4	0.09	0.7	0.5	0.17	C
	22	11	41 47.4	19-25.8	155-30.0	1.2	1.4	15	112	12.3	1.35	0.8	5.0	0.17	C
	22	15	43 3.4	19-22.1	155- 1.5	8.0*	0.5	13	163	4.8	0.24	1.6		0.20	C
	22	18	9 35.8	19-16.6	155-13.2	8.0*		7	254	9.8	0.45	2.8		0.11	D
	22	19	51 32.2	19-20.8	155-24.1	8.8	1.5	11	155	1.7	0.13	0.8	1.7	0.10	B
	23	3	31 30.3	19-24.4	155-17.6	8.4	1.2	12	138	1.9	0.11	0.8	1.2	0.06	B
	23	3	33 14.9	19-25.2	155-16.9	5.0	1.1	10	153	4.7	0.30	1.0	2.7	0.12	C
	23	5	20 36.1	19-12.0	155-26.3	5.9	1.5	14	153	5.4	0.09	1.3	0.9	0.11	C
	23	8	6 21.0	19-17.4	155-12.9?	2.1	1.9	14	228	9.3	0.48	2.3	2.1	0.21	D
	23	10	11 15.6	19-47.3	155-35.4	13.6*	2.3	13	150	13.8	0.07	0.7		0.09	C
	23	10	21 36.9	19-22.2	155-25.5?	0.5		14	69	5.4	2.64	0.9	10.0	0.25	C
	24	2	12 47.3	19-19.9	155-21.1	0.1		7	151	3.9	2.77	1.1	5.8	0.05	C
	24	3	21 24.9	19-12.0	155-26.9	5.0		11	146	4.9	0.20	3.0	1.9	0.23	C
	24	7	26 3.9	20- 5.4	155-23.8	8.2	2.9	23	226	23.0	0.27	1.8	1.9	0.18	C
	24	13	34 49.3	19-58.3	155- 1.7	59.4	3.2	20	287	28.6	1.53	6.6	10.3	0.16	D
	24	14	10 54.6	19-24.2	155-23.0	9.4	0.3	11	173	5.9	0.17	0.7	2.0	0.09	B
	24	18	45 5.8	19-20.8	155-16.2?	2.3*	0.4	10	125	3.0	0.17	1.1		0.25	C
	25	2	31 24.4	19-23.3	155-25.4	8.0*	0.3	9	187	6.8	0.11	0.8		0.08	C
	25	10	21 42.4	19-23.2	155-24.9	1.1	2.0	12	133	6.2	0.63	1.1	2.4	0.21	C
	25	12	5 6.9	19-19.4	155-13.3	7.0	2.2	17	167	7.2	0.17	1.2	0.8	0.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 25	18	39	10.0	19-24.5	155-23.7	6.3	1.5	11	191	7.1	0.13	0.9	0.8	0.08	B
26	1	2	40.8	19-10.9	155-30.5	44.4	2.6	23	98	5.2	0.32	1.4	3.0	0.12	B
26	3	31	7.7	19-22.9	155-24.1	8.0*	1.7	9	165	5.2	0.11	0.9		0.12	C
26	8	23	4.0	19-19.4	155-19.6?	6.1	2.5	18	108	3.2	0.15	1.0	1.2	0.25	B
26	12	48	32.9	19-26.3	155-23.8	3.6	1.5	11	191	6.5	0.12	0.7	1.1	0.10	C
26	16	51	57.6	19-25.6	155-14.5	29.0		17	128	1.7	0.18	1.0	1.7	0.10	B
26	21	3	22.6	19-21.5	155-25.4	3.0	2.4	24	69	4.4	0.09	0.7	0.9	0.23	B
26	21	4	35.5	19-21.6	155-25.4	5.9	1.6	14	134	4.5	0.14	1.0	1.1	0.19	B
26	22	3	47.1	19- 9.1	155-22.6	40.8		17	178	9.3	0.36	1.5	3.6	0.12	C
27	7	4	44.6	19-20.5	155-20.4?	2.3	1.3	8	117	5.1	0.18	0.5	2.5	0.07	B
27	7	23	11.1	19-20.5	155-13.2	4.7	1.5	14	151	6.6	0.14	1.0	1.3	0.23	C
27	9	16	6.5	19-23.7	155- 3.9?	3.9	2.1	14	104	7.2	0.14	1.1	1.7	0.25	C
27	15	26	42.3	19-20.2	155- 8.5	5.7	1.9	18	164	4.1	0.14	1.1	0.9	0.20	C
27	22	25	44.1	19-23.6	155-23.4	5.1		17	157	6.2	0.13	0.8	1.2	0.18	C
28	12	14	8.9	19-19.9	155- 8.6	3.6	2.3	18	168	8.6	0.13	0.8	0.8	0.19	C
28	20	4	52.0	19-22.6	155-24.8	6.2	2.3	22	52	5.2	0.08	0.6	0.7	0.17	B
28	20	43	32.1	19-19.3	155-13.4	7.3	2.5	23	145	6.0	0.11	0.8	0.6	0.18	B
28	21	8	6.1	19-20.6	155-11.1	10.3		10	155	3.5	0.12	0.9	1.8	0.08	B
28	21	8	57.8	19-19.3	155-13.6?	7.8	2.0	20	167	6.0	0.08	0.6	0.4	0.12	C
28	21	11	1.8	19-19.1	155-13.5?	0.0		16	172	7.1	1.55	1.3	22.0	0.26	C
28	21	43	30.8	19-18.3	155-13.6	5.7	1.8	13	180	11.9	0.16	0.9	0.9	0.11	C
28	23	32	36.0	20- 0.5	155-44.5	2.1	2.7	22	147	13.9	0.26	0.9	0.9	0.14	C
29	1	23	24.5	19- 8.1	155-23.0?	34.5		13	239	19.8	0.60	2.9	5.1	0.12	D
29	7	29	51.5	19-24.9	155-23.9	2.3	1.4	10	193	7.5	0.14	0.8	1.7	0.11	C
29	8	6	0.7	19-11.9	155-16.1	43.7		10	222	15.4	0.54	2.7	5.0	0.09	C
29	8	6	39.2	19-11.0	155-16.4	41.1		10	270	16.9	1.16	5.0	8.2	0.10	D
29	17	25	36.8	20- 4.7	155-49.1	13.0	3.0	23	212	6.9	0.14	1.9	2.3	0.10	C
29	19	23	38.2	19-20.8	155-13.3	6.3	1.6	17	146	5.5	0.11	0.8	0.8	0.20	B
29	23	30	26.0	19-19.5	155-16.1	2.2	1.5	19	150	2.6	0.15	0.9	1.2	0.20	C
30	0	23	26.4	19-20.3	155-13.2	5.4		14	153	6.0	0.17	1.2	1.1	0.24	C
30	0	46	60.0	19-19.9	155-47.3	8.6	3.1	23	122	11.2	0.08	0.8	1.2	0.14	B
30	2	50	7.1	19-30.5	155-15.1	8.0*		10	186	10.3	0.26	1.9		0.24	C
30	4	20	40.1	19-23.4	155-24.9	7.7	2.6	24	45	6.6	0.07	0.5	0.5	0.15	B
30	6	48	16.4	19-19.7	155-11.2	2.5	1.6	16	167	5.6	0.21	1.3	2.4	0.28	C
30	8	59	4.1	19-19.6	155-11.9	8.0*	0.3	10	167	8.6	0.09	0.8		0.10	C
30	10	1	15.0	19-19.6	155-24.8	7.9	0.8	9	158	2.9	0.10	0.9	0.6	0.10	B
30	16	53	53.1	19-20.8	155-23.9	8.0	0.6	8	153	1.5	0.09	0.8	0.6	0.08	B
30	18	49	57.8	19-19.9	155-16.7	9.0	1.0	7	206	1.3	0.61	3.1	4.4	0.11	C
31	5	8	56.8	19-20.6	155-29.7	8.0*	0.6	10	180	9.4	0.13	1.1		0.12	C
31	8	30	0.6	19-19.6	155-14.9	9.2		9	237	4.4	0.65	3.3	3.8	0.13	D
31	18	29	51.8	19-20.3	155- 9.3	10.6		7	161	3.4	0.23	1.8	3.2	0.07	C
AUG 1	3	38	22.4	19-18.6	155-16.1	9.0		11	239	3.5	0.44	2.4	2.3	0.12	C
1	6	19	17.1	19-11.5	155-36.5	5.8	2.9	20	212	6.3	0.30	1.8	1.0	0.16	C
1	8	37	9.0	19-23.1	155-23.4	8.0*	0.6	12	182	5.3	0.08	0.5		0.08	C
1	11	2	5.3	19-21.2	155-16.4	30.2	1.1	11	118	2.4	0.21	1.0	2.0	0.08	B
1	20	58	42.9	19-11.0	155-15.5	44.9		14	190	14.0	0.28	1.3	2.9	0.10	C
1	22	38	32.1	19-21.0	155-12.7	8.0*	1.7	8	174	6.2	0.05	0.3		0.04	C
2	1	13	54.3	19-19.9	155-24.4	8.4	0.4	8	154	2.0	0.13	1.0	1.7	0.09	B
2	2	23	17.3	19-25.0	155-29.6	8.0*	0.7	10	105	14.2	0.07	0.6		0.08	C
2	7	43	17.9	19-23.3	155-25.3	8.0*	0.9	11	185	6.7	0.09	0.7		0.08	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG	2	11	58 52.6	19-22.6	155-25.2	4.5	1.7	18	52	5.5	0.09	0.8	1.2	0.22	C
	2	18	39 50.3	18-60.0	155-18.5	12.5	2.6	24	228	33.6	0.38	1.4	5.2	0.13	D
	2	21	0 56.5	19-23.3	155- 4.1?	3.2	1.5	14	160	6.5	0.15	0.9	1.4	0.17	C
	2	23	37 55.2	19-19.2	155- 9.3	8.0*	0.1	9	179	5.4	0.10	0.9		0.07	C
	3	3	28 30.2	19-18.0	155-13.1	8.0*	0.6	10	232	8.5	0.33	2.1		0.15	D
	3	7	18 2.5	19-19.1	155-12.1?	2.5	1.2	18	175	6.3	0.22	1.2	2.4	0.28	C
	3	8	19 52.8	19-26.8	155-25.3	8.0*		9	229	6.5	0.14	0.9		0.07	D
	3	13	13 25.9	19-20.6	155-19.2	24.4		9	82	3.3	0.51	2.1	4.7	0.09	B
	3	17	10 10.3	19-24.1	155-26.5?	8.0	2.2	14	161	9.2	0.12	0.9	0.6	0.14	C
	3	17	49 16.6	19-10.3	155-26.9	30.6	3.1	23	160	2.2	0.19	1.0	1.9	0.14	C
	3	18	57 15.8	19-24.0	155-24.3	8.0*		13	172	7.3	0.08	0.6		0.09	C
	3	19	55 23.0	19-24.4	155-25.6	8.0*	1.5	11	154	8.8	0.15	1.1		0.15	C
	4	0	13 29.8	19-21.0	155-13.4	28.2		16	143	5.1	0.18	1.0	1.8	0.10	B
	4	0	16 27.5	19-21.3	155-13.2	26.5		18	140	5.2	0.15	0.9	1.5	0.10	B
	4	3	51 16.4	19-10.1	155-21.1	30.0	2.0	11	216	19.1	0.34	1.4	3.8	0.07	C
	4	6	58 20.6	19-23.3	155-26.1	8.0*	1.4	7	271	7.5	0.26	1.4		0.05	D
	4	14	26 50.6	19-24.2	155-26.1	8.0*	2.1	17	69	8.8	0.06	0.5		0.12	C
	4	20	44 2.2	19-22.7	155- 4.6?	2.1	0.4	8	144	5.9	0.16	1.2	2.1	0.15	B
	5	6	41 20.1	19-22.3	155-23.6	5.4	0.7	12	145	3.9	0.13	1.0	1.3	0.19	B
	5	8	6 34.1	19-20.6	155-13.2	6.4	1.7	22	149	3.5	0.10	0.8	0.7	0.22	C
	5	9	22 22.6	19-19.1	155-13.4	8.0*	0.7	12	173	7.3	0.21	1.6		0.22	C
	5	14	4 24.0	19-18.2	155-15.4	29.0	1.6	16	148	5.0	0.17	1.1	1.8	0.11	B
	5	18	32 38.0	19-19.4	155-14.9	7.7	2.1	20	144	4.5	0.09	0.7	0.5	0.12	B
	5	19	18 4.6	19-50.5	155-23.4	34.8	2.1	18	95	7.3	0.38	2.0	3.8	0.18	B
	5	22	37 13.5	18-56.6	155- 8.0	15.2*	2.5	19	262	43.7	0.54	3.6		0.19	D
	5	23	12 45.5	19-22.7	155- 4.2?	8.0*	1.9	11	97	5.6	0.15	1.4		0.21	B
	6	1	26 18.4	19-23.7	155-25.5	3.6	0.9	19	70	7.6	0.11	0.8	1.4	0.21	C
	6	1	40 15.2	19-19.4	155-12.3	5.9	1.6	20	170	5.7	0.14	1.0	0.8	0.22	C
	6	10	33 41.2	19- 6.3	155-20.4	24.6		16	197	21.7	0.36	2.0	5.9	0.20	C
	6	13	35 27.7	19-17.1	155-11.6	1.1	1.9	10	206	9.7	2.21	1.4	8.1	0.15	C
	6	18	9 32.8	19-19.9	155-11.5	8.0		15	164	4.9	0.15	1.2	0.7	0.13	C
	7	4	22 54.7	19-22.1	155-23.4?	8.1	0.6	11	119	3.4	0.09	0.6	1.0	0.10	B
	7	5	13 15.1	19-23.8	155-17.4	19.6	1.2	11	80	1.2	0.71	3.1	7.1	0.28	B
	7	14	24 18.9	19-24.6	155-23.8	8.0*		10	193	7.4	0.12	0.8		0.10	C
	7	21	24 17.9	19-24.5	155-24.7?	0.0	1.5	10	131	8.4	6.09	0.7	11.6	0.12	C
	7	22	35 37.5	19-10.1	155-26.9	30.7	2.3	16	183	11.6	0.32	1.7	3.3	0.13	C
	8	2	30 10.9	19-14.1	155-22.8	8.0*	0.8	11	227	8.0	0.25	1.7		0.16	D
	8	7	43 42.3	19-20.5	155-12.6	4.6	0.8	15	152	6.7	0.17	1.1	1.3	0.25	C
	8	15	42 9.6	19-19.2	155-15.4	8.7	2.1	21	144	3.9	0.08	0.6	1.1	0.12	B
	8	17	1 17.9	19-24.9	155-24.3	8.0*	1.5	8	202	8.0	0.14	0.9		0.10	C
	8	18	16 56.0	19-24.0	155- 3.3	3.3	1.3	13	111	7.7	0.16	1.2	1.8	0.25	C
	8	18	40 28.3	19-17.8	155-51.3	8.1	2.1	16	205	3.7	0.15	1.6	1.7	0.15	C
	9	3	18 55.4	19-17.0	155-23.2	4.9	0.9	17	129	5.9	0.09	0.8	1.2	0.17	B
	9	6	3 1.7	19-19.3	155- 8.7	8.0*	0.3	9	179	5.6	0.18	1.5		0.15	C
	9	7	32 50.5	19-23.2	155-17.1	13.9	1.9	22	61	0.5	0.07	0.7	1.0	0.10	B
	10	4	18 19.1	19-21.7	155-29.1?	8.1	1.4	17	63	10.5	0.16	1.0	1.2	0.18	B
	10	5	36 22.7	19-23.1	155-17.3	14.1	1.2	18	63	0.8	0.09	0.8	1.2	0.12	B
	10	7	59 33.3	19-19.7	155-15.2	5.9	1.0	16	177	3.9	0.18	1.1	0.9	0.19	C
	10	9	14 28.7	19-19.5	155-11.2	4.8	1.5	16	171	6.0	0.20	1.3	1.3	0.27	C
	10	11	8 22.3	19-25.0	155-25.0?	0.0	1.5	14	101	8.9	7.98	0.8	15.2	0.17	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 11	1	37	38.7	19-21.0	155- 8.4	37.5	1.3	21	132	3.2	0.23	1.1	1.9	0.09	B
12	4	28	58.7	19-22.4	155-26.3	5.0	1.3	20	57	6.6	0.08	0.6	0.9	0.18	B
12	7	54	31.6	19-12.4	155-26.6	30.8	1.1	15	168	5.8	0.52	2.1	4.2	0.10	C
12	11	1	0.2	19-20.6	155-14.4	8.8		9	235	4.2	0.52	2.8	2.9	0.12	D
12	16	4	30.9	19-20.8	155-14.7	6.7		10	185	3.7	0.26	1.4	1.2	0.13	C
12	16	35	33.4	19-19.8	155-14.5	9.0	1.2	12	201	5.0	0.20	1.1	1.7	0.09	C
12	16	55	52.1	19-19.8	155-11.6	8.9	0.8	11	164	5.1	0.17	1.2	2.5	0.10	C
12	16	58	5.4	19-18.8	155-16.2	6.8	1.2	11	145	3.2	0.10	0.9	0.7	0.11	B
13	2	35	6.9	19-10.8	155-35.3	4.4	1.5	17	135	8.2	0.15	1.1	1.1	0.21	C
13	3	4	37.0	19-17.0	155-22.3	8.0*		8	269	6.2	0.80	4.8		0.22	D
13	13	15	6.6	19-22.2	155-25.6	8.0*	1.8	11	70	5.4	0.06	0.6		0.11	B
13	16	58	3.3	19-20.5	155-23.3	15.1	1.8	10	59	0.6	0.33	2.1	4.7	0.22	B
13	17	51	11.3	19-22.1	155-25.6	8.0*		12	70	5.3	0.06	0.6		0.11	B
13	18	27	34.6	19-25.3	155-25.5	8.0*	1.8	10	158	9.2	0.06	0.4		0.06	C
13	20	10	37.7	19-19.0	155-14.8	6.3	1.6	13	197	4.9	0.22	1.4	0.9	0.21	C
13	20	16	13.4	19-18.9	155-14.3	8.0*	2.0	17	172	5.8	0.06	0.4		0.08	C
13	21	12	28.4	19-19.3	155-13.9	11.7	1.9	10	198	6.3	0.20	0.8	1.7	0.06	B
13	22	20	16.4	19-20.0	155-12.0	12.3	0.7	11	207	4.6	0.27	1.0	2.0	0.06	C
14	2	5	12.7	19-18.9	155-15.3	10.7		9	196	4.3	0.24	1.1	1.9	0.07	C
14	3	45	46.6	19-17.7	155-14.3	12.4	0.8	8	230	7.1	0.32	1.2	2.5	0.07	C
14	7	1	28.9	19-30.7	155-13.7?	8.0*	1.5	15	132	10.2	0.19	1.5		0.33	C
14	9	45	4.5	19-19.9	155-16.8	5.7	1.2	11	196	1.1	0.21	1.4	0.9	0.16	C
14	17	21	7.8	18-59.2	154-48.2	8.0*		16	299	46.1	1.35	8.3		0.16	D
15	1	37	11.1	19-11.4	155-14.4?	19.9	1.7	10	288	14.2	1.06	5.9	5.8	0.12	D
15	12	46	23.2	19-17.2	155-23.3?	5.7	1.3	16	127	5.5	0.09	0.8	0.9	0.18	B
15	14	2	2.7	19-22.3	155-27.1	4.6	1.3	16	78	7.7	0.11	0.8	1.3	0.20	B
16	2	5	29.2	19-20.3	155- 9.9	5.2	1.0	12	161	3.3	0.20	1.6	1.6	0.20	C
16	10	18	43.6	19-18.9	155-15.3	9.6		9	196	4.3	0.30	1.5	2.6	0.09	C
16	13	59	52.0	19-24.5	155-24.3	8.0*	1.6	7	202	8.0	0.15	1.0		0.10	C
16	15	50	27.8	19-19.0	155-15.5	10.7		10	191	3.9	0.18	0.8	1.5	0.07	B
16	16	15	32.3	19-19.9	155-11.9	8.0*	0.3	8	212	5.4	0.24	1.8		0.15	C
16	16	41	55.3	19-11.0	155-50.6	7.5	0.3	8	269	9.6	0.62	6.5	5.7	0.18	D
16	17	9	28.4	19-24.4	155- 6.0	8.0*	0.5	7	218	8.0	0.39	3.7		0.17	C
17	15	18	19.5	19-21.3	155-24.2	8.1	1.1	10	124	2.6	0.08	0.7	1.5	0.10	B
17	15	22	30.1	19-21.8	155-11.3	6.6	0.9	13	137	2.5	0.06	0.6	0.4	0.10	B
17	16	0	50.9	19-20.0	155-12.9	8.0*	0.2	10	158	6.8	0.11	0.9		0.13	C
17	19	32	59.4	19-42.1	155-47.8	18.4	1.0	15	217	4.6	0.24	1.5	1.9	0.09	C
18	1	1	9.6	19-32.4	155-34.9	8.0*		9	162	6.0	0.09	0.7		0.10	C
18	2	9	38.4	19-23.3	155-24.6	8.0	1.5	16	65	6.3	0.06	0.6	1.9	0.10	B
18	3	3	28.9	19-23.9	155-25.3	8.0*	1.6	14	145	7.8	0.13	0.9		0.14	C
18	5	38	23.8	19-24.8	155-16.8	15.2	1.1	15	117	0.5	0.07	0.6	0.8	0.08	A
18	8	19	59.3	19-21.8	155-16.1	21.6		10	158	1.2	0.26	1.2	2.5	0.09	C
18	8	34	43.0	19-21.2	155-24.1	11.3	2.2	16	65	2.4	0.11	1.0	1.4	0.18	B
18	14	55	17.1	19-19.9	155-13.6	6.4	2.0	20	157	4.9	0.11	0.8	0.7	0.21	C
18	16	28	8.1	19-30.1	155- 7.4	8.0*		10	179	6.4	0.21	1.9		0.22	C
18	23	14	3.9	19-20.5	155- 7.3?	0.8	2.1	21	159	5.3	1.32	1.1	4.8	0.22	C
19	3	5	45.4	19- 5.9	155-22.4	8.0*		11	225	20.9	0.46	3.4		0.28	C
19	3	32	17.7	19-23.9	155-24.5	8.3	2.0	20	63	7.2	0.07	0.5	0.5	0.13	B
19	17	59	34.1	19-21.3	155-26.0	8.0*		10	138	5.1	0.08	0.8		0.11	C
19	19	27	7.1	19-25.9	155-44.1?	8.2		13	277	15.5	0.57	3.6	1.9	0.14	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG	19	21	5 55.8	19-19.2	155-15.4	27.0		15	163	3.9	0.16	0.8	1.5	0.08	B
	19	21	19 22.7	19-19.0	155-15.3	28.2		15	165	4.2	0.18	0.8	1.7	0.07	B
	20	2	57 38.0	19-10.9	155-46.9	3.6	2.7	12	239	18.7	0.36	1.9	1.1	0.08	C
	20	3	0 17.6	19-26.3	155-49.7	9.1	2.8	16	179	13.2	0.15	1.8	2.3	0.18	C
	20	9	26 34.7	19-29.8	155-15.0	22.5	1.9	14	122	8.0	0.09	0.6	1.1	0.06	B
	20	12	24 25.0	18-32.4	155-32.3	81.7*	3.4	15	328	50.7	0.73	6.5		0.18	D
	20	15	10 38.1	19-20.9	155-13.6	10.4	1.7	10	166	4.9	0.24	1.1	2.0	0.09	C
	20	15	48 39.2	19-22.5	155-24.6	8.0	0.3	9	219	4.8	0.16	1.1	0.5	0.10	C
	20	21	12 57.4	20- 7.4	155-36.6?	2.2*		15	228	17.8	0.27	2.5		0.20	D
	21	0	39 28.3	19-19.5	155-15.5	6.5	0.8	11	177	3.5	0.25	1.2	1.6	0.17	C
	21	1	14 31.7	19-25.5	155-27.1	3.5	1.1	12	116	10.4	0.10	0.7	2.1	0.17	C
	21	4	14 21.8	19-24.7	155-24.5	8.0*	1.7	12	99	8.5	0.04	0.4		0.07	C
	21	9	42 49.4	19-19.9	155- 8.8	8.9	1.8	10	169	4.5	0.08	0.6	1.4	0.06	B
	21	17	18 16.1	19-16.6	155-23.1	6.3	1.8	15	142	6.4	0.15	1.3	1.0	0.24	C
	22	1	47 47.6	19-20.4	155-19.5	4.9	1.9	15	61	3.7	0.05	0.4	0.5	0.10	B
	22	2	19 21.6	19-26.6	155-27.9	8.0*	1.1	9	125	10.0	0.05	0.5		0.06	C
	22	9	41 24.3	19-22.8	155- 5.0	3.1	1.5	15	137	6.4	0.13	0.9	1.1	0.17	B
	22	11	34 29.4	19-20.4	155-14.4	26.7	1.7	18	160	4.6	0.13	0.8	1.2	0.09	B
	22	13	28 11.3	19-19.9	155- 7.9	3.1	1.4	18	169	5.2	0.17	1.1	1.6	0.22	C
	22	13	53 26.1	19-20.1	155-12.2?	7.2	0.6	13	160	4.4	0.21	1.5	1.1	0.22	C
	23	1	37 40.8	19-23.5	155- 3.4	2.8	1.0	15	112	6.6	0.16	1.1	1.5	0.26	C
	23	1	52 33.1	19-58.3	155-31.6	25.5	1.9	24	172	21.2	0.19	1.1	2.7	0.12	C
	23	2	34 41.2	19-19.4	155- 9.0	8.0*	0.6	12	176	5.2	0.17	1.5		0.21	C
	23	2	56 45.3	19-11.3	155-20.4	24.8	1.3	21	193	12.6	0.17	1.4	1.8	0.14	C
	23	7	38 54.7	19-23.0	155-43.4	8.0	0.7	9	264	17.4	0.42	2.6	1.5	0.08	D
	23	10	29 30.0	19-22.0	155-28.9?	4.0	2.1	15	89	10.4	0.12	0.9	1.8	0.23	C
	23	13	3 54.7	19-22.4	155-24.7	8.0*	0.4	9	90	4.7	0.06	0.6		0.09	B
	23	13	55 48.0	19-21.0	155-10.3	12.3	1.8	10	150	2.1	0.20	1.0	2.0	0.09	B
	23	20	26 3.8	19-19.7	155-10.7	8.0*	1.8	9	169	4.7	0.08	0.7		0.09	C
	23	21	0 22.2	19-15.7	155-22.5	8.0*	0.5	10	222	7.6	0.22	1.5		0.14	C
	24	2	3 17.4	19-26.9	155-10.9	25.5*	1.8	8	277	7.4	0.45	7.7		0.20	D
	24	2	59 5.6	19-20.2	155-16.2	8.9		8	219	2.1	0.14	0.8	1.0	0.03	B
	24	4	38 59.4	19-27.6	155-25.9	8.0*		7	245	6.1	0.18	1.1		0.05	D
	24	4	39 24.1	19-22.8	155-25.1	8.0*	0.8	11	139	5.7	0.06	0.5		0.08	C
	24	9	32 1.6	19-18.4	155-15.3	9.7	0.4	10	265	4.8	0.39	2.0	2.5	0.10	C
	24	10	38 1.9	19-23.2	155-17.4	13.3	2.8	24	61	3.0	0.05	0.6	0.5	0.13	B
	24	14	42 2.0	19-24.7	155-25.9	8.0*	2.3	21	69	9.5	0.07	0.6		0.12	C
	24	21	22 20.9	19-22.3	155-24.6	7.0	0.6	13	67	4.6	0.12	0.9	1.4	0.14	B
	24	21	45 31.0	19-24.2	155- 2.9?	0.0	1.3	15	119	7.9	6.74	1.1	12.8	0.26	C
	24	22	1 10.3	19-20.4	155-11.1	6.7	1.3	19	163	3.7	0.14	1.2	0.7	0.22	C
	25	1	56 51.1	19-23.4	155-24.9	3.0	0.8	12	214	6.6	0.20	1.1	1.3	0.14	C
	25	2	15 26.9	19-56.1	155-23.5	29.0	3.2	29	171	7.1	0.15	1.1	2.2	0.15	C
	25	5	46 23.9	19-19.8	155-12.5	8.0*	0.3	13	163	6.2	0.09	0.7		0.11	C
	25	12	51 2.1	19-10.5	155-27.3	29.0		16	163	19.1	0.30	1.5	3.3	0.14	C
	25	19	7 14.6	19-20.7	155- 7.2	6.3		19	155	5.3	0.13	1.0	0.8	0.21	C
	25	23	51 0.8	19-17.9	155-16.4	9.8		10	256	4.0	0.57	2.7	3.2	0.09	D
	26	2	56 0.8	19-24.9	155-22.8	8.0*	1.6	18	86	5.9	0.06	0.6		0.15	B
	26	13	15 35.2	19-22.2	155-29.6	5.1	2.0	15	95	11.6	0.11	0.8	1.1	0.18	C
	26	15	5 31.8	19-18.2	155- 9.3?	0.0	1.9	14	189	7.2	7.66	1.4	14.5	0.23	C
	26	17	28 43.0	19-19.0	155-13.8	7.8	1.7	14	175	6.6	0.17	1.3	0.7	0.18	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG	26	17	56 56.7	19-17.8	155-49.5	4.8	2.8	15	254	22.4	0.83	3.3	2.6	0.16	D
	26	21	19 44.7	19-20.7	155-25.0	6.3		14	112	3.2	0.13	1.2	1.3	0.22	B
	27	3	23 35.6	19-19.1	155-15.5	6.5	1.6	19	162	3.7	0.14	1.0	0.7	0.18	C
	27	4	24 12.6	19-18.5	155-48.2?	2.5	2.9	16	249	20.6	1.26	3.4	7.2	0.19	D
	27	7	22 53.9	19-19.8	155-12.8	8.0*		10	201	6.6	0.15	1.1		0.11	C
	27	11	0 2.9	19-17.8	155-15.6	9.3		10	221	5.2	0.36	2.0	2.9	0.14	C
	27	11	0 54.5	19-32.1	155-36.8	8.5	3.0	18	120	5.4	0.09	0.8	1.1	0.15	B
	27	15	26 26.3	18-57.7	155-30.2	32.5	2.7	22	228	17.2	0.42	2.2	3.4	0.13	C
	27	16	24 59.5	19-22.1	155-30.4?	0.0	1.9	11	155	12.3	3.51	1.6	25.6	0.25	C
	27	17	22 46.8	19-46.4	155-21.1	13.5*		10	177	12.9	0.09	1.2		0.10	C
	27	18	4 40.0	19-25.2	155-27.1	4.1		11	119	10.8	0.10	0.7	1.1	0.16	C
	27	22	51 17.3	19-18.0	155-15.1	8.1	1.8	19	181	5.6	0.11	0.8	1.4	0.12	C
	28	4	38 49.1	19-29.8	155-27.3	24.5	2.1	15	108	7.1	0.25	1.4	2.6	0.12	B
	28	22	44 53.1	19-22.4	155- 4.3	4.7		14	148	5.3	0.17	1.2	1.2	0.20	B
	29	1	49 41.9	19-20.6	155- 9.7	10.0		10	157	2.8	0.11	0.9	1.7	0.07	B
	29	1	54 51.6	18-51.1	155-18.9?	8.0*		12	263	37.3	1.16	7.6		0.24	D
	29	8	44 52.5	19-18.0	155-23.5	3.7		12	151	4.0	0.11	0.9	1.5	0.15	C
	29	8	45 16.1	19-17.8	155-23.2	2.4		9	158	4.4	0.08	0.6	1.0	0.08	B
	29	9	51 26.3	19-35.1	155- 9.3	8.0*		9	245	13.3	0.22	1.4		0.08	D
	29	13	34 34.1	19- 9.7	155-27.0	26.7		15	176	1.6	0.21	1.2	2.3	0.12	C
	29	17	10 13.9	19-28.2	155-41.8	7.7	3.0	21	68	10.4	0.10	0.5	0.7	0.10	B
	29	18	4 53.3	19-19.7	155-17.6	28.4		15	135	0.8	0.14	0.7	1.5	0.07	B
	29	22	41 35.4	19-19.2	155-12.2	4.6		16	174	6.8	0.15	1.0	0.9	0.19	C
	29	22	43 35.3	19-18.6	155-15.1	5.6	1.6	17	203	4.8	0.20	1.2	0.9	0.19	C
	30	2	19 10.4	19-18.5	155-10.7	4.4		12	183	6.8	0.21	1.4	1.5	0.19	C
	30	3	5 35.5	19-20.4	155-17.2	5.2		12	177	0.6	0.20	1.0	1.4	0.13	C
	30	10	7 42.9	19-21.3	155- 7.6	3.3	1.8	17	145	8.6	0.13	1.0	1.1	0.18	B
	31	6	27 20.0	19-23.6	155-25.1?	0.0	1.3	14	100	9.4	0.31	1.0	19.7	0.22	C
	31	16	50 27.4	19-23.8	155-17.0	14.4	1.9	12	61	0.8	0.07	0.5	0.8	0.06	A
	31	18	13 20.7	19-12.1	155-27.9	6.0	2.3	16	149	8.3	0.14	1.0	0.8	0.14	B
	31	22	14 49.9	19-22.6	155-16.0?	4.1	0.6	7	86	0.4	0.45	2.0	3.8	0.23	C
	31	23	13 54.9	19-23.2	155-10.3	42.9	2.5	13	194	2.2	0.34	1.7	2.5	0.07	C
SEP	1	3	22 33.7	19-20.2	155-19.8	2.3*	1.8	8	116	4.2	0.04	0.2		0.05	B
	1	18	2 6.8	19-23.0	155-16.4	15.9	1.9	20	57	1.2	0.08	0.7	1.0	0.11	B
	1	20	23 17.0	20- 7.2	155-55.7	34.2	2.0	18	271	15.6	0.19	1.2	2.0	0.08	C
	2	2	42 38.2	19-23.6	155-16.4	13.0	1.6	23	53	1.1	0.04	0.5	0.4	0.10	B
	2	2	56 48.2	19-23.7	155-16.4	12.7	1.7	17	70	2.4	0.06	0.7	0.6	0.13	B
	2	2	59 29.3	19-25.2	155-24.3?	6.1	1.1	19	62	7.7	0.08	0.8	3.3	0.17	B
	2	5	46 9.3	19-22.2	155-23.7	6.8	1.3	21	62	3.8	0.09	0.8	0.7	0.21	B
	2	6	46 53.3	19-10.6	155-32.4	6.0	1.8	14	106	8.3	0.18	1.3	1.2	0.23	C
	2	17	54 11.9	19-19.5	155-17.3	30.4	2.4	25	132	1.1	0.12	0.7	1.2	0.11	B
	3	7	58 59.7	19-38.1	156- 0.6	5.3	2.3	15	224	15.6	0.49	2.4	1.5	0.21	C
	3	10	39 46.9	19-19.4	155-14.1	8.0*	1.2	6	196	6.0	0.28	2.9		0.18	C
	3	14	34 6.9	19-24.0	155-23.5?	8.1	2.6	23	68	6.7	0.06	0.5	0.5	0.14	B
	3	16	50 50.3	19-23.0	155- 3.6	4.9	1.1	8	169	5.8	0.18	1.2	1.5	0.14	C
	4	4	33 10.8	19-19.7	155-12.6	8.0*	0.5	9	205	6.5	0.14	1.2		0.12	C
	4	9	15 28.5	19-22.5	155-23.3?	8.2	0.9	13	111	4.3	0.08	0.7	0.6	0.14	B
	4	22	52 7.4	19-20.2	155-11.9	8.0*		8	206	5.0	0.19	1.4		0.12	C
	5	0	24 56.9	19-18.8	155-13.6	5.7	1.5	19	176	7.2	0.13	0.9	0.8	0.18	C
	5	1	31 33.6	19-20.0	155-12.3	8.1	4.8	24	140	4.6	0.08	0.6	0.4	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP	5	1	40 7.9	19-18.7	155-11.9	8.0*	0.5	13	182	7.3	0.15	1.1		0.13	C
	5	1	41 9.7	19-19.8	155-12.3	8.0*	0.6	9	207	6.1	0.15	1.1		0.10	C
	5	1	41 34.2	19-22.9	155-26.3	2.7	1.4	20	73	7.2	0.12	0.8	1.7	0.24	C
	5	1	59 50.7	19-19.1	155-12.4	2.5	1.4	21	174	6.2	0.18	1.0	1.3	0.24	C
	5	2	8 14.9	19-20.6	155-12.3	8.0*	0.6	10	151	5.1	0.04	0.3		0.04	C
	5	6	21 52.2	19-18.7	155-12.3	2.5	1.3	23	156	6.9	0.17	0.9	1.3	0.23	C
	5	6	53 56.2	19-18.6	155-12.3	2.3	1.6	22	156	7.1	0.17	1.0	1.6	0.25	C
	5	7	10 16.8	19-20.2	155-12.1?	8.0*-	0.0	10	201	5.3	0.26	2.2		0.24	C
	5	9	7 24.1	19-18.9	155-12.5	8.0*	0.2	11	193	6.6	0.11	0.8		0.09	C
	5	10	45 15.8	19-18.5	155- 8.5	8.0*	0.5	12	202	7.0	0.18	1.4		0.15	C
	5	17	40 45.4	19-25.2	155-21.3?	2.6	1.0	11	136	3.9	0.19	0.6	0.7	0.13	B
	5	19	21 41.2	18-54.0	155-17.5	9.9	2.1	11	271	33.9	0.62	3.3	2.7	0.12	D
	5	20	55 19.3	19-19.8	155-12.4	8.0*	0.8	13	164	6.1	0.09	0.7		0.12	C
	5	20	57 56.5	19-24.4	155-17.0	7.8	0.4	14	57	0.9	0.05	0.6	0.4	0.11	B
	5	21	6 5.5	18-54.3	155-15.3	2.5	2.8	16	250	35.7	1.35	2.7	8.0	0.17	D
	5	22	26 40.2	19-19.6	155- 6.8	8.0*	1.9	14	178	6.8	0.17	1.4		0.18	C
	5	22	43 9.6	19-22.2	155-24.0	5.6	0.8	13	98	3.8	0.11	1.0	1.3	0.19	B
	5	23	0 25.8	18-53.0	155-16.4	8.8	2.2	14	273	36.5	0.61	3.2	2.7	0.12	D
	5	23	6 8.8	18-55.1	155-17.0	15.4*	2.8	18	246	32.6	0.22	1.6		0.14	D
	5	23	30 45.4	19-24.1	155-24.7?	0.0	0.8	14	174	7.6	6.86	0.8	13.0	0.13	C
	5	23	41 6.1	19-20.7	155- 6.9	7.8	3.9	24	133	5.7	0.08	0.7	0.5	0.15	C
	5	23	47 37.4	19-20.4	155- 7.6	7.8	1.8	11	160	5.0	0.10	1.0	0.6	0.14	C
	5	23	49 50.3	19-22.1	155- 6.9?	7.6	2.4	20	118	5.2	0.09	0.8	0.6	0.16	B
	5	23	56 39.4	19-23.9	155-24.4	4.9	1.2	16	156	7.2	0.10	0.7	0.9	0.15	C
	6	0	1 28.6	18-55.7	155-16.8	16.7*	2.8	23	244	32.0	0.22	1.5		0.15	D
	6	0	4 24.4	19-20.2	155- 7.3	8.0*	0.7	12	175	5.7	0.12	1.2		0.13	C
	6	0	19 11.4	18-54.7	155-16.6	9.2	2.0	16	248	33.7	0.47	2.3	2.9	0.15	C
	6	0	40 51.1	18-55.1	155-16.7	9.2	2.5	16	247	33.0	0.42	2.0	2.6	0.13	C
	6	1	52 39.6	19-20.7	155- 6.7	8.0*		13	153	6.1	0.10	1.0		0.12	C
	6	2	1 4.7	19-19.8	155- 7.6	8.0*	0.2	8	171	5.8	0.08	0.9		0.07	C
	6	2	15 7.6	18-54.4	155-16.3	9.6	1.0	9	263	34.5	0.90	4.5	4.1	0.11	D
	6	2	35 31.7	19-21.6	155- 6.4	8.0*		14	137	6.0	0.14	1.5		0.23	C
	6	2	38 12.2	19-24.6	155-24.7	8.1	1.4	22	60	8.6	0.07	0.5	0.5	0.15	B
	6	2	40 43.8	19-30.4	155-49.0	4.4	0.9	14	265	22.8	0.25	1.2	1.0	0.16	C
	6	3	21 3.1	18-50.4	155-20.6	8.5	2.0	13	265	37.3	0.52	3.1	3.2	0.12	D
	6	3	52 13.4	18-55.0	155-16.3?	12.7	3.1	25	247	33.6	0.40	1.7	2.8	0.15	D
	6	3	58 5.7	18-53.7	155-14.9	1.9*	1.6	13	259	37.0	0.49	3.2		0.19	D
	6	4	2 30.9	18-54.2	155-15.7?	8.3	3.4	25	250	35.3	0.52	2.1	2.0	0.17	D
	6	4	12 40.7	19-19.4	155-14.8	5.8	0.8	19	144	4.7	0.11	0.8	0.7	0.19	B
	6	6	1 9.0	19-19.6	155-14.2	8.0*	0.5	15	159	5.7	0.06	0.5		0.09	C
	6	6	24 29.0	19-19.1	155-15.7?	8.9	0.1	13	185	3.4	0.21	1.3	2.1	0.15	C
	6	6	54 41.7	18-56.4	155-17.7	10.3	1.5	15	246	30.1	0.41	2.1	2.3	0.11	C
	6	6	58 21.5	18-54.5	155-15.8	8.1	2.1	15	255	34.7	0.61	2.9	3.5	0.15	D
	6	9	7 55.9	19-18.9	155-27.4?	0.0	1.2	13	100	7.5	1.78	1.5	22.3	0.25	C
	6	9	44 2.8	19-19.3	155-12.9	12.5		9	210	7.5	0.39	1.4	3.0	0.08	C
	6	12	39 45.3	19-23.4	155-24.9	8.0*		8	218	6.5	0.15	1.0		0.08	C
	6	15	10 6.3	19-10.5	155-30.2	39.0	2.1	19	149	14.5	0.28	1.2	2.8	0.13	B
	6	19	29 56.9	18-55.3	155-16.5	8.8	1.7	13	287	32.9	0.87	4.8	3.0	0.13	D
	7	0	43 15.9	19-18.9	155-15.1	5.9	0.8	13	198	4.6	0.20	1.2	1.0	0.18	C
	7	1	33 37.9	18-55.3	155-15.7	8.6	2.1	17	247	33.8	0.53	2.5	3.3	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 7	1	45	5.9	18-55.3	155-15.3	11.1*	3.2	20	247	34.2	0.37	2.6		0.19	D
7	1	54	7.0	18-55.9	155-16.2	7.8	2.1	16	250	32.3	1.38	2.8	8.6	0.17	D
7	3	35	4.4	18-54.1	155-15.7	9.6	1.7	14	251	35.6	0.44	2.2	2.6	0.11	C
7	4	37	0.1	18-48.7	155-17.7	8.0*	2.7	17	272	42.3	0.39	2.6		0.11	D
7	5	58	13.1	18-49.1	155-18.3	8.9*	2.5	13	271	41.3	0.47	3.1		0.12	D
7	8	47	46.6	19-20.3	155- 7.3	8.0*	0.2	10	163	5.6	0.08	0.8		0.10	C
7	8	48	21.2	19-19.4	154-59.8?	8.0*	0.2	9	232	18.2	1.29	8.6		0.32	D
7	10	24	43.7	19-20.3	155-12.1	8.4	0.4	12	156	4.1	0.08	0.6	1.2	0.08	B
7	11	21	2.9	19- 1.2	155- 7.0	16.5*	2.8	23	241	35.3	0.31	2.1		0.18	D
7	11	28	53.8	18-46.2	155-28.6	39.2*	3.4	24	284	30.8	0.43	3.1		0.17	D
7	15	49	48.3	18-54.6	155-16.0?	7.8	1.1	14	249	34.4	1.06	2.1	6.6	0.12	D
7	15	54	3.9	18-54.5	155-17.1	8.9	1.2	12	253	33.5	0.60	2.9	3.2	0.12	D
7	18	46	59.5	18-53.4	155-16.0?	9.5	1.4	14	253	36.3	0.88	1.8	5.4	0.11	D
7	18	53	53.9	18-31.9	155-18.8	8.0*	1.5	16	300	62.1	1.16	7.2		0.15	D
7	19	19	19.8	19-23.7	155-28.7	8.0*	0.6	16	91	11.5	0.14	1.1		0.19	C
7	23	45	42.1	19-26.9	155-27.8	20.6	1.0	16	87	9.4	0.09	0.5	1.1	0.07	A
8	1	10	26.7	19- 7.2	155-25.7	37.8	0.7	14	179	5.8	0.26	1.7	2.6	0.14	C
8	4	57	15.3	19-20.5	155-20.0?	4.2	0.1	8	113	4.7	0.80	0.9	2.8	0.11	B
8	6	7	37.0	19-20.2	155-11.5	9.4	0.3	15	159	4.5	0.08	0.6	1.0	0.08	B
8	12	19	38.1	19-19.3	155-14.6	6.0		15	193	5.1	0.15	0.9	0.7	0.14	C
8	15	30	58.2	19-19.8	155- 7.1	8.0*		14	171	6.4	0.16	1.4		0.20	C
8	17	42	52.9	19-24.8	155-21.8	5.5	1.4	18	143	4.2	0.11	0.8	0.8	0.18	B
8	21	47	44.6	19-18.8	155-12.1	2.9	2.0	25	155	6.7	0.16	0.9	1.2	0.26	C
9	4	42	42.1	19-12.0	155-26.7	6.4	2.2	20	133	5.0	0.10	0.9	0.6	0.16	B
9	4	49	2.8	19-11.9	155-26.4	6.3	2.8	24	141	5.1	0.10	0.8	0.7	0.19	B
9	5	3	48.3	19-12.3	155-27.0	6.6		13	124	5.3	0.10	0.9	0.7	0.12	B
9	5	8	55.8	19-27.2	155-13.8	8.0*		6	146	9.5	0.23	2.2		0.22	C
9	11	39	49.7	19-19.4	155-13.7	8.0*		11	199	6.6	0.16	1.1		0.12	C
9	15	46	8.8	19-20.7	155- 7.8	3.8	2.8	23	139	4.3	0.14	0.9	0.9	0.21	C
9	16	22	21.4	19-19.0	155-15.4	6.9	1.7	18	171	4.0	0.10	0.8	0.6	0.14	C
9	21	13	9.5	19-10.9	155-33.7	4.8	2.7	24	102	9.5	0.13	0.9	1.0	0.22	C
9	22	59	2.0	18-52.5	155-15.8	5.6	3.2	20	256	37.9	1.17	2.5	7.7	0.14	D
10	13	0	32.3	19-23.4	155-24.9	8.1	1.7	20	65	6.6	0.12	0.8	0.8	0.18	B
10	13	1	24.5	19-24.4	155-17.7	8.2	1.3	9	88	1.6	0.07	0.5	0.7	0.04	A
10	13	2	8.8	19-20.9	155- 8.0?	0.0	2.3	20	153	8.6	4.68	1.0	8.9	0.22	C
10	15	49	59.7	19-23.1	155-22.9	8.1	2.2	19	53	5.4	0.04	0.5	1.0	0.12	B
10	18	20	33.6	19-24.9	155-17.0	8.1	1.3	9	73	0.1	0.05	0.5	0.3	0.04	A
10	19	56	19.9	19-24.5	155-23.4	7.8	1.9	20	91	6.7	0.07	0.5	0.4	0.15	B
10	20	24	55.1	19-21.1	155-24.7	4.5	1.9	20	77	3.0	0.08	0.7	0.9	0.22	B
10	22	42	38.3	19-10.0	155-35.4	7.1	3.3	22	107	9.5	0.16	1.0	1.0	0.19	C
10	23	19	53.2	19-23.3	155-28.2?	0.0	1.9	13	137	10.4	4.67	1.5	27.8	0.23	C
11	0	21	57.4	19-11.8	155-22.3	26.8		14	257	15.5	0.53	3.1	3.1	0.10	D
11	11	40	29.7	19-19.7	155-18.2	27.6	2.1	23	105	1.5	0.12	0.8	1.3	0.12	B
11	11	45	36.8	19-19.8	155-13.6	7.5	1.3	20	144	5.1	0.07	0.5	0.4	0.10	B
11	20	20	2.6	19-19.3	155-15.4	6.6	1.3	19	143	3.9	0.10	0.8	0.7	0.16	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP	12	4	34 21.8	19- 9.4	155-39.1	4.3	0.4	10	195	10.7	0.20	1.5	1.2	0.14	C
	12	4	57 50.3	19-20.4	155- 7.8	8.0*	0.3	12	160	4.8	0.18	1.6		0.21	C
	12	7	55 1.2	19-21.0	155-16.9	26.7	0.9	17	109	1.9	0.12	0.7	1.2	0.08	A
	12	13	43 32.1	19-21.1	155- 7.2	3.3	1.4	15	148	5.0	0.14	1.1	1.4	0.18	C
	13	0	51 55.3	19-23.4	155-15.4	4.1		11	97	2.0	0.13	0.5	1.4	0.11	B
	13	6	5 40.5	19-23.2	155-25.1	8.0*	0.4	11	151	6.3	0.10	0.7		0.12	C
	13	7	19 6.2	19-23.7	155-24.8	8.0*	1.9	17	75	7.0	0.07	0.6		0.13	B
	13	7	48 2.2	19-19.3	155- 8.9	3.6	1.6	17	178	5.4	0.19	1.2	1.3	0.24	C
	13	7	49 21.4	19-18.1	155-15.8	6.6	1.1	17	151	4.7	0.13	0.9	0.7	0.20	C
	13	8	56 44.6	19-18.1	155-15.3	7.0	1.1	16	182	5.2	0.14	0.9	0.6	0.16	C
	13	8	57 33.2	19-27.1	155-27.6	6.8	2.7	23	43	9.1	0.09	0.7	0.7	0.19	C
	13	11	44 46.8	19-22.1	155-25.4	8.0	0.8	13	69	5.1	0.12	0.8	0.9	0.15	B
	13	13	40 1.3	19-24.0	155-25.5	7.9	2.9	24	45	7.9	0.12	0.5	0.9	0.15	B
	13	15	43 46.5	19-20.0	155-12.4	9.3		11	160	4.5	0.13	0.9	1.8	0.10	C
	13	15	53 9.5	19-17.8	155- 1.9	33.8	1.4	22	215	4.3	0.23	1.3	1.8	0.11	C
	13	22	6 3.6	19-19.7	155- 8.9	6.9	0.5	9	171	4.7	0.18	1.5	1.0	0.16	C
	14	0	36 8.6	19-21.7	155-27.5?	7.3	2.6	24	58	7.8	0.12	0.8	0.9	0.21	C
	14	7	1 31.6	19- 9.7	155-34.6	7.4	1.2	11	113	10.5	0.17	1.2	1.1	0.19	B
	14	10	26 47.0	19-19.5	155- 8.9	8.2	1.1	14	174	5.0	0.13	1.1	2.5	0.13	C
	14	12	5 38.6	19-22.3	155-25.4	8.0	1.3	22	54	5.3	0.11	0.7	0.7	0.17	B
	14	12	17 1.0	19-19.6	155-12.8	33.6	0.7	14	143	6.9	0.18	1.0	1.9	0.09	B
	14	18	20 25.7	19-54.1	155-17.0	21.9	1.6	23	202	6.4	0.14	1.0	1.7	0.11	C
	14	20	10 17.1	19-57.5	155-47.1	12.4*	0.9	7	220	18.8	0.16	2.1		0.07	C
	14	21	26 52.3	19-18.0	155-16.7	6.4	2.3	23	149	3.4	0.09	0.7	0.5	0.15	B
	14	21	42 54.8	19-22.9	155-15.6	25.2	0.9	18	106	1.0	0.14	0.9	1.4	0.10	B
	14	22	3 23.9	19-23.2	155-15.5	26.8	2.1	25	100	1.6	0.12	0.8	1.3	0.14	B
	15	0	11 9.4	19-11.9	155-23.1	32.3	1.3	15	175	9.4	0.26	1.3	2.3	0.11	C
	15	9	2 19.0	19-23.1	155-25.6?	7.9	0.8	20	69	6.7	0.13	0.8	0.8	0.18	B
	15	11	21 57.2	19-22.3	155-25.8	5.1	1.4	22	57	5.9	0.08	0.6	0.8	0.21	C
	15	15	10 34.6	19-20.0	155-11.7	9.6	0.1	14	163	4.9	0.09	0.6	1.1	0.09	B
	15	17	17 51.2	19-21.3	155-13.8	11.5	0.5	7	155	4.2	0.25	0.7	2.4	0.05	C
	15	18	53 19.0	19-19.9	155-12.6	8.0*	0.2	11	201	6.3	0.18	1.4		0.16	C
	16	0	24 43.2	19-11.8	155-16.3	40.0	1.6	14	163	15.5	0.27	1.1	2.7	0.09	C
	16	1	6 60.0	19-22.4	155-22.4?	1.5	1.3	11	139	4.5	0.12	0.9	2.1	0.20	C
	16	3	2 44.4	19-23.7	155-23.6	8.1	0.8	19	56	6.6	0.08	0.5	0.5	0.12	B
	16	4	6 46.3	19-24.1	155-25.9	2.2	0.8	17	114	8.5	0.11	0.7	1.4	0.19	B
	16	9	56 26.1	19-23.2	155-23.3?	1.4	0.9	17	92	5.6	0.81	0.6	1.5	0.21	C
	16	19	58 30.6	19-18.5	155-14.5	26.8	1.4	20	148	5.9	0.14	0.9	1.4	0.13	B
	16	20	3 14.9	19-40.9	156- 3.2	3.1	1.7	19	233	22.5	0.45	1.9	1.5	0.17	C
	17	11	14 6.2	19-19.1	155-13.5	8.0*	1.2	10	194	7.0	0.17	1.3		0.16	C
	17	12	42 50.7	19-20.6	155-12.9	7.4	1.0	18	150	3.5	0.10	0.8	0.5	0.16	B
	17	22	57 51.8	19- 4.7	155-34.1	38.1	1.9	23	165	14.1	0.30	1.4	2.7	0.13	C
	18	18	8 13.4	19-23.0	155- 7.8	8.0*	0.3	11	120	10.3	0.14	1.5		0.26	C
	18	19	24 23.0	19-20.9	155- 4.4	21.6*		7	326	9.8	0.36	3.4		0.08	D
	18	20	22 41.1	19-12.3	155-14.9	41.8	1.0	12	201	12.2	0.54	2.0	4.9	0.11	C
	19	0	36 40.9	19-19.3	155-15.0	8.4	0.6	13	170	4.4	0.13	0.9	1.7	0.12	C
	19	3	6 12.5	19-49.6	155-33.2	30.7	1.5	26	107	11.2	0.15	0.7	2.0	0.10	B
	19	6	39 7.2	19-19.8	155- 8.3	8.0*		15	170	4.9	0.14	1.1		0.16	C
	19	7	9 32.4	19-20.1	156-19.6	11.4	1.5	22	274	48.4	0.36	4.3	8.4	0.19	D
	19	12	4 46.1	19-20.9	155-13.6	11.7	0.4	8	168	4.9	0.21	0.6	1.9	0.05	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP	19	15	39 1.8	19-19.8	155-15.3	7.0	1.5	21	139	3.6	0.07	0.6	0.4	0.14	B
	19	15	56 26.2	19-23.7	155-25.6	7.7	3.3	25	56	7.7	0.08	0.5	0.5	0.15	B
	19	16	27 13.3	19-23.3	155-25.9	8.0*	1.7	11	240	7.3	0.34	2.0		0.15	D
	19	16	51 19.4	19-23.4	155-26.0	8.0*		9	241	7.5	0.31	1.9		0.13	D
	19	20	14 40.8	19-23.8	155-26.2	8.0*	1.7	8	243	8.3	0.26	1.6		0.09	D
	20	0	18 10.3	19-22.6	155-24.0?	8.2	-0.1	9	127	4.6	0.10	0.8	1.2	0.10	B
	20	3	58 10.6	19-21.0	155- 7.6	9.2		6	163	4.4	0.11	1.1	1.5	0.03	C
	20	4	8 55.1	19-20.0	155- 7.1?	8.0*		13	167	6.1	0.17	1.8		0.26	C
	20	6	58 10.1	19-20.4	155-18.9	2.1*		8	92	2.6	0.03	0.2		0.05	B
	20	7	0 47.2	19-21.5	155-25.0	9.4	0.2	10	131	3.9	0.11	0.8	2.0	0.10	B
	20	11	45 22.6	19-19.2	155-11.9	3.6	1.4	19	174	6.1	0.19	1.2	1.3	0.28	C
	20	23	5 39.9	19- 8.3	155-25.9	43.5	1.8	14	179	4.1	0.47	2.3	4.3	0.19	C
	21	0	56 48.3	19-29.9	155-27.0	8.0*	1.1	8	134	6.5	0.07	0.8		0.09	C
	21	1	50 2.0	19-19.3	155-21.2	5.3		7	177	4.1	0.18	0.5	1.4	0.03	B
	21	3	55 47.9	19-22.8	155- 4.4	3.2	0.5	9	96	6.0	0.13	1.1	2.0	0.16	B
	21	5	6 12.0	19-20.1	155-10.1	8.7	0.2	9	163	3.6	0.07	0.6	1.1	0.06	B
	21	17	44 28.8	19-24.6	155-16.5	12.5	0.4	11	140	2.3	0.11	0.5	0.9	0.05	B
	21	19	54 32.4	19-27.1	155-45.4	4.3		10	132	17.0	0.21	1.2	1.5	0.17	C
	21	20	21 42.6	19-16.6	155-14.9	8.0*	0.8	10	217	7.0	0.17	1.1		0.10	C
	21	21	25 40.5	19-19.4	155-12.3	5.2	1.9	16	170	5.7	0.18	1.2	1.1	0.26	C
	21	21	48 59.1	19-19.8	155-11.9	4.9	1.4	15	165	5.1	0.16	1.0	1.1	0.21	C
	22	3	46 26.6	19-19.8	155-11.3	4.9	1.3	10	221	5.0	0.25	1.5	1.1	0.15	C
	22	5	35 43.4	19-19.7	155-10.4	4.5	1.2	15	168	4.4	0.14	1.0	1.0	0.17	C
	22	9	55 9.9	19-19.2	155-13.5	9.3		12	206	7.1	0.13	0.9	1.2	0.09	B
	22	13	0 25.2	19-19.1	155-13.3	8.0*	1.8	13	173	7.4	0.08	0.6		0.10	C
	22	14	18 9.7	19-22.3	155-15.4	25.0		13	114	0.9	0.25	1.0	2.3	0.08	B
	22	15	32 46.5	19-20.7	155-16.6	26.7	2.6	24	123	1.8	0.12	0.8	1.3	0.13	B
	22	17	31 49.9	19-17.3	155-23.8	4.5	1.9	16	138	5.4	0.08	0.7	0.9	0.17	B
	23	2	37 49.4	19-24.5	155-16.3	12.3	1.6	18	58	1.5	0.05	0.5	0.5	0.09	A
	23	7	31 39.6	19-25.6	155-24.4	8.0*	1.7	13	183	7.5	0.08	0.6		0.07	C
	23	10	18 11.3	19-22.9	155-23.8	8.0*	1.7	18	65	5.0	0.07	0.6		0.15	B
	23	18	58 52.1	19-22.4	155- 1.0	6.2		10	168	5.6	0.24	1.7	1.3	0.19	C
	23	19	28 20.8	19-19.4	155-12.7	3.7	1.7	21	148	5.6	0.14	0.8	1.1	0.23	C
	24	4	1 54.8	19-36.7	155- 6.4	8.0*	2.1	12	198	12.9	0.12	0.8		0.08	C
	24	14	58 6.6	19-21.4	155-14.5	27.3	2.0	16	129	5.5	0.14	0.9	1.5	0.13	B
	24	15	10 49.8	19-26.2	155-26.0	8.0*	1.1	12	131	8.2	0.13	1.0		0.15	C
	24	16	13 13.2	19-20.2	155-18.6	12.7	1.1	9	89	2.1	0.17	1.7	1.3	0.15	B
	24	17	50 24.4	19-18.6	155-14.7	9.4		10	208	5.5	0.26	1.3	2.4	0.10	C
	24	20	13 50.8	19-20.4	155-13.3	5.8	1.1	17	151	3.9	0.15	1.0	0.4	0.22	C
	25	0	50 36.4	19-19.9	155-13.5	9.8		11	190	6.2	0.21	1.0	1.9	0.09	C
	25	14	56 59.1	19-19.8	155-12.6	5.4	1.3	11	164	6.4	0.20	1.2	1.7	0.20	C
	25	17	52 59.6	19-24.4	155-23.1	8.0*	1.5	8	176	6.1	0.07	0.6		0.07	C
	25	18	0 22.5	19-24.4	155-23.4	8.0*	1.8	17	69	6.6	0.13	1.1		0.20	B
	25	18	31 44.9	19-19.8	155-12.1?	5.5	1.6	15	165	5.0	0.17	1.5	2.5	0.26	C
	25	20	23 55.3	19-34.6	155-14.4?	8.0*		10	233	16.9	0.34	2.0		0.21	D
	25	23	58 3.5	19-24.5	155-17.0	7.8	0.6	9	67	0.7	0.05	0.3	0.3	0.03	A
	26	1	44 9.0	19-20.0	155-12.0	2.8*	1.4	9	207	5.4	0.26	1.4		0.19	C
	26	2	2 40.8	19-23.6	155-25.3	8.0*	1.1	12	108	7.2	0.06	0.5		0.08	B
	26	13	55 57.6	19-18.3	155-21.4	8.0*	1.7	10	152	4.8	0.12	1.0		0.14	C
	26	16	16 25.5	19-28.1	155-55.3?	0.0	2.9	16	213	23.0	0.66	3.0	1.6	0.26	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP	26	17	37	50.5	18-58.9	155-17.4	33.5		15	248	26.8	0.44	2.3	4.5	0.11	C
	26	20	26	44.4	19-19.9	155-24.9	7.9		8	163	2.9	0.10	1.0	0.7	0.09	C
	26	20	45	42.4	19-13.3	155-33.6?	7.2	2.5	20	78	6.9	0.12	1.0	0.9	0.22	B
	26	22	28	56.2	19-17.4	155-10.4?	0.0*	1.6	12	203	8.6	0.24	1.3		0.20	C
	26	23	4	42.1	19-23.9	155-29.1?	8.0*	1.8	11	240	12.3	0.43	2.5		0.22	D
	26	23	26	10.0	19-24.4	155-16.6	12.8		18	66	2.0	0.04	0.5	0.4	0.09	A
	27	1	59	7.9	19-24.3	155-25.2?	0.0	1.3	16	66	8.3	7.21	0.7	13.7	0.20	C
	27	4	38	29.6	19-19.2	155-11.6	3.6	1.1	15	174	6.1	0.19	1.1	1.5	0.24	C
	27	8	24	20.9	19-20.5	155-12.6	15.2	0.9	13	152	6.8	0.26	1.8	3.2	0.13	C
	27	9	57	59.5	19-20.1	155- 7.1	8.0*	0.9	9	165	6.0	0.08	0.8		0.07	C
	27	16	5	21.3	19-22.9	155-22.3	7.2	0.4	7	152	4.8	0.26	0.6	2.2	0.06	C
	27	18	22	2.7	19-19.8	155-11.7?	8.2		14	166	5.2	0.14	1.1	0.6	0.13	C
	28	3	50	14.2	19-24.1	155-26.4	8.0*	0.7	11	118	9.1	0.06	0.5		0.08	C
	28	7	28	14.6	19-18.3	155-14.1	10.9	0.3	10	218	6.7	0.43	1.8	3.5	0.10	C
	28	16	19	22.6	19-18.9	155-15.5	9.0	2.2	13	194	4.1	0.09	0.7	0.8	0.08	B
	29	0	26	37.3	19-19.9	155-11.7?	6.2	1.9	17	164	5.0	0.14	1.2	1.9	0.22	C
	29	5	19	16.5	19-20.3	155- 8.7	6.9	2.3	17	162	3.8	0.12	1.0	0.6	0.16	C
	29	12	47	26.6	19-20.3	155- 8.0	9.1	0.2	10	162	4.6	0.11	0.9	1.7	0.08	B
	29	19	26	51.4	19-22.4	155-23.4	8.2	1.1	21	51	4.1	0.07	0.5	0.5	0.14	B
	30	0	1	7.2	19-23.1	155-23.1	8.0*	0.7	11	174	5.3	0.09	0.7		0.12	C
	30	5	5	49.5	19-20.9	155-11.6?	8.0	0.1	11	149	3.8	0.10	0.9	0.7	0.14	B
	30	10	37	2.2	19-23.1	155- 6.2	0.6	1.7	21	101	6.7	0.54	0.7	1.0	0.18	C
	30	16	42	34.5	19-19.2	155- 9.2	3.4	2.2	22	158	5.4	0.19	1.1	1.2	0.28	C
	30	22	52	15.5	19-19.7	155-12.1	8.0*	0.6	11	231	5.9	0.17	1.1		0.11	D

Table 3. Felt earthquakes

Date	Time H	M	S	Magnitude	Felt report
Jul 12	20	31	49.0	3.3	Kapapala
14	09	36	57.5	4.5	Hilo, Papaikou, Honokaa, Pahoa
20	17	20	44.0	2.6	Kapapala
29	17	25	36.8	3.0	Kamuela
Aug 25	02	15	26.9	3.2	Paauilo, Hilo
Sep 5	01	31	33.6	4.8	Kealakekua, Kainaliu, Napoopoo, Kalapana, Hilo, Pepeekeo, Laupahoehoe, Waimea
5	23	41	06.1	3.9	Kalapana, Hilo, Volcano, Glenwood, Keaau, Pahoa, Waimea
7	04	37	00.1	2.7	Kapapala
13	13	40	01.3	2.9	Kapapala
14	00	36	08.6	2.6	Kapapala
19	15	56	26.2	3.3	Kapapala

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	1	6.0	2040		
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAAPUNA	KAA	19 15.98	155 52.28	524	1	5.5	1020	RF12	
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			Discontinued 9/20/72
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

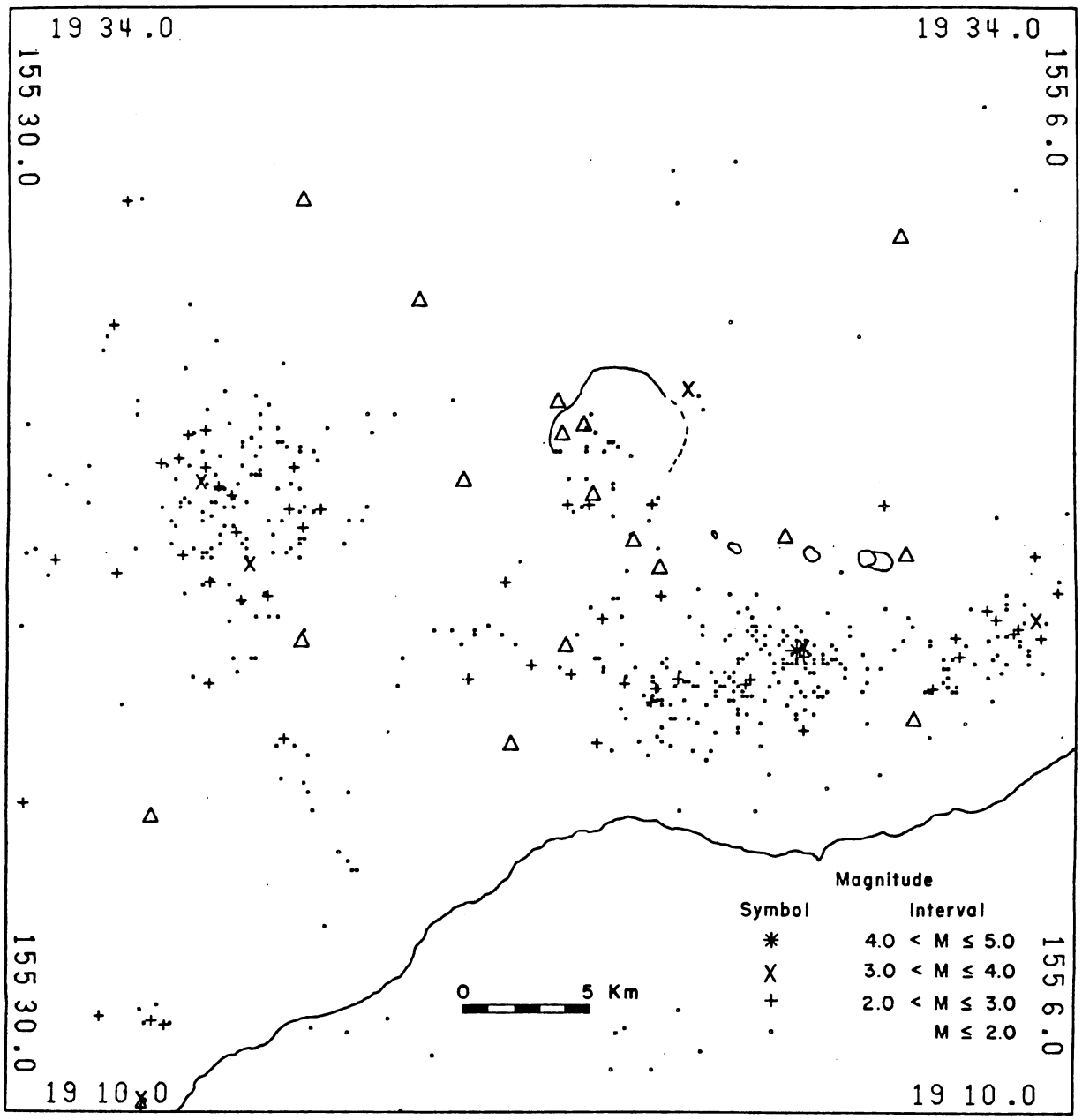

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

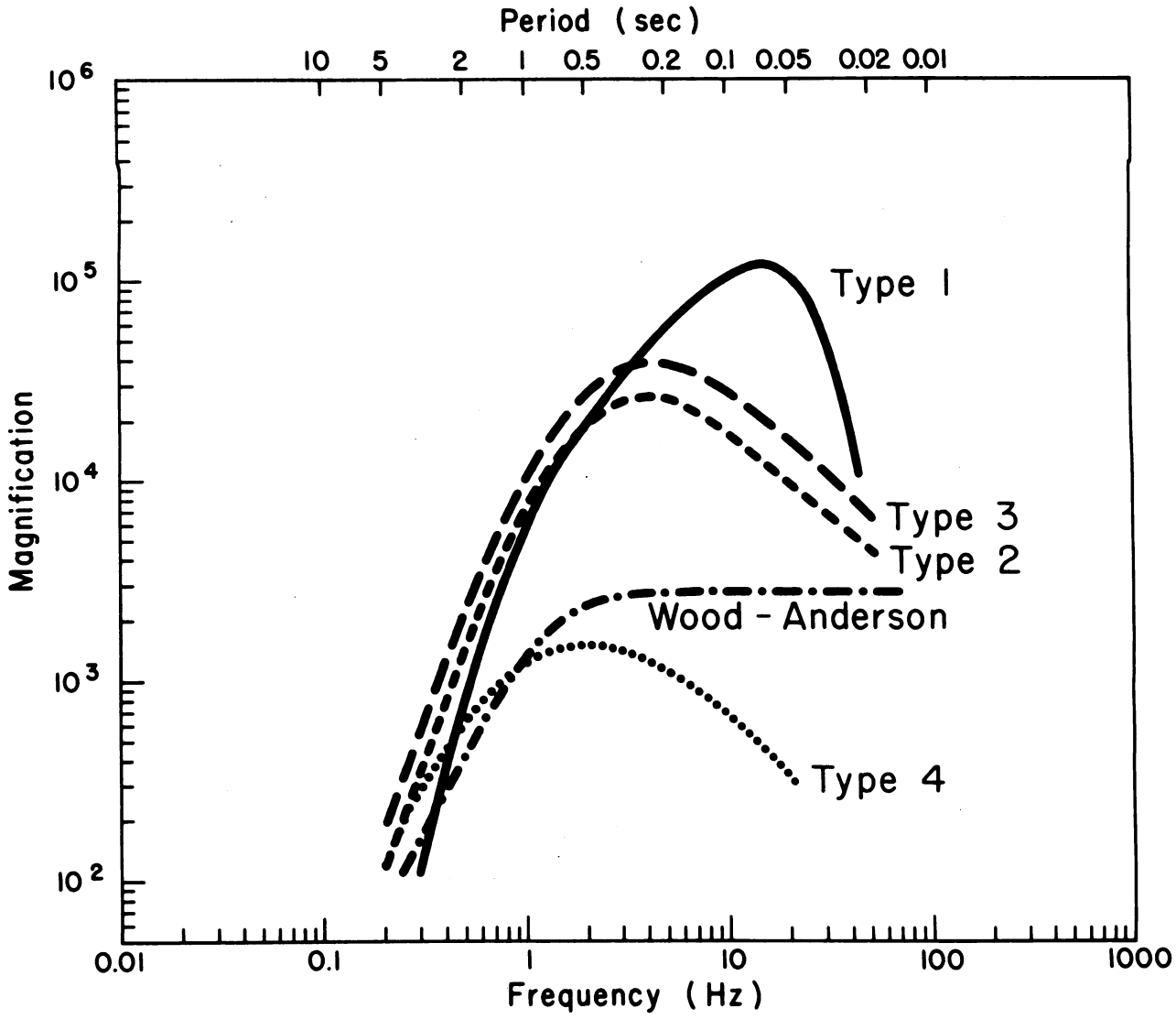

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitutde of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Essential data on each tiltmeter station are listed in Table 7, Summary 65. The field tilt bases were not measured during this quarter.

Table 6.--Tilt Coordinates at Uwekahuna,

July, August, and September 1972

Date	N-S	E-W	Date	N-S	E-W
July 2	728	330	Sept. 3	727	325
9	728	332	10	727	322
16	728	329	17	726	326
23	728	332	24	726	325
30	728	331			
Aug. 6	728	329			
13	728	334			
20	728	330			
27	728	327			

Reference Cited

Hamilton, R. M., B. E. Smith, J. C. Hall, and J. H. Healy, 1969, Summary of seismic activity in the Pahute Mesa area, Nevada Test Site, December 1968 - June 30, 1969: U.S. Atomic Energy Comm. (USGS-474-58): Springfield, Va., Clearinghouse for Federal Sci. and Tech. Inf., 63 p.

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SUMMARY 68

October, November, and December 1972

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California

1977

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HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 68

October, November, and December 1972

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SUMMARY OF ERUPTIVE ACTIVITY

Kilauea's eruption on the upper east-rift zone at Mauna Ulu and Alae continued steadily throughout this quarter. The active lava lake, approximately 80 by 150 m, in Mauna Ulu's summit crater continued to behave in essentially the same manner as in previous months. Its level fluctuated from 28 to 50 m below the crater rim, but generally remained at 30 to 33 m. Lava normally entered the lake at the east end and circulated toward the west, although sometimes the circulation pattern reversed or varied in complex ways. Lava fountains, 2 to 15 m high, commonly played on the lake surface, generally along the margins, but sometimes in the central portions. Two to four fountains at fixed locations on the lake operated nearly continuously, but at times the fountains shifted in location and number, with as many as a dozen simultaneously active. At other times the lake surface became completely stagnant.

The vent on the floor of Mauna Ulu's elongate trench, about 170 m east of the lava lake, continued to feed lava into large conduits that supplied both the lava lake in Mauna Ulu and the subsidiary vent at the northern edge of Alae. The Alae vent in turn fed a complex lava lake at its summit. From time to time, segments of Mauna Ulu's trench floor collapsed, and, at other times, new lava welled out to cover parts of the floor. Several persistent subsidiary vents between the principal vent and the lava lake were the sources of these intermittent flows. On occasion the flows ended as strong, noisy blasts of gas were emitted from the vents.

At the beginning of October, the vent and the lava lake at Alae fed a well integrated lava-tube system that extended all the way to the ocean, a distance of 13 km. Tube-fed lava entered the sea along a 2-km front between Kaena Point and Kealakomo. About mid-October a decline was noted in the eruptive rate of the Alae vent, and the volume of flow in the lava-tube system correspondingly diminished. The flow of lava into the ocean completely stopped about October 20, but dwindling flows continued through the lava tubes until early November when chilled, viscous lava gradually piled up within the tubes and plugged most passages. The flow into the ocean from August 23 to October 20 added about 0.18 km^2 of new land to the island.

The decline of vent activity at Alae was temporary, but during the lull the passage conducting lava from the vent southward into the lava lake became blocked and the lake crusted over. When more vigorous visible activity resumed in late October, the Alae vent frequently emitted strong fountains, including, at times, both dome fountains and arching fountains. Flows cascaded down the slopes of the northern part of Alae's growing lava shield and across the crusted surface of the lava lake. Lava from the vent also traveled below the crust of the lake through passageways to emerge at three different satellitic vents

along the southwestern to southeastern margin of the lake. Each of the three produced a satellitic lava shield, which progressively added bulk and breadth to the main Alae lava shield. Most of the lava erupted between late October and December contributed directly to the growth of the lava shield at Alae. In mid-December, however, flows advanced south-southwestward, and a tube system developed that by the end of the month reached almost to Poliokeawe Pali. Correspondingly the rate of growth of the Alae lava shield diminished as lava was conducted to places far from the vent.

SEISMIC SUMMARY

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit								
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
Oct. 1		2m	Low to moderate tremor from the upper east rift throughout the month		14	269	21	14	6	1	2	
2		3m			17	245	21	22	3	1		
3		?			?	?	?	?	?	?		Electrical storm
4					19?	119?	2?	?	2?	?		
5					?	?	?	?	?	?		
6	42m			2?	19	218	12?	34	?			
7					16	170	10?	27	?	1		
8					13	287	15?	53	?			
9					48	202?	?	36?	?			
10				2	13	326	9?	52		2		
11					8	488	14	35	2?			
12					16	672	22	28		1		
13	21m	5m			24	258?	12?	40	4	1		
14				1	41	132?	18	22	15	2	1	
15	?	20m?		1?	90?	242?	19?	12?	5?	2		
16				1	49	499	6?	21	9			
17		8m		1	56	753	23	25	10	3		
18	5m	10m		1	78	795	14	30	6?	1		
19		13m			61	685	17	27	10			
20		10m			28	410	16	11	9	1		
21				1	19	246	12	32	10	2		
22		15m?		1	51	216	18	13	9			
23	3m	17m		1	68	167	18	15	4	1		
24	10m?	10m?			69	206	17	11	6			
25					62	193	13	13	4	2		
26	35m	3m		3	107	265	26	27	7			
27					109	319	17	62	2	2		
28					64	295	26	55	3	2		
29				1	24	229	23	27	8	1	1	
30				2	26	228	12	18	9	1		
31				1	44	234	17	16	13			

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow						
Nov 1		10m	Low to moderate tremor from the upper east rift throughout the month		82	180	13	14	8		3	
2					63	260	11	41	8	2		
3					53	217	21	35	8	2		
4	47m?				38	246	12	42	3	2		
5					32	198	6	19	8	1		
6					53	264	23	24	2	2		
7		8m?			117	208	17	18	13			
8		6m			35	237	15	36	11		1	
9		4m			42	248	13	28	6			
10				1	39	349	19	26	11		1	
11		4m			54	321	6	46	6			
12		3m			31	187	5	29	9	1		
13		9m			25	200	14	27	4	9		
14				1	3	205	37	20	7		1	
15					28	297	11	19	6		2	
16					20	244	15	16	3	3		
17	3m				12	352	27	49	10	1		
18		6m			19	332	22	39	4	4		
19				2	29	297	14	30	11	1		
20				1	31	187	10	28	18	1		
21				2	25	237	7	15	2	2		
22				1	37	167	11	33	5		1	
23		7m			30	182	15	28	8	1		
24		5m		2	72	191	20	20	11			
25				1	106	176	24	29	10			
26		8m			117	137	17	11	8			
27		9m			147	174	12	28	14			
28		5m			166	146	7	18	7	2		
29		5m			221	169	6	15	7	2		
30	13m	15m			309	193	23	7	8			

Date (1972)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow						
Dec 1		9m	Moderate tremor from the upper east rift throughout the month	1	176	212	25	24	2			
2	120m?	4m			270	235	25	40	2	3		
3		8m			126	206	13	22	8	2		
4		8m		1	150	124	9	16	2			
5					174	225	16	20	2			
6	10m?	3m			198	229	17	13	1			
7		3m			37	222	25	29	5		2	
8	4m				18	248	25	18	10	1		
9				2	17	261	38	22	18	1		
10		3m		2	14	350	21	22	9		1	
11				3	14	222	30	22	7	2		
12		2m		3	25	174	13	17	4			
13					19	174	23	36	4	1	3	
14				2	11	183	31	18	5	6		
15				1	19	176	20	21	2	2		
16	8m				17	286	24	22	2		1	
17					32	360	12	18	4			
18	40m			1	53	154	15	19	12			
19		6m			55	108	26	15	9			
20				1	64	164	23	19	11			
21					54	184	19	19	6			
22		4m		3	42	156	31	24	9			
23		23m			48	133	21	34	2			
24		10m		1	97	117	20	23	2	1		
25		21m			63	128	16	19	2	1		
26		8m			177	98	13	21	2			
27		13m			37	146?	15	21	2			
28		3m			33	120	22	19	4			
29					21	159	11	19	2	2		
30	30m	9m			14	146	21	23	1		1	
31		4m			33	150	25	28	4	2		

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "*".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i^2 / NO \right]^{\frac{1}{2}}$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ DEPTH or 5 km
B	≥ 6	≤ 150°	≤ 2 x DEPTH or 10 km
C	≥ 6	≤ 225°	≤ 50 Km
	≥ 4	≤ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

Table 2. SUMMARY OF SEISMIC EVENTS

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	1	2	15 36.4	19-19.0	155-14.4?	8.1	1.9	23	145	5.7	0.07	0.5	0.4	0.12	B
	1	6	52 33.1	19-17.8	155-14.3	12.5	1.7	9	229	7.0	0.30	1.1	2.3	0.06	C
	1	6	53 28.4	19-18.1	155-18.0	29.0	0.9	19	145	1.1	0.16	0.9	1.6	0.10	B
	1	15	49 27.4	19-19.6	155-13.8	8.0*	0.5	15	162	6.4	0.09	0.7		0.11	C
	1	17	25 56.5	19-19.7	155-11.6	9.8	0.6	16	166	5.4	0.08	0.6	1.1	0.09	B
	1	18	9 4.6	19-26.1	155-50.7	4.4	0.9	11	249	26.5	0.32	2.0	0.8	0.08	C
	1	21	36 10.8	18-54.1	155- 8.6	19.3*	0.6	15	272	44.2	0.34	2.4		0.15	D
	2	2	34 52.6	19-20.0	155-11.4	7.8	0.4	16	162	4.6	0.12	1.0	0.5	0.14	C
	2	6	11 3.4	19-25.4	155-31.0	37.5	1.5	13	100	11.3	0.24	0.9	2.7	0.10	B
	2	6	16 30.3	19-30.7	155-52.9	26.6	1.5	23	195	20.0	0.23	1.1	2.7	0.10	C
	2	10	11 28.4	19-45.8	155-25.2	27.8	1.7	15	94	4.5	0.24	1.1	2.8	0.13	B
	2	11	24 53.0	19-20.4	155-12.2	8.0*	0.1	13	155	5.1	0.11	0.9		0.15	C
	2	15	4 16.1	19-45.9	155-23.3	26.4	1.0	9	163	14.6	0.19	1.3	2.3	0.08	C
	2	20	41 22.3	19-17.9	155-12.8?	7.7	2.5	24	162	8.3	0.12	0.7	0.6	0.15	C
	2	20	42 35.4	19-18.3	155-12.7	8.0*	0.3	8	232	8.6	0.28	1.8		0.14	D
	2	20	43 36.6	19-18.8	155-12.8	8.0*	0.4	7	222	8.0	0.25	1.9		0.13	C
	2	22	22 39.4	19-18.8	155-12.8	8.0*		10	220	8.0	0.25	1.6		0.17	C
	3	3	49 30.4	19-19.0	155-13.1	8.0*	0.4	8	214	7.8	0.17	1.2		0.11	C
	3	12	51 18.7	19-20.4	155-13.5	8.0*	0.0	10	150	6.8	0.10	0.9		0.15	C
	3	13	42 17.1	19- 9.0	155-38.8	3.3	0.2	7	189	11.3	0.19	1.5	1.6	0.09	C
	5	11	57 52.4	19-21.9	155-16.2	4.5	1.0	9	194	1.1	0.20	1.6	1.1	0.16	C
	5	15	47 51.9	20-11.9	155-51.6	32.7	2.4	12	312	11.5	1.80	9.5	11.1	0.13	D
	6	1	4 21.2	19-18.2	155-16.1	1.0	1.4	13	267	9.7	0.45	2.1	1.6	0.21	D
	6	3	41 38.6	19-10.8	155-15.2	40.0	2.1	15	194	22.7	0.28	1.5	2.7	0.14	C
	6	8	8 52.4	19-30.8	155-42.7	8.2		7	164	12.1	0.13	1.3	1.9	0.09	C
	6	22	53 43.1	19-26.1	155-24.8	8.0*	1.9	8	97	7.4	0.05	0.5		0.07	B
	8	5	21 28.1	20- 2.7	155-22.9	9.8	3.2	18	216	17.6	0.26	1.4	1.8	0.14	C
	8	8	55 27.6	20- 2.5	155-23.0	9.4	2.3	13	216	17.4	0.26	1.6	1.6	0.13	C
	8	9	5 8.4	19-17.8	155- 6.6?	0.0	1.9	14	216	9.7	7.37	1.9	13.5	0.18	C
	8	10	2 0.8	19-14.5	154-59.0?	34.2		12	251	23.5	0.53	2.9	3.6	0.11	D
	8	15	57 30.5	19-20.1	155-25.3?	1.9	2.1	14	118	7.2	2.11	1.4	7.7	0.31	C
	8	21	44 5.7	19-22.7	155-25.4?	0.0	2.4	14	118	12.2	5.08	0.8	9.6	0.19	C
	8	23	40 9.3	19-16.5	155- 8.4?	0.0	2.4	12	218	17.1	9.23	2.6	16.9	0.28	C
	9	0	54 54.7	19-18.3	155-15.0	5.4	1.7	11	209	7.7	0.34	1.9	1.4	0.17	C
	9	1	0 22.8	19-22.5	155-25.3	3.8	1.7	14	102	11.4	0.10	0.9	1.3	0.20	C
	9	8	14 30.3	19-21.8	155-24.5?	0.0	1.5	9	154	12.5	7.40	1.0	14.1	0.12	C
	9	11	16 1.1	19-20.2	155-11.4?	9.8*	0.6	6	260	4.4	0.12	1.5		0.11	D
	9	18	22 37.4	19-12.5	156- 0.3	21.2		7	330	15.5	0.93	8.4	8.2	0.17	D
	10	4	7 55.7	19-21.4	155-13.3	8.0*	1.0	9	215	4.9	0.18	1.6		0.10	C
	10	7	11 23.7	19-60.0	155-24.7	11.0	2.0	7	216	14.2	0.28	2.6	2.0	0.11	C
	10	10	55 5.9	19-21.7	155-14.4	29.0	3.0	16	141	5.4	0.19	1.2	2.0	0.16	B
	10	16	32 23.9	19-20.2	155-12.6	3.5	1.9	15	167	5.9	0.28	1.7	1.9	0.28	C
	10	18	49 28.1	19-21.5	155-12.8	6.0	1.6	12	175	5.3	0.23	1.9	0.9	0.21	C
	10	20	14 58.8	19-21.4	155-25.7	3.0	2.1	14	152	14.4	0.10	0.7	1.0	0.15	C
	10	20	21 27.8	19-20.5	155- 8.0?	9.2	2.0	9	262	4.4	1.15	7.3	4.3	0.16	D
	10	20	32 34.8	19-20.8	155-13.2?	8.0*	1.7	9	232	5.6	0.44	3.0		0.12	D
	11	4	25 18.5	19-37.8	155-12.4	8.0*		9	160	23.8	0.06	0.5		0.05	C
	11	20	37 59.2	19-25.8	155-27.4?	8.2	2.9	17	113	10.3	0.12	0.8	0.8	0.15	C
	11	21	32 9.9	19-23.6	155-26.8?	6.7	2.4	14	132	12.5	0.10	0.8	0.9	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 12	7	40	27.8	19-19.3	155-15.5	6.3	2.4	13	212	5.7	0.29	1.7	1.0	0.16	C
12	16	16	16.5	19-19.1	155-25.2	7.1	2.0	12	170	12.8	0.20	1.1	1.2	0.14	C
12	20	16	16.5	19-22.3	155-25.9?	6.9	1.8	15	151	11.2	0.12	1.0	2.6	0.15	C
12	21	14	16.5	19-18.4	155- 6.9?	0.0	2.3	17	229	8.6	5.22	1.7	9.6	0.19	D
13	7	34	47.7	19-19.9	155-13.9	6.5	2.6	17	197	5.2	0.15	1.0	0.6	0.18	C
13	14	27	53.6	20- 0.6	155-24.7	9.2	2.0	8	218	15.1	0.31	2.4	2.1	0.11	C
13	17	27	52.7	19-17.2	155- 7.0?	0.0	0.9	15	217	10.4	5.86	1.6	10.8	0.21	C
13	18	19	46.0	19-27.3	155-24.8?	6.9	1.4	15	91	5.4	0.09	0.8	1.9	0.19	B
13	22	44	12.3	19- 8.7	155-29.6	27.0	1.2	17	159	3.4	0.22	1.3	2.4	0.15	C
14	8	4	28.1	19- 8.2	155-24.1	34.3		7	261	7.1	0.87	3.4	6.9	0.05	D
14	8	18	29.1	19-20.0	155-14.7	9.8	0.7	16	164	4.7	0.10	1.0	1.0	0.16	C
14	19	57	0.5	19-19.3	155-12.3	8.0*	0.9	9	236	6.7	0.36	2.3		0.17	D
14	21	52	13.1	19-17.3	155-14.6	11.8	1.1	9	245	7.0	0.30	1.3	2.4	0.06	C
14	23	17	18.8	19-36.3	155-19.2	8.0*	0.5	7	261	13.9	0.53	3.0		0.12	D
15	0	26	28.4	19-20.9	155-23.6	7.6	2.3	14	162	1.4	0.13	1.1	0.6	0.16	C
16	1	14	47.3	19-33.7	156-13.9	1.9*	1.2	12	266	43.5	0.48	3.2		0.18	D
16	6	59	18.8	19-22.8	155-24.8?	7.5	0.6	9	158	5.4	0.13	1.0	0.9	0.14	C
16	8	37	28.1	19-19.9	155-14.6	6.5	1.5	20	167	5.0	0.14	1.0	0.7	0.22	C
16	10	42	51.8	19-30.8	155-42.3	7.3	1.1	11	161	11.5	0.19	1.1	1.1	0.14	C
16	10	58	20.6	19-25.4	155-28.9	6.8	0.6	11	110	12.8	0.07	0.8	0.9	0.08	B
16	16	4	15.0	19-54.9	155-29.6	39.4	1.5	13	270	15.2	0.78	3.5	5.7	0.09	D
16	17	39	57.2	19-22.0	155- 4.7?	0.0	1.1	15	247	9.1	1.12	3.5	20.2	0.27	D
16	19	34	33.8	19-18.9	155-15.7	10.9	0.4	10	149	1.5	0.14	0.6	1.2	0.05	B
16	23	43	29.2	19-22.2	155-13.5	3.1	9.9	8	190	3.6	0.08	0.4	0.9	0.04	B
17	2	2	57.1	19-24.0	155-23.9	0.5	0.2	14	124	7.1	0.66	0.8	1.2	0.18	B
17	5	9	17.7	19-17.3	155-14.9	9.6	0.7	11	236	6.7	0.29	1.6	2.5	0.11	C
17	5	9	37.4	19-16.1	155-14.3	8.0*	0.6	10	259	8.4	0.59	3.5		0.24	D
17	10	42	19.8	19-24.3	155-16.8?	7.9		7	76	1.1	0.29	0.8	11.9	0.21	C
17	13	5	13.1	19-24.8	155-24.1	8.0*		9	199	8.0	0.08	0.5		0.07	C
17	14	50	18.5	19-19.8	155-16.9	9.5	1.3	7	204	1.1	0.13	0.6	0.9	0.02	B
17	15	50	9.5	19-23.3	155-28.6	5.4	0.5	14	87	10.9	0.10	0.8	1.1	0.19	C
18	3	34	57.9	19-20.9	155-11.6?	0.6		9	192	3.8	0.92	1.4	1.7	0.16	C
18	7	1	16.1	19-20.3	155- 4.6?	0.0	1.4	14	209	9.7	5.90	1.6	11.0	0.20	C
18	7	22	3.9	19-20.4	155-12.5	6.0	1.5	20	182	3.8	0.14	1.0	0.7	0.21	C
18	11	17	58.1	19-24.2	155-23.8	4.0	1.3	12	192	7.2	0.19	1.1	1.9	0.16	C
18	13	52	37.4	19-26.8	155-45.4	6.6	1.8	11	223	17.2	0.15	1.1	0.7	0.07	C
18	14	15	35.5	19-19.0	155-15.7	11.2	1.7	7	218	3.6	0.12	0.6	1.0	0.03	B
18	14	41	31.0	19-27.8	155-14.4?	8.0*	1.4	7	323	4.8	0.60	5.5		0.44	D
18	15	1	34.6	19-19.7	155-15.7	30.2	2.4	20	161	3.1	0.18	1.1	1.6	0.12	C
18	16	14	8.4	19-25.9	155-39.5	8.0*		7	299	8.7	0.92	4.9		0.07	D
18	19	59	56.6	19-15.7	155-35.5	3.6	1.8	13	157	3.2	0.14	1.7	1.3	0.19	C
18	20	28	12.5	19-22.1	155- 8.8	31.3	0.8	14	135	10.9	0.30	1.3	2.7	0.10	B
18	22	9	47.4	19-19.6	155- 8.5?	7.3	0.3	14	186	5.1	0.12	1.0	0.5	0.15	C
18	22	36	8.2	19-24.0	155-15.7	1.7	0.8	7	127	2.5	0.08	0.4	0.4	0.09	B
18	22	56	39.1	19-32.1	155-58.6?	41.6	1.6	17	292	31.8	0.16	1.8	1.7	0.07	C
18	23	4	45.7	19-20.1	155- 8.6	8.2	0.1	7	164	4.1	0.08	0.8	1.5	0.06	B
18	23	35	22.7	19-24.8	155-16.9	0.6	0.1	8	87	0.2	0.09	0.3	0.2	0.09	A
19	4	14	59.9	19-30.1	155-33.0?	3.1	1.2	12	313	16.9	3.40	7.4	17.3	0.13	D
19	6	20	49.9	19-10.5	155-20.4	42.5	1.4	13	178	13.3	0.28	1.2	2.6	0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 19	6	23	44.8	19-11.3	155-20.7	45.1	2.8	20	173	12.8	0.20	0.9	2.0	0.08	B
19	7	32	1.4	19-18.8	155-14.0	8.0*		12	209	6.4	0.17	1.2		0.15	C
19	7	40	49.4	19-22.1	155-27.4	3.0		12	128	8.0	0.17	1.2	3.3	0.22	C
19	10	43	44.2	19-18.9	155-13.3	5.5	1.2	17	152	7.5	0.14	1.0	0.9	0.22	C
20	0	42	3.2	20- 1.7	155-22.9	10.1	2.1	18	213	15.8	0.24	1.4	1.6	0.16	C
20	5	6	57.7	19-31.8	156- 9.6	14.5*	1.3	20	252	37.9	0.26	1.8		0.17	D
20	5	9	19.8	19-20.1	155- 8.4	8.0	0.1	11	166	4.5	0.13	1.2	2.4	0.11	C
20	6	54	27.0	19-20.3	155-11.8	9.7	0.3	11	157	4.2	0.11	0.9	1.5	0.10	B
20	8	32	41.5	19-22.5	155-25.1?	8.2	0.4	16	93	5.4	0.08	0.6	0.5	0.13	B
20	10	0	11.6	19-22.1	155-25.6	6.3	1.0	14	70	5.4	0.10	0.8	0.8	0.17	B
20	17	37	20.6	19-22.9	155-49.4	8.0	0.6	10	221	13.6	0.17	1.4	1.4	0.07	C
20	18	59	15.1	19-20.0	155- 8.6	5.5	2.5	25	149	4.3	0.15	1.0	0.8	0.26	C
20	22	15	26.4	19-27.1	155-27.5	2.6	1.1	17	71	8.9	0.08	0.5	0.9	0.13	B
21	2	13	25.3	19-21.9	155-12.7	4.8	1.0	13	133	1.1	0.12	0.6	1.4	0.14	B
21	5	6	45.2	19-18.6	155-14.9	9.6	0.3	11	206	5.2	0.28	1.4	2.5	0.11	C
21	5	42	9.4	19-13.5	155-35.3?	9.4	1.2	11	82	4.0	0.17	1.2	1.4	0.22	B
21	12	4	0.1	19-24.2	155-15.7	2.6	1.3	7	117	2.4	0.16	0.5	3.6	0.07	B
21	18	19	32.9	19-19.4	155-10.3	8.0*	0.8	11	174	5.0	0.09	0.7		0.10	C
21	21	21	0.4	19-20.1	155-15.9	8.3	0.9	13	160	2.6	0.14	1.1	1.6	0.14	C
21	21	43	8.8	19-18.5	155-12.5	8.0*	0.1	6	230	8.0	0.26	1.8		0.08	D
22	3	1	41.7	19-28.5	155-16.3?	8.0*	1.3	8	299	5.6	0.40	3.7		0.39	D
22	5	33	49.0	19- 7.8	155-12.0	13.7*	1.0	11	284	22.1	0.49	3.3		0.18	D
22	8	10	59.4	19-20.4	155- 8.4	4.0	1.3	19	161	4.1	0.15	1.1	1.1	0.22	C
22	19	20	34.6	19-19.3	155-11.4	8.0*	0.3	12	226	5.8	0.16	1.1		0.08	D
23	0	24	30.1	19-24.0	155-17.0	7.2	1.1	12	72	1.1	0.11	0.6	0.7	0.10	A
23	13	28	34.2	19-21.4	155- 6.9	8.0*	0.3	9	152	7.5	0.17	1.7		0.22	C
23	16	44	33.8	19-22.0	155-25.0	10.8	0.9	11	134	4.5	0.12	0.8	1.9	0.10	B
23	22	3	49.3	19-22.0	155-25.8	5.9	1.7	22	61	5.5	0.09	0.6	0.7	0.18	B
24	6	22	18.5	19-18.4	155-15.1	11.9	0.3	8	209	5.1	0.18	0.7	1.4	0.04	B
24	7	23	42.0	19- 9.8	155-23.5	33.1	0.8	16	202	7.6	0.37	1.6	3.2	0.11	C
24	11	53	37.0	19-13.2	155-27.5	4.2	0.7	10	124	6.9	0.10	1.0	1.4	0.16	B
24	13	0	37.4	19-22.5	155-24.4	6.9	1.9	22	51	4.6	0.07	0.6	0.6	0.19	B
24	21	52	10.5	19-20.6	155- 7.5	8.0*	0.5	12	156	4.9	0.14	1.3		0.19	C
25	3	51	54.4	19-19.7	155-12.7	8.0*	0.1	9	204	6.7	0.31	2.5		0.21	C
25	5	33	2.4	19-18.7	155-11.6	3.5	2.1	22	179	6.9	0.19	1.0	1.2	0.27	C
25	7	28	12.6	19-22.6	155-26.7	2.6	1.7	16	75	7.4	0.11	0.8	1.6	0.22	C
26	2	6	14.5	19-20.5	155-12.7?	4.3	0.9	14	186	5.8	0.24	1.4	1.5	0.26	C
26	5	0	54.7	19-21.6	155- 8.9	11.8	0.9	12	149	11.0	0.11	1.0	1.1	0.09	B
26	12	32	47.4	19-19.8	155-13.7	8.0*	-0.0	9	160	6.2	0.08	0.8		0.10	C
26	17	49	7.0	19- 7.8	155-33.0	5.6	2.3	12	145	9.6	0.13	1.0	1.1	0.14	B
26	20	15	56.9	19-23.9	155-17.4	6.8	1.0	17	46	1.2	0.08	0.7	0.6	0.19	B
26	23	8	49.3	19-19.5	155- 6.9	8.0*	0.6	14	178	6.9	0.17	1.4		0.18	C
27	3	16	24.4	19-24.0	155-28.7	7.0	1.1	19	57	11.8	0.08	0.6	0.6	0.18	B
27	3	18	58.4	19-20.6	155-20.1	1.7*		9	111	4.8	0.06	0.4		0.09	B
27	4	37	23.9	19-21.6	155- 7.1	7.8	3.0	20	177	5.0	0.14	1.0	0.6	0.15	C
28	1	2	24.1	19-21.0	155-11.5?	8.0	1.7	17	181	3.3	0.09	0.7	0.4	0.11	C
28	1	35	36.5	19-22.3	155-24.3?	7.4	2.0	20	51	4.3	0.07	0.6	0.7	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	28	2	25 3.0	19-16.5	155- 4.0	33.4		16	266	14.5	0.39	2.2	2.4	0.08	C
	28	6	5 57.4	19-22.2	155- 9.1?	7.1	1.8	18	179	1.4	0.12	1.1	1.4	0.15	C
	28	9	27 43.4	19-25.5	155-25.2?	7.4	1.7	19	82	8.6	0.09	0.7	0.7	0.15	B
	28	10	2 42.1	19-15.2	155-18.6	8.3		10	250	5.1	0.44	2.6	2.8	0.13	D
	28	18	29 24.7	19-28.5	155-20.4	8.5		15	97	1.8	0.06	0.7	0.8	0.10	A
	29	5	44 16.7	19-16.3	155-49.4	4.3	2.7	17	140	5.0	0.14	1.4	1.3	0.18	B
	29	15	35 24.4	19-22.6	155-23.4?	7.1	0.8	15	122	4.5	0.09	0.7	1.5	0.16	B
	29	18	55 56.3	19-20.7	155-12.4	6.1		9	184	5.2	0.56	1.4	4.3	0.13	C
	29	21	25 59.8	19-21.1	155- 8.1	9.2	0.3	8	229	3.6	0.22	1.6	1.6	0.09	C
	30	0	46 31.0	19-19.9	155-46.5	5.6	0.9	11	172	12.5	0.12	1.0	1.1	0.10	B
	30	2	46 48.1	19-25.6	155-25.3	8.0*		11	197	8.6	0.12	0.8		0.10	C
	30	3	52 0.9	19-24.6	155-14.5	25.3	1.1	15	90	0.4	0.21	1.1	2.0	0.11	B
	30	15	11 37.1	19-22.0	155-25.3	6.1	1.1	18	68	4.8	0.10	0.8	0.8	0.22	B
	31	1	0 31.9	19-26.1	155-27.3?	8.1	2.8	20	69	9.8	0.11	0.7	0.7	0.17	B
	31	1	46 2.9	19-17.6	155-23.7	8.0*	-0.1	11	120	4.8	0.14	1.4		0.26	B
	31	2	43 36.2	19-19.5	155-17.9	28.4	1.0	13	131	1.4	0.19	1.1	1.8	0.10	B
	31	4	35 42.7	19-19.0	155-13.8	8.0*	0.5	10	206	6.6	0.18	1.3		0.14	C
	31	5	26 59.0	19-19.4	155-15.9	9.9		8	225	2.9	0.28	1.4	1.8	0.06	C
	31	8	55 52.5	19- 9.8	155-38.4	5.1	2.5	17	107	9.6	0.17	1.2	1.1	0.23	C
	31	11	43 54.9	19-22.3	155-22.9	7.4	0.6	8	116	3.8	0.10	0.8	2.3	0.11	B
	31	15	52 40.3	19-23.7	155-26.1	8.0*	1.2	17	88	8.1	0.07	0.6		0.14	C
	31	17	33 58.6	19-49.2	155-32.1	27.3	1.6	20	133	9.2	0.14	0.9	2.1	0.10	B
	31	17	49 4.0	19-14.2	155-21.4	27.6	1.9	19	179	8.4	0.19	0.9	1.8	0.10	B
	31	22	2 35.8	19-18.6	155-13.4	5.9	1.2	18	199	7.2	0.17	1.0	0.8	0.18	C
	31	23	24 43.2	19-20.4	155- 8.7	5.9	1.4	17	195	3.6	0.22	1.5	1.0	0.20	C
NOV	1	4	39 6.7	19-22.1	155-29.5?	3.2	1.4	17	66	11.5	1.12	1.0	8.5	0.22	C
	1	4	54 2.6	19-24.3	155-17.6	8.3	1.2	8	142	1.6	0.14	0.7	1.3	0.06	B
	1	9	21 23.2	19-20.2	155-11.3	9.9		11	215	4.2	0.24	1.2	2.3	0.10	C
	1	11	6 30.1	19-24.2	155-17.3	13.8	1.1	9	80	2.3	0.06	0.5	0.8	0.05	A
	1	12	18 30.2	19-20.6	155-12.7	6.1	2.4	21	173	3.5	0.12	0.9	0.5	0.18	C
	1	12	42 25.9	19-22.5	155- 4.1	8.0*		7	257	10.2	0.27	1.9		0.04	D
	1	14	10 17.8	19-22.1	155-13.4	2.3		6	177	1.5	0.16	0.6	1.8	0.02	B
	1	14	25 32.0	19-10.7	155-32.6	7.0	2.5	19	106	8.6	0.13	1.0	0.8	0.19	C
	1	17	0 12.7	19-20.2	155-13.1	7.5	0.4	11	204	4.2	0.15	1.0	0.6	0.11	C
	1	21	4 30.9	18-54.2	155-17.2	9.7	2.8	21	262	33.9	0.67	3.3	3.2	0.16	D
	2	0	46 44.8	18-54.5	155-16.6	8.4	1.1	12	280	34.0	0.35	2.1	2.2	0.11	C
	2	4	4 5.0	19-31.9	155-45.0?	8.0	0.9	6	300	34.2	0.30	1.4	2.0	0.05	C
	2	7	2 34.8	19-20.5	155-13.8	7.7	0.3	10	212	4.2	0.20	1.2	0.7	0.11	C
	2	16	18 19.3	19-20.0	155- 7.3?	0.0	2.5	20	241	5.9	7.55	2.2	13.7	0.23	D
	2	17	25 32.9	19-39.3	156-25.5	8.0*	3.3	20	279	72.3	0.60	3.8		0.15	D
	2	20	24 8.1	19-20.9	155- 9.7	7.7	2.1	17	188	2.2	0.08	0.7	0.8	0.09	C
	2	21	13 32.5	19-20.8	155-11.6?	5.6	1.7	12	194	3.9	0.32	1.9	1.8	0.26	C
	2	22	30 41.0	19-22.4	155-23.6?	2.7	1.6	15	111	4.1	0.12	0.9	2.1	0.23	B
	3	6	34 34.9	19-21.0	155-12.9	6.3	1.9	18	172	2.8	0.15	1.2	0.7	0.24	C
	3	10	19 37.5	19-19.8	155-11.9	8.0*		11	213	5.5	0.14	1.0		0.10	C
	3	13	16 28.0	19-10.8	155-27.9	29.6		15	126	2.5	0.27	1.5	2.8	0.14	B
	3	17	34 37.8	19-18.0	155-13.0	8.0*		9	233	8.7	0.28	1.9		0.14	D
	3	17	35 51.7	19-23.6	155-26.3	8.1	2.1	17	72	8.2	0.10	0.5	0.7	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 3	17	47	51.0	19-18.2	155-13.0	8.0*	1.7	10	230	8.4	0.24	1.6		0.13	D
3	23	47	33.0	19-20.8	155-19.2	3.7	1.6	12	92	3.4	0.04	0.3	0.6	0.06	A
4	3	56	14.9	19-10.5	155-27.5	31.5		21	139	2.0	0.23	1.3	2.4	0.14	B
4	4	24	45.8	19-23.3	155-26.7	8.0*		8	253	8.3	0.31	1.9		0.09	D
4	11	52	1.8	19-41.0	156- 8.1	10.4	3.9	26	206	60.2	0.33	1.6	4.9	0.17	C
4	14	36	18.5	19-19.7	155-11.9	4.1	1.7	15	216	5.3	0.28	1.5	1.5	0.25	C
4	16	58	11.4	19-19.5	155-11.9	6.1	1.6	13	220	5.6	0.31	1.9	1.1	0.22	C
4	20	0	37.3	19-21.1	155- 4.8?	0.0	2.0	14	203	9.1	5.96	1.7	11.2	0.19	C
4	22	23	29.1	19-22.0	155-27.3	7.7	1.9	14	79	7.8	0.09	0.7	0.7	0.11	B
5	4	12	3.4	18-53.6	155-26.3?	21.9*		20	262	25.8	0.34	2.6		0.15	D
5	5	45	21.0	19-17.6	155- 6.0	30.5*		13	286	19.4	0.35	3.0		0.09	D
5	11	15	19.8	19-20.5	155-12.3	9.8	0.1	12	191	3.6	0.29	1.3	2.4	0.10	C
6	6	44	22.8	19-20.3	155-12.7	5.9	1.4	21	168	4.0	0.13	1.0	0.7	0.22	C
6	9	56	54.8	19-21.2	155-30.0?	7.2	2.0	13	158	10.6	0.19	1.6	1.4	0.17	C
6	11	15	2.1	19-24.9	155-28.8	4.9		13	116	13.0	0.11	0.8	1.3	0.14	C
6	14	54	13.1	19-20.4	155-14.1	6.5		14	172	4.8	0.18	1.1	1.0	0.18	C
6	19	32	3.3	19-20.6	155-12.7	5.8	1.9	21	166	3.4	0.14	0.9	0.7	0.21	C
6	21	1	47.9	19-24.5	155-26.7?	0.0	1.8	12	211	9.9	5.52	1.2	29.6	0.18	C
7	1	53	34.1	19-17.1	155-13.0	8.0*		10	249	9.6	0.32	1.9		0.11	D
7	7	0	1.9	19-20.8	155-12.4	8.0*		8	181	5.1	0.07	0.6		0.05	C
7	9	44	0.2	19-24.1	155-29.1	4.5	1.4	17	58	12.5	0.10	0.8	1.1	0.22	C
7	11	35	52.6	19-26.4	155-24.7	6.0	1.6	19	68	6.8	0.07	0.6	0.7	0.18	B
7	12	9	2.6	19-19.7	155-11.3	8.1		8	240	5.7	0.12	0.8	1.0	0.03	C
7	13	53	5.4	19-20.8	155-28.2	4.0	2.1	18	128	8.7	0.11	0.8	1.0	0.20	C
7	14	6	0.3	19-20.1	155-17.0	6.7	0.3	7	190	4.7	0.22	1.0	1.2	0.07	C
7	20	19	33.6	18-51.5	155-16.3	11.7	0.8	12	296	48.9	0.42	7.0	15.3	0.11	D
7	22	38	33.8	19-24.1	155-17.7	3.9		6	125	1.8	0.19	0.7	1.7	0.05	B
8	1	3	2.6	19-24.5	155-29.2	7.0	2.1	22	58	13.0	0.07	0.5	0.5	0.15	B
8	1	4	10.7	19-24.7	155-29.6	4.2	1.2	15	149	13.9	0.14	0.9	1.2	0.17	C
8	1	24	34.1	19-24.3	155-29.8	4.1	1.6	10	61	13.7	0.11	0.8	1.3	0.19	C
8	3	32	37.6	19-23.3	155-25.9?	0.1	1.8	17	124	7.3	8.36	1.0	15.9	0.25	C
8	7	37	51.4	19-24.0	155- 4.0?	20.8*	1.6	8	334	10.9	1.25	12.1		0.31	D
8	11	4	33.5	19-22.4	155-23.4	4.6	1.2	9	181	4.0	0.18	1.1	1.1	0.14	C
8	18	41	38.3	19-31.4	155-50.2	5.6	2.3	12	225	25.3	0.87	1.4	6.0	0.12	C
8	20	46	31.5	19-31.6	155-42.7	8.8	1.9	10	241	12.5	0.17	1.0	0.8	0.06	C
8	22	17	11.6	19-53.9	155-18.9	8.0*	2.3	8	324	45.1	1.06	7.8		0.28	D
9	1	30	49.5	19-59.5	155-38.0?	22.3	1.9	11	155	21.5	0.91	3.1	9.2	0.33	D
9	1	41	6.6	19-19.6	155-12.2	8.0*	0.9	11	167	6.1	0.09	0.7		0.11	C
9	2	7	44.2	19-13.9	155-26.6?	0.0	1.4	15	133	8.4	5.12	0.9	9.8	0.17	C
9	2	46	45.6	19-23.8	155-26.4	5.8	1.4	16	119	8.5	0.11	0.7	1.2	0.18	B
9	6	44	57.4	19-18.6	155- 8.6	8.0*	1.4	11	189	6.7	0.21	1.8		0.20	C
9	8	57	6.6	19-17.2	155-12.5?	7.9	1.6	21	169	9.7	0.13	0.8	0.5	0.15	C
9	14	42	53.7	19-31.2	155-58.3	8.2	2.7	11	263	29.9	0.43	2.7	2.9	0.19	D
9	19	59	32.9	19-20.6	155-13.1	8.0*		8	180	5.9	0.09	0.7		0.07	C
10	0	15	10.1	19-19.4	155-13.8	8.0*	1.2	14	199	6.5	0.11	0.8		0.10	C
10	0	31	7.5	19-18.8	155-13.2	8.0*	1.6	9	216	7.7	0.17	1.1		0.10	C
10	0	33	20.1	19-19.4	155-13.6	8.0*	1.4	8	200	6.7	0.13	1.0		0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 10	3	40	23.4	19-19.6	155-14.3	6.2	1.4	19	190	5.6	0.14	0.9	0.6	0.19	C
10	4	9	37.7	19-20.5	155-13.3	8.0*		9	179	5.8	0.09	0.7		0.09	C
10	7	25	22.2	19-21.6	155-27.0?	8.1	1.3	17	102	6.9	0.12	0.8	0.8	0.16	B
10	8	22	26.3	19-24.0	155-16.7	13.1	2.0	16	50	1.2	0.03	0.3	0.2	0.05	A
10	12	0	52.7	19-19.2	155- 8.5	4.1	1.8	12	181	5.8	0.18	1.3	1.3	0.19	C
10	15	0	58.7	19-24.4	155-23.6	7.8	1.8	19	70	7.0	0.06	0.5	0.4	0.12	B
10	17	13	46.9	19-21.3	155-24.5	7.2	2.1	23	60	3.0	0.07	0.6	0.5	0.19	B
10	19	54	33.3	19-23.2	155-26.6?	8.4	1.3	16	73	8.1	0.12	0.7	0.9	0.13	B
11	1	32	55.3	19-18.6	155-13.1	8.0*	1.3	11	221	8.0	0.22	1.4		0.12	C
11	6	7	30.8	19-24.1	155-23.1	6.3	0.9	14	167	6.0	0.12	0.8	0.9	0.14	C
11	7	23	9.5	19-19.9	155-13.1?	8.7	1.3	10	239	4.7	0.41	2.1	2.9	0.11	C
11	12	34	37.4	19-24.1	155-15.7?	1.4	1.0	9	123	2.5	0.10	0.6	0.4	0.11	B
11	12	58	58.9	19-23.7	155-36.5?	8.5	1.3	13	122	10.3	0.11	0.9	1.1	0.14	B
11	14	3	39.4	19-18.4	155-13.2	8.0*	1.5	11	224	8.0	0.19	1.3		0.12	C
11	22	34	49.4	19-22.8	155-24.1?	7.5	1.4	14	114	4.9	0.10	1.0	2.1	0.18	B
12	0	23	44.6	19-19.0	155-16.7	6.8	1.1	13	154	2.4	0.11	0.8	0.6	0.13	C
12	4	27	5.9	19-30.1	155-27.4	6.4	2.1	20	96	7.3	0.09	0.6	0.6	0.15	C
12	6	39	15.9	19-19.2	155-15.6	10.1	1.7	8	234	3.5	0.10	0.5	0.6	0.02	C
12	18	33	38.0	19-22.7	155-22.8	6.9	1.3	12	159	4.6	0.10	0.7	0.8	0.12	C
12	19	0	20.6	19-21.0	155- 8.5	4.3	1.8	15	150	3.0	0.13	1.0	0.9	0.18	C
13	6	15	23.6	19-21.1	155-25.2	7.6	2.2	19	96	3.8	0.08	0.7	0.6	0.16	B
13	17	8	25.6	19-19.5	155-25.9	2.5	2.0	15	110	4.7	0.13	0.9	1.4	0.19	B
14	0	53	57.5	19-21.8	155-23.2	8.1		8	178	2.9	0.15	1.1	0.8	0.10	C
14	8	57	9.1	19-19.1	155-11.5	3.2		17	175	6.4	0.21	1.3	1.6	0.29	C
14	11	2	12.9	19-20.3	155- 8.5	4.6		14	162	8.3	0.16	1.2	1.6	0.20	C
14	16	47	16.6	19-19.2	155-18.5	11.0		17	101	2.3	0.07	0.7	0.6	0.13	B
14	17	18	30.7	19-22.3	155-23.1	8.5	1.8	8	174	3.9	0.23	1.3	2.6	0.10	C
14	18	3	13.4	19-19.4	155-16.6	9.9	2.0	7	220	1.9	0.22	1.0	1.5	0.04	B
15	1	48	46.1	19-20.3	155-16.2	9.6	1.7	8	202	2.1	0.14	0.7	1.1	0.04	B
15	6	59	28.5	19-24.2	155-23.9	8.0*	2.0	10	195	7.5	0.10	0.7		0.08	C
15	15	27	27.2	19-22.1	155-12.9	3.1		8	155	0.9	0.13	0.7	1.4	0.07	B
15	15	48	21.6	19-18.7	155-20.0	6.1	1.3	11	173	2.7	0.10	0.7	0.5	0.09	B
15	17	8	9.8	19-19.4	155-10.9	4.7	1.5	17	173	5.3	0.15	1.0	0.9	0.21	C
15	17	23	15.3	19- 9.5	155-36.4?	0.0	2.8	16	107	15.1	6.70	1.2	12.6	0.25	C
15	18	42	58.9	19-20.4	155- 7.4?	8.0*	1.5	15	161	5.3	0.17	1.7		0.27	C
16	1	23	40.7	19-20.3	155-11.0	9.6	1.6	10	220	3.8	0.29	1.5	2.7	0.09	C
16	10	29	40.9	19-24.4	155-23.7	8.0*	1.2	12	118	7.8	0.06	0.5		0.08	B
17	5	9	41.3	19-19.9	155- 8.3	4.0	1.8	19	169	4.8	0.17	1.2	1.1	0.25	C
17	6	25	10.4	18-52.8	155- 9.0	48.7	2.1	15	298	49.4	0.26	2.7	2.9	0.10	D
17	9	28	34.0	19-20.8	155- 7.3	7.7	3.1	21	137	4.9	0.09	0.8	0.6	0.15	B
17	9	29	33.9	19-20.2	155- 7.9	2.6	3.7	19	142	8.8	0.18	1.1	1.2	0.27	C
17	9	31	40.9	19-20.3	155- 7.6	8.0*	1.8	12	163	5.1	0.10	0.9		0.13	C
17	11	54	12.0	19-21.1	155-25.4	6.7	1.7	11	125	4.1	0.14	1.2	1.6	0.19	B
17	12	56	0.6	19-22.6	155-25.1?	6.4	2.4	20	52	5.4	0.09	0.9	1.9	0.20	B
17	14	29	53.5	19-19.9	155-11.8?	6.4		16	163	4.9	0.14	1.3	2.0	0.20	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV	17	16	13 49.4	19-24.1	155-17.4	12.8		13	66	1.4	0.05	0.5	0.4	0.07	A
	17	18	21 13.5	19-23.9	155-17.3	12.7	1.6	18	45	1.2	0.04	0.5	0.4	0.08	A
	17	18	54 2.6	19-17.0	155- 4.0	31.2		15	265	13.8	0.37	1.9	2.9	0.08	C
	17	19	51 19.9	19-23.9	155-17.4	12.9		16	45	1.4	0.05	0.6	0.4	0.09	A
	17	20	18 50.1	19-23.9	155-17.9	13.6		13	108	1.9	0.06	0.6	0.7	0.06	A
	17	20	31 27.9	19-24.7	155-26.6	7.6	2.1	17	94	10.1	0.11	0.8	0.6	0.14	B
	17	20	40 9.3	19-24.2	155-17.6	14.2		12	104	1.7	0.08	0.6	0.8	0.06	A
	17	21	8 10.6	19-21.9	155-17.5	24.4		9	87	3.0	0.20	0.9	1.9	0.05	A
	17	23	16 26.2	19-20.0	155-16.2	6.1		12	180	2.1	0.16	1.1	0.7	0.13	C
	17	23	29 59.4	19-23.2	155-17.5	12.9	2.2	22	60	1.0	0.05	0.6	0.4	0.13	B
	17	23	34 48.8	19-23.5	155-17.4	12.5	2.0	19	53	0.8	0.05	0.7	0.5	0.11	B
	18	0	23 34.5	19-47.5	155-39.7	23.6	2.7	23	104	34.2	0.18	1.0	3.6	0.12	B
	18	0	56 41.7	19-20.6	155-19.5	3.2	1.4	11	102	3.8	0.13	0.4	2.8	0.07	B
	18	1	25 58.7	19-23.9	155-17.3	12.9	1.5	16	45	1.2	0.04	0.5	0.4	0.08	A
	18	3	24 4.7	19-23.4	155-17.2	12.6	2.2	21	55	0.5	0.05	0.6	0.5	0.11	B
	18	5	0 29.5	19-37.0	156-10.0	41.9		17	255	49.7	0.69	3.2	6.2	0.11	D
	18	5	53 34.9	19-11.2	155-36.1?	7.8	3.3	24	95	7.1	0.14	0.9	0.9	0.19	B
	18	6	24 57.6	19-24.0	155-17.8	13.3		14	58	1.9	0.05	0.5	0.6	0.06	A
	18	8	4 53.3	19-31.2	155-44.3	4.9		10	174	21.4	0.18	1.2	2.4	0.06	C
	18	9	21 5.2	19-24.0	155-17.4	12.9		13	45	1.4	0.04	0.5	0.4	0.07	A
	18	10	19 49.8	19-22.5	155-25.1	8.0	1.8	22	52	5.3	0.14	0.7	1.0	0.19	B
	18	10	48 55.9	19-23.8	155-17.3	12.7	1.8	17	49	1.0	0.04	0.5	0.4	0.09	A
	18	10	58 47.4	19-19.1	155-11.8	3.7	2.7	24	153	6.4	0.16	0.9	1.1	0.27	C
	18	11	8 11.8	19-20.1	155-11.9	7.2		12	206	4.5	0.24	1.7	0.9	0.18	C
	18	11	29 40.5	19-28.1	155-51.8?	1.2	2.7	13	227	22.4	1.36	2.4	9.5	0.18	D
	18	13	45 35.6	19- 5.9	154-48.4?	24.5*		10	324	36.2	1.94	15.0		0.36	D
	18	14	5 23.1	19-23.7	155-16.9	13.2	1.5	15	65	0.6	0.04	0.6	0.4	0.09	B
	18	14	15 46.8	19-20.6	155-13.7	5.6	1.5	17	147	5.1	0.12	0.9	0.8	0.22	C
	19	1	9 48.7	19-20.4	155-24.8?	6.8		16	94	2.7	0.09	1.0	1.5	0.19	B
	19	2	10 51.5	19-29.7	156-27.3	8.0*		15	281	66.3	0.72	4.7		0.15	D
	19	2	30 34.3	19-15.4	155-21.3	29.1		13	279	6.6	0.55	2.7	4.4	0.11	D
	19	3	29 18.1	19-20.3	155-12.4	5.1		14	146	12.8	0.24	1.4	1.4	0.24	C
	19	6	51 22.9	19-27.1	155-29.3	4.1	1.9	16	78	11.6	0.12	0.9	1.5	0.21	C
	19	7	47 37.4	19-10.6	155-41.8	3.1	3.0	23	127	11.3	0.15	1.1	1.1	0.22	C
	19	11	7 54.6	19-21.4	155-17.7	22.0	1.5	11	81	2.5	0.21	1.3	2.1	0.12	B
	19	11	36 41.5	19-20.9	155-13.5	7.2	1.3	15	168	5.0	0.14	1.0	0.6	0.17	C
	19	12	9 17.1	19-18.5	155-13.0	8.1	1.8	17	177	8.3	0.12	0.8	0.6	0.13	C
	19	12	24 57.8	19-18.1	155-12.9	8.0*	2.0	9	233	8.8	0.30	1.9		0.14	D
	19	15	55 30.0	19-19.4	155-13.3	8.0*	2.0	7	205	7.2	0.19	1.4		0.12	C
	19	16	59 57.4	19-18.5	155-13.0	8.0*	1.3	10	224	8.2	0.32	2.2		0.20	C
	19	17	39 53.8	19-15.1	155- 2.2	33.1	3.6	23	252	22.8	0.26	1.6	1.7	0.10	C
	19	18	5 2.1	19-53.1	155-40.4?	9.1	3.0	25	140	25.2	0.32	0.9	2.4	0.14	C
	19	18	10 11.6	19-19.3	155-16.1	9.7	1.4	9	224	2.8	0.22	1.1	1.5	0.05	C
	19	19	44 24.8	19-22.3	155-13.4	3.6		8	145	1.2	0.10	0.4	1.0	0.06	B
	19	20	27 38.0	19-23.6	155-17.6	16.4		11	62	1.3	0.12	0.8	1.4	0.07	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 19	23	9	48.3	19-22.8	155-22.1	5.9		7	148	4.5	0.24	0.6	2.1	0.07	B
19	23	53	43.3	19-22.0	155-12.9	3.8		8	159	1.0	0.18	0.8	1.8	0.09	C
20	2	4	49.2	19-19.4	155- 8.9	8.0*	1.5	12	177	5.3	0.14	1.1		0.14	C
20	3	23	33.6	19-24.4	155-17.4	7.5		9	72	1.2	0.13	0.9	0.8	0.10	A
20	3	51	0.4	19-20.7	155- 9.7	8.0	0.6	8	155	2.5	0.12	1.3	0.8	0.10	C
20	8	33	24.4	19-15.1	155- 1.7	35.1	2.5	21	216	9.1	0.27	1.5	2.1	0.11	C
20	9	4	51.9	19-25.7	155-22.8	7.6	3.1	20	68	5.1	0.07	0.7	0.5	0.16	B
20	16	8	37.8	19-23.1	155-26.0	1.6		14	138	7.2	0.59	0.8	2.2	0.21	C
21	11	43	8.3	19-24.7	155-24.8	8.0*	1.6	9	213	8.7	0.12	0.8		0.07	C
21	19	1	30.1	19-20.7	155-16.4	27.2	1.6	21	123	2.1	0.14	0.8	1.3	0.10	B
22	6	52	49.1	19-20.1	155-14.1	31.6	1.5	22	138	5.3	0.14	0.9	1.3	0.12	B
22	13	5	25.6	19-21.6	155-25.6	3.9	1.2	17	69	4.8	0.10	0.8	1.2	0.23	B
22	13	57	44.8	19-19.9	155-11.8	7.8	0.8	13	214	5.0	0.13	0.9	0.4	0.09	C
22	16	43	15.4	19-20.1	155-13.8	8.0*		14	170	4.8	0.12	0.9		0.15	C
22	17	33	46.0	19-20.5	155-13.4	5.9	1.2	19	150	3.8	0.11	0.8	0.7	0.21	C
22	21	57	19.9	19-21.7	155- 5.7?	0.0	2.0	19	129	5.9	2.35	0.9	4.6	0.16	C
23	0	16	42.8	19-20.1	155-11.7	5.8	1.6	22	144	4.6	0.11	0.8	0.6	0.21	C
23	4	6	36.4	19-19.3	155-13.2	8.0*	0.9	13	168	7.3	0.07	0.6		0.10	C
23	4	8	14.9	19-18.0	155-14.0	8.0*	0.3	11	225	7.1	0.23	1.4		0.13	C
23	6	15	17.7	19-20.7	155-11.7	5.5	1.2	21	153	3.7	0.12	1.0	0.8	0.25	C
23	8	27	59.3	19-21.2	155- 2.6?	9.5		16	196	6.2	0.25	2.0	1.3	0.19	C
23	17	14	21.0	19-19.8	155-12.6	3.7	1.5	20	163	4.9	0.16	1.0	1.2	0.26	C
23	18	36	45.2	19-19.0	155-20.5	5.4	1.0	11	173	3.8	0.12	0.8	0.6	0.11	C
23	21	44	9.1	19-18.5	155-13.6	8.0*	0.5	10	219	7.3	0.23	1.6		0.16	C
23	23	33	14.2	19-20.4	155-24.2	8.2	1.1	11	98	1.7	0.08	0.9	0.8	0.14	B
24	5	8	23.2	19-19.5	155-12.9	8.0*	0.3	13	205	7.2	0.23	1.6		0.19	C
24	13	17	17.3	19-20.1	155-10.4	8.9		11	223	3.8	0.13	0.9	1.2	0.07	B
24	14	48	55.6	19-28.5	155-52.4?	8.7	0.9	10	232	23.1	0.26	1.9	1.9	0.12	C
24	15	1	54.9	19-17.8	155-12.7	8.0*	0.3	11	238	9.2	0.26	1.6		0.12	D
24	17	29	55.8	19-14.9	155- 0.9	35.8	1.2	19	220	9.8	0.28	1.6	2.3	0.11	C
25	0	27	47.7	19-20.3	155-12.7	9.0	0.8	12	191	4.0	0.25	1.2	2.4	0.11	C
25	0	51	35.3	19-23.3	155-17.3	12.6	1.0	20	56	0.7	0.05	0.7	0.5	0.14	B
25	2	9	5.7	19-23.6	155-16.3	12.8	1.2	21	55	1.1	0.05	0.7	0.5	0.13	B
25	4	18	8.3	19-23.1	155-17.1	15.2	2.1	26	64	0.6	0.07	0.6	0.9	0.13	B
25	4	32	24.4	19-22.9	155-17.0	14.0	0.6	15	71	0.9	0.08	0.8	1.1	0.12	B
25	9	25	12.4	19-19.7	155-12.8	8.0*	0.4	12	202	5.1	0.14	1.0		0.13	C
25	11	25	14.2	19-22.8	155-23.0	7.1	2.2	20	60	4.8	0.07	0.7	0.7	0.18	B
25	17	0	8.6	19-22.6	155-22.4	7.9	1.1	16	108	4.7	0.05	0.5	1.1	0.09	B
25	17	15	42.2	19-19.2	155-15.6	8.7	0.7	14	185	3.6	0.15	0.9	1.5	0.10	C
26	1	58	59.4	19-24.1	155-17.2	13.0	0.6	12	67	1.4	0.05	0.5	0.4	0.05	A
26	5	14	4.1	19-19.8	155-12.6	4.3	1.5	23	145	4.8	0.12	0.8	1.0	0.25	C
26	7	27	31.1	19-19.4	155-11.6	8.0*	0.2	13	171	5.8	0.08	0.6		0.09	C
26	7	29	24.4	19-19.6	155-11.9	8.0*	0.2	10	218	5.8	0.20	1.3		0.11	C
26	9	24	50.5	19-17.7	155-21.7	8.0*	0.7	7	243	5.4	0.61	3.8		0.18	D
26	13	4	41.4	19-19.2	155-11.7	8.7	0.6	12	241	6.2	0.23	1.4	2.0	0.10	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 26	17	16	16.7	19-26.0	155-22.4	7.7	1.2	18	63	4.2	0.05	0.5	0.3	0.12	B
26	18	57	59.9	19-17.3	155-23.3	3.7	0.6	10	172	5.3	0.12	0.8	1.3	0.11	C
26	19	32	8.1	19-59.6	155-25.4	11.3	1.7	11	212	14.3	0.16	1.4	1.1	0.11	C
26	22	25	5.5	19-23.9	155-17.2	12.5	0.4	15	51	1.8	0.04	0.5	0.4	0.08	A
27	0	51	7.7	19-24.8	155-25.5?	0.0	1.5	14	139	9.2	8.11	0.9	15.5	0.19	C
27	1	10	55.8	19-21.7	155-29.9?	7.5	0.9	15	75	11.2	0.09	0.7	0.7	0.14	B
27	5	19	46.7	19-22.2	155- 3.9?	4.4	1.7	16	157	4.5	0.14	0.9	0.8	0.17	C
27	14	35	8.3	19-20.2	155-12.6	6.1	1.5	18	157	4.2	0.12	0.9	0.7	0.22	C
28	2	5	39.4	19-20.1	155- 8.2	4.8	1.8	19	147	4.6	0.12	0.9	0.7	0.19	B
28	7	25	39.8	19-19.3	155- 9.0	8.0*	0.8	5	178	5.4	0.18	1.7		0.10	C
28	8	2	6.6	19-19.4	155-14.0	8.0*	0.6	14	196	5.6	0.17	1.2		0.17	C
28	9	52	49.6	19-19.7	155-11.9	9.1	0.2	15	166	5.2	0.07	0.5	1.0	0.08	B
28	19	47	40.6	19-19.9	155-11.8	7.7	0.5	10	212	4.9	0.14	0.9	0.5	0.07	B
28	21	29	25.2	19-19.3	155- 8.4	8.0*	0.8	10	178	5.6	0.17	1.4		0.15	C
29	0	51	40.3	19-18.9	155-15.5	9.6	0.7	13	191	3.9	0.13	0.7	1.2	0.08	B
29	1	59	35.0	19-19.8	155-17.0	9.5	0.1	9	193	0.9	0.43	2.1	3.2	0.10	C
29	2	49	42.2	19-21.3	155-25.1?	6.7	0.9	12	119	3.6	0.10	1.1	1.8	0.20	B
29	10	21	30.8	19-23.0	155-29.2	7.2	2.3	22	62	11.6	0.10	0.5	0.7	0.12	C
29	20	4	16.5	19-25.5	155-50.1	8.6	1.5	17	274	25.6	0.26	1.6	1.6	0.12	C
30	14	51	15.8	19-24.3	155-26.0	8.0*	1.0	15	157	8.9	0.17	1.3		0.18	C
30	18	8	2.6	19-24.9	155-24.8	8.0*	1.0	14	102	8.7	0.08	0.7		0.14	C
DEC 1	3	15	15.7	19-31.0	155- 8.1	30.3*	2.2	9	341	16.0	1.03	13.3		0.25	D
1	3	18	2.1	19-19.2	155-15.5	6.0	0.8	17	168	3.7	0.12	0.8	0.7	0.17	C
1	5	31	33.4	19-24.9	155-27.5	5.2	1.0	17	94	11.4	0.10	0.7	1.0	0.17	C
1	6	53	5.7	19-20.9	155-13.9	9.0	-0.0	10	164	4.5	0.16	0.9	1.8	0.09	B
1	7	46	9.4	19-23.3	155-17.5	12.3	1.1	19	58	0.9	0.07	0.8	0.6	0.16	B
1	8	25	10.6	19-23.6	155-54.4?	8.0	2.9	13	208	14.7	0.23	3.0	2.9	0.15	C
1	8	27	40.1	19-22.4	155-59.6	13.8*	3.0	17	233	17.5	0.30	2.2		0.14	D
1	12	22	38.6	19-21.0	155-11.4	5.6		12	201	3.3	0.30	2.3	1.1	0.25	C
1	13	3	24.2	19-24.3	155-16.6	12.4	1.6	13	73	1.3	0.11	0.5	0.9	0.07	A
1	13	59	18.2	20- 2.0	155-35.4	8.4	3.1	17	183	22.4	0.20	2.5	3.2	0.20	C
1	14	43	53.8	19-24.4	155-23.6	5.5	1.6	11	174	6.9	0.16	1.2	1.3	0.19	C
1	19	43	8.1	19-23.6	155-23.2	2.6	1.5	18	98	6.1	0.13	0.9	1.9	0.23	C
2	1	18	47.4	19-24.5	155-24.2	8.0*		12	200	7.9	0.10	0.6		0.08	C
2	5	1	47.5	19-24.0	155-16.2	12.8	2.4	22	56	1.8	0.05	0.6	0.4	0.13	B
2	5	16	32.5	19-23.4	155-23.4	8.0*		9	182	6.0	0.07	0.6		0.06	C
2	8	9	20.3	20- 1.2	155-45.4?	5.8*		15	156	12.2	0.09	1.0		0.13	C
2	13	19	16.7	19-15.5	155-19.2	25.8	2.2	14	160	4.6	0.17	0.9	1.7	0.09	B
2	21	41	10.0	19-24.2	155-23.8	8.0*		11	192	7.3	0.11	0.7		0.10	C
3	2	53	51.0	19-20.5	155-13.2	6.5		15	150	5.9	0.18	1.1	1.3	0.22	C
3	3	30	16.0	19-52.1	155-48.6	14.4*		11	178	20.2	0.15	1.5		0.12	C
3	10	59	10.9	19-19.4	155- 9.0	8.0*	0.3	10	176	5.1	0.17	1.4		0.16	C
3	12	36	30.8	19-22.4	155- 0.1	5.7	1.5	13	183	6.7	0.18	1.3	1.0	0.18	C
3	12	42	28.4	19-19.6	155-15.3	10.5	1.9	9	177	3.8	0.15	0.7	1.4	0.07	B
3	16	53	17.6	19-20.8	155-11.8	8.1	0.9	18	150	3.4	0.08	0.7	0.4	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC	3	18	30 41.4	19-19.3	155- 9.0	8.0*	1.8	13	178	5.4	0.09	0.8		0.11	C
	3	16	57 25.2	19-18.5	155-13.0	8.0*	0.6	9	224	8.2	0.20	1.4		0.11	C
	3	23	26 16.6	19-21.0	155-10.5	8.7	1.2	8	214	2.3	0.16	1.2	1.5	0.08	C
	4	0	56 41.8	18-53.6	155-25.6	24.2	1.2	13	303	29.5	1.73	10.2	9.2	0.18	D
	4	2	29 12.4	19-19.9	155- 6.9	8.0*	1.4	12	170	6.6	0.07	0.7		0.08	C
	4	4	16 59.8	19-24.4	155-17.1	9.2	1.3	6	103	0.9	0.57	2.0	4.5	0.09	B
	4	4	18 53.1	19-20.7	155-13.4	9.2	0.5	11	172	5.3	0.20	1.0	2.1	0.10	C
	4	11	20 46.0	19-15.6	155-24.8	28.5	0.7	16	137	8.9	0.30	1.2	2.9	0.11	B
	4	14	22 20.9	19-20.1	155- 5.9	8.0*	0.9	10	165	5.3	0.20	1.9		0.23	C
	4	14	55 11.4	19-20.1	155-16.4	32.3	3.2	24	133	1.7	0.18	1.0	1.7	0.15	B
	4	16	5 48.0	19-20.2	155-12.1?	7.8	0.2	10	201	4.3	0.18	1.1	0.6	0.11	C
	4	17	38 30.4	19-19.2	155-11.4	5.4	1.7	12	175	6.4	0.18	1.4	1.0	0.20	C
	4	17	42 13.4	19-20.5	155-11.8	6.0	1.6	18	140	3.9	0.11	0.9	0.7	0.21	C
	4	19	7 0.8	19-19.6	155-12.3	10.1	0.9	11	229	5.3	0.39	1.8	2.9	0.10	C
	5	3	35 36.1	19-19.6	155-11.5	8.0*	0.3	11	221	5.4	0.13	0.9		0.10	C
	5	15	16 52.4	19-18.5	155-13.4	8.0*		7	221	7.6	0.20	1.5		0.12	C
	5	21	7 11.0	19-17.7	155- 8.8	8.0*	0.9	11	211	8.2	0.31	2.4		0.25	C
	6	8	7 54.5	19-20.8	155-12.4	6.0	1.8	18	167	3.1	0.14	1.1	0.8	0.25	C
	6	13	4 48.6	19-24.8	155-23.5	8.0*	1.1	12	172	6.9	0.09	0.7		0.11	C
	6	21	10 41.9	19-10.9	155-32.6	4.3	2.2	13	103	8.7	0.13	1.0	1.1	0.22	C
	6	21	11 50.6	19-17.0	155- 1.1	29.3	0.9	10	222	24.9	0.49	2.6	4.1	0.11	C
	7	2	1 22.7	19-31.8	156- 3.9	55.7	1.7	7	239	35.5	1.78	5.8	17.3	0.05	D
	7	10	25 25.5	19-26.0	155-27.1?	8.0	3.0	22	45	9.7	0.09	0.5	0.7	0.14	B
	7	11	59 42.4	19-26.3	155-51.9?	5.6	1.5	11	257	19.0	0.38	2.5	3.0	0.12	D
	7	17	12 55.0	19-17.6	155-15.4	10.2	0.8	9	226	5.8	0.39	2.1	3.2	0.11	C
	7	20	5 53.1	19-51.6	155-28.6	8.9	0.7	9	270	14.4	2.36	24.2	19.8	0.11	D
	7	23	19 25.5	19-18.6	155-12.9	3.9	1.2	20	176	7.2	0.21	1.2	1.3	0.26	C
	7	23	41 17.0	19-19.6	155-13.0	8.0*	0.3	13	184	7.2	0.18	1.4		0.21	C
	8	2	47 7.4	19-20.3	155- 8.1	4.0	2.4	22	145	4.4	0.16	1.1	1.0	0.26	C
	8	4	34 53.1	19-10.8	155-36.3	7.4	3.0	21	97	7.7	0.16	1.0	1.0	0.22	C
	8	5	8 47.0	19-20.9	155-13.6	8.0*	0.1	8	166	6.8	0.13	1.0		0.13	C
	8	7	5 28.9	19-20.7	155-12.1	6.3	2.5	21	138	3.4	0.10	0.8	0.6	0.19	B
	8	7	22 50.1	19-21.0	155- 4.5?	5.6	1.3	10	130	3.4	0.28	2.4	2.0	0.32	C
	8	9	28 31.8	19-24.1	155-24.8	8.0*	0.9	16	78	7.6	0.11	0.9		0.21	B
	8	11	21 36.1	19-20.3	155-10.8?	9.2	0.4	10	224	3.6	0.62	3.8	2.2	0.18	C
	8	11	48 15.3	19-19.3	155- 9.8	7.9		10	233	5.1	0.39	2.6	1.4	0.17	D
	8	19	55 10.5	19-19.7	155-15.3	8.0		14	163	3.8	0.09	0.7	0.4	0.13	C
	9	6	11 46.5	19-19.3	155-14.5	8.0*	0.7	11	187	5.3	0.13	0.9		0.13	C
	9	9	30 16.8	19-13.4	155- 0.5?	34.1	1.3	14	249	22.9	0.34	1.8	2.4	0.09	C
	9	10	7 2.2	19-18.6	155- 6.2	8.0*		11	256	9.1	0.59	3.5		0.21	D
	9	17	38 44.5	19-19.4	155-15.5	6.6	1.5	19	166	3.5	0.11	0.8	0.6	0.18	C
	10	0	44 40.9	19-44.2	155-24.5	28.4	1.3	19	95	7.2	0.16	0.8	1.8	0.09	A
	10	0	58 6.6	19-10.8	155-36.9	6.0	2.3	13	96	7.6	0.19	1.2	1.3	0.23	C
	10	3	59 45.3	19-22.5	155-25.4	8.0*	1.2	13	139	5.6	0.07	0.6		0.11	C
	10	10	46 55.1	19-20.8	155-26.1	6.1	1.0	15	76	4.9	0.10	0.9	1.0	0.21	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC	10	14	56 47.3	19-31.0	155-53.2	8.0*	0.9	5	344	52.4	0.40	5.0		0.05	D
	10	15	48 29.8	19-19.6	155-11.8	8.1	0.1	8	220	5.6	0.16	1.2	0.6	0.08	C
	10	16	6 19.3	19-18.4	155-15.2	9.3	0.3	9	207	4.9	0.27	1.4	2.4	0.10	C
	10	18	56 26.8	19-19.9	155-16.5	8.3	0.4	10	178	1.7	0.11	0.8	1.1	0.07	B
	10	19	51 16.0	19-19.9	155- 9.7	10.7	0.7	11	197	4.0	0.22	2.1	2.1	0.17	C
	10	20	2 7.9	19-20.1	155-14.7	28.3	0.8	11	196	4.8	0.24	1.3	2.1	0.08	C
	10	21	55 56.9	19-24.7	155-26.5	3.9	1.5	17	74	10.1	0.10	0.7	1.1	0.17	C
	10	22	53 26.2	19-19.6	155-16.4	8.8	0.9	9	164	2.0	0.20	1.3	2.1	0.10	C
	10	23	54 45.5	19-35.4	155- 9.4	8.0*		10	247	13.8	0.29	1.7		0.11	D
	11	2	29 36.6	19-40.9	154-58.4	49.1	1.9	23	217	21.7	0.36	1.6	3.0	0.12	C
	11	3	35 13.0	19-22.8	155-22.9	8.0*	0.2	8	169	4.9	0.08	0.7		0.09	C
	11	8	33 17.4	19-24.1	155-25.8?	0.0		13	149	8.4	7.95	0.9	15.1	0.18	C
	11	8	35 0.8	19-16.3	155-29.0	4.9		9	126	12.3	0.11	1.1	1.3	0.16	C
	11	11	54 49.6	19-22.9	155-26.8	0.4*		14	127	7.8	0.14	0.9		0.23	C
	11	15	36 18.9	19-19.1	155- 3.6?	0.0		11	202	12.2	8.32	1.9	15.4	0.17	C
	11	15	43 39.4	19-22.1	155-17.7	22.2		12	83	3.2	0.22	1.0	2.1	0.08	B
	11	21	51 47.1	19-20.1	155- 8.2?	7.8		9	166	4.6	0.15	1.5	1.0	0.11	C
	12	6	5 40.4	19-37.3	155-11.9	14.4*	2.0	23	173	19.2	0.10	0.8		0.14	C
	12	13	38 53.0	19-26.4	155-23.9	6.9	1.3	20	66	5.9	0.08	0.7	0.6	0.18	B
	13	5	3 49.9	19-21.3	155-15.4	26.5	1.4	19	142	2.2	0.13	0.8	1.3	0.11	B
	13	14	37 8.6	19-18.5	155-20.8	6.8	1.7	16	113	4.0	0.10	0.9	0.7	0.17	B
	13	16	10 5.3	19-19.1	155-13.6	8.0*		9	207	7.0	0.15	1.0		0.11	C
	13	16	56 15.3	19- 1.2	155-20.3	32.3		14	237	20.2	0.49	2.5	4.2	0.10	C
	13	16	57 39.6	19- 9.5	155-25.7	31.2		12	193	20.2	0.38	2.0	4.3	0.10	C
	13	16	59 34.9	19-24.7	155-16.3	12.9	1.6	9	144	1.3	0.16	0.6	1.3	0.04	B
	13	22	7 54.5	19-14.6	155-28.0?	6.4		12	123	4.0	0.09	1.0	0.8	0.14	B
	13	22	18 19.0	19-14.6	155-30.4?	8.9	2.1	14	91	7.2	0.10	1.0	0.9	0.19	B
	13	23	3 21.6	19-20.2	155- 8.7	7.7	2.2	21	164	4.0	0.12	1.0	0.7	0.17	C
	13	23	21 29.6	19-22.6	155-28.1	4.7	1.8	14	58	9.5	0.10	0.8	1.3	0.21	C
	14	1	34 3.4	19-10.7	155-34.0?	5.3	2.3	14	104	9.5	0.15	1.2	1.3	0.25	C
	14	3	6 51.3	19-20.7	155-12.4	6.9	2.0	22	168	3.3	0.12	0.9	0.5	0.18	C
	14	12	16 53.0	19-15.3	155- 9.8	37.4		9	248	16.0	0.50	2.6	3.9	0.07	D
	14	21	48 54.8	19-20.2	155- 7.8	8.0		16	200	4.9	0.25	1.7	1.0	0.16	C
	14	23	42 3.5	19-23.3	155-11.4	45.4		14	106	3.6	0.40	1.7	3.6	0.09	B
	15	6	17 29.3	19-20.6	155-20.6	27.8		11	68	4.7	0.24	1.3	2.5	0.10	B
	15	12	3 8.4	19-23.0	155-25.7	7.6	2.1	20	76	6.7	0.11	0.6	0.7	0.15	B
	15	17	22 12.5	19-20.1	155-13.7	30.9		15	139	5.7	0.37	1.9	3.8	0.16	C
	15	23	36 53.9	19-52.4	155- 8.3?	49.7	2.8	23	216	21.5	0.35	1.5	3.2	0.11	C
	16	0	5 2.8	19-22.4	155-23.9?	8.5		13	160	4.2	0.18	1.2	2.9	0.14	C
	16	4	28 41.0	19-12.1	155- 4.8?	0.0*		11	276	20.5	0.78	4.4		0.30	D
	16	8	46 20.2	19-20.5	155-14.7	6.2		14	183	4.0	0.17	1.0	0.9	0.15	C
	16	12	14 36.6	20- 7.6	156-37.5	4.7	3.0	22	248	81.0	0.35	2.6	3.0	0.17	D
	17	2	7 20.8	19-21.1	155- 2.1?	1.4		13	213	13.7	1.97	1.7	6.9	0.16	C
	17	7	48 40.1	19-23.0	155-23.2	8.4	1.8	17	53	5.1	0.05	0.5	1.1	0.12	B
	17	7	53 8.3	19- 0.8	155-29.1	14.1*		15	230	19.2	0.30	2.5		0.20	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC	17	12	58 8.4	19-20.3	155-11.0?	8.3	1.9	11	217	3.8	0.14	0.9	0.5	0.10	C
	17	13	57 19.7	19-19.2	155-47.1	4.7	1.0	10	169	10.9	0.15	1.5	1.5	0.10	C
	17	16	2 30.1	19-17.0	155- 7.0?	0.0	1.6	19	219	10.6	5.47	1.6	10.1	0.24	C
	17	18	16 50.0	19-15.4	155-26.7	7.6	2.8	18	150	1.8	0.15	1.1	0.8	0.23	C
	17	21	0 52.9	19-20.3	155-12.1	11.2	1.2	9	217	5.1	0.41	2.2	3.0	0.11	C
	18	3	10 59.2	19-20.5	155-17.3	7.0	0.5	11	127	0.7	0.21	1.4	1.0	0.18	B
	18	3	35 5.9	19-19.0	155-13.4	7.8	0.5	15	213	6.6	0.14	0.9	0.4	0.11	C
	18	5	34 25.9	19-25.4	155-24.1?	7.3	1.2	18	62	7.2	0.05	0.6	1.8	0.13	B
	18	10	14 30.1	19-20.5	155-13.2	5.7		13	180	3.7	0.20	1.2	1.1	0.19	C
	18	10	15 31.4	19-47.4	155-23.4	27.9	3.0	21	109	12.1	0.24	1.3	3.6	0.16	B
	18	16	46 43.2	19-19.6	155-13.3	8.0*		9	199	6.8	0.12	0.9		0.11	C
	18	19	43 48.8	19-20.3	155-11.0	9.3		11	159	3.9	0.09	0.7	1.4	0.08	B
	18	23	53 57.4	19- 6.1	155-25.5	40.8		13	201	7.5	0.46	2.2	4.6	0.12	C
	19	3	23 38.2	19-23.6	155- 3.3?	2.8		10	114	6.9	0.20	1.4	2.4	0.26	C
	19	3	28 27.4	19-20.7	155-12.3	8.0*		11	185	4.9	0.10	0.7		0.07	C
	19	3	29 13.7	19-30.6	155-41.8?	3.1	2.9	17	109	10.5	0.12	0.8	1.0	0.11	C
	19	3	34 3.3	19-20.6	155-24.6?	8.1		13	130	2.3	0.11	1.1	1.1	0.18	B
	19	4	32 9.5	19-20.5	155-19.8	1.7	1.3	10	109	4.3	0.17	0.5	0.7	0.08	A
	19	15	6 57.9	19-23.5	155-23.4	8.0*		10	181	6.1	0.12	0.9		0.13	C
	19	20	5 43.9	19-21.9	155- 6.0	3.7	0.8	9	127	6.5	0.17	1.4	1.9	0.22	C
	19	20	57 24.9	19-33.4	155-54.9	9.2	1.3	12	251	34.0	0.34	2.5	2.5	0.15	D
	19	22	13 23.7	19-19.4	155-12.8	8.0*	1.6	10	208	7.1	0.19	1.3		0.14	C
	20	0	15 1.7	19-24.2	155-17.9	7.8	1.3	7	121	2.0	0.37	0.7	2.2	0.05	B
	20	0	23 52.3	19-23.3	155-16.9	13.1	1.5	20	57	0.2	0.05	0.7	0.5	0.12	B
	20	0	30 44.7	19-23.4	155-17.0	11.8	0.8	12	68	0.1	0.10	1.0	1.0	0.15	B
	20	0	43 24.3	19-24.6	155-17.2	4.3	1.2	5	106	2.3				0.09	D
	20	0	58 37.3	19-20.6	155-19.9	0.8	0.7	8	109	4.4	0.08	0.3	0.4	0.06	A
	20	8	2 23.0	19-22.1	155-12.4	4.9	0.1	11	131	0.8	0.10	0.5	1.1	0.10	B
	20	8	38 2.6	19-21.9	155-25.6	4.1	0.8	14	70	5.2	0.12	1.0	1.6	0.26	C
	20	9	34 49.5	19-18.8	155-16.3	30.4	2.4	22	143	3.0	0.12	0.8	1.2	0.12	B
	20	13	42 56.0	19-20.2	155-12.3	8.7		5	281	7.6				0.03	D
	20	17	32 59.2	19- 9.6	155-41.2	1.7	3.2	21	128	12.1	1.32	1.0	4.7	0.23	C
	20	21	31 22.2	19-58.5	155-46.5?	0.0	2.1	15	209	17.0	0.49	1.2	0.8	0.12	C
	21	0	27 11.8	19-21.9	155-13.1	4.6		9	159	1.3	0.22	0.9	2.1	0.12	C
	21	15	16 36.5	19-23.9	155-29.0	6.3	1.4	16	86	12.1	0.06	0.5	0.5	0.12	B
	21	16	11 49.3	19-23.7	155-28.9	5.5	1.8	14	88	11.7	0.11	0.9	1.2	0.20	C
	21	19	29 13.7	19-22.2	155-13.1	4.6	0.4	10	150	0.8	0.11	0.6	1.1	0.09	B
	21	21	16 49.6	20- 7.4	155-52.0	33.8	3.0	28	267	9.1	0.37	2.0	3.1	0.14	C
	21	22	42 2.4	19-28.4	155-56.5	1.2	3.1	23	211	24.0	0.38	1.3	1.5	0.15	C
	22	11	38 2.8	19-23.9	155-23.4	4.6	1.3	12	171	6.9	0.13	0.9	1.3	0.14	C
	22	17	53 42.6	19-19.2	155-13.5	8.0*	0.9	13	193	7.1	0.12	0.9		0.12	C
	22	21	55 1.8	19-19.7	155-12.1	1.8	1.3	19	165	5.2	1.48	1.0	5.4	0.25	C
	22	22	17 22.1	19-23.5	155-22.3?	2.5	1.0	12	154	4.5	0.28	0.6	0.9	0.12	C
	23	2	9 23.6	19-19.1	155-13.8	8.0*	0.8	12	204	6.6	0.16	1.1		0.15	C
	23	2	45 29.9	19-21.7	155-15.1	10.6	1.1	8	208	1.9	0.22	0.9	1.6	0.05	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 23	5	13	21.2	19-19.2	155-18.2	33.0	0.7	16	113	2.2	0.21	1.1	1.9	0.11	B
23	9	4	51.1	19-34.0	155-59.1	44.9	5.2	27	188	20.3	0.19	1.0	2.3	0.13	C
23	9	11	59.8	19-34.2	155-58.5	51.2	3.1	21	246	19.4	0.42	1.7	3.3	0.08	C
23	16	11	3.8	19-21.6	155-29.6	4.0	0.9	17	60	10.8	0.09	0.7	1.0	0.19	C
23	16	31	2.8	19-19.6	155-13.8	7.5	1.3	21	144	5.5	0.08	0.6	0.4	0.13	B
23	16	32	32.7	19-18.8	155-13.4	8.0*	0.8	14	214	6.9	0.15	0.9		0.10	C
23	18	54	6.5	19-19.1	155-13.5	8.0*	1.0	11	208	6.4	0.12	0.8		0.10	C
23	20	29	7.8	19-18.8	155-13.6	8.1	1.3	17	175	6.9	0.11	0.8	0.5	0.11	C
23	20	52	42.7	19-18.6	155-13.4	8.0*	0.7	8	219	7.6	0.17	1.2		0.11	C
23	22	10	29.8	19-20.2	155-11.9	11.4	1.4	11	205	4.4	0.27	1.1	2.3	0.08	C
24	0	17	20.4	19-43.1	155-46.9	27.4	1.9	9	120	6.8	0.20	1.2	2.5	0.04	B
24	7	15	39.5	19-17.7	155-12.9	8.0*	0.8	13	237	8.9	0.22	1.4		0.11	D
24	8	47	11.4	19-20.6	155-14.5	3.7		10	101	3.8	0.23	0.6	2.2	0.08	B
24	10	43	5.1	19-33.4	155-59.8	47.3	4.8	26	222	21.9	0.30	1.3	2.8	0.11	C
24	22	49	29.3	19-23.9	155-15.7	4.0	1.1	11	131	2.4	0.20	0.7	1.4	0.10	B
25	0	40	42.9	19-19.7	155- 7.9	3.2	1.8	21	173	5.5	0.16	1.0	1.0	0.24	C
25	0	58	3.5	19-19.3	155-12.9?	0.0	1.5	17	193	7.4	8.01	1.5	15.1	0.29	C
25	1	30	23.6	19-15.7	155-20.9	45.9	1.1	9	257	5.7	2.34	7.2	18.2	0.12	D
25	2	59	19.4	19-48.6	155-22.7	32.0	1.5	21	113	8.9	0.18	0.9	2.0	0.10	B
25	5	26	42.9	19-30.2	155-46.5	6.9	1.8	18	141	18.5	0.72	0.9	5.2	0.15	C
25	5	38	4.4	19-19.6	155-13.6	6.4	1.5	16	187	6.5	0.16	1.1	0.9	0.19	C
25	6	3	23.3	19-22.4	155-23.7	6.6	1.0	18	95	4.1	0.08	0.7	0.7	0.18	B
25	7	1	47.3	19-18.9	155-15.6?	9.0	0.7	12	192	3.8	0.22	1.4	2.4	0.16	C
25	7	17	31.7	19-24.6	155-17.3	9.2	1.3	7	90	0.6	0.28	1.0	2.2	0.06	B
25	12	32	36.8	19-23.5	155-22.5	10.7	1.3	13	115	5.0	0.09	0.5	1.3	0.08	A
25	22	8	11.3	19-34.1	156- 0.7	47.3	3.5	27	225	22.4	0.37	1.6	3.4	0.12	C
26	2	3	19.3	19-12.2	155-11.4	8.0*	0.3	12	214	16.5	0.36	2.2		0.25	C
26	2	6	51.8	19-26.2	155-26.8	7.9	1.1	19	68	9.1	0.10	0.6	0.7	0.13	B
26	5	38	12.1	19-24.5	155-16.3	19.6		16	72	2.8	0.13	1.0	1.6	0.14	B
26	18	2	43.9	19-28.8	155-26.6	5.0	2.5	22	84	6.1	0.10	0.7	0.8	0.20	C
26	19	13	28.7	19-30.3	155-50.6	8.6	0.8	12	227	25.7	0.35	2.3	2.8	0.20	C
26	21	1	32.4	19-21.0	155-16.3	31.0	1.7	19	121	2.6	0.15	0.9	1.5	0.12	B
27	8	0	11.3	19-24.2	155-15.8	3.1	1.0	7	112	2.4	0.10	0.3	1.1	0.04	B
27	10	30	38.5	19-18.0	155-14.2	14.5		8	223	6.8	0.19	1.1	1.7	0.05	C
27	20	18	23.2	19-20.5	155-15.1	10.8	1.9	10	139	3.7	0.22	1.9	2.4	0.18	C
27	20	40	1.9	19-20.6	155- 8.1	7.3	0.5	9	157	4.1	0.13	1.3	0.8	0.15	C
28	1	11	16.5	19-20.4	155-13.1	8.0*-0.0		11	183	6.1	0.11	0.8		0.10	C
29	3	51	9.5	19-24.2	155-24.0	7.4	0.8	11	124	7.5	0.07	0.6	0.6	0.11	B
29	4	43	40.9	19-28.9	155-34.5?	32.2*	1.2	6	174	2.7	6.23			1.40	D
29	4	59	50.1	19-21.4	155-13.3	11.5		8	158	5.0	0.26	0.7	2.4	0.05	C
29	7	34	30.3	19-22.7	155- 2.2?	2.7	1.0	8	141	5.3	0.29	2.3	2.8	0.29	C
29	14	54	24.2	19-24.3	155-25.7?	0.0	1.7	11	183	8.6	7.99	1.0	15.1	0.14	C
29	23	32	38.2	19-21.2	155- 7.0	2.3	1.8	14	146	5.2	0.16	1.3	1.6	0.20	C
30	3	33	54.6	19-19.6	155-13.9	6.3	1.5	18	160	6.2	0.13	0.9	0.7	0.18	C
30	11	40	41.3	19-18.1	155-12.8	8.1	1.7	14	227	8.0	0.22	1.4	0.6	0.13	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1972	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 30	14	42	0.9	19-18.8	155-13.2	7.9	2.5	22	152	6.7	0.10	0.7	0.5	0.13	C
30	15	34	52.4	19-18.6	155-13.3	5.9		12	181	7.8	0.21	1.4	1.1	0.19	C
30	18	42	51.4	19- 9.6	155-23.9	47.3		19	131	1.7	0.38	1.6	3.4	0.14	B
31	0	57	36.3	19-22.9	155-25.5	2.9		15	166	6.3	0.17	1.0	2.0	0.19	C
31	4	0	53.4	19-24.5	155-26.7	8.0*	1.8	12	248	9.9	0.21	1.2		0.09	D
31	12	37	52.6	19-20.1	155- 8.8	4.2	2.2	20	165	4.1	0.14	1.0	1.0	0.19	C
31	21	58	11.3	19-25.6	155-21.6	5.5	1.4	13	143	4.0	0.10	0.7	0.8	0.15	B

Table 3. Felt earthquakes

Date	Time H	M	S	Magnitude	Felt report
Nov 17	09	29	33.9	3.7	Kurtistown, Hilo
19	07	47	37.4	3.0	South Kona
19	17	39	53.8	3.6	Hilo
19	18	05	02.1	3.0	Kamuela
Dec 1	13	59	18.2	3.1	Kamuela, Ahualoa
4	14	55	11.4	3.2	Kapapala
17	18	16	50.0	2.8	Kapapala
21	22	42	02.4	3.1	Kailua-Kona, Kealakekua, Kainaliu
23	09	04	51.1	5.2	Kona, Kau, Naalehu, Volcano, Waimea, Puako, and on the Island of Maui
23	09	11	59.8	3.1	Kealakekua
24	10	43	05.1	4.8	Kona and on the Island of Oahu
25	22	08	11.3	3.5	Kona and on the Island of Oahu

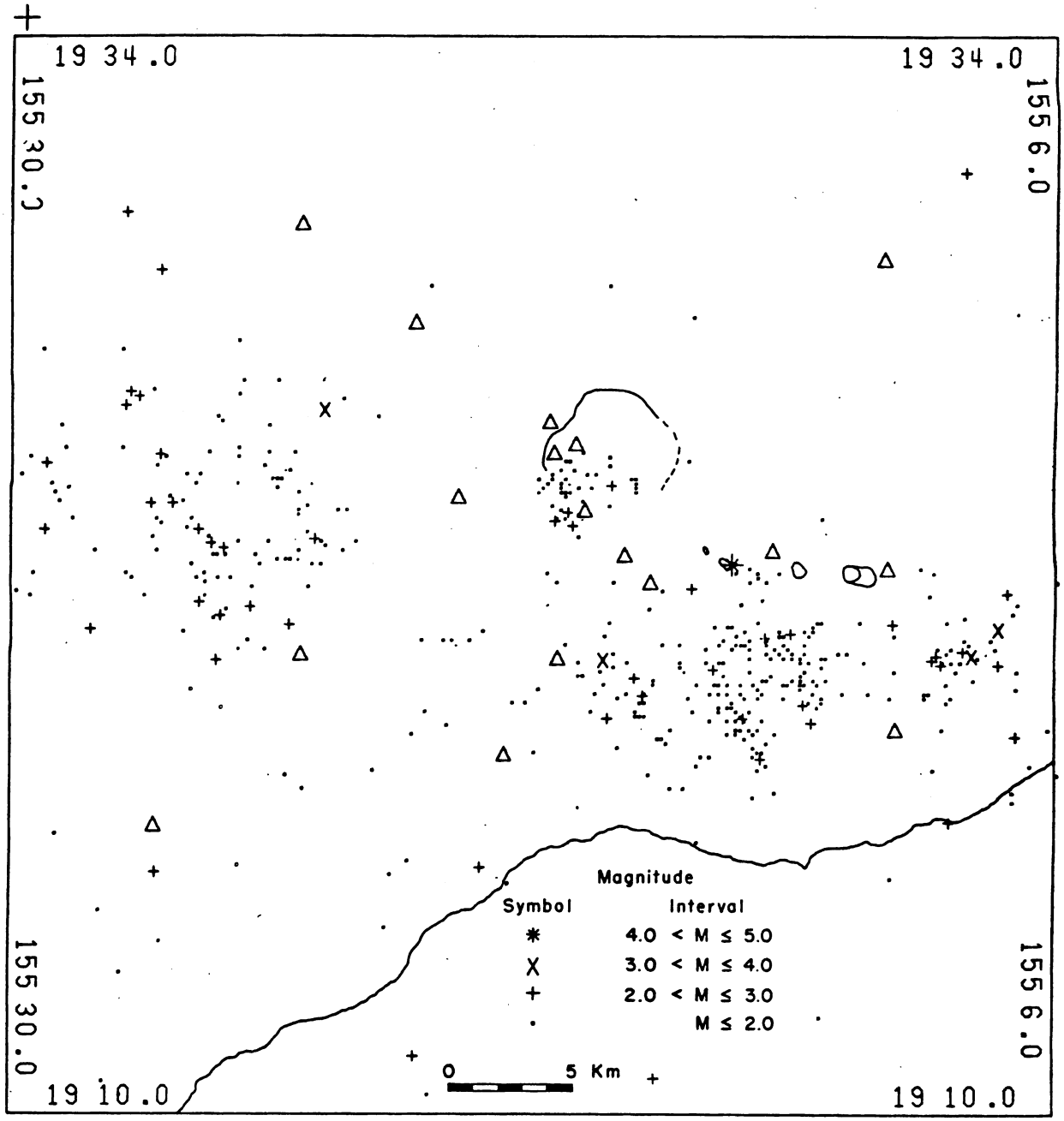

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	1	6.0	2040		
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAAPUNA	KAA	19 15.98	155 52.28	524	1	5.5	1020	RF12	
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

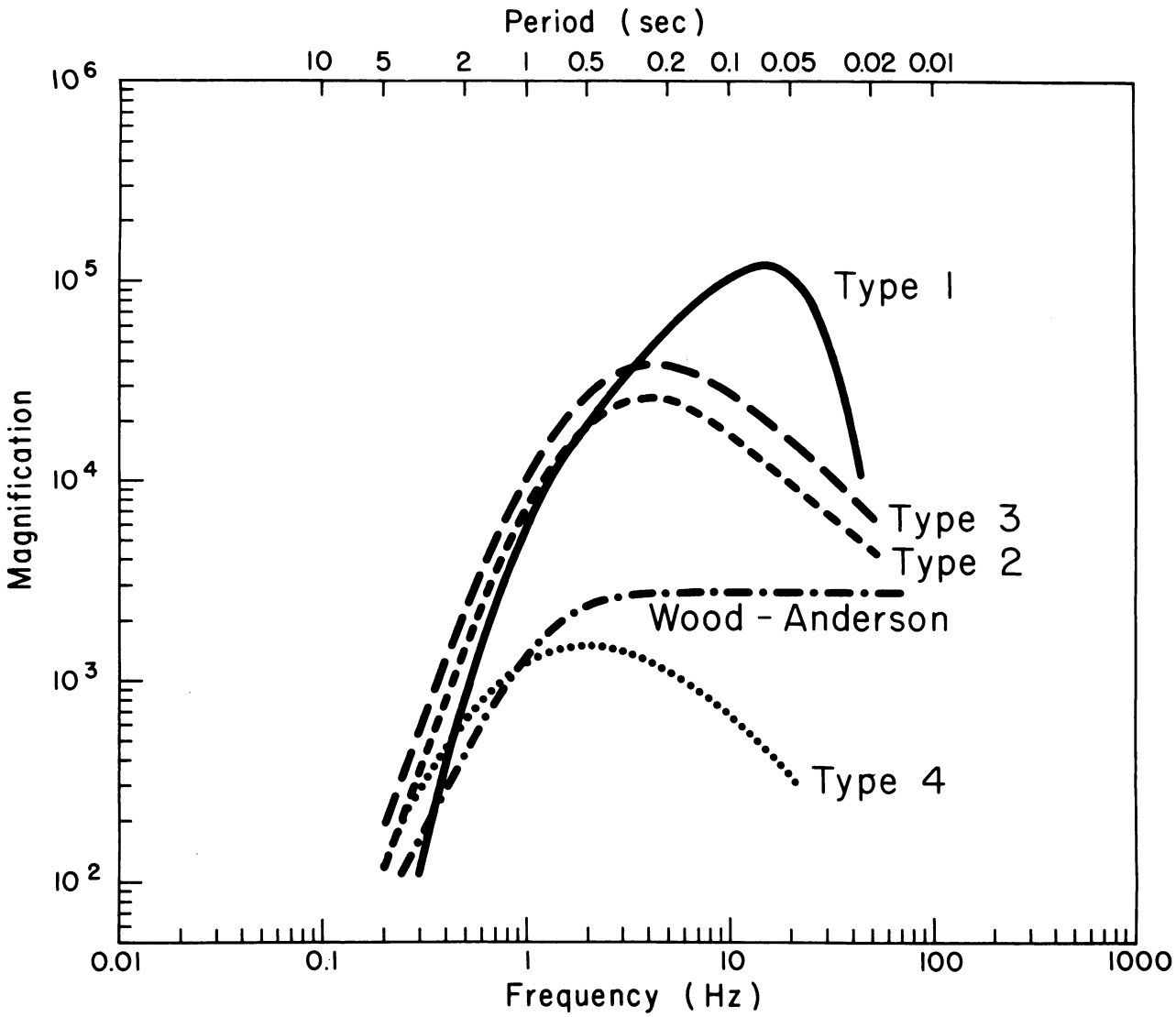

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location data on each tiltmeter station are listed in Table 7, Summary 65.

Table 6.--Tilt Coordinates at Uwekahuna,

October, November, and December 1972

Date	N-S	E-W	Date	N-S	E-W
Oct. 1	726	326	Dec. 3	722	318
8	726	323	10	722	317
15	725	323	17	722	318
22	726	323	24	721	317
29	725	321	31	721	319
Nov. 5	724	320			
12	724	319			
19	723	317			
26	723	318			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See Fig. 3)

Tilt base	Date (1972)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1972)
Uwekahuna (U on fig. 3)	5 Dec	746.3	353.5	0.87	S31.9°E	5 Jun
Tree Molds (TM)	5 Dec	580.3	483.2	0.45	S 8.4°E	5 Jun
Sand Split (SS)	6 Dec	1022.4	726.1	3.06	S13.0°E	6 Jun
Mehana (M)	5 Dec	612.5	601.7	0.40	N19.2°E	5 Jun
Keamoku (Kea)	5 Dec	777.6	228.2	3.09	S30.9°E	8 Jun
Ahua Kamokukolau (Kam)	6 Dec	376.1	535.6	3.30	N21.0°W	6 Jun
Kipuka Nene (KN)	7 Dec	279.9	498.5	0.31	N29.4°W	7 Jun
Hilina Pali (HP)	7 Dec	457.6	487.2	0.32	N66.0°W	7 Jun
Kapapala Ranch (Kap)	6 Dec	480.2	523.1	0.50	N82.4°E	8 Jun

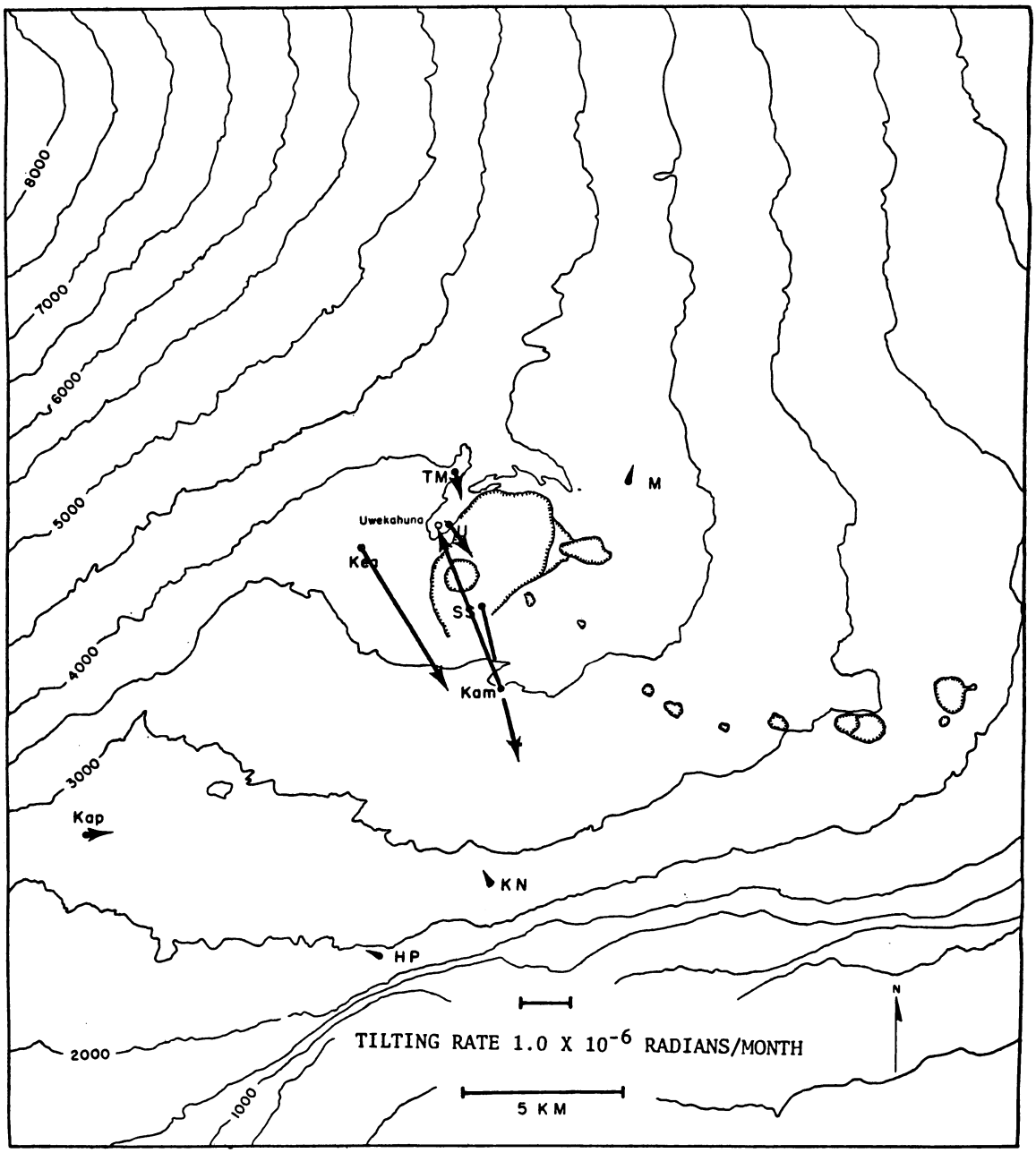

Figure 3.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 7 for explanation of abbreviations.

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and HVO Contributions, 1972

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Fiske, R. S., and Jackson, E. D., 1972, Orientation and growth of Hawaiian volcanic rifts: The effect of regional structure and gravitational stresses: Proc. R. Soc. Lond. A. 329, p. 299-326.

Jackson, D. B., and Keller, G. V., 1972, An electromagnetic sounding survey of the summit of Kilauea Volcano, Hawaii: Am. Geophys. Union, v. 77, no. 26, p. 4957-4965.

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Hawaiian Volcano Observatory
1973 Quarterly Administrative reports

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 69
January, February, and March 1973
By Arnold T. Okamura and Robert Y. Koyanagi
Chronological Summary By Donald W. Peterson

Summary 70
April, May, and June 1973
By Robert Y. Koyanagi, Arnold T. Okamura, and Patricia Stevenson
Chronological Summary By Robert I. Tilling

Summary 71
July, August, and September 1973
By Arnold T. Okamura, Marie S. Onouye, and Akira Yamamoto
Chronological Summary By Robert I. Tilling

Summary 72
October, November, and December 1973
By Patricia Stevenson, Robert Y. Koyanagi, and Arnold T. Okamura
Chronological Summary By Robert I. Tilling

Open-File Report 2007-1333
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 69

January, February, and March 1973

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California

1977

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 69

January, February, and March 1973

By
Arnold T. Okamura*, Robert Y. Koyanagi,
and
Chronological Summary
By
Donald W. Peterson

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SUMMARY OF ERUPTIVE ACTIVITY

Kilauea's eruption on the upper east-rift zone at Mauna Ulu and Alae continued without interruption throughout this quarter. The lava lake in Mauna Ulu's summit crater, its main vent in the trench about 170 m east of the lake, and the conduit system feeding both the lake and the subsidiary vent at Alae all continued to behave in the same basic pattern established in earlier months (see Quarterly Summaries Nos. 67 and 68). The surface of the lava lake in Mauna Ulu fluctuated from 24 to 35 m below the rim, and generally stood at 30 m.

The vent at Alae continued to serve as the main opening through which lava reached and spread out over the ground. The vent itself, near the northern edge of the crusted lava lake at the summit area of the newly constructed Alae lava shield, changed frequently in configuration. "Gas-piston" behavior was common, during which lava quietly and slowly rose within the vent, then abruptly underwent vigorous fountaining as a large gas bubble escaped. During such degassing and fountaining the level dropped back in the vent from several meters to a few tens of meters. Then the process would be repeated. Duration of cycles varied from 15 minutes to several hours, but averaged from 1/2 to 1 hour.

During most of the quarter, the Alae vent fed lava into conduits below the surface of the crusted lava lake. At the beginning of January most of the lava was being directed into a surface flow and growing lava-tube system that was extending toward the south-southwest. On January 5, lava descended Poliokeawe Pali and, on January 12, Holei Pali. Lava continued to flow through this channel-tube system for the remainder of the quarter. For several weeks, pahoehoe flows spread out across the coastal flats between the base of Holei Pali and the shore near Apua Point. On February 24 lava reached the ocean about 1 km west of Apua Point and for the rest of the quarter continued to enter the sea. By the end of March, the resultant lava delta had added about 0.175 km^2 of new land to the island and was continuing to grow.

Meanwhile, another lava-tube system, trending easterly from Alae and formerly active in fall, 1972, became reactivated; by January 24 lava again poured into Makaopuhi Crater. By mid-February Makaopuhi's west pit was filled to the level of the east pit's floor ("mezzanine"), and no vestige of the scarp remained that had previously defined the west pit's outline. Lava slowly spread across the floor of the east pit, ultimately covering about two-thirds of its area before the inflow into Makaopuhi dwindled and ceased in early March. The decline in the supply of lava to Makaopuhi apparently resulted from blockage in the tube system about 100 m east of the Alae vent. New overflows from a tube skylight led to the growth of a new satellitic lava shield on the northeast flank of Alae.

SEISMIC SUMMARY

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit								
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
Jan 1	28m	10m	Low level tremor from the upper east rift throughout the month		79	145	12	11	2			
2					181	122	16	13	1	1	2	
3					101	92	19	13				
4		8m			65	158	20	31	2	2		
5		16m			144	86	12	20	1			
6		6m			120	129	10	19	3			
7		8m			78	166	13	13		3		
8					44	148	19	25	4	2		
9				1	26	139	11	20	3			
10		14m		2	16	159	12	26	7	2		
11					43	155	20	23	1	2		
12				1	32	168	30	32	1	2	2	
13					15	159	27	38	4	5	2?	
14		26m			14	135	15	18	5	3		
15		25m			54	173	19	23	7			
16		3m			23	143	10	12	1			
17				3	25	174	15	16	1	1		
18				1	16	150	14	22	2	1		
19		3m		1	17	149	15	36	10	1		
20					19	154	18	22	5	1		
21		7m			18	175	14	26	1	2		
22		2m			16	110	8	20	5	2		
23		4m		1	25	116	12	17	8	1		
24				2	?	58?	22	10	1	1		
25					6	115	9	27	2			Increase of small
26				1	38	102	13	8	2	2		rockfalls at
27					2	97	18	19	1	1		Makaopuhi during
28		7m			6	121	13	25	6			the last week
29					18	98	10	39	3			
30					49	123	4	37	2			
31	5m	3m			8	98	13	31	5	2	1	

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes									
				Kilauea Summit									
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Kɔae	Lower east rift	Offshore Puu Pili	Remarks
Feb 1		13m	Low level tremor from the upper east rift throughout the month		28	93	13	57	6	1		Small rockfalls and "gas explosions" at Makaopuhi
2	39m	11m		3	137	112	11	101?	9	2		
3		6m		1	60	70	14	107?	7	7		
4				1	45	73	16	91?	5	2		
5		8m		1	97	65	9	94?	1	3		
6		3m		2	18	83	10	80?	1	2		
7		3m		2	15	95	16	108?	3	3		
8		5m		2	138	86	15	81?	10	2		
9					9	112	22	19	2	1		
10					18	96	19	53	1	1		
11		7m		2	7	97	20	49	2	2		
12				8	24	100	18	99?		1		
13		10m		1	13	98	13	88?	7	6		
14				3	31	95	14	96?	8	1		
15		2m			15	109	13	103?	3	1		
16		2m		2	3	88	14	106?	2	9		
17					4	63	10	64?	4	3		
18		3m			17	79	11	83?	7	4		
19					13	66	7	43	3	4		
20		5m			33	50	10	50		4		
21				1	26	49?	10	23	7			
22				1	9	88	16	54	4	1		
23				2	3	104	12	25	1	2		
24					24	88	17	53		8	5	
25					5	55	6	47	3	2		
26				1	6	90	15	27	4	4		
27				1	5	90	14	33		5		
28					13	82	8	34	3	2		

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes									
				Kilauea Summit									
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
Mar 1		6m	Low to moderate tremor from the upper east rift throughout the month		28	72	12	30	2	2		Scattered rockfall activity at Makaopuhi during the month
2	35m	4m			5	62	10	29	3	1		
3						64	9	26	1	1		
4					10	90	14	50	3	4		
5						174	20	32	1	2		
6					15	60	11	33	3	3		
7				1	2	81	8	20	11	1	1	
8					11	53	8	19	6	1		
9					27	122	19	30	1	1		
10				2	20	136	30	25	1	3	2	
11					10	112	6	31	5			
12		3m			18	83	12	18	2			
13		19m		1	17	91	11	21				
14					30	91	18	9	3			
15					41	65	19	16				
16					29	81	12	21				
17				1	19	71	19	25	1	1		
18					17	85	16	37	2			
19				1	44	94	10	14	1			
20				2	42	121	17	11	2	1		
21		5m			50	102	12	7				
22				1	62	90	15	10	1		1	
23		9m			35	163	15	5	2		1	
24	19m				5	112	30	11	1	1		
25					5	102	21	9	2			
26				1	1	111	9	19	6	1		
27	5m				18	106	17	15	8	1		
28					38	102	48	30	9	2		
29	?	5m		1	40	106	16	20	11	2		
30				1	57	182	36	16	3		2	
31					79	136	23	9	3	1	1	

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "*".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i^2 / NO \right]^{1/2}$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	$\geq$ 8	$\leq$ 120°	$\leq$ DEPTH or 5 km
B	$\geq$ 6	$\leq$ 150°	$\leq$ 2 x DEPTH or 10 km
C	$\geq$ 6	$\leq$ 225°	$\leq$ 50 km
	$\geq$ 4	$\leq$ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	$\leq$ 1.0	$\leq$ 2.0	$\leq$ 0.10	$\leq$ 0.25
B	$\leq$ 2.5	$\leq$ 5.0	$\leq$ 0.20	$\leq$ 0.50
C	$\leq$ 5.0		$\leq$ 0.30	$\leq$ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

Table 2 SUMMARY OF SEISMIC EVENTS

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN	1	14	40 34.3	19-15.6	155- 1.3	35.1	1.2	17	226	8.3	0.34	1.7	2.8	0.11	C
	1	19	14 29.3	19-19.8	155-15.5	8.3	1.5	19	162	3.4	0.07	0.6	1.0	0.12	C
	1	20	19 24.5	19-18.8	155-12.4	3.1	2.1	24	155	6.8	0.15	0.9	1.1	0.25	C
	1	21	34 24.4	19-12.0	155-31.3	29.3	0.9	11	86	7.7	0.30	1.7	3.2	0.14	B
	1	23	28 54.3	19- 9.9	155-29.0	40.2	1.4	16	113	2.2	0.33	1.7	3.0	0.12	B
	2	2	25 34.7	19-22.5	155-26.9	5.2	0.8	18	76	7.6	0.09	0.7	0.8	0.19	C
	2	7	10 18.0	19-20.2	155-26.6	8.0*	0.4	12	210	5.7	0.17	1.2		0.15	C
	2	18	27 17.9	19-24.4	155-17.3	9.4	1.5	9	73	1.1	0.19	0.7	1.6	0.07	A
	2	18	59 23.9	19-25.0	155-17.5	9.7	1.4	8	88	0.8	0.27	1.0	2.2	0.07	B
	2	19	30 18.7	19-24.4	155-17.1	8.7	1.4	9	70	0.9	0.19	0.8	1.7	0.08	A
	2	20	5 4.5	19-24.4	155-17.0	8.3	1.5	7	128	1.0	0.24	1.5	2.0	0.07	B
	2	20	20 10.8	19-10.4	155-34.0	6.4	3.6	23	107	10.0	0.16	1.0	1.0	0.22	C
	2	21	3 40.5	19-24.1	155-17.4	8.3	1.1	10	79	1.6	0.08	0.5	0.8	0.07	A
	2	22	16 22.8	19-22.4	155-25.5	3.3	0.9	17	120	5.6	0.14	0.9	1.5	0.24	C
	3	0	53 12.5	19-24.4	155-17.1	9.4	1.6	9	70	0.9	0.17	0.6	1.4	0.06	A
	3	3	32 40.3	19-24.4	155-16.9	9.5	1.4	9	71	1.0	0.17	0.6	1.4	0.05	A
	3	6	7 1.1	19-16.5	156-11.1	15.3*	3.2	18	291	32.9	0.74	4.6		0.13	D
	3	8	33 3.3	19-19.1	155-46.0?	7.1	0.8	6	182	12.4	0.25	1.9	2.4	0.09	C
	3	8	39 13.9	19-19.8	155-12.4	4.3		18	169	6.2	0.15	1.0	1.1	0.22	C
	3	19	21 27.0	19-18.6	155-23.9	4.0		6	148	3.2	0.18	0.8	2.5	0.06	B
	4	1	47 0.5	19-20.3	155-12.4	5.8	1.5	21	155	4.0	0.11	0.8	0.7	0.22	C
	4	2	15 26.9	19-23.7	155-23.3	8.0*	1.4	15	65	6.3	0.04	0.3		0.07	B
	4	3	22 44.9	20- 3.9	155-45.1	8.3	1.7	22	146	7.5	0.14	3.6	7.8	0.14	C
	4	8	42 36.9	19-23.4	155- 3.8	8.0*		11	106	6.7	0.09	0.8		0.12	B
	4	16	28 32.9	19-22.0	155-25.0	6.3	1.1	14	231	9.8	0.33	1.8	1.1	0.19	C
	4	19	12 47.2	19-21.2	155-29.5	6.7	1.6	20	67	10.1	0.09	0.6	0.7	0.16	B
	4	22	3 51.2	19-20.5	155- 8.4	8.6	1.2	14	158	3.8	0.08	0.7	1.4	0.10	B
	5	0	50 17.0	19-19.9	155- 7.8	8.0*	0.7	11	169	5.4	0.11	1.1		0.14	C
	5	6	25 47.7	19-19.9	155-14.6	6.5	1.1	11	179	4.8	0.16	1.0	1.2	0.17	C
	5	14	27 59.4	19-19.6	155-13.9	13.6	0.1	6	193	6.2	0.17	1.2	1.7	0.04	C
	6	2	2 36.1	19-19.5	155- 8.6	9.3	0.4	9	176	5.3	0.15	1.1	2.4	0.10	C
	6	5	7 1.3	19-23.6	154-59.3	5.1	1.3	13	176	9.4	0.17	1.3	1.1	0.18	C
	6	13	12 9.9	19-45.7	155-25.5	26.1	1.5	11	96	4.1	0.25	1.2	3.0	0.12	B
	6	14	46 57.8	19-19.4	155-15.5?	9.9		8	181	3.5	0.65	2.8	6.4	0.18	C
	6	20	16 37.1	19- 8.4	155-34.5	5.6	1.8	10	127	11.8	0.11	0.9	1.1	0.14	C
	6	22	25 20.1	19-20.6	155-12.4	8.0*		9	187	5.1	0.19	1.7		0.19	C
	7	11	41 24.4	19-20.1	155-24.2	7.0	0.5	14	101	1.6	0.09	0.8	0.6	0.17	B
	7	22	27 39.7	19-20.8	155-12.3	7.8	0.9	14	150	3.2	0.12	1.1	0.6	0.17	B
	7	22	58 49.7	19-24.4	155-24.6?	0.0	1.3	12	130	8.1	7.38	0.8	14.1	0.17	C
	7	23	8 58.3	19-34.5	155- 9.4	8.0*	1.5	13	157	12.6	0.13	1.0		0.20	C
	8	10	51 39.5	19-37.7	156- 0.5	8.0*	3.3	18	223	42.5	0.30	2.3		0.20	C
	8	23	40 34.9	19-24.7	155-24.7?	0.0	1.5	12	129	8.7	9.22	1.0	17.6	0.19	C
	9	0	29 36.7	19-19.3	155-15.4	5.7		16	183	3.8	0.18	1.1	0.9	0.20	C
	9	1	27 6.7	19-20.9	155-12.6?	1.2	2.2	18	155	2.8	0.13	0.9	1.6	0.22	C
	9	2	47 16.9	19- 4.5	155- 8.5	14.4*		14	275	37.8	0.32	2.3		0.20	D
	9	6	35 25.7	19-21.8	155-24.5	7.8	1.6	19	57	3.5	0.09	0.8	0.7	0.18	B
	9	6	51 32.6	19-19.8	155-11.8	5.2	2.0	19	169	5.1	0.18	1.2	1.0	0.26	C
	9	10	41 54.4	19-16.9	155-26.6	50.8	2.5	20	108	0.9	0.35	1.4	3.3	0.15	B
	9	12	54 27.7	19-29.7	155-14.9	23.4	1.0	13	122	7.8	0.13	0.7	1.4	0.07	B
	9	19	52 15.0	19-19.7	155-24.7	5.7	2.0	8	261	2.7	0.58	2.7	1.5	0.15	D
	9	21	45 20.6	19-22.1	155-23.8	7.8	0.6	13	112	3.6	0.09	0.8	1.5	0.15	B
	9	21	55 16.4	19-20.4	155-11.0	8.2	0.7	14	189	3.8	0.09	0.7	0.4	0.10	B
	10	2	37 22.9	19-20.1	155-11.8	10.3	-0.0	12	209	4.6	0.39	1.6	2.9	0.11	C
	10	5	42 53.0	19-19.5	155-17.6	7.0	0.7	10	183	1.1	0.23	1.0	1.3	0.09	C
	10	10	54 28.9	19-25.1	155-24.2	8.0*	1.3	12	182	8.3	0.05	0.4		0.06	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 10	13	28	35.9	19-19.9	155-15.2	24.5	1.7	21	161	3.9	0.14	1.1	1.4	0.14	C
10	15	1	13.7	19-19.9	155-15.7	31.4	1.0	11	187	3.1	0.18	1.0	1.6	0.08	B
10	21	47	24.3	19-35.1	155-41.1?	4.4	0.9	14	162	19.7	0.88	16.4	41.8	0.20	D
11	6	2	23.7	19-21.0	155-12.8	8.0*		8	172	5.4	0.09	0.7		0.07	C
11	7	41	32.8	19-19.2	155-15.9	10.6		7	229	3.1	0.25	1.2	1.7	0.04	C
11	10	5	3.5	19-20.1	155- 9.3	9.2	0.2	8	229	3.7	0.17	1.2	1.4	0.07	C
11	13	10	19.7	19-21.7	155-25.6	3.4	0.8	12	70	5.0	0.10	0.8	2.0	0.19	B
11	17	22	16.4	19-17.6	155-22.9?	4.1	1.3	10	125	4.8	0.14	1.6	2.4	0.14	B
12	0	14	31.8	19-17.6	155-22.8	8.0*	0.2	8	174	4.8	0.22	1.6		0.22	C
12	2	23	56.6	19-19.1	155-24.9?	6.5	0.5	14	96	3.4	0.10	1.1	2.0	0.20	B
12	3	26	19.3	19-16.7	155- 3.6	31.8	0.9	15	254	14.7	0.40	2.1	3.1	0.08	C
12	3	36	16.0	19-19.2	155- 8.6	8.3	1.5	11	240	5.8	0.32	2.1	2.9	0.12	C
12	10	0	57.9	19-15.3	155- 8.3	41.3		11	269	18.3	0.31	2.6	2.6	0.09	D
12	14	45	11.4	18-55.0	155-25.0	31.7		19	255	27.1	0.62	3.3	4.6	0.15	D
13	1	37	34.6	19-20.7	155-13.7	6.8		12	169	5.0	0.23	1.3	1.4	0.18	C
13	6	21	5.6	19-21.9	155-24.7?	9.1		14	66	3.9	0.08	0.8	2.1	0.13	B
13	9	42	55.4	19-24.6	155-17.0	13.4		13	143	1.9	0.08	0.7	0.7	0.09	B
13	11	30	0.1	19-17.9	155-48.1	7.9	3.7	22	110	8.2	0.08	0.7	1.1	0.11	B
14	3	57	18.7	19-17.9	155-13.2	3.2	1.8	21	202	8.4	0.21	1.1	1.6	0.20	C
14	6	1	49.9	19-58.8	155-34.1	8.8	3.1	27	166	24.9	0.10	0.9	1.4	0.12	C
14	6	40	17.2	19-58.6	155-34.0	10.1	3.2	29	166	24.5	0.10	0.9	1.3	0.13	C
14	8	9	11.8	19-59.7	155-34.0?	1.3	2.8	14	174	26.2	1.57	2.9	12.0	0.22	C
14	8	21	33.9	19-38.3	156-14.3	14.4*		10	329	83.3	5.76	34.4		0.12	D
14	8	49	53.8	19-16.6	155-27.2	4.6	1.9	7	191	9.6	0.17	1.3	1.3	0.09	C
14	9	42	41.4	19-20.1	155-10.9	9.5	0.3	15	163	4.2	0.07	0.5	1.0	0.07	B
14	12	10	5.9	18-52.7	155-10.9	8.0*	1.3	18	267	48.5	0.50	3.3		0.16	D
14	12	25	21.9	19-24.9	154-46.8?	4.0	2.0	12	296	13.8	1.32	5.3	3.1	0.12	D
14	15	58	2.3	19-24.8	155-18.0	12.6	1.8	17	78	1.3	0.03	0.4	0.3	0.07	A
14	19	19	31.2	19-58.1	155-35.2?	1.9	1.8	12	158	24.7	0.17	1.7	1.3	0.17	C
14	20	0	57.7	19-20.7	155- 7.2?	0.0	1.1	11	165	7.7	9.86	1.5	18.9	0.22	C
15	2	38	24.3	19-19.7	155-12.4	8.6	1.2	14	209	6.2	0.17	1.0	2.0	0.10	C
15	3	38	23.0	19-18.8	155-15.4	6.5	1.6	19	168	4.3	0.12	0.8	0.6	0.17	C
15	4	28	27.2	19- 9.0	155-13.6?	41.8	1.6	16	204	18.8	0.34	1.9	3.2	0.11	C
15	8	7	39.9	19-59.4	155-33.9	8.5		14	172	25.7	0.15	1.6	2.4	0.17	C
15	11	41	15.3	19-23.5	155-25.9	8.0*		9	239	7.7	0.39	2.3		0.15	D
15	13	30	28.2	19-17.6	155-23.6?	1.3	1.2	12	121	4.8	0.39	0.9	1.4	0.17	C
15	16	1	14.4	19-18.8	155-15.4	13.0	0.3	8	198	4.3	0.18	0.7	1.5	0.04	B
15	21	26	38.6	19-24.5	155-23.8	8.5	0.9	20	58	7.2	0.06	0.6	1.5	0.14	B
15	22	40	44.9	19-20.5	155- 6.0	8.0*	0.8	11	156	5.5	0.14	1.4		0.19	C
16	0	13	48.1	19-53.5	155-29.5	8.9	2.0	13	257	15.6	0.51	3.5	2.7	0.13	D
16	1	52	35.5	19-17.4	155-10.7	8.0*	0.0	13	203	8.7	0.26	1.8		0.22	C
16	8	44	27.1	19-18.7	155-14.6	9.1	0.5	10	181	5.6	0.13	1.0	1.8	0.10	B
16	8	52	34.8	19-58.8	155-34.8	1.2	1.2	14	164	25.4	1.43	1.6	5.2	0.17	C
16	17	47	32.3	19-19.7	155-15.6	15.4		9	173	3.3	0.48	3.4	4.1	0.19	C
17	10	15	52.9	19-20.3	155-17.4	36.4	1.0	14	140	0.4	0.22	1.2	1.9	0.09	B
17	11	38	51.5	19-23.4	155-24.8	6.7	2.0	17	59	6.5	0.06	0.5	0.5	0.12	B
17	12	6	19.6	19-23.4	155- 1.3	4.0	1.0	8	150	7.0	0.12	1.1	1.3	0.13	B
17	12	44	12.9	19-58.7	155-34.7	2.5	1.8	9	164	25.2	0.22	2.0	2.1	0.21	C
17	16	25	0.4	20- 3.1	155-43.9	8.1	1.0	10	144	9.7	0.08	0.9	1.3	0.07	B
17	16	40	30.2	19-22.1	155-23.3	8.2	0.5	13	141	3.5	0.08	0.8	1.4	0.12	B
18	2	43	45.7	19-18.1	155- 8.9	8.0*	0.9	9	196	7.4	0.11	0.9		0.10	C
18	7	9	23.9	19-21.0	155-13.8	6.1	1.0	17	181	3.4	0.13	0.9	0.6	0.19	C
18	8	11	3.4	19-20.2	155-12.0	8.5	0.0	12	158	4.3	0.10	0.7	1.5	0.10	C
18	13	42	13.9	19-24.3	155-24.9	8.0*	1.2	16	65	8.0	0.06	0.5		0.11	C
18	23	7	1.7	19-19.4	155- 9.2	8.7	1.8	15	175	5.0	0.12	1.0	2.2	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 19	0	23	20.2	19-18.8	155-12.8	8.0*		9	222	8.0	0.19	1.2		0.11	C
19	1	22	48.6	19-17.1	155-15.0	13.9		9	240	6.6	0.27	1.0	2.0	0.05	C
19	1	46	41.6	19-19.0	155-14.1	8.0*		9	203	6.0	0.20	1.3		0.16	C
19	2	0	39.9	19-20.0	155-12.2	9.2	0.4	13	204	4.6	0.26	1.3	2.3	0.10	C
19	9	49	56.2	19-21.9	155-24.3?	6.1	3.3	26	47	3.7	0.09	0.9	1.6	0.28	B
19	14	10	56.0	19-19.2	155-15.4	6.9	1.5	19	166	3.9	0.10	0.8	0.5	0.16	C
19	14	20	0.6	19-17.5	155- 9.7	3.7	2.2	20	176	8.5	0.23	1.2	1.1	0.25	C
19	15	37	10.4	19-20.2	155- 8.1	8.6	0.7	9	163	4.6	0.05	0.5	0.9	0.05	B
19	16	23	4.6	19-17.6	155- 8.9	8.0*	0.8	11	213	8.5	0.07	0.5		0.06	C
19	20	38	10.9	19-18.2	155-15.4	9.8	0.7	11	213	5.0	0.29	1.3	2.3	0.10	C
19	21	24	25.9	19-16.4	155-29.9	5.1	0.9	14	95	5.7	0.11	1.1	1.1	0.20	B
19	23	31	14.3	19-21.8	155-24.2?	8.1	1.3	18	51	3.3	0.05	0.5	0.4	0.13	B
20	6	36	15.3	19-22.1	155-25.8	8.0*	0.8	8	272	5.6	0.59	3.3		0.09	D
20	7	57	11.1	19-19.6	155-10.9	8.0*	0.5	11	237	5.0	0.25	1.5		0.10	D
20	11	33	57.7	19-21.4	155-12.8	13.8		8	161	5.3	0.19	1.1	1.9	0.05	C
20	16	57	13.9	19-19.6	155-13.4	8.0*	0.5	13	197	5.4	0.09	0.7		0.10	C
20	23	26	18.0	19-24.0	155-29.3	7.0	1.2	19	94	12.6	0.07	0.6	0.5	0.14	B
20	23	47	4.3	19-22.3	155- 5.1	0.3	1.9	18	130	5.8	2.83	1.0	5.5	0.18	C
21	1	52	26.3	19-19.7	155- 7.4	8.0*	0.9	11	173	6.1	0.17	1.6		0.22	C
21	10	34	20.2	19-20.2	155-10.9	9.4		10	219	3.9	0.18	1.2	1.6	0.09	C
21	13	1	58.1	19-19.2	155-13.8	8.0*		8	203	6.5	0.14	1.0		0.10	C
21	15	9	10.1	19-22.3	155-48.6	7.3	1.1	13	190	13.4	0.22	2.5	3.4	0.14	C
21	16	11	35.8	19-18.8	155-16.1	28.5	0.9	18	166	3.3	0.15	0.8	1.3	0.08	B
21	19	49	55.6	19-20.1	155- 1.0?	11.1	0.9	11	226	3.3	0.23	3.3	3.0	0.27	D
21	20	50	18.5	20- 3.5	155-54.8?	7.3	1.9	12	252	16.0	0.70	4.6	12.6	0.16	D
21	22	55	15.2	19-24.3	155-17.4	8.1	0.8	13	61	1.3	0.05	0.4	0.5	0.06	A
22	10	46	12.5	19-20.2	155- 8.9	7.9	2.1	14	146	3.8	0.14	1.0	0.8	0.16	B
22	13	12	4.3	19-55.1	155-38.6	13.7*	3.1	25	128	24.6	0.10	0.9		0.16	C
22	13	57	44.9	19-55.3	155-38.4	14.0*	3.3	22	129	24.6	0.09	0.9		0.15	C
22	15	44	45.7	19-21.8	155-19.1?	0.6	1.1	8	95	3.7	0.22	0.6	3.8	0.10	B
22	22	26	37.9	19-10.6	155-36.6?	0.0	2.3	14	98	8.0	7.33	1.4	13.9	0.29	C
22	22	35	6.3	19-49.9	155-31.2	14.4	2.5	15	111	8.6	0.11	1.1	3.0	0.15	B
22	23	14	31.0	19-26.1	154-54.3	5.7	2.4	18	215	5.3	0.19	1.4	0.7	0.16	C
23	3	36	6.8	19-19.4	155-15.1	8.7	0.6	10	202	4.2	0.18	1.1	1.7	0.09	C
23	3	38	45.1	19-18.6	155-13.5	14.4		7	218	7.4	0.20	1.1	1.8	0.04	C
23	3	40	25.1	19-19.9	155-13.6	8.0*		8	169	6.1	0.32	2.4		0.24	C
23	4	24	52.9	19-19.6	155-14.1	7.4	1.5	18	185	5.9	0.12	0.8	0.5	0.14	C
23	5	37	48.3	19-19.3	155-14.2	8.0*	0.5	12	197	5.9	0.17	1.2		0.17	C
23	9	28	54.7	19-19.9	155-11.9	8.1	1.6	9	211	4.6	0.12	1.0	0.5	0.07	B
23	14	32	44.7	19-18.4	155-13.6	8.0*		8	220	7.4	0.23	1.6		0.14	C
23	20	9	10.3	19-11.7	155- 2.8	8.0*	2.5	7	333	30.0	3.90	68.1		0.27	D
24	8	53	33.5	20- 8.8	155-39.1?	8.0*		13	290	43.0	1.12	7.2		0.28	D
24	16	41	23.7	19-24.8	155-28.4	6.5	1.9	15	133	12.2	0.12	0.9	0.9	0.17	B
24	17	55	58.6	19-20.3	155-14.1	6.1		17	177	4.7	0.16	1.0	0.9	0.19	C
24	20	58	53.8	19-49.8	155-22.1	23.2	2.4	17	142	7.1	0.36	1.8	3.7	0.10	B
25	11	9	19.3	19- 9.1	155-40.5	2.3	1.9	12	124	12.2	0.20	1.4	1.8	0.25	C
25	18	8	7.6	19-36.3	155- 6.5	8.0*	1.7	13	183	12.2	0.17	1.2		0.16	C
25	18	40	52.4	19-21.5	155-23.7	8.4	0.8	13	110	2.6	0.07	0.7	0.6	0.12	B
25	20	37	9.4	19-27.3	155-20.6	7.8	1.8	15	99	0.6	0.05	0.5	0.3	0.09	A
25	23	55	21.9	19-20.5	155-12.4	6.1	1.1	17	188	3.6	0.18	1.2	0.8	0.22	C
26	1	4	11.9	20- 3.3	155-43.0	7.5	1.2	14	154	10.4	0.34	3.0	5.2	0.22	C
26	2	38	20.7	19-21.1	155-13.2	6.2	1.8	21	141	2.7	0.10	0.8	0.6	0.23	C
26	6	1	32.5	19-19.8	155-14.0	6.8	2.0	21	167	5.4	0.10	0.7	0.5	0.17	C
27	0	43	33.1	19-14.2	155-27.6	30.6	2.4	22	117	4.3	0.19	1.0	2.0	0.13	B
27	3	25	17.4	19-19.1	155-16.0	8.8		12	180	3.0	0.15	1.2	1.4	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JAN 27	5	21	37.7	19-27.2	155-13.7	29.1		14	121	4.7	0.18	0.9	1.9	0.09	B
27	15	32	42.8	19-21.5	155- 6.8	3.7	1.9	15	141	5.4	0.11	1.0	1.0	0.16	C
27	15	49	32.2	19-17.8	155-14.8	9.2		10	225	6.3	0.32	1.6	2.7	0.09	C
27	22	12	38.6	19-23.6	155-26.9	3.8	2.6	21	55	8.9	0.10	0.7	1.1	0.22	C
28	15	52	42.9	19-24.5	155-16.0	12.1	1.1	17	65	1.9	0.05	0.5	0.5	0.09	A
28	16	19	30.8	19-23.0	155-24.4	6.9	1.2	17	69	5.6	0.06	0.6	0.6	0.14	B
28	16	43	53.3	18-54.7	155- 9.5?	8.0*	1.9	14	279	45.9	0.78	5.3		0.22	D
28	17	18	22.4	19-24.1	155-15.8	12.5	2.4	22	65	2.5	0.06	0.7	0.6	0.16	B
28	17	26	34.1	19-24.0	155-15.6	0.5*	0.7	6	128	2.5	0.06	0.2		0.06	C
28	18	33	18.3	19- 9.8	155-40.9	3.0	2.9	16	125	11.6	0.14	1.0	1.1	0.18	C
28	23	20	53.3	19-15.8	155-32.0	1.6	2.6	22	66	9.1	0.65	0.9	2.4	0.26	C
29	2	2	54.9	19-24.1	155-23.9	10.8	1.6	16	60	7.3	0.08	0.7	1.3	0.11	B
29	3	9	34.3	19-19.0	155-15.6	10.1		9	238	3.7	0.32	1.5	2.0	0.07	C
29	19	9	12.2	19- 9.7	155-41.5	3.4	1.4	13	211	12.3	0.35	2.2	1.4	0.21	C
29	20	37	15.6	19-22.4	155-22.8	7.6	1.0	14	138	4.2	0.06	0.5	0.4	0.09	B
30	9	5	17.2	19-19.3	155-13.1	6.9	2.3	19	149	5.9	0.05	0.4	0.9	0.08	B
30	11	0	18.6	19-19.6	155- 7.7	8.0*	0.6	12	175	5.9	0.14	1.2		0.13	C
30	15	32	6.9	19-23.8	155-16.8	14.7	0.6	13	73	2.0	0.06	0.6	0.9	0.09	A
31	3	59	14.1	19-17.9	155-23.6	2.4	1.1	10	155	4.4	0.07	0.6	1.4	0.11	C
31	16	18	45.9	19-25.6	155-25.3	6.2	2.6	21	64	8.6	0.07	0.6	0.6	0.17	B
31	16	34	27.8	19-23.3	155-31.1	8.0*	2.3	11	295	14.9	0.39	2.2		0.18	D
31	21	52	22.4	19-20.5	155-12.9	9.4	0.9	15	183	3.6	0.10	0.6	1.0	0.09	B
31	22	7	10.4	19-19.7	155-14.1	8.0*	1.6	16	167	5.9	0.07	0.6		0.12	C
31	22	27	20.6	19-19.4	155-14.0	8.0*	0.3	10	196	6.1	0.13	0.9		0.12	C
31	22	29	30.3	19-18.8	155-13.7	8.0*	0.9	11	212	7.0	0.17	1.1		0.13	C
31	22	37	5.3	19-20.2	155-12.8	8.7	0.9	14	192	4.2	0.13	0.8	1.4	0.09	C
FEB 1	0	28	45.0	19-59.7	155-21.4	9.8	2.9	25	208	11.7	0.16	0.9	1.0	0.10	C
1	0	35	39.5	19-11.4	155-27.7?	6.4	2.4	18	134	3.5	0.11	1.0	0.8	0.20	B
1	4	3	59.3	19-22.0	155-23.9?	8.3	1.1	15	112	3.5	0.08	0.6	0.6	0.13	B
1	4	31	11.7	19-20.5	155-11.9	6.1	1.6	20	154	3.8	0.11	0.9	0.7	0.22	C
1	10	42	38.0	19-19.7	155-11.7	8.5	0.2	11	220	5.4	0.16	1.0	1.7	0.08	C
1	16	28	14.6	19-20.3	155-10.4	8.2		11	191	3.4	0.12	0.9	0.4	0.09	C
2	14	59	29.4	19-23.0	155- 9.1	36.8	2.3	23	149	2.2	0.25	1.3	2.2	0.13	C
2	17	12	16.0	19-17.7	155-15.2	9.4	0.4	11	225	5.9	0.29	1.5	2.3	0.10	C
2	17	35	10.7	19-18.4	155-16.1	8.5	0.9	12	195	3.8	0.20	1.4	1.8	0.16	C
2	18	23	33.3	19-28.7	155-46.7?	6.2	2.9	18	177	18.8	0.15	0.9	1.0	0.12	C
2	23	5	36.1	19-21.2	155-14.2	29.7	0.9	17	131	3.7	0.21	1.2	2.2	0.12	B
3	5	5	57.8	19- 5.9	155-25.5	40.3	1.2	18	186	7.9	0.38	1.5	3.7	0.12	C
3	7	57	49.4	19-18.4	155-14.7	11.4		9	213	5.7	0.23	0.9	1.9	0.06	B
3	14	55	4.8	19-21.9	155-24.1	8.2	1.1	13	113	3.5	0.10	0.8	0.6	0.14	B
3	19	36	6.3	19-24.4	155-26.6	8.0*	0.9	14	91	9.7	0.05	0.5		0.09	C
3	20	41	41.7	19-22.8	155- 5.5?	0.0	2.0	20	127	7.1	3.70	0.8	7.0	0.17	C
4	9	26	15.3	19-19.2	155-15.5	10.9		9	185	3.7	0.22	1.2	2.0	0.10	C
4	9	53	1.2	19-20.3	155-15.8	31.7		22	135	2.8	0.11	0.6	1.0	0.08	B
4	17	58	43.6	19-20.4	155-24.9?	6.7	2.1	21	83	2.8	0.07	0.8	1.4	0.19	B
4	18	0	25.1	19-26.1	155-23.4	8.0*	1.0	12	182	5.4	0.15	1.1		0.16	C
4	19	41	51.0	19-19.5	155-12.0	5.6	1.7	22	150	5.6	0.13	0.9	0.8	0.24	C
4	21	6	6.8	19-24.2	155-25.6?	7.2	2.5	24	58	8.5	0.07	0.5	0.6	0.16	B
5	3	36	52.8	19-24.6	155-26.4?	6.8	1.8	20	71	9.8	0.16	1.1	1.0	0.24	C
5	7	17	56.5	19-20.2	155-25.0	5.1	1.0	9	152	3.0	0.09	0.7	0.7	0.10	B
5	8	49	55.7	18-57.6	155-12.5	14.5*	1.2	19	251	34.8	0.33	2.2		0.19	D
5	21	20	27.1	19-26.1	155-23.3	9.1	1.2	12	99	5.3	0.04	0.5	0.7	0.06	A
5	21	25	27.6	19-20.2	155-10.4	13.4		10	239	3.5	0.30	1.7	2.3	0.07	C
6	23	57	52.9	19-20.5	155-16.4	32.3	2.8	27	127	1.9	0.15	0.9	1.4	0.14	B
7	0	28	11.4	19-20.5	155-16.6	31.9	2.4	24	142	1.6	0.20	1.1	1.8	0.13	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB 7	5	42	18.1	19-56.7	155-23.4	31.0*	1.4	13	292	19.6	0.53	4.2		0.25	D
7	11	20	42.6	19-18.9	155-13.3	8.0*		9	212	7.4	0.15	1.0		0.10	C
7	20	1	10.6	19-14.3	155-17.9	30.5	2.8	27	165	6.8	0.16	0.9	1.5	0.14	C
8	1	57	20.0	19-18.0	155-24.9	6.8	0.9	11	135	4.3	0.11	1.2	0.8	0.16	B
8	2	51	3.6	19-20.3	155-12.1	9.2		13	199	4.1	0.30	1.4	2.4	0.10	C
8	3	7	35.9	19-26.5	155-28.8	7.6	1.4	17	79	11.5	0.13	0.6	1.0	0.13	B
8	3	55	38.0	19-16.4	155-27.4	6.0	1.4	15	98	1.2	0.10	1.0	0.8	0.21	B
8	12	15	10.9	19-24.8	155-26.8	8.0*	2.3	16	118	10.5	0.14	1.1		0.20	C
8	13	33	54.3	19-20.1	155-17.1	6.9		10	163	0.5	0.05	0.4	0.3	0.06	B
8	14	6	46.4	19-22.9	155-26.5?	7.2	2.6	20	53	7.5	0.14	0.7	1.0	0.15	C
8	16	52	25.8	19-15.0	155-25.5?	8.0	1.9	12	138	3.4	0.15	1.5	1.0	0.24	C
8	17	6	20.9	19-12.3	155- 8.0	40.3	1.2	18	206	18.3	0.19	1.1	1.7	0.09	C
9	1	0	53.7	19-21.2	155- 6.1	8.0*		9	142	6.1	0.20	2.1		0.25	C
9	2	51	49.7	19-59.3	155-47.6?	12.2*	0.9	15	277	41.9	0.24	1.7		0.11	D
9	11	16	43.1	19-15.8	155-27.3	8.3	3.1	16	110	1.6	0.14	1.0	1.0	0.20	B
9	14	30	16.6	19-25.1	155-28.1	4.4	1.9	17	79	12.1	0.10	0.7	1.1	0.20	C
9	17	51	39.5	19-21.9	155-28.8	4.1	2.1	20	62	10.0	0.10	0.7	1.3	0.22	C
10	2	3	16.3	19-21.4	155-25.1?	8.1	2.3	20	68	3.9	0.09	0.7	0.6	0.18	B
10	4	53	59.7	19-15.4	155- 2.5	34.6		17	274	26.9	0.40	2.3	2.5	0.09	C
10	10	52	36.1	19-31.0	155-35.7	10.0	2.3	15	86	3.2	0.04	0.5	0.4	0.07	A
11	5	43	39.9	19-24.6	155-25.0?	0.0	1.6	14	103	8.7	6.46	0.6	12.3	0.15	C
11	9	32	4.3	19-26.1	155-29.6	2.2	2.0	15	79	12.5	0.10	0.6	1.3	0.16	C
11	12	32	32.5	19-20.2	155- 7.7	8.6		14	164	5.0	0.12	1.1	2.3	0.14	C
11	14	19	39.0	19-21.6	155- 8.7?	8.1	1.7	15	186	2.2	0.19	1.5	0.7	0.16	C
11	19	7	14.1	19-24.7	155-28.6	7.3	1.8	18	60	12.5	0.09	0.7	0.7	0.12	B
11	19	47	37.5	19-10.3	155-11.6	46.0		12	227	20.8	0.45	2.4	3.6	0.09	C
12	0	14	33.8	19-28.0	155- 6.5	8.0*	2.0	14	132	6.4	0.08	0.9		0.11	C
12	6	21	25.2	19-27.4	155- 6.1	8.0*		12	177	6.7	0.11	1.1		0.11	C
12	7	28	29.9	19-21.8	155- 8.9?	8.3		13	217	1.7	0.18	1.4	0.5	0.11	C
12	8	55	56.6	19-22.6	155-25.2	8.0*	0.6	14	138	5.6	0.08	0.7		0.13	C
12	14	10	32.4	19-18.7	155-13.8?	6.8	2.4	20	174	6.8	0.10	0.8	1.4	0.16	C
12	14	47	46.6	19-18.2	155-13.8	6.0	1.5	17	176	7.3	0.17	1.1	0.8	0.20	C
12	19	46	58.3	19-20.1	155-20.3	28.7	3.9	27	71	5.0	0.13	0.8	1.3	0.14	B
12	19	55	46.5	19-20.1	155-20.3	28.9	2.2	25	70	5.0	0.15	0.9	1.6	0.14	B
12	22	49	53.2	19-19.9	155-20.5	27.9	2.1	18	77	4.7	0.13	0.8	1.4	0.12	B
12	23	19	38.0	19-19.5	155-20.4	28.7	1.8	22	81	4.2	0.17	1.1	1.8	0.15	B
13	1	21	42.9	20- 8.3	155-54.0	37.4	3.1	27	277	12.7	0.43	2.5	4.0	0.19	C
13	5	25	15.2	19-20.1	155- 9.2	8.3	0.3	6	230	3.8	0.35	2.6	2.7	0.07	D
13	8	43	49.6	19-10.1	155-34.8	3.5	1.4	14	132	9.6	0.14	1.0	1.1	0.20	B
13	11	46	10.1	19-18.4	155-16.0?	9.4	1.0	12	201	4.0	0.24	1.5	2.4	0.15	C
13	11	48	6.0	19-19.0	155-16.6	8.7	1.1	12	175	2.4	0.13	1.0	1.2	0.11	C
13	19	27	13.5	19-24.0	155-15.6?	2.5	1.0	8	130	2.5	0.24	1.0	2.0	0.20	C
13	19	29	24.8	19-20.4	155-13.6	5.7	1.2	20	150	4.1	0.11	0.8	0.7	0.21	C
13	23	58	12.5	19-21.6	155-23.8?	7.8	0.9	16	48	2.8	0.06	0.7	0.6	0.15	B
14	2	15	1.7	19-19.7	155-15.6	7.8	1.8	20	162	3.2	0.06	0.6	0.3	0.12	C
14	13	52	14.1	19-18.5	155-13.7	8.0*	1.7	10	217	7.1	0.15	1.0		0.09	C
14	15	9	41.1	19-25.5	155- 0.4	44.2	1.6	18	236	10.5	0.35	1.6	2.6	0.08	C
14	15	22	38.8	19-24.5	155-24.9	8.0*	1.9	21	65	8.4	0.08	0.7		0.16	C
14	18	53	42.3	19-19.4	155-15.6	7.1	1.8	22	142	3.3	0.09	0.7	0.5	0.15	C
14	23	3	28.4	19-18.5	155-13.7	8.0*		7	219	7.2	0.25	1.7		0.13	C
15	3	3	57.9	19-19.6	155-11.9?	8.1	0.9	13	216	5.3	0.14	1.0	0.4	0.11	C
15	4	29	12.1	19-21.3	155-24.2?	8.4	0.8	15	64	2.6	0.08	0.8	0.7	0.17	B
15	12	39	53.0	19-19.8	155- 9.5	8.7	1.8	13	169	7.4	0.08	0.6	1.5	0.08	B
15	12	53	41.6	19-19.8	155- 9.5	4.4	1.7	18	169	7.3	0.14	1.0	0.9	0.22	C
15	20	57	49.2	19-17.0	155- 3.6	36.1	1.0	14	270	14.4	0.44	2.5	2.9	0.08	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB	16	13	11 6.9	19-20.6	155-11.2	8.0	0.2	9	208	3.5	0.11	0.9	0.4	0.07	B
	16	16	33 52.3	19-22.1	155-12.7	5.4	0.2	11	144	0.7	0.16	0.8	1.5	0.13	B
	16	19	58 33.4	19-19.6	155-13.9	6.4	1.5	18	186	5.7	0.14	0.9	0.7	0.18	C
	16	21	8 59.5	19-22.6	155-16.6	24.5	1.4	21	89	1.3	0.11	0.7	1.1	0.11	B
	16	21	19 33.2	19-24.3	155-28.9	7.0	1.8	12	84	12.3	0.07	0.6	0.6	0.12	B
	16	22	51 52.4	19-25.0	155-27.9	4.6	2.0	22	54	11.9	0.09	0.7	0.9	0.21	C
	16	23	50 36.4	19-19.0	155-13.6	8.0*	0.4	8	208	7.0	0.16	1.2		0.12	C
	16	23	58 59.0	19-14.6	155-21.6	29.6	2.9	27	155	8.0	0.15	0.9	1.5	0.14	C
	17	5	0 1.0	19-20.0	155-10.9	2.3	2.5	23	146	9.9	0.15	0.9	1.2	0.25	C
	17	8	7 22.6	19-20.6	155-10.8	5.4	2.1	21	139	3.1	0.10	0.8	0.7	0.20	B
	17	8	8 46.5	19-20.0	155-11.0	8.6	0.6	13	165	4.4	0.10	0.8	1.5	0.09	C
	17	10	40 48.2	19-28.6	155-47.9	8.0	2.2	17	152	20.9	0.10	0.9	1.5	0.13	C
	17	12	20 37.7	19-26.2	155-27.1	8.0	1.3	21	69	9.4	0.12	0.7	0.9	0.16	B
	17	15	42 17.5	19-24.8	155-25.3	6.4	2.5	24	43	9.1	0.07	0.6	0.6	0.17	B
	18	12	13 57.9	19-22.1	155-27.8	4.1	1.5	22	65	8.7	0.09	0.7	1.0	0.22	C
	18	13	26 54.4	19-19.1	155-16.1	9.2	0.2	8	182	3.0	0.34	2.1	3.3	0.14	C
	19	5	11 5.4	19-19.3	155-13.6	8.0	3.0	23	148	6.1	0.07	0.5	0.3	0.11	B
	19	6	26 18.9	19-37.1	155-48.4	12.7	3.2	19	146	8.4	0.06	0.6	0.7	0.09	B
	19	20	34 12.1	19-19.5	155-13.8	6.2	1.2	19	163	6.3	0.11	0.8	0.7	0.19	C
	19	22	35 1.9	19-50.9	155- 2.7?	59.1	1.5	15	251	31.5	0.72	3.1	5.6	0.11	D
	21	3	51 8.8	19-19.3	155-10.5	5.0	1.0	13	200	5.2	0.28	1.7	1.3	0.23	C
	21	7	0 58.0	19-30.7	155-57.1	9.0		18	228	22.8	0.32	2.4	2.2	0.21	D
	21	21	45 51.2	19-24.8	155-24.1	6.5	1.6	20	61	7.9	0.07	0.6	0.6	0.16	B
	22	15	28 20.3	19-15.3	155- 2.7	32.6		21	249	17.7	0.26	1.6	1.6	0.08	C
	22	22	16 9.9	19-31.7	156-31.0	8.0*	2.9	14	285	73.3	0.77	4.9		0.14	D
	22	22	46 55.1	19-16.1	155- 4.3	31.7	1.9	18	252	23.5	0.19	1.4	1.3	0.10	C
	23	1	27 52.7	19-33.7	155-54.8	4.8	2.1	14	217	16.1	0.32	2.7	2.4	0.17	C
	23	2	32 32.7	19-20.7	155-25.3	4.3	2.4	22	78	3.6	0.08	0.7	0.8	0.24	B
	23	3	1 29.8	19-19.9	155-12.6	6.9	2.2	22	144	4.6	0.10	0.8	0.6	0.21	C
	23	7	30 19.1	19-19.5	155-12.8	3.6	1.7	20	188	5.4	0.20	1.1	1.2	0.24	C
	23	7	47 51.0	19-59.2	155-43.7?	44.1	4.1	26	142	16.6	0.32	1.3	3.1	0.10	B
	23	11	36 52.9	20- 1.7	155-22.4?	11.1	2.8	10	226	15.6	0.42	3.0	2.0	0.13	D
	23	18	44 41.8	19-48.7	155-32.4	16.2	2.5	14	103	9.2	0.21	1.7	4.8	0.20	B
	24	5	32 42.8	19-31.4	155-51.9	4.8	2.7	18	187	18.4	0.22	1.3	1.7	0.14	C
	24	8	15 28.7	19-26.1	155-16.1	29.7	2.1	18	80	1.4	0.23	1.3	2.3	0.15	B
	24	12	44 45.9	19-21.0	155-23.6?	3.5		11	97	1.5	0.16	1.3	1.4	0.23	B
	24	12	45 10.9	19-21.3	155-24.7	7.1	1.9	18	64	3.2	0.06	0.6	0.6	0.16	B
	24	18	3 10.8	19-19.1	155-11.3	2.4	2.1	23	155	6.1	0.18	1.0	1.4	0.27	C
	25	13	44 7.4	19-59.6	155-23.2	29.7	3.5	21	204	12.3	0.23	1.3	2.6	0.12	C
	25	16	40 10.7	19-19.2	155-13.7	8.0*	1.6	11	204	6.3	0.12	0.8		0.11	C
	26	0	42 36.2	19-23.5	155-24.4	6.5	2.3	19	99	6.3	0.08	0.6	0.6	0.14	B
	26	2	8 47.7	19-21.6	155-12.2	5.9	1.2	13	160	1.7	0.13	0.8	0.9	0.14	C
	26	5	33 17.6	19-22.9	155- 4.3?	3.7	2.1	10	153	5.9	0.20	1.5	1.5	0.20	C
	26	8	50 15.2	19-19.4	155-15.3	6.4	1.1	11	184	4.0	0.16	1.0	0.9	0.15	C
	26	9	17 49.7	19-20.2	155-20.3	28.1	2.5	28	69	5.1	0.13	0.8	1.4	0.15	B
	26	12	11 19.1	19-14.7	155-26.0	6.2	2.7	24	121	3.3	0.09	0.8	0.6	0.22	C
	27	6	31 7.4	19-22.1	155-25.4	2.6	1.4	15	104	5.1	0.14	1.0	1.9	0.25	C
	27	6	31 40.3	19-17.7	155-13.1	6.4	1.9	22	181	8.7	0.15	0.9	0.6	0.16	C
	27	11	15 18.5	19-43.4	155- 2.1	48.5	2.1	15	210	24.4	0.37	1.6	3.4	0.11	C
	27	13	15 58.8	19-18.3	155-13.2	8.0*	1.6	8	226	8.1	0.17	1.2		0.09	D
	27	13	29 30.7	19-22.8	155- 2.4	4.5	2.3	10	134	5.5	0.15	1.2	1.4	0.21	C
	28	0	16 14.2	19-19.8	155-12.1	8.0*	1.3	14	211	5.0	0.12	0.8		0.10	C
	28	3	10 28.2	19-24.6	155-24.3?	7.6	1.2	18	59	8.1	0.06	0.6	0.7	0.13	B
	28	3	57 56.0	19-53.6	155- 1.8	49.8	2.6	22	234	32.7	0.42	2.0	3.7	0.13	C
	28	7	10 20.3	19-24.8	155-24.7	8.0*	1.3	18	63	8.7	0.07	0.6		0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
FEB	28	9	14 51.0	19-23.4	155-28.8?	7.3	1.3	13	88	11.3	0.08	0.7	0.7	0.14	B
	28	15	30 22.5	20- 5.8	156- 1.6	3.2	2.7	17	272	26.1	0.53	6.0	4.9	0.21	D
	28	15	48 55.0	19-24.6	155-23.6	5.1	1.2	13	110	6.9	0.12	0.9	1.2	0.19	B
	28	21	7 28.4	19-15.9	155-11.9	8.0*	1.5	10	270	11.9	0.53	2.9		0.15	D
MAR	1	4	0 36.6	19-19.1	155-13.3	8.0*	1.3	9	209	7.4	0.19	1.3		0.13	C
	1	18	41 12.2	19-17.9	155-14.8	8.0*	1.7	13	188	6.2	0.11	0.8		0.11	C
	2	0	19 31.1	19-21.2	155-14.4	8.5	1.3	10	229	3.4	0.34	1.9	2.1	0.10	C
	2	0	48 16.6	19-19.7	155-13.2	6.0	1.7	16	198	6.9	0.20	1.2	0.8	0.21	C
	2	2	44 21.2	19-20.5	155-24.5?	8.6	1.7	12	91	2.3	0.07	0.8	0.7	0.15	B
	2	8	30 56.0	19-18.1	155-12.7	8.0*		10	234	8.9	0.26	1.7		0.15	D
	2	13	24 53.4	19-23.4	155-24.3	8.0*		8	204	6.2	0.24	1.7		0.15	C
	3	0	1 48.1	19-17.4	155-11.1?	0.1	1.5	15	236	8.9	7.67	1.9	14.1	0.20	D
	3	7	25 19.1	19-23.1	155- 5.9	2.6	1.8	13	122	7.2	0.12	0.8	1.1	0.15	B
	4	5	42 29.8	19-22.2	155-26.6	8.0*	1.7	14	75	6.9	0.06	0.6		0.11	B
	4	6	26 22.3	19-19.3	155-10.7	8.0*	1.2	11	243	5.4	0.16	1.0		0.08	D
	4	11	29 32.9	19-19.2	155- 9.1	8.0*	1.7	12	178	5.4	0.12	1.0		0.13	C
	4	17	59 19.2	19-56.7	155-31.1	25.4	2.3	16	163	19.3	0.22	1.2	3.2	0.13	C
	4	19	26 28.8	19-39.3	156- 1.9?	0.0	2.3	14	271	20.5	0.58	5.2	1.8	0.25	D
	4	20	9 9.9	19-42.4	156-10.2?	8.2	2.3	14	290	57.9	0.66	11.4	25.0	0.33	D
	5	6	2 17.6	19-19.9	155-10.5	8.5	1.5	9	224	4.1	0.13	1.0	1.2	0.06	B
	5	23	11 49.2	19-24.1	155-25.2	4.5	1.7	15	62	7.9	0.11	0.9	1.3	0.20	B
	6	1	45 20.4	19-31.9	155-37.3?	7.2	2.9	21	85	5.4	0.14	1.2	1.5	0.23	B
	6	8	15 34.1	19-20.9	155-48.3	6.7	2.8	13	180	11.5	0.18	2.0	2.7	0.12	C
	6	17	29 27.0	19-23.3	155-28.7	4.2	2.1	22	88	11.1	0.10	0.7	1.0	0.22	C
	6	18	49 45.9	19-25.1	155-26.6?	7.3	3.9	27	45	10.5	0.07	0.6	1.2	0.18	C
	6	20	4 45.1	19-20.7	155-14.0	10.7	1.1	9	169	4.7	0.10	0.6	1.0	0.06	B
	7	4	36 20.0	19-19.8	155-14.8?	7.7	1.4	10	179	4.6	0.24	1.9	1.2	0.21	C
	7	6	40 16.7	19-18.8	155-13.4	6.3	2.1	19	152	7.3	0.12	0.8	0.7	0.20	C
	7	6	51 45.6	19-18.4	155-13.2?	7.6	3.3	24	152	7.5	0.06	0.5	0.9	0.12	C
	7	9	18 24.8	19-20.3	155-12.0	10.1		12	212	4.2	0.12	0.7	1.0	0.08	B
	7	17	32 43.7	19-18.9	155-13.4?	8.0	3.3	22	152	6.7	0.08	0.5	0.4	0.10	C
	7	17	36 43.7	19-20.3	155-14.8	6.0		15	192	4.4	0.23	1.6	1.0	0.22	C
	7	18	24 26.0	19-21.6	155- 4.9?	2.0		9	126	4.6	0.15	1.2	1.6	0.17	B
	7	20	0 24.5	19-20.7	155-15.2	4.6		14	176	3.3	0.17	1.2	0.9	0.21	C
	7	20	14 11.7	20- 2.1	156-15.4	8.0*		13	305	88.3	1.20	7.3		0.11	D
	8	1	21 49.8	19-21.4	155-15.6	5.8		12	202	2.0	0.17	0.9	0.9	0.12	C
	8	2	9 58.6	19-19.1	155-14.1	7.0	2.2	20	171	6.1	0.13	0.9	0.6	0.15	C
	8	4	45 13.7	19-21.6	155- 7.0	3.8	1.9	19	137	5.0	0.11	0.8	0.9	0.16	C
	8	9	30 20.3	19-24.6	155-25.4	0.3*	1.4	12	226	9.0	0.28	1.3		0.15	D
	8	9	53 35.8	19-18.4	155- 8.8	8.0*		9	192	10.6	0.20	1.7		0.18	C
	8	17	54 0.2	19-20.8	155- 7.3?	1.7	3.1	22	138	5.0	0.13	1.1	1.1	0.20	C
	8	23	2 10.1	19-20.4	155-17.0?	7.5		9	184	0.9	0.35	1.1	2.5	0.08	C
	8	23	6 49.5	19-19.3	155-17.2	6.5	1.3	11	176	1.6	0.07	0.5	0.4	0.07	B
	9	18	28 42.3	19-19.1	155-27.1?	7.5	2.1	15	73	5.0	0.07	0.7	1.5	0.15	B
	10	1	9 31.6	19-20.6	155-19.7	1.7*		9	104	4.1	0.03	0.2		0.05	B
	10	6	44 52.9	19-25.5	155-25.0	8.0*	1.9	14	153	8.4	0.07	0.6		0.09	C
	10	10	8 35.8	19-19.5	155- 8.2	3.6		16	176	5.6	0.22	1.5	2.3	0.27	C
	10	12	10 41.8	19-21.9	155-15.7	27.9	2.2	20	116	1.0	0.11	0.7	1.1	0.10	A
	10	23	37 58.6	19-20.6	155-12.6	5.9		14	184	5.5	0.23	1.3	1.2	0.22	C
	11	1	19 42.2	19-20.5	155-16.0	26.9		14	131	2.5	0.15	0.9	1.6	0.08	B
	11	6	36 28.7	19- 9.8	155-37.5	5.3	2.9	20	102	9.5	0.14	1.0	1.0	0.22	C
	11	9	13 44.5	19-22.6	155- 5.4	2.6	2.1	7	126	6.6	0.06	0.5	1.1	0.05	B
	11	13	49 23.2	19-22.7	155-41.0	8.0	2.3	9	242	15.0	0.44	2.7	3.6	0.13	D
	11	14	25 38.4	19-20.9	155-13.8	8.6	1.4	9	166	4.7	0.20	1.2	2.4	0.12	C
	11	14	59 11.8	19-21.0	155-14.3	8.4	1.2	9	157	3.8	0.15	1.0	1.9	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR 12	9	44	3.4	19-20.1	155-21.2	28.8	2.1	18	80	3.7	0.17	1.0	1.9	0.12	B
12	9	44	38.1	19-20.3	155-20.8	27.7	2.4	22	72	4.5	0.15	0.9	1.6	0.13	B
12	18	35	36.3	19-19.3	155-13.4	8.0*	1.5	10	205	7.1	0.20	1.5		0.18	C
13	0	50	51.5	19-19.4	155-14.5	9.2	1.3	10	191	5.2	0.22	1.2	2.4	0.12	C
13	4	33	10.3	19-24.8	155-17.7	11.5	2.0	19	56	1.1	0.06	0.6	0.6	0.11	B
13	6	15	6.3	19-20.2	155-11.2	8.6	0.7	10	216	4.2	0.15	1.0	1.9	0.09	B
13	15	15	3.6	19-44.8	155-24.1	21.9	2.5	22	74	7.0	0.11	0.6	1.9	0.11	B
13	17	6	55.1	20- 9.0	155-40.3?	40.1	3.0	23	230	11.5	0.52	2.4	4.3	0.11	C
13	22	16	27.6	19-20.2	155- 7.9	8.7	0.2	8	164	4.9	0.14	1.1	2.4	0.10	C
14	0	35	31.4	19-16.0	155-22.7	6.4	0.7	14	139	7.0	0.09	0.8	0.6	0.17	B
14	3	2	28.2	19-23.3	155-24.6	7.2		10	194	6.2	0.13	0.9	0.7	0.10	B
14	19	20	1.7	19-22.6	155-47.7	10.5	3.0	17	139	14.6	0.11	1.0	1.2	0.11	B
15	2	31	10.2	19-22.8	155-23.2	5.1	1.1	12	169	4.8	0.13	1.0	1.0	0.16	C
15	7	56	13.8	19-19.3	155-11.7	2.2	2.3	23	152	6.2	0.17	1.0	1.5	0.26	C
15	13	17	15.2	19-24.4	155-25.1?	5.6	1.3	15	104	8.4	0.12	0.8	2.4	0.19	B
15	14	51	44.3	19-25.7	155-37.0?	46.5	2.3	13	223	25.1	0.57	6.0	4.7	0.28	D
15	20	34	10.4	19-21.3	155-25.1?	6.8	1.7	12	74	3.8	0.10	1.0	2.2	0.19	B
15	22	16	9.8	19- 4.2	156- 7.6?	40.3	2.2	20	301	34.6	0.23	1.5	2.3	0.09	C
16	9	40	9.3	19-37.0	155-30.0	7.4	2.1	12	92	17.7	0.22	1.0	1.5	0.16	C
17	1	44	36.4	19-22.9	155-22.5	8.0*	0.7	14	100	5.1	0.06	0.5		0.10	B
17	5	37	22.2	19-20.7	155-13.3	8.0*	0.0	11	175	5.6	0.15	1.0		0.11	C
17	14	35	12.6	19- 3.3	155-13.0	20.0	2.0	19	224	28.5	0.30	2.1	9.1	0.17	C
17	21	59	46.4	19-17.6	155-30.3	4.2	1.0	14	99	6.7	0.12	1.0	1.1	0.19	B
18	10	2	13.7	19-22.2	155-23.8	10.0		7	198	3.8	0.36	1.5	3.2	0.07	C
18	19	6	18.6	19-18.8	155-12.9	5.9	1.6	17	176	8.2	0.25	1.4	1.1	0.21	C
18	19	10	22.0	19-19.6	155-13.8	8.0*	0.5	10	209	6.4	0.25	1.7		0.17	C
18	21	36	45.3	19-20.1	155-17.2	7.8		7	184	0.3	0.09	0.6	0.7	0.03	B
18	23	44	40.4	19-17.6	155-25.5	8.0	2.3	21	109	3.0	0.09	0.8	0.6	0.17	B
19	0	48	60.0	19-19.5	155- 6.8	8.0*		11	178	6.9	0.18	1.6		0.19	C
19	4	1	21.3	19-19.1	155-13.4	8.0*	-0.0	9	208	7.2	0.19	1.4		0.14	C
19	7	50	45.3	19-21.7	155-15.6	8.9	1.3	10	143	1.4	0.17	0.8	1.5	0.07	B
19	20	12	26.1	19-21.9	155-23.1	6.8	0.6	13	92	3.3	0.06	0.5	0.5	0.10	A
19	22	14	50.6	19-23.9	155-49.3	9.6	1.7	14	202	15.5	0.16	1.4	1.5	0.13	C
20	3	23	8.4	19-17.4	155-22.0	2.4	0.8	13	134	5.6	0.11	0.7	1.4	0.14	B
21	7	30	23.7	19-19.4	155-14.5	32.2	2.5	22	143	5.3	0.14	0.9	1.4	0.11	B
21	8	11	46.3	19-23.4	155-23.9?	7.7	2.8	21	55	6.0	0.05	0.6	1.2	0.14	B
21	8	14	56.0	19-23.5	155-23.2	8.0*	1.2	13	178	6.1	0.13	0.9		0.13	C
22	13	45	56.5	19-15.4	155-22.6	4.7	1.2	14	164	8.4	0.11	1.1	1.2	0.17	C
22	23	8	50.7	19-20.3	155-11.3	10.0	1.0	12	213	4.2	0.25	1.2	2.1	0.08	C
23	1	38	44.7	19-21.7	155-23.4	6.2	0.9	12	173	2.8	0.10	0.7	0.6	0.11	C
23	4	25	6.1	19-21.7	155-24.0	7.2	0.7	13	107	3.0	0.11	0.9	0.8	0.16	B
23	14	39	8.1	19-23.9	155-24.3	7.1	3.0	21	56	7.1	0.07	0.6	0.6	0.17	B
23	19	24	33.5	19-20.0	155-13.5	5.9		14	187	6.0	0.20	1.4	1.0	0.23	C
24	1	22	49.7	19-16.8	155-23.6	3.8		14	133	6.3	0.09	0.8	1.2	0.16	B
24	20	52	3.4	18-53.5	155- 9.8	8.0*		18	272	43.4	0.88	5.7		0.18	D
24	23	41	51.8	19-20.4	155-29.0	47.0		12	102	10.0	0.34	1.2	3.4	0.08	B
25	5	53	33.9	19-18.0	155-15.1	6.8	1.7	18	184	5.5	0.16	1.0	0.7	0.19	C
25	19	22	55.3	19-24.7	155-28.4	4.4	0.9	11	170	12.1	0.12	0.8	1.4	0.13	C
26	6	3	52.0	20- 2.9	155-28.3	13.7*	1.8	16	211	22.1	0.24	1.9		0.18	C
26	9	56	45.6	19-43.4	155-46.2	20.3	3.5	21	118	8.3	0.14	0.8	2.2	0.11	B
26	11	31	25.4	19-20.6	155- 6.2	8.0*	1.9	8	164	5.8	0.16	1.6		0.15	C
27	0	46	11.6	19-19.0	155-13.4	8.0*	1.7	7	212	7.4	0.18	1.3		0.09	C
27	0	55	34.4	19-59.1	155-41.2	10.8	2.1	19	138	18.7	0.10	1.0	1.7	0.10	B
27	4	34	23.9	19-20.0	155-14.1	8.0*	1.2	17	169	5.5	0.08	0.6		0.11	C
27	7	14	25.1	19-20.4	155-13.3	7.2	0.5	13	204	4.0	0.21	1.5	0.8	0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAR	27	16	59 42.3	19-23.9	155-24.3	2.7	1.5	12	201	7.0	0.14	0.7	1.2	0.09	C
	27	17	28 22.4	19-21.9	155-25.6	4.7	1.3	17	83	5.2	0.09	0.7	0.9	0.20	B
	28	0	23 1.4	19-18.4	155-14.9	12.2	1.5	10	211	5.4	0.22	0.8	1.8	0.07	B
	28	11	31 50.9	19-18.9	155-10.1	3.6		12	181	5.9	0.24	1.6	2.4	0.24	C
	28	18	48 8.2	19-21.7	155-25.1	8.7		10	107	4.2	0.07	0.6	1.6	0.08	A
	28	19	55 7.2	19-19.2	155- 8.7?	0.8	2.0	16	178	5.7	1.42	1.2	5.2	0.22	C
	28	23	1 18.7	19-22.?	155-26.2	6.1	2.0	15	73	6.2	0.10	0.8	1.0	0.17	B
	29	7	0 43.9	19-21.9	155-25.1	8.1	1.9	18	56	4.4	0.05	0.6	1.3	0.11	B
	29	7	23 16.8	19- 5.6	155- 8.0	15.6*		13	248	29.4	0.46	3.3		0.17	D
	29	16	23 40.3	19-20.5	155- 8.9	29.8	2.2	22	174	3.4	0.16	1.0	1.3	0.11	C
	29	18	23 1.9	19-24.1	155-15.7	4.4	1.2	9	122	2.5	0.38	1.1	2.8	0.12	B
	29	20	36 35.2	19-20.0	155-10.8	9.4	1.1	14	164	4.2	0.08	0.6	1.1	0.09	B
	29	21	21 27.1	19-20.7	155-19.9	3.0	1.6	10	105	4.5	0.20	0.5	4.0	0.09	B
	30	9	32 41.2	19-46.2	155-25.9	32.1	3.0	19	92	3.0	0.19	0.9	2.4	0.12	B
	30	18	56 59.4	19-25.4	155-28.1?	8.0	1.9	19	78	11.6	0.06	0.5	0.5	0.13	B
	30	22	21 9.4	19-18.4	155-13.3	8.0*		11	224	7.9	0.22	1.5		0.13	C
	31	3	19 46.4	19-23.6	155-25.3	6.6	1.7	15	56	7.3	0.08	0.7	0.9	0.15	B
	31	4	38 10.2	19-21.8	155-24.0	7.7	1.6	11	62	3.3	0.06	0.7	0.7	0.10	A
	31	6	28 59.6	19-18.3	155-21.4	8.0*	1.7	9	219	4.7	0.29	1.9		0.16	C
	31	7	16 39.4	19-20.1	155-14.5?	4.3	1.9	18	165	5.0	0.15	1.0	1.0	0.21	C

Table 3. Felt earthquakes

Date	Time H	M	S	Magnitude	Felt report
Jan 2	20	20	10.8	3.6	Honaunau, Pahala
13	11	30	00.1	3.7	South Kona
14	06	01	49.9	3.1	Kamuela
14	06	40	17.2	3.2	Kapapala, Kamuela
14	19	19	31.2	1.8	Kamuela
21	20	50	18.5	1.9	Kamuela
22	13	12	04.3	3.1	Honokaa, Kamuela, Pohakuloa
22	13	57	44.9	3.3	Kamuela, Honokaa, Pohakuloa
28	23	20	53.3	2.6	Kapapala
Feb 4	17	58	43.6	2.1	Kapapala
9	11	16	43.1	3.1	Kapapala
12	19	46	58.3	3.9	Volcano, Pahala, South Kona, Honomu, Kurtistown, Hilo
23	07	47	51.0	4.1	Kamuela
26	12	11	19.1	2.7	Kapapala
Mar 6	18	49	45.9	3.9	Volcano, Kapapala, South Kona
7	06	51	45.6	3.3	Volcano, Keaau, Hilo
13	17	06	55.1	3.0	Kamuela
21	08	11	46.3	2.8	Kapapala

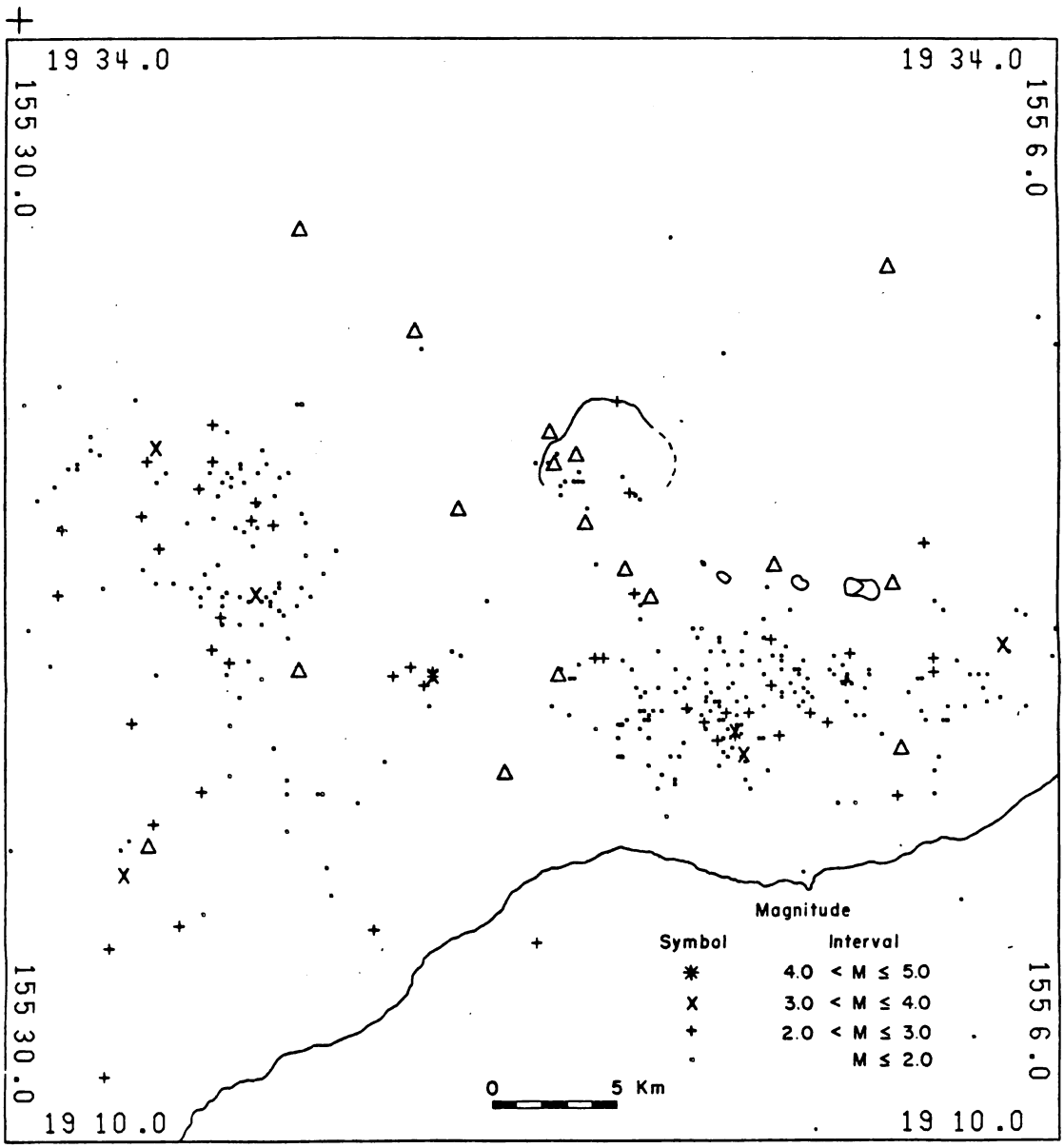

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	1	6.0	2040		
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAAPUNA	KAA	19 15.98	155 52.28	524	1	5.5	1020	RF12	
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

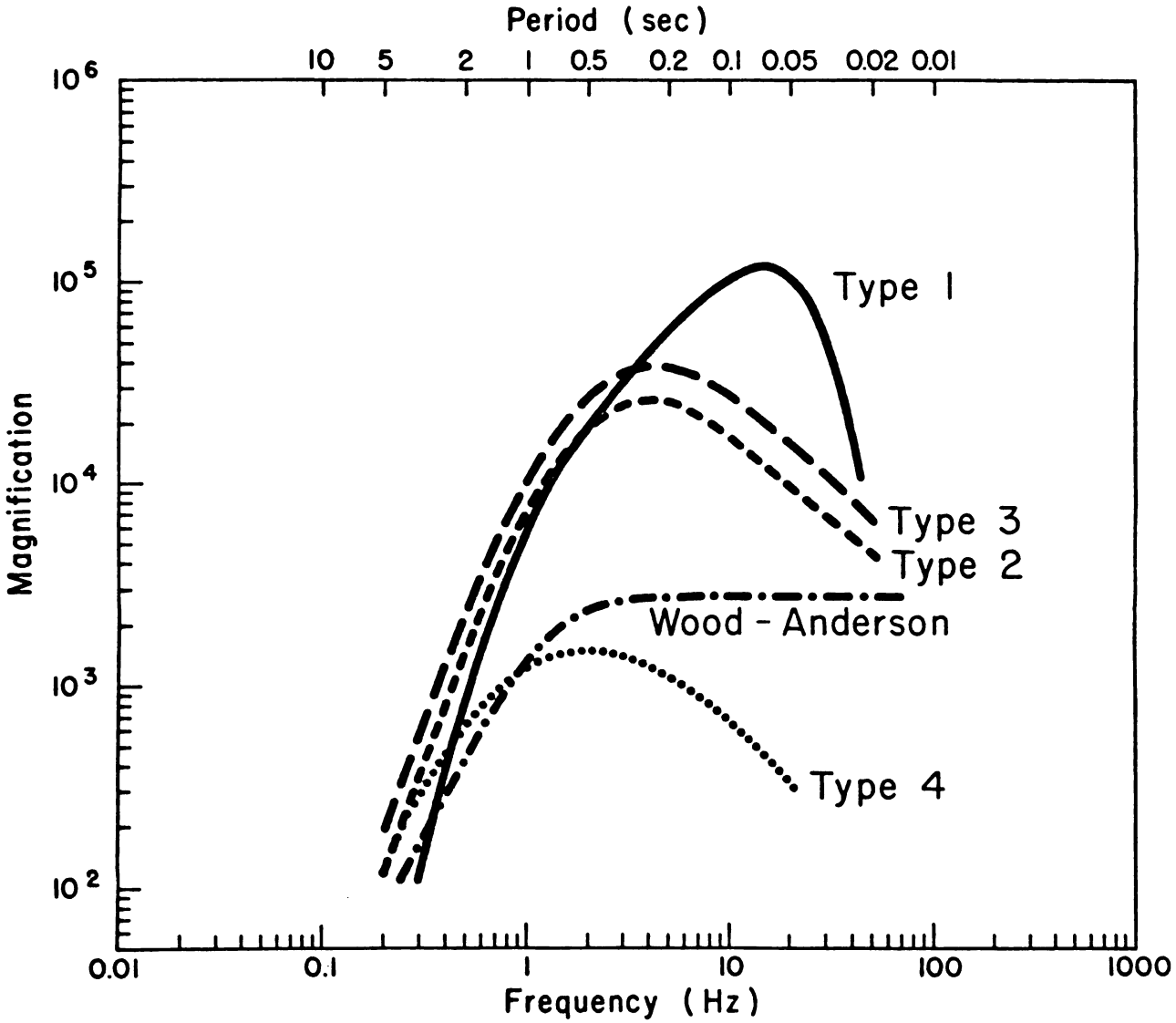

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 8.

Table 6.--Tilt Coordinates at Uwekahuna,

January, February, and March 1973

Date	N-S	E-W	Date	N-S	E-W
Jan. 7	721	320	March 4	719	321
14	721	318	11	719	321
21	720	319	18	719	320
28	720	319	25	719	319
Feb. 4	720	318			
11	720	319			
18	719	321			
25	719	321			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 3)

Tilt base	Date (1973)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading (1972)
Uwekahuna (U on fig. 3)	21 Mar	745.5	352.4	0.38 S54.0°W	5 Dec
Tree Molds (TM)	21 Mar	580.6	482.5	0.22 N66.8°W	5 Dec
Sand Spit (SS)	22 Mar	1012.2	726.6	2.89 S 2.8°E	6 Dec
Mehana (M)	21 Mar	615.2	600.9	0.80 N16.5°W	5 Dec
Keamoku (Kea)	22 Mar	773.9	233.4	1.79 S54.6°E	5 Dec
Ahua Kamokukolau (Kam)	22 Mar	383.1	530.9	2.39 N33.9°W	6 Dec
Kipuka Nene (KN)	Not occupied this epoch				
Hilina Pali (HP)	Not occupied this epoch				
Kapapala Ranch (Kap)	Not occupied this epoch				

Table 8.------Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N. Deg. Min.	Long. W. Deg. Min.			
Tree Molds	TM	19 - 26.3	155 - 17.3	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19 - 24.1	155 - 16.8	---do---	25.40	Equilateral triangle.
Keamoku	Kea	19 - 25.1	155 - 19.0	---do---	47.55	do
Ahua Kamokukolau	Kam	19 - 22.7	155 - 16.6	---do---	50.79	do
Kipuka Nene	KN	19 - 19.4	155 - 16.7	---do---	47.73	do
Hilina Pali	HP	19 - 18.2	155 - 18.6	---do---	47.73	do
Kapapala Ranch	Kap	19 - 20.5	155 - 23.8	---do---	50.79	do
Mehana	M	19 - 26.2	155 - 14.3	---do---	25.00	do
Uwekahuna	U	19 - 25.5	155 - 17.4	---do---	50.79	do
Uwekahuna Vault		19 - 25.4	155 - 17.6	Daily	3.48	NS. and EW.

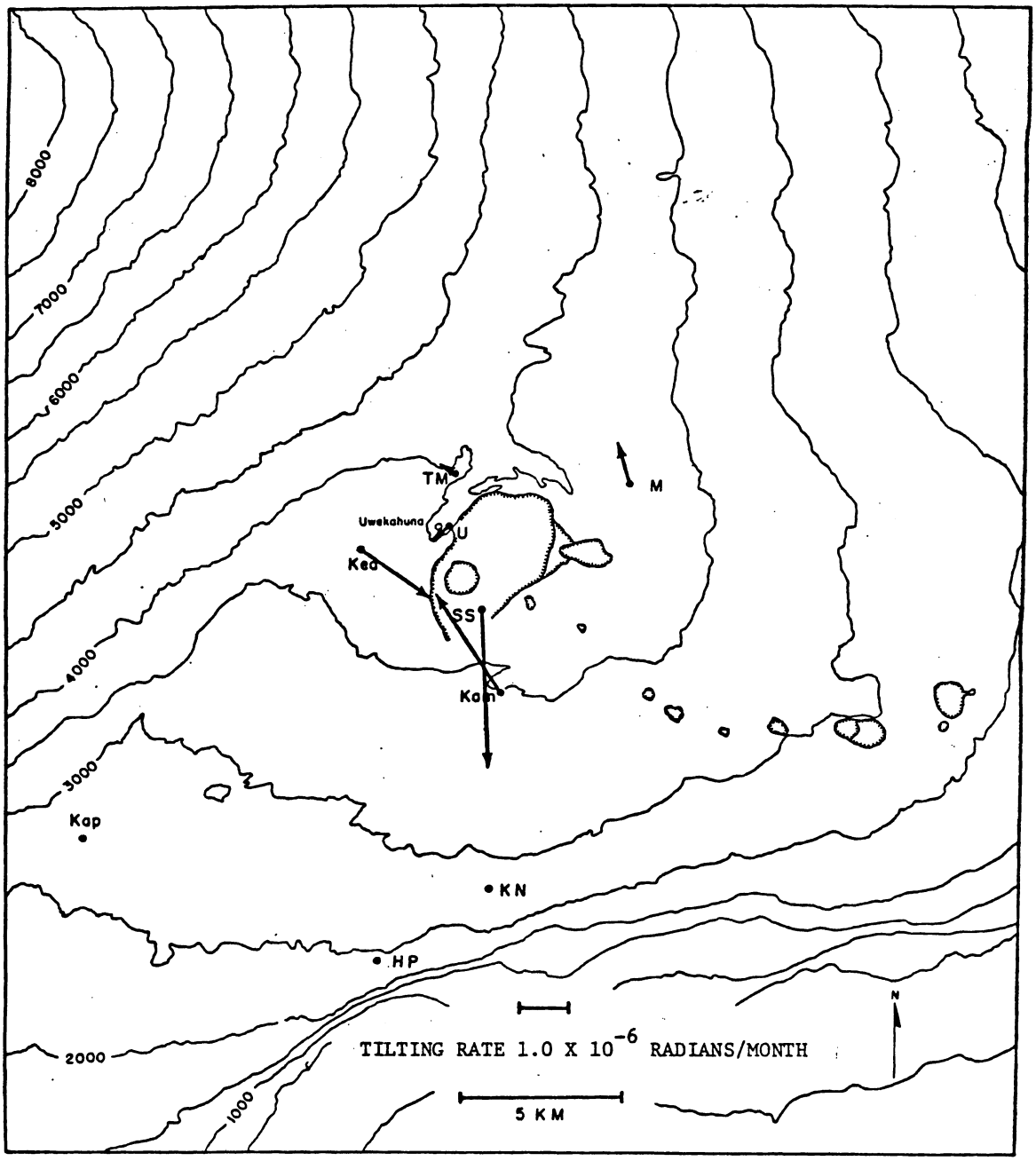

Figure 3.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 7 for explanation of abbreviations.

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Hamilton, R. M., B. E. Smith, J. C. Hall, and J. H. Healy, 1969, Summary of seismic activity in the Pahute Mesa area, Nevada Test Site, December 1968 - June 30, 1969: U.S. Atomic Energy Comm. (USGS-474-58): Springfield, Va., Clearinghouse for Federal Sci. and Tech. Inf., 63 p.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

Summary 70

April, May, and June 1973

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Summary of eruptive events

Eruptive activity during the first month of the quarter basically resembled that of the previous several months. Lava-lake activity continued at Mauna Ulu, with levels fluctuating generally around 30 ± 5 m from the rim; measurements showed that lava levels at Mauna Ulu and Alae tended to vary sympathetically. The Alae vent continued to feed pahoehoe flows, via the south-trending tube system, entering the ocean west of Apua Point. Between March 23 and April 10, the subaerial part of the lava delta grew by an additional 0.6×10^5 m^2 (15 acres). The state of inflation at Kilauea's summit varied little during this interval of relatively steady activity.

The 6.2-magnitude earthquake of April 26 (see seismic summary) apparently disrupted the lava-tube system, and flow into the ocean ceased within a few days. Presumably because of quake-caused blockages downstream in the tube system, lava gushed out many existing tube openings upstream and broke out at several new sites near Alae, increasing the size of its shield. The activity at Mauna Ulu at first did not show any changes, but during a few hours in the early morning of May 5 lava drained completely from the Mauna Ulu lava lake and the Alae vent. A rubble-choked, 200 m-deep crater was exposed at Mauna Ulu. Shortly afterward, lava erupted from a fissure in the west pit of Pauahi Crater, marking its first activity in historic times; by early afternoon another outbreak began within and near Hiiaka Crater, 800 m uprift, as the activity at Pauahi waned. Late in Hiiaka's activity a small eruptive fissure opened in the eastern end of the Koae fault zone about 1 km west of Hiiaka. Most activity stopped by early evening, but weak lava bubbling in Pauahi persisted until early the next morning. The 7-hour Pauahi-Hiiaka activity erupted a total of about 1.2×10^6 m^3 of lava, of which 2.4×10^5 m^3 drained back into vent fissures; the eruption was accompanied by a deflation of approximately 25 microradians at Kilauea's summit region.

Lava moved quietly back into Mauna Ulu within two days and began to refill the emptied crater, and by early June moderate activity resumed. A small pool of lava also reappeared at the Alae vent. On June 9, however, the level of the lake at Mauna Ulu dropped abruptly nearly 100 m, and the lava pool at Alae vent drained and was covered by rubble from collapsing walls. Within several weeks the lava level at Mauna Ulu regained its early-June stands (~20 m below the rim), but Alae never recovered and was inactive for the rest of 1973. The resumed lava-lake activity at Mauna Ulu was mild, and a small "island" of semi-solidified lava was present throughout most of June; field observations and time-lapse photography indicated that the island shifted in size, position, and level as the lava-lake surface fluctuated. Although the lake rose slowly with time, the area of actively circulating lava decreased as the activity became more sluggish toward the end of June. By the end of the quarter, an 8-microradian deflation associated with the abrupt June lowering of Mauna Ulu lava lake had been fully "recovered", but visible eruptive activity was markedly declining.

A deep drill hole south of Halemaumau, funded by NSF and headed by George V. Keller, Colorado School of Mines, was begun on April 6 and continued with brief interruptions throughout the quarter.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit								
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
Apr 1			Low level tremor on the upper east rift throughout the month		46	104	25	24	3		1	
2	12m			1	29	90	19	22	10	1		
3		5m			59	110	30	16	3			
4	10m			2	53	90	29	17	6			
5	21m			1	81	121	27	23	2	1		
6	4m	6m		1	24	118	27	30	8			
7					13	93	23	23	15	1		
8					22	112	23	11	7		1	
9	34m			1	3	73	13	17	5	1	1	
10				2	8	103	16	11	6	1		

11				24	117	25	9	7			
12		4^m		15	91	20	13	7	1	2	
13				51	102	20	11	9			
14			1	49	100	25	63	5	1		
15				67	104	28	20	11	1	1	
16		8^m	1	62	71	18	11	7			
17				49	94	20	11	6	4		
18				57	88	15	21	6	1	1	
19			1	25	80	16	16	8		1	
20			1	69	155?	15	12	3	2	2	
21			1	132	138	23	19	7	1		
22				44?	64?	24?	8?	?	?		
23				20	79	12	12	3	2	2	
24		3^m		25	132	18	14	5	4	3	
25	21^m			19	182	6	13	3	4		
26				?	?	?	?	?	?		Honomu earthquake, M = 6.2; aftershocks
27		15^m	9	64	405	46	16	19	1		
28	3^m		2	41	574	11	20	8			
29			2	69	64	23	19	9	2		Increase of shallow earthquakes NE flank of Mauna Kea
30		180^m?	1	71	463	24	42	6			

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit								
	Deep	Inter-mediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
May 1			Strong tremor May 5-11, and low to moderate tremor remainder of the month - upper east rift area		19	106	29	20	5	1		Honomu aftershocks and shallow Mauna Kea earthquakes continue during the month Upper east rift/ Koae eruption Many small rockfalls at Mauna Ulu
2				2	16	95	25	8	7			
3		7m			24	131	14	9	1	1		
4				3	14	130	25?	170?	63?	1		
5				1	17?	178?	43?	487?	1380?	2		
6					44	14?	13?	967?	135?	3		
7					37	16	11	649?	86?			
8					83	28	20	279?	55	3		
9				1	117	24	25	165?	36			
10				1	97	36	27	89?	89			

11	12^m	5^m		5	131	89	33	31	17?		
12	10^m	3^m		2	68	81	34	50	26	1	1
13					104	157	26	90	58	2	
14				2	49	204	31	46	37	2	
15					20	237	36	25	30		
16				1	26	232	53	46	32	1	
17					10	258	37	63	34	3	1
18		5^m			29	203	25	67	7		1
19				3	50	214	30	56	3	1	2
20	10^m				25	246	23	36	15		1
21					66	275	12	20	5	1	1
22					49	248	12	27	7	6	1
23					51	310	15	52	4	1	1
24		3^m		2	19	180	15	64	8	1	
25				4	3	236	9	67	10	3	
26				2	3	292	11	77	2		2
27				2	11	352	12	95	4	3	
28				1	16	395?	17	82	1		
29		8^m		1	23	284	28	57	3		1
30		4^m			41	301	18	61	1		
31		4^m		1	48	407	21	60	9		

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit								
	Deep	Intermediate	Shallow	30KM	Long Period	Shallow	SW rift and Kaoiki	Upper east rift	Koae	Lower east rift	Offshore Puu Pili	Remarks
Jun 1		7m	Moderate to weak tremor from the upper east rift throughout the month	2	55	334	26	43	1	2	2	
2	61m	15m		1	87	410	15	44	4	1		
3	12m?	13m?			85	588	16	68	2		1	
4		6m			46	302	19	41	5			
5		12m		1	88	438	36	58	5	2	1	
6		5m			51	511	18	72	8		1	
7		11m		1	26	487	29	88	15			
8		10m			23	414	24	55?	1267?			Upper east rift/ Koae swarm and summit collapse; lava drainback and increase of rockfalls at Mauna Ulu
9				2	48	451	13	80?	590?	3	1	
10				2	27	354	19	59?	56?	2	3	

11				58	328	22	82?	28?		
12				44	356	18	69?	24?	1	
13	20^m			21	340	26	41	17		
14		18^m		14	428	19	92	18		
15		15^m	2	37	452	27	61	15	1	2
16			2	12	433	27	78	11		
17				17	418	16	68	10	1	2
18				14	403	15	50	10	2	
19			2	19	405	7	48	7		
20		13^m	1	60	431	14	31	4		
21	36^m			13	405	9	62	8	5	1
22		14^m	1	21	385	15	45	8	1	
23			2	6	374	14	58	7	2	
24			1	3	351	9	60	7	1	
25				7	?	13	66	8	3	1
26				3	411?	20	63	8	1	
27				4	499	21	66	11	2	
28			1	1	342	21	56	4		
29				8	352	32	61	4	1	4
30	13^m			10	470	26	60	4	2	3?

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	EPICENTER	FOCAL DEPTH
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥8	≤120°	≤DEPTH or 5 km
B	≥6	≤150°	≤2 X DEPTH or 10 km
C	≥6	≤225°	≤50 km
	≥4	≤180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤1.0	≤2.0	≤0.10	≤0.25
B	≤2.5	≤5.0	≤0.20	≤0.50
C	≤5.0		≤0.30	≤0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 1	1	21	38.1	19-18.7	155-14.9	10.2	1.7	11	203	5.0	0.33	1.5	2.6	0.09	C
1	1	54	18.4	19-52.0	155-31.1	14.1	2.6	14	203	11.4	0.15	1.2	0.9	0.09	C
1	8	16	58.1	18-41.8	155- 5.0	8.0*	2.9	27	284	64.9	0.68	4.2		0.16	D
1	9	59	13.3	19-25.0	155-16.6	11.2	1.7	10	118	0.7	0.29	1.1	2.3	0.09	B
1	17	25	25.4	19-22.6	155-24.3?	8.0	1.0	19	52	4.8	0.08	0.5	0.6	0.14	B
1	20	53	20.6	19-30.9	155-19.2	8.0*	1.9	10	118	6.5	0.14	1.1		0.20	B
1	22	52	42.4	19-20.5	155- 3.7	8.0	1.0	12	133	1.8	0.33	2.6	4.2	0.22	C
2	1	19	31.9	19-26.3	155-17.1	9.4	1.6	8	189	1.8	0.58	2.0	4.7	0.13	C
2	3	11	27.2	19- 0.9	155-21.5	26.4	1.9	20	234	19.4	0.39	2.3	3.7	0.14	D
2	9	31	48.2	19-19.8	155-13.8	8.0*	1.9	17	173	5.3	0.06	0.5		0.09	C
2	10	25	44.0	19-24.8	155-16.7	2.7	0.7	7	107	0.6	0.26	0.9	2.1	0.08	B
2	11	57	11.4	19-22.9	155-25.4	8.0*	0.5	12	185	6.2	0.23	1.6		0.20	C
2	13	45	48.2	19-47.1	155-38.4?	3.5	1.8	10	188	19.0	0.28	2.4	2.1	0.20	C
2	16	16	46.0	19-19.8	155-13.3	7.8	1.6	19	144	5.0	0.09	0.7	0.4	0.11	C
2	16	38	44.9	19-20.5	155-12.4	8.8	0.0	11	188	5.4	0.28	1.4	2.9	0.11	C
2	18	1	50.3	19-20.3	155-13.1?	6.2	1.2	14	185	6.6	0.18	1.1	1.0	0.18	C
2	18	12	53.5	19-18.5	155-46.9	7.4	3.0	23	108	10.4	0.12	1.0	1.5	0.12	B
2	18	16	55.0	19-19.1	155-13.0	8.0*	0.8	11	213	7.9	0.16	1.1		0.13	C
3	0	54	26.1	19-19.3	155-10.1?	4.8	1.2	16	176	5.2	0.25	1.6	1.5	0.26	C
3	3	54	48.1	19-20.1	155- 8.2	3.5	0.7	15	165	4.5	0.17	1.2	1.6	0.21	C
3	10	17	29.1	19-25.0	155-17.2	9.9	1.6	7	111	0.3	0.27	0.9	2.2	0.05	B
3	11	3	5.5	19-20.6	155-12.8	8.9	0.8	14	181	5.8	0.13	0.8	1.4	0.09	C
3	12	29	42.0	19-24.6	155-18.2	9.2	1.7	8	84	1.7	0.12	0.5	1.1	0.04	A
3	19	20	59.1	19-24.4	155-16.9	10.9	1.3	10	73	1.0	0.28	1.1	2.2	0.08	B
3	21	15	45.8	19-51.8	155-21.6	32.1	1.4	17	111	3.3	0.22	1.3	2.3	0.10	B
3	21	28	40.8	19-12.0	155-19.8	26.8	2.2	23	193	11.1	0.23	1.4	2.1	0.15	C
3	23	27	16.5	19-23.8	155-17.6	6.0	1.3	11	59	1.4	0.36	1.1	2.7	0.18	B
4	8	48	53.0	19-24.7	155-16.5	0.5	-0.1	7	98	0.9	0.08	0.2	0.2	0.05	B
4	8	49	23.8	19-20.0	155-10.5	8.2		9	165	4.0	0.05	0.5	0.9	0.05	B
4	12	21	23.8	19-20.1	155-10.6	8.7		10	164	3.9	0.08	0.7	1.3	0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	4	12	25 33.7	19-15.0	155-27.1?	7.5	1.5	15	110	2.7	0.17	1.7	1.2	0.31	C
	4	15	21 24.3	19-23.4	155-28.0	7.8	2.4	23	83	10.2	0.17	0.7	1.2	0.17	B
	4	15	36 58.6	19-18.1	155-21.9?	5.8	1.7	11	158	4.7	0.14	1.0	2.0	0.12	C
	4	21	23 32.2	19-19.1	155-15.6?	8.5	0.7	14	186	3.6	0.25	1.3	2.3	0.15	C
	4	22	27 42.6	19-23.5	155-22.0	8.7	0.9	13	110	4.1	0.15	0.9	1.4	0.17	B
	5	8	31 12.2	19-24.7	155-16.1	7.2		10	86	2.8	0.40	1.1	2.3	0.10	B
	5	9	16 13.7	19-16.2	155- 4.0	31.7	1.4	21	242	14.8	0.46	2.7	2.9	0.12	D
	5	16	21 9.4	19-47.4	155-13.9?	31.2	0.9	12	198	16.0	1.02	6.7	10.5	0.34	D
	5	16	37 19.7	19-24.1	155-16.8	9.5	1.2	9	79	2.8	0.20	0.8	1.7	0.05	A
	5	19	18 35.9	19-18.6	155-16.3	33.3	2.5	26	145	3.4	0.15	0.9	1.5	0.13	B
	5	21	14 30.8	19-22.6	155-24.7	8.0*	0.4	14	134	5.1	0.11	0.8		0.14	C
	6	0	44 49.9	19-19.7	155-15.3	5.5	0.7	14	165	3.8	0.15	1.1	0.9	0.19	C
	6	8	18 26.3	19-22.4	155-24.6?	8.3	1.1	10	152	4.5	0.09	0.7	0.8	0.11	C
	6	10	21 5.9	19-19.2	155-11.9	3.6	2.6	26	147	6.1	0.14	0.9	1.0	0.24	C
	6	15	15 40.0	19-34.2	155-43.0?	5.4	1.5	16	152	15.3	0.90	1.4	6.6	0.17	C
	6	19	12 23.7	19-19.9	155-12.1	8.0*	-0.0	9	209	5.7	0.19	1.3		0.12	C
	6	19	55 15.0	19-12.6	155- 8.3	38.3	1.2	23	219	16.4	0.31	1.7	2.5	0.12	C
	6	20	32 15.5	19-24.1	155-24.1	8.0*	0.2	10	198	7.4	0.13	0.9		0.12	C
	6	22	5 45.1	19-22.6	155-24.5?	2.9	0.7	16	107	5.0	0.15	1.0	1.9	0.21	C
	6	22	37 56.2	19-18.7	155- 9.1	2.9	0.6	13	188	6.4	0.24	1.5	2.4	0.21	C
	6	23	37 24.1	19-25.5	155-25.0	7.1	1.4	21	64	8.4	0.10	0.7	0.6	0.18	B
	7	18	58 8.3	19-24.5	155-26.8	3.4	1.1	18	73	10.1	0.12	0.8	1.8	0.22	C
	7	20	7 19.9	19-26.0	155-25.9?	8.2	2.0	20	67	8.3	0.08	0.5	0.5	0.12	B
	7	21	47 33.8	19-19.9	155-14.9	8.3	0.4	13	165	4.4	0.13	0.9	1.8	0.12	C
	7	22	37 17.7	19-20.7	155-13.1	4.9	1.1	18	166	3.4	0.15	1.0	1.0	0.21	C
	8	1	30 20.0	19-19.5	155-15.3	6.0	1.4	19	167	3.8	0.12	0.9	0.6	0.18	C
	8	4	35 29.3	19-21.1	155-25.2	4.2	0.9	14	76	3.6	0.14	1.0	1.6	0.23	B
	8	5	9 41.1	19-27.9	154-58.5	7.6	1.7	12	273	28.3	0.56	3.3	1.3	0.08	D
	8	10	16 13.1	19-20.0	155-26.9	6.2	1.6	13	117	6.3	0.13	1.1	1.7	0.21	C
	8	10	18 8.6	19-19.3	155- 8.0?	8.0*	0.7	11	181	6.1	0.21	2.1		0.25	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 8	11	28	15.9	19-19.8	155-13.8	8.0*	0.5	8	175	6.1	0.10	1.0		0.11	C
8	11	34	43.9	19-23.2	155-22.9	6.1	1.0	13	151	5.6	0.12	1.0	0.9	0.16	C
8	19	2	21.6	19-21.2	155-24.4	7.3	0.7	12	110	2.7	0.12	1.1	1.0	0.17	B
8	19	16	0.5	19-12.5	155-27.5	5.6	2.1	18	130	5.6	0.12	1.1	0.9	0.22	C
8	20	32	53.1	19-19.1	155- 9.0	3.1	2.3	24	160	5.6	0.17	1.0	1.0	0.24	C
9	1	21	7.4	19-19.6	155-15.7	6.6	0.5	12	163	3.1	0.10	0.8	0.7	0.13	C
9	4	41	47.3	19-22.6	155-24.0	8.2	2.8	25	44	4.6	0.10	0.6	0.7	0.18	B
9	6	48	12.1	19-23.3	155-28.1	4.1	1.3	15	109	10.2	0.15	1.1	1.9	0.21	C
9	13	48	40.9	19- 9.4	155-27.8	44.5	1.6	20	162	0.3	0.62	2.8	5.8	0.26	C
9	18	58	27.6	19-21.1	155-12.4	6.2	1.6	20	135	2.6	0.10	0.8	0.7	0.21	C
9	21	31	14.0	19-19.6	155-16.0	8.2	0.6	11	161	2.7	0.12	1.2	0.7	0.15	C
9	23	13	19.5	19-10.6	155-33.7	6.0	2.3	13	105	9.9	0.16	1.1	1.1	0.20	B
10	0	9	55.7	19-20.6	155-13.1	4.7	0.9	15	176	5.8	0.20	1.2	1.4	0.23	C
10	5	55	24.9	19-22.8	155-15.7	27.8	0.8	14	100	0.8	0.24	1.1	2.3	0.10	B
10	6	19	29.3	19-19.6	155-13.5	7.4	2.8	25	143	5.5	0.09	0.7	0.5	0.16	B
10	16	16	19.7	19-21.1	155-13.7	4.7	0.8	14	161	4.6	0.15	1.0	1.2	0.18	C
10	16	23	32.0	19-20.6	155-13.3	8.0*	-0.0	9	176	6.5	0.14	1.1		0.12	C
10	21	42	37.0	19-27.2	155-52.5	8.4	2.9	21	230	20.6	0.23	1.4	1.5	0.12	C
11	1	0	1.9	19-18.3	155-15.2	7.3	2.4	25	152	5.0	0.10	0.7	0.5	0.16	C
11	5	19	28.5	19-19.8	155-11.8	3.1	1.6	21	147	5.2	0.16	1.0	1.4	0.26	C
11	5	47	12.5	19-24.8	155-17.3	13.8	1.1	17	72	0.5	0.06	0.5	0.8	0.10	B
11	6	45	40.3	19-25.7	155-27.0	5.9	1.2	18	66	9.9	0.09	0.7	0.9	0.18	B
11	7	27	19.3	19-22.4	155-25.3	8.0*	2.0	11	138	5.3	0.08	0.7	.	0.12	C
11	10	1	14.7	20- 3.4	155-21.1	10.3	1.4	8	234	18.5	0.23	1.6	1.1	0.05	C
11	22	21	58.8	19-24.0	155-16.4	13.0	1.8	24	50	2.0	0.04	0.6	0.4	0.13	B
12	7	18	35.3	19-18.9	155-15.3	7.4	1.9	21	144	4.3	0.09	0.7	0.6	0.15	B
12	13	10	27.6	19-22.4	155-24.9?	7.6	1.6	18	69	4.9	0.10	0.7	0.7	0.15	B
12	15	34	49.9	19-20.6	155-24.8	7.9	1.0	15	109	2.7	0.06	0.7	1.3	0.12	B
12	23	12	30.3	19-19.9	155-14.3	4.9	1.4	13	183	5.5	0.21	1.2	1.3	0.20	C
13	2	29	15.4	19- 9.0	155-40.9	5.7	2.7	19	128	12.8	0.24	1.6	1.6	0.25	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 13	8	14	43.4	19-23.0	155- 5.0?	8.0*	1.6	9	240	8.7	1.73	9.8		0.28	D
13	11	22	56.1	19-24.5	155-17.7	7.8	1.2	8	101	1.7	0.26	0.5	1.6	0.04	A
13	12	16	13.5	19-20.2	155-13.9	4.5	2.2	26	138	4.8	0.12	0.8	0.9	0.27	C
13	16	13	9.6	19-25.2	155-16.2	1.6	0.5	9	115	1.1	0.11	0.6	0.5	0.14	B
13	16	58	17.8	19-19.5	155-14.5	8.9	0.4	10	219	5.2	0.51	2.6	3.5	0.12	C
13	22	30	55.3	19-24.6	155-17.4	8.1	1.5	11	65	8.1	0.07	0.7	0.4	0.07	A
13	22	32	55.7	19-24.0	155-18.6	7.7	0.8	12	68	2.1	0.12	0.7	0.9	0.09	A
14	0	8	55.5	19-21.5	155-25.9	7.0	0.5	10	139	5.2	0.16	1.2	0.7	0.15	B
14	0	37	52.3	19-21.7	155-26.1	8.0*	0.3	9	141	11.8	0.09	0.8		0.10	C
14	4	56	13.7	20- 4.2	155-32.2	10.0	1.9	23	210	26.2	0.24	2.1	2.0	0.21	C
14	6	21	55.8	19-24.1	155-17.6	6.8	1.0	7	81	8.4	0.31	0.6	2.2	0.05	B
14	8	3	47.3	19-11.5	155-17.2	30.5	1.0	12	281	12.2	0.88	4.7	5.1	0.13	D
14	10	50	46.9	19-20.0	155- 8.4	8.5	1.5	16	167	4.7	0.11	1.0	2.2	0.13	C
14	17	37	52.0	19-21.1	155-25.1	4.0	2.1	19	76	3.6	0.12	0.9	1.3	0.25	B
14	19	0	45.0	19-20.4	155- 8.6	7.4	1.3	11	196	3.7	0.28	2.1	1.0	0.16	C
14	21	42	18.7	19-18.9	155-27.0?	0.0	2.5	24	88	6.9	4.72	0.8	8.9	0.27	C
15	0	59	38.1	19-18.1	155- 6.5	2.8	4.2	26	190	9.4	0.24	1.2	1.2	0.24	C
15	1	8	16.6	19-19.9	155- 7.3	8.0*	0.7	11	170	5.9	0.14	1.3		0.13	C
15	1	15	56.2	19-19.4	155- 8.1?	2.7	1.1	18	177	5.8	0.18	1.2	1.4	0.24	C
15	1	19	21.5	19-20.6	155- 8.1?	7.7	0.9	13	157	4.1	0.17	1.7	1.0	0.19	C
15	1	38	16.9	19-20.2	155- 8.0	8.2	1.0	14	236	4.8	0.29	1.9	2.3	0.10	C
15	1	43	5.0	19-19.2	155- 7.3	8.0*	0.8	13	184	7.0	0.20	1.8		0.24	C
15	1	43	23.0	19-19.9	155- 8.6	1.0	2.5	23	150	8.5	1.17	0.9	4.2	0.23	C
15	1	57	54.8	19-19.5	155- 8.6	8.0*	0.9	15	175	5.2	0.11	1.0		0.14	C
15	1	59	56.4	19-19.5	155- 8.3	3.8	2.0	22	156	5.4	0.15	1.0	1.0	0.23	C
15	7	16	51.6	19-19.0	155- 7.5?	0.0	1.6	21	190	7.0	5.73	1.5	10.7	0.25	C
15	7	34	8.8	19-19.7	155- 8.1	8.0*	0.6	11	172	5.3	0.12	1.0		0.11	C
15	7	36	58.2	19-19.9	155- 8.0	8.8	0.3	10	169	5.2	0.23	1.8	3.6	0.14	C
15	8	9	27.2	19-24.3	155-28.6	7.4	0.9	13	176	12.0	0.14	0.9	0.7	0.11	C
15	9	58	2.6	19-43.3	155- 4.7?	83.6*	1.8	13	232	24.1	2.48	27.2		0.74	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	15	22	21	12.5	19-20.4	155- 7.9?	8.3	0.7	11	161	4.6	0.14	1.1	1.0	0.16	C
	15	23	50	30.1	19-20.5	155- 8.3	10.2	0.5	13	158	8.4	0.12	0.7	1.7	0.08	B
	16	14	29	57.6	19-19.8	155- 7.4	3.7	3.0	20	172	6.1	0.18	1.2	1.1	0.25	C
	16	14	55	46.8	19-20.3	155- 6.4	8.0*	1.9	14	162	6.2	0.12	1.1		0.12	C
	16	23	42	41.6	19-20.3	155- 8.3	5.7	2.1	19	161	4.1	0.14	1.1	0.9	0.19	C
	17	5	24	54.4	19-25.5	155-25.1	6.0	2.3	23	64	8.5	0.08	0.6	0.6	0.17	B
	18	11	1	40.7	19-10.9	155-33.1	6.8	2.8	16	102	9.6	0.17	1.2	1.1	0.21	C
	18	13	41	46.4	19-10.6	156- 4.2	48.7	3.3	18	266	23.1	0.80	3.7	5.4	0.11	D
	19	2	14	13.1	19-19.6	155-13.6	7.4	0.6	13	196	6.7	0.16	1.2	0.6	0.15	C
	19	2	25	53.2	19-19.4	155-14.1	6.0	0.5	8	196	6.0	0.33	1.9	1.8	0.17	C
	19	13	4	11.5	19-29.3	155-12.2	23.7		10	170	11.8	0.15	0.9	1.6	0.06	B
	19	18	20	27.0	19-20.1	155-14.1	3.8		16	180	5.0	0.19	1.1	1.3	0.22	C
	19	18	51	5.8	19-20.3	155- 8.7	4.7	3.1	20	144	3.7	0.15	1.0	0.9	0.24	C
	19	18	54	4.8	19-12.6	155-27.5?	7.1	2.2	13	127	5.8	0.16	1.4	2.4	0.20	B
	20	12	6	50.7	19-21.6	155-12.8	2.5		8	156	1.6	0.19	1.2	4.1	0.13	C
	20	13	33	25.5	19-21.9	155-25.2?	7.9		10	68	4.6	0.10	0.8	0.7	0.12	B
	20	15	47	9.0	19-19.8	155- 7.8?	3.1		11	171	5.5	0.24	1.7	2.4	0.27	C
	20	22	55	58.5	19-24.3	155-26.7	8.0*		8	217	9.6	0.16	1.1		0.09	C
	21	1	3	43.4	19- 7.2	155-33.9	8.4	2.6	16	147	11.4	0.10	0.9	1.3	0.14	B
	21	2	29	42.1	19-18.7	155- 7.1?	0.9*		11	251	7.9	0.30	1.5		0.25	D
	21	4	2	24.8	19-13.0	155-25.4	31.0		17	154	7.8	0.27	1.4	2.8	0.15	C
	21	6	22	40.6	19-45.3	156- 7.2	38.8		13	247	54.6	0.47	2.4	4.8	0.10	C
	21	7	4	1.0	18-47.5	155-11.6	8.0*		17	290	49.7	1.13	7.2		0.18	D
	21	18	27	33.9	19-19.4	155-13.4	8.0*		9	203	7.1	0.13	1.0		0.10	C
	21	19	20	7.4	19-19.5	155-13.3	8.0	1.7	18	183	5.6	0.11	0.8	0.4	0.10	C
	22	3	1	11.0	19-19.1	155-13.3	8.0*		11	209	7.4	0.13	0.9		0.10	C
	22	3	3	14.2	19-19.8	155-13.6	7.6		16	184	6.3	0.13	0.9	0.6	0.14	C
	22	3	8	53.7	19-19.6	155-13.5	3.6		12	198	6.7	0.26	1.5	2.3	0.24	C
	22	4	23	44.4	19-20.0	155-14.6	26.0		18	138	4.9	0.11	0.7	1.1	0.08	B
	22	21	7	52.1	19-58.3	154-41.1?	47.5*	4.8	22	282	50.6	0.62	4.3		0.24	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 23	18	21	19.7	19-20.7	155-12.2	8.0*		10	188	4.8	0.14	1.2		0.13	C
24	6	16	22.2	19-53.9	155-43.6	40.1	3.9	28	123	26.0	0.18	0.9	2.4	0.14	B
24	8	7	42.7	19-19.4	155- 0.8?	3.1		14	279	16.6	1.07	4.5	2.5	0.20	D
24	9	22	45.9	19-22.8	155-27.8	5.6	1.9	15	137	9.2	0.12	0.9	1.1	0.18	B
24	9	45	36.5	19-20.6	155-13.0	5.7		16	180	6.0	0.16	1.0	0.9	0.17	C
24	14	12	47.1	19-20.9	155-24.4	8.7		10	123	2.3	0.08	0.8	1.4	0.09	B
25	3	13	11.5	19-20.1	155-12.9?	0.0		13	194	6.5	9.39	1.5	17.9	0.23	C
25	4	43	56.7	19-22.8	155-23.2	5.6		11	167	4.7	0.16	1.1	1.4	0.15	C
25	19	8	5.1	19-56.7	155-33.1	4.8	2.6	11	280	20.6	1.09	4.9	2.8	0.13	D
26	10	26	30.1	19-53.6	155- 6.2	50.1		27	205	25.2	0.29	1.4	2.6	0.12	C
26	11	32	7.7	19-38.5	155-13.3	8.0*	0.5	5	264	22.6	0.30	1.8		0.04	D
26	11	33	23.2	19-56.5	155- 2.9	52.0	2.2	13	291	24.9	2.07	9.0	14.0	0.12	D
26	11	40	58.9	19-22.1	155-27.9	8.0*		4	302	16.3				0.15	D
26	11	45	23.0	19-39.6	155-12.8	8.0*	1.7	9	199	14.7	0.30	2.5		0.20	C
26	11	52	37.8	19-36.8	155-16.5	8.0*	1.9	7	316	17.6	0.35	3.0		0.17	D
26	11	58	19.6	19-31.1	155-14.3	8.0*	2.0	7	289	12.4	0.22	2.4		0.21	D
26	12	2	21.2	19-35.9	155-13.4	8.0*	1.7	7	245	19.7	0.12	1.1		0.09	D
26	12	6	9.4	19-36.9	155-11.5	8.0*	1.9	5	255	24.2	0.65	3.9		0.07	D
26	12	37	54.4	19-33.5	155-12.3	8.0*		5	221	16.1	0.72	5.8		0.19	D
26	12	46	48.3	19-35.4	155-11.6	8.0*	1.7	8	242	16.7	0.12	1.2		0.14	D
26	12	55	10.7	19-35.1	155-12.2	8.0*	1.8	10	238	20.2	0.11	1.2		0.14	D
26	13	18	55.7	19-35.4	155-13.4?	8.0*	1.8	6	240	19.3	0.67	4.5		0.17	D
26	13	19	46.4	19-37.8	155-12.0	8.0*		5	261	24.6	1.00	5.9		0.11	D
26	13	56	4.0	19-37.8	155- 9.4	8.0*	2.6	7	166	12.3	0.21	3.8		0.21	C
26	14	9	27.1	19-36.6	155-11.3	8.0*	0.9	8	253	17.6	0.44	2.7		0.13	D
26	14	30	14.4	19-35.7	155-12.5	8.0*	1.6	11	243	18.3	0.40	2.4		0.17	D
26	14	36	30.7	19-21.2	155-23.7	8.0	-0.0	5	201	2.0				0.01	D
26	14	39	24.1	19-36.0	155-11.5	8.0*	2.2	9	247	22.3	0.67	4.1		0.20	D
26	14	40	31.1	19-25.1	155-12.1	8.0*	1.5	6	168	8.6	0.35	3.5		0.22	C
26	14	43	10.8	19-37.5	155-25.2	20.3*	2.1	6	334	14.6	0.61	5.1		0.07	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	26	17	11	21.1	19-38.2	155-11.4	18.7*	2.2	5	277	19.8	0.93	7.4		0.09	D
	26	17	13	18.2	19-43.6	155-12.3	8.0*	0.8	3	292	28.9				0.00	D
	26	17	23	7.6	19-34.5	155- 9.2	8.0*	0.3	4	292	22.9				0.03	D
	26	17	26	17.7	19-53.5	155- 7.3	48.5	3.4	24	221	19.2	0.47	2.1	3.9	0.14	C
	26	17	29	22.6	19-25.3	155-13.8	23.1	0.6	9	125	6.7	0.18	1.1	1.8	0.07	B
	26	17	29	35.7	19-50.9	155- 8.0?	41.8	1.9	19	240	15.0	0.74	3.2	5.6	0.12	D
	26	17	31	1.5	19-48.6	155-11.4	32.0	1.6	13	219	18.3	0.22	1.2	2.6	0.09	C
	26	17	32	0.1	19-24.7	155-13.6	24.8	0.8	7	120	8.2	0.24	1.3	2.7	0.06	B
	26	17	34	7.7	19-48.3	155-20.3?	8.3	2.3	10	174	9.4	0.24	2.4	3.7	0.12	C
	26	17	49	14.9	19-58.0	155- 0.8	52.5	3.2	21	243	28.4	0.66	3.1	5.0	0.16	D
	26	18	26	37.6	19-47.4	155-10.2?	14.0*	1.5	15	219	21.2	0.43	3.5		0.31	D
	26	18	36	45.8	19-46.5	155-12.2	13.2*	1.3	12	203	19.4	0.21	1.9		0.16	C
	26	18	41	31.1	19-52.3	155- 6.9?	38.0		16	256	16.9	0.84	3.9	6.2	0.14	D
	26	19	6	3.8	19-45.8	155-20.7?	79.8*	2.0	17	133	12.0	3.48	31.2		1.21	C
	26	19	7	17.0	19-51.1	155- 9.4	43.9	2.5	18	224	16.1	0.45	1.9	3.7	0.12	C
	26	19	9	22.2	19-55.6	155-10.1	50.1*	3.1	22	231	18.8	0.19	1.9		0.16	D
	26	19	16	24.2	19-20.1	155-17.2	32.5	1.0	8	181	10.7	0.18	0.8	1.7	0.04	B
	26	19	24	15.0	19-32.5	155-12.6	8.0*	0.5	3	315	15.8				0.00	D
	26	19	30	13.6	19-24.1	155-17.3	8.0*		3	272	2.5				0.00	D
	26	19	34	52.2	19-37.4	155- 6.0?	8.0*	1.5	7	205	10.8	0.39	5.4		0.17	D
	26	19	56	52.6	19-34.8	155-10.6	8.0*		5	252	14.6	1.12	7.6		0.15	D
	26	20	9	2.4	19-42.1	155-14.4	8.0*	1.6	11	240	16.1	0.28	1.7		0.16	D
	26	20	35	4.6	19-54.6	155- 8.5?	43.9	1.4	9	247	21.2	0.74	3.1	5.9	0.07	D
	26	20	43	11.6	19-51.0	155-13.1?	41.9	1.3	10	229	41.7	0.96	3.9	8.1	0.13	D
	26	20	47	59.1	19-34.7	155-12.5	8.0*		6	234	17.4	0.76	5.5		0.20	D
	26	20	48	37.2	19-47.2	155-31.6	24.9	1.1	14	226	7.2	0.34	1.7	3.2	0.10	C
	26	21	3	14.3	19-46.6	155-13.4	13.5*		15	196	17.7	0.16	1.4		0.15	C
	26	21	24	49.2	19-19.9	155- 5.3	8.0*		7	263	19.3	0.95	5.9		0.13	D
	26	22	0	34.7	19-55.4	155- 5.2	51.3	2.8	22	230	22.6	0.42	1.9	3.4	0.13	C
	26	22	7	0.4	19-51.9	155- 6.6	44.2*	2.7	20	234	16.1	0.11	1.0		0.10	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	26	22	8	58.5	19-49.9	155-19.1	8.1		12	139	7.0	0.08	1.2	1.6	0.09	B
	26	23	25	34.1	19-48.3	155- 8.5?	14.3*	1.5	13	210	23.1	0.40	3.1		0.31	D
	26	23	25	53.8	19-51.5	154-15.4	120.4*		17	321	93.1	1.09	9.2		0.22	D
	26	23	27	26.7	19-48.6	155-18.1	4.0		10	171	9.8	0.28	2.0	3.0	0.19	C
	26	23	27	54.9	19-50.4	155-19.4	10.0	2.5	16	139	5.9	0.10	1.4	1.7	0.11	B
	26	23	33	38.6	19-55.4	155-36.7	8.7	4.0	26	134	22.6	0.10	0.9	1.5	0.14	C
	26	23	40	5.3	19-47.7	155-11.1?	13.7*	0.4	9	215	19.5	0.27	2.2		0.16	C
	26	23	50	21.2	19-47.7	155-10.7	14.2*		7	218	29.4	0.33	2.7		0.13	C
	26	23	56	13.9	19-27.8	155- 8.4	13.5*	0.6	7	181	9.2	0.11	2.3		0.10	C
	27	0	45	17.0	19-50.1	155-18.8	8.6		11	146	6.9	0.09	0.7	1.3	0.10	B
	27	1	11	3.0	19-56.1	155-13.1	45.6	0.8	9	272	13.9	1.96	7.4	15.1	0.11	D
	27	1	16	12.9	19-59.1	155- 0.2	54.9*		10	312	37.0	0.27	2.3		0.07	D
	27	1	56	38.6	19-50.8	155-19.9	31.1		12	186	5.0	0.67	2.8	5.9	0.10	C
	27	2	2	53.8	19-56.6	155- 9.9	63.5*	1.2	12	276	19.5	0.18	2.2		0.10	D
	27	2	46	16.0	20- 0.1	155-12.3	55.0*	1.6	13	296	57.1	0.32	3.3		0.11	D
	27	3	16	24.4	19-45.3	155-13.1	13.4*	0.7	11	232	25.2	0.36	2.6		0.17	D
	27	3	19	53.4	19-46.8	155- 8.9	13.6*		13	223	23.9	0.29	2.3		0.17	C
	27	3	29	20.7	19-21.6	155-24.9?	7.3	0.7	14	67	3.8	0.09	0.9	1.2	0.16	B
	27	3	30	40.8	19-45.8	155-13.3	13.6*	0.6	11	192	18.9	0.21	2.1		0.17	C
	27	3	40	29.3	19-47.0	155-13.5?	13.8*		11	197	17.0	0.20	1.9		0.16	C
	27	3	53	41.7	19-50.0	155-18.1	4.8		13	154	7.7	0.16	1.3	1.6	0.16	C
	27	4	0	36.4	19-28.7	155-45.4?	3.4	0.9	13	254	16.5	1.30	3.1	7.6	0.13	D
	27	4	3	43.5	19-45.6	155-10.7	13.1*	0.8	11	207	22.4	0.24	2.0		0.18	C
	27	4	27	16.2	19-46.3	155-14.9	14.1*		15	184	16.4	0.18	1.6		0.18	C
	27	4	57	41.0	19-47.3	155- 8.1?	38.6	2.5	21	206	9.0	0.29	1.5	2.1	0.12	C
	27	5	28	52.5	19-13.9	155-27.6	8.0*	0.9	11	161	21.2	0.12	1.2		0.15	C
	27	5	42	5.1	19-56.0	155- 4.3	53.6	2.6	19	233	23.7	0.51	2.3	4.2	0.14	C
	27	6	15	51.9	19-46.1	155-10.3?	8.0*	0.6	10	284	30.1	6.43	38.5		0.20	D
	27	6	56	22.3	19-25.1	155-11.6	22.1	0.4	11	173	4.8	0.19	1.1	1.8	0.07	C
	27	6	59	29.0	19-46.2	155-12.8	14.2*	1.3	11	197	19.0	0.22	1.9		0.19	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 27	7	43	42.9	19-43.7	155-14.4	8.0*		3	292	30.0				0.00	D
27	7	54	13.6	19-46.6	155-12.4	14.0*		12	201	19.0	0.22	2.0		0.17	C
27	8	54	49.7	19-48.0	155-10.6	25.8	1.3	6	220	20.1	1.06	5.4	10.8	0.13	D
27	10	34	31.0	19-57.3	155- 1.9	53.4	3.0	22	260	33.4	0.77	3.6	5.6	0.12	D
27	10	47	55.5	19-58.2	155-26.3?	11.3	2.8	16	191	13.4	0.22	1.8	1.7	0.17	C
27	11	10	13.3	19-14.3	155-11.8?	0.0*	2.1	16	245	14.5	0.35	1.8		0.22	D
27	11	39	42.9	19-25.5	155-27.1	5.5	1.0	12	106	10.3	0.08	0.7	0.9	0.13	B
27	13	53	5.2	19-49.6	155-10.1?	37.0	1.2	11	232	19.6	0.84	3.4	7.3	0.11	D
27	14	8	40.7	19-20.2	155-17.6	29.6	1.0	11	132	0.4	0.21	1.2	2.0	0.08	B
27	14	14	46.2	19-59.1	155- 0.9	58.8	2.4	16	264	35.9	1.11	5.1	7.7	0.14	D
27	14	25	12.2	19-48.4	155-11.9	37.1	1.6	20	216	17.6	0.22	1.3	2.2	0.12	C
27	14	26	43.1	19-58.4	155-20.7	13.9	2.6	12	205	9.2	0.11	1.0	2.1	0.09	C
27	14	36	2.6	19-25.1	155-15.0	16.5	0.6	12	185	1.3	0.22	1.2	1.6	0.07	C
27	14	43	27.4	19-57.0	155- 9.6	49.7	2.1	13	237	20.4	0.74	3.5	5.9	0.14	D
27	15	20	36.9	19-56.5	155- 7.1	53.4		22	246	24.2	0.85	4.0	6.5	0.18	D
27	16	38	31.7	20- 0.6	155-29.6	4.1	2.2	16	194	20.6	0.33	2.3	1.6	0.28	C
27	16	49	8.7	19-57.8	154-59.5?	59.5	2.3	13	265	37.6	1.30	6.1	8.7	0.12	D
27	17	1	32.8	19-24.4	155-16.2	3.3	0.8	6	93	1.8	0.04	0.1	0.4	0.01	B
27	17	3	12.7	19-16.6	155-23.4	3.7	0.4	14	147	6.5	0.14	0.9	1.3	0.14	B
27	17	33	15.7	19-55.9	155-10.9	51.5	2.3	26	219	17.4	0.48	2.1	4.2	0.15	C
27	17	44	47.6	19-21.8	155-18.6	23.9	0.7	10	121	4.0	0.33	2.0	3.3	0.15	B
27	18	12	55.9	19-50.1	155-20.6	9.5	1.2	8	174	6.0	0.15	3.2	4.8	0.10	C
27	18	30	55.2	19-55.9	155- 6.0	45.4	2.2	15	229	23.4	0.48	2.6	4.8	0.20	D
27	20	6	29.0	19-19.4	155-15.3	5.6	1.3	21	182	3.8	0.14	0.9	0.7	0.18	C
27	20	25	13.6	19-57.6	155- 3.1?	53.4	2.0	20	257	31.4	0.76	3.6	5.8	0.13	D
27	20	51	33.2	19-55.1	155-10.5	46.6	1.8	24	218	17.9	0.44	2.0	3.8	0.15	C
27	21	22	40.7	19-57.5	155- 2.2	53.3	1.5	11	240	33.0	0.65	2.9	5.7	0.14	D
27	23	44	8.4	19-46.2	155-10.5	8.0*	0.8	7	211	22.0	0.25	1.9		0.14	C
27	23	52	4.7	19-19.2	155-15.7	5.6	0.7	18	185	3.4	0.13	0.8	0.6	0.17	C
28	0	47	58.4	19-15.3	155-23.7	27.7	1.0	14	258	9.0	0.34	2.4	2.0	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR 28	1	20	8.5	19-43.8	155-11.9	13.6*	1.1	13	191	23.2	0.23	2.2		0.22	C
28	1	36	13.1	19-28.6	155-15.4	23.1	1.8	26	70	5.7	0.09	0.7	1.0	0.10	A
28	1	43	26.9	19-46.9	155-14.2	8.0*	0.8	6	192	16.3	0.21	1.8		0.11	C
28	1	47	42.9	19-22.9	155-27.2?	6.3	1.3	18	85	8.5	0.12	1.1	2.3	0.23	C
28	1	52	8.2	19-56.3	155- 6.7	54.7	2.4	19	228	24.9	0.44	1.8	4.0	0.10	C
28	2	33	27.5	19-50.9	155-14.5?	36.7	1.7	15	220	11.6	1.77	6.5	12.9	0.11	D
28	2	37	25.7	19-53.9	155-15.4?	37.8	1.2	9	251	9.1	0.29	2.4	2.3	0.11	C
28	2	38	22.7	19-22.6	155-22.7	4.2		10	88	4.6	0.12	0.3	1.8	0.06	A
28	2	49	45.2	19-18.8	155-15.1	11.7	0.9	10	201	4.8	0.16	0.6	1.4	0.06	B
28	2	53	26.5	19-56.4	155-10.7	48.6	1.5	22	231	18.2	0.49	2.3	3.9	0.14	C
28	4	49	31.1	19-52.4	155-21.1	12.7	1.6	13	98	2.1	0.10	1.2	0.9	0.13	B
28	4	50	39.0	19-46.0	155-12.2	13.6*	0.8	9	200	20.0	0.39	3.7		0.26	C
28	5	16	41.4	19-54.0	155- 8.5	44.1	1.7	23	233	20.7	0.26	1.7	1.9	0.17	C
28	6	18	44.6	19-35.5	156- 5.8	55.7	2.1	13	242	43.1	0.83	3.0	7.7	0.09	D
28	6	20	24.1	19-56.7	155-12.1	47.6	1.7	20	226	16.0	0.51	2.5	4.1	0.15	C
28	7	42	52.7	19-55.9	155- 7.0	50.0	1.9	25	246	23.6	0.47	2.2	3.7	0.13	C
28	11	31	40.8	19-56.1	155- 7.1	51.0*	1.9	11	245	24.0	0.21	2.2		0.14	D
28	12	7	55.9	19-55.7	155- 5.2	52.0	3.4	27	230	23.0	0.47	2.1	4.1	0.14	C
28	12	18	46.1	19-56.1	155-10.8	46.2	2.0	20	237	17.9	0.41	2.1	3.3	0.12	C
28	12	40	3.1	19-46.6	155-11.7?	13.7*	1.5	8	206	19.9	0.29	2.8		0.18	C
28	13	0	13.8	19-54.1	155-11.6	44.4	2.3	16	231	15.6	0.49	2.4	4.3	0.13	C
28	13	3	20.7	19-23.7	155-30.3?	7.6	1.4	15	91	13.8	0.11	0.9	0.9	0.17	C
28	13	13	44.6	19-59.0	155- 1.0	50.7	3.2	28	246	30.1	0.54	2.6	4.2	0.14	D
28	14	4	18.0	19-24.2	155-25.2	8.1	1.4	18	82	8.1	0.07	0.5	0.5	0.11	B
28	14	37	15.4	19-58.1	155-12.1	54.5	2.0	16	223	17.1	0.48	2.0	4.3	0.13	C
28	14	43	8.6	20- 0.8	155-20.8	23.8	2.3	13	226	47.1	0.28	2.4	3.3	0.12	C
28	14	44	22.1	19-10.9	155-14.8	45.5	2.4	18	220	14.6	0.38	1.6	3.1	0.10	C
28	14	49	49.4	20- 0.8	155-20.3	13.1	2.3	10	228	13.7	0.29	2.4	1.1	0.09	C
28	15	0	13.6	19-51.0	155- 7.5	51.0	1.8	9	236	23.2	0.72	3.3	6.2	0.10	D
28	15	37	53.3	19-27.1	155-29.1	8.0*		14	134	11.3	0.08	0.7		0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	28	17	11	34.7	19-20.5	155-23.2	6.0	0.9	7	158	0.6	0.51	1.6	3.2	0.09	C
	28	17	38	8.5	19-24.1	155-16.0	2.3	0.7	8	106	2.1	0.12	0.5	0.5	0.07	A
	28	20	58	29.6	19-46.9	155-14.3	8.0*	1.1	5	191	23.1	0.10	0.8		0.04	D
	28	21	2	6.8	19-49.7	155-11.1?	40.8	2.2	25	208	15.7	0.51	2.1	4.3	0.11	C
	28	22	20	30.4	19-37.7	156-23.3	7.5	2.4	23	276	67.5	0.41	3.8	5.2	0.16	D
	28	22	35	57.1	19-52.8	155- 6.6	51.7	2.0	20	242	24.5	0.52	2.6	4.0	0.12	D
	28	22	52	17.3	19-55.2	155- 7.3	46.9	3.0	28	224	22.4	0.42	1.9	3.5	0.14	C
	28	23	54	51.8	19-57.7	155- 6.2?	43.2	1.8	14	268	42.2	0.43	3.9	2.2	0.13	D
	29	0	54	17.0	19-53.9	155-10.0	52.6	2.1	20	216	18.4	0.38	1.6	3.6	0.12	C
	29	1	8	31.3	19-18.6	155-15.9	5.6	1.6	22	172	3.8	0.14	0.9	0.7	0.19	C
	29	1	57	26.8	19-56.5	155- 4.0	52.9*	2.2	17	259	29.5	0.20	1.9		0.10	D
	29	1	58	41.1	19-24.1	155-15.9	0.8*	-0.4	8	113	2.3	0.08	0.3		0.12	B
	29	2	50	4.8	19-56.6	155-22.0	12.5	2.3	12	212	6.4	0.20	1.8	0.9	0.12	C
	29	3	25	25.7	19-57.8	155- 6.4	15.1*	2.0	21	250	51.0	0.32	2.4		0.18	D
	29	3	40	39.3	19-53.7	155- 5.5	48.3	2.4	22	225	26.4	0.43	1.8	4.0	0.13	C
	29	3	58	3.0	19-55.3	155- 8.6	43.8	2.2	20	222	21.2	0.47	2.2	4.6	0.13	C
	29	4	0	12.6	19-19.6	155-12.3	3.3	2.2	27	169	5.3	0.19	1.1	1.1	0.25	C
	29	6	8	5.7	19-24.6	155-16.7	1.3	1.1	13	95	0.7	0.06	0.3	0.3	0.11	B
	29	6	42	10.1	19-30.4	155-10.6	8.1	1.6	15	184	12.0	0.10	0.8	0.5	0.10	C
	29	7	41	34.5	19-21.0	155- 9.4	9.3	1.5	13	221	2.1	0.15	1.0	1.1	0.08	C
	29	8	7	31.2	19-19.5	155-15.7?	6.5	1.4	12	176	3.2	0.14	0.9	0.8	0.15	C
	29	8	29	40.2	19-51.4	155- 5.3	55.2	1.7	15	243	26.9	0.63	2.8	5.0	0.12	D
	29	9	0	23.6	19-57.1	155- 5.7	56.7	2.1	14	233	26.9	0.46	2.0	4.1	0.10	C
	29	9	15	27.2	20- 1.8	155- 4.1	55.5	2.1	17	245	58.2	0.84	3.7	7.2	0.16	D
	29	9	16	59.2	19-12.3	155-27.0	6.6	2.0	25	137	5.4	0.12	1.0	0.8	0.23	C
	29	9	20	4.1	19-23.1	155-23.3	8.0	1.1	20	61	5.3	0.07	0.6	1.5	0.15	B
	29	10	34	37.6	19-20.6	155-12.7	4.5	1.3	15	184	3.5	0.21	1.2	1.4	0.22	C
	29	13	1	23.0	19-54.7	155- 6.7	50.6	2.3	21	225	21.3	0.38	1.7	3.3	0.13	C
	29	15	49	18.8	18-54.0	155-19.0	14.5*	2.5	25	262	37.8	0.27	1.8		0.16	D
	29	16	43	3.2	20- 3.1	155-10.0?	19.8*	1.8	5	330	25.7	3.62	29.9		0.54	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
APR	29	16	56	18.4	20- 0.3	155-27.2	9.3	2.3	17	198	17.1	0.19	1.7	1.8	0.16	C
	29	19	4	39.1	19-47.0	155-13.9	13.5*	1.1	12	195	16.6	0.19	1.8		0.15	C
	29	19	35	28.6	19-24.0	155-15.4	2.6	0.9	8	137	2.3	0.05	0.2	0.8	0.02	B
	29	20	33	38.8	19-48.3	155- 9.9	14.0*	1.4	6	225	20.8	0.41	3.5		0.15	C
	29	21	41	23.0	19-56.3	155-11.6	49.0	2.3	14	235	16.6	0.46	2.5	4.1	0.10	C
	29	22	10	55.4	19-12.6	155-33.6	5.6	2.0	15	135	7.5	0.22	1.6	1.3	0.23	C
	29	22	31	54.1	19-53.9	155- 8.1	60.4	2.2	13	239	21.8	0.68	2.8	5.6	0.09	D
	29	22	58	55.4	19-24.1	155-15.8	1.6	0.4	8	115	2.3	0.07	0.4	0.3	0.08	A
	29	23	6	9.1	19-59.1	155-33.0	2.9	2.4	11	172	24.1	0.16	1.8	1.3	0.13	C
	29	23	10	48.8	19-10.3	155-20.8	47.8	1.9	14	197	14.6	0.56	2.1	5.5	0.11	C
	29	23	43	3.0	19-22.9	155-22.0	6.6	1.0	14	201	6.5	0.18	1.2	0.9	0.16	C
	30	1	3	39.9	19-27.4	155-17.3?	8.0*	1.1	9	281	3.6	0.19	3.1		0.29	D
	30	1	34	34.3	19-54.8	155- 8.6	49.1	2.1	18	239	21.1	0.42	2.2	3.3	0.11	C
	30	2	30	14.1	20- 1.3	155-35.9?	2.5	2.3	10	177	22.2	0.35	4.0	2.5	0.33	D
	30	2	55	50.1	20-12.5	154-59.9	84.2*	2.4	12	319	50.4	0.57	5.3		0.18	D
	30	3	15	29.6	19-50.1	155- 9.1	41.8	2.0	17	218	14.4	0.43	1.9	3.7	0.10	C
	30	3	25	13.6	19-20.8	155-29.6	9.0	1.1	16	107	9.6	0.10	1.1	1.9	0.19	B
	30	3	52	15.5	19-45.8	155-13.1	13.3*	1.5	13	193	19.2	0.19	1.9		0.16	C
	30	5	10	7.6	19-56.2	155- 6.3	46.4	2.3	10	259	25.5	0.65	6.7	3.7	0.19	D
	30	5	13	9.7	19-54.4	155-13.8	52.0	2.2	15	225	11.9	0.38	2.0	3.4	0.09	C
	30	5	14	31.8	19-54.7	155- 3.9?	46.9	2.2	16	252	29.2	0.73	3.5	5.8	0.13	D
	30	6	31	27.9	19-28.3	155-24.7	9.4	1.3	18	77	3.8	0.05	0.4	0.9	0.07	A
	30	6	36	39.9	19-27.7	155-24.3	7.8	2.7	27	58	4.2	0.08	0.5	0.6	0.14	B
	30	10	17	59.1	19-53.3	155-12.4	3.2	2.1	15	226	45.1	0.48	3.2	4.6	0.16	D
	30	13	6	59.8	19-24.6	155-16.7	1.0	1.2	11	93	0.8	0.06	0.3	0.4	0.10	A
	30	17	41	30.2	19-55.6	155- 8.0	51.9		19	243	22.2	0.53	2.5	4.1	0.13	D
	30	19	26	57.7	20- 2.1	155-18.6	12.8	3.0	23	222	16.4	0.26	1.6	1.5	0.14	C
	30	20	6	2.5	19-19.3	155-14.1	8.0*		17	196	5.9	0.08	0.5		0.08	C
	30	22	4	47.6	19-56.0	155- 8.9	57.1	2.7	17	241	20.9	0.67	3.0	5.5	0.13	D
	30	23	0	17.3	19-24.4	155-17.2	1.8	0.8	9	81	1.1	0.03	0.2	0.1	0.04	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 1	0	57	52.4	19-57.1	155- 9.0	48.0	2.3	23	239	21.3	0.46	2.2	3.6	0.11	C
1	1	35	16.3	19-35.4	155-12.4	8.0*	2.2	5	241	18.0	1.25	9.0		0.22	D
1	1	38	18.0	19-22.4	155-24.0	5.8	1.4	10	111	4.2	0.23	0.6	2.4	0.07	B
1	4	33	44.8	19-21.8	155-12.6	5.5	1.6	13	152	1.2	0.18	0.7	1.6	0.14	C
1	4	52	9.4	19-26.9	155-27.1	8.0*	1.9	9	224	8.2	0.27	1.7		0.13	C
1	6	14	37.3	19-49.8	155- 8.3	43.9	1.6	22	255	13.3	0.83	3.6	5.9	0.12	D
1	8	47	53.2	19-47.6	154-55.5	45.9	2.2	17	280	18.9	0.43	2.6	3.9	0.16	D
1	16	14	8.8	19-55.4	155- 4.2	53.7	3.1	24	232	22.6	0.68	2.9	5.6	0.19	D
1	17	51	36.3	19-50.1	155-48.9	13.7*	2.6	18	178	16.5	0.13	1.1		0.16	C
1	23	52	2.2	19-51.8	155- 7.3?	41.4	2.9	23	233	16.2	0.47	2.1	3.8	0.12	C
2	0	27	47.8	19-21.1	155-12.5	8.0	1.6	18	174	2.6	0.08	0.6	0.3	0.10	C
2	0	45	1.7	19-18.7	155-15.6	11.1		12	196	4.1	0.12	0.5	1.1	0.05	B
2	4	15	19.9	19-20.4	155- 8.0	3.3	1.8	19	234	4.4	0.33	1.7	1.1	0.20	D
2	7	6	40.8	19-53.8	155- 7.8	54.8	2.1	22	220	20.1	0.45	1.9	3.9	0.14	C
2	16	7	32.0	19-19.6	155-16.0	8.6		10	218	2.6	0.20	1.2	1.5	0.07	C
2	16	41	36.5	19-57.9	155- 3.5	54.9	1.8	17	258	27.3	1.10	4.7	9.3	0.14	D
2	22	0	52.9	19-22.9	155-22.5	8.0*		9	88	5.1	0.05	0.5		0.08	B
3	2	12	10.7	19-24.1	155-15.6	2.1*		6	126	2.6	0.05	0.4		0.05	C
3	3	14	49.7	19-51.6	155- 3.2	56.0	1.7	23	250	15.9	0.65	2.9	4.8	0.13	D
3	4	44	48.6	19-20.3	155-17.9	5.6	1.5	17	80	1.0	0.09	0.8	0.5	0.15	B
3	5	19	35.3	19-21.1	155-14.3	11.1		10	185	3.7	0.19	0.7	1.5	0.06	B
3	8	54	34.8	19-18.7	155-13.3	8.0*		7	218	7.6	0.21	1.4		0.11	C
3	13	30	36.9	20- 1.9	155-25.1	12.9	2.7	13	221	17.6	0.31	3.2	2.0	0.14	C
3	13	35	14.3	19-49.8	155- 8.8?	69.1*		12	230	21.7	0.37	5.4		0.27	D
3	13	57	12.2	19-46.7	155- 7.9	14.9*	2.1	21	228	25.4	0.34	2.6		0.26	D
3	15	13	31.6	19-22.3	155-26.7	8.3	2.4	24	57	1.6	0.05	0.5	0.9	0.14	B
3	15	19	58.0	20-12.6	155-38.2	10.1		16	299	46.9	1.50	9.9	5.6	0.16	D
3	16	41	45.9	19-52.6	155-20.9	18.5	2.1	19	101	1.7	0.12	0.9	1.5	0.10	B
3	16	42	10.8	19-54.4	155-15.9	6.6	2.1	11	219	47.1	0.36	1.8	3.1	0.09	C
3	20	42	21.9	19-51.3	155-10.8	41.7	1.8	12	239	17.5	0.21	1.5	2.4	0.08	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 3	21	40	9.9	19-57.6	155-17.7	14.6	2.0	9	224	9.3	0.26	2.3	3.0	0.11	C
3	22	6	37.1	19-18.4	155-14.6	10.1	1.1	12	212	5.8	0.24	1.1	2.2	0.09	C
3	22	16	8.9	19-54.6	155-21.8?	8.0*	1.5	8	290	17.4	2.01	12.5		0.21	D
4	3	15	39.4	19-21.4	155-23.3	6.8	1.1	13	80	2.2	0.06	0.5	0.5	0.10	A
4	4	50	53.8	19-56.6	155- 7.9	49.9		23	227	22.9	0.63	2.8	5.8	0.18	D
4	6	32	53.3	19-20.9	155- 8.5	9.3	0.5	11	227	3.2	0.14	1.0	1.0	0.06	C
4	6	34	1.9	19-55.6	155- 8.4	54.1	1.3	14	241	37.0	0.80	3.3	7.5	0.14	D
4	9	1	0.6	19-20.5	155-11.3	9.4		14	209	4.0	0.22	1.2	2.0	0.09	C
4	9	12	52.7	19-50.3	155- 6.0	44.1	1.8	23	251	26.1	0.68	3.0	5.0	0.10	D
4	12	19	29.4	19-11.3	155- 7.0?	19.3*		9	291	24.4	0.85	6.5		0.13	D
4	14	53	9.3	19-23.3	155- 5.4?	0.0	2.4	19	238	8.1	5.25	2.1	9.5	0.21	D
4	16	41	29.9	19-22.2	155-23.5	7.1		13	77	3.7	0.06	0.5	0.6	0.11	B
4	18	37	36.0	19-25.9	155-26.0	8.0*		16	85	6.9	0.04	0.3		0.06	B
4	20	35	38.6	19-56.1	155- 4.8	49.0	2.7	23	232	28.0	0.44	2.0	3.8	0.14	C
4	22	12	36.0	19-22.5	155-23.2?	7.3		13	80	4.3	0.09	0.9	2.0	0.15	B
5	4	47	14.8	19-19.8	155-14.9	30.6		8	255	11.3	0.63	2.9	4.9	0.08	D
5	6	13	13.4	19-59.6	155-19.2	16.0	2.6	14	226	11.7	0.24	2.1	2.9	0.12	C
5	6	20	10.8	19-45.0	155- 8.9	12.8*		15	215	25.6	0.24	2.0		0.18	C
5	7	12	10.8	19-18.7	155-14.1	15.9	0.3	10	219	7.5	0.62	4.3	5.6	0.22	C
5	7	14	27.8	19-21.7	155-12.1	3.3	1.7	9	116	16.5	0.16	1.3	2.6	0.19	C
5	7	15	2.8	19-22.3	155-12.0?	15.5	2.1	6	157	9.9	1.56	8.4	20.3	0.25	D
5	7	16	9.9	19-21.4	155-13.2	8.0*	1.5	9	124	7.7	0.08	0.9		0.12	C
5	7	16	26.7	19-19.9	155-12.5	14.5	1.8	8	152	9.2	0.22	1.7	3.2	0.13	C
5	7	20	34.8	19-23.1	155-13.1?	4.0	1.0	11	106	9.3	0.12	1.0	1.9	0.15	B
5	7	24	5.8	19-21.9	155-12.9?	1.3	1.8	13	113	5.3	1.73	0.6	3.3	0.12	B
5	7	27	51.2	19-22.1	155-13.2	1.4	1.3	8	118	9.6	2.67	0.9	10.2	0.10	C
5	7	29	17.6	19-21.3	155-13.5?	1.0	2.5	21	101	8.6	0.11	0.8	1.2	0.24	C
5	7	33	18.1	19-22.6	155-12.9	5.1	1.7	13	102	7.2	0.09	0.8	1.2	0.15	B
5	7	33	48.3	19-20.6	155-14.1?	0.0	2.4	12	110	9.5	9.15	1.5	17.4	0.30	C
5	7	35	54.3	19-22.1	155-11.4	5.6	2.0	12	105	9.8	0.12	1.0	1.4	0.19	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 5	7	38	26.5	19-21.2	155-13.9?	0.0	2.0	14	108	8.7	7.36	1.0	14.0	0.21	C
5	7	39	52.7	19-22.3	155-11.5	4.6	1.8	13	103	2.1	0.10	0.8	1.2	0.16	B
5	7	42	42.1	19-22.8	155-11.5	3.5	1.4	14	101	2.2	0.11	0.7	2.0	0.17	B
5	7	44	13.1	19-22.4	155-13.4	5.4	1.8	19	94	4.4	0.06	0.4	0.6	0.12	B
5	7	44	51.7	19-21.2	155-13.7	1.7	1.3	14	156	3.0	0.15	0.5	0.5	0.09	B
5	7	47	12.8	19-22.9	155-13.8	4.5	1.3	11	120	2.1	0.30	1.1	2.8	0.14	B
5	7	49	27.6	19-21.6	155-12.7	2.5	1.7	13	157	1.6	0.11	0.8	2.1	0.14	C
5	7	53	35.4	19-22.0	155-11.8	1.3		7	162	1.7	0.17	1.1	0.7	0.11	C
5	8	0	34.0	19-22.9	155-14.6	1.6		5	124	2.4				0.12	D
5	8	2	40.1	19-22.0	155-14.4	1.7	1.2	14	149	2.8	0.19	0.9	0.7	0.18	B
5	8	3	59.6	19-22.4	155-14.4	4.2	1.2	10	136	2.7	0.17	0.7	1.6	0.09	B
5	8	5	22.4	19-23.6	155-13.0	2.9	1.2	7	112	9.6	0.22	1.9	2.4	0.18	B
5	8	5	52.6	19-23.3	155-15.0	1.4		8	101	2.3	0.08	0.4	0.4	0.08	A
5	8	6	3.5	19-22.5	155-13.9	4.6	1.3	13	138	2.1	0.19	0.8	2.0	0.16	B
5	8	7	19.4	19-22.6	155-14.0	5.6	1.6	14	125	2.4	0.10	0.6	0.7	0.11	B
5	8	10	42.4	19-21.6	155-12.4	5.7	1.5	11	208	6.2	0.17	1.1	0.8	0.10	C
5	8	13	7.4	19-22.3	155-14.1	3.0		9	142	2.6	0.23	0.8	3.2	0.12	B
5	8	14	8.6	19-22.3	155-13.8	4.9		9	142	2.1	0.33	1.0	2.5	0.10	B
5	8	15	21.3	19-22.3	155-14.0	1.9		12	132	2.4	0.19	0.8	1.0	0.13	B
5	8	17	33.6	19-22.1	155-13.1	3.8		7	142	4.9	0.14	0.5	1.7	0.05	B
5	8	26	2.1	19-22.2	155-13.3?	1.7		9	138	4.6	0.27	0.8	1.1	0.15	B
5	8	28	34.6	19-22.1	155-13.2	3.6		6	154	1.1	0.31	1.5	3.4	0.09	C
5	8	40	3.1	19-22.3	155-14.2?	0.7	1.2	9	140	2.7	0.18	0.8	2.6	0.13	B
5	8	40	28.7	19-23.1	155-14.3	1.7	1.1	10	113	3.0	0.03	0.2	0.2	0.04	A
5	8	41	8.6	19-22.5	155-13.8	5.8	1.6	14	129	1.9	0.10	0.5	0.6	0.09	B
5	8	44	5.3	19-23.3	155-14.9	1.7	1.3	13	100	2.5	0.07	0.3	0.3	0.08	B
5	8	44	16.6	19-22.5	155-13.0	3.8	1.9	12	103	0.7	0.08	0.6	1.0	0.15	B
5	8	49	52.0	19-22.9	155-14.1	5.9	1.3	15	114	2.7	0.12	0.4	1.0	0.08	A
5	8	51	2.6	19-22.2	155-12.9	2.0	1.3	6	139	0.6	0.06	0.5	0.3	0.04	B
5	8	51	12.9	19-22.2	155-14.3	1.1	1.5	9	153	2.8	0.11	0.6	0.5	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 5	8	58	22.4	19-22.3	155-14.0	5.8	1.6	15	132	2.4	0.06	0.5	0.4	0.09	B
5	9	4	42.2	19-22.6	155-14.1	1.1	1.2	8	135	2.6	0.10	0.4	0.4	0.09	B
5	9	11	20.3	19-22.8	155-14.1	1.1	1.1	10	120	2.6	0.10	0.4	0.5	0.08	A
5	9	16	53.0	19-22.6	155-14.3	1.1	1.4	15	133	2.8	0.07	0.3	0.3	0.08	B
5	9	21	49.8	19-22.5	155-13.3	4.5	1.3	9	114	1.2	0.13	0.7	1.5	0.10	A
5	9	23	55.4	19-23.0	155-14.4	1.3	1.1	11	112	2.8	0.07	0.4	0.4	0.09	A
5	9	25	30.0	19-22.7	155-14.1	0.9	1.6	11	131	2.5	0.14	0.6	0.6	0.15	B
5	9	30	26.3	19-22.3	155-14.0	1.6	1.7	18	123	2.3	0.10	0.4	0.4	0.11	B
5	9	32	25.2	19-22.8	155-14.5?	0.3	3.2	21	114	3.3	0.35	0.4	0.7	0.15	B
5	9	44	16.1	19-22.4	155-14.2	1.3	1.2	9	130	2.7	0.08	0.4	0.4	0.06	B
5	9	48	7.3	19-21.9	155-12.6	4.2	1.7	15	99	1.0	0.07	0.4	1.0	0.10	A
5	9	50	17.8	19-22.2	155-13.4	4.2	1.6	16	127	1.4	0.09	0.6	1.2	0.15	B
5	9	55	10.3	19-22.8	155-14.6	1.1	1.4	12	116	2.5	0.08	0.4	0.4	0.10	B
5	9	57	17.7	19-22.7	155-14.0	1.4	1.5	11	124	2.4	0.13	0.6	0.5	0.14	B
5	10	1	30.9	19-22.7	155-14.8	1.2	3.0	25	88	2.1	0.12	0.5	0.5	0.15	B
5	10	7	28.6	19-53.7	155- 2.5	52.6	3.8	28	214	20.0	0.34	1.7	3.0	0.14	C
5	10	11	18.3	19-21.8	155-14.3	0.9	3.4	26	99	3.0	0.15	0.4	0.6	0.15	B
5	10	21	17.9	19-22.5	155-12.9	3.0	1.3	7	132	0.5	0.38	2.2	4.2	0.19	B
5	10	36	28.9	19-22.7	155-14.3	1.9	1.6	13	121	2.9	0.08	0.4	0.3	0.08	B
5	10	41	55.0	19-22.2	155-14.5?	0.7	3.2	24	95	4.7	0.49	0.6	0.9	0.21	B
5	10	45	16.4	19-22.8	155-14.7	1.4	1.6	15	119	2.2	0.09	0.4	0.4	0.10	A
5	10	56	13.9	19-21.9	155-14.2?	0.0	2.7	22	100	2.9	0.42	0.6	0.8	0.19	B
5	11	9	18.7	19-21.9	155-14.1?	0.0	2.0	18	126	5.1	1.91	0.6	3.6	0.16	B
5	11	15	12.6	19-22.5	155-14.4	2.8	2.8	15	91	4.0	0.09	0.7	3.3	0.21	B
5	11	21	44.3	19-22.0	155-14.0	4.0	1.9	15	127	5.0	0.08	0.5	1.4	0.11	B
5	11	25	20.2	19-22.6	155-14.8?	5.4		9	123	3.9	0.13	0.7	1.1	0.09	B
5	11	25	43.8	19-21.4	155-13.3?	0.4	1.6	12	157	6.1	3.25	1.0	6.2	0.17	C
5	11	27	43.5	19-21.9	155-14.3	1.2	3.2	26	99	5.1	0.20	0.5	0.8	0.19	B
5	11	34	53.8	19-22.3	155-14.2	1.9	2.1	11	141	4.4	2.20	0.5	8.4	0.08	C
5	11	38	51.5	19-22.4	155-15.1	2.0	1.7	11	123	4.2	0.26	0.9	1.0	0.19	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 5	11	40	20.7	19-22.3	155-14.8	1.5	1.6	15	127	3.8	0.11	0.4	0.4	0.11	B
5	11	40	50.9	19-22.2	155-14.7?	0.0	3.1	15	98	3.5	1.09	0.5	2.1	0.17	B
5	11	44	33.8	19-22.2	155-14.1	1.4	1.6	18	95	2.6	0.13	0.4	0.6	0.12	B
5	11	49	17.4	19-21.6	155-14.0?	0.1	1.8	16	147	2.8	1.94	0.8	3.8	0.21	C
5	11	59	0.4	19-22.3	155-14.6?	0.2	2.6	20	93	3.4	1.71	0.6	3.3	0.20	B
5	12	3	10.9	19-22.0	155-14.6?	0.4	1.9	20	122	2.3	0.56	0.8	1.0	0.25	C
5	12	4	28.8	19-22.1	155-14.4	4.8	1.9	13	107	4.8	0.13	0.6	2.0	0.14	B
5	12	13	29.5	19-22.1	155-14.8	2.0		16	141	3.8	0.15	0.4	0.5	0.11	B
5	12	14	13.6	19-21.9	155-14.4?	0.0	2.7	11	119	14.0	0.30	1.3	19.6	0.23	C
5	12	18	56.9	19-21.9	155-14.7?	1.9	1.6	14	135	5.2	0.07	0.5	1.3	0.11	B
5	12	21	1.6	19-22.2	155-14.2	1.6		10	143	2.8	0.20	0.7	0.9	0.10	B
5	12	21	45.7	19-21.9	155-14.6?	1.9	2.0	13	156	6.9	0.07	0.5	1.3	0.10	C
5	12	25	53.0	19-22.4	155-14.9	1.7	2.1	12	124	1.7	0.13	0.6	0.5	0.14	B
5	12	26	8.4	19-22.1	155-14.6	1.1	2.6	17	98	4.8	0.18	0.5	0.7	0.15	B
5	12	27	53.5	19-22.0	155-14.2?	0.0	2.1	9	137	3.0	0.83	1.2	1.4	0.19	B
5	12	28	59.4	19-22.0	155-14.3	1.6	1.7	9	148	3.0	0.07	0.2	0.2	0.03	B
5	12	30	55.7	19-22.6	155-14.9	1.6	1.6	11	121	1.7	0.09	0.5	0.4	0.09	B
5	12	36	47.7	19-22.3	155-14.7	1.2		9	129	2.1	0.12	0.5	0.5	0.10	B
5	12	40	3.0	19-22.3	155-15.1	0.2	2.8	19	92	1.4	0.41	0.7	0.8	0.28	B
5	12	43	37.5	19-22.3	155-14.7	1.4		11	128	2.1	0.08	0.4	0.3	0.09	B
5	12	44	14.6	19-22.3	155-14.7	1.6	1.7	15	128	2.1	0.10	0.5	0.4	0.13	B
5	12	45	44.8	19-22.1	155-14.9	1.6	1.6	15	131	1.9	0.07	0.3	0.3	0.08	B
5	12	48	17.0	19-22.3	155-15.0	1.6	1.4	10	125	1.5	0.15	0.6	0.5	0.11	B
5	12	48	40.0	19-22.4	155-14.9	1.7	1.7	12	124	1.7	0.13	0.5	0.4	0.10	B
5	12	50	53.3	19-22.5	155-14.9	1.9	1.4	15	121	1.7	0.11	0.4	0.4	0.09	B
5	12	53	53.4	19-21.8	155-14.5?	0.4	3.0	21	101	3.5	0.31	0.4	0.6	0.15	B
5	12	57	8.1	19-22.3	155-15.0	1.2	1.4	10	126	1.5	0.09	0.4	0.4	0.10	B
5	12	59	38.0	19-22.9	155-14.6?	1.4	2.5	10	121	2.4	0.10	0.4	0.5	0.10	B
5	13	1	40.3	19-21.9	155-14.6	0.1	2.3	17	124	2.4	0.33	0.5	0.6	0.16	B
5	13	2	58.4	19-19.4	155-13.0?	8.0*	1.9	9	142	5.7	0.23	2.1		0.31	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 5	13	6	20.5	19-22.3	155-14.3	1.4	1.5	8	130	2.7	0.17	0.6	0.6	0.07	B
5	13	8	40.1	19-22.2	155-14.7	1.3	1.7	8	140	2.1	0.16	0.5	0.5	0.06	B
5	13	11	28.3	19-22.5	155-14.9	1.8	1.6	9	123	1.8	0.17	0.7	0.6	0.10	B
5	13	13	11.3	19-22.1	155-14.7	0.7	1.6	11	132	4.8	1.30	0.6	2.5	0.12	B
5	13	16	32.7	19-22.7	155-14.8	1.5	1.8	9	119	2.0	0.05	0.3	0.2	0.04	A
5	13	21	31.2	19-22.2	155-14.6	1.9	1.5	11	139	2.3	0.18	0.7	0.6	0.12	B
5	13	27	46.2	19-22.3	155-14.9	0.4	1.6	15	100	1.7	1.06	0.4	2.1	0.12	B
5	13	32	15.1	19-22.2	155-14.9	1.2	1.9	14	127	1.7	0.19	0.6	0.6	0.13	B
5	13	37	20.4	19-22.2	155-14.6	1.3	2.1	17	120	2.3	0.11	0.3	0.4	0.09	B
5	13	39	29.2	19-22.2	155-14.6	0.9	1.6	10	130	2.4	0.16	0.5	0.6	0.10	B
5	13	42	25.7	19-22.3	155-14.7	1.2	1.6	10	128	2.2	0.17	0.6	0.6	0.11	B
5	13	44	43.4	19-22.5	155-14.6	1.5	2.0	15	117	2.3	0.10	0.4	0.3	0.09	B
5	13	59	18.8	19-22.5	155-14.6	1.3	1.6	12	124	2.3	0.10	0.3	0.3	0.07	B
5	14	14	5.3	19-24.9	155-17.6?	0.9	1.1	12	119	1.1	0.25	0.5	0.5	0.17	B
5	14	18	56.3	19-22.1	155-14.8	1.4	1.4	8	131	2.0	0.27	1.0	0.9	0.12	B
5	14	31	20.0	19-24.5	155-17.4	1.2	1.6	11	63	1.1	0.06	0.3	0.4	0.11	B
5	14	33	12.9	19-22.3	155-16.1	1.2		8	149	0.4	0.05	0.4	0.3	0.05	B
5	14	34	23.9	19-22.2	155-16.1	1.3	1.3	12	119	0.5	0.03	0.2	0.1	0.04	A
5	14	35	47.9	19-21.9	155-15.4	1.4	1.4	14	128	1.2	0.11	0.4	0.3	0.09	B
5	14	36	40.6	19-22.1	155-16.1	1.7	1.3	10	120	0.6	0.11	0.6	0.4	0.10	A
5	14	43	34.4	19-22.1	155-16.2	1.3	1.3	10	119	0.8	0.07	0.3	0.3	0.09	A
5	14	44	26.7	19-22.0	155-15.7	1.7		18	92	0.8	0.09	0.3	0.3	0.10	B
5	14	45	25.0	19-22.3	155-15.7	1.6	1.3	7	185	0.4	0.16	1.0	0.4	0.09	B
5	14	47	14.2	19-22.5	155-15.7	1.0	1.7	12	116	0.5	0.09	0.5	0.3	0.12	B
5	14	47	53.2	19-22.1	155-15.4	1.6	1.9	12	131	0.9	0.15	0.7	0.5	0.11	B
5	14	48	47.5	19-22.0	155-16.2	1.3	1.6	10	173	0.9	0.19	1.2	0.9	0.22	C
5	14	49	41.9	19-21.9	155-15.6	2.2	1.8	11	103	4.6	0.09	0.4	6.0	0.08	B
5	14	51	20.4	19-22.5	155-14.6	1.7	1.7	12	125	2.2	0.11	0.4	0.4	0.07	B
5	14	56	10.6	19-22.1	155-15.8	1.5	1.6	13	122	0.5	0.08	0.4	0.2	0.07	B
5	14	57	26.1	19-22.1	155-15.7	1.0	1.4	8	188	0.7	0.09	0.4	0.3	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY	5	14	58 24.8	19-22.1	155-16.3	1.4	1.3	7	117	0.9	0.06	0.4	0.3	0.06	B
	5	15	0 3.9	19-22.3	155-15.9	1.6	1.5	11	179	0.1	0.15	0.9	0.5	0.15	C
	5	15	0 49.5	19-24.6	155-17.3?	0.9	1.4	10	71	0.7	0.18	0.5	0.4	0.13	B
	5	15	4 19.5	19-22.0	155-15.7	2.0	1.4	10	125	0.8	0.09	0.5	0.3	0.07	B
	5	15	6 57.6	19-24.4	155-16.2	1.5	1.5	8	117	1.8	0.10	0.6	0.5	0.10	A
	5	15	8 28.3	19-22.7	155-15.6?	2.5	1.3	5	213	0.8				0.21	D
	5	15	9 9.3	19-22.1	155-15.8	1.8	1.5	11	122	0.5	0.09	0.4	0.3	0.08	B
	5	15	12 48.6	19-22.2	155-16.3	1.5	1.3	9	114	0.8	0.11	0.7	0.5	0.12	B
	5	15	18 43.4	19-22.0	155-15.4	1.5	1.4	10	196	1.1	0.20	0.7	0.5	0.11	C
	5	15	25 7.5	19-22.2	155-15.6	1.5	1.5	16	91	0.7	0.08	0.3	0.3	0.09	A
	5	15	32 24.7	19-21.9	155-15.4	1.2	1.4	11	130	1.2	0.11	0.4	0.4	0.09	B
	5	15	33 25.6	19-22.0	155-15.6	1.6	1.4	12	126	0.9	0.10	0.4	0.3	0.10	B
	5	15	35 0.6	19-22.6	155-14.8	1.5	1.1	8	122	2.0	0.12	0.5	0.5	0.08	B
	5	15	44 25.0	19-22.0	155-15.3	1.2	1.4	10	129	1.3	0.15	0.5	0.5	0.12	B
	5	15	46 48.0	19-22.4	155-14.7	1.2	1.4	12	125	2.1	0.13	0.5	0.4	0.09	B
	5	15	53 30.1	19-21.8	155-15.6	1.1	1.6	10	128	1.1	0.15	0.6	0.5	0.10	B
	5	15	54 9.6	19-21.8	155-15.3	1.1	1.4	10	132	1.5	0.09	0.3	0.3	0.09	B
	5	16	2 28.7	19-22.3	155-15.8	1.5	1.0	6	120	0.3	0.06	0.4	0.2	0.03	B
	5	16	7 49.7	19-22.1	155-15.8	0.8	1.1	8	123	0.7	0.09	0.4	0.4	0.08	B
	5	16	15 37.5	19-21.8	155-15.5	0.8	1.4	7	131	1.3	0.06	0.3	0.2	0.04	B
	5	16	18 39.1	19-24.8	155-17.1?	2.6	0.8	7	135	0.2	0.63	1.7	3.7	0.12	B
	5	16	33 10.1	19-21.8	155-15.4	1.3	1.7	14	131	1.4	0.10	0.4	0.4	0.10	B
	5	16	34 30.8	19-21.6	155-15.3	0.9	1.8	14	136	1.8	0.19	0.6	0.6	0.14	B
	5	16	39 56.6	19-21.8	155-15.7	0.9	1.4	10	130	1.3	0.23	0.8	0.9	0.16	B
	5	16	57 39.6	19-21.7	155-15.5	1.1	1.6	16	133	1.5	0.12	0.4	0.4	0.11	B
	5	17	4 30.0	19-21.8	155-15.5	1.2	1.6	15	95	1.3	0.13	0.5	0.5	0.13	B
	5	17	15 16.1	19-22.3	155-16.0	1.1	1.3	9	118	0.3	0.08	0.6	0.3	0.11	B
	5	17	53 47.7	19-21.9	155-15.8	1.3	1.4	11	189	1.0	0.16	0.8	0.4	0.10	B
	5	17	55 22.5	19-22.0	155-15.7	1.5	1.4	14	124	0.7	0.11	0.4	0.3	0.11	B
	5	17	56 47.2	19-22.1	155-15.7	1.2	1.5	17	124	0.6	0.10	0.4	0.3	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 5	17	58	7.3	19-22.0	155-15.7	1.6	1.4	13	124	0.8	0.09	0.4	0.3	0.09	B
5	17	59	23.4	19-21.7	155-15.8	1.5	1.6	16	129	1.3	0.11	0.4	0.3	0.11	B
5	18	0	16.4	19-22.0	155-15.8	1.1	1.1	8	185	0.7	0.14	0.7	0.4	0.09	B
5	18	7	0.9	19-21.7	155-15.9	1.3	1.6	14	129	1.3	0.09	0.4	0.3	0.09	B
5	18	7	45.5	19-21.8	155-16.1	1.8	1.7	13	125	1.2	0.13	0.6	0.5	0.13	B
5	18	14	3.0	19-21.7	155-16.4	1.5	1.1	9	123	1.5	0.12	0.7	0.5	0.11	B
5	18	14	23.8	19-21.8	155-16.2	1.0	1.7	15	124	1.3	0.10	0.4	0.4	0.13	B
5	18	34	37.9	19-21.6	155-15.9	1.2	1.6	15	130	3.8	0.19	0.6	0.7	0.14	C
5	18	38	49.7	19-22.1	155-16.1	1.8	1.1	6	179	0.7	0.09	0.6	0.4	0.05	B
5	18	39	57.9	19-21.7	155-16.2	1.8	1.8	17	124	5.3	0.21	0.6	0.8	0.17	C
5	18	42	51.3	19-21.9	155-16.3	1.6	1.7	16	122	1.2	0.11	0.6	0.5	0.15	C
5	18	44	30.8	19-21.9	155-16.4	1.3	1.0	11	119	1.3	0.06	0.4	0.3	0.08	A
5	18	48	18.4	19-21.4	155-16.5	1.6	1.4	13	127	2.9	0.22	0.7	1.0	0.14	C
5	18	49	3.0	19-21.7	155-15.9	1.6	1.7	15	129	1.4	0.07	0.3	0.3	0.10	B
5	18	49	44.5	19-21.8	155-16.1	1.3	1.4	12	125	1.2	0.07	0.3	0.3	0.07	B
5	18	52	20.6	19-22.5	155-16.8?	5.8	1.2	15	73	2.9	0.16	1.0	1.6	0.23	C
5	18	54	45.1	19-22.2	155-16.6?	0.9	1.4	17	78	4.1	0.21	0.7	0.9	0.19	B
5	18	57	22.6	19-21.5	155-16.0	4.2	1.8	15	131	3.5	0.09	0.4	1.2	0.10	B
5	19	0	37.4	19-21.9	155-16.7	1.1	1.3	7	147	1.7	0.03	0.2	0.2	0.02	B
5	19	1	34.2	19-21.7	155-16.3	1.4	1.6	13	125	1.5	0.11	0.6	0.5	0.11	B
5	19	14	55.7	19-24.6	155-16.1	0.7*	1.0	5	128	1.8	0.07	0.3		0.05	C
5	19	34	1.1	19-21.7	155-16.5	1.3	1.1	12	122	3.2	0.07	0.3	0.3	0.08	B
5	19	42	21.9	19-21.8	155-17.0	0.9		6	132	2.3	0.22	1.0	1.3	0.08	B
5	19	53	21.5	19-21.8	155-16.9	0.4		8	113	3.3	0.31	0.5	0.7	0.10	A
5	20	40	34.1	19-21.6	155-16.4	1.3	1.9	17	124	1.7	0.12	0.5	0.4	0.13	C
5	20	48	37.4	19-21.9	155-16.4	1.3		4	165	1.4				0.00	D
5	20	56	24.9	19-22.2	155-16.7?	0.9		5	126	1.4				0.08	D
5	21	16	7.4	19-24.3	155-16.8	2.2	1.3	13	59	1.1	0.04	0.3	0.2	0.08	A
5	21	37	27.1	19-21.6	155-16.5	1.2	1.9	21	123	1.9	0.12	0.4	0.4	0.14	C
5	21	48	32.1	19-21.5	155-17.2	1.7	1.1	7	168	2.7	0.09	0.5	0.4	0.06	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY	5	21	53 2.7	19-21.9	155-16.2	1.4		7	179	1.1	0.10	0.5	0.4	0.08	B
	5	22	37 4.5	19-21.5	155-16.5	1.4	1.1	10	177	1.9	0.09	0.5	0.4	0.11	C
	5	22	40 44.3	19-21.7	155-16.7	1.3	1.1	8	155	1.9	0.13	0.7	0.6	0.13	C
	5	22	49 48.0	19-21.6	155-16.9	1.3	1.6	18	113	2.3	0.07	0.3	0.3	0.11	B
	5	22	54 42.2	19-21.5	155-16.9	1.2	1.4	20	115	2.4	0.09	0.4	0.4	0.13	B
	5	23	0 14.3	19-21.7	155-17.0	1.4	1.1	14	108	2.3	0.05	0.2	0.2	0.07	A
	5	23	0 29.3	19-55.8	155- 5.9	46.6	3.8	24	208	23.2	0.24	1.3	2.4	0.12	C
	5	23	3 28.4	19-21.6	155-17.1	1.3	1.1	11	103	2.6	0.06	0.3	0.3	0.07	A
	5	23	5 26.2	19-21.5	155-17.0	1.4	1.4	14	110	2.7	0.06	0.3	0.2	0.08	A
	5	23	6 27.1	19-21.6	155-16.9	1.4	1.4	17	112	2.2	0.06	0.2	0.2	0.10	A
	5	23	7 7.0	19-21.6	155-17.0	1.3	1.7	20	79	2.4	0.11	0.4	0.4	0.14	B
	5	23	9 48.9	19-21.5	155-16.8	1.3	1.4	19	118	2.3	0.11	0.4	0.4	0.15	B
	5	23	11 8.8	19-21.5	155-17.0	1.6	1.4	14	110	2.7	0.05	0.2	0.2	0.08	A
	5	23	15 1.4	19-21.5	155-16.9?	0.7	1.1	11	121	2.7	0.30	0.8	2.5	0.14	B
	5	23	15 56.8	19-21.5	155-16.7	1.5	1.4	18	121	2.2	0.06	0.3	0.2	0.10	B
	5	23	17 0.9	19-21.5	155-16.7?	0.6	1.1	10	121	2.1	0.20	0.7	1.9	0.13	B
	5	23	18 16.2	19-21.8	155-17.2?	0.0	1.0	7	123	2.6	0.33	0.5	0.8	0.10	B
	5	23	18 27.8	19-21.5	155-17.0	1.6	1.6	14	108	2.6	0.09	0.4	0.4	0.11	B
	5	23	21 3.5	19-21.6	155-17.2	1.7	1.1	13	100	2.7	0.04	0.2	0.2	0.07	A
	5	23	21 41.4	19-21.6	155-17.1	1.3	1.1	13	103	2.8	0.08	0.4	0.3	0.11	B
	5	23	22 54.2	19-21.5	155-16.9	1.5	1.1	12	120	2.4	0.09	0.3	0.3	0.07	A
	5	23	23 50.9	19-21.5	155-16.9	1.6	1.1	11	115	2.4	0.04	0.2	0.2	0.06	A
	5	23	26 24.0	19-21.5	155-16.9	1.4	1.6	16	114	2.4	0.06	0.2	0.2	0.08	A
	5	23	28 8.8	19-21.3	155-17.0	1.2	1.1	13	114	2.7	0.08	0.3	0.3	0.09	A
	5	23	29 59.7	19-21.5	155-17.1	1.5	1.1	9	113	2.6	0.04	0.2	0.2	0.05	A
	5	23	31 30.4	19-21.6	155-17.0	1.4	1.4	16	109	2.5	0.06	0.3	0.3	0.10	A
	5	23	32 6.7	19-21.6	155-17.0	1.6	1.4	10	115	2.5	0.08	0.5	0.4	0.09	B
	5	23	33 40.0	19-21.5	155-17.0	1.5	1.1	14	110	2.5	0.05	0.2	0.2	0.06	A
	5	23	35 24.0	19-21.7	155-16.9	1.3	1.4	11	118	2.1	0.07	0.4	0.3	0.09	A
	5	23	39 23.1	19-21.5	155-16.9	1.2	1.4	18	115	2.4	0.15	0.6	0.6	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 5	23	41	6.7	19-21.4	155-17.0	1.8	1.4	15	114	2.4	0.13	0.6	0.5	0.16	B
5	23	44	31.6	19-21.6	155-17.1	1.4	1.4	14	104	2.6	0.05	0.2	0.2	0.08	A
5	23	45	30.6	19-21.6	155-17.1	1.7	1.1	10	139	2.6	0.06	0.4	0.4	0.08	B
5	23	46	17.9	19-21.6	155-17.0	1.3	1.6	17	109	2.5	0.10	0.4	0.4	0.13	B
5	23	47	22.1	19-21.6	155-17.1	1.3	1.1	12	103	2.6	0.06	0.3	0.3	0.09	A
5	23	48	30.6	19-21.6	155-17.1	1.4	1.4	15	103	2.7	0.05	0.2	0.2	0.08	A
5	23	49	7.5	19-21.3	155-17.1	1.4	1.4	17	111	2.3	0.08	0.4	0.3	0.13	B
5	23	54	2.8	19-21.5	155-17.8	1.3	1.1	10	86	2.6	0.12	0.5	0.6	0.14	B
5	23	57	17.2	19-21.5	155-17.2	1.6	1.4	16	103	2.7	0.06	0.3	0.2	0.09	A
5	23	58	1.4	19-21.5	155-17.1	1.7	1.4	14	108	2.6	0.06	0.3	0.3	0.10	A
6	0	0	12.1	19-21.6	155-17.2	1.4	1.1	14	100	2.7	0.05	0.2	0.2	0.07	A
6	0	0	49.3	19-21.1	155-17.6	3.0		6	115	2.0	0.23	0.8	3.1	0.06	B
6	0	2	2.1	19-21.5	155-17.8	1.3	1.1	9	104	2.7	0.10	0.5	0.5	0.08	A
6	0	9	43.6	19-21.5	155-17.0	1.7		8	146	2.6	0.09	0.5	0.4	0.11	B
6	0	10	9.4	19-21.3	155-17.1	1.3	2.3	17	110	2.3	0.08	0.3	0.3	0.11	B
6	0	15	38.4	19-21.6	155-17.3	1.6	1.1	9	124	2.8	0.05	0.3	0.3	0.07	B
6	0	19	56.4	19-21.5	155-17.1	1.3	1.1	16	107	2.6	0.07	0.3	0.3	0.11	B
6	0	23	54.9	19-21.5	155-17.1	1.4	1.4	17	108	2.6	0.05	0.2	0.2	0.08	A
6	0	26	8.7	19-21.4	155-16.5	1.4	3.1	28	94	2.1	0.13	0.5	0.5	0.19	B
6	0	34	1.9	19-21.3	155-17.4	0.9	1.1	15	95	2.3	0.10	0.4	0.5	0.12	B
6	0	38	57.4	19-21.4	155-17.2	1.3	1.4	12	111	2.3	0.07	0.3	0.3	0.08	A
6	0	43	17.0	19-21.5	155-17.1	1.5	1.7	17	105	2.6	0.05	0.2	0.2	0.08	A
6	0	47	23.9	19-21.6	155-17.3	1.4	1.4	14	99	2.8	0.05	0.2	0.2	0.08	A
6	0	53	4.5	19-21.6	155-17.3	1.4	1.1	12	105	2.7	0.06	0.3	0.3	0.09	A
6	1	7	33.6	19-21.5	155-17.3	1.5	1.7	20	100	2.6	0.07	0.3	0.3	0.12	B
6	1	21	26.3	19-21.4	155-17.3	1.4	1.8	18	101	2.4	0.06	0.2	0.2	0.10	A
6	1	32	29.8	19-21.5	155-17.3	1.5	1.4	15	99	2.6	0.06	0.3	0.2	0.09	A
6	1	40	5.3	19-21.4	155-17.3	1.4	1.7	16	99	2.5	0.06	0.3	0.3	0.10	A
6	1	46	28.1	19-21.6	155-17.3	1.4	1.1	13	100	2.8	0.06	0.3	0.3	0.10	A
6	1	47	45.9	19-21.7	155-16.2	1.3		7	181	1.4	0.14	0.6	0.5	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 6	2	22	24.9	19-22.1	155-16.7	1.1		6	130	1.5	0.05	0.2	0.3	0.03	B
6	2	23	14.2	19-21.4	155-17.2	1.6	1.8	19	105	2.4	0.07	0.3	0.3	0.12	B
6	3	10	20.4	19-21.7	155-16.2	1.3		8	180	1.3	0.11	0.6	0.4	0.10	B
6	3	47	44.3	19-21.9	155-16.5	1.1		7	156	1.4	0.10	0.5	0.5	0.08	B
6	4	20	5.9	19-21.8	155-16.3	1.2		9	177	1.3	0.11	0.5	0.4	0.10	B
6	5	0	30.6	19-21.7	155-16.2	1.4		9	181	1.4	0.12	0.6	0.4	0.12	C
6	5	14	58.1	19-21.1	155-16.8	1.8	1.5	12	127	2.2	0.09	0.5	0.4	0.12	B
6	5	49	45.4	19-24.3	155-17.1	2.1		7	82	1.1	0.06	0.3	1.3	0.05	B
6	5	55	8.3	19-21.7	155-16.0	1.3		9	128	1.3	0.09	0.4	0.3	0.08	B
6	6	10	22.1	19-24.5	155-16.1	1.5	1.2	12	75	1.7	0.04	0.2	0.2	0.08	A
6	6	34	30.1	19-21.6	155-16.1	1.3		8	184	1.5	0.13	0.6	0.5	0.11	C
6	7	31	5.2	19-21.9	155-16.5	1.3		7	159	1.4	0.10	0.6	0.5	0.09	B
6	9	11	43.6	19-16.7	155-13.5	12.9	0.7	12	209	9.2	0.08	0.7	0.5	0.06	B
6	18	7	35.9	19-53.6	155- 7.0	52.7	3.4	29	203	19.4	0.33	1.6	3.0	0.13	C
6	20	18	10.1	19-21.7	155-16.1	1.4		6	140	1.4	0.12	0.8	0.5	0.07	B
6	22	8	19.1	19-23.9	155-28.0	11.0	2.1	17	91	2.6	0.06	0.6	0.8	0.12	B
7	1	0	29.9	19-20.5	155- 1.7?	0.0	2.1	20	217	14.6	5.24	1.8	9.6	0.23	C
7	1	6	59.8	19-21.6	155- 2.0	3.1		13	209	13.8	0.24	1.5	1.1	0.17	C
7	2	43	5.3	19-53.5	155-47.0	31.4		19	166	23.3	0.20	0.9	2.5	0.09	C
7	4	13	52.3	19-20.8	155-16.3	25.0	2.4	23	140	2.3	0.16	1.0	1.4	0.13	B
7	17	20	11.3	19-54.3	155- 7.9	53.4	3.5	28	203	21.0	0.30	1.5	2.9	0.15	C
8	2	54	6.1	19-55.2	155- 9.9	44.1	3.5	29	219	19.0	0.89	4.2	8.1	0.21	D
8	13	49	41.4	19-23.4	154-54.8	3.1	2.9	20	244	10.5	0.28	1.5	1.0	0.13	C
8	15	41	49.9	19-18.6	155-14.8	8.0*		15	181	5.3	0.19	1.3		0.17	D
8	22	7	31.1	19-22.9	155-14.3	6.2		9	121	2.9	0.29	0.9	2.2	0.12	B
9	1	58	40.5	19-55.4	155- 7.7	48.2		24	225	22.8	0.47	2.1	4.1	0.15	C
9	8	30	22.7	19-52.5	155-10.8	51.4		12	247	17.2	1.74	5.1	14.7	0.06	D
9	14	19	10.1	19-46.8	155-11.0?	30.8*	2.9	12	211	20.7	0.13	1.3		0.10	C
9	15	41	44.8	19-47.9	155-20.9	31.0	2.9	24	122	10.2	0.18	0.9	2.2	0.12	B
9	17	19	38.3	19-19.0	155-13.0	8.0*	1.6	8	214	7.9	0.21	1.7		0.12	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 9	19	10	37.4	19-58.6	155- 4.4	50.6	1.6	20	256	29.9	0.64	3.1	4.8	0.12	D
9	21	12	51.3	19-24.3	155-15.9	15.9	2.9	28	59	2.2	0.06	0.6	0.8	0.12	B
9	21	59	3.3	19-22.3	155-25.5?	7.4	2.1	19	55	3.7	0.05	0.5	0.4	0.10	B
10	0	1	43.1	19-24.0	155-17.9?	0.7		11	91	1.1	0.28	1.8	3.8	0.39	C
10	1	55	2.2	19-50.7	155- 7.5	50.1	1.8	22	213	14.3	0.46	2.0	4.2	0.17	C
10	6	52	8.5	19-50.5	155- 6.6	41.3	3.1	22	228	13.6	0.43	1.7	3.6	0.10	C
10	12	56	57.6	20- 0.9	155-49.0	8.0*	1.3	17	282	45.7	0.74	4.7		0.16	D
11	0	21	47.8	19-23.9	155-17.0	11.9	0.8	16	74	1.8	0.06	0.5	0.5	0.08	A
11	4	12	57.3	19-57.5	155- 7.3	50.4	1.7	25	248	24.4	0.54	2.6	4.3	0.12	D
11	4	36	26.8	19-25.9	155-26.1	8.0*	1.5	11	193	6.9	0.09	0.6		0.07	C
11	5	3	22.8	19-23.5	155-13.9	10.7	1.5	9	127	2.3	0.49	1.9	4.1	0.17	B
11	6	13	33.5	19-22.9	155-14.0	1.8		9	120	2.5	0.07	0.4	0.3	0.07	A
11	6	36	0.5	19-24.6	155-24.6	8.0*		13	140	6.5	0.05	0.4		0.06	C
11	7	34	49.1	19-24.0	155-23.9	8.0*	1.8	18	71	7.0	0.05	0.5		0.11	B
11	7	41	16.0	19-13.5	155-28.7	45.0	1.2	19	104	6.4	0.33	1.2	3.0	0.09	B
11	12	27	59.1	19-54.6	155- 9.1	47.9	1.7	20	238	20.2	0.44	2.2	3.6	0.14	C
11	16	8	31.9	19-18.4	155-15.0	8.0*	0.6	13	161	5.2	0.08	0.6		0.10	C
11	16	43	52.1	19-57.2	155-18.4	36.1	1.8	25	208	8.1	0.32	1.7	2.9	0.13	C
11	17	45	18.0	19-11.1	155-26.9	34.1	1.7	15	137	3.5	0.36	1.4	3.2	0.09	B
12	0	4	22.2	19-20.0	155-17.4	29.1	1.1	22	103	0.2	0.25	1.4	2.2	0.16	B
12	5	12	11.4	19-53.5	155-19.7	14.7	3.4	31	188	1.6	0.13	1.0	2.0	0.14	C
12	5	44	34.1	19-24.8	155-24.4	8.7	1.6	22	79	7.1	0.06	0.5	1.4	0.13	B
12	7	16	11.0	19-18.6	155-13.6	8.0*	1.1	12	160	7.3	0.08	0.6		0.08	C
12	7	32	13.9	19- 0.5	154-50.6	13.1*	2.0	20	273	41.9	0.68	4.4		0.19	D
12	7	33	33.3	19-22.8	155-25.0?	11.0	2.3	17	71	5.6	0.12	1.2	3.1	0.26	C
12	10	17	52.2	19-53.0	155-20.6	13.1	2.5	11	137	0.8	0.14	1.7	1.1	0.13	B
12	10	30	13.5	19-42.1	155-15.1?	8.0*	3.1	33	108	17.3	6.01	40.4		2.02	D
12	12	14	41.4	19-19.9	155-18.2	9.9	1.6	15	89	1.4	0.10	0.5	0.9	0.08	A
12	13	37	27.6	19-20.3	155- 9.2	9.0	1.8	15	97	3.4	0.09	0.7	1.3	0.10	A
12	19	18	13.1	19-13.6	155-20.3	32.6	1.2	13	168	12.9	0.54	2.1	4.7	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 12	20	0	33.8	19-22.9	155-14.4	2.4	1.1	7	121	2.8	0.05	0.1	1.9	0.02	B
12	20	27	52.4	19-22.4	155-23.2?	7.0	2.4	31	47	4.0	0.08	0.8	1.6	0.25	B
12	21	47	6.1	19-23.2	155-13.2?	2.0		7	144	1.6	0.22	1.2	1.0	0.15	B
12	22	4	23.1	19-28.1	155-24.5?	8.4	1.2	17	143	3.8	0.13	1.0	0.8	0.18	B
13	0	38	58.4	19-23.0	155-14.4	6.4	1.8	18	109	2.9	0.04	0.4	0.4	0.08	B
13	1	46	24.1	19-21.0	155-15.8	7.8	0.9	11	141	2.5	0.14	1.0	0.7	0.13	B
13	4	47	19.6	19-57.8	155-21.0	13.6	1.4	10	203	8.2	0.19	1.8	2.7	0.11	C
13	13	26	19.8	19-20.6	155-19.7	1.6*	0.1	10	106	4.2	0.04	0.3		0.06	B
13	16	44	15.5	19-24.4	155-16.9	0.8*		9	74	0.9	0.04	0.2		0.06	B
13	17	11	31.1	19-23.7	155-23.6	8.0*	0.9	16	110	6.5	0.05	0.5		0.09	B
13	17	15	45.3	19-22.0	155-11.3	5.5		14	107	2.5	0.11	0.6	1.2	0.12	B
13	17	25	35.7	19-21.4	155-15.7	30.0	0.9	13	100	1.9	0.23	1.1	2.2	0.09	B
13	17	35	12.2	19-24.2	155-17.4	1.8		9	92	1.5	0.03	0.2	0.1	0.04	A
13	22	50	37.7	19-28.0	155-52.8?	9.5	3.0	24	190	22.2	0.21	1.6	2.1	0.18	C
14	2	17	22.4	19-21.9	155-24.1?	8.0	0.9	11	123	3.5	0.22	0.6	2.0	0.08	B
14	2	29	47.8	19-36.9	155- 5.7	9.8	1.9	18	162	11.6	0.10	0.8	1.1	0.14	C
14	4	33	48.4	19-22.2	155-24.4?	8.1	1.0	10	125	4.2	0.24	0.6	2.3	0.08	B
14	11	30	0.6	19-20.9	155-16.1	29.8	2.6	28	103	2.7	0.10	0.7	1.0	0.10	B
14	15	38	59.5	19-37.1	155- 5.6	8.0*	1.8	16	123	11.3	0.08	0.6		0.13	C
14	18	7	39.4	19-18.4	155-14.4	8.0*	1.5	11	163	6.0	0.08	0.6		0.10	C
14	20	3	36.4	19-55.7	155- 8.4	47.9	2.1	25	224	21.6	0.40	1.8	3.4	0.14	C
14	20	7	20.4	19-25.5	155-24.6	8.0*		13	129	7.6	0.07	0.6		0.11	C
14	22	8	15.6	19-26.6	155-26.9	7.0	1.7	17	97	7.6	0.10	0.8	0.7	0.18	C
14	23	46	3.4	19-19.2	155-13.4	9.0*	1.8	10	206	6.1	0.11	0.8		0.09	C
15	2	0	42.4	19-21.6	155-25.0?	7.9	1.2	18	62	3.9	0.06	0.6	1.4	0.15	B
15	3	48	1.4	19-20.4	155-12.9	8.0*	1.3	9	123	6.1	0.07	0.7		0.11	C
15	4	48	31.7	19-36.9	155- 5.5?	8.7	1.8	16	164	11.6	0.10	1.7	2.3	0.14	C
15	4	49	46.9	19-37.1	155- 6.7	8.0*	0.9	15	110	11.5	0.16	1.3		0.20	C
15	5	39	50.2	19-43.9	156- 2.6	8.0*	2.9	18	252	52.0	0.42	3.1		0.17	D
15	5	40	15.4	19-25.0	155-27.0?	7.9	1.7	21	92	4.8	0.09	0.7	0.6	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 15	7	11	55.1	20- 7.9	154-39.2?	140.0*	2.5	10	330	77.0	0.24	7.4		0.13	D
15	9	10	44.2	19-26.6	155-24.1	8.0*		10	154	6.2	0.06	0.5		0.06	C
15	17	40	4.6	19-20.1	155-12.8	8.0*	1.4	11	129	6.4	0.07	0.6		0.11	C
15	19	45	38.1	19-24.5	155-17.0	1.5	0.7	10	68	0.8	0.03	0.2	0.2	0.06	A
15	21	42	11.7	19-21.9	155-16.5	1.3		9	155	1.3	0.05	0.3	0.2	0.06	B
15	22	36	54.5	19-22.4	155-10.0	6.3	1.5	18	97	0.7	0.06	0.5	0.5	0.11	B
15	22	49	58.7	19-53.5	155-20.0	15.0	2.6	25	188	1.0	0.12	0.9	1.7	0.13	C
15	23	58	51.4	19-25.9	155-23.6	7.5	1.4	14	100	6.0	0.06	0.5	0.4	0.11	B
16	1	43	40.3	19-59.4	154-55.9	8.0*	2.2	18	274	44.6	1.21	8.0		0.26	D
16	4	29	10.2	19-23.6	155-23.4	8.0*	1.5	11	105	6.3	0.03	0.3		0.05	B
16	8	19	44.1	19-20.3	155-17.9?	8.9	0.6	13	86	0.8	0.41	2.5	3.3	0.36	C
16	8	46	32.4	19-20.8	155-17.1	23.4	1.3	14	150	1.4	0.22	1.0	1.9	0.07	B
16	9	16	6.9	19-24.2	155-30.1	12.7	0.5	13	97	5.4	0.05	0.5	0.4	0.07	A
16	10	2	3.4	20- 0.5	154-59.7	50.0	3.1	26	265	33.3	0.67	3.4	4.7	0.15	D
16	10	44	32.2	19-16.0	155-25.8	53.2		19	144	1.7	0.47	1.4	4.2	0.11	B
16	13	59	41.5	19-21.6	155-22.6	8.2	0.2	11	77	2.8	0.06	0.5	0.4	0.08	A
16	20	35	44.1	19-49.8	156- 6.5	48.1		21	248	32.4	0.29	1.4	2.6	0.08	C
16	21	24	34.8	19-20.8	155-27.1?	8.0	2.1	18	84	3.3	0.07	0.6	0.5	0.14	B
16	23	34	3.0	19-15.8	154-60.0	38.9	2.4	30	221	9.2	0.25	1.4	1.9	0.12	C
17	1	57	42.3	19-22.5	155-24.3?	6.0	0.9	11	112	4.7	0.16	0.9	2.4	0.09	B
17	2	29	30.1	19-55.8	155- 6.6	8.0*	1.5	16	247	47.3	0.50	3.8		0.19	D
17	5	36	54.3	19-39.7	155-10.2?	8.6	1.5	13	94	10.7	0.33	2.3	4.2	0.30	C
17	6	44	41.8	19-20.6	155-20.1	0.1	0.2	9	109	4.8	0.61	0.2	1.3	0.07	A
17	6	48	13.4	19-21.8	155-23.0	7.4	0.5	11	90	3.0	0.23	0.6	1.9	0.09	A
17	6	56	40.2	19-23.1	155-22.5	8.0*	0.8	10	91	5.1	0.05	0.5		0.09	B
17	12	0	12.7	19-56.1	155-14.6	57.3	1.6	25	215	11.7	0.55	2.3	4.6	0.17	C
17	18	55	26.5	19-56.0	155- 8.6	49.0	1.4	16	224	21.5	0.36	1.7	3.3	0.11	C
17	21	37	19.3	19-23.3	155-15.6	2.2*	1.2	9	91	1.7	0.12	0.9		0.23	B
17	22	25	32.8	19-21.9	155-24.1	8.3	0.3	13	86	3.4	0.08	0.6	1.5	0.10	A
18	1	54	32.1	19-20.2	155-10.7	9.7	1.8	11	117	3.8	0.16	1.0	2.8	0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 18	3	33	37.7	19-19.3	155-18.8	5.7	0.9	15	112	2.5	0.08	0.5	0.5	0.11	B
18	14	20	10.8	19-40.8	155-10.7?	31.3*		16	280	22.8	0.25	2.1		0.09	D
18	20	11	28.6	19-21.9	155-16.4	27.6		16	89	1.4	0.19	0.9	1.8	0.11	B
18	20	19	5.6	19-22.8	155- 4.4?	3.5		14	149	5.9	0.14	0.9	1.3	0.17	B
19	1	37	51.4	19-12.6	155-22.5	30.1		23	160	10.9	0.21	1.1	2.1	0.14	C
19	1	41	18.5	19-20.9	155- 7.9?	5.4		14	79	4.1	0.18	1.4	1.6	0.28	B
19	3	12	23.8	19-54.4	155-10.6	46.5	3.4	33	197	17.5	0.30	1.5	3.1	0.17	C
19	4	44	4.8	19-56.0	155-10.0	48.8	1.7	26	238	19.1	0.39	1.9	3.2	0.12	C
19	7	28	36.9	19-20.6	155- 7.2	8.0*		9	159	5.3	0.21	2.2		0.24	C
19	8	5	53.6	19-22.5	155-24.0	7.4	2.0	27	51	4.5	0.07	0.7	0.5	0.20	C
19	15	42	16.6	19-22.3	155-24.4	6.9	1.9	23	51	4.3	0.09	0.8	0.7	0.22	B
19	17	5	39.8	18-56.2	155-25.9	28.7		17	276	24.8	0.81	5.0	4.8	0.16	D
19	19	18	22.0	19-20.5	155-14.5	24.5	3.2	30	111	4.3	0.10	0.7	1.0	0.12	B
19	23	55	7.9	19-18.4	155-13.2	8.0*		11	224	8.0	0.16	1.0		0.09	C
20	1	18	40.8	19-22.1	155-23.6	7.8		12	75	3.5	0.08	0.8	0.5	0.13	B
20	2	3	10.1	19-20.7	155- 9.2	2.1		20	92	2.8	0.12	0.9	1.5	0.21	B
20	3	45	11.9	19-52.9	155- 8.7	43.5	2.5	31	217	18.9	0.35	1.6	3.2	0.15	C
20	4	43	44.1	19-23.0	155- 5.1?	0.0		17	85	6.9	6.14	0.8	11.7	0.20	C
20	5	23	12.6	19-21.4	155-24.5?	7.9	2.3	29	60	3.0	0.08	0.7	0.6	0.23	C
20	6	22	36.5	19-52.5	155-10.6	16.0*		15	273	31.3	0.82	5.3		0.19	D
20	8	25	37.1	19-26.1	155-28.6?	7.6		16	79	6.8	0.09	0.6	0.9	0.13	B
20	15	36	21.4	19-21.0	155-24.0	8.8	1.7	14	85	1.9	0.07	0.5	1.2	0.09	A
20	17	16	10.8	19-24.9	155-25.2	7.8	1.6	20	65	6.1	0.06	0.5	0.4	0.12	B
20	20	52	59.0	19-11.1	155-31.8?	7.8	2.5	27	100	7.4	0.12	0.8	0.8	0.20	B
20	21	57	53.4	19-20.7	155- 6.8	8.0*		19	96	5.9	0.15	1.3		0.21	B
20	23	39	44.6	19-37.3	156-11.3	54.4		15	255	37.3	0.54	2.4	4.5	0.09	C
21	0	36	17.5	19-19.9	155-12.2	5.6	1.6	24	113	4.8	0.09	0.7	0.7	0.20	B
21	0	43	25.6	19-19.3	155-13.4	6.1	1.9	27	124	5.9	0.08	0.6	0.5	0.19	B
21	0	44	44.2	19-19.3	155-13.6	6.8		18	124	6.0	0.10	0.8	0.6	0.15	B
21	1	40	48.6	19-24.5	155-17.4	9.0	1.2	11	65	1.0	0.09	0.4	0.8	0.05	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 21	1	46	10.2	19-10.9	155-19.6	41.7		10	200	14.8	1.11	3.0	10.1	0.12	C
21	1	47	24.5	19-12.2	155-17.5?	8.0*		11	194	14.6	0.30	2.2		0.31	D
21	1	48	45.8	19-10.6	155-15.9	36.9		14	211	14.4	0.73	3.0	5.9	0.18	C
21	7	34	36.8	19-22.0	155-27.0	4.4	2.2	23	78	1.4	0.11	0.9	1.0	0.27	B
21	9	27	17.6	19-23.4	155-14.9	3.4		9	194	2.5	0.08	0.3	0.7	0.02	B
21	10	11	26.5	19-19.3	155-12.5	8.0*		14	142	5.8	0.09	0.7		0.13	C
21	16	49	47.6	19-24.3	155- 9.4	8.0*		9	199	8.6	0.20	2.1		0.15	C
22	5	37	11.4	19-20.1	155-11.8	8.0	1.6	20	126	4.7	0.08	0.8	0.5	0.12	C
22	14	28	52.1	19-22.5	155- 3.9?	2.0	2.2	15	159	5.1	4.29	1.3	8.4	0.21	C
22	18	28	8.7	19-19.4	155- 9.9	1.4	1.7	17	122	4.8	2.26	1.0	8.6	0.23	C
22	21	45	50.4	19-56.2	155-31.3	25.2	2.3	24	157	18.4	0.19	1.1	2.7	0.13	C
22	22	31	25.7	19-19.4	155-13.5	6.2	1.6	27	122	5.7	0.07	0.6	0.5	0.17	B
22	23	11	25.3	19-25.2	155-17.7	4.5	1.0	11	79	0.4	0.25	0.9	1.9	0.15	B
22	23	43	51.1	19-24.1	155-15.9	2.0	0.7	12	62	2.3	0.07	0.4	0.3	0.10	A
23	13	10	47.2	19-20.6	155-11.3	7.0	1.6	23	99	3.7	0.08	0.8	0.6	0.17	B
23	14	9	8.8	19-15.6	155-22.0	8.0*		11	170	7.3	0.16	1.2		0.15	C
23	16	35	9.3	19-19.8	155- 9.4	9.4		13	107	4.3	0.09	0.6	1.2	0.07	A
23	20	37	8.2	19-22.9	155-13.1	7.7		8	165	1.1	0.14	0.7	0.6	0.05	B
23	21	11	13.0	19-16.0	155-47.8	7.8	1.5	10	161	7.9	0.11	2.7	3.1	0.09	C
23	21	18	37.3	19-23.0	155-14.3	1.9	0.4	8	114	3.0	0.11	0.6	0.6	0.09	A
24	2	45	22.6	19-22.8	155-14.4	4.3		8	126	2.7	0.25	0.9	2.6	0.10	B
24	4	31	2.8	19-24.0	155-15.9	1.9	0.5	10	113	2.5	0.05	0.4	0.3	0.07	A
24	5	3	31.1	19-23.3	155-15.1	4.7	2.6	16	77	2.1	0.10	0.4	1.0	0.09	B
24	6	51	28.3	19-32.9	155- 4.6	10.4	2.0	17	146	5.1	0.12	1.0	1.2	0.14	C
24	12	50	20.7	19-57.2	155- 1.4	50.3	2.7	26	258	34.3	0.71	3.4	5.7	0.17	D
24	21	29	5.8	19-20.7	155-13.2	8.0*	0.6	16	82	5.7	0.05	0.5		0.10	B
24	21	38	41.7	19-34.1	155- 4.4	8.3	2.2	27	121	7.1	0.09	0.8	1.3	0.13	B
24	21	40	27.9	19-21.2	155-12.5	11.6		12	76	2.3	0.17	0.7	1.6	0.09	A
24	23	27	0.1	19-21.9	155-12.8	3.3	0.9	16	52	1.0	0.08	0.5	1.3	0.12	B
25	1	0	36.9	19-20.2	155- 8.5	3.4	2.1	30	77	4.3	0.12	0.8	1.0	0.29	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 25	1	51	25.1	19- 8.9	155-30.9	33.4	1.6	24	143	5.4	0.25	1.3	2.3	0.14	B
25	5	51	28.0	19-21.4	155-17.0	24.8	1.2	23	55	2.4	0.14	0.8	1.4	0.11	B
25	14	13	20.5	19-33.2	155- 5.0	9.9	1.7	24	160	5.8	0.12	0.9	1.1	0.13	C
26	1	27	2.9	19-22.6	155-22.1	8.0	0.8	19	60	4.7	0.04	0.4	0.3	0.10	B
26	3	53	5.3	19-23.3	155-14.9	4.5	0.8	18	84	2.4	0.09	0.3	0.8	0.08	B
26	4	8	33.7	19-14.8	155- 7.1	42.4		31	200	5.0	0.26	1.3	2.0	0.13	C
26	5	46	25.7	19-22.8	155-14.5	3.6	0.4	10	124	2.5	0.26	1.0	3.1	0.15	B
26	9	12	10.8	19-23.2	155-15.1	2.9	1.0	13	110	2.1	0.08	0.4	1.4	0.08	A
26	18	22	53.3	19-24.0	155-15.9	4.0	1.4	13	91	1.3	0.12	0.5	1.0	0.06	A
27	0	50	57.4	19-20.0	155-13.5	4.6	0.8	21	68	4.7	0.11	0.7	1.2	0.23	B
27	1	9	21.2	19-57.1	155- 4.4	46.7	2.4	32	235	25.6	0.42	2.0	3.4	0.13	D
27	3	10	48.1	19-19.0	155-12.3	6.8	1.7	24	98	4.2	0.08	0.6	0.5	0.16	B
27	5	4	10.0	19- 3.5	155-26.4	30.0	1.8	25	208	11.3	0.38	2.0	3.7	0.18	C
27	14	46	15.0	19-27.1	154-53.3	8.0	1.2	13	234	3.4	0.26	2.8	1.6	0.12	D
27	17	19	10.9	19-20.5	155- 7.9?	7.5	1.1	16	109	4.5	0.09	1.0	0.5	0.16	B
27	17	31	10.1	19-24.4	155-17.1	1.2	0.6	12	59	0.9	0.04	0.2	0.3	0.09	A
27	17	59	33.5	19-24.0	155-15.9	3.6	0.4	14	91	1.1	0.09	0.4	0.9	0.08	B
27	18	10	38.8	19-24.2	155-16.0	1.9	0.4	8	186	1.2	0.06	0.3	0.9	0.04	B
28	2	20	45.9	19-20.1	155- 8.0	9.6	1.4	17	88	4.9	0.09	0.5	1.2	0.08	A
28	2	47	46.5	19-18.9	155-14.7	4.8	0.9	15	109	4.1	0.10	0.7	1.1	0.14	B
28	2	52	28.9	19-18.7	155-14.7	7.1	0.9	18	114	3.7	0.09	0.5	0.6	0.12	B
28	7	6	26.4	18-48.0	155-11.1	8.0*	1.3	21	283	49.4	0.72	4.6		0.18	D
28	9	22	0.4	19-21.8	155-24.8	14.4	0.5	10	102	3.9	0.33	2.2	4.6	0.24	B
28	10	21	19.8	19-17.5	155- 0.3	35.3	2.2	26	223	6.4	0.38	2.1	2.7	0.15	C
28	12	10	58.3	19-21.4	155- 8.3?	1.9	1.4	17	98	3.0	0.17	1.5	2.1	0.20	C
28	13	22	25.0	19-24.0	155-15.8	2.3	0.8	7	87	2.3	0.21	0.9	6.2	0.11	C
28	22	32	11.3	19-21.9	155-14.8	2.4*		8	170	3.9	0.06	0.4		0.05	C
29	4	7	2.3	19-56.4	155- 4.0	8.0*	1.9	14	263	44.7	0.83	5.7		0.22	D
29	9	31	6.6	19-23.3	155-24.2	8.0*	0.8	12	99	5.9	0.09	0.9		0.15	B
29	10	28	0.8	19-34.0	155- 3.4	8.3	2.4	17	218	17.3	0.25	2.0	1.4	0.11	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
MAY 29	15	22	1.6	19-23.4	155-14.9	13.7	3.4	28	44	0.1	0.05	0.6	0.9	0.14	B
29	17	50	38.9	19-26.8	155-36.1	7.1	0.5	11	244	4.5	0.63	4.7	2.6	0.10	D
29	21	19	16.1	19- 2.3	155-14.8	13.4*	1.3	18	277	27.3	0.55	3.6		0.15	D
29	23	10	18.6	19-24.9	155-28.2?	7.6	3.0	27	52	4.6	0.06	0.5	1.0	0.14	B
30	0	36	28.1	19-24.6	155-14.6?	1.1		10	131	2.5	0.11	0.5	0.5	0.11	B
30	0	52	37.4	19-27.9	155-47.5	10.8	1.3	10	242	36.2	0.55	4.1	2.8	0.15	D
30	2	24	9.1	19-22.5	155-13.3	2.9	1.7	22	74	1.1	0.05	0.4	0.7	0.13	A
30	4	23	26.5	19-19.4	155-13.9	6.2	1.2	22	83	6.1	0.09	0.7	0.6	0.17	B
30	5	1	59.9	19-19.4	155-15.3	6.5	0.7	20	102	3.8	0.09	0.6	0.6	0.15	B
30	5	50	18.6	19-19.2	155-11.8	8.0*	1.0	13	99	5.0	0.10	0.9		0.17	B
30	8	49	56.4	19-23.7	155-16.8	15.0	1.0	17	46	0.5	0.07	0.7	0.8	0.10	B
30	11	17	41.5	19-58.8	155-34.7	2.4		13	164	25.4	0.14	1.7	1.4	0.17	C
30	11	21	53.7	19-32.6	155-43.0?	7.9	2.4	13	251	13.7	0.32	1.6	0.9	0.07	C
30	11	22	17.3	19-31.5	155-42.2	8.3	2.4	12	133	11.6	0.06	0.6	0.9	0.08	B
30	11	28	17.3	19-32.1	155-41.6	8.0*	1.8	9	152	11.1	0.08	0.8		0.09	C
30	11	29	54.3	19-31.5	155-42.2	8.4	1.0	11	158	11.6	0.08	0.9	1.1	0.08	B
30	12	32	35.8	19-19.7	155-12.1	8.0*	1.2	12	87	5.3	0.07	0.6		0.10	B
30	16	3	48.5	19-18.9	155-22.2	3.3	2.1	9	200	3.1	0.13	0.5	1.4	0.07	B
30	18	28	34.7	19-22.0	155-24.8	3.7	1.1	12	98	4.2	0.12	1.0	1.7	0.26	B
30	20	42	59.7	19-55.8	155-10.1	45.0	3.2	31	201	18.8	0.21	1.2	2.3	0.14	C
30	21	28	33.1	19-14.1	155-21.9	6.4	1.1	16	152	9.1	0.11	0.9	0.8	0.18	C
31	1	8	36.4	19-23.3	155-14.5	2.9		10	109	2.6	0.10	0.3	1.4	0.05	A
31	2	4	41.0	19-20.2	155- 8.9	9.3		10	120	3.9	0.11	0.6	1.3	0.06	A
31	3	47	27.3	19-24.1	155-15.5	3.2		8	130	1.9	0.12	0.4	1.1	0.05	B
31	17	59	46.6	19-23.3	155-14.9	4.0	1.1	10	102	2.4	0.06	0.2	0.5	0.03	A
JUN 1	0	15	59.0	19-20.9	155- 9.0	4.6	2.0	21	65	7.0	0.09	0.7	0.8	0.17	B
1	0	18	29.9	19-19.2	155-13.2	7.9		16	77	4.0	0.11	0.7	1.8	0.11	B
1	1	7	36.3	19-23.0	155-14.4	2.0*	1.1	12	110	2.9	0.08	0.6		0.13	B
1	2	46	3.9	19-22.9	155-14.5	1.8	1.1	10	120	2.7	0.07	0.4	0.3	0.09	A
1	3	3	21.4	19-23.5	155-15.0	5.0	1.8	17	53	2.5	0.06	0.2	0.5	0.06	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 1	3	48	9.1	19-59.1	155- 1.8	46.9	3.6	31	244	34.4	0.52	2.5	4.5	0.16	D
1	4	57	26.2	19-22.2	155-13.3	5.8	1.4	12	90	1.2	0.25	0.8	2.1	0.12	B
1	8	27	8.2	19-23.2	155-14.7	2.1	1.0	10	109	2.5	0.10	0.4	0.4	0.05	A
1	9	13	36.7	19-19.7	155-12.0	8.0*		15	85	5.2	0.06	0.5		0.09	B
1	9	22	46.8	19-25.8	155-16.3	24.8		12	129	6.3	0.21	1.0	2.1	0.08	B
1	10	31	42.9	19-22.6	155-24.9	9.1	1.8	20	52	4.8	0.06	0.6	0.9	0.14	B
1	14	15	15.3	19-40.4	155- 3.3	2.2	2.9	14	231	18.8	0.42	2.2	2.2	0.14	C
1	17	0	10.9	19-20.6	155-24.6?	7.4	1.9	23	91	2.4	0.08	0.8	1.4	0.22	B
1	23	46	29.6	19-23.7	155-15.3	2.6	0.9	8	157	2.3	0.27	0.8	3.1	0.08	C
2	5	34	1.6	18-57.8	155-17.0	16.4*		17	252	28.8	0.49	3.3		0.21	D
2	11	15	43.7	19-13.6	155- 6.2	5.6	2.9	26	221	7.6	0.25	1.3	0.8	0.17	C
2	17	51	29.4	19-18.8	155-22.0	3.8		12	138	3.5	0.12	0.5	1.6	0.09	B
2	19	55	31.4	19-24.1	155-15.6	4.4	1.4	14	128	1.8	0.11	0.5	0.8	0.09	B
3	0	0	29.7	19-24.2	155-16.0	3.8	0.9	7	105	1.2	0.08	0.2	0.6	0.02	B
3	5	45	38.5	19- 9.1	155-28.3?	8.0*		9	166	22.3	0.27	3.0		0.21	C
3	7	49	22.7	19-12.4	155-24.4	32.2	2.3	22	180	8.1	0.23	1.2	2.3	0.14	C
3	17	31	46.8	19-37.5	155-22.0	8.0*		8	131	14.3	0.10	1.2		0.15	C
3	17	40	6.6	19-23.3	155-15.2	3.4	1.5	13	103	2.0	0.11	0.5	1.4	0.11	B
3	19	46	50.6	19-19.6	155- 9.2	9.0		15	125	4.7	0.15	0.8	1.7	0.09	B
4	2	52	5.7	19-18.8	155-28.3	6.7		19	68	5.3	0.11	1.0	0.9	0.25	B
4	4	36	13.7	19-22.7	155- 4.9?	0.0	2.2	26	85	6.3	2.75	0.8	5.3	0.24	C
4	4	43	12.4	19-22.6	155-13.2	5.6	1.5	14	124	1.1	0.11	0.6	0.9	0.12	B
4	4	46	35.9	19-22.2	155- 4.7?	1.9	1.9	21	86	5.3	0.44	1.0	2.0	0.22	C
4	5	10	21.4	19-24.1	155-15.8	1.9	0.9	9	120	1.5	0.06	0.3	0.3	0.07	A
4	9	24	54.3	19-23.5	155-15.5	3.9		11	93	2.0	0.11	0.5	1.0	0.09	A
4	13	6	2.6	19-59.9	155-14.4	91.6*	3.7	14	314	57.7	2.94	27.8		0.30	D
4	14	2	33.0	19-23.8	155-15.2	2.7	0.9	7	167	2.1	0.15	0.5	2.2	0.05	C
4	19	27	48.2	19-27.1	155-14.1?	9.4	1.6	15	145	4.0	0.12	1.0	1.9	0.15	C
5	4	9	55.6	19-24.3	155-24.8	8.0*	1.6	16	80	6.0	0.05	0.4		0.10	B
5	6	20	47.6	19-22.4	155-24.6?	7.5		18	51	4.6	0.07	0.6	0.6	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN	5	11	35 25.8	19-17.9	155-13.5?	6.5	1.7	11	92	1.7	0.17	1.4	2.6	0.16	B
	5	17	49 5.1	19-21.2	155-24.1?	8.4		17	101	2.3	0.07	0.7	0.4	0.14	B
	5	18	52 48.3	19-23.3	155-14.8	2.0		12	105	2.6	0.05	0.2	0.2	0.04	A
	5	20	23 4.7	19-20.4	155-19.6	4.9	2.0	22	63	4.0	0.05	0.4	0.5	0.13	B
	5	22	54 18.4	19-23.7	155-15.3	3.1	1.5	20	55	2.3	0.06	0.3	0.9	0.09	B
	6	2	10 0.0	19-36.8	155-48.7	9.6	1.6	11	153	8.8	0.09	1.1	1.8	0.10	C
	6	2	19 29.8	19-24.2	155-15.8	1.8	1.0	12	110	1.5	0.08	0.5	0.3	0.11	B
	6	5	38 24.1	19-24.0	155-15.6	3.0	1.5	19	64	1.7	0.06	0.3	0.8	0.10	A
	6	5	50 25.6	19-50.6	155-18.4	1.9	2.4	23	170	6.4	1.83	1.2	6.4	0.15	C
	6	6	1 4.1	19-24.2	155-16.0	3.0	0.8	7	104	1.1	0.03	0.2	0.4	0.02	B
	6	6	44 13.6	19-22.9	155-14.3?	1.2	1.1	8	143	2.9	0.09	0.4	0.6	0.10	B
	6	8	4 48.8	19- 9.8	155-36.8?	0.0	2.3	17	103	9.4	6.63	1.1	12.5	0.27	C
	6	13	23 22.5	19-20.3	155-12.6	9.6	1.6	19	71	4.0	0.08	0.5	1.0	0.08	A
	6	13	31 29.3	19-23.3	155-14.7	1.1	1.0	11	104	2.6	0.06	0.3	0.3	0.08	A
	6	16	16 3.7	19-22.7	155-14.2	5.6	1.6	21	103	2.7	0.07	0.4	0.6	0.10	B
	6	18	7 3.5	19-51.6	155- 7.3	45.1	2.1	33	217	15.8	0.40	1.9	3.7	0.15	C
	6	20	22 47.7	19-23.4	155-14.2	4.3	1.2	14	113	2.4	0.24	0.8	2.3	0.13	B
	6	20	54 37.8	19-20.0	155-10.8	9.1		17	102	4.2	0.11	0.6	1.4	0.08	A
	6	21	43 34.3	20- 3.8	155-54.0	32.4	2.4	12	249	42.1	0.31	1.9	3.2	0.10	C
	6	23	40 56.3	19-24.2	155-15.9	2.7		8	106	1.3	0.05	0.2	0.7	0.03	A
	7	0	12 24.4	19-24.1	155-15.7	3.5	2.2	21	62	1.7	0.05	0.3	0.5	0.09	B
	7	1	1 32.6	19-24.0	155-15.4	3.9	1.3	16	76	2.2	0.08	0.4	0.8	0.09	A
	7	4	21 6.0	19-23.2	155-14.9	3.2	1.1	13	103	2.4	0.07	0.3	1.0	0.05	A
	7	7	30 26.5	19-23.1	155-14.8	4.2	1.4	15	106	2.4	0.10	0.4	1.0	0.08	A
	7	12	41 45.7	19-20.0	155-12.9	4.7	1.5	23	71	4.5	0.08	0.6	0.7	0.19	B
	7	17	1 39.3	19-21.6	155- 5.6	1.4	2.6	28	113	5.6	0.92	0.7	3.3	0.18	C
	7	20	13 41.9	19-49.1	155- 6.9	14.3*		13	220	25.1	0.24	1.9		0.14	C
	7	21	17 27.2	19-34.1	156-17.2	1.9	2.5	7	299	48.8	0.80	17.0	10.2	0.15	D
	7	22	33 51.3	19-18.4	155-19.9	6.1	1.6	12	188	2.4	0.07	0.4	0.4	0.07	B
	8	1	18 44.2	19-21.9	155-16.7	22.2	1.9	23	102	1.7	0.12	0.8	1.2	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 8	1	49	37.6	19-22.5	155-14.1	4.4	1.3	16	99	2.4	0.13	0.4	1.3	0.08	B
8	3	7	0.3	19-23.1	155-14.3	1.8	1.1	10	111	3.0	0.06	0.4	0.3	0.08	A
8	4	49	33.0	19-19.4	155-16.3	6.5	1.5	16	105	2.3	0.07	0.5	0.4	0.10	A
8	6	14	54.4	19-22.4	155-13.0	8.0*	1.5	10	125	4.8	0.07	0.7		0.07	C
8	23	16	56.0	19-44.6	155- 9.1	14.3*		20	212	25.9	0.31	2.4		0.25	C
8	23	57	5.3	19-22.9	155-14.4?	0.7		8	121	2.7	0.23	0.7	3.0	0.09	B
9	0	4	13.5	19-23.1	155-14.4	4.4	2.2	24	52	2.9	0.06	0.4	0.7	0.13	B
9	0	5	25.0	19-22.8	155-13.9	5.3	1.6	14	70	2.3	0.10	0.6	1.0	0.14	B
9	0	31	48.2	19-23.2	155-14.8	3.6	1.6	11	109	2.8	0.13	0.5	1.8	0.07	A
9	0	37	42.9	19-22.9	155-14.7	3.2	2.1	16	66	5.1	0.07	0.5	1.3	0.12	B
9	0	47	30.9	19-22.9	155-14.5	1.5	2.4	20	67	3.3	0.08	0.4	0.3	0.11	B
9	1	0	27.4	19-22.6	155-13.5	3.3	1.6	17	80	1.6	0.09	0.6	1.3	0.17	B
9	1	9	58.4	19-23.0	155-15.0	5.4	2.0	15	62	4.2	0.06	0.5	0.6	0.11	B
9	1	10	54.1	19-22.4	155-15.0	4.2	1.9	18	71	4.1	0.09	0.6	1.2	0.17	B
9	1	15	17.4	19-22.9	155-14.9	4.1	1.6	17	83	3.4	0.06	0.4	0.8	0.10	B
9	1	27	0.8	19-22.6	155-15.0	2.5	1.7	16	77	4.1	0.07	0.5	1.7	0.14	B
9	1	29	52.6	19-23.0	155-14.8	4.8	2.0	19	48	3.8	0.06	0.4	0.7	0.09	B
9	1	33	44.8	19-22.8	155-15.2	2.2*	1.6	16	66	4.5	0.05	0.4		0.11	B
9	2	2	34.3	19-22.6	155-15.5	6.2	1.7	15	66	4.4	0.05	0.3	0.4	0.07	A
9	2	36	17.2	19-22.9	155-15.3	6.0	1.5	13	53	3.8	0.06	0.4	0.6	0.09	A
9	2	50	16.2	19-22.8	155-15.1	3.5	1.6	18	50	3.8	0.06	0.4	1.1	0.12	B
9	3	1	32.3	19-22.3	155-15.9	3.1	1.1	13	121	4.7	0.07	0.4	1.1	0.08	B
9	3	4	32.7	19-22.6	155-14.7	4.2	1.2	12	123	2.2	0.10	0.4	1.0	0.06	B
9	3	7	0.4	19-22.1	155-16.0	5.0	1.5	16	65	4.5	0.10	0.4	1.1	0.10	B
9	3	16	45.4	19-22.3	155-15.7?	5.8	2.2	19	55	5.4	0.06	0.5	0.7	0.13	B
9	3	26	34.0	19-22.7	155-15.3	5.4	1.2	11	121	3.2	0.12	0.5	1.0	0.07	B
9	3	27	32.1	19-23.1	155-15.2	6.4	1.5	14	109	3.0	0.07	0.4	0.6	0.09	B
9	3	36	47.8	19-22.1	155-16.1	5.8	1.5	16	64	4.2	0.06	0.3	0.6	0.08	B
9	3	37	18.2	19-22.9	155-14.9	3.5	1.1	16	115	1.9	0.11	0.5	1.3	0.09	A
9	3	41	46.7	19-22.6	155-15.5	5.0	1.2	15	66	2.9	0.09	0.4	0.9	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 9	3	42	49.6	19-22.9	155-15.0	5.7	1.2	17	65	1.7	0.06	0.3	0.5	0.07	A
9	3	46	53.2	19-22.7	155-15.0	5.2	1.7	15	68	3.8	0.07	0.5	0.7	0.11	B
9	3	51	45.7	19-22.7	155-15.3	3.9	1.1	16	117	1.3	0.11	0.5	1.2	0.10	B
9	3	52	58.2	19-22.9	155-14.9	4.6	1.2	16	115	3.5	0.12	0.4	1.2	0.09	B
9	3	54	22.8	19-22.7	155-15.1	5.1	1.2	13	76	1.5	0.12	0.4	1.0	0.06	A
9	3	55	6.2	19-23.1	155-15.4	3.1	1.3	15	69	1.6	0.12	0.6	2.1	0.16	B
9	3	56	45.5	19-22.7	155-14.7	3.6	1.1	13	120	2.2	0.15	0.6	2.0	0.11	B
9	3	57	27.8	19-22.7	155-15.3	3.7		14	117	1.2	0.13	0.6	1.5	0.11	B
9	3	59	57.6	19-23.0	155-14.5	4.2	2.0	19	64	3.1	0.05	0.3	0.6	0.08	B
9	4	2	22.8	19-22.9	155-15.0	5.6	1.2	17	79	1.8	0.10	0.3	0.9	0.07	A
9	4	5	7.5	19-23.0	155-14.8	3.9	1.1	12	114	2.2	0.11	0.4	1.2	0.07	A
9	4	7	59.4	19-23.1	155-14.8	4.2	1.1	12	112	2.2	0.08	0.3	0.8	0.05	A
9	4	9	27.6	19-22.3	155-16.1	3.6	1.1	14	117	0.4	0.09	0.4	1.0	0.10	B
9	4	12	23.2	19-22.8	155-15.2	5.6	1.5	19	86	1.4	0.05	0.3	0.5	0.08	A
9	4	13	21.7	19-22.8	155-14.8?	1.3		13	116	2.1	0.08	0.4	0.4	0.13	B
9	4	14	9.7	19-23.0	155-14.6	2.0	1.1	14	94	2.5	0.05	0.2	0.2	0.05	A
9	4	15	24.6	19-22.8	155-14.9	4.9	1.2	16	117	1.8	0.09	0.3	0.8	0.07	A
9	4	21	8.4	19-22.7	155-15.4	5.9	1.2	14	116	1.1	0.06	0.2	0.5	0.05	A
9	4	23	50.0	19-23.2	155-15.1	3.1	1.0	12	111	2.0	0.09	0.4	1.3	0.07	A
9	4	28	14.3	19-23.1	155-14.8	3.5	1.1	14	109	2.2	0.09	0.4	1.2	0.08	A
9	4	29	21.9	19-22.9	155-15.1	5.8	1.2	16	113	1.6	0.13	0.4	1.0	0.08	B
9	4	30	44.9	19-22.8	155-15.1	4.1	1.1	15	116	1.6	0.11	0.4	1.1	0.10	B
9	4	32	9.1	19-22.7	155-14.9	5.7	1.5	16	120	1.8	0.10	0.4	0.8	0.08	A
9	4	34	17.9	19-22.8	155-14.7	3.4	1.1	15	118	2.2	0.13	0.5	1.9	0.13	B
9	4	37	3.9	19-22.8	155-15.3	4.3		14	115	1.2	0.12	0.5	1.2	0.10	B
9	4	38	10.2	19-22.9	155-14.8	4.9	1.5	18	65	2.2	0.10	0.4	1.0	0.11	B
9	4	40	31.1	19-22.9	155-15.1	5.9	1.2	17	78	1.7	0.08	0.3	0.6	0.07	A
9	4	45	39.9	19-22.8	155-14.9	4.3		12	117	1.8	0.15	0.6	1.5	0.10	B
9	4	45	59.0	19-22.7	155-14.9	4.4	1.2	15	120	1.9	0.11	0.5	1.2	0.10	A
9	4	46	59.8	19-22.9	155-14.6	4.1	1.5	17	91	2.4	0.09	0.3	0.9	0.08	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 9	4	49	21.6	19-22.6	155-15.3	5.5	1.2	15	115	1.1	0.10	0.4	0.8	0.08	B
9	4	52	46.2	19-22.8	155-14.9	6.8		15	116	1.9	0.13	0.7	0.9	0.14	B
9	4	56	5.1	19-23.3	155-15.0	4.8	1.1	16	103	2.3	0.20	0.7	1.8	0.13	B
9	5	1	26.2	19-22.5	155-15.1	3.9	1.1	15	127	1.4	0.13	0.5	1.3	0.10	B
9	5	4	56.3	19-22.9	155-14.8	2.2		10	122	2.2	0.12	0.5	0.5	0.07	B
9	5	5	30.6	19-22.8	155-14.9	4.4		11	118	1.8	0.06	0.2	0.6	0.04	A
9	5	7	46.1	19-23.0	155-14.9	4.7	1.1	14	111	2.0	0.13	0.5	1.2	0.09	B
9	5	11	13.9	19-22.6	155-15.1	5.3	1.2	14	120	1.4	0.09	0.3	0.7	0.06	A
9	5	16	37.7	19-22.4	155-15.8	4.2		13	123	0.2	0.10	0.4	0.9	0.07	B
9	5	17	11.2	19-22.9	155-14.9	5.1	1.2	16	114	1.9	0.12	0.4	1.0	0.08	A
9	5	18	20.6	19-22.8	155-15.1	5.4		16	77	1.6	0.15	0.5	1.2	0.10	B
9	5	20	15.3	19-22.7	155-15.3	5.5	1.5	21	51	1.1	0.04	0.2	0.4	0.07	A
9	5	22	26.6	19-23.4	155-14.9	2.0		10	101	2.5	0.06	0.3	0.2	0.07	A
9	5	25	30.0	19-24.6	155-24.3	8.0*	1.5	10	171	7.1	0.07	0.6		0.08	C
9	5	32	4.9	19-22.7	155-14.7	3.4	1.1	13	120	2.2	0.06	0.2	0.9	0.05	A
9	5	43	23.8	19-22.9	155-15.0	4.4	1.1	15	113	1.9	0.06	0.2	0.6	0.05	A
9	5	37	32.4	19-22.9	155-14.9	6.3	1.5	18	82	2.0	0.05	0.3	0.3	0.07	A
9	5	45	28.9	19-22.9	155-14.9	4.0	1.1	11	113	1.9	0.09	0.3	0.9	0.05	A
9	5	46	19.2	19-23.0	155-14.9	4.5	1.1	15	111	2.0	0.13	0.5	1.3	0.10	B
9	5	50	3.7	19-22.1	155-13.1	3.0		8	153	1.0	0.11	0.7	1.3	0.05	B
9	5	50	24.8	19-22.7	155-14.9	3.9	1.1	15	119	1.9	0.13	0.5	1.4	0.11	B
9	5	51	14.9	19-22.8	155-15.2	5.5	1.2	15	116	1.4	0.08	0.3	0.6	0.05	A
9	5	55	46.0	19-23.0	155-14.7	2.0		9	117	2.4	0.11	0.5	0.5	0.06	A
9	6	2	9.4	19-22.9	155-15.0	5.5	1.2	16	114	1.8	0.11	0.4	0.9	0.07	A
9	6	7	26.6	19-22.9	155-15.0	5.1	1.2	11	117	1.8	0.13	0.4	1.1	0.07	A
9	6	12	54.7	19-22.4	155-14.4	5.9		12	142	2.6	0.33	0.9	2.2	0.11	B
9	6	15	41.4	19-22.8	155-15.2?	6.7	1.3	13	120	1.4	0.28	1.4	2.6	0.14	B
9	6	20	9.4	19-23.1	155-14.6	3.0	1.1	9	111	2.5	0.07	0.2	1.0	0.04	A
9	6	25	0.3	19-23.2	155-15.0	1.3		13	108	2.2	0.05	0.3	0.2	0.09	A
9	6	50	53.9	19-22.6	155-15.4	5.2	1.2	12	121	1.0	0.09	0.3	0.7	0.04	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 9	7	4	35.9	19-22.9	155-14.7	8.2		12	114	2.3	0.08	0.5	0.5	0.09	A
9	7	5	24.7	19-22.9	155-14.9	5.2	1.7	21	64	2.0	0.06	0.4	0.6	0.10	B
9	7	16	51.9	19-22.8	155-15.2	4.0	1.1	17	75	1.4	0.07	0.3	0.8	0.08	A
9	7	31	51.7	19-23.0	155-14.6	1.1	1.1	15	111	2.5	0.06	0.3	0.3	0.07	A
9	7	37	58.7	19-22.9	155-14.8	5.0	1.2	15	114	2.2	0.10	0.4	0.8	0.07	A
9	7	59	26.8	19-22.9	155-15.1	5.3	1.2	13	113	1.7	0.15	0.5	1.3	0.10	A
9	8	7	7.0	19-22.9	155-15.0	5.3	1.2	16	113	1.9	0.12	0.4	1.0	0.09	B
9	8	15	23.4	19-23.0	155-14.8?	1.7		10	115	2.2	0.07	0.3	0.2	0.07	B
9	8	28	16.6	19-22.9	155-14.5	1.3		11	114	2.0	0.08	0.4	0.4	0.09	B
9	8	41	21.8	19-22.8	155-15.1	5.4		14	116	1.5	0.11	0.4	0.9	0.07	A
9	9	25	23.4	19-22.9	155-14.5	1.0	1.1	14	113	2.0	0.07	0.3	0.3	0.09	B
9	9	41	42.4	19-22.3	155-15.0	2.8	1.1	12	125	0.2	0.10	0.5	1.1	0.10	B
9	9	46	9.8	19-22.8	155-15.0	5.1		13	116	1.7	0.08	0.3	0.7	0.05	A
9	11	24	47.8	19-22.9	155-15.0	4.5	1.1	14	114	1.8	0.05	0.2	0.5	0.04	A
9	11	31	46.0	19-23.1	155-14.5	1.1	1.1	14	106	2.8	0.07	0.3	0.3	0.10	B
9	11	34	47.3	19-23.1	155-15.0	4.2	1.1	12	111	2.0	0.06	0.2	0.6	0.03	A
9	12	38	43.8	19-22.8	155-15.1	6.0		14	76	1.5	0.15	0.4	1.1	0.08	A
9	12	49	46.7	19-23.0	155-14.5	2.0	1.1	12	118	2.7	0.06	0.2	0.2	0.04	A
9	15	4	9.4	19-22.8	155-15.0	5.0	1.2	12	118	1.8	0.10	0.3	0.9	0.06	A
9	15	24	28.6	19-22.7	155-14.8	6.2	1.3	10	125	1.9	0.18	0.4	1.2	0.04	B
9	15	27	54.2	19-22.9	155-14.5	1.3	1.4	15	113	2.6	0.05	0.2	0.2	0.06	A
9	18	9	13.1	19-23.1	155-14.6	6.6		10	109	2.6	0.28	0.8	1.8	0.08	A
9	18	10	57.6	19-22.9	155-14.7	4.3	1.6	20	66	2.3	0.06	0.3	0.6	0.09	B
9	18	11	49.9	19-22.8	155-14.5	5.2	1.2	13	118	2.5	0.24	0.7	1.8	0.09	B
9	18	27	50.1	19-20.6	155-19.5	1.8	1.3	12	102	3.8	0.09	0.3	0.4	0.06	A
9	19	38	12.4	19-22.7	155-15.0	5.9	1.2	15	116	1.6	0.15	0.5	1.2	0.09	A
9	20	0	22.1	19-10.3	155-36.1	6.1	2.9	27	102	8.5	0.13	0.8	0.8	0.16	B
9	20	3	40.3	19-20.5	155- 9.3	4.4	2.0	26	71	3.0	0.09	0.7	0.7	0.22	B
9	20	36	23.9	19-19.2	155-13.5?	8.0	3.2	28	70	4.0	0.04	0.4	0.3	0.12	B
9	20	39	34.5	19-19.6	155-13.3	7.5	2.7	22	70	4.8	0.03	0.3	0.6	0.08	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 9	21	14	24.8	19-22.9	155-14.7	6.4	1.3	12	121	2.2	0.24	0.5	1.5	0.06	B
9	23	11	57.7	19-17.4	155-15.5	6.4	1.6	16	177	3.6	0.09	0.6	0.6	0.12	C
10	0	25	35.1	19-22.8	155-15.1	6.0	1.2	16	117	1.6	0.13	0.5	1.0	0.08	B
10	9	20	35.6	19-23.5	155-23.0	8.0*		11	100	5.7	0.06	0.5		0.11	B
10	10	5	0.6	19-21.2	155-13.4	13.4	1.7	12	193	4.8	0.23	0.6	1.7	0.04	B
10	12	44	28.2	19-23.0	155-15.4	5.4	1.4	15	110	1.3	0.14	0.5	1.0	0.09	B
10	19	36	27.3	19-20.4	155-19.4	28.1	3.0	32	53	3.5	0.11	0.7	1.2	0.14	B
10	20	28	34.4	19-22.2	155-24.8	10.0		10	95	4.5	0.13	0.8	1.8	0.11	B
11	1	4	34.9	19-21.3	155-15.7	30.1		17	67	2.1	0.24	1.1	2.2	0.11	B
11	3	38	47.0	18-52.7	155-11.5	14.2*	2.8	20	272	42.3	0.35	2.4		0.15	D
11	5	0	2.8	19-21.3	155-17.8	23.0	0.7	13	101	2.4	0.22	1.3	2.1	0.12	B
11	9	25	54.9	19-19.2	155-21.6	1.9*	0.3	12	186	3.5	0.04	0.3		0.05	C
11	11	19	8.9	19-18.7	155-13.2	7.8	2.1	20	82	3.1	0.06	0.5	0.3	0.11	B
11	21	32	21.2	19-50.5	155-16.5	12.2	2.1	20	177	8.8	0.12	1.3	1.5	0.11	C
12	4	13	8.5	19-22.8	155-14.3	1.2		14	101	2.9	0.07	0.3	0.3	0.10	B
12	7	49	53.8	19-18.6	155-26.2	27.6	2.3	21	95	4.2	0.17	0.9	1.9	0.10	[illegible]
12	23	35	31.6	19-21.1	155-11.9	6.1	1.5	24	68	2.8	0.09	0.7	0.6	0.21	B
13	7	43	1.2	19-20.0	155-13.1	8.9	1.6	19	68	4.6	0.09	0.6	1.3	0.10	B
13	23	59	22.9	19-25.7	156- 2.9?	43.7	2.8	22	256	25.8	0.61	2.6	4.7	0.12	D
14	1	45	19.1	19-20.4	155- 8.0	4.5	1.8	17	83	4.5	0.11	0.8	1.1	0.19	B
14	5	18	50.4	19-55.2	155-14.0	49.3	2.7	27	227	12.0	0.39	1.8	3.4	0.12	C
14	9	37	48.0	19-21.6	155- 6.5	8.0*		18	99	5.9	0.09	0.8		0.13	B
14	12	42	40.6	19-18.2	155-13.2	6.6	2.6	23	93	2.2	0.07	0.6	0.5	0.14	B
14	12	45	34.5	19-18.5	155-12.9?	7.0		11	95	2.9	0.23	1.4	3.5	0.20	B
14	21	39	49.7	19-16.1	155-10.6?	1.5		14	221	5.1	0.49	1.7	1.5	0.22	C
14	23	51	37.9	19-17.8	155- 8.8	7.4		8	140	1.6	0.15	1.4	1.0	0.12	B
15	0	23	58.7	19-18.6	155-13.7	9.2		10	127	2.9	0.32	1.5	3.3	0.15	B
15	0	30	34.1	19-20.1	155- 9.4	3.1		15	104	3.7	0.14	1.2	1.8	0.24	B
15	0	31	25.3	19-11.0	155-40.8	1.0	2.7	31	119	9.7	1.18	1.0	4.2	0.24	C
15	2	2	1.1	19-17.2	155-12.7?	7.6	2.0	28	154	1.4	0.08	0.6	0.4	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 15	2	26	20.2	19-17.5	155-12.5?	8.0		14	149	1.8	0.08	0.6	0.5	0.10	B
15	3	47	17.7	19-22.1	155-15.8	3.4		13	136	0.7	0.14	0.6	1.2	0.09	B
15	11	45	59.1	19-20.4	155-20.1	3.0	2.3	21	116	4.8	0.10	0.7	1.0	0.19	B
15	21	3	2.3	18-41.5	155-15.2	8.0*	2.8	16	308	54.0	2.01	12.5		0.19	D
16	1	29	44.7	19-22.4	155-24.4	3.7		13	116	4.5	0.10	0.7	1.4	0.13	B
16	2	51	32.1	19-25.6	155-23.3	8.0*	1.6	19	62	5.8	0.05	0.4		0.11	B
16	3	14	48.3	19-53.9	155- 7.8	43.0	3.0	33	222	20.3	0.37	1.7	3.3	0.14	C
16	4	53	4.2	19-50.7	154-58.9?	77.5*		11	262	38.7	0.43	4.8		0.13	D
16	6	6	55.0	19-22.4	155-25.3	7.9	2.3	28	52	4.1	0.07	0.6	0.5	0.15	B
16	7	45	29.8	19-21.8	155-25.4	8.9		16	108	4.2	0.08	0.7	1.4	0.11	B
16	9	1	21.8	19-18.9	155-28.9	8.0*		12	84	10.0	0.15	1.4		0.24	C
16	11	44	12.0	19-20.6	155-13.6	4.5	1.6	24	111	3.9	0.11	0.7	0.8	0.22	B
16	12	56	2.4	19-51.1	155-32.2	33.2	2.6	15	118	11.4	0.23	1.3	3.0	0.12	B
16	14	7	40.6	19-24.2	155-23.3	7.5		11	103	6.4	0.08	0.5	0.5	0.10	A
16	17	25	51.1	19-18.7	155-14.9	6.4		12	117	4.0	0.11	0.5	0.9	0.09	A
16	22	39	5.0	19-18.3	155-12.6	1.8		21	112	2.9	0.25	0.9	1.2	0.22	B
16	23	12	44.7	19-22.4	155-13.2	4.2	1.5	15	75	0.9	0.10	0.5	1.2	0.10	A
17	0	47	4.1	19-17.9	155-12.2	6.8	1.8	24	136	2.8	0.08	0.5	0.5	0.15	B
17	1	48	20.0	19-55.2	155- 8.3	48.1		30	225	21.6	0.39	1.8	3.3	0.13	C
17	3	2	24.1	19-16.7	155-11.9?	7.9		12	201	2.8	0.13	0.9	0.5	0.10	C
17	3	9	24.3	19-23.0	155-27.4	9.7		14	110	1.0	0.13	1.0	1.6	0.11	B
17	3	33	24.8	19-25.6	155-21.6	7.6		10	98	3.9	0.06	0.4	0.5	0.05	A
17	4	26	7.8	19-17.0	155-11.8?	8.0	1.9	21	185	2.9	0.10	0.7	0.4	0.11	C
17	4	34	52.6	19-17.9	155-12.4?	0.9		15	129	2.4	2.10	0.8	8.0	0.18	C
17	4	48	3.5	19-17.1	155-11.8	7.8	1.8	21	181	2.9	0.11	0.8	0.4	0.12	C
17	5	31	44.6	19-58.0	154-59.8	43.7		24	246	37.3	0.54	2.7	4.6	0.15	D
17	7	48	0.3	19-17.1	155-11.9?	7.5		12	178	2.7	0.14	0.9	0.8	0.12	C
17	8	7	29.6	19-21.4	155-24.2	8.0*		11	166	6.3	0.08	0.6		0.07	C
17	13	54	3.5	19-20.6	155- 8.1	4.3	1.8	16	82	4.2	0.11	0.9	1.0	0.18	B
17	15	0	6.9	19-17.7	155-12.4	5.9	1.8	25	142	2.3	0.09	0.6	0.5	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 17	17	19	55.1	19-19.1	155-13.8	6.8		17	84	3.8	0.08	0.6	0.6	0.13	B
17	17	23	23.4	19-55.9	155-39.7?	0.0		11	127	25.0	3.62	0.9	6.8	0.10	C
17	17	58	14.5	19-23.5	155-25.9	10.3	1.7	14	144	3.4	0.09	0.5	1.0	0.06	B
17	18	29	32.7	19-10.0	155-40.0	4.1	2.4	22	117	10.3	0.15	1.2	1.3	0.24	C
17	18	39	4.5	19-16.8	155-12.0	7.9	1.8	16	196	2.7	0.10	0.7	0.4	0.11	C
18	1	9	23.4	19-31.4	155-41.9	8.3	2.9	19	109	11.1	0.05	0.5	0.7	0.09	B
18	2	12	53.2	19-20.3	155- 8.5	9.0		11	86	4.0	0.08	0.6	1.1	0.06	A
18	2	27	47.1	19-21.8	155- 7.1	3.6	1.8	13	95	4.8	0.09	0.7	1.0	0.15	B
18	6	26	38.4	19-18.3	155-13.3	5.6	1.6	12	87	2.4	0.11	0.8	0.8	0.13	B
18	7	18	19.4	19-58.0	155-25.1	9.8		11	202	11.7	0.30	2.5	2.3	0.20	C
18	7	22	33.4	19-19.8	155- 4.0	33.2		18	235	11.0	0.34	1.5	2.6	0.07	C
18	11	9	50.6	19-32.8	155-36.5	9.2	2.9	25	81	6.5	0.08	0.7	1.0	0.16	B
18	15	46	39.6	19-21.8	155-12.7	4.6	1.4	13	150	1.2	0.15	0.8	1.6	0.13	B
18	17	31	28.6	19-55.1	155- 8.5	60.9		12	241	36.5	0.94	3.8	8.8	0.12	D
18	19	44	8.8	19-22.9	155-27.4?	8.8	2.1	25	54	0.7	0.10	0.7	0.7	0.20	B
19	1	25	21.5	19-22.3	155-11.3	5.9	1.5	20	93	2.5	0.05	0.4	0.5	0.10	B
19	5	0	45.2	19-16.8	155-12.4	5.4		17	197	2.0	0.10	0.6	0.7	0.13	C
19	5	53	43.5	19-27.6	155-27.8?	8.5		20	141	8.8	0.12	0.8	0.7	0.16	B
19	6	28	58.0	19-20.6	155-14.0	10.1		18	67	4.2	0.13	0.7	1.7	0.16	B
19	11	10	17.5	19-18.7	155-13.2	6.1		11	83	3.1	0.09	0.7	0.7	0.09	B
19	13	11	20.5	19-18.4	155-13.5	6.3		14	86	2.6	0.13	0.7	1.0	0.13	B
19	14	40	55.3	19-18.3	155-13.6	6.7	1.9	18	75	2.3	0.08	0.5	0.6	0.12	B
19	19	11	20.9	19- 5.8	156- 4.1	17.8*		14	301	27.9	0.51	3.8		0.21	D
20	3	30	7.4	19-37.7	155- 8.6	11.4	2.1	22	92	14.6	0.07	0.6	0.7	0.10	B
20	16	40	53.9	19-19.7	155-13.3	8.0*	1.6	19	68	5.0	0.04	0.4		0.08	B
20	19	1	58.5	19-22.4	155-26.5	5.4	1.7	16	109	1.9	0.12	0.9	0.9	0.20	B
20	19	12	50.6	19-20.6	155- 8.0	6.3	3.3	30	81	4.3	0.09	0.7	0.5	0.20	B
20	19	20	8.5	19-20.6	155-11.1	9.5	1.7	17	79	3.5	0.07	0.5	0.9	0.07	A
20	21	0	10.0	19-25.3	155-24.2	8.2	1.8	23	62	7.5	0.06	0.6	2.4	0.16	B
20	23	28	30.6	19-18.1	155-18.4	29.0	2.1	26	124	0.5	0.18	1.0	1.7	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 21	0	31	34.9	19-19.5	155-13.9	6.4	1.5	18	79	4.7	0.10	0.7	0.8	0.17	B
21	7	24	9.3	19-20.6	155-12.1	6.9	2.9	31	71	3.6	0.06	0.6	0.4	0.17	B
21	14	26	5.9	19-17.4	155-15.9	7.1	4.0	30	136	4.2	0.07	0.5	0.4	0.15	B
21	15	32	34.0	19-18.3	155-15.7	6.8	1.6	20	142	4.4	0.07	0.5	0.4	0.11	B
21	16	51	33.6	19-21.3	155-24.0	7.2	1.6	22	51	2.3	0.06	0.6	0.5	0.17	B
21	17	43	11.2	19-20.3	155- 9.6	9.8		14	123	3.3	0.10	0.6	1.1	0.08	B
21	17	50	13.5	19-24.5	155-24.5	7.4	1.9	25	59	6.6	0.08	0.7	0.6	0.18	B
21	20	1	30.9	19-19.0	155-13.6	6.2	1.6	18	81	3.7	0.10	0.7	0.7	0.14	B
22	4	5	53.5	19-18.0	155-15.8	7.0	1.6	16	155	4.5	0.10	0.6	0.5	0.13	C
22	7	8	0.0	19-23.3	155-23.4?	7.4	1.5	21	92	5.7	0.06	0.6	1.4	0.15	B
22	17	48	6.4	19-22.4	155-13.3	6.1	1.7	16	77	1.2	0.06	0.5	0.6	0.11	B
22	18	44	13.2	19-37.6	156-12.6	7.2	2.9	17	258	53.4	0.38	3.5	4.7	0.18	D
22	22	37	58.3	19-19.1	156-27.1	15.0*	3.1	26	253	61.3	0.42	2.7		0.15	D
23	14	5	15.8	19-22.1	155-24.0	6.6	2.0	21	50	3.7	0.07	0.7	0.6	0.18	B
23	17	52	40.8	19-19.8	155-11.7	8.0*		13	88	5.2	0.08	0.7		0.14	B
23	18	24	39.5	19-19.3	155-13.8?	6.2	1.7	27	63	4.3	0.07	0.6	0.5	0.19	B
23	18	45	26.8	19-22.1	155-24.3	7.1	1.6	14	85	4.0	0.08	0.7	0.7	0.14	B
24	1	35	6.4	19-38.4	156-19.6	10.5	3.0	16	271	63.3	0.45	3.8	9.6	0.15	D
24	2	41	25.6	19-57.0	155-18.5	48.5	3.4	33	201	7.5	0.32	1.3	3.0	0.13	C
24	9	12	18.6	19-20.3	155- 8.1	7.6		14	100	4.5	0.10	1.1	0.7	0.16	B
24	18	9	21.9	19-46.6	155-12.1	13.7*		24	204	19.4	0.17	1.4		0.17	C
24	18	57	51.4	19-19.5	155-15.5	5.9	1.5	19	100	3.4	0.09	0.6	0.6	0.15	B
25	0	27	27.5	19-24.6	155-27.5?	7.9	1.8	22	65	3.9	0.08	0.7	1.3	0.18	B
25	7	1	10.0	19-18.6	155-14.8	6.0		15	94	3.7	0.07	0.5	0.5	0.11	B
25	7	39	31.0	19-13.2	155-19.9	40.5		25	163	9.0	0.24	1.0	2.2	0.12	C
25	12	52	14.4	19-20.0	155-12.1	6.2	1.9	25	80	4.7	0.07	0.6	0.6	0.20	B
25	17	32	54.7	19-23.1	155-13.4	6.6		8	135	3.4	0.40	1.0	3.1	0.10	B
25	18	0	7.4	19-12.9	155-19.7	40.5		16	166	9.5	0.32	1.4	3.0	0.12	C
25	18	7	20.3	19-54.2	155-55.1	0.7	2.8	26	214	28.9	0.38	1.6	0.8	0.14	C
26	0	32	13.0	19-20.2	155- 8.9	4.3	1.7	18	72	3.8	0.10	0.8	1.0	0.21	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 26	4	15	7.4	19-22.4	155-13.1	5.6	1.4	11	88	0.8	0.17	0.7	1.5	0.12	B
26	6	50	51.1	19-18.5	155-14.4	6.4	1.6	17	115	3.1	0.08	0.5	0.5	0.11	B
26	15	58	44.2	19-18.9	155-15.7	6.1	1.5	16	119	3.7	0.10	0.7	0.7	0.16	B
26	22	44	46.0	19-20.1	155-11.5	9.3		13	90	4.8	0.06	0.3	0.8	0.05	A
27	0	12	27.1	19-22.0	155-13.2?	8.3	1.5	10	95	1.3	0.09	0.5	0.6	0.07	B
27	3	22	46.0	19-13.3	155-19.9	40.9		23	162	8.8	0.25	1.1	2.3	0.12	C
27	5	17	51.0	19-20.9	155-13.6	6.0		16	61	3.3	0.11	0.8	0.9	0.17	B
27	8	6	58.2	19-18.5	155-13.0	8.0*		8	162	8.3	0.10	0.9		0.10	C
27	8	30	39.8	19-25.9	155-27.3?	8.1	1.7	22	67	6.2	0.08	0.6	0.5	0.14	B
27	9	59	4.5	19-25.9	155-16.7	3.6	0.7	8	235	1.9	0.37	1.3	1.9	0.08	C
27	10	16	6.6	19-17.4	155-15.6	6.9		14	137	3.8	0.10	0.8	0.8	0.17	B
27	20	28	40.5	19-20.4	155-12.1	7.5	2.6	31	73	3.9	0.05	0.5	0.3	0.15	B
27	21	28	8.6	19-42.2	155-17.8	34.0	2.3	21	98	21.2	0.28	1.1	3.5	0.14	B
27	21	57	23.9	19-17.0	155-22.0	8.0*		13	144	6.1	0.09	0.8		0.15	C
27	22	16	23.8	19-22.6	155-27.4	8.4	1.8	22	55	0.5	0.07	0.7	1.2	0.18	B
28	2	48	3.4	19-16.6	155-11.8	4.5		15	167	3.1	0.09	0.6	0.8	0.11	C
28	21	27	6.2	19-19.3	155-13.7?	1.9	1.8	27	65	4.3	0.16	1.3	2.2	0.31	C
28	22	43	44.0	19-51.4	155-15.9	34.7	2.5	26	218	8.9	0.39	1.8	3.2	0.12	C
29	4	12	55.4	19-19.3	155-15.6	6.9	1.5	17	106	3.5	0.09	0.6	0.6	0.15	B
29	4	34	44.7	19-23.6	155-25.7	7.8	2.0	23	61	4.0	0.07	0.5	0.5	0.11	B
29	8	22	27.2	19-20.4	155-11.4	5.4	1.7	24	77	4.1	0.09	0.7	0.7	0.21	B
29	8	25	41.9	19-20.6	155-11.2?	7.3	1.8	12	96	3.7	0.14	1.0	1.2	0.16	B
29	8	34	26.9	19-20.4	155-11.3	6.5	2.0	28	77	4.0	0.08	0.6	0.5	0.19	B
29	13	33	49.5	19-18.2	155-28.4	47.7		18	108	4.5	0.41	1.3	3.7	0.11	B
29	14	56	57.1	19-25.9	155-24.1	8.0*	2.0	17	81	7.4	0.04	0.4		0.09	B
29	18	32	8.5	19-17.8	155-25.1	41.2		11	164	5.4	1.00	2.4	9.1	0.12	C
29	19	14	15.4	19-13.1	155-19.7	41.2		24	165	9.2	0.32	1.4	2.9	0.13	C
29	19	28	30.7	19-20.0	155-11.1	5.1	1.8	26	86	4.4	0.09	0.7	0.7	0.23	B
29	20	6	4.4	19-20.5	155-18.2	3.7		10	77	1.5	0.09	0.4	1.1	0.07	A
29	22	49	6.5	19-21.1	155-13.5	7.5	3.0	31	54	3.0	0.05	0.5	0.3	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUN 29	23	10	46.0	19-46.6	155-11.8	13.7*	2.4	22	166	19.4	0.15	1.3		0.20	C
29	23	21	32.6	19-57.5	155-59.0	15.5*	3.5	32	237	28.4	0.23	1.6		0.15	D
30	0	46	34.1	19-18.3	155-13.4	6.4	1.8	27	81	2.3	0.09	0.7	0.5	0.18	B
30	3	8	53.0	19-49.1	155- 5.3?	48.4*	2.9	33	216	14.2	0.10	1.1		0.14	C
30	3	36	59.0	19-18.3	155-13.4	6.2	1.8	23	81	2.4	0.09	0.7	0.5	0.17	B
30	6	9	3.0	19-26.2	155-22.4	8.1	1.4	11	113	3.9	0.11	0.6	1.5	0.06	A
30	10	38	52.1	19-20.7	155-11.2	5.0		18	74	3.5	0.11	0.9	1.1	0.23	B
30	14	7	18.0	19-22.6	155-23.2	6.5	2.3	29	51	4.3	0.08	0.7	0.6	0.23	B
30	14	8	51.1	19-22.6	155-22.8	6.4	1.6	16	81	4.6	0.09	0.8	0.7	0.16	B
30	17	23	39.9	19-26.0	155-21.4	9.3	1.7	17	96	3.1	0.07	0.5	0.9	0.10	A
30	18	13	55.9	19-19.6	155-15.9	5.2		18	100	2.8	0.08	0.6	0.5	0.13	B
30	21	20	5.7	19-23.4	155-26.5	8.6	1.7	22	82	2.5	0.08	0.7	1.3	0.16	B
30	22	45	11.4	19-19.4	155-13.4	6.2	1.6	26	70	4.4	0.08	0.6	0.5	0.18	B
30	23	10	33.7	19-21.6	155- 6.1?	0.0	2.0	25	105	6.5	4.05	0.7	7.7	0.18	C
30	23	34	51.3	19-21.4	155- 6.1	2.3	2.0	27	102	6.3	0.11	0.7	1.0	0.19	C
30	23	39	9.9	19-21.5	155- 6.2?	0.0	1.8	26	102	6.4	4.70	0.8	8.9	0.21	C

Table 3. Felt earthquakes

Date	Time H	Time M	Time S	Magnitude	Felt report
Apr 15	00	59	38.1	4.2	Volcano, Keaau, Mauna Kea Observatory, Kapapala
22	21	07	52.1	4.8	Island-wide Hawaii, Maui
24	06	16	22.2	3.9	Kamuela, Honokaa, Volcano, Mauna Kea Observatory
26	10	26	30.1	6.2	Throughout Hawaiian Islands, considerable damage in Hilo
26	23	33	38.6	4.0	Kamuela, Honokaa
27	10	34	31.0	3.0	Honokaa
May 5	10	07	28.6	3.8	Hilo
5	10	11	18.3	3.4	Volcano
5	10	56	13.9	2.7	Volcano
5	11	34	53.8	2.1	Volcano
5	11	38	51.5	1.7	Volcano
5	11	40	50.9	3.1	Volcano
5	11	49	17.4	1.8	Volcano
5	11	59	00.4	2.6	Volcano
5	12	03	10.9	1.9	Volcano
5	12	04	28.8	1.9	Volcano
5	12	14	13.6	2.7	Volcano
5	23	00	29.3	3.8	Hilo
7	17	20	11.3	3.5	Laupahoehoe
9	21	12	51.3	2.9	Kulani Camp
10	06	52	08.5	3.1	Laupahoehoe
19	03	12	23.8	3.4	Kamuela, Honokaa
29	15	22	01.6	3.4	Volcano
30	20	42	59.7	3.2	Hilo, Kamuela, Honokaa
Jun 10	19	36	27.3	3.0	Kapapala
20	19	12	50.6	3.3	Kapapala
21	07	24	09.3	2.9	Kapapala
21	14	26	05.9	4.0	Kapapala, Hilo, Volcano, Ainahou Ranch
24	02	41	25.6	3.4	Honokaa
29	22	49	06.5	3.0	Honokaa, Kapapala, Volcano

May 5 upper east rift/Koae swarm--many small shocks felt near Pauahi and Hiiaka Craters area.

HVO APRIL 1-JUNE 30, 1973

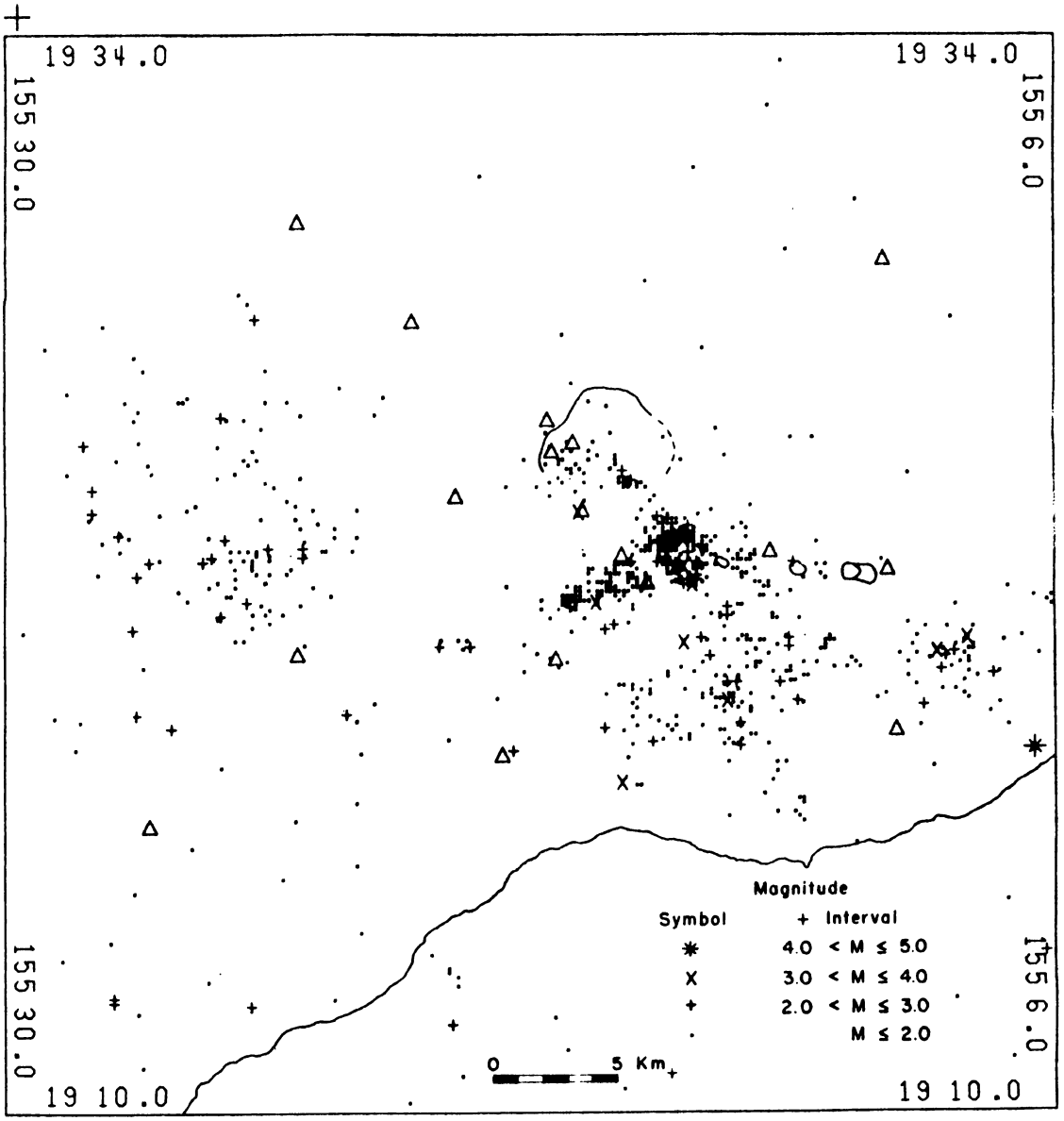

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 4 . Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
EAST KOAE	EKO	19 22.17	155 14.99	1009	3				
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	Installed 3/23/71
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
MAUNA LOA	MLO	19 29.80	155 23.30	2010	3	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	Installed 3/4/71
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	Installed 2/17/71
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	Installed 3/10/71
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	Installed 3/2/71
WEST PIT	WPT	19 24.70	155 17.50	1115	3	1.34			
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KAMUELA	KAM	20 1.90	155 42.00	740	2	0.7			
KEALAKEKUA Z	KLK	19 31.20	155 55.30	505	2	1.0			
KEALAKEKUA EW	KLE	19 31.20	155 55.30	505	2	0.34			
KEALAKEKUA NS	KLN	19 31.20	155 55.30	505	2	0.34			
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

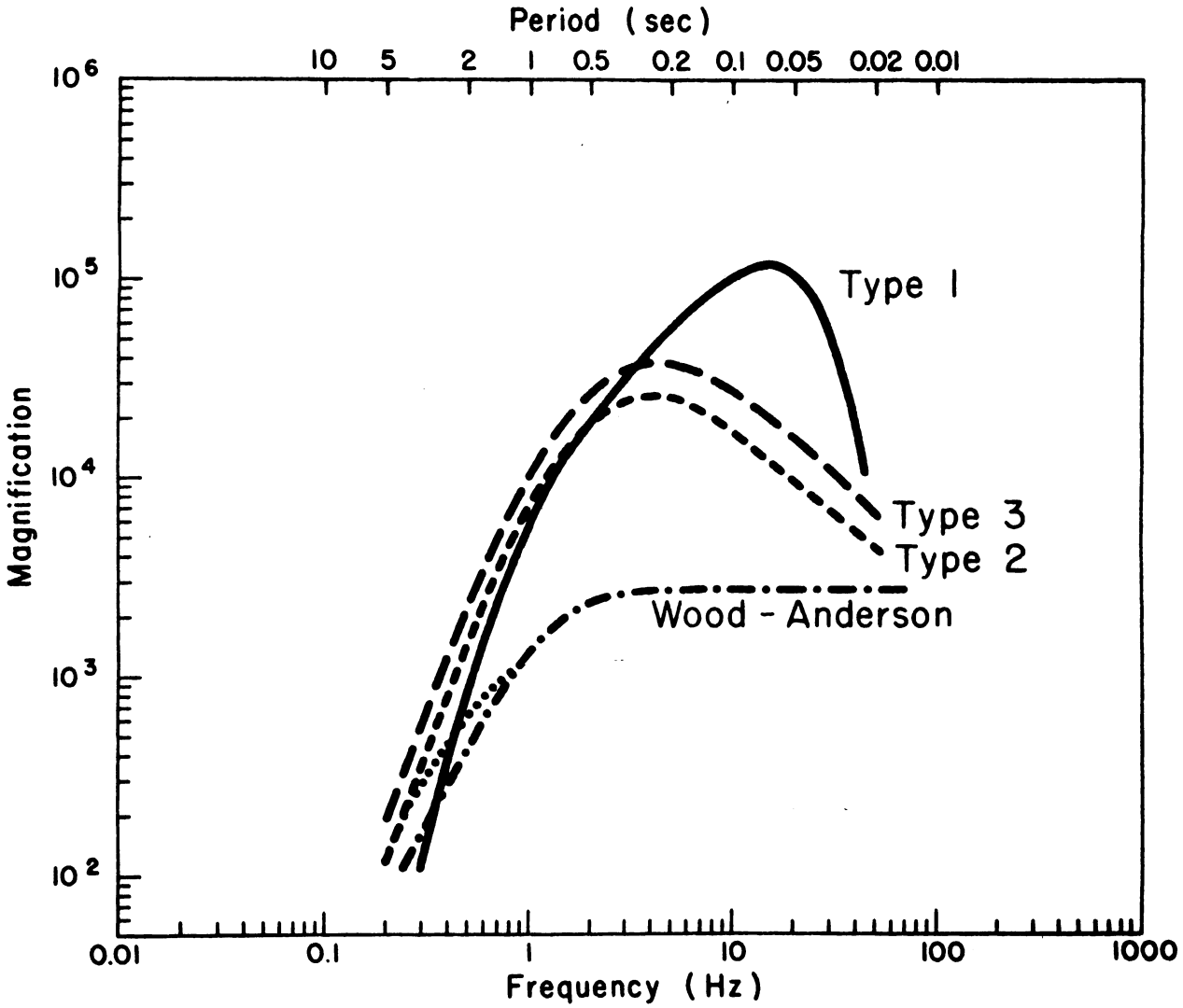

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 8, Summary 69.

Table 6.--Tilt Coordinates at Uwekahuna, April, May, and June 1973

Date	N-S	E-W	Date	N-S	E-W
April 1	718	322	June 3	726	310
8	718	321	10	727	313
15	717	324	17	730	310
22	717	324	24	730	306
29	726	308			
May 6	722	307			
13	721	324			
20	724	317			
27	725	312			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 3)

Tilt base	Date (1973)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading
Uwekahuna (U on fig. 3)	14 May	735.6	327.7	14.78 S68.2°W	21 Mar '73
Tree Molds (TM)	15 May	574.7	483.2	3.24 S 6.8°E	21 Mar '73
Sand Spit (SS)	16 May	1013.6	738.2	6.37 N83.1°E	22 Mar '73
Mehana (M)	15 May	613.9	600.1	0.83 S31.6°W	21 Mar '73
Keamoku (Kea)	15 May	771.5	242.7	5.33 S75.5°E	22 Mar '73
Ahua Kamokukolau (Kam)	14 May	407.8	527.2	14.14 N 8.5°W	22 Mar '73
Kipuka Nene (KN)	16 May	279.8	496.6	0.36 S87.0°W	7 Dec '72
Hilina Pali (HP)	Not occupied this epoch				
Kapapala Ranch (Kap)	Not occupied this epoch				

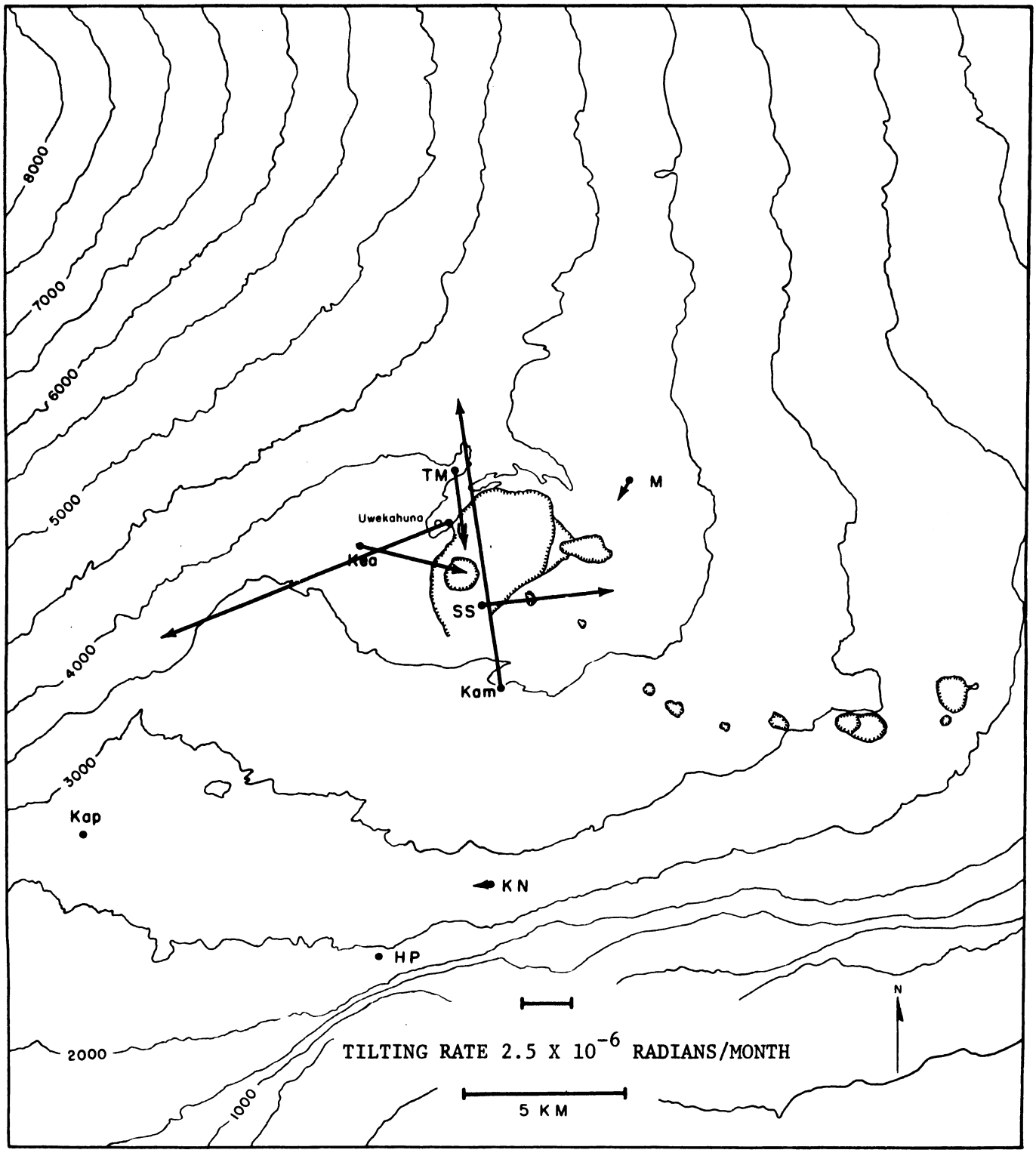

Figure 3.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base water-tube tiltmeters. See Table 7 for explanation of abbreviations.

Reference Cited

Hamilton, R. M., B. E. Smith, J. C. Hall, and J. H. Healy, 1969, Summary of seismic activity in the Pahute Mesa area, Nevada Test Site, December 1968-June 30, 1969: U. S. Atomic Energy Comm. (USGS-474-58): Springfield, Va., Clearinghouse for Federal Sci. and Tech. Inf., 63 p.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 71

July, August, and September 1973

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Chronological Summary

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CHRONOLOGICAL SUMMARY

Visible eruptive activity during this quarter was minimal and confined entirely to Mauna Ulu. The declining pattern of lava-lake activity at the end of the last quarter continued, and by early July the western part of the lake had become completely crusted and characterized by a jumble of tilted "islands" or blocks above the solidified surface. The eastern part of the lava lake containing the still-active vent also became progressively more crusted. Though gradually decreasing in surface area, the active eastern part of the lava lake continued periodically to overflow its levee. By July 20, visible active lava rose to within nearly 10 m of the rim but was restricted to two small, roughly circular areas, about 10 m and 15 m in diameter respectively, one of which included the active vent. By July 25 no live lava was visible, and the crusted floor began to subside measurably.

This subsidence continued throughout the next several weeks, although its rate tapered off. By the end of August, the floor in the main (western) part of the crater sank to about 85 m below the rim, and the vent area in the eastern part to about 40 m. During this interval of subsidence and no visible activity, low-level harmonic tremor persisted, and Kilauea's summit tilt varied within a very narrow range, showing a net deflation of only a few microradians.

An increase in tremor amplitude marked the return of visible lava to Mauna Ulu on September 4. A small active lava lake reappeared in the crater, and its level soon rose to within about 60 m of the rim; low (5 m) fountains played along its eastern end. Later that day the tremor abruptly decreased, coinciding with the cessation of the low fountaining. The lake, however, persisted for a few more days, but circulation became progressively more sluggish. By September 7, the lake became entirely crusted, and by September 9 even the incandescence in the vent and in cracks on the lake surface disappeared. Mauna Ulu then remained lifeless until toward the end of the quarter, when visible activity again returned sometime during September 25-26. By the end of September, a full-fledged lava lake was again in operation, with circulating currents, random bubblers, and crustal overturns. Kilauea's summit tilt, which showed only small variations throughout nearly all of the quarter, began to show a marked inflation trend with the revival of substantial eruptive activity at September's end.

Drilling operations on an NSF-funded research drill hole south of Halemaumau ended on July 9 after reaching a depth of 1,262 m. Periodic thermistor logs, however, were run until August 23 to monitor the thermal recovery of the hole after drilling disturbance.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph), and

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit Long-Period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
July 1				3	5	389	12	52	2	2		
2		4m		2	6	551	10	62	4	2	3	
3	35m			1	25	635	15	55	11	4	9	
4	36m			2	40	645	21	72	9	3	10	
5		3m			20?	291?	18	62?	5			
6					23?	195?	13	46?	3		1	
7		3m			19	157?	16	33	5	1	6	
8		8m			15	188	24	31	11	1	9	
9				1	15	257	49	34	11	3	1	
10	17m	10m			15	256	31	67	9	10	1	
11					6	277	18	54	7	1	1	
12	30m			2	24	266	33	46	8	2	2	
13				1	15	276	16	49	7	7	4	
14	9m	9m		3	64	247	20	67	11	1	2	
15				3	44	244	26	77		2	6	
16					7	295	26	57	3	1	2	
17		3m		1	8	223	14	57	8	1	1	
18					6	249	11	37	5	2	2	
19					4	181	9	55	4	4		
20		3m			10	149	19	54	4	1		
21					5	134	17	68	7	3		
22		3m		1	7	126	10	38	3	1		
23					20	101	5	112	1		1	
24				1	5	107	17	703	10	2		
25				1	4	76	21	703?	7	3		Small Mauna Ulu rockfalls during last week of the month.
26					20	105	26	323	5		1	
27				1	20	102	34	199	7	2	1	
28				1	12	111	21	197	3	7	10	
29				1	12	124	16	204				
30					29	134	13	233	3			
31					6	95	10	206	3	9		

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes									
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
August 1				1	8	138	12	134	3	1		Mauna Ulu rockfalls during first half of month.
2				1	26	116	19	197	3		2	
3		3m			23	?	17	215	3	1		
4					19	?	14	148	1	5		
5					1	?	13	76				
6					16	73?	16	48	2			
7				1	12	161	27	87	7	1	2	
8	37m			1	24	154	21	108	1	3	1	
9		3m			31	148	17	61?	7	2		
10		11m		1	22	188	27	84	2	1	1	
11		13m			30	223	28	95	6	5	1	
12					15	153	16	67	4	3		
13		3m			12	140	8	63	8	3	1	
14		3m			12	94	14	46	4	1	2	
15	8m				46	117	15	46	2	1	1	
16				2	29	101	21	69	3	3		
17				1	33	98	30	63	8	3		
18				2	34	110	19	47	1	1	2	
19		21m		1	57	149	18	26	4	3	2	
20					21	125	15	61	5	2		
21	21m				15	137	5	64	5	48		Lower east rift swarm.
22		4m		1	23	118	18	62	5	43	1	
23				1	29	93	22	43	4	203		
24				1	17	87	15	54	2	255		
25		34m			47	94	13	71	3	172		
26	6m	3m			68	91	8	61	5	132	1	
27	6m				43	95	11	72	3	75		
28	3m	7m			13	118	10	74	1	50		
29				1	48	186	15	79	9	78		
30		4m			42	168	8	41	4	61		
31		?			25	426	11	101	5	71		

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
Sept. 1		2m			105	507	13	85	3	21		
2		3m			15	170	9	50	4	25		
3					7	259	16	120	5	17	12?	
4	15m	11m			6	139	17	38	4	14	1	
5		24m		1	32	92	9	63	5	23		
6	4m				8	104	12	31	3	7	2	
7		14m			8	105	32	57	6	6		
8		7m			19	93	13	33	6	30	1	
9		6m			67	139	21	64	8	111	1	
10				3	55	160	23	77	11	63	4	
11	39m	7m			47	113	21	43	4	32		
12				1	23	126	26	56	8	63	6	
13				1	8	165	19	38	7	41		
14	41m	3m			16	185	10	66	9	67		
15				21	24	184	17	56	5	58		
16		6m		15	12	168	18	75	7	83		
17		11m?		3?	25	142	17	75	5	37	1	
18				4	20	132	12	69	2	36	3?	
19	12m	15m		1	62	112	10	58	2	57	2?	
20		17m		3	126	136	23	34	3	47	2	
21		3m		2	93	128	10	54	6	44		
22				5?	378	164	21	93	6	144	5	
23				8	24	131	18	42	2	45		
24		8m		3	22	144	11	34	3	43	1	
25				1	27	152	12	31	2	20		
26		10m			19	138	39	27	2	10	1	
27				1	10	153	12	24	1	10	1	
28					9	236	13	40	11	7		
29					21	155?	12	42	4	2		
30				3	4	182?	22	43	4	10		

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), *minute* (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO\right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	Epicenter	Focal Depth
A	Excellent	Good
B	Good	Fair
C	Fair	Poor
D	Poor	Poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ DEPTH or 5 km
B	≥ 6	≤ 150°	≤ 2 x DEPTH or 10 km
C	≥ 6	≤ 225°	≤ 50 km
	≥ 4	≤ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

*RMAX is the maximum residual.

SUMMARY OF SEISMIC EVENTS

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 1	0	31	31.4	19-22.1	155-48.4	9.2	2.8	23	188	13.3	0.17	1.4	1.5	0.16	C
1	2	38	42.2	19-20.7	155-13.2	5.8		19	60	3.4	0.12	0.7	1.1	0.18	B
1	3	45	39.4	19-24.3	155-24.9	8.0*		10	141	5.8	0.07	0.6		0.09	C
1	9	26	23.1	19-19.2	155-15.1	6.3		24	88	4.3	0.06	0.5	0.5	0.14	B
1	15	17	15.3	19-19.0	155-13.6	6.2		19	81	3.6	0.10	0.7	0.7	0.15	B
1	17	4	50.6	19-22.3	155-13.5	3.0		10	100	1.5	0.08	0.4	1.1	0.06	A
1	21	2	26.8	19-48.3	155-18.9?	11.4	3.2	32	128	9.9	0.08	0.9	1.3	0.13	B
1	23	12	58.3	19-50.3	155-19.6	16.7	3.6	36	133	5.9	0.10	0.7	2.0	0.13	B
2	1	10	40.3	19-10.6	155-13.4	41.9	2.4	30	198	11.9	0.27	1.3	2.3	0.12	C
2	2	35	48.4	19-20.5	155-17.2	28.9	2.4	28	72	0.8	0.13	0.7	1.2	0.12	B
2	2	47	9.7	19-13.9	155-17.9	27.9		21	195	7.6	0.18	1.2	1.7	0.11	C
2	12	49	22.7	19-21.5	155- 5.1	2.9		11	118	4.8	0.11	0.8	1.3	0.15	B
2	14	49	47.6	19-20.3	155-12.5	6.1	1.9	27	72	4.0	0.07	0.6	0.5	0.19	B
2	15	13	56.8	19-26.8	156- 2.0	14.0*		8	305	48.8	0.37	2.7		0.09	D
2	16	0	51.2	19-22.1	155-13.3	3.2	2.3	12	92	1.4	0.15	0.7	2.1	0.12	B
2	17	19	11.8	19-47.6	155-10.7	13.8*	2.3	19	181	18.8	0.16	1.3		0.17	C
2	19	23	29.4	19-18.0	155-16.8	6.3	2.5	29	125	3.2	0.08	0.6	0.5	0.18	C
2	20	51	23.2	18-57.3	155-18.9	14.6*		23	251	27.6	0.29	2.0		0.20	D
3	6	37	57.2	19-24.6	155-16.4	2.0	0.5	10	89	1.2	0.02	0.1	0.1	0.03	A
3	6	43	39.2	19-20.8	155-12.0?	7.8	1.6	24	68	3.2	0.06	0.6	0.4	0.14	B
3	12	17	49.7	19-18.3	155-14.7	5.7	1.7	22	123	3.3	0.11	0.7	0.7	0.19	B
3	16	42	36.3	19-19.6	155-14.2	8.0*	1.7	15	84	5.0	0.04	0.4		0.08	B
3	21	36	53.9	19- 8.8	155-32.8	51.4		21	210	8.8	0.59	2.7	5.0	0.15	C
3	22	9	50.5	18-50.0	155- 9.6	8.0*		27	275	48.2	0.67	4.3		0.19	D
3	23	33	8.8	19-20.6	155-12.2	6.1	1.8	28	70	3.5	0.07	0.6	0.6	0.20	B
4	2	59	31.6	19-12.1	155- 7.7	37.8		18	263	13.6	0.55	3.0	3.5	0.12	D
4	3	58	26.4	18-53.8	155- 8.3	8.0*	3.0	33	258	43.4	0.41	2.6		0.17	D
4	6	53	47.1	19-11.6	155-21.5	42.5		17	168	11.7	0.39	1.6	3.6	0.13	C
4	6	54	10.5	19-11.3	155-21.4	37.1		21	170	11.8	0.37	1.6	3.7	0.16	C
4	6	59	22.0	19-53.4	155- 6.5	48.2*	3.6	35	222	18.9	0.12	1.2		0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	4	8	55 7.5	19-13.9	155-31.2	33.1		13	131	10.0	0.60	3.0	5.8	0.17	C
	4	9	28 31.1	19-19.4	155-15.3	4.8		17	102	3.9	0.10	0.7	0.9	0.19	B
	4	9	49 39.2	19-27.3	155-25.5	8.0*	1.6	15	78	6.0	0.07	0.5		0.12	B
	4	16	32 13.2	19-20.7	155-11.4?	7.0		16	87	3.8	0.11	1.0	1.8	0.16	B
	4	17	42 33.6	19-20.6	155-19.5?	1.0	1.3	13	101	3.9	0.16	0.5	6.4	0.10	B
	4	18	43 20.9	19-19.8	155-11.8	8.0*		14	85	5.1	0.06	0.5		0.10	B
	4	18	58 35.7	19-23.7	155-24.8	9.1	1.6	20	69	5.3	0.05	0.5	1.2	0.08	A
	4	19	9 48.4	19-19.1	155-14.0?	8.6		11	88	4.0	0.22	1.3	3.1	0.16	B
	4	19	59 20.4	19-27.9	155-51.3	4.1	2.5	21	224	22.1	0.28	1.6	1.2	0.14	C
	4	22	21 28.4	19-25.0	155-23.9	8.0*		18	116	7.5	0.05	0.4		0.09	B
	4	22	56 3.1	19-25.7	155-26.7	5.0		14	96	6.1	0.12	1.0	1.6	0.21	C
	5	1	37 52.4	19-22.1	155-13.6	2.6		11	88	1.7	0.16	0.8	3.2	0.13	B
	5	2	17 35.1	19-22.3	155-13.1	5.9	1.4	18	74	0.8	0.07	0.5	0.6	0.11	B
	5	6	33 7.0	19-28.4	155-15.0	33.6		9	221	10.1	0.68	3.2	5.5	0.11	C
	5	7	29 53.4	19-29.0	155-10.8	17.1		14	227	10.1	0.24	1.7	2.3	0.09	C
	5	7	51 32.3	19-54.9	155- 8.9	49.5		27	222	20.5	0.39	1.8	3.3	0.14	C
	5	9	3 21.7	19-22.4	155-23.0	7.2	1.5	11	87	4.1	0.09	0.6	1.6	0.09	A
	6	7	7 23.6	19-22.2	155-12.5	4.9	1.7	13	72	0.5	0.10	0.5	1.2	0.11	B
	6	17	17 16.0	19-10.4	155-35.3	6.4	2.3	12	138	8.8	0.21	1.5	1.3	0.22	C
	7	12	12 28.4	19-21.5	155- 7.9	11.3		11	172	3.5	0.37	1.9	3.4	0.15	C
	7	23	54 40.3	19-25.5	155-26.4	8.0*		6	193	6.0	0.14	1.1		0.08	C
	8	4	17 40.7	18-57.6	155-28.3	31.1	3.7	33	230	20.5	0.35	1.9	2.9	0.15	C
	8	4	36 46.8	19-19.9	155-13.0	8.0*		14	70	5.4	0.06	0.6		0.13	B
	8	4	50 28.1	19-22.3	155-23.3	6.2	2.1	29	58	3.9	0.07	0.6	0.5	0.21	B
	8	8	6 9.9	18-56.1	155-28.0	32.4	2.6	22	239	21.5	0.35	1.8	2.9	0.12	C
	8	11	9 34.8	19-18.5	155-15.1	9.7		10	135	5.0	0.11	1.0	1.6	0.08	B
	8	18	27 22.0	19-24.7	155-23.7	8.0*	1.6	14	126	7.3	0.04	0.3		0.07	C
	8	19	46 19.4	19-51.0	156- 7.6	53.0	3.0	22	290	68.3	0.54	2.5	4.5	0.08	C
	8	20	15 42.6	18-54.4	155-17.0	9.7	2.7	16	254	33.7	0.70	3.5	3.5	0.17	D
	8	20	36 10.2	18-52.1	155-15.0	1.5*	2.6	13	290	39.3	0.83	5.2		0.17	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 8	21	44	8.4	19-22.8	155-45.3?	4.2	2.8	26	171	17.6	0.85	1.4	6.0	0.23	C
8	23	13	55.1	19-21.9	155-24.3	6.6	2.1	31	45	3.5	0.08	0.7	0.6	0.25	B
9	2	46	56.1	19-11.8	155-47.3?	0.0	2.6	16	241	18.9	0.41	4.0	18.8	0.22	D
9	3	18	13.6	19-25.7	155-16.0	19.1		11	127	3.5	0.15	0.9	2.0	0.07	B
9	4	18	39.8	19-24.8	155-27.4	5.9	1.8	26	94	4.2	0.11	0.8	0.7	0.23	B
9	14	28	17.5	19-16.6	155-23.4	3.8	1.9	25	124	5.9	0.09	0.7	1.0	0.23	C
9	14	57	30.3	19-35.6	155- 6.0	8.0*		7	267	10.6	0.21	1.2		0.04	D
9	17	17	22.0	19-16.4	155-23.1	3.2		18	127	6.4	0.10	0.7	1.3	0.19	B
10	0	25	15.7	19-18.4	155-14.4	5.8		18	118	2.9	0.10	0.6	0.7	0.14	B
10	1	27	26.7	19-22.6	155-22.6	3.2		14	80	4.6	0.08	0.6	1.4	0.12	B
10	2	57	11.5	19-19.9	155-15.4	6.1	1.6	26	81	3.6	0.06	0.5	0.4	0.14	A
10	4	18	14.8	19-17.6	155-22.9	3.7	2.5	31	116	4.8	0.09	0.7	0.8	0.23	B
10	4	48	31.4	19-20.4	155- 8.6?	8.0		17	144	3.8	0.11	1.0	0.7	0.15	C
10	7	42	55.4	19-12.9	155-19.8	37.2		21	166	9.6	0.35	1.7	3.2	0.14	C
10	15	37	10.8	19-34.5	155- 6.8	8.0*		11	139	9.5	0.08	0.7		0.07	C
10	16	48	7.7	19-20.6	155-12.0?	7.7	1.7	22	106	3.5	0.08	0.7	0.4	0.14	B
10	21	8	11.6	19-22.2	155-30.1?	9.8		15	99	4.3	0.10	0.9	1.3	0.14	B
11	3	49	38.8	18-57.1	155-28.1	29.4		15	254	20.9	0.77	4.1	6.1	0.16	D
11	4	38	5.3	19-19.8	155-15.1	6.9		15	132	4.1	0.09	0.6	0.6	0.11	B
11	5	17	40.5	19-18.6	155-13.4	5.8		14	82	2.9	0.13	0.9	1.0	0.16	B
11	6	23	7.2	19-22.7	155-24.0	8.0*		10	102	4.8	0.06	0.5		0.09	B
11	11	41	37.7	19-20.2	155-10.7	5.4		20	105	3.7	0.12	0.8	1.0	0.23	B
11	12	37	23.8	19-20.7	155-11.6	6.9		20	72	3.7	0.10	0.9	0.7	0.21	B
11	12	56	11.7	19-22.0	155-23.0	7.6		10	86	3.4	0.13	0.7	1.7	0.07	A
11	13	43	20.9	20- 1.4	155-29.2	50.0	3.3	33	195	21.1	0.34	1.5	3.2	0.13	C
11	14	56	11.7	19-39.6	155- 3.7	0.9	2.6	18	227	33.1	2.45	1.8	8.1	0.16	D
11	16	27	24.1	19-20.9	155-24.4	8.0		12	82	2.3	0.09	1.0	0.8	0.15	B
11	20	46	10.2	19-22.3	155-11.6	3.7	1.9	24	72	1.8	0.08	0.5	1.1	0.17	B
11	20	50	26.2	19-20.5	155-19.5	5.0	2.3	27	54	3.7	0.05	0.4	0.4	0.12	B
11	20	51	44.6	19-25.4	155-27.1	8.0*		9	209	5.4	0.22	1.4		0.15	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 11	21	34	11.1	19-22.7	155-22.4	3.8	1.3	17	81	4.9	0.08	0.6	0.8	0.15	B
12	1	58	32.1	19-22.6	155-22.3?	2.7	1.4	14	83	4.7	1.18	0.5	2.3	0.12	B
12	2	49	17.3	19-22.4	155-23.3	4.9		12	93	4.0	0.17	0.5	2.1	0.09	B
12	3	43	51.7	19-22.2	155-13.0	4.6	1.4	15	93	0.7	0.13	0.6	1.4	0.12	B
12	4	31	34.4	19-22.5	155-22.5	5.6		10	83	4.4	0.19	0.5	2.1	0.09	B
12	7	35	5.9	19-19.4	155-16.0	5.7		24	95	2.8	0.07	0.5	0.5	0.17	B
12	11	23	30.5	19-22.8	155-17.1	15.1		15	64	2.2	0.09	0.9	1.4	0.14	B
12	11	57	49.7	19-20.7	155-19.6	1.6	1.4	11	102	4.0	0.13	0.4	0.6	0.07	A
12	14	37	34.5	19-19.3	155-13.0	5.2		15	78	4.2	0.10	0.8	0.9	0.17	B
12	15	3	47.9	19-18.7	155-16.8	6.1	1.7	20	128	2.7	0.08	0.6	0.5	0.14	B
12	22	0	7.6	19-13.5	155-26.6	8.0*		9	136	5.4	0.21	2.1		0.26	C
12	22	28	50.0	19-23.0	155-14.3	22.6		19	55	3.0	0.16	0.8	1.7	0.10	B
12	23	0	49.8	19-22.3	155-24.4?	1.5		13	120	4.4	0.20	0.8	1.2	0.12	B
13	3	7	57.6	19-18.6	155-13.6	4.8	1.6	17	86	2.8	0.09	0.7	0.7	0.15	B
13	4	41	56.8	19-20.3	155-19.8	1.9*		10	112	4.1	0.05	0.3		0.07	B
13	6	15	19.1	19-55.5	155- 5.8	49.5	2.6	27	229	22.7	0.33	1.5	2.8	0.10	C
13	6	29	50.8	19-22.4	155-13.1	4.3	1.5	16	74	0.9	0.07	0.4	0.9	0.09	A
13	6	43	15.5	19-53.3	155- 5.1	43.2	3.0	33	226	18.6	0.37	1.8	3.2	0.15	C
13	8	4	31.1	19-23.7	155-24.0	8.0*		9	196	6.6	0.12	0.9		0.10	C
13	11	37	14.4	19-27.4	155-23.6	6.8	1.6	14	87	4.4	0.11	0.9	0.8	0.20	B
13	11	51	45.9	19-25.5	155-15.9	1.4	2.4	22	50	0.3	0.08	0.4	0.3	0.12	B
13	11	55	46.1	19-19.7	155-20.2	3.9	1.6	10	139	4.2	0.12	0.4	2.3	0.08	A
14	4	0	36.0	19-21.1	155-24.9?	7.3		16	80	3.2	0.10	0.8	0.9	0.17	B
14	4	29	53.9	19-52.7	155- 4.6	39.4		20	243	20.2	0.69	3.0	5.4	0.12	D
14	4	30	7.2	19-19.3	155-13.6	6.8	2.4	28	68	4.2	0.06	0.5	0.4	0.16	B
14	5	48	31.1	19-20.6	155-13.6	9.5		11	188	5.2	0.30	1.3	2.5	0.10	C
14	6	57	6.7	19-18.6	155-15.1	9.8		14	122	4.2	0.23	0.9	2.1	0.10	B
14	10	15	25.7	19-23.6	155-25.5?	8.0	2.1	22	60	4.2	0.07	0.5	0.5	0.13	B
14	14	23	4.0	19-56.9	155-35.6	46.6	3.7	33	148	23.4	0.29	1.1	2.9	0.13	B
14	15	5	28.3	19-47.6	155-26.0	23.4	2.5	19	89	3.0	0.14	1.0	2.0	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL	14	17	12	40.2	19-30.2	155-52.0	6.5	2.6	14	275	28.1	1.56	4.4	8.5	0.15	D
	15	1	27	20.3	19-25.0	155-26.0	7.7	1.9	21	62	5.4	0.03	0.3	0.2	0.07	A
	15	16	12	17.1	19- 9.7	155-23.5	35.9		17	216	7.6	0.68	2.4	5.8	0.11	C
	15	20	14	28.7	19-23.7	155-17.7	13.2		18	60	1.4	0.05	0.6	0.4	0.11	B
	15	22	37	29.2	19-20.9	155-20.6	25.4		15	64	4.9	0.22	1.0	2.1	0.12	B
	15	23	9	48.8	19-20.3	155-12.7	5.0	1.6	16	68	3.9	0.09	0.7	0.7	0.18	B
	16	0	52	24.1	19-24.4	155-24.8	8.0*	1.6	10	141	6.0	0.06	0.5		0.08	C
	16	6	10	21.9	19-23.9	155-24.4?	0.0	1.6	14	125	6.2	2.72	0.7	5.4	0.13	C
	16	17	21	56.4	19-55.3	155- 6.3	50.7		18	234	25.2	0.50	2.2	4.1	0.11	C
	16	18	22	37.4	19-21.0	155- 8.4	5.1	2.4	25	71	3.1	0.10	0.8	0.7	0.24	B
	16	21	44	15.6	19-19.0	155-15.4	8.7		13	113	4.1	0.17	0.9	1.9	0.12	B
	17	0	54	2.4	20- 2.6	155-22.3	12.8	2.6	24	215	17.3	0.21	1.3	1.4	0.14	C
	17	3	16	6.1	19-22.4	155- 4.7	3.3	1.8	19	139	5.6	0.11	0.7	0.8	0.16	B
	17	5	20	6.9	19-21.7	155-26.1	4.3	2.0	21	117	3.1	0.10	0.8	0.9	0.25	B
	17	5	21	28.2	19-21.8	155-25.6	7.5	2.9	28	64	3.8	0.08	0.6	0.5	0.19	B
	17	6	53	45.4	19-32.1	155-42.9?	5.7	2.4	12	161	13.2	0.63	1.0	4.7	0.12	C
	17	10	34	54.1	19-37.1	156- 1.5	7.9	3.1	22	227	42.3	0.41	1.7	3.3	0.16	C
	17	20	50	32.3	19-35.9	155-40.7	8.0*	2.4	6	324	14.6	1.63	8.2		0.04	D
	18	0	45	24.4	19-50.8	155-19.9	17.1	2.4	13	130	5.0	0.14	1.2	2.3	0.13	B
	18	4	41	25.4	19-27.7	155-26.7	7.0	2.5	30	78	7.1	0.09	0.7	0.6	0.20	C
	19	1	17	23.4	19-22.0	155-12.5	3.6	1.4	11	101	0.9	0.10	0.5	1.2	0.09	A
	19	4	58	28.4	19-19.0	155-21.1	4.1	1.8	23	101	4.5	0.08	0.7	0.8	0.17	B
	19	6	11	59.4	19-23.1	155-22.6	8.0*	1.5	16	91	5.2	0.05	0.4		0.09	B
	19	12	55	14.7	19-20.3	155-13.2	5.9	1.5	20	64	4.0	0.08	0.6	0.7	0.19	B
	19	16	12	57.4	19-58.2	155-25.2	13.1	2.9	29	191	12.0	0.14	1.1	1.2	0.14	C
	19	16	14	46.7	19-57.8	155-25.8	11.7	2.5	20	189	12.2	0.13	0.9	0.9	0.13	C
	20	1	14	11.7	19-30.8	155-19.7?	8.4	2.0	25	70	6.1	0.09	0.6	0.6	0.18	B
	20	4	27	49.8	19-57.5	155-25.5	12.0	3.5	32	187	11.5	0.12	0.8	0.8	0.12	C
	20	7	44	23.9	19-21.6	155-29.1?	8.1	1.9	23	58	3.2	0.12	0.8	0.8	0.24	B
	20	13	10	59.5	19-23.6	155-26.1?	7.1	2.5	30	49	3.3	0.07	0.7	1.3	0.23	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	G
JUL 21	2	7	40.4	19-17.8	155- 0.4	35.6	2.4	28	221	6.0	0.27	1.4	2.0	0.11	C
21	8	57	8.5	19-21.1	155-24.4	8.5	2.4	28	66	2.6	0.05	0.6	1.1	0.16	B
21	17	5	34.8	20- 5.5	155-23.0	9.8	2.9	29	223	22.8	0.27	1.4	1.6	0.15	C
22	5	13	4.6	19-24.3	155-23.2	8.0*	1.5	17	112	6.2	0.07	0.5		0.12	B
22	9	32	39.2	19-16.1	155-23.2	8.0*		13	130	7.5	0.10	0.9		0.18	C
22	9	35	16.5	19-16.2	155-23.3	4.8		18	128	6.0	0.10	0.8	1.6	0.22	C
22	22	21	35.3	19-22.2	155-11.4	5.8	1.5	16	146	2.3	0.08	0.6	0.6	0.14	B
22	23	31	16.8	19-25.8	155-14.9	28.7	2.6	31	48	1.5	0.11	0.7	1.1	0.12	B
23	2	3	57.5	19-23.0	155-17.2	2.1		9	173	0.9	0.06	0.3	0.1	0.04	B
23	13	16	10.0	19-25.8	155-22.3	6.9	2.0	12	110	4.5	0.08	0.5	0.7	0.10	A
23	20	26	58.2	20- 2.9	155-28.6	31.7	2.7	23	203	22.4	0.28	1.5	3.2	0.14	C
24	4	55	52.9	19-22.3	155-11.4	6.6	1.5	16	91	2.2	0.05	0.5	0.5	0.11	B
24	9	37	1.5	19-23.8	155-23.8	8.0*		8	114	6.7	0.12	1.1		0.15	B
24	10	0	17.4	19-30.5	155-27.5	7.2	2.8	27	75	7.4	0.08	0.5	0.5	0.15	B
24	11	13	27.7	19-22.5	155-11.4	5.4	1.5	21	95	2.3	0.08	0.6	0.7	0.13	B
24	12	24	48.0	19-23.6	155-15.8	8.0*		10	109	10.8	0.13	1.3		0.26	C
24	14	23	4.3	19-20.0	155-11.8	5.4		17	83	4.8	0.09	0.7	0.7	0.18	B
24	14	25	38.6	19-20.5	155- 9.4	4.8		13	76	3.0	0.12	0.9	1.2	0.20	B
24	14	41	40.6	19-18.7	155-16.0	4.6		17	128	3.5	0.12	0.7	1.1	0.17	B
24	15	54	35.4	19-20.5	155-12.4	6.1		14	69	3.6	0.12	0.8	1.0	0.15	B
24	16	50	7.0	19-18.6	155-16.0	5.2		15	133	3.7	0.12	0.7	0.9	0.17	B
24	18	29	44.6	19-24.0	155-23.2	8.2	1.5	20	96	6.2	0.05	0.5	0.3	0.11	B
25	2	26	10.0	19-22.3	155-11.3	4.8	1.5	14	92	2.4	0.13	0.6	1.4	0.13	B
25	3	2	42.1	19-22.3	155-11.0	3.6		10	93	2.1	0.05	0.3	0.7	0.05	A
25	5	16	26.9	19-22.2	155-10.3	2.5	1.6	15	105	0.8	0.13	1.0	1.6	0.18	B
25	6	3	16.8	19-27.1	155-16.6	26.4	2.3	30	51	3.3	0.09	0.6	1.0	0.12	B
25	7	37	31.6	19-57.1	155-26.5	11.1		12	183	12.4	0.14	1.2	1.1	0.11	C
25	11	26	36.1	19-20.6	155-12.1	5.3		22	73	3.4	0.11	0.8	0.9	0.22	B
25	13	42	46.0	19-21.9	155-11.6	2.7		14	128	2.1	0.12	0.7	3.0	0.11	B
25	18	18	29.1	19-21.0	155-10.9	8.4		8	106	2.7	0.04	0.3	0.6	0.04	A

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 25	19	32	32.7	19-22.5	155- 9.1?	1.4	1.6	15	99	1.5	0.12	0.9	1.8	0.17	B
25	21	44	52.6	19-22.3	155-11.5	5.7	1.8	20	92	2.1	0.07	0.5	0.7	0.13	A
25	23	44	14.8	19-21.8	155- 9.1	7.4		10	190	1.4	0.19	1.4	0.7	0.16	C
26	0	15	57.1	19-25.3	155-28.7?	7.8	1.8	21	70	5.5	0.10	0.9	1.5	0.18	B
26	18	10	55.3	19-22.2	155- 9.5	4.8	1.6	14	94	0.6	0.08	0.5	0.9	0.11	B
26	19	34	33.7	19-23.0	155-10.2?	8.2	1.6	15	119	1.9	0.11	0.7	0.9	0.13	B
27	0	31	51.8	19-19.3	155-24.4	7.9	3.0	31	95	2.5	0.06	0.6	0.4	0.18	A
27	1	2	47.1	19-11.4	155-27.4	6.0	2.1	20	120	3.6	0.10	0.9	0.7	0.18	B
27	3	13	18.2	19-21.0	155- 8.3?	2.9		18	77	3.4	0.10	0.7	1.2	0.19	B
27	7	16	56.9	19-22.2	155-11.6	4.5	2.0	22	71	2.0	0.07	0.5	0.8	0.16	B
27	10	26	54.0	19-21.1	155- 7.8	2.8		17	82	4.1	0.11	0.8	1.5	0.19	B
27	16	35	54.8	19-21.9	155- 9.6?	2.2	2.4	26	74	0.6	0.08	0.6	0.8	0.20	B
27	21	13	39.9	19-21.1	155- 8.2	3.7	1.7	20	73	3.4	0.10	0.8	1.2	0.21	B
27	23	5	26.7	19-20.5	155-12.1	9.5		17	74	3.7	0.08	0.4	1.0	0.08	A
28	0	0	16.3	19-19.8	155-12.9	5.6	2.0	25	73	4.9	0.08	0.6	0.6	0.19	B
28	2	18	54.2	19-20.3	155-13.3	5.5		22	63	4.2	0.09	0.7	0.6	0.20	B
28	3	3	48.9	19-20.4	155-12.3	7.2		15	72	3.8	0.10	0.7	0.7	0.15	B
28	4	5	44.2	19-20.7	155- 8.6	3.8		15	73	3.3	0.11	0.8	1.2	0.19	B
28	9	26	18.5	19-25.4	155-21.8	5.0	1.5	16	100	4.5	0.09	0.7	0.9	0.17	B
28	9	38	33.8	19-59.9	155-34.0	52.4	2.9	28	174	26.4	0.44	1.6	4.3	0.13	C
28	11	58	35.2	19-19.6	155-13.0	8.0*		17	75	4.9	0.06	0.5		0.12	B
28	14	21	7.7	19-19.5	155-13.1?	7.8	1.7	20	75	4.6	0.07	0.6	0.4	0.13	B
28	14	30	23.2	19-19.2	155-13.6	6.6	1.9	16	77	4.1	0.11	0.8	0.8	0.18	B
28	16	17	5.1	19-20.2	155-20.5	28.3	2.1	19	71	4.9	0.17	0.9	1.7	0.12	B
28	18	22	58.9	19-22.8	155- 4.8	2.5		16	139	6.3	0.13	0.9	1.7	0.19	B
28	18	39	18.2	18-52.8	155-15.3	4.1	3.2	23	262	37.8	1.54	2.4	9.0	0.12	D
28	19	7	19.4	19-13.0	155-31.9	5.6	2.3	15	76	9.6	0.10	0.8	0.8	0.17	B
29	9	33	45.8	19-21.0	155- 9.3	4.7	1.7	18	70	2.2	0.10	0.7	1.1	0.19	B
29	19	22	1.1	19-20.3	155-10.8	5.0		16	103	3.7	0.11	0.7	0.9	0.18	B
30	5	34	35.3	19-21.5	155- 7.6?	0.0	1.7	22	75	7.6	3.00	0.5	5.7	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
JUL 30	5	59	37.5	19-24.4	155-16.3	13.0	2.6	32	34	1.1	0.03	0.5	0.3	0.11	B
30	13	0	51.0	19-20.4	155-12.3	5.7		14	72	3.9	0.10	0.7	0.8	0.16	B
30	18	34	23.8	19-21.6	155- 8.0	10.1		8	173	3.4	0.04	0.3	0.5	0.02	B
30	19	19	14.5	19-24.2	155-26.2	7.3	2.0	13	166	4.0	0.09	0.6	0.4	0.10	B
30	22	22	32.5	19-22.1	155- 9.6	2.9	2.2	24	75	0.4	0.07	0.5	0.6	0.16	B
31	6	33	23.3	19-20.5	155-12.2	7.6	3.2	31	71	3.7	0.05	0.5	0.3	0.16	B
31	9	26	40.0	19-20.1	155- 9.4	3.1	2.0	21	78	3.7	0.11	0.8	1.2	0.23	B
AUG 1	2	10	9.1	19-22.5	155- 9.7	3.1	2.1	25	76	0.8	0.09	0.7	0.8	0.18	B
1	2	59	5.1	19-57.9	155-30.0	45.0	3.1	33	175	18.4	0.27	1.1	2.7	0.13	C
1	8	34	43.9	19-21.9	155- 9.5	4.6		17	78	0.8	0.06	0.5	0.7	0.13	B
1	16	41	50.4	19-21.6	155-16.9	26.1	2.3	24	57	2.2	0.10	0.6	1.0	0.10	B
2	0	55	27.0	19-18.2	155-14.4	9.1		12	122	2.7	0.14	0.7	1.6	0.10	B
2	4	5	51.6	19-23.9	155-25.3	7.5	2.2	25	57	4.9	0.07	0.5	0.5	0.11	B
2	6	32	55.3	19-22.1	155- 9.3	7.1	2.3	16	170	0.9	0.07	0.6	0.4	0.09	C
2	10	33	38.3	19-22.4	155- 9.4	4.4	1.9	17	95	1.0	0.11	0.7	1.1	0.16	B
2	13	9	45.4	19-22.1	155- 9.4	6.9	1.7	13	93	0.7	0.07	0.7	0.5	0.12	B
2	15	54	20.2	19-19.3	155-11.1?	7.6		15	135	5.5	0.10	0.9	0.6	0.14	C
3	2	25	20.1	19-17.5	155-11.7	4.0	2.0	23	161	3.3	0.13	0.8	1.0	0.22	C
3	2	39	17.9	19-12.3	155-31.7	5.7		19	87	8.4	0.11	0.9	0.8	0.18	B
3	3	17	51.0	19-17.0	155-11.9	5.0	1.8	18	188	2.8	0.17	1.0	0.9	0.19	C
3	8	18	14.0	19-17.0	155-11.5	7.0	1.8	17	187	3.5	0.11	0.8	0.5	0.13	C
3	9	14	50.1	19-16.6	155-11.2	7.5		16	203	4.0	0.12	0.8	0.4	0.11	C
3	11	39	26.3	19-16.8	155-11.3	7.1		17	194	3.8	0.15	1.0	0.6	0.16	C
3	15	37	39.8	19-17.6	155-11.7	3.4		18	157	3.3	0.14	0.9	1.4	0.20	C
3	15	54	24.4	19-17.2	155-11.3	4.3		15	178	3.8	0.17	1.1	1.3	0.18	C
3	16	20	58.9	19-17.4	155-11.9?	2.5	1.7	18	162	2.9	0.25	0.9	1.1	0.20	C
3	17	58	1.4	19-16.7	155-11.5	7.6		13	203	3.5	0.11	0.8	0.4	0.10	C
3	17	59	59.1	19-17.5	155-11.2?	0.7		16	164	4.0	2.15	0.9	8.2	0.21	C
3	18	37	50.1	19-17.5	155-11.4	6.6	2.1	22	151	3.7	0.07	0.5	0.4	0.14	C
4	4	38	25.1	19-17.6	155-11.4	4.0	1.7	21	148	3.8	0.12	0.8	1.1	0.22	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 4	21	41	19.2	19-21.1	155- 8.1?	0.0	1.7	24	73	6.9	3.82	0.6	7.3	0.16	C
5	1	7	9.3	19-18.6	155-14.5	6.1	1.6	17	113	3.4	0.11	0.6	0.8	0.14	B
5	2	26	11.0	19-19.8	155- 9.3	3.7		12	106	4.4	0.10	0.8	1.2	0.15	B
5	7	21	20.9	19-20.2	155- 9.8	9.1		14	78	3.4	0.07	0.5	1.0	0.07	A
5	8	49	33.4	19-53.8	156- 5.7	0.4	3.4	33	251	41.8	0.33	2.6	1.0	0.17	D
5	11	22	24.3	19-19.2	155-13.8	7.5	1.6	19	83	4.1	0.09	0.7	0.5	0.16	B
5	14	24	4.2	19-22.5	155- 9.1	7.7		10	181	1.6	0.15	1.4	0.7	0.13	C
5	21	26	3.3	19-21.4	155-11.0	8.2		16	102	2.4	0.12	1.0	1.8	0.12	B
7	9	38	24.2	19-20.4	155-19.6	2.0*		6	109	4.0	0.08	0.6		0.08	C
7	14	20	44.6	19-25.9	155-19.2?	6.3		8	177	4.1	0.38	3.4	5.0	0.39	D
7	18	32	43.2	19-19.6	155-12.4	8.0*		11	158	5.2	0.09	0.7		0.09	C
7	21	34	13.8	19-24.5	155-24.0	8.4	2.5	25	58	7.4	0.07	0.6	0.5	0.15	B
8	3	11	53.3	19-10.2	155- 3.6?	41.8	2.2	32	225	15.3	0.25	1.4	1.8	0.12	C
8	3	20	57.3	19-25.0	155-39.4	8.0*	2.3	10	229	10.0	0.17	1.0		0.08	D
8	3	59	32.0	19-23.9	155-23.2	7.5	2.6	28	56	6.1	0.05	0.5	0.4	0.17	B
8	4	21	14.6	19-23.8	155-23.2	8.0*		8	106	6.1	0.04	0.4		0.06	B
8	4	23	16.3	19-23.9	155-23.1	8.0*		8	106	6.0	0.06	0.6		0.09	B
8	4	26	19.9	19-24.0	155-23.1	8.0*		7	107	5.9	0.05	0.5		0.07	C
8	4	29	23.0	19-23.9	155-23.1	8.0*		7	106	5.9	0.04	0.4		0.05	C
8	4	41	39.0	19-23.7	155-22.7	8.0*	1.4	14	60	5.2	0.05	0.5		0.12	B
8	4	45	29.0	19-23.9	155-23.1	8.0*		7	106	6.0	0.04	0.4		0.06	C
8	5	19	49.9	19-23.9	155-24.5	8.0	1.6	20	109	6.1	0.06	0.5	0.8	0.09	A
8	5	50	41.1	20- 0.9	155-27.9?	9.2		13	196	18.9	0.24	2.8	3.3	0.19	C
8	6	14	21.5	19-19.8	155-11.5	8.0*		10	91	5.1	0.04	0.3		0.04	B
8	6	16	23.3	19-18.4	155-12.4?	0.0		9	186	3.1	7.83	2.4	15.9	0.13	C
8	9	48	8.6	19-22.2	155-26.0	8.3	2.0	14	107	2.9	0.06	0.5	1.1	0.09	A
8	9	53	53.6	19-20.5	155-12.2	6.2	2.3	28	72	3.7	0.07	0.6	0.5	0.21	B
8	11	16	47.1	19-20.4	155-12.7	8.2		14	69	3.9	0.09	0.6	1.4	0.09	A
8	11	42	45.0	19-18.9	155-15.9	6.5	1.5	26	102	3.5	0.06	0.5	0.4	0.14	B
8	16	42	58.2	19-20.7	155- 9.8	5.5		12	70	2.5	0.12	0.7	1.2	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 8	18	11	37.1	19-23.9	155-29.9	11.1	1.9	17	96	4.7	0.08	0.7	1.0	0.12	B
8	19	27	12.4	19-21.9	155- 9.9	3.0	1.6	14	78	0.2	0.07	0.5	0.9	0.12	B
8	19	44	26.1	19-23.0	155-24.0	8.0*	1.6	17	66	5.3	0.06	0.5		0.12	B
8	22	28	56.0	20- 0.7	155- 0.5	51.8	2.7	32	264	33.4	0.56	2.7	3.9	0.13	D
8	23	34	12.6	19-25.1	155-52.4	10.8		5	261	16.8				0.02	D
9	2	29	53.2	19-34.5	155-53.4	14.4*		14	246	31.9	0.22	1.6		0.13	D
9	6	30	31.3	19-19.7	155-20.0	5.2		13	136	4.0	0.15	0.5	1.5	0.09	B
9	7	6	56.5	19-19.4	155-13.4	6.2	1.6	23	72	4.4	0.09	0.7	0.6	0.19	B
10	8	20	8.1	19-12.3	155-16.2	43.9		16	180	9.9	0.54	2.1	5.1	0.15	C
10	8	20	37.4	19-11.8	155-16.2	43.7		17	183	10.7	0.43	1.6	4.0	0.12	C
10	8	25	12.2	19-10.8	155-14.9	36.8		20	192	11.8	0.40	1.8	4.0	0.15	C
10	8	44	44.9	19-21.1	155- 8.0	3.4		21	80	3.7	0.10	0.7	1.0	0.20	B
10	9	28	22.5	19-22.3	155-24.8	9.1		13	96	4.6	0.12	0.7	1.7	0.12	B
10	18	27	43.3	19-22.7	155-25.7	9.7	1.8	14	75	3.4	0.09	0.5	1.3	0.08	A
10	23	49	53.8	19-23.5	155-25.0	8.0*		14	128	4.9	0.07	0.7		0.11	C
11	3	18	4.3	19-56.9	155-30.3	43.8	3.7	33	166	18.2	0.28	1.1	2.8	0.13	C
11	9	26	30.2	19-23.0	155-49.2	10.5		23	154	14.1	0.11	1.0	1.2	0.12	C
11	11	34	0.0	19-22.0	155-24.0?	8.3		27	49	3.5	0.06	0.5	0.4	0.17	B
11	13	9	50.3	19-19.2	155-13.9	5.8		21	66	4.2	0.07	0.6	0.6	0.16	B
11	19	17	32.4	19-20.6	155- 8.4	3.7		20	81	3.8	0.11	0.8	1.0	0.20	B
11	19	22	37.7	19-20.6	155- 9.4	4.9		23	77	2.9	0.08	0.7	0.6	0.17	B
11	22	43	24.4	19-23.5	155-23.2?	8.2		13	94	6.1	0.09	0.6	0.6	0.12	B
11	23	25	5.8	19-19.5	155-16.6	4.6		13	103	1.8	0.16	0.9	1.4	0.21	B
12	13	42	55.0	19-25.0	155-21.9	6.3	1.8	23	91	4.4	0.07	0.6	0.5	0.18	B
13	2	46	35.0	19-22.0	155-19.8?	1.2	1.1	12	77	3.2	0.13	0.4	0.5	0.10	B
13	2	47	31.9	19-27.9	155-23.9	7.2	2.1	20	154	3.7	0.09	0.7	0.4	0.14	C
13	8	46	1.7	19-21.3	155-15.3	7.7	3.1	26	66	2.3	0.05	0.5	0.3	0.15	B
13	13	43	7.8	19-19.6	155-13.5?	5.0		15	71	4.8	0.12	0.8	1.1	0.19	B
13	23	32	20.5	19-11.8	155-27.4?	5.4		10	138	4.2	0.16	1.4	1.1	0.18	B
14	5	30	26.7	19-19.0	155-13.6	6.5	1.6	23	68	3.6	0.07	0.6	0.5	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG	14	6	17 20.0	19-20.2	155- 9.1	4.1		17	73	3.6	0.10	0.7	1.1	0.19	B
	14	23	49 40.7	19-25.1	155-27.2?	7.3	3.1	32	47	4.9	0.07	0.6	1.2	0.20	B
	15	6	48 18.8	19-24.9	155- 4.8?	0.0	2.3	20	90	9.8	4.68	0.7	8.9	0.18	C
	15	9	44 28.6	19-23.4	155-28.8?	6.3	1.9	20	88	2.7	0.13	1.3	1.9	0.28	C
	15	11	8 24.2	19-14.8	155-32.9	5.5	2.1	14	75	7.3	0.17	1.3	1.4	0.29	C
	15	20	41 20.9	19-33.5	155-40.9?	8.4	2.9	18	99	11.6	0.11	0.6	0.7	0.11	B
	15	22	24 17.7	19-54.1	155-10.5	49.4	3.1	32	213	17.7	0.37	1.6	3.4	0.15	C
	16	1	17 13.4	19-20.1	155-13.4	4.4		15	123	4.5	0.16	0.9	1.4	0.19	C
	16	10	19 40.0	19-10.7	155-17.2?	8.0*		15	207	17.3	0.31	2.1		0.33	D
	16	22	16 34.2	19-20.9	155- 8.9	3.9		16	72	2.7	0.11	0.8	1.1	0.21	B
	17	0	53 35.1	19-19.9	155-10.4	4.4		16	118	4.0	0.15	1.0	1.5	0.24	B
	17	1	0 16.8	19-20.2	155-13.4?	5.7	1.5	21	65	4.4	0.10	0.8	0.9	0.22	B
	17	2	44 53.2	19-19.6	155-10.7	4.4		12	128	4.8	0.14	1.2	1.5	0.23	C
	17	2	45 32.1	19-19.6	155-14.6	3.1		11	184	4.9	0.18	1.1	1.7	0.14	C
	17	3	2 38.5	19-19.8	155-10.8	5.0		19	91	4.6	0.12	0.8	1.1	0.22	B
	17	4	57 56.8	19-20.7	155-13.1	5.7		26	61	3.3	0.08	0.6	0.6	0.22	B
	17	14	11 19.6	19-25.3	155-14.5	28.6	2.0	29	52	1.2	0.11	0.6	1.1	0.12	B
	18	10	28 15.2	19-31.1	155-48.3?	8.0	2.5	13	202	35.8	0.21	2.1	2.1	0.13	C
	18	15	12 34.4	19-24.6	155-15.6	12.9	1.5	16	165	2.4	0.06	0.7	0.4	0.09	B
	18	18	20 38.1	19-27.2	155-51.6?	3.0		11	226	20.7	0.29	2.1	2.9	0.09	C
	18	19	27 49.8	18-59.9	155-18.0	3.0	2.4	20	243	24.7	0.52	1.9	2.2	0.14	C
	18	19	34 30.5	19-26.4	155-49.4	8.0	2.5	12	242	19.8	0.26	1.8	1.3	0.10	C
	18	20	20 26.2	19-18.7	155-14.6?	6.0		19	112	3.6	0.12	0.8	0.8	0.19	B
	19	9	44 23.8	19-25.2	155-24.3	8.0*	1.6	12	143	7.7	0.07	0.5		0.10	C
	19	23	2 25.6	19-20.6	155- 9.4	5.2		15	78	2.8	0.12	0.9	1.2	0.19	B
	20	16	30 31.0	19-19.8	155-24.2	7.7		9	166	1.8	0.07	0.6	0.4	0.07	B
	20	21	6 8.2	19-20.3	155- 7.7	8.5		13	143	5.0	0.21	1.6	3.0	0.19	B
	20	23	9 28.7	19-19.5	155-12.2	8.0*		7	182	6.2	0.10	0.9		0.06	C
	21	4	15 41.7	19-20.1	155-19.3	5.1	2.8	28	54	3.3	0.04	0.3	0.3	0.12	B
	21	5	20 5.2	19-23.4	155- 4.4	3.3	1.9	16	150	6.9	0.13	0.9	1.0	0.18	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 21	6	15	12.3	19-22.5	155-24.0	9.4		13	94	4.3	0.12	0.7	1.7	0.11	B
21	7	9	22.9	19-18.2	155-16.5?	8.3		14	152	3.7	0.21	1.1	1.9	0.12	C
21	7	11	9.3	19-23.9	155-15.9	14.8		15	106	2.7	0.07	0.7	1.0	0.09	A
21	7	42	1.7	19-24.7	155-23.6	8.0*		7	124	7.1	0.08	0.7		0.11	C
21	9	28	56.7	19-23.6	155-16.4	14.5		17	69	1.1	0.08	0.7	1.0	0.12	B
21	12	51	48.9	19-28.5	155-24.9	10.7		18	78	3.8	0.06	0.6	0.7	0.10	B
21	14	15	47.4	19-19.5	155-15.9	5.8	1.5	21	102	2.9	0.09	0.7	0.6	0.18	B
21	15	5	30.1	19-40.9	154-57.9	5.0	2.7	16	268	22.1	1.11	6.5	2.8	0.21	D
21	16	20	14.3	19-19.3	155-13.4	6.5		18	73	4.2	0.09	0.6	0.6	0.13	B
21	19	0	15.8	19-14.4	155-27.4	9.5	2.3	29	105	3.8	0.07	0.7	1.0	0.20	B
21	22	38	43.3	19-20.1	155-12.1	6.8	2.6	30	77	4.4	0.07	0.6	0.4	0.20	B
21	23	30	16.8	19-13.2	155- 4.0	49.0*		21	279	19.4	0.17	1.8		0.09	D
22	1	9	38.6	19-56.4	155- 2.2	49.2	2.7	25	238	25.0	0.49	2.3	3.9	0.13	D
22	5	25	14.3	19-19.3	155-10.4	8.0*		9	120	5.2	0.06	0.5		0.06	B
22	5	36	20.6	19-19.8	155-11.0?	2.1		20	98	4.6	0.13	0.8	1.4	0.22	B
22	5	50	42.3	19-21.7	155-26.0	11.1		17	80	3.3	0.13	0.7	1.6	0.11	B
22	15	12	24.4	19-54.1	156-26.6	5.6	2.7	14	289	67.8	0.43	5.6	7.1	0.15	D
22	20	57	49.8	19-20.9	155-14.6	25.6	2.0	28	64	3.5	0.10	0.7	1.0	0.11	B
23	3	39	1.7	19-23.3	155-23.0	7.0		15	91	5.8	0.09	0.6	0.7	0.12	B
23	4	29	43.8	19-18.3	155-13.3?	8.4		15	88	2.4	0.08	0.6	0.4	0.11	B
23	5	34	56.5	19-23.3	155-23.1	7.9		12	90	5.6	0.07	0.6	1.3	0.10	A
23	5	36	54.8	19-21.3	155- 8.8	4.1	1.7	18	76	2.2	0.10	0.8	1.0	0.20	B
23	6	58	55.2	19-19.4	155-16.1	6.4		17	106	2.6	0.12	0.8	0.8	0.18	B
23	9	2	16.4	19-24.2	155-19.4	9.8		14	87	1.1	0.14	1.2	1.4	0.18	B
23	9	23	32.4	19-23.0	155-23.3	6.7	2.0	23	63	5.2	0.07	0.7	0.7	0.18	C
23	9	27	22.3	19-23.2	155-23.3	8.0*		10	100	5.5	0.05	0.5		0.08	B
23	9	53	29.9	19-23.4	155-25.6	12.4		14	111	3.9	0.11	1.1	1.1	0.16	B
23	10	24	49.3	19-22.8	155-14.0	9.6		14	71	2.4	0.12	1.0	1.3	0.16	B
23	20	18	27.3	19-19.4	155-15.9	8.7		12	137	3.0	0.14	1.0	1.8	0.13	B
23	22	49	25.6	19-23.1	155-23.3	8.0*		9	128	5.4	0.04	0.4		0.05	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 24	2	7	49.1	19-21.6	155-47.3?	6.1		13	194	13.6	0.10	0.8	0.8	0.09	C
24	3	57	10.2	19-22.4	155-23.3	5.5		12	92	4.0	0.11	0.7	1.1	0.14	B
24	6	32	50.5	19-23.1	155-22.9?	0.5		12	94	5.4	1.46	0.5	5.5	0.12	C
24	17	45	40.3	19-18.3	155-16.1	5.6		15	164	3.9	0.16	0.9	1.1	0.19	C
24	21	23	13.0	19-22.5	155- 3.8	3.5		13	157	5.0	0.12	0.8	1.1	0.15	C
24	22	51	56.6	19-21.2	155-25.0	9.4		12	120	3.4	0.12	0.9	1.3	0.13	B
24	23	21	23.6	19-20.4	155- 7.8?	5.0		19	86	4.7	0.13	1.0	1.2	0.25	B
25	4	58	42.5	19-19.4	155-16.4?	7.5		10	214	2.1	0.34	2.1	0.9	0.13	C
25	8	13	20.0	19-21.3	155-16.2	24.9		16	98	2.0	0.16	0.8	1.7	0.10	A
25	11	5	44.0	19-19.7	155-14.8	5.0	1.6	18	182	4.7	0.15	0.8	0.9	0.18	C
25	18	28	7.4	19-23.7	155- 3.6?	0.0	2.1	16	109	7.1	5.57	0.9	10.6	0.23	C
26	6	1	10.3	19-22.4	155-23.1?	1.4		11	87	4.1	0.07	0.5	1.0	0.11	B
26	17	35	52.5	19-23.3	155-25.1	9.0	1.9	21	54	4.7	0.05	0.5	0.8	0.12	B
26	22	31	7.3	19-24.5	155-17.0	14.0	2.0	30	36	0.7	0.05	0.6	0.7	0.12	B
27	1	9	41.6	19-18.6	155-15.9	7.0	1.6	17	132	3.8	0.06	0.5	0.4	0.09	B
27	2	20	22.7	19-24.4	155-17.0	14.4	2.5	30	35	0.8	0.05	0.6	0.8	0.12	B
27	2	53	41.9	19-18.2	155-16.1	8.2		10	169	4.2	0.14	1.1	1.8	0.10	C
27	6	45	23.2	19-22.8	155- 4.8?	0.1	2.2	24	141	6.3	3.76	0.8	7.1	0.20	C
27	11	52	8.3	19-22.6	155-15.4	29.6		19	80	1.0	0.14	0.9	1.4	0.11	B
27	13	59	53.9	19-19.0	155-10.1	8.0*	1.8	18	110	4.8	0.05	0.4		0.09	B
27	15	8	26.9	19-19.4	155-15.6	6.4	1.8	24	102	3.4	0.08	0.6	0.5	0.18	B
27	18	22	25.0	19-19.2	155-16.0	5.8		15	113	3.1	0.10	0.6	0.9	0.15	B
28	2	10	9.6	19-20.1	155- 7.3	8.0*		15	100	5.2	0.12	1.1		0.24	B
28	3	36	59.2	19-25.6	155-21.8	8.7	1.9	21	56	4.2	0.05	0.5	0.9	0.12	B
28	5	22	54.5	18-44.3	155-23.9	11.0*	2.7	23	285	38.9	0.53	3.4		0.14	D
28	9	34	37.8	19-11.0	155-38.0?	8.8		10	101	7.4	0.30	1.7	1.9	0.22	B
28	9	41	52.7	19-24.6	155-17.3	13.8	2.1	27	44	0.8	0.05	0.5	0.6	0.10	B
28	14	9	25.1	19-18.9	155-13.4	6.1	1.9	27	74	3.6	0.07	0.6	0.5	0.19	B
28	14	13	24.6	19-18.5	155-13.7	6.8	2.9	32	70	2.7	0.07	0.6	0.4	0.19	B
28	14	41	49.5	19-19.1	155-13.6	6.7		15	79	3.8	0.10	0.7	0.8	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
AUG 28	14	56	43.7	19-19.0	155-13.7	6.9		15	84	3.6	0.09	0.6	0.6	0.13	B
28	15	36	8.4	19-18.8	155-13.4	7.8		18	79	3.3	0.07	0.5	0.4	0.11	B
28	20	25	57.3	19-19.0	155-13.3?	8.0	1.6	17	77	3.7	0.06	0.5	0.4	0.10	B
29	2	20	39.1	19-29.3	155-52.5	8.8	2.9	12	191	24.7	0.22	1.8	2.2	0.15	C
29	2	56	37.0	19-26.7	155-25.9	8.0*	2.0	17	83	7.3	0.05	0.4		0.09	B
29	12	6	41.6	19-13.5	154-39.6	10.2*	3.1	31	292	37.3	0.88	5.4		0.17	D
29	19	18	57.5	19-24.6	155-16.9	14.1	1.7	16	89	1.5	0.05	0.5	0.6	0.07	A
30	2	7	21.2	19-20.0	155-15.5	5.6	1.6	23	81	3.4	0.07	0.6	0.6	0.17	B
30	2	36	44.1	19-25.4	155-26.9?	6.4		19	64	5.4	0.10	0.9	2.2	0.22	B
30	4	9	1.5	19-22.4	155-25.4	6.5	2.2	26	52	4.0	0.08	0.7	0.6	0.20	B
30	10	46	55.1	19-28.9	155-55.7	8.1	2.9	11	282	34.5	1.35	7.6	3.3	0.17	D
30	14	50	37.8	19-19.7	155-12.9	7.0		15	74	5.0	0.10	0.8	0.7	0.16	B
30	23	9	26.2	19-48.9	155- 0.2	49.2	3.4	34	229	12.7	0.44	1.9	3.5	0.15	C
31	1	54	39.1	19-21.7	155- 7.3	3.3	2.1	23	91	4.5	0.10	0.7	1.0	0.21	B
31	17	22	4.7	19-24.3	155-17.6	1.5	1.4	9	105	1.6	0.08	0.5	0.4	0.09	A
31	17	41	30.1	19-19.9	155-11.6	5.8	2.1	26	85	5.0	0.09	0.7	0.7	0.22	B
31	21	45	11.6	19-16.2	155-24.8	28.9	2.3	28	118	3.4	0.20	1.1	2.1	0.18	B
31	21	58	44.1	19-20.8	155-13.8	5.9		20	103	4.7	0.10	0.7	0.6	0.18	B
SEP 1	4	43	35.2	19-22.9	155- 5.4?	0.0	2.1	25	130	6.9	3.59	0.7	6.8	0.20	C
1	5	1	23.5	18-50.2	155-14.9	8.0*	2.6	27	275	42.3	0.72	4.6		0.20	D
1	9	56	26.2	19-24.4	155-24.3	7.2	2.7	31	58	6.7	0.07	0.6	0.5	0.19	B
1	11	2	32.5	19-25.9	155-25.1?	6.0	2.4	28	66	7.7	0.10	0.8	0.8	0.25	C
1	15	46	8.6	19-19.2	155-13.6	6.2		23	78	4.1	0.08	0.6	0.6	0.16	B
1	20	56	28.7	19-20.1	155- 9.4	6.8	2.9	27	77	3.6	0.09	0.7	0.5	0.20	B
1	23	10	44.9	19-24.4	155-24.6	8.4		21	59	6.4	0.08	0.9	2.2	0.16	B
2	1	3	39.4	19-21.6	155-16.4	25.8	2.1	20	61	1.7	0.16	0.8	1.6	0.11	B
2	3	15	58.9	19-24.5	155-16.9	1.9	1.7	10	71	0.7	0.07	0.5	0.3	0.09	A
3	14	5	35.3	19-42.6	156- 5.0?	0.0	3.4	24	238	25.8	0.82	3.7	1.8	0.25	D
3	14	46	13.3	19-19.3	155-14.1	5.8	1.7	15	88	4.3	0.09	0.6	0.9	0.15	B
3	16	28	9.3	19-27.7	155-29.3	8.0*	2.0	11	146	10.1	0.05	0.5		0.06	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 3	16	48	0.6	19-19.1	155-15.4	8.8		13	112	4.0	0.16	0.9	1.8	0.11	B
3	18	25	5.9	18-45.7	155-24.8	11.4*	2.8	25	286	36.1	0.61	3.9		0.14	D
3	18	32	22.2	18-42.6	155-24.4	11.3*		12	307	40.6	2.47	15.5		0.17	D
3	20	6	5.7	19-16.6	155-14.2	38.4		13	205	1.5	1.75	7.0	13.7	0.24	D
4	1	57	44.3	19-19.8	155-13.6	8.0*		12	72	5.2	0.05	0.4		0.08	B
4	2	49	30.7	19-19.9	155-11.9	4.6		17	83	4.9	0.10	0.8	0.9	0.19	B
4	8	37	8.3	19-21.2	155-19.3	2.0		8	86	3.9	0.14	0.4	0.6	0.07	A
4	12	2	53.0	19-19.4	155-14.7	10.2		10	95	4.9	0.35	1.5	3.3	0.16	B
4	19	45	39.0	19-18.3	155-13.1?	8.1	1.7	14	94	2.4	0.09	0.6	0.5	0.10	B
5	0	32	21.8	19-22.9	155-50.8	7.5		10	234	13.0	0.30	3.1	2.6	0.10	D
5	10	56	7.1	19-24.9	155-16.3	12.9		15	97	1.2	0.07	0.6	0.6	0.09	B
5	12	33	59.0	19-24.8	155-17.2	14.7		25	64	0.4	0.05	0.5	0.6	0.10	B
5	20	15	31.3	19-34.2	155-40.2?	7.3	2.8	17	97	11.6	0.06	0.5	0.9	0.10	B
5	21	41	13.1	19-11.0	155-24.1	32.3		13	186	7.1	0.27	1.4	2.8	0.11	C
6	4	56	23.1	19-24.6	155-16.9	6.6	1.2	10	111	0.7	0.11	0.7	0.6	0.08	A
6	9	42	32.1	19-19.9	155-12.4	5.9	1.9	19	79	4.8	0.08	0.6	0.6	0.17	B
6	14	16	55.3	19-20.0	155- 8.5	5.4		12	100	4.5	0.16	1.4	1.2	0.24	B
6	14	17	48.6	19-48.1	156- 3.2	23.9	3.2	20	236	25.8	0.24	1.6	3.8	0.12	C
6	18	22	19.8	19-19.2	155-15.6	9.0		14	109	3.6	0.11	0.6	1.2	0.08	A
7	13	0	21.7	19-18.3	155-14.2	7.8	1.7	13	115	2.6	0.11	0.8	1.7	0.11	B
7	13	8	38.2	19-22.7	155-24.6?	7.8	2.4	19	69	5.1	0.05	0.6	1.1	0.13	B
7	15	53	13.9	19-44.0	156- 9.9	42.6	2.9	12	254	34.6	0.47	2.3	4.5	0.11	C
8	1	23	14.6	19-23.6	155-24.7	7.9	1.6	21	74	5.6	0.06	0.6	1.5	0.13	B
8	2	40	7.8	19-17.2	155-15.4	6.6	1.7	25	143	3.4	0.08	0.6	0.5	0.16	B
8	2	54	44.3	19-20.2	155- 8.6	8.6		16	75	4.1	0.06	0.5	1.0	0.07	A
8	7	31	29.8	19-19.5	155-13.4	8.0		15	72	4.5	0.07	0.6	2.1	0.09	B
8	7	43	16.1	19-20.6	155-13.6	8.1		18	64	3.8	0.08	0.6	1.4	0.11	B
8	10	43	50.9	19-20.4	155-12.3	10.5		13	73	3.8	0.12	0.6	1.5	0.08	A
8	12	7	29.4	19-23.8	155-24.9	8.0*		13	133	5.3	0.09	0.7		0.12	C
9	5	53	0.4	19-28.5	154-54.3	2.6	2.3	13	250	16.9	0.51	2.6	1.3	0.15	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 9	15	38	10.0	19-20.5	155-12.7	6.3	1.7	24	67	3.6	0.08	0.7	0.6	0.21	B
10	3	0	37.3	19-20.8	155- 8.1	2.9	1.9	25	78	3.9	0.10	0.7	1.0	0.23	B
10	3	3	53.7	19-26.0	155-36.5	19.3	2.7	29	83	6.0	0.07	0.5	1.5	0.11	B
10	10	19	58.0	19-22.2	155-27.8	8.6	2.4	27	57	0.6	0.08	0.8	1.2	0.21	B
10	12	17	4.2	19-21.2	155-25.0?	8.5		14	119	3.5	0.09	0.8	0.7	0.16	B
10	12	48	10.9	19-20.5	155-12.1	4.6		14	75	3.7	0.12	0.8	1.1	0.14	B
10	16	46	50.5	19-16.0	155-18.3	30.0		23	148	3.7	0.15	0.9	1.6	0.13	B
10	17	5	57.2	19-23.3	155-26.4	9.1		18	54	2.6	0.06	0.6	1.1	0.14	B
10	21	23	34.3	19-23.8	155-24.4	7.6		13	106	6.1	0.09	0.7	0.5	0.13	B
10	21	26	3.7	19-18.8	155-16.9	5.7		12	124	2.5	0.14	0.9	0.9	0.17	B
10	21	40	40.1	19-19.9	155-46.3	7.8	2.6	12	171	12.7	0.65	1.0	4.7	0.10	C
10	23	25	17.3	19-20.7	155- 6.4	8.0*	2.0	14	102	6.2	0.15	1.3		0.27	B
10	23	51	53.8	19-18.2	155-15.3	7.1		13	142	3.8	0.13	0.8	0.9	0.15	B
11	1	25	48.8	19-21.1	155-18.0	25.2		22	41	2.0	0.18	1.0	1.8	0.14	B
11	3	41	45.6	19-20.4	155- 9.2	4.4		11	131	3.2	0.18	1.2	1.6	0.21	C
11	9	59	6.2	19-21.1	155- 7.6	8.0	1.8	19	166	4.4	0.07	0.6	0.4	0.09	C
11	12	5	47.6	19-20.3	155-10.7	9.4		18	81	3.7	0.08	0.5	1.1	0.08	A
11	20	11	0.0	19-24.5	155-16.3	12.8	1.5	22	54	1.2	0.04	0.5	0.3	0.08	B
12	2	0	57.9	19-19.4	155-13.6	6.2	1.6	23	65	4.4	0.09	0.6	0.6	0.18	B
12	8	5	29.5	19-21.1	155- 6.0	8.0*	1.9	14	173	5.9	0.16	1.4		0.18	C
12	12	38	20.6	19-11.6	155-30.1?	5.4		13	81	5.6	0.12	0.9	1.0	0.18	C
12	18	31	46.5	19-21.1	155- 5.9	8.0*		12	175	5.7	0.13	1.2		0.15	C
12	19	16	38.6	19- 9.2	155-19.7	31.1		14	206	14.4	0.30	1.9	3.3	0.13	C
13	0	38	16.2	19-21.1	155-24.3	4.8	1.6	15	74	2.4	0.09	0.8	0.9	0.18	B
13	1	14	0.2	19- 5.6	155-26.4	31.2		12	202	7.6	0.35	1.8	3.4	0.11	C
13	4	4	15.4	19-18.3	155-14.4	7.8		11	98	2.9	0.16	1.0	2.0	0.13	B
13	4	4	57.7	19-18.2	155-14.5	6.3	1.9	25	97	2.8	0.09	0.7	0.6	0.18	B
13	4	18	0.8	19-18.2	155-14.9	4.5	1.7	17	103	3.3	0.12	0.9	1.1	0.23	B
13	4	18	59.6	19-18.3	155-14.6	7.1		11	97	3.1	0.15	0.9	1.2	0.15	B
13	16	37	33.8	19-18.2	155-14.1	7.9	2.0	22	83	2.5	0.04	0.4	0.2	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 14	1	26	8.6	19-57.1	155-26.5	11.5	2.6	12	184	12.4	0.10	0.9	0.8	0.08	B
14	3	59	6.2	20- 2.3	155-42.6	27.0	2.8	18	149	12.4	0.64	3.0	6.6	0.16	C
14	5	26	19.3	19-24.0	155-28.3?	8.1	1.8	25	56	3.1	0.10	0.7	0.6	0.18	B
14	6	27	17.9	19-12.1	155-34.9	6.6	3.3	32	89	6.4	0.15	1.0	0.9	0.25	B
14	6	47	30.8	19-12.8	155-36.1	8.1		18	87	4.2	0.12	1.1	2.2	0.20	B
14	12	24	30.6	19-26.1	155-29.9	8.0*		13	88	7.8	0.06	0.5		0.09	B
14	13	12	53.1	19-13.4	155-31.9	5.7		21	80	9.5	0.12	0.9	0.9	0.22	C
14	14	49	11.4	19-20.8	155- 8.3	4.2		16	80	3.5	0.10	0.7	1.0	0.18	B
14	17	1	51.2	19-17.4	155-21.7	7.1	3.1	27	124	5.5	0.07	0.6	0.5	0.19	B
14	20	37	20.6	19-22.0	155-16.5	19.2		12	152	1.2	1.00	3.5	8.5	0.14	C
15	12	10	57.2	19-20.4	155-12.3?	5.6	1.6	16	72	3.9	0.15	1.1	1.2	0.24	B
15	13	22	58.9	19-52.8	155-17.1	18.4	2.4	17	188	6.3	0.22	1.4	2.9	0.16	C
15	14	41	47.0	19-58.4	155-17.0	43.2	2.5	23	210	11.2	0.30	1.3	2.8	0.12	C
15	16	28	4.4	19-11.4	155-21.6	33.9		18	188	16.4	0.29	1.3	2.9	0.11	C
15	23	49	11.1	19-21.4	155-16.0	30.0	3.8	35	64	1.8	0.14	0.8	1.4	0.15	B
16	0	8	21.2	19-21.4	155-17.8	26.9	2.0	21	50	3.8	0.31	1.7	2.9	0.17	C
16	0	47	10.5	19-19.5	155-14.8	34.4		13	168	5.7	0.56	2.4	4.8	0.12	C
16	1	21	2.2	19-21.9	155-16.2	26.7		13	90	1.2	0.43	1.7	3.8	0.12	B
16	4	31	14.8	19-19.3	155-19.1?	8.0*		12	143	7.6	0.25	2.0		0.41	C
16	6	5	44.2	19-21.3	155-16.4	27.6	2.3	30	66	2.3	0.11	0.7	1.1	0.12	B
16	6	30	27.5	19-20.6	155-26.9	9.2	1.8	17	82	3.7	0.10	1.0	1.5	0.19	B
16	7	27	13.4	19-20.9	155- 8.0	4.2	1.8	17	78	3.8	0.11	0.8	1.1	0.18	B
16	7	53	0.9	19-12.4	155-18.6	40.2		16	195	10.3	0.41	1.7	4.0	0.11	C
16	9	38	12.7	19-20.7	155- 8.4	5.2		13	93	3.5	0.14	1.0	1.4	0.20	B
16	10	8	31.3	19-27.2	155-49.6?	4.1		12	248	39.5	0.69	4.7	4.6	0.14	D
16	10	12	36.5	19-24.9	155-23.8	8.0*	1.5	11	129	7.3	0.05	0.4		0.07	C
16	12	0	40.3	19-20.1	155-14.2?	0.8	1.4	18	76	5.2	2.33	0.8	8.9	0.27	C
16	15	14	20.7	19-14.0	155-19.3	34.0		22	200	7.3	0.40	2.0	3.2	0.15	C
16	15	28	47.4	19-28.0	154-54.1?	2.5	2.5	15	189	2.0	0.19	1.4	1.3	0.19	C
16	17	20	9.7	19-21.3	155-17.4	28.1	2.5	26	51	2.2	0.16	0.9	1.6	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MQ	Q
SEP	16	20	23 8.5	19-20.9	155-16.5	28.2		18	110	2.1	0.20	1.0	2.0	0.12	B
	16	21	48 7.2	19-28.3	154-54.2	1.1		11	252	17.1	2.13	3.1	6.8	0.12	D
	17	0	37 28.7	19-12.6	155-19.4	41.6		16	183	10.1	0.35	1.7	3.2	0.12	C
	17	2	18 55.4	19-22.4	155-16.4	27.9		14	95	4.5	0.24	1.3	2.5	0.14	B
	17	6	17 9.8	19-21.3	155-25.4	6.3		12	107	4.3	0.10	0.6	0.9	0.13	B
	17	6	37 33.9	19-12.8	155-19.8	38.3		28	166	9.8	0.24	1.2	2.2	0.14	C
	17	12	44 49.5	19-20.2	155- 9.6	4.8		13	79	3.5	0.11	0.8	1.2	0.18	B
	17	13	18 32.4	19-24.4	155-23.2	4.2		11	113	6.3	0.08	0.5	1.1	0.11	B
	17	18	58 41.1	19-19.3	155-16.0	5.1		17	108	2.9	0.10	0.7	0.7	0.18	B
	17	19	0 10.6	19-19.1	155-15.8	5.7		16	112	3.3	0.10	0.8	0.7	0.17	B
	17	19	52 10.5	19-25.9	154-58.1	2.7		6	161	9.9	0.27	2.0	4.0	0.12	C
	17	21	45 46.3	19-19.2	155-15.5	5.6		14	107	3.6	0.14	0.8	1.1	0.18	B
	18	1	22 26.9	19-20.9	155- 9.1	4.5		15	82	2.4	0.11	0.9	1.0	0.19	B
	18	2	57 9.5	19-12.9	155-19.8	38.5		29	166	9.5	0.23	1.1	2.1	0.14	C
	18	4	37 0.3	19-25.7	154-58.3	2.5		7	161	10.4	0.16	1.2	2.0	0.09	C
	18	6	12 37.8	19-12.5	155-18.8	40.1		14	236	10.0	0.48	2.1	4.3	0.11	C
	18	7	17 30.6	19-24.2	154-57.3	4.0		11	223	11.0	0.31	1.8	1.9	0.12	C
	18	18	0 18.5	19-24.0	155-16.4	13.3	2.2	32	31	0.4	0.04	0.5	0.3	0.12	B
	18	18	35 15.3	19-21.6	155- 7.2	4.5		9	91	4.7	0.15	1.2	2.4	0.18	B
	18	18	35 57.5	19-21.8	155- 7.6?	3.6	1.8	20	71	4.0	0.27	0.6	0.9	0.19	B
	18	23	57 7.1	19-20.6	155-14.0	6.7	1.5	21	67	4.2	0.07	0.6	0.5	0.16	B
	19	0	19 42.5	19-20.1	155- 9.8	5.1	2.0	22	81	3.7	0.11	0.8	0.8	0.23	B
	19	0	23 44.4	19-20.1	155- 8.9	8.6		10	117	3.9	0.04	0.2	0.5	0.03	A
	19	0	24 54.8	19-20.4	155- 9.1	4.4		11	70	3.4	0.10	0.8	1.1	0.16	B
	19	0	51 19.7	19-20.3	155- 9.5	4.9	1.7	18	75	3.3	0.11	0.8	1.1	0.21	B
	19	0	54 10.3	19-19.8	155- 9.4	7.8	1.8	18	83	4.2	0.08	0.8	0.6	0.14	B
	19	0	57 55.2	19-57.0	155-59.3	15.3*		10	237	29.5	0.30	2.3		0.12	D
	19	1	59 28.4	19- 9.5	155-43.0	4.7		11	141	14.3	0.24	1.8	1.9	0.23	C
	19	11	40 20.1	19-13.1	155-19.9	39.7	2.4	25	164	9.3	0.22	1.1	2.1	0.13	C
	19	12	29 0.5	19-10.9	155-32.1	5.3	3.5	31	103	7.7	0.15	0.9	0.9	0.24	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NC	GAP	DMIN	ERT	ERH	ERZ	MC	Q
SEP 19	15	57	11.4	19-19.6	155-10.5	4.0		13	113	4.7	0.13	0.9	1.3	0.18	B
19	16	45	32.4	19-24.8	155-26.9?	8.1	1.7	19	61	4.4	0.07	0.7	0.9	0.15	B
19	19	22	39.0	19-49.3	155-36.5	12.5	3.0	25	103	16.3	0.18	1.1	1.9	0.19	C
19	19	26	10.0	19-24.3	155-17.5	7.2	1.6	16	80	1.5	0.09	0.6	0.6	0.12	B
19	20	1	41.1	19-18.9	155-15.0	9.5		11	112	4.3	0.18	0.8	1.8	0.08	A
20	0	5	16.8	19-21.5	155-24.3?	7.7	1.6	20	60	2.9	0.08	0.8	1.7	0.18	B
20	0	52	1.6	19-59.7	155- 0.8	51.8		14	247	32.4	0.40	1.9	3.2	0.08	C
20	3	5	53.2	19-23.9	155-29.0	8.4	2.1	23	153	3.6	0.12	1.0	1.6	0.18	C
20	4	27	41.2	19-24.8	155- 2.6	8.0*	2.0	10	119	9.1	0.03	0.3		0.04	C
20	10	10	8.9	19-25.1	155-22.8	8.0*	1.4	17	65	5.9	0.05	0.5		0.11	B
20	14	3	43.6	19-12.6	155-20.1	37.1		23	166	10.2	0.28	1.4	2.5	0.15	C
20	15	50	28.1	19-22.8	155- 5.4	4.2		17	130	6.9	0.09	0.7	1.0	0.16	B
20	18	7	8.9	20-52.3	156-11.8	63.0*		19	328	93.1	1.90	12.0		0.17	D
20	18	13	21.6	19-11.2	155-32.4	7.0	2.2	15	98	8.5	0.09	0.7	0.7	0.14	B
20	19	55	41.2	19-20.6	155-11.3	9.9	2.0	12	94	3.6	0.09	0.5	1.0	0.07	A
21	3	59	21.9	19-22.1	155-37.0	9.9	3.6	35	46	5.4	0.06	0.5	0.7	0.15	B
21	4	24	45.2	19-13.5	155-20.1	39.0		27	160	8.6	0.18	0.9	1.7	0.12	C
21	8	14	20.1	19-21.7	155-24.3?	8.1	2.7	32	48	3.3	0.07	0.7	0.5	0.22	C
21	16	5	34.6	19-13.3	155-20.2	40.3		17	162	9.1	0.35	1.5	3.4	0.14	C
22	10	32	20.3	19-22.5	155- 4.1	40.9		13	180	10.0	0.92	3.3	7.8	0.15	C
22	13	41	34.4	19-19.7	155-11.5	8.0*		13	90	5.2	0.06	0.6		0.10	B
22	17	59	23.8	19-23.8	155-28.4	8.9		18	73	2.7	0.10	1.0	1.5	0.16	B
22	19	8	47.7	19-23.5	155-28.9?	8.8	2.3	25	60	3.0	0.15	1.0	0.9	0.24	B
22	19	14	16.2	19-23.7	155- 2.5	5.0		15	127	7.0	0.20	1.6	1.6	0.27	C
22	20	9	1.7	19-20.8	155- 7.9?	2.3		19	80	4.1	0.10	0.7	1.1	0.17	B
23	4	2	48.6	19-20.7	155-11.9	5.6		18	77	3.5	0.11	0.8	0.9	0.18	B
23	7	14	9.6	19-20.5	155- 9.2	2.6		16	70	3.1	0.13	1.0	1.6	0.22	B
23	10	48	4.1	19-13.4	155-19.6	41.5		24	163	8.5	0.27	1.3	2.4	0.13	C
23	11	3	36.9	19-19.1	155-15.8	5.5		22	115	3.3	0.09	0.6	0.7	0.18	B
23	12	14	49.5	19-24.6	155-17.4	8.7	1.5	15	60	1.0	0.13	0.8	1.2	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MC	Q
SEP 23	12	35	6.9	19-36.1	155-18.9	47.7		20	106	14.0	0.40	1.3	4.1	0.15	B
23	13	39	44.5	19-19.7	155-10.4	5.0	2.0	22	92	4.5	0.10	0.7	0.8	0.23	B
23	15	51	36.9	19-18.9	155-13.6	6.4	1.9	28	69	3.5	0.07	0.6	0.5	0.19	B
23	19	6	1.6	19-13.2	155-19.9	39.6		20	163	9.1	0.28	1.3	2.6	0.12	C
23	19	46	24.5	19-21.3	155-15.8	29.5	2.8	33	67	2.1	0.13	0.8	1.3	0.15	B
23	23	23	41.2	19-21.4	155- 8.2?	6.8		10	226	3.2	0.23	1.4	1.0	0.12	C
24	0	50	3.9	19-19.9	155-10.9	4.0		15	100	4.3	0.13	0.9	1.5	0.19	B
24	0	52	49.7	19-13.7	155-20.1	39.4		25	159	8.2	0.22	1.1	2.0	0.13	C
24	0	53	51.5	19-22.0	155-24.1	8.1	2.5	31	39	3.6	0.06	0.5	0.5	0.16	B
24	1	0	31.5	19-13.1	155-19.2	39.9	2.4	30	166	9.1	0.17	0.9	1.6	0.12	C
24	2	12	5.6	19-22.7	155-26.2	10.1		16	118	2.5	0.11	0.7	1.5	0.12	B
24	3	50	55.9	19-20.3	155- 9.4	4.7	1.7	18	75	3.3	0.11	0.8	1.1	0.21	B
24	6	13	10.0	19-21.7	155-17.2	32.0	2.1	19	47	2.7	0.20	1.0	1.9	0.12	B
24	6	24	34.9	20- 1.5	155-47.4?	8.7		9	211	11.4	0.28	2.9	4.1	0.10	C
24	14	45	20.4	19-23.1	155- 5.3?	0.0	2.6	29	82	7.2	4.03	0.8	7.6	0.23	C
24	15	6	31.4	19-21.1	155-16.6	27.4	2.5	27	68	2.3	0.13	0.8	1.3	0.14	B
24	15	12	17.2	19-25.5	155- 3.8?	0.3	2.5	21	100	8.7	0.62	0.9	2.4	0.24	C
24	18	18	37.8	19-22.9	155-25.0?	6.8	1.6	24	66	4.7	0.07	0.8	1.6	0.21	B
24	21	36	0.5	19-23.9	155- 7.3?	0.0		6	111	5.5	4.02	1.3	7.7	0.11	C
24	22	55	24.8	19-19.0	155-15.5	6.7		16	115	4.0	0.09	0.6	0.5	0.11	B
25	6	7	26.1	19-20.3	155-12.0	7.7		22	76	4.2	0.06	0.7	0.5	0.16	B
25	10	36	19.7	19-30.6	155-46.7	7.4	2.8	17	142	18.9	0.46	0.7	3.4	0.10	C
25	11	26	56.5	19-19.0	155-14.4	6.1	1.6	19	99	3.9	0.10	0.7	0.7	0.16	B
25	16	19	36.0	19-19.8	155-12.8	7.3	1.6	19	75	5.2	0.09	0.7	0.5	0.16	B
25	18	3	10.0	19-22.5	155-23.2	7.9	1.5	23	52	4.2	0.06	0.6	0.5	0.14	B
25	18	15	6.4	19-19.0	155-13.4?	7.6		19	77	3.6	0.07	0.5	0.5	0.12	B
26	0	6	58.4	19-20.2	155-26.6	12.7	1.9	17	136	4.6	0.20	1.9	1.7	0.26	C
26	4	38	47.2	19-58.2	155-44.8	1.6		14	193	17.8	0.32	1.2	1.1	0.11	C
27	2	20	23.2	19-25.7	155-28.7?	8.0	1.8	20	66	6.2	0.08	0.7	1.8	0.16	B
27	3	20	37.4	19-19.8	155-12.1	5.8	2.0	30	83	4.9	0.06	0.6	0.6	0.23	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
SEP 27	17	23	58.5	19-22.3	155-11.7	3.6	1.8	22	56	1.7	0.06	0.5	0.9	0.15	B
27	21	16	28.9	19-19.3	155-24.1	7.6	1.7	21	96	2.2	0.07	0.7	0.5	0.18	B
28	1	21	50.7	19-20.4	155- 8.3	5.6		16	78	4.1	0.12	1.0	1.1	0.21	B
28	1	35	7.1	19-22.6	155-23.2?	7.0		9	92	4.5	0.14	0.8	2.6	0.09	B
28	2	9	26.4	19-20.7	155- 9.1	5.6	1.7	24	65	2.8	0.09	0.7	0.7	0.21	B
28	2	37	47.1	19-22.1	155- 7.4	2.9	1.8	22	95	8.9	0.08	0.6	0.8	0.14	B
28	17	26	58.6	19-25.2	155- 3.9?	0.0		17	101	9.3	6.79	0.9	12.9	0.23	C
28	18	15	38.2	19-18.5	155-16.3	5.5		14	138	3.6	0.16	0.9	1.4	0.18	B
28	22	38	50.3	19-25.6	155-24.8?	6.1	2.0	26	64	7.5	0.08	0.7	2.2	0.21	C
29	3	37	59.1	19-20.4	155-46.1?	3.4		20	161	13.5	0.28	2.2	3.7	0.20	C
29	4	40	42.6	19-24.1	155-24.1	7.5	2.9	31	58	6.9	0.06	0.5	0.4	0.17	B
29	5	14	25.7	19-23.4	155-23.0	6.5		16	99	5.7	0.10	0.8	1.0	0.18	B
29	6	28	5.8	19-21.3	155- 8.4	5.2		19	79	2.9	0.10	0.8	0.9	0.18	B
29	7	55	58.3	19-21.4	155-12.9	6.0	1.5	18	56	5.5	0.15	1.1	1.1	0.25	B
29	10	21	10.4	19-31.0	155-51.9	2.7		20	188	19.1	0.20	1.3	1.1	0.15	C
30	1	5	14.3	19-19.8	155-10.7	8.1		13	114	4.4	0.06	0.6	1.7	0.08	A
30	5	59	24.1	19-26.3	155-23.9?	7.5	1.9	18	127	6.0	0.13	1.0	0.7	0.21	C
30	15	15	38.5	19-10.8	155-34.3	6.5	2.3	12	123	9.0	0.17	1.2	1.2	0.20	B
30	20	27	17.4	19-20.1	155- 8.1	7.8	2.1	25	84	4.7	0.08	0.8	0.6	0.16	B
30	20	44	41.2	19-20.1	155-12.4	5.8		16	74	5.8	0.11	0.8	0.9	0.20	B
30	22	55	37.4	19-13.6	155-20.2	38.5	2.3	28	160	8.5	0.17	0.9	1.6	0.12	C

Table 3. Felt earthquakes

Date	Time H	M	S	Magnitude	Felt report
Jul 1	21	02	26.8	3.2	Laupahoehoe, Honokaa
1	23	12	58.3	3.6	Laupahoehoe, Honokaa, Hilo, Mauna Kea Observatory
4	06	59	22.0	3.6	Honokaa, Honomu, Kapapala
10	04	18	14.8	2.5	Kapapala
13	11	51	45.9	2.4	Hawaii National Park
14	14	23	04.0	3.7	Honokaa
17	00	54	02.4	2.6	Honokaa
19	16	12	57.4	2.9	Honokaa
20	04	27	49.8	3.5	Honokaa, Volcano, Hilo
27	00	31	51.8	3.0	Kapapala
Aug 11	03	18	04.3	3.7	Honokaa
Sep 3	14	05	35.3	3.4	Kealakekua, Honokahau, Holualoa
14	06	27	17.9	3.3	Kapapala
15	23	49	11.1	3.8	Kapapala, Honokaa, Volcano
19	12	29	00.5	3.5	Kapapala, Pahala
19	19	22	39.0	3.0	Honokaa
29	10	21	10.4	?	Holualoa

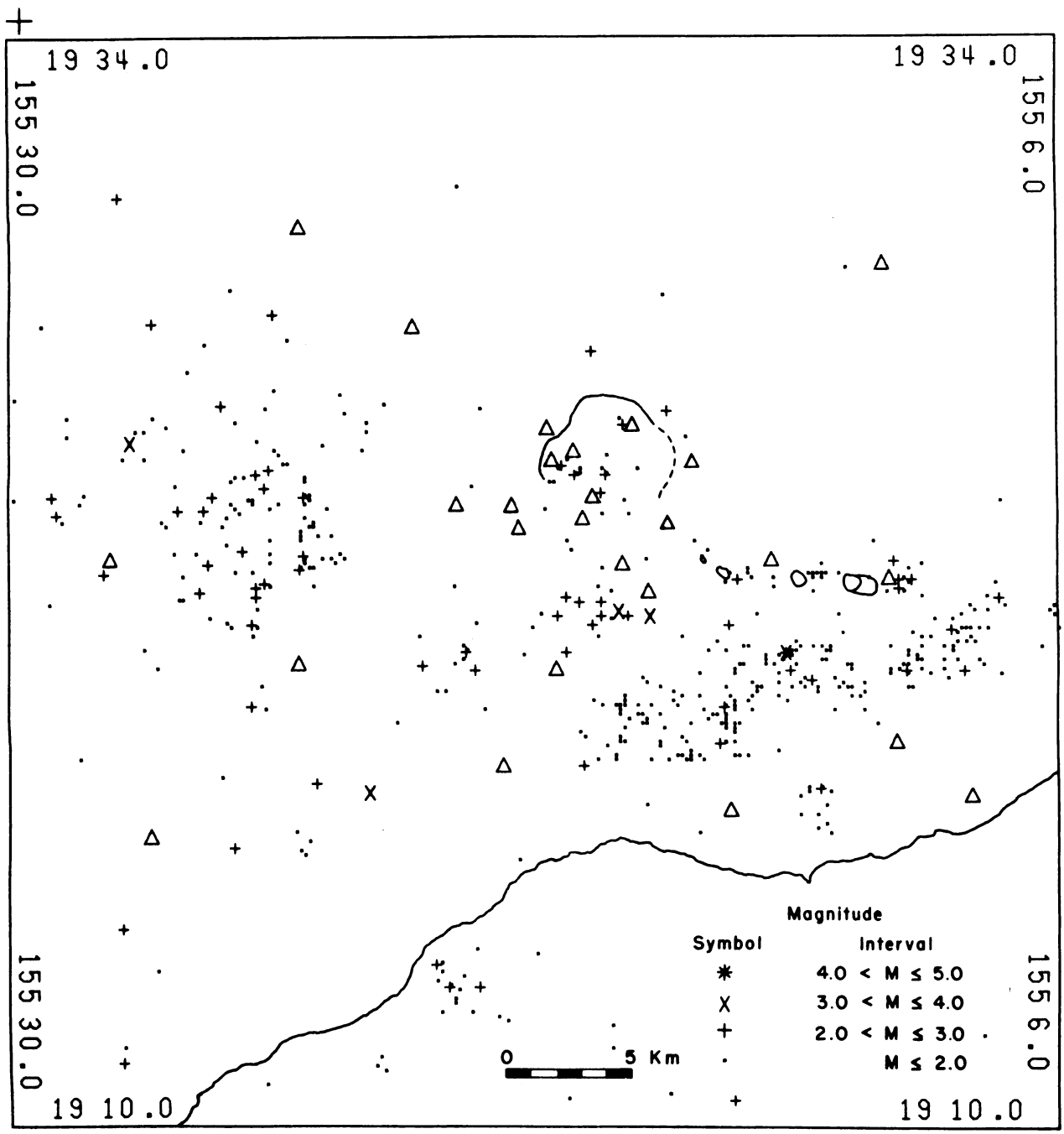

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
AINAHOU	AIN	19 22.50	155 27.62	1524	1	6.0	1700	RF9	
CAPTAIN COOK	CAC	19 29.29	155 55.09	323	1	6.0	2720	RF8	Installed 9/20/73
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	1	6.0	1360		
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAAPUNA	KAA	19 15.98	155 52.28	524	1	5.5	1020	RF12	
KAENA	KAE	19 17.35	155 7.95	37	1	6.0	2380	RF6	
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
M12	M12	19 23.69	155 18.45	1116	1	6.0	2040		
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NATIONAL GUARD	NAG	19 42.12	155 1.72	18	1	6.0	1360	RF3	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
NOSE	NOS	19 23.20	155 18.28	1083	1	6.0	1700		Discontinued 7/18/73
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
POLIOKEAWE PALI	POL	19 17.02	155 13.47	169	1	6.0	1360	RF12	
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
RIM	RIM	19 23.90	155 16.60	1128	1	6.0	1020		
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

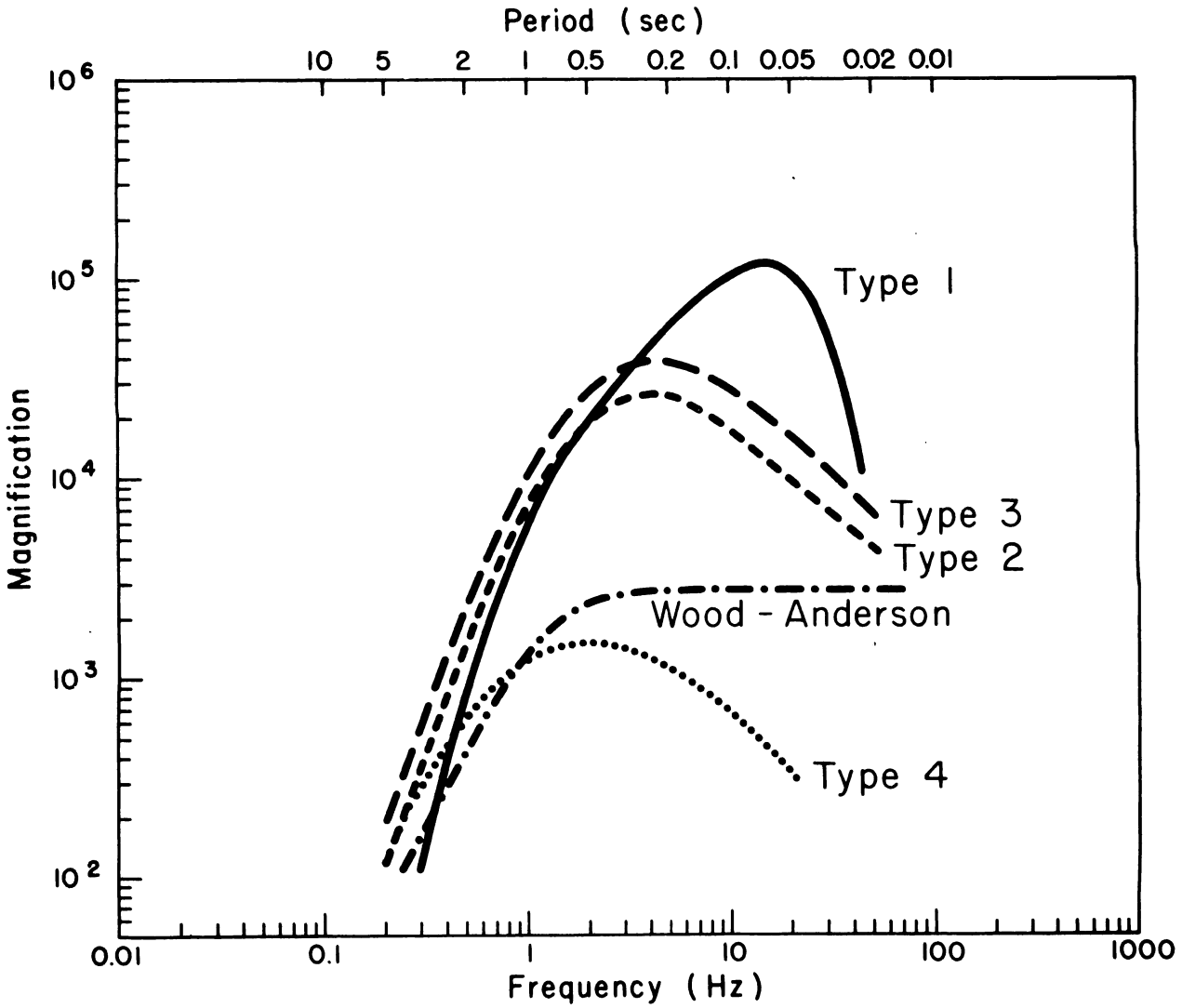

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitratily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 8, Summary 69.

Table 6.--Tilt Coordinates at Uwekahuna,

July, August, and September 1973

Date	N-S	E-W	Date	N-S	E-W
July 1	731	304	Sept. 2	729	304
8	731	304	9	728	306
15	731	304	16	727	300
22	731	303	23	726	299
29	729	307	30	727	299
Aug. 5	728	309			
12	729	304			
19	728	304			
26	726	308			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 4)

Tilt base	Date (1973)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading	Date of last reading
Uwekahuna (U on fig. 4)	26 Sep	745.8	308.2	4.89 N62.4°W	14 May '73
Tree Molds (TM)	25 Sep	577.8	481.3	0.82 N31.5°W	14 May '73
Sand Spit (SS)	27 Sep	1001.9	727.9	3.49 S41.4°W	16 May '73
Mehana (M)	25 Sep	619.1	602.2	1.27 N22.0°E	15 May '73
Keamoku (Kea)	25 Sep	772.6	235.6	1.62 N81.2°W	15 May '73
Ahua Kamokukolau (Kam)	27 Sep	393.0	516.8	3.99 S35.1°W	14 May '73
Kipuka Nene (KN)	28 Sep	276.9	494.8	0.76 S31.8°W	16 May '73
Hilina Pali (HP)	28 Sep	462.0	480.4	0.82 N57.1°W	7 Dec '72
Kapapala Ranch (Kap)	26 Sep	478.4	523.8	0.20 S21.3°E	6 Dec '72

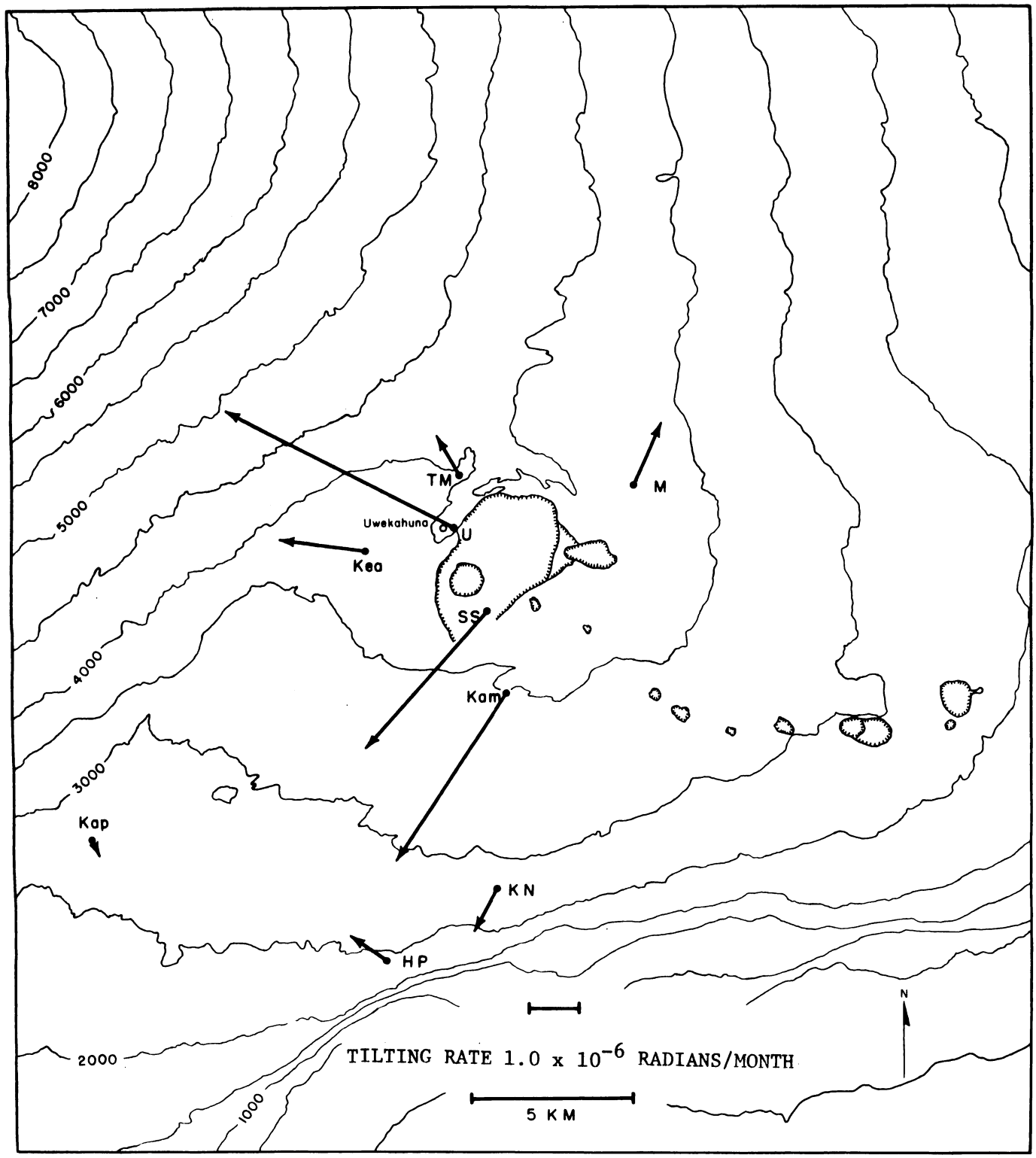

Figure 3.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 7 for explanation of abbreviations.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 72

October, November, and December 1973

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Chronological Summary

By

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CHRONOLOGICAL SUMMARY

Lava-lake activity at Mauna Ulu's summit crater, which resumed at the end of September, continued through the early part of this quarter. The sluggish but persistent influx of lava during October and early November slowly raised the level of the lake, despite intermittent, brief periods of complete stagnation and crusting. By mid-October, the eastern part containing the active vent was only 15 m below the crater rim, and the deepest area of the western part was about 32 m below the rim. The gradual rise of the lake was paralleled by a steady inflation of Kilauea's summit region, ultimately recording the greatest tumescence since tilt measurements have been made at Uwekahuna.

On November 4, lava overflowed the western end of Mauna Ulu, the first overflow since March 1972. The overflow continued until November 8 and formed a pahoehoe-aa flow that advanced about 2.5 km south of the crater. Sudden draining of Mauna Ulu during the early evening of November 10, accompanied by high-amplitude tremor and sharp deflation at Kilauea's summit, preceded a major breakout at Pauahi Crater later that evening. An eruptive fissure first opened in its east pit, and the fountain-fed lava ponded to form a rapidly rising lake. Soon lava burst from eruptive fissures within the west pit and from outside of the crater in a series of en echelon, N 70° E-trending fissures both west of Pauahi and from its east rim to north of Puu Huluhulu. At the height of the activity, lava from the lake in the east pit and from flows and fissures west of Pauahi cascaded into the west pit. All activity in the east pit and outside of Pauahi ceased by early morning of November 11, and drainback lowered the level of the new floor in the east pit about 20 m. Minor activity continued in the west pit for nearly another month, building a spatter cone. Lava from this cone fed, via surface or tubed-over streams, a small perched lava lake on the crater floor; overflows from this lake ultimately raised the floor to the level of the septum between the two pits.

Like the Pauahi-Hiiaka eruption earlier in the year (May 5), the November 10-11 activity in and near Pauahi resulted in a deflation of about 25 microradians at Kilauea's summit. The flows and crater filling at Pauahi and vicinity totalled approximately 2.8×10^6 m^3 in volume, and about 1.1 km^2 (272 acres) were covered by lava. Immediately upon cessation of the major activity on November 11, the Kilauea summit region began to reinflate at a moderately rapid rate. The 25-microradian deflation was recovered within about a week, and by December 22 the recorded tilt (E-W component of the Ideal-Aerosmith tiltmeter at Uwekahuna) peaked, surpassing the previous high reached in early November.

Mauna Ulu was inactive after November 10, marking an end to its second period of eruptive activity that had begun in February 1972. All visible activity in Pauahi stopped on December 9, coinciding with the complete cessation of harmonic tremor in the Pauahi-Mauna Ulu area

from December 9 to 12. Lava quietly returned to Mauna Ulu's summit crater on December 13 and low-level tremor resumed, and this can be considered the beginning of the third eruption of Mauna Ulu since 1969. The ensuing activity at Mauna Ulu was restricted to sporadic low fountaining from a spatter cone complex in a small, occasionally active lava lake. At year's end, activity at Mauna Ulu was intermittent and feeble, but Kilauea's summit region remained highly inflated.

SEISMIC SUMMARY

Events recorded by the U. S. Geological Survey seismograph network in Hawaii fall into two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 1. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, OTL).

Computer locations of well-recorded events are listed in Table 2. The location of each seismograph station is listed in Table 4, along with a description of the equipment at each station.

Table 1.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea

Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from a source about 30 km beneath the summit region; Kilauea Summit Long-Period, earthquakes characterized by low-frequency waves that originate roughly 5 km beneath the summit region; Kilauea Summit Shallow, earthquakes a few km deep in the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone and the adjacent fault systems of Kilauea's south flank; Koae, earthquakes along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; Offshore Puu Pili, offshore earthquakes mostly southeast of Puu Pili (PPL) station.

Date (1973)	Tremor (m = minutes) h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
Oct. 1		6m		3	7	147?	8	44	2	6	1	
2		5m			8	209	13	20	2	2	1	
3				5	21	219	14	36	8	3		
4					16	324	15	42	3	6		
5		5m		1	19	324	8	41	6			
6		12m		1	20	253	13	18	11	2	?	
7				5	36	349	9	16	7	1	1	
8				73	51	411	14	32	8	4	2	"30 km" aftershocks.
9		5m		33	52	711	10	21	5	5		
10	14m	10m		11	29	639	16	46	5	9	1	
11		3m		3	32?	537?	6	26		7		
12		19m		3	130	1245	21	35	8	6		
13		8m		11	109	1212	14	58	5	4		
14		22m		1	141	1244	18	56	13	11		
15	5m	29m		1	180	1340	15	44	10	11		
16		4m		2	113	1136	14	36	5	9		
17		3m		3	96	1095	17	36	9	13		
18		6m		1	81	1124	19	28	1	4		
19	10m			8	25	1023?	21	46	8	5	9	
20		92m?		7	35	1096	26	79	21	2	3	
21				6	65	1372	47	58	11	7	10	
22		8m		1	33	1108	22	30	3		2	
23		3m		2	33	1450	24	27	4	1		
24		11m		5	34	1295?	14	42	5		2	
25	20m				18	1190	19	32	5	4	2	
26		10m			37	1250	21	34	5	1	3?	
27	2m?	3m?		2	57	1494	16	49	4	1		
28					56	1245	21	33	6	5		
29		8m		1	27	1226	11	28	8	3	2	
30		7m		1	139	1100	17	50	3	5	1	
31	5m			1	113	1066	15	33	3	4	1	

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes									
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Intermediate	Shallow	30 KM	Long Period	Shallow						
Nov. 1		6m		3	92	1000	11	60	3	8	?	
2		9m			62	865	17	40	8	3	2	
3					33	697	15	44	2	4		
4		8m		1	36	370	10	31	3			
5		17m			19?	181?	8?	26?	7?	?		
6		24m			24?	175?	3?	9?	3?	1		
7				2	44	204	9	20	3	3	1	
8				1	24	251	22	25	4	2	2	
9	?				12	359	9	23	2	2		
10				1	44?	156?	7?	569?	6?	2?		Small upper east rift quakes and Pauahi rockfalls- Pauahi eruption.
11					23?	29?	8?	29?	?	2		
12					86?	31?	10?	21?	?	3		
13					161?	69?	21?	28?	6?		2	Many small L-P summit quakes.
14				2	216?	161?	14	61?		3		
15		10m			513?	83	10	83?	9	1		
16	35m			1	559?	110?	7?	67?	6?		1	
17		10m		1	159?	115	25	55?	1		5	
18		3m			82?	99	7	36?	3	6	1	
19					20?	164?	11?	101?	3?	9		
20					11?	129?	2?	32?	6?	1		
21					21	149	14	38?			1?	
22				3	10	140	11	33?	1	4		
23				2	21	254	4	32?	29?			
24		2m?			26	140	2	27	3	5	5?	
25				1	34	165	12	24	2			
26					60	142	8	25		2		
27					36?	133?	7?	22?	1?		1	
28					38	109?	11	8?	3	2		
29				1	56	162	9?	21	5			
30					21	212	9	17	2	3	1?	

Date (1973)	Tremor (m = minutes h = hours)			Earthquakes								
				Kilauea Summit			SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	Offshore Puu Pili	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow						
Dec. 1				2	28	204	7	28	2	4		Small rockfalls at Hilina Pali, Halemaumau, and Pauahi during heavy rain.
2				1	24	193?	9	16	11	4	1	
3				2	21	218	18	22	2		1	
4		3m		1	23	177	8	25	2	2	2?	
5				1	22	212	10	15		1	1	
6	5m				37	234	16	11	3	1	1	
7					61	311	13	51	6	2	1	
8	166m?			1	58	431	10	33	2		33?	
9					24	268	3	24	5	1		
10	5m			1	51	409	16	36	8	1	1	
11					22	265	24	24	10	1	?	
12				23	17	274	23	26	9	6	3	"30 KM" aftershocks.
13				18	18	250	9	13	4	7	1	
14		5m		5	11	224	18	42	4	4		
15				3	2	148	17	20	3		1	
16		3m		1	14	157	7	20		1	2	
17				2	24	223	20	24	4	2	3	
18				1	7	240	5	20	3	2	1	
19					6	240	14	17	1	5	3	
20		7m		2	15	250	10	24	3	2		
21		7m		3	35	267	18	18	6	1	4	
22				4	7	313	33	18	10	2	2	
23					38	327	13	30	5	4	4	
24					27	196	14	84	7		2	
25		4m			14	181	19	78			1	
26				1	5	172	14	51	1	5	1	
27	6m				19	277	12	58	2	1		
28	42m	3m			31	319	8	59	1	5	1	
29		3m		2	26	315	17	35	3	1		
30		19m			9	190	9	83	3	3		
31	2m?	2m?			4	137	8	51	1	1		

Table 2 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaii Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and West longitude (LONG W). Poor convergence of the epicenter solution is indicated by "?".

Depth - depth of focus in km. Assumed depth is indicated by "x".

Mag - magnitude, if determined.

NO - number of stations used in locating earthquakes.

GAP - largest azimuthal separation in degrees between stations.

DMIN - epicentral distance in km to the nearest station.

ERT - standard error of the origin time in seconds.

ERH - standard error of the epicenter in km.

ERZ - standard error of the depth in km.

MD - mean deviation of the time residuals. $\left[= \sum_i R_i/NO \right]$ where R_i is the observed seismic wave arrival time less the computed time at the ith station.

Q - solution quality of the hypocenter. This measure is intended to indicate the general reliability of each solution:

Q	EPICENTER	FOCAL DEPTH
A	excellent	good
B	good	fair
C	fair	poor
D	poor	poor

Q is based both on the nature of the station distribution with respect to the earthquake and the statistical measures of the solution. These two factors are each rated independently according to the following scheme:

Station Distribution

	NO	GAP	DMIN
A	≥ 8	≤ 120°	≤ DEPTH or 5 km
B	≥ 6	≤ 150°	≤ 2 x DEPTH or 10 km
C	≥ 6	≤ 225°	≤ 50 km
	≥ 4	≤ 180°	
D	Others		

Statistical Measures

	ERH(km)	ERZ(km)	MD(sec)	RMAX(sec)*
A	≤ 1.0	≤ 2.0	≤ 0.10	≤ 0.25
B	≤ 2.5	≤ 5.0	≤ 0.20	≤ 0.50
C	≤ 5.0		≤ 0.30	≤ 0.75
D	Others			

Q is taken as the average of the ratings from the two schemes, that is, an A and a C yield a B, and two B's yield a B. When the two ratings are only one level apart the lower one is used, that is, an A and a B yield a B (Hamilton and others, 1969).

The criteria for Q are the same as used by the Office of Earthquake Research and Crustal Studies, U. S. Geological Survey.

* RMAX is the maximum residual

SUMMARY OF SEISMIC EVENTS

1973		HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	1	5	19	33.9	19-21.8	155- 6.6	3.7		17	77	5.7	0.10	0.7	1.3	0.18	B
	1	6	43	6.6	20- 6.5	155-50.9	32.8	3.9	33	149	7.6	0.11	0.8	1.8	0.12	B
	1	8	43	30.8	19-10.4	155-22.9	8.0*	2.1	14	213	8.9	0.34	2.8		0.27	D
	1	11	37	38.1	19-19.8	155-10.3	7.5		14	90	4.3	0.09	0.9	0.7	0.14	B
	1	11	37	59.7	19-20.0	155-10.3	7.4		14	84	3.8	0.11	0.9	0.7	0.14	B
	1	11	55	51.6	19-20.3	155- 5.8?	8.0*		12	118	5.0	0.20	1.8		0.31	C
	1	12	9	7.3	19-20.6	155- 8.4	5.9	1.8	19	74	3.7	0.10	0.8	0.8	0.20	B
	1	15	17	52.3	19-22.5	155- 5.6?	0.0	1.8	16	75	6.8	2.10	1.2	23.0	0.27	C
	1	16	59	39.9	19-21.2	155- 8.8	5.9	2.2	24	65	2.5	0.10	0.8	0.8	0.24	B
	1	18	33	1.3	19-14.8	155-19.9	35.8		22	158	6.3	0.27	1.2	2.3	0.12	C
	1	23	58	15.9	19-20.2	155- 8.9?	8.4		17	72	3.8	0.09	1.0	0.8	0.16	B
	2	0	32	51.8	19-13.4	155-25.4	3.4	2.3	23	133	5.9	0.15	1.0	1.2	0.29	C
	2	0	43	48.8	19-20.2	155-11.4	4.2		17	92	4.4	0.16	1.0	1.8	0.28	B
	2	0	46	47.0	19-19.7	155-11.6	8.0*		16	90	5.2	0.06	0.5		0.09	B
	2	1	5	49.5	19-22.6	155- 9.6	2.3	1.9	22	77	1.1	0.09	0.6	1.2	0.16	B
	2	1	50	47.8	19-20.3	155-12.0?	7.9		18	78	5.1	0.09	0.9	0.7	0.14	B
	2	2	0	59.0	19-13.6	155-26.3	5.5	2.0	15	139	8.0	0.11	0.9	0.9	0.20	B
	2	2	7	25.3	19-22.9	155- 8.9?	1.6	1.6	11	109	2.3	0.65	1.0	1.3	0.15	B
	2	6	51	14.9	20-13.4	155-30.3	4.0	3.3	27	249	30.7	0.86	2.2	6.1	0.14	D
	2	7	18	14.4	20-13.8	155-30.2	6.1	3.1	26	251	31.1	0.93	2.4	6.5	0.14	D
	2	14	9	55.4	19-23.9	155-23.9	8.0*		12	77	6.9	0.06	0.6		0.11	B
	2	15	24	58.3	19-21.8	155- 8.6	4.2		17	80	2.2	0.11	0.9	1.1	0.22	B
	2	16	35	54.8	19-24.5	155-24.0	8.0*		14	127	7.4	0.05	0.4		0.08	C
	2	18	1	31.3	19-22.4	155-24.7	8.0	1.6	17	89	4.6	0.05	0.5	0.4	0.11	B
	2	19	20	39.9	19-11.8	155-31.7	8.0*		17	88	7.9	0.10	0.9		0.18	B
	3	2	5	46.8	19-19.6	155-16.4	6.9	1.5	23	94	2.0	0.05	0.4	0.4	0.12	B
	3	4	44	33.7	19-24.9	155-24.2	8.0*	1.5	12	136	7.4	0.05	0.4		0.08	C
	3	16	14	8.1	19-18.1	155-14.1	8.1	1.7	19	84	2.3	0.06	0.5	0.3	0.10	B
	3	16	14	51.4	19-18.3	155-14.3	7.6	1.9	22	89	2.7	0.04	0.4	0.3	0.09	A
	4	2	24	58.1	19-18.4	155-14.1	7.9	1.6	19	105	2.9	0.05	0.5	0.3	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	4	2	40 10.5	19-24.9	155-16.5?	2.0		9	122	0.8	0.03	0.2	0.1	0.03	B
	4	6	8 20.2	19-20.4	155- 8.9	4.5	1.7	13	69	3.6	0.10	0.7	1.0	0.16	B
	4	9	9 5.6	19-19.1	155-15.7	5.6		22	112	3.5	0.09	0.6	0.6	0.18	B
	4	17	53 21.0	19- 8.0	155- 7.5	8.7	3.0	32	221	17.3	0.34	1.9	1.6	0.24	C
	4	20	37 45.4	19-21.9	155- 8.1?	0.0	1.7	16	86	8.4	3.98	0.5	7.6	0.10	C
	4	20	56 4.2	19-20.6	155- 7.8?	8.0	1.8	16	83	4.4	0.09	0.9	0.7	0.16	B
	4	21	6 41.2	19-20.6	155- 7.4	8.0*	1.8	12	91	5.1	0.18	1.5		0.26	B
	5	15	54 16.4	19-20.3	155-12.2	5.9		23	75	4.0	0.10	0.8	0.7	0.20	B
	5	15	55 10.1	19-20.3	155- 9.2?	7.0		24	74	3.5	0.09	0.8	0.5	0.19	B
	5	20	59 2.6	19-23.2	155-23.1	8.0*		12	99	5.6	0.04	0.4		0.07	B
	6	0	46 29.6	19-22.9	155-15.9	20.3		18	41	0.8	0.09	0.5	0.9	0.06	A
	6	5	15 19.2	19-19.1	155-13.5	7.2	1.6	24	70	3.8	0.09	0.7	0.5	0.16	B
	6	5	42 26.4	19-22.2	155-10.4	7.2		16	164	1.0	0.13	0.8	0.4	0.10	C
	6	9	58 54.9	19-21.8	155-16.2	27.6		25	60	1.3	0.15	0.8	1.3	0.11	B
	6	10	12 18.6	19-21.1	155-27.1?	6.7		22	103	2.8	0.11	0.8	0.7	0.21	B
	6	12	35 44.5	19-22.8	155- 4.9	2.6		22	138	6.4	0.11	0.7	1.0	0.17	B
	6	20	54 12.3	19-22.3	155- 7.2?	0.0		22	99	8.7	3.25	0.5	6.2	0.13	C
	7	3	12 57.7	19-18.9	155-13.5	6.8		22	81	3.4	0.09	0.8	0.5	0.17	B
	7	3	14 46.8	19-18.6	155-13.6	6.7		20	87	3.0	0.11	0.8	0.6	0.18	B
	7	3	33 27.6	19-18.9	155-13.6	7.2		21	84	3.4	0.09	0.7	0.5	0.15	B
	7	14	12 38.1	19- 0.9	155-27.3	37.2		17	222	16.0	0.52	2.6	4.4	0.16	C
	7	15	10 51.4	19-18.5	155-10.8?	7.6		17	128	5.4	0.15	1.1	0.8	0.21	C
	7	21	43 18.6	19-21.7	155-18.4	22.0		17	66	3.5	0.26	1.4	2.4	0.15	B
	8	6	18 57.5	19-19.7	155-13.0	3.5		23	73	5.0	0.10	0.7	1.0	0.22	B
	8	16	21 16.6	19-18.1	155-25.8	49.4	2.5	20	111	3.5	0.23	0.9	2.1	0.10	B
	8	18	17 42.2	19-20.6	155- 8.6	7.6	3.2	27	72	3.5	0.08	0.7	0.5	0.16	B
	8	21	16 22.8	19-18.5	155-24.9?	8.0		21	99	4.3	0.08	0.7	0.6	0.19	B
	9	1	53 45.2	19-19.1	155-15.9	29.6	4.6	35	98	3.2	0.14	0.8	1.3	0.16	B
	9	1	59 34.6	19-19.5	155-15.7	28.0	2.4	21	140	3.2	0.12	0.8	1.2	0.11	B
	9	2	1 2.4	19-18.7	155-16.3	29.6	4.3	35	106	3.2	0.13	0.8	1.2	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 9	2	16	54.5	19-18.3	155-16.4	28.4	2.4	31	114	3.8	0.12	0.8	1.2	0.14	B
9	2	19	43.4	19-18.5	155-16.3	29.3	2.7	33	110	3.5	0.13	0.8	1.3	0.15	B
9	2	20	39.3	19-18.6	155-16.2	28.7	2.1	28	108	3.5	0.11	0.7	1.1	0.12	B
9	2	23	47.5	19-16.9	155-17.7	30.6	2.5	29	142	2.6	0.13	0.8	1.3	0.13	B
9	2	27	24.1	19-19.4	155-16.3	28.9	2.1	22	97	2.3	0.16	0.9	1.6	0.11	B
9	2	50	36.8	19-19.0	155-16.3	29.5	2.7	35	101	2.9	0.12	0.8	1.2	0.14	B
9	3	1	13.2	19-23.9	155-10.0	42.5		19	132	3.4	0.29	1.4	2.5	0.12	B
9	3	17	59.5	19-19.4	155-16.3	28.0	2.1	24	97	2.3	0.15	1.0	1.3	0.12	B
9	3	27	28.9	19-18.8	155-16.0	29.0	2.6	32	102	3.4	0.13	0.8	1.3	0.15	B
9	4	35	39.9	19-18.8	155-15.4	30.1	2.1	24	97	4.3	0.15	0.9	1.4	0.12	B
9	4	59	49.1	19-19.9	155-15.5	29.3	2.9	34	81	3.3	0.12	0.7	1.2	0.14	B
9	5	57	45.1	19-17.3	155-17.6	32.6		15	135	2.3	0.29	1.2	2.9	0.11	B
9	9	7	46.1	19-19.3	155-13.5	8.0*		14	123	6.0	0.06	0.5		0.10	C
9	10	48	17.0	19-19.5	155-16.7	28.9		19	98	1.7	0.24	1.2	2.2	0.12	B
9	11	17	27.0	19-20.4	155-16.7	27.3	2.0	18	78	1.3	0.15	0.8	1.4	0.10	B
9	18	12	17.8	19-19.9	155-16.3	29.6	2.1	21	90	4.6	0.17	1.0	1.7	0.14	B
10	4	25	38.2	19-20.0	155-11.8	5.9	1.6	27	82	4.8	0.08	0.6	0.6	0.19	B
10	10	5	7.6	19-19.4	155-16.0	5.9		15	104	2.7	0.10	0.7	0.7	0.15	B
10	10	7	31.8	19-21.8	155-15.5	23.0		16	68	1.3	0.17	0.8	1.6	0.07	A
10	12	29	15.4	19-21.3	155-16.3	25.2		19	66	2.1	0.13	0.6	1.2	0.07	A
10	14	20	48.0	19-20.4	155- 8.8	5.6	1.7	22	69	3.6	0.11	0.8	0.8	0.22	B
10	15	19	23.6	19-24.6	155-16.2	11.3		19	59	1.4	0.07	0.5	0.6	0.09	A
10	19	4	19.6	19-23.8	155-24.2	4.4	1.5	18	120	6.5	0.13	0.8	1.4	0.18	B
10	19	28	28.3	19-11.1	155-20.0	38.7	2.4	30	175	12.8	0.19	0.9	1.7	0.13	C
10	21	14	21.9	19-19.6	155-15.0	31.4		23	78	4.3	0.14	0.8	1.4	0.10	B
10	22	14	6.2	19-20.5	155- 6.2?	8.0*	1.9	15	106	5.8	0.13	1.2		0.24	B
11	2	1	29.0	19-51.0	155-44.1	16.8*	2.6	20	181	29.9	0.18	1.7		0.22	C
11	2	29	30.8	19-19.7	155-10.0	7.3	1.7	17	90	4.4	0.10	0.8	0.6	0.16	B
11	5	3	39.3	19-21.4	155- 8.4	4.0	1.7	22	79	2.8	0.11	0.8	0.9	0.22	B
11	11	7	11.8	19-22.4	155-22.6?	6.6		11	84	4.2	0.10	0.8	2.0	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 11	11	10	55.2	19-20.2	155-16.9	27.9	2.1	26	82	0.8	0.13	0.7	1.3	0.11	B
11	17	53	52.6	19-18.4	155-25.8	8.3		20	96	4.1	0.08	0.7	1.4	0.18	B
11	19	55	37.3	19-28.7	155-27.9	8.0*	2.1	16	87	8.4	0.04	0.4		0.07	C
11	20	40	18.7	19-20.7	155-12.7	6.3	1.5	24	65	3.3	0.09	0.7	0.6	0.20	B
11	21	5	1.1	19-13.9	155-58.9	25.4*		7	342	12.2	0.31	4.4		0.09	D
11	22	24	43.0	19-27.9	155-27.0	7.8	2.0	26	80	7.3	0.08	0.5	0.5	0.13	B
11	22	30	1.7	19-22.1	155-11.4	6.9	1.5	17	89	2.2	0.06	0.6	0.5	0.13	B
11	23	12	41.2	19-19.1	155-16.5	28.6	2.1	31	102	2.5	0.12	0.8	1.2	0.14	B
11	23	55	38.6	19-25.4	155-52.1	9.4		10	143	8.8	0.20	2.7	3.7	0.17	C
12	0	22	56.3	19-19.7	155-13.4	8.0*		20	69	5.0	0.04	0.3		0.08	B
12	10	45	58.5	19-27.4	155-24.3	12.0	2.3	22	72	4.7	0.05	0.6	0.5	0.11	B
12	22	5	24.5	19-23.6	155-25.6?	7.5	1.9	23	60	4.1	0.08	0.6	0.6	0.12	B
13	4	56	23.3	19-21.2	155- 6.6	8.0*	1.9	16	87	5.8	0.12	1.1		0.22	B
13	5	10	14.5	19-19.8	155-15.4	28.0	2.1	26	82	3.5	0.15	0.9	1.5	0.15	B
13	5	11	13.2	19-23.7	155-16.7	12.5	1.8	21	44	0.4	0.05	0.6	0.4	0.11	B
13	6	11	11.6	20-37.9	155-55.6	14.7*	4.3	37	204	36.8	0.10	1.2		0.13	C
13	13	2	39.0	19-20.5	155-15.6	31.2	2.1	20	78	3.3	0.21	1.1	2.0	0.11	B
13	16	1	18.9	19-20.2	155-17.0	23.1		18	81	0.7	0.27	1.1	2.6	0.12	B
13	17	19	31.3	19-20.2	155-11.3	8.9	1.7	15	95	4.3	0.08	0.7	2.0	0.09	A
13	21	29	30.1	19-21.1	155-12.9	8.0*		17	91	5.7	0.07	0.6		0.12	B
13	22	43	12.6	19-20.6	155-16.4	28.2		19	76	2.0	0.25	1.2	2.3	0.13	B
13	23	20	2.7	19-19.5	155-15.2	29.5		23	83	4.0	0.16	1.0	1.6	0.13	B
14	11	42	28.9	19-45.3	155-47.9	18.4	2.9	25	154	8.5	0.11	0.8	2.1	0.11	C
14	13	40	1.4	19-19.0	155-13.6	6.7		17	83	3.6	0.10	0.7	0.7	0.17	B
14	17	18	55.5	19-20.9	155-11.4	5.0	2.5	28	69	3.5	0.09	0.7	0.7	0.25	B
14	18	57	11.9	19-52.4	155-33.7	29.5	2.6	23	125	15.0	0.20	1.0	2.5	0.11	B
15	0	32	12.8	19-20.0	155-12.0	5.6	1.6	25	80	4.6	0.09	0.7	0.6	0.22	B
15	1	15	7.5	19-24.4	155-17.9	6.8	1.1	15	59	1.2	0.07	0.6	0.5	0.12	B
15	3	39	34.0	19-23.9	155-17.9	8.7	1.5	13	61	1.0	0.16	1.1	1.5	0.13	B
15	6	25	36.7	19-17.1	155-29.0	7.0	2.0	16	87	10.3	0.10	0.9	0.9	0.21	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 15	8	25	13.9	19-24.9	155-17.4	9.0	0.8	13	88	0.7	0.13	0.8	1.2	0.10	B
15	8	26	9.2	19-25.4	155-27.3?	7.5	1.7	20	108	5.4	0.06	0.5	1.3	0.09	B
15	12	24	58.6	19-25.0	155-17.0	9.5	0.9	13	120	0.1	0.14	0.7	1.1	0.08	A
15	14	54	17.3	19-24.6	155-17.0	0.7	0.4	11	69	0.5	0.07	0.2	0.2	0.09	A
15	15	10	59.7	19-19.6	155-15.9	6.1	1.5	20	99	2.7	0.10	0.8	0.6	0.21	B
15	15	29	19.8	19-20.1	155-13.1	5.7	1.5	22	66	4.3	0.09	0.7	0.6	0.19	B
15	17	26	20.3	19-24.5	155-16.8	8.9	0.7	14	78	0.8	0.11	0.7	0.9	0.08	A
15	18	15	46.2	19-24.7	155-16.9	8.1	1.0	11	95	0.4	0.10	0.5	0.8	0.06	A
15	22	47	29.7	20- 6.8	156- 2.6	2.3*	3.0	22	278	27.7	0.34	2.1		0.14	D
16	0	15	33.0	19-24.8	155-17.0	8.8	0.8	13	63	0.2	0.12	0.6	1.0	0.06	A
16	1	6	12.4	19-24.6	155-17.4	7.7	0.9	12	60	0.9	0.04	0.4	0.3	0.05	A
16	2	17	12.2	19-25.2	155-16.8	9.1	0.7	13	126	0.7	0.13	0.8	1.1	0.09	B
16	4	14	53.6	19-20.8	155- 5.7	5.5	1.0	14	102	5.2	0.16	1.3	1.2	0.24	B
16	6	40	39.5	19-54.5	155- 5.5	52.2	3.3	30	227	23.8	0.41	1.8	3.5	0.12	C
16	6	58	16.0	19-20.5	155-13.6	8.0*	1.4	13	76	5.3	0.08	0.7		0.13	B
16	10	13	35.8	19-25.3	155-16.8	11.5	1.3	9	135	0.9	0.25	0.9	1.9	0.04	B
16	22	57	37.8	19-23.6	155- 5.4	38.4	2.6	32	83	8.1	0.23	1.1	1.9	0.15	B
16	23	56	56.1	19- 1.5	155-22.0	21.6		15	232	18.0	0.33	2.1	4.8	0.14	C
17	0	12	49.8	19-20.4	155- 9.7	6.5	1.7	22	75	3.1	0.07	0.6	0.6	0.17	B
17	5	59	38.8	19-21.4	155-10.5	5.5	1.6	23	68	1.8	0.09	0.7	0.7	0.18	B
17	6	53	25.3	19-52.3	155- 8.9	47.2	3.0	27	213	20.5	0.32	1.4	2.9	0.12	C
17	10	53	44.1	19-24.8	155-17.0	9.0	0.9	14	87	0.1	0.07	0.5	0.6	0.06	A
17	11	19	48.2	19-20.1	155- 9.3	5.9		21	78	3.8	0.09	0.7	0.7	0.18	B
17	12	55	18.3	19-20.1	155-12.2	8.0*		15	92	5.5	0.05	0.5		0.11	B
17	15	1	25.2	19-24.6	155-16.5	10.7	1.4	11	92	1.1	0.14	0.5	1.1	0.04	A
17	17	22	15.0	19-25.8	155-24.2	7.4	2.1	23	65	7.0	0.06	0.5	0.4	0.14	B
17	19	50	51.1	19-13.5	155- 9.7?	39.9		24	224	9.3	0.26	1.5	2.0	0.12	C
17	23	1	36.3	19-32.0	155- 7.9?	8.0*		12	150	17.5	0.26	2.9		0.31	D
18	2	31	50.0	19-20.4	155-15.1	25.8	3.6	32	73	3.9	0.11	0.8	1.1	0.14	B
18	10	5	54.4	19-24.7	155-17.6	7.0	0.9	15	64	1.2	0.09	0.7	0.7	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	18	13	37 42.6	19-24.3	155-17.6	8.5	1.2	16	57	1.5	0.06	0.5	0.6	0.06	A
	18	14	19 59.5	19-25.0	155-17.4	7.8	1.1	13	117	0.7	0.05	0.6	0.4	0.09	A
	18	16	48 43.2	19-24.4	155-17.3	8.1	1.0	16	55	1.1	0.09	0.7	0.9	0.12	B
	18	21	55 50.3	19-24.3	155-18.0	5.5	0.7	14	59	1.0	0.09	0.3	0.7	0.06	A
	19	2	3 56.3	19-21.1	155-13.8	5.0		18	100	4.4	0.12	0.7	0.9	0.17	B
	19	3	45 35.3	19-54.4	155-29.9	35.6	2.3	25	147	14.6	0.21	1.0	2.4	0.13	B
	19	13	28 53.0	19-17.6	155- 3.0	32.4		26	248	4.3	0.26	1.4	1.8	0.10	C
	19	18	38 40.0	19-21.0	155-11.2	5.8	1.7	23	69	3.1	0.07	0.6	0.6	0.19	B
	19	19	16 0.4	19-20.3	155-11.9	8.0*		15	81	4.9	0.09	0.8		0.13	B
	19	19	49 33.8	19-19.3	155-13.2	6.5		18	74	4.2	0.10	0.7	0.7	0.15	B
	19	21	54 8.8	19-22.3	155-23.6	6.7	2.2	21	51	4.0	0.08	0.7	0.6	0.16	B
	19	23	59 22.4	19-10.5	155-37.0	6.8	2.5	18	97	8.1	0.16	1.0	1.0	0.20	B
	20	1	59 47.5	18-55.1	155- 8.4	8.0*		18	280	43.3	0.76	4.9		0.15	D
	20	2	3 22.2	19-24.3	155-15.8	7.2	1.2	11	111	1.6	0.66	1.7	3.7	0.15	B
	20	3	0 49.8	19-19.8	155-11.6	8.0*		14	89	5.3	0.06	0.6		0.09	B
	20	5	3 28.5	19-20.3	155-16.0	28.8		17	115	2.5	0.27	1.2	2.7	0.12	B
	20	7	44 57.6	19-22.5	155-15.6	24.3		12	131	0.5	0.28	1.2	2.8	0.10	B
	20	8	9 30.0	19- 1.2	155-19.3	14.1*	2.5	29	221	30.9	0.22	1.6		0.18	C
	20	9	8 5.4	19-26.0	155-14.7	28.5	2.2	28	54	1.9	0.11	0.7	1.2	0.12	B
	20	9	52 27.4	19-18.4	155-13.3	6.0		13	83	2.6	0.12	0.8	0.9	0.14	B
	20	12	30 41.5	19-25.9	155-29.2?	8.9	2.0	22	118	6.9	0.18	0.9	1.1	0.20	B
	20	17	8 0.5	19-23.9	155-16.7	12.6	1.6	19	47	0.2	0.04	0.5	0.3	0.07	A
	20	20	41 17.6	19-21.8	155-17.4	20.4		14	90	2.9	0.17	0.9	1.6	0.08	A
	20	21	4 9.7	19-20.0	155-11.7	5.3		23	82	4.8	0.10	0.7	0.8	0.22	B
	20	21	21 31.7	19-25.0	155-27.6	4.5	1.7	16	94	11.6	0.09	0.7	1.0	0.14	C
	20	22	12 24.3	19-22.4	155-28.4	8.3	1.8	20	108	1.3	0.11	1.1	1.4	0.17	B
	20	22	37 19.2	19-27.5	155-58.0	10.9	2.8	17	220	23.5	0.41	2.9	4.1	0.20	C
	21	0	6 49.0	19-56.9	155-27.4	10.1	3.0	18	177	13.5	0.16	1.2	1.4	0.15	C
	21	1	5 3.8	19-20.5	155- 9.1	4.5		12	70	3.2	0.13	1.0	1.3	0.22	B
	21	2	46 6.5	19-57.0	155-26.6	11.5	2.6	11	183	12.4	0.12	1.1	1.0	0.09	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 21	6	8	24.7	19-20.5	155- 9.2	9.2	1.9	14	70	3.1	0.09	0.6	1.4	0.09	A
21	6	18	59.3	19-20.3	155- 9.7	7.2	2.4	25	76	3.2	0.06	0.6	0.4	0.16	B
21	8	57	33.9	19-10.5	155-27.1?	6.3		19	151	2.3	0.09	0.8	0.6	0.13	C
21	9	0	12.5	19-22.4	155-23.6?	7.5		10	97	4.1	0.15	0.7	2.1	0.09	B
21	9	0	36.9	19-22.6	155-23.3	7.8		11	91	4.4	0.17	1.2	3.4	0.14	B
21	9	5	54.6	19-10.1	155-27.6	5.8		10	154	1.2	0.10	1.0	0.7	0.10	C
21	9	33	45.5	19-19.7	155-21.0	0.9	1.4	11	157	4.1	0.06	0.4	0.4	0.05	B
21	11	13	22.6	19-21.0	155- 8.3	4.2		14	79	3.3	0.12	0.9	1.4	0.20	B
21	16	4	40.0	19-21.3	155-24.1?	8.4	3.3	28	54	2.5	0.06	0.5	0.4	0.14	B
21	16	13	5.8	19-22.0	155-23.6	5.1	1.6	17	84	3.3	0.11	0.7	1.0	0.20	B
21	16	26	7.1	19-21.9	155-23.6	6.3		12	73	3.1	0.09	0.6	0.8	0.12	B
21	16	30	43.8	19-20.7	155-25.4	8.5	2.0	23	83	3.8	0.06	0.6	1.0	0.15	B
21	17	26	50.0	19-22.0	155-23.4	6.1		11	101	3.4	0.08	0.5	0.7	0.09	A
21	18	56	14.3	19-20.7	155-18.5	28.8	2.1	22	55	5.1	0.14	0.9	1.5	0.13	B
21	19	51	53.9	19-18.3	155-15.1?	7.8		20	104	3.7	0.06	0.5	0.4	0.12	B
21	20	25	55.2	19-20.2	155-15.5	25.3	2.1	26	78	3.3	0.11	0.7	1.1	0.13	B
21	22	3	25.4	19-25.8	155-15.8	1.5	1.4	12	129	3.2	0.08	0.3	0.3	0.07	B
22	4	4	55.4	19-19.5	155-15.6	6.3	1.6	23	88	3.4	0.08	0.6	0.6	0.17	B
22	5	19	47.6	19-55.3	155-21.4	26.5	2.9	30	188	3.8	0.16	1.0	1.9	0.12	C
22	10	34	10.7	19-19.2	155-13.4	5.6	1.4	20	76	4.0	0.10	0.8	0.8	0.22	B
22	14	46	39.9	19-34.9	155- 5.9	8.0*	2.0	9	136	9.4	0.09	0.9		0.10	C
22	16	35	20.2	19-18.7	155-13.6	6.8	0.4	13	84	3.1	0.10	0.7	0.8	0.13	B
22	18	56	53.3	19-19.9	155- 8.5	7.8	1.8	18	78	4.6	0.09	1.0	0.7	0.16	B
22	21	18	43.2	19-19.7	155-12.4	8.0*		14	83	5.3	0.06	0.5		0.09	B
22	23	54	15.3	19-21.9	155-23.7?	7.9	1.6	20	73	3.2	0.08	0.7	0.5	0.16	B
23	0	6	16.6	19-23.5	155-46.1	6.2	1.6	10	216	17.5	0.25	2.3	3.6	0.13	C
23	1	42	38.0	19-20.8	155- 7.5?	5.2	1.8	21	85	4.7	0.12	0.9	0.9	0.23	B
23	10	30	24.5	19-20.4	155- 8.9	4.3	1.7	18	69	3.4	0.09	0.7	0.9	0.18	B
23	10	49	42.2	19-20.5	155- 8.9	3.7	1.7	16	70	3.4	0.09	0.7	1.0	0.17	B
23	19	5	10.8	19-19.7	155-16.7	30.9	2.1	26	95	1.4	0.15	0.8	1.5	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT	23	20	32	10.6	19-24.7	155-16.6	1.3	-0.0	11	99	0.8	0.06	0.3	0.4	0.11	B
	23	20	44	55.1	19-24.7	155-16.6	1.4	0.4	10	101	0.8	0.05	0.2	0.3	0.08	A
	23	22	34	7.1	19-16.9	155-22.3	6.6	2.5	25	126	6.3	0.08	0.7	0.6	0.21	C
	23	22	36	52.6	19-17.3	155-22.2	6.0	1.7	20	123	5.6	0.08	0.7	0.8	0.20	B
	23	22	37	3.3	19-17.1	155-22.4	8.0*	1.8	18	123	7.7	0.09	0.8		0.17	C
	23	22	38	42.7	19-15.4	155-22.0	8.0*	0.5	10	230	7.5	0.32	2.0		0.18	D
	23	22	39	30.6	19-16.9	155-22.6	3.8	1.7	26	125	6.2	0.08	0.6	0.9	0.20	B
	23	22	41	6.6	19-17.7	155-14.7	5.9	0.7	14	153	2.5	0.14	0.8	0.9	0.18	C
	24	3	28	2.6	19-17.9	155-13.4	8.0*	0.4	14	245	8.0	0.18	1.1		0.09	D
	24	7	23	10.7	19-18.2	155-15.7	10.7		7	210	4.6	0.10	0.5	0.9	0.03	B
	24	13	40	54.7	19-24.2	155-16.0	2.6	1.0	9	105	1.1	0.03	0.1	0.4	0.03	A
	24	16	43	44.5	18-46.3	155-24.2	14.3*	3.4	30	275	36.1	0.43	2.8		0.15	D
	24	17	28	37.8	19-19.8	155-16.7	22.0		16	118	1.4	0.29	1.6	3.0	0.17	B
	24	18	45	29.0	19-21.5	155-17.9	21.3		11	73	2.7	0.38	1.2	3.5	0.08	B
	25	3	16	31.9	19-25.8	155-16.8	2.5	0.6	8	219	1.6	0.11	0.6	3.4	0.05	C
	25	4	49	44.9	19-23.3	155- 5.9	0.8	1.8	17	123	7.2	1.51	0.8	5.6	0.17	C
	25	5	28	32.1	19-18.1	155-13.4	7.1	2.2	25	140	7.9	0.09	0.6	0.5	0.15	C
	25	8	51	14.6	19-18.4	155-13.4?	5.3	2-9#	11	82	2.6	.1	0.4	.	0.0	B
	25	18	25	9.6	19-19.5	155-13.8	6.2	1.5	27	63	4.6	0.07	0.5	0.5	0.18	B
	25	23	14	53.5	19-20.8	155-12.8	26.9	1.0	19	94	5.7	0.22	1.0	2.2	0.12	B
	26	1	56	39.5	19-26.7	155-59.2	13.1	0.9	10	297	8.7	0.47	4.2	1.6	0.08	D
	26	3	27	42.6	19-17.6	155- 2.2	30.9	0.9	20	231	4.4	0.53	2.5	4.1	0.13	D
	26	5	24	56.1	19-41.5	156-23.4	4.5		22	277	54.4	0.39	3.8	5.1	0.14	D
	26	7	53	19.5	19-12.9	155-30.3	7.0	4.3	27	68	7.5	0.10	0.8	0.8	0.20	B
	26	11	29	27.6	19-21.7	155-24.3?	7.1	2.6	28	68	3.3	0.07	0.7	1.2	0.19	B
	26	15	49	57.3	19-20.3	155- 9.5	6.0	2.3	26	75	3.4	0.09	0.7	0.6	0.21	B
	26	18	21	9.2	19-23.6	155-23.0	8.0*		12	100	5.7	0.05	0.5		0.09	B
	26	22	43	26.1	19-20.2	155-15.1	8.5		17	104	4.1	0.11	0.8	1.7	0.11	B
	26	23	19	26.5	19-20.9	155-13.9	6.5	2.1	29	106	3.6	0.09	0.7	0.5	0.21	B
	27	2	34	11.6	19-24.4	155-25.6?	8.3	1.9	21	126	5.1	0.06	0.5	0.4	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 27	8	12	1.8	19-25.0	155-16.6	1.8	1.7	14	113	0.8	0.09	0.5	0.3	0.15	B
27	12	51	12.9	19-21.9	155-27.0?	8.7		21	118	1.6	0.16	1.3	1.0	0.27	B
27	15	6	29.6	19-19.1	155-11.7	8.0*		15	140	5.0	0.08	0.7		0.12	C
27	16	27	18.6	19-21.1	155- 8.2	3.6		22	79	3.3	0.10	0.7	1.0	0.18	B
27	19	20	44.4	19-22.6	155- 3.1	3.5		21	120	5.0	0.15	1.0	1.2	0.27	B
27	19	42	2.4	19-22.6	155- 4.5?	0.6		21	143	5.7	0.43	1.0	2.0	0.18	C
27	23	47	51.5	19-20.9	155-29.4	8.3		21	107	4.3	0.09	0.9	1.4	0.16	B
28	1	13	56.5	19-24.3	155-16.7?	1.3	1.5	12	77	0.8	0.12	0.6	1.0	0.20	B
28	10	20	34.1	19-24.1	155-15.9	2.3		10	110	1.3	0.05	0.3	0.8	0.06	A
28	21	6	4.6	19-24.8	155-17.4	9.2	0.8	18	89	0.6	0.06	0.5	0.6	0.09	A
29	3	31	44.1	19-25.2	155- 0.4?	8.0*	1.6	7	143	10.6	0.27	2.5		0.27	C
29	6	44	49.0	19-19.7	155-24.6?	8.2	1.3	18	90	2.5	0.08	0.7	0.6	0.17	B
29	11	48	26.3	19-24.3	155-16.4	2.3		6	103	0.9	0.05	0.6	0.4	0.04	B
29	12	10	37.3	19-24.2	155-15.9	2.0	0.7	9	108	1.3	0.05	0.3	0.2	0.05	A
29	14	44	51.7	19-10.0	155-30.9	6.5	2.2	18	118	5.5	0.12	0.9	0.8	0.17	B
29	19	11	58.7	19-24.1	155-16.0	2.5	0.7	8	106	1.2	0.03	0.2	0.9	0.04	A
30	1	31	38.0	19-25.4	155-16.9	2.3	0.4	8	174	0.9	0.08	0.6	0.3	0.08	B
30	6	44	9.6	19-24.3	155-23.1	6.3	1.7	19	111	6.0	0.09	0.7	0.6	0.15	B
30	18	17	42.7	19-20.1	155- 7.6	8.0*	0.7	13	93	5.2	0.10	0.9		0.20	B
30	18	58	48.5	19-24.9	155-16.3	9.4	0.7	11	101	1.2	0.11	0.5	0.8	0.05	A
30	19	6	23.4	19-24.2	155-15.9	2.4	0.3	7	109	1.4	0.11	0.5	1.7	0.06	B
30	19	36	44.6	19-23.5	155-25.0	8.0*	1.1	19	125	4.9	0.06	0.6		0.12	C
30	22	23	2.6	19-18.8	155-13.2	6.7		16	82	3.2	0.11	0.7	1.9	0.11	B
30	23	5	8.4	19-23.5	155- 2.3	0.3*	2.0	17	132	6.7	0.15	1.0		0.26	C
31	2	18	50.4	20-14.9	155-59.2	47.7*	2.0	9	333	25.4	0.39	3.8		0.09	D
31	4	35	6.3	19-16.5	155-23.4	5.7	1.0	17	124	5.7	0.09	0.8	0.9	0.18	B
31	6	40	52.1	19-25.4	155-24.1	8.0*	1.2	18	122	7.2	0.05	0.4		0.10	C
31	16	53	20.1	19-24.7	155-16.9	8.1	1.2	13	71	0.4	0.07	0.7	0.7	0.09	A
31	17	35	26.4	19-24.8	155-17.1	8.0	0.8	13	75	0.4	0.06	0.6	0.4	0.10	B
31	18	15	31.6	19-24.6	155-17.3	8.1	0.9	12	68	0.8	0.07	0.7	0.5	0.11	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
OCT 31	19	39	41.0	19-19.9	155-10.2	9.4	0.7	15	86	4.0	0.07	0.4	1.1	0.07	A
31	20	33	31.9	19-24.6	155-17.1	9.4	0.9	12	67	0.6	0.10	0.6	0.9	0.07	A
31	21	10	7.2	19-24.6	155-17.6	7.3	1.4	10	72	1.2	0.18	0.4	1.1	0.05	A
31	22	3	44.5	19-24.8	155-17.2	7.5	1.1	10	88	0.5	0.09	0.7	0.6	0.06	A
31	22	22	1.6	19-24.8	155-16.7	8.9	0.3	12	106	0.6	0.14	0.7	1.2	0.07	A
31	23	27	0.4	19-24.8	155-17.4	7.4	1.0	12	82	0.8	0.09	0.8	0.6	0.11	B
NOV 1	0	5	4.4	19-19.8	155-16.7	30.5	1.7	24	92	1.3	0.18	1.0	1.8	0.13	B
1	1	44	56.5	19-23.2	155-26.6	8.4	1.7	23	102	2.2	0.06	0.6	1.0	0.14	B
1	3	22	35.2	19-25.0	155-17.0	7.6	0.8	11	121	0.2	0.09	0.8	0.6	0.10	B
1	4	33	14.9	19-24.8	155-17.2	7.3	1.1	9	99	0.4	0.03	0.3	0.2	0.02	A
1	5	16	16.0	19-25.0	155-17.1	8.5	0.8	11	122	0.3	0.14	0.8	1.3	0.08	B
1	5	40	1.7	19-24.9	155-16.9	9.0	0.7	11	117	0.1	0.14	0.7	1.2	0.06	A
1	6	5	2.7	19-24.9	155-16.1	13.2	1.1	16	84	1.3	0.05	0.7	0.4	0.10	B
1	6	10	36.7	19-25.9	155-16.5	3.1	0.6	8	239	1.6	0.27	1.0	1.5	0.06	C
1	6	14	48.1	19-25.0	155-16.8	8.6	1.2	11	117	0.3	0.09	0.5	0.7	0.04	A
1	7	54	36.4	19-24.7	155-17.5	7.5	1.1	12	77	0.9	0.06	0.5	0.4	0.06	A
1	10	48	4.9	19-24.1	155-16.8	9.4	1.6	12	72	0.5	0.09	0.6	0.8	0.07	A
1	12	3	0.8	19-24.0	155-15.4	3.5	0.9	10	87	2.1	0.09	0.3	0.8	0.05	A
1	14	51	32.8	19-25.6	155-25.0?	8.0	2.3	20	104	7.3	0.06	0.5	0.4	0.12	B
1	17	14	59.9	19-23.5	155-29.2	8.5	1.9	16	111	3.4	0.11	1.0	1.7	0.16	B
1	17	55	14.8	19-18.6	155-13.3	6.9		13	82	3.0	0.14	0.9	2.2	0.11	B
1	19	19	23.7	19-24.1	155-15.9	1.8	0.7	7	113	2.3	0.07	0.4	0.4	0.07	B
1	20	19	49.9	19-26.9	155-53.1	8.2		11	147	5.6	0.14	1.8	2.6	0.14	B
1	21	16	51.9	19-25.1	155-18.0	6.3	1.0	12	96	0.8	0.21	0.9	1.6	0.14	B
1	21	41	32.8	19-17.2	155-11.4	29.3	1.0	18	236	3.6	0.32	1.4	2.4	0.07	C
1	22	50	25.0	19-22.0	155-16.2	27.7		19	58	1.0	0.18	0.9	1.7	0.11	B
2	2	57	36.4	19-23.8	155-15.4	1.6	0.4	8	148	2.6	0.06	0.3	0.3	0.06	B
2	3	17	38.2	19-23.2	155-25.0?	7.7	1.9	21	73	4.8	0.07	0.6	1.5	0.15	B
2	4	29	37.6	19-25.1	155-16.6	9.4	1.0	13	123	0.8	0.11	0.7	0.9	0.09	B
2	5	8	53.6	19-24.6	155-16.9	8.6	1.5	10	107	0.7	0.20	1.1	1.6	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 2	6	13	51.5	19-22.1	155-11.4	5.6	1.8	19	72	2.3	0.07	0.5	0.7	0.14	B
2	19	18	58.7	19-22.7	155-22.3	5.5	1.4	11	80	4.9	0.06	0.4	0.6	0.09	A
3	0	8	14.0	19-21.1	155- 7.7	4.4	0.4	14	82	4.2	0.12	1.0	1.5	0.22	B
3	1	55	21.6	19-20.0	155-12.1	9.1	0.8	18	128	4.7	0.10	0.6	1.4	0.09	B
3	2	44	36.3	18-53.4	155- 9.9	8.0*	2.6	28	257	43.3	0.50	3.3		0.22	D
3	4	41	58.5	19-24.5	155-23.5?	8.5	1.5	23	58	6.8	0.06	0.5	0.4	0.15	B
3	6	33	39.7	19-20.1	155-11.6	7.5	0.6	17	87	4.7	0.09	0.7	0.5	0.14	B
3	11	12	41.7	19-23.3	155-26.0?	8.2	4.0	28	55	3.2	0.04	0.4	0.3	0.11	B
3	12	49	48.2	19-23.0	155- 5.7	3.9	2.4	21	125	7.4	0.13	0.9	1.1	0.20	C
3	14	1	59.0	19-20.9	155- 7.7	4.2	2.1	21	81	4.3	0.11	0.8	0.9	0.22	B
3	16	5	28.7	19-20.6	155- 7.3	8.0*		11	91	5.2	0.12	1.1		0.20	B
4	7	22	20.5	19-23.1	155-14.6	25.0	1.8	17	85	2.6	0.18	0.9	1.7	0.10	B
4	23	36	25.1	19-20.9	155-15.6	28.2	2.1	27	108	2.8	0.11	0.7	1.1	0.12	B
5	1	52	5.2	19-19.6	155-12.0	5.7	1.6	20	135	6.0	0.13	0.9	0.8	0.22	C
5	2	3	2.2	19-19.4	155-15.7	8.5	1.4	13	179	3.2	0.15	1.0	1.7	0.12	C
5	2	48	18.3	19-23.2	155-24.0	6.3	2.1	20	68	5.7	0.08	0.7	0.7	0.18	B
5	4	41	11.3	19-26.1	155-27.1?	6.8	2.1	23	114	6.8	0.10	0.7	0.7	0.20	B
5	14	59	50.1	19-29.9	155-27.3	8.0*	2.8	20	93	7.0	0.06	0.6		0.11	B
5	18	41	1.0	19-19.6	155-11.1	7.5	1.8	17	94	5.0	0.09	0.7	0.5	0.15	B
5	22	5	57.6	19-16.5	155-23.4	4.4	2.5	27	124	5.8	0.08	0.6	0.8	0.21	C
6	1	4	24.5	19-20.8	155- 8.6?	7.8	1.8	20	109	3.2	0.10	0.9	0.7	0.15	B
6	1	19	42.8	19-20.6	155- 9.4	4.7	1.7	21	70	2.8	0.08	0.6	0.7	0.19	B
6	8	7	7.7	19-20.2	155-14.3	8.0*	1.5	8	127	7.5	0.15	1.6		0.21	C
6	14	16	35.6	19-21.8	155-25.5?	7.3		14	118	3.9	0.10	0.9	0.7	0.18	B
6	20	22	34.5	19-22.3	155-23.4	5.6	1.6	15	79	6.9	0.08	0.6	0.8	0.17	B
7	11	9	18.8	19-18.9	155-16.7	27.7	2.8	31	107	2.6	0.12	0.7	1.2	0.13	B
7	12	16	47.3	19-22.8	155-24.7?	2.2		11	111	5.2	0.10	0.7	1.2	0.13	B
7	13	20	14.0	19- 9.2	155-41.7	3.2		13	133	13.2	0.20	1.4	1.5	0.19	C
7	13	47	9.9	19-24.1	155- 0.8	4.9		20	150	8.7	0.16	1.2	1.2	0.22	C
7	15	24	46.2	19-22.4	155-25.1	8.1	1.8	17	70	4.5	0.04	0.5	0.3	0.09	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 7	20	0	31.4	19-24.1	155-15.9	2.3		6	109	1.2	0.07	0.4	1.6	0.04	B
7	22	21	48.6	19-25.1	155-44.8	6.6		8	149	19.6	0.35	1.8	2.4	0.13	C
8	8	27	43.9	19-17.5	155- 9.5	38.4		20	214	7.0	0.22	1.3	1.7	0.10	C
8	9	18	19.1	20-15.9	155-52.0?	73.3*	3.1	13	307	68.8	0.44	3.6		0.12	D
9	0	7	23.3	19-18.7	155-15.3	11.5	1.1	13	124	4.4	0.11	0.4	1.0	0.05	B
9	1	30	48.3	19-24.0	155-24.6	7.3	2.2	28	57	6.0	0.06	0.6	0.5	0.18	B
9	1	41	18.0	19-20.3	155-10.7	3.9		16	106	3.6	0.12	0.8	1.2	0.20	B
9	2	8	25.5	19-25.4	155-16.1	1.6	2.8	24	97	0.7	0.05	0.3	0.2	0.10	B
9	2	58	32.8	19-30.1	155-46.6	5.8	1.6	11	108	14.9	0.07	0.7	0.8	0.10	C
9	4	40	10.9	19-25.1	155-16.7	2.2	0.7	10	124	0.7	0.04	0.4	0.2	0.07	B
9	6	22	53.7	19-22.7	155-24.8	8.0*	2.2	20	69	5.0	0.04	0.4		0.10	B
9	6	34	56.8	19-22.7	155-24.8	7.7	1.9	21	85	5.0	0.04	0.4	0.3	0.10	B
9	7	10	39.8	19-18.4	155-13.4	5.8		10	83	2.6	0.20	1.1	1.8	0.17	B
9	7	26	31.4	19-21.6	155-24.3?	8.1	1.5	14	95	3.2	0.08	0.8	0.5	0.14	B
9	7	56	40.7	19-22.7	155-24.9?	8.9		11	117	4.7	0.33	0.8	3.1	0.10	B
9	14	24	45.1	19-22.8	155-24.6?	8.0		16	81	5.3	0.08	0.8	1.6	0.16	B
9	21	44	14.7	19-25.6	155-38.0	8.0*		12	170	19.1	0.20	3.1		0.25	D
10	0	57	11.4	19-22.9	155- 5.3	3.4		12	131	7.0	0.10	0.7	1.0	0.12	B
10	2	27	46.4	19-20.5	155-11.7	8.2		17	83	4.4	0.05	0.4	0.3	0.08	A
10	3	43	6.2	19-16.6	155-23.9	4.0		15	133	6.6	0.12	0.9	1.4	0.16	B
10	7	20	28.6	20- 5.8	155-28.6?	0.0		16	217	26.9	7.03	2.7	13.2	0.25	C
10	9	43	14.3	19-24.4	155-15.7	23.0	1.9	22	54	1.8	0.11	0.6	1.1	0.09	A
10	11	31	52.7	19-24.1	155-17.0	9.3	1.6	17	48	0.8	0.08	0.6	0.7	0.12	B
10	13	55	22.9	19-18.8	155-15.9	5.8	1.5	24	103	3.5	0.08	0.6	0.6	0.18	B
10	14	36	13.8	19-21.2	155-23.9	6.2	1.6	18	59	2.1	0.08	0.7	0.8	0.19	B
10	17	22	12.7	19-21.8	155-13.2	7.0		8	161	1.5	0.39	1.0	2.7	0.08	C
10	17	23	54.8	19-22.2	155-13.3	4.6	1.3	16	93	1.2	0.10	0.4	1.1	0.10	B
10	17	24	43.2	19-22.4	155-13.1	7.0		6	145	0.7	0.71	1.7	4.8	0.09	B
10	17	26	24.0	19-22.0	155-13.3	3.1	1.3	13	93	1.4	0.13	0.6	2.0	0.12	B
10	17	33	48.9	19-22.4	155-12.9	5.2	1.7	17	89	0.4	0.07	0.5	0.8	0.10	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV	10	17	48 24.3	19-22.5	155-12.9	3.5	1.8	17	89	0.4	0.10	0.6	1.6	0.16	B
	10	17	55 28.3	19-22.4	155-12.7	2.7	1.3	16	79	0.2	0.06	0.4	1.2	0.12	B
	10	17	56 29.4	19-22.5	155-12.9	5.0	1.7	17	80	0.5	0.06	0.5	0.7	0.11	B
	10	18	9 11.0	19-22.7	155-13.9	5.5	1.3	11	112	2.2	0.24	0.7	2.0	0.10	B
	10	18	10 2.9	19-25.5	155-10.8?	8.0*		8	255	6.3	1.09	6.4		0.31	D
	10	18	13 12.8	19-22.7	155-13.9	5.8	1.3	13	112	2.2	0.20	0.6	1.6	0.08	B
	10	18	15 54.7	19-22.3	155-12.8	2.3		6	179	0.5	0.05	0.4	0.5	0.02	B
	10	18	17 49.0	19-22.7	155-12.7	1.7	1.3	11	141	0.5	0.09	0.6	0.3	0.08	B
	10	18	19 55.1	19-22.5	155-13.7	3.7		9	110	1.8	0.08	0.3	0.9	0.04	A
	10	18	31 0.2	19-21.3	155-12.8	8.4		7	217	2.2	0.37	2.0	2.8	0.08	C
	10	18	31 20.6	19-22.4	155-13.9	5.1	1.3	15	101	2.1	0.20	0.6	1.8	0.12	B
	10	18	38 37.7	19-22.3	155-13.3	2.2		6	180	1.1	0.06	0.5	0.2	0.03	B
	10	18	42 19.6	19-22.3	155-13.5	3.3		7	145	1.6	0.04	0.2	0.5	0.02	B
	10	19	2 18.4	19-22.2	155-13.2	4.1	1.8	23	53	1.0	0.06	0.5	0.7	0.16	B
	10	19	5 15.7	19-22.1	155-12.9	2.3	1.6	22	56	0.8	0.11	0.5	0.4	0.16	B
	10	19	29 26.2	19-22.4	155-12.9	2.1	1.1	15	89	0.4	0.09	0.5	0.4	0.10	B
	10	19	37 11.1	19-22.5	155-13.0	4.6	1.0	16	77	0.6	0.09	0.4	1.1	0.10	B
	10	19	44 50.1	19-22.2	155-13.5	2.2		6	147	4.3	0.01	0.1	0.1	0.01	B
	10	19	59 29.3	19-13.5	155-19.9	27.2	2.2	27	161	8.4	0.14	0.7	1.4	0.12	C
	10	20	10 13.8	19-21.9	155-13.1	3.1		6	193	1.2	0.06	0.4	0.6	0.02	B
	10	20	29 4.9	19-22.3	155-13.4	4.1		6	144	1.4	0.03	0.1	0.3	0.01	B
	10	20	32 4.2	19-22.0	155-13.3	2.3		7	142	1.3	0.06	0.4	2.7	0.04	B
	10	20	34 32.5	19-22.4	155-13.0	6.2	0.5	10	133	0.6	0.06	0.4	0.5	0.06	B
	10	20	35 9.3	19-22.3	155-13.4	2.9		9	135	1.3	0.03	0.1	0.4	0.02	B
	10	20	41 40.2	19-20.6	155- 9.0	3.6	1.7	18	70	3.1	0.11	0.8	1.1	0.18	B
	10	20	49 4.6	19-22.6	155-13.3	1.3		8	133	1.2	0.04	0.2	0.2	0.04	B
	10	21	11 37.6	19-22.4	155-13.8	1.3	1.7	15	99	2.0	0.09	0.4	0.4	0.10	B
	10	21	19 3.6	19-22.6	155-14.2	1.9		9	98	2.6	0.07	0.4	0.3	0.08	A
	10	21	27 53.2	19-22.3	155-13.4	4.9	0.9	13	88	1.3	0.13	0.5	1.3	0.10	B
	10	21	30 30.4	19-22.4	155-12.9	2.9	2.4	23	79	0.5	0.06	0.5	0.8	0.14	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 10	22	2	38.3	19-22.7	155-13.0	5.5	1.6	18	81	4.4	0.09	0.5	0.9	0.13	B
10	23	38	58.0	20-20.2	155-26.7	10.7	4.1	28	208	82.6	0.41	2.0	4.1	0.24	D
11	4	16	12.0	19-10.4	155-40.1?	0.0	2.9	18	117	9.8	6.27	1.2	11.8	0.28	C
11	5	9	28.4	19-22.0	155-12.8	8.0*	1.4	9	157	5.2	0.16	1.6		0.20	C
11	5	19	34.9	19-22.4	155-12.9	8.0*	1.4	11	90	5.0	0.13	1.2		0.26	B
11	5	36	6.9	19-22.7	155-12.4	4.4	1.4	12	89	4.7	0.17	0.5	1.8	0.10	B
11	5	38	0.1	19-22.2	155-12.9?	0.0	1.6	10	139	5.2	1.03	0.5	2.1	0.10	B
11	5	59	19.3	19-23.0	155-12.2	0.9	1.3	12	98	4.6	0.32	1.2	1.5	0.28	B
11	6	5	37.7	19-22.3	155-12.5	2.3*	1.4	7	140	4.7	0.13	1.0		0.13	C
11	6	17	1.9	19-22.5	155-12.7	1.3*		6	135	5.0	0.08	0.6		0.08	C
11	6	21	14.0	19-22.3	155-12.8	8.0*	0.7	8	93	5.2	0.16	1.6		0.25	B
11	7	5	15.1	19-22.8	155-12.9	2.7	1.1	15	85	4.3	0.19	0.7	9.8	0.17	B
11	7	12	27.5	19-22.1	155-13.0	8.0*	1.0	9	109	5.2	0.06	0.7		0.10	B
11	7	22	36.7	19-22.0	155-12.7	8.0*	0.7	10	76	5.0	0.06	0.6		0.11	B
11	8	8	34.5	19-22.6	155-13.0	8.0*	1.2	10	118	5.6	0.12	1.2		0.21	B
11	13	25	55.6	19-22.0	155- 2.6	6.2	2.0	13	137	4.0	0.18	1.9	1.6	0.24	C
12	20	15	10.8	19-20.2	155-10.8	5.4	1.6	17	82	3.8	0.11	0.9	1.0	0.22	B
13	11	10	41.3	19-23.5	155-25.9	8.3	2.6	28	55	3.6	0.07	0.5	0.5	0.15	B
13	14	0	29.6	19-20.5	155- 7.8	5.6	1.8	19	85	4.6	0.11	0.8	0.9	0.21	B
13	21	33	0.2	19-19.4	155-14.2	6.8	1.6	20	68	4.6	0.07	0.5	0.5	0.13	B
14	14	39	22.0	19-26.9	155- 2.7	45.3		24	104	6.5	0.31	1.3	2.6	0.13	B
14	17	51	55.3	19-17.9	155-13.3?	8.3	0.5	12	95	1.6	0.11	0.9	0.7	0.15	B
14	21	55	30.3	19-19.4	155-15.4	6.8	0.5	20	104	3.8	0.09	0.6	0.6	0.14	B
14	21	57	23.9	19-20.4	155- 9.1	9.8	0.4	15	70	3.4	0.08	0.5	1.0	0.08	A
15	0	29	27.2	19-54.6	155- 8.0	41.0	3.0	31	222	22.1	0.30	1.7	3.0	0.16	C
15	14	40	8.6	19-58.6	155-45.9?	0.0	1.2	18	167	16.8	0.48	1.6	0.8	0.21	C
15	16	43	30.9	19-15.0	155-13.2	8.0*		8	225	14.3	0.32	2.1		0.15	C
16	1	59	20.6	19-22.1	155-12.3	4.0	0.8	12	81	1.7	0.10	0.5	1.3	0.11	B
16	17	5	49.1	19-20.4	155-12.0	6.8	2.3	30	73	4.5	0.06	0.6	0.4	0.18	B
16	21	53	57.6	19-19.7	155-12.6	4.9	1.7	17	79	5.1	0.12	0.9	1.1	0.21	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV	16	22	37	49.4	18-46.1	155-30.9	18.0*		14	296	43.5	1.41	8.9		0.18	D
	16	22	44	43.4	19-24.2	155-27.1	7.8	2.2	26	58	3.3	0.07	0.5	0.5	0.12	B
	17	10	24	18.1	19-20.0	156-23.2	8.0*		23	279	52.1	0.80	5.0		0.16	D
	17	10	34	9.2	19-14.9	155-24.1	32.0		20	155	9.9	0.30	1.5	3.0	0.13	C
	17	11	53	37.6	19-22.2	155-12.7	3.8	1.5	12	95	1.1	0.11	0.5	1.3	0.09	A
	17	11	55	41.4	19-22.0	155-12.8	5.2	1.5	12	110	1.2	0.26	0.9	2.3	0.13	A
	17	13	47	32.2	19-16.9	155-12.5	4.8	1.9	22	159	1.7	0.10	0.7	0.7	0.16	C
	17	14	24	22.5	19-17.5	155-12.4	2.8		16	152	2.0	0.12	0.7	1.5	0.16	C
	17	15	23	32.3	18-47.4	155-32.9?	8.0*		23	294	41.7	1.70	10.5		0.24	D
	17	16	24	40.0	19-24.6	155-23.5	8.6	2.5	26	58	6.9	0.03	0.4	0.8	0.11	B
	17	17	10	27.4	19-20.0	155-10.3	3.6	1.8	18	86	3.9	0.12	0.9	1.5	0.25	B
	17	20	50	3.1	19-21.8	155-24.3?	6.7		18	54	3.5	0.09	0.8	1.7	0.19	B
	18	0	52	41.4	19-19.7	155-11.9	5.8	1.7	27	87	5.6	0.08	0.6	0.6	0.21	B
	18	1	42	36.9	19-24.4	155-16.9	6.9	1.2	18	52	1.0	0.06	0.5	0.4	0.11	B
	18	1	44	28.2	19-24.0	155-16.8	7.5	1.4	11	90	1.2	0.07	0.7	0.5	0.06	A
	18	3	28	44.9	19-10.9	155-37.0	7.0	2.5	21	96	7.3	0.16	0.9	1.0	0.21	C
	18	4	55	14.3	19-21.0	155-13.5	6.1	1.7	26	55	3.0	0.07	0.6	0.5	0.18	B
	18	7	44	5.9	19-23.4	155-24.3	6.8		10	99	6.0	0.15	0.9	1.4	0.15	B
	18	7	45	59.7	18-45.1	155-30.8	16.8*		13	297	45.4	1.54	9.6		0.17	D
	18	14	48	26.4	19- 2.8	155-31.8	33.7		18	192	14.1	0.65	3.2	5.6	0.17	C
	18	17	36	50.0	19-19.5	155-11.3	7.8		16	96	5.3	0.08	0.7	0.5	0.13	B
	19	3	0	35.2	19-19.6	155-13.6	7.2	1.6	23	65	4.8	0.06	0.5	0.4	0.13	B
	19	4	37	7.5	19-20.2	155- 9.3	5.9	2.5	28	76	3.6	0.10	0.7	0.6	0.21	B
	19	7	7	17.1	19-31.2	155-42.6	9.0	2.4	14	130	12.0	0.07	0.8	1.1	0.13	B
	19	16	5	36.7	19-20.0	155-12.9	6.1	1.1	20	71	4.9	0.10	0.7	0.8	0.20	B
	19	20	34	5.3	19-25.9	155-51.9	9.3	1.8	15	136	8.4	0.08	0.8	1.4	0.10	B
	19	20	51	39.8	19-57.4	155-26.1	11.5	1.9	13	186	12.2	0.16	1.3	1.1	0.13	C
	20	14	36	38.9	19-19.9	155-13.7	8.0*		11	72	5.3	0.04	0.4		0.07	B
	20	22	54	37.8	18-54.7	155-32.7	37.5*	2.7	23	253	38.0	0.30	2.3		0.17	D
	21	0	38	35.2	19-17.0	155-12.2	4.8	1.7	15	186	2.2	0.15	0.9	1.0	0.18	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 21	2	49	9.1	19-17.2	155-12.3	5.5	1.7	15	171	2.0	0.09	0.6	0.7	0.11	C
21	4	47	10.7	19-22.7	155- 4.8?	0.0	2.3	22	88	6.1	2.74	0.9	5.3	0.22	C
21	5	11	5.0	19-19.8	155-10.5	6.1	2.0	20	90	4.3	0.09	0.7	0.6	0.18	B
21	8	40	24.8	19-17.8	155-12.5	2.7		13	131	2.2	0.09	0.6	1.4	0.13	B
21	14	18	52.4	19-23.5	155-27.2	8.2	2.3	22	57	1.9	0.09	0.9	1.4	0.21	B
21	23	9	48.0	19-25.3	155-27.9	8.7	2.3	20	156	5.2	0.12	0.9	1.4	0.13	C
21	23	18	46.7	19-21.9	155- 1.8?	6.0	2.1	16	159	4.2	0.21	1.8	1.3	0.30	D
21	23	24	23.7	18-56.3	155-32.5	37.8	2.7	31	240	13.9	0.27	1.4	2.4	0.13	C
22	3	32	1.2	19-24.1	155-27.6	8.4		25	57	3.0	0.06	0.6	1.1	0.15	B
22	3	48	59.7	19-46.8	156- 6.4	55.8		25	245	29.8	0.55	2.4	4.5	0.12	C
22	15	26	47.4	19-18.1	155-12.5?	6.2	1.3	10	123	2.6	0.40	3.4	1.7	0.21	C
22	17	34	14.0	19-18.8	155-14.9	5.5	1.1	20	116	4.1	0.09	0.7	0.7	0.18	B
22	21	40	43.9	19-20.8	155-14.6	25.8	2.3	28	64	3.8	0.10	0.7	1.1	0.12	B
23	1	36	45.7	19- 9.9	155-41.6	3.5	2.9	25	129	12.2	0.14	1.0	1.0	0.20	C
23	17	29	41.2	19-21.4	155-17.3	25.5	2.0	24	45	2.3	0.22	1.2	2.1	0.16	B
24	2	33	16.1	19-23.3	155-17.4	13.5	1.5	24	56	0.8	0.05	0.5	0.7	0.12	B
24	4	25	38.4	18-55.5	155-32.3	38.6	3.5	32	246	14.7	0.45	2.3	3.3	0.15	C
24	13	10	41.8	19-23.8	155-25.1	8.0*	1.6	15	88	5.0	0.07	0.6		0.12	B
24	13	45	0.8	19-56.2	155-11.1	56.2	2.8	17	219	17.3	0.85	3.1	7.5	0.13	C
25	7	42	41.9	19-20.8	155-12.1	5.4	1.5	17	72	3.8	0.11	0.8	0.7	0.18	B
26	8	4	56.5	19-23.1	155-24.9?	8.0	1.0	15	83	4.8	0.08	0.7	0.6	0.13	B
26	13	32	28.8	19-21.9	155- 6.8	2.6	1.1	14	76	5.4	0.09	0.7	1.2	0.14	B
27	5	52	15.0	19-24.1	155-23.1	7.7	2.8	29	40	5.9	0.05	0.5	0.4	0.16	B
28	2	59	14.7	19-17.9	155-13.4	6.6	3.8	24	173	8.2	0.14	0.9	0.6	0.18	C
28	3	59	36.6	19-20.5	155-13.6	5.5	1.3	17	190	4.0	0.14	0.9	0.7	0.19	C
28	4	49	13.8	19-18.1	155-13.4	5.3	1.4	17	201	7.8	0.25	1.4	1.0	0.20	C
28	5	2	36.8	19-18.8	155-13.8	6.6	2.4	20	173	6.7	0.13	0.8	0.6	0.16	C
28	19	29	46.6	19-23.8	155-25.6?	8.0	3.2	28	40	4.2	0.06	0.4	0.4	0.13	B
29	13	2	55.9	19-19.9	155-12.5	3.3	1.0	14	78	5.5	0.09	0.7	1.2	0.16	C
29	13	7	13.2	19-26.0	155-22.4	7.7	3.1	27	57	4.3	0.05	0.5	0.4	0.17	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
NOV 29	20	51	50.6	19-21.9	155- 9.1	5.1	1.7	21	136	1.4	0.11	0.8	0.8	0.20	B
29	23	9	27.4	18-48.0	155-32.7?	8.0*	2.7	21	293	40.6	1.79	11.1		0.25	D
30	1	9	42.8	19-19.2	155-15.4	5.8	1.2	19	108	3.9	0.11	0.8	0.6	0.22	B
30	4	4	43.2	19-19.9	155-10.2	3.9	1.1	17	108	4.1	0.13	0.9	1.2	0.22	B
30	15	13	30.4	19-18.9	155-13.2?	7.8	0.9	14	79	3.6	0.09	0.7	0.6	0.15	B
30	17	45	1.8	19-19.9	155-11.3	8.0*	0.6	15	93	4.8	0.05	0.4		0.07	B
30	18	28	49.5	19-45.9	155-33.7	22.1	2.8	25	88	11.0	0.11	0.7	2.2	0.14	B
DEC 1	1	50	21.5	18-57.2	155-32.5	34.0	2.6	28	242	13.3	0.31	1.8	2.7	0.16	C
1	6	6	29.4	19-19.6	155-11.8	7.7	1.7	21	90	5.6	0.08	0.6	0.4	0.15	B
1	10	0	46.0	19-16.6	155-29.9	7.7	2.0	22	72	5.6	0.07	0.6	0.6	0.17	B
1	12	42	18.8	19-18.9	155-13.9	6.9	0.9	13	91	3.5	0.11	0.8	0.9	0.15	B
1	23	28	3.1	19-20.5	155- 9.5?	7.7	1.7	20	166	3.0	0.12	1.0	0.6	0.14	C
2	0	19	5.5	19-22.9	155-15.3	27.6	1.0	15	86	0.9	0.18	0.9	1.7	0.10	B
2	21	18	19.5	19-22.2	155-23.0	4.8	1.4	12	76	3.7	0.06	0.4	0.7	0.10	B
3	2	30	38.4	19-25.3	155-25.8	8.2	2.6	28	43	6.1	0.06	0.5	0.4	0.14	B
3	6	20	50.1	19-20.9	155- 9.3	7.7	0.4	13	197	2.4	0.17	1.2	0.7	0.13	C
3	9	38	43.3	19-19.5	155-18.6	27.1	2.0	21	75	2.4	0.21	1.2	1.9	0.14	B
3	13	52	37.2	19-22.9	155-22.8	8.0*	1.1	11	91	5.1	0.05	0.4		0.07	B
3	14	34	36.4	19-19.3	155-13.4	8.0*	0.9	15	204	7.2	0.10	0.7		0.10	C
4	0	8	14.1	19-18.8	155-13.3	5.9	1.6	13	79	3.3	0.10	0.7	0.9	0.14	B
4	0	28	0.6	19-11.3	155-17.2	8.0*	2.0	17	223	16.3	0.33	2.0		0.27	C
4	4	4	31.0	19-45.9	155-34.5	21.0	1.2	14	147	12.4	0.13	1.0	2.8	0.11	B
4	5	6	18.6	19-19.6	155-13.9	8.0*	1.0	14	80	4.8	0.04	0.4		0.09	B
4	7	15	33.5	19-24.4	155-24.1?	7.5	1.8	24	58	7.1	0.05	0.6	1.6	0.16	B
4	9	26	59.3	19-23.2	155-26.8	8.0	1.2	12	157	1.9	0.08	0.8	0.5	0.11	C
4	9	47	28.6	19-20.6	155- 9.1	4.8	1.7	22	69	3.0	0.08	0.6	0.6	0.17	B
4	20	18	29.2	18-54.9	155-32.9	41.3	3.0	32	252	14.4	0.40	2.1	2.8	0.14	C
4	20	23	33.2	19-25.3	155-23.6?	0.9	1.8	24	75	7.5	0.20	1.5	2.8	0.30	C
5	1	30	51.4	19-25.4	155-23.7	4.7	1.4	13	133	6.6	0.09	0.7	1.0	0.14	B
5	13	20	55.8	19-22.6	155-23.8	6.8	1.3	16	101	4.5	0.09	0.7	0.8	0.16	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC	5	16	0	3.3	19-21.1	155- 7.8	3.6	1.0	18	81	4.1	0.11	0.8	1.3	0.21	B
	5	18	38	3.4	19-21.1	155- 7.4?	0.6	1.2	16	126	4.7	1.80	0.9	6.7	0.19	C
	6	0	4	15.7	19-10.6	155-37.7	6.2	2.3	19	101	8.0	0.18	1.0	1.1	0.22	C
	6	12	46	45.4	19-24.9	155-16.1	11.9	1.3	19	92	1.5	0.04	0.4	0.4	0.07	B
	6	17	24	28.3	19-11.8	155-16.1	44.0	2.4	30	183	10.6	0.23	1.1	2.1	0.13	C
	7	5	4	48.9	19-22.6	155- 5.3	3.7	0.9	15	129	6.6	0.10	0.8	1.2	0.15	B
	7	7	53	7.2	19-21.8	155-12.6?	2.5	1.7	20	87	1.7	0.06	0.5	1.1	0.15	B
	7	12	45	3.4	19-18.4	155- 2.7	33.0		26	248	2.8	0.27	1.4	1.9	0.11	C
	8	1	56	50.3	18-52.0	155-33.1	8.0*		18	286	42.8	1.07	6.9		0.24	D
	8	3	40	14.3	19-22.3	155- 7.0	2.8	1.9	21	100	5.0	0.11	0.7	1.2	0.18	B
	8	5	23	35.9	19-17.1	155-22.5?	4.3	1.8	16	131	10.5	0.20	1.2	1.6	0.21	C
	8	5	55	21.0	19-20.7	155-12.4	6.1		15	68	5.2	0.08	0.5	0.7	0.11	B
	8	13	17	47.8	19-20.9	155- 6.7	8.0*	2.0	12	94	6.0	0.12	1.0		0.18	B
	8	16	38	6.0	19-20.4	155- 8.9	6.7	2.4	27	68	3.5	0.08	0.6	0.5	0.17	B
	8	17	15	19.8	19-23.3	155-21.8	5.1		18	86	3.8	0.10	0.6	1.0	0.15	B
	9	5	41	27.0	18-55.3	155-32.6	38.7		24	257	14.4	0.59	2.9	4.2	0.14	D
	9	6	30	35.5	19-24.2	155-24.3	2.0	1.6	17	125	6.6	1.51	0.7	5.6	0.15	C
	9	7	27	34.9	19- 6.4	155-38.4	51.9*		12	295	36.7	0.22	3.3		0.09	D
	9	10	59	58.4	19-20.9	155- 9.3	6.8	2.0	26	65	2.3	0.08	0.6	0.5	0.19	B
	10	3	20	9.2	19-26.7	155-51.3	8.0*		9	315	49.3	0.55	4.0		0.15	D
	10	5	3	56.6	19-19.4	155-15.6	6.8	0.6	18	102	3.4	0.09	0.6	0.7	0.13	B
	10	9	34	37.7	19-20.9	155-12.8	10.2	1.6	20	78	3.1	0.06	0.4	0.8	0.07	A
	10	13	45	31.1	19-19.8	155- 9.4	7.6	1.8	16	83	4.3	0.09	1.1	0.9	0.17	B
	10	15	52	57.1	19-18.8	155-47.1	5.5	2.5	13	183	10.5	0.11	1.2	1.0	0.08	C
	10	18	55	36.9	19-21.3	155-23.5	7.1	1.6	12	120	2.0	0.11	0.6	0.8	0.10	B
	10	19	34	50.5	19-10.8	155-19.8	45.1	2.5	21	178	13.4	0.31	1.4	2.9	0.15	C
	10	19	39	35.6	19-11.0	155-21.3	35.9	1.8	17	173	11.8	0.29	1.5	2.9	0.16	C
	11	0	32	40.5	19-20.5	155- 9.2	5.7		21	134	3.1	0.11	0.8	0.8	0.20	B
	11	0	33	8.6	19-18.5	155-13.4	6.7	1.9	16	82	2.7	0.10	0.8	0.7	0.17	B
	11	0	39	34.8	19-19.7	155-24.1	7.6	1.7	18	108	1.8	0.07	0.7	0.5	0.12	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 11	3	44	10.3	19-19.8	155-11.5	5.6	1.1	18	92	5.0	0.10	0.8	0.7	0.19	B
11	4	52	29.9	19-21.5	155-16.5	21.1	0.8	13	155	1.9	0.24	1.1	2.1	0.09	C
11	11	2	3.4	19- 8.7	155-31.4	38.9	2.9	29	142	6.4	0.25	1.2	2.3	0.15	B
11	12	24	47.6	20- 9.1	155-50.0?	40.1*		14	294	6.2	0.33	3.4		0.20	D
12	0	21	35.1	19-20.6	155- 7.9?	7.7		18	83	4.4	0.07	0.7	0.5	0.14	B
12	5	30	17.9	20-26.1	155-52.5?	39.9		17	311	35.4	0.20	1.4	2.0	0.08	C
12	11	51	50.2	19-18.8	155-47.2	5.3		15	165	10.3	0.09	0.8	0.8	0.08	B
12	16	7	32.2	19-24.9	155-24.4	8.0*	2.0	20	121	7.2	0.09	0.8		0.15	C
12	18	20	36.3	19-21.2	155- 4.9	8.1	1.9	19	93	4.2	0.06	0.7	0.5	0.09	A
12	22	41	25.9	19-44.6	156- 1.9	41.8	2.9	24	284	21.2	0.21	1.3	2.0	0.10	C
13	2	16	16.4	19-19.9	155-18.5	6.1	1.4	12	91	2.0	0.14	0.4	1.1	0.06	A
13	3	23	10.0	19-19.3	155-13.5	9.9		14	75	4.3	0.07	0.5	1.2	0.07	A
13	4	25	56.0	19-21.0	155-17.6	32.1	4.6	34	33	1.7	0.13	0.8	1.3	0.15	B
13	4	32	48.0	19-20.9	155-17.9	32.1	2.6	31	43	1.7	0.15	0.9	1.4	0.14	B
13	4	41	39.4	19-22.1	155-17.2	28.3		22	40	2.4	0.16	0.9	1.6	0.11	B
13	4	44	1.0	19-23.2	155-26.1	7.6	2.0	23	61	2.9	0.09	0.7	0.7	0.14	B
13	5	16	43.6	19-21.4	155-17.4	29.1	1.6	20	42	2.3	0.17	0.9	1.7	0.12	B
13	6	44	32.3	19-20.2	155-12.1	7.0	1.9	25	77	4.8	0.07	0.6	0.5	0.16	B
13	7	21	19.6	19-20.6	155-17.8	29.2	1.6	22	50	1.1	0.15	0.8	1.5	0.12	B
13	7	25	27.3	19-24.5	155-25.5	8.0*	1.6	22	67	5.3	0.06	0.6		0.13	B
13	7	42	11.2	19-21.1	155-17.4	32.1	2.1	27	41	1.8	0.14	0.8	1.4	0.14	B
13	7	55	14.5	19-19.6	155-12.1	8.0*		14	87	5.4	0.05	0.4		0.08	B
13	13	20	33.8	19-21.9	155-17.8	23.5	1.9	22	31	3.1	0.10	0.6	1.0	0.10	B
13	18	48	10.0	19-20.4	155-17.9	29.9	1.2	17	67	4.6	0.23	1.1	2.4	0.14	B
14	4	15	28.6	19-28.6	155-54.5?	8.6	2.6	10	150	1.5	0.32	3.0	2.4	0.21	C
14	4	36	22.5	19-28.3	155-52.4	3.6	2.6	16	111	5.1	0.17	1.5	1.7	0.25	C
14	6	7	5.6	19-42.9	155-10.7	44.8	2.5	32	137	15.7	0.25	1.0	2.4	0.14	B
14	11	20	15.1	19-20.9	155- 8.4	5.6	1.7	27	72	3.3	0.08	0.6	0.6	0.18	B
14	16	46	39.8	19-18.9	155-13.7	6.9	3.5	32	68	3.6	0.06	0.5	0.3	0.15	B
14	17	2	0.8	19-20.0	155-12.0	7.2		14	81	5.2	0.10	0.7	0.7	0.15	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 14	18	32	59.3	19-20.7	155- 9.0	5.1	2.2	28	70	2.9	0.09	0.7	0.6	0.20	B
15	14	15	58.7	19-27.1	155-21.8	8.6	1.9	17	79	2.1	0.04	0.4	0.8	0.07	A
15	15	26	51.7	19-20.5	155-11.1	6.9	1.6	26	76	3.7	0.06	0.6	0.4	0.17	B
15	21	7	48.8	19-22.8	155-24.6	8.0*	1.6	13	109	5.3	0.05	0.4		0.07	B
15	23	32	44.4	19-17.5	155-18.9	28.7	2.1	24	131	0.9	0.13	0.8	1.3	0.12	B
16	5	37	1.3	19-18.8	155-13.9	5.6	1.3	22	69	3.4	0.08	0.6	0.6	0.18	B
16	7	33	47.1	19-20.4	155- 9.4	6.0	1.7	18	73	3.1	0.11	0.8	0.9	0.23	B
16	14	42	15.1	19-20.1	155-12.5	7.3	2.4	27	73	4.7	0.06	0.5	0.4	0.16	B
16	22	9	22.7	19-20.7	155- 8.9	4.8	1.7	20	67	3.1	0.08	0.7	0.7	0.19	B
17	1	47	52.5	19-19.0	155-15.4	9.6		12	128	4.1	0.21	0.9	1.9	0.09	B
17	6	0	33.9	19-19.4	155-13.6	8.4		15	77	4.4	0.05	0.4	0.3	0.10	B
17	18	25	2.6	19-22.0	155-23.6?	8.4		12	105	3.4	0.08	0.5	0.6	0.09	B
17	21	14	40.2	18-55.6	155-32.7	38.4	2.8	30	247	14.0	0.41	2.1	3.1	0.13	C
17	21	46	53.7	18-60.0	155-20.3?	29.7		20	240	22.1	0.41	2.2	3.9	0.14	C
17	22	0	41.1	19-22.0	155-12.4	3.5	1.5	11	79	1.7	0.06	0.3	1.0	0.06	A
18	3	35	32.6	19-22.4	155-24.6	8.1	2.0	23	51	4.7	0.06	0.6	0.4	0.12	B
18	10	41	2.7	19-18.7	155-13.4	6.4	1.6	16	78	3.1	0.10	0.7	0.7	0.16	B
18	13	39	9.5	19-21.0	155- 8.0	4.3		22	78	3.8	0.10	0.7	0.8	0.21	B
18	18	42	41.9	19-18.2	155-13.2	8.3	0.8	14	93	2.2	0.07	0.7	0.5	0.11	B
18	19	25	16.7	19-18.4	155-13.2	8.3	0.3	12	89	2.7	0.08	0.7	0.5	0.11	B
18	22	1	41.8	19-20.1	155- 9.8	9.1	0.8	15	81	3.6	0.07	0.5	1.1	0.08	A
18	23	30	23.8	19-18.1	155-14.2?	7.1		14	119	2.4	0.13	0.7	1.0	0.13	B
19	21	57	34.6	19-26.8	155-27.4	8.0*	1.8	17	105	8.0	0.08	0.6		0.13	B
19	23	17	47.6	18-56.5	155-32.8	38.6	3.2	33	239	13.3	0.25	1.4	2.1	0.15	C
20	2	31	27.4	19-22.2	155-11.3	7.4	1.1	16	90	2.5	0.07	0.6	0.4	0.12	B
20	5	1	12.9	19-40.8	155-14.9	44.3	2.5	24	107	23.2	0.27	1.1	2.7	0.13	B
20	6	32	46.8	19-19.6	155-13.1	6.0	1.6	24	73	4.7	0.08	0.6	0.6	0.19	B
20	10	40	42.3	19-18.5	155-13.9	6.2	1.6	17	73	2.8	0.08	0.7	0.6	0.15	B
20	10	57	39.7	19-17.8	155-15.2	6.7	0.6	16	159	3.4	0.10	0.6	0.6	0.11	C
20	14	30	15.1	19-22.1	155-23.7?	6.8	1.5	14	75	3.5	0.10	1.0	2.0	0.19	B

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 20	17	18	29.9	19-19.8	155- 9.3	9.4	0.6	14	82	4.2	0.09	0.5	1.2	0.09	A
20	19	22	6.3	19-19.0	155-15.6	6.2	0.5	16	116	3.8	0.10	0.7	0.7	0.16	B
20	21	27	7.9	19-19.3	155-14.5	6.9	0.6	17	94	4.6	0.10	0.7	0.7	0.15	B
21	1	46	56.7	18-52.7	155-32.9	39.0		25	276	16.8	0.68	3.5	4.4	0.14	D
21	4	15	5.0	19-19.8	155-12.1	6.2	1.9	29	83	5.5	0.07	0.6	0.5	0.19	B
21	13	48	26.9	19-19.9	155-28.2	8.1		16	101	5.0	0.09	0.8	0.6	0.15	B
22	3	29	11.3	19-23.1	155-24.6?	8.1	1.6	18	61	5.5	0.07	0.5	0.7	0.12	B
22	6	43	8.0	19-19.2	155-13.6	8.4		14	116	4.1	0.11	0.8	1.8	0.10	B
22	7	15	55.6	19-24.2	155-15.9	2.1	0.8	9	109	1.3	0.04	0.3	0.2	0.05	A
22	17	3	40.7	19-22.1	155-23.9?	8.0	1.7	21	75	3.6	0.06	0.6	0.4	0.15	B
22	17	13	53.8	19-22.8	155-24.8	8.0*	1.7	11	113	4.9	0.06	0.5		0.08	B
22	18	3	36.9	19-22.9	155-24.8	8.0*		11	110	5.0	0.06	0.5		0.08	B
22	18	18	5.0	19-24.5	155-24.8	5.5		14	135	6.2	0.09	0.6	0.7	0.13	B
22	18	19	29.1	19-21.4	155-16.7	16.3	1.7	24	62	2.2	0.10	0.7	1.2	0.13	B
23	2	28	5.4	19-23.5	155-23.2	8.0*		15	103	6.1	0.06	0.5		0.11	B
23	3	44	56.6	19-22.8	155-28.8?	8.4	2.0	26	84	2.2	0.11	0.8	0.7	0.21	B
23	3	58	29.3	19-22.3	155-23.8	8.3	2.4	32	35	4.0	0.05	0.5	0.4	0.14	B
23	4	5	13.5	19-24.7	155-16.5	1.1	0.9	11	96	0.9	0.05	0.3	0.3	0.09	A
23	9	59	19.6	19-19.6	155-15.8	5.7	1.5	21	100	2.9	0.08	0.6	0.6	0.17	B
23	12	9	55.6	18-56.3	155-32.3	32.8		19	249	14.3	0.72	3.6	5.3	0.15	D
23	17	19	30.0	19-19.4	155-13.9	6.3	2.0	29	62	4.4	0.07	0.6	0.5	0.18	B
23	17	37	17.0	19-25.8	155-33.8	41.6	2.6	19	134	7.4	0.28	1.1	2.4	0.08	B
23	17	50	17.0	19-21.8	155-12.5?	0.6	1.7	17	58	1.8	0.08	0.6	2.7	0.15	B
23	20	42	0.8	19-20.3	155-12.1	6.0	1.7	26	75	4.6	0.08	0.6	0.6	0.21	B
24	0	42	13.7	18-54.9	155-33.1	40.0		22	262	14.1	0.63	3.1	4.5	0.13	D
24	1	10	53.5	19-19.5	155-14.0	6.3	1.7	25	65	4.6	0.08	0.6	0.5	0.17	B
24	6	44	2.1	19-22.0	155-24.7	7.9	1.8	22	50	4.2	0.06	0.6	0.5	0.15	B
24	8	49	53.4	19-18.9	155-13.6	4.0	1.6	16	84	3.4	0.11	0.8	1.2	0.22	B
24	19	0	49.8	19-18.1	155-12.3?	2.3		13	124	2.9	0.13	0.9	3.2	0.21	C
24	20	17	6.1	19-37.8	156-15.2	11.9*	2.9	28	263	38.5	0.40	2.6		0.16	D

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 25	0	7	8.6	19-24.1	155-15.9	1.9	0.8	8	111	1.3	0.07	0.4	0.3	0.08	A
25	1	46	40.1	19-23.4	155-24.0	4.9	1.5	13	96	6.0	0.09	0.7	1.0	0.14	B
25	2	44	2.8	19-24.5	155-24.3	8.0*	1.7	17	69	6.9	0.05	0.5		0.10	B
25	8	4	12.5	19-18.4	155-13.5	5.3	1.7	16	85	2.6	0.10	0.7	0.7	0.17	B
25	8	38	6.9	19-18.3	155-13.4	6.1	1.8	20	84	2.4	0.10	0.8	0.6	0.19	B
25	9	51	26.1	19-22.2	155-12.7	5.9	0.1	14	95	1.0	0.09	0.6	0.8	0.11	B
25	14	4	47.4	19-18.0	155-13.2	7.8	2.9	27	98	2.0	0.05	0.5	0.3	0.12	B
25	14	6	4.1	19-17.7	155-13.6	6.1	1.4	14	100	1.2	0.15	1.0	0.9	0.19	B
25	14	6	55.2	19-18.3	155-13.5	6.6	1.9	24	79	2.3	0.08	0.6	0.5	0.16	B
25	14	8	14.1	19-18.2	155-13.2	6.4	1.2	16	91	2.3	0.12	0.9	0.8	0.16	B
25	14	28	27.4	19-18.4	155-13.2	6.6	1.1	14	89	2.7	0.11	0.7	0.8	0.12	B
25	14	39	6.9	19-18.4	155-13.2	6.7	0.7	14	88	2.6	0.11	0.8	0.7	0.14	B
25	16	47	29.2	19-17.9	155-13.1?	8.2	0.5	13	103	1.7	0.09	0.8	0.5	0.13	B
25	22	39	39.2	19-20.7	155- 7.7	4.2	1.9	24	84	4.5	0.10	0.7	0.8	0.21	B
25	22	41	21.0	19-21.3	155- 7.5	0.6*	0.7	14	85	7.3	0.07	0.5		0.12	C
25	22	53	39.4	19-17.5	155-13.2	6.4	1.8	27	118	1.1	0.07	0.5	0.4	0.15	B
25	23	24	32.8	19-22.3	155-11.3	5.6	1.0	19	92	2.7	0.06	0.5	0.6	0.11	B
26	0	9	18.7	19-17.8	155-13.1	6.6	2.7	28	107	1.6	0.06	0.5	0.4	0.15	B
26	0	54	25.9	19-18.5	155-13.5	6.4	1.2	19	78	2.7	0.08	0.6	0.5	0.14	B
26	4	3	28.1	19-18.7	155-28.1?	8.3	1.9	19	53	4.8	0.10	0.8	0.7	0.21	B
26	6	0	14.8	19-20.6	155-13.0	6.5	0.2	16	68	3.6	0.11	0.7	0.9	0.16	B
26	6	23	54.1	19-23.4	155-24.0	8.0*	1.5	15	111	6.1	0.04	0.4		0.09	B
26	12	58	47.8	19-22.1	155- 4.5	4.2	1.9	17	139	5.0	0.14	1.0	1.3	0.20	B
26	14	34	8.6	19-22.4	155-11.2	4.7	0.8	13	95	2.4	0.09	0.4	1.1	0.10	B
27	3	35	19.1	19-20.0	155-11.7	5.0	1.6	21	84	5.0	0.10	0.7	0.9	0.21	B
27	3	46	8.0	19-23.3	155-22.9?	6.8	1.7	21	89	5.6	0.08	0.8	1.8	0.19	B
27	6	8	21.6	19-23.1	155- 5.7?	0.0	1.8	22	77	7.5	4.49	0.7	8.5	0.19	C
27	6	8	59.6	19-19.9	155-11.6	8.0*	1.1	17	86	5.1	0.03	0.3		0.07	B
27	12	4	4.5	19-22.2	155-12.9	2.6	1.1	20	49	0.8	0.06	0.5	1.1	0.15	B
27	18	6	24.2	20- 0.5	155-29.8	22.2	2.1	28	191	20.8	0.18	1.2	3.1	0.14	C

SUMMARY OF SEISMIC EVENTS (CONTINUED)

1973	HR	MN	SEC	LAT N	LONG W	DEPTH	MAG	NO	GAP	DMIN	ERT	ERH	ERZ	MD	Q
DEC 27	19	0	4.0	19-22.0	155-26.0?	7.7	2.5	31	62	3.0	0.06	0.6	1.0	0.18	B
27	19	1	45.8	19-22.4	155-26.1?	8.0	1.2	23	73	2.8	0.08	0.7	1.3	0.17	B
28	0	49	51.7	19-17.3	155-27.6?	7.6	1.9	18	93	2.3	0.14	1.1	1.0	0.26	B
28	1	54	8.2	18-56.1	155-32.8	37.2	2.7	28	243	13.6	0.46	2.3	3.5	0.15	C
28	5	33	6.7	19-22.2	155-11.6	5.8	2.1	22	89	2.6	0.06	0.5	0.6	0.15	B
28	11	43	31.9	19-20.1	155- 7.9?	7.7	1.8	20	89	5.0	0.09	0.9	0.8	0.17	B
28	16	59	48.6	19-21.9	155-11.3	2.8		8	130	2.6	0.07	0.4	1.3	0.04	B
28	19	23	24.5	19-51.7	155-49.3	47.1	2.0	15	174	19.4	0.25	1.0	2.4	0.06	C
29	2	40	56.0	19-21.4	155-24.6	7.7	1.6	13	109	3.2	0.06	0.6	0.4	0.09	B
29	4	46	17.8	19-21.8	155- 5.4	8.0*	1.2	16	79	5.6	0.09	0.8		0.19	B
29	7	27	28.8	19-19.5	155-14.0	6.8	1.6	22	64	4.7	0.07	0.6	0.5	0.16	B
29	12	24	23.6	19-27.3	155-21.9	9.3	1.8	12	105	2.1	0.12	0.6	1.2	0.06	A
29	21	36	41.8	19-58.3	155-20.9	11.3	1.7	12	201	9.1	0.27	1.9	1.4	0.17	C
30	1	48	49.8	19-23.1	155-29.5?	7.4	1.5	17	94	3.5	0.12	1.1	1.8	0.19	B
30	2	12	40.7	19-19.3	155-15.1	7.3	1.8	25	86	4.2	0.04	0.4	0.3	0.10	B
30	11	13	47.0	19-28.9	155-46.2	5.3	2.7	17	106	15.6	0.08	0.5	0.7	0.11	C
30	11	25	56.5	19-30.5	155-46.5	5.7	1.8	13	190	15.3	0.13	1.3	1.0	0.13	C
30	12	4	17.4	19-30.6	155-46.6	6.4	2.4	13	191	15.1	0.10	1.1	0.7	0.10	C
30	18	41	27.7	19-22.0	155-11.4	4.3	1.5	11	132	2.8	0.41	1.4	4.9	0.15	B
30	22	47	13.6	19-19.4	155-10.1?	8.0*		6	297	5.0	0.35	5.5		0.11	D
30	23	55	26.6	19-12.0	155-29.3?	5.9	1.5	22	76	5.2	0.09	0.7	0.6	0.16	B
31	7	30	15.8	19-20.9	155-13.1	8.0*	1.0	17	87	5.5	0.05	0.4		0.09	B

Table 3. Felt earthquakes

Date	Time H	Time M	Time S	Magnitude	Felt report
Oct 1	06	43	06.6	3.9	Kamuela, Honokaa, Hilo, Puu Anahulu, Kawaihae, Kealakekua, Kohala, Honokahau
2	06	51	14.9	3.3	Honokaa
2	07	18	14.4	3.1	Honokaa
9	01	53	45.2	4.6	Island-wide Hawaii
9	02	01	02.4	4.3	Volcano, Kapapala, Honokaa, Hilo
9	02	19	43.4	2.7	Kapapala
9	02	23	47.5	2.5	Kapapala
9	02	50	36.8	2.7	Kapapala
9	03	27	28.9	2.6	Kapapala
9	04	59	49.1	2.9	Kapapala
13	06	11	11.6	4.3	Kamuela, Honokaa, Maui (Haleakala, and Kula)
18	02	31	50.0	3.6	Kapapala
22	05	19	47.6	2.9	Honokaa
23	22	34	07.1	2.5	Kapapala
26	07	53	19.5	4.3	Kapapala, Hilo, Volcano, Pahala, Kamuela, South Kona, Honokaa
Nov 3	11	12	41.7	4.0	Kapapala, Glenwood
5	22	05	57.6	2.5	Kapapala, Volcano
9	02	03	25.5	2.8	Hawaiian Volcano Observatory
10	07	20	28.6	?	Honokaa
11	23	38	58.0	4.1	Honokaa, South Kona, Hilo
28	02	59	14.7	3.8	Honokaa, Keaau, Hilo, Mt. View, Volcano, Kapapala
28	19	29	46.6	3.2	Kapapala, Volcano
13	04	25	56.0	4.6	Island-wide Hawaii
14	16	46	39.8	3.5	Hilo

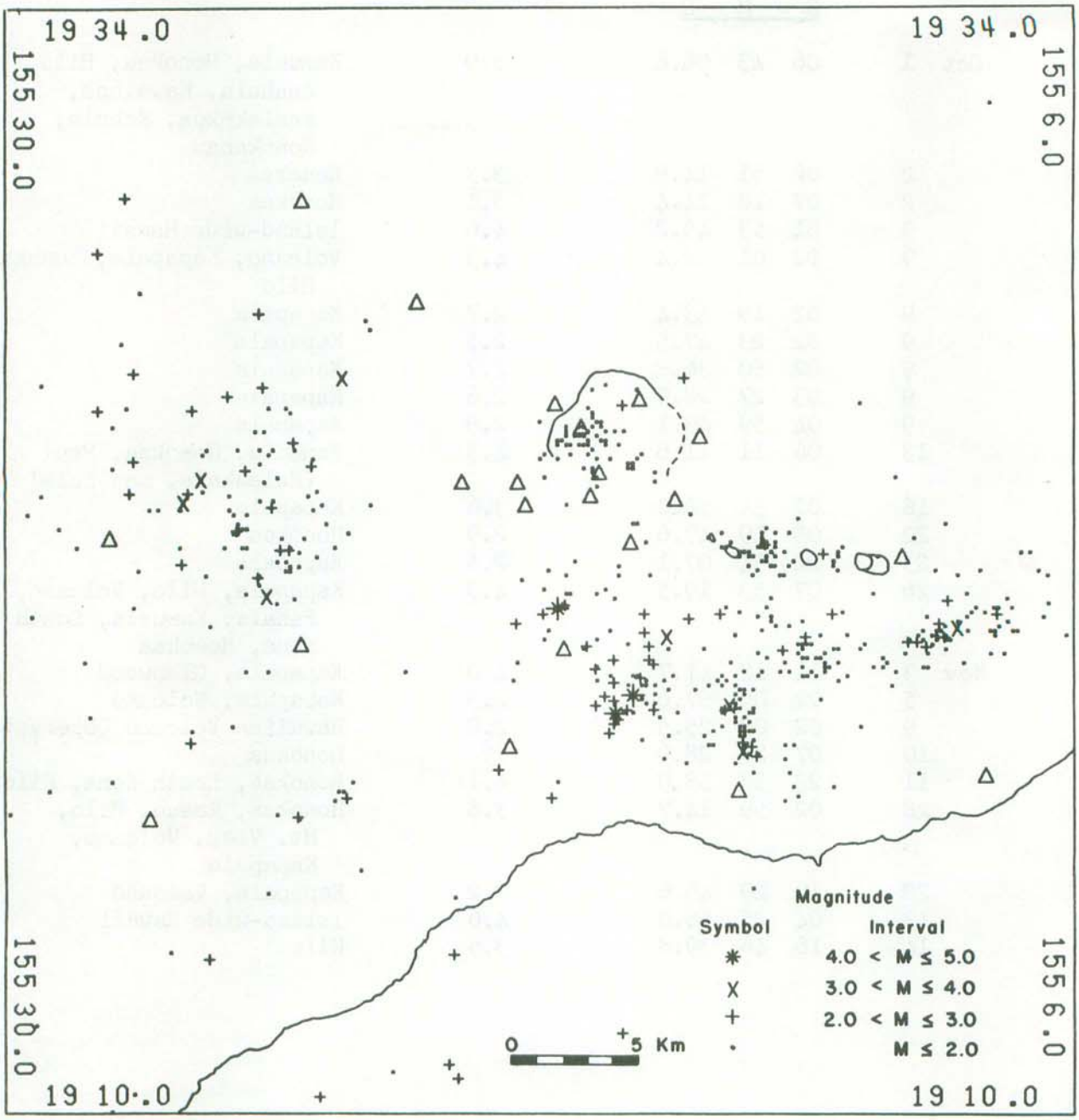

Figure 1.--Plot of epicenters in the Kilauea region. Triangles are seismometer locations. Kilauea Caldera and the major pit craters on the east rift are shown in outline. The Pacific Ocean lies in the lower right portion of the illustration.

Table 4. Seismometer stations in Hawaii operated by the U. S. Geological Survey.

STATION NAME	CODE	LAT-N	LONG-W	ELEV	TYPE	CAL	VCO	RADIO	REMARKS
AHUA	AHU	19 22.40	155 15.90	1070	3	6.0	2380		
AINAHOU	AIN	19 22.50	155 27.62	1524	1	6.0	1700	RF9	
CAPTAIN COOK	CAC	19 29.29	155 55.09	323	1	6.0	2720	RF8	
CONE PEAK	CPK	19 23.70	155 19.70	1038	3	1.34			
DESERT	DES	19 20.20	155 23.30	815	3	1.34			
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	1	6.0	1360		
HALE POHAKU	HPU	19 46.85	155 27.50	3396	1	5.6	1360	RF6	
HILINA PALI	HLP	19 17.96	155 18.63	707	3	6.0	2040		
HUALALAI	HUA	19 41.25	155 50.32	2189	1	5.2	1700	RF4	
KAAPUNA	KAA	19 15.98	155 52.28	524	1	5.5	1020	RF12	
KAENA	KAE	19 17.35	155 7.95	37	1	6.0	2380	RF6	
KAHUKU	KHU	19 14.90	155 37.10	1939	1	5.7	1700	RF3	
KAPAPALA RANCH	KPR	19 16.40	155 26.70	610	1	6.5	1700	RF1	
KEANAKOLU	KKU	19 53.39	155 20.58	1863	1	4.8	2380	RF7	
KIPUKA NENE	KPN	19 20.10	155 17.40	924	3	1.34			
KOHALA	KOH	20 7.69	155 46.77	1166	1	1.5	2380	RF2	
M12	M12	19 23.69	155 18.45	1116	1	6.0	2040		
MAU	MAU	19 22.34	155 12.52	994					Temporary
MAUNA LOA	MLO	19 29.80	155 23.30	2010	1	6.5	1360		
MAUNA LOA X	MLX	19 27.60	155 20.70	1475	3	1.34			
MAKAOPUHI	MPR	19 22.07	155 9.85	881	1	5.7	2720	RF5	
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	1	6.5	2040	RF3	
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	1	6.2	680	RF8	
NATIONAL GUARD	NAG	19 42.12	155 1.72	18	1	6.0	1360	RF3	
NORTH PIT	NPT	19 24.90	155 17.00	1115	3	1.34			
OUTLET	OTL	19 23.38	155 16.94	1038	3	5.0			
PAU	PAU	19 22.62	155 13.10	994					Installed 11/12/73
POLIOKEAWE PALI	POL	19 17.02	155 13.47	169	1	6.0	1360	RF12	
PUU HULUHULU	PHH	19 22.45	155 12.66	988	3				Discontinued 11/10/73
PUU HONUAULA	PHO	19 28.90	154 53.40	215	1	6.5	2720	RF1	
PUU PILI	PPL	19 9.50	155 27.87	35	1	4.4	1360	RF11	
RIM	RIM	19 23.90	155 16.60	1128	1	6.0	1020		
SOUTH POINT	SPT	18 58.91	155 39.92	244	1	7.8	2040	RF7	
WAHAULA	WHA	19 19.90	155 2.92	29	1	6.0	680	RF9	
WALDRON LEDGE	WLG	19 25.49	155 15.69	1067	3				
OPTICAL SEISMOGRAPHS									
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71			
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	0	1.0			Wood-Anderson
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0			
HILO EW	HIE	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
HILO NS	HIN	19 43.20	155 5.30	20	0	1.0			Wood-Anderson
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56			
UWEKAHUNA Z	UWE	19 25.40	155 17.60	1240	3	0.7			
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0			
UWEKAHUNA PEZ		19 25.40	155 17.60	1240					15-90 Press Ewing
UWEKAHUNA PEE		19 25.40	155 17.60	1240					
UWEKAHUNA PEN		19 25.40	155 17.60	1240					

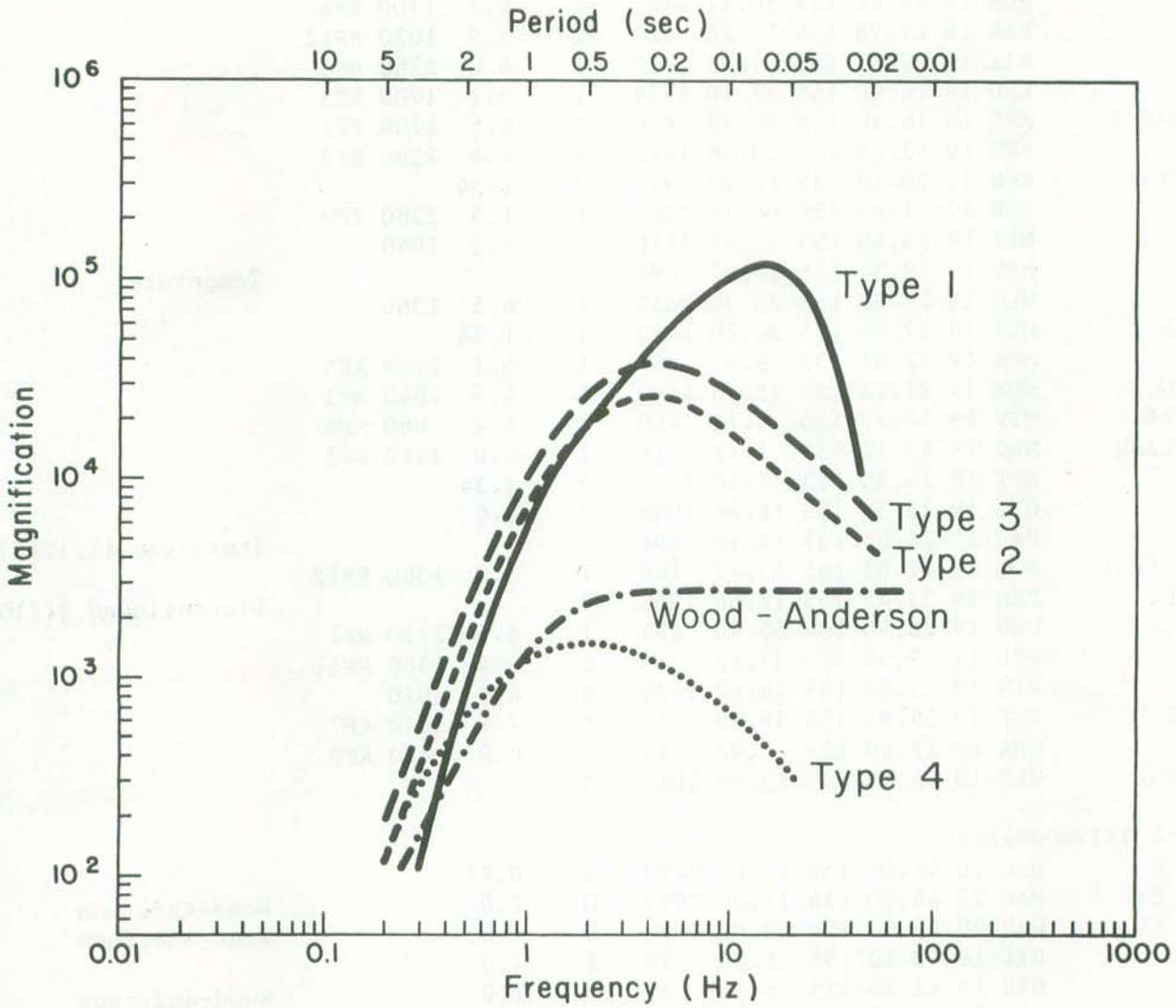

Figure 2.--System response curves for the Wood-Anderson torsion seismograph and for the four different types of seismometer-amplifier (or galvanometer) combinations in use by the Hawaiian Volcano Observatory.

Table 5.--Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical or horizontal component seismometer.

b) 3.5 Hz galvanometer with appropriate shunt resistances for critical damping. System is poorly calibrated.

Type 3. Consists of:

a) EV-17 Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 8, Summary 69.

Table 6.--Tilt Coordinates at Uwekahuna,
October, November, and December 1973

Date	N-S	E-W	Date	N-S	E-W
Oct. 7	727	296	Dec. 2	722	285
14	728	293	9	721	283
21	728	287	16	721	283
28	728	282	23	722	283
Nov. 4	728	281	30	721	286
11	725	293			
18	723	299			
25	723	290			

Table 7.--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 3)

Tilt base	Date (1974)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1973)
Uwekahuna (U on fig. 4)	14 Jan	754.3	291.1	5.21	N63.6°W	26 Sep
Tree Molds (TM)	14 Jan	584.7	478.0	2.06	N25.9°W	25 Sep
Sand Spit (SS)	15 Jan	992.3	722.2	3.04	S30.6°W	27 Sep
Mehana (M)	14 Jan	623.2	603.3	1.16	N15.7°E	25 Sep
Keamoku (Kea).	16 Jan	762.5	237.0	2.69	S 7.7°E	25 Sep
Ahua Kamokukolau (Kam).	15 Jan	391.7	504.1	3.50	S84.6°W	27 Sep
Kipuka Nene (KN)	17 Jan	278.9	494.5	0.56	N 7.2°W	28 Sep
Hilina Pali (HP)	17 Jan	463.2	483.9	0.98	N70.8°E	28 Sep
Kapapala Ranch (Kap).	16 Jan	477.4	527.7	1.08	S75.8°E	26 Sep

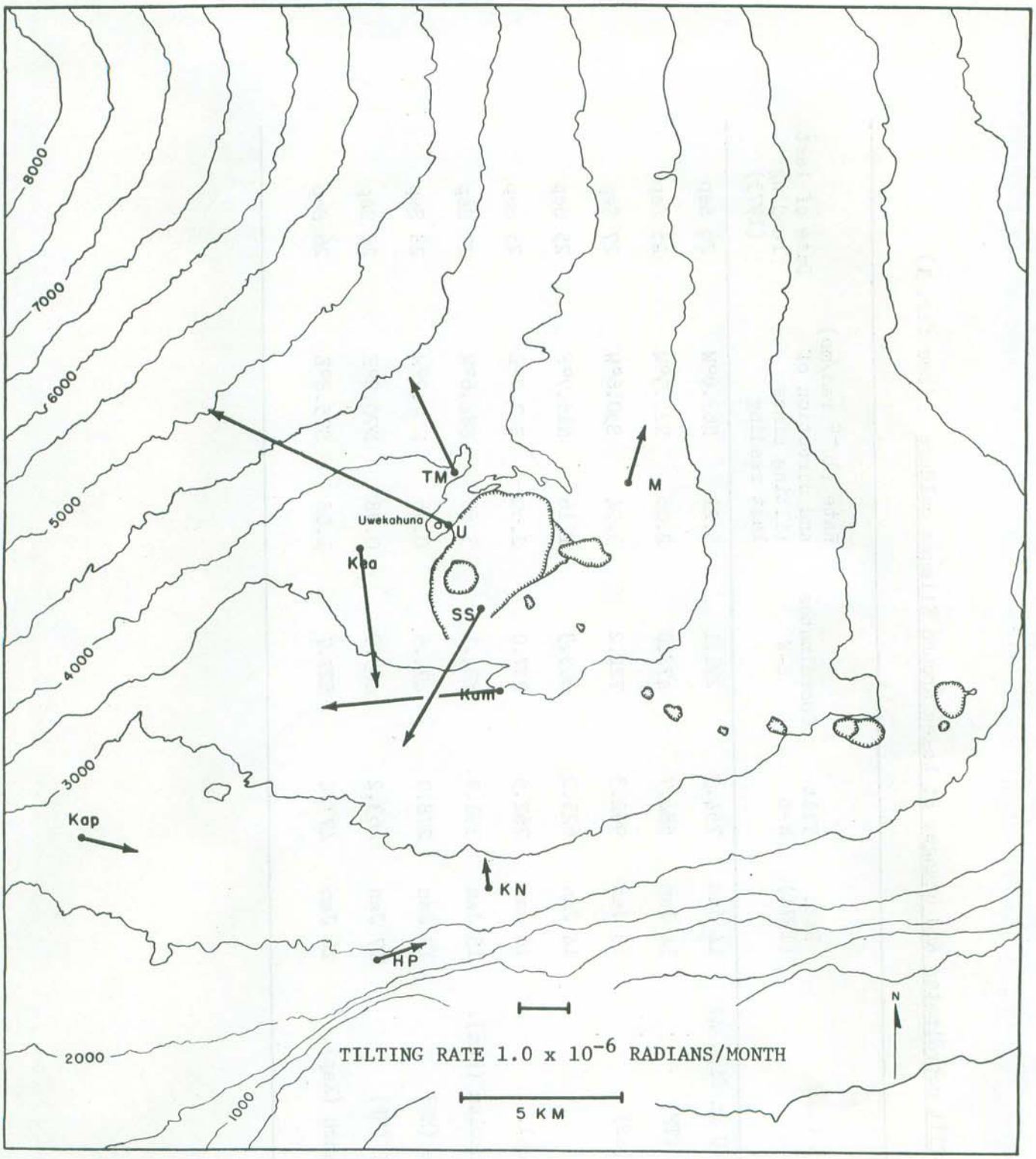

Figure 3.--Tilting of the ground around Kilauea Caldera. The vector depicting tilting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 7 for explanation of abbreviations.

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Hawaiian Volcano Observatory
1974 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 74
January to December 1974
By Robert Y. Koyanagi, Patricia Stevenson,
Elliot T. Endo, and Arnold T. Okamura

Chronological Summary
By John P. Lockwood, Donald W. Peterson,
and Robert I. Tilling

Open-File Report 2007-1334
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 74

JANUARY TO DECEMBER 1974

WITH A

CHRONOLOGICAL SUMMARY

Menlo Park, California
1978

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 74

JANUARY TO DECEMBER 1974

BY

ROBERT Y. KOYANAGI, PATRICIA STEVENSON*, ELLIOT T. ENDO,
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CHRONOLOGICAL SUMMARY

BY

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INTRODUCTION

Traditionally the Hawaiian Volcano Observatory (HVO) summaries have been published on a timely basis as a quarterly report. In recent years, however, the common occurrence of voluminous sets of earthquake data has resulted in a backlog of the routine processing. As a result, expediency required the publishing of summaries for 1974 as one volume. Conveniently this minimized repetitive publishing of certain tables and illustrations. Convenience and cost advantages led to a decision to adopt a policy for preparation of future summaries on a yearly basis. As it seemed appropriate, this first annual edition includes a summarization of the parameters used in routine earthquake data processing for the last five years. It is hoped that the information presented will help the user of the summary better understand the data set. Published seismic summaries are intended to be preliminary in nature and are not to be interpreted as final results. The primary aim of this summary is to function as a guide or reference for more detailed studies of both seismic and strain data gathered by the Hawaiian Volcano Observatory.

Publication of this summary represents a group effort by the HVO staff and members of the National Center for Earthquake Research. Noting that the summary number nearly corresponds to the year, we have used summary number 74 for 1974 data. There will be no summary 73, and future summaries will be numbered serially.

CHRONOLOGICAL SUMMARY

by

J. P. Lockwood, D. W. Peterson, and R. I. Tilling

During the first quarter eruptive activity was entirely confined to the Mauna Ulu satellitic lava shield along Kilauea Volcano's upper east rift zone. The sporadic fountain activity which reappeared in Mauna Ulu's summit crater last December 13 continued until January 24, when 60 m-high fountains quickly filled the summit crater and fed overflows which travelled more than one kilometre to the southwest. This strong eruptive phase only lasted one and one-half days, during which time Kilauea's summit (as monitored by the east-west component of the Ideal-Aerosmith tiltmeter) deflated by five microradians. Immediately after the strong Mauna Ulu eruptive activity of January 24 and 25, Kilauea's summit began a sharp re-inflation. Five days later (29 January), high fountaining resumed at Mauna Ulu and was accompanied by deflation of Kilauea's summit. This phase lasted 24 hours, after which the summit again began a sharp re-inflation. A pattern was thus established, consisting of Kilauea summit inflation, followed by a short-duration Mauna Ulu eruptive phase accompanied by summit deflation. Additional strong Mauna Ulu eruptive phases began on February 1, 8, and 14 and March 17 and 23. Each deflation of Kilauea's summit, which generally started about the same time as the onset of eruptive activity at Mauna Ulu, and each subsequent re-inflation, again substantiated the well-documented relation between the magma storage chamber beneath Kilauea's summit and the rift zone eruptive vents. Eruptive activity along the rift zones relieves the pressure within the magma reservoir, resulting in summit deflation.

Between major eruptive episodes activity persisted at Mauna Ulu but at greatly reduced rates. Irregular bursts of spatter and short lava flows issued sporadically from various vents located along a N65E-oriented zone across the summit shield. In March a steep-sided symmetrical cone about 20 m high was constructed above the site of the former summit crater by this localized activity. During episodes of Mauna Ulu overflow, lava accumulated in the topographic saddle between the Mauna Ulu shield and Puu Huluhulu to the north and formed a circular perched lava pond bounded by natural levees. Repeated flows gradually raised the surface of the pond, and lava lapped progressively higher on Puu Huluhulu's south slope.

Beginning on March 5, lava began to be extruded quietly but steadily from vents east of the summit cone. This lava constructed a complex lava tube system on the south flank of Mauna Ulu, which fed flows that travelled about four kilometres southward, almost to Poliokeawe Pali, by the end of March.

Eruptive activity was restricted to the Mauna Ulu satellitic lava shield on Kilauea Volcano's upper east rift zone during the second quarter. On 2 April, the tall, symmetrical cone located above the site of Mauna Ulu's former summit crater collapsed, forming a small pit crater whose bottom was filled with actively circulating lava. Lava continued to issue quietly from vents east of this pit crater and constructed a lava tube system that fed a lava flow which cascaded over Poliokeawe Pali, four kilometres south of Mauna Ulu, on 3 April.

During April and May, Mauna Ulu's summit pit crater enlarged by frequent small rockfalls from the steep and overhanging crater walls, to an ENE-SSW elongated pit about 60 x 85 m diameter. In April, the summit lava lake at the summit crater filled to the rim several times and lava flows poured small distances down all sides of the Mauna Ulu shield. These brief overflows did not develop the tube systems required to transport lava far from the Mauna Ulu vent, with the result that the repeated flows piled up near the source and the height of the Mauna Ulu shield increased substantially. During most of May, no overflows occurred from the crater atop Mauna Ulu, but the lava column was tapped by flank openings to the east and south. Persistent flows from these openings allowed a tube system to develop, and lava cascaded over Poliokeawe Pali on 30 April and reached the top of Holei Pali by 7 May. Thereafter, surface flows stopped, and the top of the lava column remained well below the crater rim. On 29 May, however, an abrupt deflation of Kilauea's summit began, and the Mauna Ulu crater rapidly filled to overflowing. During May 30-June 1 Mauna Ulu erupted copious volumes of lava, and lava fountained to heights of 20 m height and cascaded down all sides of the shield. By June 1, lava had travelled about 9 km to the south, cascaded over Poliokeawe and Holei Palis, and had reached within 3 km of the sea.

Early on 2 June the Mauna Ulu overflows stopped, and the summit area of Kilauea began to reinflate. The lava lake in Mauna Ulu's summit crater subsided to about 40 m below the crater rim, and profuse fuming began to obscure the lake surface much of the time. The crater walls were largely overhanging, and a series of concentric cracks developed around the crater as much as 25 m from the rim.

At the end of the second quarter the highest point on Mauna Ulu (south rim) stood 120 m above the pre-1969, pre-eruptive ground level.

Third quarter activity at Mauna Ulu lava lake, largely obscured by fume, progressively declined following the copious overflows of May 29-June 2. Circulation of the lake became increasingly more sluggish, as the lake surface continued to subside, descending to about 40 m below the rim by mid-July. During this desultory activity at Mauna Ulu, however, the summit region of Kilauea, remained highly inflated.

At about 0400 of July 19, the seismic alarm was activated by a sharp and sustained flurry of earthquakes centered near the southern part of the caldera and the upper east-rift zone. The onset of the earthquake swarm coincided with the beginning of a significant deflation of the summit region; initially the sudden change in the state of the volcano was not accompanied by harmonic tremor. Strong tremor, however, began about 1030, when the rate of deflation also markedly increased. Lava broke out about 1230 from several fissures in and near Keanakakoi Crater and within the southeastern part of Kilauea caldera (south of the August 14, 1971, fissures). New lava partly filled Keanakakoi and Lua Manu Craters and covered much of the August, 1971 lava on the caldera floor. Keanakakoi had last received lava in 1877, and no lava had entered Lua Manu in historic times. Activity in and near Keanakakoi stopped by evening of July 19, but moderate fountaining from the caldera-floor fissures persisted until July 22 when all eruptive activity ended. The eruption, accompanied by a summit deflation that measured 18 microradians at Uwekahuna, produced approximately 10 x 10^6 m^3 of lava (Tilling and others, 1975). During or shortly after this eruption, the lava at Mauna Ulu completely drained, exposing rubble-filled crater floor. Harmonic tremor in the area also ceased, signaling the end of the virtually continuous activity that began December 13, 1973.

No "live" lava was visible anywhere on Kilauea throughout August and much of September. Summit reinflation, however, proceeded and tilt data indicated a gradual southwestward shift of the center of inflation. About 0120 on September 19, with little premonitory seismic activity, lava broke out in 100 m-high fountains from N 55 E-trending fissures in Halemaumau. Shortly afterward, the fissures extended southwestward across Halemaumau's floor and climbed its west wall. As the fissures continued their southwestward advance across the caldera floor, fountains in Halemaumau diminished noticeably. At the peak of activity, lava from the caldera floor was cascading into Halemaumau, while more lava was plunging into Halemaumau's deeper central pit.

All activity ended about 0930. Drainback of lava was accompanied by reinflation of the summit region, which continued until the end of the quarter. The brief sharp, pre-eruption inflation "spike" was about 18 microradians as measured at Uwekahuna vault; the deflation associated with the eruption was roughly comparable in magnitude. A total of 10.9 x 10^6 m^3 of lava was erupted in less than half a day, mostly within Halemaumau, of which 4.8 x 10^6 m^3 drained back into the vents. The drainback left Halemaumau with a prominent lava-subsidence terrace ("bathtub ring") 9 m above the crust of the lake, the maximum depth of which is about 10 m. The crust continued irregular overturning until the morning of September 22.

Seismicity at Mauna Loa, which increased markedly in April, 1974, continued at moderately high levels throughout the third quarter. To better

monitor Mauna Loa, two additional radio-telemetered seismic stations were installed at its summit, and three lines were added to the summit geodimeter network.

Volcanic eruptions were lacking at Kilauea during most of the fourth quarter, although both Halemaumau and Mauna Ulu's summit crater emitted unusually dense fume clouds. Frequent and sometimes continuous noises of falling rocks at Mauna Ulu suggested that the crater was widening and possibly deepening. During early October, Kilauea's summit inflated rapidly, still rebounding from the deflation that accompanied the September 19 summit eruption. Later in October, the rate of inflation moderated, and slow but steady inflation continued throughout November and almost to the end of December.

On December 7 a dramatic increase in the number of Mauna Loa summit earthquakes began. The earthquake swarm, 10 days long, peaked on December 15 when nearly 1,500 quakes were recorded; several quakes were felt throughout the island. Geodimeter and level lines in Mauna Loa's summit region were remeasured, and results showed that inflation, first detected several months earlier, was continuing at an increased rate. By December 17, seismicity returned to a "normal" level, but this episode added to the possibility that Mauna Loa might be awakening from its quarter-century-long slumber.

Kilauea again returned to the spotlight as its gradual summit inflation reached extremely high levels, indicating engorgement of the shallow magma reservoir. When the frequency of short-period caldera earthquakes exceeded 1,000 per day in late December, including several that were felt locally, conditions seemed ripe for eruptive action. At 02:55 on December 31, lava fountained from a new fissure in the Ka'u Desert about 2 km south of Halemaumau. Additional eruptive fissures opened toward the northeast and southwest and ultimately spanned a length of about 4 km. Individual fissure segments varied from a few tens to 600 m in length; the N. 70° E-trending segments defined a zone that trended N. 45° E. Fountains averaged 30-40 m in height and reached a maximum height of 100 m. Activity waned beginning about 05:00, first at the northeastern end of the fissure system and then progressively decreased toward the southwest; all eruptive activity ceased about 08:50.

The December 31 flows flooded an area of about 7.5 km^2; the volume of new lava is about 15 x 10^6 m^3 if an average flow thickness of 2 m is assumed. Some flows advanced as much as 13 km from the vent fissures, reaching a point 3 km south of the Kamakaia Hills. The eruptive fissures lie in a wedge-shaped block between the Koae fault system and the southwest-rift zone--an area lacking prior historic activity. The eastern end of the eruptive zone is 2 km south of Halemaumau, and the western end is about 1 km northeast of Puu Koae.

The eruption was preceded, accompanied, and followed by considerable Kilauea summit deflation. During the height of the activity, from 02:00 to 04:00, deflation rates of 11.4 μ radians per hour were recorded at Uwekahuna. Seismic activity also was intense. Even though visible eruptive activity had ceased after about 6 hours, sharp deflation and the earthquake swarm continued into the new year.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In January 1974 the seismometer network consisted of 33 telemetering vertical high gain short period (1 sec.) stations spread over an area with a diameter of 125 kilometres (Fig. 1). The coverage is most complete on and around the main center of seismic and volcanic activity, Kilauea Volcano. During August 1974 two seismometer stations were established at the 4048 meter level on Mauna Loa to form a three station network with station MOK. Other stations in the network are part of a larger net located on other volcanoes of the island of Hawaii. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording.

The telemetering is via hardwire for stations nearby, or over VHF radio with the use of preamp/voltage controlled oscillators for distant or inaccessible stations. As many as 8 different audio carrier frequencies between 680 Hz and 3060 Hz, with a constant bandwidth of $\pm$125 Hz, can be frequency multiplexed via either hardwire or VHF radio. Though preamp/voltage controlled oscillators used in the network are constructed of discrete components or integrated circuits, the response characteristics are identical and conform to the N.C.E.R. definition of a standard high gain short-period seismometer station (Type 1, Table 1, Table 2). For telemetering more than 15 kilometres or where direct wiring is impractical, FM-VHF radios function as a link between stations and the observatory. The radios are commercially obtained handie-talkie units modified for continuous transmission at 100 milliwatts of rf output. The operating frequencies of the radio links fall in the range of 163-173 MHz. Together the preamp/VCO and VHF transmitter consume approximately 800 milliwatts of power. Less than 600 milliwatts is required for a station where low powered integrated circuits are used.

Most stations are housed in a 1.2m long x 0.6m wide x 0.3m high covered concrete tile boxes for protection from weather and vandalism. The boxes contain air polarized primary cells, preamp/VCO, and if used, a VHF transmitter. Seismometers are normally buried 25-35 meters from the box. For most VHF stations 6 element Yagi antennas are utilized. The sites are located on the basis of:

(1) geometric relationship to the rest of the net

(2) seismicity

(3) line of site for FM radio telemetry

(4) accessibility

Placement of the stations has the objective of providing Kilauea Volcano, Mauna Loa, and the entire island with a uniform coverage of seismometer

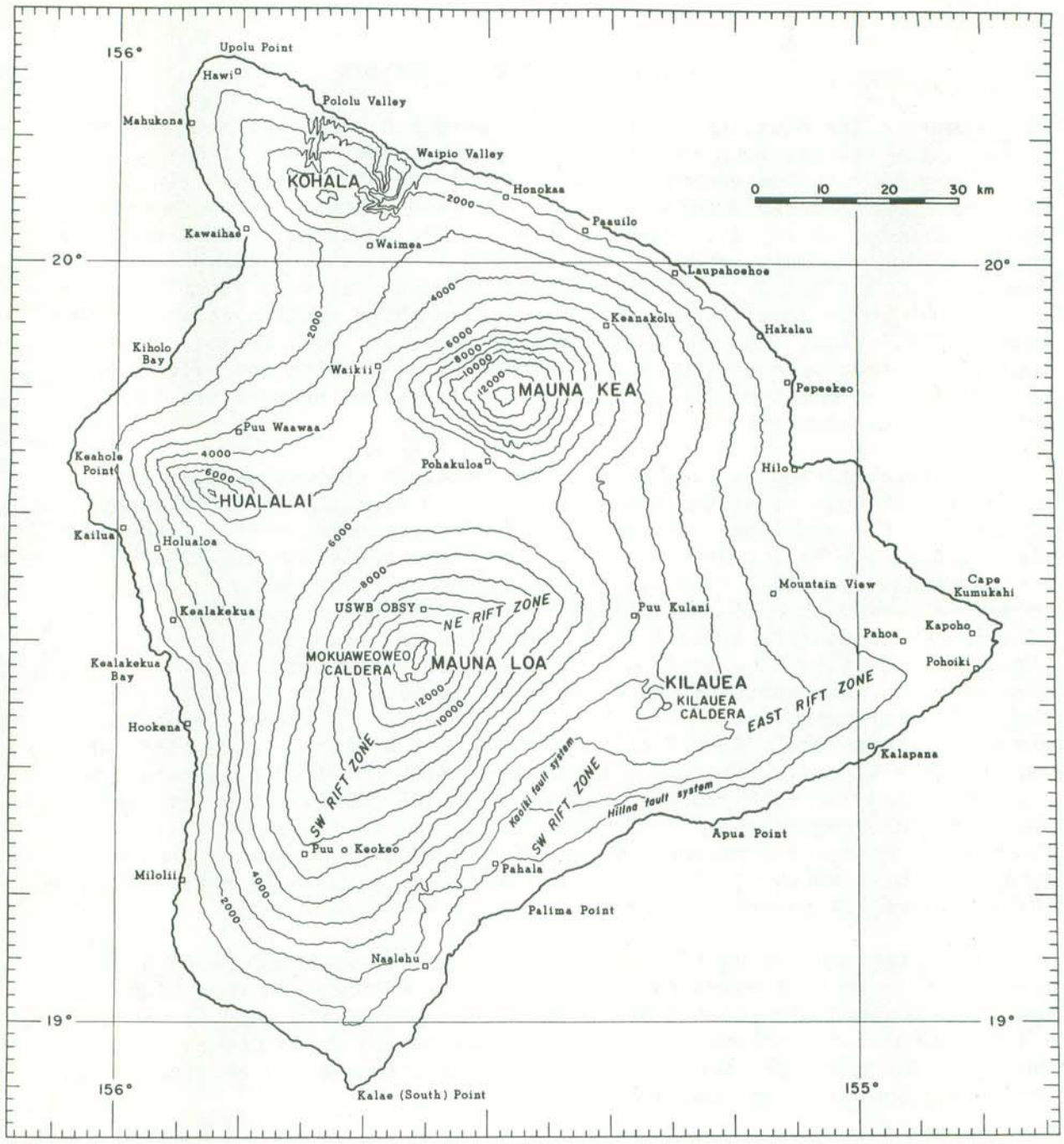

Figure 1a. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

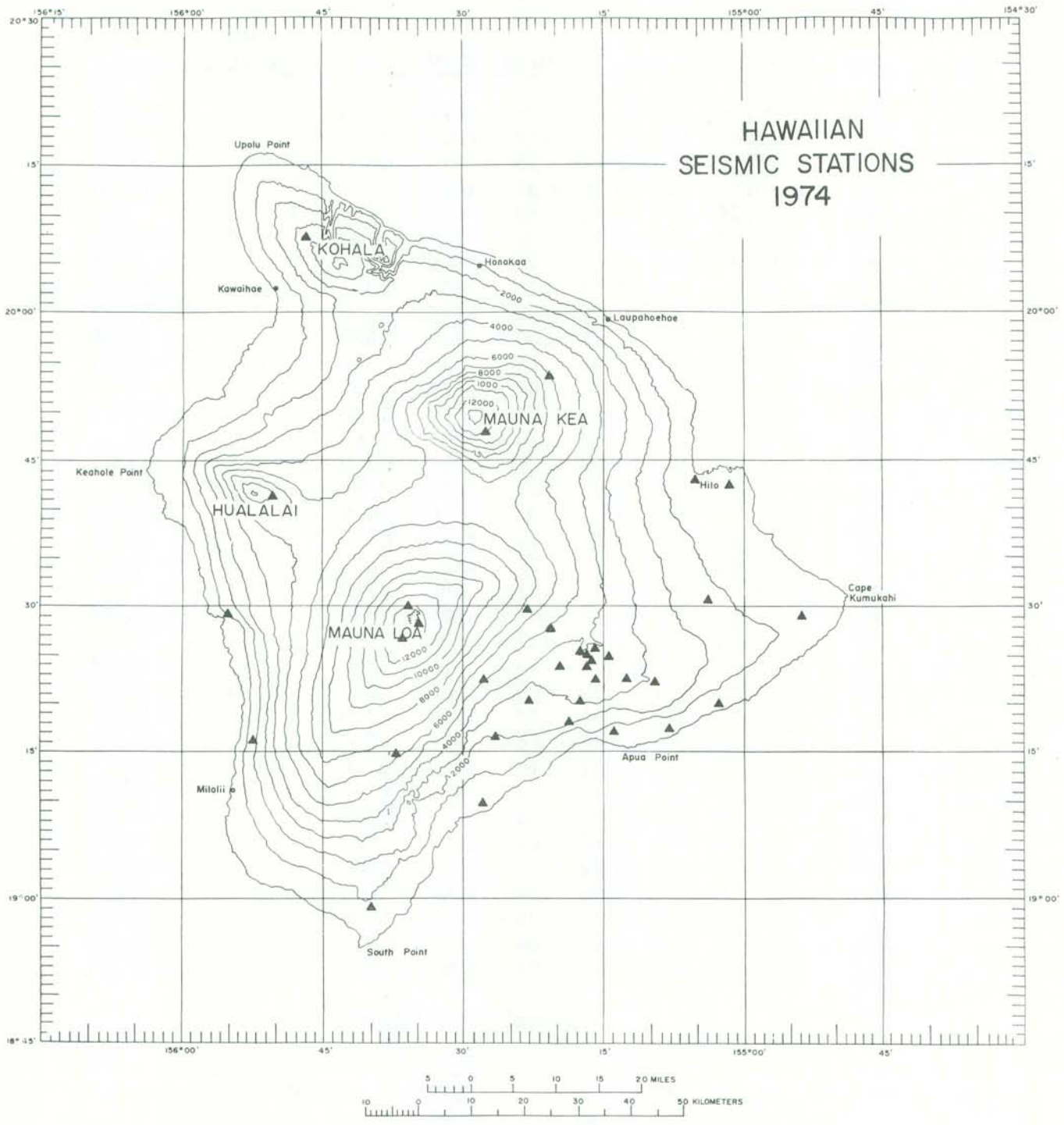

Figure 1b. Map of the island of Hawaii showing seismic stations operated by the U. S. Geological Survey.

TABLE 1.-Seismometer Stations in Hawaii operated by the U. S. Geological Survey, 1974.

Station Name	Code	LAT-N	LON-W	Delay	ELEV	VCO	Old Type/Cal	Change	New Type/Cal
AHUA	AHU	19 22.40	155 15.90	.06	1070	2380	3 6.0	74/09/23	1 3.8
AINAPO	AIN	19 22.50	155 27.62	.33	1524	1020	1 6.0	74/10/30	1 8.5
CAPTAIN COOK	CAC	19 29.29	155 55.09	.15	323	1360	1 6.0	74/08/26	1 3.3
CONE PEAK	CPK	19 23.70	155 19.70	-.04	1038	1700	3 1.34	74/11/20	1 3.5
DESERT	DES	19 20.20	155 23.30	-.10	815	680	3 1.34		
ESCAPE ROAD	ESR	19 24.68	155 14.33	.01	1177	1360	1 6.0	74/08/20	1 1.7
HALE POHAKU	HPU	19 46.85	155 27.50	.42	3396	2720	1 5.6	74/09/18	1
HILINA PALI	HLP	19 17.96	155 18.63	.18	707	2040	1 6.0	74/10/21	1 2.5
HUALALAI	HUA	19 41.25	155 50.32	.58	2189	1700	1 5.2	74/08/13	1 5.3
KAAPUNA	KAA	19 15.98	155 52.28	.00	524	1020	1 5.5	74/10/04	1 6.0
KAENA	KAE	19 17.35	155 7.95	.15	37	2380	1 6.0	74/09/03	1 2.2
KAHUKU	KHU	19 14.90	155 37.10	.08	1939	1700	1 5.7		
KAPAPALA RANCH	KPR	19 16.40	155 26.70	.05	610	1700	1 6.5	74/09/17	1 4.33
KEANAKOLU	KKU	19 53.39	155 20.58	.86	1863	2380	1 4.8	74/09	1 2.3
KIPUKA NENE	KPN	19 20.10	155 17.40	.07	924	1360	3 1.34	74/09/04	1 5.0
KOHALA	KOH	20 7.69	155 46.77	.21	1166	2380	1 1.5	74/09	1 3.2
M12	M12	19 23.69	155 18.45	.02	1116	2040	1 6.0	74/02/06	none
MAUNA LOA	MLO	19 29.80	155 23.30	.24	2010	1360	1 6.5	74/10/21	1 11.8
MAUNA LOA X	MLX	19 27.60	155 20.70	.27	1475	1360	3 1.34	74/12/18	1
MAKAOPUHI	MPR	19 22.07	155 9.85	-.01	881	2720	1 5.7		
MOKUAWEOWEO	MOK	19 29.28	155 35.98	.28	4104	2040	1 6.5	74/08/28	1 7.5
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	.17	409	680	1 6.2		
NATIONAL GUARD	NAG	19 42.12	155 1.72	.63	18	1360	1 6.0	74/10/03	1 8.5
NORTH PIT	NPT	19 24.90	155 17.00	-.06	1115	680	3 1.34	74/11/21	1 9.0
OUTLET	OTL	19 23.38	155 16.94	.02	1038	1360	3 5.0	74/11/11	1 4.15
PAU	PAU	19 22.62	155 13.10	-.06	994	2040	1	74/11/13	1 3.8
POLIOKEAWE PALI	POL	19 17.02	155 13.47	.10	169	2720	1 6.0	74/09	1 3.0
PUU HONUAULA	PHO	19 28.90	154 53.40	.03	215	2720	1 6.5	74/10/08	1 4.8
PUU PILI	PPL	19 9.50	155 27.87	.24	35	1360	1 4.4	74/09	1 2.2
RIM	RIM	19 23.90	155 16.60	.02	1128	1020	1 6.0	74/10/02	1 1.1
SOUTH POINT	SPT	18 58.91	155 39.92	-.07	244	2040	1 7.8	74/08/23	1 4.8
SOUTHWEST RIFT	SWR	19 27.26	155 36.30	.14	4048	1020	none	74/08/22	1 11.1
SUMMIT CABIN	SCA	19 28.20	155 35.08	.30	4048	1700	none	74/08/22	1 11.5
WAHAULA	WHA	19 19.90	155 2.92	.06	29	680	1 6.0	74/09/03	1 3.66
WALDRON LEDGE	WLG	19 25.49	155 15.69	-.02	1067	2380	3	74/08/26	1 2.2
Optical Seismographs									
HALEAKALA Z	HAL	20 46.00	156 15.00		2090		3 0.71		
HALEAKALA EW	HAE	20 46.00	156 15.00		2090		WA 1.0		
HALEAKALA NS	HAN	20 46.00	156 15.00		2090		WA 1.0		
HILO Z	HIL	19 43.20	155 5.30	.64	20		3. 1.0		
HILO EW	HIE	19 43.20	155 5.30	.64	20		WA 1.0		
HILO NS	HIN	19 43.20	155 5.30	.64	20		WA 1.0		
KIPAPA	KIP	21 25.40	158 .90		76		3 0.56		
UWEKAHUNA Z	UWE	19 25.40	155 17.60	.06	1240		3 0.7		
UWEKAHUNA Z	USZ	19 25.40	155 17.60	.06	1240		4. 1.0		
UWEKAHUNA EW	USE	19 25.40	155 17.60	.06	1240		4. 1.0		
UWEKAHUNA	PEZ	19 25.40	155 17.60		1240		PE		
UWEKAHUNA	PEE	19 25.40	155 17.60		1240		PE		
UWEKAHUNA	PEN	19 25.40	155 17.60		1240		PE		

Table 2.--Seismic Instrumentation Types
(Type 2 instruments have been discontinued.)

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO. USGS Model J302 was introduced in 1974.

Type 3. Consists of:

a) EV-17 - Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 200X), direct signal transmission over cable to HVO and HVO-built solid state amplifier and galvanometer driver, or Observatory-built electromagnetic seismometer with 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Experimental type amplifier systems are not given type numbers.

stations. Figure 1 and Table 1 give the station locations and instruments for 1974.

Recording. FM signals from both hardwire and VHF radio receivers are tied in to the discriminator rack where the various carrier signals are demodulated. Analog seismic signals are recorded on one of two develocorders that are capable of recording up to 18 channels of data on 16mm film, plus 2 channels for timing. Data for approximately 24 hours are recorded on 48m of film. The signals are placed on film in the order that best facilitates the preliminary evaluation of earthquakes from known seismic sources. Combinations of signals from ideally located stations are selectively recorded in successive order to monitor the most important seismic zones of Hawaii. The combination of key signals are placed on the master recorder designated as the A Develocorder. The processed film obtained from the A Develocorder is scanned to select and read well-recorded earthquakes, and to prepare daily counts of small earthquakes from the various persistent seismic sources to serve as an index of seismicity. Arrival times of quakes larger than about magnitude 2 are also read for stations recorded on the B Develocorder. Six key stations are also recorded on smoke drums (at 60mm/minute) for rapid daily assessment of seismicity around Kilauea.

Develocorder records are read on a film viewer with 20x magnification. Arrivals are read to the nearest 0.05 second. The recorded arrival times, amplitudes (where readable), and other key data are routinely sent to N.C.E.R. in Menlo Park for computer processing.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna, Hilo, Maui, and on Oahu (Kipapa station operated by Honolulu Observatory). The less sensitive short period records are used primarily for S data, and amplitude measurements for magnitude calculations to supplement readings on the 16mm film strip.

At HVO a master clock is used for timing all seismograph records. The clock is a crystal controlled chronometer with solid state counters having outputs for hour, minute, and second marks. The drift rate is a few milliseconds per day. At least once a day WWVH is recorded on all timing channels on the develocorders so a time correction can be applied to all seismic data. A time code generator with Irig-C and Irig-E code was installed in the later part of 1974 for timing magnetic tape recorders.

Seismograph system response. The standard system response (including develocorder response) and system magnification are shown in Figure 2. The dashed curve, with its amplitude scale to the right of the figure, represents the total system response exclusive of the geophone. This curve is determined by putting a 100 microvolt RMS sine wave signal into a preamp/VCO at an electronic gain of 4000 at specific frequencies and subsequently reading the absolute peak to peak amplitudes on a 20x film reader. System parameters are:

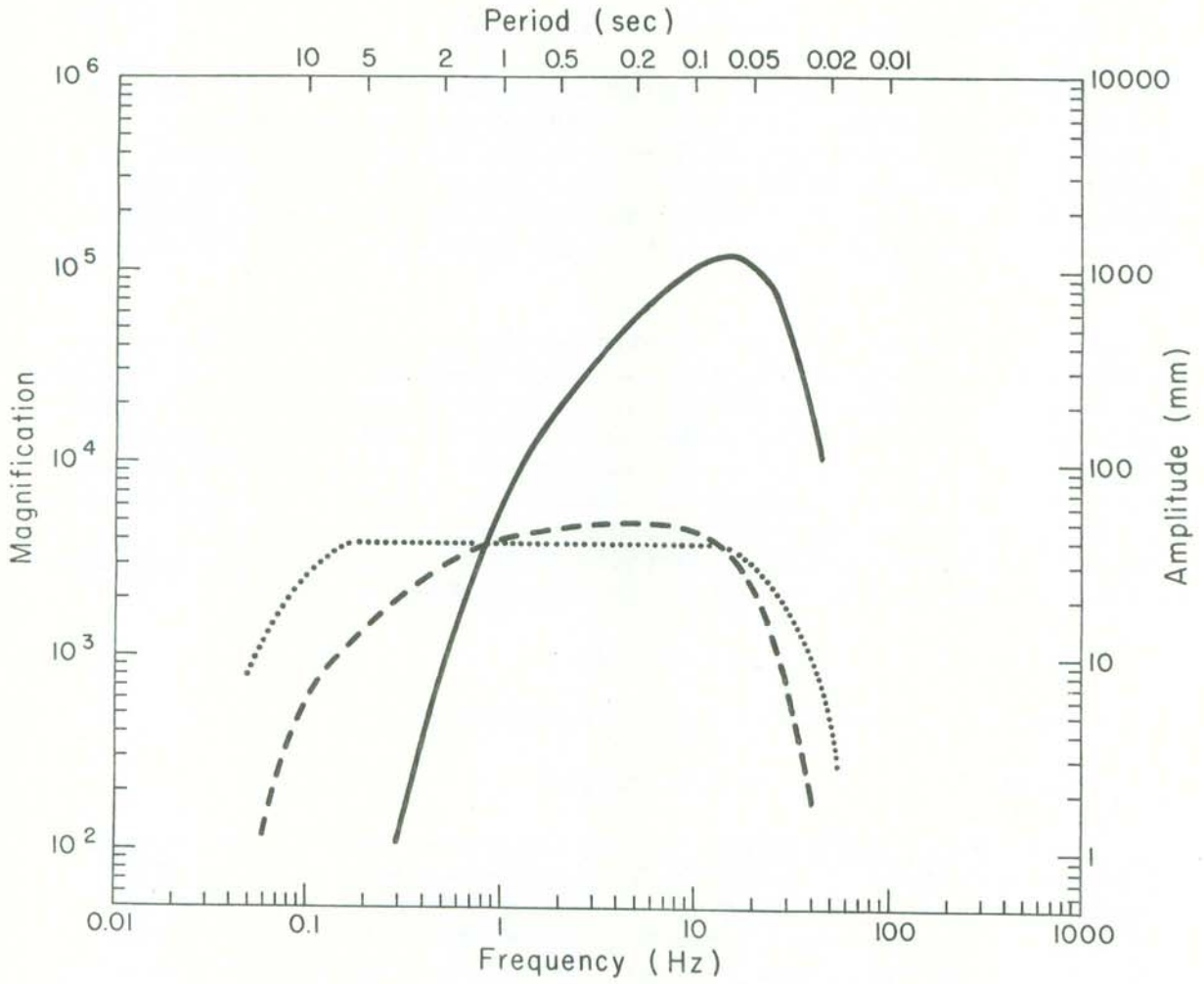

Figure 2. System response curves for a standard Hawaiian Volcano Observatory seismograph system. Solid curve (scale at left) represents the total unit magnification for a system. The dashed curve (scale at right) represents the electronics and recording response (VCO to Develocorder galvanometer). The dotted curve is the response of the purely electronic portion of the system (VCO to discriminator).

VCO deviation	-- ±125Hz for ±5 volts d.c.
Discriminator output	-- ±2.0 vdc for ±125 Hz deviation plus 6db/octave high cut filter on output
Discriminator-galvo RC coupling	-- R = 24,000 ohms 1% tolerance C = 8 microfarads, 5% tolerance
Galvonometer free period	-- .091 sec.

3 db points for the system are approximately 0.6 Hz and 15 Hz. Response characteristics for the electronics of the system are determined by filtering in the preamp/VCO, filtering of the discriminator output, RC coupling to the develocorder galvonometer and by the response of the develocorder galvonometer. Variations in RC components and individual galvonometer responses contribute to small differences in system response from trace to trace.

The peak response for the electronics is very close to 5 Hz, hence to determine the total electronic gain of a specific station, a 5 Hz sine wave calibration signal is periodically applied at the seismometer input of the preamp/VCO to determine the sensitivity of the electronics at individual stations during routine maintenance (damping resistor networks for the seismometer are bypassed). The system magnification (solid curve, Fig. 2) is determined from the theoretical output of a standard seismometer and the electronic response of the system. Average constants assumed for the theoretical output of the seismometer are:

Free period	-- 1 second
Loaded motor constant	-- 0.5 volt/cm/second
Damping	-- 0.8 critical

Seismograph system calibration. During the summer of 1972, seismometer parameters were determined for 25 EV-17 seismometers used in the HVO network. Electronic responses for 15 standard systems (Type 1) were verified. Input impedances for type 1 electronic units were fixed at 4000 ohms and an appropriate resistor network was installed at each of these sites to adjust the loaded motor constants of all seismometers to 0.5 volt/cm/sec. Eleven stations classified as type 3 or experimental were not calibrated. During 1974 all stations except DES were converted to the standard system. Low powered CMOS JE302 preamp/VCO units (Van Schaak, 1975) were introduced into the network. The new units were designed to operate from a small mercury battery power pack. Current requirement is 200 microamps at ±5 volts d.c.

Magnitudes calculated by the location program HYPOMAG, a modified version of HYPOLAYR (Eaton, 1969), require knowledge of the sensitivity of standard stations relative to the Wood-Anderson torsion seismograph. Amplitude readings from Develocorder records are reduced to the equivalent amplitudes that would have been read on the seismogram from a Wood-Anderson seismometer if located at the site of the more sensitive seismometer (Eaton, et al., 1970). Table 3 lists the four different instrument response arrays that are used for the seismometer network. The values given are the log (base 10) values for the ratios of unit responses for types 1, 2, 3, and 4 to the responses of the Wood-Anderson seismometer. Figure 3 is a graphic comparison of type 1, 3, and 4 responses to the response of the Wood-Anderson seismometer.

The 5 Hz calibration signal put in at 10, 100, and 1000 microvolts rms levels is reduced to a 10 microvolt equivalent for obtaining the calibration factor (CAL). The CAL factor represents the peak to peak value of the sine wave record (read in mm on a film viewer with 20x magnification) produced by the 5 Hz signals. Each system response in Table 3 and Figure 3 assumes a station calibration factor of 1.0 (normal CAL for an electronic gain of 1000x). To obtain the approximate magnifications for each station at frequencies above 3 Hz the log (base 10) value of CAL and the log (base 10) of 2800 are added to the unit log response values from Table 3. For example, at 10 Hz MLO has an approximate magnification of 1,230,000: $\log_{10}$ 2800 + $\log_{10}$ 6.5 + 1.83 = $\log_{10}$ 1,230,000.

Most of the network stations were changed or recalibrated during 1974. Table 1 lists the date of change, and both instrument type and CAL factor before and after the change. Minor changes in CAL factors may not be listed if they are less than 20%. Response curve and magnification for system 4 is similarly determined from calculated and experimental values.

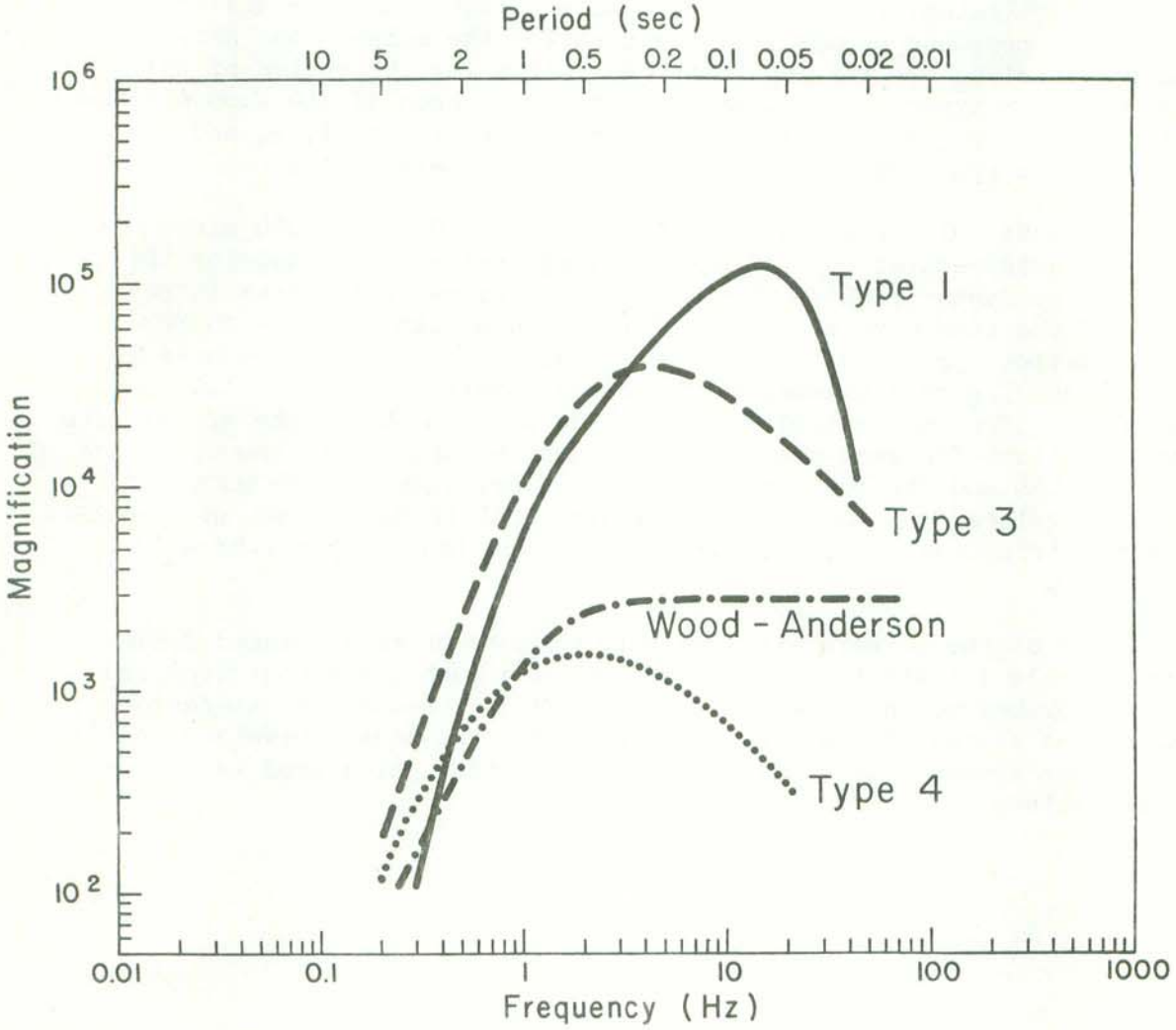

Figure 3.--System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometer-amplifier (or galvonometer) combinations in use by the Hawaiian Volcano Observatory.

FREQ.	PERIOD	TYPE 1	TYPE 2	TYPE 3	TYPE 4
0.013	79.432	0.0	0.0	0.0	0.0
0.016	63.095	0.0	0.0	0.0	0.0
0.020	50.118	0.0	0.0	0.0	0.0
0.025	39.810	-1.300	-0.690	-0.450	-0.290
0.032	31.623	-1.060	-0.580	-0.350	-0.200
0.040	25.119	-0.870	-0.480	-0.250	-0.110
0.050	19.952	-0.620	-0.380	-0.150	-0.030
0.063	15.849	-0.390	-0.290	-0.050	0.050
0.079	12.589	-0.140	-0.180	0.040	0.120
0.100	10.000	0.250	-0.080	0.140	0.180
0.126	7.943	0.300	0.020	0.240	0.230
0.158	6.310	0.390	0.120	0.330	0.260
0.200	5.012	0.500	0.210	0.430	0.270
0.251	3.981	0.600	0.300	0.510	0.280
0.316	3.162	0.700	0.390	0.600	0.260
0.398	2.512	0.790	0.470	0.670	0.230
0.501	1.995	0.880	0.540	0.740	0.190
0.631	1.585	0.960	0.620	0.790	0.120
0.794	1.259	1.040	0.680	0.840	0.050
1.000	1.000	1.100	0.740	0.890	-0.030
1.259	0.794	1.150	0.780	0.940	-0.100
1.585	0.631	1.210	0.840	1.000	-0.160
1.995	0.501	1.280	0.900	1.060	-0.200
2.512	0.398	1.360	0.950	1.110	-0.240
3.162	0.316	1.450	0.980	1.140	-0.280
3.981	0.251	1.540	0.990	1.150	-0.330
5.012	0.200	1.630	0.970	1.140	-0.390
6.310	0.158	1.710	0.930	1.110	-0.460
7.943	0.126	1.780	0.870	1.060	-0.530
10.000	0.100	1.830	0.780	1.000	-0.620
12.589	0.079	1.800	0.700	0.920	-0.710
15.849	0.063	1.780	0.620	0.840	-0.800
19.952	0.050	1.680	0.540	0.750	-0.890
25.119	0.040	1.510	0.460	0.660	-0.990
31.623	0.032	1.340	0.370	0.570	-1.090
39.810	0.025	0.0	0.290	0.470	-1.190
50.118	0.020	0.0	0.210	0.370	-1.290
63.095	0.016	0.0	0.130	0.0	0.0
79.432	0.013	0.0	0.0	0.0	0.0
99.999	0.010	0.0	0.0	0.0	0.0

Table 3.--System Response Arrays - Log Magnification.

TILT INSTRUMENTATION

In addition to the seismic network, a network of spirit-level tilt stations (dry), borehole tiltmeters, and water-tube (wet) tilt stations is maintained. The network is located primarily on Kilauea Volcano with ongoing work to establish stations on the summit of Mauna Loa and its rift zones. In December 1974 the tilt network at Kilauea Volcano consisted of:

a) 31 dry tilt stations

b) 3 borehole tiltmeters

c) 10 water-tube (wet tilt stations)

d) 1 continuous recording Ideal-Aerosmith

Dry tilt and wet tilt stations are routinely occupied once quarterly, although dry tilt stations are occasionally occupied more often. Borehole tiltmeter data are telemetered via audio carrier by VHF radio or cable. Frequency multiplexed signals are demodulated for analog recording at the Observatory. An Ideal-Aerosmith mercury-pool capacitor-type tiltmeter (1m base) is located at the Uwekahuna vault, and the analog signal is recorded at the Observatory.

DATA PROCESSING

Routine processing of Hawaii earthquake data consists of several steps. These are:

a) Computer coded reading sheets are shipped to the National Center for Earthquake Research for keypunching.

b) After punching and verification, the data is used in a location program for what is called a first run.

c) First run computer output is sent back to the Observatory for retiming of what appear to be poor readings.

d) Computer cards for retimed readings are corrected and the earthquake data are subject to one or two more passes through the location program.

Summary cards containing earthquake parameters are part of the computer output on the final run (stored on disk file or magnetic tape). Line printer plots for first motions are also obtained. Printed outputs from the final run are sent back to the Hawaiian Volcano Observatory. When processing for one year is complete phase cards are loaded on to magnetic tape for final location and subsequent analysis. Copies of magnetic tapes and original phase cards are stores at N.C.E.R. Computer output from all final location runs is put on microfiche (48x reduced). Copies of microfiche for 1974 and subsequent years are available for inspection at HVO and at NCER in Menlo Park.

During the last 5 years two different location programs have been used. From January 1970 to December 1973 HYPOMAG was used for the routine processing. A switch to HYPOELLIPSE (Lahr, in prep.) was made for data beginning January 1974. In this time period 3 different models have been used in the location programs. These are:

From January 1970 to December 1970

Layer	Velocity km/sec	Depth km	Thickness km
1	3.9	0.0	3.1
2	5.0	3.1	8.1
3	6.8	11.2	3.6
4	8.25	14.8	

From January 1971 to 1973

Layer	Velocity km/sec	Depth km	Thickness km
1	1.8	0	0.8
2	3.1	0.8	1.4
3	5.2	2.2	5.8
4	6.8	8.0	5.5
5	8.25	13.5	

From January 1974 to present

Layer	Velocity km/sec	Depth km	Thickness km
1	2.00	0	.80
2	3.25	.80	1.20
3	6.00	2.00	3.50
4	6.40	5.50	4
5	5.30	9.5	3.5
6	8.30	13.00	1000.00

Station corrections (station delays of Table 1) determined by Klein (unpublished) were applied to 1974 data.

The Hawaii data set will often include phase cards for unlocatable distant events, and for which no solutions are published in the seismic summary.

SEISMIC SUMMARY

Events recorded by the U.S. Geological Survey seismograph network in Hawaii fall in two categories:

1) Local earthquakes and tremor originating in the region of the Hawaiian Islands (usually within 100 km of at least one seismograph),

2) Distant earthquakes originating more than 3,000 km from Hawaii.

As an index of seismic activity at Hawaiian volcanoes, daily counts of earthquakes and minutes of tremor recorded by seismographs in Hawaii are listed in Table 4. The earthquakes are separated in groups on the basis of region of origin as determined by the analysis of records obtained daily at the Observatory (UWE, MLO, MLX, AHU, DES, NPT, WPT, MPH, KMO, OTL).

Computer locations of well-recorded events are listed in Table 5. The location of each seismograph station is listed in Table 1, along with a description of the equipment at each station.

Table 4.--Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea. Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano.

Earthquake categories are: Kilauea Summit 30 km, earthquakes from about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves from intermediate depths roughly 5-10 km beneath the summit region; Kilauea Summit Shallow, earthquakes from within a few km beneath the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone of Kilauea; Koae, earthquakes from along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; South Flank, faults on the south flank of Kilauea; Mauna Loa L-P, earthquakes characterized by low-frequency waves from Mauna Loa volcano; Mauna Loa S-P earthquakes from within a few kilometers beneath the summit of Mauna Loa; Offshore PPL, earthquakes from mostly offshore areas south of Puu Pili station.

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank					Off-shore PPL	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank		
January 1		9m	Moderate to low fluctuating tremor from the upper east rift--high tremor amplitude and decrease in shallow summit quakes coincide with pickup of Mauna Ulu eruptive activity.		64	259	13	34	5	1	4	5	
2	9m				25	254	16	66	5	5	8	2	
3	10m	15m		2	24	264	8	94	6	5	21	2	
4	15m	3m		2	2?	266	23	105	7	2	?	1?	
5	30m	5m			66	147?	9	47	6	2	1		
6				1	16	269	7	30	9	2	5	5	
7		3m			49	261	19	51	12	1	20		
8				6	84	413	15	49	2	5	3		
9		11m?		2	113	429	18	40	8	2	12	5	
10		11m		2	90	424	8	31	1	7	9		
11				3	149	619	35	52	5	2	39	2	
12	11m			2	187	915	20	36	4	1	37	2?	
13				1	38	717	4	13	13	4	15	1	
14				2	28	782	14	23	6	2	20	1	
15		9m		1	30	769	7	20	8	3	20	2	
16		15m		2	28	509	7	35	3		24		
17		20m?			37	370	8	43	1	2	25	1	
18	30m	9m			53	314	5	39	3		2?		
19		5m			54	367	4	36	3	2	4	3	
20		17m		1	120	465	14	41	3	2	2	4	
21				1	110	691	21	28	6	1	11	3	
22				1	116?	703?	25	21	5	4	6	4	
23				2	99	1066	20	19	8	1	2	2	
24		12m			27	458	5	4	1		10		MAU station overrun by Mauna Ulu lava; replaced by PAU.
25				1	19	186	5	7	2	2	6	2	
26				1	33	228	15	13		1	12	4?	
27		3m		1	42	347	14	8	2	1	19		
28		23m			127	579	22	23	11	2	17	1	
29		3m			30	532	9	8	4	1	3	2	
30					20	124	13	10	5	3	2	1	
31		42m?		1	102	254	19	10	4	2	19	1	

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes									
				Kilauea Summit			Kilauea Flank					Off-shore PPL	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank		
February 1			Moderate to low fluctuating tremor from the upper east rift--high tremor amplitude and decrease in shallow summit quakes coincide with pickup of Mauna Ulu eruptive activity	3?	72	345	5	16	5	2		3?	Increase of Mauna Loa L-P quakes during the month.
2		5m		1?	25	175	11	16	5	3	2	2?	
3					27	220	10	2	2	1	10		
4	37m	5m		1	69?	318?	17?	16?	11?	3	15?	1	
5		25m		4	88	407	12	27	17		6		
6					122	534	17	28	5		9	5?	
7	85m				62	497	22	15	9	5	12	1?	
8				3?	59	249	13	15	1	2	9	1	
9		15m			76	209	37	12	11	2	5	1	
10					11	228	12	19	3	3	21	1	
11		3m		1	16	324	15	21	6		6	1	
12		7m		1	47	651	23	25	2	1	5		
13		12m		2	81?	878?	19?	26?	7?	1	9?	1	
14		3m		2?	8?	358?	8?	17?	2?	3	4?		
15	20m				11	248	5	16		1			
16	?				51	486	10	12			1		
17	40m			1	24	526	21	17	1	1	1		
18		11m		2	96	918	19	19	2	4	8	2	
19	24m			2	62	1306	17	14	4	2	11	2	
20	18m?				16	1087	11	11	3	3	9	2?	
21					13	1160	16	8	7	1	17	1	
22	8m	11m			30	1391	23	16	4	2	14		
23	44m	4m			25	1237	19	15	1		11	2?	
24				1	26	1123	28	17	3	2	18	2	
25	43m				67	1084	18	15	5	4	1		
26	5m	6m		1	49	1013	19	13	2	4	13	1	
27	3m	3m		1	25	1354	7	12	3	6	12		
28	30m?			2	23	1065	10	16	3	2	11	1	

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank					Off-shore PPL	Remarks
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank		
March 1		5m	Fluctuating moderate to weak tremor from the upper east rift		2	1235	20	24	6	2	2		Intermittent small flurries of Mauna Loa. L-P quakes during the month.
2		8m			84	1235	11	41	7	4			
3				2	21	1623?	15	44	1		3	4	
4				1	24	1694	18	37	7	2	2		
5					23	1131	25	27	10	1	4	1	
6				2	39	537	9	14	3		8	3	
7				1	26	490	20	13	3	2	2		
8				1	51	671	16	26	8	3	8		
9	10m	37m			108	987	16	47	6		6		
10					22	858	16	22		5	9	4	
11	14m				26	1055	17	21	3	5	12		
12		24m		1	35	1554	26	17	2	4	7		
13		42m		1	29	1182	17	17	5	7	15		
14		10m		1	19	1774	18	41	6	10	12		
15		3m		1	12	1761	20	34	5	1	14	1	
16		11m			33	1408	30	45	5	9	23	1	
17		9m		2	16	789	12	25	8	1	13	2	
18					18	361	20	18		1	14	1	
19		12m?		1	61	332	18	41	4	2	8		
20		50m?		2?	34	438	32	43	4	1	6		
21		6m		1	51	633	17	21	5	2	24		
22	25m	3m			17	278	19	22	3	3	6		
23		3m			2	208	7	427	6	3	21		
24		3m		1?	25	233	19	60	2	1	64		
25		10m?		6?	66	409	15	40	15	1	37	3	
26				27	56	458	32	35	20	2	28	4	
27	60m	5m		1	190?	302	34	68	10	1	28	4?	
28	11m	17m		2	158	384	15	30	1	5	18		
29		3m			35	188	8	27	7	4	2		
30	5m?	2m			20	239	7	29	12	2	3	2	
31		4m			9	286	15	27		2	31		

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes											Remarks
				Kilauea Summit			Kilauea Flank					Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank	L-P	S-P	Off-shore PPL	
April 1	31m		24h	1	12	266	11	16			16				
2			24h		6	171	8	22			16	1		1	
3			24h	1	5	201	15	12	2	2	18				
4	3m		24h	1	4	156	14	15			16	1		1	
5			24h	1	30	216	30	38	4	5	6			5	
6			24h	2	13	402	20	45	6	2	2	2		1	
7			24h		18	438	23	41	6		8	3		1	15 KM-11
8		6m	24h		11	342	13	18	3	2	11			1	15 KM- 2
9		9m	24h		17	434	11	28		1	14	1		1	15 KM- 1
10			24h	3	32	716	18	41	8	4	7	15		2	
11			24h		53	789	29	48	9	5	3	7			
12		25m	24h		22	444	12	18	7	1	2			1	
13	45m	5m	24h		23	218	5	24	5	1	2			3	15 KM- 1
14		7m	24h		19	411	24	62	2	2		3		2	
15			24h	2	16	501	23	25	8	1	4	1		2	
16			24h	4	14	288	11	38	12	2	6	5			
17	4m		24h	7	12	360	13	32	2	2	11	3		1	
18			24h		6	506	15	44			19	1		2	
19			24h		15	388	14	57	5	4	13	6		1	15 KM- 1
20						425	15								Smoked record count
21			24h												
22	52m		24h	1	9	405	15	23		2	17			1	15 KM- 5
23			24h		8	224	6	31	5	2	27				15 KM- 6; Power failure 1221-0042
24			24h	1	19	395	24	45	11	2	11	35		3	15 KM- 3
25			24h		12	286	9	36	2	3	20	4			
26	6m	20m	24h		31	328	6	18	1						
27	38m		24h		34	217	8	11	1	1	8				15 KM- 4
28			24h	1	10	272	18	22	1	1	7	2		1	
29				4	42	377	16	36	15	7	22	12		2	
30		2m	24h	1	5	236	16	21	1	2	11	1	41		

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes											Remarks
				Kilauea Summit			Kilauea Flank					Mauna Loa		Off-shore PPL	
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank	L-P	S-P		
May 1			24h		2	188	11	19	5	2	20	2	23	2	
2			24h	1	1	245	9	7	1	2	11		18		
3			24h	3	15	331	29	28	3	2	6	38		5	15 KM- 1
4			24h		43	615	31	36	9	1	8	38		4	15 KM- 4
5			24h	1	25	518	19	9	1		10	2	7		
6			24h	1	76	591	22	37	7		4	20	16	2	
7			24h		39	514	26	18	6		5	5	17	1	
8			24h		7	380	19	17	1		10	1	112		
9		3m	24h		144	359	14	25	4		12		29		15 KM- 1
10			24h	1	495	279	15	7			2	3			
11	12m	1h	24h		311	290	8	12	4	2		4			15 KM- 1
12	4m	23m	24h		189	503	9	54	2	2	12	4	14		
13		14m	24h	2	43	520	12	64	4	2	8			3	15 KM- 2
14	36m	12m	24h	4	26	626	16	74	2	1	14			2	
15	11m		24h		52	775	23	81	10	3	2	10	14	4	
16	47m	5m	24h		69	1567	11	80	8	6	18	1		5	15 KM- 5
17		6m	24h		36	879	4	64	7	1	23	6			15 KM- 2
18		28m	24h		237	640	12	67	9	1	18				
19		18m	24h		107	1203	14	58	12	2	18	4			15 KM- 2
20		10m	24h		124	622	19	81	8	2	71				15 KM-11
21		7m	24h	1	75	1135	37	153	13	1	153	1			15 KM- 2
22		9m	24h		31	952	38	123	7	1	79			5	15 KM- 4
23		6m	24h	2	22	592	47	114	5	5	56	4			
24			24h		14	1297	42	26	9		9		7		
25			24h		16	1348	27	42	11	1	7	2			15 KM- 2
26		6m	24h		8	995	24	39	10		9	5			
27		20m			23	1350	12	96	14	1	54	1		1	15 KM- 3
28		19m	24h		26	1179	9	146	9		53	5			15 KM- 3
29	5m	24m	24h	1	73	825	10	185	31		39	2			
30		20m	24h	2	36	376	18	80	5	1	25				15 KM- 7
31			24h		135	168	41	16	8	3	8	3		2	

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes											Remarks
				Kilauea Summit			Kilauea Flank					Mauna Loa		Off-shore PPL	
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank	L-P	S-P		
June 1			24h	2	194	140	26	16	10		13	1		2	15 KM- 2
2		16m	24h		150	212	8	17	1	1	8	1			15 KM- 1
3		9m	24h	1	39	219	25	10	2		9	1		3	15 KM- 1
4	10m	16m	24h		58	189	25	38	9	1	12	10		4	15 KM- 2
5			24h	1	62	231	45	38	5		5	2		2	
6		6m	24h	1	69	290	26	33	12	1	14	3		3	
7	220m		24h		50	289	22	5	3	1	3		8		
8		5m	24h		40	263	7	3	6	1	3		6		
9		25m	24h		19	399	15	12		1	6	4		2	15 KM- 1
10		10m	24h		61	483	15	14			7				15 KM- 1
11		7m	24h		215	723	10	27	2		16				
12		17m	24h	1	127	468	15	22	3		6	2		2	
13		4m		2	183	267	13	64		4	10		1		
14			24h		44	308	21	69	3	4	8	1		1	
15	5m	28m	24h	1	122	402	22	87			16		2	1	
16	10m		24h		128	957	26	64	13	3	9	53	37	2	
17	5m		24h		34	618	10	68	3		20	20		1	15 KM- 1
18			24h	2	14	540	650	67			16	7		1	15 KM- 1
19		6m		2	27	682	2382	71	10	4	8	36		4	
20		7m	24h		7	620	353	56	5		23			1	
21	2m		24h		41	624	209	24	5	2			8		
22			24h		7	1181	203	51	7		16	7			
23			24h	1	29	818	144	40	4	1	16	2			
24		10m		2	50	1106	282	101	12		6	7		1	15 KM- 1
25		5m	24h		19	519	97	52	5		12	16			
26		14m	24h		11	423	67	39	2	1	18	13			
27				1	40	712	163	94	12		13	47	112	1	
28		11m			50	525	137	113	16	2	11	48		3	
29		7m			189	480	84	86	19	1	7	19	92	3	15 KM- 1
30		3m			143	472	70	52	14		15	17			

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes												Remarks
				Kilauea Summit			Kilauea Flank					Mauna Loa		Off-shore PPL		
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank	L-P	S-P			
July 1				1	234	335	102	95	10		13	20	125	1		15 KM- 1
2				5	221	461	92	72	5		5	19		4		15 KM- 1
3			24h		227	151	37	6	1			16				15 KM- 1
4			24h		208	257	24	16	5		1	10				15 KM- 2
5		7m			108	168	30	12	5	1		11				
6					92	342	49	17	4			18	3			15 KM- 1
7	15m		24h		53	605	53	65	1		15		20			
8				2	85	701	73	65	4	1	6	6	68	2		
9				1	29	690	53	33	6	1	8	4				15 KM-1
10				6	43	1411	84	74	13	1	10	4		1		
11		3m			15	1304	53	67	4	1	14	1				
12		4m		2	15	842	51	99	4	1	19	11				
13	55m				6	627	46	68	2		14	11				
14				2	5	641	44	57	3	1	20	10		1		
15				1	8	432	42	61			21		1	1		
16				3	10	509	47	76	19		7		204	1		
17				4	30	440	67	84	16	1	6	5	98			
18			5h		23	522	35	1309	17		10	12				15 KM- 1
19			24h		61	353	55	266	19	4	5	3				15 KM- 1
20	7m		24h	2	50	81	64	25	13	2	21			2		Kilauea summit
21	35m		24h	3	many small	96	58	51	8		11	2				eruption, 1230 7/19
22	20m		24h		455	401	46	39	3		8	4				
23					361	346	45	41	18		23	2		1		15 KM-43
24					285	320	59	20	17		18	5				15 KM-18
25		16m			266	642	57	26	22		16	3				15 KM-11
26				5	324	726	56	68	12		2	28		2		15 KM- 2
27				2	287	891	50	74	10			20				
28		5m		1	314	1195	48	81	6	1	9	26	149	2		15 KM- 8
29	14m			2	212	1136	41	68	9	2	3	60	84	1		
30				1	284	941	46	72	7	1	5	119	202	3		
31		12m		2	159	825	54	47	18	1	54	38	138	2		

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes												Remarks
				Kilauea Summit			Kilauea Flank					Mauna Loa		Off-shore PPL		
	Deep	Inter-mediate	Shallow	30 KM	Long Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank	L-P	S-P			
August 1		15m			158	270	47	20	9	1	14	2	77			15 KM- 7
2				1	94	137	23		5	3	1	1	1	1		
3		1m			86	181	33	5	5		5	28	11	1		
4	35m			1	180	641	47	24	8		12		105			
5		9m			120	685	22	20	7		9	6	91	2		
6	2m	3m		5	37	801	36	25	12	2	25	4	76			
7			24h	16	81	739	14	36	13	4	20	5	154			
8			24h	4	73	974	41	61	2		28	15	202	1		
9		9m	24h	4	79	886	43	48	10	2	41	6	147			
10		7m	24h	1	41	839	26	47		2	21	12	89	1		
11				3	144	1222	48	66	3		9	49	281			
12		3m	24h		16	779	24	31	1	1	22	2	230			
13				4	91	1351	33	76	5	1	7	83	445	1		
14				4	101	1497	50	124	12	1	8	83	273	4		15 KM- 1
15	35m	11m		3	60	1586	33	101	8	2	7	131	203	1		
16		10m		2	113	1818	36	105	10		9	153	268	5		15 KM- 2
17	48m				75	1999	35	100	10	2	4	120	218	3		15 KM- 1
1	3m	15m		3	95	1973	41	122	18	2	5	148	157	2		
19		12m		1	111	1895	28	64	11	1	4	188	128	1		
20				1	123	2050	32	76	8	5	3	222	139			
21		6m (MOK)[1]		4	76	2069	67	124	12	1	2	261	108	1		
22		4m	24h		52	1469	32	50	7	2	23	61	44	1		
23			24h	1	42	844	27	34	18		2	22	39			
24			24h		35	1161	43	25	15	2	4	51	16			
25			24h	1	55	1509	47	72	26	1	34	64	48			
26		27m			193	1547	64	105[2]	12	2		145	76	4		15 KM- 1
27		14m		3	673	1468	33	198[2]	9	3		149	72	5		
28			24h	1	269	1170	27	82	7	3	24	79	52			
29			24h	2	167	1154	37	89	15	2	42	42	126	1		
30			24h		33	769	23	33	7	3	1	28	46			
31	2m		24h	1	41	978	25	47	8	1	1	14	44	1		15 KM- 1

[1] (MOK) tremor beneath Mauna Loa Volcano.
[2] Upper East Rift and South Flank.

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes												Remarks
				Kilauea Summit			Kilauea Flank					Mauna Loa				
	Deep	Inter-mediate	Shallow	30 KM	Long-Period	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	South Flank	L-P	S-P	Off-shore PPL		
September 1	2m		24h		223	913	21	65	9	3	2	16	101			15 KM- 1
2	10m	7m		4	703	1442	22	103	13	1	21	43	88			15 KM- 1
3		7m		1	637	1352	22	134	9	2	12	21	77			
4				3	173	1229	37	138	8	2	15	85	71			
5				3	68	1134	42	137	10		23	48	133			
6					60	1403	41	142	13	1	27	21	286	1		
7		3m			51	1429	47	195	8	2	33	25	177			
8				3	27	1406	38	121	2	4	12	10	70			
9		8m			53	1354	26	131	11		11	13	99	1		
10				1	27	616	41	64	21	1	7	10	56	2		
11					5	528	24	74	3	2	1	16	66			
12				1	12	649	26	122	2	5	2	27	53			
13					6	501	13	23	11			11	39			15 KM- 1
14					6	552	10	17	10	1		6	46			
15					55	1170	39	87[2/]	7	4		46	77			15 KM- 1
16				1	46	1308	48	94[2/]	10			114	63			
17		13m			38	1035	21	67[2/]	6			91	82			Kilauea
18			8h		17	784	21	71[2/]	8			36	75			summit
19			24h		179	1394	22	70[2/]				53	94	1		eruption-
20			2m	3	154	1489	34	147[2/]	6	3		114	145	2		tion before
21		19m (MOK)[1/] 25m			126	852	33	99[2/]	5	2		153	131	3		0126, 9/19 15 KM- 5
22	5m		24h	1	50	832	18	120[2/]				131	134	1		15 KM- 2
23			24h	4	34	708	31	84[2/]	8			99	108			
24			24h	1	40	724	13	59[2/]	2			124	149			
25	19m	8m (MOK)[1/]	24h	4	94	519	33	95[2/]	4			121	138	1		
26			24h		30	621	11	58[2/]	2			98	103			
27			24h	1	1	305	10	21[2/]	4	2		7	39			
28	10m		24h		1	435	17	29[2/]	9	1		4	35			
29			24h	1	36	525	12	69[2/]	1	3		84	104			
30			24h	2	55	688	14	79[2/]	3	4		41	60			

[1/] (MOK) tremor beneath Mauna Loa Volcano.
[2/] Upper East Rift and South Flank.

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes										Remarks
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	
October 1	5m	3m	24h		60	570	12	57			84	89		
2			24h		27	470	12	34			45	112	1	
3			24h		57	575	14	44	1		74	100		
4		4m	24h	1	40	564	15	60	2	2	46	95		
5		7m	24h	2	23	665	8	64	1		80	91		15 KM- 1
6		3m	24h	1	36	828	9	94	2		54	54		
7			24h		50	840	3	49			28	52		
8		5m	24h		222	796	12	68	2		36	47		
9		7m	24h		46	660	7	63			72	43		
10		3m (MOK)[1]/ 5m	24h		96	535	39	74	7		63	89	1	15 KM- 2
11			24h		31	461	10	24	12	1	8	80	2	
12			24h		33	638	14	24	15		9	96	1	
13			24h		37	578	18	21	5	1	15	116		15 KM- 1
14	20m	3m (MOK)[1]/	24h	1	170	897	51	127	10	1	114	174	1	
15		7m (MOK)[1]/ 14m	24h	1	151	604	42	81	14		80	188	2	
16		4m	24h	1	30	429	12	46	2		51	76		
17		3m (MOK)[1]/	24h	3	80	640	30	95	14		62	119	2	
18			24h	2	21	372	34	81	7	7	89	92	4	
19			24h	1	123	457	35	104	10		79	93	2	
20		8m (MOK)[1]/ 7m	24h	4	78	324	42	50	18	1	168	119		
21			24h	1	21	338	9	46	2		46	59		
22	47m	11m (MOK)[1]/ 6m	24h	1	50	403	27	39	15	1	32	108	3	
23		8m	24h	1	15	574	9	50	8	1	15	34		
24		34m	24h		26	587	14	61	6		28	90		
25			24h		7	470	14	22	5	1	4	91		
26			24h		8	698	10	42	9		8	56		
27			24h		2	564	23	25	12	1	9	34		
28	25m	4m	24h		25	857	21	84	9		22	58		
29				4	54	934	54	125	35		17	117		
30	44m		24h	1	26	490	12	48	15		45	58		
31			24h	2	25	727	16	72	6		28	50		

[1]/(MOK) tremor beneath Mauna Loa Volcano.

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes										Remarks
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	
November 1		22m	24h		38	876	16	90	14		34	57		
2		3m	24h	1	34	737	19	90	9	1	36	75		
3		13m	24h	3	41	758	13	75	4		14	44		
4	5m	10m	24h	2	46	733	12	66			9	52		
5		27m	24h	2	71	736	6	62	1		10	50		
6		6m	24h	1	44	444	5	45	4	2	15	34		
7		80m	24h		105	412	17	51	2		4	32	2	
8	5m		24h		15	301	5	25	3	2	4	84		
9			24h		27	709	26	13	14		7	60		
10			24h		32	392	11	64			5	78		
11			24h	1	8	166	6	51	4		6	93		
12			24h		23	293	11	58	5	1	5	50	1	15 KM- 1
13					13	167	11	67	1	2	6	36		
14					26	425	29	84	10		5	66		
15				2	55	563	36	113	33		29	144	1	
16					15	363	30	93	19	1	7	110	1	
17				2	20	500	18	91	3		5	78		
18	3m	4m		3	14	801	8	75	1	1	8	60		
19	5m			2	13	506	13	74			17	68		
20				1	23	594	11	75	1		12	72	1	
21				10	23	719	19	99	2	2	11	83		
22					3	782	18	16	9	1	6	69	1	
23					4	837	24	19	15		7	80	1	
24				2	28	806	15	80			3	57		
25		2m (MOK)1/ 6m		1	47	1001	41	140	35	1	9	93	1	
26				4	39	608	10	100	5		14	111		
27	5m			2	32	600	9	99	2		7	81	2	
28				1	10	508	7	88	1		3	42		
29	10m				19	786	555	238	14	2	19	204		
30				1	68	707	1142	97	9		27	183		

1/ (MOK) tremor beneath Mauna Loa Volcano.

Date (1974)	Tremor (m = minutes h = hours)			Earthquakes										Remarks
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Inter-mediate	Shallow	30KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	
December 1		8m		5	238	702	788	115	42	4		175		
2				1	197	757	443	115	16	1		111	5	
3					162	824	344	89	50	3	56	102	1	
4					161	825	186	85	29		14	77		
5	39m			9	27	720	285	169	38	2		198		
6				1	4	908	316	33	47		28	117		
7					35	451	263	133	16	6		269		
8					45	744	142	174	11			655		
9				4	49	682	109	183	16	1		1343	2	
10					58	643	151	239	7			1236	1	
11					21	564	70	264	6			713		
12	35m				43	631	24	124	3		14	575		
13				3	101	725	113	402	23	1		1103		
14					56	523	122	186	34		4	899		
15					43	652	604	72			20	1491		
16				1	25	909	468	43	1			449		
17					34	995	247	88	7	1		209		
18		10m		1	74	1080	198	105	7			216		
19		5m			73	1541	162	183	8	4	2	358		
20				9	96	1127	205	236	63	2		182	6	
21		67m		1	230	1010	201	189	36			55	4	
22	6m				65	612	73	159	4	1	5	140	1	
23	7m	3m			49	663	163	87	13		27	138	1	
24				23	80	687	98	95	6		9	135	1	
25				71	56	619	96	117	7	1	3	130	1	
26	7m			25	40	829	93	161	20		7	121		
27				3	36	912	63	155		5	3	100		
28				2	33	1115	71	144	19		3	89	1	
29		3m			52	1228	106	186	45			93		
30			3m	1	25	1279	34	87	29	1		192		Count incomplete-- Kilauea summit eruption at 0255, 12/31
31			24h		134	346	6045*	22			1	13		

*Plus Koae (many near Kamakaia Hills and Hilina).

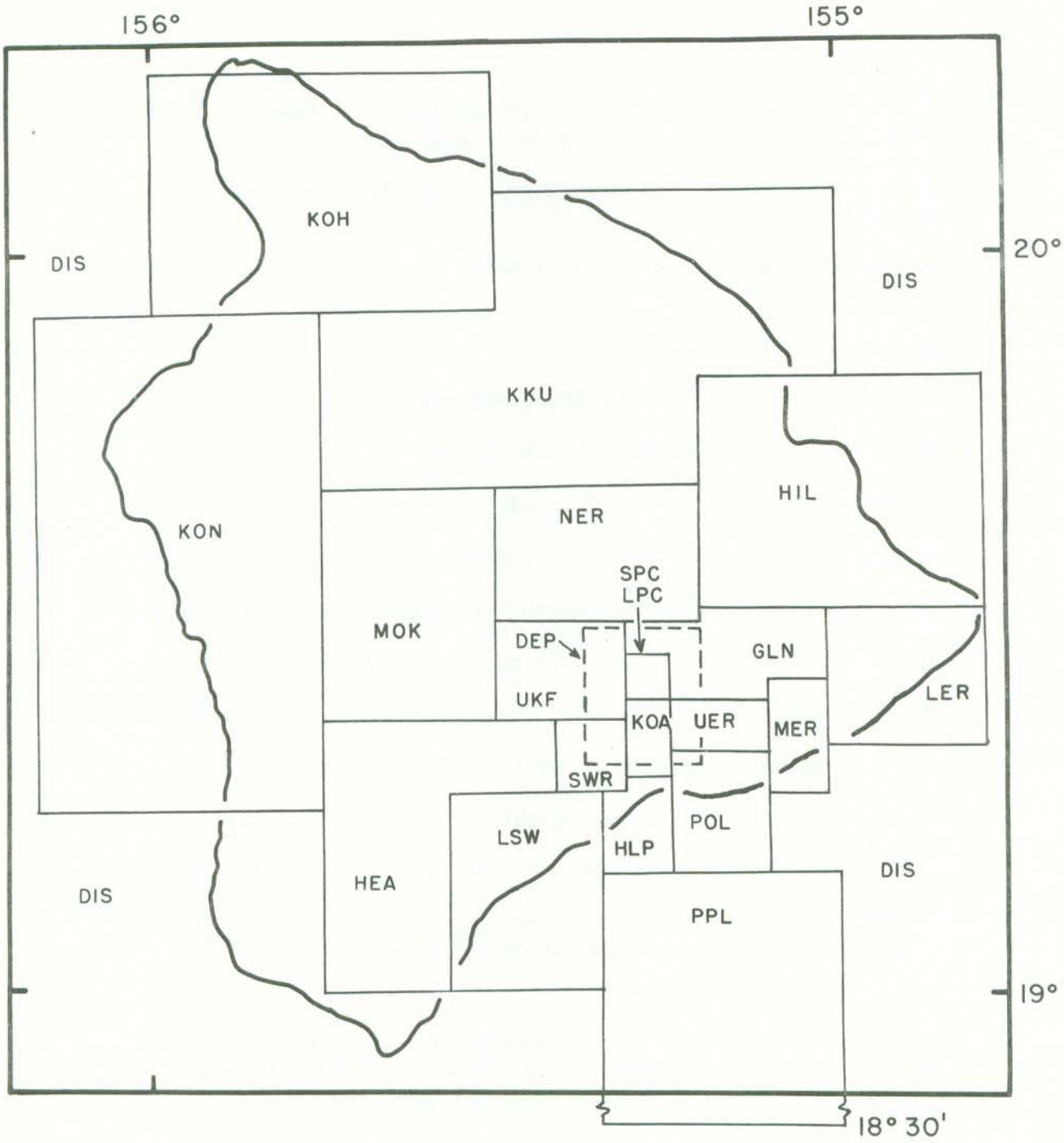

Figure 4. Map indicating limits of areas for specific pnemonic codes used in the remarks column of the earthquake summary. DEP is a code applied to earthquakes with depths greater than 13 kilometres in the Kilauea region. SPC is used for depths between 0 and 6 km, and LPC is used between 6 and 13 km.

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute(MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and west longitude (LON W).

DEPTH - depth of focus in km

AMP MAG - amplitude magnitude, if determined.

DUR MAG - duration magnitude, if determined.

NR - number of arrivals (P or S) used for solution.

NS - number of S arrivals used for solution.

GAP DEG - largest azimuthal separation in degrees between stations.

RMS SEC - root mean square error of time residuals in sec.

$$RMS = \left/\overline{\Sigma} \; R_i^2/NR\right/^{\frac{1}{2}},$$

MIN DIS - epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - remarks, three letter code for geographic location of event. See Figure 4 for location of pnemonic code.

Duration magnitudes were not determined for events during 1974, but this magnitude scale will be more complete and accurate at lower magnitudes as reported for 1975 and later data.

The first part of table 5 lists all events located during 1974. The second part lists only events of magnitude 3.5 or larger.

Table 5. HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JAN	1	055	21.55	19	21.81	155	12.51	2.76	1.9		17	0	107	.07	6	.4	1.9	UER
		1	334	57.08	19	25.72	155	24.29	10.00	2.7		23	0	79	.09	8	.6	1.2	UKF
		1	345	23.24	19	19.91	155	11.65	8.69			21	0	87	.14	8	1.0	2.6	UER
		1	6	3 7.38	19	24.26	155	26.45	10.10	2.6		23	0	72	.10	12	.6	.5	UKF
		1	650	1.68	19	24.17	155	26.51	8.97	3.0		28	0	53	.10	12	.6	1.2	UKF
		1	12	8 37.64	19	18.98	155	13.40	9.38	2.6		30	0	74	.09	7	.5	.6	POL
		1	1613	3.30	19	25.94	155	24.96	6.22	1.6		11	0	152	.06	8	.6	2.5	UKF
		1	1817	59.72	19	24.26	155	26.95	8.00	1.8		19	0	133	.08	12	.7	1.5	UKF
		2	627	51.71	19	14.52	155	28.57	11.17	3.5		32	0	91	.15	14	1.0	.4	LSW
		2	846	43.54	19	25.47	155	17.27	7.59	.9		10	0	142	.04	3	.6	1.1	LPC
		2	953	41.73	19	20.04	155	9.82	9.62			11	0	82	.06	8	.7	2.6	UER
		2	1125	30.71	19	24.05	155	23.48	9.94	1.9		21	0	68	.10	8	.6	.7	UKF
		2	1710	26.72	19	21.89	155	9.08	2.73	1.7		15	0	91	.10	11	.7	2.0	UER
		2	1957	34.35	19	14.41	155	28.80	11.23	2.6		29	1	88	.14	14	1.0	.4	LSW
		2	2013	22.75	19	49.13	155	21.23	19.76	2.0		13	1	115	.15	36	2.4	4.0	KKU
		2	2015	35.44	19	21.20	155	24.38	9.59	1.7		24	0	62	.10	9	.6	.5	SWR
		2	2126	43.62	19	21.91	155	11.12	4.35	1.0		17	0	88	.08	8	.6	1.3	UER
		3	0	8 48.88	19	19.60	155	9.19	8.55	1.8		20	0	85	.11	9	.9	1.9	UER
		3	2	8 59.17	19	22.35	155	9.11	2.17	2.0		22	0	80	.14	9	.8	2.5	UER
		3	11	5 22.95	19	21.91	155	9.19	3.73	1.7		14	0	97	.08	9	.8	1.5	UER
		3	1144	42.42	19	22.02	155	10.87	1.97	1.6		12	0	90	.11	8	1.0	99.0	UER
		3	1612	14.65	19	22.10	155	10.20	2.53	1.5		17	0	79	.08	9	.5	1.0	UER
		3	18	2 26.56	19	22.21	155	9.56	2.56	2.0		22	0	76	.12	10	.7	1.4	UER
		3	1925	13.36	19	17.95	155	14.16	7.94	1.6		17	0	125	.08	8	.6	1.0	POL
		3	2020	58.27	19	26.54	155	29.67	7.85	1.9		18	0	71	.14	15	.8	3.4	UKF
		3	21	1 21.59	19	22.06	155	11.17	1.43	1.5		16	0	90	.07	7	.5	.3	UER
		4	0	0 8.01	19	21.59	155	10.03	5.53	1.5		17	0	74	.08	9	.5	2.0	UER
		4	022	35.87	18	47.58	155	9.04	31.32	2.3		18	0	284	.10	59	5.6	8.9	PPL
		4	339	14.31	19	22.03	155	10.12	2.84	1.4		20	0	93	.08	9	.5	1.2	UER
		4	4	9 7.80	19	21.82	155	9.13	3.10			16	0	91	.10	9	.8	1.8	UER
		4	441	48.69	19	18.22	155	13.20	8.79	1.7		23	0	92	.11	9	.7	1.2	POL
		4	455	8.44	19	19.76	155	10.22	8.65			13	0	90	.06	8	.7	1.8	UER
		4	739	59.80	19	19.25	155	9.63	9.16	1.8		15	0	113	.06	8	.8	1.6	UER
		4	845	17.09	18	55.88	155	12.53	42.65			27	0	248	.09	40	2.7	5.0	PPL
		4	930	17.22	19	24.55	155	17.56	13.60	1.6		22	0	63	.07	2	.5	.7	DEP
		4	1135	57.09	19	22.89	155	26.84	12.81	1.9		20	0	80	.08	12	.7	.3	UKF
		4	1520	49.76	19	11.78	155	34.80	9.25			18	0	175	.15	17	1.8	1.9	HEA
		4	1734	13.11	19	22.22	155	24.93	9.26	1.7		24	0	54	.10	10	.6	1.2	UKF
		4	1847	24.15	19	23.55	155	28.71	9.49	1.9		23	0	90	.11	14	.7	1.3	UKF
		4	20	7 58.91	19	21.88	155	24.88	9.47			15	0	101	.07	10	.6	1.1	SWR
		4	2226	35.35	19	26.23	155	29.21	6.93	1.9		21	0	82	.09	13	.6	1.4	UKF
		5	558	52.96	19	16.24	155	22.97	7.09			17	0	130	.12	8	1.0	2.7	SWR
		5	848	.72	19	24.11	155	18.09	46.72			18	0	55	.09	3	2.5	5.8	DEP
		5	11	3 24.38	19	22.12	155	11.17	3.69	1.5		12	0	90	.04	8	.3	1.3	UER
		5	1517	15.14	19	41.63	154	59.23	12.27	3.1		15	0	235	.07	41	2.7	99.0	BLS
		6	224	12.81	19	22.62	155	.83	9.78			9	0	219	.10	28	2.2	.9	LER
		6	439	2.74	19	20.59	155	12.30	7.91			15	0	83	.09	7	.9	2.5	UER
		6	11	1 25.42	19	22.47	155	10.22	2.53	1.6		12	0	171	.09	10	1.2	2.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JAN	6	1916	14.44	18	53.80	155	9.95	50.73	2.8		25	0	266	.09	44	5.1	6.7	PPL
		6	2323	24.64	19	15.81	155	31.64	9.21	2.2		12	0	119	.15	14	1.5	2.1	LSW
		7	1122	12.56	19	14.26	155	5.70	53.93	2.6		22	0	220	.08	15	1.8	4.1	DIS
		8	437	16.62	19	26.87	155	24.53	7.08	1.6		17	1	168	.09	10	1.1	2.2	UKF
		8	453	44.06	19	18.90	155	13.45	8.75	1.7		21	0	74	.09	8	.6	1.3	POL
		8	454	43.58	19	18.93	155	13.35	10.29	3.4		26	0	76	.09	7	.6	.3	POL
		8	523	5.02	19	19.51	155	11.87	9.05	1.7		16	0	91	.04	8	.4	1.1	UER
		8	554	41.40	19	21.27	155	4.07	6.59	2.0		17	0	88	.13	10	1.4	3.4	MER
		8	1018	3.19	19	24.55	155	22.63	7.81			13	0	107	.05	7	.4	.8	UKF
		8	1035	51.65	19	19.72	155	11.40	8.59			15	0	90	.04	6	.4	.9	UER
		8	1139	9.28	19	21.47	155	17.85	31.47	2.2		24	0	88	.10	4	1.1	2.0	DEP
		9	0	6 33.86	19	27.31	155	17.17	25.02	2.8		29	0	59	.12	4	1.0	1.6	DEP
		9	614	29.87	19	29.17	155	42.95	9.92	2.4		16	0	71	.11	26	1.1	.5	MOK
		9	11	1 50.60	19	31.50	155	5.18	5.29	2.4		7	0	217	.19	24	36.7	99.0	HIL
		9	1212	5.02	19	20.61	155	7.19	6.90	1.9		18	0	93	.14	8	1.0	3.1	UER
		9	1335	55.24	19	24.95	155	25.32	12.65	1.8		11	0	160	.05	9	1.2	5.4	UKF
		9	1438	42.14	19	12.96	155	37.10	9.36	2.9		23	0	110	.15	26	.9	.9	HEA
		9	1447	32.83	19	33.31	155	1.26	41.25			12	1	294	.06	28	2.4	1.5	HIL
		9	1747	6.35	19	27.44	155	52.90	10.50	3.2		21	0	135	.13	26	1.3	.4	KON
		9	21	1 37.62	19	25.11	155	16.91	12.63	1.8		14	0	124	.05	2	.8	2.8	LPC
		10	233	33.11	19	24.93	155	16.82	9.00	1.4		10	0	114	.04	2	.9	2.1	LPC
		10	528	26.19	19	20.86	155	7.39	7.22	1.9		23	0	86	.14	8	.9	2.2	UER
		10	741	5.46	19	29.65	155	21.11	11.59	1.8		20	0	174	.08	10	.9	.4	NER
		10	950	1.64	19	26.11	155	30.44	9.19	2.0		20	0	92	.11	14	.8	1.2	MOK
		10	1545	34.88	19	37.52	156	4.53	35.05	2.7		22	2	240	.17	52	2.8	1.5	KON
		10	2216	16.79	19	20.62	155	12.32	8.77	1.1		17	0	78	.04	7	.4	1.2	UER
		11	443	18.17	19	24.20	155	16.70	8.94	1.3		11	0	79	.06	2	1.0	2.3	LPC
		11	1420	9.21	19	18.37	155	14.28	7.12	1.7		14	0	114	.08	8	.7	1.1	POL
		11	1441	23.14	19	20.22	155	11.47	9.37	1.7		23	0	80	.09	7	.6	.8	UER
		11	1528	36.22	18	54.78	155	32.40	36.60			14	0	281	.08	49	7.7	4.1	DIS
		11	1940	58.90	19	21.37	155	17.31	32.98			20	0	44	.07	4	1.2	2.0	DEP
		11	2123	16.01	19	29.77	155	28.54	7.03			12	0	276	.08	14	14.9	15.2	NER
		11	2151	7.43	19	18.67	155	15.04	7.05			17	0	95	.08	6	.6	1.6	KOA
		11	2321	33.12	19	21.92	155	9.12	2.47	1.7		18	0	79	.07	10	.4	1.0	UER
		11	2348	24.04	19	22.43	155	23.10	5.61	1.5		13	0	88	.06	8	.4	1.0	UKF
		12	027	49.76	19	20.20	155	7.59	6.45			15	0	93	.13	8	1.0	3.0	UER
		12	059	34.41	19	22.07	155	8.89	3.22	1.7		14	0	93	.06	11	.4	1.1	UER
		12	1	2 49.65	19	22.18	155	9.01	1.99	1.7		13	0	83	.05	10	.4	.0	UER
		12	221	56.29	19	20.40	155	10.98	6.45			18	0	78	.13	8	.9	2.3	UER
		12	6	4 34.07	19	20.33	155	7.36	8.74	4.7		29	0	95	.10	8	.7	.7	UER
		12	612	28.01	19	20.08	155	7.41	8.84			17	0	98	.08	8	.7	1.8	UER
		12	618	20.48	19	19.98	155	7.53	6.72			15	0	97	.13	8	1.1	3.1	UER
		12	625	8.13	19	20.22	155	8.18	6.60	1.8		13	0	82	.14	9	1.2	3.1	UER
		12	725	50.00	19	19.81	155	7.83	6.78			14	0	94	.14	9	1.2	3.2	UER
		12	753	22.77	19	20.85	155	7.10	6.62	1.9		18	0	89	.13	8	1.0	3.1	UER
		12	757	17.62	19	23.65	155	25.83	6.74			15	0	134	.06	11	.5	1.0	UKF
		12	846	52.68	19	19.58	155	7.12	7.54			13	0	114	.09	7	.9	2.3	UER
		12	1044	38.86	19	21.03	155	7.15	6.77	1.9		20	0	86	.13	8	.9	2.8	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JAN	12	1126	30.68	19	35.94	155	5.68	9.62	2.4		14	0	141	.13	26	1.3	1.1	HIL
		12	1432	35.98	19	12.76	155	14.46	43.93			26	0	183	.07	14	1.1	2.5	POL
		12	17 1	31.46	19	20.58	155	7.47	8.14	1.9		16	0	89	.08	8	.7	1.9	UER
		12	1944	35.35	19	31.15	155	2.50	12.53	2.1		23	0	142	.06	21	.9	.4	HIL
		12	20 2	13.16	19	20.23	155	8.57	9.24			14	0	144	.05	10	.5	1.4	UER
		12	22 7	5.86	19	25.81	155	35.98	3.54	2.8		21	0	93	.13	23	.9	1.7	MOK
		12	2321	25.14	19	19.94	155	8.63	8.83			14	0	92	.05	10	.5	1.1	UER
		13	048	29.28	19	29.56	155	44.37	9.50	3.0		29	0	69	.13	24	.8	.4	MOK
		13	232	10.56	19	29.77	155	44.50	9.16	2.4		17	0	183	.16	29	2.1	1.3	MOK
		13	328	2.67	19	23.37	155	23.68	12.87			13	0	106	.05	7	.5	3.4	UKF
		13	358	8.71	19	17.37	155	8.84	36.67			16	1	245	.07	16	2.2	1.9	POL
		13	519	49.44	19	19.95	155	6.63	8.29	2.6		26	1	115	.10	7	.6	1.0	UER
		13	629	16.14	19	31.51	155	46.95	9.26	2.5		11	0	304	.17	38	20.6	4.4	KON
		13	649	12.74	19	20.40	155	11.49	8.88	1.7		24	0	77	.12	7	.8	1.6	UER
		13	852	31.54	19	19.64	155	8.98	8.26	1.8		12	0	105	.06	11	.9	1.9	UER
		13	9 5	59.47	19	19.75	155	8.90	10.12			13	0	79	.04	9	.5	1.9	UER
		13	1453	19.88	19	22.20	155	28.95	9.52	3.0		30	0	46	.14	11	.8	.3	UKF
		13	1617	59.06	19	20.79	155	6.10	8.22	1.8		13	0	101	.10	7	1.2	3.3	UER
		14	158	54.39	19	20.15	155	8.62	9.51			13	0	71	.04	10	.5	1.9	UER
		14	1123	.35	19	20.04	155	8.59	6.64	1.8		17	0	76	.13	10	1.0	2.2	UER
		14	1744	8.24	19	24.19	155	16.24	1.87	1.1		17	0	67	.07	2	.3	.2	SPC
		14	1745	58.14	19	19.46	155	24.61	9.09	2.1		17	0	105	.07	11	.5	.9	SWR
		15	6 0	43.82	19	20.27	155	12.37	7.86	1.6		25	0	73	.12	6	.7	1.2	UER
		15	9 2	44.00	19	26.67	155	24.42	7.42			12	0	163	.08	10	1.0	2.9	UKF
		15	2050	28.46	19	53.50	155	13.37	25.19	2.9		27	1	227	.10	29	1.1	2.7	KKU
		15	22 6	46.54	19	48.34	155	36.05	32.68	4.2		35	1	99	.13	29	1.0	2.7	KKU
		16	050	17.46	19	22.37	155	29.15	9.41	2.2		25	0	92	.11	12	.7	.9	UKF
		16	126	56.34	19	14.32	155	20.08	41.18			25	0	155	.07	12	1.1	2.4	HLP
		16	236	16.00	19	20.01	155	7.26	6.29	1.9		19	0	102	.09	8	.6	1.4	UER
		16	432	11.75	19	20.19	155	10.39	8.76			15	0	109	.04	7	.3	.9	UER
		16	457	45.63	19	19.52	155	11.52	11.23			16	0	94	.05	6	.5	1.9	UER
		16	1055	9.41	19	20.12	155	8.31	8.26			12	0	80	.06	9	.6	1.5	UER
		16	14 0	58.92	19	22.61	155	5.49	3.09	1.9		14	0	126	.09	11	.7	3.5	MER
		16	1841	24.18	19	19.26	155	16.83	28.17	2.0		18	0	102	.09	6	1.5	2.6	DEP
		16	21 5	48.29	19	25.95	155	24.39	8.77			20	0	65	.09	9	.6	1.5	UKF
		16	2238	39.26	19	15.82	155	1.05	8.87			13	0	248	.17	19	5.5	2.5	DIS
		17	053	30.16	19	19.73	155	47.30	8.10			15	0	177	.11	27	1.5	1.0	KON
		17	611	31.03	19	17.61	155	14.35	7.40			15	0	150	.10	8	.8	1.5	POL
		17	1044	17.21	19	19.31	155	12.21	9.52	1.7		17	0	92	.13	8	1.2	5.2	UER
		17	1724	13.92	19	17.81	155	14.32	6.37	1.7		15	0	138	.10	8	.9	2.2	POL
		17	1818	49.39	19	23.41	155	27.30	8.89	3.0		29	0	55	.15	13	.9	1.2	UKF
		17	1846	24.00	19	16.21	155	1.54	9.88	2.2		19	0	224	.16	18	3.4	.8	MER
		17	1920	47.60	19	18.91	155	15.66	8.12			17	0	119	.05	5	.5	1.1	KOA
		17	2034	28.15	19	18.86	154	59.50	39.66	2.5		24	1	213	.10	21	1.6	2.0	DIS
		18	044	3.88	19	22.09	155	11.51	2.85	1.8		18	0	92	.09	8	.6	2.1	UER
		18	8 0	12.55	19	19.12	155	13.90	8.49	1.7		21	0	65	.10	6	.7	1.6	UER
		18	922	39.89	19	19.80	155	9.72	7.97			21	0	86	.08	7	.6	1.3	UER
		18	1636	14.42	19	8.73	155	6.44	54.61			26	0	221	.08	22	1.3	3.5	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JAN	18	2220	49.42	19	19.63	155	6.62	8.64			14	0	195	.09	13	1.4	2.6	UER
		18	2339	59.53	19	27.13	155	35.61	5.97			9	0	229	.07	22	1.9	1.4	MOK
		18	2341	22.51	19	26.55	155	35.97	1.31			8	0	243	.05	23	2.3	99.0	MOK
		19	811	53.34	19	19.29	155	8.52	8.89			14	0	107	.05	9	.8	1.5	UER
		19	1040	7.97	19	22.48	155	9.26	2.64	2.5		23	0	81	.12	10	.7	1.5	UER
		19	1240	31.97	19	24.72	155	7.64	10.97			16	0	103	.12	12	.7	.7	GLN
		19	13 8	17.66	19	49.82	155	.29	5.86	3.2		16	1	295	.12	52	2.3	1.3	BLS
		19	1649	28.50	19	19.97	155	9.17	9.30	1.8		24	0	78	.10	7	.8	1.2	UER
		20	1027	50.51	19	10.20	155	42.25	8.58	2.8		19	0	159	.17	30	1.3	1.2	HEA
		20	2031	28.33	19	3.74	155	23.42	34.09			20	0	217	.08	30	1.8	3.6	LSW
		21	5 8	7.56	18	55.11	155	32.88	43.31	2.8		18	0	260	.07	41	5.8	5.3	DIS
		21	1017	4.00	19	20.19	155	8.55	6.52	1.8		22	0	75	.13	10	.8	1.7	UER
		21	1022	6.56	19	28.19	155	50.12	7.58	2.9		22	0	126	.15	25	1.1	.9	KON
		21	1044	40.00	19	35.15	155	17.22	40.15			16	0	244	.06	18	2.1	3.2	NER
		21	1228	9.48	19	20.05	155	8.25	9.32	3.6		29	0	82	.09	9	.6	.6	UER
		21	18 7	2.73	19	20.80	155	17.12	33.00			18	0	69	.07	6	1.3	2.4	DEP
		21	1910	16.88	19	19.95	155	10.96	6.99	1.7		21	0	105	.13	7	.9	1.7	UER
		21	2337	4.11	19	24.49	155	28.59	9.00	1.9		22	0	84	.15	13	.9	1.9	UKF
		22	130	59.88	19	19.46	155	15.36	6.93			14	0	101	.05	6	.5	1.1	KOA
		22	131	39.84	19	32.94	155	50.09	11.95			14	0	225	.09	32	2.6	.5	KON
		22	1749	7.05	19	25.82	155	49.66	6.42			13	0	201	.11	39	4.3	1.4	KON
		22	2128	55.09	19	20.77	155	7.23	6.38	1.9		25	0	89	.14	8	.8	1.8	UER
		23	119	46.97	19	20.65	155	24.33	11.47			14	0	91	.06	10	.6	2.7	SWR
		23	354	14.66	19	26.00	155	16.31	21.01	1.9		27	0	68	.11	5	.8	1.3	DEP
		23	511	28.54	19	23.21	155	24.96	6.83	2.2		23	0	54	.11	9	.6	1.8	UKF
		23	920	37.07	19	20.26	155	12.81	7.42			19	0	69	.08	6	.6	1.3	UER
		23	1014	2.93	19	27.84	155	31.43	9.44			10	0	290	.13	19	3.1	1.0	MOK
		23	1543	35.47	19	53.24	155	19.83	31.39			20	0	183	.10	44	1.6	3.3	KKU
		23	2153	4.97	18	57.29	155	32.57	36.90			25	0	240	.10	53	3.2	4.5	DIS
		24	051	13.01	19	25.03	155	26.06	10.84	1.8		17	0	84	.07	10	.5	.7	UKF
		24	437	54.03	19	18.38	155	26.66	11.90			9	0	298	.04	16	3.8	4.7	HEA
		24	1751	23.87	19	21.48	155	28.49	12.58			17	0	86	.09	10	.8	.3	HEA
		25	124	13.85	19	24.86	155	17.07	12.35			14	0	106	.05	2	.8	2.4	LPC
		25	228	28.35	19	20.32	155	5.84	3.63			13	0	115	.11	8	.9	1.9	MER
		25	436	29.02	19	24.77	155	17.16	11.62	1.8		19	0	84	.08	2	.7	.3	LPC
		26	9 5	30.53	19	41.95	155	59.04	11.00			15	0	289	.06	47	4.8	.3	KON
		26	1720	22.35	19	32.13	155	36.83	9.24	2.3		19	0	148	.13	24	1.2	1.9	MOK
		26	1851	23.12	19	25.91	155	30.27	10.85	1.7		11	0	209	.08	16	1.8	5.0	MOK
		26	1953	42.42	19	19.81	155	11.32	11.07			16	0	91	.04	8	.3	1.5	UER
		26	2142	9.74	18	54.05	155	31.95	37.14	2.3		18	0	282	.09	42	8.2	3.7	DIS
		26	2220	.41	19	19.71	155	24.67	8.65	2.1		25	0	90	.11	7	.6	.8	SWR
		26	2223	11.25	19	52.70	155	21.42	32.69	2.6		27	0	178	.10	42	1.3	5.0	KKU
		27	341	59.66	19	20.38	155	12.93	10.01			14	0	77	.05	6	.5	2.7	UER
		27	714	56.31	19	9.01	155	39.59	7.83	2.5		14	0	195	.17	21	2.7	2.4	HEA
		27	1638	12.87	19	26.20	155	23.74	7.06	1.8		16	1	142	.06	8	.5	1.6	UKF
		27	2119	2.63	19	20.50	155	9.38	10.82	1.8		11	0	171	.04	10	1.4	4.1	UER
		27	2223	56.24	19	25.41	155	26.44	9.57			16	0	193	.06	11	1.2	4.9	UKF
		28	1 7	6.96	18	55.36	155	12.13	48.40			25	0	258	.09	41	2.9	6.3	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JAN	28	841	45.68	19	17.76	155	13.55	7.33	1.7		15	0	144	.08	10	.7	2.3	POL
		28	1844	15.39	19	26.74	155	29.30	9.55	2.2		26	1	68	.12	13	.8	.5	UKF
		28	1854	51.24	19	19.95	155	10.97	9.67			11	0	87	.04	7	.4	1.7	UER
		28	1857	47.25	19	12.71	155	5.39	52.91	2.6		27	0	212	.09	16	1.7	3.5	DIS
		28	2342	44.48	19	18.86	155	13.92	6.18			11	0	92	.06	7	.6	1.9	POL
		29	055	1.10	19	34.78	155	55.97	7.99	2.7		21	0	203	.20	36	2.8	1.0	KON
		29	1 7	.59	19	27.27	155	29.09	9.37	1.9		16	0	123	.07	13	.7	1.4	UKF
		29	136	44.80	19	17.60	155	13.01	7.09			17	0	124	.11	9	.9	2.0	POL
		29	218	25.23	19	23.28	155	17.82	11.40			10	0	130	.05	3	1.1	3.5	LPC
		29	234	8.62	19	19.02	155	12.49	7.01			15	0	94	.06	7	.5	.9	UER
		29	3 2	26.04	19	17.60	155	13.00	6.09			16	0	125	.10	9	.7	1.8	POL
		29	322	1.17	19	57.64	155	27.33	32.17			15	1	287	.10	52	2.9	1.1	KKU
		29	6 2	50.80	19	20.82	155	11.60	9.91	1.7		19	0	70	.06	8	.4	.3	UER
		29	6 3	44.14	19	21.08	155	11.28	7.58	1.7		17	0	67	.09	8	.6	1.1	UER
		29	710	40.87	19	14.06	155	31.78	8.00	2.2		25	1	125	.15	24	1.1	1.9	LSW
		29	1716	18.57	20	6.73	155	44.74	21.07	2.3		11	1	184	.04	78	1.2	1.9	KOH
		29	1744	19.85	19	24.42	155	16.76	11.63			15	0	69	.08	2	1.1	2.0	LPC
		30	229	25.91	18	58.90	155	33.13	35.24	2.7		28	1	216	.11	34	2.0	3.0	DIS
		30	2054	35.86	19	15.52	155	.54	9.88	2.6		19	0	231	.17	21	4.5	.7	DIS
		31	4 5	34.29	19	24.37	155	25.34	8.02	3.3		31	0	50	.13	10	.6	1.0	UKF
		31	1059	11.98	19	27.70	155	27.28	9.50			13	0	176	.09	12	1.2	4.7	UKF
		31	17 3	59.71	19	21.54	155	17.07	25.70			16	0	55	.03	3	.5	1.3	DEP
		31	2116	49.05	19	15.11	156	10.09	60.91	3.3		25	0	276	.10	58	6.1	7.5	DIS
	FEB	1	2 3	15.04	19	20.22	155	12.45	7.52			22	0	73	.10	6	.7	1.2	UER
		1	229	25.13	19	25.43	155	3.71	1.68	2.0		11	0	166	.15	12	1.5	57.4	GLN
		1	329	11.02	19	19.76	155	10.69	9.31			17	0	91	.07	7	.6	1.4	UER
		1	417	54.20	19	20.56	155	13.39	9.52			15	0	61	.05	7	.5	2.3	UER
		1	725	6.78	19	14.19	155	28.76	1.17	2.1		15	0	194	.13	15	1.5	.0	LSW
		1	1056	35.82	19	13.19	155	32.51	6.56			20	0	76	.16	12	1.2	2.8	LSW
		1	2330	4.25	19	19.34	155	14.45	8.52			11	0	233	.04	9	1.2	1.4	UER
		2	434	32.61	20	7.23	156	35.47	46.31			7	0	347	.08	153	94.2	54.6	DIS
		2	1431	43.28	19	13.27	155	32.48	46.23			15	0	84	.09	12	2.0	6.7	LSW
		3	511	58.81	19	22.66	155	23.24	7.63			13	0	86	.04	8	.4	1.2	UKF
		3	1313	11.39	19	20.76	155	10.56	10.03			17	0	72	.06	8	.5	1.7	UER
		3	1556	16.39	19	21.56	155	25.56	7.74	1.5		16	1	104	.10	10	.8	1.3	HEA
		3	1830	15.89	19	24.96	155	17.42	6.11	1.3		13	1	94	.15	2	1.7	1.4	LPC
		3	2211	27.68	19	18.25	155	15.18	8.54	1.7		23	0	107	.11	6	.7	.9	KOA
		4	029	37.65	19	20.12	155	12.49	9.53	1.7		23	0	74	.11	6	.8	.5	UER
		4	2 3	49.84	19	26.29	155	24.39	9.18	1.9		23	0	67	.11	9	.6	1.1	UKF
		4	854	1.02	19	27.54	155	26.27	12.77			10	0	217	.04	10	.9	.2	UKF
		4	1148	10.30	19	20.30	155	19.31	4.77			9	0	104	.02	6	.5	1.1	SWR
		4	13 9	.15	19	24.91	155	26.83	14.77			11	0	197	.03	11	1.4	2.1	UKF
		4	1816	54.59	19	33.53	155	54.97	9.05	4.2		28	0	191	.15	33	1.5	.6	KON
		4	1918	15.23	19	32.50	155	55.22	10.00	3.1		18	0	195	.11	34	1.6	.4	KON
		4	2012	34.73	19	19.80	155	13.85	31.43	2.5		28	0	59	.11	6	1.2	1.8	DEP
		4	2116	35.45	19	23.94	155	14.00	12.58			13	0	1381	.55	5	4.7	1.6	GLN
		4	22 1	34.46	19	15.75	155	11.86	4.34			15	0	181	.12	12	1.3	1.9	POL
		4	2311	59.08	19	25.49	155	25.39	7.58	2.4		21	0	70	.14	10	.9	2.9	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	FEB	4	2358	41.28	19	19.95	155	9.27	7.05			13	0	79	.10	8	.9	2.2	UER
		5	020	48.50	19	19.82	155	11.48	6.77			16	0	88	.11	6	.8	2.1	UER
		5	024	52.22	19	20.12	155	11.56	6.87	1.7		19	0	81	.12	7	.9	1.6	UER
		5	559	52.10	19	24.91	155	16.41	11.73	1.6		11	0	106	.06	2	1.6	4.2	LPC
		5	6 1	27.98	19	9.49	155	40.91	8.12	3.1		21	0	126	.18	23	1.3	1.0	HEA
		5	618	27.94	19	17.78	155	13.06	7.60			16	0	112	.09	9	.7	1.0	POL
		5	629	12.80	19	26.51	155	51.20	7.49	2.7		13	0	132	.16	27	1.6	1.8	KON
		5	16 7	9.92	19	28.12	155	23.89	6.58	2.0		15	0	81	.10	11	.8	1.9	UKF
		5	1739	24.77	19	18.24	155	13.39	9.14	2.7		26	0	84	.11	8	.7	.8	POL
		5	1744	11.08	19	19.83	155	16.86	32.17			16	0	91	.09	5	1.6	6.1	DEP
		5	23 8	53.94	20	7.23	155	44.64	17.09			11	1	219	.02	78	1.4	.7	KOH
		6	4 9	30.99	19	17.17	155	1.89	44.05			23	0	209	.08	17	2.1	3.5	MER
		6	439	24.45	19	35.83	156	13.92	24.95	3.4		13	0	265	.13	53	6.1	7.0	OIS
		6	520	54.47	19	15.06	155	26.68	33.20			17	0	109	.10	14	1.3	3.5	LSW
		6	747	42.23	19	24.98	155	16.70	11.23	1.4		12	0	150	.05	2	.9	2.5	LPC
		6	818	40.61	19	18.14	155	13.32	6.79			13	0	96	.08	8	.8	2.0	POL
		6	932	24.60	19	23.32	155	28.04	10.90			11	0	241	.11	15	6.1	12.5	UKF
		6	1216	59.39	19	15.40	155	12.37	3.05	1.9		14	0	183	.11	12	1.2	3.4	POL
		6	13 7	41.98	19	24.25	155	25.72	7.99	1.7		16	0	75	.09	11	.7	2.0	UKF
		6	1350	23.48	19	25.03	155	17.57	9.27	1.3		13	0	73	.07	3	.7	1.2	LPC
		6	1658	47.00	19	17.74	155	12.86	4.07			10	0	124	.08	9	.8	1.9	POL
		6	1730	55.09	19	17.29	155	12.88	6.16			15	0	155	.07	9	.7	1.3	POL
		6	1732	2.41	19	25.09	155	17.17	8.86	1.6		12	0	119	.04	2	.7	1.1	LPC
		6	1831	50.10	19	26.75	155	29.23	9.33	1.9		12	0	131	.07	13	.9	2.6	UKF
		6	1958	38.67	19	29.12	155	23.61	6.97	1.8		14	0	138	.07	12	.8	1.1	NER
		6	20 5	15.98	19	24.19	155	24.56	7.83	1.6		17	0	58	.10	9	.7	2.3	UKF
		6	2235	8.21	19	19.55	155	8.77	6.37			13	0	80	.13	9	1.2	3.0	UER
		6	2254	33.86	19	24.15	155	16.18	1.76	.7		8	0	98	.03	2	.4	.2	SPC
		7	5 6	48.51	19	24.93	155	16.58	16.70			13	0	122	.03	2	.6	.7	DEP
		7	654	20.40	19	25.10	155	17.08	9.98			10	0	209	.05	2	1.5	3.1	LPC
		7	15 6	7.76	19	19.02	155	9.69	11.55			16	0	109	.05	8	.5	.3	UER
		7	18 1	14.28	19	12.09	155	27.70	3.09	2.1		9	0	109	.09	17	1.0	2.5	LSW
		7	2015	34.38	19	23.34	155	24.71	9.44	2.2		27	1	55	.12	9	.7	1.0	UKF
		8	156	39.34	19	30.79	155	15.88	24.34	3.1		30	0	84	.10	10	.8	1.5	GLN
		8	428	16.08	19	27.07	155	27.79	9.62	2.1		18	0	132	.09	12	.8	4.6	UKF
		8	455	42.07	19	25.45	155	17.65	12.01	1.8		12	0	123	.06	3	1.0	.4	LPC
		8	948	48.21	19	23.38	155	23.39	7.81			15	0	103	.09	8	.7	3.0	UKF
		8	1013	44.23	19	20.53	155	8.34	6.49	1.8		21	0	76	.15	9	1.1	2.2	UER
		8	1612	11.52	19	21.76	155	28.55	8.49	1.9		24	0	61	.20	10	1.1	2.8	HEA
		8	1636	53.93	19	21.76	155	28.53	9.29	2.1		23	0	50	.12	10	.8	1.2	HEA
		8	19 7	57.27	19	21.50	155	28.53	9.27	1.9		14	0	87	.13	16	.9	1.5	HEA
		8	1917	48.91	19	15.74	155	10.57	6.57	1.9		16	0	229	.09	13	1.5	2.8	POL
		8	1949	5.34	19	19.88	155	17.24	33.56	2.2		27	0	86	.09	5	1.0	1.6	DEP
		8	2135	10.45	19	13.74	155	18.05	27.74	2.5		27	0	165	.10	15	1.2	1.7	HLP
		9	246	24.75	19	20.08	155	8.79	9.09			14	0	72	.07	9	.6	1.4	UER
		9	414	33.22	19	10.71	155	22.95	33.65			18	0	179	.09	18	1.4	2.9	LSW
		9	1825	27.17	19	19.09	155	12.98	8.17	2.7		28	0	83	.11	8	.6	1.0	UER
		9	1835	40.08	19	22.14	155	17.76	2.32			11	0	89	.08	4	.5	8.5	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	FEB	9	19 2	6.69	19	21.08	155	18.94	1.90	1.2		11	0	83	.04	5	.3	99.0	KOA
		9	2152	23.80	19	22.21	155	25.00	5.39	1.6		11	0	135	.11	10	1.1	1.7	UKF
		9	2347	19.95	19	19.87	155	24.45	7.72	1.7		17	0	103	.10	8	.7	1.2	SWR
		10	028	43.49	19	23.27	155	26.25	7.98			14	0	117	.08	11	.9	2.5	UKF
		10	029	31.04	19	19.97	155	24.47	7.95	1.7		18	0	101	.11	8	.7	1.4	SWR
		10	358	15.58	19	23.58	155	3.51	1.94			15	0	166	.18	12	1.5	55.2	MER
		10	6 7	47.74	19	19.94	155	24.33	8.64	1.7		18	0	102	.12	8	1.0	1.1	SWR
		10	825	51.76	19	25.32	155	23.96	10.80	1.7		19	0	62	.09	8	.6	.9	UKF
		10	1618	44.46	19	19.04	155	14.02	6.95	1.6		19	0	69	.12	7	.7	1.8	UER
		11	133	18.64	19	19.12	155	15.64	7.63	1.6		23	0	95	.12	6	.7	1.1	KOA
		11	643	11.46	19	16.08	155	10.90	4.59	1.9		19	0	182	.16	11	1.4	1.7	POL
		11	8 4	35.32	20	14.39	155	41.49	3.81	2.9		7	0	318	.02	84	21.5	10.0	KOH
		11	1652	13.96	19	20.91	155	10.78	7.44	1.7		19	0	70	.11	8	.8	1.6	UER
		11	1743	18.02	19	20.46	155	10.67	8.38			13	0	106	.06	7	.5	1.2	UER
		11	1928	13.77	19	14.46	155	14.12	28.08			14	0	270	.04	12	2.2	3.1	POL
		11	20 6	33.88	19	18.61	155	15.67	8.31			13	0	130	.04	5	.4	1.1	KOA
		12	1 1	15.30	19	15.54	155	10.88	1.70	1.9		14	0	232	.14	12	2.5	.0	POL
		12	114	51.24	19	19.93	155	12.71	7.66	1.6		19	0	74	.06	6	.5	.7	UER
		12	525	54.84	19	21.54	155	25.59	9.13	2.5		28	0	68	.14	10	.8	.9	HEA
		12	723	38.91	19	19.97	155	8.66	6.50			15	0	75	.13	9	1.0	2.5	UER
		12	1154	25.69	19	21.30	155	6.38	1.04			12	0	175	.13	8	1.5	.0	UER
		12	22 7	36.04	19	21.25	155	7.34	5.88			14	0	87	.15	8	1.0	2.7	UER
		13	011	56.62	19	19.47	155	8.82	8.42			14	0	82	.05	9	.5	1.1	UER
		13	448	32.91	19	22.57	155	23.24	7.46			10	0	90	.05	8	.5	2.2	UKF
		13	732	19.12	19	17.46	155	14.94	9.66	2.1		25	0	130	.10	7	.7	.6	POL
		13	1043	52.45	19	17.99	155	28.38	7.72	2.3		22	0	83	.17	16	1.0	2.3	HEA
		13	1143	28.60	19	20.60	155	9.94	9.23			14	0	119	.05	7	.5	1.2	UER
		13	1921	57.76	19	20.07	155	10.67	11.29			14	0	104	.05	10	.6	2.7	UER
		13	2152	4.98	19	24.11	155	26.44	10.81	1.8		15	0	160	.05	12	.6	3.0	UKF
		13	2338	47.56	19	20.83	155	5.53	5.25	2.5		23	0	103	.17	14	1.8	2.3	MER
		14	028	57.51	19	15.42	155	33.58	12.85	2.2		13	0	309	.07	29	9.3	99.0	LSW
		14	148	46.46	19	20.15	155	7.97	6.98	1.9		21	0	87	.10	9	.5	1.5	UER
		14	2 6	20.85	19	24.24	155	27.07	11.51	1.8		17	0	103	.07	13	.9	.6	UKF
		14	355	5.73	19	20.46	155	10.96	8.36			14	0	102	.04	8	.3	.8	UER
		14	421	21.86	19	36.01	155	40.12	8.85	2.4		10	0	173	.08	32	2.3	1.2	MOK
		14	1520	3.30	19	19.42	155	11.81	8.11			13	0	94	.06	6	.6	1.8	UER
		14	1548	29.56	19	18.85	155	12.80	7.53	1.7		21	0	91	.09	8	.6	1.4	POL
		15	021	38.24	19	18.57	155	15.53	6.94			17	0	130	.08	6	.6	.9	KOA
		15	144	35.60	19	19.68	155	9.66	6.52	1.8		18	0	89	.12	8	.8	1.8	UER
		15	1329	32.91	19	36.30	155	5.40	9.63	2.4		11	0	142	.19	27	2.7	1.5	HIL
		16	243	49.69	19	23.49	155	27.57	11.32			13	0	187	.06	14	2.0	1.4	UKF
		16	248	33.91	19	26.97	155	24.09	9.35	2.0		16	0	108	.09	12	.9	2.0	UKF
		16	735	17.66	19	26.22	155	28.17	8.72			13	0	150	.10	14	1.0	1.5	UKF
		16	1349	15.97	19	17.43	155	18.58	30.82	3.2		32	1	133	.15	9	1.4	1.8	KOA
		16	1740	57.57	19	19.88	155	12.70	6.91			14	0	77	.08	7	.8	2.0	UER
		16	1743	57.18	19	16.84	155	18.19	34.11	2.9		28	0	144	.10	8	1.3	1.9	HLP
		16	1910	11.82	19	24.24	155	16.31	23.31			17	0	52	.08	2	1.2	1.9	DEP
		16	1943	34.72	19	24.94	155	26.08	5.93	1.7		17	0	84	.11	10	1.1	4.2	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	FEB	16	2230	9.73	19	17.58	155	17.94	30.76			16	0	164	.04	8	1.0	3.2	KOA
		17	3 0	50.74	19	28.81	155	29.36	12.26			10	0	166	.15	15	4.3	.9	UKF
		17	1237	34.39	19	23.15	155	22.80	6.55			12	0	94	.10	9	.8	1.7	UKF
		17	1342	8.93	19	23.23	155	25.09	6.91	2.4		19	0	74	.08	9	.5	1.4	UKF
		17	14 4	55.54	18	49.22	155	57.42	59.80			25	0	304	.13	64	17.2	10.3	DIS
		17	1440	43.55	19	22.02	155	6.32	6.00	2.1		18	0	107	.13	9	.8	2.9	UER
		17	1728	58.10	19	19.66	155	10.79	9.67			13	0	98	.03	7	.4	1.6	UER
		17	1735	20.46	19	59.33	155	30.72	21.46			13	0	200	.08	61	2.2	15.7	KOH
		17	2116	34.05	19	59.91	156	4.84	33.15			9	0	261	.11	59	6.4	10.5	DIS
		18	217	26.29	19	19.89	155	10.14	11.70			14	0	132	.05	7	.6	.6	UER
		18	227	13.28	19	19.53	155	11.55	7.10			15	0	94	.10	6	.8	2.2	UER
		19	336	6.37	19	26.81	155	29.58	.55	1.9		11	0	154	.10	16	1.3	84.2	UKF
		19	514	54.23	19	25.01	155	16.39	12.70			17	0	92	.12	2	1.1	.4	LPC
		19	736	14.14	19	22.84	155	16.29	30.34	2.1		25	0	66	.06	2	.6	1.2	DEP
		19	1529	18.43	19	20.65	155	8.83	9.06	2.4		23	0	71	.10	8	.6	1.3	UER
		19	1834	40.02	18	56.33	155	27.15	30.79			19	0	276	.10	38	8.2	3.7	DIS
		19	1937	44.81	19	24.60	155	24.54	9.40	1.7		17	0	60	.06	9	.4	.8	UKF
		20	224	9.58	19	27.94	155	34.98	44.23	2.5		13	0	179	.06	25	2.4	4.8	MOK
		20	225	4.77	19	27.41	155	34.32	49.49	2.9		14	0	84	.07	23	1.5	4.5	MOK
		20	225	9.69	19	20.02	155	7.47	8.57			14	0	98	.08	8	.7	1.9	UER
		20	539	11.93	19	20.85	155	6.64	6.73	1.9		23	0	95	.11	7	.6	1.2	UER
		20	647	54.03	19	3.95	156	20.67	66.59			20	0	306	.14	72	16.2	14.1	DIS
		20	8 6	12.90	19	22.37	155	16.26	31.92			12	0	101	.04	5	.8	1.7	DEP
		20	1339	29.00	19	20.55	155	13.70	11.94			15	0	65	.06	7	.7	2.1	UER
		20	1655	5.65	19	26.47	155	32.07	32.78	2.3		10	0	121	.16	17	4.8	10.0	MOK
		20	1812	45.45	19	56.40	155	3.83	36.37	2.9		27	0	235	.13	45	3.6	5.4	KKU
		21	4 6	5.47	19	19.94	155	11.61	8.45	1.7		24	0	84	.12	6	.8	1.2	UER
		21	920	24.40	19	20.43	155	9.81	9.44			13	0	75	.06	7	.6	1.5	UER
		21	1140	15.32	19	22.07	155	25.08	9.27	1.7		20	0	54	.10	10	.6	.9	UKF
		21	1522	55.18	19	18.75	155	13.11	6.33			18	0	85	.16	8	1.1	2.5	POL
		22	116	34.42	19	20.19	155	10.51	8.74	1.8		19	0	82	.08	7	.6	.6	UER
		22	128	42.69	19	19.71	155	10.99	7.14			14	0	104	.07	7	.7	1.1	UER
		22	2126	30.94	19	22.28	155	4.13	6.58	2.3		25	0	97	.12	11	.7	1.3	MER
		22	2216	34.22	19	20.18	155	10.59	8.72			16	0	82	.06	7	.5	1.2	UER
		23	1013	.10	19	18.96	155	12.32	8.31			14	0	98	.08	7	.8	2.1	POL
		23	1254	12.22	18	58.56	155	28.90	33.90	3.4		32	1	223	.11	33	1.7	2.7	DIS
		23	1749	45.29	19	24.12	155	16.26	2.00			7	0	96	.06	2	.5	1.3	SPC
		23	1818	2.39	19	24.01	155	15.86	1.57	1.4		16	0	63	.09	3	.4	.2	SPC
		23	2115	45.67	19	24.65	155	16.50	.68	.7		10	0	94	.10	2	.5	.3	SPC
		23	2148	30.86	19	23.87	155	15.45	2.00			8	0	144	.07	3	.8	.0	SPC
		23	2253	32.54	19	24.08	155	15.96	2.00			7	0	109	.06	2	.7	.0	SPC
		24	4 1	55.84	19	6.82	155	27.75	28.16	2.4		22	0	183	.08	22	1.3	2.3	LSW
		24	430	13.27	19	24.33	155	56.28	29.56	2.3		17	2	280	.14	37	2.3	2.1	KON
		24	742	18.96	19	24.95	155	16.80	1.58	.3		8	0	123	.14	2	.4	.2	SPC
		24	747	45.54	19	25.83	155	16.38	6.78			6	0	228	.19	2	9.1	21.5	LPC
		24	816	38.73	19	19.53	155	13.49	7.25	1.6		15	0	73	.06	7	.5	1.4	UER
		24	911	6.11	19	20.55	155	11.34	9.29	2.4		27	0	75	.12	8	.6	.7	UER
		24	912	46.55	19	20.28	155	11.00	8.55	1.7		19	0	80	.10	7	.7	1.5	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	FEB	24	935	8.51	19	20.29	155	11.43	8.84	1.7		19	0	79	.08	7	.6	1.2	UER
		24	942	56.01	19	20.54	155	11.46	7.50	2.1		25	0	75	.16	7	.9	1.7	UER
		24	1015	26.93	19	24.04	155	15.55	.89	.8		9	0	70	.10	3	.5	1.0	SPC
		24	1247	21.98	19	20.24	155	12.90	10.30			12	0	68	.07	6	.8	4.0	UER
		24	15 9	7.46	19	22.91	155	25.69	9.19	2.4		27	0	53	.11	11	.6	.8	UKF
		24	1523	43.99	19	22.06	155	25.55	8.92	1.7		17	0	60	.08	11	.6	1.5	UKF
		24	18 2	59.16	19	21.19	155	29.21	10.25	2.0		17	0	76	.10	11	.8	.7	HFA
		24	1814	34.85	19	25.24	155	16.47	.71	.3		7	0	153	.06	2	.5	.3	SPC
		24	1929	22.97	19	20.76	155	11.60	8.59	1.7		21	0	71	.12	8	.8	1.6	UER
		24	2118	31.70	19	24.16	155	15.67	1.93	2.2		21	0	53	.12	3	.5	.5	SPC
		24	2141	34.82	19	23.93	155	23.63	9.89	1.6		16	0	102	.06	7	.5	.6	UKF
		24	2143	56.21	19	19.86	155	12.63	7.87	1.7		20	0	76	.13	6	1.0	1.4	UER
		25	3 1	44.91	19	1.28	155	27.07	38.96			18	0	220	.09	31	2.3	5.6	LSW
		25	5 6	19.96	19	25.30	155	16.47	.78	.3		10	0	131	.08	2	.5	2.0	SPC
		26	137	33.11	19	25.03	155	17.13	11.44	1.4		13	0	118	.09	2	1.3	3.3	LPC
		26	334	30.44	19	23.77	155	15.40	2.00			8	0	151	.10	3	1.2	.0	SPC
		26	4 2	46.73	19	24.80	155	29.25	9.57	2.9		27	0	34	.12	14	.6	.3	UKF
		26	1431	53.91	18	57.68	155	28.51	34.75	2.9		28	1	229	.12	35	2.2	3.3	DIS
		26	1958	35.89	20	4.51	155	15.66	7.58	2.5		15	0	233	.09	48	1.8	.9	KKU
		26	2052	43.64	19	19.97	155	7.61	6.78			15	0	96	.13	8	1.1	3.1	UER
		27	042	2.13	19	20.03	155	11.97	7.07	2.4		28	0	80	.15	6	.8	1.3	UER
		27	142	50.32	19	19.39	155	11.38	10.28			16	0	98	.06	7	.6	3.0	UER
		27	417	45.66	19	24.98	155	23.56	9.57	1.9		22	0	60	.13	8	.7	.8	UKF
		27	9 3	56.58	19	24.24	155	16.18	1.66			10	0	96	.04	2	.3	.1	SPC
		27	1311	24.73	19	21.45	155	8.02	7.37			19	0	83	.07	9	.5	.6	UER
		27	14 5	23.60	19	20.08	155	19.82	2.93			9	0	120	.07	6	.9	9.1	SWR
		27	14 7	42.65	19	20.48	155	19.52	1.43			18	0	66	.10	6	.5	.0	SWR
		27	1444	56.88	19	12.04	155	17.62	44.37			21	1	178	.14	18	2.1	2.0	HLP
		27	2138	56.76	19	19.84	155	12.48	11.18			19	0	78	.07	6	.6	2.0	UER
		28	356	26.05	19	21.68	155	16.41	29.17			21	0	91	.08	3	1.0	1.9	DEP
		28	628	28.95	19	24.72	155	23.64	5.61			22	0	59	.15	8	.7	3.2	UKF
		28	652	4.42	19	23.64	155	15.11	1.86			7	0	93	.06	3	1.0	.9	SPC
		28	946	49.16	19	24.01	155	15.91	1.40	1.2		12	0	71	.10	5	.5	.3	SPC
		28	1741	22.23	19	11.57	155	29.88	4.30	2.2		18	0	80	.15	14	1.2	1.7	LSW
		28	2044	31.52	19	20.12	155	8.71	10.21			13	0	73	.05	9	.6	2.5	UER
		28	2238	49.21	19	23.98	155	15.66	1.76	.8		8	0	127	.04	3	.4	.3	SPC
	MAR	1	332	33.62	19	19.55	155	8.98	8.46	1.8		16	0	83	.08	9	.7	1.8	UER
		1	1625	11.52	19	23.93	155	23.59	9.30	2.2		14	0	60	.05	8	.4	1.4	UKF
		1	1631	16.69	19	24.02	155	23.36	8.99			11	0	181	.03	8	.5	1.6	UKF
		1	1949	34.61	19	24.08	155	16.01	1.71			11	0	118	.08	2	1.0	.3	SPC
		1	2130	14.03	19	22.13	155	1.91	5.41			23	0	203	.16	14	2.2	1.7	MER
		2	045	16.96	19	27.41	155	30.75	12.57			13	0	282	.04	18	2.3	.2	MOK
		2	230	55.19	19	23.93	155	23.79	10.52			13	0	150	.04	7	.5	1.6	UKF
		2	810	34.99	19	27.48	154	49.76	9.27			17	0	283	.13	54	5.6	.9	LER
		2	959	27.30	19	20.21	155	12.09	9.94	3.0		25	0	76	.10	6	.7	.4	UER
		2	1510	55.30	19	25.20	155	23.76	11.43			17	0	76	.03	8	.3	.5	UKF
		2	2047	45.18	19	23.11	155	2.84	6.21			21	0	217	.15	14	1.8	1.7	MER
		2	2240	36.86	20	.94	156	2.98	11.15			8	0	259	.08	60	18.0	4.5	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAR	2	2251	25.93	19	19.74	155	10.12	7.09			15	0	120	.13	7	1.1	2.2	UER
		2	2332	16.57	19	24.97	155	17.39	9.14			12	0	92	.04	2	.5	.8	LPC
		2	2342	24.18	19	23.86	155	15.38	1.56			11	0	105	.05	3	.3	.2	SPC
		3	937	14.32	19	12.85	155	37.47	8.82			18	0	110	.21	25	1.9	2.7	HEA
		3	2258	49.08	19	16.85	155	23.55	5.87			13	0	172	.12	9	1.5	3.1	SWR
		4	613	40.45	19	24.09	155	15.74	1.60	1.2		12	0	115	.05	3	.2	.2	SPC
		4	659	59.83	19	24.14	155	15.79	1.66	.8		7	0	125	.03	3	.4	.2	SPC
		5	058	21.98	19	19.97	155	11.90	7.57	2.3		27	0	82	.12	6	.7	1.1	UER
		5	347	38.76	19	25.12	155	27.89	5.52	1.8		13	0	105	.11	12	.9	3.1	UKF
		5	719	23.60	19	18.67	155	15.42	6.49			19	0	125	.09	6	.6	1.4	KOA
		5	752	5.56	19	19.40	155	19.18	4.60	1.5		14	0	95	.10	7	.7	1.5	SWR
		5	753	14.68	19	17.90	155	20.18	3.71			10	0	205	.09	7	1.4	2.5	SWR
		5	8 8	12.27	19	28.43	155	52.66	10.13	3.1		20	0	112	.17	29	1.7	.6	KON
		5	14 9	1.24	19	18.50	155	13.10	7.22	2.0		18	0	90	.12	8	.8	1.4	POL
		5	1410	40.72	19	18.51	155	13.31	6.75	1.8		24	0	83	.13	8	.8	1.5	POL
		5	1620	2.14	19	22.82	155	22.61	6.16			10	0	88	.04	9	.4	.9	UKF
		5	1752	6.41	19	22.84	155	22.67	6.95			9	0	89	.04	9	.4	1.6	UKF
		5	1919	29.53	19	22.72	155	22.81	6.87	1.9		14	0	82	.05	8	.3	1.0	UKF
		6	035	26.59	19	19.50	155	11.63	8.23			12	0	94	.06	6	.6	1.9	UER
		6	130	22.41	18	50.53	155	11.57	41.75			22	0	277	.11	50	5.7	9.1	PPL
		6	139	47.03	19	19.74	155	12.33	7.81	1.7		22	0	82	.12	6	.7	1.2	UER
		6	157	27.19	19	24.63	155	24.44	5.16	1.5		14	0	133	.07	8	.6	2.0	UKF
		6	529	52.47	19	18.37	155	13.36	5.70	1.7		14	0	83	.10	8	.7	2.0	POL
		6	555	7.68	19	23.95	155	26.01	12.64			13	0	157	.04	11	.6	.3	UKF
		6	636	23.24	19	26.51	155	27.74	7.64	1.8		16	0	111	.10	12	.8	1.2	UKF
		6	9 1	28.90	19	19.52	155	13.21	8.35	1.7		19	0	72	.10	7	.7	1.6	UER
		6	1454	2.84	19	23.08	155	24.50	7.60	1.8		21	0	96	.15	8	1.0	1.7	UKF
		6	1636	12.00	19	17.65	155	12.99	8.80	1.8		17	0	122	.10	9	1.0	.8	POL
		6	1919	1.40	19	21.71	155	17.09	28.25			12	0	143	.03	6	1.6	3.0	DEP
		6	1927	46.49	19	21.53	155	16.63	29.72			13	0	153	.04	3	.9	2.1	DEP
		6	2015	46.48	19	12.85	155	9.90	4.90	2.3		24	0	215	.13	17	1.4	1.0	POL
		6	21 7	33.68	19	19.37	155	9.73	8.49			14	0	113	.05	8	.5	1.2	UER
		6	2350	10.74	19	23.97	155	23.28	10.79	1.9		19	0	56	.05	8	.4	.2	UKF
		7	5 8	4.13	19	22.81	155	23.33	8.19	1.6		23	0	52	.11	8	.6	1.0	UKF
		7	655	34.96	19	21.71	155	7.23	8.72	1.9		17	0	76	.12	8	.9	2.5	UER
		7	11 2	14.70	19	18.50	155	14.22	7.35	1.7		20	0	106	.08	8	.5	.8	POL
		7	2037	32.65	20	4.06	155	20.75	5.15	3.3		18	0	222	.09	46	1.3	1.7	KKU
		8	1124	22.15	19	16.54	155	15.37	9.51	2.6		27	0	156	.13	7	.9	.4	HLP
		8	1240	30.26	19	15.60	155	7.78	41.45			25	0	194	.08	12	1.4	2.5	POL
		9	513	52.14	20	5.19	155	26.63	21.57	3.3		26	0	217	.08	35	1.1	2.3	DIS
		9	650	21.06	19	21.71	155	16.82	32.79	2.3		29	0	53	.11	3	1.0	2.1	DEP
		9	725	11.83	19	18.94	155	12.09	6.57			12	0	102	.07	7	.7	1.4	POL
		9	734	36.76	19	31.78	155	37.27	8.66	2.7		23	0	145	.12	25	.9	.9	MOK
		9	10 3	55.72	19	24.55	155	25.20	7.92	1.7		14	0	126	.08	10	.7	1.4	UKF
		9	1059	42.48	19	17.02	155	14.78	7.48	1.8		20	0	174	.09	7	.6	.7	POL
		9	1128	45.24	19	22.28	155	3.29	6.66	2.0		20	0	117	.17	12	1.2	2.6	MER
		9	1437	23.10	19	19.40	155	4.02	45.32			14	0	256	.07	21	5.0	6.0	MER
		9	1617	4.11	19	13.64	155	35.99	8.43	2.3		22	0	112	.18	22	1.4	1.8	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAR	9	2038	18.44	19	19.09	155	47.74	7.45	2.5		18	0	173	.11	28	1.4	.9	KON
		9	2359	59.13	19	21.80	155	48.46	8.11	2.5		15	0	186	.15	26	2.2	1.2	KON
		10	120	27.43	19	20.23	155	13.21	7.59			16	0	117	.07	6	.6	.8	UER
		10	340	8.89	19	19.75	155	10.04	7.69	2.2		27	0	90	.12	8	.7	1.2	UER
		10	540	2.67	19	23.69	155	24.95	7.84			14	0	109	.07	9	.6	1.3	UKF
		10	740	31.76	19	19.82	155	10.78	8.39			13	0	110	.05	7	.6	2.0	UER
		10	747	50.97	19	22.04	155	5.53	8.93			16	0	119	.10	10	1.0	2.9	MER
		10	1026	37.79	19	47.02	155	46.14	11.77	2.6		16	0	236	.09	37	3.2	.9	KON
		10	12 7	40.85	19	24.05	155	15.79	1.52	.8		8	0	118	.05	3	.3	.2	SPC
		10	1621	41.47	19	20.49	155	6.92	8.18			17	0	98	.11	7	.9	2.5	UER
		10	1812	49.52	19	7.02	155	27.64	27.53	2.4		20	0	182	.09	22	1.5	2.8	LSW
		11	046	56.88	19	23.86	155	15.58	1.73			8	0	136	.05	3	.6	.2	SPC
		11	050	43.18	19	24.00	155	14.84	5.53			7	0	177	.14	3	4.7	9.1	GLN
		11	054	27.63	19	24.06	155	15.88	.99	.7		7	0	118	.13	3	1.0	1.3	SPC
		11	211	1.16	19	19.04	155	11.69	7.05			15	0	105	.08	7	.6	1.2	UER
		11	614	17.13	19	25.88	155	23.03	8.45	1.5		17	0	71	.07	10	.5	.8	UKF
		11	753	8.71	19	24.26	155	16.24	1.61	.9		10	0	71	.05	2	.4	.2	SPC
		11	1910	37.65	19	19.58	155	12.78	8.54			19	0	78	.09	7	.7	1.6	UER
		11	1939	27.73	19	19.86	155	8.13	8.05			15	0	87	.07	9	.6	1.5	UER
		12	241	39.27	19	24.11	155	15.74	2.00	.8		9	0	118	.07	3	.6	.0	SPC
		12	320	54.02	19	24.06	155	15.79	1.87			9	0	118	.05	3	.5	.2	SPC
		12	1040	59.97	19	59.46	155	5.71	42.28	2.8		27	0	237	.14	45	3.6	5.2	KKU
		12	13 7	10.08	19	23.98	155	15.69	1.25			9	0	126	.14	3	.8	.8	SPC
		12	1717	47.23	19	18.51	155	13.31	9.13	1.7		19	0	83	.11	8	.7	1.0	POL
		12	23 9	7.46	19	24.47	155	16.76	1.11	.4		9	0	73	.08	2	.5	.4	SPC
		12	2317	7.24	19	21.22	155	13.19	9.63	1.6		21	0	56	.11	6	.8	2.4	UER
		13	055	14.63	19	23.89	155	15.59	2.00			6	0	135	.04	3	.6	.0	SPC
		13	1 9	55.87	19	24.38	155	16.65	1.58			7	0	92	.13	2	.6	.4	SPC
		13	639	43.55	18	52.50	155	7.67	43.50	2.8		24	0	272	.11	47	4.3	8.9	PPL
		13	843	6.73	19	19.43	155	13.51	10.68	1.7		17	0	122	.08	7	.7	2.5	UER
		13	948	23.84	19	24.18	155	15.92	1.85	.7		9	0	64	.08	2	.8	.4	SPC
		13	11 4	1.62	19	24.07	155	15.86	1.51	.7		10	0	62	.05	3	.3	.2	SPC
		13	11 8	1.57	19	24.21	155	16.01	2.00	.7		9	0	67	.11	2	.9	.0	SPC
		13	13 8	6.87	19	24.01	155	15.45	2.00			10	0	73	.14	3	1.1	.0	SPC
		13	1753	5.01	19	14.14	155	11.23	1.67			17	1	200	.12	15	1.5	1.7	POL
		13	1755	50.85	19	14.33	155	11.26	2.75			18	0	198	.13	15	1.5	12.9	POL
		13	19 7	51.23	19	24.02	155	15.72	2.00	.8		9	0	122	.12	3	1.0	.0	SPC
		13	2329	7.49	19	19.74	155	9.59	6.73	1.8		21	0	87	.13	8	.9	2.0	UER
		13	2335	50.42	19	25.95	155	24.23	8.40	1.9		23	0	65	.10	9	.6	1.0	UKF
		14	738	19.44	19	18.48	155	15.13	9.95	1.7		15	0	128	.08	6	.8	2.9	KOA
		14	10 7	11.44	19	24.07	155	15.96	2.00	.8		10	0	60	.10	2	.7	.0	SPC
		14	1149	7.90	19	25.20	155	16.39	.63	.8		10	0	121	.07	2	.4	.2	SPC
		14	1248	14.40	19	23.98	155	15.85	1.76	1.5		17	0	56	.07	3	.3	.2	SPC
		14	1647	45.83	19	20.30	155	11.85	8.90	1.7		26	0	77	.12	7	.7	1.4	UER
		14	1954	34.91	19	26.15	155	16.52	2.54			7	0	251	.04	2	1.5	2.4	SPC
		14	22 2	4.07	19	13.57	155	10.93	7.15	2.3		28	0	192	.15	16	1.1	1.3	POL
		15	0 4	45.10	19	20.72	155	7.84	7.11	1.8		23	0	82	.12	9	.8	1.9	UER
		15	011	21.95	19	24.88	155	24.25	10.63	1.7		20	0	61	.07	9	.5	.3	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAR	15	112	23.38	19	13.80	155	4.07	50.17	2.1		24	0	213	.09	18	2.1	3.8	DIS
		15	129	30.81	19	23.93	155	15.73	2.00			8	0	125	.08	3	.8	.0	SPC
		15	136	32.02	19	54.38	156	3.96	7.68	3.2		13	0	247	.13	65	3.6	.9	KON
		15	224	14.67	19	19.98	155	8.10	6.94	1.9		18	0	86	.12	9	.9	2.3	UER
		15	344	36.22	19	23.60	155	15.09	1.89	1.0		10	0	95	.06	3	.5	.0	SPC
		15	628	44.36	19	19.52	155	11.37	8.18	1.7		23	0	95	.10	6	.7	1.5	UER
		15	11 7	.16	19	18.80	155	15.01	7.85	1.6		21	0	92	.09	7	.6	.9	KOA
		15	19 8	15.59	19	19.37	155	25.05	8.29	1.8		9	0	114	.05	7	.7	2.0	HEA
		15	1925	36.04	19	24.04	155	15.36	2.00			9	0	141	.10	3	1.0	.0	SPC
		15	2316	.53	19	19.31	155	10.14	10.71			15	0	104	.06	7	.6	2.4	UER
		16	129	52.54	19	24.16	155	16.11	1.54			8	0	101	.06	2	.5	.3	SPC
		16	313	17.64	19	16.70	155	5.10	44.88	2.5		28	0	199	.08	13	1.5	2.8	MER
		16	320	8.24	19	13.47	155	10.64	5.54	2.3		23	0	208	.12	16	1.2	3.9	POL
		16	636	40.15	19	24.04	155	15.92	2.00	.8		9	0	112	.08	2	.7	.0	SPC
		16	636	43.47	19	24.04	155	15.60	1.82	1.9		20	0	64	.09	3	.3	19.2	SPC
		16	759	14.28	19	23.97	155	15.52	2.00			9	0	135	.13	3	1.2	.0	SPC
		16	1553	37.12	19	19.93	155	11.68	11.40			20	0	84	.08	6	.7	2.2	UER
		16	1631	38.46	19	23.71	155	24.05	10.30	1.7		19	0	116	.06	8	.5	2.1	UKF
		16	17 3	25.20	19	13.00	155	10.45	5.24	2.0		19	0	212	.13	17	1.3	1.2	POL
		16	1819	55.15	19	26.32	155	29.35	9.68	1.9		17	0	82	.11	13	.7	.8	UKF
		16	2148	.30	19	22.95	155	22.59	9.02	1.6		14	0	90	.13	9	1.2	4.4	UKF
		17	017	9.34	19	14.28	155	29.34	11.44	2.1		24	0	96	.10	14	.9	.3	LSW
		17	030	27.39	19	20.21	155	16.92	31.21	2.2		26	0	82	.08	5	1.0	1.6	DEP
		17	318	18.39	19	24.05	155	15.86	2.00			7	0	115	.04	3	.5	.0	SPC
		17	4 4	54.13	19	23.88	155	15.48	.98			9	0	141	.07	3	.4	.5	SPC
		17	444	52.55	19	16.98	155	32.87	30.44	2.4		32	1	53	.10	14	.9	1.7	HEA
		17	738	43.84	19	23.92	155	15.46	2.00	.9		9	0	140	.11	3	1.0	.0	SPC
		17	948	4.69	19	24.01	155	15.47	2.00			9	0	136	.10	3	1.0	.0	SPC
		17	953	20.17	19	19.68	155	9.18	7.09			14	0	83	.13	9	1.2	2.8	UER
		17	1249	51.76	19	24.03	155	15.75	1.47	.8		8	0	120	.04	3	.3	.4	SPC
		17	1259	25.65	19	24.06	155	15.81	1.84	.8		8	0	117	.04	3	.4	.2	SPC
		17	16 6	34.14	19	13.70	155	11.13	1.15			13	0	204	.15	15	2.4	99.0	POL
		17	1753	16.93	19	20.47	155	13.49	8.90	1.6		22	0	59	.12	6	.7	1.6	UER
		18	246	25.03	19	24.52	155	25.12	10.26	2.0		20	0	65	.09	10	.6	.7	UKF
		18	1344	19.27	19	22.44	155	3.85	5.65	2.0		17	0	104	.17	12	1.2	2.7	MER
		18	1730	29.76	19	23.91	155	23.74	10.67	1.6		14	0	115	.05	7	.4	2.1	UKF
		18	2258	34.62	19	16.50	154	54.49	43.22	3.2		28	0	243	.09	24	3.3	4.5	DIS
		18	2359	1.67	19	13.69	155	10.85	1.26	1.9		14	0	205	.14	16	2.5	99.0	POL
		19	756	57.97	19	19.03	155	13.79	7.34	1.9		24	0	65	.12	7	.7	1.6	UER
		19	1356	50.65	19	21.84	155	17.52	26.39			13	0	107	.06	4	1.4	2.9	DEP
		19	1516	52.69	19	20.45	155	13.01	7.46			17	0	65	.07	6	.6	.9	UER
		19	1836	28.54	19	18.17	155	13.35	6.71	1.7		23	0	86	.09	8	.6	1.3	POL
		19	2026	.28	19	18.29	155	13.38	6.77	1.7		23	0	84	.11	8	.7	1.6	POL
		19	2221	5.09	19	20.05	155	9.16	9.94			15	0	77	.06	8	.6	2.1	UER
		20	154	57.62	19	21.12	155	4.23	6.03	2.0		22	0	89	.16	10	1.1	2.0	MER
		20	4 7	59.46	19	55.94	155	34.34	11.34	2.7		26	0	146	.08	31	1.0	.4	KOH
		20	947	23.77	19	25.58	155	24.83	6.51	1.9		14	0	79	.06	8	.5	1.7	UKF
		20	10 5	30.53	19	25.10	155	26.21	9.59	3.1		26	0	69	.12	10	.7	1.1	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAR	20	1532	10.04	20	.89	155	59.54	42.28			11	0	306	.11	92	25.8	33.3	KOH
		20	1548	57.09	19	25.86	155	26.49	11.05	1.8		12	0	235	.03	12	1.6	4.1	UKF
		20	1829	29.65	19	19.69	155	11.06	8.03			18	0	92	.06	6	.6	1.3	UER
		21	045	46.67	19	22.40	155	8.80	1.88	1.7		18	0	96	.09	9	.6	.3	UER
		21	317	54.15	19	19.52	155	12.00	7.58	1.7		18	0	90	.06	6	.5	1.0	UER
		21	419	8.53	19	18.92	155	13.00	6.71			18	0	85	.08	8	.6	1.7	POL
		21	5 0	7.18	19	19.40	155	12.58	7.65			17	0	85	.07	7	.6	1.7	UER
		21	929	47.26	19	25.29	155	17.00	9.35	1.3		9	0	213	.05	4	1.7	2.4	LPC
		21	1040	39.84	19	20.81	155	11.74	10.61	1.7		20	0	71	.09	8	.7	2.4	UER
		21	1620	48.57	19	24.79	155	26.12	8.51	1.7		15	0	176	.09	10	1.5	3.6	UKF
		21	18 4	40.83	19	21.12	155	6.72	8.59	2.8		24	0	88	.13	7	.9	1.4	UER
		21	2119	41.72	19	55.07	155	59.90	8.58	2.7		11	0	283	.05	63	3.9	1.3	KOH
		21	2233	39.84	19	22.27	155	15.50	27.78	2.4		28	1	55	.10	4	.9	1.2	DEP
		22	531	35.62	19	23.74	155	17.25	6.09	1.1		7	0	208	.15	2	2.3	5.2	LPC
		22	555	29.37	19	22.59	155	28.43	9.15	1.9		21	0	86	.11	12	.6	1.7	UKF
		22	630	32.39	19	20.31	155	19.73	1.21	1.4		13	0	112	.06	6	.4	.0	SWR
		22	1717	47.69	19	24.97	155	25.53	6.59			11	0	151	.08	10	.8	3.2	UKF
		22	1811	53.93	19	26.91	155	26.11	12.89			12	0	205	.05	10	1.2	.3	UKF
		22	1836	2.80	19	19.70	155	24.15	9.02			17	0	202	.05	10	.8	.4	SWR
		22	19 1	49.59	19	16.33	155	11.82	5.47			21	0	171	.15	11	1.1	.9	POL
		23	0 0	39.61	19	52.80	155	40.09	9.46			13	0	278	.08	44	7.7	1.0	KKU
		23	043	6.40	19	27.42	155	25.08	10.10	2.1		22	0	131	.07	10	.4	.5	UKF
		23	140	4.17	19	16.48	155	11.93	5.19	1.8		23	0	168	.13	11	1.0	1.0	POL
		23	152	.22	19	21.06	155	29.14	10.49	2.9		30	0	46	.12	10	.7	.3	HEA
		23	456	.75	19	19.05	155	13.35	8.44			21	0	75	.09	7	.6	1.5	UER
		23	537	42.87	19	24.44	155	21.02	6.58			10	0	96	.04	7	.4	1.3	UKF
		23	1040	26.99	19	16.59	155	12.13	5.79	2.8		26	0	166	.14	11	.9	1.9	POL
		23	1115	47.29	19	16.24	155	11.71	3.02			15	0	174	.14	11	1.4	6.0	POL
		23	1222	45.49	19	16.01	155	11.72	5.37			18	0	178	.16	12	2.1	1.2	POL
		23	1310	31.42	19	16.40	155	12.28	4.84			20	0	168	.15	11	1.2	1.5	POL
		23	1410	23.89	19	16.76	155	12.14	5.12	2.3		24	0	163	.17	11	1.1	1.3	POL
		23	2325	13.55	19	16.27	155	11.92	2.26			16	0	211	.10	11	1.3	6.1	POL
		23	2330	5.05	19	16.27	155	11.87	5.51			20	0	211	.12	11	1.3	1.9	POL
		23	2339	8.08	19	16.50	155	11.89	5.96	3.2		24	0	168	.16	11	1.2	2.5	POL
		24	043	27.65	19	16.22	155	11.76	5.53			23	0	174	.11	11	.8	1.6	POL
		24	158	18.49	19	16.00	155	11.80	4.32			16	0	177	.12	12	1.4	1.7	POL
		24	311	58.85	19	21.06	155	12.72	5.76			12	0	112	.21	8	2.1	5.9	UER
		24	313	18.68	19	22.08	155	12.73	2.76			17	0	77	.09	6	.5	1.7	UER
		24	316	3.91	19	21.99	155	13.20	2.82	1.4		18	0	50	.11	6	.7	2.1	UER
		24	317	25.66	19	21.98	155	12.59	1.59			6	0	148	.02	6	.5	.2	UER
		24	322	32.90	19	21.90	155	13.07	1.88			15	0	51	.11	6	.6	.4	UER
		24	323	48.96	19	22.17	155	12.99	2.80	1.4		21	0	61	.09	5	.5	1.3	UER
		24	332	33.84	19	22.02	155	13.15	1.98			8	0	156	.02	5	.3	.1	UER
		24	339	5.87	19	21.82	155	12.95	2.00			10	0	150	.13	6	1.2	.0	UER
		24	344	42.29	19	21.71	155	12.00	1.32			9	0	116	.07	7	.9	.5	UER
		24	345	1.85	19	21.95	155	12.63	1.58			8	0	148	.04	6	.6	.3	UER
		24	350	16.37	19	21.78	155	12.89	1.87			8	0	151	.02	5	.3	.1	UER
		24	417	44.59	19	21.81	155	11.80	2.20			9	0	171	.05	7	.7	7.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAR	24	5 0	54.47	19	21.89	155	11.35	2.26			13	0	127	.03	7	.2	3.3	UER
		24	510	31.72	19	21.87	155	13.11	2.03			10	0	101	.04	6	.3	6.1	UER
		24	511	33.01	19	21.72	155	9.91	6.53			6	0	241	.12	9	6.4	8.4	UER
		24	513	44.36	19	21.94	155	11.78	1.47			7	0	127	.04	7	.7	.4	UER
		24	528	42.15	19	22.04	155	13.38	2.67			14	0	64	.10	5	.6	2.4	UER
		24	9 2	2.50	19	24.79	155	27.78	12.49	1.9		16	0	120	.09	12	.9	.4	UKF
		24	1232	12.18	19	11.80	155	20.00	47.73	2.1		21	1	172	.10	15	1.8	1.9	HLP
		24	1251	34.17	19	15.70	155	11.65	5.31	1.9		16	0	183	.15	12	1.6	1.3	POL
		24	1344	14.73	19	15.98	155	11.99	5.83	2.2		22	0	176	.15	12	1.2	2.5	POL
		24	2344	38.73	19	16.74	155	12.02	5.67	2.6		24	0	163	.15	11	1.0	2.2	POL
		24	2346	11.22	19	16.44	155	12.10	5.74	2.8		24	0	168	.15	11	1.1	2.4	POL
		24	2350	28.08	19	16.29	155	11.95	4.73			15	0	171	.15	11	1.8	2.1	POL
		24	2352	10.12	19	16.27	155	11.97	5.41	2.1		23	0	172	.14	11	1.1	.9	POL
		24	2353	14.96	19	16.28	155	12.08	5.51	1.8		23	0	171	.14	11	1.1	2.2	POL
		24	2358	26.96	19	15.99	155	11.81	5.71	1.9		19	0	177	.12	12	1.0	1.8	POL
		25	111	8.89	19	16.40	155	11.85	4.67	1.8		15	0	208	.17	11	2.1	2.0	POL
		25	155	25.15	19	16.26	155	12.09	5.75			18	0	171	.15	12	1.3	2.5	POL
		25	2 1	15.07	19	15.93	155	11.77	4.90	1.9		16	0	178	.11	12	.9	1.2	POL
		25	215	31.11	19	16.17	155	11.97	5.44			16	0	173	.14	12	1.4	1.1	POL
		25	438	12.36	19	16.23	155	11.97	5.23	1.8		19	0	172	.13	11	1.1	.9	POL
		25	553	5.03	19	16.90	155	12.31	1.78			13	0	192	.10	11	1.3	.5	POL
		25	6 6	11.51	19	15.82	155	11.84	5.50			15	0	180	.14	12	1.2	2.2	POL
		25	748	35.37	19	16.51	155	11.45	3.39			12	1	206	.11	11	1.5	2.2	POL
		25	858	30.00	19	20.05	155	11.26	10.36			17	0	96	.08	7	.7	3.0	UER
		25	859	51.82	19	15.52	155	11.53	5.69	1.9		19	0	187	.14	13	1.2	2.3	POL
		25	928	20.61	19	15.71	155	11.71	5.49	1.9		17	0	183	.12	12	1.2	1.0	POL
		25	1043	26.56	19	15.52	155	11.60	5.74	1.9		21	0	187	.15	13	1.3	2.5	POL
		25	1136	10.62	19	54.73	155	11.70	40.71			21	0	215	.12	47	2.2	4.4	KKU
		25	1548	58.17	19	16.58	155	12.35	4.92			16	0	165	.14	11	1.2	1.7	POL
		25	21 1	3.02	19	16.71	155	12.29	4.96	1.8		21	0	163	.16	11	1.2	1.5	POL
		25	2222	38.83	19	21.34	155	10.34	35.97			16	0	115	.05	9	1.4	4.0	UER
		26	120	23.54	19	20.24	155	25.57	7.18	1.8		15	0	107	.10	7	.8	1.7	HEA
		26	234	31.32	19	23.04	155	2.85	7.75			17	0	124	.19	13	1.8	4.0	MER
		26	256	44.24	19	16.08	155	11.91	2.99	1.8		17	0	175	.09	12	.9	2.3	POL
		26	349	56.86	19	16.60	155	11.90	1.05			13	0	203	.09	11	1.3	.8	POL
		26	515	8.75	19	16.87	155	24.61	30.69			13	0	115	.09	14	1.6	3.9	SWR
		26	525	28.28	19	21.03	155	22.06	24.65			12	0	117	.05	8	1.7	3.4	SWR
		26	611	3.08	19	16.49	155	12.24	4.51			20	0	167	.13	11	1.1	1.5	POL
		26	611	4.60	19	16.84	155	12.35	5.33	2.1		19	0	172	.16	11	1.2	1.1	POL
		26	845	40.49	19	29.43	154	49.54	8.89			16	0	322	.07	39	2.6	.5	LER
		26	9 8	55.82	19	23.64	155	17.81	23.65			14	0	107	.04	7	.6	1.0	DEP
		26	919	26.84	19	23.60	155	17.68	23.81			16	0	75	.05	4	.7	1.2	DEP
		26	922	48.48	19	16.32	155	12.33	3.91	1.8		21	0	169	.12	11	1.0	1.6	POL
		26	946	52.75	19	16.37	155	11.99	5.73	2.1		23	0	170	.16	11	1.1	2.4	POL
		26	951	7.41	19	23.60	155	17.68	24.43			15	0	75	.05	4	.7	1.2	DEP
		26	955	32.37	19	23.88	155	17.72	24.05			13	0	99	.05	7	.7	1.7	DEP
		26	11 3	15.28	19	23.63	155	17.93	23.93			19	0	49	.06	3	.7	1.2	DEP
		26	1131	5.44	19	23.64	155	17.86	25.68	2.0		20	0	40	.07	3	.7	1.3	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAR	26	1153	44.30	19	21.03	155	24.66	8.36			14	0	95	.06	9	.5	1.1	SWR
		26	1242	51.60	19	23.98	155	17.61	24.64	2.0		22	0	40	.05	2	.5	.9	DEP
		26	1528	.81	19	25.39	155	23.81	8.77	1.6		17	0	78	.04	8	.4	1.0	UKF
		26	1655	44.19	19	16.54	155	12.18	2.78	1.8		20	0	166	.11	11	.8	2.5	POL
		26	1847	11.89	19	23.74	155	17.65	25.34	2.5		29	0	31	.09	2	.7	1.2	DEP
		26	2040	44.32	19	16.17	155	12.15	1.32	1.8		18	0	172	.09	12	.8	.5	POL
		26	2136	46.35	19	24.93	155	17.55	7.46	1.2		13	0	74	.05	3	.6	1.0	LPC
		26	23 7	58.58	19	16.10	155	12.32	3.21	1.8		19	0	173	.10	12	.9	2.0	POL
		27	058	10.86	19	18.08	155	13.07	6.15			11	0	101	.08	8	.8	2.0	POL
		27	116	59.73	19	18.21	155	13.12	6.82			16	0	96	.09	8	.7	1.6	POL
		27	758	27.21	19	24.70	155	24.41	7.93			13	0	133	.06	8	.6	1.0	UKF
		27	9 4	33.45	19	22.14	155	11.38	3.57	1.5		17	0	90	.06	7	.4	1.3	UER
		27	934	35.30	19	18.93	155	12.63	5.56			14	0	117	.17	9	1.5	4.0	POL
		27	11 1	6.30	19	18.69	155	13.19	6.83			14	0	84	.10	8	.8	2.0	POL
		27	1316	8.27	19	18.38	155	13.09	5.67	1.7		21	0	93	.14	8	.9	2.2	POL
		27	1430	11.23	19	23.98	155	23.72	10.44	2.0		20	0	57	.07	7	.4	.5	UKF
		27	1553	27.29	19	20.22	155	8.63	7.59	1.8		21	0	74	.12	9	.9	2.0	UER
		27	16 2	7.64	19	27.07	155	27.25	8.89	2.6		27	0	74	.16	11	.9	1.8	UKF
		27	1941	3.94	19	20.27	155	18.55	3.55	2.4		23	0	58	.10	6	.5	1.2	KOA
		27	2027	31.20	19	19.83	155	11.09	8.82	2.0		23	0	89	.09	7	.7	1.4	UER
		27	2053	50.38	19	16.19	155	11.89	5.37	1.8		22	0	173	.13	11	1.3	.8	POL
		27	2057	15.69	19	22.14	155	25.49	8.08			10	0	147	.06	11	1.5	3.4	UKF
		27	21 6	31.64	19	24.77	155	23.58	8.11			13	0	124	.06	8	.5	1.2	UKF
		27	2148	28.89	19	16.59	155	11.98	4.86	1.8		22	0	166	.15	11	1.1	1.2	POL
		27	2258	54.22	18	57.10	155	33.15	38.97	3.6		30	0	234	.10	34	2.4	3.6	DIS
		27	23 8	25.69	19	16.12	155	11.81	5.98	1.9		22	0	175	.14	12	1.0	2.0	POL
		28	112	59.99	19	8.79	155	25.66	34.51			16	0	226	.09	23	3.6	8.1	LSW
		28	134	8.18	19	22.82	155	22.78	6.21			10	0	90	.03	8	.3	.7	UKF
		28	222	31.77	19	20.16	155	11.08	10.60	1.8		21	0	82	.07	7	.6	2.0	UER
		28	1419	11.68	19	31.32	155	55.85	32.39	2.8		12	1	296	.13	61	3.7	4.5	KON
		28	1831	55.76	19	21.06	155	7.23	7.06	1.9		20	0	85	.12	8	.9	2.5	UER
		28	2141	3.52	19	19.39	155	10.26	11.89	1.9		18	0	103	.07	7	.7	.4	UER
		28	2147	14.75	19	9.36	155	24.08	40.83	2.1		23	0	173	.09	19	1.8	3.4	LSW
		28	22 3	15.10	19	20.06	155	10.64	8.49	1.8		24	0	85	.13	7	.9	1.8	UER
		28	2236	36.64	19	19.46	155	10.26	8.66			17	0	104	.06	7	.5	1.3	UER
		28	2330	12.95	19	22.11	155	13.44	2.01	1.3		13	0	90	.07	5	.5	4.1	UER
		29	857	38.18	19	22.78	155	31.87	8.11	2.0		8	0	165	.09	15	1.4	5.8	MOK
		29	952	6.32	19	19.30	155	11.68	11.25			18	0	98	.08	7	.7	2.5	UER
		29	1651	14.68	20	12.96	155	26.46	11.62			17	0	259	.07	48	3.4	99.0	DIS
		29	2023	33.77	19	20.18	155	6.71	10.82			17	0	108	.09	7	.9	1.3	UER
		30	2 1	42.24	18	56.07	155	32.74	41.32			25	0	251	.11	36	4.3	5.4	DIS
		30	217	40.12	19	26.41	155	26.30	7.77	1.7		9	0	113	.11	10	1.2	3.6	UKF
		30	454	34.00	19	24.10	155	29.20	9.12			17	0	90	.09	15	.7	1.9	UKF
		30	759	18.98	19	16.62	155	15.46	5.64			10	0	210	.12	7	1.7	2.9	HLP
		30	1114	20.67	19	18.06	155	13.46	6.97			17	0	88	.09	8	.7	1.7	POL
		30	19 6	29.83	19	18.46	155	15.56	8.62			13	0	134	.05	5	.7	1.7	KOA
		30	23 7	32.54	19	49.23	155	16.67	39.49			15	0	208	.11	41	5.5	12.7	KKU
		31	323	9.07	18	51.71	155	32.07	39.78			17	0	295	.08	54	6.6	4.0	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAR	31	545	12.71	19	20.67	155	7.47	9.02	2.0		23	0	115	.16	8	1.4	2.3	UER
		31	946	56.84	19	17.89	155	13.11	6.77			16	0	105	.08	9	.7	2.0	POL
		31	1126	2.71	19	20.52	155	12.95	11.57			15	0	66	.04	6	.5	1.7	UER
		31	2323	45.62	19	16.43	155	12.79	4.57			19	0	207	.16	11	1.7	1.4	POL
	APR	1	537	54.35	19	21.74	155	26.25	11.63	1.8		21	0	66	.10	10	.7	.8	HEA
		1	1348	45.50	19	28.16	155	44.31	8.67	2.4		16	0	166	.17	26	2.0	1.6	MOK
		1	1830	36.96	19	23.32	155	14.88	25.66			23	0	54	.08	5	.8	1.3	DEP
		1	2152	40.03	19	31.85	155	36.46	10.08	2.9		24	0	84	.13	23	1.0	.5	MOK
		1	2155	52.80	19	32.82	155	36.60	9.96	2.9		24	0	133	.14	25	1.2	.5	MOK
		2	3 9	35.80	19	21.57	155	6.09	7.66	2.2		21	0	122	.15	8	1.3	1.9	UER
		2	1644	50.85	19	21.70	155	5.75	12.47			10	0	111	.07	9	1.2	5.8	MER
		2	1645	14.39	19	22.40	155	6.32	2.68	1.9		13	0	83	.12	10	1.0	4.4	UER
		2	2256	9.88	19	51.56	154	59.59	40.24			21	0	250	.12	43	6.8	13.5	DIS
		3	244	54.95	19	20.22	155	9.57	9.50	1.8		16	0	77	.05	8	.5	1.7	UER
		3	8 8	13.02	19	19.73	155	11.52	10.91	1.8		18	0	89	.06	6	.6	2.3	UER
		3	1148	16.53	19	19.19	155	10.00	8.05			15	0	103	.09	7	.9	1.9	UER
		3	1834	56.31	19	14.30	155	16.71	28.55	2.2		24	0	165	.09	11	1.3	2.3	HLP
		3	1844	24.19	19	23.48	155	29.68	9.45	1.9		17	0	95	.10	14	.7	1.2	UKF
		3	2118	15.89	19	19.04	155	13.37	7.28	2.0		23	0	74	.13	7	.8	1.8	UER
		3	2337	33.80	19	19.63	155	24.87	7.82			12	0	136	.09	7	1.0	2.5	SWR
		4	1142	15.28	19	22.39	155	16.52	27.25	3.5		31	0	48	.10	3	.8	1.3	DEP
		4	1756	18.22	19	19.76	155	12.17	8.58	1.7		21	0	83	.13	6	.9	2.0	UER
		4	1852	33.25	19	18.34	155	13.36	8.22	1.7		20	0	84	.10	8	.8	1.7	POL
		4	19 7	37.82	19	26.44	155	29.41	9.36	1.9		13	0	82	.08	13	.8	2.5	UKF
		5	752	14.51	19	57.24	155	22.33	7.38	2.6		9	0	302	.05	55	4.1	.7	KKU
		5	1629	4.48	18	51.11	155	23.47	15.43	3.0		17	0	267	.10	47	3.9	25.6	DIS
		5	2248	54.48	19	19.60	155	8.82	8.10	1.8		20	0	80	.08	9	.6	1.0	UER
		5	2330	32.97	19	26.07	155	26.60	5.83	1.7		13	0	138	.11	12	1.1	5.8	UKF
		6	422	59.67	19	22.57	155	26.47	9.35	1.8		17	0	91	.09	11	.7	1.6	UKF
		6	523	31.72	19	54.28	155	4.10	44.18	2.7		22	0	252	.12	44	9.1	16.3	KKU
		6	629	49.00	19	12.52	155	28.87	36.92			20	0	145	.08	17	1.2	3.1	LSW
		6	738	4.45	19	23.65	155	23.80	9.21	2.3		29	0	55	.11	7	.5	.7	UKF
		6	1012	16.34	19	20.55	155	17.39	27.56			17	0	49	.05	5	.9	1.9	DEP
		6	2020	44.81	19	24.22	155	29.69	9.11	1.9		24	0	93	.12	14	.7	1.0	UKF
		6	2044	57.29	19	19.36	155	12.40	8.11			19	0	88	.08	7	.6	1.6	UER
		7	553	7.56	19	22.67	155	24.29	9.13	1.7		18	0	52	.08	6	.5	1.5	UKF
		7	6 7	44.69	19	52.50	155	32.57	28.62	2.9		30	0	127	.10	37	.8	2.3	KKU
		7	620	56.00	19	18.93	155	47.74	7.41			15	0	172	.10	28	1.4	1.0	KON
		7	638	31.81	19	18.92	155	15.63	6.68	1.6		22	0	119	.11	6	.7	1.2	KOA
		7	916	1.01	19	27.52	155	27.53	8.37	1.8		12	0	161	.09	15	1.4	4.1	UKF
		7	934	13.65	19	20.03	155	10.57	10.81			16	0	105	.07	7	.7	2.8	UER
		7	14 0	23.72	19	18.68	155	13.96	7.15	2.0		22	0	71	.11	7	.7	1.6	POL
		7	1910	47.39	19	20.41	155	13.77	7.30	1.9		25	0	67	.14	6	.8	1.3	UER
		7	1954	20.29	19	16.88	155	22.96	2.71			14	0	124	.11	8	1.0	2.8	SWR
		7	23 1	34.43	19	18.67	155	13.99	8.19			14	0	98	.08	7	.7	1.6	POL
		7	2344	58.96	19	21.89	155	25.62	5.62	2.0		21	0	88	.10	10	.7	1.6	HEA
		8	020	24.58	19	21.63	155	25.98	6.60	1.7		12	0	118	.09	12	.9	1.8	HEA
		8	021	59.00	19	21.81	155	25.94	6.79	1.7		16	0	84	.09	10	.7	1.7	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	APR	8	8 1	22.20	19	17.36	155	37.49	8.32	3.3		23	0	77	.15	20	.9	1.6	HEA
		9	656	28.21	19	17.45	155	18.83	11.71			19	0	132	.10	9	.8	.5	KOA
		9	1041	35.78	19	19.81	155	13.22	7.72	1.6		17	0	69	.06	7	.4	1.2	UER
		10	231	29.04	19	20.04	155	8.62	7.73	2.9		24	0	75	.13	9	1.0	1.7	UER
		10	250	56.33	19	22.76	155	26.89	5.72	1.8		16	0	137	.09	12	.9	1.6	UKF
		10	259	47.31	19	22.56	155	27.13	9.27	2.1		23	0	78	.15	11	1.2	1.4	UKF
		10	521	25.61	19	22.66	155	29.74	8.36	1.9		20	0	88	.13	16	1.0	2.4	UKF
		10	1052	21.74	19	18.83	155	13.14	7.54	1.7		22	0	83	.10	8	.7	1.4	POL
		10	1426	22.56	19	5.47	155	27.69	27.40			12	0	206	.07	25	1.7	3.3	LSW
		10	1520	24.62	19	22.56	155	23.64	8.15	1.6		15	0	89	.11	7	1.1	1.5	UKF
		10	1811	25.76	19	23.57	154	59.69	8.72	2.2		15	0	172	.16	15	1.7	2.1	LER
		10	2153	29.98	19	22.30	155	25.94	7.84	1.7		18	0	105	.09	11	.7	1.4	UKF
		11	040	38.23	19	17.61	155	15.25	7.16			15	0	167	.06	6	.5	1.3	KOA
		11	4 7	33.88	19	16.94	155	23.77	4.63	1.8		17	0	171	.13	12	1.1	1.6	SWR
		11	1650	24.35	19	49.58	155	9.49	41.12			23	0	273	.06	45	5.7	6.2	HIL
		11	2028	3.98	19	19.83	155	10.74	5.75	2.3		27	0	90	.18	7	1.0	1.9	UER
		11	2237	49.48	19	25.91	155	35.89	1.22	2.5		21	0	78	.18	23	1.1	30.8	MOK
		12	124	28.46	19	28.23	155	27.86	5.36			12	0	152	.12	13	1.3	1.7	UKF
		12	217	9.11	19	23.69	155	25.36	7.33	2.1		27	0	56	.14	10	.7	1.3	UKF
		12	623	26.38	19	23.51	155	25.35	8.42	2.5		27	0	55	.13	10	.7	1.2	UKF
		12	944	23.29	19	22.12	155	6.22	6.41	1.9		19	0	164	.14	9	1.7	1.9	UER
		12	1845	26.76	19	22.77	155	1.24	9.86			11	0	227	.16	15	2.9	1.4	MER
		12	2147	57.83	19	16.98	155	28.55	9.41			20	0	67	.17	11	1.1	1.8	HEA
		13	522	30.26	18	56.25	155	13.56	41.53			18	0	287	.08	41	5.8	8.2	PPL
		13	917	20.97	19	25.04	155	22.53	8.43			11	0	109	.02	9	.3	1.0	UKF
		13	19 8	.71	19	19.79	155	13.03	33.46			24	0	114	.07	7	1.1	1.8	DEP
		14	015	47.73	19	23.15	155	22.92	6.74			10	0	95	.05	8	.5	2.2	UKF
		14	259	55.08	19	11.02	155	25.63	13.64			13	0	185	.14	18	3.9	3.3	LSW
		14	513	37.60	19	22.24	155	6.77	4.16			12	0	103	.15	9	1.3	2.5	UER
		14	553	18.10	19	24.96	155	29.52	11.16			20	0	90	.11	14	.8	1.0	UKF
		14	922	47.61	19	33.79	155	5.13	12.53	2.9		25	0	150	.09	23	.8	.4	HIL
		14	1653	13.27	19	24.56	155	25.04	8.85	1.7		13	0	119	.04	9	.5	1.4	UKF
		14	1658	12.31	19	24.68	155	24.90	7.97	1.6		17	0	120	.07	9	.6	1.5	UKF
		15	646	54.57	18	56.22	155	33.04	38.55	2.7		23	0	251	.10	35	3.5	4.5	DIS
		15	9 6	12.18	19	19.24	155	13.50	4.35			15	0	69	.08	7	.5	1.3	UER
		15	16 9	44.62	19	41.88	155	1.44	6.04	2.7		18	0	207	.23	39	3.2	4.0	HIL
		15	21 5	18.82	19	20.94	155	24.46	6.13	1.7		17	0	81	.09	9	.6	1.5	SWR
		15	2113	54.79	19	21.51	155	17.00	31.46	2.2		24	0	52	.06	3	.7	1.3	DEP
		16	039	6.17	19	19.34	155	15.81	5.82	1.5		22	0	93	.12	6	.7	1.6	KOA
		16	627	36.47	19	17.10	155	14.88	6.61			19	0	171	.07	7	.6	1.3	POL
		16	1115	.98	19	19.25	155	13.61	8.66	1.7		20	0	67	.11	7	.8	1.8	UER
		16	1314	52.70	19	19.25	155	14.50	7.07			17	0	95	.08	6	.6	1.4	UER
		16	18 3	40.18	19	19.85	155	13.70	5.99	1.6		16	0	72	.13	6	.9	2.3	UER
		16	2041	43.80	19	24.75	155	28.81	9.31	1.9		20	0	60	.09	13	.6	1.1	UKF
		17	114	56.78	19	21.38	155	16.34	32.28	2.2		24	0	64	.07	4	.8	1.4	DEP
		17	752	35.18	19	13.32	155	5.66	43.76			13	1	240	.05	25	2.2	1.6	DIS
		17	833	7.37	19	18.27	155	13.50	7.61	1.7		22	0	83	.10	8	.7	1.1	POL
		17	1530	55.26	19	16.55	155	15.63	43.11			15	1	155	.07	7	1.8	1.8	HLP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	APR	17	17 8	25.28	19	21.84	155	5.76	6.38	1.9		16	0	79	.15	9	1.2	3.1	MER
		17	1726	30.96	19	3.22	156	9.40	87.43			12	0	307	.07	61	24.9	30.6	DIS
		17	2015	44.83	19	19.30	155	9.94	9.73			13	0	108	.05	7	.5	2.3	UER
		18	1744	44.42	19	22.46	155	1.41	6.80	2.1		17	0	160	.17	15	1.5	3.1	MER
		18	1910	44.64	19	19.45	155	14.08	8.52	1.6		19	0	66	.09	6	.6	1.4	UER
		18	2217	8.61	19	23.67	155	25.10	6.27			18	0	110	.14	9	.9	2.9	UKF
		18	2228	15.61	19	18.37	155	15.44	6.55			15	0	137	.10	6	.9	2.0	KOA
		18	2310	38.65	19	25.83	155	28.52	7.67	1.9		23	0	67	.13	14	.8	1.8	UKF
		18	2344	39.73	19	26.87	155	26.62	7.76	1.8		17	0	93	.10	10	.7	2.3	UKF
		19	932	27.63	19	18.91	155	15.41	7.86	1.7		13	0	117	.07	6	.7	1.5	KOA
		19	1417	47.25	19	20.80	155	7.05	6.69	1.9		11	0	91	.07	7	.7	2.6	UER
		19	2150	15.03	19	24.70	155	25.34	7.93	1.7		17	0	86	.08	10	.6	1.9	UKF
		20	1218	8.45	19	30.56	156	4.99	23.01	2.8		18	1	272	.14	35	3.4	3.7	KON
		21	855	57.87	19	23.50	155	26.27	6.11			15	0	91	.12	12	.9	2.5	UKF
		21	9 0	21.79	19	25.26	155	17.46	15.70	1.8		20	0	75	.05	3	.5	.7	DEP
		21	1446	5.55	19	25.22	155	17.65	15.47			19	0	64	.07	3	.7	.9	DEP
		21	1939	37.87	19	21.87	155	23.61	8.70			10	0	109	.05	8	.6	2.2	SWR
		21	1941	43.30	19	22.37	155	23.58	7.47	1.6		19	0	84	.14	7	1.0	1.6	UKF
		21	2013	49.72	19	25.06	155	17.81	15.74	1.7		24	0	58	.08	3	.6	.9	DEP
		22	836	38.38	19	29.97	155	36.40	36.28	2.8		16	0	210	.12	28	2.2	5.6	MOK
		22	842	42.85	19	19.87	155	12.67	8.56			13	0	76	.05	6	.5	1.6	UER
		22	953	4.81	19	27.77	155	24.86	8.47	1.7		11	0	189	.08	11	2.8	5.6	UKF
		22	2120	42.18	19	25.19	155	17.53	14.97			16	0	86	.05	3	.6	.9	DEP
		22	2157	6.85	19	24.85	155	28.18	13.24	1.9		13	0	236	.05	13	3.9	4.2	UKF
		22	22 1	50.31	19	24.99	155	25.66	7.95	3.0		29	0	62	.18	10	.9	1.5	UKF
		23	213	43.52	19	25.12	155	17.63	15.98	1.8		24	0	63	.06	3	.5	.7	DEP
		23	344	23.74	19	8.37	155	35.61	10.57	3.0		22	1	132	.16	22	1.4	.5	HEA
		23	347	37.75	19	19.71	155	12.38	9.79			13	0	82	.04	6	.5	2.4	UER
		23	526	36.02	19	3.41	155	23.80	32.44			21	0	218	.09	29	1.8	3.6	LSW
		23	528	52.21	19	17.52	155	14.26	7.08			13	0	153	.09	8	.9	2.1	POL
		23	533	56.22	19	17.65	155	14.41	6.21			14	0	149	.09	7	.9	1.9	POL
		23	842	44.12	19	25.14	155	17.70	15.66	1.5		20	0	56	.06	3	.6	.8	DEP
		23	1622	28.99	19	24.03	155	15.65	1.43			9	0	127	.05	3	.3	.3	SPC
		23	17 7	42.00	19	22.41	155	24.71	11.69			11	0	110	.05	13	.6	4.4	UKF
		23	2325	3.22	19	25.46	155	17.43	15.30			12	0	160	.05	4	.9	1.4	DEP
		23	2325	24.30	19	24.65	155	17.77	14.84			16	0	74	.10	3	1.0	1.3	DEP
		24	458	44.41	19	25.08	155	17.65	15.51			17	0	70	.06	3	.6	.9	DEP
		24	614	6.78	19	22.00	155	11.32	1.87	1.5		11	0	88	.05	7	.4	99.0	UER
		24	746	51.78	19	17.54	155	14.41	9.23	3.0		24	0	143	.11	7	.9	1.1	POL
		24	8 4	36.85	19	17.78	155	14.24	5.73			9	0	136	.08	8	1.1	2.2	POL
		24	1217	23.21	19	17.61	155	14.24	7.60	1.7		17	0	146	.08	8	.7	.9	POL
		24	1434	6.37	19	34.28	155	6.71	4.51	2.5		17	0	180	.13	24	1.6	2.4	BLS
		24	1628	26.27	19	20.67	155	25.98	8.65	1.8		14	0	78	.09	8	.7	1.2	HEA
		24	1635	24.01	19	22.18	155	28.89	9.37	2.1		21	0	62	.13	11	.8	1.3	UKF
		24	1642	39.51	19	25.08	155	17.48	15.72			12	0	118	.03	3	.3	.6	DEP
		24	21 6	23.69	19	17.60	155	14.30	7.27			20	0	137	.09	8	.7	1.1	POL
		24	2148	14.09	20	2.53	155	30.38	8.96			16	0	205	.05	30	1.0	.5	KOH
		24	2159	24.06	20	2.44	155	30.30	9.49	2.7		17	0	205	.05	30	.9	.4	KOH

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	APR	25	021	26.19	19	17.50	155	14.36	7.05	1.7		20	0	144	.09	8	.7	1.1	POL
		25	2 6	55.17	19	19.11	155	13.46	10.11	3.8		30	0	72	.08	7	.5	.5	UER
		25	218	14.79	19	19.10	155	13.70	4.69	1.6		21	0	82	.10	7	.6	1.0	UER
		25	322	54.28	19	24.65	155	27.67	8.51	2.6		29	0	60	.15	12	.8	1.3	UKF
		25	919	11.84	19	18.75	155	13.27	8.61			13	0	81	.07	8	.7	2.0	POL
		25	919	12.47	19	40.30	155	47.50	35.80	2.7		15	0	133	.13	37	3.8	8.1	KON
		25	1558	57.00	19	18.96	155	13.37	8.03	1.7		22	0	76	.12	7	.8	1.6	POL
		26	17 5	38.68	19	24.39	155	17.46	16.94			22	0	47	.15	2	1.2	1.8	DEP
		26	1735	18.97	19	25.29	155	17.58	15.77			20	0	75	.06	3	.5	.8	DEP
		26	2214	55.48	19	24.56	155	24.78	10.35	2.1		23	0	61	.09	9	.6	.4	UKF
		27	627	13.20	19	25.77	155	15.44	24.58			21	0	130	.09	4	1.1	1.4	DEP
		27	1422	19.71	19	42.73	156	.77	.90	2.8		15	0	271	.30	50	9.7	24.0	KON
		27	2110	53.82	19	25.01	155	17.71	16.44			25	0	62	.09	3	.7	1.0	DEP
		28	215	30.98	19	25.13	155	17.81	16.21			25	0	43	.08	3	.6	.8	DEP
		28	611	2.88	19	24.61	155	17.83	13.65			15	0	58	.05	3	.6	.7	DEP
		28	1039	4.61	19	18.94	155	13.55	7.62	1.7		21	0	71	.14	7	.9	2.0	POL
		28	1418	52.75	19	24.14	155	25.63	8.30	2.0		24	0	58	.11	10	.6	1.2	UKF
		28	1640	35.24	19	16.87	155	2.00	37.72			24	0	260	.07	17	2.5	3.7	MER
		29	617	27.79	19	23.72	155	25.80	9.44	2.7		21	0	81	.10	11	.7	1.7	UKF
		29	8 3	33.60	19	19.80	155	8.43	8.42			17	0	81	.05	10	.5	1.2	UER
		29	9 8	44.95	19	18.89	155	13.72	8.06			16	0	86	.06	7	.5	1.5	POL
		29	1350	51.64	19	25.15	155	29.50	7.49	1.9		14	0	89	.11	14	.8	1.6	UKF
		29	1728	32.37	19	21.40	155	16.40	33.17	2.6		29	0	64	.08	4	.9	1.5	DEP
		29	2145	46.89	19	18.95	155	17.81	29.39			21	0	103	.08	7	1.0	1.9	DEP
		29	2146	18.31	19	18.86	155	17.57	30.61	2.2		25	0	111	.11	7	1.3	2.3	DEP
		30	244	.89	19	21.45	155	2.41	7.12	2.8		24	0	206	.13	13	1.4	1.2	MER
		30	245	46.19	19	21.72	155	2.67	7.62	3.1		29	0	194	.11	13	1.0	.9	MER
		30	259	18.39	19	21.95	155	1.68	5.56	2.1		18	0	161	.17	14	1.6	4.1	MER
		30	3 2	12.74	19	22.19	155	1.87	3.83			13	0	153	.13	14	1.3	2.4	MER
		30	549	45.71	19	22.15	155	1.60	5.87	2.1		21	0	160	.21	14	1.7	4.3	MER
		30	734	12.02	19	26.91	155	25.13	15.76			10	0	183	.05	9	2.2	4.7	UKF
		30	12 4	51.44	19	47.42	155	9.37	35.26	3.1		25	1	223	.11	53	1.8	2.9	HIL
		30	1538	38.71	19	32.96	154	59.25	30.72	2.4		24	1	240	.14	27	3.6	1.4	HIL
		30	1659	46.77	19	31.80	155	55.21	9.85			7	0	276	.29	51	43.1	2.9	KON
		30	1720	38.19	19	24.12	155	26.65	1.72			8	0	248	.11	12	3.6	.0	UKF
		30	1750	22.75	19	22.08	155	11.29	4.04	1.5		12	0	89	.03	7	.3	.8	UER
	MAY	1	458	50.26	19	22.31	155	10.77	2.21	1.6		18	0	95	.08	8	.6	4.3	UER
		1	1315	46.18	19	12.04	155	39.35	10.68			11	0	109	.09	24	1.2	.5	HEA
		1	1524	3.88	19	28.20	155	27.50	12.78			13	0	150	.10	12	1.3	.4	UKF
		2	130	5.74	19	21.57	155	2.78	4.91	2.0		14	0	182	.14	12	2.2	1.7	MER
		2	328	24.11	19	18.50	155	16.39	6.71	1.6		18	0	137	.07	6	.5	1.1	KOA
		2	423	43.12	19	19.67	155	12.40	7.84	1.7		20	0	82	.09	6	.6	1.5	UER
		2	552	41.46	19	25.42	155	25.19	7.30	2.1		15	0	92	.08	9	.7	2.2	UKF
		2	1012	54.31	19	19.29	155	12.03	7.73			14	0	94	.05	6	.4	1.5	UER
		2	1459	41.25	19	19.63	155	8.51	12.52			14	0	80	.13	10	1.7	.7	UER
		2	2042	22.71	19	24.38	155	24.48	8.29	1.6		20	0	78	.14	8	1.0	1.5	UKF
		2	2114	37.10	19	25.29	155	28.05	6.98	1.8		18	0	107	.14	13	1.1	1.9	UKF
		2	2234	1.32	19	26.23	155	27.85	7.02	1.9		18	0	119	.12	15	.9	2.5	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	RMS DEG	MIN SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAY	3	138	14.58	19	14.01	155	10.93	5.16	3.3		28	0	202	.15	15	1.5	1.3	POL
		3	1825	34.83	19	22.05	155	19.94	28.36	2.1		26	0	48	.08	6	.7	1.4	DEP
		3	2040	10.91	19	12.67	155	20.46	39.79			23	0	177	.12	15	1.9	4.0	HLP
		4	323	38.98	19	25.39	155	25.81	2.97	1.6		19	0	64	.13	10	.7	2.4	UKF
		4	657	30.89	19	20.35	155	7.28	6.14			17	0	96	.15	8	1.1	2.7	UER
		4	1810	55.91	19	22.95	155	24.60	9.11	2.1		26	0	53	.10	9	.5	.9	UKF
		4	2321	45.97	19	19.97	155	9.60	8.35	1.8		15	0	82	.06	8	.5	1.3	UER
		4	2325	23.20	19	24.29	155	25.75	5.53	1.7		16	0	131	.13	11	1.9	6.1	UKF
		5	056	22.54	19	23.93	155	24.35	9.38	2.6		31	0	57	.14	8	.6	.8	UKF
		5	1 1	44.76	19	23.48	155	24.33	9.19	1.6		19	0	55	.08	8	.5	1.5	UKF
		5	137	17.01	19	21.68	155	15.86	12.53			17	0	129	.07	4	.7	.3	KOA
		5	137	23.92	19	21.54	155	15.60	13.75	4.2		29	0	68	.12	5	.7	1.1	DEP
		5	159	20.26	19	23.87	155	17.52	15.68	2.0		25	0	67	.08	5	.5	.8	DEP
		5	442	10.45	19	18.43	155	15.73	7.74	1.6		19	0	137	.06	5	.4	1.0	KOA
		5	641	15.56	19	20.69	155	13.17	8.19			13	0	77	.06	6	.6	1.5	UER
		5	853	17.84	19	15.37	155	24.23	4.59			11	0	153	.10	13	1.4	3.3	LSW
		5	946	14.06	19	23.25	155	24.22	10.46	2.5		26	0	68	.11	8	.7	.3	UKF
		5	1121	6.11	19	23.79	155	23.13	9.83	1.6		15	0	97	.05	8	.4	.4	UKF
		5	1218	32.42	19	54.18	155	17.91	24.25	2.9		27	1	236	.12	36	1.2	2.5	KKU
		5	1832	55.78	19	22.12	155	17.32	34.14	2.5		31	0	38	.10	4	.9	1.6	DEP
		5	2021	59.53	19	19.40	155	11.62	10.81	1.8		16	0	96	.04	6	.3	1.3	UER
		6	756	31.34	19	20.55	155	7.03	7.20	1.9		21	0	96	.10	7	.7	1.1	UER
		6	2017	.34	19	19.97	155	11.75	7.19	2.0		29	0	83	.13	6	.7	1.0	UER
		6	2045	38.56	19	48.43	154	52.81	38.12	3.3		27	0	261	.12	39	4.8	5.8	HIL
		6	23 1	3.43	19	28.61	155	49.32	6.90	2.5		14	0	170	.17	24	3.1	2.2	KON
		7	0 1	56.64	19	22.13	155	11.17	3.10	1.5		16	0	91	.07	7	.5	1.7	UER
		7	1135	33.51	19	21.75	155	2.01	6.76	2.4		19	0	156	.17	14	1.5	2.5	MER
		7	1322	19.31	19	18.46	155	15.73	8.11	2.0		22	0	136	.10	5	.7	.8	KOA
		7	1945	22.00	19	25.41	155	23.52	7.71	2.2		22	0	62	.14	8	.8	1.7	UKF
		7	2114	5.63	19	25.23	155	23.22	7.94	1.5		15	0	122	.05	8	.4	1.0	UKF
		7	2116	45.45	19	19.20	155	13.88	6.61	1.6		24	0	64	.10	6	.6	1.3	UER
		8	211	29.45	19	20.22	155	8.61	6.50			14	0	74	.14	9	1.2	2.8	UER
		8	1054	8.46	19	29.22	155	28.80	9.52	2.9		21	0	93	.13	13	.8	.5	NER
		8	1830	58.17	19	17.42	155	29.43	7.21	2.0		17	0	58	.19	12	1.2	2.8	HEA
		8	2350	7.05	19	27.81	155	35.31	.01	4.0		26	0	59	.16	24	.9	1.2	MOK
		9	447	25.93	19	28.34	155	35.29	.34	3.0		25	1	61	.18	25	.8	.8	MOK
		9	633	1.08	18	50.28	154	51.91	51.44			20	0	301	.12	70	12.2	7.3	DIS
		9	1911	53.06	19	59.33	155	31.15	26.72	2.7		22	1	256	.09	56	1.2	2.8	KOH
		9	2145	28.99	19	27.20	155	27.96	6.94	2.1		25	0	76	.16	13	.9	1.9	UKF
		9	2219	55.80	19	27.24	155	27.92	5.15	1.8		10	0	135	.06	13	.6	1.0	UKF
		9	2225	19.55	19	25.55	155	16.50	2.40	.5		8	0	193	.06	2	1.0	2.4	SPC
		10	121	46.44	19	19.84	155	8.53	7.72	1.8		20	0	78	.12	10	.9	2.1	UER
		10	610	17.02	19	25.09	155	17.68	7.90	1.2		9	0	77	.06	5	1.4	3.4	LPC
		10	7 0	22.54	19	25.79	155	17.62	8.69	1.3		12	0	153	.10	5	1.6	2.5	LPC
		10	7 2	28.46	19	24.00	155	18.15	15.93	1.7		6	0	132	.08	3	8.3	21.7	DEP
		10	7 5	46.54	19	24.69	155	17.17	10.76	1.4		10	0	68	.08	2	1.5	6.4	LPC
		10	837	47.22	19	25.02	155	24.16	12.92			12	0	199	.05	9	.9	.3	UKF
		10	853	4.46	18	45.16	155	15.77	21.03			11	0	315	.09	65	43.5	63.5	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAY	10	1431	41.61	19	30.14	155	32.18	13.44			6	0	189	.05	21	2.4	20.5	MOK
		10	1729	27.07	19	23.87	155	18.42	8.84	1.3		7	0	141	.07	3	3.1	12.2	LPC
		10	2345	16.21	19	25.21	155	16.55	22.81			9	0	130	.07	2	6.2	23.1	DEP
		11	2	1 42.54	19	17.01	155	38.77	120.61			7	0	342	.14	40	94.7	93.6	HEA
		11	227	9.28	19	20.67	155	11.88	11.77	1.7		18	0	84	.09	7	1.0	.5	UER
		11	953	5.20	19	19.88	155	11.01	12.17			13	0	104	.03	7	.4	.2	UER
		11	2125	51.19	19	3.67	155	34.30	16.07			12	0	182	.21	21	5.2	11.5	HEA
		12	317	53.22	19	25.64	155	18.00	10.43	1.4		10	0	146	.13	4	3.4	8.7	LPC
		12	342	45.81	19	19.84	155	10.76	3.78			13	0	111	.11	7	.9	2.7	UER
		12	441	32.86	19	26.24	155	15.72	1.14			7	0	255	.19	4	7.7	2.5	SPC
		12	449	49.15	19	21.39	155	26.02	8.75	1.8		21	0	71	.09	12	.6	1.2	HEA
		12	10	3 15.63	19	24.13	155	15.77	2.01	.8		8	0	116	.06	3	.6	32.5	SPC
		12	1142	46.87	19	20.40	155	11.78	10.11			12	0	119	.03	8	.4	1.6	UER
		12	1818	13.10	19	24.14	155	15.87	1.62	1.3		17	0	59	.07	2	.3	.2	SPC
		12	2014	51.52	19	12.20	155	27.37	38.65			15	0	120	.16	18	3.0	6.8	LSW
		12	2155	44.23	19	25.03	155	16.45	.60	.6		9	0	111	.08	2	.5	.2	SPC
		13	022	24.78	19	22.50	155	3.04	3.33			15	0	174	.11	13	1.0	2.0	MER
		13	223	7.68	19	24.22	155	16.25	1.85	.7		11	0	69	.08	2	.6	.2	SPC
		13	448	1.41	19	24.20	155	16.34	2.01			7	0	91	.04	2	.6	1.5	SPC
		13	750	49.45	19	25.16	155	16.66	1.38			10	0	124	.11	2	.6	.4	SPC
		13	848	33.26	19	24.12	155	19.41	22.19			7	0	216	.09	5	15.7	71.3	DEP
		13	1447	17.04	19	24.33	155	17.52	2.06	.8		7	0	103	.07	2	.7	9.0	SPC
		13	1449	59.24	19	18.65	155	15.47	8.05	1.6		12	0	157	.05	7	.7	1.4	KOA
		13	1451	26.12	19	24.17	155	15.99	2.12	.7		7	0	105	.04	2	.4	9.9	SPC
		13	1927	9.28	19	25.46	155	27.30	7.76	1.8		17	0	180	.10	12	1.2	2.4	UKF
		14	3	1 23.75	19	16.66	155	.86	40.67	2.8		32	0	214	.11	19	2.0	3.0	DIS
		14	548	40.83	19	21.24	155	4.27	3.79			15	0	133	.13	10	1.1	2.4	MER
		14	2259	32.66	19	11.37	155	17.05	49.08	2.5		19	0	202	.10	16	2.9	9.9	HLP
		14	23	2 29.31	19	12.92	155	16.21	50.44	2.1		10	1	277	.06	20	4.2	2.1	HLP
		14	23	3 10.06	19	13.24	155	16.88	45.55	2.4		21	1	173	.10	13	1.5	1.5	HLP
		15	042	11.38	19	20.01	155	8.74	6.61			15	0	73	.11	9	1.0	2.4	UER
		15	148	14.58	19	23.94	155	15.30	2.00	.9		10	0	78	.12	3	.9	.0	SPC
		15	6	3 .91	19	22.36	155	25.36	9.37	1.7		18	0	118	.08	10	.7	1.0	UKF
		15	616	31.81	19	45.16	156	1.39	6.67			11	0	274	.09	53	5.5	2.0	KON
		15	741	39.24	19	23.74	155	15.86	1.89	1.4		16	0	52	.16	2	.8	.5	SPC
		15	811	21.69	19	24.33	155	17.56	1.64	.6		9	0	105	.07	2	.8	.4	SPC
		15	837	8.19	19	23.80	155	15.34	1.13			10	0	82	.07	3	.3	.3	SPC
		15	850	1.47	19	26.30	155	36.77	4.45	3.2		21	0	188	.11	21	.9	1.4	MOK
		15	911	16.54	19	22.63	155	24.56	8.56			23	0	68	.12	9	.8	1.3	UKF
		15	2038	9.67	19	20.14	155	10.84	10.27			14	0	109	.04	7	.5	2.1	UER
		16	114	9.18	19	20.60	155	7.30	5.96			21	0	91	.16	8	1.1	2.5	UER
		16	246	30.05	20	32.94	155	29.92	7.75	3.1		23	0	299	.12	85	9.7	.0	DIS
		16	326	19.05	20	34.44	155	30.72	7.34	3.4		33	0	302	.12	88	11.2	99.0	DIS
		16	7	3 10.22	19	18.73	155	15.71	7.90			14	0	126	.04	5	.3	.9	KOA
		16	734	54.45	19	29.32	155	28.45	5.15	1.9		12	0	96	.08	13	.6	1.0	MER
		16	1112	36.24	19	24.12	155	17.76	1.55	.8		7	0	146	.08	2	1.1	.5	SPC
		16	1357	31.24	19	24.49	155	16.82	.53	1.0		13	0	70	.12	2	.6	.2	SPC
		16	1555	29.93	19	24.96	155	16.59	12.70	1.5		21	0	83	.08	2	.8	.3	LPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAY	16	1732	17.52	19	27.66	155	50.19	5.55	2.6		15	0	99	.18	25	1.8	2.2	KON
		16	1845	43.72	19	25.54	155	16.59	1.87	.7		10	0	149	.08	2	.8	.3	SPC
		16	2158	.75	19	24.88	155	16.89	1.00	.2		7	0	114	.06	2	.4	.3	SPC
		17	014	2.13	19	23.96	155	15.63	1.52	.8		14	0	70	.09	3	.5	.2	SPC
		17	144	7.77	19	24.91	155	38.08	4.19	2.2		8	0	210	.05	19	1.4	1.7	MOK
		17	222	47.91	19	24.45	155	17.34	15.52	2.5		32	0	41	.10	2	.6	.8	DEP
		17	550	54.93	19	25.94	155	28.24	7.96	2.2		26	0	56	.16	14	.9	1.8	UKF
		17	656	6.33	19	24.18	155	16.17	1.79	1.0		14	0	67	.08	2	.5	.2	SPC
		17	1354	45.35	19	44.55	155	45.71	12.75	3.4		22	0	125	.16	33	1.5	.9	KON
		17	1520	8.63	19	24.05	155	15.75	1.84	2.1		19	0	59	.06	5	.5	.2	SPC
		17	1751	28.41	19	24.29	155	16.58	1.71	1.0		12	0	68	.09	2	.5	.3	SPC
		17	1835	46.03	19	25.18	155	16.83	1.52	.6		9	0	127	.08	2	.6	.3	SPC
		17	2329	25.25	19	24.36	155	16.95	13.00			18	0	53	.05	2	.4	.4	DEP
		18	052	57.49	19	36.42	155	53.36	12.78	2.7		24	0	178	.11	33	1.5	.4	KON
		18	5 1	2.67	19	24.03	155	17.23	14.32	1.6		20	0	50	.09	2	.8	1.1	DEP
		18	642	30.96	19	25.55	155	16.03	.78	1.8		17	0	126	.09	5	.4	.2	SPC
		18	1314	40.47	19	26.10	155	29.30	9.43	1.9		15	0	120	.13	13	1.5	1.7	UKF
		18	2217	49.38	19	25.79	155	17.84	14.20	1.6		10	0	155	.03	4	1.0	1.2	DEP
		18	2235	33.25	19	24.32	155	17.33	5.57	1.0		9	0	96	.15	2	2.4	4.6	SPC
		19	034	24.94	19	25.45	155	17.32	11.41	1.4		11	0	145	.10	3	2.2	3.9	LPC
		19	2 6	59.21	19	56.62	155	46.22	33.88			26	0	160	.13	37	2.0	5.7	KOH
		19	410	3.69	19	24.33	155	17.83	1.57	.7		11	0	93	.08	2	.5	.3	SPC
		19	1635	6.90	19	18.60	155	30.13	7.92	2.7		23	0	71	.16	14	1.0	1.8	HEA
		19	18 4	22.25	19	25.98	155	16.56	1.95	.8		9	0	188	.09	2	1.5	99.0	SPC
		19	1841	20.94	19	19.71	155	8.40	8.53	1.9		17	0	82	.07	10	.7	1.7	UER
		19	2056	44.12	19	24.55	155	16.43	.62	.9		11	0	88	.11	2	.5	.3	SPC
		19	21 0	42.24	19	24.71	155	17.01	1.06	.5		9	0	71	.07	2	.5	.3	SPC
		19	2133	17.40	19	24.59	155	16.50	.76	.4		8	0	92	.04	2	.2	.2	SPC
		19	2144	19.82	19	23.90	155	15.51	1.42	.8		10	0	85	.06	5	.5	.2	SPC
		19	2335	57.34	19	23.06	155	15.51	2.00	1.0		11	0	109	.19	5	1.4	.0	SPC
		20	2 1	12.67	19	24.09	155	17.42	14.21			23	0	38	.07	2	.5	.7	DEP
		20	251	53.36	19	24.23	155	17.43	14.42	1.6		26	0	38	.08	2	.5	.7	DEP
		20	750	16.60	19	18.59	155	15.32	7.37			17	0	127	.06	6	.5	1.3	KOA
		20	1122	40.96	19	19.05	155	15.72	7.93			19	0	115	.05	5	.4	.7	KOA
		20	1357	31.45	19	19.92	155	11.41	8.70			15	0	93	.08	6	.9	2.1	UER
		20	1418	41.11	19	19.63	155	11.91	10.78	1.8		20	0	88	.08	6	.7	2.4	UER
		20	18 9	.93	19	15.75	155	13.28	6.79	1.8		19	0	173	.09	10	.9	1.7	POL
		20	1857	44.27	19	15.32	155	13.31	7.50	1.9		18	0	179	.10	11	.9	1.8	POL
		20	2140	10.19	19	24.04	155	24.34	7.85	1.6		15	0	109	.09	8	.7	2.4	UKF
		21	054	41.11	19	24.35	155	16.70	12.57	1.5		22	0	65	.08	2	.7	.3	LPC
		21	1 4	52.59	19	24.27	155	16.93	12.66	1.8		22	0	68	.08	3	.6	.3	LPC
		21	1 7	21.68	19	24.34	155	16.77	12.64	1.5		20	0	63	.06	2	.6	.2	LPC
		21	212	38.14	19	19.05	155	13.76	9.29	1.7		20	0	65	.10	7	.8	1.7	UER
		21	340	5.52	19	22.95	155	24.64	8.02	1.6		22	0	81	.14	9	.9	1.4	UKF
		21	428	2.69	19	22.89	155	4.23	7.51	2.6		24	0	154	.13	12	1.0	1.3	MER
		21	622	18.50	19	16.82	155	13.38	7.44			13	0	199	.07	9	.9	1.8	POL
		21	628	53.76	19	16.10	155	13.31	5.57			13	0	214	.10	10	1.4	1.8	POL
		21	743	3.38	19	19.47	155	12.49	8.72			12	0	85	.03	7	.4	1.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAY	21	744	57.39	19	19.47	155	12.46	8.68			14	0	85	.06	7	.5	1.3	UER
		21	752	18.09	19	15.17	155	13.43	6.96			13	0	180	.09	10	1.0	1.9	POL
		21	8 6	34.00	19	16.08	155	13.02	5.52			11	0	214	.09	10	1.5	1.8	POL
		21	814	41.79	19	16.80	155	13.48	8.46	2.3		23	0	158	.12	9	.9	1.5	POL
		21	816	38.52	19	16.59	155	13.38	8.77	1.8		19	0	161	.12	10	1.1	1.9	POL
		21	834	9.08	19	17.19	155	13.56	12.07	2.3		17	0	152	.09	10	1.0	.4	POL
		21	848	31.66	19	17.02	155	13.32	6.07			14	0	185	.07	9	.9	1.6	POL
		21	9 7	17.90	19	16.83	155	13.43	8.10			21	0	181	.13	9	1.1	1.9	POL
		21	910	45.25	19	16.67	155	13.44	8.82			20	0	160	.12	9	1.0	1.9	POL
		21	912	35.30	19	17.96	155	14.32	7.78			15	0	130	.09	8	.8	2.2	POL
		21	919	43.79	19	16.95	155	13.19	5.77			10	0	196	.05	9	.7	1.2	POL
		21	1015	10.52	19	17.89	155	13.18	7.40			12	0	101	.08	9	.9	2.6	POL
		21	1128	5.33	19	17.50	155	15.14	7.29			15	0	171	.08	6	.7	1.6	KOA
		21	14 7	29.32	19	18.04	155	14.82	7.71			12	0	140	.06	7	.7	1.8	POL
		21	1619	43.52	19	17.08	155	14.90	7.40			14	0	192	.08	7	.9	1.8	POL
		21	1811	14.93	19	16.06	155	13.61	5.54			9	0	261	.05	12	2.2	1.5	POL
		21	1921	17.43	19	17.57	155	14.66	7.25	1.7		16	0	160	.08	7	.7	1.6	POL
		21	1957	58.29	19	17.60	155	14.56	5.96			11	0	156	.13	7	1.6	3.3	POL
		21	20 6	34.36	19	18.24	155	17.84	7.06			14	0	143	.06	8	.6	1.2	KOA
		21	2141	37.08	19	17.23	155	14.96	6.44			12	0	183	.06	7	.6	1.4	POL
		21	22 6	40.92	19	52.63	155	22.78	25.88			21	0	212	.11	42	5.0	6.3	KKU
		21	2256	19.11	19	17.28	155	22.11	.89	2.0		22	0	123	.14	8	.8	36.7	SWR
		21	2357	40.83	19	17.12	155	22.23	1.11			13	0	124	.11	8	.9	99.0	SWR
		22	015	8.36	19	17.44	155	13.16	7.53			18	0	124	.08	9	.6	1.4	POL
		22	021	35.02	19	17.89	155	12.97	6.12			14	0	112	.08	9	.7	1.8	POL
		22	154	1.36	19	24.26	155	16.31	2.97			7	0	91	.05	3	.3	.9	SPC
		22	229	9.11	19	18.00	155	12.98	8.40	1.8		22	0	107	.12	9	.9	1.7	POL
		22	236	.25	20	27.91	155	37.03	31.50	3.1		3	0	311	.00	78	79.1	73.4	DIS
		22	3 9	39.37	19	26.72	155	16.16	7.17			6	0	274	.10	4	4.9	6.9	LPC
		22	311	44.32	19	14.59	155	12.05	5.01			20	0	193	.11	13	.9	.8	POL
		22	317	18.44	19	14.13	155	21.67	5.51	1.9		20	0	162	.11	12	.9	2.2	LSW
		22	4 3	55.51	19	24.23	155	17.72	1.41	.4		7	0	115	.05	2	.4	.3	SPC
		22	4 7	42.70	19	25.35	155	16.94	2.00	.3		7	0	169	.06	2	.6	1.4	SPC
		22	412	39.52	19	23.98	155	15.72	1.23	.8		8	0	124	.04	3	.2	.2	SPC
		22	428	51.80	19	24.19	155	17.26	1.50	.5		7	0	99	.11	2	.5	.2	SPC
		22	431	40.45	19	22.07	155	11.43	2.80	1.5		16	0	88	.09	7	.7	3.1	UER
		22	5 9	26.54	19	23.93	155	15.89	1.92	1.1		12	0	64	.13	3	.8	.0	SPC
		22	550	6.60	19	24.07	155	15.93	1.99	1.1		9	0	61	.09	3	.8	99.0	SPC
		22	554	44.90	19	18.81	155	15.36	7.11			13	0	120	.08	6	.7	2.3	KOA
		22	6 2	35.99	19	24.37	155	17.16	1.00	.3		9	0	86	.15	2	1.0	.8	SPC
		22	651	4.98	19	19.55	155	11.43	9.25			14	0	94	.05	6	.5	1.3	UER
		22	7 4	32.54	19	16.36	155	22.20	5.36	2.6		26	0	132	.16	8	.9	1.2	SWR
		22	7 8	40.21	19	17.84	155	13.20	7.98	1.8		23	0	102	.11	9	.7	1.2	POL
		22	712	50.45	19	17.81	155	13.17	6.32			16	0	105	.09	9	.7	1.8	POL
		22	723	59.07	19	17.03	155	13.28	6.20			17	0	179	.08	9	.8	1.3	POL
		22	729	16.95	19	25.53	155	16.93	.32	1.4		10	0	147	.20	2	.8	.4	SPC
		22	759	15.69	19	26.74	155	20.36	6.66			6	0	330	.18	8	89.7	41.8	UKF
		22	842	45.13	19	17.88	155	12.97	7.77	1.8		17	0	113	.08	9	.7	1.3	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAY	22	918	20.79	19	17.65	155	12.94	6.91			11	0	124	.07	9	.8	1.8	POL
		22	930	51.46	19	14.26	155	21.57	3.99	1.9		15	0	152	.13	13	1.1	3.2	LSW
		22	944	29.85	19	24.54	155	16.52	.62	.4		8	0	90	.06	2	.3	.3	SPC
		22	1137	2.94	19	24.56	155	16.28	1.00	.8		9	0	87	.09	2	.3	.5	SPC
		22	12 4	15.93	19	16.76	155	13.21	5.94			14	0	200	.14	10	1.7	2.6	POL
		22	1354	54.66	19	11.81	155	8.89	3.71			12	0	254	.11	19	2.6	3.1	POL
		22	1546	42.16	19	8.87	155	27.73	28.46	2.4		16	0	164	.09	22	1.3	3.0	LSW
		22	1638	21.32	19	10.94	155	6.76	3.86	2.2		17	0	244	.14	18	2.8	1.9	POL
		22	1836	36.32	19	24.22	155	17.20	13.96	1.6		20	0	43	.08	2	.6	.8	DEP
		22	1848	58.99	19	11.35	155	5.24	10.36	2.5		23	0	232	.17	18	4.1	.9	DIS
		22	21 2	29.48	19	17.58	155	21.63	7.62			14	0	217	.14	12	1.8	3.2	SWR
		22	2132	49.43	19	17.76	155	12.97	6.17			16	0	118	.09	9	.7	1.9	POL
		22	2135	17.18	18	54.94	155	12.11	39.47			16	0	266	.09	49	4.6	7.6	PPL
		22	2219	25.00	19	17.44	155	13.05	8.41	2.1		26	0	133	.10	9	.7	1.0	POL
		22	2230	33.49	19	18.66	155	13.74	7.03			16	0	90	.11	8	.8	2.4	POL
		23	043	36.55	19	24.37	155	17.05	14.48	1.6		18	0	60	.07	2	.6	.8	DEP
		23	044	11.53	19	24.52	155	17.17	15.49			15	0	54	.07	2	.9	1.1	DEP
		23	1 1	15.12	19	25.44	155	16.72	1.82	1.3		16	0	124	.10	2	.6	.3	SPC
		23	240	4.90	19	25.51	155	16.46	2.28	.5		10	0	148	.12	2	.9	2.7	SPC
		23	314	13.38	19	17.76	155	13.14	6.48	1.7		11	0	108	.07	9	.7	1.9	POL
		23	315	13.15	19	25.74	155	24.88	10.67	2.0		17	0	70	.08	8	.7	.6	UKF
		23	532	25.36	19	17.61	155	13.41	7.70	1.8		22	0	93	.07	9	.5	.8	POL
		23	734	54.97	19	14.94	155	1.26	10.50			17	0	289	.13	20	5.0	.6	DIS
		23	828	30.96	19	12.26	155	5.87	7.82	2.2		18	0	242	.15	16	3.0	1.9	DIS
		23	925	40.56	19	18.11	155	13.21	7.85			20	0	94	.11	6	.8	1.2	POL
		23	1027	6.08	19	18.43	155	13.33	6.89			13	0	84	.06	8	.5	1.4	POL
		23	1045	50.73	19	15.31	155	20.05	5.84	1.8		17	0	157	.09	11	.9	2.3	HLP
		23	1311	36.53	19	20.53	155	45.99	9.50	3.6		24	0	83	.12	23	.7	.7	KON
		23	1530	11.62	19	25.01	155	16.76	9.05	2.0		11	0	117	.10	2	1.9	3.3	LPC
		23	1818	7.97	19	11.66	155	3.03	10.15	2.7		25	0	222	.16	21	3.6	.7	DIS
		23	1957	57.54	19	12.56	155	7.34	10.05	3.1		27	0	222	.17	16	2.3	.7	POL
		23	20 9	31.39	19	25.44	155	16.51	2.01	.5		9	0	143	.08	2	.9	39.8	SPC
		23	2141	32.99	19	19.51	155	11.77	9.26	1.7		19	0	92	.11	6	.9	1.2	UER
		23	2153	.59	19	13.24	155	10.00	5.81	2.2		23	0	212	.14	16	1.6	4.5	POL
		24	033	26.23	19	18.11	155	13.85	7.05			16	0	106	.06	8	.5	1.5	POL
		24	033	45.14	19	19.74	155	16.58	27.40			19	0	120	.08	7	1.1	2.0	DEP
		24	259	40.75	19	16.32	155	22.16	.72	1.8		22	0	133	.15	14	.8	45.4	SWR
		24	541	11.13	19	25.59	155	16.53	1.92	.4		12	0	154	.10	2	.8	.3	SPC
		24	647	33.23	19	19.64	155	8.64	6.42	1.8		21	0	77	.09	10	.6	1.2	UER
		24	718	51.24	19	16.24	155	22.32	.41	1.8		15	0	133	.14	8	.9	65.7	SWR
		24	719	29.50	19	28.83	155	16.90	3.11	1.1		8	0	319	.11	7	15.6	10.5	GLN
		24	8 2	50.07	19	20.38	155	9.30	7.11			25	0	73	.12	8	.7	1.3	UER
		24	1426	39.50	19	22.56	155	24.26	8.31			14	0	110	.07	8	.6	1.0	UKF
		24	1632	21.11	19	30.26	154	52.46	30.65			9	0	346	.31	44	91.1	38.7	LER
		24	1749	7.16	19	17.86	155	14.16	9.37			14	0	129	.05	9	.6	1.2	POL
		24	1758	5.50	19	20.01	155	12.96	7.47			12	0	194	.08	7	1.4	.9	UER
		24	1810	9.87	19	24.30	155	26.46	9.18			29	0	59	.13	12	.0	.9	UKF
		24	1939	55.42	19	12.99	155	22.04	7.57	3.1		28	0	158	.16	13	1.1	1.9	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAY	24	2030	15.03	19	19.02	155	13.77	8.72			20	0	85	.08	7	.6	.9	UER
		24	2121	17.67	19	11.62	155	21.16	1.28			12	0	210	.14	16	2.4	18.5	LSW
		24	2210	25.80	19	13.00	155	20.58	.57			20	0	184	.10	14	1.2	69.5	HLP
		24	2226	20.93	19	24.24	155	26.48	8.17			16	0	161	.08	12	.9	1.8	UKF
		24	2232	34.36	19	19.46	155	8.22	5.88			14	0	158	.13	10	1.3	3.1	UER
		24	2240	6.50	19	12.98	155	32.62	6.15			19	0	88	.21	12	1.5	4.0	LSW
		24	23 1	1.43	19	13.76	155	21.35	2.86			19	0	164	.08	12	.7	3.0	LSW
		24	2349	10.56	19	13.68	155	22.16	6.25	3.7		29	1	154	.18	12	1.1	2.6	LSW
		24	2359	58.56	19	12.50	155	21.37	8.45			29	0	163	.16	13	1.1	1.5	LSW
		25	039	42.63	19	11.59	155	20.79	4.67			24	0	201	.13	14	1.4	1.2	HLP
		25	157	.10	19	15.26	155	21.19	6.36	2.2		19	0	180	.08	10	.9	2.0	LSW
		25	253	53.54	19	13.67	155	20.00	5.21			17	0	254	.08	13	2.0	.9	HLP
		25	351	6.47	19	14.45	155	22.30	3.26	1.9		25	0	149	.18	11	1.2	2.8	LSW
		25	425	17.76	19	14.33	155	22.04	.51			20	0	157	.11	11	.9	51.4	LSW
		25	428	2.52	19	17.70	155	23.47	.90			11	0	171	.07	11	1.0	.9	SWR
		25	444	16.62	19	25.54	155	16.86	.75	2.0		21	0	96	.13	2	.5	2.0	SPC
		25	449	35.24	19	13.13	155	17.60	44.05			14	0	230	.04	16	1.9	3.1	HLP
		25	5 6	45.58	19	19.01	155	15.32	8.43			21	0	93	.08	6	.5	1.1	KOA
		25	527	6.42	19	25.05	155	16.96	.89	.4		8	0	122	.10	2	.5	.5	SPC
		25	533	10.28	19	23.58	155	26.55	6.00			15	0	85	.14	12	1.1	2.5	UKF
		25	6 1	46.57	19	25.40	155	16.73	1.78			14	0	95	.11	2	.7	.3	SPC
		25	722	40.52	19	10.35	155	3.55	10.17	2.8		14	0	298	.16	24	11.9	1.7	DIS
		25	756	1.60	19	24.04	155	15.78	1.69	1.6		17	0	55	.07	3	.3	.2	SPC
		25	812	21.99	19	18.45	155	13.29	9.17	2.2		27	0	85	.12	8	.7	.8	POL
		25	1040	6.52	19	17.97	155	13.33	7.14			16	0	91	.08	9	.7	1.5	POL
		25	1122	43.36	19	18.50	155	13.26	6.45			14	0	85	.09	8	.8	2.2	POL
		25	1123	40.12	19	23.80	155	15.36	1.56			10	0	81	.07	3	.5	.3	SPC
		25	1126	48.53	19	18.59	155	13.31	9.38			18	0	82	.08	8	.7	1.3	POL
		25	1150	20.88	19	25.45	155	16.75	1.63	.8		11	1	143	.12	1	1.1	.4	SPC
		25	13 2	27.95	19	23.83	155	26.98	11.42			19	0	98	.09	13	.7	.3	UKF
		25	1338	32.28	20	9.04	155	48.28	36.04	3.6		15	0	155	.12	55	2.1	3.4	KOH
		25	14 7	.40	19	13.07	155	9.48	5.19			14	0	280	.10	17	3.7	1.3	POL
		25	2137	50.19	19	21.52	155	15.51	13.84	2.2		27	0	63	.10	4	.7	.9	DEP
		25	2216	22.72	19	25.27	155	16.64	13.28			22	0	122	.08	2	.6	.7	DEP
		25	2316	51.93	19	22.88	155	14.87	2.00			10	0	145	.19	3	1.8	.0	UER
		25	2338	33.64	19	26.74	155	17.24	3.99			13	0	150	.08	4	.7	1.4	SPC
		25	2352	38.93	19	26.53	155	17.23	5.05	1.2		16	0	134	.08	3	.6	.8	SPC
		26	110	22.36	19	18.32	155	13.05	7.70			17	0	158	.07	8	.7	.7	POL
		26	2 6	11.64	19	26.64	155	17.04	5.48	1.4		14	0	189	.10	3	1.4	.7	SPC
		26	258	55.67	19	24.39	155	17.32	15.93			14	0	110	.06	4	.7	1.1	DEP
		26	3 1	16.38	19	24.34	155	17.28	16.33	2.0		27	0	31	.07	2	.5	.8	DEP
		26	327	26.87	19	19.10	155	9.87	6.87			19	0	115	.13	7	.9	1.7	UER
		26	511	14.99	19	19.68	155	9.61	3.83			11	0	150	.11	12	1.6	2.5	UER
		26	526	1.69	19	23.06	155	14.85	2.00	1.2		9	0	115	.15	3	1.3	.0	GLN
		26	6 5	39.29	19	23.68	155	15.19	1.86	.9		10	0	90	.08	3	.7	99.0	SPC
		26	614	25.20	19	10.14	155	14.82	4.11			15	0	245	.13	19	4.5	1.9	POL
		26	615	17.43	19	12.92	155	5.85	10.61	2.6		23	0	237	.18	15	4.1	.7	DIS
		26	1152	4.16	19	18.07	155	2.40	11.60			13	0	226	.09	23	2.6	.4	HER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAY	26	1510	20.28	19	25.12	155	16.60	14.28	2.3		29	0	47	.09	2	.5	.8	DEP
		26	1814	10.83	19	23.12	155	23.25	10.42	1.6		16	0	89	.05	8	.4	.4	UKF
		26	19 1	21.02	19	20.90	155	11.42	9.13			20	0	155	.12	8	1.0	1.9	UER
		26	1916	25.22	19	18.64	155	13.58	9.26	2.2		26	0	73	.12	7	.7	.9	POL
		26	1918	21.55	19	19.07	155	14.93	9.04			11	0	132	.06	6	.7	2.4	UER
		26	2256	46.02	19	25.14	155	16.79	13.50			15	0	120	.05	2	.5	.6	DEP
		27	024	53.72	19	22.80	155	30.39	8.21			13	0	169	.16	13	1.7	4.1	MOK
		27	6 4	3.80	19	9.08	154	50.95	10.06			18	0	295	.18	41	17.9	1.6	DIS
		27	9 3	1.28	19	20.34	155	9.00	8.64			16	0	70	.07	8	.6	1.3	UER
		27	1123	6.92	19	25.25	155	16.99	.82	.6		9	0	155	.10	2	.6	.6	SPC
		27	1240	5.55	19	20.68	155	13.22	8.28			13	0	63	.06	7	.6	1.7	UER
		27	1648	33.21	19	15.73	155	2.22	10.84			16	0	283	.10	18	3.1	.5	DIS
		27	1818	30.20	19	24.00	155	17.52	14.18	1.6		20	0	51	.06	2	.5	.7	DEP
		27	1946	47.94	19	18.02	155	13.17	8.44	1.7		22	0	98	.10	8	.7	1.0	POL
		28	039	16.81	19	24.33	155	17.45	1.27	.8		11	0	80	.09	2	.6	.4	SPC
		28	210	8.78	19	24.22	155	17.50	14.05			18	0	56	.07	2	.7	.8	DEP
		28	328	49.19	19	17.56	155	12.96	8.80	2.4		27	0	129	.14	9	.8	1.0	POL
		28	331	16.13	19	17.60	155	12.93	5.59			12	0	128	.08	9	1.0	1.9	POL
		28	355	23.10	19	25.49	155	14.96	5.52	1.1		9	0	254	.12	4	3.1	3.5	GLN
		28	424	3.99	19	23.94	155	15.26	2.00			9	0	152	.10	3	1.0	.0	SPC
		28	427	47.16	19	24.57	155	16.41	.70	.4		8	0	90	.04	2	.2	.1	SPC
		28	452	48.94	19	25.16	155	19.06	5.27	1.3		10	0	156	.20	5	3.3	5.8	UKF
		28	719	55.59	19	25.56	155	16.79	1.74	.9		12	0	150	.13	2	1.1	.5	SPC
		28	927	34.15	19	25.59	155	17.04	5.11	1.2		8	0	204	.16	2	3.2	4.1	SPC
		28	1020	23.59	19	24.12	155	15.87	1.74	.7		10	0	62	.07	2	.3	.3	SPC
		28	1021	53.32	19	24.08	155	15.79	1.59	.8		9	0	117	.04	3	.3	.2	SPC
		28	1125	18.86	19	17.32	155	23.39	1.63	1.8		15	0	117	.12	8	.9	99.0	SWR
		28	1228	43.87	19	16.04	154	59.38	10.50	2.3		21	0	261	.14	21	4.9	.6	DIS
		28	1352	46.28	19	24.10	155	15.99	2.05	1.1		11	0	61	.10	2	.7	3.7	SPC
		28	1428	7.26	19	22.09	155	11.32	2.99	1.8		18	0	89	.07	7	.5	2.0	UER
		28	1521	30.17	19	24.68	155	17.31	15.44	1.7		23	0	61	.09	2	.7	.9	DEP
		28	1552	22.42	19	23.97	155	15.95	1.92	1.2		10	0	62	.12	3	.9	.5	SPC
		28	1754	27.21	19	20.11	155	11.67	9.40	1.7		21	0	86	.11	7	.8	1.0	UER
		28	1817	31.26	19	23.90	155	15.08	3.27			10	0	83	.09	3	.4	1.8	SPC
		28	19 9	17.15	19	18.47	155	13.29	7.78			12	0	84	.08	9	.8	2.2	POL
		28	1940	27.44	19	24.83	155	16.47	.92	.4		10	0	111	.09	2	.4	.5	SPC
		28	20 9	45.50	19	24.71	155	16.43	.60	.9		11	0	94	.11	2	.4	.3	SPC
		28	2216	45.25	19	20.42	155	8.31	7.71	1.8		21	0	78	.10	9	.7	1.0	UER
		29	0 3	9.60	19	21.40	155	3.99	4.69			12	0	145	.17	10	1.7	2.7	MER
		29	0 6	42.71	19	21.02	155	4.33	5.51			18	0	93	.13	10	1.6	4.1	MER
		29	013	14.26	19	24.68	155	17.17	9.05	1.3		14	0	66	.06	2	.7	.9	LPC
		29	024	5.26	19	20.92	155	4.28	5.41			19	0	96	.17	10	1.8	2.0	MER
		29	030	19.58	19	20.17	155	10.94	10.60	1.8		20	0	83	.07	7	.6	2.1	UER
		29	116	19.43	19	25.21	155	16.72	1.71	.3		7	0	152	.04	2	.5	.2	SPC
		29	235	51.49	19	29.33	155	36.68	3.92	2.5		14	0	266	.08	23	3.1	1.3	MOK
		29	1225	54.62	19	21.16	155	3.90	6.20	2.0		19	0	138	.17	10	1.8	3.2	MER
		29	1231	5.85	19	20.97	155	9.78	6.91			11	0	68	.08	7	1.0	1.9	UER
		29	1444	58.95	19	23.97	155	15.83	1.83	.8		9	0	112	.06	3	.7	.5	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	MAY	29	1518	56.23	19	23.32	155	14.93	2.00	1.7		15	0	81	.21	5	1.2	.0	GLN
		29	1551	40.21	19	23.19	155	15.12	.33	1.0		11	0	108	.08	3	.3	.5	SPC
		29	1613	57.83	19	23.01	155	14.99	2.00	1.1		10	0	116	.18	3	1.5	.0	GLN
		29	1815	.10	19	12.73	155	33.15	40.08			25	1	82	.12	20	1.3	1.7	LSW
		29	2054	19.30	19	20.60	155	11.89	7.56			21	0	78	.11	7	.8	1.2	UER
		29	2110	58.65	19	23.86	155	15.47	2.00	.9		10	0	77	.13	5	1.0	.0	SPC
		29	2218	20.08	19	22.21	155	1.71	5.50			18	0	157	.15	14	1.4	4.6	MER
		29	2237	46.79	19	19.27	155	15.52	7.71	1.6		21	0	107	.09	6	.5	.9	KOA
		29	2255	50.40	19	19.36	155	12.47	8.00			13	0	87	.06	7	.6	1.7	UER
		29	23 0	17.71	19	15.55	155	.57	10.81	2.3		22	0	230	.12	23	2.7	.4	DIS
		30	011	20.92	19	22.95	155	15.42	2.00	1.0		11	0	114	.19	3	1.3	.0	KOA
		30	3 6	21.85	19	23.15	155	15.10	2.00	1.0		12	0	110	.21	3	1.5	.0	SPC
		30	1026	23.78	19	22.77	155	1.77	3.60			15	0	201	.15	14	1.5	2.1	MER
		30	1046	59.17	19	25.18	155	17.34	12.39			15	0	117	.08	3	1.1	.4	LPC
		30	1244	8.55	19	25.56	155	16.60	17.92	1.8		19	0	73	.11	4	1.0	1.6	DEP
		30	1257	1.43	19	20.50	155	6.69	7.43	1.9		19	0	101	.10	7	.8	2.3	UER
		30	17 9	44.68	19	42.55	155	2.61	1.97	2.8		20	0	205	.19	37	3.2	23.4	HIL
		30	18 1	17.66	19	7.67	155	13.28	6.45	2.2		17	0	236	.15	21	4.1	18.3	PPL
		30	1918	1.58	19	26.01	155	16.10	.73	.5		9	0	198	.10	5	1.1	.4	SPC
		30	2153	41.40	19	22.24	155	3.57	5.71	2.0		16	0	160	.14	12	1.5	3.3	MER
		31	10 7	40.59	19	17.95	155	3.28	11.53	2.1		16	0	261	.10	19	4.2	.5	MER
		31	1347	35.59	19	25.48	155	30.34	8.17	2.0		15	0	106	.09	15	.9	2.4	MOK
		31	1418	15.42	19	16.19	155	22.31	.39	1.8		21	0	134	.14	8	1.0	80.7	SWR
		31	17 1	34.48	19	22.27	155	25.30	6.43	2.0		21	0	73	.13	10	.8	2.1	UKF
		31	1910	35.78	19	21.08	155	3.07	5.99	2.0		15	0	170	.14	12	2.9	4.5	MER
	JUN	1	5 1	30.10	19	22.17	155	1.23	6.22	2.1		23	0	217	.17	15	2.0	2.6	MER
		1	6 0	28.77	19	3.57	155	23.54	35.38	2.5		30	0	203	.10	30	1.5	2.9	LSW
		1	623	34.64	19	54.27	155	8.45	30.21	2.6		16	0	220	.12	56	2.5	4.8	KKU
		1	939	39.92	19	25.62	155	16.11	.71	1.2		14	0	127	.11	3	.5	.3	SPC
		1	1353	36.36	19	19.05	154	57.96	11.21	2.4		16	0	236	.10	20	2.8	.4	DIS
		1	1513	.58	19	21.57	155	5.93	5.99	2.1		23	0	107	.13	9	.8	1.7	MER
		2	251	1.49	19	19.67	155	12.40	8.57			14	0	82	.05	6	.5	1.4	UER
		2	612	11.69	19	19.48	155	10.42	8.54	2.1		24	0	97	.10	7	.7	1.3	UER
		2	620	38.17	19	23.65	155	12.57	28.11			26	0	110	.08	6	1.0	1.4	DEP
		2	820	42.35	19	17.88	155	13.34	6.64			12	0	92	.09	9	1.0	2.1	POL
		2	1232	52.40	19	24.69	155	17.36	13.55	1.9		11	0	76	.09	2	1.8	2.5	DEP
		2	1344	51.50	19	52.17	155	4.12	36.00	3.0		22	0	236	.13	40	6.2	9.0	KKU
		2	1441	28.54	19	16.17	155	2.77	3.90	2.1		15	0	242	.16	16	3.4	1.8	MER
		2	1444	28.75	19	20.76	155	11.18	7.81	1.7		20	0	94	.12	8	.8	1.3	UER
		2	1448	23.42	19	20.88	155	10.05	12.51			12	0	100	.08	7	1.4	.5	UER
		2	1737	41.06	19	11.76	155	5.38	9.77	2.5		24	0	248	.18	17	3.7	.9	DIS
		2	2113	18.70	19	25.05	155	17.52	8.65	1.3		13	0	81	.08	5	.8	1.3	LPC
		2	2153	.73	19	19.94	155	14.17	29.45			10	0	118	.06	9	1.5	3.6	DEP
		2	2258	43.12	19	24.92	155	18.11	8.63	1.3		14	0	88	.13	3	1.3	2.4	LPC
		2	2319	12.89	19	20.81	155	12.51	8.40	1.6		21	0	65	.07	7	.4	.7	UER
		3	0 0	54.99	19	23.68	155	17.67	10.56	1.7		12	0	87	.15	3	2.0	7.7	LPC
		3	0 8	51.79	19	24.52	155	17.42	6.24	1.0		11	0	64	.10	2	1.0	2.1	LPC
		3	559	54.29	19	20.21	155	10.58	9.81			15	0	106	.07	7	.7	3.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	3	622	45.97	19	22.23	155	21.55	11.55			20	0	57	.10	8	.7	.4	UKF
		3	827	32.87	19	19.02	155	17.65	34.31	2.4		28	0	105	.10	7	1.0	2.0	DEP
		3	1239	13.49	19	21.47	155	4.29	3.54			17	0	134	.15	10	1.0	2.5	MER
		3	13 2	9.14	19	26.26	155	26.47	9.20	4.1		31	0	47	.17	10	.8	1.1	UKF
		3	1430	39.72	19	15.57	155	22.60	7.51	1.9		19	0	158	.08	9	.8	1.1	LSW
		3	1437	39.42	19	16.41	155	23.21	.91			18	0	142	.12	9	.9	27.6	SWR
		3	1727	18.65	19	22.93	155	3.02	3.09	2.0		17	0	175	.16	13	1.4	2.9	MER
		3	18 0	23.08	19	25.70	155	23.72	9.81	2.1		25	0	63	.16	8	.7	.7	UKF
		3	2229	13.16	19	18.89	155	8.38	7.92			13	0	86	.08	10	.9	2.2	POL
		3	2327	.16	19	18.93	155	8.38	9.08			14	0	86	.08	10	.9	2.1	POL
		4	221	41.78	19	21.65	155	8.05	9.06	1.8		18	0	86	.07	9	.6	1.6	UER
		4	756	1.46	19	26.19	155	25.95	8.06			16	0	85	.10	10	.8	2.5	UKF
		4	11 1	11.47	19	3.98	155	22.87	32.99	2.5		24	0	206	.09	27	1.8	3.1	LSW
		4	1359	25.78	19	20.89	155	28.83	9.00	1.9		20	0	63	.12	10	.7	1.1	HEA
		4	1657	46.67	19	18.50	155	13.13	7.43			19	0	89	.06	8	.4	.8	POL
		4	1930	29.30	19	17.88	155	13.30	7.47	3.4		19	0	95	.08	9	.6	1.0	POL
		4	1946	37.19	19	19.75	155	9.15	7.09	2.4		28	0	82	.13	9	.7	1.2	UER
		4	2014	18.45	19	20.30	155	7.71	6.07			19	0	89	.12	8	.8	1.9	UER
		5	032	32.87	19	19.42	155	9.66	8.82	1.8		16	0	95	.08	8	.7	1.7	UER
		5	2 0	41.15	19	20.28	155	10.52	6.97			16	0	81	.10	8	.7	1.9	UER
		5	2 9	53.89	19	20.23	155	10.48	6.89			16	0	81	.12	8	.9	2.3	UER
		5	525	19.70	19	22.29	155	18.62	11.30			17	0	65	.05	5	.4	1.0	KOA
		5	7 2	35.49	19	14.88	155	27.22	8.06	2.4		25	0	135	.14	14	1.1	1.2	LSW
		5	755	7.94	19	21.95	155	.58	6.74	2.1		22	0	230	.16	16	2.3	2.3	LER
		5	846	55.02	19	32.16	155	19.57	23.40	2.0		29	0	62	.10	13	.7	1.8	NER
		5	9 0	39.87	19	26.91	155	25.68	8.83			12	0	195	.08	9	1.7	3.7	UKF
		5	1550	39.01	19	20.09	155	9.66	6.87	1.8		21	0	80	.15	8	1.0	1.9	UER
		5	1557	3.98	19	20.56	155	11.60	7.00	1.7		20	0	85	.14	7	.8	1.3	UER
		5	16 5	30.61	19	23.28	155	.87	6.99	2.1		19	0	212	.15	16	1.8	2.0	LER
		5	1652	7.40	19	22.71	155	29.59	8.79	1.9		16	0	96	.11	13	.8	2.0	UKF
		5	2114	45.02	19	17.98	155	16.88	9.69	2.5		29	0	122	.12	6	.7	.4	KOA
		5	2326	21.88	19	19.80	155	12.81	10.84	1.7		20	0	75	.10	7	.9	2.8	UER
		5	2340	38.77	19	26.41	155	26.76	7.39	2.0		24	0	70	.13	11	.7	2.6	UKF
		5	2345	23.74	19	26.56	155	26.69	7.92	1.8		15	0	95	.10	11	.8	2.4	UKF
		6	247	6.59	19	28.04	155	35.84	.10	2.7		19	0	88	.15	22	1.1	1.3	MOK
		6	4 0	55.39	19	24.41	155	28.14	7.98			17	0	133	.11	13	.8	2.4	UKF
		6	9 4	31.91	19	20.56	155	10.95	6.95			21	0	76	.12	8	.6	1.2	UER
		6	947	15.36	19	20.59	155	8.14	7.91	2.8		25	0	79	.15	9	.8	1.0	UER
		6	14 5	12.11	19	20.55	155	13.12	8.06			17	0	63	.06	6	.5	.7	UER
		6	15 2	9.06	19	25.89	155	28.47	10.58			15	0	129	.11	14	1.3	.9	UKF
		6	1514	47.26	19	20.72	155	25.92	9.02			10	0	130	.07	12	.9	.8	HEA
		7	843	39.58	19	39.95	155	6.58	9.50			15	0	109	.14	31	1.0	.9	HIL
		7	858	8.74	19	12.34	155	37.09	9.90			16	0	112	.20	25	1.7	1.0	HEA
		7	926	27.07	19	12.42	155	37.85	9.83	2.7		26	0	108	.17	26	1.3	.5	HEA
		7	10 4	15.75	19	20.73	155	33.08	24.77			13	0	183	.15	24	3.4	5.8	HEA
		7	1154	50.75	19	28.06	155	26.56	10.07	2.1		14	0	88	.12	14	1.1	8.3	UKF
		7	1411	36.14	19	22.47	155	1.98	7.49	2.6		18	0	198	.14	14	1.8	2.5	MER
		7	2333	40.58	19	17.29	155	29.41	53.31			16	0	83	.09	12	1.7	3.6	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	7	2353	39.51	19	18.62	155	15.54	8.18			15	0	128	.04	6	.4	.5	KOA
		7	2356	3.75	19	29.81	155	27.26	11.21	1.9		11	0	183	.07	13	1.3	.5	NER
		8	037	3.85	19	16.74	155	29.49	33.06			22	0	88	.12	13	1.7	3.5	HEA
		8	428	11.14	19	22.36	155	24.40	11.12			13	0	95	.05	9	.7	2.1	UKF
		8	434	37.78	19	16.05	154	50.90	7.48			10	0	299	.13	47	25.4	9.3	DIS
		8	754	37.61	19	53.85	155	8.12	40.76			26	0	243	.12	36	4.2	7.2	KKU
		8	825	56.24	19	19.32	155	15.45	8.19			19	0	140	.13	6	1.3	1.9	KOA
		8	826	47.30	19	18.83	155	15.53	8.76			18	0	121	.10	6	.7	1.0	KOA
		8	10 4	19.29	19	22.82	155	24.69	9.92	2.3		22	0	53	.09	9	.6	.4	UKF
		8	1218	30.63	19	19.47	155	11.95	7.40			16	0	91	.06	6	.5	.8	UER
		9	629	13.17	19	12.51	155	21.02	7.86			8	0	318	.14	20	36.6	15.5	LSW
		9	11 9	20.02	19	22.38	155	4.67	4.37	1.9		15	0	88	.12	11	.9	1.6	MER
		9	23 3	40.25	19	18.73	155	12.96	9.31	1.7		17	0	90	.09	8	.8	1.8	POL
		10	032	16.22	19	9.33	155	41.41	7.87	2.8		16	0	130	.23	23	1.6	2.2	HEA
		10	1239	23.34	17	41.90	153	53.85	46.41			9	0	349	.39	232	98.3	98.1	DIS
		10	2359	41.65	19	54.63	155	46.05	28.57	3.2		30	0	158	.13	35	1.3	4.2	KON
		11	416	31.58	19	26.30	155	25.14	8.08	2.3		29	0	68	.14	8	.7	1.1	UKF
		11	438	36.33	19	24.60	155	17.34	8.13	1.2		12	0	67	.08	2	1.0	2.0	LPC
		11	6 3	12.92	19	22.92	155	25.73	9.53	2.1		25	0	53	.13	11	.7	1.0	UKF
		11	717	13.39	19	25.19	155	17.68	13.24	1.5		11	0	78	.06	3	1.2	2.4	DEP
		11	813	18.93	19	24.34	155	18.75	4.85	1.2		10	0	87	.10	3	1.4	3.5	SPC
		11	1052	29.23	19	24.56	155	18.08	6.19	1.0		11	0	76	.10	3	1.4	1.9	LPC
		11	1154	58.54	19	22.18	155	3.99	3.64	2.0		17	0	154	.16	11	1.3	2.4	MER
		11	14 2	36.05	19	24.59	155	17.41	7.21	1.1		10	0	98	.10	2	1.6	2.2	LPC
		11	15 9	36.12	19	23.36	155	17.51	6.18	1.1		11	0	153	.13	5	1.9	1.8	LPC
		11	1636	2.71	19	24.96	155	17.59	3.68	1.0		13	0	122	.16	3	1.4	3.0	SPC
		11	18 6	43.20	19	24.42	155	17.29	8.64	1.7		15	0	54	.08	2	.7	1.1	LPC
		11	19 7	13.02	19	17.17	155	12.98	9.05	1.8		22	0	154	.09	9	.6	.8	POL
		11	1930	15.45	19	25.05	155	18.00	7.51	1.2		11	0	93	.12	3	1.9	3.1	LPC
		11	2132	34.91	19	24.27	155	18.00	7.42	1.5		14	0	78	.11	2	1.0	1.6	LPC
		11	2135	7.94	19	25.31	155	17.84	7.48	1.1		14	0	118	.11	3	1.2	1.8	LPC
		11	22 8	59.44	19	24.78	155	23.84	9.22	2.5		30	0	60	.13	8	.6	.8	UKF
		11	2251	6.00	19	25.14	155	17.18	13.08	1.5		12	0	130	.11	3	1.7	1.8	DEP
		12	137	44.88	19	22.78	155	22.96	10.42	1.9		20	0	84	.08	8	.5	.6	UKF
		12	3 1	54.56	19	18.92	155	15.74	6.78			16	0	119	.08	5	.7	1.6	KOA
		12	649	48.17	19	25.12	154	56.10	10.16	2.3		21	0	249	.11	25	2.5	.5	LER
		12	752	48.80	19	11.73	155	22.63	44.41			23	0	164	.08	16	1.4	3.2	LSW
		12	8 5	57.50	19	17.90	155	13.26	6.46			15	0	97	.09	9	.8	1.9	POL
		12	13 5	8.66	19	21.47	155	28.10	9.09	1.9		17	0	105	.08	10	.5	.7	HEA
		12	1738	5.82	19	22.58	155	17.51	32.38	2.7		32	0	32	.10	3	.8	1.4	DEP
		12	18 5	13.16	19	24.84	155	17.56	7.65	1.5		12	0	116	.11	5	1.4	2.5	LPC
		12	1835	33.76	19	24.39	155	17.69	6.92	1.6		15	0	74	.11	2	1.0	1.4	LPC
		12	20 5	40.60	19	24.41	155	18.07	8.07	1.5		11	0	74	.09	3	1.2	3.0	LPC
		12	2036	48.96	19	24.43	155	17.30	7.77	1.5		17	0	55	.09	2	.7	1.1	LPC
		12	2043	29.82	19	24.84	155	17.49	8.42	1.5		13	0	79	.11	2	1.4	2.2	LPC
		12	21 9	19.51	19	23.95	155	17.72	5.38	1.3		13	0	86	.08	2	.7	.9	SPC
		12	2116	3.84	19	24.51	155	17.99	7.91	1.2		11	0	73	.08	3	1.2	2.4	LPC
		12	2121	33.67	19	24.49	155	17.56	9.07	1.3		11	0	71	.06	2	1.0	2.4	LPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	13	423	27.82	19	24.13	155	17.58	5.85	1.0		13	0	80	.07	2	.6	1.0	SPC
		13	743	30.77	19	22.49	155	2.61	3.43			14	0	184	.13	13	1.5	2.4	MER
		13	10 1	11.32	19	24.28	155	17.42	7.55	1.6		12	0	76	.11	2	1.2	1.8	LPC
		13	1014	2.96	19	21.80	155	6.73	5.52			13	0	99	.17	8	1.3	3.3	UER
		13	1257	52.08	19	24.36	155	18.40	9.77	1.7		8	0	102	.09	3	2.1	4.6	LPC
		13	2242	10.31	19	18.60	155	13.31	9.06			11	0	142	.05	8	1.0	2.6	POL
		14	2 3	50.79	19	25.02	155	18.51	12.66	2.3		28	0	47	.08	3	.5	.2	LPC
		14	2014	9.31	19	18.92	155	15.54	7.83			20	0	118	.07	6	.5	.8	KOA
		15	026	35.58	19	22.97	155	30.09	9.91			18	0	114	.09	18	1.4	.8	MOK
		15	521	26.57	19	21.48	155	7.99	2.03			12	0	237	.08	13	2.1	99.0	UER
		15	1949	3.72	19	18.93	155	14.01	9.27	1.7		21	0	69	.10	7	.7	1.5	POL
		16	056	9.80	19	25.69	155	16.71	7.39	1.2		13	0	158	.06	2	.7	1.2	LPC
		16	119	59.26	19	16.26	155	23.62	5.81	1.9		14	0	141	.09	9	.9	2.3	SWR
		16	228	30.17	19	28.13	155	50.31	6.08	2.6		18	0	161	.14	25	1.0	1.1	KON
		16	440	8.60	19	18.50	155	13.22	8.88	2.0		25	0	86	.12	8	.8	1.0	POL
		16	448	39.64	19	12.16	155	22.81	51.38	2.9		22	0	161	.11	15	2.0	3.7	LSW
		16	736	17.66	19	15.19	155	18.98	28.17	2.2		22	0	170	.07	12	1.0	1.4	HLP
		16	759	15.98	19	58.09	155	27.74	33.34	2.7		26	0	185	.09	38	1.1	2.3	KKU
		16	1141	22.59	20	5.56	155	20.78	38.45	2.8		24	0	227	.09	45	1.3	2.2	DIS
		16	1255	25.45	19	15.89	154	59.61	45.09			26	0	250	.11	27	3.7	3.8	DIS
		16	1338	2.76	19	18.79	155	14.87	6.71	1.6		17	0	114	.09	7	.7	1.6	POL
		16	1338	41.57	19	19.00	155	15.48	5.90	1.6		19	0	115	.14	6	.9	2.1	KOA
		16	1958	5.18	19	22.53	155	30.26	9.04	2.0		14	0	146	.11	13	1.0	2.3	MOK
		16	2020	49.20	19	25.95	155	28.21	9.50	1.9		18	0	115	.13	13	.9	5.5	UKF
		16	2034	48.61	19	43.23	156	4.13	26.66			17	0	236	.11	54	2.0	5.0	KON
		16	23 1	31.00	19	56.97	155	12.86	35.73	2.7		30	0	216	.12	32	2.1	3.3	KKU
		17	436	35.72	19	24.96	155	25.45	11.30	1.8		14	0	163	.03	10	.8	3.0	UKF
		17	649	53.26	19	20.16	155	11.11	11.21			13	0	120	.05	8	.7	2.7	UER
		17	717	35.21	19	42.56	155	28.78	8.26	2.7		20	0	169	.30	25	2.9	2.4	KKU
		17	1230	19.32	19	19.98	154	59.02	.96	2.2		15	0	277	.15	25	7.1	25.2	DIS
		17	1246	13.06	19	19.33	155	10.26	12.16			14	0	103	.04	7	.6	.3	UER
		17	1324	29.28	19	20.11	155	19.59	3.96	1.4		9	0	110	.06	7	.7	3.2	SWR
		17	1440	39.31	19	38.19	155	4.57	5.67	2.7		14	0	150	.10	30	10.5	77.0	BLS
		18	549	2.72	19	18.58	155	13.27	8.21			20	0	194	.07	8	.7	.8	POL
		18	615	46.89	19	12.96	155	28.75	6.59	2.1		16	0	103	.14	15	1.2	2.4	LSW
		18	922	24.44	19	18.54	155	13.30	9.05	1.7		21	0	194	.09	8	1.0	.8	POL
		18	1810	6.78	19	26.25	155	37.29	4.88	2.9		14	0	203	.10	21	2.1	2.1	MOK
		18	21 6	33.29	19	25.31	155	24.77	8.99	1.7		17	0	67	.07	9	.5	1.4	UKF
		19	443	52.12	19	22.93	155	25.17	8.94	2.7		31	0	44	.14	10	.7	.9	UKF
		19	5 5	42.44	19	22.71	155	25.16	9.73	4.8		31	0	46	.13	10	.7	.5	UKF
		19	511	13.87	19	22.92	155	26.11	7.44	3.6		27	0	51	.17	11	.9	1.4	UKF
		19	517	9.93	19	22.35	155	25.31	8.57	2.0		27	0	70	.15	10	.9	1.1	UKF
		19	520	3.72	19	22.59	155	25.68	7.97	2.3		26	0	73	.12	11	.7	1.2	UKF
		19	523	17.38	19	22.57	155	25.12	7.56	2.1		28	0	52	.14	10	.7	1.5	UKF
		19	524	41.22	19	22.71	155	24.92	9.14			15	0	107	.05	9	.5	1.1	UKF
		19	526	39.13	19	21.75	155	25.64	9.14	2.5		26	0	68	.14	10	.9	1.1	HEA
		19	529	15.19	19	22.80	155	25.40	8.54	2.6		30	0	47	.14	12	.7	1.0	UKF
		19	533	3.73	19	23.02	155	25.33	8.68	3.6		31	0	44	.13	10	.6	.9	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	19	535	38.52	19	22.45	155	26.10	8.11	2.1		25	0	74	.14	11	.8	1.5	UKF
		19	536	14.50	19	22.12	155	26.39	8.02	2.3		25	0	76	.14	11	.8	1.3	UKF
		19	539	29.79	19	22.84	155	24.71	6.72	1.9		24	0	70	.11	9	.7	1.7	UKF
		19	543	32.11	19	22.67	155	24.89	6.36	1.9		26	0	52	.14	9	.8	2.1	UKF
		19	544	3.13	19	22.68	155	25.15	6.98	2.0		25	0	71	.12	10	.7	1.8	UKF
		19	545	48.51	19	22.66	155	26.03	6.34	2.0		24	0	75	.14	11	.9	1.8	UKF
		19	547	33.11	19	22.45	155	25.50	6.51	1.7		13	0	98	.09	10	.8	1.9	UKF
		19	548	49.05	19	22.25	155	25.27	5.86			21	0	79	.13	10	.8	2.3	UKF
		19	549	22.21	19	22.26	155	24.73	6.98	1.7		17	0	79	.15	9	1.0	3.1	UKF
		19	554	25.14	19	21.85	155	23.84	5.77	1.6		20	0	72	.16	8	.9	2.7	SWR
		19	558	10.43	19	20.83	155	24.92	7.78	1.7		20	0	78	.10	9	.6	1.4	SWR
		19	559	10.18	19	21.70	155	25.55	5.50			20	0	65	.13	10	.7	1.2	HEA
		19	6	0 57.13	19	22.85	155	25.49	7.66	2.0		24	0	53	.12	10	.7	1.7	UKF
		19	6	2 20.28	19	22.12	155	25.23	7.51	1.7		22	0	55	.14	10	.8	2.0	UKF
		19	611	32.44	19	21.93	155	25.33	7.89			19	0	59	.14	10	.9	2.2	HEA
		19	615	55.92	19	22.39	155	26.48	6.38	1.7		14	0	107	.09	11	.9	1.8	UKF
		19	624	3.20	19	21.96	155	25.37	10.37			16	0	106	.07	10	.7	2.4	HEA
		19	631	35.69	19	22.40	155	25.09	8.31			19	0	94	.11	10	.8	1.9	UKF
		19	645	59.49	19	22.62	155	25.18	5.99	1.7		19	0	112	.12	10	.8	2.3	UKF
		19	651	1.80	19	22.81	155	25.31	9.91	1.7		23	0	52	.13	10	.7	1.0	UKF
		19	653	23.65	19	22.93	155	25.19	7.66			21	0	53	.12	10	.7	1.9	UKF
		19	657	8.70	19	22.31	155	24.30	9.18	1.7		19	0	83	.07	8	.5	1.2	UKF
		19	7	6 35.94	19	21.35	155	25.82	8.83	1.8		24	0	73	.13	12	.8	1.1	HEA
		19	7	7 56.21	19	22.56	155	25.78	9.25	1.8		24	0	54	.14	11	.9	1.4	UKF
		19	725	16.93	19	22.28	155	24.73	8.08			15	0	91	.09	9	.7	1.7	UKF
		19	736	26.07	19	22.06	155	25.09	7.15	1.7		23	0	54	.12	10	.7	1.8	UKF
		19	742	12.17	19	23.33	155	25.13	7.37	2.0		24	0	55	.13	10	.8	2.1	UKF
		19	743	16.43	19	22.94	155	25.52	7.36	2.2		23	0	53	.11	10	.6	1.8	UKF
		19	755	27.48	19	22.65	155	25.49	7.77	1.7		25	0	52	.13	10	.8	1.9	UKF
		19	8	7 51.63	19	22.43	155	25.10	8.55	3.1		31	0	49	.16	10	.8	1.0	UKF
		19	817	40.54	19	22.23	155	24.87	9.58			8	0	227	.05	12	1.7	5.5	UKF
		19	836	48.27	19	21.59	155	25.79	7.86			16	0	118	.15	11	1.3	2.7	HEA
		19	840	20.44	19	22.43	155	25.87	5.52			20	0	102	.10	11	.8	1.8	UKF
		19	9	0 23.07	19	22.49	155	26.56	8.72			9	0	144	.07	12	2.9	4.9	UKF
		19	9	4 3.74	19	21.00	155	24.61	5.53			10	0	175	.06	10	.9	1.3	SWR
		19	911	43.57	19	23.25	155	24.14	2.75	1.7		24	0	99	.15	10	.8	2.7	UKF
		19	918	16.69	19	22.45	155	23.77	7.27	1.6		16	0	93	.12	7	.9	2.6	UKF
		19	919	41.07	19	22.04	155	26.87	8.57	1.8		12	0	184	.08	13	3.0	4.2	UKF
		19	923	14.20	19	23.01	155	24.73	7.38	1.6		14	0	112	.08	9	.7	1.8	UKF
		19	924	39.79	19	21.82	155	26.23	7.01			16	0	116	.09	12	.7	1.5	HEA
		19	926	7.88	19	21.85	155	26.14	6.30			12	0	115	.10	12	1.0	1.9	HEA
		19	928	43.88	19	21.60	155	26.15	7.78	1.8		22	0	68	.13	10	.8	1.8	HEA
		19	930	37.72	19	22.41	155	25.05	9.26	2.2		27	0	51	.14	10	.8	1.3	UKF
		19	935	6.03	19	22.11	155	25.61	9.41			10	0	151	.07	11	2.0	4.3	UKF
		19	938	35.56	19	21.02	155	24.82	5.99	1.7		13	0	82	.07	9	.6	1.4	SWR
		19	940	.13	19	21.05	155	24.74	5.54			9	0	176	.07	10	1.4	2.3	SWR
		19	955	16.70	19	20.96	155	24.50	4.88	1.6		12	0	136	.09	10	.8	1.5	SWR
		19	955	52.30	19	22.15	155	27.24	9.03	1.8		10	0	196	.06	14	3.1	4.4	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	19	958	33.18	19	22.54	155	23.99	6.36	1.6		10	0	105	.07	8	.9	3.1	UKF
		19	10 2	32.91	19	22.42	155	24.98	6.67	1.7		14	0	83	.08	10	.6	1.7	UKF
		19	1019	42.96	19	22.74	155	24.94	7.91	1.7		19	0	70	.10	9	.7	1.7	UKF
		19	1021	3.22	19	21.59	155	25.53	8.55	1.7		10	0	67	.08	14	.8	1.8	HEA
		19	1036	26.91	19	21.99	155	25.39	8.22	1.7		16	0	91	.13	10	1.1	2.2	HEA
		19	11 0	51.35	19	22.79	155	25.52	11.08			10	0	121	.07	10	2.2	7.9	UKF
		19	1121	8.69	19	22.47	155	26.52	7.49	1.8		17	0	86	.09	11	.6	1.7	UKF
		19	1133	35.59	19	20.79	155	25.52	8.74	1.8		16	0	81	.10	8	.6	.9	HEA
		19	1155	59.86	19	21.39	155	26.45	7.23	1.8		15	0	123	.09	15	.8	1.6	HEA
		19	12 8	59.80	19	21.59	155	25.69	8.53			15	0	68	.11	10	.9	1.8	HEA
		19	1216	58.88	19	22.26	155	24.54	7.24			11	0	124	.06	9	.7	1.4	UKF
		19	1235	58.56	19	22.78	155	24.75	7.46	1.6		16	0	84	.10	9	.7	1.8	UKF
		19	1239	44.84	19	22.09	155	24.76	8.03	1.8		19	0	54	.08	9	.6	1.4	UKF
		19	1255	37.60	19	21.98	155	25.21	8.52	2.1		23	0	57	.14	10	.8	1.3	HEA
		19	13 3	5.33	19	22.47	155	25.55	7.51	1.7		17	0	99	.10	10	.8	1.7	UKF
		19	1328	53.28	19	22.28	155	24.42	9.17	1.7		11	0	86	.05	9	.6	1.5	UKF
		19	1342	54.00	19	22.20	155	24.87	7.34	1.7		16	0	94	.12	9	.9	2.2	UKF
		19	1359	37.16	19	22.75	155	25.35	7.85	1.7		11	0	112	.07	10	.8	1.7	UKF
		19	14 0	7.64	19	22.34	155	25.18	6.42	1.7		11	0	99	.08	10	.9	2.7	UKF
		19	14 4	27.10	19	24.21	155	23.47	11.76	1.7		13	0	115	.02	8	.3	.3	UKF
		19	1423	56.16	19	26.26	155	29.97	7.83	1.9		19	0	69	.13	13	.9	3.4	UKF
		19	1437	11.02	19	21.57	155	24.73	6.52	1.7		15	0	77	.10	10	.8	1.3	SWR
		19	1438	57.68	19	22.48	155	27.78	8.37	1.8		12	0	82	.08	11	.7	1.6	UKF
		19	1531	8.71	19	23.86	155	27.33	5.95	1.8		13	0	181	.08	13	.8	1.2	UKF
		19	1537	4.01	19	21.42	155	25.76	9.87	1.8		13	0	121	.06	11	.6	2.0	HEA
		19	1541	55.02	19	22.22	155	24.77	7.39	1.7		11	0	130	.06	9	.9	2.4	UKF
		19	1615	42.07	19	21.44	155	24.39	5.64			10	0	149	.08	12	1.4	2.7	SWR
		19	1623	17.51	19	21.81	155	24.82	8.29	1.7		11	0	101	.06	10	.5	1.4	SWR
		19	1643	32.69	19	21.44	155	25.70	8.35	1.8		12	0	120	.07	11	.7	1.6	HEA
		19	17 5	24.25	19	20.59	155	25.04	7.62			10	0	195	.05	11	1.2	1.8	HEA
		19	1739	14.54	19	21.12	155	25.37	8.67	1.8		16	0	125	.08	11	.7	1.0	HEA
		19	1744	48.42	19	23.08	155	24.43	6.70	1.6		10	0	100	.09	8	1.2	4.1	UKF
		19	1812	58.13	19	21.66	155	24.61	9.97			10	0	147	.06	9	1.4	5.2	SWR
		19	1813	2.69	19	22.59	155	24.84	7.91	1.8		17	0	69	.11	12	.8	2.3	UKF
		19	1819	31.29	19	20.93	155	25.80	8.60			11	0	127	.08	12	.9	1.9	HEA
		19	1834	21.27	19	22.01	155	25.08	7.68	1.7		12	0	101	.08	10	.7	1.7	UKF
		19	19 3	50.22	19	22.36	155	24.86	8.90			11	0	98	.07	9	.8	1.9	UKF
		19	20 2	38.43	19	22.93	155	25.06	7.59	1.8		24	0	53	.11	9	.6	1.1	UKF
		19	2116	30.40	19	30.75	155	46.78	7.48	2.5		16	0	193	.09	29	1.4	.8	KUN
		19	2120	.82	19	22.36	155	27.45	8.36	1.8		17	0	80	.08	11	.6	1.5	UKF
		19	2122	41.07	19	22.45	155	24.76	7.57	1.8		23	0	51	.09	9	.5	1.4	UKF
		19	2124	45.67	19	23.04	155	24.40	8.22	1.8		27	0	53	.12	8	.6	.9	UKF
		19	2127	20.12	19	21.12	155	24.60	6.83			10	0	116	.06	10	.7	1.6	SWR
		19	2128	8.33	19	22.22	155	25.39	7.99	1.7		21	0	70	.10	10	.7	1.5	UKF
		19	2151	.82	19	23.89	155	24.05	9.57			16	0	104	.04	8	.3	1.9	UKF
		19	2153	47.76	19	22.85	155	25.06	9.00	2.3		27	0	53	.11	10	.5	.8	UKF
		19	2158	44.44	19	22.63	155	25.75	6.42			14	0	90	.09	11	.7	1.3	UKF
		19	22 1	43.78	19	22.43	155	25.13	5.85			12	0	130	.10	10	1.2	2.8	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	19	2215	28.55	19	25.60	155	24.97	9.12	1.7		15	0	91	.04	10	.4	1.2	UKF
		19	2225	12.25	19	21.70	155	26.34	6.91			10	0	119	.09	12	1.0	2.0	HEA
		19	2230	5.16	19	23.15	155	25.17	7.45	1.8		24	0	54	.12	10	.7	1.2	UKF
		19	23	5 44.87	19	21.29	155	25.13	5.53			11	0	100	.08	11	.6	2.9	HEA
		19	23	8 21.70	19	20.79	155	25.39	9.36	1.8		10	0	113	.07	8	.8	1.1	HEA
		19	2313	7.31	19	22.55	155	24.31	8.02			11	0	111	.06	8	.6	1.7	UKF
		19	2357	57.31	19	18.93	155	47.63	7.34	2.5		16	0	171	.10	28	1.3	.9	KON
		19	2358	27.69	19	19.70	155	48.04	7.00	2.8		20	0	98	.12	22	1.0	1.0	KON
		20	0	2 43.99	19	22.98	155	26.90	5.32	1.7		10	0	151	.10	13	1.0	1.1	UKF
		20	0	4 27.46	19	22.21	155	24.25	8.93	1.7		17	0	83	.07	8	.6	1.3	UKF
		20	0	6 52.99	19	22.51	155	26.16	8.45	3.1		32	0	54	.16	11	.7	1.0	UKF
		20	0	9 43.20	19	22.00	155	26.15	4.41	1.7		15	0	69	.12	12	.9	1.7	UKF
		20	010	.22	19	22.48	155	24.77	7.21	1.8		26	0	51	.13	9	.7	1.5	UKF
		20	029	11.71	19	22.59	155	24.49	9.08			11	0	114	.05	9	.7	2.5	UKF
		20	047	37.70	19	21.92	155	24.82	8.46			12	0	142	.07	10	.9	1.7	SWR
		20	1	1 30.53	19	21.54	155	25.29	8.61			13	0	99	.07	10	.7	1.5	HEA
		20	135	51.03	19	22.28	155	24.78	7.23			11	0	129	.06	9	.7	1.8	UKF
		20	156	50.23	19	21.62	155	25.35	7.75	1.7		12	0	113	.07	11	.6	1.5	HEA
		20	3	3 41.16	19	20.65	155	25.28	7.56			13	0	112	.06	8	.5	.9	HEA
		20	318	38.14	19	22.47	155	24.13	10.30			11	0	96	.05	8	.5	2.9	UKF
		20	330	1.41	19	21.25	155	25.55	7.90			10	0	110	.06	9	1.0	2.0	HEA
		20	345	28.36	19	22.43	155	25.87	6.48	1.7		15	0	73	.08	11	.6	1.4	UKF
		20	4	1 24.18	19	22.20	155	26.88	10.14			10	0	173	.05	13	2.4	5.4	UKF
		20	4	2 20.73	19	22.15	155	25.62	7.54	1.7		13	0	96	.10	11	1.0	1.9	UKF
		20	429	46.63	19	22.91	155	25.21	7.81	2.1		25	0	53	.15	10	.8	1.3	UKF
		20	439	54.47	19	21.93	155	25.77	11.69			10	0	161	.05	11	1.8	5.4	HEA
		20	453	46.85	19	22.23	155	26.04	8.01	2.5		28	0	58	.13	11	.7	1.3	UKF
		20	532	1.35	19	22.93	155	26.63	8.02	2.5		28	0	52	.14	12	.7	1.2	UKF
		20	549	51.08	19	22.36	155	24.76	5.84	1.6		11	0	146	.09	12	.8	2.3	UKF
		20	558	36.88	19	18.42	155	18.06	32.07	2.2		27	0	118	.12	8	1.3	2.0	DEP
		20	7	4 39.51	19	21.82	155	25.26	8.00	1.7		12	0	68	.09	10	.8	2.0	HEA
		20	714	48.67	19	20.92	155	24.89	6.82			8	0	126	.03	10	.4	.9	SWR
		20	744	15.11	19	22.35	155	25.88	5.99	1.7		13	0	104	.08	11	.7	1.5	UKF
		20	749	51.32	19	21.28	155	26.00	8.38			10	0	193	.06	12	1.4	2.1	HEA
		20	814	57.40	19	22.31	155	24.80	7.61			9	0	178	.08	12	1.6	3.2	UKF
		20	1210	41.21	19	21.92	155	25.73	8.19	1.7		10	0	161	.07	11	2.0	4.0	HEA
		20	13	7 14.89	19	25.48	155	29.00	9.21	1.9		20	0	64	.12	14	.8	2.4	UKF
		20	1525	39.41	19	18.96	155	13.90	8.46			14	0	89	.06	7	.6	1.3	POL
		20	1526	39.08	19	22.74	155	24.46	8.80			10	0	103	.05	9	.6	1.4	UKF
		20	1558	7.10	19	21.82	155	24.97	9.47	1.7		15	0	103	.08	10	.6	.9	SWR
		20	1634	10.33	19	24.94	155	26.27	4.61	2.1		20	0	88	.16	10	.9	2.0	UKF
		20	1722	30.26	19	22.57	155	24.72	9.45	2.0		18	0	85	.07	9	.6	1.3	UKF
		20	1724	47.02	19	20.14	155	12.55	8.67			22	0	73	.13	6	.9	1.8	UER
		20	1736	44.53	19	20.10	155	8.03	5.96			19	0	86	.17	9	1.1	2.4	UER
		20	1821	33.69	19	21.61	155	25.57	9.91			15	0	80	.10	10	1.0	3.5	HEA
		20	1910	7.12	19	22.57	155	26.14	8.47	1.8		23	0	54	.10	11	.6	1.5	UKF
		20	2019	51.60	19	22.22	155	25.33	9.30			13	0	101	.07	10	.7	1.8	UKF
		20	2036	56.94	19	20.60	155	13.45	7.65			17	0	62	.06	7	.5	.7	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	20	2047	32.32	19	22.16	155	25.11	8.04			19	0	99	.08	10	.6	1.4	UKF
		20	2050	26.50	19	20.21	155	12.73	9.21	4.3		31	0	70	.12	6	.6	.8	UER
		20	21 7	12.15	19	17.22	155	19.26	11.62			16	0	135	.10	9	.9	.5	SWR
		21	346	23.86	19	12.07	156	20.49	57.58	2.5		7	0	296	.15	75	30.3	16.7	DIS
		21	658	44.17	19	21.60	155	26.54	7.15			12	0	120	.08	13	.8	1.6	HEA
		21	841	53.03	19	21.89	155	24.09	8.60			11	0	124	.05	8	.6	.8	SWR
		21	1437	26.84	19	21.91	155	25.23	8.13	2.3		17	0	88	.10	10	.8	1.0	HEA
		21	15 7	54.70	19	26.02	155	13.99	25.51			15	0	98	.07	6	.9	1.9	DEP
		21	1541	44.70	19	20.46	155	12.45	11.80			13	0	139	.06	7	1.5	3.8	UER
		21	1729	39.80	19	21.54	155	25.38	8.63			15	0	115	.06	11	.4	.7	HEA
		21	1928	41.80	19	22.96	155	29.69	8.47	2.4		27	0	48	.11	16	.6	1.5	UKF
		21	21 2	56.36	19	23.81	155	23.26	8.65			15	0	107	.05	8	.4	.7	UKF
		21	2214	22.24	19	19.77	155	13.49	7.32			21	0	70	.09	6	.5	.9	UER
		21	2233	16.17	19	22.24	155	25.00	9.02			19	0	78	.08	10	.5	1.3	UKF
		21	23 6	34.51	19	21.75	155	25.41	11.58			10	0	162	.13	11	3.7	12.0	HEA
		22	058	17.62	19	18.19	155	13.19	9.77	3.1		29	0	93	.09	8	.6	.4	POL
		22	1 4	44.04	19	22.10	155	24.73	10.37			16	0	92	.05	9	.5	1.8	UKF
		22	153	22.81	19	21.48	155	24.74	7.36			9	0	157	.04	10	.9	2.1	SWR
		22	157	31.00	19	18.51	155	13.14	12.23			10	0	161	.04	9	.6	2.8	POL
		22	2 2	13.36	19	18.01	155	13.02	9.59			16	0	105	.05	9	.5	2.1	POL
		22	2 6	43.94	19	20.42	155	13.61	8.27			15	0	65	.07	6	.6	1.8	UER
		22	2 9	13.70	19	18.18	155	13.48	8.23			21	0	82	.10	8	.8	1.6	POL
		22	215	8.75	19	18.09	155	13.20	9.12			18	0	95	.09	8	.8	1.9	POL
		22	224	8.25	19	17.79	155	12.90	7.49			13	0	120	.10	9	1.0	2.3	POL
		22	237	10.73	19	22.16	155	24.71	6.89			10	0	132	.08	9	1.5	4.0	UKF
		22	242	44.65	19	23.74	155	26.43	7.22			15	0	148	.08	12	.7	1.2	UKF
		22	3 8	29.79	19	19.79	155	13.33	16.55			10	0	67	.17	7	3.6	13.5	DEP
		22	314	7.72	19	21.45	155	25.70	7.61			16	0	72	.08	9	.6	1.4	HEA
		22	352	4.67	19	21.35	155	24.97	6.39			9	0	169	.06	10	1.3	2.6	SWR
		22	4 7	53.25	19	21.76	155	26.99	7.83			8	0	206	.07	13	3.7	4.9	HEA
		22	558	55.86	19	20.92	155	24.50	7.78			14	0	93	.07	9	.5	.9	SWR
		22	729	40.33	19	17.87	155	12.88	8.59			16	0	117	.09	9	.8	1.9	POL
		22	1131	38.01	19	20.05	155	9.07	8.92	1.8		15	0	76	.06	8	.6	1.5	UER
		22	1229	58.36	19	20.48	155	25.43	9.17	2.1		13	0	85	.06	8	.6	1.3	HEA
		22	1821	30.49	19	22.18	155	24.52	6.37	2.1		17	0	127	.07	9	.7	2.0	UKF
		22	1932	13.78	19	22.27	155	24.38	6.57	1.9		17	0	93	.10	9	.8	1.9	UKF
		22	1933	41.68	19	22.52	155	23.47	5.54	2.0		17	0	122	.10	11	.9	2.1	UKF
		22	1958	32.89	19	21.28	155	25.88	8.61	1.8		15	0	73	.08	9	.7	1.7	HEA
		22	2239	53.84	19	24.21	155	23.20	9.86			21	0	96	.13	8	.9	.7	UKF
		22	2345	51.18	19	22.65	155	24.40	5.42	2.7		19	0	52	.11	8	.6	.9	UKF
		23	037	52.35	19	9.21	155	13.30	6.53	2.1		21	0	239	.13	19	2.3	2.7	PPL
		23	144	23.13	19	18.59	155	15.59	8.17			13	0	130	.04	5	.4	1.1	KOA
		23	151	22.99	19	20.39	155	13.30	9.31			14	0	116	.03	6	.3	.8	UER
		23	4 8	16.36	19	20.20	155	20.31	3.83	1.4		17	0	125	.08	5	.5	2.7	SWR
		23	411	6.05	19	25.09	155	21.64	5.11	1.3		7	0	334	.27	9	92.4	55.5	UKF
		23	413	42.38	19	24.50	155	16.35	.55	.8		10	0	85	.08	2	.3	.3	SPC
		23	524	45.07	19	21.38	155	30.46	8.94	2.0		19	0	102	.15	15	1.0	1.8	HEA
		23	612	42.15	19	22.51	155	25.08	7.10	1.7		14	0	67	.11	10	.7	2.0	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	23	616	44.64	19	17.73	155	14.23	6.07			12	0	138	.07	8	.6	1.7	POL
		23	650	7.61	19	23.77	155	26.71	9.09			17	0	136	.09	12	.8	1.0	UKF
		23	754	47.29	19	28.70	155	28.09	7.53	1.9		12	0	162	.05	13	.6	2.1	UKF
		23	8	2 19.03	19	21.93	155	26.42	7.98			13	0	89	.11	12	1.1	1.9	HEA
		23	926	40.16	19	24.01	155	15.79	1.48			10	0	65	.04	3	.2	.1	SPC
		23	1342	36.23	19	55.00	155	7.94	43.87			17	0	269	.13	46	19.0	28.5	KKU
		23	1435	35.49	19	19.17	155	17.51	31.55	2.2		25	0	102	.09	7	1.1	1.7	DEP
		23	1732	9.28	19	24.99	155	17.15	.77	2.1		16	0	114	.19	2	.8	.4	SPC
		23	1847	53.88	19	22.79	155	24.58	9.19	1.7		19	0	69	.06	9	.4	1.0	UKF
		23	1859	31.21	19	18.93	155	11.03	11.62			13	0	112	.04	6	.4	.3	POL
		23	2013	14.75	19	24.64	155	17.95	2.26	1.4		12	0	75	.09	3	.6	3.6	SPC
		23	2058	27.01	19	19.13	155	10.62	9.68			16	0	107	.05	6	.5	2.4	UER
		23	2134	27.60	19	10.60	155	7.90	46.99			26	1	212	.12	21	2.6	2.0	POL
		23	2148	27.33	19	25.30	155	23.43	9.28	2.2		19	0	127	.05	8	.4	1.2	UKF
		23	2232	32.94	19	20.30	155	11.84	9.26	2.0		26	0	77	.12	7	.7	1.4	UER
		23	2325	54.72	19	24.20	155	17.26	1.00	.7		10	0	98	.12	2	.5	.6	SPC
		23	2359	31.16	19	19.34	155	11.52	9.09			14	0	98	.06	7	.6	2.0	UER
		24	018	5.87	19	24.14	155	17.29	15.91	1.7		27	0	45	.05	2	.4	.5	DEP
		24	225	57.90	19	22.90	155	24.59	9.72	2.4		30	0	53	.11	9	.6	.3	UKF
		24	323	59.14	19	19.31	155	15.60	7.59			21	0	91	.08	6	.5	1.1	KOA
		24	450	14.63	19	21.98	155	26.20	8.40	2.1		26	0	62	.16	10	.9	1.5	HEA
		24	937	51.29	19	22.41	155	27.56	9.27	1.8		18	0	80	.11	11	.8	1.6	UKF
		24	1113	57.02	19	23.74	155	23.79	10.55	2.2		22	0	56	.06	7	.4	.3	UKF
		24	1230	2.19	19	17.98	155	13.42	7.05	1.7		17	0	87	.08	9	.6	1.2	POL
		24	1335	31.96	19	21.36	155	13.16	7.81	2.5		25	0	55	.13	6	.7	1.0	UER
		24	1612	23.28	19	22.40	155	26.26	6.37	1.7		13	0	147	.08	12	1.0	1.3	UKF
		24	1612	49.77	19	22.60	155	24.60	5.86	1.8		16	0	85	.10	9	.5	1.9	UKF
		24	1849	19.12	19	18.00	155	14.98	4.35	1.6		16	0	111	.09	6	.6	1.3	POL
		24	2019	6.87	19	22.27	155	24.64	6.91			11	0	126	.07	9	.9	2.2	UKF
		24	2019	40.91	19	20.51	155	9.51	8.80			13	0	99	.13	7	1.4	2.5	UER
		24	2028	26.91	19	18.58	155	15.39	6.58	1.6		22	0	102	.09	6	.6	.9	KOA
		24	2118	46.50	19	22.55	155	25.01	7.15	1.7		12	0	91	.07	10	.7	1.6	UKF
		24	22	6 45.82	19	22.29	155	25.91	5.64	1.9		16	0	72	.09	11	.6	1.6	UKF
		24	2214	47.14	19	23.24	155	25.04	7.36	2.3		25	0	54	.15	9	.8	1.4	UKF
		24	2245	21.79	19	21.83	155	25.80	7.21	1.9		23	0	70	.09	11	.5	1.2	HEA
		25	332	33.67	19	24.33	155	17.51	1.52	1.0		11	0	83	.11	2	.8	.3	SPC
		25	4	8 35.01	19	21.97	155	24.85	6.57	1.7		17	0	98	.09	10	.6	1.5	SWR
		25	537	30.93	19	32.57	155	9.39	23.62	2.3		17	0	135	.11	17	2.1	5.1	HIL
		25	624	44.34	19	20.89	155	11.23	8.03	2.5		28	0	70	.13	8	.7	1.1	UER
		25	628	30.06	19	25.08	155	23.84	8.23	1.6		16	0	117	.06	9	.5	.9	UKF
		25	8	9 15.49	19	23.50	155	15.12	2.00			9	0	98	.07	3	.6	.0	SPC
		25	846	33.26	19	18.67	155	13.53	7.85			17	0	84	.06	7	.5	1.4	POL
		25	20	6 46.82	19	22.06	155	26.04	7.93	1.8		21	0	61	.09	11	.6	1.4	UKF
		25	23	5 50.16	19	17.92	155	13.08	7.65			13	0	106	.08	9	.8	1.9	POL
		26	7	9 33.28	19	18.50	155	15.30	6.75			19	0	130	.12	6	.9	1.3	KOA
		26	1844	3.78	19	22.35	155	10.99	5.50	1.6		15	0	156	.08	7	1.0	.6	UER
		26	2030	15.30	19	19.54	155	11.88	7.79	1.7		21	0	91	.11	6	.7	1.3	UER
		26	2342	49.85	19	17.59	155	15.39	8.49	1.7		23	0	126	.09	6	.6	1.0	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	27	433	10.62	19	23.84	155	28.06	6.00	2.4		24	0	82	.15	14	.9	2.6	UKF
		27	437	53.01	19	20.00	155	10.66	8.75	1.8		22	0	86	.09	7	.7	1.5	UER
		27	11 6	38.36	19	25.61	155	16.84	1.82	.5		9	0	152	.12	2	1.2	.5	SPC
		27	1112	49.06	19	25.37	155	17.14	.68	1.4		14	0	138	.16	3	.9	.3	SPC
		27	1425	44.82	19	21.79	155	26.18	6.47	1.7		14	0	65	.09	10	.7	1.5	HEA
		27	15 6	24.44	19	21.56	155	24.25	5.87	1.6		12	0	140	.08	9	.9	1.5	SWR
		27	1544	43.38	19	24.94	155	16.93	2.01	3.0		24	0	39	.22	3	.8	4.0	SPC
		27	1558	24.54	19	25.29	155	16.94	.79	1.8		21	0	48	.15	2	.6	.3	SPC
		27	1612	37.89	19	24.23	155	15.93	1.82	.7		8	0	106	.05	2	.7	.3	SPC
		27	1659	2.69	19	22.57	155	3.98	4.09	2.7		7	0	342	.41	23	97.8	15.5	MER
		27	1841	55.00	19	22.14	155	24.93	7.65	1.7		17	0	76	.10	10	.7	1.7	UKF
		27	1852	9.40	19	19.10	155	13.69	6.64	2.1		26	0	67	.15	7	.8	1.4	UER
		27	1913	54.47	19	19.99	155	9.44	7.86	2.2		24	0	80	.12	8	.7	1.4	UER
		27	2044	32.83	19	19.92	155	9.16	5.98			17	0	129	.12	9	.8	1.8	UER
		27	2218	36.85	19	18.43	155	15.06	8.86			15	0	129	.03	6	.3	.9	KOA
		27	2234	23.47	19	23.18	155	22.77	7.87	1.7		20	0	53	.06	9	.4	1.1	UKF
		28	1 8	37.27	19	22.86	155	23.84	9.04			14	0	95	.06	7	.5	1.3	UKF
		28	125	48.31	19	22.09	155	24.62	8.18			12	0	132	.07	9	.9	2.2	UKF
		28	327	22.04	19	57.87	155	34.61	9.56	2.7		14	0	158	.05	28	.5	.2	KOH
		28	353	14.56	19	26.05	155	25.75	6.23	2.0		23	0	107	.12	9	.7	2.7	UKF
		28	549	39.21	19	19.71	155	15.32	7.34			17	0	94	.08	6	.6	1.4	KOA
		28	633	29.93	19	22.87	155	2.54	2.97			18	0	185	.18	14	1.7	2.9	MER
		28	1034	20.80	19	24.10	155	15.78	1.65	1.8		19	0	58	.09	3	.4	.2	SPC
		28	1345	16.19	19	22.07	155	25.59	9.39			12	0	152	.07	11	1.6	3.4	UKF
		28	15 8	37.08	19	29.07	155	22.47	11.90	2.1		19	0	101	.13	11	1.2	.5	NER
		28	1510	1.48	19	21.56	155	5.99	7.03			13	0	106	.11	9	1.2	3.6	MER
		28	21 3	35.81	19	18.52	155	15.26	7.13			19	0	129	.10	6	.7	1.2	KOA
		28	2155	3.34	19	24.75	155	16.41	.59	1.0		12	0	95	.12	2	.5	.3	SPC
		28	23 4	14.20	19	12.47	155	20.98	40.74			24	0	165	.08	15	1.2	3.0	HLP
		28	2341	57.61	19	22.30	155	25.27	8.28	1.7		23	0	53	.15	10	.9	2.1	UKF
		29	155	8.86	19	24.75	155	16.53	.88	.9		11	0	99	.09	2	.4	.5	SPC
		29	253	57.52	19	22.66	155	24.75	6.04	2.0		26	0	52	.11	9	.6	1.8	UKF
		29	357	26.60	19	22.44	155	24.43	12.08			13	0	117	.05	9	.7	.4	UKF
		29	1250	54.54	19	20.32	155	8.51	6.90			16	0	75	.14	9	1.0	1.9	UER
		29	1258	8.19	19	23.43	155	15.06	2.00	1.3		14	0	100	.10	3	.6	.0	SPC
		29	1320	20.84	19	17.98	155	14.66	7.46	1.7		18	0	139	.10	7	.7	1.1	POL
		29	15 1	53.14	19	21.80	155	25.31	8.51	1.7		13	0	108	.08	10	.7	1.7	HEA
		29	1935	45.80	19	45.55	155	47.82	19.77	2.7		17	0	154	.07	36	.7	1.9	KON
		29	2253	59.94	19	23.96	155	24.97	7.75	1.6		21	0	57	.07	9	.5	1.2	UKF
		30	023	46.79	19	19.77	155	10.55	11.84	1.8		15	0	91	.05	7	.5	.3	UER
		30	447	14.22	19	22.83	155	26.14	7.54	2.1		23	0	52	.12	11	.7	1.7	UKF
		30	510	43.53	19	18.61	155	13.52	7.40			12	0	84	.06	7	.6	1.9	POL
		30	514	1.93	19	50.05	155	21.24	8.86			13	0	129	.19	37	2.2	1.7	KKU
		30	522	3.76	19	27.10	155	35.30	.00	2.6		15	0	122	.10	23	.9	78.1	MOK
		30	8 1	42.81	19	21.96	155	24.87	9.09	1.7		19	0	58	.08	10	.5	1.3	SWR
		30	824	44.23	19	19.83	155	12.57	7.42	1.7		23	0	77	.12	6	.7	1.2	UER
		30	1031	41.69	19	21.38	155	25.70	9.79			28	0	72	.13	9	.7	.4	HEA
		30	13 9	24.01	19	22.21	155	25.08	9.81			17	0	78	.11	10	.8	.8	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUN	30	1641	21.87	19	24.58	155	16.20	.61			12	0	80	.13	2	.5	.4	SPC
		30	1938	1.26	19	19.04	155	13.59	9.65			19	0	80	.10	7	.8	3.1	UER
		30	2246	21.37	19	19.58	155	10.25	9.66			13	0	106	.05	7	.6	2.3	UER
		30	2351	35.63	19	21.34	155	25.71	9.44			23	0	73	.08	9	.4	.8	HEA
	JUL	1	0	4 19.69	19	22.40	155	10.55	5.24			20	0	97	.11	8	.7	.9	UER
		1	118	6.14	19	24.44	155	18.17	1.54			12	0	75	.10	3	.5	.3	SPC
		1	352	5.43	19	22.92	155	26.11	7.32			26	0	53	.15	11	.8	2.1	UKF
		1	1055	48.95	19	11.72	155	32.76	45.81			20	0	131	.07	23	1.0	2.8	LSW
		1	17	6 41.76	19	25.68	155	25.95	11.34			11	0	185	.04	10	1.5	5.1	UKF
		1	2041	33.35	19	21.62	155	25.39	7.07			16	0	68	.15	10	1.0	2.6	HEA
		1	2125	58.24	19	19.54	155	12.31	6.29	1.7		22	0	86	.16	6	.9	1.6	UER
		1	22	9 17.87	19	23.01	155	25.35	7.50	1.8		24	0	53	.11	10	.6	1.7	UKF
		1	2335	39.82	19	22.82	155	25.34	7.77	2.0		23	0	94	.11	10	.7	1.7	UKF
		2	015	13.83	19	22.88	155	24.76	11.96			10	0	109	.04	9	.6	3.6	UKF
		2	045	57.82	19	20.90	155	25.73	9.27	1.8		25	0	77	.10	8	.5	.8	HEA
		2	1	3 23.37	19	22.53	155	23.68	6.90			10	0	98	.06	7	.6	2.5	UKF
		2	1	5 19.96	19	19.20	155	11.74	7.91			12	0	100	.05	7	.5	2.2	UER
		2	1	7 58.87	19	18.31	155	13.30	7.19			11	0	86	.05	8	.5	1.5	POL
		2	1	8 17.94	19	25.18	155	24.36	7.24	2.0		20	0	101	.10	9	.7	1.9	UKF
		2	452	13.70	19	27.99	155	34.78	.01	2.5		15	0	105	.13	20	1.2	1.4	MOK
		2	541	27.28	19	18.65	155	13.39	7.76	1.7		23	0	78	.11	8	.7	1.6	POL
		2	551	29.94	19	24.14	155	17.22	17.06	1.7		20	0	45	.12	4	.8	1.6	DEP
		2	553	54.29	19	23.54	155	28.54	8.98	1.9		25	0	59	.13	15	.8	1.5	UKF
		2	1536	33.49	19	22.50	155	18.12	29.01			17	0	59	.06	4	1.1	2.6	DEP
		2	1555	5.29	19	23.11	155	14.64	29.75			17	0	84	.05	3	1.0	1.7	DEP
		2	1648	13.00	19	22.08	155	23.58	8.90			11	0	86	.05	7	.5	1.5	UKF
		2	1726	41.53	19	19.08	155	15.65	5.98			19	0	113	.12	6	.8	1.7	KOA
		2	1755	39.80	19	22.18	155	25.27	7.07	1.7		24	0	54	.13	10	.7	1.9	UKF
		2	1913	22.65	19	25.57	155	16.74	.54	1.5		18	0	96	.18	2	.7	.3	SPC
		2	1926	29.94	19	22.01	155	25.62	9.98	2.2		24	0	60	.07	11	.4	.2	UKF
		2	1945	48.82	19	18.21	155	23.43	4.66	1.7		15	0	109	.08	8	.6	1.5	SWR
		2	2117	.08	19	22.21	155	25.54	8.20	1.7		15	0	103	.07	11	.7	1.5	UKF
		3	357	8.32	19	22.30	155	17.93	1.98	1.0		14	0	76	.08	4	.5	99.0	KOA
		3	1658	27.35	19	25.54	155	16.76	1.84	.9		11	0	148	.10	2	.9	.4	SPC
		3	2132	27.93	19	20.12	155	12.14	7.77	1.7		24	0	77	.10	6	.6	1.0	UER
		3	2159	45.57	19	23.75	155	23.98	10.23	1.8		18	0	70	.04	7	.3	1.4	UKF
		4	041	12.99	19	19.68	155	19.54	4.30	1.8		7	0	125	.07	7	2.1	7.4	SWR
		4	055	39.99	19	22.54	155	24.80	9.86	1.9		21	0	88	.08	9	.6	.4	UKF
		4	130	13.30	19	19.92	155	6.13	8.79			10	0	148	.07	8	1.4	2.6	UER
		4	357	21.58	19	18.17	155	13.09	7.01			11	0	98	.06	8	.7	2.1	POL
		4	442	48.33	19	21.71	155	29.38	11.00	2.0		16	0	140	.09	11	1.1	.6	HEA
		4	6	4 18.45	19	12.07	155	4.06	48.89	2.6		29	0	218	.09	19	1.7	3.1	DIS
		4	1913	51.95	19	20.39	155	11.95	11.79			18	0	110	.08	7	.9	.6	UER
		4	21	7 27.20	19	22.04	155	23.28	8.79			12	0	83	.05	8	.4	1.4	UKF
		4	2129	59.81	19	24.32	155	17.44	12.74			11	0	111	.08	4	1.2	.5	LPC
		5	045	41.46	19	19.13	155	12.00	9.88			13	0	99	.05	8	.6	2.6	UER
		5	217	15.59	19	16.79	155	13.19	7.56			16	0	199	.09	10	1.0	1.8	POL
		5	234	20.86	19	21.82	155	25.58	8.71			19	0	66	.08	10	.6	1.4	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	5	414	34.53	19	19.19	155	11.87	9.03			13	0	99	.04	7	.5	1.5	UER
		5	534	27.18	19	19.81	155	10.11	7.00			15	0	110	.10	7	1.0	2.0	UER
		5	1827	14.11	19	20.56	155	13.84	7.70	1.6		22	0	81	.15	6	1.0	1.7	UER
		5	2135	51.83	19	22.21	155	26.42	5.91	1.7		15	0	63	.10	12	.8	1.4	UKF
		5	22 0	56.86	19	19.05	155	7.47	7.02			11	0	231	.13	11	8.5	10.0	UER
		5	2258	20.09	19	21.66	155	25.33	8.48			12	0	112	.07	11	.6	1.4	HEA
		6	126	1.86	19	34.42	155	5.21	5.52			12	0	199	.13	24	3.5	15.6	HIL
		6	127	16.48	19	17.72	155	12.90	7.83			10	0	123	.07	9	1.2	2.5	POL
		6	733	41.20	19	22.91	155	4.76	.43			16	0	141	.12	12	1.0	99.0	MER
		6	837	19.42	19	27.02	155	37.75	5.52			12	0	219	.10	22	3.1	5.9	MOK
		6	841	58.69	19	25.84	155	37.25	4.54	2.2		11	0	200	.07	20	1.6	1.8	MOK
		6	1455	58.87	19	22.51	155	26.62	5.99	1.7		15	0	114	.13	11	1.1	2.3	UKF
		6	21 1	48.94	19	22.15	155	24.54	7.66			14	0	128	.08	9	1.1	2.8	UKF
		6	23 1	37.27	19	20.80	155	25.50	8.23			14	0	116	.07	8	.7	2.0	HEA
		6	2320	31.53	19	20.47	155	19.32	1.63	1.3		14	0	75	.06	7	.4	99.0	SWR
		7	251	1.32	19	19.31	155	13.30	11.03			16	0	73	.09	7	1.0	4.2	UER
		7	348	15.76	19	22.28	155	28.55	9.64			15	0	64	.08	11	.7	.6	UKF
		7	513	41.49	19	22.72	155	26.34	11.83			18	0	122	.07	12	.8	.5	UKF
		7	6 6	19.20	20	7.69	155	32.63	6.05			14	0	279	.08	72	5.1	.0	KOH
		7	856	59.66	19	22.71	155	25.13	9.90			20	0	90	.14	10	1.0	1.1	UKF
		7	1713	34.94	19	19.81	155	8.83	9.13			16	0	98	.08	9	.8	1.7	UER
		7	2115	17.10	19	29.05	155	28.74	7.47	2.4		19	0	92	.09	13	.7	2.6	MER
		7	22 6	45.07	19	19.46	155	15.66	8.25	1.6		19	0	102	.08	6	.6	1.2	KOA
		8	0 4	12.49	19	18.19	155	13.73	8.82			17	0	99	.10	8	.9	2.4	POL
		8	251	6.69	19	25.13	155	23.41	9.58	3.2		32	0	43	.13	9	.6	.3	UKF
		8	441	2.72	19	22.82	155	23.55	8.23	1.6		18	0	90	.07	7	.6	1.7	UKF
		8	940	36.57	19	20.15	155	18.26	29.26	2.1		21	0	65	.09	6	1.3	2.2	DEP
		8	1140	34.06	19	20.39	155	8.82	8.66	2.6		30	0	70	.13	9	.7	.8	UER
		8	1151	58.13	19	22.47	155	4.19	8.23	2.6		28	0	148	.12	12	.8	1.1	MER
		8	1233	22.97	19	22.27	155	25.08	7.90	1.7		13	0	96	.08	10	.6	1.6	UKF
		8	1245	23.67	19	21.53	155	15.65	13.47	2.3		26	0	63	.12	4	.8	1.1	DEP
		8	1317	8.36	19	22.84	155	25.48	9.63	2.1		24	0	53	.14	10	.9	.6	UKF
		8	2032	31.25	19	11.97	155	36.83	10.10	2.9		29	0	114	.17	25	1.2	.5	HEA
		9	1146	51.00	19	19.94	155	25.64	9.18	2.4		26	0	85	.13	7	.6	.7	HEA
		9	1442	34.97	19	42.69	155	1.36	51.75	3.1		12	0	243	.13	40	5.5	30.0	BLS
		9	1821	35.45	19	20.22	155	19.56	1.62			9	0	111	.06	6	.6	99.0	SWR
		9	21 5	27.13	19	24.80	155	17.86	5.04	1.2		15	0	66	.11	3	.7	1.1	SPC
		10	012	1.43	19	22.39	155	2.65	7.32	2.1		19	0	193	.12	13	1.2	1.1	MER
		10	044	32.09	19	28.14	155	28.12	8.67	1.9		21	0	83	.09	13	.6	2.0	UKF
		10	057	28.38	19	22.97	155	1.00	3.30	2.1		13	0	160	.18	15	1.8	3.8	MER
		10	2 5	32.53	19	19.91	155	11.13	10.77			13	0	96	.06	7	.6	2.8	UER
		10	334	44.32	19	45.95	155	54.94	2.41			6	1	341	.06	69	61.3	19.9	KON
		10	435	4.02	19	24.57	155	16.29	.99	.5		8	0	88	.07	2	.2	.4	SPC
		10	633	28.92	19	25.64	155	16.66	1.80	.8		10	0	156	.10	2	.9	.4	SPC
		10	745	26.23	20	.89	155	23.33	4.91	2.7		18	1	260	.12	51	1.2	1.2	KKU
		10	817	10.81	19	21.39	155	25.46	7.34	1.7		11	0	183	.12	14	1.8	3.4	HEA
		10	841	50.45	19	18.22	155	13.37	7.13	1.7		16	0	85	.09	9	.7	1.7	POL
		10	1014	44.65	19	19.93	155	12.15	9.23	1.7		22	0	80	.11	6	.8	1.7	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	10	1028	47.42	19	24.75	155	16.50	1.29	1.2		12	0	98	.11	2	.5	.4	SPC
		10	1143	43.66	19	25.81	155	16.08	3.03	1.3		10	0	191	.16	3	2.3	3.4	SPC
		10	1222	31.16	19	24.67	155	25.39	6.73	2.2		19	0	87	.11	10	.8	2.3	UKF
		10	1437	27.91	19	24.57	155	17.63	14.32			13	0	111	.05	8	.6	1.1	DEP
		10	1523	20.32	19	18.48	155	16.28	7.39	1.8		23	0	112	.09	6	.5	1.0	KOA
		10	1649	21.55	19	19.66	155	9.68	8.43	1.8		15	0	117	.10	8	1.0	1.4	UER
		10	1751	48.52	19	24.54	155	17.78	2.00	1.1		14	0	70	.16	2	.9	.0	SPC
		11	134	15.97	19	23.38	155	24.74	7.09	1.8		25	0	55	.14	9	.8	1.6	UKF
		11	340	4.56	19	24.95	155	28.87	11.85	1.9		20	0	85	.09	13	.7	.4	UKF
		11	348	46.10	19	22.62	155	23.00	7.21	1.5		13	0	82	.04	8	.5	1.0	UKF
		11	415	13.14	19	24.28	155	17.46	2.00	.9		10	0	76	.12	2	.9	.0	SPC
		11	427	47.23	19	22.47	155	16.77	24.33			19	0	73	.09	3	1.1	1.9	DEP
		11	5	3 38.43	19	37.80	155	5.66	10.39	2.5		25	0	87	.12	27	.9	.4	HIL
		11	510	32.51	19	38.01	155	5.95	8.44	2.2		19	0	86	.11	28	1.4	6.3	HIL
		11	519	59.47	19	22.88	155	26.41	8.01	2.6		31	0	54	.17	12	.8	1.1	UKF
		11	551	11.12	19	20.43	155	10.40	6.75	1.7		16	0	110	.12	7	.9	1.5	UER
		11	628	23.78	19	24.35	155	17.90	1.44	.9		11	0	71	.09	2	.4	.3	SPC
		11	711	41.09	19	24.38	155	17.71	1.18	1.0		13	0	65	.12	2	.5	.5	SPC
		11	716	53.55	19	24.41	155	17.46	1.26	.6		10	0	97	.07	2	.6	.3	SPC
		11	745	18.91	19	25.95	155	26.45	11.29	2.0		14	0	200	.03	11	1.1	3.4	UKF
		11	8	4 42.96	19	25.73	155	17.10	2.04	1.5		16	0	97	.08	3	.5	2.2	SPC
		11	917	28.35	19	20.20	155	17.31	32.12	2.2		17	0	87	.07	5	1.5	1.9	DEP
		11	1015	22.69	19	24.97	155	25.30	10.92	1.7		15	0	133	.10	9	.9	1.0	UKF
		11	1116	10.08	19	24.78	155	16.38	.51	.9		10	0	98	.09	2	.4	.2	SPC
		11	1417	17.69	19	29.57	155	27.13	6.09	2.7		20	0	91	.18	13	1.0	3.2	NER
		11	1731	40.42	19	24.64	155	16.85	.70	.2		8	0	81	.07	2	.5	.3	SPC
		11	22	3 20.44	19	24.11	155	15.94	1.54	.7		12	0	60	.07	2	.3	.2	SPC
		11	2224	32.79	19	24.35	155	17.52	1.36	.3		9	0	102	.06	2	.5	.2	SPC
		11	2336	52.75	19	22.23	155	24.97	9.15	2.0		23	0	78	.12	10	.8	1.2	UKF
		12	4	8 17.61	19	25.27	155	16.69	1.84	.7		10	0	131	.13	2	1.5	.4	SPC
		12	448	20.08	19	21.78	155	10.73	31.87	2.2		27	0	59	.11	8	1.2	2.1	UER
		12	655	21.05	19	25.64	155	28.49	9.54	1.9		18	0	113	.11	14	1.0	4.7	UKF
		12	1416	52.14	19	23.19	155	27.22	8.51	1.8		18	0	83	.11	13	.9	2.0	UKF
		12	1532	59.07	19	27.88	155	43.69	9.43	3.0		24	0	64	.13	27	.8	.8	MOK
		12	18	6 50.66	19	24.53	155	16.49	.62	1.1		12	0	89	.10	2	.4	.2	SPC
		12	1929	11.66	19	24.58	155	16.48	1.12	.9		10	0	92	.06	2	.2	.3	SPC
		12	2036	56.15	19	24.80	155	29.42	8.85	1.9		23	0	59	.15	14	.9	2.1	UKF
		12	2248	24.61	19	24.68	155	16.27	1.18	.8		10	0	95	.07	2	.4	.3	SPC
		13	026	44.57	19	25.54	155	16.85	1.77	.6		13	0	148	.11	2	.9	.4	SPC
		13	3	7 8.47	19	19.71	155	8.84	7.12			17	0	78	.11	9	.6	1.9	UER
		13	546	47.77	19	24.03	155	15.79	1.44	1.2		13	0	65	.08	3	.4	.3	SPC
		13	637	46.55	19	21.62	155	15.33	9.79	3.1		27	0	62	.09	4	.5	.4	KOA
		13	839	4.09	19	20.01	155	7.84	11.45	1.9		18	0	91	.07	9	.7	.4	UER
		13	1829	52.72	19	25.94	155	24.00	10.34	1.6		17	0	126	.06	9	.5	.5	UKF
		13	2016	4.39	19	21.99	155	26.51	8.31	1.8		22	0	72	.11	10	.7	1.7	HEA
		13	2219	47.35	19	17.82	155	13.18	6.33	1.7		14	0	103	.08	9	.8	1.9	POL
		13	2239	50.44	19	19.96	155	5.97	6.88	1.9		22	0	125	.12	8	.8	1.2	MER
		14	6	5 11.05	19	18.77	155	10.82	11.84			17	0	118	.07	6	.7	.4	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	14	628	1.10	19	24.43	155	17.57	2.00	1.3		15	0	65	.14	2	.7	.0	SPC
		14	740	47.42	19	27.34	155	27.34	8.57	1.8		19	0	76	.13	12	.9	2.9	UKF
		14	11 5	43.42	19	25.61	155	16.70	1.85	.5		11	0	153	.11	2	.9	.4	SPC
		14	1125	39.96	19	25.34	155	16.94	1.67	1.0		14	0	122	.11	2	.6	.3	SPC
		14	13 4	2.42	19	24.18	155	16.18	1.81	1.6		16	0	67	.07	2	.3	.2	SPC
		14	16 5	6.56	19	30.50	155	26.75	4.99	2.2		16	0	95	.08	15	.5	.9	NER
		14	16 9	30.75	19	25.49	155	16.72	1.64	.9		11	0	145	.11	2	.8	.4	SPC
		14	1741	48.22	19	30.31	155	26.52	5.50	2.5		25	0	89	.10	15	.6	1.7	NER
		14	1914	40.14	19	19.41	155	11.81	9.90			14	0	94	.05	6	.6	2.7	UER
		14	1915	33.71	19	23.94	155	15.92	2.00	1.2		11	0	63	.14	3	1.0	.0	SPC
		14	2324	3.25	19	19.51	155	10.57	7.63	1.8		16	0	115	.09	7	.9	1.3	UER
		15	0 8	.98	19	23.02	155	16.54	25.23	2.0		24	0	42	.08	2	1.0	1.7	DEP
		15	348	24.22	19	20.47	155	8.82	7.03			17	0	70	.09	8	.8	1.2	UER
		15	728	57.25	19	23.89	155	17.01	1.61	.6		9	0	93	.05	2	.5	.2	SPC
		15	1023	23.21	19	21.10	155	25.95	8.88	2.1		19	0	74	.12	9	.8	1.8	HEA
		15	1819	50.32	19	23.76	155	2.87	6.86	2.3		20	0	177	.11	13	.9	2.6	MER
		15	1929	54.33	19	21.56	155	25.39	9.72	1.8		17	0	69	.08	10	.6	1.2	HEA
		15	1949	24.39	19	19.57	155	11.37	10.59	1.8		14	0	94	.04	6	.4	1.9	UER
		15	2042	12.75	19	27.34	155	35.82	2.60	3.2		26	0	56	.18	23	1.0	2.6	MOK
		15	2248	20.35	19	18.48	155	12.61	7.67			14	0	105	.07	8	.6	1.8	POL
		16	712	50.44	19	22.85	155	22.63	6.41			11	0	89	.05	9	.5	1.9	UKF
		16	9 0	35.23	19	19.62	155	10.81	5.96	1.7		19	0	98	.12	7	.8	1.9	UER
		16	933	56.37	19	19.72	155	6.59	7.33			14	0	122	.10	7	1.0	2.6	UER
		16	947	40.89	19	19.03	155	15.28	6.96	1.6		21	0	112	.12	6	.8	1.7	KOA
		16	1142	26.96	19	28.54	155	38.77	5.71	2.3		14	0	115	.22	25	2.0	5.5	MOK
		16	1516	35.69	19	18.83	155	15.46	6.50	1.6		19	0	120	.12	6	.9	2.0	KOA
		16	1557	55.01	19	25.44	155	23.95	10.88	1.7		14	0	79	.04	8	.4	2.0	UKF
		16	1721	10.86	19	18.96	155	13.65	8.49			15	0	83	.07	7	.7	1.7	POL
		16	1726	32.18	19	30.17	155	39.39	7.75	2.5		12	0	96	.15	28	1.4	3.7	MOK
		16	2044	46.31	19	23.76	155	15.24	1.45	.9		10	0	85	.05	3	.3	.2	SPC
		16	2055	35.64	19	20.38	155	13.01	8.07			16	0	65	.05	6	.4	.7	UER
		16	2148	10.68	19	23.66	155	2.54	3.27			19	0	127	.21	13	1.5	4.0	MER
		17	0 0	57.83	19	25.14	155	22.95	7.50	1.5		15	0	104	.05	9	.3	.5	UKF
		17	329	49.82	19	25.10	155	16.74	1.74	.8		11	0	121	.11	2	.8	.4	SPC
		17	621	47.26	19	18.93	155	15.52	6.97	1.6		24	0	97	.09	6	.5	.8	KOA
		17	720	8.78	19	18.18	155	13.41	5.63			14	0	85	.09	8	.7	1.9	POL
		17	750	1.72	19	18.45	155	13.15	7.58			12	0	89	.06	8	.7	1.9	POL
		17	1010	48.30	19	20.86	155	12.20	8.02	1.6		23	0	70	.17	7	1.1	1.9	UER
		17	1319	50.02	19	23.26	155	1.31	9.43	2.1		12	0	206	.13	15	2.1	1.5	MER
		17	14 9	6.15	19	17.90	155	6.69	40.55			14	0	250	.03	18	1.7	2.3	POL
		17	14 9	47.30	19	18.41	155	13.42	7.54	1.7		22	0	81	.11	8	.8	1.5	POL
		17	1526	37.82	19	18.23	155	13.37	8.99	1.7		16	0	85	.09	8	.7	1.4	POL
		17	16 0	38.11	19	19.31	155	15.78	7.25	2.1		27	0	92	.10	6	.5	.7	KOA
		17	17 0	15.54	19	21.50	155	25.83	11.16			14	0	71	.07	10	.6	2.3	HEA
		17	1818	58.09	19	24.51	155	29.44	8.67	2.2		19	0	59	.16	14	.9	1.5	UKF
		17	2345	35.05	19	22.01	155	25.08	8.91	1.7		18	0	58	.07	10	.6	1.4	UKF
		18	0 0	54.54	19	23.93	155	17.00	1.61	.7		12	0	64	.11	2	.7	.3	SPC
		18	119	5.61	19	22.79	155	24.22	11.55			12	0	103	.04	5	.6	3.1	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	18	129	18.71	19	18.41	155	13.32	6.56			17	0	84	.10	8	.8	1.9	POL
		18	343	36.22	19	19.88	155	19.77	1.32	1.4		15	0	125	.05	6	.3	99.0	SWR
		18	1111	58.38	19	20.76	155	11.45	8.73	2.4		25	0	71	.11	8	.6	1.1	UER
		18	2030	34.03	19	24.07	155	15.71	2.01	.8		9	0	66	.06	3	.4	38.0	SPC
		18	2320	44.90	19	24.34	155	17.33	16.54	1.7		19	0	71	.10	4	.8	1.4	DEP
		18	2338	17.94	19	20.11	155	12.48	7.10	1.9		22	0	74	.14	6	.8	1.4	UER
		19	3	2 6.16	19	23.40	155	14.92	2.00			10	0	101	.08	3	.6	.0	GLN
		19	3	5 54.04	19	23.43	155	15.19	2.00			11	0	100	.11	3	.8	.0	SPC
		19	319	30.48	19	23.59	155	15.18	2.10	1.3		16	0	94	.12	3	.6	18.0	SPC
		19	320	42.64	19	23.48	155	15.19	2.00			12	0	98	.11	3	.7	.0	SPC
		19	323	1.95	19	23.39	155	14.94	1.35	1.0		10	0	101	.04	3	.2	.1	GLN
		19	326	19.14	19	23.49	155	15.14	1.47			11	0	98	.09	3	.5	.3	SPC
		19	333	20.21	19	23.55	155	15.10	2.44	1.3		17	0	51	.07	3	.4	2.7	SPC
		19	334	6.31	19	23.51	155	15.21	1.51	1.0		11	0	97	.08	3	.5	.3	SPC
		19	334	55.57	19	23.48	155	15.07	1.01	1.0		13	0	97	.10	3	.4	.5	SPC
		19	337	6.35	19	23.56	155	15.09	2.00	1.0		11	0	96	.13	3	.9	.0	SPC
		19	337	23.52	19	23.31	155	14.88	2.00			10	0	104	.10	3	.8	.0	GLN
		19	337	55.20	19	23.45	155	15.10	1.36	1.0		13	0	98	.08	3	.4	.2	SPC
		19	338	34.54	19	23.30	155	14.82	2.00			10	0	105	.10	3	.8	.0	GLN
		19	339	.46	19	23.42	155	14.94	1.67	1.3		14	0	98	.07	3	.4	.2	GLN
		19	339	48.10	19	23.46	155	15.06	1.17	1.0		13	0	99	.11	3	.4	.4	SPC
		19	340	.52	19	23.60	155	15.26	1.52	1.2		14	0	91	.09	3	.5	.3	SPC
		19	340	45.16	19	23.55	155	15.04	2.00			11	0	96	.12	3	.9	.0	SPC
		19	341	12.94	19	23.42	155	15.02	2.00	1.0		11	0	101	.11	3	.8	.0	SPC
		19	343	7.31	19	23.45	155	15.08	1.45	1.0		12	0	99	.06	3	.4	.2	SPC
		19	345	9.40	19	23.52	155	14.87	1.43	1.0		12	0	94	.06	3	.4	.3	GLN
		19	345	59.50	19	23.56	155	14.78	1.36	1.0		12	0	160	.05	3	.4	.2	GLN
		19	346	23.14	19	23.63	155	15.11	2.00	1.0		12	0	94	.15	3	1.1	.0	SPC
		19	4	7 38.62	19	23.49	155	14.72	2.82	1.6		13	0	159	.10	3	.9	3.7	GLN
		19	411	12.05	19	23.21	155	14.94	.50	2.5		14	0	105	.16	7	1.0	6.4	GLN
		19	417	15.33	19	23.44	155	15.07	1.12	1.6		17	0	109	.12	3	.6	.5	SPC
		19	424	31.60	19	23.51	155	15.25	1.51	.9		13	0	95	.09	3	.5	.4	SPC
		19	425	57.84	19	23.62	155	15.21	1.39	1.4		16	0	52	.05	3	.2	.2	SPC
		19	428	42.08	19	23.54	155	15.19	2.00	1.0		13	0	95	.17	3	1.1	.0	SPC
		19	429	5.02	19	23.62	155	15.36	1.48	1.2		14	0	88	.10	3	.5	.3	SPC
		19	431	24.39	19	23.56	155	15.32	2.00	.9		13	0	91	.13	3	.8	.0	SPC
		19	435	36.18	19	23.67	155	15.16	1.42			10	0	91	.07	3	.4	.3	SPC
		19	438	55.93	19	23.62	155	15.36	1.36	.9		14	0	88	.10	3	.4	.3	SPC
		19	444	49.92	19	23.68	155	15.31	1.56	1.9		21	0	48	.10	3	.4	.2	SPC
		19	447	41.65	19	23.53	155	15.30	1.54	.9		13	0	93	.08	3	.4	.2	SPC
		19	450	55.93	19	23.13	155	15.05	2.00	1.0		12	0	111	.20	3	1.3	.0	SPC
		19	452	48.23	19	23.67	155	15.22	1.42	.9		10	0	90	.05	3	.3	.2	SPC
		19	455	27.17	19	23.60	155	15.12	2.00			10	0	95	.09	3	.7	.0	SPC
		19	5	0 3.02	19	23.49	155	15.03	.50	2.7		20	0	52	.16	3	.4	1.9	SPC
		19	5	2 20.32	19	23.67	155	15.26	1.49			9	0	89	.06	3	.4	.2	SPC
		19	5	4 58.64	19	23.63	155	15.15	1.64			9	0	93	.08	3	.6	.4	SPC
		19	511	7.97	19	23.57	155	15.45	1.76	.9		12	0	87	.12	3	.8	.5	SPC
		19	512	19.22	19	23.63	155	15.41	2.00	.9		11	0	86	.13	3	.9	.0	SPC

YEAR	MON	ORIGIN TIME DA	HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	19	514	6.09	19	23.54	155	15.23	2.00	1.0		11	0	95	.14	3	1.0	.0	SPC
		19	514	29.70	19	23.91	155	15.34	2.00	.9		10	0	78	.12	3	.9	.0	SPC
		19	519	9.43	19	23.53	155	15.24	1.07			10	0	95	.08	3	.4	.5	SPC
		19	520	14.39	19	23.48	155	15.06	1.44	1.0		10	0	98	.04	3	.3	.2	SPC
		19	520	37.79	19	23.15	155	15.00	2.00	1.0		9	0	111	.16	3	1.4	.0	SPC
		19	523	27.86	19	23.60	155	15.16	1.46			13	0	94	.08	3	.4	.3	SPC
		19	524	27.34	19	23.70	155	15.27	1.23			10	0	87	.06	3	.3	.3	SPC
		19	528	30.61	19	23.80	155	15.25	1.58	1.2		15	0	84	.08	3	.4	.2	SPC
		19	529	18.46	19	23.54	155	15.08	1.49	1.0		10	0	97	.08	3	.5	.3	SPC
		19	530	19.33	19	23.63	155	15.17	2.20			9	0	92	.06	3	.3	5.2	SPC
		19	530	45.60	19	23.58	155	15.02	1.89			9	0	95	.12	3	1.1	99.0	SPC
		19	534	29.44	19	23.52	155	15.00	2.24			10	0	97	.06	3	.4	5.3	SPC
		19	535	12.91	19	23.65	155	15.20	1.56	1.5		20	0	53	.09	3	.4	.2	SPC
		19	536	16.53	19	23.90	155	15.42	1.10			10	0	76	.10	3	.5	.6	SPC
		19	537	15.99	19	23.47	155	15.14	1.10			10	0	99	.07	3	.3	.4	SPC
		19	537	44.70	19	23.72	155	15.22	1.74	2.0		24	0	49	.11	3	.4	.4	SPC
		19	539	28.26	19	23.88	155	15.14	3.41	1.0		9	0	83	.09	3	.4	1.6	SPC
		19	544	18.87	19	23.72	155	15.24	1.01			10	0	87	.06	3	.3	.4	SPC
		19	544	54.54	19	23.30	155	14.67	3.24			10	0	104	.12	3	.7	3.0	GLN
		19	553	3.68	19	23.59	155	15.21	.13	2.1		20	0	50	.11	3	.3	.2	SPC
		19	557	24.17	19	23.54	155	15.04	2.00	1.0		10	0	96	.09	3	.7	.0	SPC
		19	559	10.90	19	23.73	155	15.22	1.61			9	0	87	.06	3	.3	.2	SPC
		19	6	1 57.77	19	23.85	155	15.51	1.40	1.1		13	0	114	.12	3	.7	.4	SPC
		19	6	3 11.82	19	23.51	155	15.05	1.75			9	0	98	.07	3	.6	.3	SPC
		19	6	3 39.09	19	23.50	155	14.83	2.00	1.0		9	0	98	.09	3	.7	.0	GLN
		19	6	6 25.09	19	23.46	155	15.02	2.51	1.0		12	0	97	.05	3	.4	2.3	SPC
		19	6	8 15.08	19	23.59	155	15.09	1.39			10	0	95	.08	3	.5	.3	SPC
		19	610	1.98	19	23.55	155	15.21	2.00			11	0	95	.11	3	.8	.0	SPC
		19	610	35.59	19	23.43	155	14.95	1.47			9	0	100	.07	3	.6	.4	GLN
		19	610	51.68	19	23.23	155	14.83	2.00			10	0	107	.09	3	.7	.0	GLN
		19	612	47.57	19	23.71	155	15.15	2.62			8	0	89	.04	3	.1	.7	SPC
		19	613	33.83	19	23.63	155	15.29	1.32	1.4		14	0	65	.09	3	.4	.3	SPC
		19	618	1.62	19	23.40	155	14.94	1.49			10	0	101	.08	3	.6	.4	GLN
		19	618	41.60	19	23.54	155	15.21	1.74	1.3		17	0	51	.08	3	.3	.3	SPC
		19	620	43.53	19	23.88	155	15.40	1.08	.9		10	0	89	.14	3	.7	.8	SPC
		19	621	48.83	19	23.63	155	15.11	1.96			9	0	94	.06	3	.5	.0	SPC
		19	623	9.20	19	23.79	155	15.20	1.11	.9		11	0	85	.09	3	.4	.5	SPC
		19	623	50.20	19	23.79	155	15.23	1.31	1.5		19	0	96	.11	3	.4	.4	SPC
		19	624	55.58	19	23.50	155	15.17	2.00	1.0		10	0	98	.12	3	.8	.0	SPC
		19	625	8.30	19	23.50	155	15.31	.90	1.4		14	0	94	.11	3	.4	.4	SPC
		19	625	49.55	19	23.70	155	15.19	1.70	2.1		21	0	50	.10	3	.4	.3	SPC
		19	627	45.92	19	23.50	155	15.32	1.96	1.3		13	0	94	.10	3	.6	.0	SPC
		19	633	20.32	19	23.50	155	15.26	1.45	1.7		13	0	96	.07	3	.4	.2	SPC
		19	634	39.89	19	23.28	155	15.52	2.00	1.0		11	0	96	.15	3	1.0	.0	SPC
		19	635	13.73	19	23.62	155	15.23	1.26	.9		12	0	91	.08	3	.4	.3	SPC
		19	635	33.93	19	23.64	155	15.10	1.36	1.6		15	0	92	.07	3	.3	.2	SPC
		19	636	31.16	19	23.63	155	15.35	1.45	1.4		15	0	64	.10	3	.5	.3	SPC
		19	636	57.09	19	23.55	155	15.49	1.61	.9		14	0	86	.08	3	.4	.3	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	19	639	46.02	19	23.51	155	15.24	1.51	.9		11	0	96	.08	3	.4	.3	SPC
		19	640	22.69	19	23.56	155	15.20	2.00			12	0	95	.13	3	.9	.0	SPC
		19	644	48.36	19	23.85	155	15.27	1.98	.9		12	0	82	.11	3	.7	99.0	SPC
		19	645	56.45	19	23.62	155	15.22	1.54	.9		10	0	91	.05	3	.3	.2	SPC
		19	648	21.44	19	23.50	155	15.25	1.52			10	0	96	.07	3	.5	.3	SPC
		19	649	4.22	19	23.58	155	15.19	1.36			10	0	94	.08	3	.5	.3	SPC
		19	649	37.23	19	23.75	155	15.36	1.59	.9		12	0	99	.10	3	.6	.3	SPC
		19	651	11.44	19	23.51	155	15.50	1.96	.9		12	0	89	.09	3	.6	.0	SPC
		19	652	40.62	19	23.40	155	14.89	2.00	1.0		10	0	101	.12	3	.9	.0	GLN
		19	653	42.78	19	23.69	155	15.17	.89	.9		12	0	90	.09	3	.4	.5	SPC
		19	654	23.27	19	23.41	155	14.95	1.04			10	0	101	.07	3	.5	.3	GLN
		19	7	2 30.55	19	24.06	155	15.68	2.00			9	0	67	.09	3	.8	.0	SPC
		19	7	2 58.87	19	23.70	155	15.46	1.44	.9		12	0	82	.09	3	.4	.4	SPC
		19	7	5 35.67	19	23.63	155	15.26	1.35			9	0	90	.09	3	.5	.4	SPC
		19	7	5 54.62	19	23.95	155	15.39	2.00	.9		10	0	76	.10	3	.7	.0	SPC
		19	7	6 38.62	19	23.72	155	15.16	1.93			10	0	89	.12	3	.9	99.0	SPC
		19	7	8 44.71	19	23.64	155	15.20	2.00	1.0		10	0	91	.10	3	.7	.0	SPC
		19	7	9 29.02	19	23.83	155	15.52	.88	.8		10	0	76	.09	3	.4	.7	SPC
		19	711	14.23	19	23.70	155	15.28	2.00			10	0	87	.10	3	.7	.0	SPC
		19	716	.15	19	23.70	155	15.46	2.00	.9		11	0	82	.13	3	.9	.0	SPC
		19	719	29.48	19	23.43	155	15.05	1.39	1.0		11	0	100	.08	3	.5	.3	SPC
		19	721	21.42	19	23.06	155	14.72	2.00	1.1		9	0	115	.22	3	2.0	.0	GLN
		19	723	36.63	19	24.38	155	15.79	2.00	1.9		18	0	58	.22	2	1.1	.0	SPC
		19	725	14.42	19	23.81	155	15.40	1.23	.9		11	0	80	.10	3	.4	.5	SPC
		19	725	52.76	19	23.39	155	14.85	.11			11	0	101	.12	3	.4	.4	GLN
		19	730	41.27	19	23.40	155	14.89	1.42	1.5		16	0	83	.07	3	.5	.2	GLN
		19	731	7.91	19	23.71	155	15.34	.76	2.1		19	0	55	.09	3	.3	1.2	SPC
		19	731	55.85	19	23.52	155	15.20	.25	1.2		12	0	96	.06	3	.1	.1	SPC
		19	734	40.38	19	23.95	155	15.45	2.00			9	0	75	.10	3	.8	.0	SPC
		19	735	16.68	19	24.24	155	15.29	2.00	1.2		11	0	126	.23	3	1.9	.0	SPC
		19	736	33.25	19	23.72	155	15.22	2.00			11	0	88	.11	3	.8	.0	SPC
		19	741	34.81	19	24.07	155	15.63	1.87			9	0	68	.06	3	.5	.4	SPC
		19	742	58.71	19	23.77	155	15.35	2.00	.9		11	0	83	.11	3	.8	.0	SPC
		19	744	21.01	19	23.45	155	15.01	1.35			11	0	100	.08	3	.4	.3	SPC
		19	753	6.95	19	24.23	155	15.49	2.00	1.1		14	0	76	.19	2	1.1	.0	SPC
		19	755	25.07	19	25.28	155	29.08	8.46	2.2		25	0	109	.18	14	1.3	2.2	UKF
		19	757	17.06	19	23.85	155	15.27	2.00	.9		10	0	82	.10	3	.7	.0	SPC
		19	757	32.78	19	23.90	155	15.32	2.00			10	0	79	.12	3	.8	.0	SPC
		19	758	56.87	19	23.62	155	15.08	2.00	1.5		17	0	51	.21	3	1.0	.0	SPC
		19	8	2 20.18	19	23.78	155	15.45	.24	1.1		11	0	80	.08	3	.3	.2	SPC
		19	8	3 50.67	19	23.90	155	15.29	2.00			10	0	79	.10	3	.7	.0	SPC
		19	8	7 23.45	19	23.69	155	15.35	1.47			8	0	158	.05	5	.4	.3	SPC
		19	8	7 47.63	19	23.98	155	15.47	2.00			10	0	73	.18	5	1.5	.0	SPC
		19	8	7 58.36	19	23.68	155	15.46	2.00	1.7		10	0	109	.20	5	1.6	.0	SPC
		19	816	.22	19	23.89	155	15.19	.48			7	0	136	.14	3	2.1	2.3	SPC
		19	829	.19	19	23.75	155	15.79	.33			9	0	103	.15	3	1.2	1.1	SPC
		19	832	5.26	19	23.71	155	15.47	.94			10	0	82	.11	3	.5	.7	SPC
		19	833	32.63	19	23.85	155	15.50	.08			11	0	76	.09	3	.3	.2	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	19	835	56.40	19	26.18	155	17.06	2.59			9	0	253	.10	5	2.5	3.4	SPC
		19	836	40.42	19	23.73	155	15.39	.27			10	0	98	.08	3	.5	.2	SPC
		19	841	58.91	19	23.94	155	15.34	.15			13	0	77	.07	3	.5	.5	SPC
		19	844	19.49	19	23.71	155	15.36	2.00			15	0	84	.21	5	1.2	.0	SPC
		19	845	5.47	19	24.25	155	15.48	2.00			13	0	78	.20	2	1.2	.0	SPC
		19	846	20.78	19	23.75	155	15.19	2.00			9	0	87	.09	3	.7	.0	SPC
		19	849	45.96	19	23.63	155	15.39	.28			11	0	87	.12	3	.4	.5	SPC
		19	853	29.57	19	23.81	155	15.44	2.00	.9		11	0	79	.21	3	1.5	.0	SPC
		19	854	41.82	19	23.76	155	15.60	.62	.8		11	0	76	.08	3	.3	1.4	SPC
		19	858	16.36	19	23.80	155	15.61	.38	.8		11	0	75	.12	3	.5	.7	SPC
		19	858	27.26	19	23.59	155	15.21	.17	2.1		18	0	51	.09	3	.2	.2	SPC
		19	9	1 28.33	19	23.66	155	15.48	.27	.9		11	0	83	.09	3	.4	.4	SPC
		19	9	2 19.34	19	23.73	155	15.60	.62	.8		11	0	77	.07	3	.2	1.3	SPC
		19	9	3 48.14	19	23.41	155	14.88	2.00	1.0		10	0	101	.07	3	.5	.0	GLN
		19	9	4 48.33	19	23.86	155	15.43	.15	.8		10	0	117	.10	3	.7	.7	SPC
		19	9	7 24.37	19	23.83	155	15.49	1.28			11	0	77	.12	3	.5	.5	SPC
		19	9	8 17.67	19	23.81	155	15.54	.60	1.1		11	0	76	.07	3	.2	1.2	SPC
		19	9	8 56.97	19	23.74	155	15.62	.39	.8		11	0	76	.12	3	.5	.7	SPC
		19	9	9 48.32	19	23.77	155	15.37	.33	.9		10	0	82	.09	3	.4	.3	SPC
		19	910	42.86	19	23.70	155	15.34	2.00			9	0	85	.17	3	1.4	.0	SPC
		19	913	2.35	19	23.56	155	15.13	1.48			10	0	96	.05	3	.3	.2	SPC
		19	918	44.51	19	23.79	155	15.55	.53	.8		11	0	77	.08	3	.3	.4	SPC
		19	923	12.97	19	23.87	155	15.45	.20			11	0	77	.08	3	.3	.2	SPC
		19	924	19.11	19	23.81	155	15.61	.35	.8		11	0	75	.12	3	.5	.6	SPC
		19	927	41.13	19	23.65	155	15.46	.39	.9		11	0	84	.07	3	.3	.4	SPC
		19	929	58.38	19	23.43	155	14.76	2.00	1.0		11	0	100	.21	3	1.5	.0	GLN
		19	931	13.94	19	23.56	155	15.02	2.00	1.6		18	0	50	.20	3	1.0	.0	SPC
		19	934	39.77	19	23.78	155	15.55	.53	.8		11	0	77	.08	3	.4	.5	SPC
		19	936	32.75	19	23.73	155	15.66	.39	.8		11	0	75	.11	2	.6	.6	SPC
		19	940	41.09	19	23.49	155	15.08	.19	1.0		11	0	98	.06	3	.2	.2	SPC
		19	945	59.30	19	23.64	155	15.59	.94	2.1		20	0	52	.11	2	.3	.4	SPC
		19	10	1 55.55	19	23.75	155	15.56	.61			9	0	101	.10	5	.5	2.6	SPC
		19	10	5 13.35	19	23.81	155	15.43	1.63	1.2		11	0	79	.05	3	.2	.2	SPC
		19	10	6 18.39	19	23.77	155	15.61	.57	1.1		11	0	76	.10	3	.5	.5	SPC
		19	1011	33.33	19	23.70	155	15.54	2.00	1.2		11	0	80	.15	3	1.0	.0	SPC
		19	1012	57.93	19	23.63	155	15.52	.41			10	0	83	.16	3	.7	.9	SPC
		19	1014	14.83	19	23.36	155	14.92	2.00	1.0		10	0	103	.09	3	.6	.0	GLN
		19	1020	1.44	19	23.30	155	15.30	2.00	1.3		11	0	104	.20	3	1.4	.0	SPC
		19	1020	58.59	19	23.76	155	15.74	.76	.8		11	0	72	.06	3	.4	2.0	SPC
		19	1024	17.30	19	23.55	155	15.38	.26			9	0	98	.08	3	.4	.4	SPC
		19	1031	51.11	19	23.96	155	15.62	2.00	1.1		10	0	71	.19	3	1.4	.0	SPC
		19	1038	27.61	19	23.70	155	15.60	.56	.6		11	0	78	.11	2	.3	.3	SPC
		19	1041	12.67	19	24.11	155	15.51	2.00	.8		9	0	120	.18	3	1.7	.0	SPC
		19	1045	58.93	19	23.73	155	15.31	1.52	.9		11	0	85	.07	3	.4	.3	SPC
		19	1052	12.28	19	23.92	155	15.30	1.61	1.6		16	0	103	.07	3	.3	.2	SPC
		19	1053	42.43	19	23.76	155	15.31	2.00	.9		9	0	98	.11	3	1.1	.0	SPC
		19	1054	37.93	19	24.42	155	14.71	4.51	1.1		7	0	132	.13	4	1.2	2.4	GLN
		19	1055	53.35	19	23.83	155	15.82	1.84	1.1		9	0	124	.09	3	1.6	.5	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	19	1058	9.45	19	23.94	155	15.98	1.89	1.8		16	0	62	.13	3	.8	.4	SPC
		19	11 6	7.50	19	23.81	155	15.65	2.00	1.6		15	0	108	.24	3	1.6	.0	SPC
		19	1113	49.89	19	23.59	155	15.54	2.00	1.7		11	0	110	.21	2	1.6	.0	SPC
		19	1122	3.28	19	23.48	155	15.39	3.52	3.4		24	0	61	.15	5	.6	1.4	SPC
		19	1124	22.71	19	23.78	155	15.76	.13	2.5		13	0	58	.10	3	.3	.2	SPC
		19	1129	10.04	19	24.02	155	16.68	6.52			8	0	127	.11	2	2.9	7.2	LPC
		19	1129	36.67	19	24.27	155	15.64	1.04	2.1		9	0	78	.05	3	.2	.3	SPC
		19	1131	58.40	19	23.78	155	15.74	1.59	1.1		8	0	71	.09	3	.6	.3	SPC
		19	1132	17.31	19	23.72	155	15.93	1.00	2.5		12	0	73	.17	2	.5	.6	SPC
		19	1226	53.45	19	24.20	155	16.75	1.00	1.0		13	0	57	.11	2	.5	.4	SPC
		19	1228	27.78	19	24.23	155	16.70	1.00			14	0	60	.14	2	.6	.4	SPC
		19	1641	48.23	19	48.75	155	34.27	14.94	3.2		22	0	102	.15	31	1.1	5.3	KKU
		20	038	46.56	19	24.41	155	16.78	15.03	2.5		28	0	37	.10	2	.6	.9	DEP
		20	248	32.57	19	24.42	155	16.70	15.63	2.3		26	0	46	.09	5	.6	1.1	DEP
		20	546	12.89	19	25.99	155	23.78	7.76			17	0	81	.15	8	1.1	1.8	UKF
		20	1626	48.64	19	25.16	155	30.22	9.65	2.4		22	0	60	.17	15	1.0	.7	MOK
		20	2048	52.82	19	24.37	155	17.73	13.74	2.1		21	0	41	.10	5	.6	1.2	DEP
		20	2222	39.31	17	16.71	155	38.63	8.00	4.2		25	0	338	.15	218	84.0	99.0	DIS
		20	2236	14.13	19	24.27	155	16.88	13.66	1.6		21	0	46	.10	5	.6	1.2	DEP
		21	528	13.94	19	24.47	155	17.00	17.73	2.5		31	0	30	.12	2	.7	1.2	DEP
		21	625	42.24	19	24.70	155	26.20	8.42	1.7		22	0	61	.14	11	.8	1.8	UKF
		21	1049	45.70	19	27.01	155	29.60	6.92	2.2		20	0	75	.15	12	.9	2.4	UKF
		21	1353	19.03	19	23.19	155	23.04	10.43	1.9		18	0	53	.09	8	.5	.7	UKF
		21	18 7	50.42	19	20.72	155	12.86	31.75	3.4		30	1	63	.10	6	.9	1.1	DEP
		22	119	13.74	19	25.62	155	35.86	.35	2.9		23	0	72	.19	20	1.1	61.6	MOK
		22	533	46.55	19	23.58	155	28.74	9.09	1.9		24	0	53	.14	14	.9	1.5	UKF
		22	1951	13.94	19	18.77	155	12.64	8.14	1.7		18	0	97	.12	8	1.0	2.0	POL
		22	2036	6.77	19	22.28	155	24.47	9.44	2.5		24	0	66	.14	9	.8	.8	UKF
		22	22 5	1.46	19	22.02	155	24.03	9.61	1.7		15	0	74	.06	8	.5	.5	UKF
		23	043	31.77	19	20.34	155	19.60	1.48	1.4		12	0	109	.07	6	.5	.0	SWR
		23	719	38.40	19	30.66	155	54.57	10.25	2.7		13	1	218	.20	33	4.1	.9	KON
		23	830	19.53	19	24.46	155	17.13	16.11	1.7		19	0	43	.11	5	.8	1.5	DEP
		23	937	4.50	19	24.51	155	36.34	.14			16	0	105	.14	24	1.2	76.7	MOK
		23	1046	33.03	19	25.76	155	35.82	3.47	3.2		20	0	74	.16	20	1.0	2.1	MOK
		23	1129	35.88	19	20.18	155	9.83	6.89	2.1		16	0	80	.09	7	.6	1.3	UER
		23	1528	57.66	19	24.03	155	15.84	1.60	1.4		16	0	112	.06	3	.3	.2	SPC
		23	1537	33.52	19	24.50	155	17.16	15.59			24	0	46	.09	4	.6	1.0	DEP
		23	1813	2.21	19	24.40	155	17.15	15.40	3.4		31	0	31	.10	2	.6	.8	DEP
		23	1817	38.65	19	24.15	155	17.39	14.74	2.0		27	0	38	.08	2	.5	.8	DEP
		23	1855	54.53	19	24.23	155	17.19	15.55	1.7		21	0	50	.06	2	.5	.7	DEP
		23	1918	38.04	19	24.56	155	17.29	15.17	1.6		22	0	58	.09	2	.7	1.0	DEP
		23	2117	12.47	19	24.06	155	16.12	1.63	1.4		14	0	107	.10	2	.5	.3	SPC
		23	2150	46.50	19	24.40	155	17.03	15.41			25	0	36	.09	2	.7	1.0	DEP
		24	020	27.53	19	18.34	155	13.18	8.13			14	0	90	.06	8	.6	1.5	POL
		24	022	22.01	19	24.31	155	16.17	1.72			11	0	129	.04	2	.3	.1	SPC
		24	025	11.75	19	24.37	155	17.20	15.18	1.6		19	0	46	.06	2	.6	.7	DEP
		24	146	50.45	19	22.89	155	30.14	8.84	2.0		21	0	99	.09	13	.6	.9	MOK
		24	210	13.15	19	21.83	155	5.36	7.70	3.0		27	0	119	.13	9	.7	1.1	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	24	340	44.17	19	23.40	155	27.81	9.84	1.9		22	0	54	.14	13	.9	.5	UKF
		24	544	18.21	19	11.38	155	36.35	9.83	2.9		25	0	118	.17	24	1.4	.6	HEA
		24	937	28.80	19	24.28	155	16.91	15.78	2.6		31	0	46	.11	2	.7	.9	DEP
		24	938	44.61	19	24.51	155	17.04	16.51			19	0	53	.09	2	.9	1.2	DEP
		24	949	58.80	19	25.04	155	17.02	14.56			15	0	92	.09	5	.9	1.5	DEP
		24	1015	41.40	19	24.61	155	17.14	15.89	1.7		18	0	73	.08	2	.8	1.0	DEP
		24	1140	10.97	19	18.83	155	13.53	11.14			17	0	131	.09	7	1.1	3.6	POL
		24	1233	37.78	19	24.64	155	36.19	4.62	2.7		13	0	106	.11	24	.8	2.1	MOK
		24	1411	16.56	19	24.42	155	17.12	15.15	1.6		17	0	60	.06	4	.6	.8	DEP
		24	1624	55.81	19	24.43	155	17.31	13.47	2.2		25	0	48	.09	2	.6	.8	DEP
		24	1759	1.90	19	25.58	155	35.87	.59	2.2		21	0	72	.20	23	1.4	83.2	MOK
		24	1850	39.62	19	33.46	155	44.10	8.19	2.8		20	0	87	.16	21	1.1	1.3	MOK
		24	2116	40.86	19	24.47	155	17.02	14.40	1.6		20	0	62	.05	2	.4	.6	DEP
		25	137	13.93	19	26.33	155	29.53	5.40	1.9		15	0	84	.09	13	.6	1.2	UKF
		25	332	37.22	19	18.93	155	15.02	7.59	1.9		26	0	90	.12	7	.7	1.0	KOA
		25	346	11.86	19	18.34	155	14.96	7.67			17	0	131	.04	6	.3	.5	POL
		25	5	6	2.57	19	26.79	155	26.76	8.30	1.8	21	0	72	.12	11	.7	2.1	UKF
		25	659	55.70	19	24.31	155	23.53	9.38	2.1		28	0	58	.12	8	.5	.8	UKF
		25	737	5.27	19	24.41	155	16.97	15.66	2.2		32	0	43	.10	2	.6	.9	DEP
		25	1623	50.56	19	24.19	155	23.63	9.92	2.1		19	0	57	.13	8	.8	.7	UKF
		25	2026	23.81	19	19.96	155	11.59	7.49	1.7		24	0	84	.13	6	.8	1.3	UER
		25	2040	10.10	19	21.55	155	1.46	6.61	2.1		22	0	174	.17	15	1.6	2.1	MER
		26	2	8	54.54	19	25.63	155	28.29	8.09	1.8	25	0	65	.16	14	.9	2.7	UKF
		26	3	9	22.04	19	24.51	155	17.02	15.42	1.7	25	0	37	.11	2	.7	1.1	DEP
		26	449	37.12	19	24.12	155	17.33	15.44	1.7		20	0	43	.07	2	.6	.9	DEP
		26	556	51.18	19	24.49	155	17.16	14.91			18	0	45	.05	2	.5	.7	DEP
		26	6	5	34.56	19	24.92	155	25.25	7.68	1.7	23	0	65	.16	9	.9	2.0	UKF
		26	845	12.37	19	24.13	155	15.76	2.02	1.1		10	0	122	.04	3	.3	13.1	SPC
		26	949	25.03	19	24.08	155	15.84	1.80	1.2		12	0	63	.05	3	.3	.2	SPC
		26	1622	1.96	19	24.84	155	16.77	15.13	2.2		27	0	109	.08	2	.5	.7	DEP
		26	1831	26.83	19	14.22	155	32.98	8.02	2.5		22	0	121	.15	18	1.2	1.8	LSW
		26	2010	32.04	19	23.57	155	30.42	9.72	2.1		27	0	50	.14	14	.8	.5	MOK
		26	2012	5.88	19	22.48	155	24.30	9.27			15	0	82	.06	8	.5	1.2	UKF
		26	2238	48.95	19	29.84	155	39.52	6.86	2.3		13	0	132	.17	27	1.8	4.0	MOK
		27	259	8.89	19	20.95	155	47.33	7.52	2.5		20	0	101	.13	21	1.1	.9	KOA
		27	342	37.56	19	24.23	155	17.29	13.27	1.6		22	0	54	.09	2	.7	.9	DEP
		27	430	44.43	19	22.97	155	26.18	7.77	2.1		26	0	59	.15	12	.8	1.7	UKF
		27	5	9	52.37	19	16.28	155	16.32	27.59		21	0	184	.06	7	.9	1.4	HLP
		27	15	4	14.18	19	26.27	155	36.35	5.71	2.6	13	0	131	.11	21	1.1	2.0	MOK
		27	1852	41.62	19	23.94	155	25.58	6.09	1.7		13	0	136	.08	10	1.1	3.3	UKF
		27	2223	29.25	19	21.53	155	26.68	8.90	2.1		24	0	63	.10	10	.6	1.6	HEA
		28	035	37.53	19	19.68	155	13.66	7.17			21	0	74	.12	6	.7	1.2	UER
		28	128	52.13	19	21.16	155	25.00	6.34	1.7		11	0	100	.07	9	.9	2.2	HEA
		28	317	44.12	19	18.40	155	16.46	6.67	1.6		23	0	115	.09	6	.5	1.2	KOA
		28	319	58.56	19	23.89	155	28.19	10.67	1.9		12	0	239	.06	14	3.3	6.9	UKF
		28	512	25.45	19	24.20	155	16.20	1.83	1.0		12	0	68	.05	2	.4	.2	SPC
		28	9	0	54.97	19	20.00	155	12.52	7.65		16	0	75	.07	6	.6	1.1	UER
		28	913	18.49	19	20.25	155	19.59	3.46			12	0	111	.04	6	.4	2.2	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JUL	28	1228	59.57	19	25.04	155	16.97	13.71			19	0	92	.11	5	.9	1.4	DEP
		28	1314	3.02	19	22.14	155	23.52	9.51			13	0	60	.04	11	.4	1.7	UKF
		28	1345	8.76	19	22.21	155	25.37	8.47			14	0	101	.07	10	.6	1.4	UKF
		28	1450	35.17	19	29.55	155	39.84	6.01	2.3		18	0	74	.21	27	1.5	3.4	MOK
		28	1539	33.89	19	25.08	155	14.75	21.25			21	0	123	.05	4	.7	1.0	DEP
		28	1820	49.02	19	22.67	155	25.33	9.36	2.6		30	0	53	.13	10	.6	.8	UKF
		28	2343	33.47	19	24.38	155	17.16	15.12			18	0	49	.04	2	.5	.5	DEP
		29	0	7 15.96	19	19.37	155	11.59	6.65	1.7		22	0	97	.14	7	.9	1.6	UER
		29	1	3 .63	19	15.04	155	28.13	9.94	2.2		24	0	94	.14	13	1.1	.5	LSW
		29	152	59.18	19	25.45	155	37.13	.44	2.4		14	0	196	.14	19	1.1	74.9	MOK
		29	351	52.92	19	12.73	155	41.33	29.76	2.9		28	0	113	.12	24	1.1	3.2	HEA
		29	7	6 22.07	19	24.12	155	15.83	1.66	1.2		17	0	57	.07	3	.3	.2	SPC
		29	924	41.29	19	20.15	155	9.66	8.34	1.8		16	0	79	.07	8	.6	.9	UER
		29	1145	52.90	19	24.18	155	16.06	1.65	1.9		20	0	65	.09	2	.4	.2	SPC
		29	19	7 30.89	19	21.46	155	17.29	31.07			21	0	44	.07	4	.9	1.9	DEP
		29	2137	59.00	19	24.21	155	25.77	9.07	1.7		19	0	68	.11	11	.7	2.1	UKF
		30	451	3.96	19	25.69	155	36.07	1.73	2.8		20	0	70	.15	20	.8	40.4	MOK
		30	7	4 18.08	19	23.84	154	49.08	38.22	3.5		28	1	282	.12	28	2.2	3.2	LER
		30	1120	24.28	19	26.62	155	25.16	7.91			12	0	144	.11	9	1.2	2.5	UKF
		30	1542	26.49	19	21.25	155	26.09	9.90	1.8		12	0	124	.07	12	.7	2.4	HEA
		30	1716	43.75	19	23.02	155	24.85	7.35	1.8		22	0	90	.11	9	.8	1.4	UKF
		30	1723	5.23	19	25.27	155	27.37	8.43	1.8		15	0	111	.11	12	.7	1.6	UKF
		30	2014	25.82	19	22.88	155	26.27	10.03	1.8		21	0	128	.12	12	1.0	.8	UKF
		31	129	45.46	19	27.37	155	35.81	8.70	2.5		16	0	83	.11	22	.9	1.8	MOK
		31	543	1.47	19	25.64	155	24.66	7.20	2.1		25	0	64	.12	6	.6	1.3	UKF
		31	9	2 36.77	19	18.28	155	13.27	7.84	2.0		21	0	88	.12	8	.8	1.1	POL
		31	12	1 30.41	19	22.15	155	24.61	8.84	2.2		12	0	91	.08	9	.7	1.1	UKF
		31	1829	7.99	19	27.36	155	22.22	7.32	2.4		19	0	95	.08	8	.5	.9	UKF
		31	1844	7.69	19	21.46	155	6.50	6.83	2.4		26	0	98	.14	8	.8	1.2	UER
		31	2022	1.77	19	18.69	155	13.29	7.30	1.7		22	0	81	.11	8	.7	1.4	POL
		31	2046	9.79	19	18.89	155	15.27	7.51	1.6		23	0	116	.07	6	.4	.6	KOA
		31	2221	20.79	19	20.99	155	19.17	3.48	1.3		14	0	88	.08	6	.5	3.2	SWR
	AUG	1	010	49.99	19	18.88	155	13.30	7.57	1.7		16	0	78	.05	8	.4	1.0	POL
		1	1	6 13.02	19	20.67	155	19.16	2.65	1.5		17	0	92	.09	6	.5	3.2	SWR
		1	1440	56.93	19	22.28	155	18.09	1.09	1.6		16	0	60	.09	4	.3	.4	KOA
		1	1514	27.17	19	21.80	155	19.09	29.54	2.3		25	0	47	.11	5	1.1	1.6	DEP
		2	738	28.71	19	17.87	154	58.02	47.33	2.6		28	0	232	.09	22	2.6	4.1	DIS
		2	1517	56.08	19	25.75	155	29.77	10.16			16	0	88	.15	14	1.7	.8	UKF
		3	319	38.07	19	20.70	155	12.98	7.46			22	0	122	.14	6	.9	.9	UER
		3	344	28.96	19	25.07	155	16.51	15.73	2.3		28	0	38	.10	2	.6	.9	DEP
		3	832	6.64	19	23.88	155	28.78	9.16	2.4		24	0	53	.13	14	.7	1.2	UKF
		3	1119	22.92	19	21.74	155	25.69	9.99	2.4		24	0	65	.14	10	.9	.4	HEA
		3	1412	21.92	19	20.14	155	19.02	5.18	1.8		14	0	79	.06	7	.4	.8	SWR
		3	2225	25.11	19	15.69	155	12.86	4.77	1.8		14	0	198	.11	11	2.2	1.0	POL
		3	2319	53.99	19	20.04	155	12.12	7.55			12	0	79	.08	8	.6	1.2	UER
		4	629	21.29	19	26.51	155	27.65	9.10			17	0	86	.08	12	.6	.9	UKF
		4	1235	56.23	19	28.23	156	1.06	33.55	2.8		27	0	233	.15	30	3.5	4.2	KOA
		4	1254	33.73	19	20.43	155	11.92	10.57	1.7		16	0	120	.08	8	.3	2.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	AUG	4	2320	10.61	19	24.55	155	15.12	29.59	2.1		28	0	46	.10	3	1.0	1.5	DEP
		5	654	41.74	19	19.01	155	15.25	7.23			20	0	112	.15	6	1.0	2.3	KOA
		5	15 3	5.09	19	16.19	155	29.19	6.94	2.0		16	0	83	.18	13	1.3	2.5	HEA
		5	1922	46.43	19	25.76	155	28.80	8.21	2.4		27	0	66	.15	14	.9	2.2	UKF
		6	611	33.40	19	30.78	155	39.73	9.82	2.3		8	0	138	.09	27	2.6	6.1	MOK
		6	1054	7.73	19	20.09	155	12.48	9.15	1.7		23	0	75	.10	6	.7	1.3	UER
		6	1243	17.81	19	24.22	155	25.47	6.97	1.7		16	0	83	.13	10	1.0	2.9	UKF
		6	2051	22.96	19	33.55	155	51.70	.52	2.6		6	0	342	.09	50	28.9	94.7	KON
		6	2355	10.40	19	30.74	155	39.70	7.77	2.3		22	0	131	.14	27	1.5	1.6	MOK
		7	033	46.58	19	18.60	155	13.48	8.32	2.0		25	0	76	.11	7	.7	1.2	POL
		7	547	28.91	19	24.86	155	25.88	8.82	2.0		26	0	61	.12	10	.7	1.0	UKF
		7	949	8.91	19	27.59	155	37.27	1.22	2.2		5	0	217	.11	23	12.5	6.9	MOK
		7	10 8	9.02	19	35.29	155	44.89	.13	2.8		8	0	305	.43	39	44.3	98.0	MOK
		7	1237	34.51	19	32.87	155	39.29	2.01	2.3		6	0	205	.49	28	14.7	.0	MOK
		7	16 5	18.10	19	30.22	155	40.25	9.49	3.1		24	0	53	.15	26	.8	1.2	MOK
		7	19 4	28.55	19	21.90	155	25.70	9.51	2.1		26	0	63	.14	10	.7	.6	HEA
		7	1914	26.85	19	29.76	155	40.73	9.78	2.7		18	0	77	.14	27	1.2	.5	MOK
		7	2021	14.36	19	30.09	155	40.46	9.71	2.7		20	0	76	.12	26	.9	.5	MOK
		7	2023	46.24	19	30.39	155	40.30	7.73	2.7		24	0	53	.11	27	.7	1.2	MOK
		7	2044	36.36	19	30.05	155	40.56	9.56	2.8		21	0	76	.15	27	1.1	.6	MOK
		7	2155	12.07	19	29.62	155	40.01	6.93	2.3		15	0	99	.11	28	.9	1.6	MOK
		7	2334	36.46	19	30.11	155	40.37	6.08	2.3		22	0	76	.16	26	1.1	2.3	MOK
		7	2335	49.82	19	30.09	155	39.89	6.63	2.6		17	0	99	.10	28	.8	1.7	MOK
		8	112	59.37	19	22.47	155	18.33	28.72	4.2		33	0	31	.11	4	.8	1.4	DEP
		8	116	21.30	19	22.49	155	18.26	28.67	2.5		32	0	31	.10	4	.7	1.2	DEP
		8	120	54.77	19	21.51	155	15.73	27.06	2.5		31	0	63	.09	4	.7	1.1	DEP
		8	2 4	34.66	19	21.49	155	15.82	26.17	2.0		23	0	74	.05	4	.5	.8	DEP
		8	1014	49.51	19	22.19	155	15.60	27.94	2.1		21	0	96	.10	5	.9	1.8	DEP
		8	1126	39.24	19	12.20	155	37.55	9.77	2.4		15	0	95	.23	21	1.9	1.4	HEA
		8	1547	29.06	19	21.94	155	17.76	2.23	1.1		9	0	94	.09	3	.7	16.8	KOA
		8	21 8	56.23	19	24.65	155	36.88	1.06	2.5		8	0	104	.13	18	1.5	99.0	MOK
		9	0 5	4.69	19	30.14	155	40.50	5.45	2.6		18	0	131	.12	27	.9	1.8	MOK
		9	438	1.98	19	30.83	155	40.20	5.80	2.6		15	0	80	.16	26	1.4	3.3	MOK
		9	456	41.18	19	30.90	155	39.82	7.39	2.3		15	0	80	.16	26	1.2	2.2	MOK
		9	644	50.74	19	20.62	155	19.13	4.33	1.6		17	0	94	.08	6	.5	1.5	SWR
		9	720	26.66	19	30.30	155	40.37	7.10	2.8		22	0	132	.14	27	1.1	1.5	MOK
		9	1151	42.65	19	25.66	155	25.84	7.73	2.7		25	0	65	.13	10	.7	1.5	UKF
		9	1452	8.09	19	24.48	155	25.97	4.10	1.9		21	0	89	.15	11	.9	1.9	UKF
		9	1520	15.69	19	55.23	155	4.88	40.66	3.0		26	0	240	.13	42	4.7	6.4	KKU
		9	1621	12.17	19	20.54	155	13.36	8.26	1.6		14	0	61	.04	6	.4	1.0	UER
		9	2135	25.60	19	20.15	155	7.35	9.73	1.9		19	0	98	.08	8	.7	3.0	UER
		9	22 5	38.16	19	19.83	155	18.52	4.25	1.9		20	1	63	.15	7	.8	2.4	KOA
		10	517	15.31	19	24.06	155	15.88	1.82	.8		13	0	62	.11	3	.7	.4	SPC
		10	717	46.48	19	29.88	155	40.58	5.62	2.5		18	0	129	.14	26	1.1	3.1	MOK
		10	729	55.34	19	13.62	155	16.75	31.10	2.4		29	0	170	.10	12	1.3	2.0	HLP
		10	944	20.80	19	22.64	155	24.89	9.07	2.0		24	0	52	.12	9	.7	1.7	UKF
		10	1347	6.99	19	24.27	155	23.07	7.59	2.3		22	0	57	.12	8	.7	1.9	UKF
		10	16 4	28.53	19	32.65	155	39.61	6.78	2.8		13	0	89	.21	28	1.9	8.1	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	AUG	11	154	15.58	19	22.50	155	18.07	23.82			22	0	47	.07	4	.9	1.3	DEP
		11	5 6	51.98	19	19.06	155	15.35	7.38	1.6		22	0	92	.09	6	.5	.9	KOA
		11	7 1	9.16	19	50.63	155	22.33	26.15	2.5		21	0	159	.10	38	3.5	5.5	KKU
		11	9 8	1.86	19	22.35	155	18.17	23.62			17	0	60	.09	4	1.2	2.1	DEP
		11	10 5	59.13	19	25.37	155	23.34	7.52	2.3		24	0	62	.11	8	.6	1.1	UKF
		11	10 7	13.10	19	30.67	155	40.39	7.70	2.3		15	0	135	.18	26	2.0	4.9	MOK
		11	10 8	33.20	19	25.13	155	23.27	7.30	1.8		16	0	98	.04	9	.3	.6	UKF
		11	1218	15.07	19	13.11	155	20.02	43.68	2.5		20	0	163	.07	14	1.1	2.5	HLP
		11	1242	10.32	19	20.44	156	1.64	57.11	2.9		22	0	251	.09	43	3.6	5.8	KON
		11	1421	55.26	21	18.97	155	33.05	12.85	3.3		15	0	332	.17	187	79.5	.0	DIS
		11	1443	36.22	21	20.68	155	31.51	3.46	3.4		18	0	333	.15	189	60.5	.0	DIS
		11	17 6	11.97	19	22.43	155	25.90	8.40	1.7		20	0	55	.10	11	.6	1.5	UKF
		11	20 8	38.72	19	32.31	155	39.76	8.88	2.3		7	0	201	.09	28	4.8	3.5	MOK
		11	2044	12.96	19	22.93	155	24.69	8.82	2.3		28	0	53	.12	9	.6	.8	UKF
		11	2057	26.18	19	16.22	155	25.17	43.46			20	0	145	.08	12	1.2	2.4	HEA
		11	21 4	38.22	19	23.79	155	6.58	39.75	2.7		31	0	70	.11	12	1.1	2.5	GLN
		12	858	18.28	19	19.69	155	14.86	7.78	1.9		25	0	77	.13	5	.7	1.0	UER
		12	915	47.09	19	27.05	155	27.16	9.18	2.1		21	0	74	.12	11	.7	1.6	UKF
		12	1126	20.56	19	23.46	155	26.96	8.08	3.5		29	0	45	.14	13	.7	1.0	UKF
		13	253	7.61	19	19.87	155	7.46	9.55			16	0	101	.09	8	.9	4.2	UER
		13	430	16.79	19	19.63	155	12.42	10.96			19	0	83	.06	6	.5	1.9	UER
		13	1358	43.56	19	32.63	155	38.65	2.66	2.7		12	0	146	.19	27	2.1	4.5	MOK
		13	1955	37.96	19	24.91	155	24.64	10.71	1.7		17	0	65	.05	9	.4	.4	UKF
		13	20 2	55.70	19	25.91	155	36.33	3.76	3.6		26	0	85	.12	20	.6	1.3	MOK
		13	20 5	44.33	19	25.72	155	28.44	7.85			13	0	209	.12	14	1.8	2.0	UKF
		13	2012	19.71	19	25.75	155	35.97	.13	2.5		20	0	79	.19	23	1.1	61.2	MOK
		13	2141	47.20	19	19.98	155	10.88	9.44			15	0	100	.06	7	.5	1.1	UER
		13	2245	30.28	19	25.88	155	36.20	3.64	3.1		28	0	51	.14	20	.7	1.5	MOK
		14	3 9	8.03	19	25.29	155	26.45	7.35	2.3		27	0	64	.15	11	.8	2.2	UKF
		14	346	14.32	19	25.89	155	28.70	7.77	1.9		20	0	186	.13	14	1.2	1.9	UKF
		14	454	4.96	19	18.66	155	17.17	33.70	2.6		31	0	113	.09	7	.8	1.4	DEP
		14	616	59.51	19	23.10	155	26.54	6.89	1.7		23	0	80	.10	12	.7	1.5	UKF
		14	7 7	18.22	19	25.13	155	25.05	5.66	1.9		18	0	88	.06	9	.4	1.7	UKF
		14	830	5.87	19	18.47	154	36.58	51.69			23	0	305	.09	53	16.0	13.4	DIS
		14	1327	7.21	19	27.90	155	37.60	5.70	3.0		15	0	255	.12	29	2.9	2.1	MOK
		14	1432	39.61	19	24.16	155	16.29	1.83	1.3		11	0	94	.04	2	.4	.1	SPC
		14	1510	8.43	19	22.01	155	18.28	.27	1.3		12	0	93	.10	4	.5	2.0	KOA
		14	1950	17.34	19	22.20	155	17.86	2.00			12	0	84	.09	4	.6	.0	KOA
		14	1959	14.23	19	23.86	155	23.88	8.13	1.6		21	0	56	.08	7	.5	1.5	UKF
		14	20 1	16.05	19	24.09	155	24.23	10.74	1.7		12	0	125	.05	8	.5	3.0	UKF
		14	2319	59.59	19	12.89	155	37.25	10.11	2.4		19	0	109	.17	24	1.6	.6	HEA
		15	0 2	29.22	19	19.36	155	14.19	8.60	1.6		20	0	88	.10	6	.7	1.5	UER
		15	023	22.80	19	19.40	155	14.18	8.58	1.6		20	0	87	.08	6	.6	1.4	UER
		15	211	43.88	19	23.01	155	17.22	1.67			9	0	103	.06	3	.7	.3	SPC
		15	1319	31.89	19	20.09	155	12.87	7.10	2.7		28	0	70	.14	7	.8	1.2	UER
		15	14 0	41.15	19	24.10	155	28.44	9.74	1.9		14	0	128	.08	14	.8	3.1	UKF
		15	1720	39.77	19	18.48	155	13.23	7.54			17	0	86	.09	8	.7	1.6	PUL
		15	1935	56.69	19	22.17	155	3.90	7.07	2.0		21	0	152	.14	11	1.0	1.8	MEK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	AUG	15	20 8	37.56	19	21.93	155	18.14	.44	1.0		12	0	162	.05	4	.4	1.3	KOA
		16	321	13.98	19	21.09	155	11.55	7.21	1.6		16	0	67	.12	8	.9	1.3	UER
		16	823	10.58	19	19.85	155	10.56	6.48			15	0	117	.12	7	1.5	3.5	UER
		16	1210	.48	19	30.21	155	47.92	7.51	2.5		11	0	189	.13	34	4.3	1.9	KON
		16	1226	25.10	19	20.10	155	13.11	6.76			14	0	67	.08	6	.7	1.8	UER
		16	1233	36.41	18	59.23	155	11.10	42.49	2.7		27	0	264	.11	55	4.3	5.5	PPL
		16	1717	8.79	19	20.92	155	20.14	28.48			11	0	61	.06	6	1.2	3.0	DEP
		16	1730	36.45	19	18.69	155	13.08	7.77			14	0	87	.06	8	.5	1.5	POL
		16	1750	14.21	19	23.04	155	1.66	6.65	2.1		25	0	148	.16	14	1.1	2.0	MER
		16	1951	37.37	19	18.92	155	15.47	7.06	1.6		24	0	96	.08	6	.4	.7	KOA
		16	2137	47.41	19	24.16	155	15.88	1.73	.7		11	0	63	.06	2	.4	.2	SPC
		16	2159	29.64	19	17.83	156	19.73	37.80	3.1		9	0	307	.18	75	13.9	6.8	DIS
		16	2228	12.14	19	23.95	155	16.95	13.56	1.6		18	0	66	.12	2	1.0	1.2	DEP
		16	2247	22.66	19	24.07	155	15.78	1.67	1.3		12	0	64	.05	3	.3	.2	SPC
		17	6 7	41.44	19	24.89	155	17.10	1.59	.2		9	0	109	.11	2	.8	.4	SPC
		17	838	53.05	19	20.23	155	18.81	2.00	1.3		14	0	94	.17	6	1.0	.0	KOA
		17	9 3	48.10	19	17.81	155	14.33	6.36	1.7		13	0	138	.07	8	.6	1.6	POL
		17	10 5	47.08	19	24.29	155	16.31	1.85	.9		10	0	73	.09	2	.8	.3	SPC
		17	1214	6.89	19	24.37	155	17.32	.65	1.1		10	0	93	.13	2	.7	.4	SPC
		17	1329	55.87	19	24.16	155	16.14	2.05	.7		9	0	65	.07	2	.7	2.5	SPC
		17	1432	28.58	19	23.48	155	26.67	7.56	2.2		20	0	55	.10	12	.7	1.7	UKF
		17	1712	11.29	19	25.55	155	26.94	9.71	2.2		15	0	167	.08	12	1.3	5.1	UKF
		17	1733	52.38	19	27.11	155	23.73	1.47	1.7		12	0	88	.14	9	1.1	.0	UKF
		17	1931	56.17	19	22.03	155	18.02	1.94	1.1		10	0	87	.09	4	.8	99.0	KOA
		17	1941	26.64	19	26.77	155	37.83	4.33	2.2		8	0	218	.07	22	2.1	1.8	MOK
		17	20 4	16.32	19	31.36	155	40.22	6.99	3.1		28	0	82	.18	26	1.1	2.0	MOK
		17	2033	44.23	19	18.17	155	13.16	6.34			14	0	95	.07	8	.6	1.7	POL
		17	2252	21.32	19	48.23	156	6.07	23.93	3.6		20	0	245	.10	49	2.2	3.6	KON
		17	2338	12.01	19	22.35	155	23.62	9.86			13	0	100	.06	7	.6	.5	UKF
		18	044	27.53	19	20.78	155	26.13	8.54			12	0	129	.07	12	.6	1.4	HEA
		18	128	48.22	19	27.05	155	29.98	10.62	2.0		15	0	135	.10	13	.9	.9	UKF
		18	2 3	50.67	18	50.24	155	7.47	48.63			14	0	305	.08	58	12.4	8.1	PPL
		18	257	42.06	19	18.09	155	15.02	9.19			12	0	142	.03	6	.4	1.2	KOA
		18	3 8	27.49	19	21.61	155	26.21	5.94			16	0	120	.15	12	1.1	2.4	HEA
		18	337	17.29	19	21.98	155	18.11	1.98	1.5		18	0	71	.08	4	.4	35.9	KOA
		18	348	.01	19	23.96	155	.77	7.40	2.1		25	0	152	.17	16	1.2	1.8	LER
		18	349	38.45	19	20.34	155	13.86	7.31			15	0	69	.08	6	.6	1.6	UER
		18	8 3	5.59	19	12.66	155	28.06	8.45	2.1		22	0	143	.13	16	1.1	1.2	LSW
		18	14 1	25.06	19	22.71	155	4.32	6.44	3.1		28	1	148	.15	12	.9	1.5	MER
		18	1523	7.32	19	22.11	155	17.90	4.00	1.1		9	0	83	.09	4	.3	1.4	KOA
		18	1618	10.74	19	18.80	155	13.27	6.90	1.7		21	0	80	.13	8	.8	1.5	POL
		18	18 5	45.92	19	20.64	155	12.05	8.03	1.9		27	0	70	.12	7	.7	1.0	UER
		18	1811	5.20	19	26.45	155	26.70	11.95	2.4		30	0	54	.15	11	.9	.4	UKF
		18	2212	57.91	19	22.61	155	17.24	1.60	1.4		16	0	84	.10	3	.5	.3	KOA
		18	2249	49.26	19	20.68	155	18.99	5.16	1.9		23	0	79	.13	6	.6	1.0	KOA
		18	2334	36.83	19	28.02	155	28.55	5.22	1.8		13	0	83	.10	13	.7	1.2	UKF
		19	024	22.61	19	22.73	155	25.47	7.84	2.0		24	0	52	.14	10	.8	2.0	UKF
		19	028	42.88	19	22.08	155	25.20	8.28	1.7		21	0	58	.11	10	.7	1.7	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	AUG	19	129	52.71	19	31.41	155	48.01	7.61	2.5		16	0	157	.10	29	1.7	1.0	KON
		19	134	39.94	19	31.78	155	47.89	7.10	2.5		16	0	160	.09	30	1.6	.9	KON
		19	256	15.80	19	18.24	155	15.36	5.82	1.6		15	0	140	.11	6	.9	2.1	KOA
		19	5 1	22.05	19	24.03	155	15.95	2.00	.8		12	0	61	.13	2	.8	.0	SPC
		19	533	48.50	19	18.56	155	13.00	7.68			13	0	92	.04	8	.4	1.2	POL
		19	544	4.15	19	19.97	155	12.14	7.07			17	0	80	.12	6	.9	1.5	UER
		19	658	29.21	19	25.96	155	31.35	10.19	2.4		17	0	116	.10	16	1.0	.7	MOK
		19	1440	43.31	19	20.48	155	19.08	3.52	1.7		14	0	92	.06	6	.4	1.4	SWR
		19	1545	9.96	19	11.88	155	19.27	28.68	2.3		17	0	212	.10	16	1.9	2.4	HLP
		19	1743	11.80	19	22.02	155	18.16	.69	1.0		9	0	77	.07	4	.4	2.1	KOA
		20	227	12.50	19	56.68	155	7.84	41.72			26	0	227	.13	39	2.8	4.7	KKU
		20	6 7	54.96	19	20.51	155	11.38	7.11	2.2		25	0	75	.12	7	.6	1.0	UER
		20	740	.74	19	20.46	155	19.14	1.78	1.3		12	0	97	.05	6	.3	99.0	SWR
		20	1456	28.23	19	19.46	155	10.21	8.41			16	0	105	.07	7	.6	1.4	UER
		20	1554	34.85	19	19.80	155	10.32	6.78	1.7		20	0	107	.12	7	.8	1.5	UER
		20	1657	40.53	19	18.44	155	15.67	6.74			18	0	136	.12	5	.9	1.3	KOA
		20	1855	36.10	19	28.14	155	18.35	7.84			13	0	152	.08	6	1.1	1.8	GLN
		20	2238	23.37	19	34.44	155	57.80	8.46	2.7		20	0	242	.15	35	3.2	.9	KON
		20	2318	58.31	19	28.61	155	41.49	9.02			12	0	170	.20	26	3.1	7.0	MOK
		21	421	39.64	19	22.17	155	17.91	1.92			10	0	82	.10	4	.7	.0	KOA
		21	825	13.09	19	26.25	155	24.66	9.06	1.6		11	0	118	.05	11	.6	1.9	UKF
		21	1152	48.44	19	25.07	155	25.31	8.32	1.7		16	0	89	.06	9	.5	.8	UKF
		21	1153	39.62	19	24.51	155	16.61	17.03	1.7		25	0	46	.11	2	.7	1.2	DEP
		21	1247	48.65	19	27.91	155	27.08	9.87	2.1		20	0	80	.16	11	1.1	1.1	UKF
		21	1330	37.18	19	19.22	155	13.86	7.89	1.6		12	0	117	.04	6	.4	1.3	UER
		21	1911	.96	19	23.08	155	17.28	1.44	.8		9	0	168	.07	3	.8	.3	SPC
		21	20 2	22.55	19	22.52	155	25.00	7.13	1.7		12	0	124	.10	10	1.3	3.3	UKF
		21	2016	29.84	19	22.19	155	18.13	.89	1.0		10	0	77	.06	4	.3	.4	KOA
		21	2212	50.31	19	26.40	155	27.14	5.23	2.2		16	0	172	.06	11	.5	.5	UKF
		22	728	49.05	19	22.48	155	23.39	7.25	1.9		23	0	61	.08	7	.5	1.1	UKF
		22	1017	12.65	19	28.26	155	27.42	10.60	2.3		10	0	247	.06	12	6.1	13.8	UKF
		22	16 0	2.28	19	17.93	155	12.89	5.55	1.7		13	0	114	.07	9	.6	1.6	POL
		22	2041	10.63	19	19.26	155	13.77	9.54	1.7		20	0	64	.09	7	.6	2.5	UER
		22	2220	39.73	19	24.11	155	16.12	1.57	.7		9	0	63	.06	2	.4	.2	SPC
		22	2223	56.30	19	18.54	155	15.37	7.58	1.6		19	0	129	.06	6	.4	.6	KOA
		22	2327	8.50	19	24.20	155	15.82	1.68	.7		13	0	66	.08	2	.4	.3	SPC
		22	2330	2.79	19	30.93	155	58.49	7.89	2.7		15	1	293	.32	48	9.6	2.9	KON
		23	448	20.03	19	18.17	155	14.18	8.23	1.7		20	0	117	.14	8	1.0	1.5	POL
		23	10 2	29.77	19	24.12	155	15.76	1.53	1.3		13	0	64	.08	3	.4	.2	SPC
		23	16 9	47.07	19	23.68	155	26.80	3.58			15	0	89	.12	12	.9	2.9	UKF
		23	1718	37.68	19	23.96	155	26.66	3.07	1.8		17	0	89	.10	12	.6	3.0	UKF
		23	1751	32.58	19	25.20	155	26.19	8.16	2.4		25	0	69	.11	11	.7	1.2	UKF
		23	1753	37.16	19	19.01	155	13.40	8.17			21	0	74	.07	7	.5	1.1	UER
		23	1815	1.96	19	18.82	155	13.27	9.84	3.7		29	0	80	.08	8	.5	.3	POL
		23	2057	40.18	19	20.19	155	19.27	1.62			12	0	106	.04	7	.3	99.0	SWR
		23	2145	19.13	19	21.76	155	19.44	12.16			18	0	78	.06	5	.5	.2	SWR
		23	22 8	43.13	19	18.62	155	13.46	8.24			22	0	80	.11	7	.7	1.1	POL
		23	2221	26.52	19	20.37	155	13.82	8.09	1.6		26	0	68	.13	6	.7	1.3	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	AUG	23	2234	52.96	19	25.09	155	25.00	8.81			18	0	62	.10	9	.7	.9	UKF
		23	2356	44.10	19	18.19	155	13.42	7.06			18	0	85	.10	8	.8	1.7	POL
		24	012	37.49	19	20.46	155	13.04	7.98			17	0	64	.06	6	.5	.6	UER
		24	038	37.09	19	22.93	155	25.65	9.75	2.9		27	0	53	.12	11	.6	.7	UKF
		24	136	6.06	19	31.55	155	39.27	6.03			7	0	144	.10	28	2.6	5.0	MOK
		24	233	49.06	19	22.77	155	17.01	1.88			9	0	78	.04	2	.4	.2	KOA
		24	550	28.51	19	20.59	155	18.94	4.29	1.4		16	0	91	.06	6	.5	1.2	KOA
		24	925	10.75	19	21.82	155	18.06	2.77	1.1		11	0	80	.10	4	.5	4.8	KOA
		24	1350	1.04	19	17.79	155	15.73	6.12			14	0	152	.08	5	.7	1.8	KOA
		24	1823	42.45	19	20.48	155	19.25	2.14	1.3		14	0	73	.05	6	.4	17.8	SWR
		24	1838	51.14	19	22.29	155	18.00	1.83	1.0		12	0	78	.07	4	.5	.0	KOA
		24	1918	48.99	19	22.09	155	18.26	1.18	1.3		15	0	68	.10	4	.4	.4	KOA
		24	1920	1.55	19	22.40	155	23.86	13.11			13	0	105	.13	8	1.5	3.2	UKF
		24	20 2	24.80	19	23.47	155	27.04	1.36	1.7		18	0	85	.14	13	.8	1.1	UKF
		24	2139	11.67	19	22.70	155	17.36	1.62	1.4		15	0	79	.05	3	.3	.2	KOA
		25	010	29.77	19	12.30	155	20.43	43.30			17	0	188	.09	15	2.5	6.2	HLP
		25	226	43.01	19	26.12	155	29.15	45.30	2.5		20	0	51	.08	13	.9	3.1	UKF
		25	359	28.35	19	23.52	155	27.07	1.17	1.7		18	0	85	.13	13	.8	1.1	UKF
		25	449	1.67	19	22.34	155	24.89	10.65	1.7		17	0	68	.06	9	.5	1.9	UKF
		25	1049	52.58	19	24.30	155	16.31	1.74	.6		8	0	74	.07	2	.7	.3	SPC
		25	1157	29.52	19	24.31	155	17.68	1.59	1.2		11	0	89	.05	2	.3	.2	SPC
		25	1213	25.79	19	20.42	155	18.33	4.45	2.4		23	0	60	.15	6	.8	1.4	KOA
		25	1221	48.81	19	19.96	155	18.60	1.79	1.4		10	0	92	.08	8	.6	99.0	KOA
		25	1222	18.61	19	20.32	155	18.58	6.53	3.3		14	0	141	.18	16	1.5	3.3	KOA
		25	1430	22.58	19	19.79	155	10.87	11.43	2.3		13	0	125	.04	7	.6	2.5	UER
		25	1842	41.22	19	20.47	155	13.13	7.88			18	0	63	.07	6	.6	.8	UER
		25	20 4	15.53	19	45.75	155	13.15	15.90	2.3		26	0	151	.12	25	1.5	10.5	KKU
		25	2312	8.01	19	20.12	155	11.23	11.45			19	0	97	.07	7	.6	2.2	UER
		26	324	45.73	19	22.22	155	6.87	6.64	1.9		25	0	101	.14	9	.8	1.5	UER
		26	9 9	4.46	19	55.77	155	42.11	1.98			16	0	132	.09	30	.8	5.4	KOH
		26	10 5	4.82	19	23.07	155	28.34	5.20			11	0	244	.12	15	3.1	1.3	UKF
		26	1031	36.01	19	22.54	155	23.22	8.48	1.6		15	0	60	.06	8	.5	1.2	UKF
		26	1117	19.92	19	22.18	155	24.41	8.29	1.8		24	0	50	.12	9	.6	1.1	UKF
		26	1218	12.03	19	19.92	155	7.80	6.89	1.9		16	0	163	.16	11	1.5	3.5	UER
		26	16 7	6.22	18	57.60	155	4.74	53.44			14	0	310	.09	46	19.2	21.9	PPL
		26	2012	52.92	19	22.60	155	23.46	6.96			12	0	92	.05	7	.4	1.3	UKF
		26	2013	2.24	19	22.74	155	23.50	7.65	2.7		30	0	52	.13	8	.6	.8	UKF
		26	2015	36.07	19	22.57	155	23.32	8.14	1.6		17	0	61	.06	8	.5	1.3	UKF
		26	2056	46.31	19	22.40	155	23.48	8.33	1.6		13	0	64	.05	7	.5	1.4	UKF
		26	21 1	57.97	19	22.60	155	23.30	9.83	1.9		19	0	52	.07	8	.4	.5	UKF
		26	2338	31.03	19	18.25	155	14.92	9.68			11	0	134	.04	7	.6	2.5	POL
		27	0 3	16.51	19	24.35	155	17.41	.88	.7		11	0	98	.12	2	.5	.6	SPC
		27	215	44.75	19	20.13	155	12.53	7.79	1.6		24	0	73	.11	6	.6	1.0	UER
		27	231	16.59	19	22.63	155	22.88	7.07	1.5		17	0	81	.06	8	.4	.8	UKF
		27	311	4.71	19	14.07	155	20.82	28.35			17	0	155	.07	14	1.1	2.3	HLP
		27	312	12.97	19	27.78	155	.99	47.12			17	0	131	.12	19	3.5	7.7	LER
		27	457	30.63	19	21.09	155	18.98	2.22	1.2		12	0	84	.04	6	.3	9.3	KOA
		27	5 4	18.90	19	23.85	155	48.48	10.32	2.8		17	0	196	.18	24	3.5	.8	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	AUG	27	6 2	55.13	19	24.08	155	15.88	1.57	1.3		14	0	62	.08	2	.3	.2	SPC
		27	913	37.92	19	24.26	155	16.14	1.80	.7		10	0	71	.06	2	.6	.2	SPC
		27	15 8	.77	19	19.88	155	11.02	8.25			19	0	88	.07	7	.5	1.2	UER
		27	19 7	19.73	19	24.28	155	17.10	7.70	1.8		17	0	53	.10	2	.7	.9	LPC
		27	2011	36.79	19	22.54	155	23.06	7.81	1.6		16	0	60	.06	8	.4	1.2	UKF
		27	2021	59.16	19	21.03	155	13.52	7.64	1.6		20	0	74	.09	6	.7	.8	UER
		27	2149	40.83	19	19.97	155	12.36	10.01	4.5		32	0	78	.09	6	.5	.3	UER
		27	2153	44.05	19	19.61	155	12.13	8.29	1.7		14	0	87	.05	6	.5	1.4	UER
		27	2155	31.95	19	19.85	155	12.42	8.16			14	0	79	.05	6	.5	1.4	UER
		27	2158	4.25	19	19.35	155	12.55	7.17			15	0	86	.08	7	.7	1.8	UER
		27	2212	35.22	19	19.85	155	12.24	9.53			12	0	81	.05	6	.6	3.0	UER
		27	2218	58.17	19	20.14	155	17.16	6.29			17	0	105	.14	5	1.1	1.7	KOA
		28	329	25.73	19	34.70	155	43.41	8.76	2.5		11	0	186	.08	19	1.3	1.0	MOK
		28	438	8.45	19	19.75	155	12.47	6.60	1.6		26	0	80	.12	6	.7	1.2	UER
		28	610	48.36	19	25.60	155	16.92	2.02	.4		9	0	202	.12	2	2.2	14.9	SPC
		28	658	5.84	19	24.21	155	24.19	12.15			14	0	74	.05	8	.6	.5	UKF
		28	13 4	35.19	19	17.60	155	17.69	32.24	2.6		28	0	130	.08	9	.9	1.7	KOA
		28	1727	51.07	19	19.86	155	12.40	9.10	1.7		13	0	79	.04	6	.4	1.1	UER
		28	1829	23.10	19	22.67	155	17.52	1.33			8	0	197	.07	3	1.0	.5	KOA
		29	548	45.54	19	21.07	155	6.01	6.21			21	0	99	.16	8	1.1	2.1	UER
		29	643	56.57	19	23.68	155	17.54	8.07	1.6		13	1	141	.19	2	3.3	2.4	LPC
		29	737	38.71	19	23.86	155	16.85	6.93	1.2		14	0	79	.09	2	.9	1.3	LPC
		29	1224	46.90	19	22.96	155	23.82	9.00	1.6		19	0	89	.08	7	.6	.9	UKF
		29	1359	3.21	19	20.06	155	12.10	8.72	2.7		27	0	79	.11	6	.7	1.0	UER
		29	1451	47.19	19	20.08	155	11.61	7.41	1.7		26	0	81	.13	6	.8	1.4	UER
		29	1756	41.05	19	50.06	155	35.67	14.91	2.6		15	0	108	.09	30	.8	6.1	KKU
		29	2026	5.83	19	24.82	155	16.92	10.24	1.7		16	0	106	.08	2	1.0	2.0	LPC
		29	2049	44.31	19	25.06	155	17.18	8.42	1.2		14	0	123	.06	2	.7	1.0	LPC
		29	2315	24.10	19	28.53	155	35.58	1.52	2.5		14	0	111	.14	3	.9	.4	MOK
		30	025	20.96	19	19.22	155	16.07	6.83	1.6		17	0	111	.09	6	.7	1.5	KOA
		30	238	30.94	19	18.63	155	47.09	8.44	2.5		16	1	125	.16	24	1.3	1.0	KON
		30	5 7	4.77	19	24.47	155	16.90	14.42	2.2		31	0	46	.10	2	.5	.8	DEP
		30	743	18.06	19	19.84	155	12.00	9.29	1.7		23	0	83	.09	6	.5	1.1	UER
		30	1830	20.59	19	20.12	155	11.92	8.22	2.0		25	0	79	.11	6	.7	1.1	UER
		30	2227	5.58	19	19.05	155	12.75	10.30			12	0	156	.04	8	.8	3.2	UER
		31	525	26.52	19	22.81	155	17.22	1.71			9	0	107	.04	2	.4	.2	KOA
		31	6 8	41.51	19	21.11	155	3.75	6.87			23	0	142	.12	11	1.0	1.0	MER
		31	638	41.72	19	29.87	155	40.01	8.01			12	0	131	.11	9	1.3	2.2	MOK
		31	1058	7.40	19	28.99	155	26.22	6.79	2.1		14	1	93	.09	15	.7	4.4	UKF
		31	13 0	9.81	19	19.91	155	11.92	9.44	1.9		18	0	117	.12	6	1.1	1.8	UER
		31	1358	52.23	19	25.76	155	28.23	9.60			15	0	110	.10	13	.9	.9	UKF
		31	1740	51.13	19	9.74	155	28.12	6.69			24	0	91	.18	18	1.3	1.7	LSC
		31	19 9	19.90	19	26.33	155	27.17	6.00	2.0		17	0	123	.14	12	1.1	4.0	UKF
		31	2042	58.93	19	21.21	155	17.86	28.50	2.6		31	0	34	.10	4	.8	1.4	DEP
		31	2328	4.11	19	24.38	155	17.65	1.59	.4		11	0	86	.10	2	.7	.3	SPC
		31	2333	1.64	19	24.23	155	16.64	18.83			16	0	62	.07	3	.9	1.3	DEP
	SEP	1	351	14.84	19	20.36	155	19.13	3.52	1.4		14	0	72	.05	6	.5	2.4	SDR
		1	358	40.24	19	34.31	155	33.24	11.27			12	0	176	.09	14	1.1	.5	MOK

HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	RMS DEG	MIN SEC	ERH DIS	KM	ERZ KM	REMK
1974	SEP	1	6 9	56.23	19	28.18	155	36.49	1.10			12	0	201	.13	2	1.4	.5	MOK
		1	1016	30.03	19	20.21	155	19.27	3.56			10	0	105	.06	6	.7	3.2	SWR
		1	1647	30.43	19	24.88	155	29.24	9.21	1.9		23	0	60	.11	13	.6	1.3	UKF
		1	1718	56.38	19	18.24	155	13.26	6.73			15	0	89	.13	8	1.1	3.1	POL
		1	1817	33.05	19	25.73	155	35.85	1.09	2.9		20	0	93	.16	7	.9	1.5	MOK
		1	2111	10.28	19	18.82	155	13.56	9.67			16	0	130	.07	7	.7	2.5	POL
		1	2152	21.59	19	29.15	155	39.27	6.78			16	0	128	.10	24	.9	1.5	MOK
		1	2335	30.84	19	24.14	155	15.88	1.80	1.2		16	0	59	.05	2	.3	.2	SPC
		2	426	11.65	19	1.38	155	27.94	34.97	2.4		24	0	216	.10	28	1.8	3.7	LSW
		2	5 5	20.28	19	21.92	155	18.13	1.81			10	0	82	.04	4	.4	99.0	KOA
		2	529	.57	19	22.47	155	14.78	28.25	2.1		23	0	73	.09	4	1.2	1.7	DEP
		2	1419	21.55	19	19.85	155	12.51	7.01	1.6		18	0	149	.08	6	.5	.8	UER
		2	1549	36.66	19	21.43	155	25.91	10.17	2.1		25	0	72	.10	9	.6	.5	HEA
		2	1610	11.92	19	24.28	155	17.13	7.15	1.1		14	0	70	.14	2	1.3	2.0	LPC
		2	17 4	5.87	19	22.01	155	15.92	29.39	2.1		20	0	66	.09	4	1.4	2.7	DEP
		2	1722	28.71	19	24.55	155	16.53	9.04	1.6		15	0	90	.10	2	1.2	1.8	LPC
		2	1826	56.45	19	24.57	155	17.07	6.37	1.1		13	0	67	.12	2	1.2	1.8	LPC
		3	654	1.99	19	22.12	155	25.33	9.11	1.7		19	0	78	.11	10	.9	1.9	UKF
		3	1143	13.61	19	22.30	155	33.78	24.88	3.1		37	2	47	.11	11	.7	1.4	MOK
		3	1541	50.57	19	11.40	155	45.18	8.31	2.8		16	0	228	.16	33	3.3	1.5	DIS
		3	1650	12.86	19	25.07	155	16.52	8.41	1.2		12	0	119	.12	2	2.0	3.4	LPC
		3	1733	36.20	19	23.28	155	14.32	4.51	1.2		9	0	120	.10	3	.4	1.4	GLN
		3	1959	35.91	19	19.89	155	12.13	8.85			17	0	81	.05	6	.4	1.0	UER
		3	2037	32.03	19	19.56	155	11.20	8.77	1.8		21	0	95	.09	7	.6	1.4	UER
		4	6 0	49.71	19	24.80	155	16.86	8.82	1.6		13	0	108	.12	2	1.5	2.4	LPC
		4	628	4.92	19	27.91	155	27.25	9.38	2.4		32	0	80	.15	11	.7	1.1	UKF
		4	717	34.24	19	19.53	155	11.72	10.28	1.8		16	0	126	.08	6	.9	2.9	UER
		4	943	7.71	19	21.90	155	25.10	9.87	2.0		20	0	69	.09	10	.7	.8	HEA
		4	1042	35.67	19	23.48	155	17.45	4.23	.9		12	0	138	.19	3	2.1	3.0	SPC
		4	1115	18.56	19	24.39	155	27.20	5.66	2.9		21	0	106	.12	13	.8	3.5	UKF
		4	1228	58.78	19	24.35	155	17.65	1.58	1.0		12	0	87	.08	2	.5	.2	SPC
		4	1341	31.01	19	27.25	155	24.28	7.74	2.5		29	0	61	.12	10	.6	1.1	UKF
		4	1352	35.77	19	23.36	155	25.21	8.27	1.7		18	0	85	.09	10	.7	1.0	UKF
		4	1811	50.04	19	28.28	155	35.29	44.73	2.5		19	0	94	.07	5	1.1	2.6	MOK
		4	22 5	57.81	19	24.72	155	24.79	9.10	1.7		23	0	60	.09	9	.6	1.0	UKF
		4	2258	49.66	19	27.49	155	35.22	43.75	2.8		20	0	81	.10	4	1.5	3.9	MOK
		4	23 9	2.61	19	22.43	155	24.86	9.54	1.7		20	0	91	.07	9	.4	.6	UKF
		5	243	39.68	19	19.68	155	15.13	8.31			16	0	93	.07	6	.6	1.6	KOA
		5	428	52.30	19	23.60	155	25.44	5.75	1.9		22	0	58	.14	10	.8	2.6	UKF
		5	615	10.08	19	22.57	155	17.20	2.07	1.0		12	0	87	.08	3	.4	7.4	KOA
		5	750	14.20	19	16.61	155	44.90	9.28	2.5		15	0	229	.18	27	5.4	1.3	HEA
		5	853	20.93	19	20.34	155	12.03	9.80	2.7		28	0	75	.13	7	.8	.5	UER
		5	929	46.74	19	25.83	155	26.42	11.38	1.8		13	0	198	.04	11	1.5	4.5	UKF
		5	1022	10.10	19	25.18	155	29.00	7.77	1.9		20	0	112	.13	15	.9	1.8	UKF
		5	1355	29.56	19	18.47	155	15.49	8.30			15	0	133	.05	6	.5	1.2	KOA
		5	1514	16.56	19	23.92	155	23.94	11.58	1.7		13	0	118	.05	7	.5	1.9	UKF
		5	16 2	41.40	19	26.88	155	27.60	6.75	1.8		15	0	128	.09	12	.8	3.0	UKF
		5	17 6	57.92	19	31.86	155	47.36	6.36	2.5		14	0	93	.12	20	1.1	19.3	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	SEP	5	1722	32.57	19	22.81	155	24.97	10.23	2.0		24	0	55	.10	9	.6	.5	UKF
		5	2044	55.83	19	27.82	155	35.61	49.38	2.6		18	0	113	.10	3	1.6	4.3	MOK
		6	054	32.04	19	24.74	155	30.03	9.39	2.3		28	0	60	.11	12	.7	.8	MOK
		6	6 2	8.84	19	28.67	155	34.42	40.31	2.5		16	0	95	.17	20	3.0	7.2	MOK
		6	11 9	51.10	19	26.77	155	23.78	8.43	1.9		18	0	86	.07	9	.6	1.4	UKF
		6	1324	43.86	19	22.58	155	24.88	9.07	2.0		26	0	69	.08	9	.5	.8	UKF
		6	16 0	6.68	19	18.58	155	12.94	11.04			15	0	159	.03	9	.4	1.2	POL
		6	1916	48.05	19	24.29	155	17.75	1.19	.7		8	0	115	.06	2	.3	.3	SPC
		6	1917	14.77	19	24.36	155	17.77	1.64	.9		11	0	75	.07	2	.3	.2	SPC
		6	1943	37.89	19	19.62	155	11.36	8.72	1.7		21	0	93	.07	6	.6	1.2	UER
		6	2241	19.81	19	22.44	155	17.25	1.48	1.0		10	0	92	.04	3	.4	.3	KOA
		6	2254	8.14	19	28.42	155	34.07	33.44	2.4		14	0	151	.06	4	2.1	3.4	MOK
		7	711	29.40	19	23.25	155	2.91	6.50			14	0	177	.10	13	.9	2.0	MER
		7	739	30.56	19	22.57	155	23.25	10.00	1.6		17	0	63	.08	8	.7	1.2	UKF
		7	1049	.64	19	24.13	155	15.74	1.52	.8		12	0	66	.09	3	.4	.3	SPC
		7	13 5	35.86	19	25.10	155	23.34	10.71	1.9		22	0	64	.05	9	.3	.5	UKF
		7	1326	54.02	19	22.83	155	24.34	9.36	1.7		19	0	55	.09	8	.6	1.6	UKF
		7	1346	31.64	19	20.31	155	10.77	8.33	1.7		12	0	130	.09	7	.9	1.7	UER
		7	1411	11.14	19	19.10	155	15.58	9.10	2.6		28	0	93	.10	6	.6	1.0	KOA
		7	1441	37.63	19	30.79	155	40.19	5.64	2.3		15	0	136	.16	10	1.4	3.2	MOK
		7	1715	38.45	19	21.24	155	13.13	11.77	1.7		17	0	74	.04	6	.4	1.4	UER
		7	22 4	39.42	19	25.52	155	28.78	9.48	1.9		26	0	64	.15	12	.9	1.2	UKF
		7	2357	22.07	19	22.61	155	17.27	1.53	.9		10	0	84	.06	3	.4	.3	KOA
		8	1126	8.20	19	18.78	155	12.80	8.91			15	0	93	.06	8	.7	1.6	POL
		8	1145	8.65	19	20.12	155	5.80	6.31	1.9		13	0	122	.09	8	1.1	2.2	MER
		8	1942	5.53	19	23.09	155	17.24	1.40	.8		10	0	102	.08	3	.7	.3	SPC
		8	2024	31.36	19	24.88	155	26.79	10.12	2.8		30	0	36	.14	11	.8	.4	UKF
		8	2154	43.46	19	20.82	155	13.03	9.25			12	0	119	.03	6	.3	1.0	UER
		9	210	58.57	19	32.92	155	10.17	22.08	2.1		22	0	142	.10	19	1.2	3.0	HIL
		9	1026	30.58	19	22.53	155	22.98	8.52	1.6		13	0	88	.05	8	.5	1.8	UKF
		9	1247	17.05	19	20.80	155	13.19	8.73	1.6		16	0	65	.09	6	.8	1.6	UER
		9	17 5	47.57	19	18.98	155	13.73	9.17	1.7		21	0	66	.09	7	.7	1.5	POL
		9	2114	58.64	19	22.50	155	17.24	2.00	1.0		12	0	89	.11	3	.7	.0	KOA
		9	2250	7.27	19	20.16	155	13.71	8.77	1.6		21	0	69	.09	6	.7	1.4	UER
		10	2 9	49.73	19	23.91	155	17.04	1.66	.6		12	0	71	.08	2	.5	.2	SPC
		10	455	35.20	19	19.57	155	11.93	8.61			14	0	89	.05	6	.5	1.4	UER
		10	529	31.80	19	23.87	155	16.99	1.48	.9		12	0	80	.11	2	.7	.4	SPC
		10	532	4.23	19	23.76	155	17.12	1.71	1.3		15	0	47	.06	2	.3	.2	SPC
		10	1230	14.03	19	19.47	155	14.07	8.37	1.6		15	0	84	.08	6	.7	1.7	UER
		10	1410	49.09	19	19.79	155	14.11	8.93	1.6		18	0	119	.06	6	.4	1.1	UER
		10	1829	29.39	19	26.54	155	26.68	8.73	2.1		27	0	71	.14	11	.8	1.6	UKF
		10	2232	15.26	19	19.72	155	9.31	7.49	1.8		17	0	84	.11	9	.8	1.9	UER
		11	047	58.51	19	21.31	155	7.22	6.48	1.9		19	0	81	.14	8	1.0	2.8	UER
		11	115	18.87	19	19.48	155	9.26	9.52	1.9		18	0	89	.09	9	.8	3.3	UER
		11	4 0	35.17	19	18.96	155	13.23	7.86			15	0	79	.04	8	.5	1.0	POL
		11	921	37.10	19	22.70	155	17.15	1.99			10	0	90	.11	5	.8	.0	KOA
		11	952	32.77	19	22.95	155	24.11	8.94	2.2		29	0	56	.10	8	.5	.7	UKF
		11	1326	49.95	19	23.17	155	27.32	9.04	1.8		18	0	94	.15	13	1.0	3.5	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	SEP	11	1350	41.60	19	24.39	155	16.37	1.71	.6		8	0	80	.09	2	1.0	.4	SPC
		12	513	2.10	19	20.27	155	10.72	8.82	1.7		22	0	81	.09	7	.7	1.4	UER
		12	7	3 18.74	19	22.07	155	25.44	8.26	1.7		19	0	78	.12	11	.8	1.6	UKF
		12	1512	39.39	19	22.24	155	24.33	9.32	2.2		27	0	47	.11	9	.5	.7	UKF
		12	16	3 45.80	19	22.09	155	24.32	9.55	1.7		19	0	52	.08	9	.5	.6	UKF
		12	1617	41.33	19	21.94	155	24.21	8.63	1.7		11	0	126	.07	9	.9	1.2	SWR
		12	1715	10.88	19	22.16	155	24.43	9.29	2.0		22	0	52	.10	9	.6	1.0	UKF
		12	1913	45.52	19	18.61	155	12.52	9.60			13	0	173	.05	8	1.2	3.8	POL
		12	1943	53.37	19	19.41	155	13.07	9.34	2.0		15	0	206	.09	8	1.1	1.3	UER
		12	2157	25.20	19	24.24	155	17.19	15.10	1.6		28	0	49	.06	2	.4	.5	DEP
		12	23	8 7.96	19	24.22	155	17.71	1.45	.7		10	0	111	.04	2	.3	.2	SPC
		13	348	40.83	19	19.87	155	9.82	8.46	1.9		18	0	112	.11	8	1.0	2.0	UER
		13	448	32.16	19	27.49	155	25.76	8.39	2.3		26	0	125	.10	10	.7	1.0	UKF
		13	1849	56.19	19	25.81	155	25.04	9.68			14	0	94	.06	8	.6	2.7	UKF
		13	1932	40.39	19	21.92	155	24.40	12.00			18	0	79	.08	9	.7	2.6	SWR
		13	1959	39.07	19	20.37	155	20.02	1.82	1.4		14	0	116	.06	6	.4	99.0	SWR
		14	114	33.23	19	23.96	155	23.83	9.86			16	0	70	.06	7	.5	2.1	UKF
		14	237	14.46	19	13.34	155	19.17	27.40			15	0	178	.10	13	1.7	3.4	HLP
		14	2119	34.34	19	59.51	155	33.93	40.96	2.8		30	0	172	.10	27	1.2	3.2	KOH
		14	2319	30.19	19	28.22	155	37.14	2.02	2.7		17	0	226	.17	4	2.9	5.2	MOK
		14	2331	59.14	19	20.36	155	19.72	5.50	2.6		26	0	65	.13	6	.6	1.5	SWR
		15	0	4 4.03	19	22.62	155	17.22	1.58	.9		11	0	84	.06	3	.4	.3	KOA
		15	947	24.12	19	21.99	155	24.53	10.61	2.9		28	0	47	.10	9	.6	.4	SWR
		15	1845	55.40	19	24.78	155	16.79	14.93	1.6		22	0	64	.07	2	.6	.8	DEP
		16	328	34.07	19	24.25	155	17.60	1.58	.8		13	0	61	.07	2	.4	.2	SPC
		16	6	2 17.65	19	23.02	155	17.29	1.30	.8		15	0	67	.10	3	.6	.4	SPC
		16	747	30.82	19	24.10	155	16.01	1.33			9	0	62	.10	2	.5	.6	SPC
		16	946	26.22	19	22.84	155	17.14	1.68	.9		12	0	75	.07	2	.5	.2	KOA
		16	1054	38.27	19	24.27	155	16.32	1.80	.6		9	0	72	.09	2	.9	.4	SPC
		16	1353	50.21	19	22.71	155	22.89	8.21	1.9		19	0	61	.06	8	.5	1.1	UKF
		16	1432	44.76	19	21.25	155	29.34	9.34	2.0		20	0	83	.14	16	1.0	1.6	HEA
		16	1510	13.59	19	22.64	155	23.10	9.07			13	0	90	.06	8	.6	2.0	UKF
		16	1548	17.93	19	22.82	155	22.96	7.96	2.2		24	0	60	.07	8	.4	.8	UKF
		16	1614	54.70	19	22.57	155	23.16	10.55	1.6		16	0	86	.06	8	.5	.5	UKF
		16	1657	41.56	19	22.84	155	22.97	8.12	2.4		23	0	60	.08	8	.5	.9	UKF
		16	1715	11.51	19	21.90	155	18.24	.63			13	0	74	.08	4	.4	1.5	KOA
		16	1750	48.02	19	22.53	155	17.25	2.00	1.0		12	0	88	.13	5	.8	.0	KOA
		16	1924	32.18	19	29.27	155	40.26	5.79	2.3		13	0	127	.13	9	1.2	3.9	MOK
		16	1944	22.84	19	23.91	155	16.94	1.75	.6		9	0	79	.07	2	.7	.3	SPC
		17	023	8.12	19	22.59	155	17.25	2.00	.9		11	0	85	.10	5	.7	.0	KOA
		17	756	1.34	19	23.79	155	17.08	2.00	.7		10	0	83	.10	2	.8	2.1	SPC
		17	933	47.14	19	22.19	155	18.01	.95			11	0	80	.05	4	.2	.3	KOA
		17	13	8 34.92	19	22.17	155	17.50	1.58	1.0		12	0	94	.08	4	.6	.5	KOA
		17	1431	55.04	19	25.99	155	29.53	12.28	2.0		15	0	68	.08	12	1.0	.4	UKF
		17	1451	23.43	19	21.89	155	18.14	.93	1.1		13	0	77	.07	4	.5	.3	KOA
		17	1558	55.74	19	20.92	155	3.51	7.26	2.0		13	0	147	.10	11	2.3	3.6	MER
		17	1652	31.31	18	50.52	155	10.11	51.86	2.8		18	0	273	.09	53	4.3	9.0	PPL
		17	1730	2.69	19	21.15	155	4.35	5.72			16	0	89	.11	10	.9	1.8	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	SEP	17	1948	34.70	19	23.88	155	17.05	1.83			10	0	81	.05	2	.4	.2	SPC
		17	2145	4.70	19	24.00	155	15.75	1.80	1.1		13	0	66	.06	3	.4	.2	SPC
		17	2156	34.17	19	24.38	155	52.77	11.54	2.9		15	0	159	.13	29	4.2	1.9	KON
		18	527	14.85	19	19.84	155	12.31	8.10	1.7		16	0	80	.05	6	.4	1.2	UER
		18	7	8 49.52	19	21.90	155	18.25	1.96	1.4		17	0	67	.09	4	.4	38.6	KOA
		18	916	54.49	19	19.83	155	12.09	8.66			14	0	83	.05	6	.5	1.8	UER
		18	1042	21.44	19	23.14	155	23.59	10.06	1.6		15	0	91	.07	7	.5	.6	UKF
		18	1043	56.06	19	25.51	155	28.30	11.20	1.9		13	0	112	.10	13	1.2	1.0	UKF
		18	1250	20.68	19	20.29	155	19.24	1.63	1.3		14	0	103	.04	6	.3	.0	SWR
		18	1312	47.24	19	22.05	155	26.45	8.14	1.8		14	0	74	.09	10	.8	1.9	UKF
		18	15	7 16.70	19	22.05	155	24.96	11.24	1.8		18	0	69	.08	10	.6	2.3	UKF
		18	18	9 52.12	19	20.42	155	19.11	2.00			12	0	97	.04	6	.3	99.0	SWR
		18	19	1 53.02	19	22.23	155	17.82	2.00	1.0		10	0	119	.08	4	.7	.0	KOA
		18	2342	6.29	19	21.53	155	18.61	1.44	1.1		13	0	78	.10	4	.6	1.0	KOA
		19	1	2 46.58	19	24.30	155	17.46	2.00	1.3		14	0	62	.12	2	.7	.0	SPC
		19	1	4 33.12	19	24.47	155	17.27	2.00	1.2		10	0	74	.17	3	1.4	.0	SPC
		19	656	20.96	19	19.81	155	14.90	7.69			14	0	76	.07	6	.7	1.1	UER
		19	1551	37.68	19	48.16	155	31.46	28.59	3.3		37	2	100	.11	36	.7	2.8	KKU
		20	123	29.83	19	21.39	155	8.33	8.56	1.8		21	0	69	.09	9	.5	.8	UER
		20	236	29.59	19	29.53	155	40.16	8.29	2.3		12	0	128	.08	9	1.0	1.7	MOK
		20	728	15.03	19	18.26	155	13.29	6.33			13	0	88	.06	8	.5	1.5	POL
		20	1145	50.65	19	27.13	155	37.34	1.70	2.1		9	0	212	.09	5	1.8	.5	MOK
		20	1359	26.95	19	22.85	155	24.20	9.20	1.7		22	0	67	.08	8	.5	1.2	UKF
		20	16	2 49.19	19	23.75	155	24.61	9.03	2.0		28	0	75	.11	9	.6	.9	UKF
		20	2144	11.20	19	20.44	155	13.69	7.66	1.6		23	0	66	.13	6	.8	1.2	UER
		20	22	5 47.77	19	20.50	155	13.05	8.29			17	0	64	.05	6	.5	.6	UER
		20	2216	15.94	19	25.24	155	25.32	11.45	1.7		14	0	67	.06	9	.5	.5	UKF
		21	323	45.56	19	24.89	155	16.73	12.18	1.5		23	0	83	.08	2	.7	.2	LPC
		21	438	18.34	19	28.80	155	25.38	7.44	1.7		15	0	87	.11	12	.9	2.3	UKF
		21	1420	1.22	19	49.85	155	47.51	28.62	2.7		26	0	163	.13	35	1.3	3.9	KON
		21	1427	5.53	19	22.01	155	28.85	9.53	1.9		26	0	79	.12	11	.7	.5	UKF
		21	15	9 8.67	19	23.44	155	17.72	11.74	1.5		21	0	54	.05	3	.4	.2	LPC
		21	1952	13.09	19	19.25	155	13.50	8.03	1.7		26	0	69	.10	7	.6	1.0	UER
		22	4	2 35.90	19	23.25	155	17.72	12.03	2.1		29	0	32	.07	3	.4	.2	LPC
		22	956	38.16	19	23.45	155	17.65	11.72	1.8		21	0	61	.06	4	.5	.2	LPC
		22	16	1 28.99	19	23.37	155	17.56	11.99	1.5		21	0	56	.06	3	.5	.2	LPC
		22	1652	9.41	19	26.06	155	24.83	10.98	1.7		17	0	71	.07	8	.5	.5	UKF
		23	345	16.98	19	23.23	155	17.65	11.98			23	0	59	.07	3	.5	.3	LPC
		23	633	28.30	19	23.51	155	17.69	11.80	1.5		21	0	52	.06	3	.5	.2	LPC
		23	8	2 5.78	19	20.05	155	8.89	7.44	1.8		22	0	73	.12	9	.8	1.9	UER
		23	8	3 53.97	19	19.82	155	8.69	9.60	1.9		15	0	75	.07	9	.7	2.5	UER
		23	1248	20.42	19	17.52	155	16.35	5.87	1.7		10	0	181	.10	5	1.2	2.3	KOA
		23	16	0 16.08	19	22.69	155	24.97	10.14	2.0		20	0	88	.07	9	.6	2.1	UKF
		23	17	4 19.25	19	20.79	155	13.18	10.02			16	0	65	.04	6	.4	1.5	UER
		24	018	57.27	19	20.10	155	25.23	7.30	1.8		19	0	92	.12	7	.7	1.7	HEA
		24	756	2.35	19	31.63	155	42.20	7.35	2.4		14	0	95	.17	14	2.0	6.1	MOK
		24	937	54.02	19	22.76	155	29.94	9.17			17	0	153	.09	13	.8	1.5	UKF
		24	1117	7.80	19	24.28	155	17.19	13.48			23	0	62	.07	2	.6	.6	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	SEP	24	1312	17.39	19	26.47	155	29.61	9.06			19	0	126	.08	12	.6	1.1	UKF
		24	1323	42.23	19	18.75	155	15.80	8.49			20	0	103	.09	5	.5	1.1	KOA
		24	1325	57.79	19	25.12	155	17.10	1.00			14	0	126	.13	2	.5	.3	SPC
		24	2026	33.99	19	28.56	155	36.64	62.99			22	0	113	.11	3	1.8	6.5	MOK
		24	2119	13.77	19	24.08	155	26.23	8.62	3.5		31	0	39	.14	11	.7	1.2	UKF
		24	2245	48.56	19	20.71	155	13.64	7.58	1.2		13	0	62	.04	7	.5	.9	UER
		25	226	25.23	19	19.60	155	10.98	8.84	3.8		24	0	94	.13	7	.8	1.3	UER
		25	232	48.08	19	19.38	155	11.89	9.37			16	0	94	.05	6	.4	1.2	UER
		25	3 6	21.41	19	19.69	155	11.22	8.23			23	0	92	.10	6	.7	1.1	UER
		25	327	27.47	19	25.35	155	36.22	1.07			10	0	98	.13	7	1.1	1.6	MOK
		25	718	25.65	19	18.60	155	15.72	9.05			21	0	131	.08	5	.6	.8	KOA
		25	10 2	30.29	19	21.81	155	25.82	9.02			13	0	71	.06	10	.5	1.3	HEA
		25	1136	37.54	19	20.08	155	8.59	6.46	1.8		17	0	76	.12	9	.8	1.7	UER
		25	1216	4.48	19	23.39	155	26.10	1.67	2.1		21	0	68	.16	11	.9	36.9	UKF
		25	20 2	51.73	19	19.74	155	10.97	8.97	1.8		21	0	91	.09	7	.7	1.3	UER
		25	2018	50.22	20	9.05	155	31.73	27.85	3.8		28	0	229	.09	42	1.7	3.2	KOH
		25	23 6	.26	19	25.44	155	26.01	10.21	1.8		14	0	149	.05	10	.5	.5	UKF
		26	152	30.97	19	25.00	155	24.09	1.24	1.4		11	0	110	.13	9	1.1	.0	UKF
		26	2 6	17.78	19	23.31	155	15.25	30.56	2.3		29	0	59	.09	3	.7	1.5	DEP
		26	335	35.58	19	17.86	155	14.38	8.15	1.7		24	0	128	.08	7	.5	.6	POL
		26	337	51.07	19	2.05	155	25.88	36.61			15	0	219	.10	31	2.4	5.4	LSW
		26	357	25.15	19	2.43	155	25.71	36.59			24	0	204	.09	30	1.6	4.0	LSW
		26	412	39.70	19	23.54	155	15.51	29.57	2.3		29	0	54	.05	3	.4	.8	DEP
		26	546	51.02	19	20.46	155	11.73	7.95	1.8		25	0	75	.11	7	.6	1.0	UER
		26	1140	57.09	19	18.49	155	13.11	9.01	1.7		14	0	161	.04	9	.5	1.2	POL
		26	1221	26.09	19	23.80	155	28.27	8.32	2.2		23	0	71	.13	14	.8	2.2	UKF
		26	2038	37.36	19	18.55	155	15.39	7.59			17	0	129	.05	6	.4	1.0	KOA
		27	1611	45.10	19	24.31	155	17.17	16.54			21	0	43	.10	2	.7	1.4	DEP
		27	19 9	16.39	19	17.70	155	12.89	6.07			10	0	186	.09	9	2.9	4.5	POL
		28	123	5.02	19	19.35	155	15.66	9.77			24	0	106	.11	6	.7	.6	KOA
		28	124	54.63	19	19.41	155	15.69	8.73			22	0	104	.09	6	.6	.8	KOA
		28	425	16.25	19	24.06	155	26.65	6.98			12	0	92	.11	12	1.0	2.7	UKF
		28	1025	33.03	19	17.99	155	12.96	9.22	2.7		29	0	109	.12	9	.6	.7	POL
		28	1110	12.82	19	25.27	155	28.14	8.92			14	0	115	.08	13	1.0	2.3	UKF
		28	1111	2.89	19	25.86	155	28.04	9.72	2.8		32	0	43	.15	13	.8	.4	UKF
		28	1149	2.06	19	17.91	155	13.06	9.11			27	0	107	.11	9	.6	.8	POL
		28	1517	47.27	19	19.49	155	7.86	8.69			15	0	216	.14	11	2.3	1.1	UER
		28	2026	17.68	19	23.72	155	2.60	5.98			20	0	125	.13	15	.9	2.0	MER
		28	22 9	17.21	19	21.59	155	49.83	10.67	2.6		20	0	125	.15	25	1.2	.5	KON
		28	2236	47.28	19	22.97	155	22.78	10.14			18	0	55	.07	9	.5	1.0	UKF
		29	236	28.30	19	22.50	155	25.28	10.48			21	0	95	.08	10	.6	1.1	UKF
		29	238	36.46	19	22.11	155	25.35	9.53	1.9		25	0	56	.13	10	.8	.7	UKF
		29	256	2.59	19	17.99	155	13.25	9.14			21	0	95	.07	9	.5	.6	POL
		29	12 9	18.23	19	27.07	155	21.62	8.51	1.9		14	0	89	.04	7	.4	.9	UKF
		29	2229	43.54	19	30.26	155	40.07	8.77	2.3		12	0	133	.11	10	1.7	2.2	MOK
		30	035	41.51	19	29.88	155	40.59	29.12	2.5		19	0	75	.10	10	1.0	2.5	MOK
		30	136	20.29	19	21.35	155	16.34	33.53	2.5		27	0	65	.08	4	.9	1.7	DEP
		30	456	33.11	19	23.23	155	27.31	7.73	1.8		22	0	67	.14	15	.9	2.1	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	SEP	30	658	42.03	19	20.59	155	12.39	9.62			16	0	77	.04	7	.4	1.4	UER
		30	949	46.59	19	19.01	155	15.29	8.60	1.6		25	0	92	.09	6	.5	.7	KOA
		30	955	37.95	19	18.55	155	15.11	7.57			11	0	125	.04	6	.5	1.4	KOA
		30	1452	24.48	19	29.19	155	28.51	11.09	2.2		19	0	92	.11	12	.8	1.1	NER
		30	1720	43.15	19	19.19	155	13.71	7.99	1.7		20	0	81	.09	7	.6	.9	UER
		30	1757	44.98	19	14.10	155	19.80	33.89	2.6		33	0	158	.09	12	.9	1.5	HLP
		30	1941	24.24	19	22.05	155	25.84	8.18	1.7		15	0	72	.09	11	.6	1.7	UKF
		30	2224	35.63	19	34.87	155	40.68	9.20	2.7		19	0	101	.14	16	1.2	1.1	MOK
	OCT	1	0 5	14.84	19	22.55	155	23.37	10.46	1.7		13	0	60	.07	7	.5	.7	UKF
		1	423	10.25	19	23.83	155	36.04	3.46	2.2		11	0	98	.09	10	.6	2.3	MOK
		1	8 1	45.49	19	19.82	155	11.76	9.35			20	0	86	.06	6	.4	.8	UER
		1	829	31.68	19	25.01	155	35.62	5.17			8	0	171	.05	8	1.4	1.3	MOK
		1	931	32.56	19	25.70	155	28.01	8.88			21	0	117	.16	13	1.1	2.6	UKF
		1	953	37.26	19	19.58	155	14.94	8.05			16	0	94	.07	5	.7	1.2	UER
		1	1036	29.98	19	39.28	155	22.95	11.11			15	0	135	.13	22	1.6	.5	NER
		1	1058	8.01	19	24.30	155	17.67	1.36	1.1		14	0	63	.09	2	.4	.3	SPC
		1	1059	7.97	19	24.22	155	17.58	2.00	.8		11	0	78	.14	2	1.0	.0	SPC
		1	1333	30.11	19	24.27	155	16.03	1.55	.7		8	0	100	.09	2	.7	.4	SPC
		1	1344	23.49	19	24.27	155	16.35	1.92	.6		8	0	72	.10	3	1.0	.4	SPC
		1	1943	2.23	19	24.14	155	26.47	7.70	2.0		24	0	61	.11	12	.6	1.6	UKF
		1	2023	28.14	19	31.11	155	40.80	1.46	2.3		7	0	322	.16	11	38.8	72.8	MOK
		2	252	55.47	19	20.17	155	12.16	8.35	2.6		28	0	76	.12	6	.7	1.2	UER
		2	7 1	28.77	19	22.78	155	25.48	7.55	2.1		28	0	52	.13	10	.6	1.2	UKF
		2	8 1	19.59	19	23.93	155	24.35	10.52	2.8		21	0	57	.08	8	.5	.3	UKF
		2	9 7	16.92	19	18.36	155	15.29	6.64			16	0	106	.06	6	.5	1.0	KOA
		2	13 7	29.13	19	32.00	155	36.73	10.11	2.7		25	0	148	.14	9	1.5	.4	MOK
		2	1332	.64	19	26.12	155	23.16	11.05			17	0	64	.09	8	.8	.4	UKF
		2	1537	21.79	19	24.07	155	16.02	1.50	1.4		15	0	61	.10	2	.4	.3	SPC
		2	1956	31.16	19	20.25	155	7.98	5.91	2.1		19	0	85	.13	9	1.0	2.5	UER
		3	1440	41.37	19	20.53	155	13.28	9.28	1.6		19	0	61	.08	6	.5	1.3	UER
		3	1810	54.86	19	23.23	155	23.77	9.88	1.6		23	0	57	.07	7	.4	.7	UKF
		3	2014	1.45	19	24.38	155	17.50	14.19	2.5		34	0	37	.07	2	.4	.6	DEP
		3	2123	8.84	19	20.79	155	13.38	8.63	1.6		27	0	58	.13	7	.7	1.2	UER
		3	2251	10.44	19	24.30	155	16.29	1.68	.9		14	0	74	.09	2	.5	.2	SPC
		3	2322	10.76	19	24.30	155	16.33	1.69	.6		10	0	74	.09	2	.7	.3	SPC
		4	119	1.74	19	24.63	155	16.75	17.03			25	0	46	.07	2	.5	.9	DEP
		4	328	17.76	19	25.06	155	26.90	7.42	2.2		27	0	62	.11	11	.6	1.4	UKF
		4	347	18.70	19	30.77	155	54.61	10.04	2.7		11	0	184	.10	33	1.9	.6	KON
		4	642	18.16	19	30.15	155	39.89	9.54	2.3		10	0	133	.08	9	1.4	3.7	MOK
		4	1046	38.22	19	24.25	155	17.90	1.38	1.1		13	0	91	.10	3	.6	.4	SPC
		4	1543	14.75	19	28.41	155	35.67	1.26	2.2		10	0	134	.08	2	.5	.3	MOK
		4	18 8	19.49	19	24.11	155	15.91	1.32	.7		10	0	120	.11	2	.6	.4	SPC
		5	047	5.74	19	26.21	155	37.48	.16	1.6		8	0	207	.08	19	1.7	99.0	MOK
		5	953	3.13	19	20.27	155	11.60	9.24			16	0	87	.06	7	.5	1.2	UER
		5	10 6	52.93	19	24.11	155	26.93	6.13	2.0		23	0	63	.14	12	.8	2.6	UKF
		5	1541	46.70	19	18.94	155	12.76	8.77			18	0	90	.06	8	.5	1.2	POL
		5	1656	26.31	19	19.08	155	15.78	7.82			18	0	114	.06	6	.5	1.0	KOA
		5	1659	47.63	19	24.20	155	16.01	1.74			9	0	103	.05	2	.5	.2	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	OCT	5	1738	23.21	19	24.31	155	16.20	1.73	.6		9	0	74	.08	2	.7	.3	SPC
		5	2023	21.02	19	26.30	155	36.78	3.61	2.8		27	0	139	.12	6	.6	1.0	MOK
		5	2216	41.90	19	24.17	155	17.74	1.35	.4		9	0	110	.07	2	.4	.2	SPC
		6	529	27.22	19	24.22	155	16.91	14.80	2.7		36	0	37	.09	2	.5	.7	DEP
		6	633	22.82	19	24.59	155	16.99	14.91	1.9		30	0	42	.09	2	.6	.8	DEP
		6	7	1 48.79	19	25.31	155	23.90	8.72			18	0	72	.10	8	.7	1.6	UKF
		6	1025	57.33	19	23.96	155	17.15	13.95	1.6		17	0	51	.04	3	.4	.5	DEP
		6	1113	7.87	20	.04	155	28.36	42.81			14	0	192	.08	35	1.3	3.0	KKU
		6	1126	17.84	19	24.17	155	16.17	1.80	1.3		14	0	66	.06	2	.4	.2	SPC
		6	1143	1.05	19	17.10	155	1.11	41.67			21	1	264	.08	23	2.5	1.1	MER
		6	14	9 55.16	19	24.00	155	15.90	1.88	.8		10	0	63	.07	3	.6	.3	SPC
		6	15	0 42.44	19	20.80	155	17.10	34.98	2.5		29	0	64	.09	5	1.0	1.7	DEP
		6	15	6 .39	19	24.34	155	16.23	1.84			9	0	76	.08	2	.8	.3	SPC
		6	1544	9.73	19	24.26	155	17.75	1.46	.7		9	0	114	.08	2	.7	.4	SPC
		6	1612	18.58	19	20.29	155	8.61	7.34	2.4		25	0	74	.12	9	.7	1.6	UER
		6	1814	9.23	19	20.30	155	8.44	7.55	1.8		20	0	77	.12	9	.8	2.0	UER
		6	1912	4.17	19	24.22	155	16.02	2.00	.7		10	0	66	.10	2	.7	.0	SPC
		6	1944	19.42	19	24.29	155	15.87	2.00			9	0	106	.12	2	1.0	.0	SPC
		6	2251	39.51	19	18.69	155	14.94	8.00	1.7		19	0	118	.04	7	.3	.5	POL
		6	2252	19.80	19	24.11	155	15.96	2.00			10	0	61	.13	2	.9	.0	SPC
		6	2327	34.55	19	16.03	155	15.39	9.90	2.3		28	0	154	.12	8	.9	.4	HLP
		6	2330	38.05	19	16.23	155	15.63	6.75			16	0	185	.11	8	1.3	1.9	HLP
		7	039	47.92	19	19.05	155	13.28	8.18	1.7		25	0	77	.09	7	.6	.9	UER
		7	638	15.96	19	24.03	155	15.69	1.73	1.4		19	0	61	.07	3	.3	.2	SPC
		7	744	12.87	19	23.90	155	15.01	4.10			9	0	86	.08	3	.2	.7	SPC
		7	1641	30.09	19	24.21	155	17.68	1.15	.7		9	0	108	.10	2	.6	.5	SPC
		7	1727	37.65	19	24.34	155	16.15	2.00	.7		10	0	73	.13	2	1.0	22.5	SPC
		7	1811	54.03	19	24.16	155	16.16	1.66	1.3		14	0	66	.06	2	.5	.2	SPC
		7	1942	56.53	19	24.39	155	16.40	1.93	.6		9	0	80	.05	2	.5	.2	SPC
		7	2012	59.12	19	17.99	155	13.14	7.54			18	0	101	.07	9	.6	.9	POL
		7	21	8 47.22	19	21.74	155	27.19	9.51	2.4		29	0	60	.14	10	.7	.5	HEA
		8	010	45.67	19	24.23	155	16.13	1.63			10	0	68	.10	2	.7	.4	SPC
		8	013	37.48	19	24.28	155	16.02	1.66	1.0		10	0	100	.08	2	.6	.3	SPC
		8	143	1.49	19	24.11	155	15.78	1.70	.8		12	0	116	.06	3	.3	.2	SPC
		8	242	17.75	19	24.20	155	17.81	1.44	.7		11	0	80	.09	2	.4	.3	SPC
		8	618	31.88	19	23.74	155	15.11	1.45	1.8		19	0	56	.11	3	.4	.3	SPC
		8	657	21.27	19	24.34	155	17.55	1.58	.9		13	0	62	.11	2	.7	.3	SPC
		8	824	50.07	19	18.95	155	14.16	7.09			21	0	96	.08	7	.5	.9	POL
		8	1219	54.93	19	24.26	155	16.25	1.78			10	0	71	.08	2	.6	.3	SPC
		8	14	3 34.90	19	24.05	155	15.57	1.34	.8		9	0	126	.07	3	.6	.3	SPC
		8	1612	52.68	19	24.16	155	16.11	1.33			10	0	65	.09	2	.4	.5	SPC
		8	1719	24.58	19	24.13	155	17.77	1.14	.4		9	0	110	.07	2	.3	.2	SPC
		8	2352	24.24	19	24.14	155	15.86	1.59			10	0	63	.09	2	.5	.3	SPC
		9	034	13.50	19	24.07	155	15.91	1.88	1.1		14	0	61	.09	2	.5	.3	SPC
		9	038	20.99	19	24.27	155	16.15	1.76			10	0	70	.09	2	.7	.3	SPC
		9	144	20.71	19	22.50	155	30.47	10.74	3.3		33	0	38	.15	15	.8	.4	MOK
		9	4	2 15.71	19	24.29	155	16.01	1.77			9	0	71	.09	2	.9	.4	SPC
		9	740	25.93	19	26.81	155	27.55	9.33	2.7		32	0	73	.17	12	.8	1.1	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	OCT	9	759	33.61	19	25.41	155	50.80	10.39	2.7		17	0	125	.18	26	1.9	.7	KON
		9	1237	55.10	19	22.18	155	28.99	9.96	3.0		33	0	46	.14	11	.7	.4	UKF
		9	1459	4.14	19	20.89	155	12.92	8.79	1.6		21	0	61	.10	6	.8	1.4	UER
		9	1552	28.37	19	24.15	155	16.13	1.41	.7		10	0	65	.11	2	.5	.4	SPC
		9	1836	9.38	19	19.87	155	8.48	6.70	1.8		19	0	79	.11	10	.9	2.0	UER
		9	1931	59.64	19	50.22	155	48.45	19.10	2.7		21	1	168	.11	40	1.5	6.9	KON
		9	21 4	42.14	19	17.97	155	15.60	6.75			14	0	155	.07	5	.7	1.5	KOA
		10	1134	15.31	19	18.42	155	23.31	3.66	2.0		16	0	123	.09	8	.6	1.7	SWR
		10	15 9	36.56	19	24.66	155	16.74	13.07	1.8		18	0	75	.07	2	.6	.6	DEP
		10	22 8	36.81	19	54.43	155	30.41	21.99	3.1		35	1	146	.10	38	.7	2.0	KKU
		10	2251	21.73	19	24.52	155	24.14	6.88	1.7		16	0	128	.06	8	.4	.8	UKF
		11	342	44.60	19	22.25	155	25.16	8.85	1.7		22	0	55	.13	10	.8	1.5	UKF
		11	517	18.16	20	7.26	155	32.82	22.73	2.8		19	0	219	.05	39	1.0	2.2	KOH
		11	648	30.02	19	26.03	155	35.72	.53	2.5		13	0	70	.18	6	1.2	7.2	MOK
		11	816	34.78	19	23.98	155	14.82	4.27	1.1		9	0	96	.09	3	.5	1.8	GLN
		11	1148	15.26	19	22.53	155	11.69	3.60	1.9		13	0	1321	.12	7	11.5	10.7	UER
		11	1335	50.84	19	22.23	155	24.85	10.21	1.7		15	0	79	.08	9	.6	.4	UKF
		11	1337	54.46	19	22.81	155	14.18	2.00	1.3		10	0	128	.20	5	2.3	.0	UER
		11	1454	17.21	19	23.54	155	28.53	10.90			15	0	112	.08	14	.7	2.6	UKF
		11	15 5	36.08	19	20.21	155	19.26	11.50	1.9		23	0	52	.12	6	.8	.4	SWR
		11	1750	40.75	18	57.17	155	28.77	34.61	3.0		31	0	232	.10	36	2.1	3.7	DIS
		11	2030	4.04	19	20.58	155	8.70	6.92			16	0	135	.14	10	1.4	2.1	UER
		11	2143	1.48	19	18.92	155	13.57	9.57	1.7		24	0	82	.09	7	.5	.7	POL
		11	2148	19.51	19	24.27	155	16.08	1.74	2.0		22	0	45	.09	2	.3	.2	SPC
		12	042	36.60	19	23.97	155	15.95	1.82	.8		10	0	62	.10	3	.9	.5	SPC
		12	116	18.87	19	24.08	155	15.64	1.77	.8		9	0	124	.04	3	.4	.2	SPC
		12	237	26.03	19	10.58	155	41.02	7.52			21	0	122	.20	22	1.8	2.2	HEA
		12	345	53.03	19	21.34	155	13.67	6.86			19	0	57	.13	7	.8	1.4	UER
		12	558	27.56	19	24.22	155	16.16	1.75	.8		9	0	69	.06	2	.5	.2	SPC
		12	1145	49.94	19	24.63	155	16.35	18.66	1.8		31	0	46	.09	2	.6	1.0	DEP
		12	1538	18.14	19	24.24	155	16.11	1.74			11	0	68	.04	2	.3	.1	SPC
		12	16 3	35.47	19	25.26	155	16.46	11.88			19	0	93	.11	2	.9	.5	LPC
		12	1725	50.04	19	46.46	155	13.87	51.42	2.8		9	0	339	.30	40	65.7	74.0	KKU
		12	1753	35.73	19	23.10	155	14.72	2.00			9	0	113	.09	3	.7	.0	GLN
		12	1759	40.11	19	24.24	155	15.82	2.00			9	0	110	.10	2	.8	.0	SPC
		12	1833	4.96	19	10.49	155	36.46	5.78			17	0	156	.12	20	1.1	1.8	HEA
		12	2213	28.69	19	17.00	155	23.06	5.96	1.8		17	0	170	.14	8	1.4	3.0	SWR
		13	353	55.84	19	30.99	155	39.54	6.65	2.3		18	0	81	.16	9	1.3	2.5	MOK
		13	452	49.73	19	22.60	155	30.12	10.41	2.1		29	0	56	.10	15	.6	.3	MOK
		13	456	28.89	19	24.70	155	17.25	4.11			8	0	229	.12	3	4.4	5.2	SPC
		13	5 3	26.04	19	24.86	155	24.09	11.80			17	0	64	.06	8	.6	.9	UKF
		13	640	12.63	19	22.86	155	24.81	10.60			16	0	84	.07	9	.6	.9	UKF
		13	649	5.94	19	.57	155	47.27	3.32			7	0	354	.24	69	99.0	99.0	DIS
		13	1036	33.00	21	20.52	155	48.51	32.53			11	0	354	.32221		96.5	96.5	DIS
		13	1240	53.74	19	24.19	155	17.56	1.52	1.1		9	0	141	.06	4	.5	.2	SPC
		13	1435	55.95	19	22.60	155	30.12	10.10	2.0		26	0	50	.11	13	.7	.3	MOK
		13	17 5	23.38	19	24.19	155	17.65	13.97	1.6		20	0	45	.09	2	.8	1.0	DEP
		13	1914	16.96	19	24.43	155	17.21	.68	1.0		12	0	70	.14	2	.6	.3	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	OCT	13	2020	26.66	19	22.92	155	16.97	1.84	1.3		20	0	48	.08	2	.5	.2	KOA
		13	2355	35.77	19	22.73	155	24.86	9.80	2.6		23	0	63	.07	12	.5	.5	UKF
		14	032	52.45	19	20.00	155	8.24	7.94	2.0		27	0	151	.11	10	.7	.6	UER
		14	135	30.10	19	24.65	155	24.83	9.48	2.4		30	0	60	.14	9	.7	.9	UKF
		14	149	55.17	19	19.48	155	10.26	6.51			17	0	125	.13	8	1.2	2.0	UER
		14	428	16.15	19	22.82	155	23.33	8.82	1.7		25	0	52	.10	8	.6	.9	UKF
		14	755	52.76	19	19.26	155	14.12	6.81			18	0	89	.07	6	.5	1.3	UER
		14	957	16.35	19	9.90	155	30.81	4.82	2.6		24	0	120	.19	14	1.3	1.8	LSW
		14	1257	23.06	19	24.01	155	15.79	1.51	1.2		13	0	65	.08	3	.3	.3	SPC
		14	1653	15.84	19	22.70	155	28.22	10.04	1.9		27	0	50	.14	12	.8	.5	UKF
		14	1656	49.42	19	24.28	155	16.18	1.72	.7		9	0	72	.10	2	.9	.4	SPC
		14	1724	.92	19	22.78	155	22.74	6.86			12	0	89	.05	9	.4	1.2	UKF
		14	2052	22.29	19	24.24	155	16.08	1.73	.7		10	0	68	.08	2	.6	.3	SPC
		14	22 4	15.41	19	24.25	155	16.10	2.00	1.0		13	0	68	.11	2	.7	5.8	SPC
		15	050	40.93	19	20.37	155	12.21	7.33	1.8		23	0	74	.14	7	.8	1.3	UER
		15	336	27.09	19	22.15	155	28.99	12.34	2.0		20	0	80	.11	11	.8	.4	UKF
		15	337	41.54	19	22.54	155	23.21	7.73			11	0	90	.06	8	.6	2.3	UKF
		15	532	19.15	19	24.06	155	15.95	1.58	1.1		12	0	60	.06	2	.3	.2	SPC
		15	533	16.29	19	24.13	155	16.04	1.62	.7		11	0	65	.08	2	.6	.3	SPC
		15	541	17.43	19	17.59	155	23.55	6.01	1.8		18	0	126	.18	12	1.3	3.6	SWR
		15	6 4	18.60	19	24.23	155	16.02	2.00			9	0	68	.12	2	1.0	.0	SPC
		15	723	58.15	19	24.17	155	15.74	2.00	.8		10	0	67	.14	2	1.0	.0	SPC
		15	750	38.15	19	24.25	155	16.24	1.68	1.1		10	0	71	.11	2	.9	.4	SPC
		15	823	26.46	19	26.73	155	30.48	7.96	2.0		10	0	178	.06	17	1.3	1.3	MOK
		15	838	5.38	19	26.21	155	29.89	9.81	3.5		32	0	41	.14	11	.7	.4	UKF
		15	912	17.84	19	24.28	155	17.58	1.63	1.6		16	0	56	.08	2	.4	.2	SPC
		15	1416	12.35	19	23.55	155	16.36	26.05	3.0		31	0	42	.07	2	.6	1.1	DEP
		15	1432	31.78	19	27.92	155	45.42	8.89	2.5		14	0	163	.10	17	1.2	1.0	KON
		15	1448	41.19	19	55.16	156	34.25	2.98	3.2		23	0	297	.18	86	14.1	99.0	DIS
		15	1959	51.79	19	31.89	155	39.87	6.74	2.3		21	0	85	.22	11	1.5	3.3	MOK
		15	2048	37.15	19	24.12	155	17.77	1.45	.5		9	0	123	.06	2	.4	.2	SPC
		16	015	5.26	19	24.37	155	17.65	1.71	1.9		22	0	39	.08	2	.3	.2	SPC
		16	210	5.73	19	20.14	155	11.87	7.36	1.7		25	0	82	.09	6	.6	.9	UER
		16	438	38.33	19	20.61	155	13.65	7.32			20	0	63	.09	7	.6	1.0	UER
		16	647	45.33	19	19.54	155	8.39	6.94			18	0	154	.14	10	1.1	1.8	UER
		16	727	36.91	19	18.84	155	14.17	6.73	1.6		22	0	98	.09	7	.5	.9	POL
		16	1842	25.46	19	28.49	155	35.72	1.60	2.5		14	0	138	.11	2	.8	.3	MOK
		16	21 8	52.35	19	26.32	155	27.54	12.18	1.9		20	0	95	.10	12	.7	.4	UKF
		16	2152	21.63	19	28.09	155	37.06	.62	2.2		12	0	206	.13	3	1.5	3.6	MOK
		17	9 8	52.32	19	18.64	155	13.12	9.75	2.9		28	0	87	.12	8	.7	.4	POL
		17	1018	58.37	19	18.88	155	13.18	6.96	1.7		18	0	81	.09	8	.6	1.4	POL
		17	1517	33.40	19	43.12	154	56.37	8.62	3.3		16	0	274	.12	46	8.2	1.2	BLS
		17	1851	51.43	19	23.02	155	17.39	1.46	.8		12	0	107	.09	3	.7	.4	SPC
		17	2010	59.94	19	24.23	155	17.87	1.36	1.0		14	0	64	.11	2	.4	.3	SPC
		17	2025	45.92	19	22.96	155	17.33	1.48			9	0	176	.06	5	.7	.3	KOA
		17	2043	38.39	19	30.95	155	47.27	8.24	2.5		20	0	151	.12	20	.8	.8	KON
		17	23 2	15.55	19	16.68	155	19.12	29.04	2.2		27	0	142	.08	10	.8	1.7	SWR
		18	238	44.90	19	28.00	155	35.30	1.07	2.7		24	0	60	.19	3	.8	.6	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	OCT	18	613	26.80	19	24.23	155	16.00	1.83	.7		10	0	68	.08	2	.7	.4	SPC
		18	630	22.09	19	24.32	155	16.37	1.72			8	0	75	.11	2	1.2	.5	SPC
		18	8 9	6.93	19	30.38	155	45.78	6.06	2.5		17	0	143	.11	18	1.4	17.1	KON
		18	10 3	17.73	19	20.62	155	17.56	5.76			17	0	68	.14	5	.9	1.9	KOA
		18	1128	18.98	19	20.36	155	18.09	33.08	2.5		32	0	65	.09	5	.9	1.4	DEP
		18	1237	42.68	19	11.36	155	6.89	52.54	2.9		29	0	212	.09	20	1.6	3.0	POL
		18	2042	20.19	19	21.23	155	18.97	1.46	1.2		14	0	82	.07	6	.4	.6	KOA
		18	2137	42.98	19	21.38	155	16.09	35.89	2.3		17	0	65	.05	4	.8	2.1	DEP
		19	451	36.92	19	22.47	155	17.23	1.39	.9		12	0	91	.07	3	.4	.4	KOA
		19	458	44.50	19	19.16	155	12.81	7.96	1.7		26	0	85	.10	8	.6	.9	UER
		19	5 5	50.69	19	19.74	155	9.04	7.41	2.0		23	0	131	.12	9	.8	1.4	UER
		19	531	1.84	18	58.26	155	27.52	32.05	2.6		24	0	238	.11	34	2.5	4.2	DIS
		19	915	56.44	19	28.09	155	24.50	25.80	2.1		22	0	75	.09	12	.8	1.7	UKF
		19	14 2	26.87	19	20.18	155	9.08	7.86	2.4		10	0	180	.10	12	1.4	2.2	UER
		19	1938	20.62	19	23.22	155	17.14	1.61	1.1		14	0	60	.09	3	.5	.2	SPC
		20	053	17.40	19	20.33	155	20.26	5.90	2.1		22	0	90	.09	5	.5	1.0	SWR
		20	219	55.87	19	20.08	155	12.04	7.61	2.3		28	0	79	.14	6	.8	1.5	UER
		20	226	23.93	19	19.81	155	11.82	9.70	2.9		29	0	85	.12	6	.7	.4	UER
		20	629	52.83	19	20.79	155	19.53	4.77	2.1		25	0	52	.13	5	.6	1.0	SWR
		20	7 9	50.47	19	19.03	155	15.48	7.29	1.6		23	0	114	.08	6	.5	.8	KOA
		20	736	29.43	19	24.25	155	16.05	2.00	.7		10	0	67	.12	2	.8	.0	SPC
		20	933	12.01	19	27.98	155	27.44	6.20	1.8		22	0	81	.13	13	.7	2.8	UKF
		20	939	21.30	18	48.75	154	51.78	37.31	2.9		25	0	293	.13	69	9.2	7.1	DIS
		20	1559	5.28	19	24.15	155	25.29	7.86	2.1		19	0	115	.07	10	.6	1.2	UKF
		20	1757	1.80	19	31.71	155	39.66	7.44	2.3		17	0	84	.24	26	1.8	3.7	MOK
		20	18 9	51.68	19	24.83	155	26.01	7.69	1.7		22	0	65	.16	11	.9	2.0	UKF
		20	1936	51.57	19	22.74	155	24.55	8.62	1.7		21	0	55	.09	9	.6	1.3	UKF
		20	2115	2.45	19	19.67	155	13.33	6.91	1.6		25	0	68	.12	7	.7	1.1	UER
		20	2211	12.83	19	17.43	155	13.11	9.36	2.1		26	0	129	.10	9	.7	.7	POL
		20	2230	45.67	19	20.08	155	9.98	7.02			18	0	125	.11	7	.8	1.5	UER
		21	351	6.27	19	26.72	155	28.68	11.65			18	0	80	.09	14	1.0	.6	UKF
		21	8 6	27.76	19	31.81	155	39.39	5.51	2.3		21	0	84	.16	27	1.0	2.9	MOK
		21	820	3.94	19	24.88	155	16.49	17.18	1.7		29	0	47	.09	2	.6	.9	DEP
		21	1648	44.31	19	6.58	155	27.72	28.22	2.4		15	0	199	.09	23	1.5	3.4	LSW
		21	2131	57.08	19	22.05	155	16.20	26.05	2.0		21	0	61	.07	4	.9	1.4	DEP
		22	321	45.19	19	19.04	155	13.58	9.06	2.5		28	0	69	.09	7	.5	.7	UER
		22	614	7.82	19	20.29	155	10.94	7.83	1.7		25	0	80	.11	7	.7	1.0	UER
		22	810	4.08	19	18.89	155	15.50	7.48			19	0	118	.08	6	.6	.8	KOA
		22	1015	7.17	19	31.68	155	39.38	6.84	2.6		23	0	84	.14	27	1.0	2.0	MOK
		22	1023	3.11	19	20.47	155	13.37	7.17			18	0	62	.09	6	.6	1.3	UER
		22	1737	44.65	19	25.53	155	24.51	8.40	1.9		22	0	63	.11	8	.6	1.4	UKF
		22	1859	49.73	19	24.28	155	17.67	1.51	1.5		16	0	63	.08	2	.4	.3	SPC
		22	2021	33.10	19	24.18	155	16.04	1.64	1.6		22	0	46	.09	2	.3	.2	SPC
		23	358	51.97	19	24.18	155	15.65	1.75	1.9		24	0	51	.11	2	.4	.3	SPC
		23	435	41.69	19	24.39	155	16.05	3.53	.8		10	0	96	.13	2	1.4	2.8	SPC
		23	7 2	10.92	19	23.04	155	17.19	1.39	.8		12	0	66	.08	3	.6	.3	SPC
		23	856	27.66	19	19.29	155	15.08	7.86			22	0	85	.11	7	.8	1.2	KOA
		23	925	45.06	19	18.88	155	15.12	7.80	1.6		18	0	115	.06	6	.5	1.0	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	OCT	23	1125	4.91	19	24.29	155	17.54	1.58	1.4		14	0	61	.06	2	.3	.2	SPC
		23	1428	56.26	19	20.22	155	11.63	9.71	2.8		26	0	79	.09	7	.6	.4	UER
		23	1611	18.09	19	19.82	155	11.53	8.90	1.7		19	0	87	.07	6	.6	1.2	UER
		23	1922	29.59	19	27.61	154	52.46	9.15	2.7		23	0	263	.13	23	2.3	.9	LER
		23	2038	24.24	19	22.76	155	17.15	2.00	.9		11	0	78	.12	2	.8	.0	KOA
		24	0	5 24.75	19	19.99	155	11.87	8.45	1.7		18	0	82	.05	6	.4	1.0	UER
		24	012	28.26	19	19.70	155	8.82	8.43	1.8		15	0	78	.06	9	.6	1.4	UER
		24	149	7.04	19	23.20	155	16.93	1.78	.8		14	0	59	.09	2	.6	.2	SPC
		24	228	4.90	19	17.54	155	14.94	8.54	1.7		24	0	126	.09	7	.6	.8	POL
		24	427	28.48	19	23.98	155	15.51	1.67			10	0	72	.07	2	.5	.3	SPC
		24	614	54.72	19	22.19	155	28.62	10.32	3.0		33	0	49	.14	11	.7	.3	UKF
		25	134	27.76	19	18.82	155	15.68	8.21			17	0	122	.05	5	.4	1.1	KOA
		25	549	.08	19	23.74	155	15.19	1.47	.9		12	0	87	.06	3	.3	.2	SPC
		25	1229	28.24	19	22.11	155	17.72	1.83	1.3		9	0	88	.10	5	.9	.0	KOA
		26	014	35.93	19	19.75	155	11.60	8.20			17	0	177	.06	6	.5	.7	UER
		26	542	11.99	19	31.80	155	40.00	7.76			10	0	138	.19	27	2.1	3.9	MOK
		26	652	24.06	19	29.15	154	52.93	10.09			18	0	258	.09	28	3.4	.4	LER
		26	1223	47.86	19	19.48	155	11.55	7.95			18	0	95	.10	6	.8	1.4	UER
		26	1242	35.98	19	21.03	155	6.81	5.89			21	0	90	.15	11	.9	2.5	UER
		26	1320	7.30	19	19.83	155	11.25	9.69	3.4		25	0	89	.08	6	.6	.5	UER
		26	1332	53.23	19	19.51	155	11.42	9.82	2.8		25	0	95	.13	6	1.0	.5	UER
		26	1425	26.74	19	19.97	155	13.71	9.10			11	0	163	.04	6	.8	1.0	UER
		26	2243	16.41	19	18.97	155	15.63	5.58			14	0	117	.09	6	.7	1.7	KOA
		26	23	0 6.26	19	21.36	155	6.01	7.98			16	0	103	.11	8	1.2	3.3	UER
		27	227	59.85	19	24.02	155	15.84	1.52	1.5		13	0	64	.11	3	.5	.3	SPC
		27	238	59.77	19	37.98	155	50.40	23.30	2.7		31	0	154	.13	30	1.5	3.1	KON
		27	519	27.56	19	22.34	155	17.15	1.45			11	0	99	.07	3	.6	.4	KOA
		27	937	30.25	19	26.86	155	30.21	9.47			18	0	132	.12	11	1.1	3.7	MOK
		27	1059	31.37	19	22.17	155	18.10	.91	1.0		10	0	78	.04	4	.2	.3	KOA
		27	1215	20.94	19	22.00	155	18.33	2.44	1.9		17	0	65	.09	4	.4	2.2	KOA
		27	1516	38.07	19	20.57	155	6.70	8.23			17	0	100	.10	7	.9	2.4	UER
		28	247	32.36	19	22.60	155	24.03	9.85			16	0	104	.06	8	.7	.9	UKF
		28	554	34.96	19	22.07	155	18.09	1.00	1.6		16	0	68	.10	4	.3	.4	KOA
		28	6	1 6.01	19	23.15	155	14.71	1.65			8	0	111	.04	3	.3	.2	GLN
		28	848	26.72	19	20.37	155	13.61	9.60			12	0	179	.02	7	.3	1.0	UER
		28	1143	31.51	19	31.72	155	39.51	6.97	2.3		11	0	144	.13	26	1.7	4.1	MOK
		28	1153	35.48	19	22.98	155	17.02	1.75	.9		11	0	89	.06	2	.5	.2	KOA
		28	1313	13.49	19	24.25	155	15.93	1.81	1.1		16	0	64	.09	2	.5	.2	SPC
		28	1356	38.16	19	19.49	155	13.24	7.34	1.6		25	0	72	.13	7	.8	1.1	UER
		28	1427	.58	19	22.19	155	18.00	1.20	1.0		10	0	81	.03	4	.1	.2	KOA
		28	15	9 6.01	19	23.10	155	17.68	2.00			9	0	112	.13	3	1.2	.0	SPC
		28	1643	55.92	19	24.27	155	17.58	1.53	.8		12	0	61	.06	2	.4	.2	SPC
		28	18	2 48.67	20	48.27	155	17.02	4.00	3.2		17	0	310	.13	145	22.6	99.0	DIS
		28	1844	32.88	19	23.18	155	17.23	1.55	.8		10	0	99	.08	3	.7	.3	SPC
		28	21	9 34.21	19	24.36	155	28.58	9.72	2.8		32	0	36	.12	13	.6	.3	UKF
		28	2113	6.16	19	22.05	155	18.12	1.19			9	0	80	.05	4	.6	.5	KOA
		28	2213	32.56	19	22.44	155	17.15	2.00	1.0		10	0	94	.15	3	1.0	.0	KOA
		28	2248	40.79	19	20.41	155	19.04	1.86	1.3		12	0	96	.06	6	.4	99.0	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	OCT	29	2 9	36.00	19	24.10	155	15.85	1.15			10	0	62	.08	3	.3	.4	SPC
		29	611	.85	19	33.43	155	58.17	9.20	2.7		10	0	241	.12	34	4.2	1.3	KON
		29	657	35.24	19	23.70	155	15.29	2.00	.9		11	0	86	.11	3	.7	.0	SPC
		29	1136	31.68	19	24.25	155	17.74	1.41	1.1		15	0	63	.07	2	.3	.2	SPC
		29	12 2	34.75	19	31.38	155	39.77	8.81	3.1		23	0	53	.17	26	1.0	1.5	MOK
		29	14 0	13.29	19	17.91	155	30.52	8.60	2.8		21	0	93	.16	13	1.2	2.0	HEA
		29	1438	43.89	19	21.93	155	18.20	2.00	1.1		10	0	76	.09	4	.7	.0	KOA
		29	1444	8.40	19	23.16	155	17.17	1.64	.8		10	0	99	.07	3	.6	.2	SPC
		29	16 9	36.40	19	23.00	155	17.32	1.22	.8		9	0	173	.07	3	.8	.5	SPC
		29	1655	58.51	19	22.79	155	17.20	2.00	.9		11	0	76	.13	2	.9	.0	KOA
		29	1857	32.33	19	24.59	155	25.34	8.62	3.4		28	0	73	.15	10	.8	1.0	UKF
		29	2038	14.78	19	25.67	155	16.74	2.00	.9		10	0	208	.09	2	1.5	.0	SPC
		29	2255	3.35	19	25.07	155	16.84	1.74	1.0		11	0	134	.10	2	.8	.3	SPC
		29	2310	58.26	19	25.41	155	38.37	1.16	2.7		7	0	217	.05	20	1.4	99.0	MOK
		30	024	49.82	19	25.31	155	16.53	13.92	2.1		26	0	70	.08	2	.5	.7	DEP
		30	214	6.81	19	23.13	155	17.24	1.39	1.4		13	0	68	.08	3	.5	.3	SPC
		30	322	41.69	19	24.12	155	23.92	8.55	1.6		16	0	147	.05	7	.5	1.0	UKF
		30	431	31.01	19	22.23	155	24.71	8.01	1.7		15	0	78	.10	9	.8	1.7	UKF
		30	455	26.85	19	22.68	155	17.27	2.00	.9		9	0	111	.11	3	.9	.0	KOA
		30	5 7	35.19	19	26.30	155	29.75	7.49	1.9		18	0	158	.09	12	.8	2.4	UKF
		30	554	36.54	19	18.59	155	13.30	7.11			15	0	82	.05	8	.4	1.2	POL
		30	9 1	1.96	19	20.39	155	19.28	1.62			13	0	101	.10	6	.6	.0	SWR
		30	1144	6.75	19	23.01	155	17.01	1.72	1.2		13	1	67	.06	2	.4	.2	SPC
		30	1340	27.57	19	19.86	155	18.27	2.94	2.1		14	1	116	.11	6	.8	2.8	KOA
		30	1342	52.36	19	24.39	155	17.93	1.31	1.1		11	0	172	.14	3	1.0	.5	SPC
		30	14 0	11.83	19	20.59	155	13.21	8.14			15	0	178	.08	7	1.1	2.2	UER
		30	1510	23.22	19	20.50	155	19.16	2.27	1.3		10	0	97	.05	6	.5	14.0	SWR
		30	1651	24.73	19	22.68	155	17.13	1.71	.9		11	0	82	.05	2	.4	.2	KOA
		30	1742	6.82	19	22.07	155	30.30	10.14	2.0		16	0	77	.10	14	.8	.5	MOK
		30	1810	43.02	19	22.33	155	30.12	10.50	3.2		33	0	39	.14	13	.7	.3	MOK
		31	458	29.22	19	22.65	155	17.93	1.01	.9		9	0	133	.07	4	.5	.5	KOA
		31	542	32.48	19	22.40	155	17.31	1.30	1.0		13	0	92	.08	3	.5	.4	KOA
		31	616	59.41	19	22.50	155	17.09	2.00	1.0		12	0	92	.14	3	.9	.0	KOA
		31	8 1	46.96	19	21.77	155	18.55	.91	1.1		10	0	80	.07	4	.4	.4	KOA
		31	929	1.83	19	22.10	155	17.83	3.39			8	0	88	.06	4	.8	3.9	KOA
		31	10 1	48.84	19	21.83	155	2.61	8.54	3.9		28	0	186	.14	13	1.3	.9	MER
		31	1045	22.07	19	21.88	155	2.54	8.66	3.7		28	0	188	.13	13	1.3	.7	MER
		31	1721	3.14	19	20.49	155	19.19	2.25	1.3		14	0	98	.06	6	.4	10.0	SWR
		31	1849	37.19	19	20.26	155	18.40	30.17	2.5		31	0	61	.09	6	.8	1.3	DEP
		31	19 5	33.40	19	23.29	155	16.81	1.85	.8		12	0	62	.08	2	.6	.2	SPC
		31	2046	37.72	19	24.38	155	17.55	2.00	.8		10	0	73	.11	2	.8	.0	SPC
		31	22 1	52.01	19	22.22	155	17.80	2.00			12	0	85	.09	4	.6	.0	KOA
		31	2330	45.52	19	23.09	155	17.18	1.58	1.1		15	0	64	.06	3	.3	.2	SPC
	NOV	1	110	27.79	19	22.12	155	18.15	.90	1.5		16	0	62	.05	4	.2	.2	KOA
		1	2 8	47.30	19	24.19	155	16.28	1.79	.7		11	0	67	.10	2	.7	.3	SPC
		1	218	42.22	19	21.82	155	18.11	1.53	1.1		14	0	78	.11	4	.7	.0	KOA
		1	223	34.55	19	22.88	155	17.03	2.00			10	0	101	.09	2	.5	3.3	KOA
		1	340	10.84	19	20.77	155	11.09	8.68	2.0		26	0	72	.12	8	.7	1.1	UER

HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	1	342	28.36	19	35.62	155	46.25	4.14	3.0		13	0	93	.17	21	1.4	3.3	KON
		1	427	25.29	19	22.41	155	17.32	2.00	1.0		11	0	91	.11	3	.8	.0	KOA
		1	511	10.75	19	22.66	155	17.31	2.00			9	0	113	.10	3	.9	.0	KOA
		1	512	45.33	19	17.81	155	13.09	8.99	1.8		20	0	109	.08	9	.7	.5	POL
		1	841	46.93	19	15.28	155	15.06	.08	1.8		18	0	196	.14	10	1.6	5.1	HLP
		1	1033	47.05	19	23.82	155	17.34	.76	1.0		10	0	86	.05	2	.3	1.3	SPC
		1	1347	12.48	19	22.64	155	30.14	10.06	2.0		19	0	68	.09	13	.6	.4	MOK
		1	1524	34.56	19	20.16	155	10.97	7.82	1.7		18	0	83	.07	7	.5	.9	UER
		1	16	3 58.83	19	21.77	155	18.07	1.80	1.1		13	0	79	.11	4	.7	99.0	KOA
		1	1636	23.29	19	26.56	155	27.27	8.42	1.8		19	0	71	.12	12	.8	2.5	UKF
		1	1728	3.71	19	22.60	155	17.16	1.73			10	0	86	.07	3	.5	.3	KOA
		1	22	1 32.89	19	17.28	155	13.92	8.52			17	0	157	.06	8	1.0	1.5	POL
		2	0	1 10.28	19	17.64	155	13.94	8.36			19	0	119	.07	8	.6	.5	POL
		2	137	47.02	19	22.78	155	26.72	7.61	2.9		27	0	52	.13	12	.7	1.6	UKF
		2	232	33.83	19	22.55	155	17.27	2.00			10	0	114	.10	3	.8	.0	KOA
		2	242	31.26	19	24.29	155	17.55	2.00	.6		10	0	76	.09	2	.7	.0	SPC
		2	251	23.90	19	23.07	155	17.20	1.36			12	0	90	.08	3	.6	.3	SPC
		2	357	27.64	19	22.56	155	17.27	2.00	1.0		10	0	114	.09	3	.8	.0	KOA
		2	4	1 52.53	19	22.70	155	17.07	2.00			11	0	82	.12	2	.8	.0	KOA
		2	435	32.81	19	23.73	155	16.98	1.76	1.2		15	0	46	.06	2	.4	.2	SPC
		2	533	57.93	19	19.05	155	13.65	9.52			14	0	207	.04	7	.6	2.2	UER
		2	621	.53	19	23.11	155	16.82	2.00	.8		10	0	92	.11	2	.9	2.1	SPC
		2	622	36.96	19	22.37	155	17.33	1.32	1.1		14	0	90	.07	3	.4	.4	KOA
		2	731	3.44	19	23.19	155	17.17	1.47	.8		10	0	83	.09	3	.8	.3	SPC
		2	1132	38.66	19	22.73	155	17.13	2.00	.9		10	0	80	.10	2	.7	.0	KOA
		2	1457	54.86	19	51.57	155	19.38	12.27	2.5		17	0	152	.08	35	1.1	.4	KKU
		2	1620	7.92	19	22.38	155	17.25	1.34			15	0	91	.07	3	.3	.3	KOA
		2	21	9 .07	19	30.48	156	13.82	44.25	2.2		12	1	290	.10	66	3.7	6.7	DIS
		3	338	1.19	19	20.45	155	19.13	2.06	1.3		17	0	97	.05	6	.3	28.6	SWR
		3	426	49.43	19	22.58	155	17.17	2.00			11	0	87	.08	3	.6	.0	KOA
		3	5	0 13.81	19	18.94	155	15.04	8.06	1.6		23	0	112	.09	7	.6	.8	KOA
		3	1544	2.43	19	20.31	155	19.45	1.68	1.4		12	0	107	.05	6	.4	99.0	SWR
		3	1615	12.03	19	20.58	155	19.12	1.63	1.3		11	0	95	.05	6	.5	99.0	SWR
		3	1616	36.06	19	23.26	155	17.18	1.59	.8		10	0	97	.06	5	.5	.2	SPC
		3	18	1 7.05	19	23.15	155	17.31	1.59	.8		10	0	102	.07	5	.6	.3	SPC
		3	2041	58.49	19	32.36	155	50.39	7.37	2.2		17	1	181	.17	28	2.0	1.5	KON
		3	21	6 33.00	19	18.93	155	47.77	7.73	1.8		13	0	172	.12	28	1.4	1.1	KON
		3	2332	29.68	19	23.01	155	17.31	1.36	.8		10	0	105	.07	3	.6	.3	SPC
		4	0	4 20.01	19	22.16	155	17.61	.93	1.0		14	0	84	.08	4	.4	.4	KOA
		4	344	28.77	19	19.66	155	9.36	8.19			15	0	86	.04	9	.4	.9	UER
		4	521	45.57	19	19.98	155	8.86	9.20			17	0	74	.06	9	.6	1.2	UER
		4	556	1.48	19	24.27	155	17.63	1.58	.7		12	0	85	.06	2	.4	.2	SPC
		4	7	1 35.46	19	24.25	155	16.05	1.16	.6		10	0	67	.08	2	.3	.5	SPC
		4	710	13.69	19	24.21	155	17.76	1.39	1.0		13	0	62	.09	2	.4	.2	SPC
		4	10	8 52.30	19	24.21	155	15.85	.85			10	0	65	.13	2	.5	.8	SPC
		4	1031	6.73	19	25.84	155	24.73	10.93	1.7		17	0	69	.06	8	.4	.6	UKF
		4	11	3 12.70	19	24.55	155	16.53	4.00			8	0	116	.12	2	.5	1.4	SPC
		4	1145	56.42	19	21.27	155	18.09	31.27	2.2		21	0	50	.06	5	.9	1.6	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	4	12 5	2.01	19	25.47	155	16.80	2.13	.4		9	0	184	.08	2	1.3	2.8	SPC
		4	1241	57.72	19	24.23	155	15.95	1.66	2.0		19	0	63	.11	2	.5	.3	SPC
		4	1247	6.49	19	24.23	155	16.14	1.78	1.1		15	1	68	.09	2	.4	.2	SPC
		4	1441	49.08	19	22.78	155	17.32	2.00			9	0	111	.08	3	.7	.0	KOA
		4	1545	20.48	19	24.18	155	15.64	2.00			7	0	120	.09	2	1.0	.0	SPC
		4	1942	49.02	19	24.05	155	15.87	1.49	.7		13	0	63	.10	3	.4	.3	SPC
		5	026	2.30	19	24.31	155	16.28	1.72	.6		10	0	74	.09	2	.7	.3	SPC
		5	247	20.96	19	28.97	155	12.95	25.38	2.4		32	0	55	.09	10	.7	1.4	DEP
		5	259	25.83	19	24.25	155	16.31	1.78	.6		10	0	71	.08	2	.6	.3	SPC
		5	425	47.07	19	24.09	155	15.97	2.00	.8		11	0	61	.15	2	1.0	.0	SPC
		5	7 8	55.78	19	23.16	155	17.19	1.45	.8		11	0	99	.06	3	.5	.2	SPC
		5	817	27.38	19	23.14	155	23.87	8.69			11	0	105	.06	7	.7	1.6	UKF
		5	1033	.78	19	24.33	155	16.30	1.84	1.7		16	0	76	.08	2	.4	.2	SPC
		5	1256	15.77	19	20.58	155	18.98	1.83	1.3		12	0	92	.07	6	.5	99.0	KOA
		5	1334	32.83	19	25.29	155	16.65	1.81	.8		10	0	132	.09	2	.8	.3	SPC
		5	1344	20.96	19	19.40	155	15.64	7.93	1.6		25	0	91	.10	6	.6	1.1	KOA
		5	1345	4.44	19	19.91	155	17.27	30.96	2.2		27	0	85	.07	5	.8	1.5	DEP
		5	1449	26.91	19	24.25	155	17.56	1.55	.8		11	0	84	.05	2	.5	.2	SPC
		5	19 3	58.84	19	25.44	155	16.37	1.60	.8		12	0	142	.07	2	.5	.3	SPC
		5	1937	36.55	19	24.14	155	15.79	.69	.7		10	0	65	.10	3	.4	2.3	SPC
		5	1950	9.50	19	24.14	155	15.79	.99			10	0	65	.13	2	.6	.8	SPC
		5	2030	56.35	19	22.98	155	17.37	.78	1.8		18	0	50	.09	3	.3	1.3	KOA
		5	2052	33.37	19	24.30	155	15.85	1.72			9	0	68	.14	2	1.1	.7	SPC
		5	2256	44.01	19	24.05	155	17.75	1.03	.7		8	0	126	.07	2	.3	.3	SPC
		6	118	9.59	19	24.26	155	16.20	1.84	1.1		12	0	71	.05	2	.4	.2	SPC
		6	138	20.42	19	24.25	155	16.04	1.81	.8		10	0	67	.05	2	.4	.2	SPC
		6	151	51.19	19	24.09	155	15.98	1.75	1.1		14	0	61	.08	2	.4	.2	SPC
		6	3 7	44.90	19	27.83	155	24.44	7.54	2.0		21	0	79	.08	11	.5	1.1	UKF
		6	350	2.35	19	24.19	155	16.01	2.00			9	0	66	.09	2	.7	.0	SPC
		6	352	53.59	19	24.17	155	16.06	1.78	.7		9	0	66	.06	2	.5	.2	SPC
		6	734	43.26	19	20.15	155	6.04	6.33			17	0	118	.10	8	1.0	2.7	UER
		6	756	44.30	19	24.24	155	17.69	1.31	1.3		14	0	62	.08	2	.3	.2	SPC
		6	853	51.41	19	45.90	155	3.51	31.51	2.2		27	1	218	.13	33	1.6	3.7	HIL
		6	1227	57.03	19	23.96	155	15.66	1.49	.8		11	0	70	.09	3	.5	.3	SPC
		6	1445	55.12	19	22.64	155	17.15	1.77	1.5		14	1	84	.07	3	.4	.2	KOA
		7	0 2	41.05	19	18.01	155	13.20	7.51	1.7		18	0	97	.09	8	.7	1.5	POL
		7	531	34.58	19	20.02	155	19.20	3.93	1.4		11	0	107	.06	7	.8	2.9	SWR
		7	6 3	34.49	19	25.55	155	16.68	1.81	1.4		16	0	125	.09	2	.6	.3	SPC
		7	1117	27.38	19	18.45	155	13.54	8.08			18	0	87	.07	8	.5	.8	POL
		8	0 4	32.04	19	15.66	155	32.35	8.54	2.6		28	0	117	.16	15	1.0	1.5	LSW
		8	345	32.00	19	7.22	155	27.93	26.80	2.6		31	1	172	.10	21	1.1	2.2	LSW
		8	632	.91	19	24.07	155	15.86	2.00	.8		10	0	62	.18	3	1.2	.0	SPC
		8	758	5.33	19	22.94	155	26.75	9.66	1.8		21	0	55	.12	12	.7	.7	UKF
		8	1056	15.85	19	24.19	155	24.69	9.23	2.3		22	0	81	.12	9	.9	1.2	UKF
		8	1058	54.43	19	19.78	155	8.37	8.44			18	0	82	.14	10	1.1	1.7	UER
		8	21 3	22.74	19	25.47	155	36.14	2.52	2.9		20	0	51	.16	7	.8	2.9	MOK
		9	022	.41	19	27.58	155	28.33	8.84			24	0	79	.12	12	.8	1.7	UKF
		9	052	21.57	19	19.99	155	11.54	8.26	1.7		24	0	84	.12	6	.8	1.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	9	153	.25	19	19.23	155	20.14	5.48	2.0		18	0	114	.08	6	.4	.5	SWR
		9	446	15.74	19	21.60	155	8.01	9.40	3.0		28	0	128	.12	9	1.0	.7	UER
		9	1455	44.16	19	19.38	155	20.18	4.85			11	0	151	.04	6	.8	2.4	SWR
		9	1522	58.92	19	20.29	155	19.02	1.99			10	0	98	.06	6	.5	99.0	SWR
		9	2016	16.65	18	57.98	155	29.63	39.69			23	0	243	.09	34	3.1	4.6	DIS
		9	2125	33.21	19	18.81	155	17.30	7.81			18	0	120	.04	7	.3	.4	KOA
		9	2216	37.83	19	2.70	155	5.52	27.48	2.8		13	0	310	.15	41	25.5	14.8	PPL
		9	2231	35.67	19	16.67	155	14.94	8.13	2.1		12	0	214	.05	8	1.4	1.9	POL
		10	153	14.72	19	24.87	155	25.50	10.39	4.2		34	0	41	.13	10	.7	.4	UKF
		10	158	5.72	19	25.08	155	25.84	8.84	2.6		26	0	76	.14	10	.9	1.2	UKF
		10	615	36.74	19	25.42	155	16.68	2.05	1.2		13	0	124	.07	2	.5	2.4	SPC
		10	915	15.90	19	16.85	155	22.90	6.77	1.6		19	0	124	.16	8	1.1	2.9	SWR
		10	1356	5.08	19	59.90	155	27.10	31.14	1.8		18	0	194	.07	53	1.0	2.6	KKU
		10	1722	49.43	19	18.89	155	47.85	8.35			15	0	172	.12	25	1.4	.9	KON
		11	3 6	14.21	19	23.24	155	17.23	1.42	.8		11	0	70	.07	3	.5	.3	SPC
		11	520	41.68	19	19.57	155	9.17	7.19	1.8		20	0	85	.12	9	.8	2.0	UER
		11	521	15.97	19	19.78	155	9.23	8.19	2.9		27	0	82	.11	9	.7	.8	UER
		11	1045	21.91	19	20.40	155	19.14	1.72	1.6		14	0	72	.07	6	.4	.0	SWR
		11	1352	47.49	19	20.43	155	16.99	35.21			27	0	77	.09	5	.9	1.6	DEP
		11	1648	9.70	19	20.70	155	18.97	2.60	1.3		13	0	90	.05	6	.3	3.2	KOA
		11	1743	40.03	19	28.42	155	24.44	23.56	2.9		37	2	34	.11	12	.7	1.4	UKF
		11	1859	52.96	19	18.82	155	15.46	7.00			20	0	121	.10	6	.6	1.0	KOA
		12	14 2	38.30	19	19.88	155	18.43	4.35	2.3		20	0	108	.09	6	.6	.8	KOA
		12	1513	29.73	19	19.65	155	19.90	4.24	2.3		21	0	99	.12	6	.7	1.3	SWR
		12	1650	55.99	19	23.17	155	17.07	1.71	1.8		18	0	61	.07	2	.3	.2	SPC
		12	1859	4.32	19	25.30	155	17.12	.86	3.1		32	0	57	.20	3	.6	.5	SPC
		12	2010	48.74	19	25.02	155	17.08	.84	.8		12	0	122	.16	2	.9	.5	SPC
		13	0 1	58.65	19	25.06	155	16.24	18.14	1.7		25	0	47	.07	2	.6	.8	DEP
		13	157	23.96	19	24.05	155	23.81	10.74	2.5		27	0	57	.06	7	.4	.2	UKF
		13	3 7	2.33	18	57.47	155	34.91	40.08	2.7		28	0	233	.11	32	2.9	4.3	DIS
		13	651	39.83	19	19.11	155	15.77	7.88	1.6		21	0	113	.07	6	.5	.7	KOA
		13	7 2	38.73	19	19.41	155	15.91	9.72	1.9		29	0	93	.12	6	.6	.6	KOA
		13	1343	50.85	19	22.40	155	25.37	10.80			18	0	54	.06	10	.4	.6	UKF
		13	2259	22.83	20	16.88	155	38.14	2.49	3.0		6	0	274	.04	58	4.4	3.6	DIS
		14	1010	28.72	19	25.21	155	25.23	9.50	2.9		33	0	43	.12	9	.6	.7	UKF
		14	1043	46.81	19	19.68	155	10.15	7.75	1.8		21	0	92	.11	7	.8	1.7	UER
		14	2140	43.44	19	26.55	155	27.88	8.73	1.8		27	0	71	.15	13	.9	2.1	UKF
		15	842	33.20	19	50.81	155	31.08	20.86	2.6		17	0	117	.07	38	.7	1.9	KKU
		15	9 9	1.45	18	57.62	155	28.74	34.86	3.3		32	0	229	.10	35	1.9	3.4	DIS
		15	959	.92	19	25.11	155	16.47	12.62	1.5		19	0	117	.10	2	1.0	.4	LPC
		15	1146	57.01	19	22.38	155	54.28	10.09	2.7		19	0	190	.15	33	1.7	.5	KON
		15	14 7	20.89	19	18.99	155	13.66	7.98	2.2		28	0	68	.12	7	.7	1.0	POL
		15	2019	6.97	19	18.32	155	13.37	6.91			20	0	83	.08	8	.6	1.1	POL
		16	056	15.16	19	36.08	155	19.54	10.84	1.9		19	0	113	.13	20	1.0	1.4	NER
		16	512	39.16	19	12.72	156	21.85	31.14	3.4		18	0	306	.16	78	18.4	9.0	DIS
		16	750	23.79	19	30.12	155	39.33	7.52	3.0		22	0	136	.11	8	.9	1.2	MOK
		16	1037	3.29	19	20.12	155	11.26	9.09	2.8		30	0	83	.11	7	.6	.8	UER
		16	1045	55.66	19	20.46	155	10.88	7.10	1.7		23	0	77	.14	8	.8	1.8	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	16	1448	28.27	19	25.95	155	35.83	2.51	2.8		24	0	61	.17	6	.8	3.2	MOK
		16	2316	33.65	19	18.46	155	13.45	7.63	1.7		27	0	80	.10	8	.6	.9	POL
		17	140	47.64	19	24.50	155	24.71	9.66	1.7		15	0	119	.08	9	.7	1.2	UKF
		17	518	2.57	19	24.51	155	16.79	2.00	.9		10	0	88	.25	2	1.9	.0	SPC
		17	1252	22.07	19	28.54	155	35.66	1.63	1.8		14	0	106	.10	3	.6	.3	MOK
		17	1828	5.60	19	22.70	155	16.41	30.83	1.8		23	0	54	.06	2	.8	1.5	DEP
		17	2030	57.90	19	20.11	155	11.29	7.45	1.8		20	0	83	.10	7	.7	1.3	UER
		18	639	51.90	19	18.56	155	14.88	7.57	1.7		20	0	121	.06	7	.4	.5	POL
		18	643	21.78	19	19.39	155	13.56	8.66	1.7		27	0	67	.10	7	.6	.9	UER
		18	1020	55.46	19	20.22	155	11.22	7.72	2.0		24	0	81	.09	7	.5	.9	UER
		18	1447	45.83	19	25.47	155	16.84	1.83	1.0		16	0	124	.08	2	.5	.2	SPC
		19	341	20.06	19	22.41	155	15.93	32.95	2.3		33	0	53	.09	3	.8	1.4	DEP
		19	1258	40.54	19	21.99	155	25.36	8.92	1.7		23	0	58	.14	10	.8	1.6	HEA
		19	1418	27.79	19	25.24	155	22.93	9.17	1.7		18	0	70	.10	8	.7	1.2	UKF
		19	19 6	57.23	19	33.53	155	38.57	9.99	1.9		16	0	223	.16	12	2.8	.7	MOK
		20	1 2	50.69	19	25.68	155	16.68	1.76	.8		11	0	158	.10	2	.9	.4	SPC
		20	1518	24.57	19	20.52	155	19.17	1.48	1.3		11	0	97	.05	6	.3	.5	SWR
		20	1641	40.88	19	24.05	155	26.44	10.26	1.8		18	0	91	.07	12	.6	2.4	UKF
		21	635	30.40	19	12.63	155	20.22	44.77	2.5		33	0	166	.09	14	1.1	2.2	HLP
		21	7 9	54.77	19	23.44	155	24.89	10.59	2.6		29	0	55	.09	9	.5	.2	UKF
		21	922	41.76	19	20.92	155	30.63	9.02	2.0		18	0	94	.16	13	1.2	3.5	HEA
		21	15 2	57.62	19	21.89	155	18.23	.92	1.1		12	0	75	.11	4	.5	.6	KOA
		21	1522	13.54	19	21.79	155	17.96	1.88			13	0	83	.08	4	.5	99.0	KOA
		21	1550	35.53	19	21.97	155	18.01	.86	1.0		12	0	81	.07	4	.3	.4	KOA
		21	2149	14.57	19	21.41	155	18.63	30.71	4.4		35	0	42	.10	5	.7	1.3	DEP
		21	2324	52.03	19	19.49	155	12.97	8.11	1.7		26	0	77	.11	7	.6	1.0	UER
		22	217	18.68	19	20.95	155	18.74	29.96	2.1		29	0	50	.07	6	.7	1.2	DEP
		22	340	45.09	19	26.81	155	24.52	4.44	1.5		17	0	74	.11	10	.7	2.1	UKF
		22	345	23.20	19	22.43	155	17.45	1.29	1.9		19	0	52	.10	3	.4	.5	KOA
		22	412	7.81	19	22.77	155	17.17	2.00	.9		10	0	106	.09	2	.7	.0	KOA
		22	449	51.28	19	25.70	155	16.90	2.71	.5		11	0	156	.09	2	.9	1.8	SPC
		22	546	52.32	19	21.61	155	18.76	30.36	2.1		28	0	39	.09	5	.9	1.5	DEP
		22	549	.43	19	21.39	155	18.80	30.34	2.1		28	0	43	.11	5	1.0	1.9	DEP
		22	1352	59.81	19	21.90	155	18.22	1.00			11	0	75	.06	4	.3	.3	KOA
		22	1644	30.82	19	24.98	155	23.37	11.32	1.6		20	0	60	.04	9	.4	.6	UKF
		22	1659	9.12	19	25.02	155	23.41	11.16	2.6		25	0	60	.06	9	.4	.2	UKF
		22	2055	16.15	19	21.77	155	18.46	.36			12	0	69	.12	4	.5	2.4	KOA
		22	2254	52.17	19	24.25	155	17.66	1.52	2.2		19	0	44	.07	2	.3	.2	SPC
		23	2 0	.43	19	31.27	155	46.20	7.61	2.9		20	0	151	.12	19	1.6	.9	KON
		23	220	10.43	19	18.41	155	13.14	8.06			12	0	152	.05	8	1.1	2.3	POL
		23	414	46.05	19	23.09	155	17.21	1.54	.8		12	0	64	.06	3	.4	.2	SPC
		23	420	4.25	19	20.71	155	13.16	9.11			16	0	65	.03	6	.3	.8	UER
		23	531	56.53	19	23.44	155	16.91	1.96	1.2		11	0	88	.05	3	.4	.2	SPC
		23	548	4.92	19	18.38	155	15.13	10.70			12	0	132	.07	6	.9	2.9	KOA
		23	913	17.77	19	24.72	155	17.85	2.69	1.1		11	1	77	.07	2	.5	1.2	SPC
		23	928	36.11	19	19.60	155	10.80	1.50			13	0	95	.17	7	1.3	99.0	UER
		23	934	34.94	19	23.05	155	25.06	14.67			12	0	117	.05	9	1.4	3.1	UKF
		23	14 7	21.16	19	27.56	155	25.30	.28	1.8		12	0	126	.10	10	.8	.0	UKF

HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	RMS DEG	SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	23	1451	33.95	19	21.73	155	24.95	7.65			15	0	67	.09	10	.7	1.8	SWR
		23	2253	16.19	19	22.98	155	25.03	8.50			24	0	56	.11	9	.7	1.1	UKF
		23	2330	47.63	19	31.99	155	58.69	9.69			10	0	264	.09	40	5.2	.6	KON
		24	243	40.76	19	22.22	155	16.58	1.84	1.2		17	0	59	.05	3	.3	.1	KOA
		24	324	48.62	19	23.77	155	24.22	9.80			17	0	75	.05	8	.4	1.7	UKF
		24	625	54.25	19	20.18	155	19.26	2.50			13	0	105	.13	7	1.3	16.8	SWR
		24	1359	38.29	19	22.27	155	25.39	9.82	1.7		26	0	70	.12	10	.7	1.1	UKF
		24	14 0	47.93	19	23.13	155	17.08	1.62	.8		12	0	65	.05	2	.3	.1	SPC
		24	1446	18.06	19	21.50	155	18.47	29.91	2.6		32	1	38	.09	5	.9	1.3	DEP
		24	1733	12.79	19	23.10	155	17.53	1.24	.8		9	0	181	.06	3	1.0	.4	SPC
		24	2134	56.32	19	24.29	155	17.65	1.54	1.2		15	0	63	.06	2	.3	.2	SPC
		24	22 7	12.48	19	29.13	155	26.81	7.60	2.0		24	0	93	.13	12	.8	3.2	NER
		24	2313	11.89	19	24.52	155	16.80	14.17	2.0		29	0	72	.06	2	.4	.5	DEP
		25	2 3	45.64	19	19.31	155	14.09	7.84	1.6		22	0	87	.08	6	.5	1.2	UER
		25	429	13.99	19	23.14	155	17.03	1.63	1.0		14	0	62	.05	2	.3	.1	SPC
		25	1030	19.43	19	20.48	155	19.07	2.52	1.3		9	0	96	.06	6	.5	7.8	SWR
		25	1239	20.38	19	25.58	155	24.66	7.41	1.6		18	0	92	.08	8	.6	1.7	UKF
		25	1428	59.77	19	25.56	155	16.82	1.95	.5		11	0	149	.12	3	1.2	.6	SPC
		25	1528	37.96	19	21.87	155	24.47	7.74	1.7		12	0	136	.08	9	1.2	3.1	SWR
		25	16 1	8.52	19	25.34	155	24.50	12.11	2.0		21	0	84	.05	8	.4	.3	UKF
		25	1612	7.66	19	22.59	155	17.17	1.61	1.2		13	0	86	.06	3	.3	.2	KOA
		25	1858	27.64	19	22.86	155	17.48	1.08	.8		10	0	113	.06	3	.4	.3	KOA
		25	1958	43.58	19	22.50	155	17.08	2.00	1.0		14	0	92	.10	3	.6	.0	KOA
		25	21 0	11.88	19	25.35	155	16.66	1.63	.7		11	0	136	.10	2	.6	.3	SPC
		25	2211	53.75	19	22.03	155	18.11	.88	1.2		15	0	71	.06	4	.2	.3	KOA
		25	2217	30.96	19	19.11	155	15.70	5.04	1.5		20	0	113	.12	6	.7	.9	KOA
		25	2312	32.69	19	22.88	155	17.31	1.28	1.0		15	0	72	.16	3	.8	.7	KOA
		25	2340	52.62	19	22.03	155	17.93	1.87	1.1		11	0	86	.09	4	.7	.0	KOA
		26	425	59.41	19	48.03	155	12.33	36.96			21	0	285	.07	40	3.2	5.5	KKU
		26	533	6.27	19	22.90	155	19.78	13.65	1.6		11	0	126	.32	6	7.4	10.0	DEP
		26	816	15.32	19	21.81	155	18.64	.71	1.1		14	0	70	.11	4	.5	2.1	KOA
		26	1237	27.10	19	22.60	155	17.25	1.39	.9		9	0	84	.07	3	.7	.6	KOA
		26	1344	28.55	19	22.38	155	26.02	6.66	1.7		16	0	104	.13	13	1.1	3.6	UKF
		26	1623	25.97	19	30.80	155	40.06	7.76	2.6		11	0	80	.14	10	1.4	3.7	MOK
		26	1958	53.83	19	22.54	155	26.37	7.15	1.7		21	0	54	.11	11	.7	1.7	UKF
		27	032	50.32	19	21.65	155	18.65	1.82			14	0	80	.08	5	.5	.0	KOA
		27	116	40.92	19	26.01	155	25.90	6.11	2.0		23	0	72	.11	10	.7	2.6	UKF
		27	319	42.47	19	27.82	155	21.49	8.30	2.5		25	0	98	.09	8	.6	.8	UKF
		27	358	44.57	19	29.59	155	40.03	7.83	2.0		12	0	129	.11	9	1.6	2.4	MOK
		27	657	43.28	19	25.54	155	17.01	2.00	.1		9	0	197	.11	2	1.8	11.2	SPC
		27	1344	55.14	19	18.68	155	14.08	7.41	1.7		17	0	100	.11	7	.9	1.4	POL
		27	15 6	3.61	19	30.05	155	44.37	8.80	2.4		21	0	70	.14	17	1.0	1.0	MOK
		27	15 6	45.75	19	29.63	155	44.33	6.95	2.9		24	0	69	.15	19	1.0	1.8	MOK
		28	140	7.28	18	52.24	155	21.32	12.30	2.6		24	0	258	.11	46	3.7	99.0	DIS
		28	912	36.75	19	24.91	155	16.25	1.34			13	0	100	.11	2	.5	.3	SPC
		28	10 1	5.88	19	20.65	155	12.82	11.35			16	0	71	.04	6	.3	1.5	UER
		28	1039	40.79	19	18.39	155	15.09	8.87			14	0	131	.05	6	.5	1.3	KOA
		28	1147	40.40	19	13.02	155	36.00	6.98	2.6		11	0	115	.18	26	1.7	6.1	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	28	1721	14.11	19	21.06	155	20.56	28.85	2.1		25	0	62	.09	6	.9	1.7	DEP
		28	1744	32.44	19	19.51	155	11.86	9.56	1.7		18	0	91	.08	6	.7	2.4	UER
		29	512	44.26	19	23.15	155	17.17	1.68	.8		10	0	99	.04	3	.4	.2	SPC
		29	517	31.89	19	23.18	155	17.23	1.49	.8		12	0	69	.06	3	.4	.2	SPC
		29	8	6 37.60	19	19.28	155	8.86	9.98	1.9		17	0	87	.07	9	.7	2.5	UER
		29	818	32.75	19	18.27	155	14.21	7.31			13	0	218	.04	8	.6	1.0	POL
		29	1154	12.14	19	22.38	155	17.41	.60			14	0	87	.09	3	.4	1.5	KOA
		29	1442	37.47	19	22.86	155	17.48	1.32			10	0	113	.14	3	1.3	.9	KOA
		29	1938	24.22	19	25.87	155	35.60	.10	2.4		26	0	80	.17	6	.9	1.2	MOK
		29	2043	45.12	19	19.87	155	17.91	5.54			27	0	76	.18	6	.8	1.6	KOA
		29	2054	10.09	19	26.63	155	24.67	7.84			24	0	69	.12	9	.7	1.4	UKF
		29	21	0 22.20	19	33.61	155	38.31	7.94			21	0	221	.17	12	2.0	2.3	MOK
		29	2325	3.02	19	24.65	155	25.81	7.29			22	0	71	.11	10	.7	2.0	UKF
		30	0	2 9.11	19	29.31	155	44.05	5.48			24	0	68	.16	16	1.1	9.8	MOK
		30	027	11.49	19	23.07	155	17.35	1.30			17	0	65	.10	3	.5	.4	SPC
		30	2	4 8.39	19	20.18	155	11.48	9.37			22	0	81	.08	7	.6	1.1	UER
		30	2	6 1.64	19	24.73	155	16.92	13.58	1.7		29	0	81	.06	2	.4	.5	DEP
		30	3	3 51.47	19	25.75	155	16.90	2.26			17	0	126	.13	2	.8	2.3	SPC
		30	322	52.06	19	26.27	155	24.99	5.53	2.9		30	0	67	.13	8	.6	3.1	UKF
		30	324	36.92	19	26.23	155	24.92	5.16	2.9		31	0	48	.13	8	.6	1.0	UKF
		30	330	27.59	19	26.41	155	24.83	4.88	2.2		25	0	68	.14	9	.8	1.3	UKF
		30	354	23.67	19	26.26	155	25.05	5.60	5.5		29	0	67	.14	8	.6	3.2	UKF
		30	4	7 37.90	19	29.07	155	22.57	8.07	3.6		13	0	206	.22	14	4.5	3.7	NER
		30	426	18.27	19	27.22	155	22.96	6.27	2.5		21	0	87	.16	9	1.1	1.9	UKF
		30	428	6.19	19	26.00	155	24.51	7.87	2.9		20	0	61	.14	12	1.0	1.8	UKF
		30	431	46.97	19	25.41	155	23.53	7.47	2.0		23	0	85	.11	10	.7	1.4	UKF
		30	434	4.57	19	24.01	155	27.04	6.03	3.0		26	0	69	.14	13	.9	2.7	UKF
		30	436	30.60	19	25.51	155	24.27	2.32	2.9		19	0	83	.22	10	1.5	4.8	UKF
		30	438	16.16	19	24.93	155	26.64	6.88	2.5		21	0	108	.12	16	1.0	2.1	UKF
		30	439	58.34	19	28.06	155	23.37	4.74	2.6		25	0	82	.15	10	.8	1.2	UKF
		30	442	12.20	19	26.75	155	24.03	7.06	2.6		27	0	76	.16	9	.9	1.8	UKF
		30	446	54.84	19	27.36	155	24.15	8.61	3.4		26	0	63	.15	12	.8	1.4	UKF
		30	455	8.50	19	24.87	155	25.67	7.71	3.0		21	0	105	.16	11	1.3	2.3	UKF
		30	5	1 6.44	19	26.81	155	24.88	8.78	2.1		17	0	142	.08	9	.7	1.6	UKF
		30	5	1 45.86	19	24.66	155	26.87	7.69	2.2		25	0	77	.13	13	.8	1.7	UKF
		30	5	2 43.88	19	27.16	155	23.73	6.62	2.4		26	0	72	.15	10	.9	1.6	UKF
		30	5	5 41.34	19	25.11	155	24.00	7.05	2.2		22	0	71	.15	8	.9	2.6	UKF
		30	511	13.07	19	27.58	155	23.56	4.63	2.7		32	1	53	.16	10	.7	1.3	UKF
		30	513	44.50	19	25.04	155	26.11	6.67	1.5		20	0	107	.15	10	1.0	3.1	UKF
		30	515	36.65	19	25.33	155	25.83	5.60	2.3		20	0	106	.16	10	1.0	4.5	UKF
		30	517	37.06	19	27.20	155	22.84	8.81	2.6		23	0	90	.15	10	1.1	1.4	UKF
		30	518	46.32	19	27.78	155	32.31	.26	2.5		17	0	135	.21	26	1.3	72.9	MOK
		30	520	20.69	19	26.40	155	24.86	6.83	2.2		27	0	79	.13	9	.7	1.6	UKF
		30	524	50.51	19	25.45	155	23.77	7.29	1.7		22	0	115	.15	8	1.1	1.9	UKF
		30	527	4.56	19	27.98	155	22.52	5.17	2.4		26	0	91	.13	9	.7	.7	UKF
		30	529	34.00	19	24.26	155	25.97	10.64	1.7		24	0	87	.11	11	.7	.4	UKF
		30	534	58.15	19	27.17	155	23.90	7.90	2.3		25	0	76	.13	10	.8	1.2	UKF
		30	536	28.15	19	24.98	155	26.17	7.02	2.7		26	0	107	.15	10	1.0	2.0	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	30	540	21.96	19	23.76	155	27.07	7.56	1.9		19	0	139	.15	13	1.4	4.3	UKF
		30	541	7.74	19	27.96	155	23.73	6.51	2.6		26	0	83	.13	11	.7	1.9	UKF
		30	544	40.15	19	26.58	155	24.64	1.31	1.7		14	0	167	.12	9	1.5	99.0	UKF
		30	545	27.28	19	28.71	155	22.33	5.32	2.2		24	0	100	.13	10	.8	.9	UKF
		30	547	29.52	19	27.45	155	22.77	5.67	2.4		25	0	99	.17	9	.9	2.5	UKF
		30	553	8.84	19	28.08	155	23.11	2.00	1.9		14	0	108	.17	11	1.2	.0	UKF
		30	554	3.79	19	26.31	155	24.84	8.11	1.8		22	0	105	.14	9	.9	1.7	UKF
		30	559	23.18	19	28.87	155	22.79	5.60	2.9		26	0	100	.12	13	.8	2.3	UKF
		30	6 2	44.09	19	24.24	155	26.14	8.48	3.1		30	0	58	.16	11	.8	1.4	UKF
		30	6 4	22.05	19	24.57	155	25.72	8.13	2.0		27	0	63	.11	11	.6	1.4	UKF
		30	6 7	3.94	19	24.56	155	26.08	8.38			22	0	94	.14	11	1.0	2.5	UKF
		30	6 7	19.33	19	23.86	155	26.36	6.67			18	0	157	.12	12	1.2	2.5	UKF
		30	611	14.56	19	24.98	155	25.50	8.93	3.0		31	0	49	.13	10	.8	1.0	UKF
		30	625	46.41	19	25.34	155	25.59	7.85			26	0	63	.13	10	.7	1.9	UKF
		30	629	29.24	19	25.17	155	24.31	6.80	2.2		22	0	121	.15	9	1.0	2.0	UKF
		30	632	10.86	19	25.54	155	23.70	6.33			14	0	238	.10	10	2.6	3.7	UKF
		30	634	20.38	19	24.52	155	27.53	6.81	1.6		15	0	137	.15	12	1.2	3.6	UKF
		30	636	25.10	19	26.84	155	24.08	6.69	2.7		23	0	103	.17	12	1.1	2.9	UKF
		30	638	53.69	19	27.00	155	23.80	1.79			19	0	143	.09	9	.7	.0	UKF
		30	659	32.82	19	26.93	155	15.61	.24			8	0	233	.08	5	1.3	1.0	SPC
		30	640	27.83	19	23.61	155	25.75	8.74	3.3		31	0	41	.14	11	.7	1.1	UKF
		30	642	20.07	19	22.68	155	28.65	5.70	3.3		30	0	47	.17	12	.8	2.9	UKF
		30	647	11.09	19	22.76	155	38.78	12.61	2.5		11	0	256	.18	33	76.7	52.6	MOK
		30	657	32.56	19	26.44	155	23.14	12.07	2.2		13	0	100	.07	11	.9	3.2	UKF
		30	7 3	22.55	19	27.30	155	23.90	9.51	2.3		14	0	98	.06	13	.8	3.0	UKF
		30	7 6	30.87	19	28.75	155	22.95	6.15	2.5		19	0	182	.14	14	1.5	3.3	UKF
		30	719	20.52	19	29.48	155	23.24	4.75	3.4		28	0	98	.16	12	.9	1.1	NER
		30	722	16.15	19	25.99	155	22.29	8.38			16	0	86	.10	7	1.0	1.9	UKF
		30	724	8.97	19	23.41	155	26.44	3.21	1.4		21	0	104	.19	12	1.3	2.9	UKF
		30	730	12.14	19	24.78	155	24.12	2.89	1.4		13	0	209	.11	11	.7	7.9	UKF
		30	730	30.19	19	27.42	155	22.29	.66	1.6		14	0	112	.07	8	.7	3.1	UKF
		30	731	2.45	19	24.48	155	26.05	10.01	1.6		20	0	105	.08	11	.6	.7	UKF
		30	732	2.49	19	25.26	155	24.50	9.67	1.7		17	0	88	.06	9	.6	2.8	UKF
		30	733	6.38	19	27.21	155	24.20	7.37	2.2		27	0	103	.11	10	.7	1.2	UKF
		30	734	32.40	19	26.07	155	25.53	10.61	1.7		16	0	165	.08	9	1.0	4.5	UKF
		30	735	21.23	19	27.37	155	24.42	8.24	2.0		24	0	77	.12	11	.8	1.5	UKF
		30	736	25.78	19	27.51	155	24.14	6.95	2.0		21	0	110	.11	11	1.0	2.0	UKF
		30	738	21.24	19	25.04	155	25.67	5.53	2.1		25	0	96	.16	10	1.0	4.2	UKF
		30	740	12.34	19	24.03	155	26.74	5.66	1.7		20	0	162	.14	12	1.3	3.1	UKF
		30	748	1.24	19	25.03	155	25.45	10.60	2.0		24	0	90	.08	10	.6	.4	UKF
		30	751	59.20	19	24.70	155	26.35	8.38	1.7		19	0	97	.09	11	.7	1.8	UKF
		30	753	22.93	19	27.06	155	24.63	7.77	1.8		24	0	108	.10	10	.7	1.2	UKF
		30	755	57.63	19	25.49	155	25.00	7.70	1.7		19	0	95	.11	8	.8	1.3	UKF
		30	8 5	16.20	19	27.30	155	23.67	6.91	2.1		26	0	75	.14	10	.8	1.4	UKF
		30	8 8	11.27	19	26.74	155	24.53	6.59	2.2		25	0	69	.12	10	.6	1.6	UKF
		30	810	35.32	19	28.28	155	22.78	2.48	2.4		24	0	97	.12	10	.7	7.0	UKF
		30	811	45.31	19	24.08	155	26.03	5.98	1.4		19	0	132	.17	11	1.4	5.4	UKF
		30	820	40.20	19	25.25	155	26.25	7.68	1.7		19	0	107	.13	11	1.2	2.5	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	30	821	57.56	19	24.71	155	25.92	5.69			23	0	72	.19	10	1.2	4.1	UKF
		30	826	30.51	19	24.48	155	25.14	7.46	2.2		26	0	70	.15	10	.8	1.8	UKF
		30	827	57.74	19	24.93	155	25.10	7.53			21	0	90	.10	9	.7	1.8	UKF
		30	829	42.76	19	25.22	155	26.29	7.81	1.6		21	0	67	.11	11	.7	2.0	UKF
		30	832	24.02	19	26.75	155	24.64	5.61			15	0	169	.13	9	2.0	5.8	UKF
		30	835	7.42	19	26.64	155	22.75	7.56			16	0	93	.08	8	.7	1.5	UKF
		30	837	28.77	19	24.85	155	25.85	5.52	1.5		22	0	105	.16	10	1.0	4.3	UKF
		30	846	28.39	19	24.66	155	26.23	8.93	1.4		25	0	64	.12	11	.7	2.0	UKF
		30	851	9.39	19	27.34	155	24.20	5.72	1.9		22	0	99	.10	10	.7	2.3	UKF
		30	9	9 2.96	19	23.12	155	17.21	1.51			9	0	100	.06	3	.6	.3	SPC
		30	912	10.07	19	29.03	155	22.94	1.69	1.4		17	0	110	.12	11	1.4	1.1	NER
		30	917	34.42	19	27.80	155	23.86	6.05	2.7		27	0	78	.13	10	.7	1.6	UKF
		30	920	42.43	19	28.23	155	23.16	3.55			14	0	110	.12	10	.9	2.5	UKF
		30	924	4.07	19	27.97	155	23.95	6.25			19	0	79	.10	11	.7	1.7	UKF
		30	925	56.28	19	27.76	155	23.95	6.05	2.6		25	0	66	.14	11	1.0	2.0	UKF
		30	931	56.88	19	26.36	155	22.43	9.16	1.7		21	0	68	.09	7	.7	1.4	UKF
		30	936	36.03	19	26.42	155	22.12	7.59	1.8		25	0	92	.15	7	1.0	1.5	UKF
		30	939	30.40	19	26.16	155	25.21	8.02	1.9		29	0	67	.12	8	.7	1.1	UKF
		30	940	18.01	19	26.09	155	24.35	5.79	1.6		14	0	126	.11	9	.9	3.8	UKF
		30	945	53.47	19	28.95	155	22.81	2.14			17	0	116	.13	11	1.7	22.0	UKF
		30	946	31.29	19	27.10	155	23.50	5.66	2.0		26	0	78	.13	9	.7	1.8	UKF
		30	948	48.57	19	27.83	155	23.89	6.87	1.8		25	0	104	.10	11	.7	1.5	UKF
		30	954	31.60	19	26.95	155	23.39	1.73			15	0	182	.07	9	.5	.0	UKF
		30	958	25.40	19	23.11	155	27.66	2.69	1.5		19	0	86	.14	13	.9	2.1	UKF
		30	10	1 1.79	19	24.60	155	25.43	7.63	1.7		26	0	90	.13	10	.9	2.1	UKF
		30	10	2 44.07	19	28.10	155	22.82	1.80			16	0	98	.10	10	.7	99.0	UKF
		30	10	4 .60	19	26.94	155	23.99	4.86	1.6		16	0	96	.09	10	.7	1.2	UKF
		30	10	6 32.41	19	27.42	155	23.63	6.02	3.0		31	0	74	.12	10	.6	1.5	UKF
		30	10	9 57.08	19	26.38	155	21.98	7.21	2.0		26	0	90	.14	7	.9	1.3	UKF
		30	1014		38.16	19	27.35	155	23.92	4.26	1.3	18	0	99	.10	10	.7	1.4	UKF
		30	1018	10.31	19	25.02	155	25.96	10.74	2.1		28	0	62	.10	10	.6	.4	UKF
		30	1019	56.25	19	25.22	155	25.54	5.60			17	0	164	.17	9	2.4	6.5	UKF
		30	1023	55.73	19	25.55	155	24.64	7.49	2.1		27	0	64	.11	8	.5	1.1	UKF
		30	1026	54.81	19	23.90	155	27.16	5.47	1.4		20	0	92	.16	15	1.2	1.4	UKF
		30	1027	36.79	19	25.41	155	25.60	10.73	2.2		25	0	75	.10	9	.7	.4	UKF
		30	1042	40.23	19	25.88	155	25.18	8.67	1.6		16	0	70	.12	8	.8	2.4	UKF
		30	1045	38.09	19	25.50	155	25.54	8.29	1.9		27	0	68	.13	9	.7	1.5	UKF
		30	1049	32.95	19	25.18	155	25.44	7.55	1.0		17	0	95	.08	9	.7	1.7	UKF
		30	1052	51.07	19	27.38	155	23.80	5.90	1.5		16	0	97	.08	10	.6	2.2	UKF
		30	11	7 59.57	19	26.04	155	24.83	5.80	1.6		23	0	99	.10	8	.7	1.6	UKF
		30	1122	55.28	19	25.65	155	24.62	7.63	2.1		29	0	88	.13	8	.7	1.1	UKF
		30	1129	.42	19	25.97	155	24.82	7.65	1.5		24	0	66	.10	6	.7	1.1	UKF
		30	1135	8.05	19	25.08	155	25.19	1.37	1.3		16	0	92	.15	10	1.5	75.7	UKF
		30	1154	13.62	19	24.43	155	26.33	7.55			22	0	94	.11	11	.7	2.0	UKF
		30	12	9 22.39	19	24.51	155	26.83	6.76	2.1		24	0	97	.12	12	.8	2.3	UKF
		30	1220	32.59	19	29.31	155	23.27	5.08			18	0	93	.14	12	1.2	1.0	NER
		30	1226	20.86	19	25.58	155	25.28	9.31			21	0	69	.10	9	.7	1.8	UKF
		30	1226	59.99	19	26.30	155	22.36	6.28			15	0	113	.09	7	.7	2.0	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	30	1229	1.84	19	26.19	155	24.44	8.86	1.2		20	0	95	.10	9	.8	1.8	UKF
		30	13 4	5.27	19	27.08	155	23.41	6.30	1.6		22	0	86	.10	9	.6	1.8	UKF
		30	13 6	3.87	19	24.85	155	25.78	7.56	1.6		25	0	91	.13	10	.7	1.5	UKF
		30	1310	43.49	19	23.79	155	25.82	8.68	3.7		29	0	46	.14	11	.8	1.1	UKF
		30	1312	17.98	19	24.20	155	26.54	1.60	1.4		19	0	101	.14	12	.9	32.0	UKF
		30	1325	53.74	19	26.33	155	25.32	12.68	1.4		13	0	164	.08	11	1.3	.5	UKF
		30	1327	10.98	19	25.70	155	25.12	7.59	1.4		15	0	98	.10	8	.8	2.6	UKF
		30	1345	35.81	19	23.94	155	25.20	2.69	2.1		22	0	83	.14	10	.8	2.5	UKF
		30	14 4	24.61	19	25.29	155	24.17	11.42			14	0	85	.07	8	.6	2.5	UKF
		30	1415	37.11	19	26.05	155	24.87	7.42	2.1		25	0	71	.10	8	.5	1.1	UKF
		30	1416	29.29	19	27.32	155	24.29	5.64			20	0	167	.13	10	1.7	4.1	UKF
		30	1437	1.27	19	25.85	155	25.14	7.35			16	0	169	.12	8	1.3	3.5	UKF
		30	1445	58.03	19	24.68	155	26.50	3.00	1.5		22	0	64	.18	11	1.1	2.9	UKF
		30	1514	51.66	19	20.19	155	18.54	2.06			17	0	88	.10	6	.5	25.5	KOA
		30	1530	8.60	19	26.65	155	24.78	8.32	1.6		28	0	74	.14	9	.7	1.3	UKF
		30	1547	4.70	19	26.50	155	25.08	7.24			18	0	73	.11	9	.7	2.2	UKF
		30	1548	19.84	19	24.23	155	24.31	10.21	1.7		24	0	61	.13	8	.6	.9	UKF
		30	1559	16.64	19	26.29	155	25.26	10.12			16	0	73	.07	8	.7	2.7	UKF
		30	16 2	1.87	19	25.58	155	25.78	4.65	1.1		16	0	103	.15	10	1.3	2.9	UKF
		30	1611	55.63	19	26.65	155	23.40	8.46	2.6		27	0	68	.09	8	.5	1.0	UKF
		30	1614	29.15	19	26.09	155	26.93	8.06	1.2		14	0	213	.07	11	2.2	4.0	UKF
		30	1646	12.60	19	26.83	155	23.50	8.42	2.2		23	0	72	.08	9	.5	1.3	UKF
		30	1647	45.98	19	28.14	155	27.16	14.23			17	0	125	.07	11	1.0	1.6	UKF
		30	1656	18.00	19	27.72	155	23.80	5.74	1.5		15	0	77	.10	10	.7	2.0	UKF
		30	1723	12.34	19	26.87	155	24.07	6.86	1.5		22	0	74	.08	10	.5	1.2	UKF
		30	1746	.87	19	25.33	155	25.66	8.44	1.0		21	0	99	.08	10	.7	1.2	UKF
		30	1746	43.19	19	25.85	155	24.90	7.64	1.5		20	0	93	.07	8	.5	1.0	UKF
		30	1748	7.42	19	25.79	155	25.46	8.15	1.5		25	0	65	.11	9	.7	1.4	UKF
		30	18 7	49.70	19	26.04	155	24.68	7.96			19	0	97	.09	8	.7	1.8	UKF
		30	1811	28.02	19	26.32	155	23.30	5.90	1.0		13	0	133	.09	8	.8	3.1	UKF
		30	1827	35.32	19	22.97	155	25.63	10.14	2.1		27	0	55	.10	10	.6	.3	UKF
		30	1828	39.01	19	25.15	155	25.20	11.77	3.5		27	0	62	.10	9	.7	.3	UKF
		30	1831	42.82	19	25.40	155	24.63	7.58			23	0	67	.10	8	.5	1.3	UKF
		30	1840	14.88	19	28.22	155	23.66	6.58	2.4		27	0	74	.10	11	.6	1.0	UKF
		30	1916	15.63	19	22.27	155	24.87	10.66	2.0		26	0	51	.09	9	.5	.3	UKF
		30	1920	6.37	19	22.35	155	24.80	8.05			24	0	53	.12	9	.7	1.9	UKF
		30	1932	22.49	19	25.50	155	25.06	9.16	1.1		15	0	95	.07	9	.6	1.9	UKF
		30	1947	19.00	19	25.24	155	24.83	7.63	2.0		28	0	66	.13	9	.7	1.3	UKF
		30	20 5	24.72	19	22.94	155	27.30	5.21	1.6		21	0	76	.17	12	.9	1.3	UKF
		30	20 5	58.15	19	30.19	155	7.71	42.26	2.3		25	0	181	.06	15	1.5	2.7	GLN
		30	2034	31.48	19	24.88	155	25.71	10.67	1.4		23	0	65	.08	10	.4	.6	UKF
		30	21 1	.88	19	25.76	155	25.35	7.84	1.2		24	0	70	.10	9	.6	1.6	UKF
		30	2112	57.85	19	27.36	155	24.17	5.62	1.3		12	0	165	.11	10	2.0	5.0	UKF
		30	2117	55.41	19	25.28	155	25.51	7.85	1.3		24	0	63	.10	9	.7	1.9	UKF
		30	2122	45.92	19	25.70	155	24.46	8.13	2.5		30	0	64	.12	8	.6	1.1	UKF
		30	2125	40.60	19	25.44	155	24.86	11.37	1.7		20	0	64	.06	8	.4	.5	UKF
		30	2134	52.29	19	25.71	155	24.37	7.15	1.6		23	0	64	.12	8	.7	2.1	UKF
		30	2148	26.29	19	22.31	155	24.83	7.82	1.3		20	0	57	.12	9	.7	1.9	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	NOV	30	2152	58.01	19	25.61	155	25.40	7.00	1.7		28	0	69	.13	9	.7	1.7	UKF
		30	2154	21.66	19	25.23	155	25.69	8.60	1.3		21	0	67	.09	10	.5	1.8	UKF
		30	2157	23.42	19	28.88	155	23.01	1.95	1.1		16	0	132	.12	11	1.0	99.0	UKF
		30	22 3	50.46	19	26.75	155	23.94	.41	1.4		15	0	93	.10	9	.6	75.0	UKF
		30	2219	6.32	19	25.81	155	25.08	10.63	2.0		24	0	76	.10	8	.7	.5	UKF
		30	2238	22.11	19	25.62	155	25.22	8.92	2.0		28	0	64	.13	9	.7	1.5	UKF
		30	2252	24.50	19	24.42	155	25.57	8.14	1.3		21	0	69	.11	10	.7	1.8	UKF
		30	2255	51.91	19	27.71	155	24.17	6.68	1.7		24	0	78	.13	11	.7	2.1	UKF
		30	2314	2.16	19	27.60	155	24.17	7.18	3.3		27	0	64	.14	11	.8	1.6	UKF
		30	2317	49.84	19	26.92	155	25.00	.47			16	0	112	.13	9	1.1	99.0	UKF
		30	2320	22.30	19	25.10	155	26.41	7.80	2.2		25	0	74	.15	11	.8	1.7	UKF
	DEC	1	022	40.15	19	25.49	155	25.26	7.96	1.3		22	0	93	.09	9	.6	1.5	UKF
		1	041	51.45	19	22.30	155	24.98	9.06	1.4		25	0	53	.13	10	.8	1.5	UKF
		1	044	3.79	19	23.00	155	17.03	1.71			11	0	99	.06	2	.5	.2	SPC
		1	118	23.94	19	26.70	155	23.78	8.45	1.3		18	0	72	.10	9	.7	1.1	UKF
		1	119	4.95	19	24.41	155	26.45	9.65	1.6		25	0	63	.11	11	.7	3.1	UKF
		1	138	32.94	19	25.43	155	25.70	5.99	1.5		23	0	68	.12	10	.5	2.5	UKF
		1	149	37.79	19	26.71	155	24.65	7.11	1.4		19	0	74	.08	10	.5	1.7	UKF
		1	229	14.94	19	24.10	155	26.76	5.96	1.4		22	0	92	.12	12	.8	2.2	UKF
		1	332	54.20	19	23.39	155	26.57	8.33	3.1		28	0	45	.16	12	.9	1.5	UKF
		1	345	41.72	19	26.68	155	22.98	2.62	1.5		21	0	77	.15	8	.9	3.5	UKF
		1	4 9	36.81	19	27.22	155	26.63	1.54			18	0	165	.13	14	1.2	26.6	UKF
		1	446	20.43	19	24.88	155	26.74	6.91	1.2		23	0	101	.11	11	.7	2.1	UKF
		1	615	49.69	19	22.98	155	27.44	6.52	2.2		24	0	54	.14	12	.8	2.0	UKF
		1	641	42.17	19	27.49	155	22.13	3.01	1.1		17	0	107	.09	8	.6	2.1	UKF
		1	645	54.30	19	24.81	155	23.70	7.37			17	0	77	.08	8	.5	1.2	UKF
		1	646	40.80	19	25.02	155	23.61	9.10			15	0	77	.04	8	.4	1.3	UKF
		1	652	10.04	19	26.56	155	15.58	29.62	1.6		23	0	138	.07	4	1.0	1.6	DEP
		1	659	32.93	19	24.16	155	25.73	8.36			24	0	61	.12	11	.7	1.4	UKF
		1	7 5	28.99	19	24.06	155	26.35	10.31	2.9		29	0	58	.12	12	.7	.3	UKF
		1	738	.38	19	24.20	155	26.64	7.45			19	0	93	.10	12	.7	2.0	UKF
		1	747	6.49	19	23.63	155	24.23	9.46	1.1		17	0	114	.07	8	.6	1.1	UKF
		1	8 8	50.38	19	23.76	155	16.93	1.90	.5		9	0	82	.06	2	.5	.3	SPC
		1	855	56.49	19	22.56	155	23.57	2.77			17	0	82	.17	7	.9	3.5	UKF
		1	919	3.67	19	23.81	155	24.38	8.26			24	0	59	.14	8	.8	1.5	UKF
		1	919	33.56	19	25.18	155	25.67	8.46			22	0	67	.10	10	.5	1.2	UKF
		1	923	1.81	19	23.57	155	25.42	.47			16	0	107	.13	11	.8	99.0	UKF
		1	10 4	25.82	19	24.92	155	25.86	7.58	2.3		28	0	65	.13	10	.7	1.5	UKF
		1	1052	21.81	19	27.00	155	24.03	7.58	1.9		23	0	69	.13	10	.8	1.5	UKF
		1	1152	48.72	19	24.97	155	25.43	6.27	1.9		19	0	65	.12	10	.8	2.5	UKF
		1	1135	20.07	19	24.86	155	24.94	9.01			17	0	88	.06	9	.5	1.5	UKF
		1	1146	28.99	19	25.27	155	25.34	8.10	1.7		21	0	91	.10	9	.7	1.2	UKF
		1	1149	4.69	19	24.11	155	25.89	1.27			14	0	158	.12	11	1.2	99.6	UKF
		1	12 7	59.06	19	23.73	155	16.84	2.00			9	0	83	.08	2	.7	1.2	SPC
		1	1244	6.21	19	26.80	155	25.12	8.28	1.7		15	0	145	.05	9	.5	1.1	UKF
		1	1247	36.12	19	22.88	155	25.61	5.57	1.7		19	0	55	.14	10	.8	1.1	UKF
		1	1344	20.27	19	24.25	155	26.81	8.77	1.8		23	0	62	.14	12	.8	2.4	UKF
		1	1429	26.98	19	25.23	155	26.25	10.85	2.9		28	0	63	.11	11	.7	.4	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	RMS DEG	MIN SEC	ERH DIS	ERZ KM	KM	REMK
1974	DEC	1	1439	55.61	19	24.17	155	24.91	8.08			20	0	61	.08	9	.6	1.7	UKF
		1	1515	54.57	19	26.84	155	24.03	5.45	1.5		20	0	73	.14	10	.9	1.1	UKF
		1	1518	35.95	19	24.66	155	26.21	8.21	1.7		21	0	64	.11	11	.8	2.0	UKF
		1	1520	.30	19	23.22	155	17.18	1.83			9	0	98	.08	3	.8	.3	SPC
		1	16	0 42.22	19	26.48	155	22.41	8.54	1.5		17	0	70	.09	7	.7	1.4	UKF
		1	16	6 52.29	19	25.66	155	25.29	7.71	1.7		21	0	99	.09	9	.7	1.9	UKF
		1	1628	37.73	19	25.88	155	26.26	11.71	1.8		12	0	195	.06	10	2.2	7.1	UKF
		1	1634	29.65	19	26.93	155	24.52	6.49	1.9		20	0	75	.12	10	.7	2.4	UKF
		1	1642	38.90	19	22.63	155	17.28	2.00			10	0	112	.10	3	.8	.0	KOA
		1	1713	53.56	19	26.34	155	24.52	5.63	1.9		18	0	98	.13	9	1.0	3.8	UKF
		1	1745	12.26	19	25.89	155	25.04	7.66			18	0	70	.10	8	.7	1.2	UKF
		1	1839	32.66	19	23.01	155	17.31	1.29	.8		10	0	105	.07	3	.6	.4	SPC
		1	1859	11.05	19	25.11	155	26.03	8.88	3.1		30	0	49	.14	10	.7	1.1	UKF
		1	1910	13.50	19	25.32	155	26.29	8.79	1.7		20	0	85	.14	11	1.0	2.8	UKF
		1	1913	32.11	19	25.63	155	25.02	8.84	2.2		30	0	64	.15	8	.8	1.2	UKF
		1	1917	44.76	19	24.63	155	25.72	11.87	2.1		22	0	64	.13	10	.9	.4	UKF
		1	1945	6.28	19	22.37	155	24.82	6.34			18	0	81	.11	9	.7	2.1	UKF
		1	1959	30.08	19	24.76	155	26.44	8.17			20	0	79	.12	11	.8	2.4	UKF
		1	20	4 54.93	19	24.37	155	25.44	10.86			18	0	65	.07	10	.6	.6	UKF
		1	2011	31.54	19	23.16	155	27.25	5.48	1.8		19	0	67	.15	12	.9	1.7	UKF
		1	2014	35.22	19	25.62	155	25.34	7.69	2.2		26	1	65	.12	9	.7	1.9	UKF
		1	2036	54.83	19	26.08	155	29.11	8.68	1.9		25	0	68	.11	12	.7	1.4	UKF
		1	2041	59.32	19	21.91	155	17.97	2.00	1.1		13	0	82	.13	4	.8	.0	KOA
		1	2115	27.88	19	21.92	155	18.25	.34	1.1		15	0	74	.08	4	.3	1.5	KOA
		1	2120	50.67	19	27.70	155	24.37	5.30	1.9		21	0	78	.12	11	.8	1.0	UKF
		1	2212	53.80	19	27.21	155	24.28	7.13	1.9		24	0	76	.13	10	.8	2.2	UKF
		1	2218	30.16	19	23.89	155	26.24	.12	1.9		23	0	88	.18	11	1.0	6.2	UKF
		1	2223	55.29	19	23.21	155	26.03	7.53	1.7		24	0	56	.18	11	1.1	2.8	UKF
		1	2257	9.12	19	25.61	155	23.63	11.55			23	0	120	.12	8	1.0	.5	UKF
		1	2325	44.76	19	11.80	155	26.46	38.87			24	0	138	.11	20	1.5	3.6	LSW
		1	2333	46.52	19	16.73	155	22.19	33.66	2.3		22	0	135	.08	8	1.2	3.1	SWR
		1	2346	49.52	19	24.62	155	23.57	3.72	1.4		14	0	114	.09	8	.7	5.2	UKF
		2	0	3 19.59	19	26.75	155	25.02	7.46	2.2		25	0	75	.12	9	.7	1.2	UKF
		2	024	10.82	19	26.97	155	22.60	6.34	2.3		26	0	98	.14	8	.9	1.5	UKF
		2	054	19.51	19	20.01	155	10.22	7.92	2.2		27	0	85	.12	7	.8	1.3	UER
		2	059	42.48	19	20.12	155	10.27	7.97	1.8		24	0	83	.15	7	1.0	1.5	UER
		2	145	47.90	19	26.49	155	22.37	8.88			16	0	70	.08	7	.7	2.1	UKF
		2	146	9.58	19	26.09	155	23.23	10.91	2.3		25	0	74	.13	8	.8	.5	UKF
		2	158	6.88	19	24.45	155	25.90	9.91			18	0	70	.09	11	.7	3.3	UKF
		2	159	55.33	19	26.98	155	24.08	7.75	1.6		20	0	74	.10	10	.7	1.7	UKF
		2	215	23.83	19	25.27	155	24.95	10.10	1.7		20	0	92	.07	9	.5	2.7	UKF
		2	215	30.97	19	25.14	155	25.65	11.73	2.4		19	0	135	.15	10	1.6	.5	UKF
		2	217	38.36	19	24.92	155	26.47	7.77			22	0	80	.12	11	.8	2.4	UKF
		2	228	44.29	19	26.36	155	29.68	9.41	1.9		28	0	70	.16	12	.9	1.2	UKF
		2	318	19.08	19	26.87	155	24.67	7.14	1.6		23	0	75	.10	10	.6	1.7	UKF
		2	324	4.38	19	27.14	155	23.98	8.72	2.7		51	0	67	.14	10	.7	1.1	UKF
		2	357	41.32	19	24.87	155	26.20	8.14	1.7		22	0	65	.12	10	.8	2.2	UKF
		2	4	7 28.64	19	25.51	155	24.84	7.08	2.3		27	1	64	.12	8	.6	1.5	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	2	428	1.66	19	24.01	155	26.68	6.59			19	0	60	.10	12	.7	1.9	UKF
		2	443	50.56	19	24.36	155	26.53	7.00	2.0		27	0	62	.13	12	.7	2.1	UKF
		2	518	41.31	19	15.37	155	20.33	29.63			20	0	148	.12	10	1.9	4.1	HLP
		2	535	46.14	19	22.79	155	16.99	2.00			9	0	101	.10	2	.8	.0	KOA
		2	541	16.57	19	25.91	155	28.50	7.88	1.8		25	0	67	.13	15	.9	2.6	UKF
		2	546	38.23	19	23.05	155	26.08	6.49			17	0	80	.11	11	.8	1.9	UKF
		2	610	52.15	19	26.34	155	24.73	8.82	1.9		18	0	72	.16	9	1.2	3.0	UKF
		2	618	53.96	19	22.43	155	18.34	26.61			19	0	61	.08	4	1.3	2.9	DEP
		2	625	35.47	19	24.10	155	24.21	9.19	1.9		25	0	61	.13	9	.8	1.3	UKF
		2	659	39.03	19	28.25	155	23.69	2.17	1.8		12	1	230	.14	11	5.7	70.8	UKF
		2	740	40.77	19	26.61	155	25.38	7.09			21	0	69	.13	11	1.0	3.1	UKF
		2	839	14.33	19	25.23	155	24.80	7.42			22	0	90	.13	9	1.0	2.5	UKF
		2	859	2.20	19	23.96	155	23.96	10.22			18	0	74	.05	7	.4	1.6	UKF
		2	9	4 55.30	19	25.09	155	26.13	6.67			28	0	62	.13	10	.7	1.7	UKF
		2	9	8 5.30	19	23.39	155	26.51	7.78			26	0	82	.12	12	.7	1.8	UKF
		2	951	46.74	19	25.13	155	16.68	1.33	.8		11	0	122	.10	2	.5	.3	SPC
		2	954	12.06	19	22.69	155	17.28	2.00	.9		13	0	80	.11	3	.7	.0	KOA
		2	1019	50.20	19	23.50	155	24.17	8.23			19	0	98	.13	8	1.0	1.6	UKF
		2	1025	18.26	19	28.75	155	23.44	3.82	2.1		20	1	100	.16	11	1.2	2.5	UKF
		2	11	4 25.85	19	28.93	155	22.72	5.13	2.8		29	1	100	.15	11	.8	1.0	UKF
		2	1115	52.38	19	24.27	155	26.57	6.31			19	0	138	.13	12	1.2	2.5	UKF
		2	1120	41.35	19	25.40	155	25.59	8.00			18	0	99	.08	10	.6	2.3	UKF
		2	1140	44.39	18	59.93	155	28.80	43.50			19	0	231	.13	31	4.3	7.9	DIS
		2	1240	32.62	19	1.91	155	30.30	40.03	3.3		31	0	196	.10	27	1.7	5.6	LSN
		2	13	2 19.02	19	21.26	155	30.03	9.29	2.4		31	1	40	.15	12	.7	1.0	HEA
		2	1329	6.91	19	22.78	155	17.25	1.23	.9		12	0	77	.09	2	.6	.5	KOA
		2	1355	7.64	19	24.62	155	26.00	7.75			20	0	69	.10	11	.7	2.0	UKF
		2	1413	36.15	19	25.25	155	26.23	8.81	1.7		16	0	102	.10	11	.9	2.4	UKF
		2	1434	7.62	19	29.14	155	27.92	7.39	2.2		27	0	90	.14	15	.9	3.2	NER
		2	1455	16.31	19	24.95	155	26.98	11.46	1.8		12	0	202	.06	11	1.0	.5	UKF
		2	1517	12.37	19	24.18	155	26.99	6.31	2.0		25	0	61	.16	12	.9	2.7	UKF
		2	1631	44.73	19	26.54	155	23.03	8.95	1.9		21	1	77	.08	8	.5	1.1	UKF
		2	1644	24.67	19	27.03	155	23.88	7.23	1.6		22	0	95	.12	10	.6	1.4	UKF
		2	17	8 7.19	19	22.96	155	17.49	1.36	1.3		18	0	51	.17	3	.8	.7	KOA
		2	1716	25.79	19	26.46	155	25.55	7.22			23	0	74	.14	9	.6	2.3	UKF
		2	1747	4.32	19	21.79	155	18.17	1.77	1.4		15	0	99	.10	4	.7	99.0	KOA
		2	18	3 45.88	19	25.14	155	25.26	5.93			17	0	81	.10	9	.8	3.0	UKF
		2	18	4 44.91	19	25.03	155	26.03	10.77	1.8		17	0	80	.12	10	1.2	.8	UKF
		2	1828	56.98	19	23.60	155	26.39	7.53	1.7		20	0	87	.11	12	.8	1.9	UKF
		2	1846	37.46	19	25.51	155	25.81	7.92	1.7		22	0	69	.19	10	1.2	3.5	UKF
		2	1910	14.21	19	25.48	155	25.24	7.30	1.6		25	0	64	.15	9	.5	2.6	UKF
		2	1941	12.31	19	27.52	155	23.88	8.09	1.6		21	0	76	.10	10	.6	1.1	UKF
		2	20	3 49.46	19	22.86	155	25.95	.20	1.6		17	0	55	.15	12	.8	50.1	UKF
		2	20	8 56.24	19	25.92	155	23.74	5.90	1.5		19	0	68	.13	8	.9	2.8	UKF
		2	2112	58.97	19	25.29	155	25.25	9.15	2.0		28	0	63	.13	9	.7	1.2	UKF
		2	2117	58.20	19	24.91	155	25.85	7.65	2.1		27	0	61	.14	10	.7	1.7	UKF
		2	2132	2.90	19	22.92	155	16.83	1.58	.9		12	0	79	.12	2	.8	.4	KOA
		2	2136	9.40	19	25.90	155	25.18	7.25	1.6		16	0	155	.10	8	1.0	3.3	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	2	2153	4.68	19	25.39	155	25.60	7.49			22	0	68	.12	9	.8	2.2	UKF
		2	22 3	2.10	19	25.37	155	27.93	6.00	2.2		20	0	74	.14	13	.9	3.2	UKF
		2	2316	17.43	19	25.51	155	24.67	8.85	2.6		32	0	44	.14	8	.7	.9	UKF
		3	0 4	3.17	19	24.67	155	25.81	1.64	1.6		15	0	167	.15	10	1.4	.0	UKF
		3	048	12.18	19	25.02	155	25.97	8.47	1.7		23	0	66	.11	10	.7	1.7	UKF
		3	1 6	28.77	19	27.05	155	23.12	6.24	1.5		20	0	80	.11	9	.7	1.9	UKF
		3	111	38.26	19	24.26	155	27.13	6.50	1.8		19	0	72	.13	12	.9	2.5	UKF
		3	113	7.90	19	26.91	155	22.96	5.60	1.7		18	0	105	.11	8	.8	2.4	UKF
		3	154	7.35	19	21.97	155	18.14	1.51	1.1		14	0	98	.10	4	.7	99.0	KOA
		3	3 3	39.39	19	23.08	155	18.73	8.60	1.3		14	0	87	.26	4	2.7	4.6	LPC
		3	350	27.10	19	24.81	155	26.67	7.50	1.7		15	0	168	.09	11	1.0	2.3	UKF
		3	411	22.62	19	24.76	155	25.98	7.38	1.7		22	0	65	.12	10	.8	2.3	UKF
		3	443	24.43	19	30.29	155	47.50	8.37	2.5		26	0	84	.18	20	1.2	1.1	KON
		3	448	36.36	19	25.75	155	24.92	8.02	1.6		17	0	97	.08	8	.7	1.8	UKF
		3	452	28.14	19	25.56	155	25.11	8.19	1.7		27	0	64	.14	9	.7	1.3	UKF
		3	521	48.99	19	26.16	155	25.16	5.19	1.6		15	0	173	.09	8	.6	.9	UKF
		3	624	28.76	19	25.47	155	16.75	1.89	.7		13	0	124	.10	2	.7	.3	SPC
		3	7 6	10.40	19	18.63	155	13.02	7.75			17	0	90	.07	9	.6	1.3	POL
		3	846	32.29	19	20.38	155	19.44	1.73	1.3		11	0	105	.08	6	.7	99.0	SWR
		3	956	41.31	19	20.44	155	19.23	4.87	2.2		26	0	50	.11	6	.5	1.0	SWR
		3	1048	15.45	19	23.15	155	17.11	1.47	1.8		21	0	48	.10	3	.4	.3	SPC
		3	1229	48.96	19	25.35	155	24.96	9.82	1.5		17	0	67	.08	9	.5	2.8	UKF
		3	1242	6.63	19	27.83	155	22.67	2.86	1.9		17	0	99	.15	9	1.0	4.6	UKF
		3	1311	45.11	19	26.59	155	24.62	5.45	1.6		14	0	102	.11	9	.9	1.2	UKF
		3	1333	3.05	19	27.02	155	23.03	6.85	1.4		15	0	80	.08	8	.6	1.9	UKF
		3	1342	58.99	19	26.88	155	23.67	10.44	1.6		14	0	73	.21	9	1.9	7.0	UKF
		3	1416	51.36	19	28.14	155	27.01	12.71			12	0	239	.10	11	2.7	.5	UKF
		3	1423	5.99	19	26.94	155	24.08	7.58	1.9		24	0	69	.14	10	.9	1.7	UKF
		3	1423	38.58	19	26.77	155	23.83	10.75	2.8		26	0	73	.09	9	.6	.3	UKF
		3	1428	5.11	19	24.31	155	25.98	6.82	1.7		12	0	222	.09	11	1.9	2.6	UKF
		3	1432	50.20	19	22.66	155	17.49	1.29			6	0	118	.07	4	1.5	1.2	KOA
		3	1447	40.73	19	26.84	155	23.79	8.79	3.1		29	0	67	.12	9	.7	1.1	UKF
		3	1455	35.15	19	26.98	155	23.76	10.84	2.4		25	0	69	.10	9	.6	.3	UKF
		3	1512	4.75	19	25.49	155	25.46	9.82	2.0		25	0	64	.13	9	.7	3.7	UKF
		3	16 0	46.56	19	26.88	155	24.06	6.83	1.4		15	0	90	.12	10	.8	2.3	UKF
		3	1621	5.98	19	24.01	155	26.57	5.96	2.0		22	0	62	.11	12	.6	2.0	UKF
		3	1830	41.54	19	23.36	155	27.64	6.00	1.2		18	0	69	.13	13	.8	1.6	UKF
		3	2135	4.87	19	25.20	155	16.98	2.40	1.8		26	0	93	.13	2	.6	1.2	SPC
		3	2221	40.57	19	27.44	155	22.06	6.13	1.5		18	0	60	.08	8	.5	1.2	UKF
		4	014	34.10	19	22.58	155	17.23	1.56	.9		10	0	112	.05	5	.5	.2	KOA
		4	020	45.15	19	25.56	155	25.95	7.74	1.8		22	0	79	.14	11	.9	1.5	UKF
		4	029	4.37	19	25.58	155	25.06	7.29			15	0	83	.10	9	.8	2.4	UKF
		4	029	36.87	19	26.06	155	24.98	7.28	1.6		20	0	86	.11	8	.7	2.3	UKF
		4	1 0	41.22	19	21.92	155	18.30	.18	1.2		15	0	75	.05	4	.2	.9	KOA
		4	111	59.75	19	19.69	155	26.92	8.23	1.6		23	0	74	.17	6	1.0	1.7	HEA
		4	121	37.69	19	21.61	155	17.97	1.92	1.1		12	0	92	.10	4	.8	.0	KOA
		4	157	31.75	19	24.70	155	30.68	10.27	2.0		22	0	56	.11	11	.9	.6	MOK
		4	255	53.83	19	14.24	155	8.91	41.92	2.5		34	1	197	.10	15	1.2	1.4	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	4	3 0	19.34	19	25.86	155	25.18	7.66			15	0	70	.08	10	.7	2.5	UKF
		4	3 0	55.27	19	25.29	155	25.46	6.66	1.6		22	0	67	.10	9	.6	2.0	UKF
		4	412	16.44	19	22.51	155	17.43	1.47	1.3		16	0	85	.08	3	.4	.4	KOA
		4	6 0	45.79	19	24.03	155	26.19	4.49			14	0	77	.13	11	1.0	4.4	UKF
		4	637	54.90	19	20.65	155	19.02	5.28	2.2		27	0	48	.12	6	.5	.8	SWR
		4	646	36.06	19	24.81	155	26.28	8.38	1.4		19	0	65	.14	11	1.1	2.7	UKF
		4	737	4.55	19	22.00	155	24.24	8.32	1.7		16	0	125	.13	9	1.1	2.4	UKF
		4	8 5	43.82	19	24.35	155	25.92	.71	1.5		12	0	163	.13	11	2.5	13.4	UKF
		4	911	22.48	19	24.90	155	26.22	6.82	1.7		18	0	162	.11	10	1.0	1.8	UKF
		4	912	46.24	19	25.85	155	24.94	6.52	1.6		19	0	151	.13	8	1.0	3.3	UKF
		4	1142	19.97	19	26.47	155	23.59	7.19	1.8		25	0	70	.13	8	.7	1.3	UKF
		4	1349	36.42	19	23.97	155	13.31	6.44	1.4		18	0	62	.06	5	.4	.8	GLN
		4	15 4	29.86	19	22.26	155	17.26	1.20	1.0		12	0	105	.08	3	.5	.3	KOA
		4	16 7	45.60	19	22.86	155	22.77	9.13	1.6		20	0	67	.06	9	.4	.6	UKF
		4	1632	43.34	19	22.03	155	18.10	.88	1.0		15	0	71	.08	4	.3	.4	KOA
		4	1634	24.55	19	23.17	155	22.64	6.49	1.5		15	0	93	.08	9	.4	1.0	UKF
		4	17 6	12.26	19	24.26	155	27.48	3.91	1.8		18	0	136	.15	13	1.1	2.2	UKF
		4	1711	3.57	19	26.25	155	24.15	8.93	2.1		28	0	66	.14	9	.7	1.0	UKF
		4	1730	40.44	19	27.01	155	24.03	7.56	1.6		17	0	97	.12	10	.9	1.6	UKF
		4	1910	4.93	19	21.89	155	18.20	2.38	1.2		16	0	75	.07	4	.4	3.1	KOA
		4	2029	34.46	19	27.34	155	24.63	7.05	2.0		27	0	77	.16	10	.8	1.5	UKF
		4	2146	45.18	19	26.67	155	22.80	8.90			20	0	79	.10	8	.7	1.7	UKF
		4	23 3	58.23	19	22.81	155	17.10	1.19			12	0	76	.10	4	.6	.5	KOA
		4	2355	46.36	19	25.66	155	25.39	7.06	1.8		20	0	107	.09	9	.7	1.8	UKF
		5	2 2	19.18	19	21.86	155	18.15	3.27	2.2		26	0	40	.12	4	.5	1.2	KOA
		5	2 5	20.18	19	26.77	155	24.95	7.56	2.2		23	0	106	.11	9	.7	1.4	UKF
		5	341	5.66	19	27.23	155	24.74	6.67	2.2		28	0	72	.11	10	.6	1.2	UKF
		5	415	19.15	19	27.59	155	21.90	8.96	1.5		20	0	97	.11	8	.8	1.2	UKF
		5	641	34.90	19	24.98	155	25.15	7.86	1.5		22	0	61	.12	9	.8	2.1	UKF
		5	730	.04	19	25.76	155	24.83	6.64	2.1		26	0	96	.12	8	.7	1.7	UKF
		5	810	28.66	19	27.88	155	25.71	11.82	1.8		11	0	211	.08	10	4.9	13.5	UKF
		5	844	29.29	19	25.45	155	25.05	5.60	1.6		14	0	95	.10	9	.9	4.3	UKF
		5	9 0	38.83	19	20.51	155	16.56	27.25			16	0	106	.07	5	1.3	3.6	DEP
		5	1041	21.77	19	23.29	155	24.80	8.16	1.7		24	0	57	.13	9	.8	1.5	UKF
		5	1046	41.62	19	28.13	155	36.42	.74	2.2		13	0	197	.18	2	1.7	3.5	HDK
		5	1137	38.40	19	22.52	155	17.35	1.10	1.0		9	0	94	.06	3	.4	.3	KOA
		5	12 4	9.14	19	22.53	155	17.50	.63	1.2		10	0	83	.09	3	.5	2.3	KOA
		5	1235	21.51	19	20.24	155	19.79	1.71	1.4		13	0	115	.12	6	.9	.0	SWR
		5	1257	18.20	19	25.33	155	25.17	9.01			14	0	68	.09	10	.8	2.6	UKF
		5	1445	27.66	19	26.33	155	24.48	6.85	1.6		18	0	87	.16	9	1.1	3.3	UKF
		5	15 6	59.07	19	22.69	155	22.81	8.44	1.7		20	0	61	.10	8	.7	1.0	UKF
		5	15 8	35.91	19	22.96	155	22.79	8.96	1.9		18	0	92	.06	8	.4	.5	UKF
		5	1523	48.14	19	25.73	155	25.95	8.72			18	0	70	.08	10	.7	1.7	UKF
		5	1526	22.17	19	24.21	155	27.60	10.89	1.9		13	0	216	.07	13	3.5	8.3	UKF
		5	16 1	59.74	19	22.88	155	22.58	8.16			14	0	89	.13	9	.8	1.5	UKF
		5	1621	35.74	19	25.42	155	53.88	80.98			12	0	341	.33	60	60.3	78.5	KOK
		5	1635	17.49	19	25.58	155	24.66	6.73	1.7		22	0	92	.14	6	.9	1.8	UKF
		5	1735	21.52	19	25.80	155	25.04	10.22	2.5		25	0	70	.11	8	.7	1.0	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	5	1739	6.63	19	23.02	155	15.32	2.00	1.0		9	0	113	.17	3	1.4	.0	SPC
		5	1742	34.56	19	22.89	155	22.54	7.37	1.5		17	0	84	.05	9	.3	.9	UKF
		5	1759	21.65	19	25.11	155	26.37	6.73	1.7		19	0	101	.16	11	1.1	3.7	UKF
		5	2016	49.50	19	24.71	155	25.36	9.56			16	0	90	.09	10	.8	3.4	UKF
		5	21 2	52.46	19	22.81	155	22.75	7.12			13	0	90	.09	9	.8	2.2	UKF
		5	21 3	8.83	19	22.80	155	22.59	8.15	1.5		15	0	88	.08	9	.6	.9	UKF
		5	2130	25.54	19	20.41	155	19.66	4.47	1.6		22	0	81	.10	6	.5	1.1	SWR
		5	2231	41.81	19	25.05	155	17.62	2.07	.3		10	0	81	.10	3	1.0	2.2	SPC
		6	147	39.35	19	23.48	155	27.07	7.29	2.4		27	0	65	.16	13	.8	2.4	UKF
		6	2 4	2.77	19	23.30	155	14.78	1.49	1.5		22	0	56	.09	3	.3	.2	GLN
		6	2 6	23.04	19	26.54	155	25.02	7.45	2.4		29	0	69	.12	9	.6	1.1	UKF
		6	211	14.41	19	24.86	155	25.30	10.18	2.0		25	0	65	.10	10	.5	.7	UKF
		6	244	45.82	19	25.94	155	27.61	6.07			21	0	99	.09	12	.6	2.6	UKF
		6	3 7	31.45	19	24.14	155	26.58	8.18	1.9		26	0	61	.12	12	.6	1.3	UKF
		6	318	4.39	19	26.02	155	25.25	8.45	1.8		20	0	71	.09	8	.6	1.6	UKF
		6	331	20.24	19	23.05	155	14.63	2.00			10	0	115	.09	3	.7	.0	GLN
		6	332	53.19	20	3.56	156	5.19	38.35			9	0	271	.06	66	5.7	7.8	DIS
		6	342	42.37	19	26.87	155	24.30	8.26	1.8		23	0	74	.09	10	.5	1.5	UKF
		6	356	41.25	19	25.58	155	23.11	7.26			18	0	123	.06	8	.4	1.2	UKF
		6	442	50.17	19	23.07	155	14.30	3.63			8	0	113	.07	3	.2	.7	GLN
		6	518	41.69	19	25.46	155	16.58	13.00			16	0	124	.04	3	.5	.4	DEP
		6	536	47.44	19	24.45	155	25.38	9.51			20	0	63	.09	10	.6	3.1	UKF
		6	6 0	1.77	19	25.12	155	18.04	15.27			23	0	65	.17	3	1.3	1.8	DEP
		6	6 2	3.53	19	25.33	155	16.17	12.53	1.5		26	0	48	.12	3	.8	.3	LPC
		6	644	41.05	19	25.39	155	24.48	9.07	1.8		21	0	67	.08	8	.6	1.4	UKF
		6	7 1	57.50	19	21.81	155	16.32	1.64			11	0	74	.11	4	1.1	99.0	KOA
		6	718	24.43	19	23.17	155	17.25	1.49			8	0	100	.09	3	1.0	.5	SPC
		6	8 9	47.90	19	22.85	155	22.98	8.51	1.7		21	0	55	.06	8	.4	1.0	UKF
		6	9 2	49.67	19	24.27	155	26.52	7.64	2.7		23	0	62	.13	12	.7	1.4	UKF
		6	9 8	43.66	19	23.22	155	14.81	1.39			8	0	108	.06	3	.4	.4	GLN
		6	1222	48.67	19	25.09	155	25.66	10.22	2.2		22	0	96	.11	10	.8	.7	UKF
		6	1354	25.54	19	23.46	155	14.82	1.51			9	0	139	.07	3	.7	.3	GLN
		6	1558	37.29	19	24.82	155	28.60	34.15	2.3		10	0	166	.20	13	9.4	34.9	UKF
		6	1736	14.60	19	28.60	155	29.11	7.73			20	0	92	.11	12	.8	2.5	UKF
		6	1927	46.29	19	21.39	155	15.20	10.42			17	0	77	.04	5	.3	1.2	KOA
		6	1934	52.03	19	21.92	155	18.22	.92			13	0	75	.07	4	.3	.4	KOA
		6	2035	36.50	19	21.66	155	15.49	10.13	2.7		29	0	61	.10	4	.6	.3	KOA
		6	2223	43.51	19	22.65	155	22.67	8.26			21	0	60	.09	9	.6	1.5	UKF
		6	2340	17.71	19	26.42	155	23.37	11.15	1.6		15	0	82	.04	8	.4	1.8	UKF
		7	024	55.57	19	22.03	155	25.72	9.40	1.8		22	0	72	.09	11	.6	1.6	UKF
		7	041	23.33	19	25.17	155	25.06	8.57	2.6		25	0	66	.09	9	.5	1.3	UKF
		7	117	46.66	19	19.41	155	11.54	8.64	1.7		25	0	96	.12	7	.8	1.7	UER
		7	142	32.29	19	20.74	155	6.71	9.16	2.2		26	0	96	.11	7	.7	1.0	UER
		7	213	44.21	19	25.20	155	37.59	3.32	3.1		18	0	196	.09	8	.8	1.4	MOK
		7	248	46.08	19	23.30	155	14.88	1.49	1.3		15	0	56	.08	3	.4	.3	GLN
		7	325	52.54	19	19.63	155	11.88	8.37			20	0	89	.06	6	.4	1.0	UER
		7	350	26.03	19	19.49	155	16.20	9.66	1.8		26	0	94	.07	5	.4	.4	KOA
		7	7 1	41.48	19	24.58	155	24.53	10.61	1.9		20	0	83	.09	9	.6	.9	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	7	7 9	41.06	19	24.51	155	17.41	13.83			18	0	73	.07	2	.7	.9	DEP
		7	718	54.49	19	23.29	155	15.22	.17	2.7		19	0	57	.11	3	.5	.4	SPC
		7	739	56.46	19	25.43	155	24.86	10.42	3.0		28	0	63	.12	9	.8	.4	UKF
		7	831	18.00	19	23.30	155	15.07	2.00	1.2		9	0	105	.17	5	1.6	.0	SPC
		7	835	12.83	19	23.31	155	15.14	.21	2.5		18	0	69	.09	3	.3	.3	SPC
		7	934	38.49	19	23.43	155	15.02	2.00			8	0	165	.17	3	2.2	.0	SPC
		7	1040	9.95	19	23.94	155	15.27	1.74	1.1		18	0	49	.11	5	.5	.3	SPC
		7	1113	24.04	19	23.78	155	14.82	2.13	1.0		10	0	98	.08	3	.6	15.5	GLN
		7	1144	21.03	19	25.70	155	16.76	1.81	.4		12	0	158	.11	2	.9	.4	SPC
		7	1243	25.60	19	25.49	155	36.80	1.09	2.8		20	0	96	.15	7	.8	1.5	MOK
		7	1246	.11	19	23.72	155	14.92	2.52			9	0	92	.07	3	.5	3.7	GLN
		7	1249	46.21	19	23.69	155	14.81	1.13			9	0	133	.08	4	.8	.5	GLN
		7	1254	16.09	19	26.60	155	24.75	.57	1.7		14	0	155	.12	9	1.1	84.3	UKF
		7	13 3	4.78	19	23.50	155	26.98	4.90	1.7		18	0	78	.13	13	.8	1.3	UKF
		7	1446	35.83	19	24.95	155	25.75	8.14	1.7		19	0	95	.12	10	.9	2.4	UKF
		7	1514	27.91	19	24.43	155	26.84	9.13	4.1		31	0	59	.15	12	.8	1.0	UKF
		7	1518	35.33	19	25.00	155	26.39	.87			15	0	86	.16	10	1.1	44.6	UKF
		7	1832	21.24	19	23.10	155	14.55	2.00			9	0	215	.11	4	2.0	.0	GLN
		7	1911	2.16	19	24.51	155	27.14	7.64	1.8		17	0	103	.13	12	1.1	1.8	UKF
		7	1952	2.26	19	24.92	155	25.00	2.71	1.5		10	0	89	.13	9	1.5	33.2	UKF
		7	1957	18.35	19	26.28	155	26.25	8.52	1.7		15	0	176	.08	10	.9	2.4	UKF
		7	2019	17.75	19	25.94	155	24.72	8.76	2.1		26	0	85	.17	8	1.0	1.3	UKF
		7	2036	15.51	19	23.26	155	14.61	1.88			9	0	210	.06	4	1.1	99.0	GLN
		7	2042	25.62	19	22.99	155	23.15	1.22			17	0	64	.19	8	1.1	99.0	UKF
		7	2127	11.32	19	25.34	155	24.84	1.32	1.5		14	0	92	.08	9	.6	99.0	UKF
		7	2220	29.53	19	18.97	155	13.65	9.13	2.8		28	0	68	.12	7	.7	1.0	POL
		7	2226	2.02	19	23.59	155	17.04	1.88	.7		13	0	55	.06	2	.4	.2	SPC
		8	028	52.50	19	46.98	156	51.61	28.59	3.3		10	0	355	.36	163	97.2	97.1	DTS
		8	031	29.62	19	28.58	155	35.63	1.05	2.2		12	0	129	.18	5	1.5	.7	MOK
		8	1 6	24.60	19	21.70	155	18.39	2.82			10	0	103	.13	4	1.0	9.5	KOA
		8	119	11.62	19	24.49	155	26.93	7.48	1.8		19	0	97	.12	12	1.0	1.8	UKF
		8	122	28.90	20	13.64	155	34.54	6.85	2.9		14	0	312	.19	88	29.7	99.0	KOH
		8	440	2.80	19	22.33	155	23.64	9.72	2.8		26	0	64	.11	7	.6	.5	UKF
		8	450	30.11	19	22.30	155	23.66	8.48	1.6		23	0	64	.11	7	.7	1.2	UKF
		8	540	46.57	19	20.19	155	7.18	7.89			20	0	100	.15	7	1.0	1.5	UFR
		8	6 9	44.11	19	22.42	155	23.58	7.90			24	0	64	.11	7	.7	1.0	UKF
		8	614	22.10	19	22.15	155	23.44	9.96			13	0	86	.06	7	.7	2.4	UKF
		8	634	5.22	19	25.10	155	25.87	7.53	2.8		26	0	109	.15	10	1.0	1.3	UKF
		8	641	29.44	19	23.25	155	14.93	2.00	1.0		10	0	113	.11	5	1.2	.0	GLN
		8	644	54.77	19	18.56	155	18.28	32.79	2.2		26	0	100	.09	8	1.2	1.9	DEP
		8	646	3.06	19	18.62	155	18.74	30.95	2.2		25	0	63	.10	9	1.2	2.3	DEP
		8	646	31.90	19	27.18	155	24.07	5.08	3.5		22	0	93	.16	11	1.0	1.3	UKF
		8	651	22.55	19	26.93	155	24.45	9.46	2.9		30	0	70	.12	10	.6	.9	UKF
		8	839	18.59	19	24.24	155	17.62	1.63	1.0		8	0	106	.05	2	.6	.5	SPC
		8	843	45.60	19	24.58	155	25.88	7.07			15	0	93	.09	11	.7	2.1	UKF
		8	1122	44.95	19	23.81	155	15.22	2.00	.9		12	0	84	.11	5	.7	.0	SPC
		8	1213	9.39	19	25.64	155	25.05	5.92	1.6		19	0	92	.10	8	.7	2.5	UKF
		8	1239	13.28	19	21.93	155	25.52	9.58	3.1		17	0	108	.08	11	.8	2.6	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	8	1339	30.13	19	23.52	155	15.17	1.57			11	0	97	.10	3	.6	.3	SPC
		8	1356	18.25	19	24.66	155	26.40	8.48			18	0	97	.10	11	.8	2.1	UKF
		8	1428	35.31	19	23.01	155	14.56	2.66	1.4		11	0	117	.04	3	.3	1.8	GLN
		8	1447	30.98	19	23.22	155	14.83	1.22	1.0		12	0	108	.07	3	.4	.3	GLN
		8	15 6	39.97	19	24.81	155	25.77	6.55			16	0	153	.09	10	1.4	3.9	UKF
		8	1630	29.84	19	25.65	155	38.69	2.20	2.6		11	0	213	.14	8	1.6	3.7	MOK
		8	18 7	29.30	19	24.52	155	24.48	9.48	1.5		21	0	77	.12	9	.7	1.1	UKF
		8	18 8	14.80	19	24.42	155	24.57	8.81	1.7		26	0	78	.11	9	.7	1.0	UKF
		8	1827	15.32	19	24.89	155	26.21	7.29	1.9		16	0	161	.09	10	.9	1.2	UKF
		8	2036	58.76	19	23.72	155	15.08	2.19	1.1		11	0	90	.08	3	.4	6.7	SPC
		8	2245	54.58	19	23.09	155	17.05	1.60	1.0		12	0	64	.05	2	.4	.2	SPC
		9	3 0	45.60	19	19.80	155	11.19	7.19			26	0	89	.11	7	.7	1.4	UER
		9	356	50.86	19	24.96	155	25.52	11.15	1.9		18	0	94	.06	10	.5	2.7	UKF
		9	558	33.60	19	25.59	155	25.17	10.64			16	0	166	.05	9	.9	3.7	UKF
		9	642	17.02	19	26.24	155	36.75	3.59	3.4		20	0	187	.11	6	1.0	1.3	MOK
		9	757	27.84	19	23.41	155	14.70	2.00	2.1		22	0	52	.12	3	.5	3.5	GLN
		9	1014	28.20	19	26.15	155	36.96	1.92	2.5		15	0	196	.11	6	1.3	99.0	MOK
		9	1024	8.22	19	23.65	155	15.22	1.30			10	0	149	.08	3	.5	.3	SPC
		9	1029	36.87	19	23.19	155	14.73	1.84	1.3		15	0	59	.09	3	.5	99.0	GLN
		9	1138	59.70	19	22.35	155	13.38	2.41			9	0	87	.05	5	.5	1.2	UER
		9	12 7	19.32	19	27.77	155	37.20	.83	2.5		10	0	218	.12	4	1.6	1.0	MOK
		9	1242	35.51	19	23.19	155	14.80	1.37	1.1		9	0	109	.06	3	.4	.3	GLN
		9	13 3	4.60	19	19.57	155	11.98	8.07	2.3		29	0	89	.12	6	.7	1.1	UER
		9	1454	11.81	19	25.21	155	25.08	9.32			15	0	93	.07	9	.6	1.9	UKF
		9	1512	8.08	19	25.10	155	24.77	8.24	1.8		25	0	62	.13	9	.7	1.3	UKF
		9	1530	57.53	19	23.92	155	22.16	8.82	1.5		14	0	93	.08	7	.7	2.1	UKF
		9	1551	30.09	19	27.67	155	37.24	1.55			13	0	217	.13	4	2.1	.7	MOK
		9	16 2	58.77	19	24.88	155	22.69	10.68	1.6		22	0	59	.04	9	.2	.3	UKF
		9	1725	14.25	19	23.85	155	26.17	9.31			13	0	87	.07	11	.8	2.1	UKF
		9	1749	42.60	19	17.34	155	14.80	8.34			20	0	133	.11	7	.8	1.3	POL
		9	18 3	27.91	19	24.60	155	24.79	8.47	1.9		29	0	81	.13	9	.7	.9	UKF
		9	1841	46.18	19	25.68	155	25.69	7.00	2.0		23	0	103	.12	9	.8	2.4	UKF
		9	1954	13.28	19	24.64	155	12.55	11.02	1.7		11	0	139	.20	6	4.2	9.3	GLN
		9	20 5	33.49	19	24.59	155	26.04	8.78	1.9		25	0	60	.13	11	.7	1.5	UKF
		9	2010	37.97	19	25.01	155	17.86	2.27	.4		11	0	80	.10	3	.9	2.3	SPC
		9	2018	16.04	19	26.36	155	37.51	2.75	2.2		14	0	208	.13	6	1.4	2.7	MOK
		9	2050	11.88	19	28.45	155	35.63	1.40	2.7		21	0	107	.15	2	.7	.4	MOK
		9	21 3	15.97	19	20.65	155	16.93	31.56	2.2		26	0	73	.09	5	1.1	1.7	DEP
		9	2144	2.08	19	23.29	155	14.70	2.00	1.5		19	0	56	.12	3	.5	27.8	GLN
		10	035	54.12	19	27.80	155	35.10	1.28	2.4		20	0	118	.11	21	1.2	.7	MOK
		10	1 0	2.82	19	23.72	155	15.11	1.21			10	0	90	.08	3	.3	.4	SPC
		10	216	27.70	19	28.11	155	37.33	2.00	2.2		10	0	228	.19	4	3.9	.0	MOK
		10	226	27.72	19	24.80	155	23.03	7.98	1.4		21	0	67	.07	9	.5	.9	UKF
		10	4 1	16.65	18	57.20	155	9.60	36.26			22	1	264	.12	41	4.0	5.0	PPL
		10	528	53.85	19	24.71	155	26.29	5.42	1.7		19	0	96	.10	11	.7	.9	UKF
		10	542	56.05	19	24.82	155	25.50	7.43	1.7		22	0	89	.10	10	.6	1.8	UKF
		10	548	10.93	19	25.01	155	26.49	6.71			14	0	168	.13	10	2.3	5.5	UKF
		10	9 9	38.43	19	21.89	155	23.98	9.28			23	0	85	.09	8	.6	.8	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	10	1021	22.08	19	25.81	155	28.57	13.03			10	0	247	.05	14	2.2	2.1	UKF
		10	1033	23.79	19	19.32	155	13.21	8.92	1.7		21	0	75	.08	7	.6	1.3	UER
		10	1047	30.39	19	24.31	155	17.58	1.55	1.3		14	0	56	.08	2	.5	.3	SPC
		10	1153	1.68	19	25.98	155	25.85	10.57	1.8		13	0	187	.04	10	1.4	5.0	UKF
		10	1214	9.00	19	23.72	155	24.09	12.72			14	0	117	.05	8	.6	.4	UKF
		10	1536	10.02	19	24.10	155	15.84	2.01			8	0	62	.06	3	.6	52.1	SPC
		10	1540	49.70	19	24.45	155	24.97	8.02	1.9		24	0	125	.13	9	1.0	1.3	UKF
		10	1356	51.52	19	23.16	155	25.76	12.72			15	0	104	.11	7	1.4	.5	UKF
		10	1427	22.02	19	25.14	155	24.99	6.45			11	0	91	.12	9	1.1	4.4	UKF
		10	1447	13.55	19	23.12	155	22.67	4.56			10	0	92	.14	9	1.3	6.8	UKF
		10	1625	30.20	19	25.09	155	35.62	.43	2.9		22	0	97	.11	25	.8	36.0	MOK
		10	1626	30.46	19	22.48	155	23.36	7.89	1.6		24	0	90	.15	7	1.0	1.3	UKF
		10	1756	1.17	19	23.16	155	14.84	1.41			10	0	110	.07	3	.4	.3	GLN
		10	1824	42.99	19	26.48	155	28.09	6.05	1.8		18	0	116	.09	13	.7	2.9	UKF
		10	1847	23.23	19	24.95	155	24.39	1.17			15	0	141	.15	9	1.1	.0	UKF
		10	1925	56.05	19	23.29	155	14.92	1.84	1.0		11	0	102	.08	3	.6	99.0	GLN
		10	1931	42.51	19	27.23	155	37.80	1.42			11	0	223	.15	5	3.0	1.4	MOK
		10	1945	55.25	19	25.64	155	24.72	7.07	1.6		18	0	68	.12	8	.8	2.4	UKF
		10	20 1	12.03	19	28.12	155	35.78	1.12	2.9		25	0	77	.14	2	.5	.4	MOK
		10	2051	24.78	19	24.53	155	25.51	10.51	2.3		25	0	63	.09	10	.5	.3	UKF
		10	2114	48.90	19	20.19	155	8.97	6.14	1.9		25	0	72	.15	9	.9	2.0	UER
		10	2317	5.27	19	24.92	155	25.77	8.38	1.9		27	0	61	.15	10	.8	1.4	UKF
		10	2349	40.79	19	24.50	155	27.29	8.19	1.8		18	0	109	.09	12	.7	1.8	UKF
		11	039	5.39	19	27.57	155	35.30	.12	3.1		26	0	64	.15	16	.9	.6	MOK
		11	143	42.34	19	24.06	155	15.16	2.12	1.6		19	0	55	.18	3	.9	4.0	SPC
		11	2 4	49.52	19	27.21	155	37.37	1.78	2.2		11	0	214	.11	5	1.8	.5	MOK
		11	210	44.38	19	23.01	155	14.25	4.61			9	0	116	.11	3	.9	3.3	GLN
		11	232	25.64	19	26.35	155	37.12	2.02	3.1		15	0	195	.08	6	.8	2.6	MOK
		11	3 1	44.66	19	23.24	155	14.83	1.32			10	0	107	.07	3	.4	.3	GLN
		11	325	40.87	19	25.37	155	24.41	7.52	1.4		21	0	88	.11	8	.6	1.3	UKF
		11	335	59.35	19	21.86	155	23.73	9.14	1.5		22	0	72	.10	8	.6	.7	SWR
		11	339	41.15	19	23.42	155	15.08	2.00	1.0		11	0	101	.12	3	.9	.0	SPC
		11	348	40.66	19	28.32	155	36.06	.48			11	0	133	.14	2	.7	.4	MOK
		11	349	52.60	19	27.89	155	35.74	7.62	2.8		16	0	204	.15	24	2.8	5.4	MOK
		11	5 7	49.68	19	23.15	155	30.14	8.60			21	0	64	.13	13	.9	2.2	MOK
		11	519	22.84	19	23.87	155	24.07	7.87			14	0	75	.13	8	1.0	3.0	UKF
		11	643	2.49	19	26.06	155	25.54	5.63			15	0	86	.12	9	.9	5.7	UKF
		11	714	1.47	19	19.55	155	10.18	8.70			15	0	106	.03	7	.5	.7	UER
		11	720	54.43	19	26.42	155	25.02	7.77	3.0		28	0	73	.12	9	.7	1.1	UKF
		11	738	37.35	19	26.52	155	24.00	7.39			15	0	146	.07	9	.6	1.6	UKF
		11	750	12.39	19	23.34	155	16.79	1.85	1.0		14	0	52	.10	2	.6	.5	SPC
		11	837	18.04	19	26.54	155	22.94	7.62	1.7		18	0	76	.07	8	.5	.9	UKF
		11	958	41.76	19	23.97	155	15.39	2.02			8	0	208	.09	3	1.5	76.4	SPC
		11	1050	31.62	19	25.62	155	25.11	8.15			19	0	97	.12	9	.8	1.1	UKF
		11	1113	42.07	19	24.07	155	15.68	1.50	.8		11	0	65	.12	3	.6	.4	SPC
		11	1356	16.56	19	23.22	155	14.69	1.91	1.7		17	0	58	.07	3	.4	26.3	GLN
		11	1753	59.67	19	23.30	155	14.86	1.68			10	0	105	.11	3	.9	.6	GLN
		11	1754	47.76	19	23.33	155	14.75	1.88			9	0	201	.09	3	1.3	.0	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	11	1756	24.59	19	23.51	155	15.16	1.09	.9		9	0	178	.09	3	.6	.5	SPC
		11	1758	56.03	19	23.22	155	14.89	1.89	1.1		15	0	83	.12	3	.6	.0	GLN
		11	1955	30.94	19	23.25	155	14.80	2.00	1.1		12	0	107	.12	3	.8	.0	GLN
		11	2151	18.17	19	23.01	155	14.81	2.00			11	0	116	.15	3	1.1	.0	GLN
		11	2159	11.82	19	27.57	155	35.87	.82	2.6		19	0	81	.16	3	1.0	1.0	MOK
		11	22 0	50.04	19	28.57	155	35.58	1.05	2.7		22	0	100	.15	3	.7	.4	MOK
		11	22 9	18.56	19	19.14	155	14.12	6.75			18	0	91	.11	7	.8	1.7	UER
		11	2241	24.66	19	23.13	155	14.54	1.97	1.3		12	0	96	.08	3	.6	.0	GLN
		11	23 4	38.70	19	19.22	155	13.84	7.65	2.1		24	0	85	.13	7	.8	1.4	UER
		11	2315	34.97	19	18.28	155	12.93	12.21			14	0	101	.15	9	2.0	.7	POL
		11	2335	3.60	19	23.38	155	15.06	2.00	1.0		12	0	102	.20	3	1.3	.0	SPC
		11	2343	2.70	19	18.56	155	16.35	6.23			12	0	165	.06	7	.7	1.4	KOA
		12	036	22.67	19	28.16	155	38.48	5.55	2.7		18	0	198	.13	6	1.7	2.4	MOK
		12	057	51.31	19	22.42	155	13.57	3.45			10	0	84	.04	6	.4	2.8	UER
		12	256	12.62	18	54.02	155	24.09	35.74			18	0	262	.08	45	3.9	5.9	DIS
		12	346	50.33	19	23.00	155	15.00	2.49			8	0	116	.09	3	.4	2.1	SPC
		12	4 1	19.17	19	21.89	155	5.46	8.18	3.6		27	1	119	.11	9	.6	.8	MER
		12	450	39.04	19	23.14	155	14.89	1.20			10	0	199	.08	3	.9	.3	GLN
		12	551	4.10	19	23.95	155	26.26	7.87	1.7		13	0	89	.08	11	.8	1.7	UKF
		12	617	56.32	19	22.14	155	13.87	2.77			7	0	287	.08	6	33.3	54.8	UER
		12	725	10.60	19	21.89	155	23.92	8.95			10	0	84	.08	8	1.0	2.4	SWR
		12	8 6	31.47	19	23.27	155	14.82	2.00	1.2		7	0	238	.06	3	1.8	.0	GLN
		12	826	17.73	19	25.92	155	25.37	10.55			11	0	175	.09	9	1.2	1.4	UKF
		12	1146	7.33	19	25.87	155	24.86	6.67	1.6		14	0	131	.09	8	.8	2.5	UKF
		12	1437	46.87	19	24.50	155	26.75	9.98	1.8		14	0	189	.06	11	.7	.9	UKF
		12	1956	45.16	19	28.41	155	35.68	1.24	2.2		11	0	135	.09	2	1.0	.3	MOK
		12	2010	.82	19	19.28	155	13.69	8.77			18	0	80	.06	7	.4	1.0	UER
		12	2329	2.30	19	19.00	155	13.03	8.18			18	0	147	.11	8	1.3	2.3	UER
		13	349	35.47	19	28.45	155	35.97	.65	2.5		21	0	84	.14	2	.7	.7	MOK
		13	4 1	16.64	19	23.85	155	49.50	10.23	2.2		16	0	117	.18	24	1.7	.7	KON
		13	419	40.77	19	26.04	155	24.70	9.42	1.6		28	0	66	.12	8	.7	1.0	UKF
		13	725	44.98	19	25.57	155	16.62	1.91	1.0		12	0	152	.08	2	.6	.2	SPC
		13	9 4	37.82	19	22.93	155	13.52	4.32			12	0	127	.14	4	1.3	3.2	UER
		13	923	9.91	19	24.36	155	15.73	1.96	.8		11	0	74	.05	2	.3	.0	SPC
		13	932	14.81	19	28.40	155	35.28	.24	2.1		19	0	80	.17	3	.6	.4	MOK
		13	1024	19.71	19	26.45	155	25.08	13.36			14	0	106	.04	9	.5	.9	UKF
		13	1047	16.25	19	23.67	155	15.40	2.00	.9		13	0	85	.13	3	.8	.0	SPC
		13	1059	3.04	19	23.19	155	14.68	1.30			10	0	109	.05	3	.3	.3	GLN
		13	1130	59.57	19	23.71	155	14.91	2.19			10	0	91	.08	3	.7	8.5	GLN
		13	1213	9.76	19	25.29	155	25.28	7.84	2.0		18	0	95	.10	9	.8	2.0	UKF
		13	1330	54.46	19	22.96	155	23.19	5.57			14	0	56	.18	8	1.2	4.0	UKF
		13	1341	20.51	19	23.73	155	15.22	2.01			9	0	122	.07	3	.6	99.0	SPC
		13	1349	45.29	19	23.41	155	14.87	1.92			10	0	101	.08	3	.7	99.0	GLN
		13	1433	57.79	19	24.19	155	15.93	1.87			8	0	107	.07	2	.9	.4	SPC
		13	15 6	5.17	19	.31	155	19.12	42.06	2.6		24	0	240	.07	33	1.8	4.4	PPL
		13	1520	37.11	19	27.80	155	37.44	2.41	2.2		14	0	225	.18	4	2.9	3.9	MOK
		13	1550	5.38	19	25.56	155	12.63	10.45	1.6		9	0	234	.18	8	8.0	19.8	GLN
		13	16 7	23.87	19	23.13	155	14.70	1.28	1.1		13	0	107	.09	3	.5	.3	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	13	1623	52.34	19	23.32	155	23.52	5.42	1.5		15	0	68	.14	9	.8	1.8	UKF
		13	1647	45.58	19	23.37	155	14.94	1.41			9	0	102	.03	3	.2	.1	GLN
		13	1739	10.77	19	24.94	155	13.39	7.78	1.9		12	0	136	.16	4	2.5	3.4	GLN
		13	1756	6.63	19	25.97	155	11.39	12.63			11	0	155	.22	8	5.7	12.9	GLN
		13	18 4	.52	19	23.72	155	15.11	1.51	1.3		12	0	90	.04	3	.2	.1	SPC
		13	18 8	12.16	19	24.91	155	13.60	8.10			9	0	134	.18	4	3.9	6.1	GLN
		13	18 9	33.20	19	24.01	155	14.94	3.62	1.0		10	0	88	.09	3	.5	1.9	GLN
		13	1933	43.89	19	22.84	155	18.57	28.95			19	0	59	.05	4	.9	1.6	DEP
		13	1957	49.11	19	24.31	155	16.12	2.00			9	0	74	.09	2	.8	14.7	SPC
		13	20 7	12.13	19	23.54	155	14.94	1.96			10	0	96	.17	3	1.3	.0	GLN
		13	2310	29.12	19	18.75	155	13.54	8.09	1.7		23	0	73	.10	7	.6	1.4	POL
		14	0 2	26.89	19	23.47	155	15.08	1.60			11	0	99	.08	3	.5	.3	SPC
		14	011	10.35	19	25.13	155	25.51	9.00	3.6		33	0	42	.14	9	.7	.9	UKF
		14	1 5	29.01	19	25.29	155	25.20	10.74	1.7		19	0	127	.12	9	.8	.8	UKF
		14	129	45.90	19	22.97	155	14.66	2.22			10	0	119	.08	3	.6	9.4	UER
		14	144	22.22	19	25.53	155	24.89	5.87	1.6		14	0	94	.10	8	.8	3.2	UKF
		14	240	56.97	19	30.07	155	39.05	.07	2.3		12	0	278	.20	24	9.3	99.0	MOK
		14	330	32.37	19	23.12	155	22.92	8.86			18	0	95	.08	8	.5	.9	UKF
		14	345	34.62	19	23.23	155	14.80	1.65	1.1		11	0	104	.08	3	.7	.3	GLN
		14	417	42.65	19	26.83	155	24.77	6.95	2.1		25	0	70	.11	9	.6	1.5	UKF
		14	435	26.45	19	29.42	155	36.76	2.22	2.2		10	0	267	.11	24	5.2	7.0	MOK
		14	448	19.87	19	20.33	155	12.15	9.26	2.2		26	0	74	.09	7	.5	.9	UER
		14	652	24.22	19	26.12	155	36.17	3.36	3.7		28	0	49	.14	6	.7	1.3	MOK
		14	740	14.14	19	23.25	155	14.78	1.38			9	0	107	.05	3	.3	.3	GLN
		14	8 8	53.88	19	25.07	155	25.07	9.54	1.7		18	0	91	.06	9	.5	2.3	UKF
		14	813	17.57	19	23.33	155	14.89	1.33			9	0	104	.04	3	.2	.2	GLN
		14	854	48.02	19	23.21	155	14.87	1.39	1.0		11	0	105	.11	3	.6	.4	GLN
		14	923	35.92	19	22.49	155	24.26	9.18			19	0	97	.08	8	.7	1.5	UKF
		14	936	36.24	19	23.17	155	14.77	1.49			10	0	110	.09	3	.7	.5	GLN
		14	1112	53.89	19	23.29	155	14.63	2.00			9	0	105	.10	3	.8	.0	GLN
		14	1113	41.87	19	24.41	155	25.11	8.23			14	0	137	.08	10	.8	2.0	UKF
		14	1141	9.99	19	23.30	155	14.86	1.32	1.0		9	0	105	.04	3	.2	.2	GLN
		14	1146	55.41	19	23.25	155	14.79	1.69	1.5		12	0	103	.03	3	.2	.1	GLN
		14	12 0	32.03	19	27.49	155	22.57	7.50	1.6		18	0	116	.11	9	.8	2.0	UKF
		14	1321	42.98	19	23.29	155	22.79	1.57			19	0	95	.19	9	1.1	99.0	UKF
		14	1349	39.29	19	23.20	155	14.67	2.00			10	0	108	.10	3	.8	.0	GLN
		14	1449	13.66	19	25.40	155	26.42	9.09	2.5		21	0	156	.11	11	.9	1.4	UKF
		14	1451	11.61	19	18.81	155	13.29	10.29	2.2		22	0	79	.09	8	.7	.4	POL
		14	1541	40.32	19	26.93	155	22.81	8.28	2.5		13	0	75	.06	8	.5	1.3	UKF
		14	1653	53.67	19	29.15	155	40.06	.58	2.3		5	0	328	.35	9	99.0	99.0	MOK
		14	1728	29.22	19	25.23	155	24.97	7.07	1.6		15	0	146	.09	9	.8	2.9	UKF
		14	18 9	21.08	19	20.84	155	27.98	9.78	2.4		25	0	57	.14	8	1.2	.4	HEA
		14	1847	48.35	19	24.89	155	25.68	10.24	1.7		19	0	94	.11	10	.9	4.0	UKF
		14	1913	17.83	19	19.87	155	12.64	5.94			17	0	156	.12	7	1.1	2.2	UER
		14	1936	53.04	19	26.84	155	36.07	.99	2.2		15	0	159	.27	5	2.4	1.9	MOK
		14	1937	58.32	19	26.62	155	25.62	10.82	1.8		16	0	172	.06	9	.7	.4	UKF
		14	1959	54.42	19	28.75	155	22.16	10.06	2.1		20	0	131	.08	10	.8	2.4	UKF
		14	2116	54.06	19	24.33	155	29.66	8.81	1.9		24	0	56	.12	13	.8	1.3	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	14	2250	29.09	19	24.09	155	15.94	.97	.7		10	0	110	.15	2	.7	.9	SPC
		15	155	19.40	19	23.30	155	14.95	1.37	1.0		13	0	105	.10	3	.5	.4	GLN
		15	2 9	20.93	19	28.47	155	35.76	1.52	2.6		13	0	143	.11	2	.9	.4	MOK
		15	329	4.59	19	24.04	155	24.13	8.47	1.9		23	0	76	.09	8	.6	.8	UKF
		15	344	14.01	19	25.90	155	24.68	8.57	1.6		18	0	95	.07	8	.6	1.7	UKF
		15	412	9.75	19	26.01	155	25.01	7.29	2.7		25	0	71	.11	8	.6	1.4	UKF
		15	522	32.23	19	24.46	155	26.27	8.89			21	0	63	.10	11	.6	1.8	UKF
		15	552	21.75	19	26.24	155	25.40	8.22	1.7		23	0	72	.10	9	.6	1.2	UKF
		15	6 7	32.25	19	24.63	155	25.31	8.65	1.7		13	0	89	.06	10	.7	2.1	UKF
		15	630	8.71	19	24.11	155	25.87	10.14	3.1		26	0	61	.14	11	.9	.4	UKF
		15	653	32.92	19	27.78	155	27.93	5.40			15	0	152	.10	13	.9	1.2	UKF
		15	748	56.00	19	24.96	155	36.57	1.23	2.8		13	0	101	.17	8	1.4	77.2	MOK
		15	8 7	8.38	19	27.85	155	35.84	.70	3.0		20	0	58	.15	3	.6	.6	MOK
		15	927	5.16	19	17.59	155	14.32	7.70			19	0	138	.07	8	.6	1.1	POL
		15	1053	47.76	19	28.51	155	36.06	2.10	4.7		32	0	60	.19	2	.9	2.3	MOK
		15	14 9	38.96	19	24.22	155	25.96	6.41	2.4		19	0	90	.09	11	.7	1.8	UKF
		15	1549	5.89	19	26.56	155	24.13	7.86	1.7		10	0	95	.09	9	1.0	2.6	UKF
		15	1745	23.56	19	23.33	155	24.28	8.23	1.8		23	0	73	.08	8	.5	.9	UKF
		15	1823	4.15	19	24.82	155	25.56	9.24	1.9		25	0	89	.10	10	.6	1.0	UKF
		15	1848	29.01	19	24.66	155	24.95	7.41	2.1		24	0	87	.10	9	.6	1.0	UKF
		15	2026	21.84	19	20.29	155	19.20	1.84	1.3		14	0	74	.06	6	.4	99.0	SWR
		15	2047	44.79	19	24.18	155	15.99	1.70	.7		10	0	64	.08	2	.6	.3	SPC
		15	2317	29.59	19	24.39	155	25.90	9.15	4.8		32	0	38	.11	11	.6	.7	UKF
		15	2328	14.04	19	23.46	155	26.94	6.99	2.4		18	0	87	.11	13	.8	1.9	UKF
		15	2330	35.88	19	24.17	155	26.24	8.33	3.1		23	0	98	.11	12	.8	1.0	UKF
		15	2334	27.17	19	23.90	155	26.84	9.44	1.7		21	0	99	.09	13	.8	1.8	UKF
		15	2337	4.37	19	25.18	155	25.26	11.00	1.7		16	0	193	.08	10	1.1	5.2	UKF
		15	2337	47.44	19	24.08	155	27.07	5.69	2.3		15	0	102	.11	12	.8	2.1	UKF
		15	2341	45.66	19	24.14	155	27.04	8.19	2.5		17	0	103	.10	12	.9	1.9	UKF
		15	2344	14.67	19	23.73	155	26.84	5.99	1.6		21	0	89	.10	13	.7	1.8	UKF
		15	2344	36.55	19	25.21	155	26.09	11.82	2.2		9	0	238	.06	17	2.1	.8	UKF
		15	2350	53.64	19	25.68	155	24.67	11.83	1.7		19	0	93	.05	9	.5	.3	UKF
		15	2353	31.55	19	23.83	155	26.28	8.65	1.7		23	0	88	.11	12	.8	1.3	UKF
		15	2359	16.31	19	24.33	155	25.46	7.74	1.8		21	0	121	.11	10	.7	1.4	UKF
		16	0 0	1.28	19	24.22	155	26.92	8.69	1.8		23	0	83	.13	12	1.0	2.0	UKF
		16	0 7	47.14	19	24.32	155	25.77	7.88			24	0	62	.10	11	.6	1.2	UKF
		16	012	28.31	19	25.59	155	25.54	8.00	2.1		17	0	137	.12	9	1.0	1.3	UKF
		16	018	27.94	19	24.39	155	25.82	8.22	1.7		25	0	90	.10	11	.6	1.1	UKF
		16	035	44.51	19	24.60	155	26.63	8.10	2.1		20	0	97	.11	11	1.0	2.4	UKF
		16	041	7.44	19	24.44	155	26.55	9.12	2.6		32	0	59	.14	11	.7	1.0	UKF
		16	058	50.70	19	24.55	155	25.75	7.48	2.0		25	0	92	.12	10	.7	1.3	UKF
		16	1 0	13.13	19	24.74	155	25.62	5.99	2.4		26	0	92	.15	10	.9	2.1	UKF
		16	1 3	41.73	19	25.24	155	24.39	7.18	1.9		19	0	86	.11	9	.5	2.1	UKF
		16	111	41.55	19	24.86	155	25.10	8.49	1.7		20	0	96	.10	9	.7	1.9	UKF
		16	122	43.65	19	25.60	155	24.23	6.08	1.9		24	0	68	.13	8	.7	1.9	UKF
		16	123	27.92	19	24.64	155	25.71	7.53	2.1		24	0	92	.10	10	.6	1.1	UKF
		16	216	29.87	19	23.92	155	26.49	5.41	1.9		20	0	90	.13	12	.9	1.0	UKF
		16	223	22.71	19	25.03	155	24.72	7.94	2.1		25	0	61	.11	9	.6	1.3	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	16	254	8.24	19	24.78	155	25.98	11.15	2.5		26	0	61	.09	10	.6	.3	UKF
		16	3 1	30.95	19	24.23	155	25.55	12.13	1.6		19	0	87	.09	10	.7	.4	UKF
		16	4 5	47.17	19	23.83	155	25.34	8.03	1.7		19	0	83	.07	10	.5	1.2	UKF
		16	428	21.37	19	24.14	155	26.78	7.56	2.0		25	0	61	.11	12	.6	1.2	UKF
		16	6 0	29.28	19	22.44	155	23.98	8.75	1.9		24	0	54	.08	8	.5	.9	UKF
		16	618	56.24	19	25.25	155	25.34	9.71	1.7		21	0	67	.07	9	.4	2.5	UKF
		16	628	21.18	19	24.05	155	27.06	8.39	1.8		21	0	93	.13	12	1.0	2.4	UKF
		16	659	19.39	19	23.35	155	24.38	8.20	2.0		26	0	71	.14	8	.8	1.0	UKF
		16	7 6	55.08	19	25.48	155	24.54	11.05	1.7		13	0	90	.13	9	1.4	6.8	UKF
		16	718	33.49	19	25.13	155	24.98	11.91	1.7		19	0	91	.06	9	.5	.3	UKF
		16	839	25.11	19	24.04	155	26.71	11.77			13	0	150	.06	12	.8	.5	UKF
		16	9 0	55.13	19	24.41	155	25.71	9.42	3.8		29	0	86	.14	11	.8	.9	UKF
		16	953	31.76	19	24.53	155	25.85	9.52	1.5		21	0	92	.07	11	.6	2.4	UKF
		16	1010	5.57	19	25.64	155	25.87	9.02	1.7		21	0	78	.07	10	.4	1.3	UKF
		16	1021	42.00	19	25.70	155	24.65	10.31	1.8		20	0	93	.07	8	.5	2.1	UKF
		16	1029	21.59	19	25.37	155	25.57	6.35	2.0		18	0	98	.06	9	.5	1.8	UKF
		16	1056	40.52	19	23.90	155	24.94	9.93	1.8		21	0	78	.11	9	.6	2.5	UKF
		16	12 3	52.08	19	24.47	155	24.96	9.60	2.5		25	0	85	.11	9	.5	.6	UKF
		16	1219	21.30	19	24.68	155	24.81	1.59	1.5		15	0	145	.12	9	1.0	99.0	UKF
		16	1228	34.65	19	24.00	155	26.47	5.90	1.9		18	0	90	.10	12	.7	2.0	UKF
		16	1241	35.57	19	25.51	155	25.76	1.17	1.8		21	0	79	.13	11	.8	90.6	UKF
		16	13 8	26.18	19	25.85	155	24.17	8.60	1.8		22	0	89	.11	9	.7	1.9	UKF
		16	14 1	56.90	19	23.09	155	24.61	11.78	1.2		19	0	79	.07	9	.5	1.0	UKF
		16	1417	42.59	19	24.37	155	25.97	10.02	1.7		21	0	91	.07	11	.4	2.1	UKF
		16	1439	26.57	19	25.36	155	24.77	11.67	1.7		17	0	91	.08	9	.7	.5	UKF
		16	16 3	23.96	19	25.47	155	36.43	3.67	3.2		24	0	95	.13	7	.7	1.4	MOK
		16	1818	12.09	19	24.02	155	15.87	2.20	1.8		21	0	55	.13	3	.5	2.0	SPC
		16	1935	23.78	19	25.11	155	25.62	12.39	1.8		19	0	96	.13	10	1.2	.6	UKF
		16	1942	28.21	19	24.82	155	26.08	9.56	2.3		19	0	96	.10	11	.8	4.9	UKF
		16	1953	23.73	19	25.80	155	17.16	16.51	1.7		26	0	77	.14	4	1.0	1.5	DEP
		16	20 2	53.04	19	24.05	155	25.24	8.59	2.0		25	0	84	.13	10	.8	1.1	UKF
		16	2115	.11	19	25.30	155	26.60	8.12	1.7		20	0	105	.09	11	.6	1.8	UKF
		16	2116	47.86	19	18.04	155	13.25	9.30	1.8		21	0	94	.11	8	.9	1.8	POL
		16	2133	21.86	19	24.68	155	27.13	10.04	2.2		20	0	100	.12	12	.8	.7	UKF
		16	22 4	6.07	19	22.74	155	27.87	5.15	2.9		24	0	83	.14	12	.7	1.0	UKF
		16	2236	.95	19	24.11	155	26.80	7.45	1.8		20	0	93	.11	12	.8	2.1	UKF
		16	2241	4.21	19	25.28	155	25.01	9.53	1.7		19	0	93	.07	9	.5	2.6	UKF
		16	2254	50.69	19	25.28	155	24.95	9.28	1.7		20	0	92	.07	9	.6	1.4	UKF
		16	2319	35.39	19	27.50	155	24.37	9.69	2.3		22	0	94	.12	11	.9	1.5	UKF
		16	2328	4.84	19	24.81	155	25.17	7.65	1.6		19	0	90	.12	9	.9	2.5	UKF
		17	052	59.70	19	23.09	155	17.24	1.46	.8		13	0	64	.11	3	.7	.4	SPC
		17	119	46.85	19	22.76	155	24.12	11.91	2.2		20	0	69	.10	11	.6	.6	UKF
		17	321	10.72	19	22.39	155	23.84	9.38	1.7		20	0	65	.10	8	.7	1.7	UKF
		17	333	24.82	19	24.47	155	27.78	11.46	1.6		16	0	223	.08	13	1.2	.7	UKF
		17	425	47.11	19	25.93	155	25.96	11.33	1.6		18	0	108	.06	10	.5	2.6	UKF
		17	6 4	18.34	19	23.12	155	27.79	5.55	3.2		26	0	56	.16	13	.8	2.0	UKF
		17	616	41.69	19	25.41	155	26.48	9.29	1.9		18	0	171	.08	11	.9	1.8	UKF
		17	627	20.01	19	22.91	155	27.57	4.67	2.7		23	0	84	.15	12	1.0	1.5	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	17	637	3.16	19	22.47	155	23.85	8.23	1.9		22	0	66	.11	8	.7	1.1	UKF
		17	637	29.17	19	22.21	155	24.01	9.23	2.7		21	0	107	.11	12	.9	.7	UKF
		17	942	8.99	19	17.02	155	14.74	9.87	2.4		27	0	143	.11	7	.7	.5	POL
		17	10 0	9.30	19	25.02	155	17.10	1.56	1.2		15	0	121	.14	2	.7	.4	SPC
		17	10 1	46.33	19	24.42	155	26.23	8.91	1.7		21	0	93	.12	11	.9	1.4	UKF
		17	1038	10.68	19	16.77	155	14.79	8.81	1.7		20	0	155	.12	8	1.0	1.5	POL
		17	1039	4.56	19	25.65	155	24.68	9.03	1.8		17	0	156	.09	8	.9	1.4	UKF
		17	1216	37.75	19	23.11	155	22.99	8.08	1.3		17	0	95	.14	8	1.1	2.5	UKF
		17	1217	36.38	19	23.26	155	29.50	8.39	2.1		13	0	200	.07	16	1.2	1.6	UKF
		17	1226	28.38	19	15.09	155	13.43	9.22	1.9		17	0	181	.15	11	1.9	1.5	POL
		17	1255	20.76	19	23.98	155	26.40	8.58	2.4		26	0	90	.12	12	.7	1.1	UKF
		17	1349	39.22	19	24.53	155	17.67	2.00	.9		12	0	117	.13	2	1.0	.0	SPC
		17	1438	46.69	19	25.74	155	23.49	9.38	2.2		25	0	80	.15	8	.9	1.1	UKF
		17	1519	31.86	19	24.11	155	15.98	1.65	1.7		19	0	61	.10	2	.4	.2	SPC
		17	16 8	35.61	19	25.63	155	24.19	7.50	1.7		19	0	141	.08	8	.6	1.3	UKF
		17	1615	1.54	19	22.08	155	24.16	9.21	2.4		27	0	52	.15	8	.7	.8	UKF
		17	1632	56.58	19	24.74	155	25.70	11.10	1.6		21	0	93	.09	10	.5	.6	UKF
		17	1710	34.08	19	23.35	155	24.35	8.27	2.1		23	0	73	.11	8	.7	1.3	UKF
		17	1818	45.45	19	24.81	155	26.11	9.14	1.7		22	0	96	.09	10	.7	1.6	UKF
		17	1923	24.01	19	25.17	155	25.49	11.34			16	0	81	.05	10	.5	.8	UKF
		17	20 5	37.64	19	23.67	155	25.67	8.63	1.9		20	0	127	.09	10	.7	1.0	UKF
		17	2128	54.64	19	25.89	155	24.31	10.77	1.7		21	0	91	.09	9	.6	.5	UKF
		17	2155	16.69	19	23.08	155	14.53	2.00			10	0	114	.10	3	.9	.0	GLN
		17	2250	44.63	19	24.53	155	17.81	13.73	2.1		11	0	128	.29	2	6.9	10.5	DEP
		17	2256	48.10	19	24.12	155	15.89	1.00	.7		11	0	61	.10	2	.4	.5	SPC
		18	011	48.69	19	25.91	155	25.08	7.28	2.2		21	0	100	.11	8	.8	2.3	UKF
		18	019	31.66	19	22.36	155	23.61	9.59	1.8		21	0	64	.12	7	.9	3.3	UKF
		18	041	35.31	19	24.66	155	26.10	10.92	1.8		18	0	95	.08	11	.7	3.1	UKF
		18	150	57.86	19	22.31	155	24.23	9.08	1.7		20	0	93	.08	8	.6	.8	UKF
		18	152	20.34	19	24.17	155	15.98	2.28	.8		9	0	65	.04	2	.4	1.3	SPC
		18	3 5	26.91	19	19.90	155	8.68	7.28	1.8		22	0	141	.12	9	1.3	1.9	UFR
		18	311	16.14	19	24.15	155	26.55	5.40	2.5		24	0	92	.13	12	.8	1.0	UKF
		18	526	.94	19	22.94	155	24.39	8.29	1.6		21	0	107	.09	8	.7	1.0	UKF
		18	553	30.10	19	23.25	155	14.91	1.94	1.0		9	0	107	.07	3	.5	.0	GLN
		18	736	8.98	19	24.19	155	15.98	1.57	1.1		13	0	63	.15	2	.6	.5	SPC
		18	753	35.08	19	22.21	155	23.91	8.80	1.9		21	0	65	.12	8	.9	1.6	UKF
		18	8 9	38.30	19	24.63	155	25.77	9.75	1.7		23	0	92	.14	10	1.0	.8	UKF
		18	851	22.06	19	23.28	155	14.85	1.57	1.3		14	0	102	.09	3	.5	.4	GLN
		18	9 7	8.74	19	25.39	155	25.01	9.83	1.8		17	0	94	.08	9	.7	3.1	UKF
		18	1022	34.66	19	24.16	155	15.01	.36	2.5		19	0	61	.12	3	.5	.5	SPC
		18	1025	25.21	19	23.54	155	15.21	.96	.9		10	0	104	.14	3	.8	1.1	SPC
		18	1056	59.27	19	23.13	155	14.69	2.01	1.1		9	0	112	.07	3	.5	99.0	GLN
		18	1246	29.94	19	24.85	155	25.56	12.08	2.3		17	0	93	.12	10	1.2	.6	UKF
		18	1329	41.26	19	21.51	155	25.79	10.27	1.8		19	0	119	.10	11	.9	.5	HEA
		18	1652	52.16	19	24.60	155	25.42	7.49	1.3		17	0	144	.13	10	1.2	2.2	UKF
		18	1845	11.12	19	24.71	155	16.75	13.18	2.6		21	0	101	.05	2	.4	.3	DEP
		18	2025	3.44	19	25.83	155	28.71	8.18	2.0		26	0	121	.16	12	1.1	2.1	UKF
		18	2210	6.47	19	18.55	155	12.79	6.55	1.7		25	0	133	.13	9	.8	2.0	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	18	2230	52.64	19	25.22	155	16.39	15.54	3.1		34	1	38	.10	2	.6	.8	DEP
		18	2311	39.75	19	24.15	155	26.89	8.94	1.8		22	0	71	.11	12	.7	2.0	UKF
		18	2327	58.17	19	23.76	155	23.64	9.46	1.9		26	0	68	.14	7	.8	1.2	UKF
		18	2359	11.78	19	23.06	155	17.09	1.71	1.1		10	0	99	.07	2	.6	.3	SPC
		19	035	3.41	19	24.86	155	25.51	7.89	1.6		24	0	93	.10	10	.7	1.2	UKF
		19	133	33.95	19	25.92	155	24.91	7.88	2.1		19	0	98	.09	8	.8	2.0	UKF
		19	237	34.41	19	24.00	155	15.51	1.39	.8		11	0	72	.07	3	.3	.2	SPC
		19	256	11.49	19	24.14	155	15.81	1.61	1.3		15	0	62	.08	3	.4	.2	SPC
		19	342	38.05	19	24.24	155	26.76	5.95	2.0		22	0	94	.13	12	.9	2.5	UKF
		19	5 6	10.13	19	25.56	155	16.76	2.19	.9		12	1	131	.07	2	.6	2.0	SPC
		19	534	13.91	19	23.00	155	17.04	1.63	.8		14	0	68	.08	2	.5	.2	SPC
		19	554	59.89	19	23.37	155	14.92	1.47	1.0		10	0	102	.07	3	.5	.3	GLN
		19	555	37.53	19	24.31	155	16.19	1.76	.6		10	0	73	.08	2	.6	.3	SPC
		19	654	12.23	19	23.04	155	16.79	1.69	.9		12	0	64	.15	2	1.0	.5	SPC
		19	830	11.34	19	20.68	155	11.96	8.67	2.0		23	0	116	.12	8	1.0	1.6	UER
		19	9 8	10.19	19	24.20	155	26.87	5.71	2.2		21	0	63	.13	12	.8	2.5	UKF
		19	11 1	54.89	19	18.32	155	13.15	9.45	1.8		18	0	165	.08	9	.8	.7	POL
		19	1147	43.69	19	22.35	155	24.01	9.08			18	0	82	.09	8	.8	1.2	UKF
		19	1257	58.42	19	24.16	155	15.93	1.48	1.0		12	0	61	.09	2	.4	.3	SPC
		19	1458	37.36	19	25.14	155	25.47	7.52	2.1		22	0	66	.12	10	.7	1.4	UKF
		19	1511	1.35	19	25.40	155	25.33	9.38	1.7		15	0	97	.06	9	.6	1.7	UKF
		19	1533	4.91	19	23.38	155	17.18	1.84	.8		8	0	94	.06	4	.6	.3	SPC
		19	1630	.48	19	25.77	155	16.96	1.90	.6		10	1	166	.09	2	1.2	.3	SPC
		19	1659	26.64	19	24.28	155	12.23	9.98	1.6		10	0	153	.14	6	2.6	5.8	GLN
		19	1732	30.80	19	24.85	155	26.00	8.61	1.5		18	0	96	.08	10	.6	1.8	UKF
		19	1952	24.85	19	24.30	155	16.35	1.69	.6		9	0	75	.05	2	.4	.2	SPC
		19	1956	6.30	19	25.81	155	25.77	10.76	2.1		20	0	70	.12	9	.8	.8	UKF
		19	20 9	12.09	19	23.34	155	17.32	1.48	1.3		14	0	81	.11	4	.6	.4	SPC
		19	2031	41.02	19	22.90	155	27.36	8.88	1.8		24	0	64	.15	13	.9	1.4	UKF
		19	2254	1.13	19	22.74	155	28.43	4.84	1.8		12	0	168	.11	12	1.3	1.8	UKF
		19	2316	35.02	19	25.73	155	16.80	1.73	.3		9	0	159	.10	2	1.0	.4	SPC
		19	2338	5.71	19	24.65	155	16.13	4.45	.9		8	0	88	.13	3	1.1	3.3	SPC
		19	2347	25.41	19	24.11	155	15.78	1.48	1.1		12	0	81	.10	3	.5	.3	SPC
		20	2 8	14.73	19	23.71	155	17.26	1.53	.9		12	0	57	.08	3	.5	.3	SPC
		20	250	41.27	19	25.85	155	37.46	1.31	2.2		15	0	204	.11	7	1.4	.9	MOK
		20	257	56.38	19	21.92	155	23.80	11.23	1.7		17	0	52	.12	8	.9	1.7	SWR
		20	313	3.45	19	28.45	155	35.67	1.74	2.7		17	0	134	.11	2	.9	.3	MOK
		20	317	14.58	19	29.59	155	39.94	7.17	2.6		25	1	78	.10	9	.8	.9	MOK
		20	334	47.84	19	30.49	155	40.15	7.60	2.0		19	0	131	.17	10	1.7	2.3	MOK
		20	413	22.47	19	27.47	155	37.54	2.89	2.0		13	0	208	.10	5	1.4	1.2	MOK
		20	445	15.90	19	23.91	155	27.14	8.37	1.8		18	0	92	.12	13	.9	2.1	UKF
		20	633	18.84	19	23.53	155	15.08	2.00	1.0		9	0	97	.10	4	.8	.0	SPC
		20	651	22.17	19	24.34	155	26.53	10.33	2.2		17	0	83	.13	12	1.1	.5	UKF
		20	10 2	14.38	19	23.64	155	25.20	7.82	2.6		23	0	62	.19	11	.9	1.2	UKF
		20	10 5	7.70	19	23.14	155	25.46	6.25	1.0		11	1	124	.10	10	1.8	3.6	UKF
		20	1013	1.27	19	23.92	155	25.99	7.73			18	0	82	.14	11	1.0	2.5	UKF
		20	1014	57.14	19	23.43	155	25.51	10.03			19	0	85	.09	10	.6	.6	UKF
		20	11 8	49.19	19	24.28	155	16.24	1.81			11	0	72	.06	2	.4	.2	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	20	1139	52.26	19	30.27	155	15.68	18.58			10	0	250	.22	10	14.5	16.1	GLN
		20	1150	41.62	19	23.12	155	17.22	1.72	1.4		10	0	168	.05	5	.7	.2	SPC
		20	1213	10.99	19	22.56	155	28.70	9.49	1.9		16	0	87	.13	12	1.0	2.7	UKF
		20	1241	21.88	19	22.48	155	48.62	10.33	2.8		24	0	110	.19	23	1.5	.7	KON
		20	1422	6.20	19	22.36	155	17.36	1.30	1.0		12	0	93	.08	3	.5	.5	KOA
		20	1424	43.20	19	23.33	155	14.50	2.11	1.8		18	0	53	.12	3	.7	5.6	GLN
		20	1425	36.83	19	23.33	155	14.79	2.00	1.1		12	0	100	.14	3	.9	.0	GLN
		20	1438	42.02	19	23.14	155	14.83	1.90	1.4		14	0	107	.07	5	.5	99.0	GLN
		20	1442	7.79	19	24.99	155	25.53	6.41	1.6		18	0	94	.08	10	.6	1.8	UKF
		20	1448	56.66	19	26.34	155	25.48	8.72	1.7		18	0	167	.07	9	.7	1.8	UKF
		20	1531	50.96	19	21.65	155	18.19	2.93			13	0	83	.17	4	.9	6.9	KOA
		20	1622	51.56	19	25.46	155	24.85	9.40	1.7		22	0	93	.12	8	.9	1.1	UKF
		20	1647	2.92	19	20.89	155	9.94	12.31			16	0	92	.16	7	1.9	.7	UER
		20	1730	25.23	19	21.94	155	18.19	2.00	1.2		14	0	76	.09	4	.5	.0	KOA
		20	1915	7.44	19	29.11	155	12.20	13.94	1.8		13	0	208	.26	11	7.0	6.3	GLN
		20	1939	58.82	19	24.15	155	15.98	1.75	1.7		20	1	63	.12	2	.4	.3	SPC
		20	2042	58.09	19	24.48	155	17.29	13.83			20	0	54	.06	2	.5	.6	DEP
		20	21 9	50.31	19	23.90	155	14.95	3.72			9	0	89	.09	3	.3	1.2	GLN
		20	2112	46.00	19	20.96	155	25.61	56.21	2.6		13	0	78	.33	12	12.1	40.8	HEA
		20	2230	21.14	19	23.72	155	17.00	1.49	.6		11	0	72	.09	2	.6	.3	SPC
		21	115	34.01	19	23.56	155	25.85	7.32	1.7		25	0	58	.14	11	.7	1.8	UKF
		21	154	16.97	19	39.76	155	57.34	20.05			18	0	292	.09	44	10.4	8.4	KON
		21	217	25.98	19	21.82	155	23.85	10.44	1.7		20	0	79	.08	8	.6	.5	SWR
		21	249	4.88	19	28.65	155	42.97	7.09	2.8		26	0	114	.17	14	1.2	1.9	MOK
		21	321	5.27	19	22.44	155	14.23	2.22			13	0	83	.07	4	.4	5.4	UER
		21	422	45.15	19	21.98	155	25.06	9.36	1.7		24	0	55	.11	10	.6	1.1	HEA
		21	459	12.47	19	20.47	155	10.65	10.30			16	0	77	.06	7	.5	1.9	UER
		21	5 1	28.02	19	24.12	155	27.43	5.56	1.8		21	0	74	.12	13	.7	2.3	UKF
		21	640	21.66	19	25.44	155	23.19	6.85	1.8		22	0	65	.12	8	.7	1.6	UKF
		21	818	4.02	19	23.68	155	26.90	10.07	4.1		29	0	64	.14	13	.8	.5	UKF
		21	830	27.10	19	21.03	155	7.39	7.06			19	0	84	.14	8	1.0	2.0	UER
		21	835	46.60	19	23.49	155	27.24	8.30	2.1		24	0	66	.12	13	.7	1.9	UKF
		21	852	24.28	19	24.07	155	15.88	1.60	1.1		16	0	60	.08	2	.3	.2	SPC
		21	10 9	23.44	19	22.92	155	24.19	10.23	1.7		21	0	90	.13	8	.9	1.0	UKF
		21	1021	7.27	19	23.60	155	26.10	10.69	2.8		25	0	124	.11	11	.3	.4	UKF
		21	1045	18.73	19	25.45	155	24.82	8.28	2.0		20	0	103	.09	8	.6	1.1	UKF
		21	11 0	27.45	19	23.61	155	27.00	6.48			17	0	162	.13	13	1.3	2.5	UKF
		21	1240	14.69	19	22.55	155	23.81	9.67	2.0		25	0	52	.16	8	.9	.6	UKF
		21	1256	20.80	19	23.68	155	28.29	8.35	2.0		19	0	210	.14	14	2.3	3.1	UKF
		21	13 3	25.97	19	24.45	155	25.08	9.88			17	0	123	.06	10	.6	2.9	UKF
		21	13 4	45.39	19	24.33	155	27.09	9.87	1.8		21	0	154	.10	12	.7	.7	UKF
		21	1610	49.92	19	26.94	155	36.84	5.18	3.0		20	0	198	.14	24	.9	1.3	MOK
		21	1719	43.92	19	22.49	155	24.73	10.25			17	0	84	.08	9	.6	.4	UKF
		21	20 3	55.36	19	25.24	155	25.21	10.42	1.7		20	0	127	.06	9	.5	.3	UKF
		21	21 6	14.07	19	25.54	155	37.28	.76	2.4		15	0	199	.10	26	1.3	99.0	MOK
		21	2126	3.41	19	23.32	155	17.41	1.07	1.3		16	0	57	.14	3	.5	.5	SPC
		21	2139	54.57	19	22.08	155	23.32	7.97	1.6		17	0	84	.12	8	1.0	2.6	UKF
		21	2218	46.25	19	24.18	155	23.73	10.99			20	0	106	.06	7	.5	.3	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	22	026	53.98	19	21.73	155	18.22	1.83	1.1		15	0	75	.12	4	.7	.0	KOA
		22	037	28.97	19	22.99	155	14.24	4.29			10	0	117	.12	3	1.2	3.6	UER
		22	040	53.19	19	24.07	155	16.05	1.97			8	0	106	.08	2	.8	.4	SPC
		22	1	0 51.22	19	22.02	155	23.71	8.77	1.8		23	0	74	.14	8	.9	1.2	UKF
		22	252	59.19	19	25.19	155	16.57	13.38			19	0	122	.08	2	.7	.8	DEP
		22	410	21.43	19	25.44	155	24.71	7.27	1.6		19	0	145	.11	8	.9	2.0	UKF
		22	454	1.08	19	24.88	155	18.29	24.63			7	0	274	.07	5	21.5	96.7	DEP
		22	830	6.07	19	25.72	155	16.97	2.44	1.8		20	0	49	.08	2	.4	1.1	SPC
		22	10	9 32.11	19	26.39	155	22.68	6.61	1.4		17	0	120	.08	7	.5	1.5	UKF
		22	1031	20.63	19	23.25	155	17.14	1.55	.9		10	0	96	.07	3	.6	.2	SPC
		22	13	6 27.61	19	27.32	155	23.88	7.22	2.3		20	0	75	.11	10	.7	1.3	UKF
		22	1534	28.39	19	25.76	155	24.80	7.85	2.2		29	0	69	.14	8	.7	1.1	UKF
		22	1748	25.32	19	24.97	155	26.19	7.22	1.6		25	0	66	.16	10	.9	2.0	UKF
		22	1838	58.23	19	24.65	155	26.20	7.23	1.9		21	0	64	.15	11	.9	2.8	UKF
		22	2121	5.04	19	22.48	155	23.86	7.27	1.7		25	0	54	.19	8	1.0	2.7	UKF
		22	2218	53.59	19	19.28	155	25.64	7.27	1.7		28	0	91	.15	7	.8	1.5	HEA
		23	0	9 12.99	19	20.01	155	12.55	5.98	1.6		27	0	75	.14	6	.8	1.4	UER
		23	053	16.48	19	6.07	155	26.10	31.69	2.1		29	0	185	.12	25	1.6	3.3	LSW
		23	131	43.29	19	24.87	155	25.22	11.73	1.7		23	0	65	.10	9	.7	.4	UKF
		23	132	19.24	20	7.32	155	50.26	29.84	2.2		19	0	330	.11	92	50.7	27.2	KOH
		23	457	14.89	19	18.77	155	15.47	7.33			23	0	122	.08	6	.5	.8	KOA
		23	511	34.42	19	19.24	155	25.27	7.70	2.3		28	0	93	.16	12	.8	1.5	HEA
		23	745	53.34	19	19.14	155	25.33	9.46	3.6		33	0	93	.12	7	.6	.7	HEA
		23	841	29.11	19	25.58	155	25.18	6.96	1.6		23	0	69	.15	9	.9	2.8	UKF
		23	1016	6.16	19	26.20	155	37.01	3.60	2.4		23	0	192	.11	6	.8	1.0	MOK
		23	11	4 38.45	19	19.37	155	25.30	7.14	1.8		20	0	112	.12	13	.8	1.9	HEA
		23	1212	5.01	19	22.26	155	25.15	9.42	2.5		30	0	69	.14	10	.7	.9	UKF
		23	1323	27.23	19	25.12	155	25.34	7.92	1.7		23	0	81	.16	9	1.0	1.8	UKF
		23	1336	5.49	19	19.05	155	14.10	7.87	1.6		20	0	110	.09	7	.7	1.4	UER
		23	1642	15.54	19	19.38	155	25.29	8.41	2.7		29	0	91	.16	7	.8	1.2	HEA
		23	1647	24.33	19	22.44	155	24.08	10.62	1.6		22	0	54	.09	8	.5	.6	UKF
		23	1654	8.87	19	22.41	155	24.16	10.42	1.7		22	0	53	.11	8	.6	.8	UKF
		23	17	7 35.09	19	19.25	155	25.12	9.05	3.0		31	0	93	.13	7	.7	.9	HEA
		23	1713	56.19	19	19.11	155	25.13	8.55	1.5		20	0	95	.15	8	.9	1.4	HEA
		23	1823	2.61	19	18.99	155	15.63	7.60			19	0	116	.08	6	.5	.8	KOA
		23	1839	42.95	19	24.99	155	23.45	6.21	1.5		22	0	76	.11	9	.7	1.5	UKF
		23	2026	10.45	19	22.54	155	23.69	6.55	1.5		25	0	54	.10	12	.5	1.7	UKF
		23	2222	50.00	19	22.60	155	24.07	10.50	1.7		21	0	54	.11	8	.8	.5	UKF
		24	022	19.97	19	22.19	155	23.87	10.00	1.8		27	0	53	.10	8	.6	.4	UKF
		24	042	57.25	19	24.87	155	25.21	10.44			21	0	65	.08	9	.6	.3	UKF
		24	146	31.94	19	24.74	155	26.46	5.62	1.8		21	0	65	.14	11	.8	3.1	UKF
		24	228	45.87	19	27.21	155	24.40	6.97	2.0		26	0	76	.13	10	.7	1.2	UKF
		24	237	15.84	19	25.42	155	24.49	9.74	1.7		20	0	67	.09	8	.7	3.3	UKF
		24	3	6 17.83	19	25.64	155	25.81	8.23	2.2		24	0	69	.13	10	.8	1.9	UKF
		24	317	16.22	19	19.03	155	25.13	8.51	1.8		26	0	95	.14	8	.8	1.2	HEA
		24	356	3.45	19	20.23	155	19.94	4.92	1.8		22	0	88	.12	6	.7	1.3	SWR
		24	449	37.31	19	26.33	155	25.58	8.42	2.0		21	0	73	.09	9	.6	1.8	UKF
		24	714	52.85	19	25.48	155	23.91	11.93			15	0	138	.05	9	.6	3.1	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	24	721	3.76	19	23.19	155	27.91	6.65	1.8		21	0	87	.11	13	.9	1.7	UKF
		24	8 9	47.55	19	25.67	155	16.30	1.84	.9		13	0	165	.08	2	.7	.3	SPC
		24	1342	1.83	19	26.59	155	22.98	8.04	1.5		16	0	77	.07	8	.6	1.5	UKF
		24	14 8	13.36	19	26.14	155	27.12	15.53	1.9		15	0	217	.09	12	5.6	6.8	UKF
		24	1445	1.57	19	22.88	155	27.39	7.78	2.9		30	0	54	.13	12	.7	1.3	UKF
		24	1543	32.77	19	24.31	155	16.21	1.82	.6		10	0	73	.11	2	.8	.4	SPC
		24	1556	55.91	19	24.27	155	15.90	1.90	.7		10	0	65	.11	2	1.0	.5	SPC
		24	16 9	49.30	19	24.34	155	17.31	1.73	1.2		14	0	55	.11	2	.7	.3	SPC
		24	1639	45.20	19	25.45	155	24.95	7.63	1.8		25	0	68	.14	9	.8	1.4	UKF
		24	1826	16.28	19	23.98	155	14.79	4.92			8	0	98	.10	3	.7	2.4	GLN
		24	1831	26.79	19	24.89	155	24.91	8.74	1.4		21	0	65	.11	9	.7	1.8	UKF
		24	20 6	21.65	19	22.95	155	27.36	5.94	1.8		21	0	97	.15	12	.9	2.2	UKF
		24	20 8	20.52	19	24.31	155	16.09	1.68	.7		10	0	71	.09	2	.6	.3	SPC
		24	2122	24.54	19	23.54	155	17.01	1.57	.7		11	0	87	.09	3	.7	.3	SPC
		24	2138	48.06	19	26.27	155	23.79	10.98	1.7		21	0	70	.12	9	.9	.5	UKF
		24	22 9	40.33	19	25.61	155	16.95	2.17	.5		11	0	151	.08	2	.8	2.1	SPC
		24	2346	55.93	19	23.30	155	28.85	10.86	1.1		14	0	238	.09	15	1.3	.6	UKF
		24	2347	31.48	19	23.71	155	17.02	1.83	.7		11	0	84	.08	2	.7	.3	SPC
		25	031	7.49	19	50.28	155	29.16	2.00	2.5		9	0	195	.25	51	35.7	99.0	KKU
		25	1 2	27.02	19	19.74	155	12.99	9.18			14	0	137	.02	7	.5	.9	UER
		25	255	7.91	19	26.32	155	27.79	9.38	2.0		29	0	70	.13	13	.7	1.0	UKF
		25	350	22.02	19	25.89	155	24.30	7.54	2.3		28	0	69	.14	9	.7	1.2	UKF
		25	423	34.66	19	26.36	155	23.81	7.58	1.8		23	0	88	.11	9	.8	1.2	UKF
		25	455	45.68	19	24.93	155	25.57	6.89	1.6		23	0	94	.12	10	.8	1.6	UKF
		25	559	45.89	19	13.19	155	18.70	8.14	3.1		31	0	167	.14	13	.9	1.3	HLP
		25	7 7	22.61	19	26.43	155	28.07	8.35	1.6		27	0	77	.17	13	.9	2.1	UKF
		25	747	49.33	19	20.94	155	16.86	30.48	4.6		36	1	69	.10	5	.8	1.3	DEP
		25	8 4	1.85	19	19.52	155	17.52	30.47	1.6		26	0	91	.08	6	1.0	1.7	DEP
		25	8 4	57.20	19	17.91	155	16.09	30.66	2.9		34	0	120	.12	5	1.1	1.7	KOA
		25	1042	58.81	19	20.56	155	16.53	31.30	2.2		28	0	77	.10	5	1.2	1.8	DEP
		25	1127	20.98	19	20.89	155	17.65	30.71	2.3		29	0	34	.07	5	.9	1.3	DEP
		25	1219	44.88	19	21.34	155	17.10	32.11	3.4		32	0	52	.11	4	1.0	1.6	DEP
		25	1419	37.80	19	20.42	155	17.67	29.95	2.1		29	0	59	.10	5	1.1	1.6	DEP
		25	1512	12.54	19	25.96	155	24.98	7.73	2.2		22	0	99	.11	8	.8	2.1	UKF
		25	1558	26.44	19	20.17	155	17.72	28.79	1.6		26	0	73	.08	5	.9	1.7	DEP
		25	1637	34.33	19	26.24	155	37.55	1.98	2.4		23	0	152	.13	6	1.0	23.2	MOK
		25	1813	21.06	19	13.58	155	18.01	7.69	4.2		31	0	166	.14	12	.8	1.2	HLP
		25	1817	10.60	19	13.61	155	17.63	7.82	3.8		30	0	167	.16	12	1.0	1.5	HLP
		25	1824	14.54	19	13.50	155	18.28	7.94	4.3		31	0	166	.15	12	.9	1.2	HLP
		25	2026	1.85	19	24.34	155	16.31	2.00	.6		10	0	76	.11	2	.7	3.7	SPC
		25	2056	19.54	19	13.02	155	18.66	7.93	3.4		28	0	168	.15	13	1.0	1.4	HLP
		25	21 0	26.02	19	23.98	155	25.11	7.99	2.7		30	0	57	.14	9	.7	1.2	UKF
		25	22 9	20.14	19	24.19	155	15.82	1.81	.9		10	0	65	.06	2	.4	.2	SPC
		25	2329	22.99	19	24.11	155	15.93	1.93	.8		10	0	60	.08	2	.6	.4	SPC
		26	122	32.29	19	25.83	155	24.78	11.35	1.5		18	0	134	.08	8	.6	.6	UKF
		26	629	19.84	19	23.85	155	15.01	2.14	1.4		16	0	86	.07	3	.4	6.4	SPC
		26	718	54.96	19	25.51	155	16.90	1.43	1.9		22	0	124	.13	2	.6	.3	SPC
		26	757	19.69	19	23.36	155	15.00	2.01	1.0		12	0	100	.08	3	.5	80.4	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	26	843	22.79	19	23.39	155	15.05	1.56			11	0	102	.11	3	.7	.4	SPC
		26	942	57.05	19	20.05	155	17.85	28.26	1.8		23	0	73	.09	6	1.2	2.7	DEP
		26	1017	59.08	19	23.27	155	14.73	2.00			10	0	106	.11	3	.9	.0	GLN
		26	1056	45.41	19	24.22	155	16.14	1.72	.5		9	0	68	.09	2	.7	.3	SPC
		26	1120	17.78	19	25.31	155	24.98	8.64	1.7		20	0	67	.13	9	.7	2.2	UKF
		26	1121	20.51	19	24.26	155	16.33	1.72	1.1		12	0	71	.07	2	.4	.2	SPC
		26	1210	54.37	19	25.93	155	24.66	6.93	1.4		16	0	85	.09	8	.7	2.5	UKF
		26	1212	34.62	19	19.20	155	25.48	6.82	1.6		19	0	102	.15	7	1.0	2.4	HEA
		26	1311	1.17	19	20.08	155	10.98	9.31	1.8		21	0	84	.11	7	.9	1.2	UER
		26	15	0 6.82	19	24.37	155	17.67	1.55	1.3		17	0	57	.10	2	.5	.3	SPC
		26	1517	32.81	19	24.74	155	25.98	6.22	2.5		25	0	91	.13	10	.8	2.5	UKF
		26	1614	50.00	19	20.15	155	10.81	10.40			16	0	127	.06	7	.6	1.9	UER
		26	1648	5.97	19	23.27	155	14.54	2.00			11	0	107	.11	3	.8	.0	GLN
		26	1913	54.15	19	23.07	155	14.57	2.26	1.3		13	0	109	.11	3	.6	9.6	GLN
		26	1919	33.25	19	24.08	155	14.99	4.22			9	0	83	.10	3	.5	2.0	GLN
		26	2218	48.39	20	9.09	154	49.56	108.78	3.2		10	0	348	.25	94	76.9	70.7	DIS
		26	2322	46.12	19	23.77	155	15.17	.02	1.0		13	0	86	.14	3	.5	.3	SPC
		27	126	30.47	19	24.17	155	15.90	1.92	1.0		13	0	62	.09	2	.6	.4	SPC
		27	138	47.50	19	21.18	155	16.76	31.03	2.6		33	0	66	.09	4	.8	1.3	DEP
		27	158	20.91	19	24.22	155	15.71	2.00			9	0	115	.13	2	1.1	.0	SPC
		27	231	39.02	19	22.81	155	17.46	1.04			11	0	73	.07	3	.4	.3	KOA
		27	334	31.82	19	20.60	155	7.74	6.88	1.9		24	0	85	.12	9	.7	1.5	UER
		27	339	25.59	19	27.47	155	24.33	7.14	2.7		29	0	72	.15	11	.7	1.4	UKF
		27	528	22.76	19	23.36	155	15.07	2.00	1.0		10	0	102	.12	3	.9	.0	SPC
		27	538	21.15	19	23.20	155	14.79	1.84	1.2		13	0	105	.07	3	.5	.0	GLN
		27	630	48.84	19	23.18	155	17.16	1.51			10	0	98	.05	3	.5	.2	SPC
		27	641	11.99	19	23.93	155	15.46	1.56	.9		10	0	75	.08	3	.5	.3	SPC
		27	641	38.42	19	23.68	155	27.47	7.00	2.2		29	0	55	.15	15	.7	2.1	UKF
		27	735	43.97	19	22.55	155	24.33	9.59	1.4		22	0	54	.09	8	.5	.6	UKF
		27	737	57.73	19	20.99	155	6.10	8.46	2.1		25	0	96	.10	7	.6	1.0	UER
		27	758	2.04	19	23.00	155	5.09	11.63	2.0		17	0	136	.18	12	2.0	1.5	MER
		27	840	54.20	19	24.02	155	15.84	2.46			8	0	64	.05	3	.4	2.3	SPC
		27	10	2 20.26	19	24.77	155	22.71	15.53	1.6		9	0	208	.17	11	9.2	10.7	UKF
		27	1155	21.97	19	21.78	155	18.69	1.27	1.3		12	0	71	.10	4	.5	.5	KOA
		27	1252	23.81	19	23.15	155	14.65	2.00	1.1		11	0	106	.09	3	.6	.0	GLN
		27	1315	24.55	19	23.19	155	14.48	2.00			11	0	108	.15	3	1.2	.0	GLN
		27	1317	13.45	19	24.18	155	16.37	1.92			9	0	66	.05	2	.7	.3	SPC
		27	1422	38.28	19	22.80	155	14.55	2.89			9	0	119	.07	4	.9	2.8	UER
		27	16	9 49.36	19	24.62	155	16.13	1.28	.5		9	0	87	.08	2	.4	.4	SPC
		27	1635	38.48	19	23.20	155	14.65	2.00			10	0	108	.09	3	.7	.0	GLN
		27	1644	38.69	19	23.18	155	14.80	1.25			11	0	110	.10	3	.6	.4	GLN
		27	1659	22.60	19	21.63	155	25.96	9.43	1.6		24	0	68	.13	10	.8	1.1	HEA
		27	1713	35.16	19	28.30	155	33.76	1.00	2.1		14	0	143	.17	23	1.7	34.5	MOK
		27	1732	30.75	19	23.11	155	14.57	2.00			10	0	112	.08	3	.6	.0	GLN
		27	1852	24.92	19	25.24	155	30.48	10.25	1.7		23	0	108	.06	12	.6	.4	MOK
		27	1914	56.43	19	23.65	155	14.71	3.84			17	0	51	.17	3	1.0	2.5	GLN
		27	1936	24.68	19	24.17	155	15.94	1.47	.9		16	0	61	.09	2	.4	.3	SPC
		27	2037	6.59	19	24.46	155	17.26	1.73	1.1		15	0	54	.12	2	.7	.3	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	27	2137	21.43	19	24.71	155	25.40	9.25	1.0		22	0	71	.10	10	.6	1.7	UKF
		27	2138	57.37	19	23.96	155	15.79	1.12	.8		10	0	66	.14	3	.6	.8	SPC
		27	2143	48.70	19	23.23	155	17.20	1.49	1.2		16	0	60	.08	3	.4	.2	SPC
		27	2223	59.31	19	24.18	155	15.91	2.00			9	0	108	.09	2	.8	.0	SPC
		27	2237	29.80	19	22.93	155	17.20	2.00			10	0	104	.09	2	.7	12.8	KOA
		27	2256	32.58	19	23.81	155	16.89	1.97			9	0	80	.05	2	.5	.2	SPC
		27	23 6	57.05	19	23.15	155	14.67	2.00			10	0	111	.09	3	.7	.0	GLN
		27	2323	6.90	19	25.86	155	16.72	1.90	.3		12	0	168	.09	2	.8	.3	SPC
		27	2334	31.12	19	23.29	155	17.14	1.56			10	0	95	.05	3	.5	.2	SPC
		27	2338	50.59	19	22.59	155	23.55	8.21	1.9		28	0	52	.16	7	.8	1.2	UKF
		28	059	14.55	19	25.34	155	15.26	8.89	1.5		10	0	136	.19	3	4.2	5.3	LPC
		28	113	57.18	19	22.79	155	17.44	1.00			10	0	114	.07	3	.4	.3	KOA
		28	151	41.76	19	24.15	155	15.74	1.67	1.4		20	0	54	.09	2	.4	.2	SPC
		28	2 2	6.04	19	23.93	155	24.58	6.06	2.0		25	0	75	.15	9	.9	2.8	UKF
		28	2 5	20.84	19	23.09	155	17.20	1.45	.8		10	0	101	.08	3	.8	.3	SPC
		28	227	29.50	19	24.28	155	17.63	1.58	1.2		14	0	62	.06	2	.4	.2	SPC
		28	338	33.84	19	24.14	155	15.80	1.69	.8		10	0	64	.06	2	.4	.2	SPC
		28	520	26.37	19	20.19	155	12.49	10.11	2.4		28	0	73	.09	6	.5	.3	UER
		28	523	42.41	19	21.76	155	15.82	2.32			18	0	68	.13	4	.7	2.6	KOA
		28	558	42.06	19	24.18	155	16.07	1.34	.7		10	0	66	.09	2	.4	.5	SPC
		28	632	16.80	19	27.25	155	24.24	7.10	2.0		21	0	81	.16	10	.9	1.9	UKF
		28	642	2.06	19	22.90	155	17.19	2.00			11	0	72	.09	2	.6	54.0	KOA
		28	8 7	1.19	19	22.28	155	18.10	1.93			15	0	76	.12	4	.6	.0	KOA
		28	836	33.71	19	23.53	155	15.02	1.52			10	0	97	.08	3	.5	.3	SPC
		28	921	3.55	19	23.31	155	15.02	1.55			11	0	102	.07	3	.4	.2	SPC
		28	1024	8.97	19	23.74	155	17.07	1.73	1.7		18	0	47	.14	2	.7	.4	SPC
		28	1027	14.47	19	23.16	155	17.04	1.71	.8		13	0	61	.06	2	.4	.2	SPC
		28	1117	36.48	19	25.16	155	25.26	8.17	2.0		24	0	73	.12	9	.8	1.2	UKF
		28	1135	12.66	19	25.54	155	16.82	3.75	2.2		22	0	96	.12	2	.7	1.0	SPC
		28	1142	31.16	19	26.14	155	23.75	7.68	2.5		28	0	81	.15	8	.9	1.2	UKF
		28	1224	57.72	19	23.33	155	17.13	1.56			10	0	94	.07	3	.6	.2	SPC
		28	1512	36.23	19	31.79	155	15.74	24.36	2.7		33	0	64	.09	12	.6	1.4	NER
		28	1527	58.20	19	24.44	155	18.04	1.98	.5		11	0	72	.09	3	.6	99.0	SPC
		28	16 0	40.67	19	17.98	155	13.25	6.30			16	0	95	.06	9	.7	1.5	POL
		28	16 3	37.89	19	23.27	155	14.71	2.00			10	0	106	.06	3	.5	.0	GLN
		28	1620	58.42	19	23.23	155	14.92	2.00			11	0	108	.13	3	.9	.0	GLN
		28	17 2	38.79	19	45.19	156	1.12	6.29	3.7		28	0	227	.13	48	1.5	.9	KON
		28	1714	3.10	19	23.26	155	14.75	2.00			10	0	106	.07	3	.5	.0	GLN
		28	1742	46.32	19	22.49	155	17.35	1.40	1.4		16	0	88	.07	3	.3	.3	KOA
		28	1819	26.31	19	23.11	155	17.24	1.41	.8		15	0	64	.14	3	.8	.5	SPC
		28	1829	32.98	19	23.20	155	14.66	2.00			9	0	208	.09	4	1.6	.0	GLN
		28	1834	48.07	19	24.29	155	16.25	2.00			11	0	73	.08	2	.4	2.1	SPC
		28	1848	20.95	19	23.21	155	14.52	2.00			10	0	108	.12	3	1.0	.0	GLN
		28	1857	41.83	19	25.64	155	16.62	1.97	.1		11	0	156	.11	2	1.1	.5	SPC
		28	19 4	7.31	20	6.30	155	23.20	45.07	3.0		31	0	226	.07	41	1.1	1.8	DIS
		28	1915	25.75	19	23.11	155	14.68	2.00			10	0	113	.08	3	.6	.0	GLN
		28	1916	11.97	19	24.33	155	24.13	10.07	1.6		24	0	68	.10	8	.6	.6	UKF
		28	1916	36.98	19	23.26	155	14.81	1.46			8	0	106	.05	3	.5	.2	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	28	1924	23.58	19	20.73	155	4.02	8.85	3.9		29	0	123	.13	10	1.0	.8	MER
		28	1948	5.05	19	23.16	155	14.92	1.45			13	0	107	.10	3	.5	.3	GLN
		28	20 8	10.41	19	24.11	155	15.82	2.00	.8		10	0	63	.09	3	.6	.0	SPC
		28	2041	32.85	19	23.97	155	15.67	1.57	1.0		15	0	62	.05	3	.2	.2	SPC
		28	2042	16.63	19	24.43	155	16.02	1.67			10	0	73	.16	2	1.2	.6	SPC
		28	2050	55.75	19	23.16	155	14.77	2.00	.1		10	0	110	.13	3	1.0	.0	GLN
		28	2052	58.38	19	20.39	155	7.35	7.64	1.9		24	0	94	.13	8	.9	1.3	UER
		28	2139	59.99	19	23.73	155	25.78	8.33			23	0	67	.09	11	.5	1.4	UKF
		28	2151	32.69	19	22.34	155	17.31	2.00			11	0	95	.12	3	.9	.0	KOA
		28	2159	56.85	19	23.30	155	14.84	1.29			7	0	105	.04	3	.3	.3	GLN
		28	23 7	9.50	19	24.09	155	15.83	1.25			7	0	115	.07	3	.6	.6	SPC
		29	024	14.43	19	24.54	155	26.21	11.72	1.3		13	0	138	.05	11	.7	.4	UKF
		29	031	50.10	19	23.01	155	17.32	1.22	.8		12	0	67	.04	4	.5	.2	SPC
		29	112	18.13	19	23.80	155	24.03	11.27	1.7		12	0	197	.04	11	.8	3.1	UKF
		29	143	1.27	19	24.06	155	24.33	8.38	1.9		16	0	87	.11	11	.8	1.2	UKF
		29	312	12.17	19	21.88	155	30.05	9.69	2.4		16	0	117	.12	17	1.1	1.2	HEA
		29	348	30.27	19	24.25	155	15.63	1.71			7	0	73	.14	3	1.0	.6	SPC
		29	353	11.87	19	19.77	155	16.93	31.27	2.2		16	0	151	.05	5	1.0	1.3	DEP
		29	411	38.35	19	24.13	155	15.96	1.12			8	0	63	.12	3	.7	.9	SPC
		29	432	7.69	19	24.16	155	16.21	1.05			8	0	66	.08	3	.5	.7	SPC
		29	5 2	2.35	19	23.37	155	14.97	3.24			8	0	102	.05	3	.3	1.6	GLN
		29	514	39.64	19	23.63	155	16.97	1.63	1.3		11	0	45	.08	3	.6	.3	SPC
		29	515	13.55	19	23.47	155	14.79	2.41			8	0	98	.06	3	.4	4.6	GLN
		29	516	7.30	19	21.90	155	18.24	.35	1.6		12	0	72	.06	4	.3	1.3	KOA
		29	540	59.70	19	24.01	155	26.12	11.96			12	0	240	.05	12	1.2	.6	UKF
		29	638	6.10	19	23.47	155	17.15	1.47	.8		12	0	52	.08	3	.5	.3	SPC
		29	641	43.90	19	23.16	155	17.28	1.23	.8		8	0	101	.09	3	.9	.5	SPC
		29	659	24.93	19	18.58	155	14.71	10.52	1.2		12	0	207	.05	7	.9	3.1	POL
		29	7 8	34.51	19	24.26	155	17.70	2.10	.4		8	0	90	.03	4	.1	1.5	SPC
		29	711	24.21	19	24.89	155	24.44	11.76			12	0	205	.06	9	1.0	4.0	UKF
		29	758	16.18	18	30.76	155	22.29	11.63	3.4		14	0	327	.14	91	82.9	99.0	DIS
		29	759	43.73	19	26.49	155	26.45	11.33	2.0		12	0	248	.04	13	1.8	5.2	UKF
		29	10 3	27.30	19	23.26	155	17.17	1.49			9	0	97	.09	3	.8	.4	SPC
		29	10 9	27.32	19	24.11	155	18.08	2.07	.9		11	1	64	.05	3	.4	15.5	SPC
		29	1013	6.62	19	23.14	155	17.40	1.23			8	0	167	.07	3	.9	.5	SPC
		29	1036	57.52	19	23.71	155	24.29	9.61	3.2		32	0	38	.13	8	.7	.5	UKF
		29	1043	26.20	19	23.62	155	24.31	11.97	1.7		16	0	118	.06	8	.5	.4	UKF
		29	1120	59.82	19	23.23	155	24.11	8.81	1.9		26	0	68	.14	8	.8	1.3	UKF
		29	1126	5.28	19	21.84	155	18.17	.23	1.1		12	0	76	.14	4	.6	2.8	KOA
		29	1130	14.70	19	24.29	155	16.01	1.79	1.5		23	1	43	.11	2	.4	.2	SPC
		29	1139	35.53	19	25.86	155	37.02	4.44	3.3		25	0	140	.12	18	.9	1.2	MOK
		29	1153	48.46	19	23.69	155	24.49	11.93	1.1		12	0	122	.09	8	1.0	5.7	UKF
		29	1155	54.58	19	23.62	155	24.47	11.65			15	0	121	.05	8	.5	2.1	UKF
		29	1158	.62	19	22.84	155	24.36	9.31	.9		15	0	105	.09	8	.8	2.3	UKF
		29	12 0	20.48	19	23.68	155	24.46	12.82			10	0	122	.04	8	.6	3.1	UKF
		29	12 5	51.34	19	20.13	155	18.23	2.00			11	0	81	.14	6	.9	.0	KOA
		29	1318	11.36	19	23.64	155	24.39	8.85	2.0		24	0	72	.11	8	.7	.9	UKF
		29	1319	11.70	19	22.90	155	30.81	43.37	1.8		12	0	293	.16	18	18.9	41.5	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	29	1324	36.11	19	23.93	155	24.55	9.02	2.5		29	0	57	.15	9	.8	1.1	UKF
		29	1336	16.16	19	23.49	155	24.46	11.72	1.1		11	0	118	.08	8	.9	5.1	UKF
		29	1411	18.74	19	23.44	155	17.08	1.92	.1		8	0	143	.08	3	.9	.3	SPC
		29	1432	27.69	19	25.26	155	30.00	8.68	1.9		24	0	61	.12	13	.7	1.6	MOK
		29	1444	22.82	19	13.67	155	18.85	3.47	1.7		24	0	174	.10	12	.8	1.8	HLP
		29	1445	22.74	19	22.90	155	24.56	10.38	1.1		10	0	108	.06	9	1.1	5.1	UKF
		29	1455	5.95	19	23.27	155	24.99	13.31	1.4		11	0	121	.08	9	1.8	3.2	UKF
		29	1456	24.90	19	23.80	155	24.42	11.44	1.0		11	0	123	.05	8	.7	4.1	UKF
		29	1528	51.13	19	21.64	155	4.45	1.94	1.0		19	0	133	.17	10	1.2	30.0	MER
		29	1544	45.42	19	23.96	155	17.28	.58	2.0		19	0	55	.20	2	.6	.4	SPC
		29	1547	5.23	19	22.41	155	17.24	1.57	1.0		11	0	93	.15	3	1.2	.7	KOA
		29	1553	15.44	19	23.35	155	14.84	1.34	.2		9	0	103	.05	3	.3	.3	GLN
		29	1616	54.44	19	17.20	155	13.16	8.96	1.8		19	0	151	.13	9	1.2	2.2	POL
		29	1658	2.68	19	23.33	155	14.89	1.42	1.0		11	0	104	.06	3	.3	.2	GLN
		29	1658	55.70	19	23.15	155	14.83	2.00			9	0	111	.11	3	.9	.0	GLN
		29	17	0 34.27	19	23.43	155	14.88	1.26	1.3		20	0	72	.12	3	.5	.4	GLN
		29	17	3 47.39	19	23.38	155	14.95	1.46			9	0	102	.07	3	.5	.3	GLN
		29	17	4 43.89	19	23.41	155	14.83	1.97	2.3		21	0	53	.10	3	.4	23.0	GLN
		29	17	8 1.78	19	23.20	155	16.86	3.67	.3		6	0	149	.12	2	1.2	2.6	SPC
		29	1722	10.44	19	20.53	155	17.03	30.68	3.9		34	1	75	.10	5	.9	1.3	DEP
		29	1724	31.76	19	23.33	155	14.85	1.19	.2		7	0	104	.04	3	.4	.4	GLN
		29	1725	7.31	19	21.24	155	13.19	7.54			17	0	109	.14	6	1.1	2.8	UER
		29	1728	40.39	19	20.33	155	13.05	7.05	.4		9	0	188	.05	6	1.0	2.3	UER
		29	1730	48.74	19	25.81	155	16.95	2.01	.3		9	0	161	.12	2	1.5	47.6	SPC
		29	1731	10.09	19	25.31	155	25.71	11.68	1.0		11	0	174	.06	10	.7	.9	UKF
		29	1758	5.76	19	23.38	155	14.91	2.00	.2		9	0	102	.08	3	.6	.0	GLN
		29	18	9 14.60	19	23.49	155	14.81	2.00	.1		9	0	98	.09	3	.8	.0	GLN
		29	1825	54.55	19	21.21	155	17.22	24.74	1.3		19	0	58	.04	4	.7	1.7	DEP
		29	1832	29.40	19	22.32	155	17.34	2.00	1.0		9	0	120	.12	3	1.1	.0	KOA
		29	1835	31.68	19	22.35	155	17.34	2.00			8	0	120	.14	3	1.3	.0	KOA
		29	1845	8.37	19	23.24	155	14.82	1.22	.1		8	0	107	.05	3	.3	.3	GLN
		29	1847	39.60	19	26.16	155	22.17	6.94	1.2		15	0	109	.07	7	.5	1.8	UKF
		29	1848	10.77	19	23.16	155	14.63	2.00			9	0	110	.08	3	.7	.0	GLN
		29	1850	29.37	19	17.70	155	13.45	6.93	1.0		13	0	143	.08	9	1.6	2.5	POL
		29	1912	56.30	19	18.27	155	13.10	7.71	1.7		26	0	95	.12	8	.8	1.2	POL
		29	1921	40.16	19	23.39	155	24.45	7.33	2.5		29	0	46	.17	8	.9	1.5	UKF
		29	1931	2.93	19	19.07	155	13.89	8.15			20	0	87	.10	7	.7	1.7	UER
		29	1948	15.17	19	23.23	155	14.56	2.00	1.1		9	0	107	.09	3	.7	.0	GLN
		29	1951	21.61	19	23.33	155	14.82	1.81	1.0		11	0	104	.07	3	.5	99.0	GLN
		29	20	2 33.49	19	23.42	155	24.73	13.04			13	0	121	.03	9	.6	1.0	UKF
		29	20	3 56.36	19	20.18	155	15.87	4.93	.4		11	0	97	.12	6	1.0	1.9	KOA
		29	20	7 14.26	19	17.76	155	14.90	5.53	.8		14	0	144	.11	7	1.2	2.3	POL
		29	2039	44.99	19	21.82	155	24.02	7.70	1.7		26	0	57	.14	8	.8	1.5	SWR
		29	21	8 55.95	19	18.02	155	12.76	5.55	.7		12	0	179	.11	9	2.5	3.7	POL
		29	2119	26.64	19	22.06	155	18.12	.86	.2		8	0	88	.07	4	.4	.6	KOA
		29	2125	27.54	19	22.84	155	17.27	2.00			9	0	108	.09	3	.7	.0	KOA
		29	2128	7.52	19	22.92	155	17.35	1.09	.2		9	0	178	.11	3	1.1	.9	KOA
		29	2131	47.94	19	22.89	155	17.27	2.00	.1		9	0	107	.14	3	1.2	.0	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	29	2152	13.25	19	22.64	155	24.57	9.55			19	0	102	.06	9	.5	2.1	UKF
		29	2154	33.00	19	25.64	155	24.65	7.54	1.9		25	0	74	.15	8	.8	1.7	UKF
		29	2212	27.95	19	24.42	155	17.58	1.45	1.5		21	1	56	.13	2	.5	.5	SPC
		29	2226	22.92	19	24.07	155	17.82	.92			8	0	126	.06	2	.5	.6	SPC
		29	2248	43.98	19	23.07	155	17.05	2.00			8	0	163	.08	2	1.0	2.0	SPC
		29	2251	34.39	19	22.75	155	17.53	1.17			10	0	118	.08	3	.8	.5	KOA
		29	23 2	20.42	19	19.96	155	18.05	27.96			15	0	178	.11	7	3.3	9.4	DEP
		29	2319	26.23	19	23.32	155	24.27	8.77	2.1		27	0	64	.11	8	.6	.9	UKF
		29	2326	9.10	19	26.60	155	29.01	10.08			12	0	252	.09	15	2.4	.7	UKF
		29	2343	35.59	19	22.87	155	17.28	2.00	.9		10	0	108	.13	3	1.0	.0	KOA
		29	2352	39.72	19	25.67	155	16.76	1.91			8	0	163	.03	2	.5	.1	SPC
		29	2355	45.57	19	20.17	155	18.33	1.97	.1		6	0	93	.05	6	1.0	99.0	KOA
		30	0 0	43.16	19	25.79	155	16.64	1.65	.2		8	0	221	.11	2	2.2	.5	SPC
		30	0 2	49.70	19	23.13	155	16.95	1.83			7	0	156	.08	2	1.3	.4	SPC
		30	017	49.35	19	23.48	155	24.23	8.67	1.5		20	0	98	.09	8	.6	1.2	UKF
		30	024	58.35	19	22.45	155	17.56	1.19			7	0	125	.03	3	.6	.6	KOA
		30	058	40.74	19	22.04	155	18.18	.58			8	0	160	.06	4	.4	1.7	KOA
		30	059	7.13	19	23.60	155	15.20	.04			10	0	93	.17	3	.6	.6	SPC
		30	1 4	13.47	19	22.93	155	17.06	1.73			8	0	171	.06	2	.8	.3	KOA
		30	1 6	25.93	19	21.78	155	17.51	5.77	.4		7	0	136	.14	3	.4	1.7	KOA
		30	113	7.18	19	22.47	155	17.22	2.00	.1		8	0	113	.08	3	.8	.0	KOA
		30	122	18.98	19	22.03	155	17.39	6.02	.4		7	0	127	.11	4	.7	2.6	KOA
		30	126	18.58	19	26.55	155	29.21	7.49	2.1		29	0	72	.13	12	.7	1.6	UKF
		30	127	4.62	19	23.41	155	28.84	11.63	1.3		18	0	187	.11	15	1.5	.6	UKF
		30	214	59.45	19	24.13	155	16.03	2.64			7	0	105	.06	2	.8	2.9	SPC
		30	234	6.33	19	22.84	155	17.47	1.16	.8		10	0	113	.09	3	.8	.6	KOA
		30	238	24.95	19	24.47	155	29.53	13.87	.9		10	0	271	.06	15	9.7	8.4	UKF
		30	240	15.62	19	23.98	155	15.76	2.00	.2		9	0	122	.14	3	1.3	.0	SPC
		30	245	13.27	19	22.35	155	17.32	1.42	1.0		13	0	90	.08	3	.5	.4	KOA
		30	247	41.56	19	22.54	155	17.34	2.00	1.3		16	0	86	.13	3	.6	.0	KOA
		30	251	44.04	19	25.11	155	25.65	8.06	3.3		31	0	42	.17	10	.8	1.3	UKF
		30	253	52.87	19	24.83	155	25.93	8.05	2.2		21	0	72	.11	10	.8	2.2	UKF
		30	257	37.03	19	21.84	155	18.32	.30	2.3		13	0	90	.07	4	.3	1.2	KOA
		30	259	25.18	19	23.47	155	24.43	9.94	1.0		16	0	101	.06	8	.5	.5	UKF
		30	3 6	18.56	19	25.06	155	25.58	6.13	2.2		26	0	62	.13	10	.7	2.5	UKF
		30	3 7	37.71	19	22.48	155	17.31	1.55			8	0	116	.05	3	.6	.4	KOA
		30	351	4.61	19	23.50	155	14.96	1.38			10	0	98	.09	5	.5	.3	GLN
		30	415	9.31	19	21.75	155	18.19	3.52	.3		7	0	168	.09	4	.6	4.3	KOA
		30	434	51.57	19	29.19	155	36.51	2.71	2.7		16	0	258	.13	20	3.4	1.4	MOK
		30	452	18.49	19	26.08	155	26.88	12.34	1.3		11	0	211	.07	11	3.7	10.1	UKF
		30	5 0	27.09	19	25.44	155	26.60	12.55	1.0		12	0	198	.05	11	.6	.4	UKF
		30	5 6	3.33	19	22.53	155	17.39	2.00			10	0	118	.10	3	.8	.0	KOA
		30	5 7	55.19	19	22.00	155	18.16	1.03	1.0		15	0	70	.10	4	.4	.5	KOA
		30	525	45.19	19	23.30	155	17.25	1.42			9	0	155	.09	3	.9	.3	SPC
		30	553	36.95	19	23.09	155	17.40	1.13			9	0	170	.07	3	.6	.3	SPC
		30	554	11.21	19	23.93	155	16.60	3.91	.4		8	0	86	.09	2	1.2	2.7	SPC
		30	623	50.24	19	18.81	155	28.54	6.70	1.5		19	0	64	.15	10	.9	2.7	HEA
		30	715	3.34	19	22.77	155	17.49	1.07	.7		8	0	116	.07	3	.6	.5	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	30	715	50.17	19	28.30	155	37.47	2.00	2.2		12	0	237	.16	20	3.4	.0	MOK
		30	735	53.38	19	28.91	155	30.76	24.29			8	0	301	.15	26	56.5	50.9	MOK
		30	738	25.61	19	23.95	155	15.70	2.00			8	0	126	.09	3	.9	.0	SPC
		30	739	8.97	19	24.25	155	15.75	1.89	1.4		22	1	55	.09	2	.5	.3	SPC
		30	740	27.11	19	24.13	155	15.71	1.83	.1		7	0	118	.04	3	.6	.3	SPC
		30	756	33.66	19	24.15	155	15.89	3.15	2.1		20	0	59	.10	2	.5	1.1	SPC
		30	813	.48	19	24.10	155	15.81	2.00	.4		9	0	115	.10	3	.8	.0	SPC
		30	813	17.73	19	17.42	155	17.84	29.75			21	0	167	.07	8	1.1	1.8	KOA
		30	833	45.35	19	26.53	155	24.67	7.72			20	0	80	.10	10	.8	1.5	UKF
		30	1035	57.34	19	25.91	155	24.89	12.57	1.4		15	0	164	.05	8	.7	.3	UKF
		30	1038	22.22	19	23.65	155	16.92	1.64	.2		9	0	84	.07	2	.7	.3	SPC
		30	1050	42.38	19	26.25	155	7.26	23.51	1.5		10	0	279	.30	16	41.8	57.4	GLN
		30	1137	13.05	19	23.33	155	14.92	1.51	1.4		17	0	101	.07	3	.3	.2	GLN
		30	1146	27.47	19	23.28	155	17.16	1.84			9	0	96	.08	3	.8	.3	SPC
		30	1150	49.83	19	22.64	155	17.30	1.53	.9		15	0	82	.09	3	.5	.4	KOA
		30	13 1	17.24	19	26.46	155	23.94	7.36	2.3		26	0	67	.14	9	.7	1.3	UKF
		30	1350	19.05	19	24.45	155	15.67	2.10	1.1		14	0	64	.06	2	.5	5.6	SPC
		30	1451	23.28	19	22.26	155	17.48	1.27			10	0	110	.17	3	1.5	1.3	KOA
		30	1557	51.97	19	23.20	155	16.99	1.80	.8		12	0	94	.10	2	.8	.3	SPC
		30	1625	43.85	19	23.26	155	17.09	1.51			10	0	95	.07	3	.7	.3	SPC
		30	1658	51.20	19	23.68	155	16.97	1.58	1.5		18	0	45	.15	2	.6	.4	SPC
		30	17 9	.02	19	26.10	155	24.89	7.09	1.9		22	0	100	.12	8	.8	2.4	UKF
		30	1740	12.13	19	23.22	155	17.15	1.53	.8		11	0	68	.05	3	.3	.1	SPC
		30	18 8	49.46	19	22.35	155	17.22	2.00			11	0	97	.14	3	1.1	.0	KOA
		30	1822	45.41	19	26.00	155	36.12	3.36	2.9		27	0	51	.16	16	.8	1.5	MOK
		30	1918	24.25	19	23.10	155	16.82	1.47	1.1		16	0	62	.12	2	.6	.3	SPC
		30	1937	2.51	19	24.65	155	25.55	7.02	1.7		22	0	87	.11	10	.7	2.2	UKF
		30	1949	14.51	19	24.27	155	16.10	1.89	.1		8	0	98	.07	2	.7	.3	SPC
		30	1951	59.00	19	25.71	155	26.11	7.08	1.8		18	0	167	.08	10	1.0	2.7	UKF
		30	20 4	59.69	19	23.15	155	17.10	1.73			9	0	163	.09	3	1.2	.3	SPC
		30	2023	50.56	19	23.19	155	17.28	1.78	.8		12	0	61	.08	3	.6	.3	SPC
		30	2025	45.40	19	23.27	155	17.18	1.50			10	0	96	.08	3	.7	.3	SPC
		30	21 2	21.18	19	20.64	155	6.57	7.12	1.5		17	0	100	.10	7	.9	2.5	UER
		30	21 7	34.69	19	23.29	155	17.17	1.60			9	0	96	.06	3	.7	.3	SPC
		30	2110	31.38	19	23.38	155	17.14	1.52	.2		10	0	93	.08	3	.7	.3	SPC
		30	2121	56.56	19	23.09	155	17.18	1.79			10	0	100	.08	3	.7	.3	SPC
		30	2131	47.36	19	23.14	155	17.18	1.49			11	0	67	.05	3	.4	.2	SPC
		30	2137	38.68	19	23.30	155	17.04	1.63	.8		15	0	56	.10	3	.6	.3	SPC
		30	2150	12.49	19	22.99	155	17.09	1.72	.1		9	0	168	.08	2	.9	.3	KOA
		30	2226	32.06	19	23.19	155	17.03	1.56			12	0	60	.12	2	.9	.4	SPC
		30	2238	6.84	19	23.25	155	17.16	1.49			9	0	155	.09	3	1.0	.3	SPC
		30	2241	30.56	19	23.03	155	16.94	2.00			8	0	162	.09	2	1.2	2.2	SPC
		30	2241	52.86	19	18.20	155	16.65	6.35	1.4		19	0	119	.09	6	.6	1.2	KOA
		30	2242	26.06	19	23.36	155	17.04	1.55			10	0	92	.09	3	.8	.3	SPC
		30	2251	25.27	19	21.23	155	17.25	30.25	1.7		24	0	57	.08	4	1.0	1.6	DEP
		30	2256	56.55	19	23.42	155	16.98	2.00			10	0	89	.11	3	.8	1.5	SPC
		30	23 2	39.45	19	23.21	155	17.14	1.35			10	0	97	.10	3	.9	.4	SPC
		30	23 3	40.88	19	23.35	155	17.17	2.71	2.0		28	0	56	.16	3	.6	1.3	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	30	23 8	1.90	19	23.10	155	17.21	1.47			9	0	165	.12	3	1.2	.5	SPC
		30	23 9	26.50	19	23.36	155	17.10	1.63			10	0	93	.07	3	.6	.3	SPC
		30	2310	49.33	19	23.16	155	17.28	1.42			11	0	101	.07	3	.6	.3	SPC
		30	2316	32.94	19	23.18	155	17.23	1.46			10	0	100	.09	3	.9	.4	SPC
		30	2320	11.32	19	23.12	155	17.45	1.09			10	0	106	.10	3	.5	.5	SPC
		30	2324	38.09	19	23.25	155	16.91	1.62	.8		14	0	57	.10	2	.6	.3	SPC
		30	2325	13.63	19	23.06	155	17.24	1.40	.8		13	0	66	.06	3	.4	.2	SPC
		30	2326	18.68	19	23.26	155	17.22	1.46	.1		9	0	156	.06	3	.7	.3	SPC
		30	2326	37.44	19	23.33	155	17.03	1.89			10	0	92	.10	3	.9	.4	SPC
		30	2331	32.20	19	23.07	155	17.27	1.43			9	0	168	.07	3	.8	.3	SPC
		30	2332	36.90	19	23.20	155	17.01	1.60	.8		12	0	85	.11	2	.8	.3	SPC
		30	2332	48.48	19	23.32	155	17.01	1.49	.8		13	0	56	.10	3	.6	.3	SPC
		30	2335	14.25	19	23.24	155	16.99	1.91			9	0	151	.07	2	.8	.3	SPC
		30	2336	50.11	19	23.25	155	15.11	1.52	1.0		14	0	104	.08	3	.4	.2	SPC
		30	2339	25.44	19	23.14	155	16.72	1.62	1.1		16	0	58	.11	2	.6	.3	SPC
		30	2340	2.94	19	23.35	155	17.07	1.62			9	0	148	.08	3	.9	.3	SPC
		30	2340	28.79	19	23.06	155	17.08	2.00			9	0	164	.09	2	1.0	2.3	SPC
		30	2340	53.65	19	23.16	155	16.89	1.81			8	0	152	.06	2	.7	.2	SPC
		30	2341	49.53	19	23.20	155	16.89	1.95			10	0	92	.10	2	.9	.4	SPC
		30	2344	28.56	19	27.69	155	22.91	33.96			11	0	195	.34	12	23.9	34.0	UKF
		30	2345	7.31	19	23.61	155	16.93	2.00			10	0	85	.11	2	.8	1.6	SPC
		30	2345	18.16	19	23.14	155	17.29	1.41			9	0	165	.09	3	1.0	.4	SPC
		30	2346	53.73	19	23.19	155	17.22	1.47			10	0	99	.08	3	.7	.3	SPC
		30	2347	28.96	19	23.20	155	16.95	1.84	.8		13	0	59	.11	2	.7	.3	SPC
		30	2350	13.62	19	23.12	155	17.03	1.40	.8		9	0	96	.10	3	.8	.4	SPC
		30	2351	42.11	19	23.19	155	17.11	1.34	.9		16	0	61	.11	3	.6	.3	SPC
		30	2352	40.00	19	23.24	155	17.08	1.53	.8		8	0	154	.09	3	1.0	.4	SPC
		30	2352	55.00	19	23.06	155	17.13	1.37	1.0		16	0	71	.10	2	.5	.3	SPC
		30	2353	56.04	19	23.28	155	17.29	1.13			9	0	157	.09	3	.9	.4	SPC
		30	2354	8.55	19	23.22	155	17.43	.89	.7		9	0	103	.18	3	1.0	1.0	SPC
		30	2356	41.63	19	23.07	155	17.30	1.31	.8		10	0	103	.08	3	.7	.4	SPC
		30	2357	12.03	19	23.16	155	17.28	1.31			9	0	163	.07	3	.8	.4	SPC
		30	2358	1.05	19	23.08	155	17.23	1.51	2.3		27	0	60	.12	3	.4	.3	SPC
		30	2359	24.91	19	23.05	155	16.87	2.00	.9		10	0	85	.15	3	1.0	.0	SPC
		31	0 1	28.48	19	23.35	155	17.02	1.63	1.3		20	0	55	.10	3	.4	.2	SPC
		31	0 2	11.51	19	23.22	155	17.20	1.38			9	0	158	.07	3	.8	.3	SPC
		31	0 2	26.15	19	22.91	155	17.99	2.00			9	0	127	.16	3	1.9	.0	KOA
		31	0 3	37.32	19	23.15	155	17.19	1.50	1.1		17	0	62	.10	3	.5	.3	SPC
		31	0 4	44.71	19	23.04	155	16.83	2.00	1.0		12	0	85	.15	3	1.0	.0	SPC
		31	0 5	19.25	19	23.61	155	17.03	.81	1.4		22	0	47	.20	2	.5	.5	SPC
		31	0 6	34.95	19	23.16	155	17.30	1.29			9	0	164	.08	3	.6	.4	SPC
		31	0 8	33.82	19	23.13	155	17.18	1.42			10	0	99	.08	3	.8	.3	SPC
		31	0 9	.70	19	23.24	155	17.08	1.54	1.1		14	0	70	.09	3	.5	.3	SPC
		31	0 9	26.02	19	23.30	155	17.27	1.23	2.0		21	0	58	.14	4	.5	.5	SPC
		31	010	44.56	19	23.27	155	16.98	1.06	1.8		22	0	57	.13	2	.4	.4	SPC
		31	011	14.94	19	23.07	155	17.09	.60	2.4		18	0	73	.14	2	.6	.5	SPC
		31	012	23.86	19	23.72	155	17.05	.68	2.1		17	0	61	.20	7	1.1	2.1	SPC
		31	013	38.24	19	23.35	155	17.27	4.45	2.1		15	0	67	.17	4	1.1	2.1	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	31	014	43.87	19	23.22	155	17.47	2.54	2.2		11	0	62	.10	4	.6	7.3	SPC
		31	023	19.31	19	22.92	155	17.40	5.61	2.5		14	0	78	.12	6	.8	2.6	KOA
		31	026	16.50	19	23.91	155	16.99	1.17			23	0	58	.19	4	.9	1.1	SPC
		31	028	3.28	19	23.33	155	16.79	1.03	1.3		14	0	89	.08	4	.5	.7	SPC
		31	030	27.35	19	23.43	155	17.11	1.79	2.9		15	0	83	.09	5	.5	99.0	SPC
		31	034	17.14	19	23.41	155	16.97	4.87	1.7		13	0	91	.12	10	.9	1.6	SPC
		31	035	25.45	19	24.81	155	15.95	2.00	.7		8	0	74	.17	6	1.5	.0	SPC
		31	041	23.40	19	23.76	155	17.14	4.52	2.3		22	0	58	.12	4	.6	.9	SPC
		31	042	55.79	19	22.90	155	17.28	.52	.8		10	0	88	.07	5	.5	2.6	KOA
		31	043	22.90	19	23.44	155	16.46	1.57	1.2		11	0	91	.19	4	1.4	.9	SPC
		31	043	51.78	19	23.06	155	17.00	1.06	1.6		13	0	90	.14	4	.8	1.0	SPC
		31	045	45.00	19	23.75	155	17.09	4.39	2.3		24	0	58	.14	3	.6	.9	SPC
		31	048	.68	19	24.11	155	17.19	1.62	1.0		10	0	72	.12	2	.9	.6	SPC
		31	050	45.26	19	23.75	155	16.94	1.65			18	0	46	.13	3	.5	.6	SPC
		31	051	54.19	19	23.63	155	16.93	1.59			12	0	84	.15	3	1.2	.5	SPC
		31	052	31.82	19	23.26	155	17.04	1.61	1.5		18	0	58	.08	3	.3	.2	SPC
		31	053	10.37	19	23.22	155	17.07	1.14	1.4		12	0	117	.09	3	.6	.3	SPC
		31	054	40.14	19	23.73	155	17.09	1.77	1.1		14	0	47	.17	3	.9	.6	SPC
		31	054	58.02	19	23.38	155	17.30	.81	1.4		13	0	67	.21	4	.8	1.2	SPC
		31	059	7.63	19	22.73	155	17.42	4.01	2.3		11	0	85	.10	6	.8	2.5	KOA
		31	1	0 46.40	19	22.95	155	17.18	.32			13	0	62	.15	5	.8	4.9	KOA
		31	1	2 24.47	19	22.78	155	17.48	2.00			8	0	115	.14	4	1.3	.0	KOA
		31	1	2 44.38	19	22.65	155	17.19	2.00	1.3		13	0	83	.16	4	.9	.0	KOA
		31	1	3 55.42	19	23.66	155	17.26	3.91	2.1		18	0	77	.11	3	.6	1.3	SPC
		31	1	5 24.61	19	23.86	155	16.86	1.11	1.2		12	0	79	.19	3	1.1	.6	SPC
		31	1	7 20.05	19	22.98	155	17.34	1.74	1.1		10	0	68	.12	4	.9	.5	KOA
		31	1	8 21.72	19	22.30	155	18.07	1.03	1.3		14	0	72	.13	4	.6	.7	KOA
		31	1	9 52.53	19	23.85	155	17.23	4.17			14	0	66	.09	11	.6	1.6	SPC
		31	111	41.51	19	22.36	155	17.50	1.02	1.7		11	0	86	.14	4	.8	.8	KOA
		31	112	8.31	19	23.59	155	17.16	1.38			18	0	49	.11	2	.5	.3	SPC
		31	112	56.48	19	22.13	155	26.25	15.78	2.7		13	0	115	.20	14	2.3	4.0	UKF
		31	113	58.24	19	23.85	155	17.20	1.55	1.9		14	0	78	.08	4	.4	.6	SPC
		31	116	.77	19	23.69	155	16.98	4.13			17	0	60	.15	5	.9	1.8	SPC
		31	119	31.32	19	23.65	155	17.37	1.50			18	0	76	.13	3	.6	.6	SPC
		31	120	38.23	19	23.05	155	16.95	2.00	1.0		9	0	161	.15	3	1.7	.0	SPC
		31	124	28.25	19	22.93	155	19.96	4.56	1.5		7	0	263	.15	7	9.5	14.5	UKF
		31	124	50.71	19	23.60	155	16.78	1.30			8	0	84	.04	5	.4	.5	SPC
		31	132	7.00	19	23.55	155	17.14	1.32	1.2		11	0	77	.11	3	.7	.4	SPC
		31	139	4.07	19	23.61	155	16.98	1.74	2.2		15	0	77	.07	4	.5	.2	SPC
		31	140	17.89	19	22.49	155	17.52	1.19			9	0	84	.09	4	.8	1.0	KOA
		31	141	16.46	19	22.81	155	17.74	.27			9	0	79	.10	4	.8	2.6	KOA
		31	142	31.49	19	23.94	155	17.04	1.35	.7		7	0	119	.08	3	1.0	.5	SPC
		31	146	9.94	19	23.45	155	16.95	1.45			14	0	84	.11	4	.7	.5	SPC
		31	150	19.73	19	26.60	155	24.29	7.41	2.2		26	0	68	.16	10	.8	1.2	UKF
		31	155	14.57	19	22.12	155	17.60	3.84			16	0	76	.06	4	.5	.9	KOA
		31	2	1 2.81	19	23.83	155	16.98	2.12			16	0	58	.16	2	.9	1.8	SPC
		31	228	9.75	19	22.02	155	18.64	1.49			12	0	83	.09	5	.6	48.3	KOA
		31	243	46.54	19	21.72	155	18.19	2.80			15	0	68	.19	5	1.2	4.9	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	31	514	22.45	19	21.01	155	19.15	4.48			18	0	66	.09	6	.5	.8	SWR
		31	6 5	4.45	19	20.38	155	19.52	5.34			21	0	63	.17	6	.9	1.1	SWR
		31	627	25.03	19	20.38	155	19.60	5.05	2.3		23	0	63	.13	7	.7	1.0	SWR
		31	636	50.81	19	21.20	155	18.74	3.89			19	0	79	.11	5	.6	1.3	KOA
		31	659	13.66	19	20.47	155	20.05	5.29			21	0	85	.17	6	.9	1.2	SWR
		31	7 6	58.60	19	21.52	155	18.84	1.92			15	0	116	.07	5	.5	43.4	KOA
		31	740	36.18	19	21.00	155	18.74	5.64			15	0	74	.12	6	.9	1.8	KOA
		31	745	30.33	19	20.55	155	19.87	5.04			18	0	77	.12	6	.7	1.2	SWR
		31	8 2	5.94	19	20.58	155	20.27	5.37			20	0	64	.10	6	.6	.7	SWR
		31	8 2	50.64	19	20.74	155	20.16	4.87	2.4		17	0	96	.14	6	.9	1.6	SWR
		31	8 5	52.10	19	26.51	155	17.57	6.58			8	0	218	.08	5	2.2	2.2	LPC
		31	8 6	27.39	19	20.24	155	20.38	6.04			15	0	89	.07	5	.6	1.3	SWR
		31	814	2.24	19	20.37	155	20.12	5.86			21	0	69	.11	6	.7	1.6	SWR
		31	817	36.37	19	20.05	155	20.22	5.72			19	0	124	.11	7	.9	1.8	SWR
		31	822	18.67	19	19.91	155	20.17	6.28			16	0	72	.09	6	.7	1.4	SWR
		31	830	2.34	19	20.47	155	20.61	5.51			22	0	108	.14	9	.8	2.4	SWR
		31	832	38.58	19	21.30	155	18.69	5.24			15	0	68	.11	6	.7	1.0	KOA
		31	833	37.93	19	20.39	155	20.44	5.50			18	0	71	.06	5	.4	1.0	SWR
		31	838	52.06	19	20.55	155	20.67	3.99			12	0	90	.07	6	.7	2.8	SWR
		31	922	21.06	19	26.48	155	19.28	1.21			7	0	168	.19	7	5.3	.0	UKF
		31	926	3.60	19	19.60	155	21.02	2.57			21	0	87	.18	6	1.0	3.9	SWR
		31	930	56.62	19	19.01	155	20.32	3.84	3.2		27	0	94	.15	6	.8	1.4	SWR
		31	932	34.75	19	18.97	155	19.92	1.17			13	0	89	.10	6	1.2	1.5	SWR
		31	1020	52.17	19	20.29	155	20.58	5.67			12	0	164	.07	6	.9	1.7	SWR
		31	1022	28.94	19	20.56	155	20.82	3.47			14	0	120	.15	6	1.3	4.8	SWR
		31	1027	45.14	19	20.30	155	20.94	4.59			17	0	114	.12	6	.9	1.8	SWR
		31	1031	34.19	19	20.33	155	20.24	5.09			6	0	120	.03	5	.6	3.6	SWR
		31	1032	38.28	19	17.38	157	14.30	23.06			7	0	356	.33	206	99.0	97.5	DIS
		31	1034	31.34	19	8.59	155	24.88	2.00			13	0	317	.35	25	68.3	.0	LSW
		31	1036	24.40	19	20.39	155	20.12	5.00			14	0	101	.09	6	.7	1.4	SWR
		31	1045	28.90	19	18.89	155	19.79	1.59			9	0	126	.18	7	3.3	3.4	SWR
		31	1047	46.09	19	24.01	155	16.99	.01			7	0	122	.36	4	2.9	4.4	SPC
		31	1054	52.63	19	17.04	155	21.60	4.76			15	0	190	.07	9	.8	1.1	SWR
		31	1059	30.25	19	17.78	155	21.76	5.04			18	0	123	.13	9	1.0	1.6	SWR
		31	11 2	31.66	19	19.80	155	21.05	6.66			8	0	312	.19	11	31.2	12.6	SWR
		31	11 5	1.48	19	18.07	155	21.65	5.21			14	0	166	.13	8	1.4	3.4	SWR
		31	1118	50.36	19	20.54	155	20.73	.48			7	0	120	.15	6	5.8	36.3	SWR
		31	1123	2.88	19	32.55	155	36.70	6.59			9	0	345	.09	39	93.6	32.2	MOK
		31	1128	39.81	19	17.63	155	22.53	5.89			15	0	127	.14	10	1.0	2.0	SWR
		31	1138	26.14	19	20.64	155	20.92	1.25			9	0	122	.13	6	.6	33.7	SWR
		31	1157	28.09	19	18.46	155	21.41	5.54			12	0	156	.16	8	1.8	2.7	SWR
		31	1158	53.99	19	20.13	155	21.55	.01			7	0	119	.21	7	4.5	4.9	SWR
		31	12 4	52.31	19	20.26	155	20.27	3.11			12	0	155	.12	6	1.3	2.5	SWR
		31	12 6	58.51	19	18.59	155	21.20	1.66			14	0	110	.22	7	1.5	64.5	SWR
		31	12 9	25.27	19	20.45	155	20.47	5.92			13	0	106	.07	6	.6	1.4	SWR
		31	1213	4.08	19	18.26	155	21.79	5.49			9	0	118	.12	8	1.5	1.6	SWR
		31	1214	5.21	19	17.29	155	22.01	6.44	3.0		19	0	126	.13	10	1.1	2.7	SWR
		31	1219	47.41	19	19.22	155	20.95	.38	2.6		20	0	94	.12	6	.5	2.3	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	31	1225	29.62	19	19.09	155	22.08	5.14	3.2		20	0	101	.14	8	.8	1.1	SWR
		31	1228	19.06	19	18.99	155	20.35	.41			13	0	95	.12	6	1.0	8.5	SWR
		31	1238	25.13	19	25.02	155	17.37	9.31			10	0	194	.27	3	9.9	16.9	LPC
		31	1240	48.20	19	18.04	155	21.83	4.97	5.5		25	0	121	.16	9	.8	1.2	SWR
		31	1248	46.42	19	19.51	155	21.88	3.70			13	0	93	.04	8	.3	1.0	SWR
		31	1252	53.37	19	15.60	155	22.42	8.17	2.7		22	0	143	.12	9	.9	1.5	LSW
		31	1259	37.29	19	20.23	155	20.05	2.43			9	0	177	.08	6	.7	11.7	SWR
		31	13	6 45.40	19	16.70	155	21.91	7.44	3.0		26	0	131	.13	10	.8	1.6	SWR
		31	1313	54.49	19	18.12	155	22.69	5.63			11	0	117	.11	10	1.2	2.6	SWR
		31	1317	46.12	19	24.41	155	17.35	1.08			8	0	142	.04	2	.6	.2	SPC
		31	1319	37.26	19	16.57	155	22.45	6.58	2.4		21	0	129	.19	7	1.3	2.0	SWR
		31	1321	35.81	19	19.23	155	22.12	5.06			18	0	98	.08	8	.5	.7	SWR
		31	1333	1.92	19	19.30	155	21.98	3.01	2.3		22	0	97	.13	8	.8	1.9	SWR
		31	1333	47.64	19	21.16	155	22.16	3.49			11	0	118	.29	9	2.8	5.1	SWR
		31	1344	5.86	19	16.59	155	21.00	5.68	2.4		21	0	136	.16	9	1.1	3.1	SWR
		31	1348	.05	19	16.53	155	22.30	4.43	2.4		20	0	130	.14	11	1.0	1.7	SWR
		31	1356	37.71	19	20.41	155	20.06	4.02	3.5		21	0	63	.10	6	.6	1.1	SWR
		31	1359	23.99	19	19.80	155	20.65	2.00			6	0	159	.10	7	1.8	.0	SWR
		31	14	3 31.50	19	26.63	155	23.37	2.58			7	0	329	.24	13	41.1	58.6	UKF
		31	1426	59.62	19	19.68	155	20.59	3.27	2.3		18	0	89	.10	6	.7	1.6	SWR
		31	1431	19.51	19	19.67	155	20.93	2.31	2.9		21	0	85	.15	6	.9	4.0	SWR
		31	1439	22.13	19	19.32	155	22.33	4.67	3.4		21	0	97	.13	9	.7	1.1	SWR
		31	1446	22.89	19	17.71	155	21.67	4.27	2.3		21	0	124	.15	9	.9	1.8	SWR
		31	1449	14.99	19	16.74	155	22.00	5.60	4.1		26	0	130	.14	8	.9	2.1	SWR
		31	1459	14.29	19	16.36	155	21.65	2.58	3.6		19	0	142	.14	10	1.0	3.1	SWR
		31	15	4 45.62	19	16.18	155	22.21	3.43	2.4		16	0	134	.18	8	1.3	4.2	SWR
		31	1520	47.37	19	17.78	155	22.54	3.00	2.6		24	0	120	.19	8	1.2	2.9	SWR
		31	1522	56.49	19	19.17	155	22.89	3.43			20	0	99	.17	8	1.1	2.6	SWR
		31	1528	58.83	19	.53	155	11.79	34.67	4.4		26	0	235	.11	34	2.7	5.0	PPL
		31	1537	.93	19	19.04	155	22.66	5.03	2.3		11	0	201	.07	9	.9	1.3	SWR
		31	1538	38.28	19	16.99	155	22.33	7.49	2.4		18	0	127	.14	8	1.1	1.7	SWR
		31	1551	17.20	19	20.27	155	19.86	.73	3.3		18	0	67	.09	6	.5	2.7	SWR
		31	16	1 27.10	19	19.60	155	23.21	3.19	2.3		12	0	182	.13	10	2.0	3.1	SWR
		31	16	5 51.39	19	17.10	155	22.52	.93			13	0	137	.16	11	2.1	39.3	SWR
		31	1620	23.11	19	16.58	155	21.67	5.26	2.8		13	0	159	.09	14	1.6	1.0	SWR
		31	1624	41.67	19	17.62	155	24.81	2.88	2.4		12	0	199	.23	14	3.7	5.7	SWR
		31	1629	17.47	19	16.01	155	21.69	5.94	2.4		12	0	158	.10	15	1.9	2.8	SWR
		31	1639	27.96	19	20.11	155	24.44	6.25	2.3		9	0	201	.28	16	7.9	10.6	SWR
		31	1645	56.31	19	17.13	155	24.62	3.16	2.4		11	0	193	.30	15	5.2	10.0	SWR
		31	1648	19.38	19	20.21	155	20.26	4.30	3.1		15	0	123	.11	5	.9	1.5	SWR
		31	1651	43.79	19	18.41	155	22.53	4.76			10	0	177	.11	11	2.1	3.2	SWR
		31	1657	24.21	19	19.24	155	22.79	7.09	2.3		18	0	98	.14	10	1.1	1.8	SWR
		31	17	1 .80	19	18.72	155	22.97	6.78			17	0	106	.13	10	1.3	1.9	SWR
		31	17	2 23.59	19	18.56	155	22.82	6.77	2.3		20	0	109	.10	10	.7	1.4	SWR
		31	17	3 12.85	19	15.66	155	22.53	6.53			16	0	142	.14	12	1.3	2.0	LSW
		31	17	6 56.99	19	15.61	155	23.27	5.61	2.4		16	0	151	.15	13	1.4	2.9	LSW
		31	17	7 38.21	19	38.76	155	8.85	9.86	1.4		16	0	2921	.48	29	36.9	5.2	HIL
		31	17	9 25.90	19	17.96	155	21.74	.91	2.3		13	0	147	.17	13	2.0	46.7	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	31	1710	53.40	19	18.67	155	22.88	4.12	3.2		15	0	107	.14	10	1.3	2.3	SWR
		31	1712	50.99	19	19.12	155	23.11	6.27			14	0	144	.09	8	1.1	3.3	SWR
		31	1713	8.84	19	18.65	155	22.76	4.73	2.3		16	0	118	.10	10	.8	1.5	SWR
		31	1719	22.89	19	18.71	155	22.84	4.05	2.3		17	0	107	.09	10	.7	1.8	SWR
		31	1721	1.59	19	18.62	155	22.76	7.02	2.3		21	0	109	.10	10	.7	1.3	SWR
		31	1724	44.23	19	18.84	155	22.87	6.50	2.3		17	0	105	.14	10	1.0	2.6	SWR
		31	1733	52.97	19	18.90	155	23.31	4.50	2.3		20	0	103	.14	10	.9	1.5	SWR
		31	1741	3.70	19	18.70	155	22.59	5.40	2.3		21	0	108	.11	8	.7	.9	SWR
		31	1754	36.58	19	18.79	155	22.78	4.11	2.3		17	0	106	.14	10	1.1	2.4	SWR
		31	18	2 17.40	19	17.42	155	22.68	5.41	3.2		20	0	122	.16	7	1.1	1.4	SWR
		31	18	7 38.82	19	18.68	155	22.93	6.83	2.3		21	0	107	.12	10	.9	1.6	SWR
		31	1812	20.26	19	18.70	155	22.72	6.51	3.1		20	0	107	.11	10	.8	1.4	SWR
		31	1815	21.51	19	15.77	155	21.15	7.32	2.4		23	0	149	.12	10	.9	1.5	LSW
		31	1822	52.86	19	16.71	155	23.04	.65	2.4		16	0	132	.17	8	1.4	90.6	SWR
		31	1828	46.70	19	17.16	155	22.05	1.21	2.7		13	0	140	.36	14	3.5	99.0	SWR
		31	1838	4.33	19	18.57	155	23.10	5.67			19	0	108	.15	10	1.1	3.3	SWR
		31	1841	42.06	19	19.16	155	23.16	6.55	2.6		20	0	108	.14	14	1.0	2.1	SWR
		31	1848	55.24	19	18.01	155	23.28	6.03	2.7		19	0	116	.15	12	1.4	2.5	SWR
		31	1911	18.38	19	16.17	155	21.63	8.05	2.4		14	0	147	.09	15	1.0	1.4	SWR
		31	1915	12.54	19	18.68	155	23.01	4.66			16	0	107	.12	10	.9	1.7	SWR
		31	1916	21.71	19	13.88	155	21.52	8.80	2.7		15	0	158	.15	14	1.4	2.1	LSW
		31	1919	43.60	19	19.58	155	22.12	4.84	2.3		10	0	170	.14	9	1.9	2.6	SWR
		31	1922	25.42	19	16.16	155	23.37	7.43	2.4		14	0	127	.16	13	2.1	1.9	SWR
		31	1930	16.16	19	16.59	155	22.09	5.58	2.4		15	0	131	.12	8	1.0	3.3	SWR
		31	1931	20.81	19	15.83	155	22.49	6.03	2.4		12	0	141	.12	8	1.3	2.3	LSW
		31	1947	30.70	19	14.61	155	21.94	7.67	2.7		14	0	154	.10	13	1.6	1.0	LSW
		31	1951	30.94	19	16.77	155	23.83	7.11	3.4		9	0	120	.41	15	5.8	7.1	SWR
		31	1957	23.34	19	19.16	155	23.54	6.41	2.3		19	0	106	.13	11	1.0	2.1	SWR
		31	20	2 55.66	19	16.34	155	23.92	.68			14	0	123	.21	15	1.8	11.3	SWR
		31	2017	28.78	19	17.22	155	24.02	6.86	2.4		9	0	195	.19	16	4.6	3.5	SWR
		31	2043	55.35	19	17.99	155	23.18	4.36	4.2		14	0	115	.16	11	1.3	2.1	SWR
		31	2053	24.99	19	15.72	155	21.55	7.05	3.4		18	0	147	.14	16	1.3	1.8	LSW
		31	2121	17.15	19	13.24	155	21.90	8.26	2.9		17	0	164	.15	15	1.4	2.3	LSW
		31	2124	48.54	19	16.32	155	24.14	6.09	3.4		12	0	121	.13	14	1.6	2.6	SWR
		31	2141	54.30	19	15.76	155	21.69	7.25	4.3		17	0	146	.10	9	.8	1.2	LSW
		31	2226	31.96	19	16.33	155	22.69	7.17	2.7		11	0	130	.11	12	1.4	1.8	SWR
		31	2239	27.86	19	15.59	155	21.79	7.80	2.4		8	0	160	.09	15	2.0	1.6	LSW
		31	2241	55.05	19	18.19	155	23.62	5.24	2.4		17	0	112	.12	11	.8	1.1	SWR
		31	2245	31.54	19	14.94	155	22.65	2.10			14	0	142	.19	13	2.1	8.1	LSW
		31	2246	23.95	19	17.66	155	23.59	2.84	2.4		16	0	115	.13	9	1.0	2.6	SWR
		31	23	6 4.92	19	23.89	155	18.42	14.76			9	0	152	.23	3	11.3	11.0	DEP
		31	23	9 3.53	19	20.39	155	20.40	2.79			11	0	198	.08	6	1.2	2.8	SWR
		31	2318	54.52	19	17.38	155	23.22	6.65	2.4		11	0	127	.14	11	1.8	2.4	SWR
		31	2330	26.45	19	14.47	155	22.20	4.82			15	0	165	.12	11	1.0	1.8	LSW
		31	2331	23.81	19	18.54	155	24.20	5.84	2.7		25	0	105	.15	9	.9	2.1	SWR
		31	2337	41.82	19	17.75	155	23.94	5.49			11	0	119	.07	12	.8	1.0	SWR
		31	2342	26.24	19	18.16	155	23.81	3.16	2.4		17	0	111	.11	9	.8	2.6	SWR
		31	2354	57.86	19	17.80	155	23.64	5.28	2.9		18	0	118	.15	9	1.1	1.2	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	31	2356	55.11	19	20.20	155	24.60	3.90			5	0	236	.07	15	7.8	55.7	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	JAN	2	627	51.71	19	14.52	155	28.57	11.17	3.5		32	0	91	.15	14	1.0	.4	LSW
		12	6 4	34.07	19	20.33	155	7.36	8.74	4.7		29	0	95	.10	8	.7	.7	UER
		15	22 6	46.54	19	48.34	155	36.05	32.68	4.2		35	1	99	.13	29	1.0	2.7	KKU
		21	1228	9.48	19	20.05	155	8.25	9.32	3.6		29	0	82	.09	9	.6	.6	UER
	FEB	4	1816	54.59	19	33.53	155	54.97	9.05	4.2		28	0	191	.15	33	1.6	.6	KON
	MAR	27	2258	54.22	18	57.10	155	33.15	38.97	3.6		30	0	234	.10	34	2.4	3.6	DIS
	APR	4	1142	15.28	19	22.39	155	16.52	27.25	3.5		31	0	48	.10	3	.8	1.3	DEP
		25	2 6	55.17	19	19.11	155	13.46	10.11	3.8		30	0	72	.08	7	.5	.3	UER
	MAY	5	137	23.92	19	21.54	155	15.60	13.75	4.2		29	0	68	.12	5	.7	1.1	DEP
		8	2350	7.05	19	27.81	155	35.31	.01	4.0		26	0	59	.16	24	.9	1.2	MOK
		23	1311	36.53	19	20.53	155	45.99	9.50	3.6		24	0	83	.12	23	.7	.7	KON
		24	2349	10.56	19	13.68	155	22.16	6.25	3.7		29	1	154	.18	12	1.1	2.6	LSW
		25	1338	32.28	20	9.04	155	46.28	36.04	3.6		15	0	155	.12	55	2.1	3.4	KOH
	JUN	3	13 2	9.14	19	26.26	155	26.47	9.20	4.1		31	0	47	.17	10	.8	1.1	UKF
		19	5 5	42.44	19	22.71	155	25.16	9.73	4.8		31	0	46	.13	10	.7	.3	UKF
		19	511	13.87	19	22.92	155	26.11	7.44	3.6		27	0	51	.17	11	.9	1.4	UKF
		19	533	3.73	19	23.02	155	25.33	8.68	3.6		31	0	44	.13	10	.6	.9	UKF
		20	2050	26.50	19	20.21	155	12.73	9.21	4.3		31	0	70	.12	6	.6	.8	UER
	JUL	20	2222	39.31	17	16.71	155	38.63	8.00	4.2		25	0	338	.15	218	84.0	99.0	DIS
		30	7 4	18.08	19	23.84	154	49.08	38.22	3.5		28	1	282	.12	28	2.2	3.2	LER
	AUG	8	112	59.37	19	22.47	155	18.33	28.72	4.2		33	0	31	.11	4	.8	1.4	DEP
		12	1126	20.56	19	23.46	155	26.96	8.08	3.5		29	0	45	.14	13	.7	1.0	UKF
		13	20 2	55.70	19	25.91	155	36.33	3.76	3.6		26	0	85	.12	20	.6	1.3	MOK
		17	2252	21.32	19	48.23	156	6.07	23.93	3.6		20	0	245	.10	49	2.2	3.6	KON
		23	1815	1.96	19	18.82	155	13.27	9.84	3.7		29	0	80	.08	8	.5	.3	POL
		27	2149	40.83	19	19.97	155	12.36	10.01	4.5		32	0	78	.09	6	.5	.3	UER
	SEP	24	2119	13.77	19	24.08	155	26.23	8.62	3.5		31	0	39	.14	11	.7	1.2	UKF
		25	226	25.23	19	19.60	155	10.98	8.84	3.8		24	0	94	.13	7	.8	1.3	UER
		25	2018	50.22	20	9.05	155	31.73	27.85	3.8		28	0	229	.09	42	1.7	3.2	KOH
	OCT	15	838	5.38	19	26.21	155	29.89	9.81	3.5		32	0	41	.14	11	.7	.4	UKF
		31	10 1	48.84	19	21.83	155	2.61	8.54	3.9		26	0	186	.14	13	1.3	.9	MER
		31	1045	22.07	19	21.88	155	2.54	8.66	3.7		28	0	188	.13	13	1.3	.7	MER
	NOV	10	153	14.72	19	24.87	155	25.50	10.39	4.2		34	0	41	.15	10	.7	.4	UKF
		21	2149	14.57	19	21.41	155	18.63	30.71	4.4		35	0	42	.10	5	.7	1.3	DEP
		30	354	23.67	19	26.26	155	25.05	5.60	5.5		29	0	67	.14	8	.6	3.2	UKF
		30	4 7	37.90	19	29.07	155	22.57	8.07	3.6		13	0	206	.22	14	4.5	3.7	NER
		30	1310	43.49	19	23.79	155	25.82	8.68	3.7		29	0	46	.14	11	.8	1.1	UKF
		30	1828	39.01	19	25.15	155	25.20	11.77	3.5		27	0	62	.10	9	.7	.3	UKF
	DEC	7	1514	27.91	19	24.43	155	26.84	9.13	4.1		31	0	59	.15	12	.8	1.0	UKF
		8	646	31.90	19	27.18	155	24.07	5.08	3.5		22	0	93	.16	11	1.0	1.3	UKF
		12	4 1	19.17	19	21.89	155	5.46	8.18	3.6		27	1	119	.11	9	.6	.8	MER
		14	011	10.35	19	25.13	155	25.31	9.00	3.6		33	0	42	.14	9	.7	.9	UKF
		14	652	24.22	19	26.12	155	36.17	3.36	3.7		28	0	49	.14	6	.7	1.3	MOK
		15	1053	47.76	19	28.51	155	36.06	2.10	4.7		32	0	60	.19	2	.9	2.3	MOK
		15	2317	29.59	19	24.39	155	25.90	9.15	4.8		32	0	38	.11	11	.6	.7	UKF
		16	9 0	55.13	19	24.41	155	25.71	9.42	3.8		29	0	86	.14	11	.8	.9	UKF
		21	818	4.02	19	23.68	155	26.90	10.07	4.1		29	0	64	.14	13	.8	.5	UKF
		23	745	53.34	19	19.14	155	25.33	9.46	3.6		33	0	93	.12	7	.6	.7	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1974	DEC	25	747	49.33	19	20.94	155	16.86	30.48	4.6		36	1	69	.10	5	.8	1.3	DEP
		25	1813	21.06	19	13.58	155	18.01	7.69	4.2		31	0	166	.14	12	.8	1.2	HLP
		25	1817	10.60	19	13.61	155	17.63	7.82	3.8		30	0	167	.16	12	1.0	1.5	HLP
		25	1824	14.54	19	13.50	155	18.28	7.94	4.3		31	0	166	.15	12	.9	1.2	HLP
		28	17	2 38.79	19	45.19	156	1.12	6.29	3.7		28	0	227	.13	48	1.5	.9	KOH
		28	1924	23.58	19	20.73	155	4.02	8.85	3.9		29	0	123	.13	10	1.0	.8	MER
		29	1722	10.44	19	20.53	155	17.03	30.68	3.9		34	1	75	.10	5	.9	1.3	DEP
		31	1240	48.20	19	18.04	155	21.83	4.97	5.5		25	0	121	.16	9	.8	1.2	SWR
		31	1356	37.71	19	20.41	155	20.06	4.02	3.5		21	0	63	.10	6	.6	1.1	SWR
		31	1449	14.99	19	16.74	155	22.00	5.60	4.1		26	0	130	.14	8	.9	2.1	SWR
		31	1459	14.29	19	16.36	155	21.65	2.58	3.6		19	0	142	.14	10	1.0	3.1	SWR
		31	1528	58.83	19	.53	155	11.79	34.67	4.4		26	0	235	.11	34	2.7	5.0	PPL
		31	2043	55.35	19	17.99	155	23.18	4.36	4.2		14	0	115	.16	11	1.3	2.1	SWR
		31	2141	54.30	19	15.76	155	21.69	7.25	4.3		17	0	146	.10	9	.8	1.2	LSW

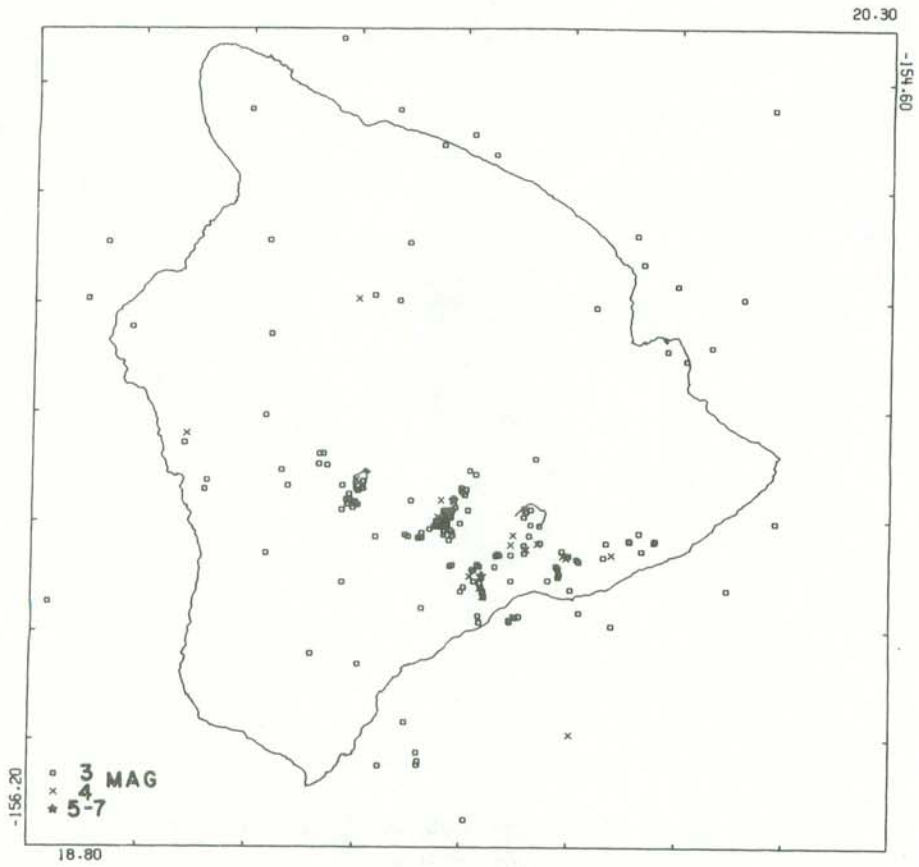

Figure 5.--Epicenter plot of magnitude 3 and above earthquakes for the year 1974.

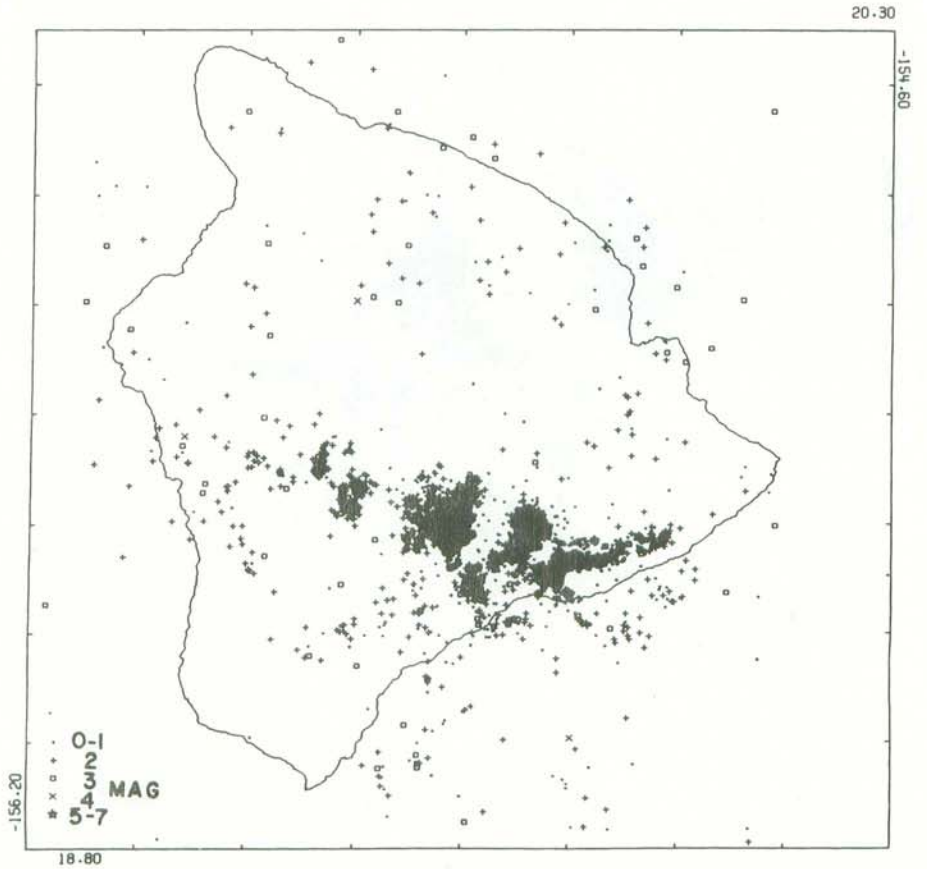

Figure 6.--Epicenter plot of all events located for the year 1974.

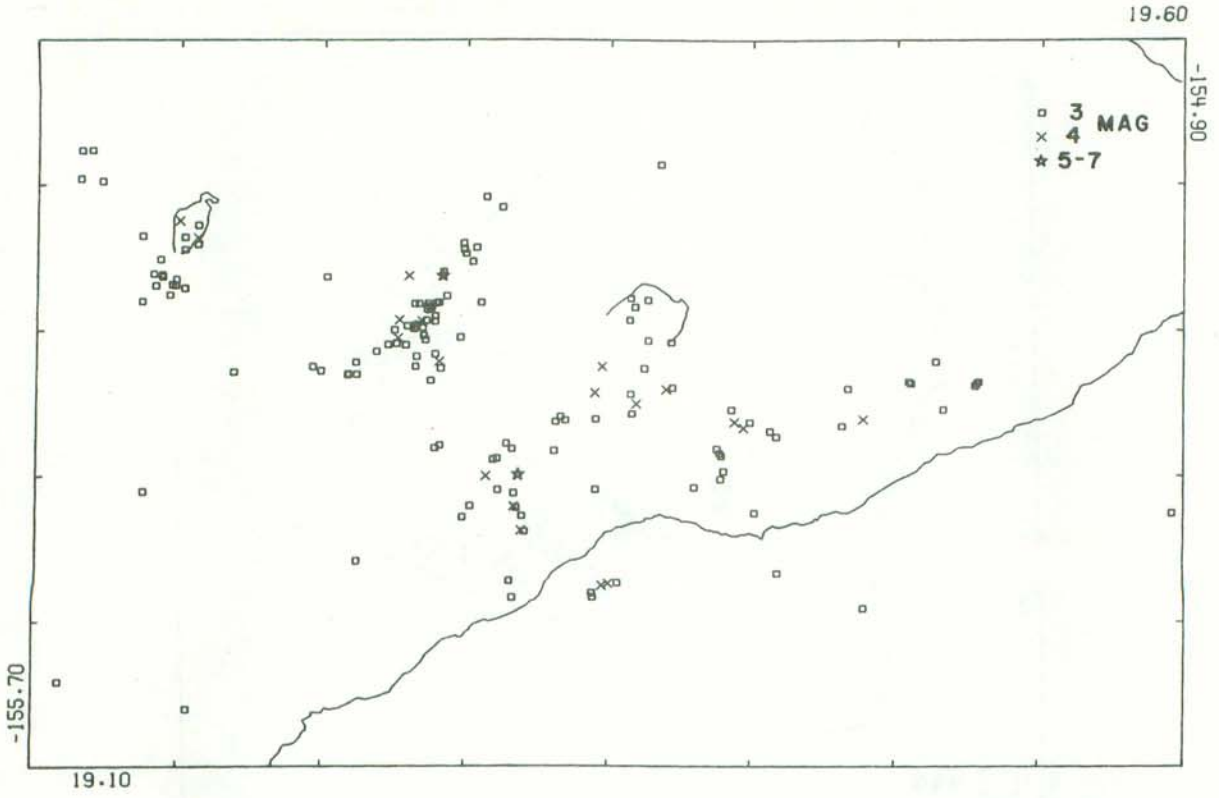

Figure 7. Epicenter plot of Mauna Loa and Kilauea earthquakes magnitude 3 and above for the year 1974.

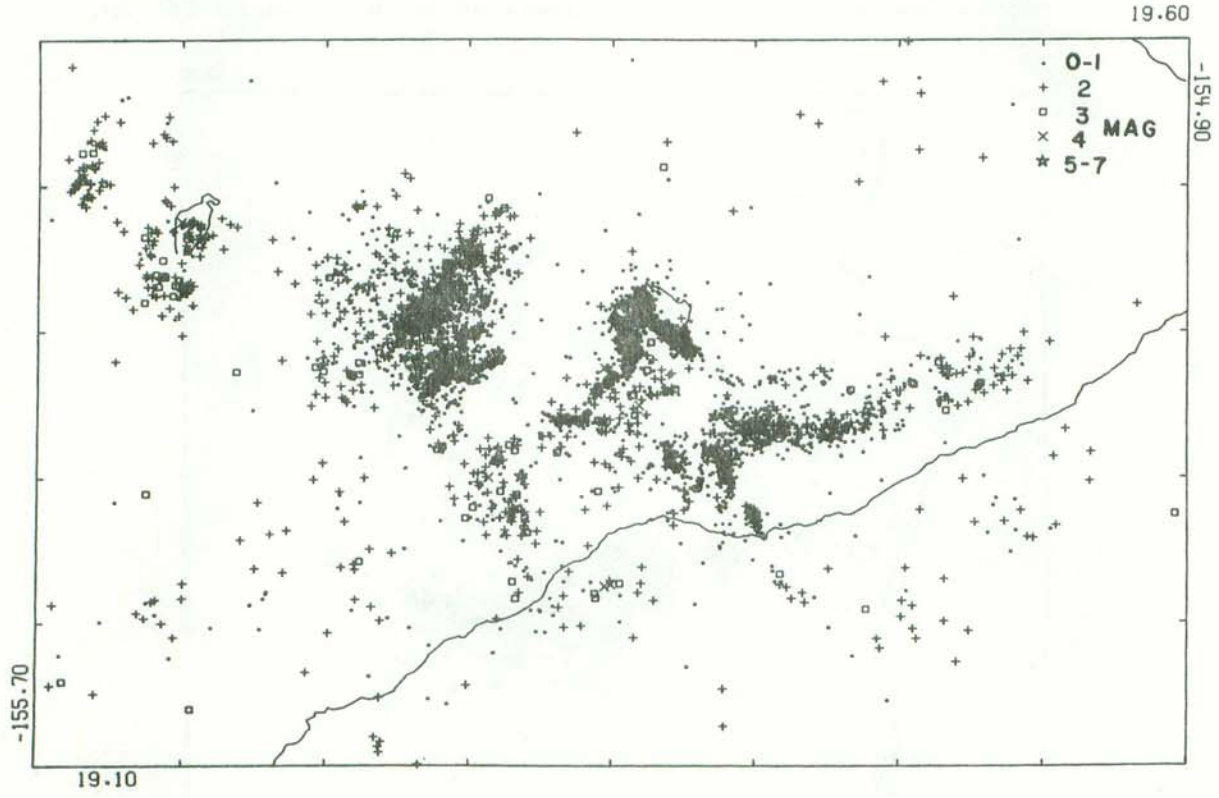

Figure 8. Epicenter plot of all Mauna Loa and Kilauea earthquakes located for the year 1974.

Table 6 .--Felt Earthquakes

Date	Time H	M	S	Magnitude	Felt Report
Jan. 2	06	27	51.6	3.8	Ainahou Ranch
8	04	54	43.5	3.7	Ainahou Ranch, Hilo
12	06	04	33.9	4.7	Kealakekua, Captain Cook, Kamuela, Honokaa, Volcano, Hilo
15	22	06	46.5	4.4	Waimea, Kealakekua, Captain Cook, Keauhou-Kona
20	10	27	50.2	3.2	South Kona
Feb. 4	18	16	54.7	4.3	Kealakekua
5	06	01	27.4	3.7	South Kona
8	01	56	39.5	3.3	Volcano, Glenwood
24	21	18	31.3	3.0	Volcano
Mar. 23	23	39	07.7	3.5	Ainahou Ranch, Mt. View, Glenwood, Hilo
27	22	58	53.6	4.0	Kahuku Ranch, Naalehu
Apr. 4	11	42	15.3	4.0	Hilo
25	02	06	55.1	4.0	Volcano, Kaiwiki, Hilo, Glenwood
30	02	44	00.4	3.2	Volcano
30	02	45	46.2	3.3	Volcano
May 5	01	37	23.9	4.5	Kona, Hilo, Volcano, Keaau, Naalehu, Kamuela, Kahuku Ranch, Waiohinu
18	06	42	30.7	2.5	Hawaii Volcanoes National Park

Table 6 .--Felt Earthquakes (Continued)

Date	Time H	Time M	Time S	Magnitude	Felt Report
Jun. 3	13	02	09.1	4.1	Glenwood, Pahala, Volcano
6	09	47	15.2	2.8	Hawaii Volcanoes National Park, Ainahou Ranch
19	05	05	42.4	4.9	Island-wide
19	05	11	13.5	3.8	Hilo, Ka'u, Volcano
19	05	33	03.6	3.7	Hilo, Ka'u, Volcano
20	20	50	26.4	4.4	Volcano, Ainahou Ranch, Hilo, Kona, Kurtistown, Glenwood, Hawaii Volcanoes National Park
23	17	32	09.1	2.9	Hawaiian Volcano Observatory
27	15	44	42.9	3.1	Hawaii Volcanoes National Park
27	15	58	24.4	2.6	Hawaii Volcanoes National Park
Jul. 11	14	17	17.6	3.2	Kealakekua
12	15	32	59.0	3.6	Kainaliu
13	06	37	46.5	3.4	Ainahou Ranch
19	04	38	48.3	3.4	Volcano
19	05	00	02.9	3.0	Volcano, Hawaii Volcanoes National Park
19	11	22	02.9	3.7	Volcano, Hawaii Volcanoes National Park
19	11	32	17.1	2.8	Hawaiian Volcano Observatory
19	16	41	48.0	4.0	Honokaa
21	18	07	50.5	3.9	Volcano, Hilo
23	18	13	02.3	3.9	Ainahou Ranch, Kapapala Ranch

Table 6.--Felt Earthquakes (Continued)

Date	Time H	M	S	Magnitude	Felt Report
Aug. 7	20	44	36.3	3.4	Kona
8	01	12	59.5	4.3	Honokaa, Hilo, Kapapala Ranch, Volcano, Kona, Puna, Hawaii Volcanoes National Park, Glenwood
12	11	26	20.5	3.8	Kapapala Ranch
17	22	52	20.1	3.8	Kona
20	22	38	23.4	3.3	Kealakekua
23	18	15	01.9	3.9	Hilo
27	21	49	40.7	4.6	Hilo, Keaau, Kurtistown, Pahoa, Honokaa, Laupahoehoe, Naalehu, Kapapala Ranch, Hookena, Holualoa, Mt. View, Volcano, Hawaii Volcanoes National Park, Pahala, South Kona, Kamuela
Sep. 17	21	56	34.2	3.3	South Kona
19	15	51	37.3	3.5	Hilo
25	20	18	49.7	3.9	Kamuela, Honokaa
Oct. 11	21	48	19.2	2.6	Hawaii Volcanoes National Park
15	08	38	05.3	4.0	Kapapala Ranch
22	18	59	49.5	2.1	Hawaii Volcanoes National Park
23	03	58	51.7	2.6	Hawaii Volcanoes National Park
26	13	20	07.1	3.7	Hilo, Hawaii Volcanoes National Park
29	18	57	32.2	3.7	Pahala
31	10	01	48.9	4.0	Hilo, Kaimu, Pahoa, Glenwood, Kalapana, Volcano
31	10	45	22.1	3.8	Hilo, Kaimu, Volcano, Puna

Table 6.--Felt Earthquakes (Continued)

Date	Time H	Time M	Time S	Magnitude	Felt Report
Nov. 9	04	46	15.7	3.2	Volcano, Hilo
10	01	53	14.7	4.1	Hilo, Volcano, Hawaii Volcanoes National Park, Onomea, Pahala, Honokaa, Napoopoo, Kamuela, Kurtistown
12	18	59	04.1	3.5	Volcano, Hawaii Volcanoes National Park
13	07	02	38.6	2.3	Ainahou Ranch
16	05	12	41.0	3.8	Napoopoo, South Kona
17 [1]	05	30	25.0	≈3.5	Captain Cook
21	21	49	14.7	4.5	Hilo, Glenwood, Volcano, Mt. View, Hawaii Volcanoes National Park, Kapapala Ranch, Pahala, Honomu, Ainahou Ranch, Kamuela, South Kona, Kealakekua
22	05	49	00.6	2.5	Kamuela
30	03	54	23.4	5.3	Island-wide
30	04	07	37.7	3.6	Kamuela, Hilo, Volcano
30	04	46	54.8	3.4	Hilo
Dec. 7	15	14	27.8	4.3	Hilo, South Kona
8	06	46	31.9	3.8	Hilo
11	00	39	05.3	3.6	Volcano
11	03	49	52.7	3.3	Hilo
12	04	01	19.1	3.8	Hilo
15	10	53	47.4	4.8	Volcano, Hawaii Volcanoes National Park, Hilo, Kapapala Ranch, Mauna Loa summit cabin, Mauna Loa Observatory

[1] No computer solution for this event.

Table 6.--Felt Earthquakes (Continued)

Date	Time H	M	S	Magnitude	Felt Report
Dec. 15	23	17	29.4	4.9	Island-wide
15	23	30	35.7	3.7	South Kona
16	09	00	55.0	3.9	Hawaii Volcanoes National Park, Kapapala Ranch, Hilo
21	08	18	03.9	4.2	Volcano, Pahala, Hawaii Volcanoes National Park, Hilo
25	07	47	49.5	4.7	Island-wide, island of Oahu
25	12	19	45.0	3.7	Volcano, Hilo
25	18	13	20.6	4.3	Hilo, Volcano, Glenwood, Mt. View, Pahala
25	18	17	10.2	4.1	Volcano, Hilo
25	18	24	14.1	4.4	Hilo, Volcano, Glenwood, Pahala
26	07	18	54.7	2.5	Volcano, Hawaii Volcanoes National Park
28	11	35	12.3	2.6	Hawaii Volcanoes National Park
28	17	02	38.1	3.9	Keauhou-Kona, Kealakekua
28	19	24	23.5	4.2	Kahuku Ranch, Volcano, Papaikou, Hilo, Glenwood, Hawaii Volcanoes National Park
29	17	22	10.6	4.1	Island-wide
30	02	51	43.9	3.6	Pahala
31	00	30	27.0	3.4	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	01	12	56.3	3.5	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	09	30	56.2	3.2	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park

Table 6.--Felt Earthquakes (Continued)

Date	Time H	Time M	Time S	Magnitude	Felt Report
Dec. 31	12	14	02.8	3.0	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	12	25	29.1	3.2	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	12	40	47.8	5.3	Island-wide; minor damage at Kapapala Ranch
31	13	06	45.0	3.0	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	13	56	37.3	3.5	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	14	39	21.8	3.4	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park, South Kona
31	14	49	13.7	4.0	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park, South Kona, Hilo
31	14	59	13.9	3.4	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	15	28	59.1	4.4	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park, Hilo
31	15	51	17.3	3.3	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	16	48	19.0	3.1	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	17	10	53.0	3.2	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	18	02	17.0	3.2	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park

Table 6.--Felt Earthquakes (Continued)

Date	Time H	Time M	Time S	Magnitude	Felt Report
Dec. 31	18	12	20.0	3.1	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	19	51	30.6	3.4	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	20	43	55.0	4.1	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park, and Hilo
31	20	53	24.4	3.4	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	21	24	48.2	3.4	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park
31	21	41	54.0	4.2	Volcano, Kapapala Ranch, Pahala, Hawaii Volcanoes National Park, Hilo

Dec. 31: A swarm of earthquakes accompanied and followed an eruption of Kilauea Volcano on December 31, 1974. Many hundreds of earthquakes of about magnitude 2.0 to 5.3 were felt by residents of Kapapala Ranch, Pahala, Volcano, and the Hawaii Volcanoes National Park.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in Table 8.

Table 7.--Tilt Coordinates at Uwekahuna. January to December, 1974.

Date (1974)	N-S	E-W
Jan. 6	720	287
13	721	288
20	720	289
27	720	288
Feb. 3	718	293
10	718	291
17	718	292
24	719	290
Mar. 3	719	286
10	719	285
17	719	285
24	718	289
31	717	294

April 7	713	296
14	718	291
21	717	290
28	717	291
May 5	716	295
12	716	290
19	722	287
26	724	285
June 2	725	290
9	729	288
16	728	287
23	728	284
30	729	282
July 7	733	284
14	735	284
21	739	289
28	739	287
Aug. 4	739	289
11	741	387
18	745	286
25	748	286
Sept. 1	752	282
8	755	281
15	758	280
22	782	262
29	784	260

Oct. 6	786	255
13	789	251
20	793	249
27	798	248
Nov. 3	802	245
10	805	243
17	805	239
24	806	241
Dec. 1	811	238
8	817	233
15	819	232
22	822	228
29	810	248

Table 8a--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 9a)

Tilt base	Date (1974)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1974)
Uwekahuna (U on fig. 9a)	3 Apr	754.2	289.9	0.46	S85.2°W	14 Jan
Tree Molds (TM)	3 Apr	586.9	475.9	1.15	N43.7°W	14 Jan
Sand Spit (SS)	5 Apr	992.2	721.9	0.12	S71.6°W	15 Jan
Keamoku (Kea).	4 Apr	764.0	239.2	1.02	N55.7°E	16 Jan
Ahua Kamokukolau (Kam).	5 Apr	393.9	499.1	2.05	N66.3°W	15 Jan
Kipuka Nene (KN)	Not Occupied This Epoch					
Hilina Pali (HP)	Not Occupied This Epoch					
Kapapala Ranch (Kap).	Not Occupied This Epoch					
Mehana (M)	2 Apr	626.0	604.4	1.16	N21.4°E	14 Jan

Table 8b--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 9b)

Tilt base	Date (1974)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1974)
Uwekahuna (U on fig. 9b)	31 Jul	787.8	261.8	11.04	N39.9°W	3 Apr
Tree Molds (TM)	30 Jul	600.6	474.0	3.52	N 7.9°W	3 Apr
Sand Spit (SS)	6 Aug	1023.6	631.8	23.27	N70.8°W	5 Apr
Keamoku (Kea).	31 Jul	783.4	215.8	7.73	N50.3°W	4 Apr
Ahua Kamokukolau (Kam).	1 Aug	336.4	498.7	14.62	S 0.4°W	5 Apr
Kipuka Nene (KN)	Not Occupied This Epoch					
Hilina Pali (HP)	Not Occupied This Epoch					
Kapapala Ranch (Kap).	Not Occupied This Epoch					
Mehana (M)	30 Jul	630.4	610.8	1.96	N55.5°E	2 Apr

Table 8c--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 9c)

Tilt base	Date (1974)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1974)
Uwekahuna (U on fig. 9c)	1 Oct	820.4	232.4	21.24	N42.0°W	31 Jul
Tree Molds (TM)	1 Oct	609.6	475.8	4.37	N11.3°E	30 Jul
Sand Spit (SS)	2 Oct	976.9	701.8	44.29	S56.3°E	6 Aug
Keamoku (Kea).	2 Oct	813.9	182.5	21.50	N47.5°W	31 Jul
Ahua Kamokukolau (Kam).	2 Oct	299.4	519.7	20.58	S29.6°E	1 Aug
Kipuka Nene (KN)			Not Occupied This Epoch			
Hilina Pali (HP)			Not Occupied This Epoch			
Kapapala Ranch (Kap).			Not Occupied This Epoch			
Mehana (M)	1 Oct	632.9	613.1	1.62	N42.6°E	30 Jul

Table 8d--Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 9d)

Tilt base	Date (1975)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1974)
Uwekahuna (U on fig. 9d)	14 Jan	711.0	296.6	36.24	S30.4°E	1 Oct
Tree Molds (TM)	14 Jan	550.9	490.5	17.29	S14.1°E	1 Oct
Sand Spit (SS)	15 Jan	922.0	755.3	21.90	S44.3°E	2 Oct
Keamoku (Kea).	16 Jan	735.0	293.2	38.47	S54.5°E	2 Oct
Ahua Kamokukolau (Kam).	15 Jan	508.6	595.0	63.53	N19.8°E	2 Oct
Kipuka Nene (KN)	17 Jan	259.1	520.1	2.66	S52.3°E	17 Jan
Hilina Pali (HP)	28 Jan	398.1	526.8	6.22	S33.4°E	17 Jan
Kapapala Ranch (Kap).	16 Jan	579.9	448.0	10.67	N37.9°W	16 Jan
Mehana (M)	14 Jan	619.7	587.8	8.15	S62.4°W	1 Oct

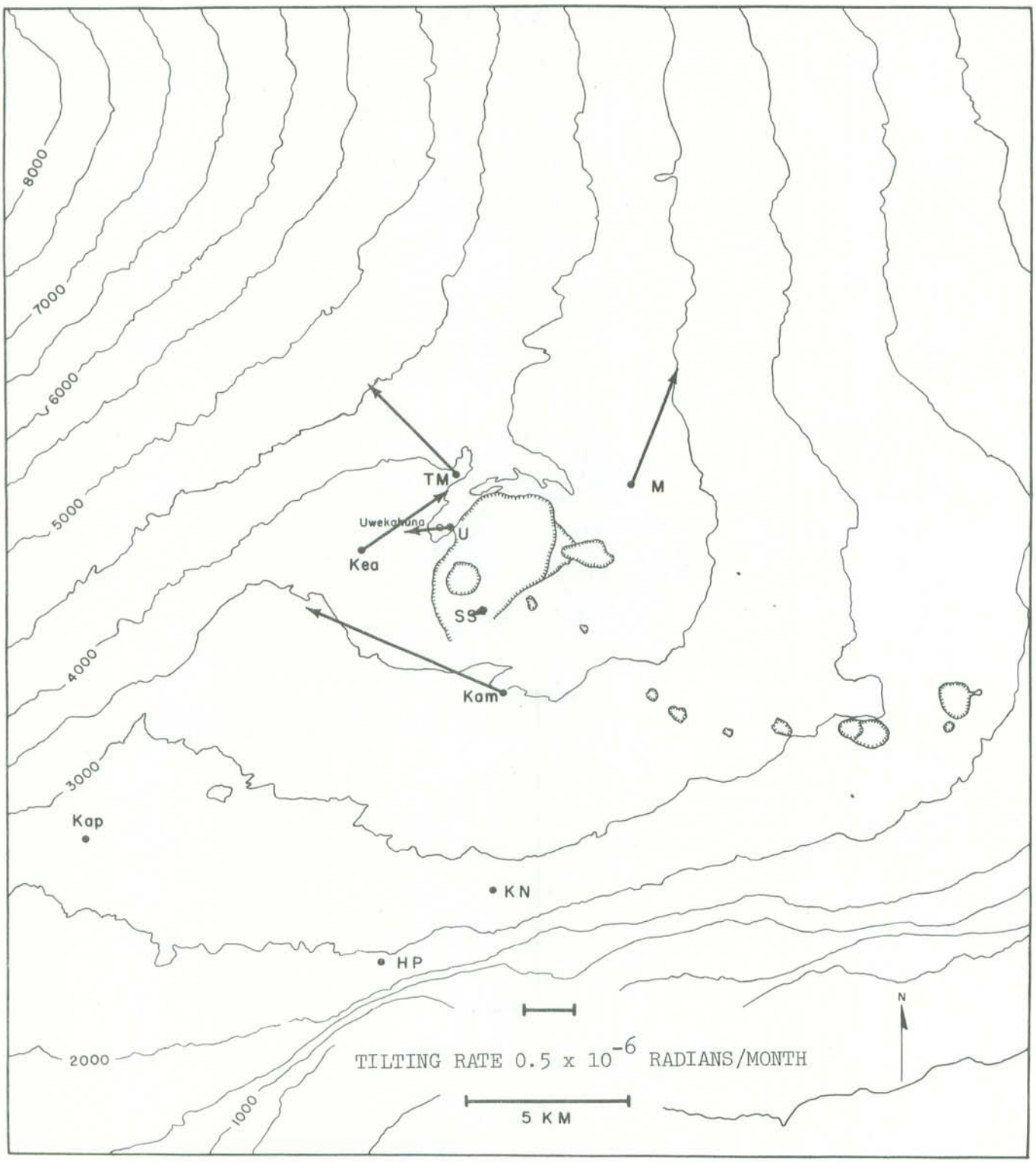

Figure 9a.--January to April 1974 tilting of the ground around Kilauea Caldera. The vector depicting at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 8a for explanation of abbreviations.

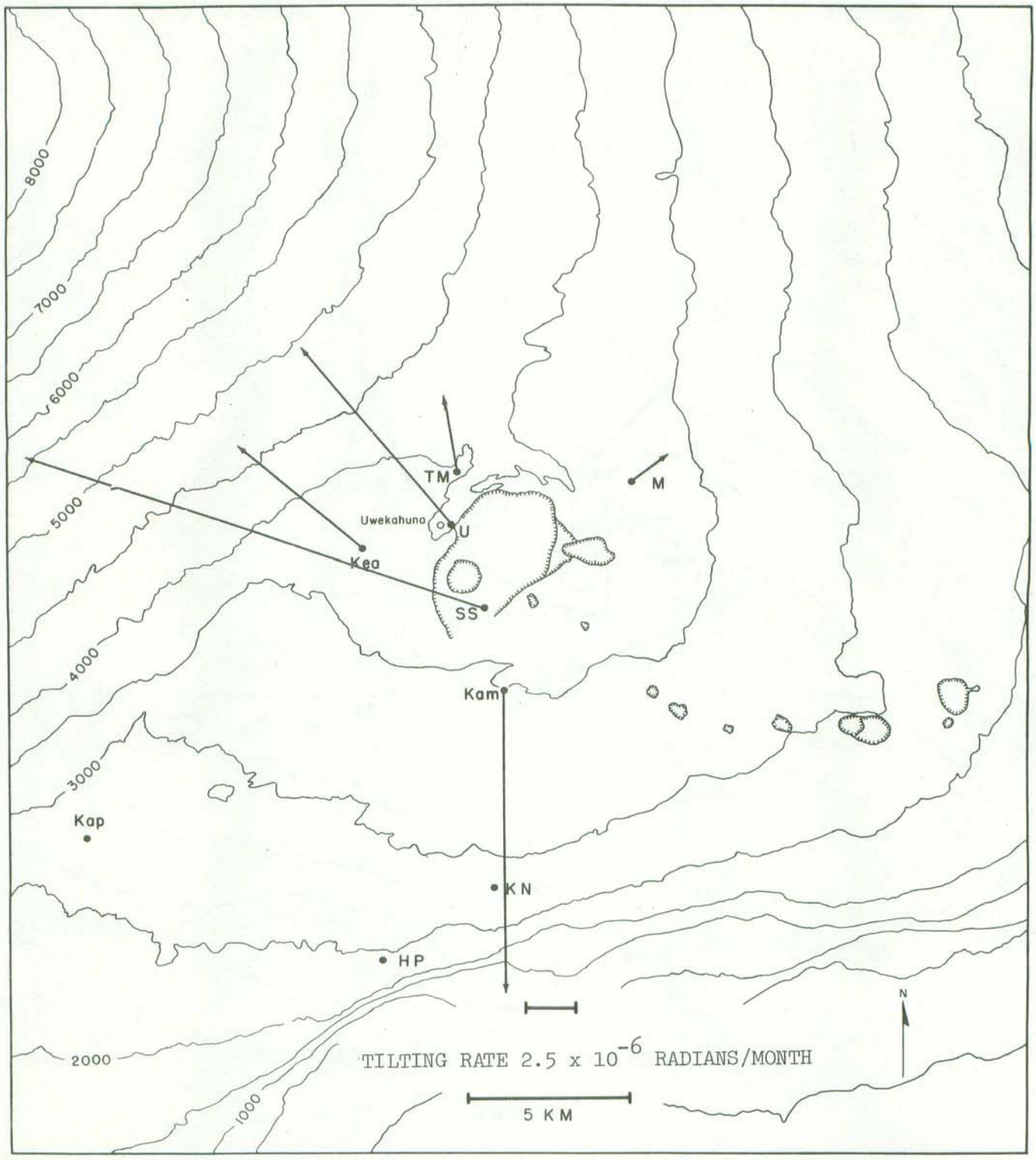

Figure 9b.--April to July 1974 tilting of the ground around Kilauea Caldera.

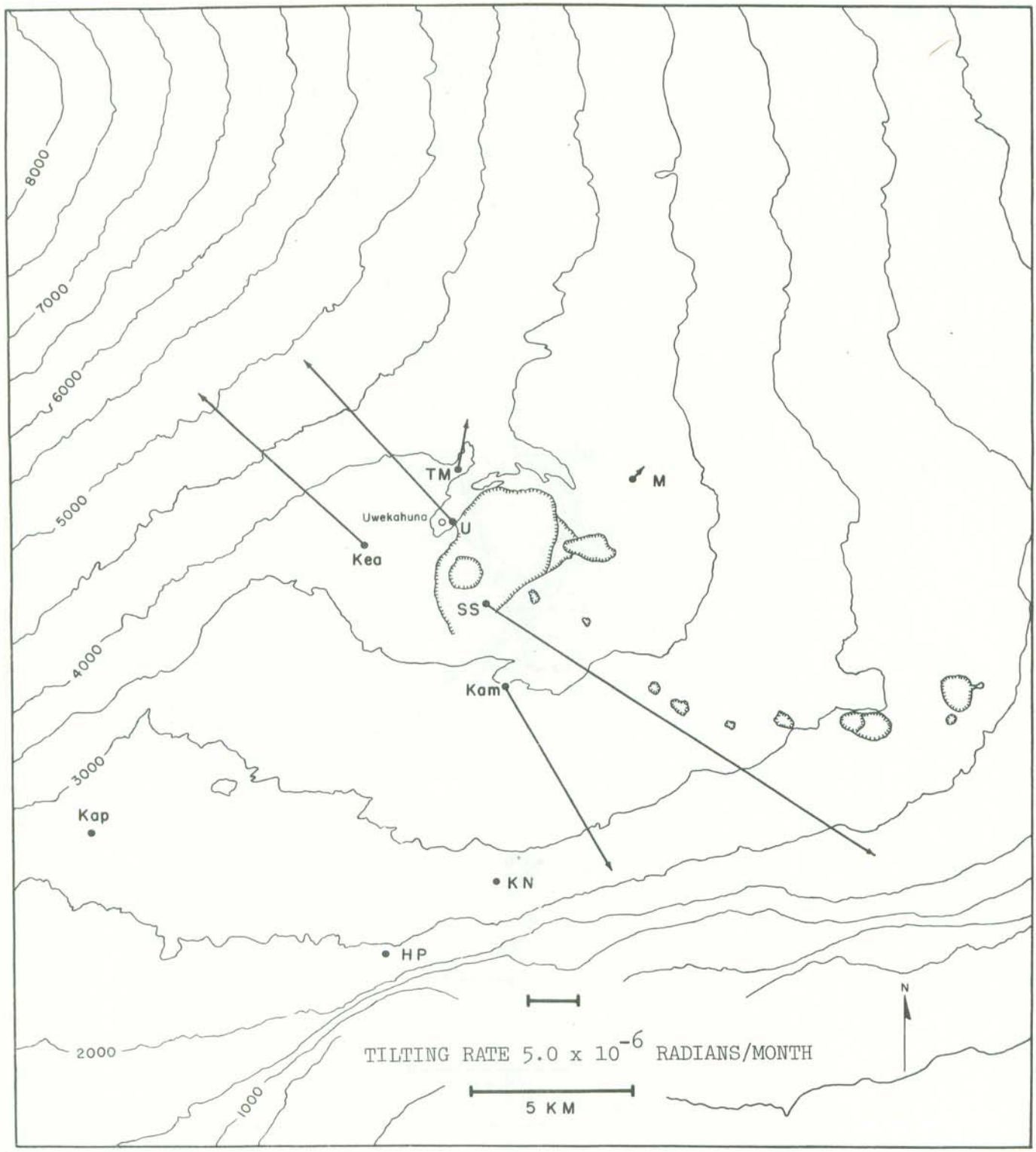

Figure 9c.--July to October 1974 tilting of the ground around Kilauea Caldera.

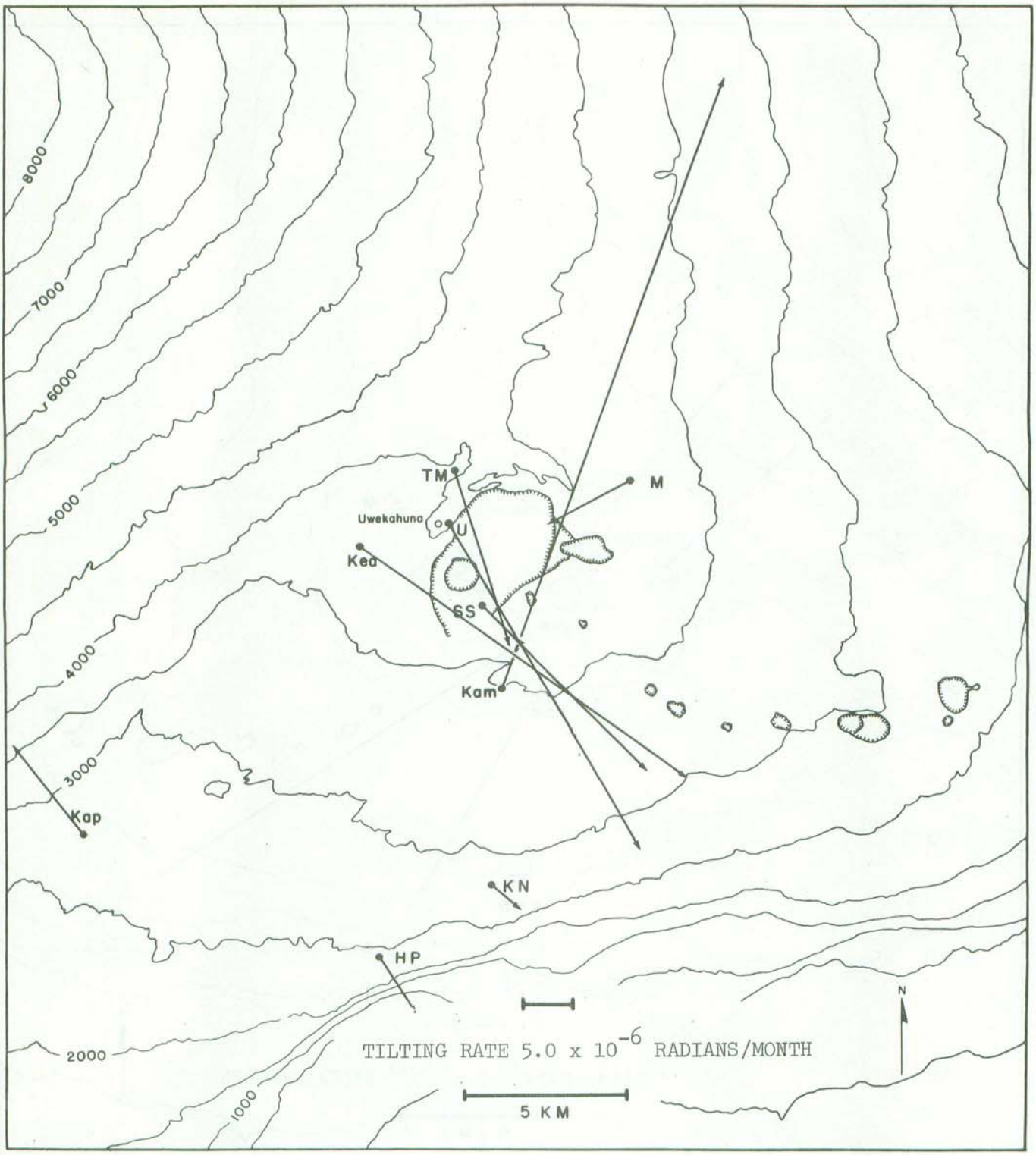

Figure 9d.--October 1974 to January 1975 tilting of the ground around Kilauea Caldera.

Table 9.--U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N. Deg. Min.	Long. W. Deg. Min.			
Tree Molds	TM	19 - 26.3	155 - 17.3	Quarterly	50.79	NS. and EW.
Sand Spit	SS	19 - 24.1	155 - 16.8	---do---	25.40	Equilateral triangle.
Keamoku	Kea	19 - 25.1	155 - 19.0	---do---	47.55	do
Ahua Kamokukolau	Kam	19 - 22.7	155 - 16.6	---do---	50.79	do
Kipuka Nene	KN	19 - 19.4	155 - 16.7	---do---	47.73	do
Hilina Pali	HP	19 - 18.2	155 - 18.6	---do---	47.73	do
Kapapala Ranch	Kap	19 - 20.5	155 - 23.8	---do---	50.79	do
Mehana	M	19 - 26.2	155 - 14.3	---do---	25.00	do
Uwekahuna	U	19 - 25.5	155 - 17.4	---do---	50.79	do
Uwekahuna Vault		19 - 25.4	155 - 17.6	Daily	3.48	NS. and EW.

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Hawaiian Volcano Observatory
1975 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 75
January to December 1975
By Robert Y. Koyanagi, Karen Meagher,
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Chronological Summary
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Open-File Report 2007-1335
U.S. Department of the Interior
U.S. Geological Survey

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 75

JANUARY TO DECEMBER 1975

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California

1978

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 75
JANUARY TO DECEMBER 1975

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summaries present data gathered during the year together with a chronological narrative intended to describe in geologic terms the volcanic activity associated with the seismic events and tilt data included. The seismic, tilt, and chronological summaries are offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has recently shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters and repeated measurements at numerous spirit-level tilt stations ("dry" tilt). To maintain continuity with past summaries, we will continue to publish weekly data from the Uwekahuna vault tiltmeter (Kilauea summit) and from water-tube tilt stations as they are reoccupied. A comprehensive summary of the numerous and varied tilt and deformation data now gathered is beyond the scope of this publication.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 (Koyanagi, et al.) for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

Publication of the summary represents a group effort by the staffs of the Hawaiian Volcano Observatory and the National Center for Earthquake Research in Menlo Park, California.

CHRONOLOGICAL SUMMARY

Kilauea

The year 1975 opened with Kilauea adjusting to the effect of the 6-hour-long eruption of December 31, 1974. This eruption occurred in the Ka'u Desert, between the southwest rift zone and the Koae fault system. About 15 x 10^6 m^3 of lava was erupted from a set of en echelon fissures about 4 km long. The eruption was preceded, accompanied, and followed by a strong earthquake swarm, and the resultant ground deformation was severe. Deflation at Kilauea's summit continued until about January 5, and later the magma reservoir beneath Kilauea's summit began to reinflate. Inflation continued at moderate rates for many months, interrupted occasionally by brief episodes of rapidly fluctuating deflation and inflation. The pattern of ground deformation and seismicity on Kilauea was not affected in any perceptible way by an eruption of Mauna Loa on July 5-6.

By early November, inflation had reached a level sufficient for the observatory staff to speculate about renewed activity on Kilauea. This high level of inflation coincided with an appreciable increase in felt earthquakes, which were centered on the south flank and provided additional credence for these speculations. However, the increase in seismicity was later to be interpreted as foreshocks of a much more momentous event, the greatest earthquake in Hawaii in more than a century.

On November 29 at 03:36 a 5.7-magnitude earthquake (Richter Scale) proved to be the largest foreshock. The main shock, of magnitude 7.2, struck at 04:48. It was centered beneath the southeastern coast of Hawaii (lat 19°20.1' N., long 155°01.4' W.) at a depth of about 5 km, and it was accompanied or followed by massive ground movements, hundreds of aftershocks, a tsunami, and a brief summit eruption of Kilauea. Although the epicenter of the quake was located near Kalapana, most of the aftershocks as well as the major ground deformation occurred throughout a region extending 40 km to the west of the epicenter. Ground subsidence along the south coast of the island reached a maximum of 3.5 m in the area due south of Kilauea caldera, and subsidence of more than 0.3 m occurred throughout a segment of the south coast at least 70 km in length. Extensive landslides, rockfalls, and ground cracks were induced by the quake throughout the summit and south flank regions of Kilauea. Structural damage was estimated to be about $2.7 million; the most severe damage was in Hilo and Hawaii Volcanoes National Park.

A tsunami was generated by sudden ground motion associated with the main earthquake. It produced one of the largest waves recorded in Hawaiian history, which had a maximum runup height of

14.6 m above the postsubmergence shoreline. The greatest runups were recorded along the sparsely populated south coast of the island, but waves in both the Hilo and the Kona districts reached heights as much as 2.4 m. The tsunami claimed two lives and caused damage estimated at $1.4 million.

About a half hour after the main quake, harmonic tremor began to be recorded near Kilauea's summit, and at 05:32 lava began to fountain from a 500-m long, east-northeast-trending fissure on the caldera floor just northeast of Halemaumau. Fountains initially were about 50 m high, but in about 15 minutes they declined to 5-10 m high, and they finally ended about 07:00. The resultant lava flow covered about 0.25 km^2 and had a total volume of about 0.25 x 10^6 m^3. Noisy, jetlike degassing from the vents continued for some time.

At about 08:30 a vent opened on Halemaumau's northeast wall, 21 m above the crater floor. It emitted low fountains whose lava built a small spatter cone and formed a sluggish flow that pooled at the base of the wall. At 09:53 another vent opened nearby on Halemaumau's northeast wall. Weak emission of lava from both vents was intermittent throughout the day and was interspersed with vigorous degassing episodes. Eruption of lava ended at 22:00; degassing continued until 02:00 on November 30. Lava from the 08:30 vent had a volume of 3.2 x 10^3 m^3, and from the 09:53 vent about 300 m^3.

A more complete summary of the events of November 29 has been prepared by Tilling and others (1976).

Mauna Loa

Following a strong earthquake swarm in December 1974, Mauna Loa seismicity dropped to moderate levels through the first half of 1975, with occasional swarms of microearthquakes during March and April. The huge volcano apparently was continuing to stir from its quarter-century of slumber. The heaviest cover of snow and ice in many years thwarted efforts by observatory personnel to expand deformation-monitoring networks in the summit region, although several geodimeter and tilt stations were installed on the lower and middle slopes. Aerial surveillance indicated anomalously high rates of snow melting in Lua Hou pit crater and along some zones on the floor of Mokuaweoweo. In early June, when weather finally permitted the summit geodimeter network to be reoccupied, measurements revealed that tumescence was continuing unabated. All these signs suggested a buildup toward an eruption, but they did not convey the immminence of the anticipated outbreak.

On July 5, harmonic tremor began to be recorded at 22:51 on Mauna Loa summit seismometers. The intensity of the tremor quickly increased and soon was recorded across the entire seismic network;

swarms of microearthquakes accompanied the tremor. Observatory personnel had just enough time to issue warnings to National Park and Civil Defense authorities before lava broke out from the floor of Mokuaweoweo at 23:42. The eruption, as seen from the observatory 30 km to the east and 2,750 m lower, began with a small glow above the southwest end of the caldera, but within minutes the glow extended across the entire summit area. By the time aerial surveillance was established, at about 01:45 on July 6, a northeast-trending line of fountains extended across the caldera floor and about 1 km down the southwest rift zone. Fountains were 20-50 m high; lava was flooding much of the caldera floor and was pouring into the pit craters south of the caldera; narrow flows were advancing southward and westward away from the rift zone.

Thereafter the line of active fountains extended northeastward across North Pit and into the upper part of the northeast rift zone. At 03:15 the fountains within the caldera and on the southwest rift zone began to wane, but others continued to propagate into the northeast rift zone. Caldera and southwest rift zone fountains ended about 06:00, while those on the northeast rift zone continued unabated and fed copious flows, most of which traveled northward. The main eruptive activity became localized along short fissures near Pohaku Hanalei at the 3,700-m level. These vents remained vigorous until about 08:00, after which activity gradually declined throughout the day. The longest flow reached about 5 km north of the rift zone, while other flows extended 2-3 km eastward and northeastward. Eruptive activity ceased between 16:30 and 19:30; the duration of the eruption was 17 to 20 hours. Approximately 30 x 10^6 m^3 of lava covered 13.5 km^2 of land in the summit area and upper flanks of the volcano.

When extrusion of lava ceased, strong harmonic tremor accompanied by abundant earthquakes continued. Earthquake epicenters migrated down the northeast rift zone to about the 2,900-m level near Puu Ulaula (Red Hill). Frequent reoccupation of the nearby geodimeter network revealed significant dilation for a few days, and further eruptive outbreaks seemed possible. However, about July 10, the tremor diminished, and geodimeter measurements indicated detumescence. By July 12 the volcano had stabilized and no further immediate activity seemed likely. Throughout the remainder of 1975, however, geodetic measurements indicated that tumescence had resumed and seismometers showed a relatively high level of microseismicity, suggesting that magma was building toward Mauna Loa's next eruption. Further details on Mauna Loa's eruption and subsequent status are provided by Lockwood and others (1976).

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In January 1975 the seismometer network consisted of thirty-six vertical high gain short period (1 sec.) stations spread over an area with a diameter of 125 kilometres (Figs. 1 and 2). The coverage is most complete on and around the main center of seismic and volcanic activity, Kilauea Volcano. Other stations in the network are part of a larger net located on other volcanoes of the island of Hawaii. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording.

The network expanded during 1975. Two new stations were added on the middle portion of the East Rift Zone (LUA, TAN), and two more were added on the northwest flank of Mauna Loa (HSS, KII). Twelve horizontal seismometers were added to nine existing vertical stations to make a total of twenty-nine vertical only, seven two-component and four three-component stations on the island.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated or added during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1975. Listed are station name, three letter code, coordinates in degrees and minutes, elevation in meters, and other data described below.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or VHF radio. The VCO frequencies are listed in Table 1. These telemetering stations are now all of Type 1, the NCER standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from thirty-two stations are recorded on two Develocorders using 16mm microfilm. Beginning in late 1975, FM signals from the telemetering network were recorded directly on one inch magnetic tape. Selected larger events are copied onto condensed library tapes which are currently archived in Menlo Park.

Develocorder records are read on a film viewer with 20x magnification. Arrivals are read to the nearest 0.05 second. The recorded arrival times, amplitudes (where readable), and other key data are routinely sent to N.C.E.R. in Menlo Park for computer processing.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Kipapa station operated by Honolulu Observatory). The less sensitive short period records are used primarily for S data and amplitude measurements for magnitude calculations to supplement readings from 16mm film. Optical seismographs listed in Table 1 are of four types. Types numbered three and four are electro-mechanical systems of high and low gain respectively. Hilo and Haleakala are each equipped with two low-gain Wood-Anderson torsion seismographs. Long period Press-Ewing seismographs record in three components in the Uwekahuna vault. The paper (optical) records as well as the 16mm develocorder microfilm are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard NCER system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20x Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited, and major changes in attenuation or recalibrations are listed in Table 1 along with the dates they took place. Minor changes in CAL factors may not be listed if they are less than 20%.

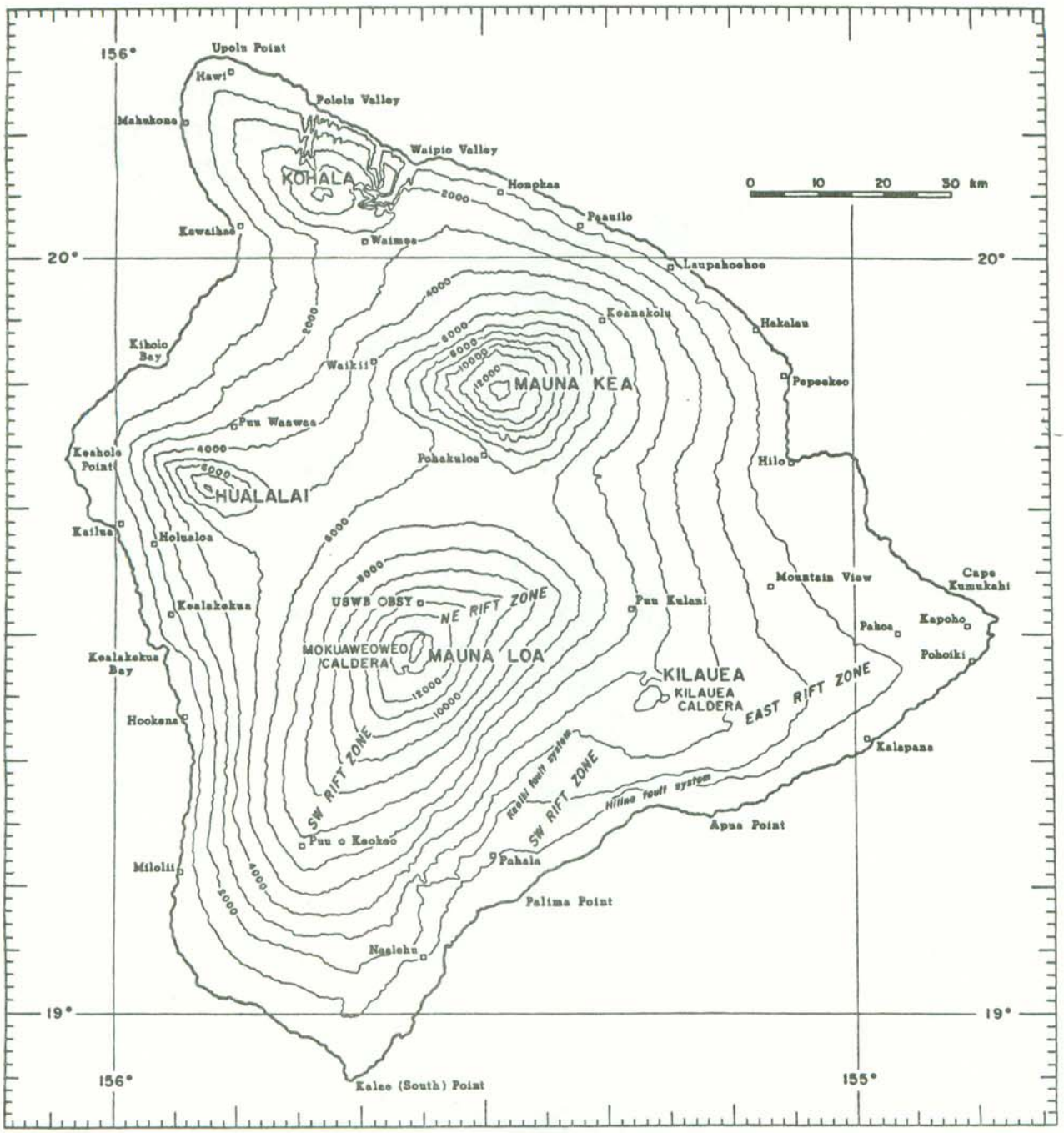

Figure 1 Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

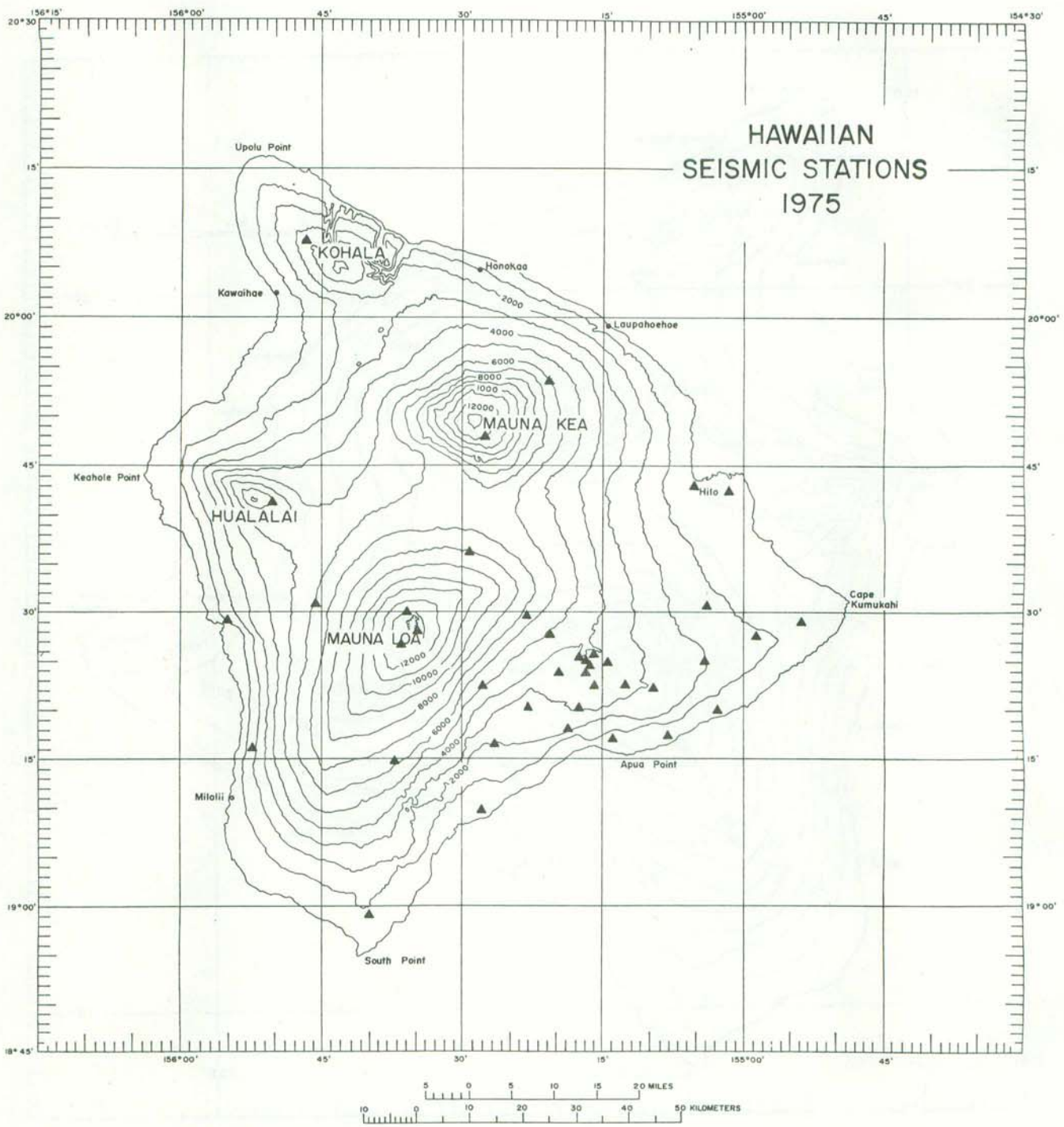

Figure 2 Map of the island of Hawaii showing seismic stations operated by the U.S. Geological Survey.

TABLE 1. Seismometer stations in Hawaii operated by the U. S. Geological Survey, 1975

Station Name	Code	LAT-N	LON-W	Delay	ELEV	VCO	Old Type/Cal	Date of Change	New Type/Cal
AHUA	AHU	19 22.40	155 15.90	.06	1070	2380	1 3.8		
AINAPO	AIN	19 22.50	155 27.62	.33	1524	1020	1 8.5		
	AINE					2380	none	75/11/14	1
	AINN					2720	none	75/11/14	1
CAPTAIN COOK	CAC	19 29.29	155 55.09	.15	323	1360	1 3.3		
CONE PEAK	CPK	19 23.70	155 19.70	-.04	1038	1700	1 3.5	75/12/30	1 4.0
	CPKH					1020	none	75/12/22	1
DESERT	DES	19 20.20	155 23.30	-.10	815	680	3 1.34	75/04/30	1 4.8
ESCAPE ROAD	ESR	19 24.68	155 14.33	.01	1177	1360	1 1.7		
HALE POHAKU	HPU	19 46.85	155 27.50	.42	3396	2720	1	75/11/18	1 4.5
HILINA PALI	HLP	19 17.96	155 18.63	.18	707	2040	1 2.5	75/05/21	1 5.0
HUALALAI	HUA	19 41.25	155 50.32	.58	2189	1700	1 5.3	75/02/04	1 2.2
HUMUULA	HSS	19 36.31	155 29.13	.35	2445	1700	none	75/07/07	1 6.2
	HSSE					680	none	75/10/29	1
	HSSN					2720	none	75/10/29	1
KAAPUNA	KAA	19 15.98	155 52.28	.00	524	1020	1 6.0	75/03/28	1 4.9
KAENA	KAE	19 17.35	155 7.95	.15	37	2380	1 2.2		
KAHUKU	KHU	19 14.90	155 37.10	.08	1939	1700	1 5.7	75/02/18	1 3.7
KALALUA	LUA	19 24.55	155 04.25	-.02	622	1020	none	75/12/09	1
KANEKII	KII	19 30.56	155 45.90	.18	1841	1700	none	75/11/13	1 7.1
	KIIE					1020	none	75/11/13	1
	KIIN					1360	none	75/11/13	1
KAPAPALA RANCH	KPR	19 16.40	155 26.70	.05	610	1700	1 4.33		
KEANAKOLU	KKU	19 53.39	155 20.58	.86	1863	2380	1 2.3		
KIPUKA NENE	KPN	19 20.10	155 17.40	.07	924	1360	1 5.0		
KOHALA	KOH	20 7.69	155 46.77	.21	1166	2380	1 3.2	75/12	1 2.4
MAUNA LOA	MLO	19 29.80	155 23.30	.24	2010	1360	1 11.8	75/05/09	1 10.5
	MLOH					2040	none	75/09/25	1
MAUNA LOA X	MLX	19 27.60	155 20.70	.27	1475	1360	1	75/04/24	1 2.1
	MLXH					2720	none	75/11/19	1
MAKAOPUHI	MPR	19 22.07	155 9.85	-.01	881	2720	1 5.7	75/11/07	1 2.1
MOKUAWEOWEO	MOK	19 29.28	155 35.98	.28	4104	2040	1 7.5		
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	.17	409	680	1 6.2	75/05/13	1 3.2
NATIONAL GUARD	NAG	19 42.12	155 1.72	.63	18	1360	1 8.5		
NORTH PIT	NPT	19 24.90	155 17.00	-.06	1115	680	1 9.0		
OUTLET	OTL	19 23.40	155 16.80	.02	1084	1360	1 4.15		
	OTLH					2040	none	75/09/15	1
PAU	PAU	19 22.62	155 13.10	-.06	994	2040	1 3.8		
	PAUH					1020	none	75/01/19	1
POLIOKEAWE PALI	POL	19 17.02	155 13.47	.10	169	2720	1 3.0	75/12/10	1 4.8
PUU HONUALA	PHO	19 28.90	154 53.40	.03	215	2720	1 4.8		
PUU PILI	PPL	19 9.50	155 27.87	.24	35	1360	1 2.2		
RIM	RIM	19 23.90	155 16.60	.12	1128	1020	1 1.1	75/05/7	1 7.3
	RIMH					2040			1
SOUTH POINT	SPT	18 58.91	155 39.92	-.07	244	2040	1 4.8	75/06/10	1 3.6
SOUTHWEST RIFT	SWR	19 27.26	155 36.30	.14	4048	1020	1 11.1	75/10/15	1 2.4
SUMMIT CABIN	SCA	19 28.20	155 35.08	.30	4048	1700	1 11.5		
TANGERINE	TAN	19 27.79	154 58.51	.02	351	1020	none	75/12/02	1
WAHAULA	WHA	19 19.90	155 2.92	.06	29	680	1 3.66		
WALDRON LEDGE	WLG	19 25.49	155 15.69	-.02	1067	2380	1 2.2		

TABLE 1 (continued)

Optical Seismographs

HALEAKALA Z	HAL	20 46.00	156 15.00		2090	3	0.71
HALEAKALA EW	HAE	20 46.00	156 15.00		2090	WA	1.0
HALEAKALA NS	HAN	20 46.00	156 15.00		2090	WA	1.0
HILO Z	HIL	19 43.20	155 5.30	.64	20	3	1.0
HILO EW	HIE	19 43.20	155 5.30	.64	20	WA	1.0
HILO NS	HIN	19 43.20	155 5.30	.64	20	WA	1.0
KIPAPA	KIP	21 25.40	158 .90		76	3	0.56
UWEKAHUNA Z	UWE	19 25.40	155 17.60	.06	1240	3	0.7
UWEKAHUNA Z	USZ	19 25.40	155 17.60	.06	1240	4	1.0
UWEKAHUNA EW	USE	19 25.40	155 17.60	.06	1240	4	1.0
UWEKAHUNA	PEZ	19 25.40	155 17.60		1240	PE	
UWEKAHUNA	PEE	19 25.40	155 17.60		1240	PE	
UWEKAHUNA	PEN	19 25.40	155 17.60		1240	PE	

Table 2. -- Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO. USGS Model J302 was introducted in 1974.

Type 3. Consists of:

a) EV-17 - Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 2000X), or Observatory-built electronmagnetic seismometer approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnitication approximately 1500X at 2Hz.

Experimental type amplifier systems are not given type numbers.
Type 2 instruments have been discontinued.

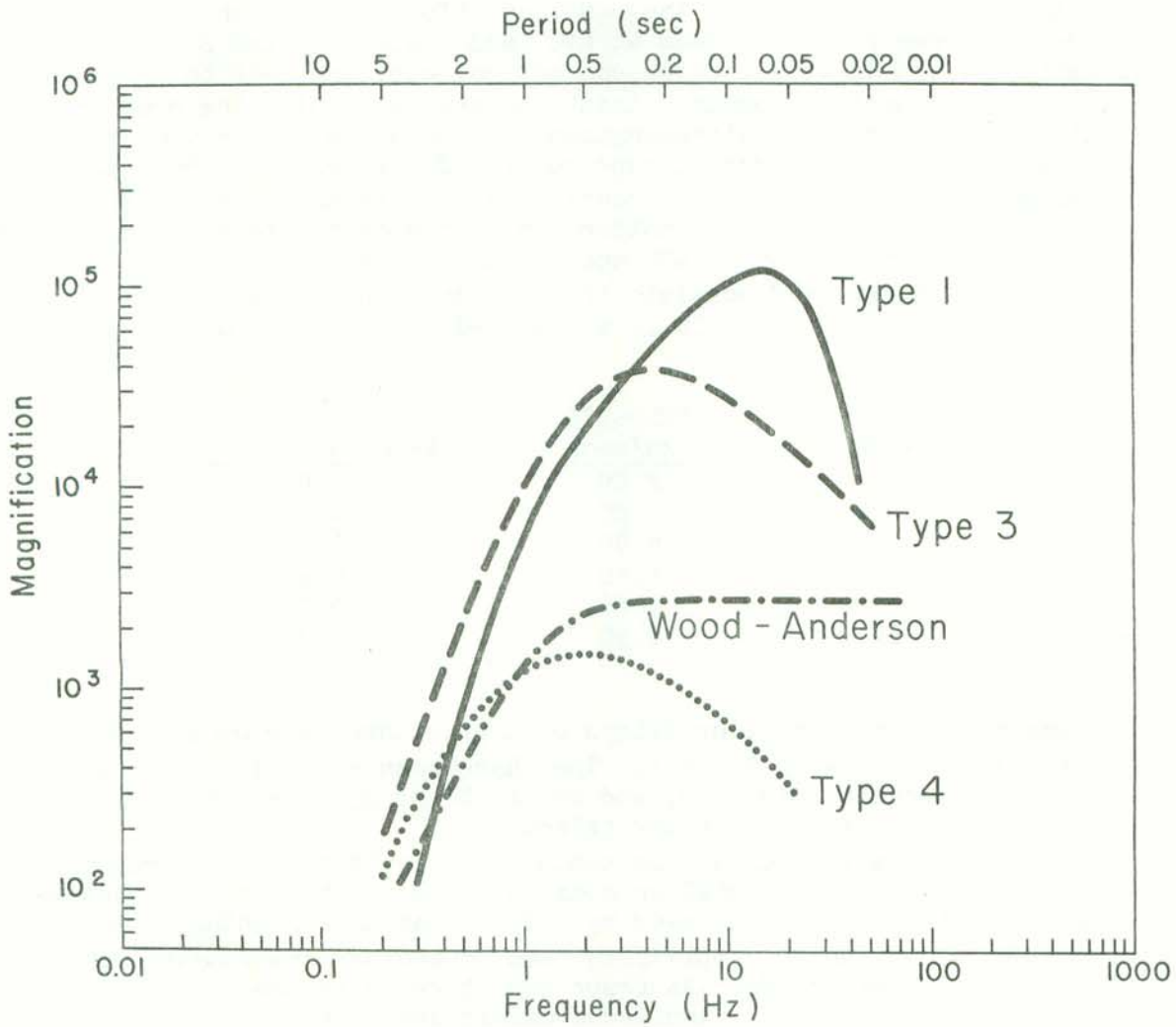

Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard NCER seismometer recorded on Develocorder film. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an individual station.

SEISMIC DATA PROCESSING

Earthquakes are located by the combined efforts of HVO and NCER in Menlo Park. Develocorder films are read at HVO, and lists of P and S arrival times, event amplitude and duration, clock correction, etc. are sent to Menlo Park. Data are then keypunched, computer locations are made using the program HYPOELLIPSE (Lahr, et al., in preparation), and problem events are reread at HVO and rerun. Card and magnetic tape copies of all arrival time (phase) and output summary data (one card per event), are kept in Menlo Park. All computer output (including first motion plots) are on microfiche, and copies are available for inspection at HVO and in Menlo Park.

The crustal model used consists of flat, homogeneous layers and contains a embedded low velocity zone. It is a modified version of Crosson's (1976) model and is:

LAYER	VELOCITY (km/sec)	DEPTH TO TOP (km)
1	2.00	0.0
2	3.25	0.8
3	6.00	2.0
4	6.40	5.5
5	5.30	9.5
6	8.30	13.0

An empirical set of station delays or corrections were used in the locations, and are given in Table 1. They have been adjusted so the mean delay of Kilauea stations is zero, and are most appropriate for locating earthquakes on the south side of the island.

Magnitudes for most events were computed using both recorded amplitudes on calibrated stations and signal or coda duration on short-period vertical stations. Amplitude magnitudes used by HVO are based on readings from Wood-Anderson seismographs. Amplitudes read from other instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors of Table 1. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, KAA, OTL, or PPL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed to about twice the noise level, or to about 1 cm peak-to-peak on the Develocorder viewer. A plot of log (F-P time) versus local (amplitude) magnitude appears in Figure 4. The bilinear relation shown in the figure is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

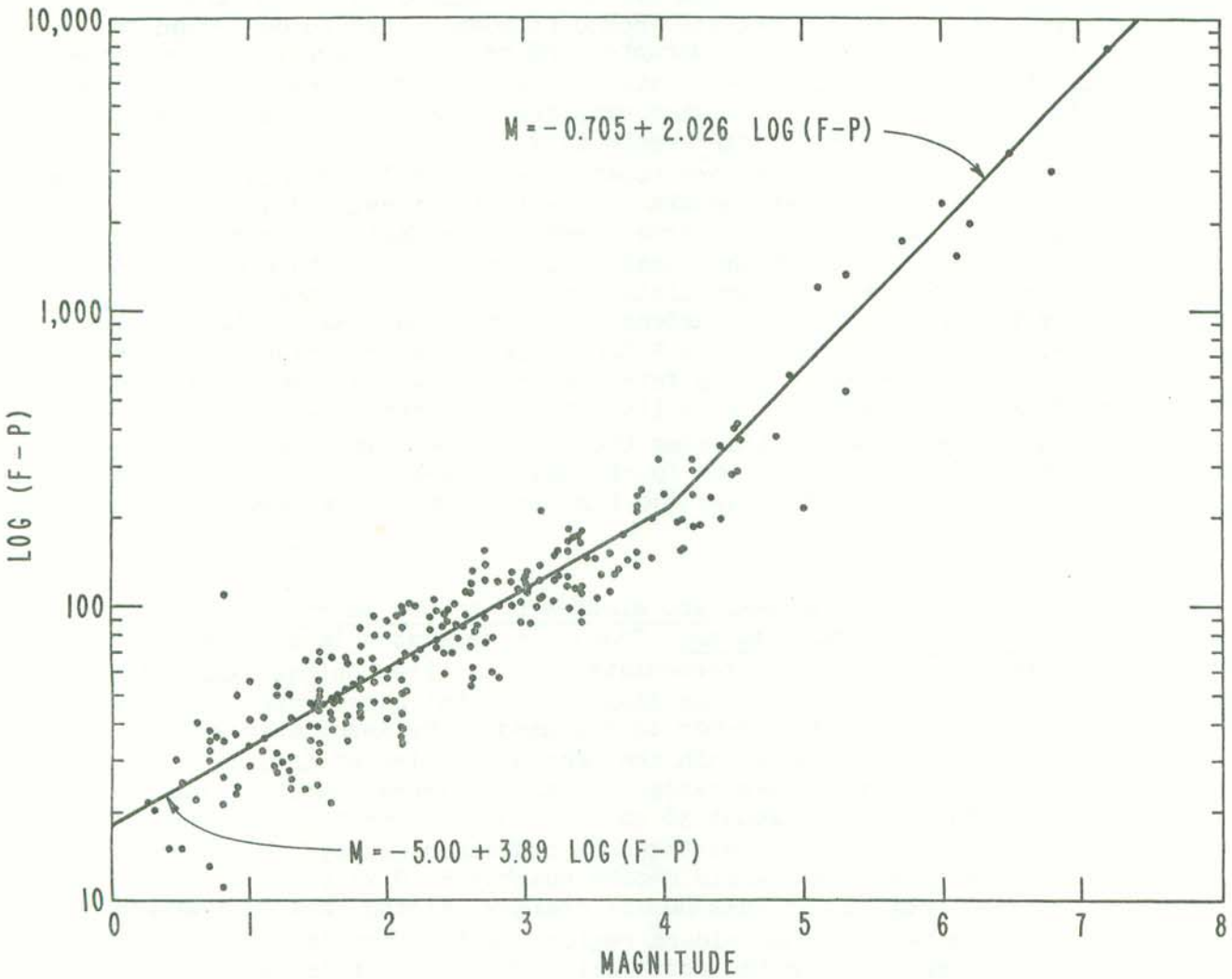

Figure 4. Relationship between signal duration (F-P time) and local magnitude for a large number of earthquakes which occurred during 1975 and 1976. Local magnitude is determined from amplitudes read on Wood-Anderson and other calibrated seismographs. The dual linear relationship between magnitude and log(F-P) appears to hold over a magnitude range of 7 units.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south flank of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0 to 2.5. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complte as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters of all depths are given in Figures 5, 6, 7 and 8. The epicenter maps are on two scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and in some cases on its depth. Figure 9 is a map of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figure 9. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.5 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Earthquakes reported felt during the first three quarters of 1975 are listed in Table 7. A list for the fourth quarter would be long and dominated by the M = 7.2 Kalapana earthquake and its many aftershocks, and is omitted here.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea. Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano. Earthquake categories are: Kilauea Summit 30 km, earthquakes from about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves from intermediate depths roughly 5-10 km beneath the summit region: Kilauea Summit Shallow, earthquakes from within a few km beneath the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone of Kilauea; Koae, earthquake from along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; South Flank, faults on the south flank of Kilauea; Mauna Loa L-P, earthquakes characterized by low-frequency waves from Mauna Loa volcano; Mauna Loa S-P earthquakes from within a few kilometers beneath the summit of Mauna Loa; Offshore PPL, earthquakes from mostly offshore areas south of Puu Pili station.

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Jan. 1			24h	1	468	532	6143	61				58		
2		35m	45m	1	1195	405	6851	53		1	1	72		
3			20m	1	460	27	2162	58	3		1	94	9	
4		30m		3	166	625	2822	84	14	1	3	108	12	
5				3	111	1047	1734	81	38	1		143	14	
6				2	302	591	1555	92	132	1	4	156	15	
7			5m	7	323	1151	4680*	84				108		*plus West Koae
8		6m		6	140	1439	1960	113	30	3	2	78		
9				7	269	637	1414	93	102	2	26	215		
10				4	624	282	697	107	135	2		115		15 km-1
11				3	384	278	606	97	90	2		79		Kona-2, 15 km-4
12		many short bursts		6	226	349	234*	145	83	3	1	82	1	*plus West Koae, Kona-1
13					54	82	374	133	41			84	1	Electrical storm
14	15m		5m	5	144	223	297	74	73		4	55	4	Electrical storm
15			2m	7	180	267	977	183	29	4	11	154	1	Kona-3
16		10m		2	51	258	331	148	40			38		
17					159	143	316	46	29	1		28		
18	10m		10m	1	66	111	286	48	42			14		Kona-1
19		13m			38	320	358*	150	43	2		30		*plus West Koae
20			20m	4	24	220	390*	195	77			30	4	*plus West Koae
21				7	41	353	229*	236	61	4		38		*plus West Koae
22				3	35	338	287*	161	63		1	55		*plus West Koae
23	33m			2	46	478	303*	162	55		1	43		*plus West Koae
24				5	36	236	224*	89	32	3	1	42		*plus West Koae
25				1	34	417	308*	125	37		4	49		*plus West Koae
26				5	32	368	261*	100	45	4		44	2	*plus West Koae
27	5m			2	29	422	241*	94	32		1	31	1	
28				2	21	409	267*	117	42	2	10	51	1	Kona-1
29	5m			2	16	423	132	134	29		4	44		
30				2	24	342	178	138	26	1	40	145		
31				3	43	149	250	43	66			43		

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa				
	Deep	Inter-mediate	Shallow	30 KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Feb. 1				4	43	210	355	56	93	3	2	17		
2		4m		3	59	491	87	104	23		9	76		
3	1h	13m			318	546	110	117			69	52		
4		3m			101	352	82	118	18		65	43	1	
5				4	37	598	92	125	20	1	41	41		
6				3	35	425	86	179	19	1	21	36		
7				9	38	139	144	30	38	3	7	24		Mauna Kea-1
8				3	115	132	173	31	36		7	34		
9				2	6	525	103	221	23		8	45		
10	25m			2	44	298	83	167	15		6	82		
11		10m			56	223	111	116	9		7	72		
12				2	515	361	88	146	3		6	110		
13		15m		2	191	452	128*	114	28		5	172		*plus West Koae
14		several bursts		1	907	440	293	124	61	8	3	122	4	Kona-4
15		5m			197	499	110	44	17	5	10	67		
16					1238	317	132	305	62	10	6	95	8	Kona-3
17					45	427	108	72	19		3	53		Kona-1
18		20m			344	970	64	102	13		3	74		
19	20m	several bursts			160	603	72	131	21	1	6	93		
20		8m		1	169	576	95	155	11		11	162		
21	8m	13m		4	116	415	90	110	8		14	330		
22				5	49	559	103	112	15		4	124		
23		10m		3	65	408	52	110	6			73		
24		5m		5	45	526	64	125	21		1	73		Kona-1
25				1	35	345	71	122	11		2	53		
26				2	399	238	806	125	101	4	14	369	16	Kona-2
27		3m		6	88	485	75	85	20			45		
28				3	117	199	126	37	37	1	1	68	1	Kona-2

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Mar. 1		8m		6	173	167	101	37	33	1		103		
2	7m	3m		1	53	307	60	71	12	2	2	210		
3					262	170	250	66	83	3	150	412	36	Kona-1
4	10m			6	21	222	50	73	5			134		
5		6m		1	30	283	27	109	14		3	118		
6				1	35	258	50	83	7		6	223	1	Kona-1
7	5m			2	9	135	4	21	14	1	6	306		15 km-1
8	5m				14	114	45	19	19	2	9	421		Kona-2
9				1	51	293	36	68	5		2	437		
10				1	49	253	42	71	4			322	1	
11			10m	3	68	231	53	75	5		3	246	3	
12		18m		3	116	223	61	95	6	1	3	87		Kona-2
13		7m		2	82	224	46	82	7		7	72		
14				1	90	88	76	27	3	2		149		Kona-1
15					91	87	142	22	6			140		
16				1	152	87	75	18	1	1	10	268		
17		1½h		2	168	96	87	24	3		3	375	1	Kona-2
18					94	69	69	29	6	1	6	495	1	Mauna Kea-1, Kona-2
19				2	29	56	99	21	1	1	6	269		
20				3	221	58	56	22	2		3	276	1	
21		26m		4	184	225	26	48	6	1	2	274		Kona-2
22			11m	1	321	63	104	30	2		11	413		
23		15m			572	54	100	21	5		12	389	1	
24			1½h	1	744	74	91	23	6		9	301		
25			29m		596	78	81	16	6		13	295		
26		3h	3½h	1	1196	47	59	17	1		26	418		Power outage 1330-1700, Kona-1
27			3m		423	84	58	11		1	12	240		
28					296	92	48	13	1			111		
29					304	94	107	6	3			61		
30					330	82	60	17	3			57		
31				1	318	106	88	31	4	1	8	211		

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Apr. 1				2	231	115	67	19	3		2	334		Kona-2
2					219	109	109	21	4		2	249		
3				1	242	102	91	23			4	163		Kona-1
4	2m				15	198	43	34	29	1	4	66		
5					30	169	273	31	26		3	133	3	
6				2	187	81	113	31	4		1	588		
7					262	80	79	15	2	1	3	623		
8	4m			1	211	109	72	26			2	750		
9				1	215	112	60	22	7	2	13	913		
10			8m		236	150	67	43	1		2	817		
11	17m			1	289	498	77	84	33		31	565	3	Kona-1
12		several bursts		2	312	406	45	77	33		15	399	2	Kona-1
13			3m		192	168	58	21	2		1	230		
14	3m	9m		2	329	163	72	18	1	3	2	248		Kona-2
15		9m		1	316	125	66	20			1	384		Kona-1
16		12m	1m		131	88	63	33	1		13	530		
17		18m			136	114	77	30			7	882		
18		13m		1	110	526	50	62	36	3	20	1347		Kona-2
19		several bursts			66	396	49	23	21		4	364		
20		5m			51	118	44	12	1		1	166	1	
21		9m			59	97	52	20	1		3	137	1	
22	1h	32m			74	95	36	24	1		12	254		
23		5m			71	113	40	28	1		1	385		
24				1	83	135	33	27	2	2	2	625		
25					43	248	19	18	11	2		411	2	Kona-1
26					40	245	14	23	16		1	345		Kona-1
27			22m		184	180	73	29		3	2	481		Kohala-1
28		11m		1	174	204	57	36	9		1	484		Kona-1
29			19m		145	146	55	25	6		5	353		
30			23m		118	134	51	41			1	378		

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa				
	Deep	Inter-mediate	Shallow	30 KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
May 1	14m			1	142	174	67	35	3		6	476		Kona-1
2				1	75	158	34	23	2		6	569		
3					62	227	37	34	1		11	357		
4				2	133	142	37	35	1		3	382		
5				1	68	177	50	50	2		4	407		
6				1	103	265	52	20	1		2	380		
7				1	158	340	45	42		1	9	582		Kona-1
8	3m[1/]				155	227	47	34	2	4	14	441		
9				9	45	318	43	39	22		21	472		Kona-1
10				9	91	335	49	59	17	1	19	637		Kona-8
11		4m[1/]			116	209	53	44	1	2	15	613	1	Kona-1
12				1	109	195	29	32	1		6	459		
13					86	194	41	37	4	1	8	534		
14	1m	15m 1m[1/]			143	212	24	27	1		8	421		
15		8m		1	152	184	58	33	1	1	5	455		Kona-1
16			20m[1/]	1	12	245	10	21	16	4		566		Kona-1
17					11	190	14	19	10	1		458		Kona-1
18		2m			112	170	51	30		1	3	614		Kona-2
19				1	155	166	34	38	1		8	260		Kona-1
20		2m 3m[1/]	2m		107	186	35	29	1		22	267		
21		3m	5m	1	233	406	45	43			18	245		Maui-1
22	2m	8m	10m	1	257	310	38	38			8	194		Kona-1
23	1m			1	155	262	43	50	1	6	6	154	2	
24	34m 2m[1/]				148	167	72	49		2	14	132		Kona-3
25	6m 4m[1/]				72	136	45	37			29	222	1	Kona-2
26	2m				113	159	45	52		1	17	329	2	Kohala-11, Kona-4
27				2	137	222	45	52	1	3	10	462	1	Kona-5
28	14m	2m[1/]		3	167	173	27	54		2	25	478		LPD-2, Kona-5
29	1m			3	177	150	37	69		4	15	562		LPD-7, Kona-3, Mauna Kea-1
30				4	166	440	87	68	45	2	46	504	5	Kona-8, Mauna Kea-1
31	19m	20m		4	157	347	58	49	27	2	25	513	3	Kona-4

[1/] MOK - tremor beneath Mauna Loa Volcano

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa				
	Deep	Inter-mediate	Shallow	30 KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Jun. 1				1	105	134	43	40			13	509	1	Kona-7
2				1	153	130	38	32	1	3	8	436		Kona-4
3				1	202	82	42	47		1	10	528	1	LPD-1, Offshore-1, Kona-1
4		6m		2	93	108	61	34	1		12	230		LPD-1, Kona-3, Kohala-2
5	37m				131	175	45	28		2	24	193	3	LPD-2, Kona-2
6					4	381	29	26	6	1	8	117		
7					3	383	20	28	4	1	7	176	1	Kona-6
8				7	134	204	47	61		3	20	181		LPD-5, Kona-2
9	25m		10m	4	27	337	23	79				212		
10				1	94	117	43	72	2	2	21	286		LPD-11, Kona-4
11	6m			4	85	167	83	54	1	3	16	195		LPD-3
12				2	96	149	54	67	1	1	2	227		LPD-5
13				2	142	214	42	61	3	1	2	410	1	Kona-3
14					105	183	52	35	2	1	4	461	1	Kona-1
15				1	52	133	66	54	1	2	1	331	5	LPD-2
16				2	151	184	43	46	1		9	227		Kona-2, Hilo-1
17		10m		2	97	365	19	80		1		325		
18		20m		1	97	343	32	110				246		Kona-2
19		7m	6m		233	187	40	63	1		10	504	2	Kona-1
20	5m	40m		2	267	374	55	51	12	9	15	506		Kona-12
21				3	81	262	56	50	17	1	24	597	1	Kona-2
22				3	97	127	41	45		1	2	403	1	Kona-2
23	30m			3	41	121	35	19	1			110		LPD-1
24	20m				48	97	24	18	1			283		LPD-11
25					33	188	23	39	1		21	514		
26	1h			1	38	211	33	28	1		3	428	1	Kona-1, LPD-3, Kohala-1
27					3	393	11	17	5		1	276	1	Kona-2
28					10	487	22	14	4	1	3	145		15-KM-1, Kona-1
29					180	210	22	42	3			120	1	
30	18m			3	46	173	38	47		2		117	7	LPD-1, Kona-3

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa				
	Deep	Inter-mediate	Shallow	30KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Jul. 1	2m	4m[1/]		2	24	213	49	50		1	4	153	9	Kona-1, Mauna Kea-1
2	3m			1	37	343	28	62		6	2	131	1	LPD-5, Kona-1
3				1	37	272	36	30	1	2		166	2	
4				10	27	183	59	31	3			142	2	Kona-2
5	30m			2	35	213	50	59	6	2	7			LPD-14, Kona-3
6				1	3	144	33	7	3		321		4	
7				1	23	150	3	11	1		143		1	Kona-1
8					22	299	18	19		1	48			
9				2	8	388	53	54	1	1	93		1	Kona-1
10	2m[1/]				27	298	39	41			56			
11				2	23	246	45	27	11	6	530		1	Kona-1
12				4	47	333	53	46	1	1	270			Kona-2
13	1m	2m			19	274	51	47	3		19			LPD-1, Kona-1
14					36	281	23	32	4		41			
15		1m		1	31	336	43	54	1		169			
16					15	383	60	56	3	1	155		1	Kona-2
17					7	84	8	13			22			Partial records
18					5	313	21	11		1	9			
19					10	293	33	16	7	3	8			
20				1	41	287	44	50		1	180			Kona-1
21	2m				21	418	32	41	3		219			LPD-4
22				1	24	446	33	33			208		3	LPD-3, Kona-1
23	10m[1/]				7	340	28	31	1		228			LPD-2, Kona-1
24	4m[1/]	15m[1/]			6	193	34	11	1	1	38			Kona-1
25	25m[1/]				9	157	32	21	2		26			
26				3	7	356	34	31	1		147		1	
27		4m		1	21	377	37	44			159			
28	10m[1/]	38m		1	9	403	42	35	1		77	211		
29	13m			4	18	254	35	29	3		70	180		Kona-1
30				1	5	115	36	31		1	21	175		Kona-1
31		8m	10m		42	119	37	42	4	1	78	205		Kona-2

Mauna Loa summit eruption on July 5 followed by a swarm of many hundreds of earthquakes on the northeast rift zone

[1/] MOK-tremor beneath Mauna Loa Volcano.

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa				
	Deep	Inter-mediate	Shallow	30KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Aug. 1	8m			3	33	343	114	22	13	3	46	401	2	
2		6m	90m[1/]	2	46	378	143	33	12	1	251	464	1	
3					36	261	53	36	5		85	279		LPD-3
4					12	221	98	25	1		79	176		Kohala-1
5	12m			1	14	193	257	35	2		72	163		Mauna Kea-1
6				1	20	249	87	31	5		64	111	1	
7					27	431	56	33	2		53	141		Kona-1
8				1	34	362	39	24	1		53	128		
9		10m				603	30	9	8		3	121		
10				1	21	443	68	40	2	1	42	146		LPD-14
11	1m[1/] 9m			1	11	372	68	63	4		103	107		Kona-1, Mauna Kea-1
12	3m			2	16	346	63	34	2		58	96	1	
13		15m			35	274	53	32	1		30	130		Kona-1, Mauna Kea 1
14				1	45	357	68	39	3	3	70	91		LPD-3
15					13	217	66	47			43	83		
16					24	365	58	42	4		27	128		
17			64m	2	58	399	31	42	4	2	20	120		Kona-1
18		4m			38	277	54	49	3	2	17	106		
19					26	528	59	57	9	1	35	101		LPD-2
20		7m		1	22	499	63	44			20	59	1	LPD-1, Kona-1
21					5	256	36	35	2		28	44	1	LPD-2, Kona-1, Mauna Kea-1
22				1	13	317	40	32			15	53		LPD-2
23		15m		1	8	283	35	27	2		21	86	1	LPD-1, Mauna Kea-2
24					25	431	26	36	1		3	87	2	Mauna Kea-1
25				1	21	287	54	23	3		20	67	27	LPD-1, Kona-2
26					16	421	55	49	1	2	28	134	84	
27	5m				20	364	50	56	1		13	136	5	Mauna Kea-2
28		6m			9	578	56	33	5		8	112	12	
29		19m 3m[1/]		1	50	563	41	57	1	3	9	97	27	Kona-1
30	47m		30m	1	40	519	18	35			20	46	144	
31	10m		6m	1	57	678	16	45		2	23	43	60	

[1/] MOK-tremor beneath Mauna Loa Volcano

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	30KM	L-P	Shallow	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P		
Sep. 1	3m 3m[1/]		11m		54	686	78	47	1	3	8	152	61	Kona-2
2	29m				94	543	47	24	5	2	17	107	80	
3	17m	15m		1	67	583	48	48	4		14	102	110	Kona-1
4	32m				61	456	36	36	2	1	7	126	23	Kona-1
5					89	367	49	64	9		9	81	19	
6	4m			1	23	259	41	57	1	2	58	85	118	LPD-1, Kona-2
7	15m		10m		52	356	39	46	1	1	54	65	66	
8		3m		2	40	378	58	58	1	5	57	63	31	Kona-1
9				2	113	478	43	42	3		36	87	36	
10	1m[1/]				87	900	46	61	2		77	62	9	Kona-1, LPD-1
11	70m	5m	20m	3	42	932	26	53		1	19	51	101	
12	20m	5m	85m	1	47	700	37	34	8	2	12	62	10	Kona-2
13	30m		10m		43	598	31	29	1		20	58	114	Kona-1
14			20m	2	30	492	28	33	1	1	17	101	41	Kona-1, Kohala-1
15					26	511	49	38	2	3	23	45	17	Kona-1
16				2	30	558	59	31			21	83	19	
17					21	530	54	41	3		42	77	6	LPD-1, Kona-1
18	16m			1	36	309	68	46	6	1	47	62	32	LPD-1, Kona-2
19				2	40	331	16	12	3			60	8	
20	15m				39	1223	16	9	6	1	7	71		
21				1	35	928	76	44	4		92	51	10	
22	74m				10	673	48	47	3	1	44	58	9	
23	11m	8m			38	549	53	33	4		78	58	12	LPD-1
24		3m		1	23	615	70	41		3	62	47	17	Kona-6
25	30m			1	10	305	38	38	5		74	25	37	LPD-2, Kona-4
26					23	466	59	54	3	2	33	56	41	LPD-1, Kona-4
27		3m			26	647	103	41	3	3	78	19	27	LPD-1, Kona-1
28				1	19	577	73	42	5	2	46	18	34	LPD-5
29	5m	10m			40	501	44	33		3	17	82	57	
30					21	289	58	44		2	20	89	30	

[1/] MOK-tremor beneath Mauna Loa Volcano

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa				
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Oct. 1		3m			95	369	48	83	1	1	103	11	34	
2					86	398	44	57		1	66	32		
3	5m	35m		1	73	395	29	49	9	4	14	80	19	LPD-13
4	20m	45m			54	346	20	34		4	20	79	16	LPD-4, Kona-1
5		5m		1	40	333	41	48	1		62	30	28	Kona-1
6					33	415	58	61	1	1	60	23	33	
7	36m				30	356	55	36			71	29	24	
8					30	469	66	50	2	2	105	15	25	Offshore-2
9	19m				31	490	42	47		2	104	22	30	LPD-2, Kona-1
10				1	19	503	43	35	3	1	64	24	20	
11	3m				23	455	44	49			68	40	31	
12				1	27	413	63	51	1	4	46	52	23	LPD-1
13				1	18	504	47	31	1	3	61	17	21	LPD-1, Kona-3
14	7m	3m			38	537	47	36		1	38	24	27	LPD-2, Kona-1
15	10m	30m		1	31	420	36	34	3	2	8	111	13	LPD-2
16	10m	4m			12	369	23	37			13	75	2	LPD-30, Kona-1
	20m[1]	5m[1]												
17					4	428	19	10	3	2	33	5		Kona-1
18						414	16	16	8	3	5	19	4	
19	5m			1	9	378	45	40			4	66	16	Kona-2
20	5m[1]	12m		1	39	430	33	27		1	10	45	9	Mauna Kea-1
21	5m[1]	16m		2	24	600	41	48	4		5	67	10	LPD-7
		5m[1]												
22					8	643	37	56	3	1	21	23	17	LPD-1, Kona-2, Mauna Kea -1
23		3m			32	599	46	36	3	3	37	22	13	Offshore-1, LPD-3, Kona-1
24		3m		1	17	456	21	50		2	5	51		
25					21	540	31	44			6	51	6	Kona-1
26		25m		3	45	521	28	41			5	31	2	15 KM-1
27					3	609	36	50	7		28	20	9	
28					8	699	46	36	2	3	23	42	12	Kona-1
29		2m		1	4	671	39	52	8	2	34	30	10	
30		11m	6m[1]		6	838	38	63	2	1	39	38	14	LPD-1, Kona 1
31	70m	10m			1	633	15	9	4		1	24		

[1] MOK-tremor beneath Mauna Loa Volcano

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Nov. 1					10	1068	7	16	3	3	1	30	2	15 KM-1
2					16	800	38	15	1	1	31	21	11	Kona-1, LPD-1
3			2m	1	12	787	43	56	4	3	36	42	9	LPD-2, 15 KM-1
4					8	553	45	73		1	41	47	8	Kona-2, Mauna Kea-1
5	2m	2m	52m[1/]	48	20	784	74	47	2	4	152	47	7	Kona-3
6		5m		4	26	894	55	67	1		45	36	9	
7	1hr	5m		6	20	743	34	74	1	3	19	14	2	LPD-6, Kona-1
8				3	39	672	28	66	4	2	2	31	2	LPD-6, Kona-2, Mauna Kea-2
9		2m		3	12	872	39	79	1	1	5	19	1	LPD-2, Kona-2
10					9	823	50	84		2	9	5	1	LPD-4, Kona-2
11					6	1055	49	74	1	1	30	26	54	Kona-1
12	3m			2	15	962	42	104	1	2	28	28	1	LPD-20, Kona-1
13		2m		3	36	928	38	74	1	6	38	33	1	LPD-16
14		139m			72	601	18	59	1		3	32		
15		30m		1	39	484	15	183	2	1	2	17		
16	7m				24	618	43	99		3	45	36	2	LPD-11
17	4m			1	45	552	36	110		4	55	24		LPD-1, Kona-2
18		5m		1	19	585	38	102		1	39	22		LPD-1
19	30m				26	526	42	102	1	3	25	19		LPD-8, Kona-1
20				2	21	453	42	78		3	19	26		LPD-8
21					7	379	59	19	7	9	4	23		
22				1	1	498	8	28	4	1	1	18		
23	4m	2m		1	4	429	33	57	2	3	6	5		LPD-5, Kona-1
24					4	415	29	66	1		3	11	1	LPD-2
25				2	10	397	41	80		1	5	6		LPD-3
26	17m			1	21	415	46	72	2	2	12	11	40	LPD-15, Kona-3
27				1	24	643	32	83		1	25	18		LPD-3, Kona-3, Mauna Kea-1
28	6m			1	32	225	30	233	1	3	13	30		LPD-5, Kilauea eruption @0552
29				3	9	66	1458	1161	114	489				Counts incomplete-- totals are estimated
30														Quakes not counted

[1/] MOK-tremor beneath Mauna Loa Volcano

Date (1975)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Dec. 1				3	14	20	1428	1687	265	311	2			1 hr power failure
2							921	1047	18	654	9	6		(✓)
3				3	8	15	1141	980	281	439		1		Kona-1, electrical storm
4				6		28	972	1176	138	448				(✓)
5				3		33	1053	1138	154	463				(✓)
6														Quakes not counted
7				1	15	26	1102	1362	181	472	1	1		(✓)
8					9	57	979	1243	141	520			3	(✓)
9					4	48	957	1229	165	476	1	5		(✓)
10				1	7	39	1181	1223	270	369	1	2		LPD-1
11			18m 1/		36	42	870	1137	218	264	3	4	1	(✓)
12														Quakes not counted
13					9	111	745	1128	148	342	2	3		LPD-2, (✓)
14				1	29	87	673	1060	125	258				LPD-6, (✓)
15					14	113	604	1040	97	265	5	1		Kona-1
16					5	108	1362	958	148	304	10	1	1	LPD-1
17					6	83	687	939	160	263	4	4	2	LPD-5, Kona-1
18				1	12	86	648	1023	187	251	6	1		LPD-2
19						87	271	336	97	138	2	29		(✓)
20						79	236	463	116	173	1	11		(✓)
21		22m			132	65	528	905	148	158	8	1		
22		2m		1	63	82	514	924	128	165	5	7		LPD-2
23		17m		3	140	103	435	847	156	212	7		9	LPD-1
24				1	48	110	282	818	110	178	4	18		(✓)
25					105	69	228	507	142	348		5		(✓)
26														Quakes not counted
27				1	16	54	532	772	109	221		2	1	(✓)
28	3m		8m 1/	3	8	59	537	716	108	231	2	1		Kona-2
29					4	65	468	832	92	252	10	7	1	LPD-5, Kona-1
30				2	18	91	485	888	103	250	17	4		LPD-1
31		8m	4m 1/	3	61	100	580	926	166	295	23	7	1	Offshore-6

(✓) counts incomplete; totals are estimated

1/ MOK-tremor beneath Mauna Loa Volcano

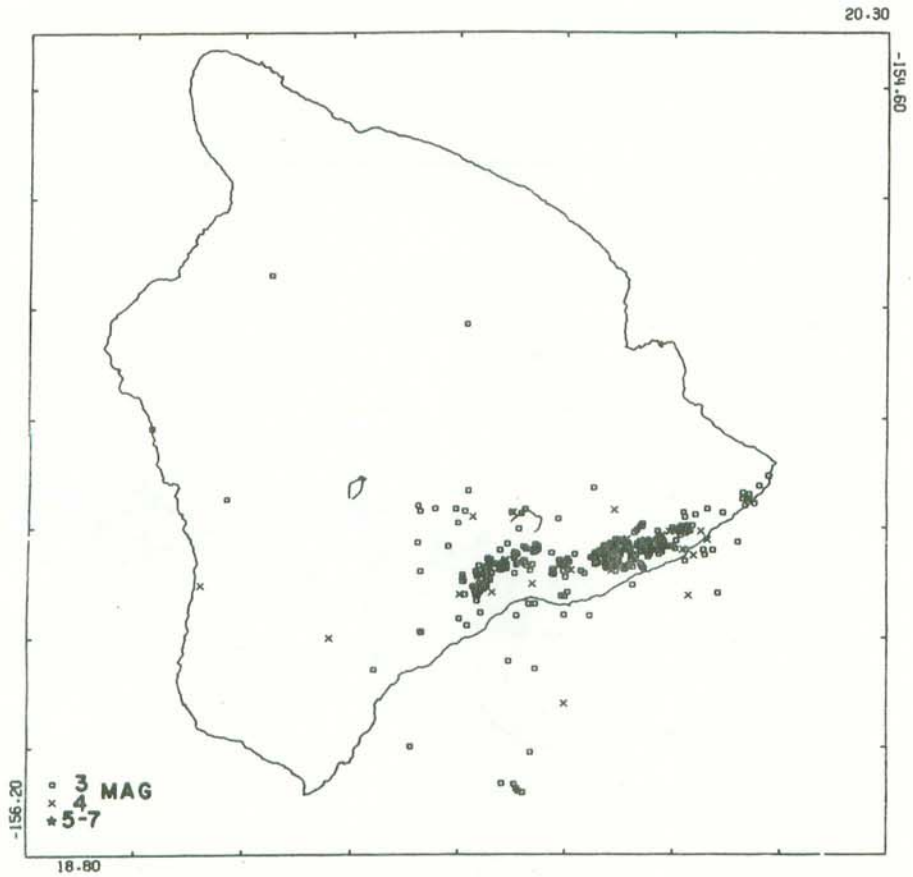

Figure 5 Epicenter plot of magnitude 3 and above earthquakes for the year 1975.

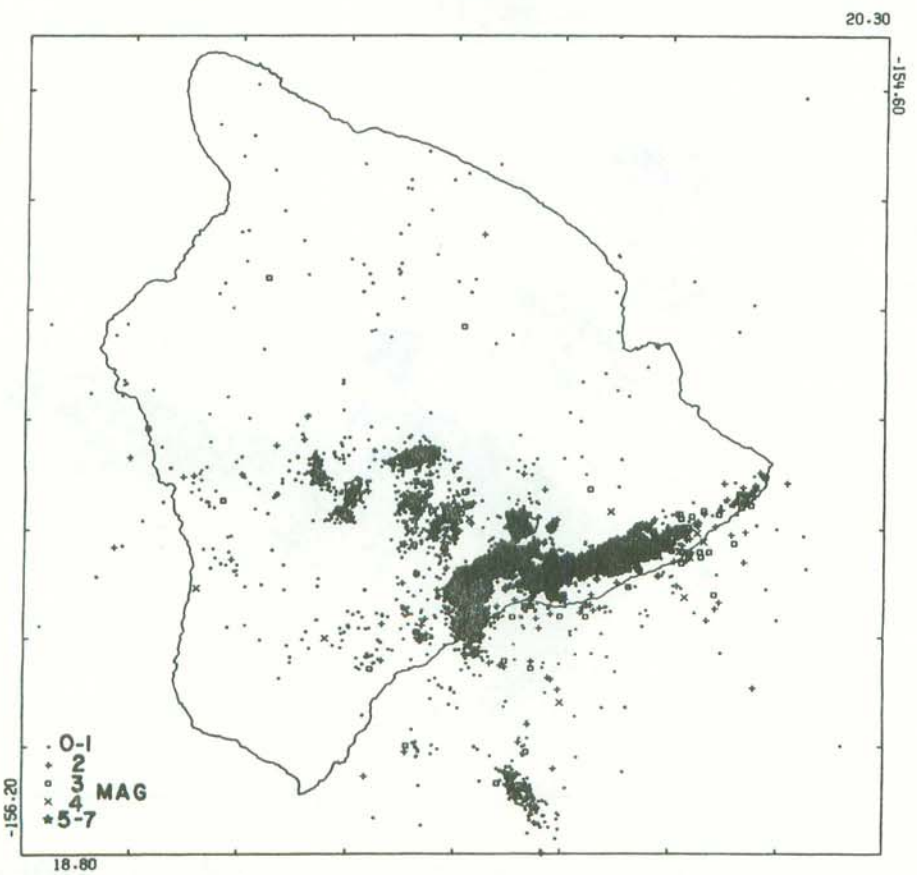

Figure 6. Epicenter plot of all events located for the year 1975.

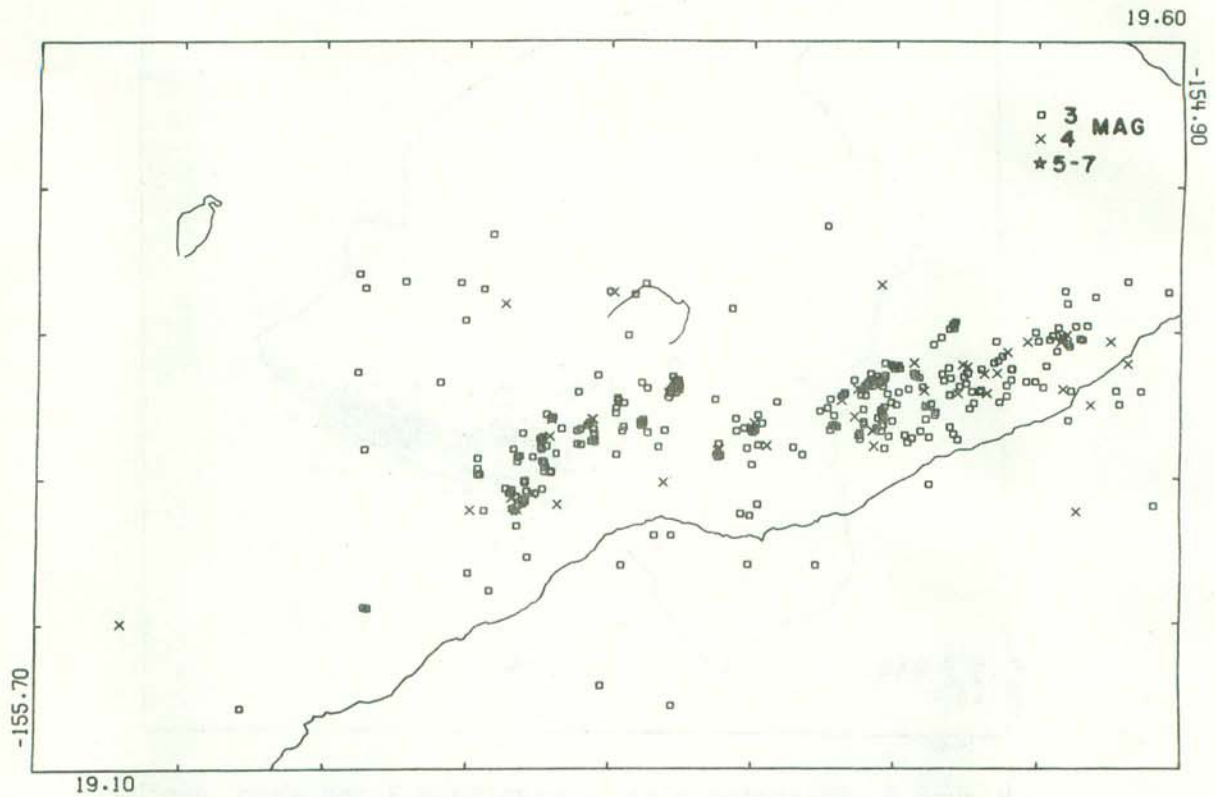

Figure 7. Epicenter plot of Mauna Loa and Kilauea earthquakes magnitude 3 and above for the year 1975.

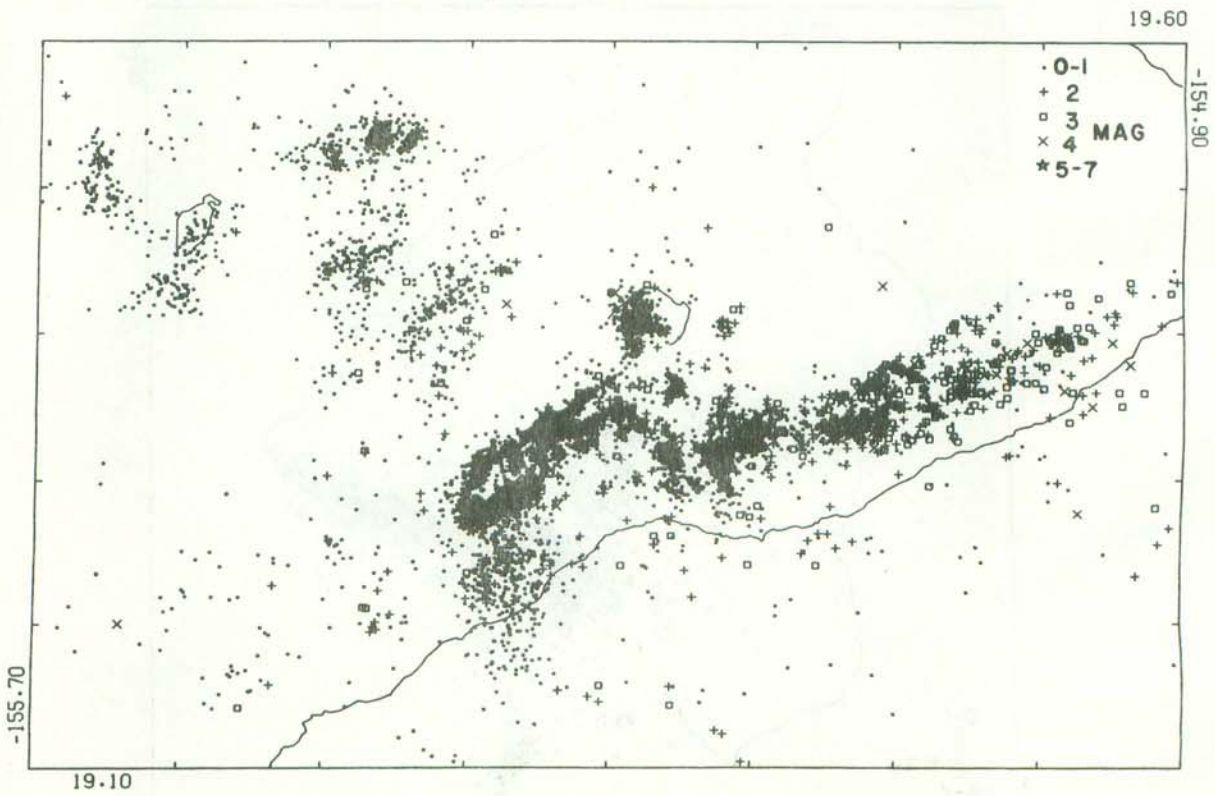

Figure 8. Epicenter plot of all Mauna Loa and Kilauea earthquakes located for the year 1975.

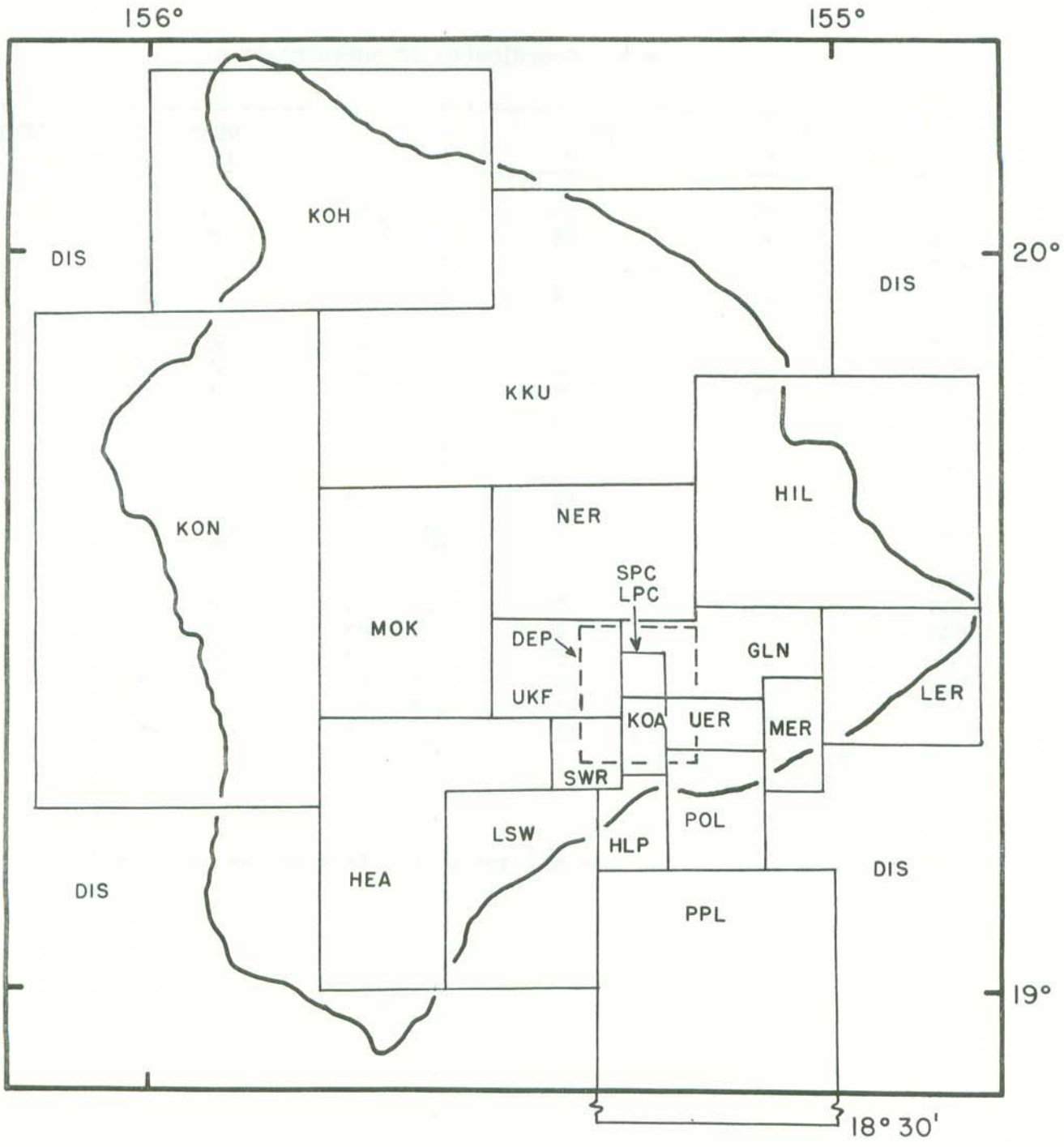

Figure 9. Map indicating limits of areas for specific mnemonic codes used in the remarks column of the earthquake summary. DEP is a code applied to earthquakes with depths greater than 13 kilometres in the Kilauea region. SPC is used for depths between 0 and 6 km, and LPC is used between 6 and 13 km.

Table 4. Coordinates of named regions.

Name	(----------Limits----------								)
	NORTH		SOUTH		EAST		WEST		DEPTHS
	D	M	D	M	D	M	D	M	0
SPC	19	27	19	23	155	15	155	19	0 - 6
LPC	19	27	19	23	155	15	155	19	6 - 13
DEP	19	29	19	18	155	22	155	22	13 - 70
UER	19	23	19	19	155	6	155	15	
KOA	19	23	19	17	155	15	155	19	
SWR	19	22	19	16	155	19	155	25	
UKF	19	29	19	22	155	19	155	30	
MER	19	25	19	16	155	1	155	6	
LER	19	31	19	20	154	47	155	1	
POL	19	19	19	10	155	6	155	15	
LSW	19	16	19	0	155	21	155	34	
PPL	19	10	18	30	155	0	155	21	
HLP	19	17	19	10	155	15	155	21	
MOK	19	40	19	22	155	30	155	45	
GLN	19	31	19	23	155	1	155	19	
KON	19	55	19	15	155	45	156	10	
HEA	19	22	19	0	155	25	155	45	
KOH	20	15	19	55	155	30	156	0	
NER	19	40	19	29	155	12	155	30	
HIL	19	50	19	31	154	47	155	12	
KKU	20	5	19	40	155	0	155	45	
DIS	EVERYPLACE ELSE								
BLS	QUARRY BLAST								

When coordinates imply an overlap, precedence is given as shown in Figure 9.

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = \left(\Sigma R_i^2 / NR \right)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standrad error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 9 for location of mnemonic code.

Table 5 lists all events located during 1975. Table 6 lists only events of magnitude 3.5 or larger.

TABLE 5. HVO EARTHQUAKE SUMMARY LIST PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	1	0 0	1.47	19	15.85	155	22.54	5.57	2.9		14	0	154	.14	8	1.6	2.9	LSW
		1	0 5	34.84	19	17.97	155	24.67	5.79	2.4		11	0	274	.11	14	5.2	2.4	SWR
		1	010	19.26	19	18.68	155	23.47	3.81	2.2		18	0	106	.17	9	1.3	2.5	SWR
		1	010	57.17	19	17.86	155	24.20	.09	2.1		13	0	122	.19	10	1.5	7.5	SWR
		1	014	4.87	19	17.62	155	24.22	1.55	1.8		14	0	117	.11	10	.8	58.1	SWR
		1	019	5.99	19	18.38	155	23.43	1.15	2.4		17	0	124	.20	11	1.6	52.8	SWR
		1	020	43.83	19	17.87	155	23.78	6.08	2.5		21	0	113	.12	9	.8	1.7	SWR
		1	023	44.14	19	16.19	155	22.80	3.48	1.8		12	0	135	.16	15	2.0	4.9	SWR
		1	024	30.67	19	16.56	155	22.97	5.28	1.8		17	0	133	.23	8	1.8	2.1	SWR
		1	026	33.15	19	17.42	155	24.22	3.64	2.3		16	0	119	.09	10	.7	3.2	SWR
		1	029	5.59	19	14.28	155	26.11	5.16	3.5		22	0	119	.18	15	1.4	1.6	LSW
		1	031	23.75	19	20.16	155	20.73	3.16	2.4		9	0	133	.44	9	6.3	51.1	SWR
		1	033	35.81	19	16.76	155	23.28	2.70	2.6		15	0	136	.15	8	1.5	4.0	SWR
		1	035	55.78	19	14.91	155	22.06	7.82	2.2		22	0	151	.11	10	.8	1.3	LSW
		1	037	3.93	19	16.22	155	25.17	2.39	1.9		12	0	121	.17	12	1.2	4.3	HEA
		1	040	17.32	19	19.14	155	22.29	5.15	2.2		14	0	100	.11	9	.8	1.0	SWR
		1	043	23.42	19	18.19	155	24.13	2.77	2.3		20	0	109	.12	10	.7	2.3	SWR
		1	044	4.81	19	15.72	155	23.92	4.97	2.2		15	0	127	.21	13	1.2	1.7	LSW
		1	046	18.03	19	18.10	155	24.47	1.17	2.6		13	0	170	.17	13	2.3	65.5	SWR
		1	048	20.29	19	17.58	155	24.16	2.36	2.1		21	0	118	.14	10	1.0	2.5	SWR
		1	049	46.69	19	9.41	155	15.23	4.25	2.1		8	0	229	.13	20	3.4	4.2	PPL
		1	055	6.71	19	14.35	155	21.65	5.38	2.4		15	0	156	.14	11	1.3	1.5	LSW
		1	057	34.68	19	20.36	155	20.29	4.53	1.9		15	0	120	.08	5	.6	2.3	SWR
		1	1 2	7.25	19	10.55	155	20.87	7.66	4.1		23	0	176	.18	15	1.6	2.8	HLP
		1	1 6	47.00	19	18.32	155	23.26	5.00	2.2		20	0	112	.15	8	.9	1.3	SWR
		1	1 7	30.10	19	12.19	155	21.22	9.87	2.9		25	0	165	.18	15	1.3	1.0	LSW
		1	110	55.65	19	16.53	155	21.64	6.88	2.3		22	0	133	.13	9	1.0	1.7	SWR
		1	123	40.98	19	16.33	155	22.70	6.08	2.7		16	0	130	.15	8	1.3	2.3	SWR
		1	126	16.73	19	17.85	155	23.76	4.57	2.1		20	0	116	.14	9	.9	1.5	SWR
		1	129	17.04	19	16.11	155	23.03	4.53	3.2		23	0	130	.13	8	.9	1.4	SWR
		1	137	33.72	19	13.39	155	23.56	10.72	2.5		23	0	151	.13	12	1.3	.6	LSW
		1	147	24.44	19	13.22	155	23.22	9.60	2.5		22	0	157	.15	12	1.3	.9	LSW
		1	153	52.76	19	18.56	155	24.24	2.44	2.3		20	0	104	.14	10	.8	4.4	SWR
		1	158	49.81	19	17.74	155	24.00	6.00	3.0		24	0	117	.10	9	.7	1.0	SWR
		1	2 2	18.11	19	16.56	155	23.29	6.92	3.1		20	0	125	.20	12	1.5	2.6	SWR
		1	210	52.52	19	18.21	155	23.91	4.35	2.7		21	0	110	.16	9	1.0	1.7	SWR
		1	216	40.64	19	18.10	155	24.17	2.32	2.5		18	0	143	.14	10	1.1	4.0	SWR
		1	231	12.00	19	14.90	155	22.52	6.71	2.5		21	0	161	.09	10	.9	1.5	LSW
		1	233	8.10	19	15.44	155	22.77	6.74	2.2		23	0	143	.13	9	1.0	1.8	LSW
		1	237	21.25	19	17.64	155	24.18	5.29	2.5		19	0	117	.10	10	.6	.7	SWR
		1	240	25.46	19	15.40	155	23.44	6.53	2.7		13	0	131	.20	9	1.7	3.7	LSW
		1	241	10.86	19	12.83	155	21.30	5.95	4.6		19	0	164	.15	13	1.5	3.1	LSW
		1	256	52.19	19	17.84	155	24.15	3.97	2.6		19	0	111	.13	10	.9	1.6	SWR
		1	258	58.86	19	15.13	155	23.19	2.15	2.6		20	0	158	.11	12	.9	3.8	LSW
		1	3 5	45.82	19	13.26	155	22.40	9.30	3.5		20	0	164	.16	12	1.7	2.1	LSW
		1	311	2.75	19	15.45	155	23.16	6.19	2.5		22	0	134	.24	9	1.7	3.4	LSW
		1	313	11.39	19	17.17	155	21.78	6.65	2.4		17	0	150	.20	9	1.6	2.6	SWR
		1	335	38.03	19	16.17	155	22.31	4.35	2.9		14	0	133	.17	8	1.5	2.7	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	1	344	16.53	19	14.81	155	24.93	8.24	3.3		15	0	127	.20	16	1.7	3.1	LSW
		1	357	55.21	19	18.10	155	24.12	5.06	1.9		19	0	111	.14	10	1.0	1.2	SWR
		1	4 1	44.49	19	14.26	155	22.04	7.43	2.9		19	0	155	.13	13	1.3	2.7	LSW
		1	416	27.33	19	18.23	155	24.00	2.20	2.4		22	0	110	.15	9	.9	4.5	SWR
		1	431	35.56	19	18.55	155	24.09	4.91	2.4		19	0	105	.17	16	1.0	2.0	SWR
		1	435	29.64	19	15.75	155	23.38	4.22	3.4		20	0	139	.13	15	1.0	1.7	LSW
		1	439	29.95	19	19.06	155	23.59	3.13	2.3		23	0	100	.15	9	.8	2.1	SWR
		1	442	21.23	19	18.33	155	24.16	2.82	2.0		20	0	108	.14	10	.8	2.6	SWR
		1	448	21.50	19	17.50	155	24.91	1.74	3.1		18	0	109	.16	11	1.2	62.7	SWR
		1	5 3	41.35	19	18.91	155	23.74	2.68	1.7		15	0	127	.12	9	.9	2.8	SWR
		1	511	25.29	19	18.37	155	23.50	2.80	2.1		19	0	142	.15	9	1.0	3.0	SWR
		1	515	15.03	19	17.87	155	24.70	.00	2.2		10	0	144	.12	14	1.3	3.1	SWR
		1	518	13.01	19	14.46	155	23.30	6.61	3.4		20	0	147	.12	11	1.1	2.3	LSW
		1	521	24.21	19	9.94	155	20.24	4.00	2.2		19	0	213	.13	16	2.0	1.4	PPL
		1	534	59.77	19	14.15	155	22.56	5.01	2.5		19	0	154	.10	11	.7	.9	LSW
		1	540	37.43	19	18.75	155	22.93	2.67	1.5		16	0	118	.08	8	.5	1.7	SWR
		1	543	39.85	19	13.96	155	22.04	7.69	2.0		18	0	157	.10	12	.8	2.4	LSW
		1	544	36.10	19	15.16	155	22.60	6.51	2.0		22	0	140	.18	9	1.4	2.7	LSW
		1	548	7.47	19	11.98	155	21.92	8.06	2.5		15	0	176	.14	12	1.8	3.3	LSW
		1	550	15.88	19	16.23	155	21.01	6.07	1.8		15	0	160	.08	10	.9	1.4	SWR
		1	552	16.24	19	13.49	155	21.21	7.59	3.1		23	0	171	.10	13	1.0	1.8	LSW
		1	553	29.79	19	13.63	155	21.08	7.01	3.3		19	0	171	.10	14	1.0	1.7	LSW
		1	6 3	10.66	19	17.80	155	24.68	.57	3.2		12	0	116	.15	16	1.9	6.7	SWR
		1	6 8	22.23	19	12.37	155	22.09	3.56	2.6		22	0	162	.18	12	1.3	2.2	LSW
		1	612	52.84	19	13.18	155	21.05	6.36	2.0		17	0	172	.14	14	1.5	1.9	LSW
		1	622	27.04	19	16.75	155	24.42	6.15	2.5		24	0	123	.19	10	1.2	2.7	SWR
		1	625	12.44	19	18.49	155	23.73	3.00	2.0		22	0	107	.11	9	.7	1.6	SWR
		1	627	21.14	19	16.76	155	24.57	6.30	2.4		21	0	122	.19	11	1.3	2.5	SWR
		1	631	1.71	19	14.20	155	21.00	1.99	2.0		17	0	158	.10	12	.9	29.5	LSW
		1	632	5.77	19	18.51	155	23.71	1.95	1.9		17	0	137	.12	9	.9	59.6	SWR
		1	633	24.66	19	20.07	155	21.20	4.75	2.4		17	0	89	.09	7	.7	.9	SWR
		1	634	38.55	19	18.52	155	21.78	2.38	1.9		12	0	219	.20	8	4.6	69.5	SWR
		1	636	12.62	19	18.55	155	23.24	4.03	2.3		21	0	108	.11	8	.7	1.4	SWR
		1	637	37.55	19	15.65	155	25.20	4.84	2.6		14	0	136	.16	12	1.2	1.5	LSW
		1	643	58.68	19	17.26	155	24.82	1.46	2.0		16	0	118	.14	11	1.0	32.3	SWR
		1	646	42.83	19	15.03	155	22.53	5.43			12	0	194	.14	13	2.7	1.7	LSW
		1	647	45.49	19	14.91	155	22.48	6.88	3.0		24	0	148	.13	10	.9	1.9	LSW
		1	652	24.49	19	23.23	155	17.08	1.49	.9		10	0	154	.10	3	.9	.4	SPC
		1	655	57.39	19	19.13	155	22.61	4.83	2.4		20	0	100	.11	9	.7	1.1	SWR
		1	7 0	3.60	19	17.82	155	24.93	.69	2.1		19	0	110	.18	11	1.1	6.2	SWR
		1	7 2	55.14	19	14.55	155	23.29	1.35	2.7		20	0	158	.13	10	.9	31.7	LSW
		1	7 4	4.53	19	16.47	155	21.85	7.74	2.7		20	0	140	.13	9	1.0	1.5	SWR
		1	7 5	55.57	19	15.92	155	22.03	1.83	2.5		22	0	137	.14	8	1.0	36.0	LSW
		1	712	41.22	19	14.60	155	23.28	.27	2.1		19	0	168	.13	10	.8	49.7	LSW
		1	715	51.11	19	18.23	155	24.16	1.47	1.7		21	0	109	.16	10	.8	30.6	SWR
		1	717	7.57	19	14.62	155	22.35	.00	2.3		19	0	152	.13	10	1.0	61.1	LSW
		1	718	20.37	19	19.87	155	23.26	4.72	2.2		23	0	89	.13	9	.7	1.0	SWR
		1	721	3.37	19	18.35	155	23.36	4.49	2.0		21	0	111	.14	8	.8	1.4	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	1	723	5.23	19	19.00	155	22.53	1.91	2.2		17	0	114	.13	9	.8	59.9	SWR
		1	724	17.34	19	14.97	155	22.65	3.64	2.7		23	0	142	.19	10	1.2	2.7	LSW
		1	730	5.19	19	22.17	155	18.13	1.17	1.5		7	0	154	.07	4	.5	.6	KOA
		1	731	21.34	19	20.10	155	20.30	3.17	2.4		22	0	71	.10	5	.6	1.4	SWR
		1	734	33.62	19	14.93	155	22.28	.17	1.9		16	0	150	.14	13	1.3	51.1	LSW
		1	735	10.98	19	18.97	155	23.77	4.56	2.5		16	0	126	.13	9	1.1	1.5	SWR
		1	742	40.29	19	24.56	155	16.78	.74	1.7		10	0	80	.10	2	.6	.3	SPC
		1	746	1.31	19	19.30	155	22.22	3.08	2.5		15	0	108	.10	9	.7	1.7	SWR
		1	754	23.34	19	19.32	155	20.75	8.00	2.3		18	0	98	.14	6	1.0	1.2	SWR
		1	754	44.52	19	16.30	155	23.04	7.51	3.3		24	0	128	.17	8	1.1	2.1	SWR
		1	758	51.00	19	12.19	155	23.18	4.89	3.1		25	0	162	.16	13	1.2	1.5	LSW
		1	8	4 22.10	19	13.12	155	19.40	3.96	2.5		20	0	177	.11	14	.9	1.4	HLP
		1	810	7.20	19	18.95	155	22.71	5.27	2.6		20	0	103	.16	8	.9	1.2	SWR
		1	812	32.02	19	18.00	155	23.37	5.25	2.2		17	0	116	.09	8	.7	.8	SWR
		1	817	39.15	19	19.36	155	20.52	1.48	2.4		9	0	160	.11	6	1.4	99.0	SWR
		1	851	42.87	19	19.19	155	22.94	5.06	2.2		21	0	99	.11	8	.7	.9	SWR
		1	911	35.42	19	14.46	155	22.64	9.49	3.5	3.4	27	0	151	.18	11	1.2	1.7	LSW
		1	917	26.69	19	17.86	155	22.05	7.75	1.7	2.2	23	0	121	.17	9	1.0	1.6	SWR
		1	921	1.39	19	12.95	155	22.80	2.16		2.6	23	0	159	.22	12	1.6	5.7	LSW
		1	924	6.75	19	19.44	155	21.67	5.41	1.6	1.6	19	0	120	.09	8	.6	.7	SWR
		1	924	55.51	19	17.92	155	15.10	7.95	1.7	1.9	26	0	140	.12	8	.8	1.4	KOA
		1	927	39.47	19	10.23	155	21.38	7.59		2.6	27	0	176	.19	15	1.5	2.2	LSW
		1	930	30.48	19	20.27	155	20.77	6.68	2.3	2.5	25	0	82	.17	6	1.0	1.7	SWR
		1	940	11.57	19	17.14	155	25.13	.03	2.6	2.8	21	0	116	.20	11	1.2	1.0	HEA
		1	942	17.44	19	12.41	155	21.10	7.26	2.7	2.7	20	0	175	.15	15	1.2	1.9	LSW
		1	946	45.66	19	14.40	155	24.31	5.81	4.3	4.1	22	0	140	.15	11	1.2	2.6	LSW
		1	10	0 34.26	19	17.14	155	24.34	4.82	2.9	3.0	27	0	114	.18	10	1.0	1.3	SWR
		1	1015	59.55	19	12.73	155	22.17	.71	2.0	1.9	23	0	160	.16	12	1.2	71.0	LSW
		1	1017	16.54	19	19.25	155	23.13	2.78	2.2	1.9	26	0	98	.17	8	.9	2.5	SWR
		1	1018	58.01	19	14.24	155	22.78	6.34	2.1	2.2	25	0	148	.17	11	1.2	4.5	LSW
		1	1020	.94	19	18.49	155	23.57	6.06	2.5	2.6	25	0	108	.17	9	1.0	2.5	SWR
		1	1021	45.87	19	20.43	155	20.94	5.29	1.8	2.0	25	0	73	.10	6	.6	.7	SWR
		1	1027	3.19	19	12.50	155	22.26	2.51	3.6	3.6	28	0	161	.17	12	1.1	3.1	LSW
		1	1033	47.74	19	19.12	155	13.90	11.30	3.4	3.8	20	0	127	.19	7	1.6	.7	UER
		1	1036	22.90	19	18.61	155	13.29	8.85	2.4	2.2	24	0	133	.08	8	.6	.9	POL
		1	1039	33.71	19	10.90	155	21.97	7.72	2.9	3.0	23	0	171	.18	14	1.6	3.3	LSW
		1	1042	15.53	19	17.77	155	23.48	.15	2.2	2.3	23	0	119	.15	9	.8	4.7	SWR
		1	1046	49.39	19	16.61	155	23.97	7.92	4.4	4.3	25	0	133	.15	15	1.1	1.7	SWR
		1	11	2 17.14	19	17.28	155	23.63	.95	2.3	2.2	22	0	137	.19	14	1.4	44.1	SWR
		1	11	8 2.58	19	18.50	155	23.47	5.32	2.5	2.6	24	0	108	.12	9	.7	.7	SWR
		1	1114	31.45	19	16.77	155	25.02	4.36	2.5	2.6	20	0	119	.18	11	1.1	1.8	HEA
		1	1119	45.13	19	18.48	155	23.70	5.52	2.3	2.5	26	0	108	.12	9	.7	1.9	SWR
		1	1128	54.56	19	10.95	155	21.80	7.74	4.1	3.9	27	0	171	.16	14	1.2	2.0	LSW
		1	1136	53.48	19	13.52	155	21.16	8.12	2.5	2.8	27	0	158	.16	13	1.1	1.9	LSW
		1	1140	26.71	19	19.33	155	22.50	3.45	2.4	2.6	22	0	97	.12	9	.8	1.4	SWR
		1	1143	52.44	19	19.08	155	22.18	.04	1.8	2.0	17	0	101	.08	9	.5	42.2	SWR
		1	1147	39.04	19	18.82	155	22.85	5.21	2.4	2.3	27	0	105	.13	8	.7	.8	SWR
		1	1154	25.78	19	13.75	155	22.06	8.46	2.9	2.6	20	0	168	.12	12	1.1	2.0	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	1	1155	44.84	19	19.42	155	22.21	5.33	2.1	2.5	27	0	95	.12	9	.6	.8	SWR
		1	12	0 .09	19	15.24	155	22.78	6.33	2.0	2.3	24	0	139	.17	9	1.2	3.0	LSW
		1	1210	31.66	19	11.06	155	21.25	4.56	2.7	2.6	25	0	173	.16	14	1.1	1.6	LSW
		1	1213	34.51	19	17.89	155	13.92	9.38	2.2	2.5	27	0	137	.09	9	.6	.8	POL
		1	1215	44.97	19	15.80	155	23.21	4.47	2.8	3.0	24	0	150	.20	9	1.3	1.9	LSW
		1	1235	7.87	19	17.37	155	24.75	7.05	2.5	2.8	24	0	129	.17	11	1.1	2.5	SWR
		1	1237	43.82	19	12.19	155	21.09	5.65	2.5	2.5	19	0	186	.21	15	2.2	11.1	LSW
		1	1240	37.00	19	18.23	155	23.27	4.93	2.5		19	0	146	.15	11	1.3	1.5	SWR
		1	1246	56.34	19	17.86	155	23.51	8.53	2.2	2.6	20	0	134	.12	11	.8	1.2	SWR
		1	13	6 35.26	19	13.82	155	21.95	9.69	2.9	3.1	23	0	168	.09	13	.8	.4	LSW
		1	13	8 16.33	19	13.12	155	21.96	7.53	2.3	2.2	19	0	178	.11	15	1.1	1.7	LSW
		1	13	9 33.01	19	14.12	155	22.34	8.76	2.8	2.9	23	0	166	.11	14	.8	1.2	LSW
		1	1312	10.28	19	18.45	155	23.06	5.56	2.4	2.7	24	0	133	.10	10	.6	1.5	SWR
		1	1317	22.23	19	16.24	155	23.71	.71	2.5	2.9	19	0	144	.16	13	1.1	60.7	SWR
		1	1324	8.22	19	16.67	155	23.22	.83	2.5	2.5	20	0	145	.14	12	1.1	28.9	SWR
		1	1331	16.99	19	11.69	155	21.40	5.75	2.6	2.5	20	0	177	.12	16	1.3	3.4	LSW
		1	1333	1.92	19	18.24	155	13.15	9.00	1.8	1.9	21	0	178	.11	9	1.1	1.1	POL
		1	1342	32.76	19	18.56	155	23.20	4.58	2.0	2.1	16	0	132	.11	11	.8	1.4	SWR
		1	1344	29.79	19	20.06	155	21.93	2.96	3.0	3.6	15	0	182	.19	11	2.1	2.9	SWR
		1	1347	31.08	19	15.47	155	24.69	4.17	2.3	2.5	14	0	230	.11	15	1.8	1.4	LSW
		1	1355	26.15	19	18.87	155	22.10	4.56	2.4	2.8	19	0	136	.10	9	.7	1.2	SWR
		1	1359	16.91	19	16.65	155	23.81	7.14	2.6	3.2	23	0	141	.14	13	.9	1.8	SWR
		1	14	1 21.68	19	16.06	155	24.23	5.56	2.4	2.6	20	0	142	.14	13	1.0	2.8	SWR
		1	14	4 52.74	19	21.40	155	18.37	4.35	1.4	1.4	11	0	165	.23	5	4.2	5.9	KOA
		1	14	7 2.96	19	18.61	155	23.47	5.82	2.3	2.2	24	0	129	.18	10	1.1	2.6	SWR
		1	14	7 39.77	19	18.41	155	22.55	5.46	2.2	2.1	15	0	170	.16	10	1.7	1.3	SWR
		1	14	9 23.52	19	20.70	155	20.21	4.57	2.2	2.4	20	0	131	.16	10	1.1	1.7	SWR
		1	1410	58.84	19	19.78	155	21.33	3.32	3.1	3.6	19	0	151	.11	8	.8	2.2	SWR
		1	1415	55.17	19	18.97	155	22.08	4.91	1.9	2.2	18	0	164	.12	9	1.0	1.3	SWR
		1	1418	15.94	19	19.46	155	21.01	5.21	2.2	2.6	18	0	174	.10	8	1.0	.8	SWR
		1	1426	37.78	19	18.31	155	23.37	5.70	1.7	2.2	15	0	165	.11	11	1.0	1.9	SWR
		1	1428	7.65	19	17.66	155	23.78	6.67	2.7	2.9	25	0	134	.14	11	.8	1.3	SWR
		1	1436	25.98	19	20.37	155	20.86	5.46	2.3	2.4	25	0	117	.12	6	.6	.6	SWR
		1	1449	46.01	19	16.06	155	22.29	10.39	2.0	2.6	17	0	166	.18	11	2.0	1.4	SWR
		1	1455	18.77	19	18.18	155	23.40	5.28	2.2	2.6	19	0	133	.12	11	.9	1.0	SWR
		1	1456	49.08	19	24.94	155	16.55	13.53	2.1	2.4	22	0	95	.10	2	.8	.8	DEP
		1	1457	45.00	19	15.81	155	20.98	2.56	1.8	1.6	20	0	163	.11	10	.8	2.4	HLP
		1	15	0 38.83	19	24.62	155	17.36	.85	1.6	2.1	14	0	67	.16	2	.6	.7	SPC
		1	15	4 34.44	19	20.12	155	21.15	2.87	2.2	2.4	16	0	144	.11	7	1.0	2.3	SWR
		1	1510	57.49	19	18.55	155	22.57	4.89	2.1	2.3	18	0	168	.16	9	1.1	1.4	SWR
		1	1521	5.70	19	12.49	155	23.39	7.12	2.2	2.5	20	0	182	.12	14	1.2	2.5	LSW
		1	1522	55.46	19	18.98	155	21.03	.12	2.6	2.6	11	0	172	.09	9	.9	4.5	SWR
		1	1527	42.40	19	16.03	155	23.24	4.76	2.5	2.5	22	0	149	.11	15	1.0	1.2	SWR
		1	1531	28.44	19	20.08	155	21.34	4.71	2.0	2.2	24	0	121	.09	7	.6	.8	SWR
		1	1533	19.96	19	20.88	155	20.56	4.69	2.4	2.4	20	0	107	.11	6	.7	1.1	SWR
		1	1535	18.87	19	17.72	155	14.04	10.29	3.7	3.6	25	0	172	.08	9	.8	.3	POL
		1	1543	43.20	19	14.17	155	21.09	8.59	2.8	2.8	25	0	169	.13	13	1.1	2.0	LSW
		1	1546	55.22	19	18.16	155	23.40	5.35	2.5	2.4	18	0	133	.08	11	.5	.5	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	1	1547	36.51	19	19.36	155	22.38	4.57	2.2	2.0	18	0	136	.14	10	1.2	1.6	SWR
		1	1550	15.37	19	19.73	155	21.09	4.29	2.1	1.6	15	0	168	.08	8	.6	1.5	SWR
		1	1551	48.63	19	20.15	155	20.66	4.18		.9	14	0	146	.10	7	.9	3.4	SWR
		1	1556	15.63	19	19.11	155	22.45	5.04	2.2	2.3	23	0	130	.10	9	.7	.8	SWR
		1	16 0	9.66	19	20.08	155	20.58	2.37	2.2	2.5	19	0	148	.12	7	.9	5.0	SWR
		1	16 4	11.13	19	21.16	155	19.86	.09	1.3	1.2	13	0	139	.17	6	1.2	4.1	SWR
		1	16 5	43.82	19	19.19	155	22.23	4.63	1.9	1.8	14	0	158	.12	9	1.1	1.3	SWR
		1	16 5	58.75	19	16.10	155	22.66	.96	2.3	1.9	16	0	163	.13	12	1.1	33.1	SWR
		1	16 7	17.47	19	20.68	155	20.69	2.29	2.5	2.5	22	0	111	.12	6	.7	3.0	SWR
		1	1610	46.94	19	21.22	155	19.94	4.98	2.0	2.4	14	0	137	.13	6	1.2	2.7	SWR
		1	1611	55.94	19	18.89	155	22.81	3.79	2.0	2.0	16	0	159	.07	10	.6	1.0	SWR
		1	1614	26.96	19	20.20	155	20.42	5.24	2.0	2.2	20	0	145	.09	7	.7	.8	SWR
		1	1623	27.26	19	20.34	155	20.57	4.99	2.1	2.1	18	0	142	.15	6	1.2	1.9	SWR
		1	1630	48.51	19	14.79	155	22.23	8.33	3.1	3.1	25	0	163	.12	13	.9	1.3	LSW
		1	1633	31.54	19	18.61	155	23.20	5.29	2.2	1.8	19	0	131	.16	11	1.0	1.1	SWR
		1	1633	57.98	19	14.53	155	21.68	6.85	2.9	2.9	21	0	166	.15	13	1.2	1.8	LSW
		1	1641	26.97	19	19.91	155	21.20	4.62	2.1	2.3	15	0	165	.12	7	1.1	1.6	SWR
		1	1643	15.97	19	15.17	155	22.52	9.52	2.8	2.7	25	0	159	.15	13	1.0	.8	LSW
		1	1645	.03	19	12.67	155	21.45	6.59	2.3	2.3	23	0	173	.14	14	1.3	2.3	LSW
		1	1646	53.06	19	18.27	155	23.24	5.66	2.1	2.4	22	0	133	.16	11	1.0	2.4	SWR
		1	1650	40.62	19	20.11	155	20.76	.82	2.4	2.9	21	0	147	.17	7	1.2	1.7	SWR
		1	1652	12.67	19	19.95	155	20.97	5.45	1.5	2.3	20	0	149	.14	7	1.2	1.1	SWR
		1	1655	49.66	19	20.87	155	21.14	.29	2.5	2.5	16	0	107	.26	7	2.1	10.8	SWR
		1	1657	10.37	19	24.41	155	17.33	.62	1.8	2.2	9	0	99	.11	2	.6	.3	SPC
		1	1658	43.99	19	19.61	155	21.05	3.11	2.0	2.0	19	0	157	.09	8	.7	1.5	SWR
		1	1659	21.30	19	14.08	155	20.89	5.45	2.1	1.9	21	0	177	.12	13	1.0	1.5	HLP
		1	17 0	21.77	19	19.84	155	20.63	2.92	2.1	2.1	14	0	167	.18	7	1.8	13.4	SWR
		1	17 4	22.46	19	20.28	155	20.46	4.92	2.5	2.0	20	0	143	.12	6	.9	1.1	SWR
		1	1710	24.69	19	20.11	155	21.14	5.00	2.3	2.2	20	0	145	.11	7	.9	1.1	SWR
		1	1717	46.59	19	17.26	155	24.18	6.99	2.2	1.9	23	0	134	.14	11	.9	1.4	SWR
		1	1719	29.10	19	20.55	155	20.53	1.66	1.5	1.5	15	0	136	.13	6	1.1	99.0	SWR
		1	1722	52.46	19	19.97	155	20.56	5.00	2.0	2.1	16	0	151	.07	7	.6	.9	SWR
		1	1723	48.12	19	4.59	155	18.54	7.43	3.0	2.6	19	0	255	.11	33	3.6	1.7	PPL
		1	1725	32.18	19	13.11	155	22.46	8.32	2.0	1.9	22	0	176	.16	16	1.5	2.1	LSW
		1	1726	29.35	19	19.43	155	21.82	7.56	2.2	2.0	17	0	156	.11	10	.9	1.1	SWR
		1	1730	34.49	19	16.21	155	21.47	6.48	2.2	1.8	15	0	163	.08	16	1.1	4.2	SWR
		1	1733	16.94	19	19.96	155	20.46	5.24	2.1	1.9	18	0	152	.08	7	.6	.6	SWR
		1	1737	23.51	19	19.94	155	21.24	2.00	1.5	1.6	10	0	148	.20	7	2.2	.0	SWR
		1	1739	38.59	19	13.76	155	20.94	3.34	2.3	2.3	26	0	160	.14	13	.9	2.3	HLP
		1	1746	1.14	19	17.00	155	23.93	8.49	2.9	2.8	29	0	117	.18	9	1.0	1.9	SWR
		1	1755	51.20	19	20.04	155	21.30	3.61	2.0	2.1	23	0	91	.12	7	.6	1.6	SWR
		1	1757	31.78	19	19.23	155	21.26	1.31	2.5	2.9	17	0	96	.13	7	.9	30.4	SWR
		1	1811	6.05	19	18.15	155	23.46	2.51	2.4	2.6	23	0	109	.10	8	.6	1.8	SWR
		1	1817	21.71	19	12.21	155	21.99	7.94	2.0	1.9	22	0	209	.12	15	1.1	1.5	LSW
		1	1822	34.34	19	14.67	155	22.31	9.49	2.5	2.4	25	0	147	.13	10	.9	1.5	LSW
		1	1823	39.34	19	15.38	155	22.67	7.34	2.7	2.8	26	0	138	.15	9	.9	1.6	LSW
		1	1827	39.67	19	20.43	155	20.81	3.82	2.3	2.6	19	0	92	.11	6	.6	2.2	SWR
		1	1833	2.77	19	15.16	155	22.15	6.89	2.5	2.6	22	0	147	.15	10	1.1	2.2	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	1	1834	56.76	19	18.90	155	23.50	5.67	2.9	2.8	26	0	102	.16	9	.8	2.2	SWR
		1	1843	8.07	19	15.75	155	22.76	1.65	1.9	1.9	15	0	136	.20	8	1.7	46.6	LSW
		1	1850	54.02	19	20.65	155	20.20	5.64	1.6	1.8	20	0	84	.13	6	.7	1.5	SWR
		1	1851	33.97	19	19.37	155	22.48	4.40	2.6	2.1	22	0	122	.12	9	.7	1.1	SWR
		1	1852	49.30	19	19.96	155	22.85	6.64	1.8	1.3	10	0	211	.10	10	5.0	5.4	SWR
		1	1855	32.79	19	20.41	155	20.58	6.25	2.1	1.9	22	0	92	.16	6	.9	1.9	SWR
		1	1857	10.01	19	17.64	155	14.47	8.84	2.5	2.2	18	0	114	.16	7	1.5	1.9	POL
		1	1912	44.76	19	18.71	155	22.91	4.95	1.7	1.6	17	0	137	.08	8	.6	.9	SWR
		1	1913	28.12	19	20.08	155	20.50	4.89	1.6	1.4	16	0	98	.16	5	1.1	2.2	SWR
		1	1917	49.96	19	18.29	155	23.44	4.91	2.3	2.3	22	0	108	.10	8	.6	.8	SWR
		1	1924	56.98	19	20.28	155	20.54	4.33	2.0	2.1	21	0	94	.14	6	.8	1.7	SWR
		1	1926	50.47	19	18.84	155	22.80	3.67	1.8	1.8	16	0	134	.10	8	.8	1.4	SWR
		1	1931	17.39	19	19.32	155	22.58	3.63	1.3	1.6	14	0	123	.08	9	.7	1.4	SWR
		1	1932	39.70	19	20.54	155	20.14	1.81	2.4	1.6	15	0	85	.15	6	.9	99.0	SWR
		1	1936	27.87	19	19.24	155	23.22	3.48	2.2	2.2	23	0	98	.17	8	.9	1.6	SWR
		1	1937	26.31	19	22.86	155	18.82	3.82	2.2	2.9	14	0	113	.15	4	.9	2.2	KOA
		1	1942	12.08	19	19.06	155	23.49	5.73	2.6	2.4	23	0	100	.14	9	.8	1.9	SWR
		1	1949	23.94	19	14.57	155	21.42	3.29	2.0	2.2	26	0	151	.19	11	1.2	3.1	LSW
		1	1950	41.93	19	18.57	155	23.19	4.16	2.4	2.3	28	0	107	.14	8	.7	1.3	SWR
		1	1952	47.33	19	17.04	155	23.64	6.88	2.1	2.6	27	0	118	.18	12	1.0	2.4	SWR
		1	1955	22.39	19	24.58	155	17.66	.05	1.7	2.6	9	0	178	.27	5	1.7	1.4	SPC
		1	1957	33.51	19	20.56	155	21.74	.62	1.4	1.2	20	0	76	.19	7	1.0	7.1	SWR
		1	20 0	1.36	19	20.56	155	20.40	1.44	1.7	2.4	17	0	88	.15	6	.8	99.0	SWR
		1	20 3	2.03	19	13.13	155	23.12	2.84	2.0	1.6	22	0	158	.15	12	1.0	2.1	LSW
		1	20 3	20.11	19	19.90	155	21.92	5.66	2.0	1.9	17	0	110	.12	8	.9	2.2	SWR
		1	20 7	17.14	19	20.25	155	20.94	6.21	2.0	2.4	20	0	99	.16	6	1.0	1.8	SWR
		1	20 8	22.04	19	18.57	155	23.39	5.26	1.5	1.8	22	0	106	.14	8	.9	1.0	SWR
		1	2011	52.34	19	20.27	155	20.81	5.10	2.2	2.3	25	0	74	.10	6	.5	.8	SWR
		1	2014	24.87	19	16.68	155	23.99	6.09	2.2	2.2	26	0	119	.15	10	.9	2.0	SWR
		1	2019	35.17	19	24.58	155	16.86	.04	2.2	2.8	16	0	115	.36	2	1.2	.9	SPC
		1	2023	7.43	19	20.60	155	20.49	4.74	2.4	2.7	27	0	66	.13	6	.6	1.0	SWR
		1	2026	1.56	19	20.26	155	20.36	4.94	1.5	1.2	16	0	124	.09	5	.7	2.9	SWR
		1	2037	36.08	19	18.57	155	23.43	2.60	2.5	2.8	23	0	106	.10	10	.6	1.9	SWR
		1	2038	51.13	19	16.89	155	24.40	4.89	2.2	2.0	23	0	115	.14	10	.9	1.2	SWR
		1	2040	5.70	19	19.38	155	22.99	6.63	2.7	2.3	28	0	96	.14	9	.7	1.4	SWR
		1	2044	10.47	19	19.93	155	20.25	.52	1.6	2.1	21	0	98	.12	5	.6	4.8	SWR
		1	2046	37.21	19	17.36	155	24.62	2.06	2.7	2.9	24	0	110	.18	11	1.1	3.4	SWR
		1	21 1	29.26	19	19.84	155	21.22	4.40	2.5	2.6	17	0	109	.11	7	.6	1.6	SWR
		1	21 3	7.28	19	18.57	155	23.62	2.22	1.8	1.9	22	0	105	.15	9	.7	3.2	SWR
		1	21 3	55.79	19	11.98	155	20.90	9.42	3.4	3.5	26	0	168	.17	16	1.2	1.8	HLP
		1	2117	52.68	19	17.43	155	24.44	1.78	3.1	3.9	23	0	110	.16	10	.9	28.2	SWR
		1	2121	3.35	19	11.82	155	22.92	5.96	2.7	2.7	20	0	164	.14	14	1.1	2.7	LSW
		1	2126	32.85	19	20.35	155	20.22	4.94	1.8	1.6	20	0	90	.07	5	.4	.9	SWR
		1	2126	55.08	19	17.78	155	23.83	.96	2.1	1.9	20	0	110	.17	9	1.0	33.4	SWR
		1	2128	2.05	19	19.19	155	23.37	5.83	1.8	1.5	25	0	99	.17	9	.9	2.3	SWR
		1	2128	24.06	19	18.51	155	23.41	5.44	2.6	2.3	20	0	106	.15	8	1.0	.8	SWR
		1	2131	57.28	19	16.73	155	23.21	6.01	2.1	1.9	23	0	123	.18	8	1.2	3.8	SWR
		1	2137	20.36	19	26.00	155	27.66	9.63	3.6	3.7	52	0	48	.16	13	.8	.5	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	1	2141	53.23	19	16.64	155	22.60	6.20	2.1	2.4	26	0	128	.14	7	.9	1.9	SWR
		1	2147	8.67	19	17.20	155	15.43	10.11	2.8	3.1	28	0	136	.13	6	.8	.6	KOA
		1	2150	47.53	19	11.99	155	21.09	3.14	2.3	2.4	25	0	167	.18	13	1.2	2.5	LSW
		1	2157	3.54	19	20.20	155	20.86	2.90	1.9	2.1	19	0	99	.15	6	.8	2.9	SWR
		1	22 1	31.04	19	11.77	155	21.18	8.81	2.8	3.3	27	0	168	.17	16	1.2	2.0	LSW
		1	22 4	40.29	19	18.50	155	23.50	5.60	2.1	2.5	25	0	106	.16	9	.9	2.5	SWR
		1	2222	19.48	19	14.86	155	23.45	.01	2.0	2.2	22	0	138	.19	10	1.2	67.5	LSW
		1	2228	11.85	19	21.50	155	19.38	1.46	1.2	1.0	16	0	82	.10	6	.6	.0	SWR
		1	2233	19.42	19	16.53	155	25.00	4.29	2.2	2.4	22	0	114	.15	11	.9	1.4	HEA
		1	2237	25.36	19	19.49	155	22.28	4.59	2.2	2.4	27	0	94	.14	9	.7	1.1	SWR
		1	2239	48.14	19	16.42	155	23.62	6.62	2.4	2.4	26	0	124	.16	9	1.0	2.1	SWR
		1	2242	12.90	19	12.50	155	21.55	2.89	2.1	2.4	20	0	163	.18	12	1.3	3.8	LSW
		1	2252	42.90	19	14.71	155	22.52	6.72	2.1	2.3	24	0	145	.14	10	1.1	2.4	LSW
		1	2256	6.53	19	22.75	155	17.24	1.54	.9	.3	9	0	109	.05	2	.5	.2	KOA
		1	23 2	51.76	19	16.39	155	24.13	2.22	1.8	1.9	24	0	121	.17	10	1.0	3.9	SWR
		1	23 4	5.78	19	17.14	155	23.01	3.99	1.8	1.5	23	0	120	.17	8	1.0	2.0	SWR
		1	23 5	39.78	19	18.64	155	23.70	2.81	1.5	1.5	21	0	104	.13	9	.8	2.2	SWR
		1	23 5	55.86	19	13.14	155	21.14	3.34	2.1	1.5	21	0	170	.16	14	1.3	3.2	LSW
		1	23 7	28.16	19	19.05	155	23.58	5.21	2.2	1.9	26	0	100	.17	9	.9	1.1	SWR
		1	2317	7.20	19	19.07	155	23.51	5.33	2.2	2.2	26	0	100	.19	9	1.0	1.2	SWR
		1	2322	10.63	19	15.23	155	24.18	7.05	2.3	2.4	22	0	131	.17	11	1.2	1.9	LSW
		1	2325	1.76	19	14.59	155	22.73	5.63	2.2	2.0	25	0	149	.15	10	1.2	2.2	LSW
		1	2326	58.07	19	14.01	155	23.28	6.16	4.2	4.2	25	0	153	.12	11	.9	2.3	LSW
		1	2340	1.86	19	18.19	155	23.64	2.79	2.0	2.0	23	0	108	.16	9	.9	2.6	SWR
		1	2343	41.65	19	15.83	155	23.58	6.95	1.9	1.9	21	0	129	.18	10	1.3	3.4	LSW
		1	2348	6.77	19	12.13	155	22.34	2.02	2.5	2.0	24	0	163	.19	13	1.4	5.8	LSW
		1	2348	54.65	19	11.26	155	22.77	6.41	2.4	2.2	24	0	192	.12	14	1.2	2.2	LSW
		1	2355	19.76	19	15.11	155	22.59	6.63	2.0	1.6	22	0	141	.14	9	1.0	3.3	LSW
		1	2356	50.00	19	17.70	155	16.07	9.76	3.7	3.3	28	0	125	.10	5	.6	.4	KOA
		2	017	9.34	19	13.33	155	21.23	8.04	2.0	2.2	26	0	159	.18	13	1.2	1.8	LSW
		2	022	10.13	19	19.46	155	22.35	4.98	1.6	1.6	20	0	120	.14	9	1.0	1.3	SWR
		2	029	2.24	19	14.85	155	21.87	3.17	2.3	1.9	25	0	152	.14	10	.9	2.2	LSW
		2	039	44.27	19	19.27	155	22.92	4.83	2.0	2.4	25	0	98	.16	8	.9	1.3	SWR
		2	043	1.67	19	20.44	155	20.93	5.30	2.6	2.6	29	0	72	.15	6	.7	1.0	SWR
		2	043	41.77	19	18.59	155	23.33	4.99	2.6	2.7	17	0	107	.14	8	.9	1.2	SWR
		2	047	18.05	19	18.91	155	22.57	3.29	1.6	1.2	17	0	133	.11	9	.8	3.2	SWR
		2	051	54.56	19	20.96	155	19.36	2.75	1.6	1.5	15	0	91	.04	6	.3	3.0	SWR
		2	054	35.20	19	20.13	155	20.25	4.63	1.5	1.5	17	0	127	.10	5	.6	2.0	SWR
		2	1 6	54.47	19	19.74	155	20.06	5.04	1.9	1.6	14	0	160	.09	9	.9	1.4	SWR
		2	111	14.73	19	14.12	155	22.45	5.43	2.4	1.9	26	0	151	.15	11	1.0	1.5	LSW
		2	114	12.62	19	13.16	155	23.24	3.51	2.0	1.4	21	0	156	.15	12	1.1	2.4	LSW
		2	127	47.21	19	19.28	155	18.55	11.89	1.7	1.4	12	0	154	.14	7	2.8	1.1	KOA
		2	130	28.52	19	19.63	155	22.17	3.99	2.1	1.6	17	0	117	.10	8	.6	1.0	SWR
		2	145	8.42	19	17.16	155	22.44	5.98	2.2	2.1	28	0	123	.18	8	1.0	2.9	SWR
		2	147	33.14	19	12.22	155	23.35	.15	2.0	1.6	21	0	169	.20	15	1.8	99.0	LSW
		2	153	9.96	19	20.22	155	20.82	2.43	1.8	1.6	12	0	132	.06	6	.4	8.7	SWR
		2	2 7	5.44	19	19.96	155	21.14	5.26	1.8	1.4	17	0	106	.09	7	.6	1.1	SWR
		2	216	37.91	19	10.52	155	20.45	6.30	2.5	2.6	25	0	207	.15	15	1.4	2.3	HLP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	2	219	8.43	19	20.36	155	20.74	2.92	2.2	2.3	21	0	95	.13	6	.7	3.0	SWR
		2	223	32.70	19	18.64	155	23.48	4.47	2.2	2.0	25	0	105	.15	9	.8	1.3	SWR
		2	225	26.26	19	20.36	155	20.86	1.88	2.8	3.1	25	0	73	.12	6	.5	22.0	SWR
		2	226	30.41	19	19.00	155	22.86	3.62	1.8	2.0	18	0	102	.11	8	.7	2.3	SWR
		2	229	7.76	19	25.16	155	18.08	6.80	1.1	.7	7	0	296	.21	4	46.7	49.9	LPC
		2	229	27.48	19	22.51	155	13.90	29.33	2.1	1.5	8	0	143	.10	5	10.6	24.7	DEP
		2	233	11.20	19	12.57	155	20.98	8.78	2.5	2.2	30	0	164	.16	15	1.0	1.4	HLP
		2	239	9.72	19	12.06	155	23.90	10.81	3.6	3.4	23	0	172	.12	14	1.4	.5	LSW
		2	241	55.63	19	20.58	155	20.90	1.77	1.6	1.3	17	0	92	.15	6	.8	.0	SWR
		2	246	22.48	19	17.34	155	24.07	5.17	2.5	2.6	23	0	113	.14	10	.9	1.0	SWR
		2	247	42.46	19	16.62	155	23.61	6.81	2.4	2.5	29	0	122	.18	9	1.1	1.8	SWR
		2	255	59.36	19	19.57	155	21.49	5.55	2.0	1.6	17	0	117	.09	7	.7	1.5	SWR
		2	3 2	32.23	19	17.59	155	24.03	8.40	2.5	2.2	24	0	111	.18	9	1.1	1.6	SWR
		2	3 3	33.27	19	20.32	155	20.34	.21	1.5	1.3	16	0	120	.13	6	.9	99.0	SWR
		2	3 6	7.61	19	19.55	155	21.06	.33	1.9	1.9	16	0	115	.11	6	.7	4.0	SWR
		2	3 7	23.38	19	19.58	155	22.44	4.38	2.0	1.9	23	0	93	.13	9	.8	1.4	SWR
		2	310	39.95	19	19.91	155	21.35	4.73		.7	15	0	108	.14	7	1.0	2.2	SWR
		2	311	15.39	19	19.49	155	21.69	5.75	1.7	1.1	15	0	177	.10	8	.9	2.1	SWR
		2	324	16.53	19	14.87	155	20.10	14.35		.6	14	1	230	.29	11	6.0	8.2	HLP
		2	326	41.15	19	16.16	155	24.01	2.43	2.3	1.5	21	0	124	.19	10	1.2	3.3	SWR
		2	327	43.12	19	13.04	155	23.19	6.15	5.0	4.7	24	0	158	.19	12	1.5	3.8	LSW
		2	331	33.33	19	13.35	155	21.92	2.18		2.1	12	0	176	.10	15	1.1	5.0	LSW
		2	333	55.98	19	10.06	155	21.41	1.65		1.8	13	0	204	.11	15	1.6	.0	LSW
		2	337	42.43	19	13.67	155	21.38	3.72	2.3	1.4	22	0	160	.14	14	1.0	2.0	LSW
		2	338	59.63	19	10.48	155	21.18	6.76	2.8	2.9	25	0	200	.14	15	1.5	3.4	LSW
		2	339	53.43	19	11.25	155	22.45	9.68	3.6	3.5	18	0	194	.08	17	1.2	.4	LSW
		2	341	47.56	19	16.02	155	24.31	8.21	3.4	3.3	21	0	136	.17	11	1.3	2.1	SWR
		2	345	41.91	19	12.42	155	21.84	.39	2.7	1.5	15	0	193	.13	12	1.8	93.8	LSW
		2	349	7.85	19	18.65	155	23.56	5.78	3.0	3.1	27	0	104	.13	9	.7	1.9	SWR
		2	352	40.11	19	20.47	155	20.43	4.26	1.8	1.5	20	0	90	.13	6	.8	2.1	SWR
		2	354	52.41	19	16.88	155	23.89	2.30	2.3	2.0	24	0	118	.15	9	.9	3.1	SWR
		2	4 4	14.18	19	13.66	155	20.49	3.02	1.9	1.9	25	0	159	.13	13	.9	1.8	HLP
		2	4 4	45.49	19	20.47	155	20.18	4.45	2.0	1.9	14	0	78	.11	5	.8	1.4	SWR
		2	4 5	30.22	19	20.31	155	20.71	4.69	1.9	1.9	22	0	72	.09	6	.5	1.0	SWR
		2	4 6	57.77	19	14.72	155	22.81	6.62	2.6	2.3	26	0	143	.14	10	.9	3.4	LSW
		2	4 8	23.05	19	16.63	155	24.58	8.44	3.4	3.5	26	0	132	.14	12	.9	1.5	SWR
		2	425	29.04	19	20.64	155	20.40	6.55	2.6	2.6	29	0	65	.12	6	.6	1.2	SWR
		2	426	47.19	19	14.02	155	23.33	10.36	3.2	3.1	27	0	149	.16	11	1.4	.6	LSW
		2	431	16.34	19	19.59	155	23.01	5.53	2.1	2.3	26	0	93	.14	9	.8	1.9	SWR
		2	433	5.72	19	19.14	155	23.55	6.08	2.7	2.6	29	0	99	.14	9	.7	1.5	SWR
		2	436	13.31	19	20.49	155	20.79	4.47	1.7	1.6	19	0	93	.12	6	.6	1.4	SWR
		2	438	20.41	19	12.70	155	22.68	6.34	2.6	2.7	23	0	161	.17	12	1.4	3.4	LSW
		2	441	16.96	19	20.26	155	20.66	5.28	1.5	.8	17	0	128	.12	6	.8	1.8	SWR
		2	449	57.80	19	17.82	155	23.85	5.18	2.3	2.5	25	0	110	.14	9	.8	1.0	SWR
		2	455	48.36	19	19.85	155	21.49	4.85	2.1	1.9	21	0	95	.15	7	.9	1.6	SWR
		2	5 1	2.18	19	18.82	155	23.48	5.58	2.5	2.5	26	0	103	.15	9	.8	2.2	SWR
		2	510	53.19	19	14.85	155	23.72	5.90	2.5	2.7	25	0	136	.19	11	1.2	4.6	LSW
		2	527	11.34	19	18.15	155	13.09	8.17	1.7	1.1	15	0	98	.14	8	1.4	3.3	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	2	535	49.11	19	16.48	155	23.24	6.42	2.0	1.9	20	0	126	.20	9	1.4	2.3	SWR
		2	536	59.39	19	20.17	155	21.04	4.82	1.8	1.9	18	0	101	.12	6	.8	1.7	SWR
		2	540	25.94	19	14.85	155	22.62	2.86	2.3	1.9	20	0	147	.11	10	.8	2.1	LSW
		2	557	13.06	19	19.32	155	21.83	4.27	1.7	1.4	21	0	123	.11	8	.7	1.3	SWR
		2	559	33.31	19	20.10	155	20.54	1.01	1.4	1.0	16	0	133	.19	5	1.3	99.0	SWR
		2	6	3 23.17	19	16.88	155	23.70	.52	2.2	1.9	20	0	119	.16	9	1.1	83.3	SWR
		2	6	8 20.25	19	10.51	155	21.48	10.21	2.8	2.6	27	0	174	.18	18	1.6	.6	LSW
		2	610	39.80	19	19.76	155	22.30	3.18	1.6	1.2	19	0	114	.15	9	.9	1.9	SWR
		2	615	29.51	19	21.04	155	19.58	1.92	1.7	1.4	16	0	93	.10	6	.6	99.0	SWR
		2	618	8.95	19	23.35	155	17.35	2.80	.8	.6	9	0	154	.15	3	1.9	3.7	SPC
		2	619	7.90	19	13.35	155	19.88	7.40	2.5	2.3	23	0	174	.10	13	.9	1.7	HLP
		2	620	51.72	19	20.79	155	19.49	9.93	1.7	1.0	14	0	97	.17	5	1.7	1.6	SWR
		2	621	48.25	19	20.23	155	20.96	.56	2.5	2.6	23	0	84	.18	6	.9	6.4	SWR
		2	623	11.26	19	20.29	155	20.39	5.14	1.9	1.8	18	0	93	.08	5	.5	1.0	SWR
		2	626	7.72	19	18.98	155	22.98	4.89	1.8	1.2	16	0	130	.15	8	1.1	1.9	SWR
		2	628	54.50	19	15.31	155	22.81	11.28	1.9	1.5	20	0	138	.38	9	1.9	.7	LSW
		2	629	28.89	19	18.35	155	23.29	4.57	2.2	1.9	18	0	108	.09	8	.6	1.2	SWR
		2	630	39.68	19	20.43	155	20.58	1.47	2.3	2.1	21	0	77	.14	6	.7	57.8	SWR
		2	631	33.52	19	18.72	155	23.74	2.63	1.5	1.4	21	0	103	.14	9	.8	2.4	SWR
		2	632	52.60	19	24.19	155	16.75	.08	.9	.9	10	0	77	.21	5	.7	.7	SPC
		2	634	.92	19	21.18	155	19.50	3.05	1.4	1.1	14	0	89	.12	6	.7	6.5	SWR
		2	644	25.32	19	24.66	155	16.83	1.21	1.7	2.4	9	0	86	.10	2	.7	.3	SPC
		2	647	33.92	19	24.67	155	16.77	.79	1.6	2.2	10	0	94	.14	2	.8	.3	SPC
		2	648	21.47	19	20.38	155	19.92	.14	2.4	2.5	18	0	85	.18	6	.8	5.7	SWR
		2	656	46.51	19	20.20	155	21.19	5.69	2.6	2.6	27	0	78	.12	7	.6	1.7	SWR
		2	658	25.88	19	19.33	155	22.29	5.14	1.6	1.3	15	0	123	.11	9	.7	1.3	SWR
		2	658	44.78	19	18.30	155	23.39	3.00	1.4	.7	15	0	112	.06	8	.5	1.6	SWR
		2	7	6 24.51	19	19.52	155	22.68	2.97	1.9	1.8	25	0	94	.17	9	.8	2.1	SWR
		2	710	19.23	19	19.40	155	20.45	1.60	1.9	1.8	18	0	113	.14	5	.8	.0	SWR
		2	711	17.45	19	17.06	155	23.38	5.62	1.8	1.5	29	0	119	.21	8	1.1	3.2	SWR
		2	714	7.61	19	18.84	155	23.04	3.43	2.0	2.3	20	0	133	.11	8	.7	1.5	SWR
		2	715	9.62	19	16.65	155	22.85	6.24	2.4	1.9	20	0	126	.19	8	1.3	3.9	SWR
		2	717	50.40	19	18.58	155	23.46	4.86	1.7	1.0	15	0	253	.08	11	1.5	1.0	SWR
		2	724	23.59	19	20.17	155	20.82	4.83	2.3	2.1	21	0	99	.08	6	.5	.9	SWR
		2	735	55.65	19	18.70	155	23.72	1.71	1.8	1.6	19	0	131	.15	9	.8	29.6	SWR
		2	737	24.70	19	20.33	155	20.90	5.79	2.0	1.9	20	0	97	.19	6	1.1	3.1	SWR
		2	743	27.46	19	19.48	155	22.31	5.50	1.9	2.3	23	0	120	.12	9	.8	1.8	SWR
		2	748	8.83	19	20.86	155	19.62	3.33	1.8	1.5	15	0	97	.05	6	.3	1.2	SWR
		2	8	7 16.05	19	17.62	155	23.42	10.22	2.9	3.1	23	0	126	.15	11	1.2	.5	SWR
		2	8	9 28.02	19	13.60	155	21.01	8.55	2.7	2.4	26	0	158	.15	13	1.0	1.8	LSW
		2	810	19.79	19	17.58	155	23.96	5.37	2.6	2.6	23	0	111	.16	9	.9	1.1	SWR
		2	811	35.12	19	12.11	155	23.85	1.81	2.0	1.8	21	0	161	.19	15	1.4	20.9	LSW
		2	825	29.20	19	20.43	155	20.28	3.22	2.9	3.7	27	0	66	.12	5	.5	1.5	SWR
		2	829	52.38	19	21.25	155	19.37	5.13	1.4	1.4	16	0	86	.09	6	.5	3.9	SWR
		2	832	11.29	19	20.73	155	20.98	5.33	2.0	1.9	24	0	69	.14	7	.7	1.2	SWR
		2	840	54.43	19	19.20	155	22.17	2.15	2.1		7	0	203	.03	9	1.3	18.3	SWR
		2	843	16.76	19	17.28	155	24.00	5.43	2.6	2.2	14	0	123	.05	13	.5	.5	SWR
		2	846	7.59	19	18.81	155	23.52	5.36	2.8	2.6	22	0	104	.14	9	1.0	1.0	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	2	848	57.69	19	13.09	155	22.54	3.98	2.0	1.5	20	0	156	.16	11	1.1	2.3	LSW
		2	852	12.57	19	20.63	155	20.59	4.50	2.5	2.4	27	0	67	.13	6	.6	1.2	SWR
		2	856	55.11	19	18.74	155	22.84	4.92		1.4	14	0	136	.11	8	.9	1.6	SWR
		2	911	16.99	19	21.52	155	19.11	1.02		1.1	13	0	162	.12	5	1.2	.8	SWR
		2	911	33.85	19	19.04	155	23.05	3.87	1.7	1.6	22	0	101	.09	8	.6	1.3	SWR
		2	914	55.39	19	20.29	155	20.18	2.09		1.3	12	0	90	.08	5	.5	57.8	SWR
		2	916	28.26	19	21.63	155	18.81	1.09		.9	12	0	81	.09	5	.6	.5	KOA
		2	919	36.59	19	19.20	155	23.11	4.89	1.7	1.9	17	0	124	.13	8	.9	1.2	SWR
		2	926	22.59	19	20.04	155	20.97	3.37	1.5	1.6	15	0	103	.11	6	.7	2.4	SWR
		2	938	15.33	19	17.85	155	14.34	7.01	1.7	1.8	20	0	102	.09	8	.6	1.3	POL
		2	940	24.96	19	19.37	155	22.38	3.01	2.2	2.3	24	0	123	.10	9	.6	1.6	SWR
		2	941	37.92	19	16.53	155	23.78	.10	2.0	2.3	18	0	122	.14	9	.9	5.0	SWR
		2	946	39.24	19	24.69	155	16.79	1.00	1.0	1.5	8	0	96	.08	2	.4	.7	SPC
		2	949	39.26	19	20.43	155	20.26	4.72	2.2	2.4	18	0	89	.07	5	.4	1.1	SWR
		2	958	52.19	19	18.62	155	23.93	1.60	2.4	2.2	18	0	103	.13	9	.7	.8	SWR
		2	10	0 45.25	19	18.36	155	23.75	1.41	2.2	2.2	17	0	106	.13	9	.8	1.0	SWR
		2	10	2 16.79	19	16.52	155	23.52	6.94	2.8	2.7	22	0	123	.20	9	1.3	3.0	SWR
		2	10	6 22.98	19	24.82	155	17.06	1.23	.5	1.0	8	0	76	.10	2	.8	.4	SPC
		2	1012	13.73	19	18.66	155	23.77	2.12	2.1	2.7	19	0	131	.12	9	.8	4.8	SWR
		2	1014	22.50	19	19.02	155	23.14	2.72	2.0	1.9	19	0	114	.11	8	.7	2.7	SWR
		2	1017	8.09	19	18.63	155	23.43	3.59	2.4	2.7	21	0	105	.11	9	.7	1.6	SWR
		2	1022	20.72	19	18.46	155	23.35	2.62	1.8	1.6	17	0	138	.14	8	1.0	4.9	SWR
		2	1029	7.79	19	18.41	155	23.54	4.57	1.9	1.5	16	0	138	.06	9	.5	1.0	SWR
		2	1032	24.91	19	19.38	155	21.04	1.33	2.3	2.4	14	0	119	.10	7	.7	99.0	SWR
		2	1037	34.79	19	16.76	155	23.02	5.88	1.8	2.0	18	0	124	.15	12	1.0	3.8	SWR
		2	1042	18.97	19	17.80	155	23.62	5.30	2.4	2.5	25	0	111	.13	9	.7	.4	SWR
		2	1048	9.76	19	13.67	155	20.85	3.74	2.4	2.4	19	0	165	.16	13	1.3	3.2	HLP
		2	1054	39.64	19	13.46	155	21.01	4.06	1.9	2.2	21	0	158	.13	13	.9	1.7	LSW
		2	1055	29.49	19	13.65	155	21.16	7.75	2.9	2.6	27	0	157	.16	13	1.0	2.0	LSW
		2	11	1 38.93	19	18.55	155	23.45	3.29	2.3	2.2	17	0	136	.09	9	.6	1.7	SWR
		2	11	2 53.44	19	15.62	155	22.87	5.81	2.3	2.3	26	0	135	.17	13	1.1	3.8	LSW
		2	11	6 27.12	19	20.06	155	20.61	4.75	2.0	2.3	14	0	100	.09	6	.6	1.6	SWR
		2	11	8 52.47	19	19.38	155	21.04	.10	1.7	2.1	12	0	169	.08	7	1.1	3.1	SWR
		2	1110	36.29	19	13.58	155	20.97	4.38	2.1	2.3	23	0	158	.15	15	1.1	1.7	HLP
		2	1114	7.56	19	18.66	155	23.12	2.04	2.1	2.2	20	0	136	.13	8	.8	4.4	SWR
		2	1116	47.51	19	20.14	155	20.86	5.34	2.1	2.2	22	0	85	.09	6	.5	.7	SWR
		2	1130	39.64	19	20.50	155	20.41	5.20	2.5	2.6	25	0	66	.10	6	.5	.7	SWR
		2	1138	40.30	19	16.35	155	23.24	10.02	2.4	2.3	21	0	127	.13	9	.9	.8	SWR
		2	1141	6.62	19	24.96	155	17.50	1.21	.7	1.1	9	0	108	.04	3	.3	.2	SPC
		2	1148	16.63	19	19.95	155	19.68	2.60	2.8	3.5	20	0	63	.13	6	.7	3.2	SWR
		2	1150	19.57	19	24.50	155	17.15	1.11	.7	1.2	7	0	172	.13	2	1.2	.8	SPC
		2	1155	38.32	19	20.38	155	20.48	4.36	1.9	1.9	20	0	92	.09	6	.5	1.2	SWR
		2	1156	5.84	19	13.44	155	21.33	.27	1.9	1.8	22	0	160	.12	13	.8	51.7	LSW
		2	12	5 3.49	19	25.22	155	20.37	2.88	1.5	.7	6	0	234	.16	7	5.4	20.4	UKF
		2	1213	30.18	19	19.68	155	21.55	3.68	1.5	1.1	13	0	114	.09	7	.7	2.9	SWR
		2	1214	58.76	19	11.65	155	22.17	8.98	3.1	2.9	29	0	166	.18	13	1.3	1.7	LSW
		2	1216	30.57	19	17.09	155	23.40	4.37	2.6	2.8	22	0	119	.18	9	1.1	2.1	SWR
		2	1218	29.35	19	11.92	155	22.20	4.13	2.9	2.8	18	0	164	.21	13	1.7	2.8	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	2	1230	34.32	19	18.41	155	23.64	1.49	1.9	1.6	15	0	137	.11	9	.7	.9	SWR
		2	1234	4.28	19	19.14	155	22.46	3.96	1.8	1.6	13	0	128	.07	9	.5	1.4	SWR
		2	1238	6.77	19	17.61	155	22.15	6.99	1.9	1.7	24	0	120	.19	8	1.1	2.1	SWR
		2	1244	2.50	19	18.15	155	24.13	5.19	3.0	3.1	29	0	106	.14	10	.7	1.0	SWR
		2	1246	14.10	19	17.12	155	24.18	.30	2.3	2.4	22	0	114	.13	10	.8	3.9	SWR
		2	13 5	47.69	19	18.81	155	23.52	5.52	3.1	3.1	28	0	103	.16	9	.9	2.3	SWR
		2	13 9	9.88	19	19.91	155	20.76	5.41	2.3	2.2	21	0	104	.09	6	.5	.7	SWR
		2	1315	34.44	19	14.43	155	23.18	.23	1.9	1.9	20	0	148	.15	11	1.0	71.7	LSW
		2	1318	53.49	19	17.04	155	24.10	.31	2.2	2.0	22	0	115	.15	10	.9	4.5	SWR
		2	1320	42.85	19	15.04	155	22.77	4.50	1.9	1.6	17	0	189	.12	10	1.1	1.5	LSW
		2	1321	37.40	19	14.45	155	22.74	5.77	2.6	3.1	26	0	151	.16	11	1.0	2.9	LSW
		2	1326	54.29	19	20.38	155	20.51	5.18	1.9	1.7	15	0	92	.07	6	.4	1.1	SWR
		2	1335	23.56	19	14.19	155	22.24	2.75	2.5	2.6	22	0	155	.12	11	.8	2.6	LSW
		2	1337	16.74	19	24.46	155	17.09	.71	.5	.7	7	0	88	.14	2	.9	.5	SPC
		2	1337	44.67	19	17.50	155	14.97	7.90	2.0	1.9	26	0	128	.14	6	.9	1.6	POL
		2	1340	15.03	19	21.06	155	19.56	1.59	1.3	.9	9	0	92	.07	6	.7	99.0	SWR
		2	1348	56.77	19	18.80	155	22.82	3.78	1.7	1.5	14	0	135	.10	8	.8	2.4	SWR
		2	1353	3.06	19	21.05	155	19.46	3.51	1.3	1.0	14	0	91	.07	6	.4	2.2	SWR
		2	1354	26.65	19	18.32	155	22.53	4.87	2.3	2.6	16	0	161	.12	10	.9	1.1	SWR
		2	1410	16.69	19	19.33	155	22.29	3.30	2.0	1.8	16	0	124	.09	9	.7	1.4	SWR
		2	1415	11.41	19	21.04	155	19.49	1.51	1.7	1.6	13	0	172	.08	6	.8	.0	SWR
		2	1420	24.55	19	18.98	155	22.96	4.84	2.3	1.9	21	0	130	.12	8	.8	1.1	SWR
		2	1429	19.32	19	11.67	155	23.76	13.75	2.4	2.2	25	0	161	.40	16	2.7	8.7	LSW
		2	1433	33.22	19	20.31	155	20.43	4.68	1.6	1.2	19	0	93	.10	5	.6	1.8	SWR
		2	1438	7.61	19	20.28	155	20.63	4.99	2.3	2.3	22	0	95	.09	6	.5	.9	SWR
		2	1440	29.04	19	12.81	155	22.02	8.89	2.2	2.0	19	0	160	.16	14	1.4	2.7	LSW
		2	1442	25.62	19	16.59	155	23.25	5.66	2.8	2.8	20	0	124	.15	12	1.1	3.6	SWR
		2	1444	58.22	19	18.73	155	23.17	5.11	2.4	2.3	20	0	118	.12	8	.8	1.0	SWR
		2	1446	32.29	19	19.77	155	22.75	4.35	2.1	1.8	12	0	186	.09	9	1.0	4.2	SWR
		2	1455	28.90	19	24.23	155	20.91	6.91	1.2	.7	6	0	328	.18	7	22.0	13.8	UKF
		2	1457	36.66	19	24.82	155	17.04	1.12	.7	1.0	8	0	75	.13	2	1.0	.6	SPC
		2	1458	40.38	19	16.91	155	23.95	1.64	1.8	1.6	15	0	169	.15	10	1.3	39.6	SWR
		2	15 2	44.07	19	14.83	155	22.55	5.23	1.9	2.0	27	0	144	.15	13	.9	1.2	LSW
		2	15 4	50.04	19	21.55	155	18.83	2.67	1.7	1.8	16	0	75	.11	5	.6	3.4	KOA
		2	15 6	22.96	19	20.12	155	20.90	5.14	2.0	2.2	25	0	101	.08	6	.4	.6	SWR
		2	15 7	38.49	19	20.97	155	19.39	5.07	1.3	1.4	11	0	92	.05	6	.4	3.8	SWR
		2	15 8	38.09	19	20.28	155	20.76	4.69	2.1	1.9	19	0	97	.09	6	.6	1.0	SWR
		2	1513	56.93	19	19.38	155	21.89	3.24	1.6	1.4	12	0	122	.06	8	.5	2.2	SWR
		2	1515	.88	19	20.29	155	20.74	3.85	1.8	1.8	16	0	96	.06	6	.4	2.2	SWR
		2	1524	51.61	19	20.97	155	19.53	1.19	1.3	1.1	9	0	94	.08	6	.7	1.0	SWR
		2	1526	29.40	19	16.67	155	23.48	.71	2.2	2.2	18	0	122	.15	9	.9	65.1	SWR
		2	1533	19.51	19	19.76	155	21.26	1.02	2.6	3.6	26	0	86	.14	7	.6	1.2	SWR
		2	1541	23.73	19	13.52	155	24.05	4.02	2.4	2.6	22	0	154	.16	13	1.2	2.1	LSW
		2	1547	45.40	19	27.41	155	18.05	1.58	1.3	1.0	8	0	214	.23	5	5.7	99.0	GLN
		2	1548	36.81	19	11.20	155	22.19	8.21	3.5	3.7	23	0	188	.11	14	1.2	1.9	LSW
		2	1554	19.96	19	17.01	155	22.16	7.66	2.7	2.6	27	0	126	.17	8	1.0	2.0	SWR
		2	1557	15.42	19	19.54	155	22.19	4.52	2.1	1.9	20	0	119	.15	8	1.0	1.6	SWR
		2	1557	44.07	19	18.69	155	23.58	3.22	2.5	2.4	21	0	104	.17	9	1.0	2.1	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	2	16 0	26.43	19	17.10	155	22.16	2.58	1.7	2.1	23	0	125	.12	8	.8	3.6	SWR
		2	16 7	44.32	19	17.02	155	22.11	5.66	1.8	1.7	23	0	126	.15	8	1.0	2.8	SWR
		2	1613	12.04	19	20.22	155	20.75	5.18	2.2	2.4	19	0	97	.07	6	.4	.7	SWR
		2	1616	8.38	19	16.19	155	23.34	6.34	2.7	2.9	23	0	127	.17	13	1.2	4.9	SWR
		2	1620	45.61	19	20.10	155	21.08	3.50	2.2	2.4	20	0	103	.10	6	.6	1.9	SWR
		2	1621	52.60	19	18.75	155	23.28	4.27	1.7	1.6	14	0	134	.05	8	.4	1.1	SWR
		2	1635	17.15	19	19.30	155	22.22	4.28	1.6	1.6	16	0	124	.08	9	.6	1.6	SWR
		2	1636	46.84	19	24.75	155	17.11	1.41	.3	.6	7	0	157	.06	2	.7	.3	SPC
		2	1644	3.51	19	16.19	155	23.66	10.02	3.1	3.4	26	0	125	.15	9	1.1	.8	SWR
		2	1646	35.19	19	20.51	155	20.31	3.33	2.0	1.8	20	0	88	.09	6	.5	2.2	SWR
		2	1647	49.78	19	16.41	155	23.78	5.62	1.9	1.9	25	0	123	.16	9	1.0	3.1	SWR
		2	1648	54.69	19	19.82	155	21.73	4.94	1.7	1.8	15	0	140	.11	8	.9	1.7	SWR
		2	1649	57.81	19	12.82	155	24.04	3.55	2.9	3.1	26	0	157	.18	13	1.1	2.4	LSW
		2	1651	48.56	19	20.08	155	20.83	2.01	1.6	1.6	10	0	101	.12	6	.9	.0	SWR
		2	1652	21.20	19	16.19	155	23.78	.35	1.8	1.4	15	0	125	.14	10	1.1	77.8	SWR
		2	1654	6.45	19	16.14	155	23.69	6.49	1.9	2.0	21	0	126	.15	9	1.1	2.1	SWR
		2	1656	9.79	19	19.94	155	21.18	1.64	1.6	1.5	11	0	107	.06	7	.5	99.0	SWR
		2	17 2	54.09	19	11.76	155	22.13	1.79	2.3	2.2	22	0	182	.12	13	1.2	40.1	LSW
		2	17 6	47.95	19	20.24	155	20.78	3.84	1.8	2.1	18	0	97	.08	6	.5	1.3	SWR
		2	1710	23.08	19	20.51	155	20.44	2.51	1.5	1.4	10	0	117	.09	6	.8	14.7	SWR
		2	1711	35.58	19	12.50	155	22.03	5.15	2.0	1.9	25	0	164	.10	14	.8	1.0	LSW
		2	1712	16.69	19	10.18	155	10.42	4.07	2.1	2.0	18	0	227	.11	20	1.9	1.4	POL
		2	1713	41.47	19	20.51	155	20.29	1.06	1.4	1.3	12	0	88	.14	6	.9	.0	SWR
		2	1715	19.06	19	19.22	155	22.28	2.63	1.6	1.4	12	0	126	.06	9	.5	2.7	SWR
		2	1721	50.57	19	18.29	155	23.59	4.12	1.9	1.8	17	0	140	.06	9	.5	1.2	SWR
		2	1722	54.32	19	12.85	155	22.33	4.79	2.7	2.7	22	0	158	.19	12	1.3	1.9	LSW
		2	1725	26.31	19	19.88	155	20.27	2.36	2.2	2.4	16	0	99	.11	5	.6	8.4	SWR
		2	1729	1.56	19	20.24	155	20.45	5.13	2.1	2.1	15	0	108	.10	7	.9	1.5	SWR
		2	1733	30.17	19	20.21	155	20.71	1.64	2.2	1.8	11	0	97	.16	6	1.1	.0	SWR
		2	1733	59.94	19	20.30	155	20.27	4.80	2.0	1.9	14	0	91	.09	5	.6	1.5	SWR
		2	1736	11.67	19	18.48	155	15.80	9.00	2.2	2.1	26	0	108	.09	5	.6	.9	KOA
		2	1751	28.29	19	25.35	155	18.99	4.00	1.0	1.6	8	0	312	.18	5	13.3	8.0	SPC
		2	1751	58.74	19	21.12	155	19.27	1.52	1.2	1.3	11	0	87	.06	6	.5	99.0	SWR
		2	1754	17.65	19	20.29	155	20.46	1.57	1.4	1.2	13	0	125	.09	5	.6	.0	SWR
		2	1758	33.58	19	19.21	155	23.13	5.25	2.2	2.1	22	0	124	.14	8	.9	1.0	SWR
		2	18 2	1.67	19	20.17	155	20.73	3.55	1.5	1.2	13	0	98	.10	6	.7	4.1	SWR
		2	18 2	54.01	19	18.95	155	23.21	4.47	2.2	1.9	22	0	102	.16	8	.9	1.6	SWR
		2	18 3	26.29	19	18.76	155	23.38	4.26	2.2	2.2	19	0	104	.10	8	.6	1.4	SWR
		2	18 5	49.35	19	19.14	155	22.49	5.23	2.2	2.2	15	0	128	.11	9	.9	1.1	SWR
		2	18 6	36.16	19	12.74	155	22.38	3.62	2.9	2.9	26	0	159	.18	12	1.2	2.7	LSW
		2	1815	57.02	19	18.63	155	23.82	1.93	1.7	1.6	19	0	131	.15	9	1.0	43.3	SWR
		2	1819	20.55	19	21.71	155	18.86	4.97	2.0	2.2	15	0	74	.15	5	.9	2.1	KOA
		2	1820	15.30	19	19.47	155	22.96	4.77	2.2	2.4	22	0	95	.19	9	1.0	1.4	SWR
		2	1824	27.36	19	21.10	155	19.43	1.47	1.3	1.1	12	0	90	.06	6	.4	99.0	SWR
		2	1824	42.15	19	18.54	155	21.60	2.00	2.4	2.5	12	0	144	.25	8	2.3	.0	SWR
		2	1828	16.84	19	19.10	155	22.96	5.06	1.9	1.8	23	0	127	.13	8	.8	1.1	SWR
		2	1834	51.92	19	19.32	155	21.92	1.76	1.7	1.7	13	0	124	.09	8	.6	35.4	SWR
		2	1837	43.55	19	17.64	155	14.10	8.87	2.5	2.7	30	0	97	.13	8	.7	.9	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	2	1848	10.34	19	18.95	155	23.32	4.61	2.1	2.1	20	0	102	.12	8	.7	1.1	SWR
		2	1850	3.27	19	20.27	155	20.46	4.25	1.8	1.9	18	0	94	.12	5	.8	1.7	SWR
		2	1852	28.78	19	20.23	155	20.78	4.27	2.2	2.2	21	0	82	.10	6	.6	1.2	SWR
		2	1853	38.05	19	20.86	155	20.69	6.48	2.6	2.6	28	0	65	.16	6	.8	1.6	SWR
		2	1854	18.58	19	17.03	155	23.27	6.35	2.3	2.0	19	0	120	.19	12	1.4	4.1	SWR
		2	1859	18.72	19	20.31	155	20.99	2.41	1.4	.7	8	0	131	.13	6	1.4	26.0	SWR
		2	19 0	36.11	19	24.45	155	17.03	1.22	.7	.7	9	0	85	.08	2	.7	.4	SPC
		2	19 3	.37	19	18.38	155	23.31	2.86	1.9	1.6	19	0	108	.12	8	.8	3.0	SWR
		2	19 4	11.27	19	14.54	155	22.39	5.70	2.6	2.4	29	0	148	.16	11	1.0	2.7	LSW
		2	19 8	22.99	19	16.76	155	23.82	3.02	2.4	2.5	23	0	119	.17	9	1.0	2.6	SWR
		2	1916	46.04	19	20.07	155	21.12	4.10	1.5	1.6	15	0	130	.08	7	.6	1.6	SWR
		2	1917	3.83	19	17.32	155	23.73	5.98	1.8	1.8	17	0	115	.17	9	1.4	3.5	SWR
		2	1918	41.66	19	14.85	155	23.40	.34	2.2	2.2	20	0	143	.17	10	1.2	67.4	LSW
		2	1919	5.91	19	16.39	155	23.65	.43	2.0	2.4	13	0	130	.15	9	1.3	71.7	SWR
		2	1919	21.36	19	15.56	155	22.95	7.16	2.3	2.2	17	0	153	.08	15	.8	1.7	LSW
		2	1924	59.19	19	24.62	155	16.80	1.02	.5	1.4	10	0	85	.18	2	.9	.7	SPC
		2	1925	2.40	19	20.26	155	20.83	5.22	2.2	2.1	16	0	74	.17	6	1.0	1.5	SWR
		2	1930	54.61	19	19.51	155	22.05	3.51	1.6	1.1	13	0	119	.08	8	.6	1.7	SWR
		2	1932	17.30	19	24.81	155	16.91	1.21	.9	1.5	7	0	104	.02	2	.1	.1	SPC
		2	1938	52.66	19	17.71	155	23.87	4.90	2.6	2.4	27	0	111	.15	9	.8	1.3	SWR
		2	1941	9.85	19	24.68	155	16.92	.80	1.0	1.2	9	0	110	.13	2	.9	.6	SPC
		2	1941	56.94	19	17.10	155	24.65	2.69	1.8	1.8	22	0	112	.17	11	1.0	3.2	SWR
		2	1944	45.42	19	24.69	155	17.04	1.12	.8	1.3	9	0	79	.10	2	.7	.4	SPC
		2	1947	48.18	19	20.10	155	20.96	3.35	1.5	1.2	12	0	102	.06	6	.4	1.6	SWR
		2	20 6	16.68	19	24.62	155	16.99	1.25	.8	1.2	8	0	79	.02	2	.2	.1	SPC
		2	20 9	18.99	19	19.63	155	21.52	4.26	1.9	1.7	13	0	115	.14	7	1.0	2.2	SWR
		2	2022	55.66	19	16.78	155	23.21	5.88	1.8	1.9	20	0	123	.17	8	1.2	3.5	SWR
		2	2026	52.38	19	20.35	155	20.88	3.39	1.4	1.3	11	0	123	.11	6	1.0	3.0	SWR
		2	2029	25.14	19	16.58	155	23.67	2.68	1.8	1.9	26	0	122	.18	9	1.0	2.9	SWR
		2	2030	22.09	19	14.31	155	22.37	2.40	1.9	1.6	18	0	150	.16	11	1.2	5.2	LSW
		2	2031	23.80	19	20.24	155	20.74	4.23	1.5	1.4	16	0	123	.05	6	.3	.9	SWR
		2	2032	23.73	19	18.37	155	23.62	4.48	2.3	2.1	19	0	107	.10	9	.7	1.6	SWR
		2	2043	51.24	19	25.64	155	38.13	1.03	3.0	2.8	16	0	151	.19	19	1.4	1.7	MOK
		2	2045	14.15	19	18.93	155	22.80	4.89	2.3	2.3	22	0	132	.10	8	.6	1.0	SWR
		2	2048	9.75	19	21.09	155	19.55	1.31	1.6	1.5	14	0	92	.08	6	.6	99.0	SWR
		2	2052	16.03	19	18.91	155	23.76	8.31	3.2	3.3	29	0	102	.16	9	.9	1.2	SWR
		2	2116	17.45	19	20.76	155	19.72	4.50	2.0	2.5	21	0	62	.08	5	.4	1.1	SWR
		2	2121	3.63	19	19.17	155	22.21	4.38	1.9	1.6	17	0	127	.09	9	.6	1.1	SWR
		2	2122	56.79	19	21.20	155	19.29	2.23		1.2	12	0	86	.05	6	.4	12.2	SWR
		2	2124	31.93	19	19.36	155	22.25	4.34	2.3	2.3	24	0	96	.09	9	.5	.9	SWR
		2	2127	40.32	19	19.64	155	21.49	4.46	1.9	1.8	18	0	115	.09	7	.6	1.3	SWR
		2	2132	50.12	19	20.10	155	20.81	4.86	2.0	2.0	18	0	101	.08	6	.5	.9	SWR
		2	2135	35.14	19	18.92	155	22.80	1.81	2.0	1.2	10	0	132	.06	8	.7	.0	SWR
		2	2141	56.12	19	20.20	155	20.65	4.58	2.4	2.6	25	0	73	.11	6	.5	1.1	SWR
		2	2149	32.66	19	20.96	155	19.38	1.98	1.4	1.6	15	0	70	.12	6	.6	99.0	SWR
		2	2151	1.75	19	20.44	155	20.29	4.57	1.9	2.1	23	0	89	.09	5	.5	1.0	SWR
		2	2153	7.73	19	19.86	155	21.11	5.30	2.1	2.0	16	0	108	.09	7	.6	.9	SWR
		2	2155	16.67	19	13.35	155	20.67	5.02	2.7	2.8	25	0	170	.11	15	.9	.9	HLP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	2	2157	33.16	19	19.95	155	21.26	3.21	1.6	1.6	18	0	107	.07	7	.4	1.5	SWR
		2	22 5	57.89	19	20.72	155	20.16	5.51	2.4	2.5	24	0	83	.14	6	.7	1.8	SWR
		2	22 8	7.13	19	20.71	155	20.21	1.69	1.3	1.4	12	0	109	.07	6	.5	99.0	SWR
		2	2211	37.20	19	21.56	155	18.91	1.10	1.2	.8	15	0	76	.10	5	.5	.6	KOA
		2	2228	12.44	19	20.53	155	20.41	4.58	1.4	1.2	16	0	117	.06	6	.4	2.9	SWR
		2	2238	4.25	19	18.74	155	22.90	1.57	1.8	1.9	17	0	136	.06	8	.6	.6	SWR
		2	2241	5.88	19	18.51	155	23.07	2.73	1.8	1.3	16	0	139	.16	8	1.2	4.5	SWR
		2	2245	39.21	19	19.07	155	22.86	4.34	2.1	2.3	21	0	128	.08	8	.5	.9	SWR
		2	2248	29.11	19	18.81	155	22.65	3.79	2.1	2.4	19	0	136	.12	9	.9	1.8	SWR
		2	2311	36.92	19	20.35	155	20.35	4.42	1.4	1.8	18	0	91	.07	5	.4	1.1	SWR
		2	2315	28.66	19	20.19	155	20.80	5.08	1.6	1.8	21	0	99	.08	6	.5	.8	SWR
		2	2320	39.73	19	21.03	155	19.37	1.57	1.3	1.6	12	0	90	.07	6	.4	.0	SWR
		2	2324	15.47	19	21.06	155	19.44	3.45	1.3	1.6	13	0	91	.06	6	.4	2.1	SWR
		2	2329	56.06	19	14.06	155	21.31	5.26	2.3	2.4	28	0	154	.18	12	1.1	1.5	LSW
		2	2331	10.26	19	21.01	155	19.55	3.89	1.3	1.6	18	0	72	.09	6	.5	2.0	SWR
		2	2332	40.51	19	18.55	155	23.35	9.86	2.5	2.2	25	0	106	.14	10	1.0	1.1	SWR
		2	2333	19.10	19	13.57	155	20.98	8.54	3.0	3.1	23	0	158	.16	13	1.2	1.9	HLP
		2	2337	55.36	19	19.70	155	20.98	.61	2.8	3.3	26	0	93	.12	6	.6	3.5	SWR
		2	2346	8.24	19	20.39	155	20.58	5.15	1.5	2.2	18	0	93	.05	6	.3	.6	SWR
		2	2356	20.61	19	18.59	155	23.73	1.64	2.0	2.3	17	0	133	.14	9	1.0	1.0	SWR
		2	2357	25.66	19	12.35	155	22.59	3.19	2.0	2.1	25	0	161	.15	12	1.0	2.8	LSW
		3	0 1	18.91	19	16.41	155	23.61	.64		1.4	22	0	124	.15	9	.9	63.0	SWR
		3	0 5	6.90	19	18.83	155	22.88	4.05	2.3	2.6	24	0	134	.10	8	.6	1.3	SWR
		3	0 9	14.22	19	14.44	155	23.48	7.87	2.3	2.4	13	0	141	.36	11	2.8	6.0	LSW
		3	011	56.07	19	20.56	155	20.41	4.11	2.5	3.0	25	0	74	.09	6	.5	1.0	SWR
		3	023	55.96	19	20.17	155	19.19	2.00	1.8	2.0	15	0	76	.15	7	.8	.0	SWR
		3	028	45.37	19	20.14	155	20.75	4.34	1.8	1.8	18	0	99	.10	6	.6	1.7	SWR
		3	029	59.99	19	16.76	155	24.01	5.98	2.4	2.7	22	0	118	.18	10	1.2	2.4	SWR
		3	045	27.15	19	16.58	155	23.86	5.53	2.2	2.4	20	0	121	.14	10	.9	2.8	SWR
		3	057	10.98	19	20.16	155	21.09	3.64	1.5	1.8	14	0	102	.18	6	1.2	4.0	SWR
		3	058	29.89	19	19.38	155	22.27	4.99	2.1	2.1	23	0	96	.13	9	.7	1.2	SWR
		3	1 2	32.89	19	18.73	155	15.66	6.89	1.1	1.1	19	0	125	.10	5	.7	1.2	KOA
		3	1 8	27.80	19	20.36	155	20.34	1.39	1.5	1.6	13	0	91	.08	5	.5	.0	SWR
		3	1 9	12.58	19	13.47	155	20.53	4.42	1.9	1.9	19	0	170	.09	13	.8	1.3	HLP
		3	122	9.76	19	19.40	155	22.90	4.80	2.0	2.4	24	0	96	.16	9	.6	1.3	SWR
		3	126	55.05	19	9.97	155	22.89	6.09	2.6	2.9	25	0	173	.15	17	1.1	5.4	LSW
		3	132	9.27	19	21.09	155	19.58	1.24	1.3	1.3	15	0	92	.08	6	.5	99.0	SWR
		3	133	18.94	19	20.12	155	20.89	5.30	1.9	1.8	14	0	101	.06	6	.4	.6	SWR
		3	134	17.41	19	18.60	155	14.24	9.13	2.8	2.8	27	0	76	.10	8	.6	1.0	POL
		3	138	35.09	19	21.24	155	19.06	1.73		1.0	13	0	83	.05	6	.3	.0	SWR
		3	142	36.11	19	18.59	155	14.18	8.70	2.7	3.1	26	0	78	.11	8	.6	1.3	POL
		3	145	50.39	19	10.22	155	23.08	9.86	3.9	.1	30	0	171	.19	16	1.5	.9	LSW
		3	149	42.45	19	9.74	155	22.74	9.79	2.8	2.7	31	0	175	.16	17	1.3	.5	LSW
		3	151	23.13	19	16.84	155	23.41	2.97	2.2	2.3	26	0	121	.19	9	1.1	3.2	SWR
		3	158	5.85	19	18.81	155	14.11	7.85	1.7	2.2	27	0	73	.11	7	.6	1.2	POL
		3	2 2	2.07	19	20.86	155	19.70	2.86	1.3	1.4	12	0	98	.04	6	.3	2.9	SWR
		3	2 2	30.27	19	11.53	155	22.11	1.69	2.3	2.5	24	0	168	.11	13	.8	28.2	LSW
		3	2 5	3.00	19	20.32	155	20.45	4.83	2.2	2.4	21	0	74	.12	6	.6	1.3	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	3	2 5	53.85	19	18.57	155	14.20	8.73	2.0	2.2	27	0	75	.14	8	.8	1.2	POL
		3	222	30.94	19	20.47	155	20.12	3.10	1.5	1.8	16	0	114	.09	6	.5	4.7	SWR
		3	222	48.48	19	10.22	155	22.36	10.45	2.9	2.9	23	0	173	.15	18	1.5	.7	LSW
		3	227	.42	19	19.37	155	22.22	4.11	2.1	1.9	18	0	96	.11	9	.7	1.5	SWR
		3	230	41.41	19	21.37	155	19.15	1.45	1.3	1.4	14	0	64	.10	6	.6	99.0	SWR
		3	231	15.94	19	9.25	155	13.97	10.38	2.2	1.4	20	0	226	.15	21	2.4	.7	PPL
		3	232	53.81	19	18.57	155	23.53	1.93	2.0	1.8	22	0	105	.16	9	.9	58.3	SWR
		3	237	53.88	19	18.92	155	20.70	.21	1.7	1.6	12	0	181	.12	6	2.1	5.0	SWR
		3	240	50.23	19	21.12	155	19.47	1.50		.8	16	0	90	.09	6	.5	99.0	SWR
		3	241	24.80	19	19.28	155	22.21	2.53	1.7	1.5	18	0	125	.08	9	.5	2.5	SWR
		3	242	41.56	19	18.47	155	23.33	4.51	2.1	2.3	22	0	107	.12	8	.7	1.3	SWR
		3	244	34.97	19	19.19	155	16.30	6.74	1.6	1.5	21	0	112	.10	6	.6	1.0	KOA
		3	251	38.54	19	20.80	155	19.82	1.58	1.3	1.6	14	0	101	.08	6	.6	99.0	SWR
		3	254	13.67	19	19.84	155	21.20	4.56	1.7	1.5	17	0	109	.07	7	.5	1.4	SWR
		3	3 0	17.82	19	20.43	155	20.25	1.90	1.8	1.4	16	0	89	.10	5	.6	.0	SWR
		3	3 5	39.87	19	14.69	155	22.61	4.39	3.2	3.3	28	0	149	.17	10	1.0	1.5	LSW
		3	330	14.34	19	18.89	155	22.94	2.50	1.6	1.5	17	0	132	.07	8	.5	3.4	SWR
		3	330	40.30	19	19.02	155	22.89	1.76	1.8	1.4	18	0	129	.09	8	.6	.5	SWR
		3	331	5.82	19	12.32	155	24.31	5.63	2.2	1.9	24	0	156	.15	14	1.0	2.4	LSW
		3	333	39.83	19	13.14	155	24.42	9.46	3.4	3.7	27	0	151	.15	13	1.0	1.3	LSW
		3	341	56.47	19	10.71	155	23.49	5.00	2.5	2.5	19	0	188	.16	16	1.8	2.6	LSW
		3	349	6.89	19	18.91	155	23.04	3.16	2.0	2.3	25	0	131	.17	8	1.0	2.2	SWR
		3	355	16.83	19	17.20	155	23.53	2.33	1.9	2.0	23	0	117	.17	9	1.0	3.1	SWR
		3	357	16.28	19	20.15	155	20.77	5.34	1.8	1.8	18	0	99	.07	6	.5	.8	SWR
		3	359	39.47	19	20.57	155	20.19	3.03	1.4	1.5	15	0	85	.07	6	.4	2.6	SWR
		3	413	32.72	19	20.29	155	20.26	4.80	2.1	2.3	19	0	91	.08	5	.5	1.2	SWR
		3	423	11.03	19	20.21	155	20.68	4.76	1.9	1.9	19	0	112	.09	6	.6	1.5	SWR
		3	426	26.75	19	19.32	155	22.24	2.74	2.0	2.1	21	0	124	.09	9	.5	1.9	SWR
		3	427	27.55	19	24.47	155	17.18	1.00	1.9	1.9	9	0	91	.08	2	.5	.4	SPC
		3	435	14.27	19	20.23	155	20.84	4.33	2.2	2.7	19	0	83	.10	6	.6	1.4	SWR
		3	445	29.51	19	20.46	155	20.91	6.26	2.5	2.8	28	0	72	.15	6	.7	1.5	SWR
		3	448	56.79	19	20.39	155	20.37	3.55	1.4	1.4	17	0	91	.08	5	.5	1.9	SWR
		3	454	55.12	19	20.51	155	20.27	1.07	1.4	1.1	14	0	115	.05	6	.4	99.0	SWR
		3	458	58.18	19	24.60	155	17.07	1.20	.6	1.0	9	0	78	.11	2	.7	.4	SPC
		3	459	25.37	19	20.21	155	21.10	3.50	1.6	1.5	15	0	136	.17	6	1.3	7.6	SWR
		3	459	42.26	19	14.89	155	22.46	9.66	2.6	2.7	23	0	144	.15	10	1.0	1.3	LSW
		3	5 4	42.64	19	20.32	155	20.48	3.89	1.7	1.6	15	0	119	.07	5	.5	1.6	SWR
		3	5 8	7.88	19	20.01	155	21.28	3.65	1.6	1.4	15	0	106	.08	7	.5	2.0	SWR
		3	516	6.74	19	10.34	155	22.88	9.70	3.1	3.3	27	0	171	.12	18	1.0	.5	LSW
		3	522	37.12	19	20.73	155	19.48	4.73	2.0	2.3	17	0	98	.15	5	1.0	2.8	SWR
		3	524	1.34	19	18.55	155	23.22	4.24	2.1	2.2	20	0	137	.09	8	.7	1.4	SWR
		3	526	24.53	19	10.13	155	22.29	8.17	2.7	2.7	26	0	174	.16	16	1.3	1.9	LSW
		3	533	.45	19	14.93	155	21.70	5.34	1.9	1.5	23	0	152	.14	10	1.0	1.2	LSW
		3	541	1.92	19	11.94	155	23.18	5.73	2.6	2.7	24	0	174	.10	15	1.0	4.1	LSW
		3	553	13.37	19	10.09	155	21.84	2.98	2.2	1.9	23	0	176	.15	16	1.4	2.5	LSW
		3	6 0	35.36	19	20.35	155	21.12	4.97	2.5	2.8	23	0	75	.12	7	.7	1.3	SWR
		3	6 3	15.98	19	19.38	155	22.15	5.30	1.8	1.6	21	0	122	.09	8	.6	.8	SWR
		3	6 6	50.04	19	18.77	155	22.89	5.20	2.4	2.6	24	0	106	.10	8	.6	.7	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	3	614	41.65	19	14.03	155	21.72	4.01	1.9	1.8	19	0	153	.15	12	1.1	2.1	LSW
		3	620	38.54	19	18.97	155	22.70	2.50	1.6	1.4	15	0	131	.08	8	.6	4.2	SWR
		3	621	28.77	19	18.92	155	22.84	2.92	1.8	1.6	19	0	132	.09	8	.6	2.0	SWR
		3	631	20.78	19	20.15	155	20.77	4.84	1.9	1.9	21	0	99	.08	6	.5	1.1	SWR
		3	636	55.48	19	24.84	155	17.07	.90	.5	1.1	8	0	91	.09	2	.7	.4	SPC
		3	640	50.45	19	13.42	155	20.55	8.33	2.6	2.7	25	0	170	.15	13	1.3	2.2	HLP
		3	647	39.52	19	15.35	155	23.12	3.53	2.0	1.9	9	0	210	.15	15	2.4	15.3	LSW
		3	650	32.67	19	20.90	155	19.63	2.92	1.3	1.2	15	0	97	.06	6	.4	3.6	SWR
		3	651	22.62	19	18.70	155	25.65	9.60	1.9	1.6	21	0	105	.11	8	1.0	.5	HEA
		3	7 4	8.01	19	19.05	155	22.39	3.01	1.6	1.4	17	0	130	.08	9	.6	1.8	SWR
		3	7 4	57.87	19	20.85	155	19.79	1.28	1.3	1.1	11	0	100	.08	6	.6	99.0	SWR
		3	7 9	24.00	19	16.69	155	22.50	5.99	1.8	1.9	21	0	128	.15	7	1.1	3.1	SWR
		3	7 9	42.96	19	14.51	155	23.03	.39	2.6	2.8	18	0	148	.17	11	1.1	71.0	LSW
		3	712	50.20	19	20.70	155	19.96	3.03	1.7	1.8	18	0	81	.08	6	.4	3.4	SWR
		3	715	8.64	19	17.04	155	23.33	3.84	1.8	1.9	21	0	120	.14	8	1.0	2.3	SWR
		3	717	31.30	19	11.68	155	21.69	2.99	2.7	2.6	26	0	167	.17	13	1.2	3.0	LSW
		3	718	23.21	19	16.40	155	23.37	1.03	2.3	2.4	18	0	126	.13	9	.9	36.7	SWR
		3	722	7.32	19	16.44	155	24.48	5.21	2.3	2.2	22	0	118	.14	11	1.0	1.1	SWR
		3	727	26.50	19	18.28	155	23.42	4.30	2.1	2.2	18	0	141	.10	8	.8	1.6	SWR
		3	728	44.24	19	21.09	155	19.21	1.52	1.2	1.4	10	0	87	.05	6	.4	.0	SWR
		3	730	35.13	19	14.67	155	21.75	5.82	2.2	.5	25	0	154	.12	11	.8	3.6	LSW
		3	732	26.55	19	17.82	155	14.38	8.28	1.7	1.2	17	0	139	.11	7	.9	2.3	POL
		3	732	49.30	19	12.26	155	21.72	9.62	4.9	4.7	26	0	164	.17	12	1.4	.8	LSW
		3	740	28.80	19	10.81	155	22.89	5.10	2.1	1.8	24	0	168	.14	15	1.1	1.6	LSW
		3	743	5.97	19	11.27	155	22.81	10.54	2.8	2.8	19	0	166	.16	16	2.1	.8	LSW
		3	743	43.17	19	14.26	155	23.56	3.41	3.2	3.4	14	0	142	.15	11	1.1	3.7	LSW
		3	746	4.62	19	15.77	155	21.79	1.58	2.1	2.0	17	0	186	.14	9	1.4	86.3	LSW
		3	754	41.27	19	17.95	155	23.91	1.13	2.3	2.4	22	0	109	.13	9	.7	32.7	SWR
		3	758	18.16	19	14.21	155	23.58	7.30	2.4	2.4	22	0	147	.13	11	1.0	2.6	LSW
		3	8 2	58.50	19	17.26	155	23.97	3.18	2.5	2.7	26	0	114	.18	9	1.0	2.9	SWR
		3	811	42.43	19	14.63	155	23.43	8.89	3.4	3.8	26	0	144	.16	10	1.1	1.6	LSW
		3	814	46.08	19	13.01	155	23.00	9.73	3.5	3.5	25	0	163	.13	12	1.2	.7	LSW
		3	818	57.82	19	13.34	155	23.43	1.76	2.5	2.4	24	0	156	.10	12	.7	25.7	LSW
		3	823	32.15	19	14.59	155	23.04	4.61	1.9	2.3	25	0	147	.16	10	1.0	1.7	LSW
		3	831	9.58	19	12.72	155	22.31	8.84	2.0	1.6	21	0	162	.14	14	1.2	2.0	LSW
		3	832	18.86	19	18.35	155	21.85	7.47	2.0	2.3	21	0	113	.16	8	1.1	1.8	SWR
		3	835	2.58	19	20.68	155	20.34	3.89	1.8	1.9	18	0	111	.11	6	.7	3.0	SWR
		3	837	33.71	19	20.50	155	20.28	.74	1.4	.9	13	0	116	.08	6	.6	.0	SWR
		3	847	6.58	19	15.42	155	22.75	8.75	1.9	1.9	15	0	162	.05	13	.6	1.5	LSW
		3	848	4.39	19	15.52	155	22.46	9.72	2.8	3.1	16	0	156	.11	12	1.2	1.9	LSW
		3	856	37.09	19	18.74	155	23.06	5.11	1.7	1.6	19	0	135	.13	8	1.0	1.2	SWR
		3	857	56.75	19	18.74	155	22.87	4.07	1.8	1.6	17	0	208	.10	10	1.3	1.9	SWR
		3	9 3	34.74	19	14.27	155	21.59	5.74	2.2	2.2	21	0	156	.12	11	.9	4.5	LSW
		3	9 4	20.56	19	14.12	155	23.34	6.17	2.0	1.6	15	0	148	.21	15	2.2	7.2	LSW
		3	9 8	56.61	19	18.76	155	22.99	5.08	2.1	2.0	20	0	135	.10	8	.7	1.1	SWR
		3	9 9	35.27	19	16.90	155	22.49	10.32	3.3	3.6	27	0	125	.17	7	1.1	.7	SWR
		3	911	49.47	19	16.28	155	22.35	7.93		1.0	14	0	153	.12	8	1.3	3.1	SWR
		3	914	28.49	19	16.86	155	22.40	5.95		1.6	25	0	126	.14	8	.9	2.7	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	RMS DEG	MIN SEC	ERH DIS	ERZ KM	REMK
1975	JAN	3	917	3.12	19	13.42	155	22.35	6.93	2.5	2.6	26	0 158	.13	12	.9	3.1	LSW
		3	918	5.23	19	16.70	155	22.03	6.72		1.2	21	0 130	.15	8	1.0	2.4	SWR
		3	919	1.11	19	16.90	155	22.14	8.17	2.7	3.0	28	0 127	.13	8	.8	1.3	SWR
		3	920	53.72	19	16.66	155	22.23	6.70	2.1	2.2	27	0 129	.13	8	.8	2.2	SWR
		3	921	55.91	19	21.63	155	18.76	.30		.4	12	0 81	.06	5	.4	1.3	KOA
		3	924	48.24	19	16.78	155	22.43	6.09	1.8	1.8	22	0 127	.13	8	.9	2.6	SWR
		3	928	13.28	19	21.29	155	19.26	.31		1.5	15	0 84	.09	6	.5	2.0	SWR
		3	929	55.22	19	18.59	155	23.27	2.67		1.6	15	0 155	.12	10	1.1	6.1	SWR
		3	934	23.38	19	14.48	155	23.27	5.26	2.1	2.0	23	0 147	.13	11	.9	1.1	LSW
		3	936	4.11	19	16.14	155	23.96	.89	1.8	1.8	18	0 124	.13	10	.9	30.8	SWR
		3	941	6.79	19	18.04	155	23.40	1.57	1.9	2.0	16	0 160	.15	11	1.3	99.0	SWR
		3	942	38.62	19	15.12	155	22.75	5.18	2.4	2.5	25	0 147	.14	9	1.0	1.1	LSW
		3	943	52.90	19	20.28	155	20.41	3.30	1.6	1.6	14	0 124	.07	5	.5	4.2	SWR
		3	955	59.82	19	10.85	155	22.85	9.74	2.7	3.1	23	0 169	.09	17	.9	.5	LSW
		3	957	55.55	19	19.04	155	22.57	5.65	1.7	1.6	20	0 130	.08	9	.6	1.4	SWR
		3	959	29.84	19	20.15	155	20.85	1.49	1.4	1.6	14	0 135	.08	6	.6	.0	SWR
		3	10 1	57.41	19	20.86	155	19.66	1.25	1.7	1.9	15	0 98	.08	6	.5	.0	SWR
		3	1019	47.22	19	17.45	155	23.92	.79	2.6	2.8	20	0 113	.12	12	.8	96.1	SWR
		3	1021	38.79	19	19.07	155	22.77	2.93	1.8	1.8	18	0 129	.14	8	.9	3.6	SWR
		3	1022	34.66	19	17.22	155	23.61	3.82		1.5	16	0 116	.10	9	.7	3.7	SWR
		3	1023	7.01	19	16.19	155	20.63	6.95	1.8	1.6	16	0 141	.14	9	1.1	2.8	SWR
		3	1027	9.55	19	14.45	155	22.68	5.80	3.5	3.9	28	0 151	.15	11	.9	2.3	LSW
		3	1031	56.60	19	17.83	155	16.88	7.30	1.8	1.9	26	0 127	.11	6	.7	1.2	KOA
		3	1033	33.10	19	14.20	155	22.64	1.83	2.1	2.0	17	0 149	.14	11	1.0	37.4	LSW
		3	1038	16.44	19	12.92	155	21.81	7.65	2.7	2.6	27	0 159	.16	12	1.1	2.1	LSW
		3	1041	6.84	19	9.38	155	19.67	12.09	2.7	2.6	28	0 185	.13	18	1.7	.4	PPL
		3	1042	17.84	19	14.52	155	21.93	2.69	2.4	2.6	25	0 154	.12	13	.8	2.7	LSW
		3	1049	2.45	19	19.26	155	22.11	3.62	1.6	1.6	15	0 125	.14	8	1.1	2.6	SWR
		3	1054	55.70	19	14.39	155	22.82	.26	2.7	2.8	24	0 151	.13	11	.8	63.4	LSW
		3	11 2	15.29	19	3.31	155	10.43	11.41	2.7	2.6	27	0 238	.13	31	3.3	.6	PPL
		3	1111	21.42	19	20.20	155	20.75	4.70	2.3	2.2	25	0 74	.11	6	.6	1.1	SWR
		3	1117	28.94	19	15.39	155	22.09	10.12	3.8	3.9	26	0 144	.12	9	1.0	.4	LSW
		3	1129	31.93	19	15.65	155	22.39	10.09	2.4	2.4	25	0 137	.16	9	1.2	.8	LSW
		3	1135	3.31	19	19.98	155	21.52	3.40	1.7	1.6	17	0 151	.09	7	.7	2.4	SWR
		3	1135	32.10	19	15.10	155	21.78	11.42	2.1	1.9	14	0 146	.15	10	2.0	.7	LSW
		3	1149	51.68	19	15.48	155	22.27	9.54	3.1	3.3	24	0 140	.14	9	.9	.8	LSW
		3	1152	15.45	19	15.53	155	21.98	7.23	1.9	1.4	17	0 141	.19	9	1.6	3.0	LSW
		3	1153	10.10	19	19.28	155	21.29	3.36	3.1	3.5	24	0 95	.11	7	.6	1.7	SWR
		3	1157	24.60	19	21.08	155	19.44	3.53	1.4	1.2	14	0 90	.07	6	.4	2.9	SWR
		3	1159	4.69	19	16.78	155	23.98	1.55	2.0	1.8	22	0 118	.16	10	.9	33.5	SWR
		3	12 3	23.71	19	18.56	155	23.51	3.38	1.8	1.6	15	0 137	.10	8	.8	2.4	SWR
		3	12 4	12.40	19	18.85	155	23.10	4.49	1.8	1.6	17	0 133	.06	8	.5	.9	SWR
		3	12 7	8.76	19	19.96	155	21.42	4.32	1.7	1.5	17	0 108	.08	7	.5	1.4	SWR
		3	1210	11.18	19	14.77	155	22.52	9.79	2.3	2.2	23	0 149	.09	10	.8	.5	LSW
		3	1213	24.43	19	15.20	155	22.37	.99	1.9	2.0	23	0 141	.19	9	1.2	48.0	LSW
		3	1228	20.01	19	16.86	155	22.57	.54	1.8	1.9	20	0 125	.15	7	.9	87.7	SWR
		3	1236	3.61	19	14.37	155	22.19	.88	2.0	2.0	24	0 154	.13	11	.9	37.0	LSW
		3	1247	8.91	19	14.56	155	22.33	8.30	3.5	3.6	28	0 152	.14	11	1.0	1.6	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	RMS DEG	MIN SEC	ERH DIS	ERZ KM	REMK
1975	JAN	3	1257	11.49	19	9.19	155	22.66	5.20		1.0	16	0 225	.15	18	2.5	2.8	LSW
		3	13 0	36.65	19	18.06	155	23.56	4.91	2.4	2.5	19	0 110	.14	11	1.0	1.4	SWR
		3	13 3	18.40	19	14.11	155	22.08	5.37	1.9	1.6	20	0 158	.11	11	.9	1.0	LSW
		3	13 3	37.06	19	14.92	155	22.82	.94	3.0	2.9	20	0 141	.16	10	1.2	36.2	LSW
		3	13 8	39.40	19	13.76	155	22.33	6.14	2.0	1.8	20	0 159	.13	12	1.2	4.3	LSW
		3	1315	28.36	19	14.52	155	21.86	3.51	2.0	2.3	24	0 155	.12	11	.9	2.0	LSW
		3	1317	57.87	19	16.76	155	22.42	7.21	1.8	2.0	25	0 127	.15	8	1.0	1.7	SWR
		3	1319	49.30	19	20.10	155	20.95	3.93	1.8	1.9	16	0 102	.07	6	.4	1.5	SWR
		3	1329	18.87	19	18.62	155	23.21	5.38	1.9	2.2	22	0 136	.12	8	.6	.6	SWR
		3	1349	14.69	19	18.63	155	23.42	4.93	2.2	2.2	22	0 105	.17	8	1.1	1.7	SWR
		3	1357	26.33	19	19.53	155	22.08	2.89	1.7	1.6	14	0 147	.07	8	.6	1.7	SWR
		3	1410	7.51	19	18.84	155	22.97	2.48	1.8	1.6	16	0 133	.07	8	.5	2.0	SWR
		3	1411	17.89	19	14.61	155	22.03	1.40	2.3	2.1	21	0 170	.13	11	1.1	38.4	LSW
		3	1417	5.80	19	13.45	155	21.91	3.58	1.9	1.8	16	0 164	.11	15	1.1	5.9	LSW
		3	1418	13.30	19	18.09	155	23.84	1.28	2.1	2.2	24	0 122	.16	9	.9	32.2	SWR
		3	1428	44.37	19	14.55	155	21.93	5.92	2.2	1.9	20	0 155	.09	11	.8	3.1	LSW
		3	1430	55.91	19	17.71	155	23.65	5.04	2.6	2.9	23	0 112	.10	9	.6	.8	SWR
		3	1437	18.73	19	19.07	155	22.70	4.84	2.4	2.8	22	0 101	.11	9	.6	1.4	SWR
		3	1439	46.19	19	20.94	155	19.49	3.67	1.7	1.6	17	0 94	.09	6	.5	2.5	SWR
		3	1447	8.20	19	20.27	155	20.51	4.10	1.7	1.6	17	0 94	.09	5	.6	1.9	SWR
		3	1448	50.17	19	20.28	155	20.58	1.63	1.4	1.0	14	0 127	.10	6	.7	.0	SWR
		3	1454	29.37	19	16.86	155	23.43	6.51	1.1	1.3	17	0 121	.14	9	1.3	2.7	SWR
		3	15 2	48.17	19	19.39	155	22.41	1.94	1.9	1.6	22	0 96	.09	9	.5	40.3	SWR
		3	15 3	11.53	19	20.54	155	10.91	7.61	1.7	1.4	16	0 76	.10	8	.6	1.7	UER
		3	15 3	36.78	19	20.92	155	11.29	6.94	2.3	2.2	26	0 70	.15	8	.7	1.3	UER
		3	1512	3.29	19	19.59	155	22.88	5.07	2.2	2.5	25	0 93	.16	9	.8	1.2	SWR
		3	1518	19.77	19	17.03	155	22.10	6.85	1.8	1.9	26	0 126	.14	8	.9	1.6	SWR
		3	1519	45.41	19	16.58	155	23.36	8.24	2.5	2.8	29	0 124	.15	9	.9	1.5	SWR
		3	1532	41.49	19	20.51	155	20.13	1.37	1.7	1.8	15	0 86	.09	6	.5	.0	SWR
		3	1536	41.37	19	20.82	155	19.68	1.24	1.4	1.4	12	0 99	.06	6	.4	99.0	SWR
		3	1539	49.47	19	12.44	155	22.45	7.19	2.0	1.5	19	0 179	.14	12	1.5	2.0	LSW
		3	1542	14.91	19	19.63	155	22.96	5.78	2.4	2.8	25	0 93	.13	9	.7	1.7	SWR
		3	1544	18.47	19	18.68	155	23.56	4.96	1.7	1.6	17	0 105	.14	9	1.0	1.7	SWR
		3	1554	8.75	19	19.23	155	23.15	4.13	2.0	2.0	19	0 98	.10	8	.6	1.8	SWR
		3	16 0	40.32	19	15.99	155	22.07	7.73	2.2	2.3	28	0 136	.17	8	1.0	1.8	LSW
		3	16 6	28.97	19	19.21	155	22.25	5.31	2.4	2.5	23	0 99	.10	9	.6	.7	SWR
		3	16 9	2.30	19	20.07	155	21.08	4.63	2.2	2.3	20	0 103	.09	6	.5	1.2	SWR
		3	16 9	27.81	19	18.97	155	22.36	3.15	1.8	1.6	17	0 132	.13	9	.9	3.6	SWR
		3	1613	14.52	19	20.55	155	20.43	6.21	2.8	3.1	24	0 66	.10	6	.5	1.1	SWR
		3	1617	55.27	19	21.66	155	18.66	.11	1.3	1.2	13	0 80	.07	5	.4	1.5	KOA
		3	1624	24.72	19	20.06	155	20.78	4.70	2.0	1.9	17	0 116	.07	6	.5	1.1	SWR
		3	1626	55.30	19	14.42	155	16.59	12.18	2.2	2.0	12	0 223	.19	11	4.5	1.3	HLP
		3	1630	9.44	19	17.45	155	43.06	15.50	3.7	2.8	5	0 355	.23	48	97.8	97.8	HEA
		3	1634	.21	19	20.60	155	19.91	1.97	1.5	1.6	14	0 186	.08	6	.9	99.0	SWR
		3	1635	18.97	19	1.89	155	28.72	30.94	2.7	1.8	13	0 327	.15	35	38.2	34.2	LSW
		3	1641	55.01	19	20.19	155	20.56	4.69	2.0	1.6	18	0 96	.10	6	.6	1.4	SWR
		3	1643	45.51	19	18.46	155	23.43	1.90	2.2	2.1	19	0 138	.10	8	.7	37.9	SWR
		3	1649	29.93	19	10.17	155	21.59	6.47	2.8	2.9	26	0 202	.11	15	1.2	2.1	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	3	1653	13.74	19	18.28	155	23.23	7.03	1.9	1.9	12	0	154	.15	17	2.5	3.3	SWR
		3	1654	3.34	19	19.80	155	20.85	5.48	1.5	1.5	16	0	107	.10	6	.7	.8	SWR
		3	1655	50.51	19	19.20	155	22.35	3.03	1.3	1.0	14	0	194	.08	9	.9	2.0	SWR
		3	1656	21.66	19	16.14	155	23.69	5.64	2.3	2.2	20	0	126	.12	9	1.0	2.9	SWR
		3	17	3 24.79	19	20.70	155	19.86	3.84	2.0	2.2	18	0	80	.09	6	.5	2.0	SWR
		3	1710	38.05	19	20.91	155	19.32	4.28		.7	12	0	92	.05	6	.5	2.6	SWR
		3	1730	7.25	19	21.25	155	19.28	1.27	1.5	1.2	16	0	85	.07	6	.4	.6	SWR
		3	1741	7.54	19	16.76	155	24.29	1.36	2.0	2.0	16	0	172	.13	10	1.0	39.1	SWR
		3	1744	3.16	19	18.97	155	22.84	4.81	2.2	2.3	19	0	131	.10	8	.8	1.3	SWR
		3	1747	35.02	19	21.08	155	19.71	4.71	1.8	2.0	16	0	99	.11	6	.7	1.9	SWR
		3	1757	45.10	19	20.44	155	20.18	1.73	1.5	1.6	13	0	112	.07	5	.5	54.7	SWR
		3	1759	20.33	19	21.06	155	17.08	30.36	1.5	.4	18	0	116	.06	4	1.3	2.7	DEP
		3	18	7 11.56	19	19.49	155	22.40	4.22	1.6	1.5	16	0	120	.19	9	1.3	2.6	SWR
		3	1826	23.80	19	17.50	155	22.46	5.90	.9	.7	13	0	174	.11	10	1.4	2.6	SWR
		3	1826	48.22	19	19.88	155	21.16	2.89	1.9	1.8	17	0	108	.08	7	.5	2.4	SWR
		3	1828	13.21	19	20.35	155	20.30	4.67	1.6	1.0	16	0	121	.08	5	.6	1.7	SWR
		3	1831	6.15	19	20.07	155	20.89	4.51	1.6	1.3	20	0	102	.09	6	.5	1.3	SWR
		3	1840	3.19	19	11.82	155	23.58	1.60	2.2	2.3	23	0	163	.12	14	.9	28.6	LSW
		3	1855	35.77	19	20.88	155	19.72	4.40	1.7	1.6	15	0	98	.06	6	.4	1.4	SWR
		3	19	8 52.16	19	20.77	155	19.91	3.31	1.7	1.6	17	0	103	.07	6	.4	1.8	SWR
		3	1930	2.96	19	20.18	155	20.99	3.39	1.9	1.9	19	0	100	.09	6	.5	2.0	SWR
		3	1946	.72	19	21.00	155	19.33	4.24		.8	13	0	90	.05	6	.4	2.1	SWR
		3	1947	51.65	19	20.28	155	20.64	3.64	2.1	2.0	22	0	72	.11	6	.6	1.6	SWR
		3	1959	51.49	19	19.45	155	21.64	3.78	.9	1.2	13	0	120	.04	8	.4	1.0	SWR
		3	20	0 59.84	19	18.94	155	23.65	4.76	2.4	2.3	24	0	116	.13	9	.8	1.2	SWR
		3	20	6 38.39	19	18.91	155	22.90	3.38	2.0	1.9	17	0	132	.06	8	.4	1.3	SWR
		3	2015	.22	19	14.73	155	20.82	11.32		.8	13	0	244	.04	12	1.3	2.9	HLP
		3	2015	17.56	19	18.96	155	22.16	2.12	1.8	1.0	15	0	133	.07	9	.6	20.1	SWR
		3	2035	3.62	19	18.40	155	23.61	1.66	1.9	1.5	17	0	138	.08	10	.6	36.0	SWR
		3	2035	52.38	19	20.27	155	7.65	8.98	4.4	4.2	26	0	91	.10	8	.7	.8	UER
		3	2041	30.59	19	19.95	155	20.78	4.61	1.8	1.6	15	0	104	.10	6	.7	3.1	SWR
		3	2045	2.56	19	21.66	155	18.79	1.10	.9	1.0	15	0	73	.07	5	.3	.4	KOA
		3	2054	9.28	19	20.01	155	7.74	7.83	2.4	2.5	19	0	93	.08	8	.6	.8	UER
		3	2056	5.92	19	15.02	155	9.83	35.45	1.7	1.0	13	0	290	.12	15	14.0	25.6	POL
		3	2057	32.92	19	20.37	155	7.81	7.19	2.2	1.9	19	0	87	.17	9	1.6	2.1	UER
		3	2059	1.49	19	7.31	156	13.36	13.93	3.1	1.9	15	0	350	.19	98	76.9	76.9	DIS
		3	21	3 1.88	19	21.29	155	19.18	1.91	1.4	1.6	15	0	83	.09	6	.5	99.0	SWR
		3	2111	27.13	19	20.39	155	20.23	2.98	1.4	1.2	15	0	89	.07	6	.4	5.3	SWR
		3	2115	34.46	19	16.13	155	23.79	2.17	1.8	1.6	23	0	125	.15	10	1.0	3.4	SWR
		3	2119	23.34	19	17.09	155	24.23	1.89	2.8	3.2	15	0	124	.13	10	1.1	99.0	SWR
		3	2136	10.52	19	18.72	155	22.79	4.39	1.7	1.6	18	0	137	.10	10	.8	2.2	SWR
		3	2136	55.62	19	19.33	155	22.21	3.30	1.0	1.2	18	0	124	.08	9	.5	2.1	SWR
		3	2137	25.96	19	5.94	155	13.76	10.30	2.5	2.8	30	0	214	.12	24	1.7	.3	PPL
		3	2145	.79	19	18.37	155	21.25	2.54	1.6	1.2	19	0	122	.10	7	.8	3.1	SWR
		3	22	2 13.34	19	20.64	155	11.73	7.27		.9	13	0	83	.04	7	.5	1.1	UER
		3	22	5 34.19	19	20.58	155	20.17	1.12	1.5	1.3	15	0	112	.09	6	.5	99.0	SWR
		3	2218	54.97	19	20.04	155	20.92	4.83	1.8	1.8	16	0	103	.13	6	.9	3.3	SWR
		3	2232	36.89	19	19.36	155	11.77	9.26	2.3	2.4	19	0	96	.10	6	.9	1.2	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	3	23	4 57.09	19	10.73	155	23.89	4.50	2.3	2.2	25	0	166	.14	16	1.1	1.5	LSW
		3	23	6 56.66	19	21.14	155	19.53	2.05	1.6	1.6	16	0	90	.08	6	.4	58.5	SWR
		3	2311	19.04	19	20.02	155	21.15	3.74	1.5	1.4	19	0	105	.09	7	.5	2.0	SWR
		3	2331	22.81	19	10.67	155	23.95	3.80	2.3	2.2	25	0	166	.11	16	.9	1.3	LSW
		3	2335	47.36	19	20.17	155	20.56	1.74	1.4	1.4	17	0	122	.08	6	.5	47.7	SWR
		4	016	52.14	19	20.85	155	19.81	2.34	1.7	1.9	17	0	100	.05	6	.3	2.8	SWR
		4	040	47.96	19	20.26	155	20.50	4.18	2.2	2.1	22	0	78	.08	5	.4	1.1	SWR
		4	126	45.46	19	18.81	155	20.51	1.91		1.2	16	0	182	.09	6	.8	99.0	SWR
		4	127	38.99	19	11.54	155	22.40	3.96	2.2	2.2	22	0	166	.16	16	1.2	2.0	LSW
		4	131	35.95	19	13.32	155	23.43	2.08	2.0	1.4	22	0	159	.12	12	.9	3.8	LSW
		4	154	52.18	19	20.27	155	20.84	3.49	1.8	1.9	19	0	98	.08	6	.5	2.0	SWR
		4	158	36.54	19	18.58	155	23.26	4.10	2.0	1.8	19	0	106	.14	8	1.0	2.5	SWR
		4	2	6 2.81	19	19.91	155	20.96	4.62	2.0	2.0	18	0	106	.10	6	.6	1.6	SWR
		4	213	28.10	19	14.45	155	23.27	4.89	3.7	3.8	27	0	147	.15	11	.9	1.2	LSW
		4	221	29.66	19	12.58	155	23.02	5.70	2.9	2.9	24	0	172	.10	13	.9	2.7	LSW
		4	224	45.10	19	20.35	155	20.47	3.84	2.1	2.2	19	0	92	.10	5	.6	1.8	SWR
		4	249	30.46	19	20.39	155	20.31	5.03	2.6	2.7	23	0	67	.07	5	.4	.8	SWR
		4	3	8 18.27	19	20.32	155	20.79	4.46	2.4	2.5	25	0	81	.13	6	.6	1.2	SWR
		4	310	32.81	19	21.58	155	18.89	2.94	1.7	2.1	18	0	76	.10	5	.5	3.1	KOA
		4	324	49.89	19	20.22	155	20.80	4.19	1.9	2.2	22	0	83	.10	6	.5	1.5	SWR
		4	340	10.69	19	14.31	155	23.28	3.86	3.1	3.2	25	0	148	.14	11	.9	2.2	LSW
		4	341	39.65	19	14.00	155	23.07	2.19	2.9	3.0	26	0	153	.13	11	.9	2.9	LSW
		4	352	7.50	19	19.11	155	22.47	2.70	1.4	1.6	18	0	129	.07	9	.5	1.6	SWR
		4	358	15.22	17	52.96	155	41.40	71.81	3.7		15	0	336	.40164		84.9	84.4	DIS
		4	4	0 37.17	19	19.25	155	22.10	3.32	1.5	1.6	17	0	126	.11	8	.8	2.0	SWR
		4	4	5 35.03	19	19.08	155	22.74	2.86	1.9	2.4	20	0	129	.07	9	.5	1.3	SWR
		4	422	57.02	19	19.20	155	22.18	4.42	1.9	1.9	21	0	127	.08	9	.5	1.0	SWR
		4	424	18.05	19	14.10	155	23.59	.04	2.2	2.1	19	0	148	.14	11	1.0	72.1	LSW
		4	430	15.74	19	19.72	155	21.64	3.50	1.5	1.6	19	0	114	.07	7	.4	1.3	SWR
		4	443	16.25	19	17.75	155	23.78	5.28	2.1	2.2	22	0	111	.15	9	.9	1.1	SWR
		4	456	17.76	19	24.64	155	17.77	18.46		1.2	27	0	38	.09	2	.7	1.0	DEP
		4	5	2 23.04	19	18.98	155	22.87	3.85	2.0	2.0	21	0	130	.09	8	.6	1.3	SWR
		4	5	3 57.42	19	20.38	155	20.34	1.41	.9	1.0	17	0	90	.10	5	.5	.0	SWR
		4	510	26.15	19	24.40	155	17.33	.31	1.3	1.5	8	0	93	.18	2	.9	.6	SPC
		4	510	53.84	19	16.82	155	23.58	5.90	1.8	1.6	21	0	120	.17	9	1.1	3.2	SWR
		4	511	39.55	19	17.81	155	23.68	5.69	2.8	3.0	27	0	111	.15	9	.8	1.9	SWR
		4	515	10.46	19	20.69	155	19.92	1.95	1.5	1.4	16	0	105	.12	6	.7	.0	SWR
		4	528	4.41	19	19.30	155	22.24	1.86	1.9	1.2	18	0	124	.08	9	.5	33.0	SWR
		4	536	19.06	19	19.29	155	22.08	3.61	2.0	2.1	20	0	125	.08	8	.5	1.3	SWR
		4	547	55.60	19	20.44	155	13.78	6.91	1.5	1.4	26	0	67	.14	6	.8	1.5	UER
		4	550	12.75	19	18.69	155	23.45	5.39	2.4	2.7	25	0	105	.14	9	.8	.9	SWR
		4	559	24.64	19	16.43	155	24.10	2.16	1.6	1.6	23	0	121	.19	10	1.2	3.9	SWR
		4	6	4 9.71	19	18.71	155	22.99	2.71		1.5	13	0	136	.07	8	.6	3.3	SWR
		4	610	27.23	19	18.37	155	23.62	4.74	1.7	1.6	17	0	138	.14	9	1.1	2.2	SWR
		4	612	19.97	19	21.05	155	19.49	1.79	1.3	1.4	14	0	92	.06	6	.4	99.0	SWR
		4	633	1.59	19	18.78	155	13.11	4.21	.7	.4	16	0	85	.13	8	.9	1.8	POL
		4	646	38.45	19	14.30	155	23.32	6.02	2.4	2.8	22	0	148	.13	11	1.0	3.6	LSW
		4	7	1 32.03	19	20.38	155	20.62	3.79	.7	.6	17	0	124	.08	6	.5	3.2	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	4	718	34.61	19	19.16	155	22.52	4.98	2.2	2.4	25	0	100	.13	9	.7	1.1	SWR
		4	728	50.89	19	18.93	155	22.70	2.16	1.6	1.8	18	0	132	.10	8	.7	4.0	SWR
		4	750	.67	19	20.45	155	20.34	2.03	1.9	2.0	18	0	89	.08	5	.5	4.4	SWR
		4	8 1	1.22	19	19.32	155	22.17	3.46	1.7	1.6	20	0	124	.06	6	.5	1.6	SWR
		4	8 1	48.12	19	20.31	155	20.47	1.75	1.4	1.4	16	0	124	.10	5	.6	99.0	SWR
		4	8 2	36.59	19	18.20	155	13.27	7.70	2.3	2.3	26	0	90	.11	8	.7	1.3	POL
		4	8 7	16.31	19	19.25	155	22.51	1.80	1.4	1.5	17	0	125	.08	9	.6	.5	SWR
		4	843	58.83	19	20.11	155	20.73	4.84	2.0	1.9	19	0	100	.09	6	.6	1.3	SWR
		4	9 2	16.98	19	17.28	155	10.04	17.53		1.3	10	0	273	.11	14	10.3	14.2	POL
		4	9 3	56.20	19	20.35	155	20.56	3.44	1.2	1.3	9	0	121	.07	5	.9	8.0	SWR
		4	924	28.91	19	13.03	155	21.03	2.15	1.9	1.6	19	0	173	.12	14	1.1	3.4	LSW
		4	942	16.00	19	20.49	155	20.25	1.97	1.8	1.6	16	0	88	.06	5	.5	99.0	SWR
		4	10 2	13.37	19	21.06	155	19.41	1.89	1.3	1.4	15	0	90	.08	6	.4	99.0	SWR
		4	10 2	51.98	19	19.22	155	22.33	1.96	1.7	1.4	16	0	126	.09	9	.6	99.0	SWR
		4	10 5	46.67	19	15.35	155	22.22	7.90	2.3	2.2	18	0	144	.10	12	.9	3.0	LSW
		4	1014	35.69	19	18.59	155	15.01	7.04		1.2	14	0	123	.12	6	1.1	2.5	KOA
		4	1016	15.83	19	20.26	155	19.54	1.82	.8	1.0	10	0	105	.14	6	1.2	99.0	SWR
		4	1020	19.43	19	18.76	155	14.99	7.08		1.6	25	0	93	.10	7	.6	1.3	POL
		4	1022	21.80	19	18.16	155	14.92	7.80	.7	.8	13	0	137	.06	7	.7	1.4	POL
		4	1038	56.98	19	20.31	155	20.67	4.75	1.9	1.5	16	0	95	.07	6	.5	1.2	SWR
		4	11 0	8.31	19	21.12	155	19.50	2.22	1.6	1.6	15	0	90	.07	6	.4	16.1	SWR
		4	1128	44.46	19	15.97	155	23.69	.83	1.9	1.6	17	0	126	.13	10	1.0	44.6	LSW
		4	1139	43.80	19	18.80	155	23.01	2.78	1.8	1.6	15	0	134	.07	8	.5	2.9	SWR
		4	1158	44.37	19	21.18	155	19.32	1.54	1.2	1.1	12	0	87	.08	6	.5	99.0	SWR
		4	1228	24.02	19	17.66	155	15.51	8.41	2.0	2.2	24	0	127	.11	6	.7	1.2	KOA
		4	1323	34.05	19	20.90	155	19.69	1.29	2.2	2.6	22	0	60	.07	6	.3	26.4	SWR
		4	1355	46.86	19	19.20	155	22.32	3.40	1.5	1.4	17	0	127	.08	9	.6	2.0	SWR
		4	1414	19.11	19	18.96	155	22.72	3.17	2.0	1.4	21	0	131	.11	8	.7	2.0	SWR
		4	1416	7.37	19	17.59	155	23.92	.66	2.4	2.4	25	0	112	.15	9	.7	67.4	SWR
		4	1446	45.59	19	17.12	155	22.73	5.93	1.8	1.6	18	0	122	.13	7	.9	2.5	SWR
		4	15 2	26.61	19	14.47	155	22.28	10.26	3.7	3.8	26	0	153	.11	11	.8	.6	LSW
		4	15 5	12.08	19	14.59	155	22.09	.99	1.9	1.8	21	0	153	.11	11	.8	34.6	LSW
		4	15 9	15.10	19	18.66	155	23.41	3.98	2.2	2.2	18	0	105	.11	8	.7	2.2	SWR
		4	1516	13.82	19	16.08	155	21.85	.09	1.2	1.2	16	0	136	.18	9	1.3	99.0	SWR
		4	1518	28.63	19	13.97	155	21.77	.00		1.6	18	0	164	.11	12	1.0	83.1	LSW
		4	1519	18.34	19	16.31	155	22.45	6.12	1.8	1.6	18	0	132	.14	7	1.2	3.0	SWR
		4	1530	7.55	19	13.84	155	21.84	5.49	2.3	2.8	23	0	165	.09	12	.8	1.1	LSW
		4	1532	5.22	19	14.89	155	22.39	9.70	5.0	4.8	28	0	144	.16	10	1.1	.7	LSW
		4	1542	13.06	19	16.71	155	22.78	6.79	3.1	3.2	21	0	126	.12	8	.9	2.3	SWR
		4	1547	26.97	19	13.66	155	23.47	1.66	2.5	2.6	19	0	153	.13	12	1.1	55.1	LSW
		4	1550	6.77	19	16.50	155	22.54	6.79	1.8	1.5	16	0	133	.13	11	1.2	3.5	SWR
		4	1550	40.91	19	14.53	155	21.69	8.31	1.9	1.6	17	0	157	.11	11	1.1	1.7	LSW
		4	1554	52.89	19	16.95	155	22.35	6.23	1.8	1.9	20	0	126	.15	8	1.2	3.2	SWR
		4	1556	32.36	19	12.65	155	21.55	1.88	2.0	2.2	20	0	183	.11	13	1.1	67.8	LSW
		4	1558	19.42	19	15.28	155	21.96	7.17	2.6	2.5	21	0	146	.10	12	.9	2.9	LSW
		4	16 2	14.44	19	17.12	155	24.10	11.02	2.7	2.8	15	0	115	.12	14	1.3	1.0	SWR
		4	16 3	28.80	19	15.52	155	21.74	6.71	2.4	2.3	21	0	145	.15	11	1.3	2.3	LSW
		4	16 5	.04	19	16.68	155	22.82	7.27	2.4	2.3	19	0	126	.15	14	1.3	2.9	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	4	16 6	17.50	19	19.70	155	20.20	.45	2.0	2.4	14	0	140	.11	6	.7	5.4	SWR
		4	16 9	2.94	19	19.15	155	21.25	.63	2.0	2.4	13	0	126	.14	7	1.0	5.2	SWR
		4	1610	31.55	19	13.31	155	23.10	5.39	3.4	3.5	22	0	162	.11	12	.9	1.1	LSW
		4	1613	18.24	19	13.92	155	21.94	7.26	3.5	3.5	26	0	153	.17	12	1.3	2.6	LSW
		4	1617	55.94	19	14.02	155	22.51	.90	1.9	1.6	19	0	158	.13	11	1.0	60.6	LSW
		4	1619	23.76	19	15.31	155	20.94	4.35	2.7	2.6	26	0	147	.15	10	1.0	1.9	HLP
		4	1621	11.95	19	20.66	155	19.33	2.86	1.8	1.6	10	0	214	.10	7	1.5	10.2	SWR
		4	1621	51.62	19	14.26	155	25.08	7.80	2.5	2.3	23	0	150	.14	11	1.1	2.0	LSW
		4	1622	57.97	19	17.18	155	22.89	8.69	3.0	3.5	26	0	121	.16	8	1.1	1.5	SWR
		4	1624	53.85	19	15.48	155	20.90	4.93	3.2	3.6	27	0	146	.17	10	.9	1.4	HLP
		4	1626	16.80	19	16.08	155	22.39	7.48		2.6	15	0	134	.10	8	1.1	2.2	SWR
		4	1627	42.98	19	16.64	155	22.43	2.08	1.8	1.2	19	0	128	.14	7	1.1	6.8	SWR
		4	1629	12.11	19	14.85	155	23.56	5.38	1.9	1.9	18	0	193	.12	10	1.4	1.1	LSW
		4	1630	3.62	19	16.88	155	22.44	7.20	2.8	2.8	27	0	126	.15	8	.9	1.5	SWR
		4	1631	40.99	19	16.02	155	22.50	10.23	2.5	2.8	27	0	134	.13	8	.7	.7	SWR
		4	1635	1.03	19	13.54	155	23.70	.98	2.6	2.7	17	0	152	.11	12	.9	.0	LSW
		4	1638	8.11	19	13.64	155	22.85	3.01	2.3	2.4	20	0	160	.12	12	1.0	3.8	LSW
		4	1643	39.72	19	14.63	155	20.78	4.26	2.3	2.5	19	0	160	.10	11	.9	2.2	HLP
		4	1649	38.87	19	16.03	155	23.41	2.76		1.4	22	0	129	.14	9	1.0	3.3	SWR
		4	1650	36.82	19	13.44	155	22.21	5.71	3.0	3.7	18	0	173	.10	19	1.4	3.0	LSW
		4	1657	39.39	19	14.90	155	21.51	.97	2.5	2.4	26	0	148	.13	10	.9	40.1	LSW
		4	1659	58.79	19	14.57	155	22.11	8.40	2.7	2.6	26	0	154	.10	11	.8	1.5	LSW
		4	17 7	27.71	19	16.91	155	22.71	6.06	2.1	2.4	24	0	124	.16	7	1.1	2.8	SWR
		4	17 8	41.73	19	16.76	155	22.74	5.36	1.0	1.0	19	0	126	.13	8	.8	1.0	SWR
		4	17 9	20.49	19	14.19	155	22.89	.35	2.3	1.9	18	0	153	.09	11	.4	58.1	LSW
		4	1715	31.27	19	16.29	155	23.75	4.40	2.0	1.8	19	0	124	.11	9	1.0	2.0	SWR
		4	1716	21.01	19	7.91	155	21.74	9.71	2.7	2.4	23	0	229	.13	19	1.9	.8	LSW
		4	1717	40.44	19	13.56	155	23.06	8.20	2.6	2.4	26	0	156	.15	11	1.2	1.7	LSW
		4	1719	55.71	19	13.02	155	23.32	5.45	2.2	1.9	21	0	158	.12	12	1.0	1.6	LSW
		4	1723	50.65	19	16.61	155	22.41	5.74	1.8	1.6	22	0	129	.13	8	.9	2.7	SWR
		4	1725	31.95	19	11.68	155	21.82	5.83	3.0	2.9	16	0	202	.10	13	2.0	3.7	LSW
		4	1728	15.17	19	17.05	155	22.70	6.66	1.8	1.5	21	0	123	.14	7	.9	2.4	SWR
		4	1735	49.35	19	14.09	155	23.14	3.25	1.9	1.8	21	0	147	.16	11	1.0	4.1	LSW
		4	1746	7.92	19	13.11	155	23.20	5.39	2.0	1.6	21	0	160	.13	12	1.3	1.4	LSW
		4	1748	1.71	19	19.25	155	22.28	2.76	1.9	2.2	20	0	98	.08	9	.5	2.1	SWR
		4	1755	3.31	19	20.25	155	20.91	2.84	2.1	2.5	23	0	84	.11	6	.6	2.7	SWR
		4	1759	28.22	19	14.22	155	22.77	5.41	2.3	2.4	22	0	153	.12	11	1.0	1.2	LSW
		4	18 6	49.99	19	16.83	155	22.75	6.59	1.8	1.6	20	0	125	.18	8	1.3	2.5	SWR
		4	18 8	5.38	19	9.78	155	34.95	9.55	2.8	2.8	18	0	130	.19	22	1.7	.7	HEA
		4	1819	10.67	19	16.99	155	22.16	6.74		1.4	23	0	126	.15	8	1.0	2.2	SWR
		4	1824	32.14	19	15.04	155	21.39	7.89	2.0	1.8	22	0	153	.10	10	.9	1.7	LSW
		4	1825	7.96	19	14.46	155	20.83	8.12	2.9	3.2	25	0	160	.11	11	.9	1.4	HLP
		4	1828	5.49	19	13.08	155	23.71	2.66	2.4	2.3	15	0	153	.15	15	1.2	4.8	LSW
		4	1832	24.10	19	16.68	155	23.22	5.93	2.0	1.6	19	0	134	.14	8	1.2	2.9	SWR
		4	1836	32.90	19	16.63	155	23.39	2.65	1.8	1.6	22	0	123	.14	9	1.0	2.9	SWR
		4	1838	34.74	19	16.68	155	23.12	5.91	1.2	1.2	20	0	124	.14	8	1.1	2.9	SWR
		4	1840	28.94	19	19.01	155	20.17	2.00	1.5	1.4	15	0	122	.16	6	1.2	.0	SWR
		4	1847	45.34	19	17.73	155	21.93	7.31	2.1	1.8	24	0	119	.15	9	.9	1.5	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	4	1858	2.40	19	14.78	155	21.33	5.95	2.0	2.0	25	0	154	.14	11	1.0	3.2	LSW
		4	1919	29.12	19	16.94	155	23.12	1.45	1.8	1.6	22	0	122	.15	8	.8	31.9	SWR
		4	1921	58.12	19	16.49	155	23.01	7.62	2.2	2.4	23	0	127	.14	8	1.1	2.1	SWR
		4	1927	13.10	19	19.18	155	22.19	2.03	1.7	1.5	16	0	127	.06	9	.5	51.1	SWR
		4	1928	3.14	19	13.57	155	24.94	9.25	3.9	3.9	26	0	141	.13	13	1.1	1.2	LSW
		4	1935	24.95	19	16.59	155	23.10	6.35	2.2	2.6	23	0	125	.12	8	.9	2.2	SWR
		4	1942	18.85	19	15.29	155	22.09	8.22	2.3	2.4	24	0	145	.13	9	.9	1.7	LSW
		4	1947	27.89	19	14.22	155	23.35	.41	2.3	2.2	22	0	149	.17	11	1.1	87.9	LSW
		4	1948	7.78	19	20.61	155	20.39	4.93	2.6	2.6	23	0	65	.09	6	.5	.8	SWR
		4	20 1	18.41	19	19.32	155	22.24	5.03	2.2	1.8	20	0	124	.09	9	.6	1.0	SWR
		4	2019	10.64	19	17.30	155	22.32	4.74	2.1	2.5	26	0	122	.16	8	1.0	1.6	SWR
		4	2021	.19	19	13.60	155	23.90	2.03	2.0	1.9	21	0	150	.13	12	1.0	5.1	LSW
		4	2024	8.82	19	17.01	155	22.14	.30	1.5	1.4	20	0	126	.18	8	1.0	97.0	SWR
		4	2036	20.85	19	16.44	155	23.25	5.95		1.2	21	0	126	.15	9	1.1	2.9	SWR
		4	2041	24.18	19	19.29	155	22.92	3.78	2.2	1.9	24	0	110	.11	9	.6	1.3	SWR
		4	2041	57.58	19	17.18	155	21.85	8.66	2.2	2.2	23	0	126	.11	9	.8	1.2	SWR
		4	2051	16.64	19	21.69	155	18.75	1.17	1.4	1.5	17	0	73	.08	5	.4	.4	KOA
		4	21 6	8.10	19	19.17	155	22.99	4.98	2.3	2.4	25	0	99	.10	8	.5	.8	SWR
		4	2117	17.83	19	18.88	155	15.34	6.95	1.6	1.4	20	0	117	.09	6	.6	1.4	KOA
		4	2118	59.36	19	18.98	155	20.79	.10	2.9	3.4	20	0	129	.09	6	.5	2.0	SWR
		4	2121	57.73	19	13.98	155	21.70	5.20	2.1	2.2	24	0	160	.11	12	.8	.9	LSW
		4	2128	44.89	19	13.75	155	23.18	1.78		1.3	19	0	156	.10	11	.9	99.0	LSW
		4	2133	58.58	19	18.65	155	23.28	5.68	2.3	2.5	24	0	106	.13	8	.7	1.8	SWR
		4	22 5	3.31	19	19.75	155	20.40	.56	2.5	2.8	16	0	104	.11	5	.6	4.9	SWR
		4	22 8	7.86	19	14.87	155	21.21	5.90	1.9	1.9	22	0	154	.11	10	.8	3.0	LSW
		4	2218	21.55	19	14.81	155	21.13	7.17	1.9	2.1	24	0	155	.13	11	1.0	2.0	LSW
		4	2225	9.14	19	15.99	155	23.46	6.59	2.4	2.8	24	0	129	.13	9	.9	2.4	LSW
		4	2234	39.33	19	20.20	155	20.86	1.54	1.8	1.6	16	0	99	.07	6	.4	.0	SWR
		4	2237	56.30	19	16.42	155	23.10	5.62	1.8	1.7	21	0	127	.15	8	1.2	3.3	SWR
		4	23 1	37.80	19	13.51	155	24.04	1.28	2.1	2.1	20	0	152	.14	12	1.2	65.0	LSW
		4	23 7	5.11	19	19.11	155	22.18	3.24	2.0	1.8	20	0	129	.07	9	.4	1.4	SWR
		4	2324	48.41	19	15.23	155	22.36	7.10	1.9	1.6	18	0	144	.12	9	1.2	3.0	LSW
		4	2356	27.16	19	17.37	155	22.91	5.51	1.8	1.5	23	0	119	.14	8	1.0	2.6	SWR
		5	0 5	20.43	19	20.33	155	20.62	.79	1.8	1.5	16	0	98	.10	6	.6	4.7	SWR
		5	019	37.90	19	13.96	155	22.96	1.41	2.7	2.8	23	0	154	.13	12	.8	33.5	LSW
		5	023	19.64	19	20.63	155	20.68	1.97	2.2	2.6	16	0	117	.09	6	.7	50.2	SWR
		5	048	39.62	19	13.59	155	23.28	6.02	4.1	4.1	24	0	155	.12	11	1.0	2.4	LSW
		5	053	58.58	19	14.14	155	22.69	1.33	2.4	2.3	21	0	155	.11	11	1.0	38.7	LSW
		5	1 3	10.24	19	14.84	155	20.62	7.49	2.4	2.2	26	0	159	.10	11	.7	.9	HLP
		5	1 3	54.96	19	12.96	155	23.55	5.26	2.8	2.8	17	0	163	.13	13	1.1	1.2	LSW
		5	117	40.25	19	11.52	155	21.11	3.96	2.2	2.5	23	0	170	.16	13	1.4	2.2	LSW
		5	140	41.60	19	19.68	155	21.74	.94	1.7	1.8	17	0	169	.08	8	.6	.9	SWR
		5	156	47.56	19	19.46	155	12.55	7.03		.4	12	0	155	.06	7	.7	1.9	UER
		5	2 1	14.75	19	16.60	155	23.21	5.54	2.2	1.9	20	0	124	.16	8	1.1	3.5	SWR
		5	2 8	1.84	19	19.41	155	22.03	3.79	1.7	1.8	14	0	122	.14	8	1.2	2.9	SWR
		5	214	18.01	19	10.69	155	21.56	10.54	2.1	1.8	23	0	173	.11	14	1.5	.9	LSW
		5	215	50.02	19	19.34	155	21.35	3.40	2.7	3.2	24	0	94	.08	7	.4	1.2	SWR
		5	218	45.29	19	10.89	155	21.44	5.50	2.1	1.5	21	0	172	.12	17	1.4	99.0	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	5	239	38.86	19	14.10	155	23.64	5.18	2.1	1.9	23	0	148	.14	11	.9	1.2	LSW
		5	241	40.51	19	19.26	155	22.08	4.31	1.8	1.6	20	0	125	.08	8	.5	1.0	SWR
		5	247	.39	19	15.31	155	22.83	.07	1.9	1.6	19	0	163	.11	9	1.0	71.8	LSW
		5	251	26.82	19	19.04	155	15.36	7.30	1.8	1.3	25	0	112	.10	6	.6	.9	KOA
		5	322	38.63	19	17.09	155	22.37	5.60	1.8	1.7	20	0	124	.12	8	.9	2.5	SWR
		5	325	59.16	19	15.02	155	20.73	4.17	.9	.4	19	0	157	.09	11	.8	1.4	HLP
		5	334	24.31	19	21.66	155	18.80	1.17	1.1	1.2	15	0	74	.11	5	.5	.6	KOA
		5	353	47.99	19	20.20	155	20.79	5.05	1.9	1.5	20	0	98	.10	6	.6	1.4	SWR
		5	410	10.98	19	20.92	155	19.47	2.33	1.3	1.6	17	0	94	.07	6	.4	2.2	SWR
		5	428	58.02	19	19.19	155	22.36	2.54	1.4	1.6	18	0	127	.08	9	.5	2.7	SWR
		5	430	3.34	19	12.13	155	21.69	1.36	2.0	1.9	21	0	175	.15	12	1.3	50.4	LSW
		5	436	1.02	19	17.51	155	24.14	3.84	2.4	2.6	26	0	111	.14	10	.8	1.8	SWR
		5	441	10.26	19	18.22	155	23.12	6.79	1.7	1.5	19	0	159	.14	11	1.2	4.1	SWR
		5	453	31.80	19	19.00	155	22.96	4.23	1.4	1.5	19	0	130	.07	8	.4	.9	SWR
		5	5 3	15.48	19	18.01	155	13.08	8.68		.7	9	0	232	.02	9	.5	1.0	POL
		5	511	10.82	19	19.22	155	22.34	3.62	1.6	.6	18	0	126	.08	9	.6	2.1	SWR
		5	516	39.84	19	18.95	155	22.71	1.92	1.5	1.4	18	0	132	.09	8	.7	44.4	SWR
		5	535	37.07	19	14.86	155	20.76	3.34	1.8	1.9	24	0	155	.10	11	.7	2.7	HLP
		5	539	43.31	19	16.59	155	13.11	8.68	1.8	1.1	14	0	203	.12	10	2.0	2.7	POL
		5	546	53.27	19	16.64	155	21.53	7.54	1.8	1.9	26	0	133	.11	9	.7	1.3	SWR
		5	6 6	24.29	19	16.99	155	23.33	5.55	1.8	1.4	22	0	120	.15	8	1.0	2.9	SWR
		5	632	8.22	19	16.50	155	23.29	5.57	1.8	1.3	20	0	125	.17	9	1.2	3.7	SWR
		5	636	38.97	19	20.02	155	10.97	9.09		.7	18	0	85	.08	7	.7	1.5	UER
		5	649	46.03	19	19.67	155	21.52	1.91	1.0	.8	15	0	114	.08	7	.6	62.8	SWR
		5	7 8	24.89	19	17.35	155	24.12	5.56	2.7	2.9	25	0	113	.11	10	.7	1.5	SWR
		5	715	24.80	19	16.03	155	22.03	5.86	1.8	1.5	23	0	136	.17	8	1.1	3.7	SWR
		5	733	30.77	19	16.49	155	21.52	6.66		.4	18	0	202	.08	9	.9	1.6	SWR
		5	755	40.34	19	17.09	155	23.32	5.55	1.3	1.6	19	0	131	.14	8	1.1	2.9	SWR
		5	758	49.73	19	18.42	155	13.37	3.46	1.6	.7	12	0	141	.08	8	1.4	4.6	POL
		5	8 9	6.74	19	17.80	155	13.01	8.62	2.4	2.3	25	0	114	.11	9	.8	1.5	POL
		5	812	53.75	19	17.67	155	13.13	6.95		.8	17	0	113	.11	9	1.0	2.3	POL
		5	823	34.58	19	18.17	155	13.13	3.76		.5	12	0	96	.09	8	1.0	3.4	POL
		5	827	4.72	19	19.01	155	22.82	2.34	1.6	1.2	18	0	130	.09	8	.6	5.2	SWR
		5	843	5.03	19	17.72	155	12.93	7.00	1.7	1.6	18	0	122	.09	9	.7	1.3	POL
		5	847	10.70	19	12.60	155	22.04	5.98	2.2	2.1	20	0	179	.07	12	.7	3.6	LSW
		5	856	35.83	19	18.65	155	8.32	8.09	1.9	1.6	13	0	144	.13	10	1.3	1.2	POL
		5	9 1	54.34	19	20.06	155	21.01	5.05	1.9	1.8	20	0	103	.07	6	.4	.9	SWR
		5	9 4	54.54	19	17.77	155	14.33	6.87		1.0	18	0	140	.10	8	.8	1.8	POL
		5	914	55.31	19	7.84	155	21.05	6.56	2.6	2.6	23	0	229	.17	22	2.4	4.2	LSW
		5	917	16.57	19	13.94	155	23.35	3.12	1.9	1.8	16	0	152	.10	11	.8	2.7	LSW
		5	947	42.75	19	19.43	155	22.23	3.33	1.9	2.0	20	0	121	.09	9	.5	1.4	SWR
		5	10 7	16.86	19	20.26	155	20.64	3.99	2.0	2.0	21	0	96	.11	6	.6	1.7	SWR
		5	1015	8.80	19	20.05	155	9.49	9.23	1.1	.8	14	0	101	.05	8	.6	1.4	UER
		5	1024	53.77	19	18.40	155	12.76	6.32		1.3	14	0	103	.06	8	.5	1.6	POL
		5	1030	10.82	19	17.94	155	21.75	4.78	2.2	2.4	23	0	118	.17	9	1.0	1.8	SWR
		5	1037	40.45	19	18.47	155	14.43	6.14	1.6	1.9	22	0	87	.09	8	.5	1.2	POL
		5	1119	58.25	19	17.71	155	23.66	5.18	3.0	3.4	24	0	112	.12	9	.7	.9	SWR
		5	1125	40.31	19	19.17	155	22.91	3.03	1.6	1.9	19	0	126	.10	8	.6	1.8	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	5	1127	19.83	19	21.01	155	11.12	8.75	1.7	1.9	19	0	160	.13	8	1.3	1.8	UER
		5	1155	36.93	19	13.75	155	23.26	5.27	2.1	2.1	24	0	153	.13	11	1.0	1.2	LSW
		5	1210	58.99	19	13.79	155	23.24	5.32	2.0	1.9	22	0	155	.12	11	1.0	1.2	LSW
		5	1221	31.14	19	19.13	155	22.80	2.16	1.6	1.2	16	0	200	.12	10	.9	5.2	SWR
		5	1231	47.66	19	16.90	155	23.13	5.60	1.8	2.2	20	0	122	.13	8	.9	2.7	SWR
		5	1234	34.50	19	17.24	155	23.02	4.84	1.8	1.6	21	0	119	.14	8	.9	1.7	SWR
		5	1235	26.02	19	16.87	155	15.20	9.21		1.4	21	0	180	.12	7	1.0	1.4	HLP
		5	1241	40.51	19	4.32	155	7.46	14.61	2.9	2.7	22	0	269	.11	30	4.0	15.9	PPL
		5	1244	3.65	19	13.01	155	23.45	4.97	2.2	2.4	18	0	184	.09	12	1.0	.9	LSW
		5	1248	39.04	19	17.00	155	22.94	5.71		1.3	22	0	122	.12	8	.8	2.3	SWR
		5	1318	6.97	19	21.26	155	4.61	8.97	2.7	3.1	22	0	212	.11	17	1.1	1.8	MER
		5	1322	24.52	19	18.21	155	23.75	4.84	1.9	1.9	19	0	140	.08	9	.6	1.0	SWR
		5	1325	55.83	19	16.69	155	23.22	5.59	2.4	2.6	23	0	124	.13	8	1.0	2.6	SWR
		5	1338	56.80	19	9.87	155	20.97	7.45	2.6	2.8	27	0	207	.12	16	1.3	1.8	PPL
		5	1344	23.19	19	15.99	155	23.21	5.42	1.9	1.6	22	0	136	.13	9	1.0	1.1	LSW
		5	1357	10.74	19	17.65	155	21.49	8.67	2.8	3.0	25	0	122	.12	8	.9	1.3	SWR
		5	14	0 13.86	19	17.68	155	21.58	3.01	1.8	1.6	20	0	121	.11	9	.7	2.8	SWR
		5	1416	28.26	19	17.16	155	13.69	7.92	1.9	2.1	25	0	117	.11	9	.8	1.2	POL
		5	1428	24.02	19	21.69	155	18.79	.82	1.3	1.5	15	0	73	.09	5	.3	.5	KOA
		5	1432	4.18	19	18.23	155	13.06	4.01		1.1	15	0	98	.12	8	.8	2.4	POL
		5	1442	14.32	19	16.62	155	22.47	.39		1.5	24	0	128	.15	7	.9	58.8	SWR
		5	15	3 48.56	19	17.20	155	22.12	7.03		1.3	17	0	168	.12	8	1.2	3.1	SWR
		5	15	8 36.13	19	17.00	155	23.21	4.93	1.7	1.9	21	0	121	.13	8	.9	1.5	SWR
		5	16	2 22.22	19	19.40	155	22.07	3.40	1.3	1.5	14	0	122	.07	8	.5	1.5	SWR
		5	1711	18.50	19	17.29	155	22.43	5.46	1.9	1.9	19	0	122	.11	8	.8	.9	SWR
		5	1727	26.66	19	17.63	155	15.56	6.84		1.5	20	0	155	.11	6	.8	1.7	KOA
		5	1731	32.48	19	21.30	155	3.77	6.51		1.9	20	0	98	.14	11	1.4	3.3	MER
		5	1749	3.45	19	17.52	155	15.39	7.57		1.6	21	0	157	.09	6	.7	1.0	KOA
		5	1754	47.15	19	21.28	155	16.99	29.42	2.4	1.9	23	0	56	.07	4	1.0	1.6	DEP
		5	1847	56.53	19	20.55	155	20.42	2.31	1.5	1.6	19	0	115	.07	6	.4	2.4	SWR
		5	1856	25.82	19	18.85	155	15.48	7.18		1.2	25	0	120	.10	6	.6	.9	KOA
		5	19	7 6.03	19	19.57	155	8.41	6.68		1.4	21	0	83	.11	10	.9	1.5	UER
		5	2014	30.98	19	20.55	155	20.93	6.65	2.6	2.8	27	0	71	.14	6	.7	1.5	SWR
		5	2049	49.98	19	17.02	155	23.84	2.12	1.8	2.0	17	0	167	.13	9	1.1	3.7	SWR
		5	21	1 53.62	19	19.72	155	9.93	6.84		.9	16	0	90	.07	8	.7	1.2	UER
		5	2141	21.02	19	16.71	155	23.56	5.36		1.6	20	0	133	.13	9	.8	1.0	SWR
		5	2146	57.50	19	19.12	155	22.21	2.10	1.3	1.5	15	0	129	.06	9	.4	1.9	SWR
		5	2151	21.65	19	20.36	155	20.19	3.92	2.1	2.0	18	0	89	.06	5	.3	1.0	SWR
		5	2220	19.98	19	13.28	155	23.28	2.19		1.5	21	0	180	.13	12	1.2	3.8	LSW
		5	2223	22.02	19	19.14	155	15.54	7.17		1.0	21	0	187	.11	6	1.1	.9	KOA
		5	2226	7.79	19	19.21	155	22.39	4.28	1.8	1.6	19	0	126	.08	9	.6	.9	SWR
		5	2248	4.41	19	16.82	155	22.65	6.01		1.5	20	0	141	.12	7	.9	2.4	SWR
		5	2253	5.19	19	16.41	155	24.37	1.32	2.0	2.1	21	0	125	.14	10	1.0	34.9	SWR
		5	23	7 16.84	19	18.79	155	15.05	7.81	1.9	2.0	22	0	213	.09	7	1.2	.8	KOA
		5	2318	47.08	19	24.46	155	17.02	13.52	1.8	2.1	24	0	37	.08	2	.6	.7	DEP
		5	2333	17.75	19	20.33	155	20.57	3.29	1.2	1.3	17	0	120	.07	6	.5	2.1	SWR
		5	2347	36.07	19	19.26	155	22.22	4.51	2.0	2.1	14	0	125	.04	9	.4	.7	SWR
		6	017	13.72	19	28.68	155	35.60	2.63	2.6	2.9	22	0	98	.12	18	.9	2.0	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	6	031	25.27	19	21.52	155	18.75	2.28	1.5	1.6	14	0	75	.06	5	.4	10.6	KOA
		6	033	7.22	19	13.25	155	22.84	2.02		1.3	20	0	174	.13	13	1.2	4.5	LSW
		6	034	24.10	19	13.62	155	23.18	.49	2.0	1.6	20	0	171	.13	12	1.1	57.8	LSW
		6	058	7.12	19	18.76	155	22.90	4.92	1.8	1.7	22	0	136	.14	8	1.0	1.5	SWR
		6	116	2.09	19	15.18	155	22.10	8.24	2.4	2.4	24	0	165	.11	9	.9	1.3	LSW
		6	116	58.62	19	17.46	155	22.57	4.41	1.7	1.9	22	0	131	.10	5	1.0	1.8	SWR
		6	120	3.66	19	16.20	155	22.43	6.70	2.0	1.9	22	0	154	.14	6	1.0	1.6	SWR
		6	221	6.48	19	20.39	155	7.68	8.72	2.7	2.5	26	0	89	.13	8	1.0	1.1	UER
		6	223	4.80	19	11.84	155	22.88	5.09	2.2	2.0	25	0	163	.14	14	1.2	1.4	LSW
		6	3	8 25.68	19	19.18	155	22.28	3.72	1.8	1.6	18	0	127	.08	9	.5	1.6	SWR
		6	319	5.11	19	15.51	155	22.95	11.04		1.5	22	0	165	.10	9	1.1	.4	LSW
		6	4	1 32.67	19	19.05	155	22.07	4.05	1.3	1.2	15	0	130	.05	8	.4	.8	SWR
		6	5	0 24.51	19	12.27	155	20.74	6.27	1.6	2.1	24	0	201	.09	14	1.0	1.2	HLP
		6	513	31.52	19	19.26	155	15.79	7.68	.6	.6	17	0	181	.10	6	1.1	1.8	KOA
		6	544	23.45	19	20.82	155	19.61	4.31	1.8	1.9	19	0	75	.07	6	.4	1.0	SWR
		6	545	24.07	19	14.63	155	20.50	5.96	2.0	1.9	22	0	173	.08	11	.6	1.4	HLP
		6	552	13.86	19	13.10	155	22.51	3.55	2.0	1.3	16	0	183	.12	12	1.1	2.4	LSW
		6	555	34.15	19	13.19	155	22.79	9.71	2.9	2.9	26	0	158	.13	11	1.1	.7	LSW
		6	6	4 15.74	19	18.98	155	22.80	3.30	1.6	1.9	19	0	149	.06	10	.4	.9	SWR
		6	6	8 27.71	19	18.02	155	23.64	1.02	1.7	1.6	20	0	150	.14	9	.9	1.2	SWR
		6	633	21.61	19	19.10	155	22.91	5.09	2.1	2.3	22	0	101	.12	8	.8	1.1	SWR
		6	655	34.84	19	24.85	155	16.79	2.00	1.5	1.6	8	0	112	.15	2	1.3	.0	SPC
		6	7	5 50.36	19	13.57	155	23.23	5.47	2.0	1.9	21	0	171	.12	11	1.1	1.4	LSW
		6	714	.06	19	15.45	155	21.10	4.17		1.6	22	0	146	.12	10	.9	1.7	LSW
		6	723	12.27	19	16.28	155	22.97	6.79	1.8	1.9	21	0	147	.13	8	1.0	2.6	SWR
		6	8	2 19.99	19	19.31	155	21.88	5.27		1.2	15	0	150	.06	8	.5	1.2	SWR
		6	1035	46.11	19	17.12	155	21.03	7.85	2.1	1.8	24	0	140	.10	8	.7	.9	SWR
		6	1158	12.17	19	19.20	155	15.85	9.52	1.9	1.9	22	0	126	.09	6	.7	1.1	KOA
		6	12	8 57.94	19	18.96	155	16.13	6.43		1.0	16	0	185	.08	6	.9	1.2	KOA
		6	14	1 10.99	19	16.17	155	22.90	5.67	1.1	1.5	20	0	131	.13	8	1.0	5.0	SWR
		6	1438	10.99	19	17.82	155	15.58	7.57	1.7	1.9	24	0	123	.09	5	.5	1.1	KOA
		6	1449	17.23	19	18.80	155	22.75	2.00	1.3	1.3	12	0	152	.05	10	.4	3.0	SWR
		6	1455	7.41	19	24.27	155	17.32	14.05	1.1	1.1	22	0	78	.06	2	.5	.6	DEP
		6	1533	14.07	19	20.29	155	20.67	1.77	1.1	1.3	17	0	96	.07	6	.4	33.5	SWR
		6	1639	17.71	19	20.78	155	11.01	7.54		1.3	18	0	72	.12	8	.8	1.4	UER
		6	1645	5.01	19	20.56	155	20.14	3.23	1.4	1.6	14	0	85	.06	6	.4	3.4	SWR
		6	1648	17.15	19	16.99	155	23.87	1.37	1.9	2.1	24	0	117	.14	9	.8	32.7	SWR
		6	1728	18.41	19	19.45	155	22.34	2.64	1.3	1.3	15	0	121	.09	9	.6	3.3	SWR
		6	1738	24.52	19	19.75	155	11.61	7.91		1.0	16	0	88	.06	6	.5	1.3	UER
		6	1747	2.90	19	16.61	155	24.05	8.68	4.5	4.3	27	0	119	.18	10	1.1	1.7	SWR
		6	1841	24.01	19	17.86	155	14.40	7.64	2.0	2.0	25	0	103	.08	7	.5	.8	POL
		6	1857	42.88	19	13.81	155	23.18	5.58	2.0	1.9	22	0	155	.14	11	1.1	5.5	LSW
		6	1922	41.74	19	10.15	155	22.56	3.66	2.4	2.2	25	0	173	.16	16	1.4	2.0	LSW
		6	1939	45.08	19	10.89	155	22.28	10.39	2.1	2.0	22	0	170	.14	17	1.4	1.2	LSW
		6	2031	1.46	19	16.98	155	12.92	7.05		1.2	16	0	241	.10	10	1.8	2.1	POL
		6	2040	53.69	19	13.75	155	23.28	4.28	2.3	2.4	22	0	155	.18	11	1.3	2.4	LSW
		6	2048	16.46	19	20.52	155	20.65	5.30	1.8	1.5	19	0	91	.06	6	.4	1.7	SWR
		6	2051	58.09	19	23.81	155	24.98	8.13	1.8	1.5	22	0	87	.10	9	.7	.9	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	6	2118	8.53	19	12.93	155	22.48	3.53	2.3	2.0	18	0	184	.15	11	1.4	2.7	LSW
		6	2147	35.43	19	18.80	155	13.13	8.45		.6	19	0	84	.09	8	.7	1.6	POL
		6	2314	33.21	19	20.63	155	12.56	9.37	1.7	1.6	20	0	67	.09	7	.6	1.4	UER
		7	040	33.92	19	19.63	155	21.75	3.57	1.6	1.4	15	0	127	.11	8	.9	2.8	SWR
		7	051	45.12	19	17.16	155	24.29	4.93	3.1	3.3	24	0	113	.14	10	.9	1.1	SWR
		7	1 2	59.23	19	21.02	155	19.59	2.33	1.3	1.5	18	0	93	.08	6	.4	3.8	SWR
		7	1 7	14.27	19	12.80	155	22.87	2.68		1.3	24	0	160	.12	12	1.0	2.5	LSW
		7	1 9	9.06	19	24.09	155	26.36	8.58	1.7	1.1	22	0	87	.08	12	.6	1.4	UKF
		7	123	42.65	19	19.38	155	20.11	.38	1.6	2.1	12	0	150	.11	6	.7	3.2	SWR
		7	129	51.84	19	19.36	155	24.06	3.87		1.6	13	0	141	.14	11	1.6	4.3	SWR
		7	238	55.62	19	13.31	155	23.44	5.03	2.0	1.8	20	0	159	.10	12	.8	1.0	LSW
		7	254	44.59	19	19.43	155	22.09	3.34	1.6	1.8	18	0	121	.07	8	.4	1.9	SWR
		7	3 4	58.78	19	13.30	155	3.01	12.98		1.5	15	0	277	.08	20	4.6	.4	DIS
		7	3 6	21.46	19	13.38	155	23.62	9.25	2.2	2.1	24	0	155	.13	12	.9	1.0	LSW
		7	325	5.44	19	11.08	155	22.39	4.73	2.1	1.9	22	0	179	.14	14	1.3	1.4	LSW
		7	335	55.19	19	19.43	155	22.20	3.49		1.2	15	0	121	.09	8	.7	2.4	SWR
		7	336	10.14	19	21.25	155	19.26	1.46	1.4	1.6	11	0	166	.10	6	1.0	99.0	SWR
		7	349	55.98	19	20.19	155	20.63	1.48	1.4	1.4	16	0	97	.11	6	.6	.0	SWR
		7	427	37.09	19	20.54	155	20.26	2.72	1.4	1.3	17	0	114	.07	6	.5	5.9	SWR
		7	559	44.56	19	13.82	155	23.63	6.76	2.8	2.9	25	0	150	.14	12	1.0	3.2	LSW
		7	614	7.59	19	20.22	155	20.81	4.49	2.1	2.1	20	0	98	.12	6	.7	1.8	SWR
		7	627	39.87	19	19.34	155	22.10	1.91	1.6	1.3	13	0	123	.05	8	.4	28.0	SWR
		7	638	36.52	19	13.69	155	23.12	3.48	2.3	2.3	21	0	155	.13	11	1.0	2.4	LSW
		7	8 4	59.44	19	17.57	155	15.14	5.67		1.4	21	0	158	.09	6	.6	1.2	KOA
		7	951	9.74	19	19.55	155	22.08	3.19	1.6	1.6	17	0	116	.08	8	.6	2.6	SWR
		7	11 6	49.67	19	17.51	155	15.03	7.11	1.8	1.9	22	0	128	.12	6	.8	1.8	KOA
		7	1228	58.35	19	18.93	155	23.02	4.03	2.0	1.8	21	0	131	.09	8	.6	1.2	SWR
		7	1241	53.28	19	16.69	155	23.78	8.60	2.5	2.6	27	0	120	.16	9	1.0	1.4	SWR
		7	1245	57.45	19	17.87	155	23.39	1.20	1.6	1.8	23	0	112	.15	8	.7	33.1	SWR
		7	1320	59.31	19	19.89	155	11.84	8.97	1.7	1.9	13	0	212	.07	8	1.5	2.4	UER
		7	1328	55.90	19	19.61	155	17.78	25.52	1.6	1.0	14	1	134	.10	6	2.0	2.0	DEP
		7	1426	30.07	19	20.69	155	19.75	1.28	1.6	1.4	12	0	103	.09	6	.7	99.0	SWR
		7	1448	22.00	19	19.68	155	21.46	.39	1.5	1.2	11	0	164	.05	7	.9	4.4	SWR
		7	1531	53.20	19	19.01	155	22.28	4.87	1.9	1.9	13	0	195	.14	9	1.6	1.5	SWR
		7	1615	47.51	19	21.68	155	18.58	3.58	1.2	1.0	16	0	71	.10	4	.6	3.1	KOA
		7	1621	12.56	19	16.91	155	23.10	4.02	1.7	1.2	22	0	122	.17	8	1.1	2.3	SWR
		7	1621	35.67	19	21.48	155	18.76	1.57	1.2	1.3	13	0	79	.07	5	.5	.0	KOA
		7	1641	56.51	19	13.86	155	23.20	5.57	2.7	2.9	23	0	153	.14	11	1.0	6.1	LSW
		7	17 8	48.75	19	25.18	155	16.52	15.55	2.0	2.4	28	0	94	.14	2	1.0	1.3	DEP
		7	1743	59.03	19	20.16	155	20.90	5.34	1.5	1.6	20	0	126	.12	6	.8	1.1	SWR
		7	1752	11.69	19	19.54	155	22.18	1.87	1.6	1.7	16	0	119	.07	8	.4	.4	SWR
		7	1844	14.27	19	20.51	155	20.55	4.37	2.2	2.4	22	0	68	.11	6	.6	1.3	SWR
		7	19 7	44.57	19	20.78	155	19.91	1.31	1.3	1.2	16	0	103	.08	6	.4	99.0	SWR
		7	1913	29.33	19	19.02	155	13.67	7.38	1.7	2.0	25	0	68	.12	7	.7	1.3	UER
		7	1924	42.63	19	18.87	155	13.54	8.96	2.6	2.8	26	0	72	.10	7	.6	.9	POL
		7	2156	42.06	19	21.41	155	18.62	2.47	1.5	1.2	16	0	75	.06	5	.3	4.7	KOA
		7	22 6	2.62	19	8.71	155	22.38	7.20	2.8	2.8	24	0	220	.11	18	1.4	1.1	LSW
		7	22 7	21.17	19	20.69	155	19.78	4.85	1.7	1.6	19	0	79	.11	6	.6	1.6	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	7	2251	16.52	19	16.75	155	23.84	4.90	1.6	1.9	20	0	132	.13	9	1.1	1.2	SWR
		7	2330	27.23	19	26.97	155	35.54	5.50	3.4	3.4	22	0	121	.11	22	.9	99.0	MOK
		7	2348	48.58	19	20.12	155	20.67	5.10		1.1	16	0	134	.08	6	.6	1.3	SWR
		7	2357	53.03	19	21.23	155	19.23	1.36	1.2	1.6	16	0	85	.08	6	.5	99.0	SWR
		8	0 5	8.35	19	20.12	155	20.70	1.78	1.7	1.4	10	0	134	.10	6	.8	.0	SWR
		8	1 0	25.25	19	19.37	155	16.60	31.77	1.6	.9	19	0	160	.10	6	2.0	5.0	DEP
		8	144	31.94	19	20.03	155	20.69	4.94	1.9	1.9	19	0	101	.08	6	.5	1.1	SWR
		8	2 5	12.87	19	15.43	155	20.52	4.61	1.8	2.0	26	0	147	.15	10	.9	1.5	HLP
		8	257	30.48	19	13.36	155	23.92	5.14	2.3	2.3	18	0	154	.10	13	.9	1.0	LSW
		8	4 2	46.76	19	13.65	155	24.11	3.64	2.0	1.9	20	0	149	.14	12	1.1	2.7	LSW
		8	410	1.04	19	21.43	155	18.74	1.88	1.2	1.2	15	0	76	.07	5	.4	.0	KOA
		8	434	41.19	19	17.91	155	15.34	7.06	1.7	1.5	20	0	150	.08	6	.7	1.1	KOA
		8	5 1	.19	19	13.92	155	23.29	6.20	2.5	2.8	25	0	152	.16	11	1.2	3.6	LSW
		8	542	21.70	19	19.06	155	22.19	1.31		1.1	14	0	130	.14	9	1.0	1.1	SWR
		8	552	50.23	19	15.32	155	20.55	7.73	4.1	4.0	26	0	152	.14	10	1.0	1.4	HLP
		8	557	37.11	19	15.35	155	20.82	4.68	2.4	2.6	28	0	147	.18	10	1.0	1.8	HLP
		8	559	17.86	19	14.96	155	21.16	.48	1.8	1.9	24	0	154	.14	10	1.0	57.3	LSW
		8	6 4	51.85	19	16.30	155	20.39	10.28	1.8	1.8	23	0	141	.14	9	.9	.8	SWR
		8	610	37.68	19	14.86	155	20.56	3.10	1.8	2.0	23	0	156	.11	11	.8	2.2	HLP
		8	615	10.67	19	14.91	155	20.29	4.08	1.8	1.9	21	0	157	.10	11	.8	1.5	HLP
		8	813	31.33	19	14.62	155	20.38	7.88	3.5	3.9	24	0	157	.13	11	.9	1.3	HLP
		8	821	6.07	19	19.34	155	22.10	3.27	1.6	1.6	18	0	123	.10	8	.7	1.8	SWR
		8	1014	21.67	19	19.44	155	20.34	.55	2.9	3.3	12	0	83	.15	5	1.0	7.6	SWR
		8	1028	28.96	19	14.64	155	20.68	2.46		2.0	21	0	159	.11	11	.9	2.8	HLP
		8	1128	57.12	19	20.06	155	19.13	2.00	1.9	1.9	15	0	105	.15	7	.9	.0	SWR
		8	1340	7.53	19	15.33	155	20.14	.98	1.8	1.8	24	0	149	.10	11	.6	33.1	HLP
		8	1342	32.02	19	15.61	155	20.08	6.19	1.8	2.0	22	0	147	.13	10	1.0	1.9	HLP
		8	1450	18.41	19	20.68	155	16.99	31.13	2.2	1.6	21	0	72	.07	5	1.1	2.7	DEP
		8	1623	21.20	19	20.57	155	6.97	3.51	1.9	1.4	22	0	96	.19	7	1.2	3.1	UER
		8	1957	13.99	19	20.23	155	20.57	6.33	2.4	2.4	23	0	80	.13	6	.7	1.4	SWR
		8	21 7	6.15	19	16.63	155	22.82	9.31	2.2	2.4	24	0	126	.14	11	.9	1.5	SWR
		8	2110	55.45	19	16.60	155	22.85	6.67	1.8	1.9	25	0	127	.15	8	1.0	1.8	SWR
		8	2242	29.30	19	20.06	155	10.82	8.87	1.7	1.7	21	0	85	.10	7	.7	1.5	UER
		8	2344	41.77	19	18.11	155	13.55	7.68		.9	18	0	92	.13	8	1.0	2.5	POL
		9	032	54.30	19	18.40	155	13.55	6.93		1.0	19	0	88	.10	8	.8	1.9	POL
		9	038	31.23	19	17.75	155	15.72	8.40	2.0	2.1	21	0	126	.11	5	.9	1.7	KOA
		9	1 5	24.26	19	26.80	155	17.13	12.67		1.4	15	0	106	.16	6	1.9	.6	LPC
		9	237	.71	19	14.72	155	22.42	6.91		1.5	17	0	166	.11	10	1.2	3.3	LSW
		9	322	40.38	19	13.89	155	22.11	7.90		1.3	15	0	187	.08	13	1.1	3.0	LSW
		9	358	29.87	19	17.93	155	17.95	7.70		.6	13	0	228	.08	9	2.5	3.0	KOA
		9	4 2	4.32	19	24.53	155	17.30	12.88		.9	19	0	55	.06	2	.6	.2	LPC
		9	4 5	48.58	19	16.08	155	24.07	3.96	1.9	1.5	17	0	139	.13	10	1.1	2.0	SWR
		9	457	3.42	19	16.39	155	22.68	3.82	1.8	1.5	22	0	129	.16	8	1.1	2.5	SWR
		9	520	10.63	19	13.66	155	19.90	27.99	2.2	1.6	15	0	226	.04	13	1.7	1.1	HLP
		9	6 0	40.21	19	17.11	155	21.39	7.07		1.2	18	0	190	.13	9	1.4	1.2	SWR
		9	623	13.86	19	17.33	155	23.60	5.48	2.1	1.9	22	0	125	.14	9	1.0	1.0	SWR
		9	651	14.30	19	19.54	155	15.55	9.66	1.9	2.2	22	0	163	.10	6	.9	1.2	KOA
		9	746	16.53	19	17.63	155	20.94	5.77	1.2	1.3	19	0	138	.13	8	1.1	2.5	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	9	828	59.71	19	21.50	155	16.86	2.34	1.5	1.5	14	0	76	.09	5	.5	13.3	KOA
		9	918	8.32	19	15.93	155	23.32	.61	1.8	1.9	19	0	148	.15	9	1.1	64.0	LSW
		9	10 9	40.78	19	16.59	155	20.45	8.39	1.8	1.8	21	0	163	.07	8	.6	1.2	SWR
		9	1010	48.13	19	25.59	155	36.16	3.75	2.9	2.8	19	0	94	.14	16	1.0	1.8	MOK
		9	1039	36.57	19	17.84	155	13.16	9.84	2.1	2.2	24	0	144	.10	9	.6	.6	POL
		9	1348	51.54	19	17.13	155	21.41	4.26	2.0	2.1	21	0	138	.14	9	1.0	1.7	SWR
		9	1425	8.19	19	19.62	155	12.18	7.37	2.0	1.9	20	0	116	.13	8	1.0	2.1	UER
		9	1814	28.90	19	27.19	155	35.12	.17	2.5	2.5	22	0	123	.11	21	.9	1.0	MOK
		9	1927	10.44	19	24.08	155	27.60	2.13	2.3	1.9	19	0	110	.16	13	1.3	4.4	UKF
		9	21 1	19.60	19	18.25	155	23.59	5.65	2.7	3.2	25	0	111	.15	9	.9	1.5	SWR
		9	2226	56.64	19	15.11	155	22.49	5.70	1.9	1.9	23	0	147	.13	13	1.0	2.7	LSW
		9	2330	8.03	19	14.84	155	20.72	7.69	1.9	1.6	21	0	158	.09	11	.8	1.0	HLP
		10	355	50.28	19	16.13	155	23.59	.00	1.8	1.8	21	0	132	.17	9	1.1	72.6	SWR
		10	417	5.95	19	24.68	155	16.60	15.54	1.7	1.6	24	0	64	.11	2	.8	1.2	DEP
		10	613	15.54	19	17.12	155	23.43	1.32	1.8	1.6	21	0	127	.16	9	1.1	33.5	SWR
		10	713	34.66	19	17.90	155	13.39	8.72	1.8	1.4	18	0	175	.11	9	1.5	1.0	POL
		10	815	3.83	19	18.25	155	23.80	1.61	1.7	1.6	19	0	143	.15	9	1.1	35.2	SWR
		10	827	4.86	19	21.17	155	19.26	3.23	1.3	1.2	15	0	86	.06	6	.3	2.3	SWR
		10	832	21.07	19	20.09	155	20.67	.37	1.4	1.3	13	0	135	.07	6	.5	3.5	SWR
		10	1051	40.77	19	16.32	155	24.30	1.60	1.8	2.0	19	0	133	.11	10	.7	21.8	SWR
		10	1111	22.70	19	20.42	155	17.51	29.72	2.1	1.4	24	0	53	.06	5	.7	1.2	DEP
		10	1216	39.00	19	24.64	155	26.73	9.65	2.5	2.3	16	0	106	.06	12	.6	3.9	UKF
		10	1343	51.30	19	20.83	155	16.99	27.80	2.1	1.6	18	0	96	.03	5	.6	1.2	DEP
		10	1441	.77	19	16.78	155	22.15	7.14	2.1	2.4	29	0	129	.15	8	.9	1.2	SWR
		10	1527	15.50	19	19.69	155	12.23	10.66	1.7	1.6	18	0	153	.09	8	1.0	1.2	UER
		10	1551	4.00	19	20.17	155	13.61	8.97	1.6	1.2	19	0	151	.14	7	1.4	2.2	UER
		10	2248	48.38	19	20.41	155	17.20	29.41	2.1	1.6	27	0	102	.09	6	.9	1.5	DEP
		11	2 5	23.70	18	57.24	155	5.09	11.85	2.6	2.3	23	0	268	.10	46	5.4	99.0	PPL
		11	422	6.88	19	21.22	155	5.95	8.77	2.6	2.8	22	0	91	.12	8	1.0	1.4	MER
		11	5 9	11.18	19	13.66	155	23.45	3.74	2.4	2.7	27	0	149	.13	12	.9	1.4	LSW
		11	549	40.55	19	16.73	155	23.39	5.39	1.8	1.6	24	0	130	.19	12	1.0	1.5	SWR
		11	556	25.55	19	13.59	155	23.37	3.50	2.3	2.1	26	0	165	.15	12	1.1	1.7	LSW
		11	616	12.68	19	16.54	155	22.87	6.08	1.8	1.4	19	0	157	.10	12	1.0	1.4	SWR
		11	642	32.54	19	20.50	155	11.80	8.65	1.7	1.5	23	0	126	.10	8	.8	1.0	UER
		11	819	32.19	19	17.80	155	20.97	5.86	1.7	1.4	23	0	141	.15	10	1.2	3.3	SWR
		11	840	44.07	19	19.37	155	15.97	7.35	1.6		21	0	153	.09	8	.6	.8	KOA
		11	1038	35.42	19	15.93	155	24.12	.19	1.9	1.6	17	0	152	.13	14	.9	4.7	LSW
		11	1153	39.11	19	14.17	155	23.75	5.31	2.3	2.1	24	0	142	.19	11	1.3	1.7	LSW
		11	1246	34.28	19	13.61	155	23.50	5.50	2.4	2.2	20	0	153	.11	12	.9	1.4	LSW
		11	1544	24.87	19	20.08	155	17.51	28.40	2.1	1.2	20	0	116	.09	6	1.2	2.2	DEP
		11	1545	57.82	19	20.94	155	17.12	30.12	2.1	1.2	19	0	85	.06	5	.9	1.7	DEP
		11	1625	28.56	19	19.25	155	13.07	8.07	1.7	1.8	23	0	124	.10	8	.7	1.2	UER
		11	1820	52.33	19	17.33	155	23.69	7.76	2.7	3.3	25	0	117	.14	12	.9	1.4	SWR
		11	1853	8.27	19	17.41	155	24.29	5.18	2.6	3.1	27	0	113	.18	11	1.0	1.2	SWR
		11	1855	42.63	19	17.33	155	22.45	5.82	1.8	1.5	23	0	123	.18	10	1.2	2.8	SWR
		11	2220	.45	19	25.42	155	17.17	17.03	1.7	1.5	28	0	48	.08	3	.5	.8	DEP
		11	2252	56.61	19	17.98	155	23.58	5.30	1.8	1.9	24	0	136	.15	11	1.0	1.1	SWR
		11	2334	29.28	19	13.52	155	22.60	6.39	2.0	1.8	19	0	182	.15	12	1.5	2.9	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	11	2346	28.87	19	19.92	155	10.13	10.16		1.3	15	0	130	.05	7	.7	1.9	UER
		12	024	32.27	19	13.34	155	23.04	7.87	2.0	1.6	20	0	181	.13	13	1.3	1.4	LSW
		12	056	59.60	19	30.31	155	17.01	10.60	1.6	1.2	22	0	87	.16	9	1.2	.5	GLN
		12	145	44.55	19	17.15	155	24.20	6.79	2.6	2.4	28	0	115	.18	12	1.1	1.7	SWR
		12	225	36.41	19	19.98	155	20.78	2.87	1.5	1.6	18	0	150	.06	7	.4	1.3	SWR
		12	234	7.35	19	20.06	155	20.75	3.56	1.5	1.5	17	0	148	.07	7	.6	1.3	SWR
		12	732	44.43	19	13.32	155	23.02	2.74	2.0	2.0	21	0	157	.13	13	1.0	2.7	LSW
		12	10 7	10.25	19	16.61	155	23.06	5.97	1.8	2.2	27	0	126	.18	12	1.1	2.0	SWR
		12	1543	39.87	19	32.37	155	37.62	10.03	2.6	2.1	26	0	147	.13	25	1.2	.4	MOK
		12	1548	47.70	19	17.08	155	22.26	2.77	1.6	2.0	23	0	134	.14	8	.9	2.4	SWR
		12	16 2	52.99	19	32.22	155	37.65	10.07	2.6	2.1	27	0	147	.10	25	.9	.3	MOK
		12	1641	42.69	19	3.46	155	34.20	39.49	2.6	2.0	31	0	169	.11	22	1.7	3.6	HEA
		12	2049	34.96	19	20.29	155	8.87	7.72	1.8	2.1	24	0	92	.11	9	.9	1.6	UER
		12	2055	39.71	19	19.45	155	15.99	8.83	1.7	1.9	25	0	123	.13	5	.8	1.2	KOA
		12	2343	49.88	19	19.82	155	11.59	11.49	1.8	1.4	19	0	129	.10	8	1.1	3.0	UER
		13	032	38.53	19	20.39	155	17.12	30.22	1.9	1.5	28	0	101	.09	5	.9	1.6	DEP
		13	156	3.39	19	31.71	155	11.85	26.93	2.1	1.7	29	0	64	.10	14	.8	2.0	HIL
		13	735	43.90	19	24.63	155	16.76	14.94	1.6	1.6	29	0	46	.08	2	.5	.7	DEP
		13	847	44.29	19	17.53	155	22.12	5.48	1.7	1.8	23	0	123	.18	8	1.2	1.4	SWR
		13	924	8.24	19	19.22	155	13.63	10.21	2.7	3.2	26	0	122	.09	7	.6	.3	UER
		13	1935	1.95	19	25.21	155	35.98	5.84	1.6	1.9	14	0	98	.12	24	1.1	4.1	MOK
		13	1937	32.61	19	26.10	155	36.78	3.71	2.9	3.0	21	0	187	.12	21	1.0	1.1	MOK
		13	2035	28.28	19	21.77	155	2.70	9.64	2.5	2.7	17	0	135	.11	13	1.4	.6	MER
		13	2238	51.49	19	17.54	155	22.07	7.62	1.8	1.9	22	0	124	.14	8	.9	1.2	SWR
		14	229	19.82	19	24.01	155	29.41	9.18	1.8	1.9	21	0	78	.11	13	.8	1.0	UKF
		14	424	10.26	19	26.92	155	23.11	7.83	2.0	1.5	18	0	132	.08	12	.8	.9	UKF
		14	648	53.51	19	16.82	155	24.37	6.59	2.6	2.8	22	0	116	.18	10	1.2	1.6	SWR
		14	1140	26.80	19	13.35	155	35.83	9.91	2.3	2.4	18	0	114	.19	22	1.8	.8	HEA
		14	13 1	23.18	19	17.30	155	16.81	7.65	1.5	1.6	19	0	144	.08	10	.6	1.0	KOA
		14	1348	8.43	19	10.27	155	33.77	32.11	2.5	1.9	24	0	109	.13	17	1.6	3.4	LSW
		14	1513	52.31	19	24.75	155	16.77	13.65	2.0	2.0	21	0	73	.06	2	.5	.4	DEP
		14	1617	53.49	19	24.56	155	16.60	13.90	2.1	2.1	28	0	64	.08	2	.6	.7	DEP
		14	2012	46.51	19	16.66	155	22.50	6.82	1.7	1.8	21	0	128	.11	7	.9	1.7	SWR
		14	2046	34.04	19	18.85	155	13.75	7.81		1.0	15	0	154	.08	8	.8	2.2	POL
		14	2047	13.60	19	9.84	155	33.82	31.94	2.8	2.1	29	0	114	.08	17	.8	1.8	LSW
		14	2153	5.98	19	9.93	155	33.92	34.46	2.2	1.6	26	0	113	.10	17	1.3	2.9	LSW
		15	012	.20	19	19.86	155	11.79	7.27		1.3	19	0	129	.11	8	.9	1.2	UER
		15	223	38.60	19	13.85	155	21.68	9.54	2.0	2.2	25	0	158	.12	12	1.0	.6	LSW
		15	614	38.65	19	17.56	155	22.46	5.97	1.8	1.6	24	0	122	.17	8	1.1	2.7	SWR
		15	917	39.59	19	17.55	155	21.15	7.67	2.1	1.6	23	0	128	.14	8	.9	1.7	SWR
		15	1024	59.49	19	24.80	155	16.49	14.12	2.9	2.7	19	0	47	.08	2	.7	.8	DEP
		15	1317	10.99	19	24.27	155	16.54	14.44	1.9	2.0	27	0	46	.11	2	.8	1.0	DEP
		15	1654	29.18	19	25.08	155	16.90	14.37	1.6	1.4	24	0	92	.06	2	.5	.6	DEP
		15	17 1	57.31	19	20.50	155	12.74	8.57	1.6	1.2	18	0	67	.05	7	.4	.8	UER
		15	1845	27.36	19	18.88	155	15.20	6.92	1.6	1.3	19	0	116	.06	6	.6	1.4	KOA
		15	19 3	14.03	19	20.57	155	17.24	30.16	2.1	1.5	30	0	63	.10	5	1.0	1.7	DEP
		15	1958	57.96	19	24.93	155	16.59	13.95	1.6	1.0	25	0	47	.08	2	.6	.8	DEP
		15	20 5	17.59	19	24.81	155	16.75	14.57	1.6	1.3	26	0	64	.06	2	.4	.5	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	15	2128	8.05	19	24.87	155	16.83	14.07	1.6	1.4	27	0	64	.07	2	.5	.7	DEP
		15	2228	56.82	19	17.83	155	21.71	8.15	1.9	1.6	26	0	119	.15	9	.9	1.2	SWR
		16	313	16.48	19	20.34	155	11.90	9.19	1.7	1.4	24	0	76	.13	7	.9	1.8	UER
		16	423	20.51	19	16.68	155	22.37	7.25	2.0	2.2	27	0	128	.17	8	1.1	1.5	SWR
		16	619	22.45	19	24.44	155	24.00	11.05	1.7	1.4	20	0	68	.05	8	.3	.4	UKF
		16	631	21.10	19	18.61	155	15.03	7.78		1.1	19	0	122	.07	6	.5	1.2	KOA
		16	739	54.55	19	19.25	155	14.24	7.21	1.6	1.2	24	0	71	.11	7	.6	1.3	UER
		16	855	33.55	19	16.97	155	24.42	1.71		1.6	22	0	114	.18	10	1.1	34.1	SWR
		16	9 2	8.91	19	19.14	155	15.90	6.56		1.0	18	0	113	.10	6	.7	1.4	KOA
		16	1152	30.32	19	19.83	155	9.28	6.92	1.8	1.6	25	0	82	.15	8	.9	1.6	UER
		16	1332	20.57	19	15.51	155	22.76	6.67	2.0	2.2	26	0	136	.17	9	1.1	3.0	LSW
		16	1523	40.89	19	19.41	155	13.07	7.80	1.5	1.6	24	0	76	.11	7	.7	1.3	UER
		16	17 4	30.86	19	19.15	155	9.64	11.70		1.3	15	0	139	.07	9	1.0	.4	UER
		16	2015	35.76	19	17.31	155	15.15	6.39		1.5	20	0	165	.12	6	.9	1.6	KOA
		16	2024	33.19	19	16.94	155	24.02	.83		1.6	21	0	117	.16	10	1.0	99.0	SWR
		16	2226	24.85	19	20.42	155	20.33	1.45		1.3	17	0	90	.09	5	.5	.0	SWR
		17	341	20.46	19	16.49	155	23.71	6.94	2.6	2.9	29	0	123	.16	9	.9	1.4	SWR
		17	516	4.64	19	14.53	155	20.33	41.13	3.1	3.0	32	0	154	.11	12	1.4	2.4	HLP
		17	7 7	14.20	19	20.00	155	10.57	7.02	1.7	1.1	18	0	86	.10	7	.8	1.8	UER
		17	738	30.10	19	18.02	155	22.43	6.69	1.7	1.6	18	0	115	.15	12	1.2	2.6	SWR
		17	1231	43.25	19	18.33	155	21.50	2.32	1.6	1.6	14	0	203	.12	8	1.4	19.4	SWR
		17	13 9	9.13	19	17.92	155	23.61	5.44	3.0	3.7	23	0	110	.13	11	.8	1.0	SWR
		17	1355	25.44	19	24.12	155	26.14	11.10		1.6	17	0	143	.07	11	.7	.4	UKF
		17	1512	21.29	19	20.53	155	20.36	1.34	1.7	2.0	17	0	88	.08	6	.4	99.0	SWR
		17	1858	41.91	19	20.50	155	17.52	29.70	2.1	1.9	22	0	38	.08	5	1.1	2.7	DEP
		17	20 9	57.58	19	18.41	155	20.70	6.25		1.3	15	0	199	.09	7	.9	2.0	SWR
		17	2128	42.66	19	18.18	155	22.77	8.39	1.8	1.6	13	0	147	.09	8	.8	1.2	SWR
		18	722	57.02	19	18.46	155	13.44	9.05	2.4	2.8	24	0	79	.10	8	.7	1.3	POL
		18	10 7	2.49	19	17.38	155	21.56	8.31	1.8	2.1	18	0	131	.11	9	.9	1.9	SWR
		18	1218	2.94	19	18.67	155	13.02	9.58		1.8	16	0	89	.09	8	1.0	3.1	POL
		18	1223	28.84	19	25.91	155	25.01	12.02	1.7	1.8	16	0	105	.07	8	.8	.4	UKF
		18	13 6	12.80	19	18.94	155	15.32	8.42	1.8	2.2	20	0	115	.07	6	.6	1.1	KOA
		18	1317	51.70	19	19.45	155	11.97	8.80		1.6	18	0	92	.07	6	.6	1.4	UER
		18	16 1	20.06	19	18.83	155	15.91	8.18	1.6	2.0	18	0	123	.05	5	.4	.9	KOA
		18	1723	38.94	19	30.36	155	52.28	8.65		1.9	11	0	164	.22	39	5.6	2.2	KON
		18	1817	23.88	19	19.02	155	15.64	8.27		2.0	19	0	115	.06	6	.5	1.1	KOA
		18	1916	7.76	19	22.00	155	28.64	7.97	1.9	2.1	23	0	77	.12	11	.8	1.9	UKF
		18	1922	13.74	19	18.23	155	13.26	8.92	1.7	2.5	22	0	90	.11	8	.8	1.6	POL
		19	223	13.89	19	13.70	155	24.11	5.16		2.3	17	0	149	.15	12	1.1	1.5	LSW
		19	226	9.29	19	16.43	155	23.78	7.96	1.9	2.4	13	0	137	.06	13	.7	1.7	SWR
		19	230	10.91	19	17.93	155	13.17	6.94		1.4	11	0	101	.08	9	1.0	2.3	POL
		19	241	11.97	19	8.46	155	23.18	9.91	2.2	2.1	19	0	236	.08	19	1.3	.4	LSW
		19	9 4	51.19	19	19.24	155	13.34	7.02	1.5	1.6	24	0	73	.10	7	.6	1.3	UER
		19	949	13.10	19	20.80	155	11.93	8.69	1.5	2.0	24	0	70	.13	7	.8	1.6	UER
		19	950	54.93	19	20.73	155	11.91	9.13	1.7	2.8	24	0	70	.10	7	.6	1.2	UER
		19	1712	18.57	19	26.65	155	30.38	8.21	1.6	1.6	22	0	76	.11	11	.8	1.5	MOK
		19	2018	1.90	19	17.94	155	21.21	7.75	1.4	1.6	13	0	120	.11	8	1.0	1.5	SWR
		19	2127	4.41	19	18.79	155	12.95	8.67		1.6	14	0	89	.06	8	.6	1.8	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	19	2324	10.59	19	18.93	155	13.06	7.81		1.1	17	0	84	.07	8	.6	.9	POL
		20	0 7	44.98	19	17.55	155	22.16	7.00		1.2	23	0	120	.15	8	1.0	2.0	SWR
		20	110	49.47	19	24.43	155	26.37	10.70		1.3	19	0	130	.07	12	.9	.7	UKF
		20	3 3	26.66	19	17.35	155	21.87	8.25	2.5	2.9	25	0	124	.13	9	.8	1.2	SWR
		20	3 7	15.92	19	17.76	155	21.95	6.58		1.4	17	0	119	.13	9	1.2	2.6	SWR
		20	4 0	58.38	19	17.97	155	21.33	6.91	2.2	2.0	24	0	119	.12	8	.8	1.2	SWR
		20	639	46.88	19	20.58	155	7.91	9.51		1.6	17	0	149	.05	9	.6	2.2	UER
		20	932	18.61	19	13.94	155	23.94	5.48		2.0	18	0	147	.14	12	1.2	1.5	LSW
		20	10 6	30.12	19	24.00	155	26.14	7.99	2.3	2.2	20	0	78	.11	12	.9	1.9	UKF
		20	1448	38.95	19	19.17	155	11.93	7.52		1.2	18	0	99	.07	7	.5	.9	UER
		20	16 5	27.10	19	17.90	155	21.26	9.65	2.5	2.6	21	0	120	.12	8	.9	.6	SWR
		20	1714	14.89	19	17.73	155	23.75	2.12	1.7	2.2	17	0	111	.13	9	.9	4.6	SWR
		20	1733	38.88	19	18.07	155	21.48	7.64	1.9	1.8	20	0	117	.12	8	.9	1.3	SWR
		20	1943	34.32	19	19.25	155	9.97	7.98		1.2	16	0	101	.08	7	.7	1.5	UER
		20	1944	.29	19	20.66	155	17.51	30.65	1.9	1.6	23	0	46	.08	5	1.1	2.7	DEP
		20	2248	11.76	19	18.69	155	13.55	7.92	1.5	1.4	23	0	73	.09	7	.6	.9	POL
		20	2347	19.76	19	18.78	155	12.89	7.86	1.3	1.2	19	0	90	.06	8	.4	.7	POL
		21	046	3.99	19	22.77	155	17.56	2.00		1.0	12	0	91	.18	3	1.4	.0	KOA
		21	053	13.98	19	16.87	155	23.84	5.11	1.6	1.6	20	0	118	.15	9	1.1	1.3	SWR
		21	122	39.07	19	17.62	155	22.79	7.61	2.1	2.4	24	0	117	.18	7	1.2	1.6	SWR
		21	425	13.66	19	13.85	155	24.15	5.69	2.0	1.8	18	0	146	.15	12	1.3	4.7	LSW
		21	557	32.36	19	25.75	155	24.85	11.22	2.0	1.5	21	0	75	.07	11	.6	.4	UKF
		21	813	29.51	19	19.36	155	13.38	9.85	2.7	2.8	23	0	71	.09	7	.5	.4	UER
		21	818	33.48	19	20.17	155	17.33	30.19	1.8	1.2	20	0	102	.08	5	1.2	2.6	DEP
		21	1128	7.01	19	21.76	155	44.45	10.08	2.9	2.5	17	0	175	.15	33	1.8	.6	HEA
		21	1313	28.85	19	24.34	155	17.27	14.33	1.9	1.6	18	0	58	.06	2	.7	.6	DEP
		21	14 3	46.29	19	25.03	155	26.59	6.61	2.2	1.9	12	0	222	.07	16	1.6	2.2	UKF
		21	1851	24.54	19	16.46	155	24.26	5.98	2.0	2.2	27	0	119	.19	10	1.2	2.4	SWR
		22	451	36.68	19	16.88	155	23.24	.32	2.2	2.3	25	0	122	.17	8	.9	59.1	SWR
		22	532	52.81	19	19.85	155	15.34	6.79		1.2	22	0	91	.09	6	.5	1.2	KOA
		22	731	56.17	19	17.93	155	12.97	5.52		1.5	13	0	111	.06	9	.5	1.4	POL
		22	837	58.23	19	20.83	155	19.80	1.56		.8	9	0	100	.06	6	.6	99.0	SWR
		22	1011	51.10	19	17.43	155	12.66	8.36		1.2	13	0	151	.14	10	1.2	1.9	POL
		22	1416	11.34	19	16.38	155	23.83	.54	1.8	1.8	20	0	123	.18	10	1.2	70.1	SWR
		22	1421	8.47	19	54.00	155	26.30	22.81	2.6	1.9	22	0	151	.16	45	1.8	4.6	KKU
		22	1720	55.85	19	18.59	155	24.03	1.58		1.6	18	0	103	.16	10	1.0	33.7	SWR
		22	21 3	20.12	19	19.43	155	15.28	7.32		.8	11	0	101	.04	6	.4	1.1	KOA
		22	2256	54.32	19	17.65	155	21.46	6.87	1.7	1.1	20	0	122	.13	8	.9	1.3	SWR
		22	2322	27.07	19	24.11	155	16.95	12.68	1.5	.7	23	0	44	.07	1	.5	.2	LPC
		22	2344	53.13	19	24.56	155	17.47	14.32	1.6	.9	23	0	49	.07	2	.5	.7	DEP
		22	2351	51.81	19	18.31	155	23.89	5.08	1.8	1.4	15	0	137	.08	9	.6	.9	SWR
		23	0 6	38.19	19	18.13	155	14.83	7.78		1.1	16	0	137	.07	7	.6	.9	POL
		23	044	57.55	19	20.53	155	17.20	30.39	2.1	1.6	29	0	69	.10	5	1.0	1.8	DEP
		23	441	48.65	19	21.35	155	14.43	23.38	2.0	1.2	20	0	61	.04	6	.5	1.1	DEP
		23	444	16.38	19	20.61	155	13.35	8.90		.9	16	0	60	.03	7	.3	.8	UER
		23	551	33.75	19	21.70	155	16.79	32.73	2.5	2.3	33	0	54	.08	3	.7	1.2	DEP
		23	553	8.66	19	17.53	155	15.50	7.56		.7	17	0	173	.07	6	.6	.7	KOA
		23	622	49.58	19	16.78	155	24.01	.50	1.8	1.8	17	0	118	.13	10	1.0	5.4	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	23	746	7.01	19	19.35	155	20.43	4.68	1.5	1.6	18	0	135	.14	5	1.0	1.6	SWR
		23	8 5	33.97	19	18.12	155	23.53	1.38	2.0	2.5	28	0	109	.16	9	.8	24.7	SWR
		23	1339	.61	19	19.88	155	10.38	6.90	2.0	2.1	25	0	88	.16	7	1.0	2.3	UER
		23	1345	20.98	19	18.24	155	13.69	7.96	1.7	1.9	24	0	91	.12	8	.9	1.6	POL
		23	1532	57.31	19	17.17	155	23.94	2.06	1.8	1.8	23	0	129	.17	9	1.0	4.1	SWR
		23	16 5	58.94	19	16.64	155	23.67	.80	1.1	1.5	17	0	174	.16	9	1.4	99.0	SWR
		23	17 3	53.89	19	15.58	155	22.45	30.54		.9	19	0	184	.05	9	.9	2.0	LSW
		23	1716	50.07	19	19.13	155	15.25	7.98	1.9	1.6	24	0	109	.08	6	.5	.7	KOA
		23	1936	26.50	19	33.96	155	36.52	9.59	2.3	2.1	25	0	138	.17	12	1.3	.8	MOK
		23	2149	6.49	19	17.01	155	22.22	6.78	1.7	1.6	23	0	126	.14	8	1.0	2.5	SWR
		23	2220	50.07	19	18.62	155	23.94	1.79	1.7	1.6	19	0	103	.14	9	.8	34.8	SWR
		23	2232	4.55	19	17.87	155	23.76	.84	1.5	1.9	26	0	110	.15	9	.6	1.4	SWR
		24	045	35.89	19	18.32	155	23.83	7.22	1.8	1.4	17	0	137	.17	9	1.2	1.9	SWR
		24	1 6	42.37	19	18.97	155	13.54	7.72	1.7	.9	22	0	80	.10	7	.7	1.1	POL
		24	244	41.27	19	18.28	155	23.89	4.96	1.8	1.5	17	0	138	.12	9	.8	1.3	SWR
		24	4 9	51.13	19	32.90	155	32.14	39.82	2.5	1.6	12	0	276	.15	22	16.0	24.6	MOK
		24	429	41.04	19	14.86	155	19.08	27.20			20	0	154	.13	11	1.9	3.5	HLP
		24	5 9	42.74	19	24.11	155	17.48	14.30	1.7	1.7	28	0	35	.08	2	.5	.7	DEP
		24	541	24.70	19	17.19	155	22.41	4.38	1.1	1.5	19	0	123	.14	8	1.0	2.0	SWR
		24	546	58.89	19	16.78	155	23.28	6.59	1.5	1.6	26	0	122	.20	8	1.2	2.6	SWR
		24	6 8	17.39	19	17.24	155	22.56	4.36	1.6	1.8	22	0	122	.18	7	.9	1.8	SWR
		24	636	27.19	19	20.33	155	11.87	10.29	2.8	3.2	28	0	76	.09	7	.6	.4	UER
		24	734	48.92	19	17.86	155	13.87	6.23		1.2	16	0	116	.14	8	1.1	2.4	POL
		24	9 5	39.21	19	19.00	155	13.34	10.27	2.6	2.7	27	0	76	.10	7	.6	.3	UER
		24	922	36.78	19	24.39	155	17.28	14.20	1.6	1.4	27	0	34	.08	2	.5	.8	DEP
		24	1051	34.09	19	17.86	155	14.47	9.72	2.8	2.9	26	0	101	.11	7	.6	.9	POL
		24	1133	36.50	19	17.79	155	21.78	4.22	1.3		17	0	119	.17	9	1.1	2.0	SWR
		24	1224	12.21	19	16.80	155	23.13	2.68	1.7	1.6	22	0	123	.15	8	.9	3.6	SWR
		24	1258	59.63	19	17.68	155	14.30	7.74		1.3	17	0	133	.08	8	.6	.9	POL
		24	2041	17.95	19	19.04	155	13.80	7.80		1.0	21	0	86	.08	7	.6	.9	UER
		24	2112	22.26	19	19.70	155	11.84	8.90	2.2	2.2	27	0	87	.12	6	.7	1.2	UER
		24	2216	28.82	19	16.15	155	24.21	5.97	1.8	2.2	26	0	122	.16	10	1.1	1.9	SWR
		25	3 5	34.07	19	19.95	155	16.28	31.40	1.9	1.2	20	0	156	.09	6	2.2	3.4	DEP
		25	336	27.54	19	18.33	155	13.58	7.00	1.7	1.3	21	0	75	.11	8	.7	1.5	POL
		25	7 6	22.11	19	26.65	155	29.41	7.43	1.9	1.4	23	0	135	.12	12	1.0	1.7	UKF
		25	748	3.20	19	17.88	155	14.58	9.93	2.1	2.3	26	0	107	.10	7	.6	.5	POL
		25	925	44.86	19	20.07	155	20.83	3.24	1.5	1.5	13	0	101	.08	6	.6	4.6	SWR
		25	930	39.30	19	19.31	155	11.77	4.94	1.4	.7	21	0	97	.10	7	.6	.9	UER
		25	1131	5.46	19	17.87	155	21.93	4.50	1.6	1.7	23	0	118	.16	9	.9	1.7	SWR
		25	1213	45.33	19	19.02	155	.89	6.28	2.7	2.8	22	0	214	.15	17	2.3	2.4	DIS
		25	1343	52.52	19	17.15	155	22.56	.62	1.4	1.5	19	0	123	.14	11	.9	66.3	SWR
		25	1513	26.16	19	21.52	155	4.66	5.58	2.0	2.1	24	0	127	.13	10	.8	2.2	MER
		25	1842	14.46	19	25.28	155	25.14	10.40	1.8	1.9	26	0	73	.10	9	.6	.3	UKF
		25	19 4	40.06	19	22.04	155	18.17	.40	1.0	1.1	13	0	76	.08	4	.4	1.5	KOA
		25	20 3	54.67	19	22.00	155	4.64	2.64		1.6	25	0	85	.15	10	.8	2.4	MER
		25	2236	18.77	19	19.26	155	16.07	8.09		1.4	25	0	110	.12	6	.7	1.1	KOA
		25	2330	56.21	19	17.03	155	22.70	.64	2.1	1.9	27	0	123	.16	7	.8	61.8	SWR
		25	2358	33.04	19	24.01	155	16.89	2.47	.7	.9	11	0	71	.08	2	.3	.7	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	26	042	34.09	19	16.55	155	24.01	2.80	1.0	1.3	23	0	120	.17	10	1.1	3.0	SWR
		26	053	15.10	19	16.56	155	24.13	6.55	2.3	2.4	26	0	119	.19	10	1.3	1.9	SWR
		26	146	28.17	19	19.15	155	15.80	6.75	.9	1.0	22	0	112	.07	6	.5	.7	KOA
		26	147	24.66	19	16.36	155	23.75	5.97	2.0	2.2	26	0	124	.17	9	1.0	2.4	SWR
		26	2 3	49.16	19	25.66	155	18.04	12.31	2.0	1.8	25	0	76	.09	4	.7	.3	LPC
		26	322	38.67	19	16.20	155	23.92	2.17	1.1	1.2	23	0	124	.16	10	1.0	3.3	SWR
		26	348	52.71	19	20.14	155	11.84	8.75		1.5	21	0	79	.05	6	.4	.8	UER
		26	825	34.82	19	18.58	155	13.40	8.84	2.3	2.3	27	0	79	.14	8	.8	1.5	POL
		26	13 6	17.24	19	20.31	155	3.59	8.58	2.6	2.6	22	0	112	.16	11	1.7	3.0	MER
		26	1310	1.43	19	21.41	155	4.11	6.00	2.0	1.9	21	0	137	.12	10	.8	1.5	MER
		26	1514	55.29	19	19.85	155	9.91	8.80	2.6	2.9	27	0	87	.11	8	.7	.9	UER
		26	1822	19.53	19	16.88	155	25.75	.63	1.7	1.9	26	0	119	.17	9	.9	58.1	SWR
		26	1849	16.83	19	8.76	155	14.11	36.06		1.5	29	0	204	.09	19	1.4	2.7	PPL
		26	1851	9.43	19	14.23	155	23.66	5.21	2.1	1.8	27	0	142	.16	11	1.0	1.4	LSW
		26	19 4	22.56	19	16.55	155	24.04	.97	1.0	1.4	24	0	120	.19	10	1.1	38.2	SWR
		26	1923	7.20	19	18.06	155	21.80	6.83	1.7	1.6	27	0	116	.19	9	1.0	1.7	SWR
		26	23 2	48.65	19	24.74	155	16.41	12.68		1.1	24	0	68	.12	2	.9	.5	LPC
		26	2311	43.67	19	18.92	155	15.85	6.89	.8	.9	20	0	120	.10	5	.7	1.4	KOA
		27	111	28.55	19	19.99	155	8.87	6.76	2.3	2.4	24	0	74	.13	9	.9	2.1	UER
		27	126	7.18	19	9.25	155	32.94	3.14	2.3	1.9	21	0	126	.18	17	1.5	2.7	LSW
		27	2 2	22.93	19	20.47	155	20.21	.88	.8	1.5	14	0	87	.09	5	.5	.0	SWR
		27	245	53.90	19	17.37	155	22.59	.71	1.7	1.9	23	0	120	.16	7	1.0	99.0	SWR
		27	325	35.83	19	19.39	155	19.58	5.91		1.4	22	0	98	.16	7	.9	2.0	SWR
		27	532	57.08	19	21.20	155	19.18	1.65	.6	1.1	12	0	85	.07	6	.4	.0	SWR
		27	538	15.12	19	15.53	155	21.50	.00	1.2	1.3	24	0	143	.18	9	1.2	82.2	LSW
		27	714	9.86	19	22.95	155	23.95	11.86	1.3	1.4	19	0	69	.06	8	.4	.4	UKF
		27	741	9.55	19	15.66	155	22.79	5.78	1.3	1.6	21	0	135	.15	12	1.1	4.7	LSW
		27	819	32.18	19	17.45	155	22.30	6.62	1.4	1.6	25	0	121	.17	10	1.1	2.2	SWR
		27	821	37.64	19	17.06	155	24.12	.65		1.8	24	0	165	.16	10	1.1	5.7	SWR
		27	923	32.08	19	20.10	155	11.64	8.61	1.7	1.5	21	0	87	.10	7	.7	1.5	UER
		27	930	6.83	19	30.83	155	16.21	25.17		1.5	24	0	65	.10	11	.8	2.1	GLN
		27	13 2	25.50	19	20.04	155	12.11	7.53	1.9	1.9	27	0	79	.11	6	.6	1.3	UER
		27	1333	57.77	19	16.98	155	22.21	6.99	1.6	1.8	27	0	126	.18	8	1.1	1.6	SWR
		27	1414	30.41	19	17.64	155	21.70	7.57	2.3	2.3	29	0	121	.16	9	.9	1.2	SWR
		27	15 4	39.62	19	9.88	155	6.90	54.57	2.1	1.5	26	0	235	.07	25	2.1	3.5	PPL
		27	1555	58.77	19	18.43	155	15.42	6.83	1.4	1.4	26	0	106	.11	6	.6	.9	KOA
		27	1615	41.79	19	18.09	155	14.62	7.28	1.0	1.2	20	0	133	.08	7	.6	.9	POL
		27	1654	42.00	19	15.00	155	21.26	7.23	1.9	2.3	29	0	153	.15	10	.9	1.3	LSW
		27	1726	57.19	19	18.98	155	12.83	9.09	1.6	1.4	25	0	88	.12	8	.8	1.5	POL
		27	1939	49.31	19	20.85	155	17.27	30.95	2.1	2.0	31	0	53	.13	5	1.1	2.1	DEP
		27	2049	46.83	19	17.10	155	22.39	6.26	1.7	1.7	20	0	124	.12	8	.8	2.2	SWR
		27	21 4	15.68	19	20.37	155	7.89	8.04	2.2	2.4	18	0	85	.10	10	.8	2.8	UER
		27	2236	7.85	19	27.15	155	24.17	6.92	1.9	1.8	21	0	75	.09	10	.5	1.6	UKF
		27	2318	21.04	19	19.05	155	15.44	6.45		1.1	25	0	94	.08	6	.4	.9	KOA
		27	2350	26.76	19	16.96	155	24.24	.14	1.2	1.6	23	0	115	.13	10	.7	5.8	SWR
		27	2353	12.67	19	16.59	155	24.08	.04	1.7	2.0	25	0	119	.17	10	1.0	5.6	SWR
		28	044	55.35	19	16.99	155	22.50	5.95	1.4	1.6	25	0	124	.19	7	1.2	3.0	SWR
		28	351	43.97	19	19.38	155	16.06	7.24	1.3	1.6	25	0	95	.12	6	.7	1.3	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	28	722	21.88	19	18.19	155	23.60	5.44	2.1	2.5	26	0	108	.17	9	.9	1.1	SWR
		28	929	6.41	19	29.95	155	15.43	32.88	2.0	1.4	25	0	79	.10	10	1.1	2.4	GLN
		28	1056	54.14	19	9.10	155	34.27	30.56	3.2	2.9	32	0	122	.11	19	1.0	2.4	HEA
		28	1428	36.13	19	17.72	155	13.51	7.51	2.0	2.5	25	0	98	.10	9	.7	1.2	POL
		28	1649	41.62	19	17.87	155	21.90	6.59	1.6	1.9	18	0	118	.14	9	1.0	1.8	SWR
		28	1824	56.34	19	19.43	155	13.89	8.47	1.6	1.5	24	0	63	.11	6	.7	1.4	UER
		28	1831	55.20	19	20.15	155	13.20	7.81	1.0	.6	23	0	65	.09	6	.6	1.2	UER
		28	1941	18.32	19	19.88	155	8.48	7.35	1.4	1.3	22	0	79	.11	10	.8	1.8	UER
		29	8 9	14.25	19	25.22	155	16.32	14.19	1.9	2.2	29	0	65	.12	2	.8	1.1	DEP
		29	1125	22.69	19	17.19	155	22.80	1.42	1.8	2.5	23	0	121	.16	7	.9	41.5	SWR
		29	1345	14.69	19	19.17	155	15.83	6.57		1.3	23	0	112	.10	6	.6	1.3	KOA
		29	1424	41.89	19	17.63	155	13.34	7.68		1.6	24	0	99	.12	9	.8	1.2	POL
		29	16 4	50.14	19	20.34	155	8.56	8.50	2.1	2.2	26	0	74	.10	9	.6	.9	UER
		29	1759	36.48	19	19.03	155	13.06	6.90	1.7	1.6	22	0	82	.10	8	.6	1.1	UER
		30	0 6	16.63	19	16.57	155	23.23	.50	1.3	1.6	22	0	125	.15	8	.9	57.8	SWR
		30	019	47.15	19	17.86	155	21.51	7.32	1.8	2.1	25	0	120	.14	8	.9	1.2	SWR
		30	114	14.36	19	20.38	155	17.56	29.80	1.6	1.4	25	0	51	.09	5	1.0	2.2	DEP
		30	6 5	1.50	19	18.66	155	15.21	7.73		1.5	20	0	116	.09	6	.6	1.1	KOA
		30	12 8	12.33	19	20.06	155	8.88	7.69	1.8	2.1	24	0	73	.09	9	.6	1.0	UER
		30	1517	26.29	19	18.00	155	16.81	8.38	2.1	2.3	26	0	122	.11	6	.6	1.0	KOA
		30	1738	18.89	19	19.72	155	8.60	7.32	1.8	2.0	24	0	77	.13	10	.9	2.1	UER
		30	1741	48.39	19	19.80	155	8.72	7.82	1.8	2.0	23	0	75	.11	9	.8	1.7	UER
		30	1747	56.62	19	30.43	155	39.67	6.84	2.8	2.6	20	0	137	.13	9	1.1	1.9	MOK
		30	1749	24.03	19	32.47	155	33.01	12.57	2.2	1.8	18	0	156	.21	11	3.5	1.0	MOK
		30	1840	8.54	19	21.13	155	18.67	12.14	1.6	1.1	22	0	59	.08	5	.6	.3	KOA
		30	1853	57.71	19	19.26	155	13.62	8.77	2.7	3.1	27	0	67	.08	7	.5	1.0	UER
		30	1859	29.81	19	18.45	155	13.68	8.11	1.7	1.6	17	0	92	.12	8	1.0	2.5	POL
		30	2032	41.34	19	17.99	155	21.10	6.85	1.7	1.6	19	0	120	.17	8	1.2	2.0	SWR
		30	2038	17.03	19	18.16	155	15.28	7.57	1.7	1.5	23	0	137	.08	6	.5	.8	KOA
		30	21 0	4.25	19	19.49	155	13.24	8.91	1.7	1.5	23	0	72	.09	7	.6	1.4	UER
		30	2348	29.49	19	17.48	155	22.55	.81	1.7	1.8	24	0	119	.16	8	.9	99.0	SWR
		31	427	10.14	19	32.20	155	38.79	5.24	2.3	2.0	14	0	155	.15	10	2.0	2.4	MOK
		31	442	6.99	19	16.33	155	23.61	5.35	1.8	1.8	21	0	125	.13	9	.9	1.1	SWR
		31	542	45.49	19	24.08	155	17.47	12.55	1.8	1.9	27	0	39	.11	2	.7	.3	LPC
		31	917	47.07	19	20.65	155	17.33	29.74		.6	13	0	77	.05	5	1.4	1.9	DEP
		31	1137	7.95	19	18.54	155	13.26	8.31	2.0	2.5	25	0	84	.10	8	.6	1.3	POL
		31	2131	5.26	19	13.01	155	23.30	32.07	2.3	1.8	22	0	155	.10	12	1.4	2.6	LSW
	FEB	1	110	59.89	19	19.80	155	11.84	9.23	1.7	2.5	24	0	86	.08	6	.6	1.2	UER
		1	145	50.40	19	18.88	155	15.92	7.29	1.6	1.4	17	0	122	.09	5	.7	1.6	KOA
		1	510	2.48	19	16.25	155	23.51	5.26	1.8	1.9	18	0	126	.14	9	1.1	1.3	SWR
		1	428	31.46	19	16.63	155	22.92	.18	1.8	2.3	16	0	126	.14	8	1.0	99.0	SWR
		1	726	21.15	19	23.69	155	29.36	8.86	2.2	2.2	23	0	92	.11	13	.7	1.1	UKF
		1	1012	55.85	19	24.24	155	29.61	9.07	1.9	1.6	24	0	112	.13	13	.9	1.1	UKF
		1	1456	12.60	19	17.31	155	22.41	3.73	1.7	1.4	16	0	122	.16	8	1.0	2.7	SWR
		1	1952	2.67	19	24.06	155	17.23	14.19	2.1	2.0	30	0	31	.09	2	.5	.7	DEP
		1	2037	17.51	19	19.89	155	11.45	8.39	1.7	1.6	26	0	86	.13	6	.8	1.7	UER
		1	2053	26.03	19	17.30	155	15.05	8.74	1.8	1.4	16	0	181	.05	7	.6	.8	KOA
		1	21 1	24.04	19	21.76	155	20.22	30.24	2.1	1.6	29	0	52	.09	6	.8	1.5	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	FEB	1	2151	10.14	19	19.52	155	11.88	7.25	1.7	1.8	20	0	91	.11	6	.8	1.8	UER
		1	2155	51.74	19	17.71	155	22.43	2.92	1.7	1.2	21	0	118	.19	8	1.2	4.3	SWR
		1	22 7	.55	19	20.71	155	17.19	30.42	2.5	1.9	31	0	62	.10	5	.8	1.5	DEP
		2	027	21.98	19	16.37	155	22.81	7.24	2.8	3.2	27	0	129	.15	8	.9	1.9	SWR
		2	029	55.56	19	19.03	155	13.68	7.65	1.7	1.4	21	0	67	.07	7	.5	.8	UER
		2	042	55.48	19	25.15	155	29.09	8.76	1.9	1.8	15	0	122	.09	13	.8	2.3	UKF
		2	444	26.03	19	17.09	155	22.99	6.23	1.8	1.6	22	0	121	.14	8	.9	1.6	SWR
		2	620	23.95	19	24.95	155	25.71	11.17	1.8	1.2	18	0	74	.06	10	.4	.7	UKF
		2	7 2	36.43	19	17.75	155	17.94	2.76	1.6	1.2	17	0	161	.14	8	1.2	1.9	KOA
		2	9 2	59.68	19	18.22	155	23.96	5.15	1.8	1.9	15	0	106	.06	9	.4	.7	SWR
		2	1243	12.51	19	19.43	155	13.97	8.73	1.7	1.4	20	0	87	.07	6	.6	1.0	UER
		2	1357	59.03	19	16.25	155	24.47	1.30	1.9	2.3	20	0	120	.12	13	.8	31.9	SWR
		2	1424	25.27	19	17.56	155	21.76	.98		1.6	19	0	122	.16	9	1.0	99.0	SWR
		2	18 6	17.02	19	23.97	155	17.25	13.52	1.7	2.0	27	0	38	.08	2	.5	.7	DEP
		2	20 5	24.27	19	24.33	155	17.25	15.97	1.8	1.4	29	0	32	.10	2	.6	.9	DEP
		2	2344	24.82	19	20.66	155	11.85	9.43	1.7	1.7	21	0	71	.10	7	.7	1.5	UER
		3	3 5	45.82	19	19.22	155	13.57	8.17		1.8	24	0	66	.08	7	.5	1.1	UER
		3	428	58.03	19	20.68	155	13.36	7.74	1.6	1.7	26	0	60	.14	7	.9	1.3	UER
		3	720	49.34	19	19.81	155	25.01	8.82	1.8	2.0	26	0	88	.11	7	.6	1.0	HEA
		3	832	50.17	19	24.00	155	26.74	10.21	2.5	2.6	28	0	63	.12	12	.7	.4	UKF
		3	837	40.36	19	21.28	155	16.60	34.09	2.2	2.0	24	0	65	.08	4	1.0	1.7	DEP
		3	1510	57.15	19	16.85	155	22.54	7.34	1.8	2.0	17	0	126	.11	14	.9	2.3	SWR
		3	1650	25.73	19	19.30	155	15.41	8.14	1.6	2.0	25	0	89	.09	6	.5	.9	KOA
		4	2 9	4.21	19	18.36	155	13.28	7.89	1.7	2.0	23	0	86	.10	8	.6	1.3	POL
		4	216	3.04	19	18.35	155	13.39	6.77	1.7	1.7	27	0	83	.09	8	.5	1.0	POL
		4	3 6	14.46	19	17.15	155	22.56	6.66	1.8	2.1	22	0	123	.13	7	.9	2.4	SWR
		4	4 3	36.00	19	19.84	155	12.23	7.94	1.7	1.7	25	0	81	.13	6	.8	1.6	UER
		4	433	7.54	19	23.77	155	17.76	7.80	1.5	1.7	11	0	74	.08	2	1.2	2.8	LPC
		4	445	23.82	19	9.98	155	33.46	31.70	2.1	1.4	26	0	230	.08	17	2.8	3.8	LSW
		4	710	27.08	19	17.71	155	22.36	6.50	1.7	2.1	24	0	158	.14	8	1.0	1.8	SWR
		4	1210	3.56	19	20.26	155	17.58	29.86	2.1	1.7	25	0	70	.08	5	.9	1.6	DEP
		4	1726	44.79	19	20.30	155	11.66	6.88	1.7	1.8	28	0	78	.13	7	.7	1.2	UER
		4	1819	48.34	19	45.66	155	33.62	33.54		1.3	28	0	108	.13	30	1.4	3.6	KKU
		4	2353	47.26	19	17.79	155	21.66	8.47	2.7	3.2	28	0	120	.16	9	1.0	1.2	SWR
		5	014	11.20	19	14.98	155	34.76	9.04	2.3	2.0	24	0	183	.15	19	1.6	1.3	HEA
		5	022	36.49	19	17.59	155	23.31	6.66	1.8	1.7	20	0	115	.16	11	1.2	3.2	SWR
		5	454	36.65	19	22.89	155	31.23	.65	2.1	2.4	17	0	117	.17	18	1.3	67.8	MOK
		5	549	54.98	19	21.96	155	30.45	1.62	2.2	2.4	20	0	76	.15	14	.9	99.0	HEA
		5	1119	20.92	19	25.40	155	14.46	28.30	3.1	3.1	33	0	48	.09	5	.7	1.4	DEP
		5	16 3	11.29	19	18.02	155	20.91	9.68	2.1	2.1	26	0	120	.13	7	.7	.4	SWR
		5	1811	19.78	19	20.59	155	11.27	11.45	1.8	1.4	20	0	75	.08	8	.6	2.0	UER
		5	2115	6.75	19	25.81	155	24.05	8.43	1.6	1.6	24	0	64	.13	9	.7	1.5	UKF
		5	2238	50.36	19	19.87	155	10.14	7.82	1.8	1.4	22	0	88	.10	7	.7	1.6	UER
		5	2358	41.66	19	16.66	155	24.24	.92	1.8	2.0	23	0	118	.16	10	1.0	1.5	SWR
		6	024	31.67	19	19.88	155	15.52	7.40	1.5	1.2	21	0	81	.08	6	.5	.7	KOA
		6	348	55.56	19	24.62	155	17.00	13.49	2.0	2.3	31	0	40	.10	2	.6	.8	DEP
		6	4 1	59.15	19	24.12	155	16.86	12.88	1.5	1.2	27	0	48	.08	1	.5	.2	LPC
		6	548	13.03	19	24.55	155	16.83	13.82	2.2	2.4	33	0	64	.08	2	.5	.6	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	FEB	6	549	49.04	19	20.34	155	8.75	6.60	1.8	1.8	25	0	71	.12	9	.7	1.7	UER
		6	6 5	7.25	19	24.25	155	17.00	13.05		1.6	25	0	42	.08	2	.6	.7	DEP
		6	740	11.04	19	28.20	155	36.71	49.08	2.6	2.2	16	0	234	.09	19	4.5	8.1	MOK
		6	1149	43.58	19	24.58	155	16.95	12.83	1.5	1.4	26	0	46	.14	2	.9	.4	LPC
		6	1942	13.20	19	16.92	155	24.13	2.02	1.8	2.1	24	0	116	.18	10	1.1	3.9	SWR
		7	1 6	57.82	19	20.67	155	17.31	50.20	2.3	2.3	33	0	54	.10	5	.9	1.4	DEP
		7	153	15.96	19	21.34	155	13.44	8.52	1.9	2.5	25	0	53	.13	6	.8	1.4	UER
		7	4 4	44.46	19	58.46	156	20.02	10.54	5.1	2.6	34	0	285	.17	69	8.4	99.0	DIS
		7	422	42.27	19	20.19	155	11.45	8.04	1.7	1.6	25	0	81	.11	7	.7	1.1	UER
		7	525	12.30	19	19.12	155	13.84	7.62	1.6	1.3	26	0	64	.09	7	.5	.8	UER
		7	646	52.37	19	14.85	155	32.72	9.26	3.6	3.9	30	0	67	.18	13	1.0	1.3	LSW
		7	7 7	45.08	19	19.96	155	9.13	8.49	2.2	2.4	27	0	78	.14	9	.9	1.1	UER
		7	1254	45.52	19	18.53	155	13.06	8.46	1.7	1.8	18	0	154	.08	9	.7	1.2	POL
		7	1355	11.00	19	19.01	155	13.78	7.76	1.7	1.7	18	0	86	.09	7	.6	1.6	UER
		7	1723	18.93	19	17.51	155	12.88	8.89	1.8	1.9	22	0	137	.10	9	.8	.9	POL
		7	1950	49.59	19	52.93	155	34.60	14.03	2.6	1.8	23	0	126	.11	35	1.1	9.4	KKU
		8	710	22.48	19	19.00	155	15.43	7.73	1.6	1.4	17	0	114	.03	6	.3	.5	KOA
		8	956	6.02	19	18.86	155	20.33	4.53	1.6	2.2	11	0	176	.07	6	.8	2.6	SWR
		8	11 3	28.25	19	22.18	155	9.00	5.05	2.2	2.6	17	0	92	.10	9	.8	1.1	UER
		8	1738	10.66	19	18.44	155	13.26	9.14	1.7	2.2	20	0	86	.11	9	.8	1.2	POL
		8	2232	52.57	19	18.20	155	15.69	9.30		1.9	18	0	146	.07	5	.7	1.4	KOA
		9	022	45.91	19	19.26	155	11.48	7.62	1.7	1.4	15	0	135	.05	10	.5	1.1	UER
		9	134	55.35	19	19.64	155	12.61	7.63	1.7	2.2	21	0	80	.09	8	.6	1.4	UER
		9	326	10.80	19	18.58	155	13.39	9.86	1.7	2.8	24	0	79	.08	8	.4	.3	POL
		9	347	25.83	19	11.85	155	40.97	1.56	2.4	2.8	21	0	115	.15	24	.8	21.5	HEA
		9	412	47.92	19	17.64	155	22.65	6.66	1.8	2.3	18	0	158	.14	7	1.2	1.8	SWR
		9	620	26.70	19	13.97	155	23.45	6.74	2.6	3.1	24	0	150	.13	11	.9	5.0	LSW
		9	742	54.19	19	19.69	155	11.91	9.61	1.7	1.8	20	0	87	.08	8	.7	2.7	UER
		9	11 2	37.36	19	17.98	155	13.26	7.59	1.7	1.4	20	0	94	.12	9	.9	1.9	POL
		9	1117	3.23	19	17.81	155	13.25	8.65	1.8	1.9	23	0	100	.13	9	.9	1.4	POL
		9	1237	.68	19	17.86	155	13.32	10.44	1.8	1.6	18	0	143	.16	9	1.6	.7	POL
		9	1240	3.53	19	17.60	155	13.28	7.65	1.8	1.6	18	0	104	.11	9	.9	1.6	POL
		9	1533	7.97	19	24.62	155	17.46	14.22	2.5	2.6	29	0	50	.08	2	.5	.7	DEP
		9	19 7	2.56	19	19.17	155	13.58	7.37	1.6	2.3	26	0	68	.11	7	.6	1.3	UER
		9	2148	20.35	19	18.15	155	21.72	4.25	1.7	1.4	19	0	116	.15	8	.9	1.7	SWR
		9	22 1	22.95	19	24.78	155	35.28	5.42	2.7	3.0	19	0	143	.12	23	1.3	10.1	MOK
		9	2245	28.72	19	25.18	155	24.36	2.13	1.5	1.6	17	0	86	.10	9	.6	6.9	UKF
		9	23 4	34.22	19	10.31	155	8.64	45.97	2.5	1.4	29	0	219	.10	20	1.7	3.2	POL
		10	251	31.39	19	17.48	155	22.37	4.57	1.7	1.8	21	0	120	.15	8	.9	2.1	SWR
		10	6 2	52.57	19	16.56	155	22.29	7.26	2.2	2.8	28	0	130	.13	8	.8	1.2	SWR
		10	6 4	36.45	19	16.67	155	22.62	7.10	1.8	1.9	25	0	127	.17	7	1.1	2.1	SWR
		10	1247	46.43	19	17.48	155	22.11	2.59	1.7	1.6	17	0	121	.14	10	.9	5.6	SWR
		10	2156	29.18	19	20.58	155	16.90	30.24	2.1	1.8	29	0	86	.09	5	.8	1.3	DEP
		10	2342	51.73	19	19.65	155	12.38	6.45		1.0	26	0	83	.11	6	.6	1.1	UER
		11	0 3	42.92	19	24.55	155	16.89	13.86	2.1	2.6	29	0	56	.07	2	.4	.6	DEP
		11	236	19.67	19	19.54	155	11.96	7.26	1.7	.7	21	0	90	.11	6	.7	1.2	UER
		11	419	30.08	19	19.99	155	11.90	8.41	1.7	1.6	25	0	81	.13	6	.8	1.6	UER
		11	6 3	15.36	19	19.82	155	11.72	8.55	1.7	1.5	22	0	86	.09	6	.6	1.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	FEB	11	626	55.98	19	27.75	155	36.01	1.40	2.9	2.8	22	0	86	.16	3	.9	.4	MOK
		11	651	40.44	19	24.13	155	17.52	12.92	2.0	1.9	25	0	39	.07	2	.5	.2	LPC
		11	721	26.11	19	30.91	155	39.94	6.68	2.6	2.2	22	0	135	.14	10	1.4	1.7	MOK
		11	1139	54.14	19	17.05	155	22.46	5.53	1.8	2.2	28	0	124	.17	8	1.0	2.6	SWR
		11	1455	46.43	19	16.86	155	22.30	.46	1.7	1.9	23	0	127	.16	8	.9	99.0	SWR
		11	19 7	47.19	19	45.59	154	52.47	19.84	2.6	1.6	25	2	257	.12	34	1.9	1.8	HIL
		11	2033	33.50	19	23.91	155	23.79	8.55	1.6	1.2	21	0	73	.10	9	.7	1.5	UKF
		11	2251	50.26	19	17.45	155	22.43	6.05	2.1	2.2	27	0	120	.15	8	.9	2.1	SWR
		12	035	27.89	19	35.71	156	14.39	15.31	3.1	2.7	14	0	266	.14	53	6.3	30.2	DIS
		12	119	45.04	19	18.45	155	13.35	9.73	2.1	2.2	26	0	83	.10	8	.6	1.2	POL
		12	338	14.19	19	17.89	155	14.65	6.71	1.7	1.9	21	0	134	.12	7	.8	1.8	POL
		12	445	4.96	19	27.15	155	27.60	9.25	1.8	1.6	25	0	75	.11	12	.6	1.1	UKF
		12	448	9.26	19	17.95	155	14.46	7.97	1.7	1.6	23	0	127	.11	7	.7	1.4	POL
		12	524	3.93	19	18.41	155	13.30	9.87	2.1	2.6	27	0	85	.11	8	.7	.4	POL
		12	536	6.17	19	18.63	155	13.20	8.22	1.7	1.4	23	0	85	.15	8	.8	1.7	POL
		12	544	22.45	19	18.54	155	13.41	7.40	1.7	1.2	23	0	79	.11	8	.7	1.1	POL
		12	942	49.66	19	17.34	155	22.27	6.69	1.8	1.4	21	0	122	.15	8	1.1	2.7	SWR
		12	1032	31.04	19	17.88	155	15.31	8.44	1.7	1.6	21	0	119	.16	6	1.1	1.6	KOA
		12	1040	32.25	19	18.53	155	23.78	4.51	1.7	2.4	23	0	105	.09	9	.5	1.1	SWR
		12	1626	24.54	19	24.32	155	16.90	.79	.8	1.2	14	0	55	.09	2	.4	1.7	SPC
		12	1630	23.21	19	20.67	155	12.46	8.83	1.9	2.6	25	0	67	.12	7	.7	1.4	UER
		12	17 0	11.57	19	9.68	155	32.52	32.05	2.5	1.9	25	0	121	.10	16	1.2	2.7	LSW
		12	2058	44.16	19	27.03	155	14.84	23.53	2.8	3.0	35	0	51	.10	5	.6	1.2	DEP
		12	2118	9.55	19	27.03	155	14.86	23.06	2.0	1.5	30	0	51	.06	5	.5	.9	DEP
		13	748	42.31	19	11.84	155	32.59	9.95	2.7	2.6	27	0	91	.17	13	1.3	.6	LSW
		13	755	46.91	19	11.54	155	32.24	7.21		1.6	24	0	94	.15	13	1.2	1.9	LSW
		13	12 1	34.11	19	16.53	155	23.64	.76		1.6	23	0	123	.18	9	1.1	65.1	SWR
		13	1243	13.92	19	16.42	155	23.41	.59		1.6	21	0	125	.15	9	1.0	62.3	SWR
		13	1319	35.56	19	16.61	155	23.66	5.38		2.2	26	0	122	.18	9	1.0	1.4	SWR
		13	1359	18.08	19	16.81	155	23.50	5.86		1.8	24	0	121	.16	9	1.1	3.0	SWR
		13	1522	27.73	18	52.41	155	12.09	48.43		1.6	28	2	284	.09	47	2.0	2.3	PPL
		13	1610	42.72	19	18.04	155	23.63	1.32	2.0	2.3	23	0	109	.14	9	.8	30.1	SWR
		13	1734	57.42	19	16.84	155	22.99	5.62		1.6	29	0	123	.19	8	1.0	3.2	SWR
		13	2310	15.69	19	16.27	155	24.04	6.91	1.9	2.0	24	0	122	.17	10	1.3	2.3	SWR
		13	2357	3.77	19	18.66	155	15.52	6.45		1.0	24	0	127	.10	6	.6	1.0	KOA
		14	028	27.66	19	16.95	155	23.05	.51		1.4	20	0	140	.15	8	1.2	66.1	SWR
		14	420	44.78	19	21.88	155	18.05	2.93		1.0	13	0	80	.13	4	.5	3.6	KOA
		14	439	33.70	19	16.71	155	23.03	7.64	2.3	2.6	27	0	124	.14	8	.9	1.7	SWR
		14	451	26.27	19	17.48	155	22.72	5.50	1.8	2.2	26	0	119	.15	7	.9	1.2	SWR
		14	633	15.89	19	20.83	155	17.24	30.53	2.2	1.9	29	0	55	.11	5	1.1	1.9	DEP
		14	755	37.48	19	15.22	155	21.93	7.82		1.9	21	0	147	.10	10	.8	2.0	LSW
		14	834	29.12	19	21.29	155	4.03	5.64		1.4	21	0	137	.16	10	1.1	2.2	MER
		14	10 6	37.42	19	20.06	155	8.53	6.48	1.8	1.9	18	0	77	.11	10	.9	1.8	UER
		14	1127	32.85	19	18.14	155	15.26	7.48	.9	.6	16	0	162	.09	8	.7	.9	KOA
		14	1539	24.89	19	30.73	155	39.55	8.37	2.8	2.5	23	0	79	.16	27	1.0	1.9	MOK
		14	1935	16.07	19	19.04	155	15.55	8.89	1.8	2.2	25	0	95	.14	6	.8	1.2	KOA
		14	1936	35.74	19	16.85	155	21.91	7.00	1.4	1.9	21	0	129	.12	10	.9	1.3	SWR
		14	2122	12.01	19	20.32	155	50.07	7.76	2.9	2.4	24	0	126	.20	25	1.4	1.3	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	FEB	14	2249	1.73	19	14.37	155	34.31	8.42	2.3	1.9	23	0	116	.17	22	1.3	1.9	HEA
		14	2258	12.09	19	17.72	155	15.53	5.98		1.3	14	0	165	.06	5	.6	1.2	KOA
		14	23 3	9.22	19	17.29	155	15.17	6.97		1.4	14	0	182	.06	6	.6	1.2	KOA
		14	2356	40.67	19	25.70	155	24.78	7.04	1.6	1.3	14	0	146	.11	8	1.0	2.8	UKF
		15	145	2.72	19	20.40	155	11.76	8.68	1.7	1.9	23	0	75	.10	7	.7	1.0	UER
		15	227	51.97	19	17.35	155	22.40	5.81	1.4	1.2	13	0	121	.10	10	.9	2.2	SWR
		15	320	36.21	19	18.31	155	13.35	7.46		1.1	16	0	85	.06	8	.5	.8	POL
		15	321	23.44	19	18.73	155	13.30	7.47		1.3	23	0	80	.11	8	.7	1.0	POL
		15	345	53.80	19	18.36	155	13.35	6.26		.4	12	0	143	.07	8	1.2	2.6	POL
		15	348	12.99	19	18.71	155	13.35	7.26	1.4	1.6	19	0	80	.08	8	.6	1.0	POL
		15	4 2	30.48	19	17.97	155	12.98	8.01		1.0	10	0	127	.10	9	1.7	3.8	POL
		15	4 6	31.42	19	19.01	155	13.86	3.25		.7	10	0	158	.12	7	2.3	12.4	UER
		15	441	47.04	19	26.53	155	25.49	7.80	1.8	1.8	19	0	107	.10	9	.7	2.0	UKF
		15	619	25.82	19	38.41	155	49.48	12.44	2.9	2.6	14	0	235	.14	54	2.9	.0	KON
		15	10 9	30.75	19	18.61	155	13.80	8.24	2.2	2.6	22	0	67	.10	7	.7	1.3	POL
		15	1633	53.18	19	18.40	155	22.00	1.93		1.6	18	0	208	.10	9	1.2	99.0	SWR
		15	2140	41.58	19	20.57	155	13.25	9.26	1.6	1.5	19	0	61	.10	7	.9	1.7	UER
		16	139	43.14	19	45.55	155	5.99	31.83	2.5	1.9	28	2	191	.13	29	2.3	2.3	HIL
		16	627	10.41	19	20.11	155	11.36	7.95	1.7	1.8	22	0	83	.12	7	.8	1.8	UER
		16	953	53.56	19	25.26	155	24.65	9.09		1.6	18	0	85	.09	9	.8	1.5	UKF
		16	1028	48.62	19	17.87	155	21.70	5.80	1.7	2.0	18	0	119	.12	9	.8	1.7	SWR
		16	1052	54.77	19	20.77	155	6.85	8.37	2.0	1.9	19	0	94	.09	7	.7	2.0	UER
		16	1248	20.49	19	19.49	155	15.66	7.29	2.3	2.5	25	0	88	.11	6	.6	1.0	KOA
		16	1320	11.29	19	16.84	155	21.93	5.63	1.5	1.6	15	0	129	.11	10	.9	2.7	SWR
		16	1821	6.71	19	19.75	155	11.20	7.42		1.6	22	0	91	.09	6	.5	.8	UER
		16	2046	33.79	19	18.70	155	15.67	7.04	1.6	1.6	22	0	127	.14	5	.9	1.1	KOA
		16	2322	14.13	19	18.41	155	23.23	4.74	1.6	1.6	15	0	166	.16	11	1.2	2.3	SWR
		17	044	39.58	19	18.57	155	13.58	7.62		1.2	19	0	87	.08	8	.6	1.1	POL
		17	136	47.90	19	21.99	155	18.36	.15	1.0	1.3	13	0	74	.13	4	.6	2.6	KOA
		17	310	1.45	19	23.23	155	49.33	10.33	2.6	2.0	20	0	117	.14	26	1.4	.7	KON
		17	635	.11	19	18.95	155	15.59	7.44	1.6	1.8	21	0	117	.09	6	.6	.8	KOA
		17	711	33.91	19	15.54	155	19.29	8.15	1.8	1.9	18	0	190	.09	11	1.0	1.2	HLP
		17	728	19.99	19	19.98	155	10.62	6.46	1.8	1.7	20	0	86	.12	7	.8	1.8	UER
		17	843	2.33	19	18.73	155	13.88	6.71		1.3	14	0	93	.09	7	.7	2.0	POL
		17	2241	17.94	19	19.46	155	14.05	7.68	1.6	2.2	21	0	84	.14	6	.9	1.2	UER
		17	23 5	27.46	19	19.07	155	13.69	7.85	1.7	2.3	25	0	67	.11	7	.7	1.1	UER
		18	0 7	1.25	19	19.59	155	11.90	6.54	1.9	2.4	20	0	89	.08	6	.6	1.3	UER
		18	046	16.26	19	20.29	155	25.80	8.99	1.7	2.1	19	0	81	.08	7	.5	.8	HEA
		18	2 8	5.73	19	18.43	155	15.08	8.24	1.7	1.4	14	0	130	.04	6	.4	1.0	KOA
		18	951	48.06	19	17.37	155	21.92	7.53		2.0	18	0	123	.15	9	1.1	1.8	SWR
		18	1024	2.28	19	20.38	155	6.68	11.20	2.0	2.2	17	0	186	.06	12	.8	.4	UER
		18	1759	48.54	19	17.67	155	14.20	8.48		1.5	18	0	141	.08	8	.6	1.0	POL
		18	1845	53.50	19	19.50	155	14.43	7.41	1.6	1.8	22	0	72	.09	6	.6	1.3	UER
		18	1933	38.48	19	29.49	155	39.83	5.68	2.3	2.0	13	0	129	.16	27	1.5	5.7	MOK
		18	2347	36.04	19	24.57	155	16.57	.83	.3	1.3	9	0	92	.09	2	.5	.8	SPC
		19	0 1	46.66	19	24.57	155	16.57	1.34	.4	.8	8	0	92	.05	2	.4	.2	SPC
		19	024	41.49	19	24.47	155	17.09	.96	.4	1.0	9	0	87	.07	2	.5	.4	SPC
		19	028	14.87	19	24.65	155	17.17	1.00	.5	1.1	8	0	85	.07	2	.6	.3	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	FEB	19	029	9.66	19	24.59	155	17.04	1.14	.2	.4	8	0	82	.02	2	.2	.1	SPC
		19	058	29.27	19	24.37	155	16.52	.86	1.1	1.5	11	0	76	.14	2	.6	.9	SPC
		19	134	55.61	19	24.52	155	16.60	1.30	.3	1.0	9	0	87	.06	2	.4	.2	SPC
		19	137	15.05	19	24.52	155	16.60	1.12	.4	1.0	8	0	87	.06	2	.5	.7	SPC
		19	217	30.31	19	24.17	155	17.14	1.54	.4	.5	8	0	102	.03	2	.5	.2	SPC
		19	220	15.96	19	24.40	155	17.28	.83	1.3	2.0	15	0	54	.11	2	.3	.5	SPC
		19	1030	26.50	19	18.76	155	13.59	8.12	1.7	1.3	18	0	71	.06	7	.5	1.2	POL
		19	1124	17.85	19	24.54	155	16.90	1.26	1.0	1.3	12	0	66	.11	2	.7	.4	SPC
		19	1522	7.84	19	24.35	155	16.11	1.74	.7	.8	8	0	95	.05	2	.5	.2	SPC
		19	1542	48.72	19	22.53	155	3.55	10.09	3.2	3.3	24	0	164	.11	14	1.2	.6	MER
		19	17 7	43.23	19	10.09	155	33.17	69.13	2.8	1.8	20	0	140	.12	25	3.2	11.9	LSW
		20	037	22.84	19	26.70	155	35.23	1.69	1.7	2.2	13	0	157	.17	22	2.3	99.0	MOK
		20	042	49.14	19	18.34	155	13.33	9.38	2.1	2.6	25	0	85	.10	8	.7	1.2	POL
		20	915	45.46	19	26.15	155	37.03	4.31	2.2	2.9	21	0	192	.10	21	1.1	1.5	MOK
		20	1016	23.61	19	16.22	155	23.82	5.56		1.6	16	0	179	.12	10	1.3	2.9	SWR
		20	1440	44.87	19	25.57	155	35.98	3.49	3.5	3.8	26	0	94	.16	20	1.0	1.8	MOK
		20	1728	18.59	19	21.95	155	2.63	5.44	2.1	2.1	21	0	193	.11	18	1.4	1.9	MER
		20	1734	51.89	19	16.95	155	22.06	7.37	1.7	2.0	19	0	127	.11	8	.9	1.4	SWR
		20	1814	19.24	19	16.75	155	21.99	6.78	1.7	1.6	20	0	130	.12	8	1.0	2.3	SWR
		20	1815	19.25	19	16.80	155	22.13	6.64	1.7	1.2	18	0	128	.12	8	.9	2.4	SWR
		20	20 3	55.66	19	24.31	155	16.27	1.68	.9	1.5	12	0	74	.05	2	.3	.2	SPC
		20	2259	11.83	19	16.39	155	23.88	4.94	1.6	2.4	18	0	123	.11	10	.9	1.1	SWR
		20	2338	3.79	19	16.87	155	22.17	8.18	2.3	2.5	25	0	127	.14	8	.9	1.5	SWR
		21	0 8	55.85	19	20.94	155	9.41	9.88	1.9	1.6	19	0	129	.13	7	1.2	4.5	UER
		21	130	30.83	19	19.44	155	13.83	8.16	2.0	2.4	26	0	61	.11	6	.7	1.1	UER
		21	2 6	47.76	19	16.94	155	22.05	6.39	1.3	1.5	19	0	127	.13	8	1.1	2.3	SWR
		21	445	37.20	19	20.10	155	13.76	7.42	1.7	2.2	22	0	70	.11	6	.7	1.5	UER
		21	559	14.18	19	16.76	155	25.13	34.98	2.2	1.9	29	0	111	.11	11	1.1	2.3	HEA
		21	821	54.37	19	30.81	155	29.72	22.41	2.2	1.9	17	0	112	.04	16	.9	2.0	MER
		21	1119	40.47	19	21.51	155	6.48	9.29	3.4	3.6	23	0	139	.09	12	.7	.8	UER
		21	1127	39.97	19	21.17	155	6.27	6.58	1.9	1.8	18	0	145	.19	12	1.6	3.6	UER
		21	1131	16.05	19	17.65	155	12.97	8.36		1.6	14	0	183	.06	9	1.0	1.5	POL
		21	1132	52.52	19	16.34	155	22.83	6.78	1.8	2.1	22	0	129	.13	8	1.0	2.3	SWR
		21	1233	26.59	19	20.86	155	12.42	11.23		1.3	14	0	84	.04	7	.5	1.7	UER
		21	1450	15.36	19	29.82	155	39.85	7.89	2.1	2.1	14	0	131	.13	9	1.6	2.5	MOK
		21	1731	18.92	19	18.72	155	23.12	5.81	1.7	2.0	19	0	135	.09	8	.7	1.6	SWR
		21	1739	58.68	19	31.20	155	39.73	7.22	2.4	2.3	18	0	81	.16	10	1.3	3.2	MOK
		21	2128	59.12	19	22.03	155	28.54	9.80	2.4	2.7	29	0	49	.13	11	.7	.4	UKF
		21	2138	21.42	19	17.83	155	16.55	6.77		1.6	21	0	127	.10	6	.7	1.2	KOA
		22	3 4	4.08	19	29.98	155	39.87	7.36	2.1	2.3	13	0	132	.11	9	1.5	2.2	MOK
		22	1318	59.38	19	38.51	155	4.64	2.27	2.5	2.2	7	0	248	.14	35	6.8	6.1	BLS
		22	1913	4.98	19	14.74	155	22.11	7.98	1.2	1.5	17	0	147	.13	10	1.1	2.1	LSW
		23	121	15.04	19	20.03	155	7.23	8.63	1.9	2.0	20	0	103	.10	8	.8	2.0	UER
		23	3 9	51.45	19	28.37	155	35.90	.90	1.8	1.9	13	0	88	.13	2	.6	.5	MOK
		23	925	18.50	19	21.99	155	.70	9.17	2.3	2.3	21	0	191	.12	16	1.5	1.2	LER
		23	928	34.00	19	30.84	155	39.25	6.72		2.0	13	0	139	.16	9	2.0	5.5	MOK
		23	1035	34.27	19	20.23	155	17.18	51.27	1.7	1.4	20	0	79	.08	5	1.3	3.8	DEP
		23	1236	31.72	19	17.92	155	24.07	8.80		1.8	13	0	108	.09	10	.9	1.9	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	FEB	23	18 5	6.17	19	17.17	155	22.74	4.76	1.8	2.3	18	121	.13	7	.9	1.4	SWR
		23	1924	11.21	19	14.91	155	27.79	6.99	2.3	2.2	20	133	.13	14	1.2	1.8	LSW
		24	156	42.59	19	22.24	155	15.65	33.91	2.6	2.5	31	55	.09	3	.8	1.5	DEP
		24	10 2	11.00	19	24.95	155	38.62	5.23		2.8	15	218	.13	9	3.7	3.9	MOK
		24	1139	27.25	19	21.94	155	29.23	9.51	2.8	2.7	24	81	.12	11	.8	.6	HEA
		24	1219	20.24	19	22.05	155	16.08	32.33	2.2	1.8	19	57	.08	4	1.3	2.8	DEP
		24	13 1	26.48	19	22.29	155	15.67	33.96	3.1	2.9	27	55	.10	3	1.0	2.0	DEP
		24	1445	52.90	19	20.15	155	11.89	7.28	1.9	2.0	18	82	.10	6	.7	1.3	UER
		24	1741	27.60	19	30.86	155	39.57	6.63	2.9	2.9	20	135	.14	9	1.2	1.7	MOK
		24	1953	29.20	19	26.40	155	25.45	8.01		1.5	19	167	.10	9	1.2	2.8	UKF
		25	638	9.46	19	20.16	155	7.63	8.35		1.5	19	166	.12	11	1.0	1.0	UER
		25	746	42.60	19	22.24	155	25.47	10.11	2.2	2.1	28	55	.10	10	.6	.4	UKF
		25	2339	22.08	19	17.45	155	21.71	7.44	1.5	1.7	23	123	.14	9	.9	1.6	SWR
		26	221	50.83	19	19.05	155	13.86	7.74	1.8	1.9	17	65	.08	7	.6	1.3	UER
		26	547	54.79	19	30.08	155	41.60	8.06	3.0	2.6	18	234	.15	29	2.5	2.3	MOK
		26	816	56.80	19	23.41	155	29.57	9.74	1.6	1.9	17	111	.08	13	.7	2.6	UKF
		26	1114	15.33	19	16.78	155	23.50	5.65		1.7	18	121	.17	9	1.2	3.5	SWR
		26	1322	39.90	19	20.80	155	17.59	28.96	2.0	1.6	27	34	.09	5	.9	1.5	DEP
		26	1543	17.81	19	28.85	155	27.12	7.00	2.6	2.6	30	86	.12	12	.7	1.5	UKF
		26	2054	47.82	19	16.47	155	24.02	6.00	2.0	2.2	29	121	.16	10	.9	2.1	SWR
		27	046	7.27	19	24.60	155	16.74	16.43		1.2	30	64	.09	2	.6	.8	DEP
		27	5 4	34.45	19	29.97	155	9.54	23.54	2.1	1.5	25	66	.08	14	.9	2.0	GLN
		27	929	22.09	19	25.04	155	23.43	9.42	1.9	1.9	22	76	.06	9	.4	.9	UKF
		27	14 8	14.63	19	26.19	155	25.35	8.26	2.4	2.4	24	67	.11	9	.6	1.2	UKF
		27	1531	1.98	19	18.88	155	13.57	9.00		1.4	16	129	.04	7	.3	.8	POL
		27	21 6	57.21	19	20.19	155	9.75	8.88	1.8	1.3	15	106	.05	7	.5	1.0	UER
		28	547	42.97	19	21.80	155	16.94	33.71	2.8	2.6	34	49	.08	3	.6	1.2	DEP
		28	829	45.12	19	25.73	155	24.72	9.17	2.5	2.3	17	90	.09	11	.9	1.3	UKF
		28	857	50.88	19	18.81	155	13.48	5.68	1.6	1.4	18	80	.10	7	.7	1.9	POL
		28	914	1.11	19	22.36	155	15.59	32.48		2.6	33	54	.09	3	.8	1.5	DEP
		28	949	3.65	19	17.86	155	15.90	7.22	1.7	1.2	20	124	.08	5	.6	.9	KOA
		28	959	15.79	19	24.97	155	16.68	12.73		.7	18	92	.06	2	.6	.2	LPC
		28	1028	1.30	19	22.25	155	30.09	9.41	2.3	2.0	27	44	.11	12	.6	.8	MOK
		28	1256	32.08	19	29.18	155	39.16	6.59	2.4	2.2	15	129	.10	7	.8	1.4	MOK
		28	1737	21.31	19	19.98	155	12.19	7.08	1.7	1.8	25	79	.13	6	.7	1.4	UER
		28	1944	59.69	19	17.48	155	21.58	8.39	2.9	3.1	30	123	.11	9	.6	.9	SWR
	MAR	1	1 5	55.70	19	25.79	155	35.84	.30	2.7	2.8	21	73	.18	6	.9	5.6	MOK
		1	155	46.42	19	18.74	155	15.07	7.89	1.6	1.9	22	119	.07	6	.5	.7	KOA
		1	416	45.26	19	18.59	155	15.01	7.21	1.6	1.4	19	123	.06	6	.5	.7	KOA
		1	758	48.53	19	18.53	155	15.05	7.52	1.6	1.4	17	125	.05	6	.4	.5	KOA
		1	938	43.99	19	20.03	155	12.20	7.86		2.4	25	78	.12	6	.7	1.4	UER
		1	1143	55.43	19	19.61	155	17.33	32.54	2.7	2.6	31	92	.08	6	.7	1.4	DEP
		1	1528	13.93	19	29.22	155	39.98	8.25	2.3	1.6	12	0	127	.11	9	1.7	2.2	MOK
		1	1717	49.76	19	29.52	155	39.68	7.32	2.9	2.5	20	0	78	.15	8	1.3	2.2	MOK
		1	1856	14.02	19	18.32	155	21.87	1.74	1.6	1.6	17	0	157	.11	8	.9	.0	SWR
		2	020	1.49	19	18.98	155	13.60	5.70	1.6	1.4	19	0	82	.08	7	.5	.9	POL
		2	141	43.85	19	25.97	155	30.43	10.08	2.9	2.6	33	0	41	.11	11	.6	.3	MOK
		2	339	58.39	19	25.66	155	30.79	11.27	2.0	1.5	13	0	151	.14	10	2.2	1.1	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAR	2	448	50.00	19	23.92	155	15.93	28.73	2.6	2.2	31	0	51	.09	5	.7	1.3	DEP
		2	1353	1.87	19	29.68	155	39.65	6.51	2.8	2.7	20	0	131	.14	6	1.2	2.0	MOK
		2	20 4	.13	19	32.41	155	39.66	5.93	2.3	2.1	11	0	141	.12	11	1.4	6.4	MOK
		2	21 2	25.00	19	17.83	155	13.34	8.04	1.7	1.6	18	0	93	.13	9	1.1	2.3	POL
		2	22 5	19.29	19	25.33	155	16.31	12.75	2.3	2.3	28	0	48	.12	2	.8	.3	LPC
		2	2236	41.31	19	30.54	155	39.58	9.99	3.3	3.3	27	0	79	.16	9	1.0	.5	MOK
		3	053	37.84	19	53.26	155	47.49	28.38	2.3	1.6	20	1	166	.14	46	1.3	5.7	KON
		3	4 8	20.67	19	19.94	155	11.07	9.36		1.6	19	0	87	.10	7	.7	1.7	UER
		3	21 1	13.78	19	18.93	155	15.88	7.06		1.2	20	0	100	.13	5	.9	1.4	KOA
		3	2131	15.88	19	16.50	155	23.29	6.87	2.1	2.4	24	0	125	.17	9	1.2	1.8	SWR
		3	2150	9.68	19	17.18	155	22.45	6.21		1.6	21	0	123	.16	8	1.1	2.0	SWR
		3	2317	2.60	19	21.38	155	16.82	31.22		1.8	27	0	43	.10	5	.9	1.9	DEP
		3	2332	30.71	19	19.48	155	11.84	6.69	1.7	2.0	26	0	92	.11	6	.6	1.3	UER
		4	0 6	16.29	19	16.80	155	23.10	5.57	1.8	1.9	22	0	123	.16	8	1.0	3.2	SWR
		4	1012	58.30	19	18.41	155	15.30	7.21	1.6	1.6	19	0	105	.10	6	.7	1.5	KOA
		4	1250	17.63	19	19.23	155	8.69	9.64		1.6	14	0	136	.13	10	1.6	.8	UER
		4	1833	48.39	19	20.52	155	13.04	7.94		1.2	17	0	125	.08	6	.7	1.1	UER
		4	2030	50.96	19	19.14	155	13.69	7.37	1.6	1.4	22	0	81	.08	7	.5	.8	UER
		4	2346	8.21	19	24.62	155	25.94	10.60	1.8	1.6	22	0	64	.07	11	.4	.4	UKF
		5	253	43.51	19	19.68	155	12.13	8.55	1.7	1.6	16	0	85	.05	6	.4	1.1	UER
		5	523	44.21	19	20.00	155	11.67	7.76		1.2	17	0	87	.07	6	.6	.8	UER
		5	1556	18.09	19	20.39	155	13.29	8.44	1.6	1.2	17	0	62	.08	6	.6	1.5	UER
		5	1738	16.21	19	18.47	155	15.96	6.87	1.5	1.5	18	0	110	.07	5	.5	1.0	KOA
		6	111	17.91	19	18.70	155	15.74	8.13		1.5	12	0	127	.06	5	.7	1.6	KOA
		6	7 1	57.59	19	20.46	155	8.31	8.31	1.8	2.3	23	0	78	.11	9	.6	.9	UER
		6	1325	39.62	19	26.58	155	29.35	12.08	2.0	1.8	13	0	128	.08	12	1.2	.5	UKF
		6	1835	2.66	19	31.40	155	42.58	9.46	2.4	2.5	20	0	132	.10	14	1.1	.7	MOK
		7	022	31.15	19	19.58	155	48.35	7.80		1.8	17	0	168	.12	25	1.5	1.2	KON
		7	244	45.50	19	30.22	155	40.01	9.91	2.8	2.5	18	0	97	.14	9	1.2	.7	MOK
		7	5 2	54.66	19	30.15	155	40.58	9.94	2.6	2.3	23	0	88	.10	10	.9	.3	MOK
		7	5 4	14.28	19	26.36	155	36.80	4.39		2.5	18	0	189	.11	6	1.2	1.2	MOK
		7	624	14.07	19	56.67	155	47.37	29.62	2.7	2.4	21	0	168	.14	59	2.4	7.1	KOH
		7	821	37.59	19	10.64	155	21.94	7.46	2.7	2.8	21	0	196	.13	15	1.7	2.7	LSW
		7	1221	4.10	19	20.74	155	17.48	28.83		1.4	13	0	63	.04	6	1.0	1.9	DEP
		7	1221	36.03	19	20.50	155	17.60	29.07		1.1	13	0	69	.06	5	1.4	2.9	DEP
		7	1237	48.08	19	20.95	155	5.95	8.11		2.0	16	0	98	.09	8	.7	1.3	MER
		8	513	32.64	19	24.40	155	17.48	17.79	1.9	1.9	24	0	46	.08	2	.6	1.0	DEP
		8	1017	41.46	19	10.41	155	22.84	9.67	2.8	2.7	24	0	195	.15	16	1.7	.9	LSW
		8	1526	10.76	19	16.21	155	15.48	7.52		2.0	15	0	185	.11	8	1.3	2.1	HLP
		8	1549	43.93	19	19.55	155	7.01	11.02		1.5	16	0	117	.06	7	.8	.3	UER
		8	1859	55.38	19	19.38	155	13.30	7.53	1.6	1.6	20	0	72	.08	7	.5	.9	UER
		9	157	22.08	19	24.12	155	24.49	9.40	1.7	1.6	15	0	91	.08	8	.7	1.1	UKF
		9	218	13.78	19	16.16	155	21.79	8.03		1.5	17	0	206	.05	9	.6	1.2	SWR
		9	752	1.24	19	30.21	155	38.78	7.86	3.0	2.7	23	0	85	.15	24	1.0	1.9	MOK
		9	938	37.21	19	29.07	155	39.37	8.53		1.9	11	0	127	.10	24	1.6	2.0	MOK
		9	956	48.62	19	19.46	155	11.57	7.04	1.7	1.6	19	0	95	.10	6	.7	2.0	UER
		9	959	43.98	19	29.03	155	39.26	8.18	2.6	2.3	17	0	126	.09	24	.9	1.5	MOK
		9	10 1	20.49	19	29.53	155	38.93	7.41	2.6	2.6	23	0	131	.12	24	.9	1.1	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAR	9	1029	.46	19	29.63	155	38.96	8.84	2.3	2.4	14	0	96	.15	24	1.3	2.4	MOK
		9	11 7	44.36	19	28.81	155	39.19	8.33	2.3	1.8	11	0	121	.10	23	1.2	1.9	MOK
		9	11 8	26.93	19	29.07	155	39.15	8.08	2.3	2.0	12	0	127	.10	24	1.2	1.8	MOK
		9	1140	2.70	19	29.53	155	39.05	7.56	3.0	3.1	24	0	131	.12	24	1.0	1.1	MOK
		9	1825	41.96	19	20.93	155	50.73	9.29	2.7	2.3	20	0	179	.18	28	2.0	1.3	KON
		9	2013	27.25	19	26.34	155	37.29	3.39	2.5	2.4	11	0	204	.09	18	1.1	1.2	MOK
		9	2340	9.30	19	18.68	155	12.99	8.26	2.3	2.6	22	0	90	.16	8	.7	1.4	POL
		10	014	12.67	19	25.53	155	28.29	9.61	4.0	3.8	31	0	60	.14	13	.7	.4	UKF
		10	1 9	38.56	19	19.91	155	11.59	10.06	1.7	1.9	19	0	85	.08	6	.6	2.3	UER
		10	629	48.07	19	19.84	155	14.03	32.89		1.3	22	0	77	.07	6	.9	1.8	DEP
		10	723	31.44	19	25.76	155	44.91	10.28	2.5	1.9	12	0	144	.14	19	1.8	.7	MOK
		10	745	7.88	19	18.06	155	13.30	8.57	1.8	1.8	25	0	91	.10	8	.6	.8	POL
		10	839	17.75	19	15.58	155	23.29	5.62		1.8	16	0	154	.08	9	.8	2.2	LSW
		10	9 6	9.97	19	26.80	155	30.20	12.05		1.9	19	0	131	.11	11	1.1	.4	MOK
		10	19 2	30.85	19	27.18	155	37.52	1.87	2.5	2.4	11	0	208	.10	19	1.5	.5	MOK
		10	1945	48.98	19	17.95	155	13.19	8.31	1.8	1.8	19	0	99	.07	9	.6	1.1	POL
		10	21 2	20.57	19	16.49	155	13.42	6.44		1.4	15	0	206	.07	10	.8	1.5	POL
		10	2115	32.74	19	18.04	155	12.98	8.56	1.8	1.6	19	0	106	.09	9	.7	1.3	POL
		11	036	6.20	19	27.26	155	52.33	8.74	2.6	2.0	16	0	177	.19	29	3.4	1.3	KON
		11	045	39.99	19	29.98	155	40.11	9.93	2.6	2.2	13	0	131	.10	26	1.3	.5	MOK
		11	333	.92	19	16.58	155	13.52	8.73	1.8	2.1	20	0	184	.14	9	1.2	1.6	POL
		11	617	52.26	19	31.59	155	40.39	9.68	1.7	2.1	10	0	138	.08	26	1.6	.7	MOK
		11	15 5	55.41	19	39.20	155	5.95	12.75	2.7	2.0	18	0	113	.07	30	1.8	.9	HIL
		12	036	39.23	19	24.35	155	16.44	1.83	.6	1.2	8	0	76	.09	2	1.0	.4	SPC
		12	434	12.33	19	19.84	155	10.68	12.04		1.4	12	0	237	.06	10	1.5	.6	UER
		12	6 2	27.57	19	15.60	155	9.21	37.32	2.0	1.2	12	1	290	.04	17	1.7	.8	POL
		12	6 8	50.48	19	19.39	155	10.00	8.32	1.8	2.1	13	0	257	.06	12	2.3	2.8	UER
		12	726	28.50	19	19.32	155	12.37	8.74		1.3	12	0	216	.04	8	.6	1.4	UER
		12	749	3.79	19	17.65	155	20.91	6.08	1.7	2.1	8	0	137	.02	8	.3	.6	SWR
		12	1036	8.42	19	19.72	155	8.07	9.79	1.9	1.9	13	0	89	.07	9	.8	2.9	UER
		12	1254	19.97	19	30.34	155	42.63	9.58	2.4	2.4	21	0	75	.14	22	1.1	.5	MOK
		12	19 6	14.04	19	18.92	155	13.83	6.88		1.1	13	0	88	.07	7	.6	1.6	POL
		12	1946	11.12	19	28.03	155	53.41	7.29		1.8	16	0	133	.19	30	1.8	1.3	KON
		13	144	2.79	19	18.03	155	14.70	6.54		1.4	15	0	138	.09	7	.8	1.9	POL
		13	234	55.94	19	49.93	155	34.55	20.35	2.5	2.2	31	0	108	.13	32	.9	3.2	KKU
		13	248	56.24	19	18.60	155	14.91	8.67		1.4	16	0	121	.04	7	.4	.9	POL
		13	748	10.74	19	19.55	155	11.62	8.69		1.0	15	0	92	.04	6	.4	1.1	UER
		13	1047	55.87	19	20.71	155	11.85	9.89	2.5	2.8	23	0	70	.09	7	.6	.3	UER
		13	1650	50.38	19	9.90	155	21.84	46.21	2.5	1.6	25	0	177	.10	16	1.4	2.9	LSW
		13	1950	10.92	19	20.26	155	13.03	9.51	1.7	1.1	13	0	66	.03	6	.3	1.4	UER
		13	2258	48.38	19	17.68	155	21.75	5.66	1.9	2.4	21	0	121	.16	9	1.2	2.6	SWR
		14	524	32.36	19	16.51	155	22.99	.91	1.7	1.9	20	0	127	.14	8	1.0	33.1	SWR
		14	716	20.14	19	19.68	155	8.72	7.37		2.0	16	0	112	.08	9	.8	1.7	UER
		14	8 4	44.14	19	24.23	155	16.17	1.71	1.7	2.2	15	0	70	.09	2	.5	.2	SPC
		14	1157	34.56	19	20.62	155	25.61	10.53	2.1	2.0	18	0	79	.11	8	.8	3.0	HEA
		14	1444	28.47	19	24.25	155	17.68	3.70	1.1	1.6	11	0	85	.07	2	.6	1.2	SPC
		14	1624	24.55	19	20.49	155	13.36	8.49		.7	13	0	117	.06	6	.8	2.4	UER
		14	1716	13.50	19	23.15	155	17.35	6.64	1.1	1.3	10	0	103	.05	3	.8	1.8	LPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAR	14	1856	46.92	19	24.93	155	16.80	2.01	.6	1.8	13	0	113	.12	2	.9	1.8	SPC
		14	19 6	28.03	19	24.91	155	17.12	10.74		1.5	10	0	119	.05	3	.9	3.5	LPC
		14	1956	45.77	19	26.66	155	29.89	9.23	2.2	1.9	26	0	72	.13	12	.7	1.5	UKF
		14	2156	22.09	19	24.49	155	16.10	11.03	1.4	.7	10	0	91	.15	2	3.0	12.9	LPC
		14	23 3	3.83	19	30.38	155	40.05	9.99	2.7	2.0	27	0	78	.13	26	.6	.4	MOK
		15	023	54.40	19	26.84	155	30.04	9.15		1.6	23	0	73	.09	11	.6	1.6	MOK
		15	1 8	38.11	19	24.16	155	28.33	9.72		1.6	26	0	57	.17	14	1.1	.7	UKF
		15	3 7	51.04	19	20.70	155	12.89	8.48		.8	14	0	70	.09	6	.9	1.1	UEP
		15	316	11.42	19	22.23	155	19.93	33.05		1.3	27	0	65	.12	6	1.2	2.1	DEP
		15	323	13.42	19	19.41	155	.71	36.60		.9	22	0	261	.07	22	3.4	3.7	DIS
		15	432	8.64	19	26.04	155	36.98	3.55	2.4	2.0	19	0	190	.11	18	.8	1.2	MOK
		15	528	25.92	19	24.05	155	25.13	9.15	1.8	1.6	22	0	57	.10	10	.7	1.1	UKF
		15	740	19.82	19	22.22	155	28.98	9.03	1.9	1.8	20	0	79	.13	11	1.0	2.1	UKF
		15	919	28.91	19	26.53	155	30.15	9.57	3.2	3.1	30	0	71	.13	11	.7	.6	MOK
		15	1111	58.90	19	19.03	155	15.83	6.72		1.5	20	0	116	.10	6	.7	1.2	KOA
		15	1626	8.95	19	19.11	155	15.53	9.76	2.3	2.8	25	0	94	.10	6	.6	.8	KOA
		15	1758	58.69	19	26.26	155	36.72	3.65	3.2	3.0	24	0	138	.13	17	.7	1.1	MOK
		15	1849	33.79	19	20.75	155	12.83	8.42		1.5	22	0	63	.09	6	.6	1.0	UER
		15	2032	54.57	19	19.94	155	11.45	9.47	1.7	1.9	25	0	85	.12	6	.8	1.0	UER
		15	2323	14.83	19	16.35	155	23.23	7.23	1.9	2.5	26	0	127	.15	9	1.0	2.3	SWR
		15	2355	48.07	19	26.21	155	36.76	4.01	3.0	3.3	24	0	187	.11	21	.9	1.1	MOK
		16	116	57.02	19	19.02	155	15.56	7.11		1.5	16	0	115	.06	6	.5	1.1	KOA
		16	124	1.45	19	17.07	155	21.95	6.76		1.4	22	0	126	.14	8	1.0	1.6	SWR
		16	139	11.17	19	18.87	155	15.68	7.42	.9	.6	13	0	121	.05	5	.5	1.2	KOA
		16	316	28.21	19	25.29	155	36.67	.07	2.7	2.6	23	0	69	.19	17	.9	6.8	MOK
		16	546	9.68	19	19.73	155	11.20	7.47		1.5	25	0	91	.12	6	.7	1.4	UER
		16	647	3.06	19	18.96	155	15.72	7.75		1.5	19	0	118	.08	5	.6	.9	KOA
		16	740	4.10	19	11.19	155	37.58	10.60	2.4	2.3	20	0	113	.13	27	1.5	.5	HEA
		16	817	27.75	19	17.23	155	21.87	7.40		1.6	18	0	125	.09	9	.7	1.1	SWR
		16	15 5	17.93	19	24.86	155	35.75	6.37	2.8	2.9	19	0	95	.10	19	.8	2.3	MOK
		16	1539	41.57	19	19.28	155	13.19	8.07	1.7	1.8	23	0	75	.10	7	.6	1.3	UER
		16	2053	7.55	19	15.03	155	15.95	27.05		.8	21	0	197	.06	10	.9	2.0	HLP
		16	2057	58.37	19	25.54	155	14.66	23.15	3.1	2.8	32	0	51	.10	4	.7	1.2	DEP
		17	025	37.61	19	20.46	155	10.57	7.45		1.0	18	0	196	.12	8	1.2	1.0	UER
		17	318	32.78	19	25.43	155	25.34	5.65	1.8	1.7	23	0	93	.10	9	.6	2.5	UKF
		17	1231	40.50	19	25.36	155	35.45	.23	2.8	2.8	14	0	111	.16	23	1.5	99.0	MOK
		17	15 4	50.85	19	30.62	155	39.83	7.94	2.9	2.9	18	0	136	.13	26	1.2	2.6	MOK
		17	1518	34.78	19	30.13	155	40.12	5.86	3.2	3.0	24	0	131	.10	26	.9	1.5	MOK
		17	1727	45.92	19	18.12	155	17.73	7.67		1.1	19	0	155	.05	8	.4	.3	KOA
		17	1952	10.70	19	18.61	155	15.20	8.72		1.3	23	0	125	.10	6	.6	.8	KOA
		17	2136	49.15	19	18.31	155	23.47	5.18	1.9	2.5	27	0	108	.12	9	.7	.8	SWR
		17	2226	16.91	19	26.80	155	23.76	9.44		1.5	21	0	68	.11	9	.7	1.2	UKF
		18	054	31.09	19	24.75	155	17.37	9.27	1.2	1.5	14	0	84	.07	2	.8	1.4	LPC
		18	255	17.18	19	20.09	155	7.92	6.27		1.4	20	0	88	.13	10	.9	2.4	UER
		18	5 8	23.91	19	13.54	155	28.27	8.06	2.1	1.8	22	0	138	.15	16	1.5	1.7	LSW
		18	510	27.74	19	24.74	155	17.54	10.07	1.3	1.1	10	0	113	.12	3	2.0	7.8	LPC
		18	615	50.86	19	26.74	155	23.93	8.83	1.6	1.6	24	0	68	.10	9	.5	.9	UKF
		18	756	9.86	19	28.33	155	39.02	6.26		1.9	19	0	111	.13	23	1.0	2.2	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAR	18	1230	57.46	19	29.57	155	38.81	7.51	2.7	2.5	24	0	125	.15	24	1.0	1.2	MOK
		18	1235	53.40	19	20.09	155	8.01	9.02		1.5	16	0	87	.06	9	.6	1.5	UER
		18	1330	59.89	19	28.33	155	38.58	7.06	2.7	2.6	23	0	109	.14	22	1.0	1.4	MOK
		18	1415	19.58	19	28.87	155	38.41	8.37	2.8	2.6	25	0	72	.16	22	1.0	1.1	MOK
		18	1416	45.25	19	15.20	155	2.60	45.96	2.5	2.1	26	0	244	.09	19	2.5	3.2	DIS
		18	1439	.93	20	18.78	155	20.34	55.73		2.1	10	0	297	.03	75	6.9	2.6	DIS
		18	1449	21.46	19	28.98	155	38.23	7.40	3.2	3.1	25	0	73	.15	22	.9	1.5	MOK
		18	17 5	1.48	19	29.03	155	39.78	5.61	2.3	1.9	16	0	125	.16	24	1.4	3.9	MOK
		18	21 5	55.12	19	26.24	155	46.30	9.61	3.0	2.6	26	0	81	.17	19	1.1	.5	KON
		18	2254	39.47	19	17.94	155	21.91	5.03	1.7	2.2	22	0	117	.17	9	1.0	1.4	SWR
		18	2314	58.14	19	26.42	155	30.07	8.79	2.2	2.2	25	0	70	.15	13	.8	2.4	MOK
		18	2325	43.57	19	30.06	155	39.03	7.80	3.1	2.9	28	0	77	.13	28	.9	1.2	MOK
		19	037	3.36	19	30.08	155	39.02	7.14	2.4	2.2	25	0	77	.15	24	1.1	1.6	MOK
		19	043	.27	19	19.61	155	8.59	8.26		1.5	16	0	78	.05	10	.5	1.2	UER
		19	3 5	28.57	19	18.63	155	13.71	8.09	1.7	1.5	20	0	90	.07	7	.4	.8	POL
		19	335	13.31	19	18.76	155	15.69	7.58		1.2	18	0	125	.10	5	.7	1.3	KOA
		19	434	59.94	19	17.96	155	22.30	3.95		1.5	21	0	153	.14	8	1.0	1.8	SWR
		19	448	59.29	19	17.77	155	21.97	4.85		1.5	17	0	158	.13	9	1.1	1.5	SWR
		19	458	17.97	19	18.93	155	15.74	7.90	1.6	1.2	19	0	119	.05	5	.4	.6	KOA
		19	6 3	5.48	19	29.41	155	38.79	7.79	2.7	2.2	26	0	131	.13	23	1.0	1.3	MOK
		19	6 5	32.18	19	17.45	155	13.63	11.35	1.3	.9	14	0	123	.07	9	1.6	4.1	POL
		19	640	31.06	19	29.62	155	39.20	7.18	2.6	2.1	22	0	132	.15	24	1.0	1.5	MOK
		19	646	36.75	19	17.98	155	16.71	8.07	1.7	1.9	26	0	124	.12	6	.8	1.1	KOA
		19	7 1	22.17	19	29.94	155	39.20	6.74	2.5	2.2	19	0	76	.17	24	1.2	2.2	MOK
		19	725	32.30	19	26.27	155	28.33	8.32	2.0	1.6	24	0	70	.13	14	.9	1.7	UKF
		19	814	41.69	19	24.93	155	30.49	10.07	2.4	2.2	28	0	103	.09	13	.6	.2	MOK
		19	816	51.69	19	25.01	155	25.67	9.51	2.8	2.8	30	0	62	.13	10	.6	.4	UKF
		19	930	22.58	19	24.30	155	28.49	7.67	2.0	2.0	17	0	110	.14	14	1.3	1.8	UKF
		19	951	17.65	19	30.32	155	39.12	7.74	2.9	2.6	22	0	81	.14	25	.8	.9	MOK
		19	952	45.37	19	29.52	155	39.10	7.10	2.5	2.4	18	0	131	.15	24	1.3	2.0	MOK
		19	15 7	32.17	19	28.86	155	38.85	7.52	2.7	2.6	22	0	122	.12	23	.8	.7	MOK
		19	1510	49.09	19	29.27	155	38.93	8.14	2.7	2.6	23	0	78	.15	23	1.1	1.2	MOK
		19	16 6	26.01	19	24.62	155	25.68	7.25	1.7	1.8	14	0	88	.09	10	.8	2.1	UKF
		19	2239	9.77	19	16.23	155	13.19	8.73		1.6	15	0	238	.10	10	2.0	2.2	POL
		20	115	13.04	19	18.55	155	13.30	7.97		1.8	23	0	83	.10	8	.7	1.3	POL
		20	228	59.31	19	22.53	155	15.64	52.64	2.6	2.1	30	0	52	.08	3	.8	1.4	DEP
		20	430	7.02	19	18.49	155	13.19	9.17		1.4	26	0	87	.10	8	.6	.7	POL
		20	452	43.38	19	20.19	155	17.33	28.84		1.8	24	0	101	.07	5	.9	1.6	DEP
		20	550	8.12	19	18.41	155	13.29	9.04	1.7	1.6	24	0	85	.12	8	.8	1.5	POL
		20	914	24.56	19	19.23	155	13.23	9.21	1.7	2.4	25	0	75	.10	7	.6	1.2	UER
		20	1451	48.31	19	20.24	155	17.14	31.05	1.8	1.6	22	0	103	.09	6	1.1	2.0	DEP
		20	1631	25.70	19	20.63	155	17.84	27.80	1.5	.6	18	0	54	.06	5	1.0	1.6	DEP
		20	21 6	17.49	19	24.51	155	17.54	5.33	.9	1.2	11	0	86	.15	2	1.7	3.4	SPC
		20	22 8	29.33	19	17.59	155	15.99	8.04		.8	16	0	159	.10	5	.9	1.8	KOA
		20	2322	30.56	19	17.41	155	14.71	8.26		1.4	21	0	129	.13	7	1.0	1.2	POL
		21	215	15.90	19	29.62	155	39.13	7.55		1.5	19	0	75	.15	24	1.2	2.4	MOK
		21	223	55.42	19	23.39	155	17.02	8.61	1.5	1.6	11	0	79	.09	3	1.3	3.2	LPC
		21	232	46.18	19	21.61	155	1.98	8.91	2.1	1.9	19	0	159	.15	14	1.6	3.3	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAR	21	430	39.50	19	16.78	155	23.08	6.68	1.8	2.0	20	0	133	.14	8	1.2	2.1	SWR
		21	5 2	51.02	19	24.02	155	17.00	5.33	1.1	1.4	11	0	77	.09	2	1.0	2.0	SPC
		21	550	1.40	19	23.38	155	17.51	4.19	1.3	1.8	12	0	87	.14	3	1.3	2.7	SPC
		21	812	41.06	19	24.67	155	16.17	11.78	1.7	1.8	10	0	85	.13	2	3.5	10.2	LPC
		21	815	11.37	19	20.47	155	16.71	29.80	1.5	.8	16	0	158	.05	5	1.6	3.1	DEP
		21	1349	48.93	19	20.02	155	8.02	9.07	1.9	1.9	19	0	87	.08	9	.7	1.3	UER
		21	14 6	2.38	19	24.93	155	16.64	9.94	1.8	1.9	15	0	111	.06	2	.9	2.3	LPC
		21	1434	46.43	19	25.33	155	17.14	7.58	1.1	1.6	11	0	136	.11	3	1.9	3.6	LPC
		21	15 0	43.20	19	29.73	155	39.16	7.47	2.5	2.4	15	0	132	.13	8	1.2	1.6	MOK
		21	2220	23.37	19	20.47	155	17.13	31.12	2.3	2.0	30	0	75	.10	5	.9	1.5	DEP
		21	2224	36.11	19	19.20	155	11.84	8.96	2.0	1.5	17	0	99	.04	7	.5	.9	UER
		21	2225	3.34	19	19.07	156	25.36	48.64		1.4	19	0	306	.12	85	16.4	9.1	DIS
		21	2342	28.19	19	25.63	155	16.70	11.54	1.9	2.5	14	0	154	.07	2	1.1	5.5	LPC
		22	046	13.68	19	29.32	155	52.30	7.88	3.1	2.5	21	0	98	.18	25	1.5	1.3	KON
		22	1 4	43.36	19	15.97	155	14.69	.76	1.8	2.1	15	0	250	.23	9	4.1	6.8	POL
		22	123	.32	19	18.62	155	13.05	9.53	1.7	1.5	18	0	89	.09	8	.8	3.3	POL
		22	256	24.36	19	25.12	155	16.66	10.61	1.6	1.6	9	0	125	.02	2	.6	2.4	LPC
		22	257	44.63	19	24.85	155	16.46	9.25		1.5	11	0	101	.07	2	1.1	3.0	LPC
		22	258	43.23	19	24.71	155	16.46	11.39	1.4	1.2	12	0	95	.07	2	1.3	4.7	LPC
		22	3 8	10.25	19	24.20	155	17.08	4.36	.8	1.6	10	0	77	.12	2	1.2	3.2	SPC
		22	5 7	40.71	19	19.25	155	14.05	8.37		.7	17	0	87	.07	6	.5	1.3	UER
		22	536	26.10	19	22.35	155	17.57	31.15	2.5	2.1	32	0	32	.07	3	.6	1.0	DEP
		22	636	43.66	19	24.62	155	15.98	9.24	1.3	1.5	9	0	90	.07	2	1.4	4.0	LPC
		22	939	2.82	19	19.77	155	26.87	9.34	1.5	1.4	24	0	75	.13	6	.7	1.9	HEA
		22	939	51.97	19	24.79	155	17.11	9.97	1.4	1.5	12	0	79	.08	2	1.4	4.4	LPC
		22	1154	58.58	19	17.83	155	21.95	7.10	2.7	2.8	28	0	118	.16	9	.9	1.5	SWR
		22	12 8	6.89	19	17.69	155	21.73	6.32	1.7	1.8	18	0	160	.11	9	.9	2.2	SWR
		22	1241	4.36	19	25.42	155	16.89	12.63	1.6	1.4	12	0	141	.08	3	1.3	4.3	LPC
		22	1347	10.22	19	24.92	155	35.61	4.07	2.6	2.7	17	0	60	.13	22	.9	2.2	MOK
		22	1626	49.82	19	24.37	155	16.51	9.21	1.4	1.5	9	0	82	.03	2	.6	1.9	LPC
		22	1752	30.94	19	24.29	155	13.72	27.90	2.7	2.7	9	0	276	.11	5	17.0	58.1	DEP
		22	1948	33.38	19	17.40	155	22.46	7.09	2.2	1.8	31	0	121	.16	8	.8	1.4	SWR
		22	2026	34.38	19	25.52	155	16.77	10.80	1.5	1.5	13	0	147	.05	2	.8	2.4	LPC
		22	2135	11.89	19	24.66	155	17.01	8.57	1.6	2.4	13	0	65	.12	2	1.5	3.1	LPC
		22	2234	22.70	19	24.88	155	16.74	10.33	1.7	1.5	12	0	110	.07	2	1.1	3.5	LPC
		22	2322	14.72	19	25.35	155	16.75	10.25	1.5	1.6	12	0	137	.04	2	.6	1.9	LPC
		23	0 3	29.53	19	24.96	155	16.70	10.84	1.6	2.2	12	0	114	.05	2	1.0	2.9	LPC
		23	155	57.83	19	20.51	155	6.99	9.41	3.0	2.9	28	0	97	.10	7	.7	.8	UER
		23	314	50.39	19	25.14	155	17.14	10.71	1.6	1.6	12	0	130	.06	2	1.0	3.0	LPC
		23	4 5	17.15	19	24.93	155	17.09	9.47	1.6	1.7	13	0	113	.08	2	1.0	2.0	LPC
		23	4 7	24.69	19	28.93	155	40.11	5.12		1.6	20	0	72	.21	25	1.8	2.4	MOK
		23	457	26.91	19	24.79	155	17.46	8.25	1.3	1.5	14	0	80	.05	2	.6	1.1	LPC
		23	512	56.76	19	18.63	155	15.30	7.64		.8	21	0	125	.08	6	.5	.9	KOA
		23	625	6.78	19	25.11	155	17.04	8.56	1.4	1.8	14	0	125	.05	2	.6	1.1	LPC
		23	645	58.08	19	24.30	155	16.95	7.77	1.3	1.5	12	0	71	.07	2	.8	1.8	LPC
		23	720	59.99	19	23.37	155	16.75	7.67	1.6	1.5	14	0	67	.10	2	1.0	1.8	LPC
		23	738	36.57	19	24.20	155	26.03	8.50		1.4	20	0	87	.14	11	1.0	1.9	UKF
		23	946	16.30	19	17.84	155	21.42	5.90		1.6	23	0	120	.13	8	.8	2.1	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAR	23	1253	39.90	19	24.56	155	16.72	4.92	1.5	1.9	9	0	85	.10	2	1.2	2.7	SPC
		23	1527	45.88	19	19.14	155	13.07	9.37	1.7	1.6	21	0	80	.12	8	.9	2.1	UER
		23	1617	59.98	19	19.22	155	15.33	7.84	1.6	1.9	25	0	90	.09	6	.5	1.0	KOA
		23	1647	17.56	19	.20	155	26.42	32.62	2.6	1.8	32	2	216	.11	30	1.8	2.2	LSW
		23	1733	4.73	18	59.23	155	26.50	34.67	2.9	2.5	31	0	221	.09	32	1.5	2.9	DIS
		23	1840	45.21	19	19.59	155	16.50	6.70	1.5	2.3	27	0	95	.12	5	.6	1.2	KOA
		23	2248	33.85	19	20.16	155	11.86	9.53	1.7	1.8	23	0	79	.08	6	.5	.7	UER
		24	117	13.04	19	19.39	155	15.87	6.58	1.8	1.6	24	0	105	.07	6	.4	.8	KOA
		24	421	.38	19	19.60	155	8.21	6.41		1.2	18	0	159	.14	10	1.1	1.8	UER
		24	426	47.80	19	25.74	155	24.03	10.30		1.0	16	0	125	.06	8	.6	.5	UKF
		24	6	2 38.32	19	26.82	155	36.34	1.78	2.7	2.4	20	0	83	.14	17	.9	.5	MOK
		24	641	18.80	19	24.06	155	17.09	7.14	1.4	1.8	14	0	77	.09	2	.9	1.6	LPC
		24	8	1 10.14	19	24.12	155	16.34	7.44	1.7	2.2	11	0	112	.12	2	1.1	1.8	LPC
		24	914	24.05	19	19.77	155	15.46	8.08		1.6	19	0	93	.07	6	.5	1.1	KOA
		24	1436	36.70	19	25.59	155	25.02	6.35		1.5	14	0	150	.09	8	.9	3.6	UKF
		24	19	7 21.58	19	18.55	155	15.56	7.03	.8	.6	15	0	129	.06	6	.5	1.3	KOA
		24	2020	22.83	19	20.07	155	7.69	8.73		.8	17	0	93	.08	8	.7	1.7	UER
		24	2035	45.27	19	29.73	155	39.90	5.86	2.3	2.2	23	0	75	.19	9	1.3	3.0	MOK
		24	2114	6.38	19	19.03	155	13.82	8.03		1.8	27	0	68	.11	7	.6	1.2	UER
		24	2151	55.87	19	14.95	155	7.09	45.20		1.3	25	0	212	.08	12	1.6	3.0	POL
		25	252	49.07	19	19.42	155	12.93	6.86	1.6	1.9	29	0	78	.13	7	.7	1.3	UER
		25	452	36.52	19	18.42	155	15.09	8.38		1.1	18	0	130	.04	6	.4	.9	KOA
		25	6	7 7.75	19	18.53	155	15.35	7.53	.9	.6	18	0	129	.07	6	.5	.9	KOA
		25	716	38.31	19	12.05	155	26.67	38.91		1.6	29	0	131	.09	18	1.1	2.6	LSW
		25	723	14.04	19	27.54	155	36.21	1.58	1.9	2.0	17	0	134	.15	3	1.1	.5	MOK
		25	1145	7.55	19	19.46	155	13.42	6.64		1.6	19	0	118	.13	7	1.0	2.2	UER
		25	1611	45.26	19	18.62	155	13.02	7.74		.9	15	0	154	.08	8	.9	1.9	POL
		25	17	3 25.02	19	43.67	155	45.51	6.56	2.6	1.8	20	0	164	.13	34	1.3	1.2	KON
		25	17	9 46.91	19	25.07	155	16.82	6.40	1.3	2.0	10	0	134	.18	2	2.9	4.3	LPC
		25	1753	51.75	19	19.07	155	15.40	8.45	2.0	2.4	27	0	93	.12	6	.7	.9	KOA
		25	1917	20.53	19	18.80	155	15.50	7.78	1.0	.5	15	0	122	.06	6	.4	.6	KOA
		25	2050	55.87	19	19.11	155	13.60	9.08		1.2	19	0	80	.08	7	.7	1.6	UER
		25	2127	45.89	19	23.90	155	16.30	7.64	1.6	1.8	8	0	101	.08	2	1.5	3.6	LPC
		25	2256	8.69	19	24.55	155	17.18	5.13	1.7	2.1	9	0	74	.19	2	2.3	5.4	SPC
		25	2257	51.07	19	25.50	155	19.24	16.82	2.2	2.1	9	0	133	.20	5	4.8	14.4	DEP
		26	250	20.93	19	20.19	155	11.66	8.79	2.3	2.4	27	0	80	.12	7	.7	1.2	UER
		26	350	11.60	19	25.54	155	35.89	3.11	2.9	2.6	25	0	50	.15	20	.8	1.6	MOK
		26	553	2.43	19	20.71	155	11.51	8.48		1.2	25	0	72	.13	8	.8	1.4	UER
		26	711	17.49	19	25.85	155	37.46	4.21	2.5	2.2	19	0	197	.09	7	1.0	.9	MOK
		26	10	6 7.73	19	27.23	155	35.47	.80	4.4	4.2	25	0	83	.17	4	.9	1.4	MOK
		26	1013	29.03	19	27.83	155	35.81	1.18	3.3	3.4	21	0	79	.14	3	.8	.5	MOK
		26	1134	1.59	19	20.48	155	10.91	7.14		1.0	19	0	77	.08	8	.6	1.2	UER
		27	117	43.62	19	22.90	155	2.87	5.69		1.5	20	0	125	.17	14	1.4	6.1	MER
		27	354	9.87	19	24.36	155	29.38	9.18		1.5	25	0	64	.11	15	.7	1.2	UKF
		27	445	25.20	19	23.92	155	25.72	9.44		1.2	20	0	83	.09	11	.6	2.2	UKF
		27	532	44.82	19	16.08	155	14.61	7.85	1.0	.8	13	0	134	.05	7	.8	2.0	POL
		27	542	34.88	19	25.10	155	36.38	2.35	2.8	2.5	19	0	96	.15	19	.9	3.6	MOK
		27	558	56.27	19	16.99	155	24.15	5.94		2.0	24	0	130	.17	10	1.1	2.9	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAR	27	1645	54.07	19	20.82	155	7.81	8.49	1.9	1.9	26	0	61	.17	9	1.1	1.3	UER
		27	1919	1.57	19	17.83	155	3.80	47.28		1.1	26	0	221	.07	13	1.6	2.4	MER
		28	940	47.00	19	18.55	155	15.05	7.62	1.0	.8	16	0	124	.07	6	.6	1.6	KOA
		28	1633	10.88	19	24.07	154	48.07	50.41		1.4	26	1	286	.07	37	2.2	1.1	LER
		28	1647	59.79	19	24.91	155	36.15	2.96	3.2	3.3	21	0	72	.15	24	.9	2.3	MOK
		28	1815	18.54	19	17.28	155	22.53	6.26		1.7	24	0	130	.15	7	1.0	2.4	SWR
		28	2014	29.70	19	20.06	155	12.43	8.17		.9	20	0	76	.06	6	.4	.8	UER
		28	2034	39.63	19	18.62	155	13.44	8.16		1.4	21	0	79	.10	7	.7	1.5	POL
		28	2114	23.91	19	20.13	155	10.82	9.07	2.1	2.2	22	0	83	.08	7	.6	.7	UER
		28	2324	22.51	19	18.61	155	14.98	8.33	.7	.4	10	0	122	.03	7	.5	1.4	POL
		28	2344	25.98	19	29.42	155	39.86	6.07		1.1	16	0	129	.16	27	2.1	4.0	MOK
		29	027	21.01	19	27.53	155	28.56	8.98	1.3	1.1	14	0	213	.11	16	2.0	5.3	UKF
		29	218	54.09	19	12.06	155	26.49	37.97		1.5	25	1	156	.08	18	1.3	1.8	LSW
		29	1437	6.16	19	18.33	155	15.35	8.31		.5	13	0	137	.04	6	.4	.3	KOA
		29	1443	53.16	19	20.05	155	20.76	5.00	1.5	1.2	13	0	101	.07	6	.5	1.3	SWR
		29	1448	27.51	19	17.03	155	22.58	.96	1.9	2.0	20	0	132	.16	7	1.1	46.2	SWR
		29	1456	26.36	19	17.15	155	22.57	4.48		4.7	17	0	123	.17	7	1.1	2.7	SWR
		29	17	2 56.37	19	16.85	155	22.89	2.65		1.5	17	0	133	.15	8	1.2	4.2	SWR
		29	20	0 52.42	19	26.45	155	26.81	9.75	1.3	1.4	18	0	138	.07	13	.6	3.5	UKF
		30	320	20.10	19	25.99	155	25.35	9.84	2.1	1.6	20	0	129	.07	11	.5	2.8	UKF
		30	327	55.11	19	19.75	155	11.93	9.46	1.9	2.3	21	0	86	.09	6	.7	1.4	UER
		30	425	2.33	19	19.78	155	11.02	8.88		.8	16	0	96	.05	7	.4	1.2	UER
		30	1031	33.93	19	18.49	155	13.17	6.93		1.4	15	0	88	.07	8	.5	1.4	POL
		30	21	6 1.66	19	20.41	155	12.13	8.55	1.7	1.8	24	0	73	.13	7	.8	1.6	UER
		31	1	9 32.98	19	17.74	155	22.05	7.37	1.9	1.9	26	0	119	.17	9	1.0	1.8	SWR
		31	637	20.14	19	17.18	155	21.47	5.90		1.4	22	0	127	.16	9	1.1	2.9	SWR
		31	7	4 50.64	19	18.04	155	15.51	7.69	1.0	.9	15	0	151	.07	5	.8	1.8	KOA
		31	855	31.66	19	18.78	155	15.40	8.22		.6	17	0	121	.07	6	.5	.8	KOA
		31	1159	22.92	19	24.19	155	17.49	14.84	1.6	1.1	21	0	75	.06	2	.6	.7	DEP
		31	1427	46.85	19	24.96	155	29.88	7.96	1.9	1.2	21	0	105	.14	14	1.0	2.0	UKF
		31	1455	48.42	19	19.77	155	10.26	7.67		1.2	22	0	90	.12	7	.8	1.9	UER
		31	15	7 41.20	19	20.89	155	11.28	9.44		1.0	15	0	111	.04	8	.4	.7	UER
		31	1639	40.82	19	23.89	155	27.22	5.47	1.8	1.3	14	0	108	.14	13	1.1	1.6	UKF
		31	2322	4.47	19	24.49	155	16.60	14.94	1.8	1.7	30	0	46	.07	2	.5	.6	DEP
		31	2336	24.07	19	28.59	155	35.59	1.40	2.3	2.4	21	0	125	.11	3	.7	.3	MOK
APR		1	014	43.23	19	18.88	155	13.04	9.46	1.6	1.3	21	0	85	.09	8	.7	1.5	POL
		1	016	43.74	19	19.08	155	13.25	10.18	2.3	2.5	28	0	77	.09	8	.5	.3	UER
		1	049	28.27	19	18.55	155	13.32	8.51	1.7	1.8	26	0	82	.09	8	.6	1.1	POL
		1	150	54.40	19	21.19	155	11.45	8.31		1.4	23	0	66	.09	8	.6	.9	UER
		1	217	48.99	19	26.34	155	36.74	2.00	2.7	2.6	18	0	139	.14	6	1.0	90.3	MOK
		1	3	5 19.35	19	19.60	155	11.97	6.76		.9	16	0	88	.10	6	.8	1.7	UER
		1	337	53.33	19	21.85	155	25.42	8.18	1.1	.8	19	0	77	.11	10	.8	1.7	HEA
		1	5	2 53.23	19	19.39	155	15.43	7.97	1.6	1.4	24	0	88	.13	6	.7	1.2	KOA
		1	5	6 49.63	19	15.54	155	7.17	44.68	2.5	1.8	28	0	198	.08	11	1.5	2.6	POL
		1	625	23.26	19	19.90	155	11.76	9.21	2.0	2.0	26	0	84	.11	6	.7	1.4	UER
		1	732	50.39	19	26.17	155	24.50	7.87	2.2	2.1	29	0	52	.13	9	.7	1.1	UKF
		1	739	35.87	19	19.55	155	11.67	9.56	1.1	.6	14	0	90	.05	6	.5	2.7	UER
		1	848	47.90	19	25.88	155	35.96	.22	2.6	2.4	26	0	81	.18	16	.9	5.9	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	APR	1	1530	45.23	19	26.54	155	51.40	10.05	2.9	2.4	22	0	124	.14	26	1.1	.4	KON
		1	16 9	25.12	19	19.80	155	15.08	6.76	1.9	1.4	25	0	90	.11	6	.6	1.0	KOA
		1	1745	14.04	19	19.82	155	11.96	8.67	1.7	1.9	20	0	84	.09	6	.6	1.4	UER
		1	2147	52.51	19	22.31	155	15.53	32.50		1.1	27	0	54	.09	3	.9	1.8	OEP
		1	2152	57.58	19	28.89	155	36.34	2.65	2.5	2.3	17	0	219	.12	3	2.2	1.5	MOK
		2	2 0	56.10	19	19.77	155	13.78	6.93	1.9	2.0	23	0	75	.10	6	.6	1.3	UER
		2	2 8	41.16	19	20.03	155	13.67	7.28	1.6	1.5	27	0	60	.10	6	.5	.9	UER
		2	456	2.52	19	19.39	155	13.83	8.10	1.6	1.6	24	0	62	.11	6	.7	1.3	UER
		2	529	7.67	19	24.77	155	25.81	10.97		1.3	21	0	61	.09	10	.6	.5	UKF
		2	536	56.25	19	33.34	155	36.67	8.29	2.4	1.9	25	0	91	.19	26	1.2	2.5	MOK
		2	619	39.62	19	16.19	155	23.73	5.55	1.9	1.6	20	0	125	.14	10	1.1	3.0	SWR
		2	11 2	13.95	19	19.76	155	11.58	6.80		1.1	20	0	90	.08	6	.6	1.4	UER
		2	1325	41.24	19	19.20	155	14.02	7.10	1.0	1.0	15	0	88	.05	7	.4	1.0	UER
		2	1346	56.52	19	19.73	155	13.40	12.95		1.0	14	0	69	.10	7	1.2	.5	UER
		2	1535	27.65	19	18.68	155	15.20	8.08		.6	15	0	122	.03	6	.3	.7	KOA
		2	1743	39.98	19	29.17	155	39.86	6.83	3.0	2.7	27	0	127	.15	9	1.1	1.5	MOK
		2	18 4	59.97	19	19.38	155	15.70	6.58	1.6	1.3	24	0	91	.15	6	.9	1.3	KOA
		2	18 7	53.54	19	29.99	155	39.77	6.69	3.1	3.1	25	0	76	.14	9	.9	1.5	MOK
		2	2050	35.73	19	18.17	155	13.19	7.79		1.4	21	0	94	.09	8	.6	1.0	POL
		2	2123	34.25	19	16.54	155	22.60	.74	1.4	1.6	23	0	129	.15	7	1.0	53.7	SWR
		2	2234	1.21	19	16.47	155	22.76	2.11	1.7	1.6	24	0	128	.13	8	.8	3.0	SWR
		2	2244	25.13	19	15.04	155	6.51	45.74		1.3	23	0	201	.08	13	1.5	2.5	POL
		2	2327	9.37	19	24.13	155	15.93	1.59			8	0	109	.06	2	.4	.3	SPC
		2	2327	21.28	19	15.50	155	13.47	8.36	1.4	1.0	16	0	226	.14	10	2.4	1.5	POL
		2	2351	45.82	19	14.00	155	22.36	5.94	2.5	2.8	27	0	153	.15	12	1.1	1.9	LSW
		3	345	17.26	19	20.31	155	11.31	7.29	1.1	.7	19	0	95	.09	7	.7	1.5	UER
		3	356	13.99	19	12.73	155	10.99	13.54	1.5	.8	12	0	255	.13	18	4.4	3.7	POL
		3	419	34.28	19	17.58	155	14.99	8.87	1.7	2.0	28	0	126	.11	6	.7	.8	POL
		3	724	7.84	19	18.85	155	13.51	7.50	1.1	.3	12	0	132	.05	7	.6	1.6	POL
		3	952	18.59	19	9.53	155	20.80	2.36	2.1	2.2	16	0	200	.14	16	2.2	7.9	PPL
		3	1014	42.59	19	19.34	155	13.79	7.34	1.7	1.6	20	0	63	.10	6	.7	1.5	UER
		3	12 7	30.10	19	16.72	155	24.22	4.38	1.8	1.8	22	0	117	.14	10	.9	1.8	SWR
		3	1811	19.06	19	20.92	155	6.66	8.66	2.6	2.7	25	0	93	.11	7	.8	1.1	UER
		3	19 7	23.93	19	19.28	155	13.23	7.35	1.8	2.0	24	0	75	.12	7	.7	1.6	UER
		3	1958	3.07	19	20.04	155	11.90	8.33		1.2	21	0	82	.12	6	.8	1.8	UER
		3	2115	41.49	19	31.87	155	9.86	24.32	2.9	2.6	30	0	64	.09	16	.6	2.0	HIL
		3	22 3	11.15	19	18.95	155	13.70	8.31		.8	18	0	124	.04	7	.4	.7	POL
		4	153	50.30	19	26.93	155	40.13	5.23		1.4	19	0	72	.18	25	1.2	2.1	MOK
		4	2 3	16.40	19	16.66	155	12.34	9.05		1.3	19	0	202	.10	11	1.3	.6	POL
		4	319	5.15	19	17.02	155	12.55	7.67		1.0	17	0	184	.09	10	1.2	1.7	POL
		4	951	15.35	19	25.98	155	30.53	8.52		1.6	13	0	118	.11	10	1.0	1.8	MOK
		4	1121	57.63	19	18.25	155	13.30	8.79		1.8	18	0	87	.08	8	.7	1.5	POL
		4	13 9	55.86	19	19.24	155	13.69	10.75	3.9	3.9	24	0	66	.10	7	.8	.4	UER
		4	1335	17.35	19	19.22	155	13.64	10.38	3.5	3.7	27	0	67	.11	7	.6	.3	UER
		5	414	56.21	19	19.88	155	13.88	9.84	1.7	1.8	20	0	75	.08	6	.6	2.0	UER
		5	8 3	5.20	19	16.70	155	22.87	7.49	3.6	3.6	27	0	125	.13	8	.8	1.4	SWR
		5	912	13.67	19	16.75	155	23.24	.57		1.3	18	0	133	.17	8	1.2	74.2	SWR
		5	941	50.77	19	15.48	155	22.11	6.75		1.5	18	0	140	.11	9	1.2	2.4	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	APR	5	942	42.48	19	16.97	155	22.98	6.78	1.8	1.8	23	0	122	.19	8	1.3	2.3	SWR
		5	1022	32.28	19	18.11	155	21.26	6.47	2.0	1.9	19	0	124	.16	8	1.0	2.5	SWR
		5	1024	9.91	19	16.63	155	23.03	7.74	3.5	3.5	28	0	125	.18	8	1.1	1.8	SWR
		5	1029	19.48	19	16.64	155	22.85	7.44	2.4	2.6	26	0	126	.15	8	.9	1.6	SWR
		5	1033	48.10	19	16.57	155	23.63	6.24	2.5	2.8	26	0	122	.21	9	1.2	2.8	SWR
		5	1040	55.71	19	16.82	155	23.46	.38	1.8	2.2	20	0	121	.20	9	1.3	99.0	SWR
		5	1045	44.94	19	16.38	155	23.62	.27	1.8	1.6	21	0	124	.16	9	1.4	72.2	SWR
		5	11 3	34.63	19	16.55	155	22.76	5.94	1.3	1.4	17	0	128	.12	8	.9	2.6	SWR
		5	11 4	.31	19	16.42	155	22.98	8.24	2.9	3.3	26	0	128	.16	8	1.1	1.9	SWR
		5	1110	56.05	19	16.82	155	22.98	.00	1.8	2.2	16	0	124	.16	12	1.5	75.1	SWR
		5	1143	39.83	19	16.61	155	22.90	5.91		1.4	17	0	126	.14	8	1.2	5.2	SWR
		5	1146	24.09	19	16.31	155	23.34	7.32	2.8	3.4	27	0	126	.18	9	1.1	2.2	SWR
		5	1156	58.28	19	17.02	155	22.64	7.08	3.8	4.0	26	0	123	.18	7	1.0	2.1	SWR
		5	1159	55.77	19	16.84	155	22.29	4.65	2.1	1.9	20	0	127	.15	8	1.0	2.0	SWR
		5	12 1	42.35	19	16.18	155	21.74	10.08	2.2	2.0	22	0	159	.09	9	.8	.6	SWR
		5	12 3	20.73	19	17.16	155	21.85	5.82	1.8	1.9	15	0	126	.12	9	1.1	3.0	SWR
		5	12 9	34.09	19	18.60	155	22.01	1.58		1.8	19	0	205	.17	9	1.7	99.0	SWR
		5	1212	44.21	19	18.23	155	21.46	1.86		1.3	14	0	207	.09	6	1.2	99.0	SWR
		5	1223	39.37	19	17.17	155	22.33	7.24	1.8	1.6	19	0	123	.13	10	1.0	2.6	SWR
		5	1228	2.30	19	16.90	155	22.50	4.33		1.3	20	0	125	.14	7	.9	1.9	SWR
		5	1240	33.01	19	18.68	155	21.66	4.03		1.1	16	0	200	.11	8	1.1	5.0	SWR
		5	13 2	17.12	19	17.34	155	22.85	3.65	1.8	1.8	21	0	119	.19	7	1.2	3.1	SWR
		5	1311	10.37	19	16.45	155	23.10	6.53		1.5	19	0	127	.15	8	1.2	2.0	SWR
		5	1324	44.43	19	17.06	155	22.22	6.34		1.6	19	0	125	.13	8	1.0	2.8	SWR
		5	1344	31.83	19	17.26	155	22.03	7.96	2.2	2.2	23	0	124	.15	10	.9	2.1	SWR
		5	1345	16.32	19	17.35	155	22.01	5.62	1.9	1.8	16	0	123	.14	10	1.4	5.6	SWR
		5	1441	1.21	19	17.15	155	22.15	7.20	2.2	2.5	22	0	124	.17	10	1.2	5.4	SWR
		5	1721	44.09	19	16.52	155	23.52	.83		1.9	21	0	123	.18	9	1.1	50.9	SWR
		5	1834	14.98	19	17.26	155	22.35	7.07	1.8	1.6	21	0	122	.15	8	.9	2.4	SWR
		5	19 7	42.86	19	16.72	155	23.10	.97	1.8	2.0	21	0	124	.17	8	1.1	45.9	SWR
		5	1930	35.85	19	20.32	155	8.50	8.21	1.8	2.2	24	0	75	.11	9	.8	1.0	UER
		5	2342	9.42	19	11.63	155	32.39	3.17	2.4	2.1	22	0	97	.17	13	1.1	2.4	LSW
		6	126	11.94	19	12.39	155	27.64	1.12	2.1	1.8	15	0	109	.14	16	1.1	99.0	LSW
		6	234	40.18	19	26.94	155	15.45	14.71	2.1	1.9	9	0	237	.09	5	6.3	8.9	OEP
		6	457	37.86	19	17.38	155	22.65	5.94	1.8	1.8	24	0	129	.16	7	1.1	2.8	SWR
		6	458	14.92	19	17.17	155	22.62	2.74	1.7	1.8	22	0	131	.16	7	1.0	3.8	SWR
		6	547	40.78	19	26.21	155	28.18	9.85		1.2	18	0	69	.11	13	.8	1.0	UKF
		6	1157	53.49	19	16.91	155	22.55	5.34		1.2	17	0	125	.13	7	.9	1.1	SWR
		6	1215	55.40	19	18.69	155	13.31	10.34	3.8	3.9	27	0	80	.09	8	.6	.3	POL
		6	13 8	59.61	19	19.22	155	15.17	35.35		1.2	23	0	124	.08	6	1.3	1.9	OEP
		6	1444	39.78	19	19.03	155	13.80	7.74	1.7	1.6	21	0	86	.13	7	.9	1.7	UER
		6	17 7	47.63	19	18.83	155	13.38	8.52	2.0	2.6	24	0	77	.10	7	.8	1.5	POL
		6	1833	33.83	19	17.38	155	13.03	8.64		1.4	20	0	139	.11	9	.9	1.2	POL
		6	19 6	35.92	19	26.60	155	30.02	9.02	2.1	1.8	21	0	103	.13	11	1.1	2.5	MOK
		6	1954	.06	19	19.22	155	12.11	8.56	1.1	.6	15	0	95	.04	7	.4	1.1	UER
		6	2014	41.27	19	19.24	155	13.97	8.45	2.0	2.0	23	0	66	.12	6	.7	1.5	UER
		6	2110	37.78	19	16.90	155	23.27	7.64	1.8	2.0	20	0	132	.13	12	1.1	2.0	SWR
		7	150	14.67	19	22.25	155	3.87	7.83	2.0	1.8	17	0	103	.10	12	.9	2.7	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	APR	7	321	51.95	19	17.05	155	12.80	8.87		1.0	17	0	181	.09	10	1.1	.9	POL
		7	424	56.27	19	24.85	155	36.13	4.70	3.9	3.9	22	0	240	.15	23	2.7	1.9	MOK
		7	5 2	30.87	19	18.87	155	15.51	8.32	1.1	.5	15	0	119	.03	6	.2	.7	KOA
		7	545	34.08	19	25.98	155	24.28	9.42	2.7	2.5	27	0	91	.13	9	.8	.9	UKF
		7	625	2.81	19	18.01	155	21.58	10.12	2.4	2.7	25	0	118	.15	8	.9	.7	SWR
		7	7 0	30.87	19	22.17	155	3.91	8.59	2.0	1.8	18	0	102	.11	11	1.0	2.7	MER
		7	1439	29.31	19	16.48	155	15.67	10.20	3.0	3.3	27	0	149	.10	7	.7	.3	HLP
		7	16 7	46.24	19	25.98	155	26.35	12.64	1.8	1.6	14	0	198	.05	10	.9	.2	UKF
		7	1730	45.74	19	31.71	155	40.11	6.09	2.3	2.0	18	0	138	.14	11	1.3	4.7	MOK
		7	1732	34.68	19	25.31	155	17.31	6.20	1.0	1.1	10	0	135	.07	5	.9	2.0	LPC
		7	1750	38.68	19	18.69	155	15.56	6.00	1.6	1.2	20	0	126	.12	6	.9	1.8	KOA
		7	2232	15.98	18	59.72	155	21.26	48.03	3.2	2.8	30	0	225	.08	33	1.7	4.0	DIS
		7	2353	33.56	19	16.66	155	22.46	7.22	2.0	2.4	24	0	128	.14	7	1.0	1.3	SWR
		8	146	24.79	19	11.19	155	42.65	7.16	2.9	2.6	23	0	159	.16	30	1.5	1.8	HEA
		8	533	5.49	19	26.66	155	30.03	7.79	2.3	2.3	25	0	77	.14	11	.9	2.0	MOK
		8	536	.76	19	26.42	155	29.91	9.51	1.9	1.6	18	0	125	.12	12	1.1	7.4	UKF
		8	7 7	8.31	19	24.52	155	16.47	7.42	1.9	2.4	10	0	88	.02	2	.4	.8	LPC
		8	1112	33.07	19	26.70	155	29.71	7.50	1.9	1.8	21	0	130	.10	12	.9	2.6	UKF
		8	1146	1.88	19	17.93	155	13.26	8.48		1.3	18	0	96	.11	9	.8	1.2	POL
		8	1332	40.24	19	20.19	155	7.87	8.46	2.0	2.3	23	0	88	.12	9	.9	1.2	UER
		8	1444	37.26	19	24.95	155	25.92	8.10	1.9	1.8	18	0	104	.06	10	.5	1.4	UKF
		8	1448	51.09	19	26.81	155	29.55	12.29		1.5	15	0	131	.11	12	1.5	.4	UKF
		8	15 3	33.76	19	17.55	155	15.16	9.93		1.6	19	0	128	.09	6	.6	.5	KOA
		8	16 9	23.13	19	19.49	155	13.47	8.01	.8	.4	14	0	106	.04	7	.4	1.0	UER
		8	1739	17.37	19	25.22	155	16.80	11.76	1.9	2.1	9	0	133	.03	2	.7	3.2	LPC
		8	18 7	13.51	19	18.93	155	13.58	7.04		.9	13	0	82	.07	7	.6	1.8	POL
		8	2022	13.62	19	25.27	155	14.74	14.41	1.6	1.4	11	0	207	.12	4	5.1	6.6	DEP
		8	2220	8.17	19	17.11	155	24.28	.88	1.8	1.9	25	0	114	.15	10	.9	1.4	SWR
		8	2258	58.93	19	24.64	155	16.69	7.47	1.6	2.2	13	0	137	.18	2	2.2	3.3	LPC
		9	353	21.92	19	12.31	155	26.54	37.10		1.6	31	0	130	.12	17	1.4	2.8	LSW
		9	712	14.45	19	24.08	155	16.89	9.20	2.1	2.8	10	0	83	.05	2	1.0	1.8	LPC
		9	12 1	31.12	19	18.71	155	15.76	9.16	1.7	1.8	23	0	104	.10	5	.6	.8	KOA
		9	1358	38.28	19	18.90	155	15.62	9.04	1.7	1.7	22	0	98	.09	6	.6	.8	KOA
		9	1439	19.32	19	29.86	155	39.76	8.30	2.3	2.1	15	0	280	.08	25	4.7	1.9	MOK
		9	1632	11.10	19	19.44	155	13.27	7.34		.8	20	0	72	.09	7	.6	1.0	UER
		9	1711	13.69	19	20.06	155	8.44	7.56		.8	18	0	78	.08	9	.6	1.4	UER
		9	18 1	16.15	19	24.75	155	16.84	11.72	2.0	2.2	10	0	102	.05	2	1.1	3.5	LPC
		9	1850	31.32	19	18.96	155	13.61	7.38		.9	21	0	84	.11	7	.8	1.6	POL
		9	2245	26.13	19	25.17	155	16.08	13.25	2.2	2.4	30	0	65	.09	3	.6	.7	DEP
		10	444	3.53	19	19.06	155	15.71	6.49	1.6	1.4	24	0	97	.11	6	.6	1.2	KOA
		10	541	2.90	19	23.99	155	16.71	5.29	1.6	2.2	14	0	50	.18	2	1.4	2.9	SPC
		10	654	10.86	19	26.52	155	36.41	3.51	3.0	2.8	21	0	133	.13	21	.7	1.2	MOK
		10	1418	40.24	19	20.45	155	8.52	9.61	3.3	3.5	24	0	77	.10	9	.7	.5	UER
		10	22 9	7.17	19	17.18	155	22.37	6.02		1.4	22	0	123	.14	8	1.0	2.6	SWR
		10	2222	53.73	19	19.98	155	8.09	6.93	1.9	1.3	22	0	86	.10	9	.6	1.4	UER
		10	2243	8.70	19	25.04	155	16.85	10.43	1.3	1.1	11	0	120	.03	2	.5	1.5	LPC
		10	2358	48.13	19	18.64	155	15.44	7.01		1.2	21	0	126	.07	6	.4	.7	KOA
		11	0 9	47.96	19	25.20	155	16.56	11.54	2.5	2.3	9	0	131	.04	2	.9	4.1	LPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	APR	11	119	2.92	19	16.93	155	23.28	6.89	1.8	2.1	31	0	121	.19	8	1.1	1.6	SWR
		11	2 3	26.10	19	17.77	155	21.22	8.94	2.8	2.7	29	0	122	.12	8	.7	.9	SWR
		11	223	38.21	19	17.15	155	23.37	2.64	1.6	1.5	25	0	118	.21	8	1.2	4.0	SWR
		11	452	42.92	19	30.65	155	18.15	29.92	2.1	1.1	8	0	290	.06	11	18.3	43.1	GLN
		11	616	7.97	19	20.46	155	11.30	8.52	1.7	1.9	22	0	77	.11	7	.7	1.5	UER
		11	622	24.87	19	20.27	155	8.63	9.53	3.3	3.2	28	0	74	.13	9	.8	.5	UER
		11	626	17.22	19	20.35	155	8.31	6.45		1.0	21	0	79	.12	9	.8	1.6	UER
		11	640	55.98	19	25.16	155	16.75	10.23	1.5	1.3	11	0	125	.04	2	.8	2.4	LPC
		11	751	38.90	19	25.46	155	17.63	13.59	2.4	2.5	12	0	140	.07	3	1.4	1.5	DEP
		11	15 9	34.08	19	17.52	155	22.39	7.31	2.3	2.8	28	0	120	.18	8	1.0	1.8	SWR
		11	1520	50.94	19	9.59	155	28.81	27.51	2.5	1.9	26	0	129	.10	22	1.1	2.5	LSW
		11	1616	39.30	19	25.56	155	37.06	1.91	2.5	1.9	13	0	195	.12	7	1.3	99.0	MOK
		11	1715	40.34	19	13.85	155	27.57	7.96	2.1	1.6	19	0	139	.10	16	.9	1.4	LSW
		11	1747	28.82	19	23.70	155	27.85	6.78	2.1	1.9	24	0	55	.14	14	.8	2.1	UKF
		11	2245	32.56	19	25.86	155	37.39	4.14	2.2	1.8	10	0	203	.10	18	1.9	2.1	MOK
		12	010	24.75	19	25.09	155	38.44	3.35	2.6	2.3	12	0	213	.09	19	1.2	1.5	MOK
		12	8 9	2.21	19	17.11	155	23.17	7.12	2.1	2.0	25	0	120	.16	12	1.1	1.7	SWR
		12	1313	6.17	19	25.43	155	36.39	.34	2.8	2.5	17	0	99	.20	16	1.2	7.8	MOK
		12	1435	58.91	19	19.19	155	15.32	6.29	1.6	1.6	21	0	90	.12	6	.7	1.4	KOA
		12	1458	5.39	19	19.27	155	10.50	8.35	1.8	1.6	21	0	103	.09	7	.7	1.6	UER
		12	1642	25.79	19	22.84	155	26.42	9.63	1.8	1.5	21	0	52	.12	12	.7	.5	UKF
		12	2158	18.42	19	17.53	155	21.95	7.47	1.9	2.2	27	0	121	.13	9	.8	1.1	SWR
		12	2324	1.24	19	26.00	155	37.55	4.58	3.0	2.9	15	0	207	.08	19	1.2	.9	MOK
		13	922	5.70	19	27.82	155	23.81	6.34	1.7	1.6	16	0	102	.08	10	.5	1.7	UKF
		13	18 1	18.76	19	19.24	155	15.72	7.24	1.6	1.3	24	0	109	.12	6	.7	1.1	KOA
		13	2251	4.11	19	26.33	155	24.95	8.34	1.5	1.3	20	0	68	.09	8	.6	1.1	UKF
		13	2327	24.92	19	20.55	155	4.20	9.23	2.0	1.9	21	0	110	.10	10	.8	1.2	MER
		14	253	54.55	19	32.28	155	39.72	8.42	2.5	2.3	21	0	140	.15	11	1.3	3.8	MOK
		14	648	55.23	19	18.24	155	15.46	7.25	1.7	1.6	24	0	138	.08	6	.5	.8	KOA
		14	1736	8.39	19	25.45	155	16.95	8.73	1.6	1.8	11	0	162	.09	4	1.6	2.7	LPC
		14	1824	2.21	19	25.10	155	16.69	9.08	1.4	1.5	13	0	121	.07	2	.9	1.8	LPC
		14	2339	35.22	19	18.91	155	26.06	7.95		1.3	25	0	91	.14	7	.8	1.2	HEA
		15	729	18.57	19	24.85	155	16.65	11.68	2.0	2.2	12	0	107	.09	2	1.7	5.1	LPC
		15	8 9	13.67	19	25.08	155	17.81	5.44	1.7	2.6	16	0	80	.12	5	.6	.6	SPC
		15	944	26.88	19	24.54	155	17.05	8.30		2.9	10	0	67	.10	2	1.7	3.9	LPC
		15	1433	13.97	19	24.97	155	17.46	9.39	1.4	1.6	12	0	122	.09	3	1.3	2.7	LPC
		15	1538	55.42	19	24.94	155	58.80	28.43		1.6	24	2	241	.13	40	1.7	2.2	KON
		15	1546	45.60	19	24.47	155	17.50	10.51	1.7	2.5	15	0	56	.10	2	1.1	3.1	LPC
		15	2323	4.77	19	19.97	155	16.70	35.17	2.8	2.5	34	0	88	.09	5	.8	1.4	DEP
		16	0 7	15.94	19	20.00	155	8.77	7.85		1.5	21	0	73	.10	9	.7	1.6	UER
		16	012	51.90	19	28.34	155	35.16	1.14	2.7	2.8	22	0	122	.14	3	.7	.4	MOK
		16	1 5	12.67	19	17.23	155	22.54	8.30	1.8	2.1	30	0	122	.16	7	1.0	1.2	SWR
		16	835	57.32	19	20.43	155	11.22	7.37	1.7	2.2	25	0	77	.10	7	.6	1.2	UER
		16	1447	9.62	19	19.17	155	13.24	6.90	1.7	1.1	19	0	76	.08	7	.6	1.4	UER
		16	1550	56.77	19	20.58	155	10.63	7.34		1.0	19	0	115	.08	8	.6	.9	UER
		16	1627	53.89	19	19.94	155	11.92	7.65	1.7	1.2	23	0	82	.10	6	.6	1.4	UER
		16	18 0	38.87	19	27.72	155	34.68	4.10	2.8	3.3	17	0	164	.12	24	1.2	1.8	MOK
		16	2024	35.91	19	21.09	155	13.24	8.16	1.7	2.2	29	0	56	.14	6	.7	1.1	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	ES	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	APR	16	2027	31.98	19	31.83	155	39.61	7.74	2.3	1.4	21	0	84	.18	10	1.1	1.9	MOK
		16	2223	46.74	19	20.62	155	13.70	7.31		.7	20	0	64	.11	7	.7	1.3	UER
		17	0	1 46.39	19	17.40	155	21.57	7.19	1.9	2.2	28	0	124	.13	9	.8	1.0	SWR
		17	026	38.87	19	25.27	155	25.40	5.83	1.8	1.4	19	0	70	.11	9	.7	3.0	UKF
		17	359	3.41	19	32.07	155	39.86	8.71	2.7	2.4	25	0	86	.15	25	.9	1.7	MOK
		17	451	12.53	19	19.01	155	17.13	8.24	1.7	1.5	21	0	114	.11	7	.7	.8	KOA
		17	6	2 44.21	19	20.45	155	9.62	10.15		1.2	19	0	69	.07	8	.6	2.4	UER
		17	652	58.06	19	18.85	155	13.57	8.16		1.1	25	0	77	.10	7	.6	.9	POL
		17	7	5 14.04	19	31.54	155	39.65	8.31	2.3	2.3	24	0	83	.17	10	1.0	1.4	MOK
		17	1020	23.92	19	19.27	155	12.15	9.06		.5	15	0	94	.05	7	.5	1.5	UER
		17	1134	58.68	19	17.62	155	25.33	9.51	2.5	2.8	26	0	104	.14	10	.7	.6	HEA
		17	1336	50.70	19	18.80	155	15.68	8.41		1.0	14	0	123	.04	5	.4	1.0	KOA
		17	1625	52.46	19	18.74	155	15.25	7.42		.7	19	0	121	.10	6	.7	1.0	KOA
		17	1653	22.33	19	31.83	155	39.71	7.66	3.1	2.8	25	0	84	.13	11	.8	1.5	MOK
		17	1752	35.19	19	29.29	155	26.32	8.87	2.0	1.5	18	0	93	.16	13	1.3	4.4	NER
		17	1821	32.48	19	12.01	155	28.41	32.11	2.5	2.4	28	0	94	.09	18	1.0	2.3	LSW
		17	1959	19.78	19	28.72	155	30.89	12.17	1.9	1.4	20	0	93	.12	10	1.1	.4	MOK
		17	2055	53.46	19	20.13	155	11.38	9.75		.8	17	0	94	.06	7	.5	2.3	UER
		17	2138	45.36	19	22.76	155	20.28	28.82	2.1	1.5	28	0	47	.09	7	.8	1.6	DEP
		17	2157	17.71	19	18.52	155	20.60	6.82		1.3	21	0	150	.10	6	.7	1.1	SWR
		17	23	2 1.80	19	17.90	155	13.19	8.12		1.0	16	0	101	.11	9	1.0	2.4	POL
		17	2326	8.15	19	18.11	155	13.19	8.14	1.7	1.6	23	0	95	.07	8	.5	.8	POL
		17	2330	14.73	19	18.31	155	13.26	10.05	3.5	3.7	31	0	88	.10	8	.6	.3	POL
		18	023	46.76	19	18.31	155	13.43	8.60	2.5	2.8	24	0	81	.10	8	.6	1.1	POL
		18	029	5.05	19	18.33	155	13.32	8.48	1.9	2.0	24	0	85	.09	8	.6	1.2	POL
		18	057	11.60	19	29.37	155	41.91	9.79	3.3	2.6	29	0	72	.14	23	.9	.4	MOK
		18	322	28.98	19	18.56	155	13.35	10.21	3.7	3.8	30	0	81	.10	8	.6	.3	POL
		18	335	30.74	19	18.11	155	13.36	8.45	1.7	1.8	25	0	87	.09	8	.5	.7	POL
		18	351	3.67	19	18.56	155	13.68	7.99		1.0	21	0	88	.12	8	.8	1.6	POL
		18	8	1 21.00	19	17.53	155	13.40	8.78		.8	15	0	151	.11	9	1.4	1.3	POL
		18	9	3 42.01	19	25.04	155	38.10	3.90	2.5	2.2	9	0	211	.08	9	1.6	3.2	MOK
		18	1111	29.61	19	48.16	155	48.98	13.19	3.2	2.2	22	0	242	.13	42	3.0	12.7	KON
		18	1221	29.95	19	16.09	155	12.13	9.21	1.9	1.3	21	0	174	.12	12	1.5	1.0	POL
		18	13	0 9.89	18	54.90	156	44.85	45.89	3.3	2.2	24	0	311	.16	114	22.2	11.2	DIS
		18	1415	4.06	19	31.86	155	39.86	8.54	3.0	2.9	19	0	87	.14	11	1.1	2.0	MOK
		18	1430	48.80	19	19.86	155	12.04	8.03	1.7	1.3	19	0	83	.09	6	.7	1.5	UER
		18	15	0 23.24	19	18.25	155	13.43	7.42	1.7	1.2	19	0	82	.10	8	.6	1.1	POL
		18	15	1 8.59	19	18.24	155	13.51	6.31	1.7	1.4	20	0	79	.08	8	.5	1.0	POL
		18	2024	4.94	19	27.33	155	35.77	.76	2.8	2.8	19	0	64	.16	4	.6	.5	MOK
		18	2059	35.89	19	26.17	155	36.71	3.78	3.0	3.0	21	0	186	.10	6	.8	1.1	MOK
		19	010	28.00	19	19.82	155	11.35	7.09	1.7	1.4	26	0	88	.13	6	.8	1.3	UER
		19	1	5 8.30	19	19.84	155	11.52	6.98		1.1	19	0	91	.12	6	.9	1.5	UER
		19	410	12.94	19	16.86	155	13.62	7.67	1.8	1.3	18	0	180	.09	9	.8	1.7	POL
		19	5	7 44.78	19	18.63	155	13.53	9.23	2.2	2.4	24	0	83	.09	7	.7	1.2	POL
		19	6	4 7.01	19	22.48	155	24.05	8.62	1.6	1.2	17	0	95	.08	8	.6	.5	UKF
		19	714	21.44	19	31.35	155	39.77	7.78	2.3	2.2	16	0	82	.15	10	1.1	3.0	MOK
		19	747	4.69	19	20.57	155	12.83	7.81		1.0	20	0	65	.08	6	.6	.9	UER
		19	859	7.84	19	31.46	155	39.62	8.40	2.3	2.1	15	0	83	.18	26	1.5	3.0	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	ES	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	APR	19	1013	46.83	19	31.19	155	39.65	8.55	2.3	1.9	12	0	81	.16	10	1.5	3.5	MOK
		19	1855	42.98	19	19.90	155	11.12	7.62	1.7	1.6	26	0	87	.12	7	.8	1.5	UER
		20	055	48.64	19	17.89	155	13.51	7.50		1.1	17	0	94	.10	9	.9	1.2	POL
		20	138	16.63	19	17.59	155	21.93	7.63	1.8	1.9	19	0	173	.11	9	1.0	.8	SWR
		20	9	8 41.75	19	20.29	155	8.72	7.52		.8	14	0	149	.07	10	.6	1.1	UER
		20	1537	20.81	19	7.55	155	43.46	6.51	3.3	2.9	18	0	303	.18	48	38.8	13.4	HEA
		20	1553	12.88	19	26.05	155	23.52	10.67	1.8	1.8	20	0	64	.09	8	.5	.5	UKF
		20	1724	34.92	19	25.76	155	28.98	7.43	1.9	1.8	23	0	120	.11	12	.9	1.5	UKF
		20	20	9 14.26	19	16.48	155	23.71	7.20	2.3	2.5	28	0	123	.13	9	.8	1.3	SWR
		20	2044	50.52	19	22.87	155	29.05	9.94	2.7	2.7	31	0	49	.12	13	.6	.3	UKF
		21	1240	26.67	19	19.29	155	15.95	9.32	2.5	2.6	23	0	95	.08	6	.5	.8	KOA
		21	1650	55.41	19	15.04	155	35.93	10.06	3.0	.4	25	0	178	.12	23	1.1	.4	HEA
		21	2227	3.25	19	19.84	155	11.44	9.05	1.6	1.2	21	0	92	.10	6	.8	1.5	UER
		22	250	11.44	19	17.06	155	23.54	7.69	1.8	1.8	22	0	170	.13	12	1.2	1.9	SWR
		22	254	9.85	19	18.72	155	12.85	9.13	1.7	1.6	25	0	93	.14	8	.8	.9	POL
		22	513	28.12	19	17.16	155	22.10	5.95	1.6	1.4	19	0	170	.12	10	1.1	2.5	SWR
		22	11	9 52.49	19	17.98	155	22.80	8.54	1.8	1.8	18	0	113	.15	10	1.2	1.9	SWR
		22	1140	22.03	19	19.53	155	13.65	6.30		.6	15	0	75	.07	7	.5	1.3	UER
		22	2040	12.20	19	17.80	155	22.83	7.18	1.8	1.7	25	0	126	.19	10	1.2	2.0	SWR
		23	233	58.19	19	25.19	155	25.34	7.82	2.2	1.9	29	0	63	.12	9	.7	1.2	UKF
		23	932	16.87	19	24.27	155	16.17	1.75		.6	10	0	70	.04	2	.3	.1	SPC
		23	10	5 46.75	19	30.22	155	40.23	10.10	2.7	2.1	17	0	80	.11	10	1.0	.4	MOK
		24	413	59.35	19	17.57	155	21.95	6.54	1.7	1.6	22	0	121	.15	9	1.0	1.9	SWR
		24	5	5 32.94	19	19.75	155	8.50	6.50	1.8	1.8	19	0	79	.12	10	.8	2.3	UER
		24	559	47.38	19	18.25	155	13.54	5.14		1.0	18	0	90	.13	8	.6	1.3	POL
		24	647	42.12	19	19.62	155	11.10	9.14	1.8	1.8	20	0	94	.06	7	.5	.9	UER
		24	649	21.16	19	25.27	155	37.87	11.00	2.6	2.6	14	0	256	.07	27	2.9	.3	MOK
		24	844	44.65	19	25.85	155	29.65	7.87	2.7	2.6	24	0	117	.14	13	1.0	2.1	UKF
		24	1446	55.86	19	15.25	155	23.45	8.51	3.0	3.3	24	0	154	.13	10	1.0	1.2	LSW
		24	1448	23.53	19	16.17	155	23.73	3.80	2.2	2.4	21	0	126	.14	10	.9	2.3	SWR
		24	16	9 37.89	19	18.54	155	13.56	6.56		1.2	14	0	132	.09	8	.9	1.5	POL
		24	1918	47.45	19	19.51	155	13.11	8.11	1.7	1.3	25	0	74	.11	7	.7	1.4	UER
		24	1926	18.14	19	20.52	155	7.83	8.30	2.5	2.5	27	0	85	.10	9	.5	.6	UER
		25	2	4 29.92	19	20.02	155	8.38	6.97	2.2	2.2	28	0	80	.13	10	.8	1.6	UER
		25	243	52.69	19	31.03	155	40.36	9.65	2.5	2.5	17	0	135	.12	26	1.2	.5	MOK
		25	324	21.00	19	31.08	155	39.81	6.84	2.8	2.5	24	0	81	.15	24	1.0	2.3	MOK
		25	527	29.27	19	19.04	155	13.50	7.65	1.7	1.6	13	0	78	.08	7	.7	2.3	UER
		25	6	7 18.81	19	23.22	155	26.69	8.34	2.6	2.6	29	0	54	.14	12	.8	1.1	UKF
		25	628	47.68	19	27.27	155	36.38	1.87	2.7	2.5	19	0	138	.15	16	.9	.5	MOK
		25	711	21.37	19	30.98	155	39.80	7.75	3.1	2.9	24	0	135	.13	26	1.1	1.5	MOK
		25	8	0 4.39	19	18.97	155	15.45	7.36	.8	.6	13	0	116	.05	6	.5	.6	KOA
		25	925	10.23	19	12.77	155	23.72	8.53		2.1	17	0	183	.07	14	.9	2.6	LSW
		25	1240	50.25	19	13.68	155	24.26	1.00	2.5	2.8	18	0	146	.15	13	1.2	99.0	LSW
		25	2119	37.74	19	16.96	155	16.13	8.34		1.8	15	0	176	.05	6	.6	1.0	HLP
		25	22	6 16.77	19	28.17	155	37.37	3.05		2.4	11	0	231	.12	20	2.7	1.6	MOK
		26	1	8 40.47	19	18.57	155	13.14	7.78		.7	14	0	87	.07	8	.6	1.9	POL
		26	4	5 35.08	19	27.71	155	36.06	1.15	3.3	3.3	16	0	88	.14	16	.8	.6	MOK
		26	552	33.11	19	31.05	155	40.36	1.00			9	0	238	.37	27	5.6	64.7	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	APR	26	20 2	53.21	19	19.99	155	10.68	9.41	1.8	2.0	20	0	86	.08	7	.7	.9	UER
		26	2110	24.73	19	19.60	155	9.14	8.22	2.1	2.0	19	0	85	.08	9	.5	.7	UER
		26	2136	16.88	19	18.62	155	15.36	6.54		1.6	19	0	126	.10	7	.7	1.8	KOA
		27	0 9	43.91	19	18.83	155	13.40	9.17	2.3	2.6	26	0	76	.10	8	.6	1.2	POL
		27	16 3	40.44	19	15.17	155	18.46	7.85		.9	16	0	200	.07	9	.9	1.6	HLP
		27	17 1	45.61	19	44.31	155	19.63	25.91	2.5	1.4	27	0	103	.10	28	1.0	3.6	KKU
		27	1730	54.98	19	19.24	155	14.22	7.89		.9	18	0	91	.10	7	.7	1.0	UER
		27	1850	31.97	19	19.91	155	12.00	7.49	1.7	1.6	29	0	82	.12	6	.7	1.0	UER
		27	2041	33.00	20	3.83	155	34.45	14.17	3.2	1.9	28	2	197	.15	34	1.3	25.8	KOH
		27	2126	2.09	19	20.10	155	10.99	8.89	1.7	1.8	26	0	84	.11	7	.7	1.3	UER
		27	22 4	53.75	19	26.52	155	36.38	3.29	3.0	3.0	22	0	131	.12	17	.7	1.2	MOK
		28	1 3	8.89	19	16.89	155	23.96	5.10	1.2	1.7	22	0	117	.13	10	.7	1.0	SWR
		28	455	6.81	19	14.75	155	19.21	8.16		1.3	23	0	187	.08	12	1.1	.9	HLP
		28	539	22.28	19	26.47	155	36.37	3.53	2.8	2.8	23	0	85	.14	17	.7	1.2	MOK
		28	16 4	16.87	19	18.02	155	45.56	8.88	2.6	1.9	24	0	135	.15	24	1.2	.8	KON
		28	1616	25.33	19	20.25	155	9.17	8.07	1.8	1.6	20	0	73	.09	8	.7	.9	UER
		28	1628	26.13	19	29.83	155	40.05	5.29	2.3	1.6	18	0	131	.21	26	1.8	2.6	MOK
		28	2036	2.71	19	19.54	155	11.62	8.00	1.7	2.0	24	0	93	.14	6	.9	2.0	UER
		28	2326	10.47	19	21.33	155	24.98	8.15	1.2	1.0	20	0	73	.11	10	.7	1.6	SWR
		29	114	21.05	19	26.78	155	36.05	3.24	3.2	3.3	25	0	56	.16	17	.8	1.3	MOK
		29	148	7.45	19	24.56	155	16.65	15.05	3.4	3.7	33	0	64	.10	2	.6	.9	DEP
		29	2 2	35.54	19	24.15	155	17.34	14.46	2.5	2.5	32	0	34	.09	2	.5	.7	DEP
		29	3 5	21.45	19	24.29	155	16.99	12.49		.8	24	0	46	.08	2	.6	.2	LPC
		29	645	19.61	19	17.50	155	12.94	8.52		1.2	15	0	134	.12	9	1.2	1.1	POL
		29	13 1	34.04	19	18.57	155	13.75	9.11		1.5	19	0	92	.10	8	.7	1.1	POL
		29	1853	35.00	19	25.32	155	23.71	8.51	1.5	1.1	19	0	114	.11	8	.9	1.5	UKF
		29	1923	9.97	19	23.85	155	28.98	9.10	3.3	3.3	31	0	39	.13	13	.7	1.1	UKF
		29	2127	13.63	19	24.08	155	28.92	7.98	2.0	1.9	23	0	95	.12	14	.8	1.4	UKF
		30	050	22.70	19	19.23	155	16.02	6.83	1.8	1.1	24	0	97	.11	6	.6	1.1	KOA
		30	151	17.78	19	18.09	155	16.82	8.74	2.0	2.3	27	0	122	.13	6	.8	1.0	KOA
		30	152	38.18	19	18.33	155	16.93	8.21	2.0	2.3	29	0	117	.15	7	.8	1.0	KOA
		30	535	12.59	19	21.21	155	19.10	1.49		1.3	15	0	84	.05	6	.3	99.0	SWR
		30	619	31.91	19	19.32	155	15.63	7.67	1.6	1.7	24	0	106	.12	6	.7	1.2	KOA
		30	642	28.95	19	28.56	155	35.14	2.64	3.5	3.5	24	0	132	.16	17	1.1	2.0	MOK
		30	828	44.10	19	19.33	155	13.16	9.91		1.0	13	0	186	.04	8	.5	1.7	UER
		30	1121	1.99	19	32.99	155	36.73	10.07	2.9	2.3	27	0	139	.14	24	1.3	.4	MOK
		30	1311	23.61	19	27.91	155	35.50	.57	2.7	2.5	22	0	99	.14	17	.7	.7	MOK
		30	1410	28.34	19	23.45	155	26.46	8.81	1.8	1.7	24	0	82	.10	12	.7	1.0	UKF
		30	1633	17.37	19	20.84	155	8.00	7.48	2.4	3.0	27	0	78	.14	9	.9	1.0	UER
		30	1658	25.04	19	23.20	155	26.86	9.50	2.6	2.7	29	0	53	.12	13	.7	.9	UKF
		30	1753	39.25	19	25.15	155	37.25	3.41	2.9	2.8	18	0	92	.17	8	.9	2.3	MOK
	MAY	1	034	15.09	19	22.39	155	25.08	9.04	1.7	1.4	21	0	100	.08	10	.7	1.0	UKF
		1	1216	8.14	19	21.41	155	14.80	29.73	2.1	1.4	28	0	62	.08	5	.9	1.4	DEP
		1	1623	46.32	19	25.69	155	37.05	1.84		2.1	16	0	196	.11	7	1.2	99.0	MOK
		1	1727	41.59	19	18.48	155	16.17	6.03	2.1	2.2	28	0	111	.15	5	.8	1.6	KOA
		1	1922	16.42	19	15.64	155	22.09	8.80	2.4	2.7	29	0	141	.13	9	.8	.9	LSW
		1	2118	4.06	18	2.67	155	43.69	59.22	3.0	4.0	29	0	327	.21	136	55.4	23.5	DIS
		2	059	55.87	19	19.83	155	51.16	4.55	2.6	1.8	19	0	224	.18	32	3.3	2.7	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAY	2	244	15.90	19	18.77	155	15.39	6.93		.7	21	0	121	.12	6	.8	1.3	KOA
		2	256	31.25	19	18.70	155	15.29	6.88	1.6	1.0	23	0	122	.11	6	.7	1.1	KOA
		2	1315	4.07	19	22.24	155	2.55	6.02	2.1	1.6	19	0	186	.17	15	1.7	2.3	MER
		2	1531	45.74	19	25.88	155	17.15	16.09	1.7	1.3	27	0	67	.10	4	.6	1.1	DEP
		2	2219	31.83	19	21.79	155	24.94	11.33	1.8	1.5	27	0	62	.12	10	.7	.4	SWR
		2	2315	2.80	19	19.03	155	13.74	9.96	1.9	1.9	25	0	84	.15	7	.9	.7	UER
		3	534	18.27	19	25.25	155	24.21	10.99	2.3	2.0	24	0	62	.06	8	.4	.2	UKF
		3	15 7	40.17	19	17.79	155	12.96	8.19	1.9	2.1	19	0	117	.09	9	.8	1.5	POL
		3	1744	30.41	19	28.73	155	27.68	8.40	2.1	1.7	25	0	87	.10	12	.6	1.3	UKF
		4	056	49.64	19	18.19	155	13.14	8.03	1.9	2.1	23	0	95	.12	8	.9	1.7	POL
		4	144	27.09	19	20.10	155	13.41	6.87		.6	19	0	66	.08	6	.5	1.4	UER
		4	242	44.97	19	17.33	155	12.97	8.81	1.8	1.4	20	0	147	.13	9	.9	1.3	POL
		4	324	42.40	19	17.63	155	13.23	9.41	2.2	2.4	27	0	108	.13	9	.9	1.4	POL
		4	10 8	41.73	19	20.84	155	7.39	6.58	1.9	1.4	20	0	86	.13	8	.9	1.9	UER
		4	18 9	48.44	19	25.54	155	23.78	8.34	1.6	1.3	21	0	76	.07	8	.5	.8	UKF
		4	1824	.69	19	19.22	155	15.39	7.95		1.0	21	0	107	.07	6	.5	.8	KOA
		4	2044	59.75	19	31.77	155	41.66	9.48	2.5	1.6	23	0	83	.09	13	.6	.5	MOK
		4	2115	42.51	19	20.15	155	12.65	7.67		.8	21	0	72	.06	6	.4	.7	UER
		4	2136	9.04	19	19.72	155	11.28	7.73	1.7	1.7	28	0	91	.13	6	.8	1.3	UER
		4	2217	44.42	19	20.19	155	13.57	7.63	1.0	.6	19	0	116	.08	6	.6	.8	UER
		4	2249	21.91	19	20.64	155	13.82	7.55	1.2	1.2	25	0	65	.10	6	.6	.9	UER
		5	1 6	54.20	19	20.01	155	12.19	9.24		.9	20	0	79	.07	6	.5	1.2	UER
		5	249	58.55	19	26.43	155	37.08	3.54	2.8	2.4	22	0	195	.11	18	.7	1.0	MOK
		5	533	49.32	19	31.89	155	41.67	9.67	2.5	1.5	22	0	84	.14	23	1.2	.4	MOK
		5	634	6.91	19	24.07	155	16.52	5.97	1.2	1.6	11	0	87	.08	2	.9	1.7	SPC
		5	7 7	21.07	19	25.44	155	36.36	3.34	2.8	2.8	20	0	95	.13	16	.8	1.6	MOK
		5	8 8	35.48	19	20.65	155	17.22	30.66		1.2	26	0	62	.07	5	.8	1.2	DEP
		5	8 9	31.94	19	20.51	155	17.12	30.54		1.0	15	0	148	.05	5	1.7	3.6	DEP
		5	9 3	42.79	19	25.80	155	36.96	3.96	2.7	2.5	17	0	189	.11	17	1.2	1.6	MOK
		5	1133	40.51	19	27.63	155	24.28	7.56	2.5	2.7	27	0	89	.11	11	.6	.8	UKF
		5	1641	6.94	19	17.08	155	23.19	5.93	1.8	2.0	25	0	120	.13	8	.8	2.3	SWR
		5	1727	47.02	19	18.82	155	15.09	8.46	1.7	1.7	26	0	93	.10	6	.6	.8	KOA
		5	1953	25.24	19	26.24	155	36.81	3.96	2.7	2.6	26	0	140	.11	6	.6	.9	MOK
		5	2128	49.05	19	19.25	155	13.18	6.25	1.6	1.6	25	0	76	.13	8	.7	1.8	UER
		5	2139	30.59	19	26.01	155	36.42	3.86	3.2	2.8	25	0	85	.12	6	.6	1.1	MOK
		5	22 5	21.60	19	19.15	155	13.21	6.90	1.7	1.6	24	0	77	.11	8	.7	1.4	UER
		5	2233	9.77	19	27.83	155	35.81	.70	2.8	2.9	23	0	121	.17	5	.8	.6	MOK
		5	2255	18.27	19	25.99	155	36.06	2.76	3.0	3.1	25	0	69	.17	6	.9	2.1	MOK
		6	159	29.12	19	24.92	155	25.85	8.61	1.3	1.2	23	0	61	.10	10	.6	1.1	UKF
		6	227	54.79	19	20.60	155	7.37	6.29	1.0	1.0	21	0	90	.19	8	1.4	2.7	UER
		6	524	59.61	19	18.28	155	12.56	7.83	1.6	1.1	23	0	112	.10	8	.7	1.1	POL
		6	910	31.42	19	24.86	155	29.49	7.91	1.9	1.7	22	0	104	.11	14	.7	2.1	UKF
		6	12 7	16.38	19	20.68	155	6.56	6.60		1.1	18	0	99	.11	7	.9	1.9	UER
		6	18 5	12.81	19	17.16	155	23.05	6.55	1.8	2.1	30	0	120	.18	8	1.0	1.8	SWR
		7	010	4.34	19	28.64	155	35.23	2.58	2.9	2.8	19	0	79	.14	25	.8	1.6	MOK
		7	5 3	12.60	19	17.82	155	14.55	8.34		1.0	21	0	134	.10	7	.6	.8	POL
		7	942	51.46	19	20.06	155	8.12	6.91	1.8	2.0	21	0	85	.13	9	1.0	2.4	UER
		7	1130	39.75	19	24.80	155	16.78	.49	1.1	1.7	10	0	107	.20	2	1.5	.4	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	RS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAY	7	1631	57.46	19	20.31	155	13.69	7.43	1.6	1.5	24	0	67	.13	6	.8	1.6	UER
		7	1752	36.27	19	48.80	154	42.11	10.62	3.7	2.9	31	0	254	.20	105	7.1	99.0	DIS
		7	2130	6.81	19	28.44	155	35.50	.89	3.0	3.5	25	0	61	.13	3	.5	.5	MOK
		7	2224	5.58	19	16.09	155	21.42	6.40		1.5	16	0	215	.05	10	.9	1.7	SWR
		7	2321	18.21	19	20.08	155	16.37	32.56		1.0	28	0	111	.07	6	.8	1.3	DEP
		8	028	28.36	19	20.47	155	8.30	8.87	2.0	2.4	23	0	78	.17	9	1.2	1.7	UER
		8	7	7	19.26	19	20.47	155	7.54	9.17	2.4	2.9	21	0	129	.12	11	1.0	1.1	UER
		8	947	6.79	19	25.03	155	16.33	13.26	2.6	2.6	28	0	47	.09	2	.6	.7	DEP
		8	16	9	43.10	19	17.70	155	17.44	7.40		1.1	16	0	161	.06	7	.6	.8	KOA
		8	1627		6.51	19	19.06	155	15.85	8.99	2.5	3.1	27	0	96	.11	6	.6	.9	KOA
		8	20	2	31.16	19	24.61	155	26.14	8.36		1.0	22	0	60	.12	11	.7	2.0	UKF
		8	2017		5.30	20	17.88	155	6.06	64.01		.3	9	0	353	.26	99	65.7	84.4	DIS
		8	2039		47.93	19	26.03	155	28.75	9.50		1.1	21	0	68	.16	15	.9	1.7	UKF
		8	2159		14.69	19	24.23	155	16.02	1.69	.7	.6	9	0	102	.04	2	.4	.2	SPC
		8	2313		17.40	19	24.98	155	27.16	9.42	1.8	1.8	28	0	62	.14	11	.8	1.2	UKF
		8	2330		.19	19	25.93	155	24.92	7.19	2.0	1.9	24	0	66	.15	8	.9	1.6	UKF
		9	159		56.79	19	19.88	155	10.08	7.04	1.8	1.9	26	0	87	.14	7	.9	1.8	UER
		9	2	3	16.58	19	24.81	155	26.51	7.45	1.7	1.9	21	0	107	.13	11	.9	2.5	UKF
		9	917		39.41	19	27.79	155	37.45	.54	2.5	2.2	11	0	225	.11	20	1.6	3.9	MOK
		9	1318		10.40	19	29.13	155	34.01	11.82	2.3	1.5	17	0	138	.07	17	.8	.2	MOK
		9	1327		27.56	19	20.30	155	8.66	8.09	2.7	3.0	26	0	73	.12	9	.7	.8	UER
		9	1551		2.36	19	23.74	155	25.45	8.48	1.7	1.2	14	0	85	.09	11	.8	2.0	UKF
		9	1834		26.84	19	19.75	155	8.45	5.84	1.8	1.8	20	0	112	.15	10	1.0	1.9	UER
		9	2035		45.75	19	28.01	155	35.22	.00	2.7	2.8	19	0	60	.17	17	.7	.8	MOK
		9	2114		25.08	19	20.80	155	11.48	7.14	1.7	2.1	24	0	71	.13	8	.8	1.3	UER
		9	2242		56.60	19	20.85	155	11.37	7.13	1.7	1.7	24	0	70	.15	8	.9	1.4	UER
		9	23	2	35.70	19	17.16	155	23.72	5.77	1.8	1.7	14	0	164	.15	9	1.4	3.2	SWR
		10	231		19.97	19	19.03	155	17.80	30.76	2.2	1.7	25	0	100	.09	7	.9	1.6	DEP
		10	349		43.73	19	19.06	155	13.80	7.21	1.6	1.6	17	0	85	.07	7	.5	.8	UER
		10	5	5	53.89	19	20.43	155	11.88	8.24	2.1	2.5	22	0	74	.10	7	.7	1.5	UER
		10	621		16.37	19	18.78	155	15.39	7.29	1.6	1.9	20	0	121	.07	6	.5	.7	KOA
		10	7	3	58.56	19	31.50	155	39.01	8.52	2.3	1.8	7	0	144	.09	26	1.7	3.6	MOK
		10	932		47.02	19	25.86	155	36.26	1.86	2.7	2.7	10	0	166	.14	24	1.9	.0	MOK
		10	1350		54.13	19	17.81	155	15.21	9.75	1.7	2.0	22	0	120	.09	6	.6	.5	KOA
		10	1921		17.04	19	19.32	155	13.88	6.84	1.6	1.7	22	0	83	.10	6	.6	1.0	UER
		10	1932		51.91	19	20.26	155	7.58	9.49	4.0	4.1	29	0	92	.10	8	.7	.7	UER
		10	1940		44.72	19	20.09	155	7.90	9.58	2.7	3.2	23	0	89	.09	9	.7	.9	UER
		10	1947		45.24	19	20.38	155	8.12	8.16	1.9	1.8	21	0	81	.11	9	.8	1.4	UER
		10	2133		9.86	19	17.45	155	22.30	7.03	1.8	1.7	21	0	129	.17	8	1.3	1.8	SWR
		11	4	2	2.78	19	32.10	155	39.81	7.61	3.0	2.8	26	0	55	.15	25	.8	1.5	MOK
		11	418		29.48	19	18.95	155	12.95	7.73	1.7	1.8	25	0	86	.10	8	.6	1.0	POL
		11	5	7	13.18	19	29.96	155	40.87	7.33	2.4	1.8	11	0	128	.11	25	1.5	2.3	MOK
		11	626		14.04	19	18.69	155	13.17	7.06		.4	16	0	85	.06	8	.5	.8	POL
		11	714		47.39	19	59.42	154	26.48	3.61		1.4	17	0	294	.15	78	11.1	99.0	DIS
		11	8	3	34.76	19	16.87	155	22.05	7.37	1.7	1.1	16	0	191	.12	8	1.4	1.1	SWR
		11	916		10.03	19	12.72	155	40.53	8.57	2.7	2.1	23	0	206	.15	25	2.1	1.3	HEA
		11	1247		6.77	19	20.22	155	12.91	7.56		.7	21	0	68	.10	6	.6	1.0	UER
		11	1427		4.22	19	17.13	155	21.65	7.25	1.8	2.0	22	0	127	.12	9	.9	1.1	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	RS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAY	11	1628	8.04	19	17.38	155	12.51	8.61		1.3	18	0	220	.06	10	1.2	.7	POL
		11	1944	38.15	19	29.45	155	37.85	2.53	3.4	3.3	25	0	206	.15	22	1.5	1.7	MOK
		12	2	8	3.53	19	29.25	155	38.91	6.82	2.1	1.9	19	0	150	.15	25	1.5	2.4	MOK
		12	749		20.51	19	29.60	155	38.28	6.89	2.3	2.1	19	0	134	.10	23	1.0	1.6	MOK
		12	941		31.51	19	18.55	155	12.78	7.38	2.1	2.2	22	0	121	.08	8	.6	1.1	POL
		12	10	3	22.81	19	24.80	155	29.90	8.66	1.9	1.8	22	0	77	.13	15	1.0	1.6	UKF
		12	1359		34.51	19	26.24	155	36.29	3.55	2.7	2.8	18	0	124	.15	6	1.0	1.9	MOK
		12	1638		24.75	19	19.81	155	11.75	6.79		1.2	20	0	86	.11	6	.6	2.2	UER
		12	1826		23.72	19	14.56	155	21.71	7.22	1.9	1.7	22	0	155	.11	11	.9	1.8	LSK
		13	751		7.84	19	19.52	155	15.93	7.85	2.1	2.6	28	0	91	.13	6	.7	1.2	KOA
		13	757		47.67	19	20.68	155	7.35	7.56		1.1	19	0	89	.15	8	1.4	1.4	UER
		13	946		10.15	19	18.58	155	15.17	7.44		1.5	20	0	125	.09	6	.6	1.3	KOA
		13	1034		6.23	19	18.59	155	15.26	7.33		1.3	16	0	126	.07	6	.5	1.3	KOA
		13	1343		43.17	19	20.28	155	8.29	6.33		1.3	20	0	79	.13	9	1.1	2.4	UER
		13	1733		11.44	19	18.91	155	15.26	6.41		1.1	22	0	115	.11	6	.7	1.3	KOA
		13	2040		41.78	19	20.65	155	13.00	9.33	1.6	2.2	26	0	62	.10	6	.6	1.1	UER
		13	2323		36.61	19	16.86	155	23.59	6.77	1.8	2.4	31	0	120	.16	9	1.0	1.6	SWR
		14	0	0	23.88	19	19.97	155	10.11	9.01	1.8	2.0	23	0	85	.13	7	1.0	1.1	UER
		14	316		51.81	19	53.52	155	35.89	20.98	3.0	2.2	32	0	126	.11	32	.9	3.2	KKU
		14	414		47.33	19	19.29	155	15.57	5.68		.6	18	0	107	.09	6	.6	1.6	KOA
		14	428		3.93	19	17.53	155	14.23	8.28		1.2	16	0	158	.09	8	.8	1.6	POL
		14	433		25.03	19	20.11	155	9.29	6.70	1.8	1.9	27	0	77	.15	8	.9	1.6	UER
		14	757		38.58	19	30.94	155	39.08	8.84	2.5	2.5	21	0	94	.15	9	1.1	1.5	MOK
		14	1156		5.43	19	26.64	155	27.29	8.19	1.8	2.0	22	0	122	.12	12	.9	1.8	UKF
		14	1653		50.87	19	25.45	155	36.07	3.26	3.0	3.1	26	0	69	.15	16	.8	1.5	MOK
		14	2330		36.38	19	28.27	155	34.03	.54	2.2	2.3	21	0	116	.19	25	1.6	38.8	MOK
		14	2343		52.61	19	18.78	155	15.04	7.93		.5	21	0	117	.07	6	.5	.6	KOA
		15	448		37.67	19	18.00	155	13.23	6.86	1.8	1.8	21	0	96	.09	9	.7	1.5	POL
		15	733		26.17	19	17.95	155	13.65	6.97		1.1	13	0	101	.10	9	1.1	2.9	POL
		15	916		2.37	19	21.78	155	18.52	29.37	2.4	2.4	29	0	34	.11	4	1.1	1.8	DEP
		15	11	8	38.71	19	20.27	155	11.50	8.77		1.3	20	0	90	.09	7	.7	1.5	UER
		15	1131		37.40	19	26.00	155	35.89	.92	3.1	3.0	21	0	74	.16	16	.9	1.8	MOK
		15	1831		4.75	19	19.27	155	12.14	7.09		1.9	22	0	142	.10	8	.8	1.2	UER
		15	19	7	37.89	19	31.02	155	39.54	7.28	2.7	2.5	21	0	81	.14	26	1.0	2.1	MOK
		15	1916		34.80	19	19.34	155	13.38	7.96		.9	18	0	204	.08	7	1.1	.8	UER
		15	1929		41.41	19	20.24	155	8.07	9.42	2.5	3.0	25	0	84	.10	9	.7	.9	UER
		16	228		15.14	19	20.21	155	12.01	7.74		.8	21	0	124	.10	8	.8	1.3	UER
		16	244		11.74	19	17.94	155	17.23	8.81	1.7	1.0	22	0	201	.09	9	1.1	.7	KOA
		16	430		43.39	19	25.38	155	17.07	7.23	1.5		14	0	94	.09	2	.9	1.4	LPC
		16	830		37.77	19	24.65	155	25.69	9.24		1.5	20	0	88	.07	10	.5	1.3	UKF
		16	949		26.02	19	24.57	155	16.76	14.08	1.9	2.0	24	0	74	.06	2	.5	.6	DEP
		16	14	5	29.12	19	27.35	155	29.29	12.44		1.4	12	0	140	.11	12	1.6	.5	UKF
		17	416		24.37	19	18.87	155	11.44	8.66	1.8	2.0	12	0	194	.05	8	.7	1.4	POL
		17	715		30.93	19	23.15	155	24.56	11.99	1.7	1.7	18	0	103	.11	11	1.1	.4	UKF
		17	939		16.50	19	28.15	155	50.71	10.55		1.4	9	0	160	.20	25	5.7	1.2	KON
		18	210		10.05	19	24.37	155	17.42	14.34	1.6	1.1	17	0	81	.05	2	.6	.8	DEP
		18	243		47.09	19	30.86	155	39.54	10.03	2.3	2.0	15	0	138	.12	26	1.2	.5	MOK
		18	6	0	55.63	19	20.47	155	8.12	8.98	2.7	2.9	24	0	105	.10	9	.7	.7	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAY	18	610	11.81	19	19.88	155	8.36	7.78		1.2	18	0	81	.09	10	.7	.8	UER
		18	1325	34.28	19	20.33	155	13.41	7.77	1.6	1.8	22	0	63	.13	6	.9	1.5	UER
		18	1810	11.88	19	26.78	155	36.36	3.11	2.8	2.6	21	0	133	.13	17	.7	1.2	MOK
		18	1825	46.04	19	25.89	155	36.31	3.30	3.3	3.2	25	0	80	.13	16	.7	1.3	MOK
		18	20	2 34.39	19	17.70	155	21.38	7.84		1.9	19	0	164	.11	8	1.0	1.2	SWR
		18	2216	42.69	19	23.44	155	1.46	8.00	2.1	2.2	23	0	147	.14	15	1.1	2.0	MER
		18	2259	44.77	19	17.33	155	21.98	7.14		1.3	21	0	123	.17	8	1.2	1.6	SWR
		19	056	55.37	19	28.93	155	36.35	3.46	2.8	2.8	17	0	202	.08	26	.9	.7	MOK
		19	554	51.43	19	16.54	155	23.12	7.11	1.8	2.3	26	0	126	.14	8	.9	1.4	SWR
		19	613	10.36	19	25.67	155	37.08	4.30	3.5	3.8	26	0	140	.10	18	.5	.9	MOK
		19	748	39.68	19	30.82	155	39.25	8.74	2.7	2.7	18	0	139	.13	26	1.2	1.8	MOK
		19	842	27.29	19	26.94	155	35.80	.66	3.0	3.1	23	0	120	.18	22	1.2	.8	MOK
		19	1549	16.53	19	18.61	155	13.28	9.33	1.9	2.4	26	0	82	.11	8	.7	1.2	POL
		19	1636	37.31	19	19.17	155	15.48	6.89	1.6	2.0	25	0	92	.11	6	.6	1.2	KOA
		19	1745	32.09	19	17.77	155	13.37	8.45	1.8	1.6	26	0	92	.12	9	.8	1.0	POL
		19	1837	13.06	19	18.44	155	13.40	8.25	1.7	1.3	20	0	81	.09	8	.7	1.2	POL
		20	450	52.07	19	19.27	155	14.14	7.15		1.3	18	0	89	.11	6	.7	1.4	UER
		20	516	10.59	19	21.06	155	16.97	32.98		1.3	30	0	62	.07	4	.7	1.3	DEP
		20	17	2 4.05	19	21.55	155	2.11	9.54	2.7	3.1	21	0	157	.12	14	1.2	.6	MER
		20	2027	20.78	19	18.05	155	14.23	7.58		1.2	18	0	124	.11	8	.8	1.6	POL
		21	014	8.58	19	18.41	155	15.29	6.98	1.8	1.4	23	0	131	.12	6	.9	1.4	KOA
		21	15	9 47.49	19	17.90	155	21.64	5.81	1.7	2.0	24	0	119	.14	8	.8	2.2	SWR
		21	2053	43.04	19	31.08	155	15.27	24.03	1.4	1.2	28	0	62	.10	11	.8	2.0	NER
		21	21	5 52.47	19	18.24	155	13.16	7.68		1.1	20	0	93	.09	8	.6	1.1	POL
		21	2232	58.18	20	18.72	155	36.78	23.10	4.7	4.3	16	4	191	.10	61	1.5	4.3	DIS
		22	446	5.44	19	22.69	155	27.83	8.40	3.2	3.3	31	0	37	.15	12	.8	1.3	UKF
		22	934	17.35	19	20.91	155	17.52	31.79		1.9	26	0	49	.09	5	.9	1.8	DEP
		22	1336	.03	19	20.19	155	8.73	6.95	1.8	1.9	19	0	72	.12	9	.9	2.1	UER
		22	1729	21.04	19	24.36	155	16.16	2.34		.6	9	0	77	.09	2	.7	2.3	SPC
		23	413	13.51	19	18.34	155	23.51	8.58	1.8	2.0	27	0	121	.15	9	.9	1.1	SWR
		23	522	.85	19	31.51	155	39.07	9.34	2.5	2.1	24	0	83	.15	26	.9	1.5	MOK
		23	643	47.15	19	20.08	155	11.97	8.33	1.7	2.0	22	0	79	.12	6	.9	1.6	UER
		23	742	23.58	19	19.17	155	12.94	8.17		1.0	18	0	82	.13	8	1.0	2.2	UER
		23	954	31.16	18	55.41	155	11.45	46.62	2.7	1.0	23	0	297	.08	41	7.4	8.0	PPL
		23	1055	16.29	19	24.50	155	17.46	13.73	1.6	.8	17	0	94	.04	2	.4	.5	DEP
		23	1128	4.64	19	19.08	155	15.46	6.81		1.4	18	0	112	.12	6	.8	1.8	KOA
		23	1913	59.10	19	24.11	155	15.95	1.53	.9	1.4	13	0	61	.10	2	.5	.3	SPC
		24	1152	5.03	19	24.15	155	15.84	1.30	.7	1.4	9	0	64	.08	2	.4	.4	SPC
		24	1533	9.03	19	20.64	155	13.10	8.22		1.5	23	0	62	.11	6	.7	1.1	UER
		24	1956	51.69	19	16.04	155	24.02	6.46	2.2	2.7	24	0	125	.17	10	1.1	2.3	SWR
		24	2123	39.94	19	16.01	155	23.97	6.26	1.9	2.0	24	0	125	.15	14	1.1	2.1	SWR
		24	2158	36.68	19	18.87	155	15.16	9.81	2.3	2.6	28	0	93	.11	6	.6	.5	KOA
		24	22	4 45.75	19	24.88	155	25.06	10.82	3.5	3.6	31	0	41	.16	9	.9	.4	UKF
		25	518	37.31	19	39.83	156	.77	28.16	3.0	2.1	23	0	224	.12	46	1.6	2.5	KON
		25	6	7 35.66	19	20.00	155	11.82	8.63		1.5	22	0	82	.11	6	.7	1.5	UER
		25	850	44.93	19	20.84	155	12.13	9.09	1.7	1.4	24	0	67	.11	7	.7	1.1	UER
		25	1629	12.98	19	28.78	155	34.69	.70	2.7	2.9	25	0	78	.16	20	.8	3.7	MOK
		25	23	5 10.21	19	19.24	155	11.71	9.43		1.1	19	0	99	.08	7	.6	1.6	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAY	26	315	37.37	19	23.25	155	26.98	5.70	1.9	1.8	23	0	54	.13	13	.8	2.1	UKF
		26	857	18.61	19	28.77	155	33.91	.00	1.2	2.4	16	0	135	.18	24	1.3	46.2	MOK
		26	1211	38.82	19	21.99	155	25.54	7.89	1.9	2.0	27	0	60	.15	11	.8	1.8	HEA
		26	1422	54.31	19	20.79	155	13.45	6.83		1.5	21	0	60	.09	7	.6	1.3	UER
		26	16	1 5.27	19	19.71	155	9.06	5.52	2.3	2.9	26	0	81	.13	9	.7	1.6	UER
		26	1624	12.55	19	25.62	155	27.99	10.32	1.9	1.6	15	0	233	.07	13	4.0	10.1	UKF
		26	18	9 15.67	19	27.39	155	34.71	.00	2.7	2.7	15	0	136	.15	25	1.3	75.2	MOK
		26	1826	33.79	19	5.96	155	23.95	36.84		1.6	17	0	190	.15	27	3.5	8.1	LSW
		26	1850	23.27	19	19.89	155	10.16	7.29	1.1	1.1	19	0	110	.12	7	.9	1.5	UER
		26	1851	14.32	19	26.78	155	36.07	1.09	2.7	2.8	20	0	100	.15	22	1.1	.9	MOK
		26	1911	10.79	19	31.62	155	5.41	41.08		.6	18	0	85	.10	20	1.6	5.4	MIL
		26	23	9 58.66	19	20.38	155	8.21	7.13	1.8	2.2	27	0	80	.16	9	1.0	2.1	UER
		27	145	28.58	19	16.50	155	23.57	.94	1.2	1.8	23	0	123	.17	9	1.1	35.9	SWR
		27	3	5 52.41	19	19.32	155	11.47	8.18		1.2	21	0	99	.07	7	.5	.8	UER
		27	335	30.37	19	20.50	155	7.74	6.90		1.1	24	0	86	.13	9	.9	1.7	UER
		27	557	31.33	19	26.38	155	50.86	10.26	2.6	1.8	20	0	119	.13	26	1.1	.5	KON
		27	731	39.18	19	13.82	155	19.47	42.90		1.3	18	0	202	.09	12	2.0	3.6	HLP
		27	11	2 54.63	19	28.07	155	34.89	.06	3.1	3.1	19	0	122	.16	21	.7	.9	MOK
		27	1145	2.13	19	22.88	155	24.25	8.19		1.0	18	0	104	.06	8	.6	.8	UKF
		27	13	1 26.92	19	20.22	155	15.78	31.20		.6	15	0	81	.08	6	1.5	3.6	DEP
		27	1537	59.89	19	14.17	155	22.33	7.35	2.2	2.4	25	0	151	.18	11	1.3	2.1	LSW
		27	1615	34.70	19	28.97	155	34.64	.29	2.9	3.0	17	0	136	.17	20	1.0	1.0	MOK
		27	18	1 7.36	19	20.67	155	13.63	8.76		1.2	21	0	63	.10	7	.7	.9	UER
		27	2112	11.19	19	20.93	155	8.69	7.94	1.8	1.7	26	0	68	.11	8	.7	1.0	UER
		27	2156	4.19	19	18.33	155	19.17	11.24	1.5	1.0	24	0	97	.11	8	.8	.4	SWR
		27	2226	41.29	19	20.32	155	11.19	7.19		.6	24	0	79	.10	7	.6	1.0	UER
		27	2232	6.95	19	20.46	155	11.05	7.39		1.5	27	0	77	.11	8	.6	1.0	UER
		28	137	7.90	19	18.46	155	14.44	7.27	1.5	1.1	25	0	88	.10	7	.6	1.0	POL
		28	137	46.96	19	18.34	155	14.41	6.95		1.0	18	0	89	.08	7	.5	1.4	POL
		28	2 1	55.86	18	.72	153	31.80	47.57	4.6	4.2	34	0	339	.12220		78.6	27.0	DIS
		28	425	14.67	19	27.95	155	35.66	.79	2.5	2.6	21	0	94	.13	17	.6	3.6	MOK
		28	521	35.40	19	19.97	155	8.17	7.46	1.9	1.8	24	0	85	.13	9	.8	1.0	UER
		28	533	50.31	19	25.02	155	25.09	11.11		.8	19	0	85	.05	9	.4	.4	UKF
		28	1137	5.99	19	16.24	155	24.28	4.49	1.7	2.0	19	0	135	.13	10	1.0	1.7	SWR
		28	13	7 3.62	19	22.92	155	13.14	54.20	2.4	2.4	30	0	43	.09	5	.9	1.5	DEP
		28	1356	37.11	19	28.07	155	35.75	.72	2.6	2.8	19	0	89	.14	2	.6	.3	MOK
		28	14	2 56.57	19	25.69	155	35.84	.25	2.5	2.5	17	0	95	.17	7	1.0	6.0	MOK
		28	2042	54.49	19	22.53	155	13.11	33.18	2.2	1.9	33	0	47	.09	5	.8	1.5	DEP
		28	21	1 12.55	19	21.41	155	4.96	3.52	1.6	1.5	27	0	87	.18	9	1.1	1.9	MER
		28	2216	34.40	19	30.65	155	55.80	8.48	2.7	1.8	23	0	249	.18	35	2.5	.8	KON
		28	2319	25.21	18	58.84	155	10.24	40.23			24	1	291	.09	37	3.2	4.0	PPL
		29	145	46.99	19	19.20	155	15.66	9.34	1.8	2.1	28	0	94	.12	6	.7	1.0	KOA
		29	243	43.44	19	28.38	155	34.86	.77	2.8	2.8	24	0	108	.20	25	1.2	56.2	MOK
		29	616	50.47	19	16.55	155	23.82	7.12	1.9	2.0	25	0	121	.15	9	.9	1.8	SWR
		29	646	48.92	19	25.13	155	36.50	3.20	3.6	3.3	26	0	62	.16	8	.7	1.8	MOK
		29	9	5 28.42	19	22.12	155	16.22	34.90		1.0	26	0	56	.10	3	1.2	2.2	DEP
		29	1028	38.06	19	22.81	155	4.90	9.58	2.6	3.0	26	0	86	.10	11	.7	.4	MER
		29	1214	14.07	19	22.67	155	4.83	9.48	3.9	4.0	29	0	87	.11	11	.8	.7	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	MAY	29	1722	32.16	19	19.91	155	12.92	9.15	1.9	1.7	27	72	.15	7	.9	1.5	UER
		29	18 4	15.91	20	3.81	155	19.25	5.76	2.7	1.8	14	224	.09	49	1.5	1.1	KKU
		29	1843	6.37	19	22.40	155	13.01	35.71	2.3	2.0	31	48	.11	5	1.1	2.2	UER
		29	2327	36.55	19	31.39	155	39.10	8.38	2.3	1.9	22	83	.20	27	1.4	4.3	MOK
		30	033	21.84	19	24.99	155	35.53	4.50	2.3	2.3	20	108	.11	22	.8	1.6	MOK
		30	213	29.36	19	22.65	155	4.31	9.63	2.4	2.6	23	87	.10	11	.6	.5	MER
		30	7 2	8.95	19	13.09	155	16.15	45.31		1.0	24	191	.08	13	1.5	2.4	HLP
		30	1040	15.63	19	22.60	155	4.91	9.84	2.0	2.4	16	128	.09	11	.9	4.3	MER
		30	1133	16.78	19	20.65	155	10.85	9.02	1.7	1.1	18	106	.08	8	.7	1.0	UER
		30	1238	28.10	19	17.85	155	21.52	5.24	1.7	1.8	17	120	.11	8	.7	1.1	SWR
		30	1240	35.06	19	22.43	155	27.86	7.16	5.0	3.1	26	52	.11	11	.6	1.5	UKF
		30	1254	37.41	19	17.78	155	14.36	6.97		1.2	16	130	.07	7	.6	1.5	POL
		30	1542	.65	19	18.04	155	14.30	6.21		1.0	13	127	.06	8	.5	1.4	POL
		30	2214	8.35	19	26.93	155	35.79	1.41	2.8	2.9	21	66	.19	4	.9	.7	MOK
		30	2245	37.02	19	27.21	155	36.53	3.26	3.2	3.5	26	70	.15	4	.7	1.0	MOK
		31	0 3	6.23	19	19.04	155	15.26	8.47	1.6	2.0	23	111	.08	6	.5	.7	KOA
		31	1 8	30.30	19	19.23	155	25.22	9.91	2.0	2.1	27	105	.09	7	.7	.3	HEA
		31	110	59.39	19	21.01	155	17.12	31.68	1.3	.8	17	57	.05	7	.8	1.5	DEP
		31	4 4	24.02	19	21.12	155	14.29	30.32	2.2	1.1	27	106	.09	6	1.0	1.5	DEP
		31	424	32.78	19	17.22	155	21.61	6.71	1.8	1.1	19	140	.12	9	1.2	2.2	SWR
		31	7 3	54.93	19	25.87	155	23.85	8.89	1.6	1.5	20	81	.10	8	.7	1.2	UKF
		31	1831	30.50	19	13.00	155	10.35	31.25	1.9	.6	19	230	.08	17	2.0	3.2	POL
	JUN	1	520	.48	19	24.71	155	37.45	10.00	2.2	1.6	19	53	.12	18	.8	.6	MOK
		1	814	31.62	19	19.79	154	44.76	42.54		1.0	18	303	.10	51	3.7	4.5	DIS
		1	1620	47.53	19	20.32	155	11.67	9.23	2.1	2.5	26	77	.09	7	.5	.8	UER
		1	1725	57.66	19	24.88	155	25.90	8.80	1.7	1.5	24	61	.11	10	.6	1.1	UKF
		1	2231	37.61	19	25.83	155	28.69	6.86	1.8	1.4	25	67	.16	12	1.1	2.5	UKF
		1	2257	57.52	19	27.47	155	35.60	4.24	3.2	3.4	27	67	.13	23	.7	1.8	MOK
		2	510	14.47	19	22.76	155	27.87	7.88	3.3	3.4	30	51	.14	12	.7	1.6	UKF
		2	812	50.15	19	18.25	155	15.70	7.21	1.6	1.6	25	113	.10	5	.6	1.1	KOA
		2	958	36.99	19	27.39	155	35.99	1.21	3.1	3.2	18	84	.15	3	.9	.5	MOK
		2	1248	50.60	19	19.84	155	11.32	5.97	1.7	2.0	20	88	.12	6	.8	2.1	UER
		2	1252	17.05	19	19.84	155	10.90	6.87	1.7	1.3	19	89	.08	7	.6	1.3	UER
		2	13 9	18.51	19	23.15	155	19.73	31.87	2.2	.5	14	68	.13	7	2.5	6.9	DEP
		2	1826	8.54	19	26.08	155	28.30	8.53	1.9	1.9	26	118	.15	12	1.0	1.8	UKF
		2	1959	33.04	19	26.34	155	37.26	4.00	2.8	3.1	18	203	.09	6	1.5	1.2	MOK
		2	2147	33.63	19	30.93	155	39.29	8.13	2.9	2.7	29	102	.14	9	.8	1.0	MOK
		3	545	18.32	19	23.56	155	17.30	4.52	1.4	2.4	15	58	.17	3	1.2	1.5	SPC
		3	1018	46.17	19	28.82	155	34.73	.75	3.1	3.3	16	154	.15	4	1.1	5.5	MOK
		3	1349	47.44	19	17.77	155	20.77	8.74	1.7	1.9	19	123	.11	7	.8	1.3	SWR
		3	1359	23.05	19	19.48	155	13.19	6.86	1.7	1.5	23	73	.10	7	.7	1.6	UER
		3	14 7	38.89	19	13.44	155	35.92	10.13	2.7	2.5	25	113	.17	22	1.3	.7	HEA
		3	1557	12.72	19	51.65	155	40.66	32.01	2.7	1.5	27	2 119	.12	35	.8	1.6	KKU
		3	2016	42.41	19	18.01	155	14.26	8.00	1.7	2.1	28	94	.13	8	.8	1.3	POL
		3	2256	52.99	19	25.32	155	17.21	10.94	1.3	1.5	10	139	.03	4	.6	1.5	LPC
		3	2310	38.48	19	25.31	155	17.30	7.70	1.1	1.6	13	138	.10	5	1.2	2.0	LPC
		3	2318	59.70	19	22.22	155	15.44	34.55		.4	18	57	.11	4	2.4	6.2	DEP
		4	0 3	22.42	19	27.28	155	30.67	6.05		1.5	20	138	.10	14	1.0	4.7	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUN	4	030	55.80	19	23.85	155	17.16	8.51	1.2	1.6	12	0	79	.12	2	1.6	3.0	LPC
		4	515	57.01	19	22.01	155	3.07	9.49	2.6	3.1	26	0	123	.13	12	1.0	1.2	MER
		4	620	8.35	19	19.03	155	13.03	8.27	1.6	1.9	22	0	83	.10	8	.8	1.4	UER
		4	843	49.71	19	18.85	155	15.55	6.36		1.3	20	0	120	.12	6	.8	1.7	KOA
		4	929	35.82	19	17.32	155	21.80	6.59	1.8	2.1	25	0	124	.13	9	.8	2.1	SWR
		4	953	38.98	19	21.91	155	50.95	13.83	2.6	2.1	21	0	140	.16	27	4.6	17.2	KOH
		4	14 2	13.86	19	20.04	155	10.64	9.94	2.9	3.4	25	0	85	.10	7	.7	.4	UER
		4	20 2	24.28	19	25.47	155	28.34	8.12		1.5	28	0	64	.14	13	.8	1.7	UKF
		4	2126	8.25	20	4.70	155	47.96	20.32	2.9	2.2	26	1	195	.13	49	2.4	4.0	KOH
		5	249	43.35	19	27.77	155	28.59	7.25	2.2	1.8	28	0	81	.14	13	.8	2.1	UKF
		5	336	58.93	20	6.95	155	46.85	24.28	2.9	1.9	21	1	180	.09	52	2.0	2.1	KOH
		5	644	39.17	19	19.11	155	16.17	8.41	1.6	2.1	28	0	100	.15	6	.8	1.2	KOA
		5	811	3.14	19	19.10	155	48.28	9.57	3.6	2.2	29	0	169	.14	26	1.2	.4	KON
		5	10 4	7.16	19	24.89	155	25.64	10.01	2.3	2.0	26	0	90	.10	10	.6	3.0	UKF
		5	1447	49.95	19	24.63	155	29.59	8.53	1.9	1.3	24	0	102	.18	15	1.2	3.2	UKF
		5	18 8	15.22	19	6.49	155	25.32	39.09			15	0	278	.12	26	9.0	12.9	LSW
		5	1836	35.23	19	20.82	155	6.82	8.85		1.5	12	0	198	.07	15	1.7	1.9	UER
		5	2230	43.44	19	16.81	155	22.93	2.62	1.7	1.5	25	0	124	.15	8	.9	2.6	SWR
		5	23 8	35.40	19	19.85	155	10.11	8.62	2.3	2.7	29	0	88	.13	7	.6	1.0	UFR
		6	1737	30.44	19	16.82	155	22.39	7.55		2.4	19	0	127	.14	8	1.2	1.9	SWR
		6	1836	6.62	19	11.86	155	27.13	6.27		1.9	17	0	128	.14	17	1.2	2.8	LSW
		6	2333	22.72	19	20.32	155	8.78	9.79		1.5	17	0	71	.07	9	.7	2.6	UER
		7	316	57.37	20	8.17	155	50.62	31.30	2.9	2.1	14	0	271	.10	56	9.8	11.3	KOH
		7	331	14.51	18	51.29	155	27.51	24.54	2.7	1.9	29	0	262	.12	46	3.4	5.6	DIS
		7	6 3	11.66	19	23.66	155	26.73	10.28	3.1	3.2	28	0	45	.12	12	.7	.3	UKF
		7	1112	29.85	19	32.89	155	56.74	10.09		2.0	15	0	230	.10	52	1.7	.4	KON
		7	1153	57.62	19	11.75	155	36.48	9.76	3.6	3.7	24	0	116	.15	24	1.2	.6	HEA
		7	1255	13.94	19	25.79	155	36.24	1.29	2.8	2.9	13	0	167	.18	6	1.7	2.8	MOK
		7	2016	45.03	19	31.22	155	39.40	9.23	2.3	1.9	13	0	141	.14	9	1.4	2.6	MOK
		8	532	28.96	19	20.58	155	7.99	9.52	3.4	3.6	28	0	81	.10	9	.7	.4	UER
		8	1313	20.33	19	24.27	155	16.02	1.82	.9	1.5	11	0	70	.05	2	.4	.2	SPC
		8	1735	5.21	19	20.53	155	16.88	31.47	2.2	1.4	30	0	76	.09	5	.8	1.6	DEP
		8	2027	15.62	19	18.96	155	13.38	8.34	1.7	1.5	25	0	75	.11	7	.7	1.3	POL
		8	2050	14.47	19	19.59	155	12.25	6.47	1.6	1.1	26	0	86	.10	6	.6	1.1	UER
		8	2229	56.95	19	24.17	155	15.97	2.00	.9	1.5	13	0	62	.13	2	.8	.0	SPC
		8	23 1	58.84	19	24.27	155	16.20	1.76	.7	1.0	12	0	71	.05	2	.3	.2	SPC
		9	040	38.41	19	24.20	155	16.04	1.67	1.2	1.9	17	0	65	.06	2	.3	.1	SPC
		9	131	14.89	19	24.25	155	16.22	1.77	.8	1.3	12	0	71	.05	2	.3	.2	SPC
		9	233	6.89	19	24.13	155	16.09	1.55	1.1	1.6	16	0	64	.13	2	.6	.3	SPC
		9	5 4	49.69	19	18.69	155	13.26	8.24	1.6	1.3	21	0	82	.09	8	.6	.9	POL
		9	5 6	14.58	19	18.71	155	13.48	8.32	1.7	2.0	22	0	75	.11	7	.7	1.4	POL
		9	744	32.19	19	17.35	155	22.45	6.34		1.5	21	0	121	.13	10	.9	2.6	SWR
		9	914	3.82	19	18.98	155	14.04	6.62	1.6	2.1	19	0	70	.08	7	.5	1.4	POL
		9	14 8	30.42	19	18.50	155	15.33	6.81	1.6	1.8	16	0	130	.05	6	.4	.7	KOA
		9	1849	33.97	19	21.98	155	15.68	52.77	2.2	1.8	31	0	58	.09	4	.9	1.5	DEP
		9	1935	19.10	19	20.13	155	16.89	29.94	2.1	1.6	20	0	109	.07	5	1.5	3.2	DEP
		9	1940	49.83	19	26.04	155	27.72	7.31	1.8	1.5	19	0	68	.16	13	1.0	2.4	UKF
		9	2151	3.50	19	19.48	155	11.50	9.13		1.0	17	0	95	.06	6	.5	1.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUN	10	052	56.25	19	19.01	155	13.50	6.99	1.7	1.9	21	0	72	.08	7	.5	1.3	UER
		10	516	5.26	19	8.59	155	29.00	29.44	2.4		9	0	177	.13	24	3.6	8.5	LSW
		10	526	48.82	19	5.28	155	26.63	45.09			19	0	187	.11	26	2.4	6.3	LSW
		10	927	59.40	19	19.66	155	8.51	6.51		1.3	19	0	80	.11	10	.9	2.2	UER
		10	1052	26.43	19	23.53	155	28.80	11.51	2.1	2.0	21	0	112	.09	14	.6	.6	UKF
		10	1218	39.54	19	19.12	155	15.92	8.88	2.4	3.1	29	0	96	.09	6	.5	.8	KOA
		10	1231	31.09	19	17.83	155	21.90	7.36	1.9	2.2	25	0	119	.19	9	1.1	2.1	SWR
		10	1237	21.53	19	17.33	155	22.64	3.58	1.7	1.4	22	0	120	.18	7	1.0	2.8	SWR
		10	1913	52.04	19	28.27	155	35.79	1.41	2.3	2.2	19	0	144	.15	2	1.0	.4	MOK
		10	2233	16.10	19	20.59	155	7.40	6.55	1.9	1.5	16	0	90	.12	8	1.0	2.6	UER
		10	2326	5.02	19	19.29	155	15.69	7.28	1.5	1.4	23	0	93	.10	6	.6	1.2	KOA
		11	7	0 30.65	19	26.98	155	29.07	8.40	1.9	1.3	29	0	72	.15	11	.9	1.7	UKF
		11	851	13.57	19	26.05	155	36.54	3.58	3.2	3.3	22	0	133	.12	6	.6	1.2	MOK
		11	858	54.08	19	19.31	155	14.33	7.24		1.1	21	0	91	.11	6	.7	1.2	UER
		11	956	43.09	19	18.97	155	15.62	6.44		1.2	22	0	117	.14	6	.9	1.4	KOA
		11	1024	54.63	19	25.59	155	36.06	2.12	2.9	3.1	21	0	94	.16	7	.9	3.6	MOK
		11	1153	29.52	19	19.54	155	12.07	7.78	1.7	1.6	21	0	89	.08	6	.6	.9	UER
		11	1516	44.67	19	26.24	155	37.11	4.31	3.2	3.3	23	0	194	.10	6	1.0	.9	MOK
		11	1624	54.56	19	22.49	155	3.03	6.56	2.0	2.2	23	0	174	.11	13	.8	1.2	MER
		11	1654	54.27	19	21.27	155	24.71	9.70	1.9	2.1	26	0	66	.10	10	.5	.4	SWR
		11	1811	21.49	19	19.14	155	16.97	29.97	1.6	.7	21	0	92	.07	8	1.2	2.6	DEP
		11	2220	27.90	19	27.93	155	35.47	.45	2.7	2.9	23	0	63	.18	22	.8	1.0	MOK
		12	0	8 14.58	19	16.92	155	21.94	8.63	2.4	2.8	25	0	128	.14	10	1.0	1.2	SWR
		12	024	7.92	19	17.05	155	21.76	6.85	1.9	2.4	26	0	127	.12	9	.7	1.1	SWR
		12	238	28.42	19	19.24	155	15.29	6.97	1.5	1.3	23	0	106	.14	6	.9	1.3	KOA
		12	642	5.76	19	25.62	155	36.50	3.83	2.5	2.7	23	0	95	.11	7	.6	1.2	MOK
		12	7	1 4.22	19	20.75	155	17.12	50.54	2.6	2.7	31	0	65	.09	5	.8	1.3	DEP
		12	1127	21.42	19	31.11	155	39.50	8.21		2.2	22	0	84	.19	9	1.3	2.2	MOK
		12	1415	44.67	19	57.26	155	29.63	18.00		.4	15	2	177	.11	56	2.3	17.0	KKU
		12	2255	51.95	19	18.77	155	13.03	7.41	1.7	1.8	24	0	87	.11	8	.7	1.5	POL
		13	152	21.22	19	41.00	155	7.32	40.70		.6	21	0	123	.10	32	3.2	8.5	HIL
		13	657	54.70	19	24.16	155	26.32	7.26	2.0	1.9	28	0	88	.12	12	.7	1.3	UKF
		13	7	1 31.03	19	22.13	155	16.83	25.96	2.3	2.0	30	0	47	.09	3	.7	1.1	DEP
		13	736	45.89	19	14.65	155	21.71	9.53	2.2	2.2	22	0	155	.07	11	.6	.6	LSW
		13	738	29.66	19	14.98	155	22.28	7.86	2.1	1.9	21	0	144	.13	10	1.0	1.7	LSW
		13	754	2.34	19	8.27	155	6.00	55.51	3.0	2.5	32	0	224	.11	22	2.3	4.5	PPL
		13	932	41.38	19	18.37	155	13.14	8.90	2.2	2.2	26	0	91	.12	8	.7	1.1	POL
		13	1352	.61	19	19.03	155	14.66	8.30	1.8	1.9	24	0	82	.12	7	.7	1.4	UER
		13	14	3 55.08	19	31.30	155	39.55	7.22	2.7	2.2	19	0	96	.17	10	1.2	2.3	MOK
		13	14	5 20.27	19	11.86	155	29.67	36.43	2.8	2.0	31	0	73	.09	14	1.0	2.1	LSW
		13	14	6 17.91	19	18.87	155	13.56	8.53	1.7	1.5	17	0	82	.06	7	.5	1.1	POL
		13	1550	57.89	19	25.53	155	26.18	10.05	1.8	1.9	23	0	101	.09	10	.6	3.0	UKF
		13	1621	23.58	19	19.28	155	15.68	6.95	1.5	1.0	20	0	108	.11	6	.7	1.7	KOA
		13	1648	40.08	19	31.00	155	39.60	8.69		1.5	20	0	84	.21	9	1.7	2.9	MOK
		14	2	9 11.96	19	24.38	155	16.72	1.00	.6	1.2	13	0	68	.16	2	.6	.4	SPC
		14	231	41.62	19	25.71	157	47.45	2.04	3.8	2.8	25	0	3361	.01207		99.0	.0	OIS
		14	238	11.08	19	18.61	155	15.39	10.54	1.7	1.3	22	0	127	.09	6	.7	.4	KOA
		14	633	54.85	19	19.34	155	17.73	31.35	2.2	1.6	30	0	92	.11	6	1.1	1.7	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUN	14	930	6.80	19	35.36	155	41.78	5.43	2.7	3.0	23	0	138	.10	18	.9	3.2	MOK
		14	936	35.63	19	24.36	155	16.22	1.69		.8	7	0	147	.08	2	1.2	.4	SPC
		14	1519	21.10	19	24.29	155	16.24	1.90	.8	1.4	8	0	89	.03	2	.4	.2	SPC
		14	20	2 1.24	19	26.66	155	36.05	1.77	2.8	3.2	24	0	67	.15	5	.7	.7	MOK
		14	2247	6.82	19	25.90	155	35.97	2.44	2.9	3.5	26	0	51	.16	6	.7	2.2	MOK
		15	013	40.48	19	19.98	155	8.78	9.06	2.8	3.5	28	0	73	.11	9	.7	.8	UER
		15	057	6.23	19	19.88	155	14.95	8.09	2.2	1.7	26	0	76	.12	6	.6	.9	UER
		15	2	4 39.16	19	19.01	155	15.57	7.82	2.2	2.4	28	0	96	.12	6	.6	.9	KOA
		15	322	27.28	19	29.96	155	39.23	7.99		1.4	20	0	134	.12	25	1.2	2.1	MOK
		15	945	10.77	19	24.18	155	16.15	1.77		.9	10	0	67	.03	2	.2	.1	SPC
		15	1341	14.86	19	25.64	155	26.85	8.14	1.9	2.1	16	0	165	.07	11	.7	1.8	UKF
		15	22	9 17.77	19	26.55	155	16.34	16.83	2.7	2.7	33	0	50	.08	3	.5	.8	DEP
		15	2321	19.06	19	20.13	155	10.87	6.24		1.6	23	0	83	.13	7	.8	1.7	UER
		16	146	15.34	19	20.70	155	13.08	8.44		1.0	20	0	67	.11	6	.8	1.9	UER
		16	518	22.95	19	8.50	155	34.56	10.10		1.7	24	0	127	.15	20	1.4	.5	HEA
		16	6	7 56.66	19	8.72	155	34.89	10.03	2.8	2.6	26	0	123	.17	20	1.4	.5	HEA
		16	639	54.75	19	25.52	155	25.49	8.50	1.7	1.4	20	0	99	.10	9	.8	1.4	UKF
		16	735	21.62	19	19.15	155	15.56	7.03	1.7	1.5	24	0	93	.11	6	.6	1.1	KOA
		16	939	10.15	19	17.58	155	21.39	7.42	1.9	2.5	21	0	123	.11	8	.7	1.3	SWR
		16	1440	16.17	19	16.73	155	23.57	6.52	2.4	2.9	25	0	122	.14	9	.8	1.7	SWR
		16	1943	14.74	19	19.39	155	15.82	7.30	1.6	1.9	28	0	92	.10	6	.5	.8	KOA
		16	2214	59.32	19	24.54	155	25.88	8.27		1.1	20	0	89	.08	11	.6	1.8	UKF
		16	2226	22.88	19	24.33	155	17.37	.75	.3	.7	11	0	104	.11	2	.5	2.2	SPC
		16	2310	23.09	19	29.87	155	38.81	7.28	2.3	1.9	20	0	134	.10	7	1.0	1.5	MOK
		16	2353	41.37	19	24.16	155	16.10	1.32	1.1	1.7	18	0	65	.13	2	.4	.3	SPC
		17	022	24.37	19	24.39	155	16.87	3.66	1.6	2.4	15	0	59	.19	2	1.2	2.0	SPC
		17	6	3 43.65	19	31.74	155	39.49	8.47	2.5	2.4	23	0	84	.16	26	1.0	1.7	MOK
		17	1623	2.84	19	16.29	155	23.44	7.48	1.7	1.7	16	0	126	.12	13	1.1	3.0	SWR
		17	1716	12.57	19	18.06	155	16.83	7.01	2.5	2.5	20	0	123	.06	6	.4	.9	KOA
		17	1718	59.94	19	18.00	155	16.94	6.80		1.4	16	0	154	.10	6	.8	1.5	KOA
		17	1728	28.68	19	18.93	155	12.34	7.60		1.4	19	0	99	.09	7	.7	1.7	POL
		17	1822	56.38	19	29.61	155	47.44	9.03	2.5	2.0	22	0	103	.17	20	1.5	1.2	KON
		17	1917	54.17	19	30.47	155	39.27	7.19	2.5	2.3	23	0	78	.16	8	1.1	2.0	MOK
		17	1936	14.76	19	28.00	155	43.87	9.31	2.8	3.1	28	0	64	.14	15	.9	.6	MOK
		17	1945	53.44	19	18.81	155	27.48	9.07		1.6	15	0	84	.11	8	.8	1.3	HEA
		17	20	5 59.12	19	27.63	155	44.05	10.06		1.4	17	0	120	.13	16	1.5	.5	MOK
		17	2041	51.36	19	27.48	155	44.27	10.43	2.4	1.5	18	0	67	.18	16	1.4	.6	MOK
		17	2339	55.75	19	27.76	155	44.05	9.90		1.2	17	0	103	.14	20	1.4	.5	MOK
		18	255	4.26	19	31.86	155	39.43	7.63	2.3	1.6	18	0	85	.19	26	1.4	3.9	MOK
		18	523	17.51	19	27.83	155	43.78	9.99	2.4	1.9	22	0	64	.16	20	1.1	.5	MOK
		18	1141	30.59	19	30.09	155	39.68	9.05		1.6	9	0	133	.09	9	1.6	2.4	MOK
		18	1337	47.00	19	17.09	155	22.35	7.45	1.8	2.1	22	0	124	.14	8	1.0	1.5	SWR
		18	14	0 47.14	19	17.00	155	22.48	5.98	1.8	2.0	17	0	124	.11	7	.9	2.3	SWR
		18	1427	56.70	19	16.99	155	22.40	2.19		1.5	17	0	125	.17	8	1.1	5.9	SWR
		18	16	6 21.52	19	18.88	156	3.82	47.00	2.9	2.2	24	1	247	.16	47	3.3	3.9	KON
		18	2022	5.69	19	31.22	155	39.29	8.18		1.9	14	0	82	.15	9	1.3	2.6	MOK
		18	2033	37.32	19	19.87	155	10.81	9.07	1.6	2.2	21	0	89	.11	7	.9	1.2	UER
		19	041	46.55	19	13.24	155	49.25	39.08	2.5	1.7	26	1	230	.11	51	1.9	3.4	OIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUN	19	1 0	15.90	19	25.42	155	25.89	7.86	1.8	2.0	21	0	64	.10	10	.7	1.9	UKF
		19	1322	34.36	19	27.91	155	36.79	1.15	2.7	2.9	15	0	208	.13	3	1.6	.5	MOK
		19	1329	36.31	19	49.90	155	6.21	40.68	2.6	2.2	26	0	227	.11	37	4.1	7.4	HIL
		19	1537	50.47	19	26.61	155	29.84	8.41	1.9	1.9	21	0	128	.13	11	1.0	3.1	UKF
		19	1634	5.01	19	27.14	155	34.68	.07	3.0	3.2	21	0	96	.12	21	.6	.8	MOK
		19	1640	19.27	19	27.92	155	35.98	.63	2.8	2.9	22	0	128	.18	3	.9	.4	MOK
		19	1644	19.70	19	26.57	155	35.42	.37	2.8	3.0	19	0	63	.16	16	.7	1.0	MOK
		19	19 2	28.65	19	19.38	155	12.03	7.56		1.2	23	0	92	.11	6	.7	1.4	UER
		19	1914	8.94	19	10.47	155	22.06	7.40	1.4	1.6	20	0	209	.15	15	2.1	3.0	LSW
		19	1917	11.54	19	24.79	155	16.92	8.22	1.7	2.6	17	0	95	.11	2	1.0	1.5	LPC
		19	1952	20.06	19	26.43	155	35.55	.24	2.1	2.6	21	0	69	.20	5	.9	1.1	MOK
		19	20 3	33.40	19	11.84	155	22.21	10.12	2.1	2.0	22	0	165	.11	17	1.1	.8	LSW
		19	2054	29.33	19	29.82	155	38.62	7.32	2.6	2.4	24	0	134	.10	7	.8	1.0	MOK
		20	133	48.14	19	20.70	155	19.98	2.05	1.5	1.9	18	0	106	.08	6	.4	3.3	SWR
		20	216	8.67	19	25.22	155	28.70	8.57	1.9	1.5	26	0	63	.13	15	.7	1.6	UKF
		20	1228	44.68	19	20.10	155	13.74	11.31	1.7	1.8	16	0	70	.06	6	.6	2.2	UER
		20	16 9	51.51	19	30.36	155	39.22	7.18	3.2	3.4	24	0	136	.12	8	.9	1.3	MOK
		20	1631	38.90	19	28.97	155	46.85	8.42	2.8	2.3	17	0	103	.14	19	1.1	1.9	KON
		20	1652	54.64	19	28.11	155	35.66	.78	2.9	2.9	15	0	87	.17	2	.7	2.9	MOK
		20	18 5	1.57	19	48.50	154	50.83	35.14	2.9	1.9	17	0	267	.09	41	4.7	5.0	HIL
		20	1816	25.46	19	18.45	155	15.09	8.75		1.0	14	0	129	.04	6	.6	1.5	KOA
		21	126	29.78	19	24.58	155	28.44	9.51	1.9	1.5	16	0	113	.09	13	.8	.6	UKF
		21	746	50.44	19	29.41	155	39.74	7.40	2.5	2.1	17	0	129	.12	8	1.3	2.2	MOK
		21	748	53.98	19	23.06	155	23.82	8.34	1.8	1.9	21	0	66	.10	7	.6	.8	UKF
		21	838	43.96	19	31.50	155	16.88	22.22	2.0	1.4	18	0	87	.10	12	.9	2.7	NER
		21	922	21.03	19	24.74	155	36.87	.07	3.5	3.6	24	0	53	.17	9	.7	5.2	MOK
		21	13 6	30.18	19	20.47	155	15.00	7.66		1.7	22	0	64	.10	6	.7	.9	UER
		21	1334	56.79	19	27.25	155	28.80	9.76	3.5	3.4	34	0	43	.13	11	.7	.3	UKF
		21	1547	30.18	19	25.31	155	24.78	8.20	1.9	2.0	21	0	87	.08	9	.6	1.0	UKF
		21	1636	48.98	19	27.69	155	36.08	1.33	2.7	2.8	18	0	88	.14	5	.8	.4	MOK
		21	1953	51.46	19	17.10	155	22.70	6.64	1.8	2.2	26	0	122	.16	7	1.0	1.5	SWR
		21	21 3	30.70	19	10.89	155	40.23	9.94	2.5	1.6	11	0	115	.12	23	1.3	.7	HEA
		21	2115	22.56	19	28.95	155	35.59	.79	2.6	2.5	17	0	72	.16	3	.7	3.4	MOK
		21	2259	7.46	19	18.55	155	15.50	8.19	1.8	2.2	27	0	104	.11	6	.6	.7	KOA
		22	214	39.06	19	28.47	155	35.51	.08	2.6	2.4	16	0	61	.18	18	.8	.7	MOK
		22	635	11.73	19	14.79	155	3.23	42.63		1.0	16	0	243	.06	27	1.9	2.7	DIS
		22	8 6	25.28	19	28.53	155	37.64	8.53	2.7	2.7	14	0	210	.09	29	1.3	11.5	MOK
		22	1724	23.77	19	19.52	155	11.05	11.82	1.6	1.3	16	0	96	.06	7	.7	.3	UER
		22	1749	36.30	19	24.91	155	17.52	8.23	1.1	2.3	16	0	69	.10	2	1.0	1.5	LPC
		22	2143	29.49	19	23.68	155	26.93	6.08	1.7	1.7	21	0	86	.12	13	.7	1.8	UKF
		22	2219	22.71	19	27.91	155	36.95	.93	2.5	2.6	21	0	205	.14	5	1.4	.5	MOK
		23	040	51.70	19	19.52	155	8.90	28.97		1.3	18	1	83	.19	9	2.7	2.7	UER
		23	043	12.10	19	24.96	155	17.92	6.41	.9	2.0	16	0	79	.11	5	.9	1.4	LPC
		23	555	33.52	19	17.53	155	15.23	7.82		1.8	22	0	156	.13	6	1.0	1.6	KOA
		23	921	13.33	19	19.58	155	15.48	32.18	1.6	.7	18	0	193	.06	6	1.3	1.8	DEP
		23	10 0	51.33	19	27.34	155	28.62	7.22	2.3	2.5	25	0	87	.15	11	1.0	2.2	UKF
		23	1033	30.74	19	18.38	155	15.02	7.70		1.1	16	0	128	.05	6	.4	1.1	KOA
		23	14 8	.80	19	23.48	155	16.65	33.19		1.6	23	0	42	.10	2	1.5	2.8	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUN	23	1427	55.82	19	24.97	155	25.06	7.85	1.8	1.9	18	0	86	.09	9	.6	1.8	UKF
		23	21 5	45.09	19	16.76	155	12.57	8.81		1.6	18	0	98	.10	8	.8	2.0	POL
		23	23 7	39.76	19	18.49	155	20.72	6.18	1.4	1.1	12	0	197	.09	7	1.0	2.1	SWR
		23	2330	41.62	19	19.42	155	13.39	8.17	2.1	2.4	23	0	70	.10	7	.6	1.3	UER
		23	2331	24.39	19	19.37	155	13.49	7.57	1.9	1.9	21	0	68	.11	7	.7	1.5	UER
		24	0 8	42.24	19	14.58	155	26.24	12.59	2.1		10	0	173	.13	20	3.5	.7	LSW
		24	354	23.90	19	27.26	155	35.98	2.38	2.8	3.1	26	0	84	.14	17	.8	1.5	MOK
		24	1831	45.76	18	59.01	155	19.91	17.27		1.2	24	3	273	.10	35	2.5	7.7	PPL
		25	2 1	42.90	19	27.83	155	35.65	.20	2.6	2.6	18	0	93	.18	17	.9	.9	MOK
		25	239	41.76	19	25.45	155	36.23	3.23	3.2	3.6	28	0	67	.15	16	.8	1.5	MOK
		25	414	5.41	19	20.21	155	12.81	7.51		.5	17	0	69	.12	6	.9	2.1	UER
		25	453	54.08	19	25.34	155	35.83	.15	2.7	2.7	21	0	71	.18	19	.8	6.3	MOK
		25	728	53.47	19	6.77	155	25.69	43.80	2.0	1.2	23	0	191	.09	24	1.7	5.1	LSW
		25	729	42.24	19	7.57	155	26.12	39.09		.7	22	2	176	.12	24	2.1	5.7	LSW
		25	735	52.46	19	25.22	155	36.63	3.91	2.8	2.9	20	0	86	.19	8	1.0	2.0	MOK
		25	834	53.92	19	28.46	155	35.17	1.20	2.9	3.0	15	0	126	.13	3	.8	.4	MOK
		25	11 8	47.73	19	25.14	155	35.97	.25	2.6	2.7	19	0	53	.22	8	1.2	7.8	MOK
		25	1218	6.87	19	18.55	155	13.53	7.30		1.8	23	0	83	.13	8	.9	1.8	POL
		25	2142	41.94	19	31.32	155	39.54	7.81	2.5	2.3	20	0	82	.18	10	1.3	2.2	MOK
		26	333	32.28	19	18.75	155	13.51	7.83		1.8	22	0	81	.11	7	.8	1.7	POL
		26	610	12.49	19	26.49	155	36.36	3.37	2.9	3.1	23	0	129	.13	5	.8	1.3	MOK
		26	644	50.04	19	34.30	155	41.22	8.87	2.4	1.5	17	0	156	.14	16	1.3	1.0	MOK
		26	1258	46.11	19	18.51	155	13.11	7.64		1.4	21	0	90	.10	8	.7	1.6	POL
		26	1511	57.72	19	25.69	155	37.67	4.12	2.5	2.9	13	0	207	.15	7	3.2	3.1	MOK
		26	1732	55.43	19	13.01	155	33.90	37.68	2.8		20	0	81	.25	14	3.6	7.9	LSW
		26	1735	15.75	19	13.10	155	33.56	38.48	2.8		12	0	185	.15	31	8.2	15.8	LSW
		26	1850	56.44	19	25.79	155	15.61	11.95	2.2	2.5	28	0	51	.13	3	.9	.4	LPC
		26	20 1	13.95	19	36.71	155	26.94	30.31		.7	17	0	151	.09	21	1.4	3.9	NER
		26	2154	50.76	19	17.96	155	15.53	7.58		1.1	15	0	146	.07	5	.6	1.6	KOA
		27	033	31.87	20	3.18	155	44.50	15.87	2.7	2.2	29	2	141	.14	42	1.4	4.2	KOH
		27	133	20.82	19	28.64	155	38.17	6.91	2.6	2.5	25	0	115	.12	22	.9	1.1	MOK
		27	143	38.18	19	14.23	155	21.97	9.52		1.3	22	0	157	.09	11	.6	.6	LSW
		27	229	4.89	19	28.02	155	34.34	.02	2.6	2.5	18	0	129	.18	20	1.6	6.6	MOK
		27	855	33.43	19	19.65	155	15.41	7.75		1.4	11	0	108	.03	6	.4	1.2	KOA
		27	11 4	1.12	19	25.81	155	35.61	.24	2.8	2.9	16	0	72	.17	6	.9	6.2	MOK
		28	431	27.57	19	29.16	155	40.04	6.89		2.0	13	0	127	.12	25	1.4	2.7	MOK
		28	1416	51.99	19	31.02	155	39.21	10.06	2.3	2.1	16	0	81	.14	9	1.4	.5	MOK
		28	15 6	22.30	19	21.56	155	15.83	34.60	2.2	1.8	23	0	69	.06	4	.7	1.2	DEP
		28	1739	57.80	19	19.57	155	15.45	7.71		1.7	13	0	107	.03	6	.2	.4	KOA
		28	2344	6.11	19	17.04	155	22.52	8.86	1.8	2.7	24	0	124	.13	11	.8	1.9	SWR
		28	2348	21.31	19	16.65	155	21.90	8.18		1.7	14	0	250	.05	10	1.7	1.9	SWR
		29	12 9	41.09	19	9.32	155	42.31	8.11	2.7	2.1	19	0	137	.28	21	2.0	2.2	HEA
		29	13 7	40.10	19	20.56	155	11.23	6.47		1.0	17	0	95	.12	8	1.0	2.6	UER
		29	2119	59.22	19	25.37	155	17.56	5.94	.9	1.3	14	0	137	.07	3	.8	1.0	SPC
		29	2331	15.26	19	23.39	155	17.55	7.89	1.5	2.0	12	0	87	.13	3	1.5	3.3	LPC
		30	116	40.21	19	25.34	155	17.66	8.19	1.4	2.0	16	0	91	.12	3	1.2	1.7	LPC
		30	533	27.67	19	19.23	155	15.44	7.29	1.7	1.1	20	0	107	.11	6	.7	1.1	KOA
		30	558	23.75	19	25.20	155	17.15	4.34	1.0	2.0	11	0	93	.15	3	1.4	2.3	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUN	30	559	46.01	19	25.06	155	17.43	6.20	.9	1.5	17	0	67	.17	5	1.2	1.9	LPC
		30	650	3.88	19	25.01	155	17.02	10.04	1.7	2.4	17	0	91	.08	5	.7	.9	LPC
		30	7 6	45.52	19	25.48	155	16.89	7.72	1.4	1.9	14	0	100	.16	2	1.8	2.7	LPC
		30	733	1.19	19	24.85	155	17.46	7.91	1.2	1.7	15	0	89	.10	5	1.0	1.6	LPC
		30	759	49.67	19	24.67	155	17.68	5.95	1.2	1.9	13	0	86	.15	4	1.5	2.2	SPC
		30	910	25.57	19	24.03	155	17.32	7.36	1.2	1.8	13	0	69	.10	2	1.1	1.9	LPC
		30	923	37.65	19	25.52	155	17.38	8.04	1.1	1.5	14	0	95	.12	4	1.5	2.1	LPC
		30	937	2.80	19	25.21	155	17.47	8.14	1.3	1.5	13	0	150	.08	4	1.1	1.4	LPC
		30	951	44.35	19	24.79	155	17.49	7.96		1.6	14	0	56	.13	2	1.4	2.0	LPC
		30	1017	50.08	19	24.69	155	17.26	7.58	1.5	2.2	15	0	88	.10	3	1.0	1.6	LPC
		30	1020	21.30	19	24.67	155	17.57	7.39	1.0	1.4	11	0	168	.07	5	1.0	1.5	LPC
		30	1030	46.60	19	24.25	155	18.45	8.60	1.2	1.5	13	0	79	.12	3	1.5	2.6	LPC
		30	1039	32.70	19	23.94	155	17.48	8.57		1.5	14	0	69	.11	2	1.5	1.7	LPC
		30	1048	53.80	19	24.56	155	17.90	4.47		2.1	15	0	60	.09	3	.7	1.0	SPC
		30	1123	23.96	19	24.90	155	17.79	7.24	1.2	1.8	15	0	87	.10	3	.9	1.6	LPC
		30	1218	23.95	19	20.35	155	10.01	6.61		1.0	16	0	142	.14	7	2.3	4.1	UER
		30	19 0	37.88	19	27.22	155	16.99	2.97		.8	9	0	202	.08	6	1.9	6.0	GLN
		30	2016	5.68	19	25.73	155	16.71	5.83	.9	1.6	15	0	161	.16	2	1.5	2.0	SPC
		30	2046	40.05	19	10.64	155	30.94	8.43	2.3	1.9	21	0	105	.15	22	1.1	2.0	LSW
		30	2133	8.21	19	24.40	155	18.22	5.48	1.0	1.7	15	0	67	.18	3	1.3	1.3	SPC
	JUL	1	034	9.99	19	30.81	155	39.50	9.11	2.3	1.9	20	0	138	.17	27	1.6	2.3	MOK
		1	2 3	6.05	19	19.81	155	8.27	6.81	2.1	2.6	24	0	84	.13	9	.8	2.2	UER
		1	559	.68	19	20.08	155	8.71	7.97	2.0	1.8	21	0	87	.13	9	1.1	1.4	UER
		1	743	52.20	19	20.54	155	8.56	11.58	1.9	1.6	19	0	73	.06	9	.5	.3	UER
		1	751	49.82	19	22.48	155	17.94	24.77	1.8	.8	21	2	58	.11	4	1.5	1.1	DEP
		1	752	11.14	19	22.13	155	17.88	25.61		.9	21	2	59	.11	4	1.4	1.1	DEP
		1	833	14.31	19	15.20	155	27.70	4.21		1.1	10	0	304	.16	20	17.9	3.8	LSW
		1	851	.33	19	19.54	155	12.52	7.42		2.0	22	0	83	.13	7	.8	1.8	UER
		1	11 2	56.78	19	16.98	155	22.53	6.61		1.7	18	0	124	.13	7	1.1	2.5	SWR
		1	1123	33.51	19	24.13	155	17.75	7.13	1.1	1.1	12	0	81	.09	2	1.2	1.6	LPC
		1	1531	5.20	19	51.09	154	57.58	1.13	3.0	2.6	9	0	338	.13	59	45.5	87.9	BLS
		1	1647	49.78	19	24.95	155	17.36	6.39	1.1	2.0	11	0	98	.06	3	.7	1.6	LPC
		1	1932	3.42	19	24.29	155	16.69	8.06	1.2	1.0	16	0	64	.06	2	.5	.9	LPC
		1	2022	15.93	19	16.28	155	23.74	2.66	1.6	1.9	24	0	124	.16	9	.9	2.7	SWR
		1	2352	48.18	19	25.60	155	16.80	13.95	1.2	.6	20	0	125	.08	2	.7	.7	DEP
		2	046	17.61	20	2.11	155	24.51	9.47	2.8	2.5	32	1	208	.12	40	1.3	.7	KKU
		2	142	18.40	19	30.85	155	39.55	9.88		1.1	19	0	135	.20	27	2.1	.7	MOK
		2	344	44.79	19	24.78	155	25.59	5.91	1.6	1.2	20	0	89	.09	10	.6	1.9	UKF
		2	659	9.98	19	19.61	155	8.79	6.91		.8	19	0	163	.13	9	3.0	4.6	UER
		2	659	29.76	19	31.62	155	36.58	10.02	2.7	2.4	28	0	126	.13	8	1.2	.4	MOK
		2	7 4	25.97	19	19.00	154	59.77	2.66	1.7	1.0	14	0	271	.17	28	9.3	3.3	DIS
		2	725	50.44	19	26.50	155	23.79	11.48	1.7	1.3	17	0	84	.06	9	.6	2.1	UKF
		2	10 2	39.18	19	18.40	155	22.20	11.92		1.4	16	0	112	.14	11	1.1	.9	SWR
		2	13 4	36.17	19	19.91	155	11.70	8.59	2.2	2.6	25	0	85	.12	6	.7	1.5	UER
		2	1457	40.98	19	19.38	155	13.23	7.44	1.9	1.7	21	0	73	.13	7	1.0	1.8	UER
		2	2032	14.27	19	31.18	155	39.66	8.12	1.5	1.3	15	0	81	.15	10	1.7	3.0	MOK
		2	2124	22.08	19	4.26	155	23.59	57.49		.8	27	0	202	.08	29	1.5	3.5	LSW
		3	134	55.41	18	59.46	155	27.47	55.44		1.0	26	2	229	.09	55	1.4	1.7	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	3	152	40.05	18	59.84	155	28.19	57.23	3.2	2.7	32	0	215	.11	31	1.7	3.6	DIS
		3	2 2	26.55	19	23.30	155	48.95	10.12		1.5	20	0	112	.15	25	1.2	.5	KOA
		3	258	2.54	19	25.16	155	16.51	13.40	1.7	1.5	28	0	47	.08	2	.5	.7	DEP
		3	423	41.96	19	10.17	155	26.99	49.03		.7	19	1	166	.09	20	2.3	2.4	LSW
		3	426	31.49	19	13.54	155	29.18	54.49		1.0	20	1	89	.22	16	6.3	4.3	LSW
		3	455	55.51	19	22.15	155	16.12	1.01		.8	10	0	77	.05	4	.3	.3	KOA
		3	551	54.19	19	31.09	155	39.37	8.44		1.4	21	0	81	.16	26	1.1	2.0	MOK
		3	720	15.66	19	24.92	155	17.71	8.13	1.1	1.8	15	0	120	.19	3	1.7	3.7	LPC
		3	8 7	45.18	18	58.96	155	28.10	35.91	1.8	.6	18	2	232	.06	33	1.4	1.7	DIS
		3	1043	20.94	19	.36	155	28.38	34.03		1.0	19	2	222	.10	31	1.7	3.0	LSW
		3	1543	42.08	18	58.87	155	28.21	33.27		1.5	27	2	233	.12	32	1.6	2.3	DIS
		3	1818	1.83	19	20.82	155	9.74	33.40	1.9	.7	19	0	91	.05	10	.9	1.5	UER
		3	1829	38.62	18	59.62	155	27.98	35.37		1.3	26	2	228	.08	31	1.2	1.5	DIS
		3	2243	32.71	19	25.21	155	25.03	9.48	1.5	1.3	22	0	62	.07	4	.6	.9	UKF
		3	2311	2.47	19	17.65	155	20.87	8.80	1.8	2.2	23	0	124	.08	8	.6	.9	SWR
		4	119	36.06	18	59.96	155	28.26	56.22	3.0	2.6	30	0	214	.10	30	1.7	3.1	DIS
		4	2 0	57.19	19	25.38	155	16.52	18.86	1.9	1.0	22	0	66	.07	6	.6	1.0	DEP
		4	657	45.07	19	17.56	155	22.39	7.60		1.8	23	0	119	.11	8	.7	1.4	SWR
		4	755	57.42	19	24.97	155	39.91	5.05	2.3	1.6	15	0	114	.10	11	.8	1.3	MOK
		4	11 2	13.96	19	.38	155	28.56	33.99		1.3	24	1	221	.09	30	1.5	2.7	LSW
		4	12 9	39.58	19	20.64	155	7.99	6.85	1.9	1.6	22	0	81	.15	9	1.0	1.8	UER
		4	1740	54.89	19	22.37	155	19.03	30.47	4.2	4.2	36	0	38	.10	5	.7	1.3	DEP
		4	1819	34.30	19	20.63	155	17.46	32.89	1.7	.6	18	0	110	.05	5	1.5	3.1	DEP
		4	20 4	18.56	19	22.50	155	19.46	30.72	2.5	2.3	34	0	41	.09	6	.7	1.3	DEP
		4	2024	5.34	19	22.70	155	18.50	30.35		1.3	24	0	39	.06	5	.6	1.2	DEP
		4	21 3	46.55	19	22.45	155	19.03	31.12	3.4	3.3	36	0	38	.10	5	.7	1.3	DEP
		4	22 9	15.68	19	16.79	155	20.76	7.29	1.8	1.2	18	0	135	.11	8	.9	1.6	SWR
		4	2354	37.27	19	19.26	155	15.76	7.88	1.8	1.7	23	0	94	.12	6	.8	1.2	KOA
		5	438	19.69	19	22.21	155	17.87	31.86		.4	11	0	84	.04	4	2.2	5.4	DEP
		5	519	9.25	19	.52	155	28.21	34.03		.4	18	3	234	.09	31	1.7	1.9	LSW
		5	520	7.62	19	26.99	155	28.89	7.13	2.1	2.1	20	0	133	.12	13	1.0	1.9	UKF
		5	652	44.60	19	18.03	155	15.52	7.48		1.0	17	0	149	.10	6	.9	1.3	KOA
		5	728	16.78	19	15.58	157	39.56	9.08			17	0	346	.76	197	99.0	99.0	DIS
		5	829	59.45	19	21.92	155	18.23	1.74	1.1	1.1	11	0	75	.09	4	.6	.0	KOA
		5	10 7	46.69	19	16.53	155	22.36	6.76		1.3	19	0	130	.17	8	1.3	3.4	SWR
		5	1136	30.68	19	17.14	155	14.94	8.92		1.0	16	0	188	.04	7	.7	.9	POL
		5	1142	5.52	19	18.29	155	13.50	10.28		1.3	14	0	136	.08	8	1.3	4.1	POL
		5	12 7	33.47	19	19.80	155	12.80	7.73		1.6	24	0	75	.12	7	.8	1.4	UER
		5	13 8	12.73	19	18.97	155	13.09	8.55	2.1	2.5	24	0	82	.10	8	.7	1.3	POL
		5	1622	50.72	19	4.65	155	24.55	60.08	2.7		16	0	197	.12	29	4.0	11.3	LSW
		5	1625	20.61	19	7.29	155	26.73	42.59	1.5		17	0	189	.15	24	3.6	8.3	LSW
		5	17 1	14.57	19	19.97	155	8.58	6.80		1.3	20	0	151	.15	9	1.3	1.8	UER
		5	2037	48.07	19	22.90	155	13.92	29.30		.8	22	0	88	.06	4	.7	1.3	DEP
		5	2058	41.77	19	31.85	155	47.85	7.17		1.1	16	0	205	.15	22	3.1	1.4	KOA
		5	2258	28.38	19	28.18	155	35.71	.28	2.1	2.1	17	0	73	.15	2	.5	.5	MOK
		5	23 8	7.29	19	26.99	155	35.71	1.27	2.2	2.5	17	0	121	.16	22	1.5	99.0	MOK
		5	2318	17.62	19	29.43	155	38.42	.00	4.3	4.3	11	0	213	.15	43	2.7	57.4	MOK
		5	2325	45.16	19	28.15	155	38.00	.20	4.2	4.2	7	0	210	.16	56	3.7	56.4	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	6	029	10.95	19	29.07	155	34.78	6.51	2.7	2.6	16	0	79	.22	25	2.0	5.3	MOK
		6	129	6.29	19	29.21	155	33.60	5.41	3.0	3.2	19	0	139	.11	25	1.3	99.0	MOK
		6	216	41.53	19	17.65	155	13.05	8.02		2.5	12	0	177	.05	9	.6	1.4	POL
		6	4	9 27.85	19	18.85	155	15.58	6.81		1.1	18	0	96	.10	6	.7	1.0	KOA
		6	423	23.70	19	19.66	155	10.16	6.54		1.3	20	0	92	.10	8	.7	1.2	UER
		6	442	49.19	19	18.67	155	15.47	7.41	.9	.6	7	0	126	.03	6	.5	1.5	KOA
		6	517	15.74	19	30.72	155	33.72	.26	2.5	1.7	13	0	219	.10	18	2.4	7.5	MOK
		6	552	6.47	19	32.03	155	36.65	10.21	2.5	1.6	27	0	148	.16	24	1.6	.5	MOK
		6	552	43.86	19	31.17	155	36.50	9.20	2.5	1.4	21	0	149	.16	28	1.4	1.8	MOK
		6	554	32.99	19	31.85	155	37.47	29.61	2.4	.4	15	0	159	.07	28	1.9	2.3	MOK
		6	6	6 21.61	19	32.63	155	35.43	22.84	2.6	1.4	19	0	168	.16	27	2.8	4.3	MOK
		6	613	58.81	19	33.94	155	35.93	22.29	2.3	1.0	15	0	171	.22	29	4.7	6.6	MOK
		6	619	10.80	19	30.79	155	32.33	4.26	2.4	1.4	13	0	191	.10	16	1.9	1.6	MOK
		6	636	19.27	19	28.96	155	29.57	1.35	2.2	1.4	10	0	220	.12	20	2.7	99.0	UKF
		6	648	45.28	19	30.43	155	30.08	6.84		1.0	11	0	168	.11	15	1.3	2.6	MOK
		6	716	35.50	19	32.46	155	33.19	4.59	2.4	2.0	12	0	236	.10	21	3.2	1.6	MOK
		6	722	28.76	19	31.40	155	32.19	.90	2.1	1.5	17	0	112	.18	16	1.1	30.7	MOK
		6	724	9.06	19	36.99	155	36.61	27.39	2.7	1.5	14	0	234	.12	38	5.0	8.8	MOK
		6	726	3.80	19	32.60	155	33.17	3.80		1.3	10	0	171	.12	18	1.4	2.8	MOK
		6	729	35.72	19	31.51	155	31.11	.61		1.6	8	0	197	.08	20	1.5	71.2	MOK
		6	736	9.17	19	46.37	156	.68	.33	2.8	1.7	8	0	350	.14	83	99.0	99.0	KON
		6	825	18.69	19	32.56	155	28.58	10.49	2.3	2.1	17	0	130	.16	19	1.4	.6	NER
		6	847	33.47	19	31.63	155	28.49	11.95	2.5	2.6	14	0	235	.10	21	3.3	.4	NER
		6	849	.77	19	31.76	155	30.79	5.65	2.3	1.3	16	0	139	.14	19	1.1	49.6	MOK
		6	915	10.88	19	27.19	155	29.77	11.49	2.2	1.5	15	0	169	.12	17	1.7	.6	UKF
		6	915	31.32	19	29.00	155	29.05	5.33	2.4	1.6	21	0	171	.19	13	1.9	1.5	NER
		6	922	3.48	19	32.81	155	28.49	10.71	2.2	1.3	14	0	131	.12	23	1.9	.9	NER
		6	924	48.09	19	31.64	155	30.96	11.05	2.5	1.9	18	0	129	.18	14	1.5	.8	MOK
		6	929	41.06	19	31.72	155	30.61	4.75	2.5	1.7	18	0	138	.14	24	1.1	2.6	MOK
		6	933	1.16	19	31.86	155	30.50	7.53	2.3	1.6	18	0	138	.14	19	1.0	6.9	MOK
		6	1013	58.46	19	32.71	155	31.20	11.12	2.4	1.9	17	0	189	.14	21	3.0	.6	MOK
		6	1119	20.91	19	30.35	155	31.07	1.24	2.4	2.0	18	0	126	.21	11	2.0	29.2	MOK
		6	1145	29.54	19	29.45	155	28.33	7.26	2.5	1.8	19	0	176	.13	13	1.4	3.8	NER
		6	1153	55.14	19	29.08	155	28.49	7.11	2.8	2.1	24	0	91	.09	12	.6	1.5	NER
		6	1216	15.89	19	29.69	155	25.99	5.31	2.2	1.9	14	0	206	.20	16	2.7	2.2	NER
		6	13	4 40.82	19	27.16	155	27.78	7.07	2.7	2.2	19	0	133	.13	12	1.0	2.4	UKF
		6	1320	15.26	19	27.27	155	27.35	7.30	1.8	1.2	12	0	115	.12	15	1.3	4.7	UKF
		6	1344	13.64	19	27.42	155	27.48	6.02	1.8	.7	17	0	136	.15	12	1.5	4.1	UKF
		6	1435	32.45	19	30.87	155	28.76	7.28	2.5	1.8	18	0	98	.09	13	.7	2.7	NER
		6	1526	22.30	19	28.88	155	27.46	7.19	2.3	1.2	28	0	84	.15	12	1.0	2.0	UKF
		6	1528	26.64	19	31.04	155	25.82	2.34	2.6	2.0	17	0	98	.14	16	1.1	5.2	NER
		6	1538	53.93	19	29.38	155	28.67	5.00		.9	12	0	186	.11	13	2.0	1.2	NER
		6	16	1 49.35	19	29.34	155	28.48	9.67	2.6	2.2	23	0	89	.12	13	.9	.6	NER
		6	1626	3.15	19	29.18	155	27.62	10.83	2.3	1.8	25	0	86	.11	12	.7	.4	NER
		6	1639	22.48	19	31.09	155	26.75	2.18	3.2	3.4	16	0	99	.10	16	.9	5.2	NER
		6	1641	48.95	19	28.65	155	27.53	6.86	2.5	1.7	26	0	89	.15	12	.9	2.2	UKF
		6	1659	51.06	19	31.07	155	26.55	5.10	2.5	2.4	21	0	106	.14	16	.7	1.4	NER
		6	17	1 37.96	19	29.18	155	27.65	5.60	2.0	1.2	24	0	90	.19	13	1.2	5.8	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	6	17	2 19.89	19	28.54	155	26.93	7.94	2.1	1.5	22	0	87	.14	11	1.0	2.9	UKF
		6	17	3 33.40	19	18.13	155	15.05	7.45		1.3	10	0	108	.04	6	.6	1.1	KOA
		6	1711	47.87	19	29.05	155	28.20	8.63	2.9	2.5	24	0	87	.13	12	.9	2.5	NER
		6	1722	26.25	19	28.24	155	27.16	6.98	2.3	1.3	28	0	73	.15	11	.8	2.0	UKF
		6	1723	27.88	19	31.11	155	31.58	8.28	2.3	1.2	12	0	231	.09	20	4.4	8.6	MOK
		6	1735	9.16	19	30.80	155	29.58	5.58		.6	14	0	205	.10	17	1.5	3.9	NER
		6	1741	35.41	19	26.99	155	28.01	9.10	2.3	1.1	18	0	155	.12	13	1.1	1.5	UKF
		6	1810	33.92	19	28.51	155	26.68	5.60	2.1	.8	18	0	128	.15	11	1.2	4.9	UKF
		6	1823	36.12	19	31.72	155	27.93	7.33	2.8	2.3	32	0	68	.15	15	.7	2.1	NER
		6	1957	53.21	19	27.11	155	28.31	9.53	2.2	1.2	14	0	96	.11	15	1.3	.6	UKF
		6	2018	46.05	19	32.72	155	28.71	15.36	2.3	1.2	15	0	223	.14	25	3.6	41.4	NER
		6	2029	21.03	19	29.90	155	27.53	5.30	2.7	2.6	23	0	155	.15	14	1.2	1.1	NER
		6	2044	24.60	19	30.27	155	26.93	6.89	2.9	2.6	22	0	94	.12	14	.8	2.2	NER
		6	2047	41.64	19	31.77	155	29.93	5.15	2.7	2.2	26	0	105	.15	12	1.0	1.4	NER
		6	2051	14.96	19	31.61	155	30.33	6.60	2.5	1.9	21	0	123	.18	13	1.3	2.7	MOK
		6	2056	43.89	19	31.83	155	29.94	6.80	2.5	2.0	24	0	105	.18	12	1.2	3.5	NER
		6	2058	45.30	19	30.34	155	30.42	6.07	2.3	1.5	20	0	123	.21	12	2.5	5.9	MOK
		6	21	1 41.22	19	30.93	155	30.07	.12	2.3	1.6	18	0	186	.18	12	2.7	41.5	MOK
		6	21	3 26.50	19	29.80	155	30.00	2.61	2.2	1.5	22	0	184	.19	12	2.0	2.5	MOK
		6	21	9 51.71	19	32.01	155	30.46	10.80	2.5	1.6	18	0	197	.15	19	1.9	.6	MOK
		6	2113	10.54	19	31.50	155	30.15	5.49	2.5	2.1	26	0	105	.16	12	1.1	2.5	MOK
		6	2117	6.87	19	31.54	155	30.12	7.62	2.6	2.1	17	0	121	.20	17	1.5	4.7	MOK
		6	2139	15.18	19	32.41	155	29.71	5.28	2.4	1.9	22	0	94	.16	24	.8	7.1	NER
		6	2142	22.66	19	32.21	155	29.96	10.67	2.5	2.0	16	0	208	.11	12	2.3	.6	NER
		6	2218	5.06	19	30.21	155	29.94	4.58		1.0	19	0	81	.15	22	1.4	1.6	NER
		6	2223	57.83	19	30.79	155	27.08	9.33	2.4	1.6	20	0	129	.15	18	1.4	1.7	NER
		6	2227	49.73	19	31.13	155	26.96	8.65	2.3	1.4	20	0	131	.16	15	1.4	1.8	NER
		6	2229	50.36	19	34.96	155	30.62	8.81		.7	17	0	262	.11	16	2.8	4.8	MOK
		6	2245	3.29	19	31.03	155	28.04	7.62	2.2	1.3	25	0	160	.16	14	1.6	3.5	NER
		6	2247	13.62	19	29.25	155	26.86	8.81	2.7	2.1	24	0	88	.12	13	.8	1.2	NER
		6	2258	1.15	19	26.88	155	29.91	8.93	1.9	1.3	13	0	172	.11	11	1.4	3.1	UKF
		6	23	1 48.05	19	27.61	155	30.22	9.28		.6	19	0	105	.18	20	1.7	1.9	MOK
		6	23	7 9.86	19	31.48	155	28.37	7.40	2.3	1.5	19	0	98	.11	21	1.1	2.5	NER
		6	2327	59.32	19	31.14	155	28.26	9.18	2.2	1.5	23	0	88	.15	16	1.2	1.5	NER
		6	2333	15.10	19	30.73	155	29.19	7.93	2.4	1.3	23	0	69	.14	16	.9	2.4	NER
		6	2341	10.63	19	30.99	155	30.46	7.22	2.0	1.0	18	0	226	.09	18	1.6	2.7	MOK
		6	2343	8.55	19	31.32	155	28.14	8.28	2.1	1.3	21	0	116	.14	16	1.3	3.5	NER
		6	2348	56.10	19	32.50	155	29.07	.61	3.0	3.2	16	0	95	.15	16	1.4	37.6	NER
		6	2350	2.76	19	31.10	155	28.67	8.25		1.1	18	0	83	.17	22	1.6	1.6	NER
		6	2352	6.39	19	32.12	155	30.02	.21	2.7	2.7	9	0	186	.25	18	4.0	99.0	MOK
		7	027	8.12	19	31.05	155	28.81	8.10	1.9	1.2	23	0	113	.11	16	.6	1.0	NER
		7	035	53.16	19	29.96	155	28.48	9.62	2.2	1.3	21	0	126	.17	19	1.3	.6	NER
		7	054	51.46	19	31.02	155	28.61	7.45		.7	20	0	143	.11	21	.8	2.0	NER
		7	153	26.77	19	32.19	155	29.86	7.33	2.3	1.9	24	0	106	.16	14	.9	1.9	NER
		7	2	3 55.68	19	31.06	155	28.24	8.61	2.1	1.5	24	0	130	.14	16	1.0	1.4	NER
		7	250	14.60	19	22.96	155	19.93	31.08		1.0	17	0	95	.06	6	1.1	1.5	DEP
		7	254	27.01	19	32.45	155	27.74	8.43		1.6	26	0	103	.13	18	.8	1.7	NER
		7	324	6.37	19	32.73	155	27.45	8.31	2.5	2.0	26	0	105	.15	16	.8	2.2	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	7	342	57.40	19	31.96	155	28.23	7.41	2.8	2.4	27	0	97	.14	15	.9	2.4	NER
		7	355	28.29	19	32.31	155	28.12	4.27	1.9	1.2	18	0	125	.14	17	.9	1.8	NER
		7	4 1	53.53	19	31.97	155	28.66	1.69	1.9	1.2	18	0	127	.16	16	.9	25.0	NER
		7	413	35.96	19	32.89	155	28.65	.57	2.3	1.3	22	0	131	.19	19	1.1	33.8	NER
		7	415	1.62	19	28.07	155	35.00	.45	2.8	2.8	21	0	66	.18	17	.8	4.3	MOK
		7	420	27.07	19	32.51	155	27.08	5.86	2.0	1.0	25	0	95	.17	18	.9	3.7	NER
		7	424	52.30	19	31.54	155	27.10	4.93	1.7	1.0	18	0	189	.16	17	2.2	1.8	NER
		7	427	9.41	19	27.54	155	27.56	6.07	1.8	1.2	25	0	87	.17	15	1.0	2.4	UKF
		7	434	4.11	19	32.07	155	28.18	5.18	2.1	1.7	20	0	114	.13	15	.9	1.7	NER
		7	443	22.32	19	32.29	155	27.95	.22	1.9	1.3	16	0	180	.16	15	2.5	73.1	NER
		7	448	49.89	19	31.85	155	27.67	5.73	2.2	1.5	16	0	192	.10	21	1.3	4.9	NER
		7	5 7	12.43	19	32.30	155	28.14	6.43	2.7	2.5	28	0	98	.13	16	.8	2.6	NER
		7	510	26.61	19	32.69	155	27.20	7.11	1.9	1.4	16	0	129	.10	19	.7	1.8	NER
		7	515	15.49	19	32.43	155	27.84	8.32	1.9	1.0	16	0	127	.10	18	.9	1.7	NER
		7	536	18.80	19	30.26	155	28.54	7.84	2.2	1.7	23	0	74	.17	15	1.2	2.7	NER
		7	539	48.74	19	32.28	155	27.78	6.27	3.6	3.4	30	0	69	.15	18	.8	2.3	NER
		7	547	26.31	19	32.70	155	26.67	7.47		.7	9	0	191	.11	21	2.7	4.6	NER
		7	552	3.25	19	30.78	155	29.89	6.05	2.0	1.0	18	0	196	.17	17	2.6	7.7	NER
		7	6 6	12.77	19	28.31	155	34.98	.29	2.5	2.8	18	0	127	.14	20	1.1	1.2	MOK
		7	611	51.92	19	32.67	155	28.09	.61	1.8	1.0	14	0	224	.17	22	2.8	99.0	NER
		7	616	30.84	19	30.66	155	23.84	6.58	2.2	2.4	20	0	98	.13	15	1.2	1.4	NER
		7	626	21.89	19	30.29	155	26.14	6.82	1.8	1.4	13	0	210	.15	19	2.7	7.8	NER
		7	629	44.62	19	34.18	155	29.06	.42		1.5	11	0	283	.10	28	7.1	84.9	NER
		7	715	8.74	19	26.65	155	29.72	8.86	2.4	1.6	27	0	148	.18	12	1.2	1.6	UKF
		7	717	2.38	19	32.49	155	28.57	5.39	2.3	1.5	17	0	235	.11	16	2.0	2.2	NER
		7	723	5.25	19	31.23	155	26.46	7.54	1.8	1.1	20	0	80	.16	16	1.0	2.8	NER
		7	748	55.27	19	32.14	155	26.17	7.47	2.9	2.6	29	0	109	.17	17	1.4	2.4	NER
		7	757	18.52	19	30.32	155	28.16	8.97		1.0	16	0	139	.14	19	1.3	2.3	NER
		7	811	27.64	19	32.06	155	26.12	6.47	3.1	3.0	28	0	114	.15	15	1.3	3.0	NER
		7	817	24.23	19	32.55	155	27.68	4.53	2.5	2.4	22	0	115	.13	16	.8	1.3	NER
		7	828	22.09	19	32.17	155	27.65	6.94	3.6	3.3	17	0	159	.17	21	2.1	3.4	NER
		7	916	40.61	19	32.24	155	27.65	5.36	2.8	2.5	23	0	113	.10	16	.8	1.3	NER
		7	918	40.75	19	32.19	155	27.94	4.98	2.3	1.3	19	0	179	.09	15	.9	.9	NER
		7	922	51.77	19	31.54	155	25.19	5.50	2.4	1.6	21	0	79	.15	19	1.2	.0	NER
		7	931	29.42	19	31.77	155	26.83	7.30		1.4	16	0	165	.15	17	1.4	4.1	NER
		7	944	58.42	19	32.55	155	27.87	6.31	2.4	2.4	23	0	116	.12	16	1.2	7.2	NER
		7	10 4	7.75	19	30.82	155	27.22	9.96	2.5	2.5	20	0	181	.14	19	2.9	1.0	NER
		7	1041	2.44	19	33.98	155	29.35	4.13	2.4	1.3	14	0	200	.15	15	3.2	2.3	NER
		7	1047	31.74	19	32.59	155	28.06	5.26	2.1	2.0	19	0	183	.13	15	2.1	1.3	NER
		7	11 4	22.07	19	33.77	155	27.46	2.02	2.4	2.1	24	0	102	.18	17	1.4	2.8	NER
		7	1226	52.06	19	34.06	155	27.70	8.02	2.5	1.7	12	0	307	.09	21	11.8	4.3	NER
		7	1341	50.22	19	27.36	155	27.93	9.05	2.0	2.1	18	0	91	.10	13	.7	.8	UKF
		7	1350	22.82	19	32.02	155	26.75	7.25	2.0	1.5	18	0	123	.12	16	.9	1.9	NER
		7	1424	5.31	19	26.79	155	29.59	10.65	1.9	2.0	14	0	88	.10	12	1.0	.9	UKF
		7	1440	21.47	19	32.98	155	27.48	5.25	2.8	3.2	23	0	132	.12	16	.8	1.4	NER
		7	1447	42.51	19	32.38	155	29.52	2.75	4.7	4.6	30	0	119	.20	13	1.4	2.3	NER
		7	1513	38.34	19	32.53	155	25.28	7.02	2.3	1.8	15	0	163	.09	19	1.0	1.3	NER
		7	1645	22.18	19	31.96	155	27.78	6.19	2.4	2.5	25	0	97	.11	15	.7	2.2	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	7	17 9	34.39	19	31.89	155	27.99	4.95	2.5	2.2	26	0	98	.15	15	.9	1.5	NER
		7	1749	50.86	19	32.70	155	28.13	.19	2.3	2.0	14	0	184	.14	19	1.8	55.9	NER
		7	1753	5.56	19	31.61	155	27.00	6.85	2.5	2.3	30	0	156	.17	15	1.5	2.7	NER
		7	1839	52.34	19	31.79	155	27.61	5.43	4.2	4.3	33	0	67	.14	15	.8	1.9	NER
		7	1843	43.61	19	30.44	155	28.16	5.64	2.5	2.1	27	0	91	.18	14	1.2	4.0	NER
		7	1847	7.84	19	19.75	155	12.51	6.30	1.8	1.3	17	0	79	.08	6	.5	1.6	UER
		7	1848	51.58	19	32.62	155	26.92	5.23	2.3	2.2	18	0	118	.13	16	1.2	1.7	NER
		7	19 5	28.26	19	27.38	155	29.56	9.09	2.5	2.2	30	0	76	.15	12	.8	1.4	UKF
		7	19 7	58.24	19	32.15	155	28.31	.64	2.1	1.5	18	0	115	.12	14	.9	59.7	NER
		7	1913	59.52	19	32.61	155	26.50	7.51	2.2	1.9	22	0	128	.11	18	.8	2.1	NER
		7	1937	36.32	19	32.64	155	28.47	6.19	3.2	3.0	27	0	101	.12	15	1.0	3.1	NER
		7	1938	25.54	19	29.92	155	26.90	8.01	2.8	2.7	14	0	109	.11	16	1.0	2.1	NER
		7	1952	14.28	19	32.27	155	26.96	7.00	2.4	1.9	28	0	107	.17	16	1.0	2.5	NER
		7	1955	14.91	19	33.50	155	28.10	7.41	2.1	1.4	18	0	244	.10	16	2.0	1.5	NER
		7	1956	.20	19	31.78	155	28.39	8.11	2.0	1.6	23	0	109	.14	16	1.0	2.1	NER
		7	2014	8.77	19	32.35	155	28.27	4.75	2.7	2.5	21	0	101	.12	17	.7	1.5	NER
		7	2015	53.67	19	31.99	155	28.33	8.71	2.0	1.4	20	0	124	.11	16	.8	1.8	NER
		7	2019	16.92	19	32.65	155	26.35	7.74	2.7	2.3	29	0	92	.16	17	.9	1.7	NER
		7	2026	47.25	19	31.86	155	28.45	5.23	2.4	2.1	26	0	84	.12	14	.7	1.3	NER
		7	2032	36.15	19	32.51	155	27.80	4.92	3.5	3.6	31	0	78	.15	15	.8	1.4	NER
		7	2036	48.09	19	31.99	155	28.15	5.66	2.8	3.0	27	0	97	.13	15	.8	3.1	NER
		7	2047	35.05	19	32.14	155	27.62	4.45	2.0	1.9	16	0	119	.10	15	.8	1.3	NER
		7	21 4	40.42	19	32.00	155	27.85	5.19	2.6	2.7	28	0	96	.16	15	1.1	1.5	NER
		7	21 7	15.25	19	32.17	155	27.24	6.95	2.1	1.4	22	0	108	.15	16	1.2	2.1	NER
		7	2125	41.39	19	32.28	155	27.12	11.61	2.6	2.4	18	0	108	.09	18	.9	.4	NER
		7	2151	47.13	19	31.99	155	27.93	5.29	2.6	2.6	17	0	131	.14	14	1.4	2.6	NER
		7	22 3	.24	19	30.67	155	28.07	8.22	2.1	1.3	21	0	81	.13	14	1.1	1.7	NER
		7	2212	35.46	19	31.85	155	28.09	5.18	2.4	2.0	28	0	83	.12	14	.6	1.1	NER
		7	2219	45.15	19	27.53	155	29.21	9.49	2.3	1.7	16	0	109	.12	12	1.3	1.0	UKF
		7	2233	41.05	19	32.12	155	27.63	5.74	3.3	3.4	30	0	78	.16	15	.8	3.2	NER
		7	2245	39.43	19	32.33	155	28.18	5.73	2.7	2.6	33	0	76	.15	14	.7	2.1	NER
		7	2250	1.66	19	32.38	155	27.64	7.59	3.0	3.3	16	0	78	.15	24	1.2	1.9	NER
		7	2251	55.46	19	31.76	155	29.98	11.57		1.0	16	0	135	.08	12	.8	.3	NER
		7	23 5	34.38	19	32.27	155	27.72	7.15	2.4	2.1	24	0	120	.13	15	.8	1.9	NER
		7	23 6	34.05	19	32.20	155	27.51	7.48	2.8	2.5	27	0	121	.14	15	.8	1.7	NER
		7	2333	28.02	19	32.10	155	28.33	7.09	3.0	2.7	32	0	76	.14	14	.7	2.1	NER
		7	2335	22.53	19	31.86	155	28.40	4.99	2.4	1.8	18	0	91	.16	13	.9	1.8	NER
		7	2351	4.95	19	31.11	155	27.99	2.01	2.3	1.5	15	0	196	.16	14	1.8	4.8	NER
		8	019	53.01	19	31.61	155	30.23	8.06	2.0	1.6	14	0	123	.16	17	1.4	6.1	MOK
		8	021	4.06	19	26.56	155	22.48	7.05	1.6	1.5	16	0	97	.09	7	.6	1.0	UKF
		8	028	5.12	19	32.31	155	27.59	6.05	2.7	2.5	20	0	141	.13	15	1.1	3.8	NER
		8	038	18.20	19	31.49	155	29.91	8.40	2.0	1.1	17	0	119	.10	11	.8	1.7	NER
		8	039	46.81	19	32.14	155	27.65	7.88	2.4	1.9	22	0	101	.11	15	.6	1.4	NER
		8	048	5.29	19	32.06	155	28.15	5.06	2.3	1.9	20	0	114	.11	15	.8	1.2	NER
		8	052	49.53	19	32.16	155	27.90	7.87	3.0	3.0	29	0	100	.14	15	.7	1.6	NER
		8	1 7	6.86	19	31.35	155	28.65	7.65	1.9	1.1	22	0	112	.12	13	.9	2.2	NER
		8	1 9	7.71	19	31.82	155	28.35	7.60	3.6	3.5	25	0	76	.17	14	1.1	2.5	NER
		8	118	36.19	19	31.83	155	26.47	7.21	2.0	1.3	20	0	85	.13	13	1.0	1.6	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	8	119	54.74	19	31.70	155	26.53	7.07	2.2	1.4	21	0	95	.18	15	1.5	3.1	NER
		8	150	55.99	19	31.92	155	28.50	5.12	2.4	2.1	21	0	99	.10	16	.7	1.3	NER
		8	135	9.49	19	32.15	155	27.51	8.17	2.5	2.2	23	0	122	.13	14	.8	1.8	NER
		8	146	4.20	19	32.01	155	28.51	9.25	2.0	1.2	17	0	124	.11	18	1.3	2.1	NER
		8	150	9.49	19	31.45	155	30.20	7.69	2.0	1.1	15	0	121	.14	11	1.1	2.3	MOK
		8	2 5	58.77	19	31.57	155	30.10	10.67	2.2	1.2	16	0	121	.09	11	.7	5.1	MOK
		8	2 6	50.86	19	32.12	155	28.19	7.72	2.7	2.7	24	0	84	.15	14	1.0	1.8	NER
		8	210	39.27	19	31.91	155	28.24	6.15	2.4	1.7	23	0	112	.12	14	.7	5.2	NER
		8	233	4.58	19	31.51	155	29.62	7.49	2.3	1.8	27	0	101	.11	12	.6	1.6	NER
		8	242	2.16	19	31.86	155	26.94	7.13	2.1	1.5	22	0	98	.17	13	1.0	1.9	NER
		8	243	22.90	19	31.95	155	26.75	7.26	2.0	1.4	21	0	96	.18	13	1.1	2.3	NER
		8	246	27.97	19	32.20	155	26.96	7.84	2.3	2.3	28	0	82	.20	14	1.0	2.6	NER
		8	253	20.03	19	31.62	155	31.37	10.46	2.5	2.1	24	0	109	.16	9	.9	.6	MOK
		8	3 4	9.29	19	31.92	155	27.84	5.85	2.7	2.5	31	0	68	.12	14	.6	2.1	NER
		8	3 7	26.32	19	31.72	155	29.55	9.14	2.3	1.8	22	0	101	.12	12	.8	1.4	NER
		8	319	.45	19	31.60	155	30.00	8.34	2.4	1.6	23	0	104	.13	11	.7	3.1	MOK
		8	323	21.61	19	28.13	155	29.46	8.56		1.0	20	0	88	.15	12	1.3	2.1	UKF
		8	333	29.83	19	32.35	155	26.25	9.07	2.3	1.8	19	0	128	.11	13	.7	1.3	NER
		8	336	49.47	19	31.63	155	27.61	5.18	2.4	2.5	20	0	114	.10	14	.6	1.0	NER
		8	353	59.63	19	31.10	155	29.67	6.39	2.3	1.2	27	0	85	.17	11	.9	2.7	NER
		8	358	58.71	19	31.91	155	29.85	8.53		1.1	17	0	123	.11	12	1.0	2.5	NER
		8	4 6	31.36	19	31.89	155	27.43	6.24	3.1	3.1	29	0	69	.16	14	.8	2.2	NER
		8	413	15.68	19	32.14	155	27.70	5.21	2.1	1.8	18	0	119	.09	15	.7	1.1	NER
		8	416	6.62	19	32.08	155	28.01	7.50	2.4	2.0	28	0	94	.12	14	.7	1.5	NER
		8	422	10.16	19	31.72	155	28.31	5.54	2.7	2.6	31	0	91	.11	14	.6	1.9	NER
		8	430	55.10	19	31.56	155	29.54	7.76	2.1	1.4	20	0	115	.11	12	.8	2.4	NER
		8	432	51.63	19	30.25	155	24.25	.19	2.5	2.7	16	0	179	.13	14	2.0	.8	NER
		8	435	36.54	19	31.29	155	31.10	7.55	2.0	1.7	19	0	126	.12	10	.7	2.6	MOK
		8	442	11.55	19	31.39	155	29.70	7.47	2.6	2.2	28	0	99	.14	12	.8	1.7	NER
		8	449	6.56	19	32.11	155	26.34	7.70	2.7	2.5	31	0	71	.17	13	.9	1.7	NER
		8	450	35.14	19	31.54	155	27.76	5.81	2.3	2.3	14	0	100	.12	14	.9	5.3	NER
		8	452	19.81	19	32.10	155	28.00	7.37	3.0	2.9	33	0	69	.13	14	.7	1.3	NER
		8	454	3.36	19	31.36	155	30.15	7.32	2.2	1.5	23	0	120	.13	11	.8	1.6	MOK
		8	456	11.28	19	32.03	155	27.16	7.72	2.3	2.0	25	0	122	.14	14	.8	1.8	NER
		8	5 4	42.73	19	31.99	155	29.18	9.08		1.0	14	0	132	.09	18	1.3	2.7	NER
		8	5 8	14.36	19	32.27	155	26.34	7.42	2.3	1.7	20	0	127	.16	13	1.0	2.0	NER
		8	510	28.33	19	32.16	155	26.37	7.72	2.4	1.7	23	0	83	.15	13	.9	1.5	NER
		8	527	52.08	19	32.21	155	26.59	7.69	2.5	2.0	26	0	71	.16	17	.9	1.7	NER
		8	531	1.77	19	30.91	155	29.29	1.75	1.9	1.2	18	0	106	.15	11	1.1	99.0	NER
		8	542	6.22	19	32.47	155	26.10	8.55	2.5	2.2	25	0	129	.13	13	.8	1.6	NER
		8	6 1	34.47	19	31.33	155	29.61	7.24	2.2	1.4	23	0	99	.12	11	.9	3.7	NER
		8	6 3	8.24	19	32.38	155	27.83	7.43	2.1	1.6	21	0	120	.11	15	.8	1.6	NER
		8	611	14.04	19	32.56	155	28.07	6.21	2.7	2.6	22	0	82	.18	15	1.1	4.1	NER
		8	615	16.55	19	32.61	155	26.28	10.97	2.1	1.7	19	0	160	.12	17	1.2	.6	NER
		8	620	59.49	19	32.07	155	27.71	5.82	2.1	1.5	19	0	116	.11	15	.7	3.4	NER
		8	626	17.96	19	31.96	155	29.54	7.29	2.1	1.5	18	0	224	.12	12	1.7	2.0	NER
		8	627	31.21	19	30.94	155	29.69	5.18	2.0	1.5	17	0	111	.10	11	.7	1.3	NER
		8	632	.89	19	31.94	155	28.58	6.05	3.0	3.1	34	0	69	.14	14	.8	2.0	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	8	633	37.51	19	31.47	155	29.54	6.56	2.3	1.5	20	0	114	.12	11	.8	2.4	NER
		8	639	18.71	19	32.00	155	26.77	7.87	2.2	1.8	23	0	80	.14	15	.9	2.1	NER
		8	649	2.20	19	33.92	155	29.24	2.46	2.5	1.9	20	0	128	.17	15	1.2	3.5	NER
		8	714	6.33	19	31.09	155	29.57	7.60	2.0	1.2	18	0	111	.10	11	.7	1.9	NER
		8	726	48.94	19	33.48	155	27.07	9.24	2.4	2.2	19	0	109	.14	16	1.1	3.3	NER
		8	728	52.98	19	31.39	155	27.93	5.01	2.4	2.1	18	0	102	.10	14	.7	1.4	NER
		8	730	53.81	19	31.78	155	26.39	8.24	2.0	1.6	22	0	75	.12	13	.8	1.3	NER
		8	737	21.19	19	31.35	155	27.52	9.10	1.9	1.1	16	0	87	.14	14	1.4	2.7	NER
		8	741	2.17	19	31.04	155	29.57	5.18	2.3	1.3	21	0	111	.10	11	.6	1.1	NER
		8	741	40.75	19	30.57	155	24.36	.43	2.8	2.9	20	0	100	.16	15	1.2	69.5	NER
		8	745	48.44	19	31.83	155	29.22	11.96	2.7	2.3	15	0	113	.08	12	1.0	.3	NER
		8	749	31.75	19	31.34	155	29.73	7.43	2.4	1.6	20	0	116	.10	12	.8	2.0	NER
		8	756	3.45	19	31.65	155	26.76	6.98	1.9	1.2	17	0	145	.12	13	1.1	2.8	NER
		8	8 1	36.08	19	31.80	155	27.65	4.79	2.0	1.4	15	0	133	.12	14	.9	1.6	NER
		8	8 4	40.20	19	18.79	155	15.29	6.68	1.8	1.9	16	0	96	.05	6	.4	.8	KOA
		8	811	7.28	19	33.37	155	29.81	13.10	2.7	2.1	9	0	137	.11	13	6.3	10.9	NER
		8	824	43.01	19	32.62	155	27.50	7.47	2.8	1.5	8	0	108	.09	15	1.4	2.5	NER
		8	841	4.78	19	32.52	155	27.62	6.05	2.9	2.8	27	0	79	.14	15	.9	2.5	NER
		8	845	7.99	19	31.56	155	27.06	11.77	2.2	1.5	12	0	175	.14	13	2.2	.6	NER
		8	849	56.37	19	31.39	155	29.73	7.27	2.5	1.9	22	0	116	.10	12	.7	2.8	NER
		8	856	4.17	19	32.57	155	29.60	11.48		1.5	17	0	245	.11	18	2.7	.4	NER
		8	9 4	13.71	19	31.72	155	29.88	9.14		1.6	18	0	122	.08	12	.6	1.7	NER
		8	9 9	24.42	19	30.71	155	29.52	7.70		1.7	17	0	128	.14	15	1.3	3.4	NER
		8	915	10.76	19	32.14	155	29.85	8.22	2.2	1.4	17	0	227	.09	12	1.3	1.4	NER
		8	925	52.45	19	32.32	155	26.36	8.71	2.9	3.0	27	0	75	.16	13	1.1	1.8	NER
		8	932	46.49	19	32.02	155	26.53	9.85	2.3	2.0	20	0	152	.13	13	1.1	6.2	NER
		8	952	41.29	19	31.50	155	29.83	7.35	2.6	2.1	26	0	101	.11	12	.8	2.9	NER
		8	953	46.74	19	32.22	155	28.28	7.70	2.1	1.2	22	0	128	.12	14	.9	2.1	NER
		8	10 5	20.04	19	32.78	155	28.05	7.35	2.6	2.5	24	0	103	.14	15	.9	2.3	NER
		8	1019	55.88	19	32.05	155	25.95	8.47	2.5	2.3	24	0	102	.17	12	1.2	2.0	NER
		8	1023	45.73	19	32.08	155	26.23	9.37	2.3	2.0	23	0	90	.14	13	.9	1.3	NER
		8	1037	14.81	19	31.57	155	29.83	7.73	2.1	1.6	19	0	119	.08	12	.8	2.8	NER
		8	1055	52.00	19	30.80	155	30.97	5.46	2.6	2.1	22	0	109	.14	11	1.1	1.9	MOK
		8	1056	35.18	19	31.52	155	28.41	7.61	3.3	3.5	30	0	74	.16	13	1.0	2.5	NER
		8	11 9	52.02	19	31.93	155	26.63	6.93	2.3	2.0	26	0	78	.14	13	.8	1.4	NER
		8	1112	3.89	19	32.03	155	28.43	7.13	2.8	2.5	26	0	86	.13	14	.9	2.1	NER
		8	1118	58.82	19	30.91	155	29.79	5.33	2.5	1.9	24	0	100	.14	11	.8	1.7	NER
		8	1120	40.19	19	32.03	155	27.66	5.68	2.6	2.5	29	0	77	.14	15	.8	2.8	NER
		8	1124	54.19	19	31.10	155	29.42	6.06	2.1	1.4	23	0	100	.13	11	.9	4.2	NER
		8	1126	47.32	19	32.46	155	28.00	7.66	2.5	2.2	20	0	136	.12	15	.9	2.3	NER
		8	1128	37.27	19	32.65	155	27.72	7.74	2.3	2.0	25	0	142	.14	15	1.0	2.4	NER
		8	1138	19.72	19	31.29	155	29.85	7.29	2.1	1.4	14	0	117	.09	11	1.5	5.6	NER
		8	1155	49.97	19	31.74	155	27.79	7.69	2.1	1.0	19	0	80	.15	14	1.0	2.1	NER
		8	1156	26.83	19	31.47	155	29.51	6.51	2.1	1.3	22	0	114	.13	11	1.0	5.5	NER
		8	1210	46.09	19	31.88	155	26.92	7.64	2.0	1.4	20	0	92	.11	13	.8	2.0	NER
		8	1212	41.73	19	25.63	155	27.95	7.89	2.1	1.6	20	0	158	.16	13	1.3	2.0	UKF
		8	1226	21.95	19	32.21	155	26.52	7.46	2.5	2.3	22	0	98	.13	13	1.0	1.9	NER
		8	1229	37.65	19	30.95	155	30.12	7.43	2.5	2.4	25	0	101	.15	11	1.0	1.8	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	8	1233	11.54	19	31.44	155	27.69	.74	2.6	2.3	17	0	127	.11	14	.8	77.0	NER
		8	1240	8.42	19	32.09	155	26.64	10.01	2.7	2.4	23	0	148	.16	13	1.4	.7	NER
		8	1251	30.53	19	32.08	155	27.85	7.33	2.3	1.5	21	0	94	.13	15	.9	1.9	NER
		8	13 9	49.11	19	31.81	155	27.74	5.27	2.4	1.9	16	0	132	.11	14	1.0	1.7	NER
		8	1312	46.44	19	32.29	155	27.54	7.65	2.8	2.6	24	0	101	.15	15	1.1	2.1	NER
		8	1335	31.09	19	32.34	155	26.54	9.17	2.1	1.6	20	0	99	.12	13	1.0	2.1	NER
		8	1336	41.60	19	32.38	155	27.49	7.30	2.3	2.0	24	0	143	.14	15	1.0	2.0	NER
		8	1353	28.17	19	32.21	155	26.36	8.04	2.0	1.6	16	0	160	.10	13	1.0	3.1	NER
		8	1354	29.82	19	32.46	155	26.35	9.79	2.3	1.8	19	0	116	.10	13	.8	4.1	NER
		8	14 1	32.01	19	31.66	155	27.00	6.21	2.2	1.7	18	0	90	.15	13	1.2	5.3	NER
		8	1410	33.90	19	31.05	155	29.64	7.22	2.6	1.9	27	0	97	.14	12	.8	2.4	NER
		8	1417	11.37	19	32.35	155	26.31	9.62	2.1	1.4	17	0	158	.10	13	.9	5.2	NER
		8	1423	24.18	19	20.74	155	13.46	9.32	1.6	1.0	12	0	60	.04	7	.4	1.0	UER
		8	1442	31.55	19	30.95	155	29.54	6.12	2.9	2.9	27	0	96	.13	11	.8	2.6	NER
		8	1456	53.17	19	31.47	155	26.68	6.49	1.8	1.2	18	0	91	.18	13	1.5	4.7	NER
		8	15 6	6.00	19	32.18	155	28.18	6.62	2.4	2.4	21	0	83	.12	14	.7	3.7	NER
		8	1514	40.04	19	26.33	155	30.34	11.21	2.5	1.0	16	0	80	.13	11	1.2	1.1	MOK
		8	1518	2.13	19	30.93	155	29.43	4.75	2.4	1.8	22	0	94	.12	11	.7	1.2	NER
		8	1536	11.97	19	31.19	155	29.72	7.92	2.1	1.2	19	0	114	.14	12	1.0	3.2	NER
		8	1546	53.91	19	32.35	155	26.11	7.73	2.0	1.4	17	0	161	.13	13	1.2	3.5	NER
		8	16 9	45.64	19	31.60	155	27.01	6.48	1.9	1.0	19	0	82	.16	13	1.1	4.2	NER
		8	1623	.10	19	22.16	155	18.72	29.30	2.7	2.4	32	0	36	.10	4	.9	1.5	DEP
		8	1627	14.39	19	31.23	155	30.04	7.12	2.4	1.7	28	0	102	.12	11	.7	1.7	MOK
		8	1634	59.16	19	31.03	155	29.55	4.85	2.0	1.3	16	0	123	.12	11	.8	1.6	NER
		8	17 5	19.38	19	33.00	155	26.88	7.13	2.5	2.4	25	0	130	.14	17	1.3	2.5	NER
		8	1715	36.92	19	32.51	155	28.92	7.29	2.4	1.9	24	0	94	.16	14	1.1	4.9	NER
		8	1738	12.93	19	31.57	155	26.84	6.01	2.2	1.6	24	0	69	.17	13	1.0	3.2	NER
		8	1743	33.90	19	29.11	154	52.79	9.99	2.0	1.7	19	0	259	.13	25	2.2	.5	LER
		8	1758	45.40	19	30.83	155	29.65	5.12	2.4	1.8	27	0	96	.13	11	.7	1.1	NER
		8	18 7	8.62	19	24.97	155	28.42	9.28	2.5	2.0	28	0	56	.11	13	.6	1.2	UKF
		8	1811	29.79	19	32.18	155	26.69	8.93	2.2	1.8	24	0	91	.11	13	.8	1.3	NER
		8	1827	32.67	19	25.18	155	28.24	9.33	2.4	2.2	27	0	56	.12	13	.7	1.3	UKF
		8	1848	1.30	19	31.94	155	28.23	5.91	2.4	2.1	25	0	105	.12	14	.8	1.9	NER
		8	1853	17.92	19	31.54	155	26.90	5.87	2.0	1.3	22	0	81	.17	13	1.1	3.0	NER
		8	19 0	6.09	19	31.96	155	26.45	6.91	2.5	2.3	26	0	91	.14	17	.9	1.6	NER
		8	1910	11.92	19	32.22	155	26.50	7.93	2.0	1.6	22	0	152	.14	13	1.0	1.9	NER
		8	1911	11.83	19	31.60	155	28.36	3.81	2.4	2.0	28	0	85	.15	13	.8	1.4	NER
		8	1915	6.93	19	31.18	155	29.87	7.00	2.4	1.7	27	0	100	.11	11	.7	1.9	NER
		8	1939	44.77	19	31.88	155	26.65	7.30	2.2	1.9	27	0	78	.12	13	.7	1.1	NER
		8	1943	36.33	19	31.70	155	28.01	.45	2.0	1.4	18	0	111	.15	15	1.0	70.1	NER
		8	1950	8.07	19	31.59	155	28.14	.46	2.0	1.5	18	0	106	.15	14	1.0	64.2	NER
		8	1956	49.51	19	27.58	155	27.35	8.38	2.3	1.7	26	0	71	.12	12	.7	1.9	UKF
		8	1959	9.73	19	31.90	155	27.79	5.08	2.3	1.6	20	0	132	.10	14	.6	1.1	NER
		8	20 0	43.45	19	31.83	155	28.08	8.57	1.9	1.2	21	0	127	.12	14	.9	1.4	NER
		8	20 7	2.68	19	32.29	155	27.89	7.36	3.9	3.8	33	0	69	.15	15	.9	1.6	NER
		8	2044	14.20	19	32.36	155	27.09	7.12	2.1	1.2	20	0	149	.10	14	.7	1.4	NER
		8	21 9	21.38	19	31.81	155	28.17	6.15	3.2	3.2	31	0	70	.14	14	.8	1.9	NER
		8	2124	9.65	19	32.16	155	27.75	7.37	2.3	1.5	18	0	137	.12	15	.9	1.8	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	8	2125	57.37	19	31.09	155	29.80	7.05	2.5	1.8	23	0	101	.13	11	.9	1.7	NER
		8	2130	46.11	19	32.35	155	27.74	8.46	2.3	1.9	21	0	139	.11	15	.8	1.5	NER
		8	22 9	39.99	19	31.71	155	26.53	8.02	2.8	2.6	31	0	88	.17	13	1.0	1.3	NER
		8	2217	15.49	19	31.80	155	27.84	5.52	2.1	1.1	19	0	130	.12	14	.9	3.2	NER
		8	2222	18.72	19	30.79	155	29.72	4.98	2.3	1.7	26	0	99	.12	11	.6	1.1	NER
		8	2257	35.47	19	32.19	155	26.30	8.23	2.4	2.1	25	0	94	.12	13	.8	1.3	NER
		8	23 1	31.24	19	31.64	155	26.60	7.41	2.2	1.8	23	0	96	.18	13	1.2	2.2	NER
		8	23 5	59.13	19	27.39	155	27.34	6.84	2.5	1.7	29	0	69	.14	12	.8	1.7	UKF
		8	2333	43.37	19	32.38	155	27.74	5.43	3.0	3.1	29	0	78	.16	15	.9	1.9	NER
		8	2351	.52	19	31.06	155	31.38	5.39	2.3	1.7	20	0	114	.13	17	1.1	2.5	MOK
		9	016	40.27	19	31.26	155	29.76	7.54	2.6	2.0	31	0	69	.13	11	.8	1.5	NER
		9	023	.43	19	32.28	155	28.22	8.89	2.2	1.7	21	0	110	.13	14	.9	1.7	NER
		9	114	36.53	19	32.69	155	27.53	7.75	2.6	2.6	23	0	79	.13	15	.9	1.7	NER
		9	124	53.68	19	28.91	155	27.00	8.26	1.8	1.0	24	0	69	.14	12	.8	1.3	UKF
		9	143	51.91	19	31.94	155	26.37	8.49	2.9	2.7	30	0	97	.15	13	1.0	1.5	NER
		9	2 0	.65	19	27.77	155	28.92	9.13	2.4	1.5	30	0	76	.16	11	.8	1.1	UKF
		9	231	43.87	19	31.89	155	27.56	5.21	2.5	2.5	22	0	78	.14	14	.8	1.4	NER
		9	241	.58	19	30.91	155	29.61	5.05	2.0	1.0	20	0	110	.11	11	.7	1.3	NER
		9	3 7	1.40	19	30.70	155	24.17	.19	2.2	2.3	17	0	134	.13	14	1.1	.6	NER
		9	326	12.69	19	32.97	155	26.50	7.30	2.3	2.0	22	0	181	.11	17	1.2	1.3	NER
		9	330	2.03	19	32.70	155	27.65	6.38	2.5	2.4	26	0	79	.14	15	.9	2.4	NER
		9	342	28.44	19	32.01	155	26.11	7.67	2.0	1.5	19	0	81	.11	12	.8	1.5	NER
		9	349	27.55	19	32.18	155	28.06	7.77	3.4	3.6	31	0	82	.14	14	.9	1.5	NER
		9	426	43.32	19	31.41	155	28.08	.85	2.3	1.9	26	0	83	.17	14	.9	22.0	NER
		9	432	53.10	19	26.18	155	28.62	8.64		1.2	19	0	120	.11	12	.9	2.0	UKF
		9	447	38.81	19	30.94	155	29.99	7.25	2.0	1.5	17	0	115	.12	11	1.0	2.9	NER
		9	515	10.92	19	31.59	155	26.85	6.23	1.9	1.6	19	0	91	.15	13	1.1	3.1	NER
		9	524	25.06	19	32.06	155	26.22	8.42	2.7	2.6	29	0	100	.17	13	1.1	1.5	NER
		9	547	42.70	19	32.57	155	27.95	8.56	3.9	4.0	30	0	80	.19	15	1.3	1.6	NER
		9	557	48.58	19	32.46	155	28.17	6.38	3.1	3.2	28	0	76	.13	14	.8	2.1	NER
		9	6 0	43.27	19	31.71	155	28.31	.44	2.2	1.4	15	0	109	.15	13	1.0	62.5	NER
		9	616	19.48	19	31.05	155	28.78	7.26	1.9	1.2	19	0	101	.11	12	.8	1.9	NER
		9	634	34.38	19	32.31	155	25.95	7.69	2.1	1.9	20	0	98	.14	13	1.1	1.8	NER
		9	637	57.06	19	31.06	155	30.87	6.11	2.3	1.9	18	0	144	.12	17	.9	3.1	MOK
		9	653	50.12	19	31.80	155	30.19	7.28	2.0	1.4	17	0	140	.12	13	1.0	2.0	MOK
		9	7 4	34.04	19	31.80	155	27.80	7.74	3.0	2.9	29	0	79	.14	14	.9	1.6	NER
		9	739	28.40	19	31.97	155	27.64	5.10	2.0	1.4	21	0	136	.12	15	.8	1.3	NER
		9	754	6.23	19	31.71	155	26.66	6.65	2.0	1.7	23	0	93	.17	13	1.2	2.1	NER
		9	758	18.43	19	49.90	155	22.49	18.04		.8	19	0	158	.07	37	1.8	3.7	KKU
		9	8 9	11.85	19	31.01	155	29.76	6.59	2.7	2.3	29	0	98	.12	11	.8	1.7	NER
		9	840	3.50	19	31.88	155	28.17	8.43	4.5	4.3	33	0	68	.15	14	.9	1.1	NER
		9	950	26.63	19	32.41	155	27.75	7.28	2.3	1.6	20	0	140	.12	15	.8	1.8	NER
		9	1010	44.98	19	31.68	155	28.28	6.20	2.7	2.5	32	0	68	.13	14	.7	1.8	NER
		9	1016	55.18	19	31.64	155	29.00	8.11	2.0	1.6	16	0	118	.13	13	1.0	3.2	NER
		9	1049	6.53	19	31.41	155	31.63	10.28	2.5	1.9	22	0	119	.13	10	1.0	.8	MOK
		9	12 5	7.93	19	27.82	155	28.65	11.94	2.3	1.7	23	0	75	.09	11	.7	.3	UKF
		9	1235	18.24	19	26.97	155	27.39	9.99	1.8	1.2	19	0	64	.08	12	.5	.6	UKF
		9	13 2	47.18	19	31.82	155	27.54	5.45	2.9	3.0	30	0	67	.15	14	.8	1.7	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	9	1334	23.80	19	32.51	155	27.50	7.41	3.4	3.7	32	0	69	.15	15	.8	1.6	NER
		9	1356	37.08	19	31.93	155	28.09	7.40	2.8	2.7	21	0	97	.11	14	.8	3.5	NER
		9	14 2	19.72	19	19.95	155	11.60	6.89	2.2	1.9	26	0	84	.09	6	.5	.9	UER
		9	15 9	.14	19	28.51	155	28.54	9.37	2.1	1.2	21	0	80	.09	11	.6	1.1	UKF
		9	1529	49.02	19	32.12	155	26.69	8.71		1.2	17	0	96	.13	13	1.1	3.5	NER
		9	1647	17.16	19	31.93	155	27.75	5.02	1.9	1.5	15	0	133	.10	15	.8	1.4	NER
		9	1728	53.72	19	32.29	155	26.51	8.25	2.0	1.5	17	0	161	.12	13	1.5	3.8	NER
		9	1755	49.57	19	27.38	155	28.06	8.28	2.4	1.9	29	0	69	.15	12	.8	1.7	UKF
		9	1938	26.83	19	31.89	155	27.74	6.27	3.1	3.2	31	0	68	.14	15	.8	2.2	NER
		9	20 7	3.81	19	32.30	155	27.96	7.13	1.9	1.0	18	0	135	.11	15	1.2	4.2	NER
		9	2021	32.48	19	19.37	155	13.16	7.76	2.4	2.5	22	0	75	.10	7	.6	.9	UER
		9	2039	22.18	19	31.42	155	27.00	7.16	1.9	1.0	16	0	90	.16	13	1.2	4.5	NER
		9	2121	45.20	19	30.74	155	31.07	7.13	2.3	1.7	21	0	109	.16	11	1.1	3.1	MOK
		9	22 2	12.03	19	26.98	155	29.68	9.61	2.4	1.9	30	0	72	.13	12	.7	.4	UKF
		10	046	34.10	19	31.69	155	27.35	4.76	2.4	2.2	18	0	114	.11	14	.7	1.1	NER
		10	153	2.36	19	32.77	155	25.97	8.25	2.1	1.8	20	0	111	.15	13	1.1	2.0	NER
		10	253	32.04	19	30.81	155	31.12	6.74	2.4	2.1	22	0	110	.13	11	.9	2.3	MOK
		10	3 1	24.26	19	31.13	155	29.85	5.97	2.0	1.1	21	0	115	.12	11	.8	2.6	NER
		10	4 9	8.20	19	31.39	155	27.71	.88	2.2	1.9	20	0	126	.12	14	.8	53.4	NER
		10	735	27.94	19	32.15	155	27.42	7.89	2.9	3.0	31	0	68	.15	14	.9	1.5	NER
		10	816	37.48	19	31.64	155	27.85	5.66	2.7	3.0	25	0	109	.12	14	.8	2.4	NER
		10	12 5	49.25	19	32.65	155	27.94	7.41	2.6	2.7	20	0	103	.12	15	.8	2.6	NER
		10	1216	53.87	19	30.75	155	29.73	6.43	2.4	2.1	22	0	97	.15	11	1.0	3.4	NER
		10	1432	38.10	19	31.60	155	28.87	7.03	2.0	1.5	17	0	112	.10	13	1.0	4.4	NER
		10	1439	42.44	19	26.59	155	29.90	9.59	1.9	1.3	17	0	76	.09	13	.7	2.2	UKF
		10	1547	18.82	19	27.66	155	26.94	6.84	1.8	.9	15	0	80	.10	11	.8	3.2	UKF
		10	1615	12.64	19	32.38	155	27.82	7.61	2.4	2.2	23	0	79	.11	15	.7	1.5	NER
		10	1853	25.12	19	32.51	155	30.83	11.46	2.4	2.2	19	0	146	.11	11	1.1	.4	MOK
		10	2133	7.62	19	27.08	155	29.12	9.82	2.8	2.7	30	0	71	.14	11	.8	.5	UKF
		10	2217	49.79	19	27.23	155	29.32	9.82	2.4	2.4	22	0	73	.12	12	.9	.6	UKF
		10	23 0	10.86	19	26.95	155	29.29	9.35	1.9	1.4	25	0	71	.13	12	.8	1.9	UKF
		10	2319	.18	19	27.18	155	29.19	8.69	2.1	2.0	27	0	72	.14	11	.7	1.7	UKF
		10	2347	30.58	19	27.39	155	29.36	9.01	1.8	1.5	21	0	75	.12	12	.8	2.6	UKF
		11	051	38.62	19	27.65	155	27.21	8.77	1.5	1.1	13	0	104	.11	11	1.2	2.4	UKF
		11	117	.21	19	20.14	155	10.69	6.47	1.8	1.0	15	0	104	.14	7	1.1	2.3	UER
		11	120	13.68	19	31.55	155	33.15	10.95	1.6	1.3	16	0	196	.09	19	1.2	.4	MOK
		11	318	18.00	19	32.33	155	27.93	7.19	2.6	2.4	25	0	136	.14	15	1.0	2.6	NER
		11	336	6.80	19	32.30	155	27.72	5.28	2.4	2.2	24	0	78	.15	15	.8	1.5	NER
		11	452	.90	19	27.38	155	28.53	7.05	1.9	1.4	21	0	71	.17	12	1.1	4.6	UKF
		11	637	58.16	19	26.80	155	28.67	10.54	2.7	2.8	28	0	68	.13	12	.8	.5	UKF
		11	851	40.78	19	31.16	155	31.98	10.27		1.1	14	0	144	.10	11	1.7	8.1	MOK
		11	955	29.63	19	19.60	155	9.91	7.59		1.9	18	0	112	.10	8	.7	1.9	UER
		11	1054	22.40	19	20.09	155	11.03	7.45		1.2	14	0	84	.08	7	.7	1.5	UER
		11	11 7	24.26	19	30.84	155	31.02	2.49	2.0	1.4	15	0	143	.11	11	.9	5.4	MOK
		11	1221	16.60	19	26.52	155	30.10	9.52		1.3	16	0	69	.11	11	.8	5.2	MOK
		11	1258	51.82	19	18.09	155	21.18	7.55		1.2	14	0	168	.11	8	1.1	1.3	SWR
		11	1343	43.57	19	26.74	155	28.46	10.18	1.5	.8	20	0	67	.11	12	.6	1.2	UKF
		11	1348	16.45	19	26.71	155	28.40	10.05	1.9	.7	15	0	104	.08	12	.8	.5	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	11	1421	.78	19	26.24	155	29.98	12.17	2.0	1.3	18	0	69	.09	11	.6	.3	UKF
		11	1426	24.45	19	31.66	155	27.77	5.08		.8	12	0	129	.14	14	1.2	2.2	NER
		11	1450	54.19	18	52.11	155	32.84	75.28	1.8		19	0	291	.20	46	30.0	38.9	DIS
		11	1538	3.93	19	32.05	155	27.65	5.36	1.9	1.4	16	0	137	.13	15	1.2	1.8	NER
		11	1544	2.72	19	32.49	155	28.05	7.20	2.3	1.9	22	0	136	.13	15	1.4	4.4	NER
		11	16 7	55.81	19	26.58	155	28.71	10.64	2.1	1.0	19	0	69	.12	12	.9	.9	UKF
		11	1651	49.55	19	27.79	155	27.11	6.32	2.0	1.6	16	0	72	.11	11	.5	1.4	UKF
		11	1753	5.96	19	26.92	155	27.41	3.63	1.7	1.4	10	0	95	.09	14	1.0	3.9	UKF
		11	1939	22.71	19	31.26	155	31.78	7.90		.7	9	0	189	.08	18	1.8	7.9	MOK
		11	1946	15.65	19	31.10	155	31.32	7.53	1.6	1.2	15	0	149	.12	14	1.1	5.2	MOK
		11	20 2	29.27	19	29.63	155	30.59	6.57		1.3	12	0	135	.15	14	1.4	11.3	MOK
		12	0 0	19.33	19	25.32	155	24.19	8.08	1.9	1.8	18	0	81	.12	8	.9	1.4	UKF
		12	020	35.30	19	31.12	155	31.06	6.56	2.2	1.6	21	0	131	.13	10	.9	2.4	MOK
		12	054	33.44	19	28.69	155	27.74	7.20	1.5	.5	14	0	86	.10	12	.9	3.7	UKF
		12	331	.65	19	18.50	155	13.14	6.47	1.6	1.1	18	0	89	.10	8	.7	1.3	POL
		12	350	15.02	19	30.01	155	26.61	11.08	1.3	.6	13	0	115	.10	12	1.1	1.5	NER
		12	415	53.07	19	32.03	155	27.46	7.46	2.3	2.3	21	0	140	.12	14	.9	1.8	NER
		12	440	26.20	19	28.13	155	30.48	12.19	1.3	.6	14	0	98	.09	13	.9	.4	MOK
		12	450	54.37	19	26.71	155	28.60	6.94	1.3	.6	11	0	77	.10	12	.9	3.7	UKF
		12	639	39.16	19	32.10	155	28.28	5.80	3.0	2.9	26	0	79	.13	14	.8	1.8	NER
		12	1236	51.65	19	31.97	155	27.39	7.53	2.4	2.2	23	0	140	.15	14	1.1	1.9	NER
		12	1552	17.67	19	26.70	155	26.90	8.80	1.8	1.3	18	0	65	.12	11	.8	1.8	UKF
		12	17 6	13.45	19	24.98	155	16.34	13.68	2.5	2.8	32	0	38	.11	3	.6	1.0	DEP
		12	1710	12.24	19	25.08	155	16.50	13.58	2.3	2.7	32	0	38	.11	3	.6	1.0	DEP
		12	18 4	14.26	19	24.61	155	16.35	16.43	1.7	1.7	28	0	43	.10	2	.6	1.1	DEP
		13	016	4.32	19	24.84	155	28.86	9.41	2.2	2.1	19	0	59	.11	13	.7	1.5	UKF
		13	140	59.80	19	26.99	155	51.48	10.09	2.0	1.4	18	0	120	.18	20	1.7	.7	KON
		13	231	52.79	19	25.49	155	25.37	8.40	2.3	2.1	23	0	55	.12	9	.7	1.0	UKF
		13	525	31.12	19	50.89	155	49.97	41.80		1.7	26	2	187	.18	45	1.8	2.7	KON
		13	611	13.03	19	20.23	155	12.15	9.51	2.1	2.3	22	0	75	.13	6	.8	.9	UER
		13	648	59.24	19	20.16	155	10.35	7.68	2.1	2.2	21	0	82	.12	7	.8	1.6	UER
		13	649	40.91	19	20.08	155	9.92	6.82	1.8	1.3	17	0	126	.14	7	1.2	2.7	UER
		13	1655	22.79	19	28.92	155	28.53	12.14	2.1	1.1	14	0	92	.10	12	1.0	.5	UKF
		13	17 3	21.71	19	22.32	155	26.90	9.16	2.1	2.0	22	0	46	.11	12	.6	1.2	UKF
		13	1720	36.00	19	25.47	155	17.14	6.15	1.4	1.6	14	0	95	.07	4	.5	1.0	LPC
		13	1743	6.19	19	26.65	155	24.75	8.47	1.6	1.3	15	0	53	.08	9	.7	1.2	UKF
		14	0 7	17.24	19	17.75	155	15.57	7.68	2.0	2.0	22	0	125	.12	5	.8	1.1	KOA
		14	032	49.17	19	19.01	155	15.61	6.93	1.9	1.3	18	0	116	.11	6	.8	1.3	KOA
		14	1 6	54.72	19	20.45	155	8.96	8.03	1.9	1.5	16	0	145	.10	8	1.0	1.0	UER
		14	551	59.25	19	26.55	155	22.41	9.55	1.7	1.4	15	0	96	.06	7	.5	2.0	UKF
		14	932	38.37	19	17.41	155	12.97	7.97	1.6	1.8	21	0	140	.11	9	.9	1.3	POL
		14	1448	24.30	19	25.01	155	23.90	8.31	1.5	1.2	16	0	85	.08	6	.6	1.1	UKF
		14	1828	29.20	19	25.59	155	30.26	10.12	2.1	1.3	21	0	61	.11	12	.8	.5	MOK
		14	2011	35.42	19	31.52	155	24.70	7.06	2.0	1.5	16	0	135	.11	12	1.0	1.5	NER
		14	2150	13.07	19	20.17	155	11.13	10.26	1.8	1.7	19	0	82	.09	7	.7	1.2	UER
		15	345	23.65	19	18.91	155	15.17	6.70	1.9	1.8	21	0	93	.11	6	.6	1.3	KOA
		15	420	13.68	19	17.99	155	13.05	7.25	2.1	2.1	21	0	105	.11	9	.8	1.3	POL
		15	1030	56.49	19	32.69	155	27.89	8.56	2.7	2.7	23	0	103	.12	15	.8	1.6	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH Km	ERZ KM	REMK
1975	JUL	15	1036	1.10	19	18.00	155	13.03	5.87		1.5	17	0	105	.10	9	.8	1.9	POL
		15	1037	33.37	19	17.62	155	12.91	9.53	2.9	2.9	24	0	128	.12	9	.9	.6	POL
		15	12 3	1.75	19	19.65	155	12.35	7.41	1.7	1.0	15	0	95	.11	8	1.0	2.3	UER
		15	1354	49.74	19	19.13	155	13.53	6.60	1.7	1.1	19	0	78	.14	7	.9	1.8	UER
		15	1954	53.06	19	29.07	155	24.86	9.12	1.7	1.2	18	0	66	.10	13	.7	1.0	NER
		15	2217	.58	19	33.07	155	28.04	5.33	2.1	1.7	17	0	239	.09	16	2.2	1.1	NER
		15	23 5	25.56	19	19.81	155	11.76	6.92	1.6	.7	17	0	86	.14	6	1.1	2.8	UER
		15	2321	39.88	19	4.97	155	18.15	42.89	2.1	.7	27	0	216	.08	26	1.4	3.0	PPL
		16	735	9.19	19	17.65	155	12.83	9.37	2.6	2.9	24	0	130	.12	9	.8	1.1	POL
		16	818	29.36	19	28.82	155	26.97	7.36	1.8	1.2	15	0	90	.12	12	.9	3.5	UKF
		16	847	23.42	19	27.17	155	21.07	5.92	1.7	1.5	14	0	88	.07	7	.6	1.2	UKF
		16	925	1.75	19	14.42	155	31.47	6.76		1.6	24	0	67	.18	11	1.1	2.5	LSW
		16	15 1	25.14	19	41.73	155	2.60	.57	2.5	3.1	17	0	201	.19	38	2.4	65.6	BLS
		16	1750	2.32	19	26.16	155	23.99	7.81	2.5	2.5	23	0	85	.10	9	.6	1.3	UKF
		16	1913	30.57	19	27.76	155	28.81	10.35	2.2	1.5	24	0	103	.14	11	1.2	.4	UKF
		17	015	18.02	19	17.11	155	22.13	4.28	1.6	1.7	18	0	125	.14	8	1.1	2.0	SWR
		17	020	53.71	19	24.24	155	24.81	8.98	1.9	1.7	24	0	82	.14	9	.8	1.0	UKF
		17	257	57.24	19	17.38	155	12.81	10.07	2.7	3.0	23	0	144	.10	9	.8	.4	POL
		17	19 5	23.89	19	31.77	155	29.68	8.26	2.4	2.3	24	0	118	.13	12	1.1	3.1	NER
		18	11 8	2.83	19	26.49	155	22.28	7.41	2.1	2.0	19	0	94	.09	7	.6	1.1	UKF
		18	2055	51.35	19	32.34	155	27.69	7.13	2.9	3.0	21	0	103	.14	15	1.0	2.1	NER
		18	2119	58.22	19	20.74	155	6.89	9.40	3.4	3.5	22	0	139	.10	11	.8	.7	UER
		19	125	51.25	19	13.78	155	23.02	37.00	2.1	1.0	19	0	151	.08	12	1.8	3.5	LSW
		19	223	23.69	19	25.17	155	25.97	12.50		1.1	11	0	178	.05	10	.6	.7	UKF
		19	449	34.23	19	19.06	155	13.82	8.45		.8	12	0	86	.08	7	.9	2.3	UER
		19	6 0	34.27	19	17.87	155	20.11	8.72	2.2	2.5	18	0	124	.09	7	.7	1.1	SWR
		19	1538	54.41	19	20.66	155	25.05	8.82	1.6	1.2	16	0	86	.11	8	.9	1.4	HEA
		19	20 1	58.90	19	22.92	155	24.26	9.29	1.7	1.9	20	0	70	.10	8	.7	1.1	UKF
		20	327	5.90	19	26.87	155	25.56	12.98		1.0	12	0	118	.07	9	1.0	.3	UKF
		20	336	47.35	19	31.14	155	23.80	7.97		1.3	12	0	150	.09	15	1.1	1.6	NER
		20	349	39.51	19	35.13	155	33.58	11.11	1.6	1.1	15	0	193	.10	15	2.2	.4	MOK
		20	1233	28.82	19	26.61	155	28.09	7.91	1.8	1.3	15	0	131	.15	13	1.4	3.8	UKF
		20	14 1	40.80	19	27.69	155	23.67	6.43	1.8	1.7	15	0	97	.07	10	.6	1.5	UKF
		20	1743	18.54	19	23.36	154	45.10	43.54	2.7	1.6	24	1	291	.09	42	1.9	1.4	DIS
		20	2319	47.30	19	21.31	155	19.22	30.72	2.2	1.6	25	0	44	.09	6	1.0	1.8	DEP
		21	1 7	54.64	19	20.46	155	8.98	5.86	1.8	1.7	20	0	102	.16	8	1.0	2.5	UER
		21	112	41.93	19	20.78	155	9.22	6.43	1.8	1.6	24	0	99	.16	8	1.0	2.0	UER
		21	147	39.38	19	26.69	155	25.32	9.85	1.7	1.2	17	0	90	.07	9	.6	.4	UKF
		21	740	4.23	19	26.93	155	29.06	9.27	1.7	1.3	19	0	94	.12	11	1.0	2.0	UKF
		21	2147	1.89	19	27.04	155	28.70	8.76	1.5	1.2	14	0	141	.09	11	1.0	2.4	UKF
		21	2314	43.29	19	31.24	155	23.54	7.46	2.4	2.1	24	0	101	.13	15	.8	1.0	NER
		22	0 1	27.84	19	21.59	155	30.25	9.46	1.5	1.4	17	0	74	.13	12	1.0	2.6	HEA
		22	034	52.02	19	19.02	155	15.52	7.18		.9	15	0	115	.07	6	.6	1.4	KOA
		22	042	59.91	19	19.18	155	15.52	6.78		1.4	19	0	110	.08	6	.5	1.0	KOA
		22	317	3.27	19	12.56	155	21.11	30.41	2.7	2.3	26	0	164	.08	13	1.1	1.7	LSW
		22	329	58.58	19	19.84	155	8.69	7.56		1.3	16	0	140	.10	9	.8	1.8	UER
		22	544	25.77	19	24.50	155	26.04	7.36	1.7	1.5	19	0	93	.12	11	.9	2.2	UKF
		22	9 1	2.62	19	15.25	155	24.78	39.10	1.9	.9	16	0	142	.09	12	1.7	4.6	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH Km	ERZ KM	REMK
1975	JUL	22	918	32.74	19	17.25	155	21.89	5.64	1.6	1.5	18	0	125	.11	9	.9	2.3	SWR
		22	1057	4.21	19	25.57	155	24.84	8.96	1.8	1.9	20	0	83	.11	8	.8	1.2	UKF
		22	1438	38.26	19	26.50	155	22.44	7.67	2.2	2.2	22	0	58	.11	7	.6	1.4	UKF
		22	1446	4.90	19	17.56	155	23.40	7.02		1.4	17	0	127	.12	8	.9	2.0	SWR
		22	1512	36.48	19	39.17	155	57.80	18.57	4.1	4.3	19	0	266	.15	42	9.2	8.3	KON
		22	1933	20.32	19	26.57	155	22.61	8.11	1.5	1.2	14	0	98	.06	7	.5	1.4	UKF
		22	2141	35.95	19	32.81	155	27.12	7.12	1.4	1.5	15	0	153	.12	15	1.1	2.1	NER
		22	2159	49.57	19	27.88	155	26.76	8.26	1.8	1.6	19	0	75	.09	11	.6	1.4	UKF
		22	2244	18.04	19	27.65	155	26.95	7.30	1.6	1.1	15	0	72	.10	11	.8	3.1	UKF
		23	321	50.69	18	59.76	155	25.78	34.97	1.8	.7	18	0	244	.09	31	5.0	4.4	DIS
		23	335	36.88	19	26.94	155	34.42	8.82	2.1	1.3	10	0	156	.11	5	4.5	6.8	MOK
		23	938	20.80	19	31.62	155	37.03	10.11	2.1	1.4	20	0	111	.18	16	1.5	.7	MOK
		23	1656	26.31	19	19.34	155	10.49	5.94	1.8	1.3	22	0	101	.14	7	1.0	2.3	UER
		23	1750	10.00	19	31.84	155	25.43	20.91		1.1	20	0	82	.14	11	1.5	3.0	NER
		23	1951	51.45	19	18.54	155	12.24	29.35	2.2	1.9	25	0	111	.10	8	1.2	1.8	DEP
		24	451	35.49	19	16.22	155	23.94	8.66	2.4	2.8	25	0	123	.18	13	1.1	1.6	SWR
		24	1552	35.69	19	29.00	155	27.90	6.66	1.3	.7	12	0	173	.08	13	.9	3.3	NER
		24	1618	11.07	19	21.88	155	17.67	3.35		.6	8	0	99	.10	5	1.0	4.2	KOA
		24	18 0	46.08	19	27.11	155	27.97	4.14	1.7	1.2	12	0	74	.06	13	.5	1.4	UKF
		24	2029	56.72	19	21.56	155	49.20	10.43	2.6	1.9	20	0	117	.19	18	1.6	.6	KON
		24	2217	46.91	19	26.36	155	28.82	8.90		1.0	16	0	65	.10	12	.7	2.3	UKF
		24	23 5	58.65	19	24.23	155	25.23	9.40	1.9	1.4	21	0	69	.11	10	.8	1.2	UKF
		24	2343	15.94	19	19.07	155	15.82	6.15	1.7	1.5	17	0	115	.12	6	.9	1.5	KOA
		25	1117	41.27	19	15.91	155	23.86	.56	1.6	1.6	17	0	127	.14	10	1.0	57.0	LSW
		25	1956	44.71	19	27.69	155	35.22	16.54	3.0	3.3	30	0	46	.12	3	.8	1.6	MOK
		26	918	38.96	19	18.86	155	12.49	8.88	1.9	1.7	15	0	97	.09	8	.8	1.9	POL
		26	10 8	18.92	19	19.19	155	11.80	4.30		1.2	13	0	99	.20	7	1.6	4.4	UER
		26	1127	15.05	19	12.52	155	36.63	10.00	2.3	1.9	21	0	113	.19	24	1.7	.7	HEA
		26	1550	50.53	19	20.98	155	16.97	31.97	2.1	1.6	25	0	65	.07	4	.8	1.7	DEP
		26	1919	41.71	19	19.78	155	23.69	29.63	2.3	2.3	29	0	90	.10	9	.8	1.6	SWR
		26	1932	27.00	19	20.22	155	20.96	29.14	2.0	1.1	24	0	76	.08	6	.8	1.7	DEP
		26	1956	20.38	19	26.69	155	22.54	7.89	2.7	3.0	29	0	58	.12	7	.6	.9	UKF
		26	2314	59.23	19	50.86	155	33.58	30.89	5.7	3.5	32	0	200	.15	54	1.8	4.9	KKU
		26	2327	21.31	19	18.90	155	15.20	6.52		1.0	20	0	115	.14	5	.9	2.1	KOA
		27	410	19.56	19	32.14	155	27.79	6.71	2.2	1.9	19	0	136	.11	15	1.1	4.2	NER
		27	1048	27.39	19	20.65	155	11.63	9.17	1.9	1.9	21	0	73	.11	7	.8	1.5	UER
		27	1936	17.65	19	27.90	155	29.07	10.19	2.5	2.1	28	0	56	.13	11	.7	.3	UKF
		27	2145	46.71	19	18.67	155	13.53	7.28	1.6	1.0	20	0	74	.12	7	.8	1.9	POL
		28	451	9.22	19	17.14	154	59.62	39.94		1.2	25	0	240	.08	24	2.6	3.5	DIS
		28	830	39.38	19	24.19	155	16.31	1.56	.8	1.2	8	0	93	.10	3	1.0	.4	SPC
		28	1126	19.57	19	25.48	155	24.41	10.02	1.8	1.5	15	0	109	.09	9	.7	1.4	UKF
		28	1159	8.67	19	21.87	155	19.46	29.14	2.3	1.9	29	0	44	.11	5	.9	1.9	DEP
		28	15 7	49.20	19	24.05	155	16.37	1.04	.8	1.2	7	0	91	.14	3	.6	.5	SPC
		28	16 3	2.21	19	19.39	155	12.83	7.58	1.7	1.5	22	0	81	.15	7	.9	1.9	UER
		28	1857	56.93	19	25.03	155	25.25	10.05	2.0	2.1	21	0	61	.15	9	.9	2.1	UKF
		28	1913	17.79	19	24.30	155	16.29	1.76	.6	1.0	8	0	94	.08	2	.8	.5	SPC
		28	20 2	27.94	19	19.43	155	15.63	6.64		1.1	20	0	103	.10	6	.6	1.1	KOA
		28	2210	11.22	19	19.60	155	13.85	7.16	1.4	1.5	19	0	61	.12	6	.8	1.7	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	29	2 0	55.25	19	16.36	155	23.44	.57	2.0	2.0	22	0	122	.14	10	.8	4.5	SWR
		29	3 4	36.51	19	25.53	155	37.90	11.17	1.6	.8	18	0	150	.15	27	1.5	.5	MOK
		29	349	31.40	19	24.10	155	16.00	2.00	1.1	1.4	10	0	106	.14	5	1.2	.0	SPC
		29	1040	49.07	19	26.92	155	28.45	9.86	1.9	1.8	23	0	94	.17	12	1.3	.7	UKF
		29	1044	43.05	19	26.99	155	28.59	12.37	1.9	1.5	13	0	140	.14	12	1.9	.6	UKF
		29	1220	16.14	19	27.38	155	15.68	25.63	2.3	2.0	26	0	57	.08	8	.7	1.2	DEP
		29	1253	4.85	20	19.42	155	59.47	22.73	3.1		24	2	318	.11	101	4.2	26.0	DIS
		29	1647	46.20	19	24.12	155	17.70	15.02		1.0	16	0	88	.13	4	1.3	1.7	DEP
		29	1849	1.84	19	26.22	155	28.57	7.58	1.8	1.5	20	0	126	.15	12	1.0	1.9	UKF
		30	520	51.64	19	24.45	155	17.26	14.72	2.2	2.3	29	0	40	.10	3	.6	.9	DEP
		30	328	32.56	19	24.57	155	17.66	14.71		1.0	16	0	106	.06	4	.6	.8	DEP
		30	1246	27.65	19	24.50	155	17.28	15.00	2.2	2.2	27	0	40	.09	3	.6	.9	DEP
		30	1331	22.36	19	31.98	155	36.00	9.93	3.9	3.8	26	0	128	.12	9	1.1	.4	MOK
		30	1442	29.59	19	18.89	155	13.64	9.00	1.7	1.0	16	0	84	.09	7	.6	1.8	POL
		30	1524	33.26	19	24.25	155	16.45	2.07	.8	1.1	9	0	88	.10	3	.9	11.5	SPC
		31	144	29.33	19	26.97	155	56.49	12.42	3.2	2.8	21	0	230	.16	38	8.5	2.9	KON
		31	755	9.01	19	17.62	155	21.01	8.14	2.1	2.2	20	0	124	.10	8	.8	1.5	SWR
		31	1617	2.00	19	19.04	155	13.51	8.24	1.9	1.5	17	0	76	.11	5	.8	1.8	UER
		31	2034	34.82	19	21.84	155	12.28	2.17		1.5	14	0	86	.06	6	.5	5.7	UER
		31	2115	29.83	19	18.95	155	15.59	7.51	1.9	1.3	22	0	116	.10	6	.6	1.0	KOA
		31	2326	37.48	19	21.82	155	18.09	2.84		1.0	10	0	79	.11	4	.7	5.4	KOA
	AUG	1	312	47.88	19	24.75	155	16.16	7.08		1.2	19	0	49	.14	3	.8	1.3	LPC
		1	430	29.81	19	17.89	155	14.31	7.26		1.1	18	0	125	.10	8	.8	1.5	POL
		1	1152	37.80	19	26.18	155	17.62	14.21	1.9	1.1	21	0	91	.10	5	.8	1.2	DEP
		1	1421	5.85	19	21.01	155	13.15	7.25	1.8	1.9	17	0	58	.13	6	.9	2.0	UER
		2	553	29.07	19	16.36	155	30.54	3.62	2.5	2.4	22	0	70	.17	15	.9	2.2	HEA
		2	940	43.63	19	20.09	155	17.62	28.55	1.8	1.0	20	0	76	.09	5	1.0	2.0	DEP
		2	1841	31.82	19	16.52	155	22.05	6.69	1.8	1.3	12	0	202	.09	8	1.5	2.5	SWR
		2	20 9	34.71	19	26.39	155	22.70	7.91	2.4	2.6	23	0	67	.11	7	.7	1.2	UKF
		3	21 9	29.52	19	27.80	155	44.08	9.58	3.0	2.6	24	0	65	.13	14	.8	.4	MOK
		4	127	42.25	19	29.07	155	22.60	9.25	2.0	1.6	17	0	127	.07	12	.6	.9	NER
		4	211	22.15	19	23.91	155	26.74	11.46	1.5	.8	15	0	71	.06	13	.4	3.1	UKF
		4	1027	18.54	19	25.20	155	24.77	9.16	2.0	1.7	16	0	53	.14	9	1.0	2.0	UKF
		4	1729	21.13	20	2.11	155	29.34	2.56	2.5	2.0	20	0	199	.14	53	1.6	2.3	KKU
		4	1824	6.76	19	17.31	155	24.08	.28	2.3	2.7	23	0	128	.15	10	.9	5.5	SWR
		4	1825	54.28	19	16.81	155	24.05	.60	1.8	2.0	15	0	172	.15	10	1.5	6.6	SWR
		4	1827	44.82	19	17.02	155	24.02	.22	1.8	1.9	14	0	166	.08	10	.9	4.0	SWR
		4	2134	24.86	19	16.96	155	24.02	.57	1.8	1.9	16	0	168	.13	10	1.2	6.3	SWR
		4	22 5	37.62	19	17.21	155	24.20	.36	2.1	2.6	20	0	128	.14	10	.9	4.8	SWR
		5	349	56.54	19	20.39	155	13.82	8.17	1.9	2.0	21	0	68	.14	6	.9	1.7	UER
		5	736	28.76	19	16.95	155	23.42	7.35	2.2	1.6	21	0	131	.16	9	1.2	1.9	SWR
		5	736	39.73	19	15.99	155	23.87	8.06	3.2	3.3	15	0	185	.20	18	3.5	3.3	LSW
		5	738	13.88	19	16.57	155	23.20	6.12	2.4	2.5	16	0	135	.17	12	1.6	4.2	SWR
		5	750	47.30	19	16.83	155	23.25	7.35	2.5	2.9	23	0	153	.16	8	1.1	1.8	SWR
		5	753	19.79	19	16.88	155	23.35	3.39		1.9	19	0	132	.14	9	1.1	2.4	SWR
		5	8 0	47.03	19	15.41	155	22.85	10.92	1.9	1.6	16	0	167	.12	9	1.9	.6	LSW
		5	8 2	41.43	19	16.81	155	23.22	8.30	2.8	3.2	24	0	133	.18	8	1.2	1.6	SWR
		5	910	47.32	19	17.10	155	23.42	4.27		1.6	14	0	167	.16	9	1.5	3.4	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	AUG	5	925	53.74	19	17.68	155	22.54	5.68	1.7	2.1	13	0	247	.14	10	5.2	3.4	SWR
		5	940	43.22	19	16.50	155	23.62	6.44	2.4	3.2	23	0	176	.14	9	1.1	1.8	SWR
		5	1220	32.80	19	16.49	155	23.51	.82		1.5	14	0	176	.13	9	1.4	37.7	SWR
		5	14 0	21.58	19	16.06	155	23.54	4.05	1.8	1.9	15	0	181	.14	9	1.5	3.9	SWR
		5	1440	51.68	19	16.13	155	23.23	4.95		1.8	18	0	129	.18	9	1.4	1.8	SWR
		5	15 1	57.17	19	16.36	155	23.21	5.65	1.8	2.1	18	0	127	.15	9	1.5	3.5	SWR
		5	15 3	25.30	19	15.83	155	23.28	.68		1.6	17	0	132	.17	9	1.3	99.0	LSW
		5	1532	53.39	19	16.31	155	23.19	5.99	1.8	2.0	20	0	128	.18	9	1.3	3.4	SWR
		5	1551	31.44	19	16.46	155	23.45	6.24		1.0	21	0	125	.17	9	1.1	3.2	SWR
		5	1551	36.72	19	16.35	155	22.98	7.45	3.0	3.6	15	0	148	.11	19	1.1	1.5	SWR
		5	1653	51.04	19	16.34	155	23.42	7.07	3.0	3.6	25	0	126	.15	9	.9	1.6	SWR
		5	1656	33.01	19	16.36	155	23.43	.85	1.8	1.7	13	0	126	.13	15	1.3	49.9	SWR
		5	1729	16.21	19	15.95	155	23.74	.47	1.8	1.5	16	0	128	.16	10	1.3	79.1	LSW
		5	1733	24.12	19	15.96	155	23.52	5.93		1.7	16	0	129	.13	9	1.2	3.2	LSW
		5	1749	37.59	19	16.36	155	23.82	5.70	2.2	2.2	22	0	123	.18	10	1.2	2.7	SWR
		5	1918	33.06	19	16.40	155	23.52	3.63	1.6	1.7	21	0	125	.16	9	1.0	2.3	SWR
		5	1922	33.03	19	16.35	155	23.60	3.41	1.8	1.9	21	0	124	.18	9	1.1	2.7	SWR
		5	2054	43.07	19	20.33	155	9.86	8.58	1.8	1.6	21	0	87	.15	7	1.0	1.4	UER
		5	23 3	20.42	20	1.13	155	29.32	4.06	2.4	1.7	21	0	194	.16	52	1.9	3.1	KKU
		6	116	40.83	19	17.41	155	14.86	9.13	2.0	1.5	22	0	131	.11	7	.8	1.1	POL
		6	214	34.67	19	31.61	155	27.89	4.37	2.3	2.1	20	0	107	.13	14	.7	1.4	NER
		6	440	8.12	19	16.34	155	23.73	6.99	2.8	3.2	26	0	124	.15	9	.9	1.8	SWR
		6	5 5	59.99	19	16.40	155	23.24	5.38	1.6	1.5	21	0	126	.17	9	1.1	1.4	SWR
		6	549	13.11	19	19.06	155	13.78	7.94		.1	15	0	85	.06	7	.5	1.3	UER
		6	7 5	57.53	19	21.62	155	17.71	33.48	2.4	1.9	29	0	30	.10	4	.9	1.9	DEP
		6	1026	42.80	19	18.89	155	15.58	7.42	1.6	1.5	20	0	119	.11	6	.8	1.2	KOA
		6	2329	25.01	19	16.58	155	23.19	7.39	2.4	2.7	25	0	125	.16	8	1.0	1.9	SWR
		6	2342	51.44	19	19.29	155	15.27	8.17	1.8	1.6	23	0	88	.10	6	.6	1.1	KOA
		6	2345	23.47	19	18.86	155	15.37	7.59		.3	14	0	118	.07	6	.6	1.4	KOA
		7	032	21.38	19	20.23	155	17.61	29.05	2.1	1.6	27	0	74	.09	5	.9	1.7	DEP
		7	4 7	6.90	19	16.97	155	23.06	5.07	1.4	1.3	20	0	122	.15	8	1.0	1.4	SWR
		7	428	26.38	19	13.16	155	35.77	10.18	2.4	2.0	22	0	114	.21	22	1.6	.8	HEA
		7	737	51.08	19	21.71	155	3.49	9.43	2.9	3.2	24	0	171	.12	16	1.1	1.0	NER
		7	1722	17.60	19	20.47	155	7.44	7.26		1.6	16	0	175	.11	11	1.5	1.0	UER
		7	1742	.34	19	15.98	155	23.99	5.66	1.5	1.5	16	0	126	.13	10	1.1	3.0	LSW
		7	1838	2.50	19	19.91	155	17.80	27.53	1.8	1.2	20	0	77	.07	6	.8	1.8	DEP
		7	1859	43.64	19	25.60	155	24.30	9.65	1.6	1.3	12	0	59	.06	8	.6	3.1	UKF
		8	1718	52.41	19	16.93	155	22.46	.93		1.9	17	0	125	.13	7	.9	43.1	SWR
		8	2059	58.76	19	32.59	155	27.89	4.81	2.3	2.1	19	0	132	.13	15	1.4	1.2	NER
		8	2227	30.88	19	22.12	155	18.04	1.99		.6	10	0	79	.06	4	.4	.0	KOA
		9	1655	23.44	19	19.34	155	15.53	8.61	2.5	2.7	21	0	90	.09	6	.6	.8	KOA
		9	1942	6.43	19	18.90	155	15.41	7.76		1.4	16	0	117	.05	6	.4	1.0	KOA
		9	1956	36.76	19	21.92	155	19.41	29.39	1.9	1.4	21	0	46	.10	5	1.3	3.0	DEP
		9	2143	43.07	19	16.45	155	23.38	6.80	2.4	3.0	22	0	125	.16	9	1.0	2.1	SWR
		10	455	52.27	19	26.95	155	24.34	8.33		1.5	14	0	102	.09	10	.9	2.2	UKF
		10	9 7	49.44	19	19.37	155	15.71	8.53		2.2	22	0	92	.11	6	.7	1.1	KOA
		10	1014	32.52	19	19.47	155	11.77	10.99	1.9	1.5	15	0	93	.05	6	.6	2.6	NER
		10	11 2	9.65	19	18.74	155	18.10	11.70	1.7	1.5	20	0	102	.08	8	.6	.4	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	AUG	10	1615	14.60	19	27.07	155	29.62	12.05	2.0	1.6	19	0	88	.10	12	.9	.4	UKF
		10	1959	10.43	19	21.04	155	7.77	7.47	2.0	2.0	18	0	123	.13	10	1.1	1.6	UER
		10	2325	28.99	19	16.40	155	23.14	5.44	1.8	2.2	15	0	127	.20	8	1.6	2.1	SWR
		10	2342	34.71	19	25.94	155	28.84	9.29	2.5	2.5	23	0	80	.16	12	1.0	1.7	UKF
		11	3 8	41.99	19	19.82	155	9.98	8.03		1.8	16	0	88	.12	8	1.1	2.0	UER
		11	440	2.62	19	23.03	155	16.96	1.71	.8	1.2	8	0	122	.10	5	1.1	.4	SPC
		11	7 2	4.15	19	11.26	155	25.08	46.08	1.9	1.7	13	0	257	.07	23	3.7	7.9	LSW
		11	940	24.28	19	20.67	155	6.61	7.22		1.5	15	0	189	.14	12	1.8	2.4	UER
		11	1140	39.16	19	19.43	155	11.66	8.83	2.6	3.0	23	0	95	.13	6	.9	1.3	UER
		11	14 2	32.57	19	23.28	155	17.11	1.88	1.3	2.0	13	0	57	.08	3	.5	.3	SPC
		11	1530	45.86	19	24.23	155	17.15	14.61		1.3	20	0	43	.06	3	.4	.7	DEP
		11	1825	47.48	19	28.03	155	30.77	9.57	2.3	1.9	25	0	130	.11	10	.8	.6	MOK
		11	2250	16.67	19	20.73	155	11.06	7.19		.9	14	0	98	.13	8	1.2	2.6	UER
		12	0 7	52.68	19	44.98	155	31.45	10.70	2.2	2.0	23	0	152	.13	31	1.4	.5	KKU
		12	710	19.40	19	23.30	155	16.91	1.79		2.1	15	0	55	.13	3	.7	.4	SPC
		12	923	41.29	19	25.09	155	25.29	9.11	2.8	2.9	25	0	80	.12	9	.7	1.2	UKF
		12	1059	40.34	19	9.12	155	12.23	34.37	2.4	1.5	21	0	222	.12	20	2.1	4.0	PPL
		12	2121	35.46	19	22.04	155	26.46	7.16	1.8	1.7	19	0	74	.12	12	.8	2.0	UKF
		12	2234	22.93	19	20.94	155	24.52	8.19		1.5	17	0	82	.09	9	.7	1.1	SWR
		13	2 2	58.30	19	19.72	155	12.39	8.34	2.8	3.1	24	0	82	.12	6	.7	1.0	UER
		13	2 4	28.37	19	11.36	155	26.66	4.75	2.1	1.5	16	0	140	.15	17	1.2	1.6	LSW
		13	414	22.47	19	26.28	155	29.05	8.79		1.0	16	0	129	.13	12	1.2	3.8	UKF
		13	434	11.94	19	11.99	155	19.47	43.05	2.0	1.2	23	0	171	.11	15	2.1	3.6	HLP
		13	2113	48.52	19	51.89	155	33.89	29.14	2.5	1.5	22	0	235	.13	45	4.1	8.9	KKU
		14	0 4	28.62	19	21.92	155	6.88	10.97		1.8	14	0	131	.05	11	.6	2.0	UER
		14	745	45.20	19	18.12	155	13.22	7.83	1.6	1.8	19	0	93	.08	8	.7	1.2	POL
		14	939	29.50	19	24.52	155	17.19	12.47		1.0	15	0	73	.06	3	.7	.3	LPC
		14	1622	15.05	19	16.31	155	23.95	7.72	2.8	3.3	24	0	123	.19	10	1.2	1.8	SWR
		14	23 0	24.46	18	43.92	154	14.44	9.66	2.5	2.3	17	0	333	.26	122	99.0	99.0	DIS
		15	250	56.11	19	19.69	155	15.09	6.80	1.6	1.6	19	0	72	.09	7	.6	1.4	UER
		15	619	46.03	19	18.80	155	13.44	6.64		1.4	16	0	79	.10	7	.7	1.7	POL
		15	818	20.79	19	25.13	155	25.56	5.63	1.6	1.5	11	0	132	.13	11	1.5	8.3	UKF
		15	1716	31.04	19	12.48	155	7.52	43.49	2.2	1.0	19	0	250	.07	22	2.6	3.3	POL
		15	18 2	25.83	19	26.86	155	29.59	10.29	1.8	1.3	17	0	78	.14	12	1.0	.7	UKF
		15	19 8	51.39	19	23.02	155	17.42	.72		.9	8	0	84	.08	4	.6	.4	SPC
		16	424	58.69	19	16.62	155	22.93	4.79	2.4	2.8	23	0	126	.14	8	.9	1.4	SWR
		16	427	7.59	19	16.59	155	22.85	5.45	1.8	1.9	19	0	127	.15	8	1.1	1.3	SWR
		16	445	56.45	19	16.74	155	22.81	5.37		1.7	19	0	125	.17	8	1.1	1.5	SWR
		16	516	25.45	19	16.81	155	22.79	5.75	1.5	1.8	17	0	125	.15	8	1.2	3.3	SWR
		16	533	43.08	19	16.67	155	22.88	7.15	2.1	2.4	22	0	126	.12	8	.8	1.5	SWR
		16	720	23.09	19	19.92	155	11.30	7.76	1.8	1.9	20	0	86	.15	7	1.0	2.0	UER
		17	2 1	47.25	19	27.19	155	23.27	3.61	1.6	1.7	12	0	138	.06	12	.5	1.3	UKF
		17	1129	8.40	19	18.89	154	59.97	39.26		1.6	20	0	227	.07	22	2.4	3.1	DIS
		17	1236	33.14	19	18.58	155	13.26	8.11		1.3	14	0	84	.08	8	.7	1.4	POL
		17	14 0	47.36	19	16.58	155	23.52	5.45	1.7	1.6	12	0	123	.13	9	1.2	1.5	SWR
		17	2018	4.00	19	24.22	155	17.19	15.93	2.5	2.5	26	0	58	.10	4	.6	1.0	DEP
		18	524	6.00	19	20.44	155	17.92	29.82	2.5	2.2	23	0	66	.13	5	1.3	2.2	DEP
		18	551	16.10	19	18.39	155	13.28	7.87		1.0	14	0	86	.07	9	.7	1.6	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	AUG	18	7 8	57.14	19	38.56	156	1.21	37.42	3.9	3.8	25	1	226	.13	44	2.0	3.1	KON
		18	1226	20.42	19	17.41	155	21.53	8.48	1.8	1.8	18	0	131	.11	9	.6	1.8	SWR
		18	22 5	17.99	19	19.17	155	14.02	6.72	1.6	1.5	17	0	88	.08	7	.6	1.4	UER
		18	2336	24.06	19	19.37	155	15.67	7.50		1.5	15	0	105	.07	6	.5	1.2	KOA
		19	048	15.64	19	19.62	155	10.03	8.49		1.3	17	0	110	.09	8	.7	1.6	UER
		19	412	5.47	19	19.88	155	12.23	7.06	2.2	2.7	24	0	80	.11	6	.7	1.1	UER
		19	929	54.72	19	18.94	155	15.11	8.47	2.2	2.5	20	0	91	.10	6	.7	1.3	KOA
		19	1642	28.53	19	22.56	155	30.10	8.93	1.9	1.7	19	0	99	.15	13	1.1	1.5	MOK
		19	18 8	29.55	19	17.69	155	12.99	8.18	2.1	2.1	17	0	120	.10	9	.9	1.7	POL
		19	2126	29.80	19	16.13	155	21.80	7.90	1.3	1.2	14	0	162	.06	9	.8	1.6	SWR
		20	050	1.23	19	19.60	155	11.66	7.00	1.8	1.7	20	0	91	.15	6	1.0	2.1	UER
		20	128	10.07	19	17.95	155	13.04	8.08	2.2	2.2	20	0	107	.11	9	.8	1.5	POL
		20	3 3	3.29	19	16.61	155	22.95	6.05	1.7	2.0	18	0	126	.15	8	1.2	2.4	SWR
		20	524	13.67	19	19.93	155	12.06	7.41		1.0	16	0	81	.09	6	.7	1.7	UER
		20	742	42.55	19	20.30	155	8.18	6.01	2.1	2.5	19	0	117	.12	10	.9	2.1	UER
		20	1746	18.30	19	20.63	155	12.82	8.13	1.6	1.6	19	0	64	.11	6	.8	1.5	UER
		20	1925	45.94	19	28.10	155	28.09	8.74	2.7	2.4	27	0	113	.13	12	.8	1.2	UKF
		21	139	37.90	19	16.81	155	22.72	5.93	1.2	1.5	14	0	125	.14	7	1.3	3.6	SWR
		21	232	15.39	19	24.10	155	16.03	2.00	1.3	2.1	11	0	62	.16	3	1.1	.0	SPC
		21	419	38.95	19	19.42	155	9.95	11.81		1.0	15	0	109	.05	8	.5	.3	UER
		21	5 7	3.49	19	24.17	155	16.19	1.34	1.2	2.1	16	0	66	.19	3	.9	.5	SPC
		22	036	21.79	19	56.30	155	30.52	30.75	1.9	1.5	19	1	236	.10	50	2.4	5.0	KOH
		22	425	9.28	19	24.33	155	15.96	1.91	.7	1.0	9	0	182	.03	2	.4	.2	SPC
		22	446	9.19	19	20.35	155	11.71	10.02	2.9	3.3	23	0	77	.09	7	.6	.5	UER
		22	448	18.50	19	20.20	155	11.93	7.07	1.9	1.9	12	0	80	.11	6	1.0	2.6	UER
		22	518	6.84	19	20.19	155	12.14	8.73	1.9	1.9	21	0	76	.12	6	.8	1.2	UER
		22	644	46.21	19	18.08	155	30.40	7.34		1.8	16	0	112	.16	20	1.3	5.2	HEA
		22	857	40.61	19	24.13	155	16.03	1.56		1.5	10	0	168	.08	2	1.0	.3	SPC
		22	1115	28.04	19	22.14	155	4.74	6.69		1.6	18	0	204	.15	15	1.9	1.6	MER
		23	7 5	33.37	19	21.50	155	18.66	2.34		1.6	13	0	74	.07	5	.4	7.2	KOA
		23	932	13.99	19	21.92	155	3.18	6.07		2.2	19	0	172	.16	15	1.6	2.1	MER
		23	1924	30.69	19	47.45	155	32.98	14.57	2.6	2.6	25	0	174	.13	34	1.7	31.7	KKU
		24	545	35.22	19	22.00	155	16.75	35.15	3.6	3.1	30	0	50	.11	4	1.1	1.9	DEP
		24	620	27.53	19	49.20	155	30.17	10.34		1.6	20	0	207	.10	38	1.9	.5	KKU
		24	649	56.81	19	24.28	155	16.21	1.83	1.0	2.0	10	0	97	.05	2	.5	.2	SPC
		24	10 1	40.46	19	24.39	155	16.56	2.16	.9	1.5	8	0	82	.10	2	1.0	2.5	SPC
		24	1023	24.35	19	24.07	155	15.95	1.38	1.3	1.8	9	0	108	.15	2	1.1	.6	SPC
		24	1046	23.64	19	19.69	155	11.96	9.16	2.2	2.4	21	0	87	.09	6	.7	1.2	UER
		24	1132	38.02	19	20.20	155	43.12	9.46	2.4	1.9	20	0	213	.15	20	2.2	.9	HEA
		24	1457	12.66	18	53.60	155	15.19	9.53	2.7	2.2	20	0	266	.10	45	4.5	.6	PPL
		24	1641	15.74	19	52.39	155	30.63	17.00	2.4	1.4	23	0	129	.13	40	1.8	8.6	KKU
		24	18 7	11.85	19	19.26	155	10.80	11.87		1.5	15	0	103	.06	6	.7	.3	UER
		25	0 8	20.38	19	19.05	155	11.86	6.42	2.0	2.0	19	0	102	.13	7	1.0	2.2	UER
		25	556	16.06	19	17.32	155	21.42	7.32	1.5	1.5	18	0	126	.10	9	.8	1.8	SWR
		25	6 3	31.63	19	18.04	155	16.83	6.40	1.9	1.5	18	0	153	.07	6	.6	1.0	KOA
		25	911	41.02	19	13.10	155	34.68	10.37	2.5	2.5	20	0	119	.18	21	2.0	.8	HEA
		25	1146	35.22	19	27.94	155	15.75	25.06	2.0	1.6	21	0	76	.10	8	1.2	2.0	DEP
		25	1754	11.77	18	55.02	155	16.59	15.42	2.9	2.9	22	0	247	.14	41	4.8	34.1	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	AUG	25	1845	57.76	19	19.92	155	11.55	10.87		.8	15	0	90	.04	6	.5	2.0	UER
		26	025	50.94	19	27.57	155	27.66	8.56	1.6	1.1	17	0	139	.09	13	.8	2.7	UKF
		26	324	24.95	19	31.31	155	48.47	7.54	2.8	2.0	22	0	98	.14	22	1.1	.9	KON
		26	417	15.84	18	51.62	155	13.56	15.94	2.8	2.2	22	0	259	.11	48	4.5	36.3	PPL
		26	550	50.52	19	26.09	155	27.75	9.45	1.7	1.3	16	0	122	.13	13	1.2	3.2	UKF
		26	943	57.56	18	45.41	155	14.69	16.28	3.0		13	0	308	.11	64	14.7	82.0	PPL
		26	1314	12.46	18	51.93	155	12.54	8.05	2.8	2.2	17	1	308	.11	48	2.3	1.0	PPL
		26	1444	36.46	18	53.60	155	13.38	8.88	2.7	2.4	20	1	268	.14	45	4.3	1.1	PPL
		26	19	6 7.24	19	18.69	155	15.18	7.36		1.3	18	0	122	.10	6	.8	1.7	KOA
		27	552	19.27	18	52.59	155	12.30	8.32	2.8	2.1	18	0	257	.10	46	4.5	1.4	PPL
		27	6	2 46.43	18	53.88	155	13.55	8.76	2.9	2.5	19	1	253	.11	44	3.4	.8	PPL
		27	636	20.96	18	49.73	155	12.42	9.80	2.9	3.1	21	0	278	.16	51	7.8	99.0	PPL
		27	717	43.48	18	55.19	155	15.15	9.22	2.6	1.8	19	1	262	.10	42	2.1	.6	PPL
		27	734	4.75	19	26.83	155	28.57	9.65	2.4	2.1	31	0	43	.15	12	.9	.5	UKF
		27	734	44.22	19	26.95	155	28.44	10.14	4.0	4.0	31	0	39	.15	12	.9	.4	UKF
		27	1324	31.36	18	52.32	155	13.72	15.09	3.0	3.2	21	1	288	.10	47	2.9	44.7	PPL
		27	1714	48.53	19	22.79	155	27.84	5.95	1.8	1.6	12	0	83	.09	12	.7	1.5	UKF
		27	2158	54.86	19	51.85	155	30.55	14.29	2.5	1.6	24	0	200	.13	43	2.5	23.6	KKU
		27	2349	49.52	18	54.00	155	13.92	19.57	2.8	2.4	21	0	252	.12	44	4.2	15.1	PPL
		28	3	4 59.48	19	18.66	155	15.06	6.10		1.1	18	0	120	.09	7	.6	1.8	KOA
		28	636	50.56	19	17.28	155	22.44	6.32	1.7	1.7	18	0	122	.12	8	.9	2.3	SWR
		28	1453	1.76	19	20.31	155	9.07	6.43	1.8	1.6	16	0	142	.19	8	1.7	3.4	UER
		28	2249	33.44	19	18.14	155	17.00	6.24	1.9	1.5	16	0	152	.08	7	.6	1.2	KOA
		28	2316	17.03	19	26.41	155	29.91	8.97	1.4	1.1	15	0	125	.09	11	1.0	3.0	UKF
		28	2320	44.75	19	26.58	155	29.93	9.93		1.0	11	0	136	.09	13	1.4	7.8	UKF
		28	2322	51.35	19	26.66	155	30.08	11.58	1.4	1.0	14	0	129	.12	11	1.5	7.1	HOK
		29	151	27.76	19	18.48	155	15.75	9.31	2.4	2.7	25	0	106	.11	5	.7	.8	KOA
		29	311	17.48	18	51.38	155	14.66	8.93	2.8	2.6	23	0	259	.08	47	2.5	1.1	PPL
		29	519	59.66	19	16.90	155	22.40	6.09	1.2	1.0	18	0	126	.17	8	1.3	3.7	SWR
		29	956	4.49	18	54.04	155	14.89	9.88	2.9	2.9	20	1	284	.10	45	2.8	.5	PPL
		29	1243	50.13	19	20.00	155	11.01	11.35		1.5	14	0	104	.04	7	.5	2.1	UER
		29	1851	51.84	19	19.31	155	15.06	8.06		1.0	12	0	102	.03	6	.3	1.0	KOA
		29	2055	16.17	19	19.50	155	12.04	6.61		.8	15	0	90	.10	6	.9	2.5	UER
		29	22	8 20.64	19	45.19	156	1.95	33.39	3.0	2.4	26	5	230	.13	49	1.5	2.1	KON
		30	353	26.55	19	27.46	155	28.63	10.09	1.7	1.3	21	0	72	.09	11	.5	.6	UKF
		30	355	42.55	19	27.55	155	28.44	10.17	1.6	1.3	17	0	72	.06	14	.5	.8	UKF
		30	442	4.72	19	29.29	155	27.08	8.33	1.9	1.8	21	0	97	.10	13	.6	1.3	NER
		30	714	47.73	19	20.02	155	11.29	10.74	1.1	.5	13	0	97	.04	7	.5	2.4	UER
		30	754	21.24	19	24.78	155	25.48	10.22	1.7	1.9	19	0	53	.08	10	.6	1.6	UKF
		30	937	4.95	19	19.49	155	11.60	8.37	2.8	3.5	25	0	94	.16	6	1.0	1.4	UER
		30	1325	35.96	19	16.55	155	26.05	8.00	1.6	1.9	14	0	106	.12	11	.9	1.4	HEA
		30	1547	19.94	19	53.04	155	30.30	20.27	1.9	1.2	17	0	135	.11	59	1.2	5.4	KKU
		30	16	8 44.33	19	26.11	156	21.02	21.29		2.0	8	1	288	.15	62	51.7	26.6	DIS
		30	1615	6.68	18	46.27	155	16.27	13.09	2.0	1.2	9	1	327	.12	62	6.2	.0	PPL
		30	1821	4.44	19	19.32	155	12.91	7.68	1.7	2.0	22	0	80	.09	7	.5	1.2	UER
		30	1843	2.32	18	53.00	155	14.99	8.09	2.1	1.5	14	1	269	.10	45	2.8	.8	PPL
		30	2052	21.68	18	45.30	155	13.97	12.97	2.1	1.2	10	1	313	.13	60	23.5	20.5	PPL
		30	2224	45.83	18	57.62	155	19.11	4.84	1.8	1.5	8	0	270	.12	37	7.5	99.0	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	AUG	30	2226	2.72	18	52.99	155	14.46	9.16	2.2	1.6	18	1	269	.12	46	3.5	1.0	PPL
		30	2314	47.85	18	58.45	155	17.54	10.21	1.6	1.3	12	1	260	.11	36	3.8	.6	PPL
		31	026	25.55	18	53.30	155	15.22	9.44	2.0	3.0	16	1	267	.11	45	3.7	.9	PPL
		31	030	33.15	18	50.81	155	12.16	34.39	2.7	2.2	23	1	276	.08	51	1.3	4.8	PPL
		31	2	1 40.38	18	55.43	155	16.55	10.20	2.1	5.3	16	1	258	.10	42	3.5	.7	PPL
		31	746	16.26	19	21.18	155	5.82	11.50	2.0	2.2	16	0	151	.07	13	.9	.5	MER
		31	836	18.14	18	54.44	155	15.29	6.76	2.0	1.5	11	0	264	.15	44	5.8	2.2	PPL
		31	1350	46.45	19	52.07	155	30.59	15.97	2.1	1.6	15	2	202	.12	40	1.4	6.7	KKU
		31	1756	27.24	18	53.99	155	15.63	9.53	2.6	2.2	18	1	265	.14	44	3.7	.6	PPL
		31	1840	45.15	19	20.21	155	9.32	11.17	1.6	1.2	15	0	128	.05	8	.5	1.9	UER
		31	2038	32.56	18	52.64	155	14.57	4.65	2.0	1.2	14	1	256	.12	46	4.1	2.5	PPL
		31	2045	4.06	18	51.02	155	14.07	6.60	2.0	1.3	12	1	260	.09	50	2.9	1.1	PPL
	SEP	1	059	.56	19	20.43	155	17.84	32.26	1.5	1.4	24	0	66	.10	5	1.1	1.9	DEP
		1	133	39.56	18	53.89	155	15.09	8.37	1.7	1.6	13	1	251	.11	45	4.0	1.0	PPL
		1	134	24.03	19	13.61	155	21.96	33.12	2.2	1.4	28	2	155	.10	12	1.3	1.9	LSM
		1	143	53.76	18	53.90	155	15.96	9.57	1.9	1.8	12	0	251	.11	43	4.9	.6	PPL
		1	148	36.82	18	55.09	155	15.78	9.78	1.7	1.9	15	3	247	.12	43	2.0	.5	PPL
		1	159	55.11	18	55.69	155	17.31	10.19	1.6	1.3	9	1	256	.09	41	3.7	.9	PPL
		1	637	26.97	18	56.04	155	15.83	9.82	1.7	1.0	9	1	307	.06	41	2.6	.4	PPL
		1	948	1.36	18	53.37	155	14.59	8.66	3.0	2.5	24	0	253	.12	46	3.5	.8	PPL
		1	952	23.68	18	46.72	155	13.08	5.57	2.5	1.7	19	1	309	.07	57	2.5	.8	PPL
		1	1149	19.26	18	52.99	155	15.75	19.95	2.5	1.9	21	2	300	.11	46	2.1	10.7	PPL
		1	1239	26.15	18	54.46	155	15.12	11.52	3.1	3.1	26	1	250	.11	44	2.5	5.6	PPL
		1	1459	35.64	18	55.19	155	16.30	10.15	2.3	1.4	17	1	295	.07	42	3.1	.5	PPL
		1	1633	42.53	18	53.95	155	14.30	9.58	2.7	2.9	26	1	252	.12	45	3.0	.6	PPL
		1	2039	58.91	18	55.91	155	17.60	10.06		1.8	17	1	267	.08	40	2.6	.4	PPL
		1	2054	58.25	19	29.81	155	47.64	8.25	1.9	1.3	19	0	82	.15	20	1.5	.8	KUN
		1	21	3 6.23	19	23.13	155	17.28	1.25	.8	1.2	10	0	63	.10	3	.8	.6	SPC
		1	2135	24.72	19	24.39	155	17.30	1.00	.8	1.7	10	0	76	.09	2	.3	.3	SPC
		2	014	22.30	19	17.13	155	23.82	3.27	1.3	1.8	22	0	116	.14	9	.9	2.0	SWR
		2	357	30.92	19	23.16	155	17.00	1.82	.8	1.8	10	0	61	.06	2	.5	.2	SPC
		2	7	1 33.14	19	24.04	155	15.72	1.16	1.4	2.1	13	0	109	.16	3	.7	.6	SPC
		2	1137	49.10	19	17.98	155	21.34	7.39	1.6	1.9	20	0	119	.13	8	.9	1.7	SWR
		2	1218	1.08	19	25.45	155	17.20	6.94	1.0	1.7	10	0	141	.11	3	1.8	2.4	LPC
		2	1711	25.16	18	52.33	155	13.90	9.32		1.7	15	1	283	.13	46	3.1	1.5	PPL
		2	1721	4.17	18	51.04	155	14.08	9.68	2.6	2.1	25	1	274	.10	48	1.5	.4	PPL
		2	20	5 40.26	18	52.98	155	15.15	9.54	3.0	2.8	27	1	254	.08	45	2.0	.4	PPL
		2	20	6 45.07	19	23.45	155	17.12	1.45	1.5	2.3	13	0	52	.06	3	.3	.2	SPC
		2	2042	3.76	19	26.99	155	22.42	9.22		1.3	10	0	120	.03	10	.5	1.7	UKF
		2	2056	10.82	19	26.65	155	22.56	8.62	1.3	1.4	14	0	116	.04	10	.4	1.2	UKF
		2	22	3 27.39	19	24.43	155	17.19	13.52	1.2	1.0	18	0	65	.13	3	1.1	1.6	DEP
		3	653	31.85	18	53.16	155	14.33	11.35		1.7	20	0	268	.13	46	5.5	99.0	PPL
		3	940	11.93	19	31.66	155	14.86	24.25	2.4	2.1	25	0	64	.10	15	.8	2.3	NER
		3	1049	17.39	19	20.21	155	48.27	6.71	2.3	1.7	21	0	103	.16	21	1.1	1.6	KUN
		3	1054	49.98	19	25.25	155	16.98	15.06	1.4	1.2	7	0	200	.01	3	.6	1.1	DEP
		3	1923	57.60	19	24.39	155	17.89	6.03	1.0	1.9	11	0	102	.11	3	1.2	2.2	LPC
		3	2153	53.75	18	52.30	155	15.40	14.31	2.9	2.5	22	0	270	.17	46	6.9	99.0	PPL
		3	22	4 16.39	18	52.42	155	15.08	10.89	3.0	3.7	24	0	256	.13	45	4.7	99.0	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	SEP	3	2215	20.47	18	51.52	155	14.40	13.48	2.8	2.5	24	0	259	.19	47	7.1	99.0	PPL
		3	2228	45.63	18	51.87	155	15.34	20.28	2.7	2.5	23	0	257	.15	47	5.5	17.1	PPL
		3	23 8	45.65	18	51.37	155	14.24	11.14	2.8	2.7	23	0	259	.12	47	4.7	99.0	PPL
		3	2324	13.03	18	52.64	155	15.25	10.67	2.8	2.7	25	0	255	.15	45	5.4	99.0	PPL
		3	2333	52.22	19	23.44	155	17.25	.88	.7	1.1	9	0	94	.14	3	.6	.9	SPC
		4	015	16.09	19	20.40	155	12.35	8.87	1.7	2.1	23	0	71	.12	7	.8	1.3	UER
		4	425	10.91	19	24.90	155	17.78	7.05	1.0	1.3	8	0	178	.06	3	1.7	1.2	LPC
		4	6 6	30.18	19	26.47	155	23.39	8.06	2.4	2.7	30	0	48	.13	10	.7	.9	UKF
		4	631	34.18	18	39.79	155	13.54	10.30	2.8	2.5	17	0	319	.09	70	23.4	99.0	PPL
		4	644	36.01	18	53.21	155	14.83	9.10	2.7	2.2	18	0	254	.16	45	6.8	1.4	PPL
		4	655	49.08	18	46.77	155	13.42	5.84	2.9	2.3	20	0	296	.08	57	9.8	3.4	PPL
		4	7 9	45.53	18	51.05	155	13.21	8.02	2.9	2.9	25	0	261	.10	49	3.6	.7	PPL
		4	738	54.63	19	18.28	155	21.35	5.14	1.4	1.7	17	0	116	.16	8	1.3	1.5	SWR
		4	1240	53.30	19	19.89	155	11.51	9.12	2.6	3.1	23	0	91	.09	6	.6	1.3	UER
		4	1632	25.27	19	18.91	155	15.24	7.31	2.2	2.5	24	0	94	.09	6	.6	1.0	KOA
		4	2022	27.11	19	26.52	155	27.51	7.90	1.8	1.0	19	0	64	.13	14	.8	2.9	UKF
		4	2056	55.76	19	25.17	155	17.39	11.03	1.7	1.9	12	0	129	.09	3	1.5	3.2	LPC
		4	2240	39.14	19	24.14	155	17.26	7.29	1.4	2.0	13	0	64	.10	2	1.1	1.5	LPC
		5	357	.07	19	19.95	155	12.04	6.57	1.7	1.9	22	0	81	.12	6	.7	1.5	UER
		5	1629	30.56	19	15.36	155	13.49	6.43	1.9	1.4	14	0	242	.11	11	2.1	2.1	POL
		5	1641	19.23	18	53.54	155	16.18	9.40	2.7	2.4	21	0	286	.08	45	5.2	1.5	PPL
		5	1646	4.26	19	21.01	155	4.50	6.00	2.1	2.3	22	2	169	.14	15	1.1	2.0	MER
		5	2016	15.35	19	29.32	155	23.64	7.69	1.7	1.6	14	0	83	.10	14	.9	2.1	NER
		5	2146	4.32	19	29.25	155	33.85	13.78	2.2	.8	12	0	122	.10	15	2.0	3.2	MOK
		5	2156	31.58	19	24.74	155	17.00	11.84	1.4	1.3	13	0	61	.03	3	.4	1.0	LPC
		5	2228	.44	19	17.17	155	14.59	8.41	1.7	1.6	23	0	141	.10	7	.8	1.2	POL
		5	2259	33.63	19	19.41	155	13.81	7.46	2.1	2.2	28	0	62	.12	6	.7	1.0	UER
		6	041	25.95	19	34.20	155	16.79	30.25	1.5	.7	17	0	187	.07	17	1.5	3.2	NER
		6	043	12.12	19	15.73	155	13.32	8.72	1.9	1.7	21	0	195	.14	10	1.3	1.9	POL
		6	055	30.10	18	53.58	155	14.64	10.59	2.9	2.6	22	0	267	.09	45	3.6	99.0	PPL
		6	3 6	32.94	19	17.04	155	13.43	8.41		1.8	19	0	152	.11	9	.9	1.4	POL
		6	547	35.75	18	53.56	155	15.48	9.46	2.4	1.6	15	0	272	.15	45	7.0	2.6	PPL
		6	841	6.94	19	24.22	155	26.52	5.98	1.7	1.5	16	0	57	.10	12	.6	2.0	UKF
		6	852	47.04	19	25.19	155	17.91	8.12	1.8	2.1	8	0	126	.08	4	1.7	2.9	LPC
		6	1345	8.86	19	19.18	155	13.31	7.91	2.0	2.1	23	0	74	.11	7	.7	1.2	UER
		6	1428	26.88	19	36.69	155	11.23	.49	2.5	2.4	8	0	278	.11	28	8.2	99.0	BLS
		6	1541	35.63	19	11.81	155	45.65	7.66	2.9	2.8	18	0	231	.14	34	2.6	1.1	DIS
		6	22 1	23.01	19	16.65	155	13.30	9.55	2.3	2.5	25	0	160	.11	10	.9	.4	POL
		6	2329	9.48	18	54.39	155	15.01	9.74	2.6	2.6	24	0	250	.08	44	2.8	.4	PPL
		7	057	49.32	19	13.11	155	21.73	36.39	2.6	2.3	27	0	159	.13	13	1.4	3.1	LSW
		7	058	58.77	19	13.23	155	21.50	35.20	2.0	1.2	24	0	158	.10	13	1.3	2.3	LSW
		7	2 2	58.90	19	13.53	155	21.83	33.33	1.5	.2	18	0	222	.06	13	2.2	3.8	LSW
		7	248	12.44	19	14.57	155	2.39	42.83	1.8	.4	25	0	227	.08	20	1.8	2.7	DIS
		7	248	48.31	19	24.06	155	1.69	6.37	2.1	1.7	20	0	191	.15	17	2.0	2.7	MER
		7	422	50.23	18	55.19	155	16.01	16.68	2.6	2.0	25	0	247	.13	42	4.0	20.6	PPL
		7	450	.69	19	26.10	155	.83	46.11		1.5	21	0	149	.10	17	2.8	5.5	LER
		7	635	41.09	18	54.30	155	14.80	9.82	3.0	2.8	23	0	250	.07	44	2.6	.4	PPL
		7	747	5.50	19	45.74	155	33.22	6.48	2.6	2.8	24	0	163	.21	51	2.6	1.6	KKU

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	SEP	7	841	50.27	19	17.27	155	21.23	5.87	1.7	1.8	17	0	145	.13	8	1.1	2.6	SWR
		7	1120	34.07	18	56.90	155	17.30	16.43	2.7	2.4	26	0	240	.12	39	2.7	14.0	PPL
		7	1236	41.82	19	31.64	155	25.99	9.94	1.9	1.6	19	0	71	.15	17	1.1	2.2	NER
		7	1754	54.70	19	16.37	155	12.88	9.53	1.9	1.5	21	0	188	.11	10	1.5	.5	POL
		7	18 5	27.18	19	16.53	155	12.98	10.16	2.5	2.9	25	0	163	.11	10	.9	.4	POL
		7	18 9	52.42	19	17.16	155	13.16	5.70		1.5	15	0	157	.16	9	1.5	2.9	POL
		7	1815	1.19	19	16.61	155	13.09	9.23	1.8	2.1	21	0	162	.13	10	1.1	1.6	POL
		7	1825	19.17	19	17.65	154	58.77	42.08	2.3	1.7	24	0	229	.06	23	1.7	2.7	DIS
		7	2038	.60	18	57.15	155	16.78	9.66	1.7	1.5	10	0	304	.08	39	11.6	1.2	PPL
		7	2221	14.30	18	52.54	155	15.17	9.54	2.0	1.6	16	0	302	.09	47	9.9	1.0	PPL
		7	23 7	39.88	18	55.26	155	16.07	16.29	2.6	2.2	25	0	247	.11	42	5.1	17.0	PPL
		8	015	10.61	18	54.45	155	15.68	10.91	2.4	1.9	22	0	265	.11	43	3.7	.0	PPL
		8	221	34.14	18	54.41	155	15.13	12.53	2.6	2.2	22	0	264	.10	44	3.5	99.0	PPL
		8	1041	48.17	19	13.51	155	22.33	33.40	1.6	.9	20	0	155	.07	15	1.0	2.2	LSW
		8	1320	41.37	19	19.96	155	12.25	7.33	2.3	2.6	24	0	79	.14	6	.8	1.6	UER
		8	15 3	18.17	19	19.54	155	12.51	5.89	1.7	1.5	22	0	83	.13	7	.8	2.0	UER
		8	1655	26.37	19	18.80	155	30.46	7.53	2.0	1.9	13	0	114	.15	13	1.4	4.3	HEA
		8	1926	29.60	19	22.67	155	9.42	2.20	1.9	2.0	20	0	179	.13	11	1.1	2.5	UER
		8	1936	46.85	19	20.36	155	12.30	7.09		1.2	19	0	145	.14	6	1.1	2.4	UER
		8	1947	50.11	19	19.49	155	13.72	32.08	1.7	.7	16	0	188	.06	7	1.1	1.9	DEP
		8	2036	13.75	19	18.14	155	15.33	6.87	1.7	1.9	22	0	112	.09	6	.6	1.1	KOA
		9	225	54.49	19	20.42	155	12.23	8.25	1.7	1.9	21	0	135	.12	7	.9	1.5	UER
		9	233	53.22	19	20.09	155	12.56	5.11		.8	20	0	143	.12	6	.7	.8	UER
		9	316	5.42	19	24.53	155	16.79	7.96	1.4	1.3	13	0	76	.05	2	.6	.9	LPC
		9	316	59.89	19	24.71	155	16.82	7.95	1.4	1.9	10	0	96	.02	2	.4	.5	LPC
		9	317	38.64	19	23.96	155	16.74	7.86	1.3	1.7	11	0	78	.06	2	.9	1.6	LPC
		9	337	47.09	18	55.34	155	16.87	10.11	2.6	2.1	22	0	246	.08	41	5.0	.6	PPL
		9	524	3.23	19	20.52	155	10.24	5.13		1.6	19	0	208	.11	9	1.7	.8	UER
		9	554	49.23	19	23.73	155	28.54	8.44	1.6	1.6	21	0	70	.12	14	.7	1.4	UKF
		9	15 7	19.83	19	26.70	155	29.41	12.15	2.0	1.3	16	0	74	.09	12	.8	.4	UKF
		9	1814	18.87	19	13.15	155	22.04	35.58	2.5	2.3	28	0	157	.11	12	1.3	2.4	LSW
		9	1820	24.07	19	28.86	155	26.76	23.58		1.2	18	0	70	.09	14	1.1	2.9	UKF
		9	2254	6.79	19	29.03	155	26.91	23.37	1.4	1.0	18	0	72	.10	14	1.2	3.2	NER
		10	153	47.39	19	26.54	155	23.11	8.52	1.5	1.6	18	0	82	.06	11	.4	.7	UKF
		10	530	36.10	19	17.24	155	23.68	5.13	1.4	1.6	19	0	126	.15	9	1.0	1.3	SWR
		10	713	40.35	19	12.40	155	20.69	44.47	2.6	2.1	29	0	166	.11	14	1.4	3.0	HLP
		10	723	41.28	19	20.48	155	7.12	6.82	1.9	2.0	20	0	137	.12	11	1.0	1.5	UER
		10	834	13.49	19	19.79	155	8.56	9.17	3.6	3.8	13	0	177	.12	21	2.0	.9	UER
		10	846	25.91	19	28.05	155	27.41	7.77	2.0	1.6	18	0	77	.09	13	.6	2.6	UKF
		10	1249	45.80	19	19.09	155	15.85	6.76		1.4	18	0	114	.10	6	.7	1.5	KOA
		10	1512	2.52	19	18.36	155	13.11	6.58	1.7	1.8	21	0	93	.11	8	.7	1.6	POL
		10	2222	37.88	19	35.74	155	10.02	9.54	1.9	2.1	24	0	63	.11	19	.8	.4	HIL
		10	2233	2.30	19	19.00	155	15.77	5.68	1.3	1.1	20	0	117	.13	5	.9	1.5	KOA
		11	320	36.09	19	18.30	155	13.20	7.39	1.7	2.2	21	0	91	.11	8	.7	1.5	POL
		11	358	22.14	19	22.47	155	15.11	24.14	1.9	1.0	21	0	64	.05	4	.5	.8	DEP
		11	443	55.34	18	19.94	155	45.68	11.78	3.1	2.8	29	0	322	.15	103	29.6	99.0	DIS
		11	450	12.89	19	19.02	155	13.58	6.94	1.4	1.4	22	0	70	.10	7	.6	1.5	UER
		11	626	40.05	19	14.11	155	27.86	4.05	1.7	1.7	18	0	100	.15	14	1.2	1.8	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	SEP	11	642	21.55	19	24.09	155	15.99	1.41	.9	1.7	9	0	107	.10	2	.8	.4	SPC
		11	735	50.75	19	19.66	155	13.01	.68		1.7	20	0	74	.16	7	.9	52.5	UER
		11	754	47.42	19	17.96	155	13.11	8.50	1.7	2.0	21	0	103	.08	9	.6	1.0	POL
		11	943	36.60	18	55.66	155	17.24	11.11	2.5	2.0	23	1	244	.12	40	1.9	.6	PPL
		11	1014	42.05	19	24.23	155	16.08	1.80	.7	1.2	8	0	103	.05	2	.5	.2	SPC
		11	1150	29.47	19	24.29	155	16.43	1.78		1.3	8	0	67	.09	2	1.1	.4	SPC
		11	1349	22.32	19	24.19	155	16.05	1.93	.7	1.2	8	0	105	.06	2	.7	.4	SPC
		11	14 0	7.90	19	24.17	155	16.01	2.00		1.0	7	0	164	.07	2	1.0	.0	SPC
		11	14 5	37.81	19	24.57	155	15.76	4.05		1.3	7	0	179	.11	2	.6	1.2	SPC
		11	1443	52.75	19	23.62	155	26.38	8.10	1.5	1.5	13	0	119	.05	12	.4	1.0	UKF
		11	1517	57.78	19	20.12	155	8.39	7.70	1.8	2.2	20	0	148	.11	9	.8	1.0	UER
		11	18 2	30.90	19	22.88	155	15.19	29.80	2.0	1.9	23	0	74	.10	3	1.1	2.0	DEP
		11	18 4	53.09	19	23.15	155	15.15	31.29	2.5	2.7	30	0	47	.10	3	.8	1.5	DEP
		11	2039	16.38	18	57.77	155	17.85	7.71		1.9	12	0	261	.23	37	9.0	4.3	PPL
		11	2050	38.33	19	24.19	155	15.97	1.71	1.2	2.0	11	0	108	.05	2	.4	.2	SPC
		11	2055	50.64	19	18.29	155	13.18	7.03	1.7	2.2	21	0	91	.11	8	.7	1.5	POL
		11	2251	49.27	19	33.66	155	33.86	9.35	1.5	1.0	15	0	162	.11	10	1.0	1.3	MOK
		12	423	46.49	18	54.69	155	15.21	9.69	1.7		15	0	263	.09	43	3.6	.5	PPL
		12	10 0	16.85	19	40.25	156	1.01	6.53	2.9	2.8	15	0	225	.19	32	4.0	1.8	KON
		12	1038	8.81	19	39.75	156	1.03	6.53	2.8	1.9	14	0	225	.16	31	3.5	2.0	KON
		12	1356	21.73	19	24.75	155	1.96	36.76		1.5	18	0	155	.05	17	1.1	2.1	MER
		12	2053	28.54	19	19.88	155	11.61	9.30		1.1	15	0	89	.05	6	.5	1.2	UER
		12	2147	27.99	19	19.19	155	15.62	7.79	1.8	1.9	20	0	93	.08	6	.5	1.2	KOA
		12	22 1	34.84	18	57.18	155	18.38	15.67	1.6	1.2	9	0	262	.09	38	2.6	10.7	PPL
		12	2335	13.28	20	2.84	155	22.89	8.10	2.4	1.7	12	1	214	.09	50	1.2	.7	KKII
		13	042	17.80	19	19.83	155	8.72	7.53	1.8	1.8	17	0	105	.10	9	.8	1.8	UER
		13	311	44.75	19	19.10	155	15.82	7.71		1.5	15	0	114	.05	6	.4	1.1	KOA
		13	551	13.58	19	24.44	155	16.79	15.01		1.6	20	0	46	.09	2	.7	1.1	DEP
		13	7 6	42.27	19	19.60	155	11.83	9.01	1.6	2.0	20	0	90	.08	6	.6	1.3	UER
		13	7 9	7.80	19	18.65	155	20.82	8.12	1.1	1.8	14	0	140	.05	7	.5	.9	SWR
		13	734	58.44	19	22.44	155	25.03	8.30	1.3	1.9	20	0	56	.08	10	.5	1.1	UKF
		13	1113	27.84	18	55.76	155	15.54	9.79	1.9	1.9	14	0	297	.06	43	7.4	1.0	PPL
		13	1339	57.81	17	50.19	155	3.66	10.68	3.0	1.4	7	0	352	.05	168	99.0	.0	DIS
		13	1355	12.06	18	54.60	155	15.36	9.92	2.6	2.4	22	0	249	.08	43	2.8	.4	PPL
		13	1853	2.76	19	22.56	155	24.67	10.08	1.3	1.4	16	0	74	.06	9	.4	1.8	UKF
		13	1956	31.99	19	22.96	155	17.49	.98		.9	10	0	68	.08	3	.4	.5	KOA
		13	2023	41.59	19	26.51	155	24.79	6.86	2.1	2.4	21	0	57	.11	10	.7	1.3	UKF
		13	2213	19.66	18	55.90	155	16.12	16.17	1.7	1.6	17	0	258	.11	41	3.5	20.5	PPL
		13	2328	37.50	18	56.50	155	17.05	18.15	1.7	1.2	15	0	261	.10	40	3.3	9.7	PPL
		13	2334	12.50	18	55.92	155	16.73	18.37	2.0	1.9	12	0	256	.11	41	3.2	11.1	PPL
		13	2337	41.23	18	57.02	155	17.04	10.43	1.7	1.7	13	2	274	.06	40	2.2	.5	PPL
		13	2340	5.90	18	56.87	155	18.07	10.13	1.7	1.1	11	0	273	.14	39	8.5	1.3	PPL
		13	2341	33.99	19	.02	155	21.70	12.39		1.9	11	0	246	.17	34	8.2	1.9	LSW
		14	5 9	10.96	19	16.78	155	28.64	7.19		1.4	16	0	109	.14	11	1.1	2.3	HEA
		14	6 9	7.23	18	55.38	155	15.45	9.91	2.6	2.1	17	0	261	.07	43	3.7	.7	PPL
		14	719	57.34	19	19.02	155	15.61	5.91		1.5	16	0	187	.07	6	.8	1.1	KOA
		14	822	8.58	18	50.36	155	15.51	11.81	2.0	1.2	10	0	321	.09	52	55.7	99.0	PPL
		14	1123	26.77	18	56.79	155	17.82	15.90	2.5	2.3	22	0	240	.10	39	2.3	13.8	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	SEP	14	1126	42.30	18	57.36	155	18.64	15.93		1.7	16	0	247	.11	34	3.0	16.8	PPL
		14	1456	10.99	18	56.18	155	17.61	10.30		2.0	18	0	242	.08	40	2.8	.6	PPL
		14	1650	38.44	19	28.64	155	5.72	11.99	2.0	1.9	22	0	102	.14	17	1.5	.4	GLN
		14	1759	54.46	19	20.00	155	11.57	7.30	2.1	2.3	23	0	84	.15	6	.9	1.7	UER
		14	19 6	46.70	19	17.60	155	21.72	5.49	1.6	1.9	16	0	133	.14	9	.9	1.1	SWR
		14	2245	18.56	19	25.68	154	52.54	10.09	1.9	1.9	16	0	255	.13	31	5.6	.6	LER
		15	2 2	30.57	19	36.09	155	47.05	4.02	2.5	1.9	8	0	120	.31	23	3.0	16.2	KON
		15	529	14.46	18	56.52	155	18.00	16.64	2.5	2.5	25	0	241	.14	39	3.6	17.4	PPL
		15	1359	32.93	19	26.21	155	30.15	9.50	2.0	1.6	19	0	66	.16	12	1.0	1.4	MOK
		15	1942	12.41	19	13.45	155	47.31	4.59	2.6	2.0	22	0	144	.23	30	1.7	3.0	DIS
		15	2040	40.47	19	17.74	155	13.20	8.69	2.0	1.9	26	0	105	.10	9	.7	.9	POL
		15	2229	35.21	19	18.06	155	13.16	7.21	1.7	1.6	19	0	98	.10	8	.7	1.6	POL
		15	2326	35.62	19	18.09	155	14.56	6.55	1.7	1.5	19	0	126	.09	7	.7	1.5	POL
		16	512	24.97	19	17.11	155	22.63	7.90	2.0	2.5	24	0	123	.17	7	1.1	1.6	SWR
		16	518	32.78	19	27.29	155	28.18	7.77	1.4	1.3	13	0	69	.08	12	.6	1.4	UKF
		16	930	54.09	19	21.56	155	16.03	35.22		1.7	21	0	129	.07	4	1.3	2.2	DEP
		16	1055	24.49	19	19.90	155	11.99	7.19	1.9	2.0	22	0	82	.12	6	.8	1.6	UER
		16	11 2	14.29	19	23.47	155	17.36	1.37	1.3	2.5	13	0	55	.08	3	.5	.4	SPC
		16	1148	14.09	19	16.37	155	27.03	7.99	2.0	2.5	19	0	102	.12	11	.8	1.3	HEA
		16	1246	52.23	18	53.63	155	16.49	8.58	2.4	2.1	16	0	285	.10	49	6.7	2.2	PPL
		16	19 8	39.91	19	10.92	155	36.73	8.85	2.6	2.3	18	0	95	.19	20	1.5	2.8	HEA
		16	1938	5.02	19	15.63	155	29.89	42.17	3.1	2.8	30	0	77	.12	13	1.3	3.2	LSW
		16	2222	55.35	19	24.06	155	17.41	13.52		1.0	21	0	41	.07	2	.5	.8	DEP
		17	243	57.59	19	20.19	155	10.39	8.18	1.9	1.5	21	0	113	.13	7	1.1	1.8	UER
		17	6 0	9.29	19	12.79	155	21.62	35.34	1.9	1.4	23	0	172	.08	14	1.2	2.1	LSW
		17	939	35.42	19	23.98	155	15.98	1.52	1.3	2.0	11	0	106	.16	2	1.6	.6	SPC
		17	1140	27.87	19	18.87	155	13.23	7.30	1.7	1.5	20	0	80	.07	8	.5	1.0	POL
		17	1250	19.37	19	18.60	155	15.50	6.02	1.2	1.3	17	0	129	.08	6	.6	1.3	KOA
		17	14 1	32.48	19	20.24	155	9.61	5.49	1.7	1.9	16	0	168	.10	9	1.1	.8	UER
		17	14 2	57.44	19	19.86	155	10.59	8.89	1.8	2.0	19	0	89	.11	7	.9	1.1	UER
		17	1414	3.53	19	24.08	155	16.02	1.56	1.3	2.2	11	0	105	.11	2	.7	.4	SPC
		17	18 2	13.80	19	20.40	155	20.21	4.93	1.4	1.7	13	0	118	.08	5	.6	1.6	SWR
		17	1924	13.93	19	27.15	155	29.77	10.22	1.5	.8	13	0	117	.08	12	.9	6.1	UKF
		17	2030	51.25	18	56.15	155	17.40	15.29	2.5	2.3	24	0	242	.11	40	2.5	19.0	PPL
		17	2244	2.83	19	19.10	155	15.71	7.53	1.9	1.9	25	0	113	.11	6	.7	1.0	KOA
		18	0 5	59.10	19	23.35	155	28.09	8.05	1.4	1.3	16	0	56	.10	13	.8	1.9	UKF
		18	2 7	33.35	19	17.61	155	13.03	8.99	2.2	2.3	26	0	123	.13	9	.9	1.1	POL
		18	315	44.51	19	26.49	155	22.70	8.26	1.3	1.4	13	0	108	.07	10	.7	2.2	UKF
		18	930	43.66	19	14.71	155	29.15	41.31		1.2	17	0	105	.10	14	1.7	5.9	LSW
		18	1044	13.08	19	24.50	155	16.79	9.39	1.3	1.9	12	0	73	.09	2	1.2	1.9	LPC
		18	1138	34.60	19	17.14	155	22.20	4.89	1.7	2.0	18	0	139	.13	8	.9	1.4	SWR
		18	1512	14.32	19	26.50	155	28.71	7.77	1.9	1.5	19	0	66	.10	12	.7	1.5	UKF
		18	1549	10.57	19	18.53	155	15.45	6.84	1.3	1.2	19	0	173	.12	7	1.0	1.3	KOA
		18	1930	34.24	18	53.00	155	14.93	15.64	2.6	2.0	22	0	254	.11	45	4.0	33.9	PPL
		18	1945	3.41	19	30.64	155	55.69	9.86	1.7	1.1	14	0	270	.17	28	4.2	.7	KON
		18	2227	28.78	18	57.50	155	17.52	9.88	1.9	1.7	23	0	238	.12	39	2.9	.5	PPL
		18	2349	46.59	19	20.59	155	22.82	8.66	1.6	1.4	15	0	98	.05	9	.5	.7	SWR
		19	042	4.32	18	56.79	155	17.96	15.38	2.1	1.6	23	0	240	.13	39	3.3	22.0	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	SEP	19	132	58.42	19	27.30	155	28.98	8.18	1.4	1.2	15	0	72	.12	11	.9	3.3	UKF
		19	148	31.46	19	26.40	155	26.05	8.86	1.7	1.5	19	0	57	.09	12	.6	1.0	UKF
		19	233	37.69	18	57.37	155	18.16	12.36	1.9	1.5	21	0	238	.12	38	3.2	.0	PPL
		19	239	10.13	19	17.58	155	13.43	7.22	1.8	2.2	19	0	175	.12	9	1.3	2.3	POL
		19	252	20.71	19	29.48	155	43.32	9.14	1.8	1.5	16	0	93	.16	15	1.2	1.4	MOK
		19	326	15.43	19	17.15	155	13.30	6.56		1.4	16	0	230	.08	11	1.4	2.5	POL
		19	754	11.41	19	14.74	155	28.82	41.08	1.7	1.0	18	0	107	.15	14	2.0	7.0	LSW
		19	8	0 35.90	19	19.04	155	14.94	7.42	1.8	1.8	22	0	128	.08	7	.6	.9	UER
		19	13	2 59.26	19	20.44	155	6.65	9.46	3.0	3.2	18	0	146	.07	12	.8	.5	UER
		19	1924	28.59	19	14.52	155	32.08	10.20	3.1	3.2	21	0	123	.14	17	1.0	.8	LSW
		19	2039	34.86	18	54.04	155	15.82	9.49		1.7	15	0	298	.06	50	7.5	1.9	PPL
		19	2049	12.03	19	15.49	155	29.23	42.24	1.9	1.3	18	0	141	.10	14	1.6	4.8	LSW
		19	2120	40.11	19	24.69	155	26.65	9.89	1.2	1.2	14	0	55	.06	11	.5	.5	UKF
		19	2355	59.17	19	15.62	155	23.34	5.47	1.3	1.8	14	0	161	.09	13	.9	1.0	LSW
		20	426	53.75	19	16.75	155	14.97	9.03		1.4	12	0	227	.04	11	1.2	.8	POL
		20	656	7.71	19	15.25	155	29.53	41.59	2.0	1.3	19	0	95	.09	13	1.2	3.8	LSW
		20	9	9 49.90	19	16.57	155	22.55	6.83	2.0	2.8	19	0	129	.12	11	.9	2.6	SWR
		20	1217	56.57	19	15.39	155	29.74	39.17	2.3	1.7	17	0	93	.10	23	1.5	5.1	LSW
		20	2112	51.19	19	20.62	155	11.86	8.92	2.0	2.5	20	0	138	.10	7	.8	1.2	UER
		21	350	14.09	19	19.48	155	15.75	8.95	2.0	2.2	22	0	123	.11	6	.8	1.1	KOA
		21	5	2 20.15	20	1.22	155	29.74	37.57	2.6	1.6	21	0	200	.15	46	2.4	5.5	KKU
		21	618	19.20	19	25.69	155	24.41	7.54	1.7	1.8	17	0	86	.08	9	.7	1.2	UKF
		21	1149	59.86	19	22.56	155	17.38	34.01		1.4	15	0	84	.08	7	1.2	2.7	DEP
		21	1441	36.23	18	53.72	155	16.77	12.82	2.6	2.0	17	0	299	.08	49	9.1	.0	PPL
		21	1445	25.95	19	19.52	155	16.52	6.65	1.5	1.4	19	0	184	.12	7	1.3	1.6	KOA
		21	1550	32.18	19	18.77	155	15.20	6.79	1.7	1.9	21	0	131	.08	8	.7	1.4	KOA
		21	1839	6.20	19	21.93	155	17.08	33.70	2.4	1.9	24	0	101	.08	3	1.0	1.6	DEP
		21	1946	5.24	19	20.20	155	12.48	10.10	3.2	3.6	28	0	73	.11	6	.8	.3	UER
		21	2222	32.33	19	23.41	155	16.94	1.51		1.1	9	0	89	.12	3	1.1	.4	SPC
		21	2315	39.53	18	56.95	155	16.43	13.29	2.3	1.9	16	0	293	.13	43	9.3	99.0	PPL
		22	026	58.72	19	15.28	155	29.76	43.15	2.6	2.0	27	0	93	.13	13	1.4	3.7	LSW
		22	134	38.51	19	22.18	155	17.34	33.14	1.8	1.0	17	0	132	.07	7	1.0	1.5	DEP
		22	210	7.08	19	23.78	155	26.10	9.59	3.4	3.6	26	0	49	.12	11	.6	.8	UKF
		22	3	0 49.77	19	12.75	155	21.50	36.46	2.0	1.0	20	0	182	.08	15	1.5	2.2	LSW
		22	329	16.54	19	21.08	155	7.69	6.75	1.5		17	0	233	.17	15	2.9	2.4	UER
		22	7	2 55.82	19	14.97	155	29.51	42.29	2.2	1.5	18	0	147	.10	14	1.5	5.4	LSW
		22	818	16.67	19	29.56	155	23.48	11.47	2.1	2.4	23	0	53	.11	14	.8	.4	NER
		22	1244	44.71	19	15.29	155	29.42	39.75	1.9	1.3	22	0	90	.09	14	1.1	3.7	LSW
		22	1328	54.05	19	27.92	155	28.25	9.79	2.1	1.6	18	0	74	.13	12	.7	.8	UKF
		22	1557	34.33	19	17.26	155	20.90	7.37	1.7	2.2	22	0	129	.12	8	.9	1.3	SWR
		22	17	7 25.85	19	23.84	155	17.19	1.43	.9	1.5	10	0	55	.09	2	.7	.4	SPC
		22	1853	5.26	18	56.42	155	17.23	10.46	2.0	1.3	19	0	292	.08	40	6.2	.6	PPL
		22	1926	50.78	19	24.34	155	16.38	1.66	.7	1.1	10	0	89	.08	2	.7	.3	SPC
		22	21	3 46.00	19	24.14	155	16.04	1.70	.9	1.9	11	0	105	.10	2	.8	.3	SPC
		22	2241	13.68	19	19.51	155	28.43	8.14	1.6	1.8	19	0	64	.14	9	1.0	2.3	HEA
		23	041	7.94	19	15.47	155	29.71	40.36	2.5	1.8	28	0	79	.10	13	1.1	3.0	LSW
		23	042	45.72	19	24.42	155	17.23	1.00	.5	1.1	10	0	72	.11	2	.7	.6	SPC
		23	043	3.43	19	18.64	155	15.55	6.02	1.0	1.4	16	0	125	.10	6	.8	1.6	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	SEP	23	248	2.99	19	23.64	155	17.16	1.81	1.6	2.6	21	0	48	.14	2	.5	.3	SPC
		23	310	21.35	19	19.64	155	9.93	6.82	1.2	1.6	18	0	92	.11	8	.8	2.0	UER
		23	317	8.34	18	55.30	155	16.58	15.45	2.6	2.5	24	0	246	.11	41	3.1	20.1	PPL
		23	326	40.32	19	27.74	155	27.21	5.53	1.4	1.4	16	0	89	.10	14	.6	4.0	UKF
		23	356	11.03	19	23.64	155	17.25	1.39	.6	1.4	10	0	57	.10	2	.8	.5	SPC
		23	412	9.74	19	24.08	155	15.89	1.17		1.4	9	0	111	.13	2	1.0	.6	SPC
		23	754	29.01	19	19.79	155	11.79	8.01	1.7	2.5	21	0	86	.10	6	.7	1.4	UER
		23	10	6 45.38	18	51.84	155	15.36	11.31	2.6	2.1	13	0	303	.09	49	10.4	.0	PPL
		23	1143	53.92	19	21.95	155	18.57	4.52	2.2	2.4	20	0	65	.13	4	.7	1.2	KOA
		23	1352	56.40	19	18.83	155	15.62	6.03	1.7	1.5	20	0	122	.13	6	.9	1.6	KOA
		23	1353	38.35	19	19.06	155	15.88	6.30		1.6	18	0	116	.09	6	.6	1.3	KOA
		23	1743	4.83	19	28.98	155	28.17	9.53	1.6	1.0	13	0	82	.13	14	1.1	2.2	UKF
		23	1951	.35	19	27.43	155	28.52	10.23	1.6	1.6	16	0	87	.08	13	.7	.5	UKF
		23	2155	52.50	18	54.27	155	15.49	9.93	2.4	2.2	16	0	264	.05	44	2.4	.4	PPL
		23	2345	45.21	19	9.21	155	33.05	35.48	2.5	1.9	25	0	126	.12	17	1.3	3.5	LSW
		24	244	22.20	19	18.94	155	15.67	5.98	1.3	1.5	16	0	118	.11	6	.8	1.4	KOA
		24	3	5 57.17	19	20.46	155	8.73	5.11	2.1	1.5	21	0	71	.15	10	.3	1.3	UER
		24	4	4 45.90	19	15.41	155	29.83	40.70	2.0	1.6	20	0	78	.12	13	1.7	5.0	LSW
		24	756	52.99	19	17.40	155	24.89	1.43	1.6	2.0	15	0	108	.15	11	1.3	36.0	SWR
		24	1030	41.29	19	29.50	155	23.73	11.74	2.1	2.1	20	0	54	.12	15	.9	.4	UER
		24	1630	50.46	18	54.53	155	16.27	12.63	2.6	2.1	15	0	289	.10	45	8.0	99.0	PPL
		24	1925	2.94	18	54.88	155	15.39	9.99	2.6	2.0	22	0	254	.08	43	2.4	.5	PPL
		24	2354	44.66	19	18.39	155	21.48	6.80		1.6	20	0	114	.17	10	1.2	2.4	SWR
		25	1	2 53.76	19	20.18	155	49.50	14.83	2.0	1.6	17	0	118	.24	20	5.3	15.9	KON
		25	139	.02	19	15.47	155	29.69	41.34	3.0	2.8	30	0	77	.12	14	1.3	3.2	LSW
		25	158	22.53	19	15.51	155	29.73	39.54	1.5	.6	18	0	125	.09	14	1.3	4.4	LSW
		25	317	21.97	19	20.05	155	17.49	28.45		1.3	21	0	97	.10	6	1.3	2.2	DEP
		25	412	39.22	19	24.22	155	16.12	1.60	1.4	2.4	16	0	68	.09	2	.5	.2	SPC
		25	853	16.83	19	21.86	155	51.99	10.05	2.6	1.9	16	0	220	.11	29	1.9	.5	KON
		25	1059	21.78	18	54.41	155	17.41	17.68	2.9	2.6	14	0	289	.12	43	7.4	18.1	PPL
		25	1129	41.18	19	24.32	155	16.89	15.48	2.2	2.3	29	0	46	.09	2	.6	.8	DEP
		25	1130	33.06	19	24.39	155	17.12	14.54	1.6	1.6	19	0	83	.08	5	.7	1.1	DEP
		25	1134	37.95	19	23.98	155	17.03	14.76	2.0	2.0	28	0	37	.09	2	.6	.8	DEP
		25	1220	10.40	19	24.26	155	16.98	14.64	1.6	1.7	23	0	43	.08	2	.7	.8	DEP
		25	1347	27.38	19	13.11	155	36.76	9.64	2.3	2.2	19	0	111	.20	24	1.4	.9	HEA
		25	2045	19.44	19	19.10	155	12.42	6.65	1.7	1.5	22	0	93	.11	7	.7	1.6	UER
		25	2050	10.64	19	12.65	155	36.27	9.68		1.4	18	0	114	.19	26	1.7	.8	HEA
		25	2112	57.42	19	20.00	155	11.64	6.79	1.7	1.6	20	0	83	.15	6	1.1	2.4	UER
		26	039	39.70	19	17.50	155	14.27	8.09	1.7	1.6	20	0	141	.10	8	.8	1.5	POL
		26	050	55.38	18	55.74	155	17.34	10.14	2.5	1.8	25	1	249	.06	40	1.3	.3	PPL
		26	3	1 13.92	19	10.76	155	31.42	3.25	1.7	1.2	16	0	104	.13	22	.9	2.3	LSW
		26	345	35.58	18	56.53	155	15.57	15.62	2.3	2.2	21	0	266	.14	40	7.3	24.9	PPL
		26	459	34.08	19	36.54	155	51.48	13.21		1.5	14	0	168	.23	15	7.5	21.2	KON
		26	610	43.57	18	55.70	155	15.97	12.67	2.6	2.4	24	0	245	.11	41	3.1	99.0	PPL
		26	755	19.25	19	17.23	155	22.49	6.45	1.8	1.8	25	0	122	.15	8	.9	2.2	SWR
		26	1019	44.99	19	17.27	155	16.48	7.98		1.9	23	0	168	.12	5	1.0	1.4	KOA
		26	1549	52.50	19	19.65	155	13.06	8.32	1.7	1.7	22	0	73	.12	7	.8	1.3	UER
		26	1911	5.71	19	25.22	155	24.41	7.45	1.4	1.4	19	0	63	.09	9	.6	1.2	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	SEP	26	2112	16.13	19	26.54	155	28.25	9.70		1.1	16	69	.08	12	.5	.6	UKF
		26	2135	14.40	19	33.47	155	51.36	10.07	1.9	1.5	17	195	.19	28	5.9	.7	KON
		27	142	33.67	19	17.52	155	14.33	6.54		1.6	18	142	.08	8	.7	1.4	POL
		27	349	3.66	18	54.56	155	16.97	9.69	1.9	1.2	19	269	.11	43	7.4	.9	PPL
		27	558	58.18	19	12.28	155	27.25	5.17	1.4	1.5	19	117	.13	16	1.0	1.5	LSW
		27	814	30.54	19	18.68	155	13.40	7.93		1.5	20	78	.07	7	.5	1.1	POL
		27	1345	6.92	19	19.10	155	13.42	8.05	1.7	1.7	18	76	.10	7	.7	1.6	UER
		27	1525	59.57	19	24.20	155	15.86	1.82	.9	1.6	9	114	.05	2	.4	.2	SPC
		27	1541	2.72	19	24.52	155	26.74	5.63	1.7	1.5	13	69	.11	11	.8	2.8	UKF
		28	0 2	31.77	19	20.43	155	8.28	6.20	1.8	1.6	23	78	.15	9	1.0	2.3	UER
		28	039	.71	18	59.24	155	16.27	14.83	3.9	4.0	31	233	.11	35	1.9	16.2	PPL
		28	157	54.56	19	.93	155	16.58	15.24	2.4	1.7	19	230	.21	32	4.7	27.0	PPL
		28	253	37.85	18	55.62	155	15.78	15.51	2.6	1.8	22	251	.08	42	2.3	19.6	PPL
		28	254	1.64	18	55.96	155	16.34	14.47	2.8	2.7	16	244	.12	42	3.0	50.8	PPL
		28	411	29.23	19	16.68	155	22.49	7.66	2.3	2.9	27	128	.15	7	.9	1.3	SWR
		28	416	59.65	19	13.02	155	29.99	39.86		1.6	31	72	.12	13	1.3	3.1	LSW
		28	432	44.00	19	17.03	155	22.60	3.04	1.6	2.1	21	124	.15	7	.9	2.4	SWR
		28	433	51.65	19	17.16	155	22.61	4.32	1.6	1.9	22	122	.13	7	.8	1.5	SWR
		28	511	40.74	19	17.37	155	22.70	3.98	1.6	1.9	22	120	.18	7	1.0	2.2	SWR
		28	6 7	27.35	19	14.68	155	35.34	10.03	2.3	1.6	22	190	.15	20	1.6	.7	HEA
		28	622	52.21	19	19.82	155	13.00	4.88	2.1	2.6	27	72	.19	7	.9	1.3	UER
		28	858	36.19	19	17.11	155	22.49	6.26	1.3	1.6	17	123	.13	7	1.0	2.6	SWR
		28	1612	9.61	19	26.54	155	22.54	8.98	2.8	3.3	29	45	.13	10	.7	1.2	UKF
		28	1643	34.61	19	25.73	155	24.76	7.91		1.9	18	73	.07	10	.5	1.7	UKF
		28	1654	15.42	19	18.58	155	15.37	6.79	.8	1.1	18	128	.08	6	.6	1.3	KOA
		28	1851	48.96	19	20.04	155	11.49	7.24	1.8	1.4	23	83	.14	7	1.0	1.8	UER
		28	2234	58.60	18	56.42	155	15.99	10.41		2.5	25	248	.09	40	2.5	.5	PPL
		28	2349	31.23	19	25.74	155	17.24	13.02		.7	18	117	.08	4	.7	.7	DEP
		29	012	.10	19	26.69	155	22.72	8.65		1.3	13	110	.07	11	.6	2.0	UKF
		29	244	5.38	19	19.26	155	21.40	5.53	1.6	1.4	17	137	.17	7	1.4	3.0	SWR
		29	432	33.35	19	13.76	155	22.03	33.27	1.8	1.2	26	164	.10	13	1.4	2.0	LSW
		29	437	45.58	19	19.60	155	10.04	7.33	1.8	1.7	23	93	.12	8	.8	1.5	UER
		29	656	11.31	19	18.76	155	15.02	7.42		1.5	17	117	.06	6	.5	1.1	KOA
		29	716	21.74	19	17.13	155	25.99	8.95		2.1	20	103	.13	10	.9	1.7	HEA
		29	8 2	2.25	19	19.53	155	15.52	5.56		1.2	16	100	.11	6	.7	1.7	KOA
		29	852	32.22	19	31.73	155	27.76	5.32	1.4	1.9	14	130	.13	14	1.1	2.1	NER
		29	1557	29.24	18	55.20	155	16.43	10.22		2.1	22	288	.06	42	2.0	.4	PPL
		29	2335	48.95	18	53.42	155	15.10	9.62	1.9	1.9	20	253	.07	45	3.4	.4	PPL
		30	115	22.85	19	16.86	155	23.85	.41	1.4	1.8	15	118	.12	12	.9	99.0	SWR
		30	241	30.57	19	24.30	155	17.19	3.01	2.3	2.6	8	121	.14	2	1.8	3.8	SPC
		30	4 3	35.35	19	17.86	155	39.34	11.24	3.0	3.0	27	80	.15	20	.9	.4	HEA
		30	416	22.49	19	18.70	155	39.24	10.52	2.6	2.6	22	106	.12	20	.9	.4	HEA
		30	511	16.16	18	55.75	155	15.94	11.75		2.3	24	245	.11	41	3.0	99.0	PPL
		30	1026	39.64	19	25.37	155	24.77	9.54	2.4	2.5	23	59	.09	9	.5	1.0	UKF
		30	1844	43.80	19	26.39	155	34.18	24.81	2.0	1.9	10	97	.14	6	2.8	6.9	MOK
		30	19 9	25.79	18	55.74	155	15.28	16.50		2.3	23	246	.10	41	2.8	15.5	PPL
		30	2036	47.08	19	20.17	155	13.25	5.97		1.2	21	65	.12	6	.7	1.6	UER
	OCT	1	3 8	31.77	19	19.37	155	13.47	8.31	1.8	2.1	24	63	.11	6	.7	1.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	OCT	1	321	21.13	19	20.77	155	6.60	7.66	2.0	1.3	18	97	.12	7	1.0	1.6	UER
		1	1728	16.12	18	53.33	155	15.83	15.51	2.6	1.7	16	300	.11	46	7.7	55.0	PPL
		1	1824	35.63	18	55.37	155	15.22	18.83	2.6	1.9	23	247	.11	42	2.7	12.4	PPL
		1	1935	18.05	19	22.82	155	2.51	6.94	2.2	2.3	21	133	.16	14	1.1	1.7	MER
		1	2134	39.58	19	19.16	155	13.47	10.27	3.7	4.0	29	71	.08	7	.5	.2	UER
		1	23 9	41.15	19	19.46	155	13.65	7.94		2.2	24	62	.12	6	.8	1.3	UER
		2	3 4	20.11	19	22.02	155	25.18	10.03	1.5	1.1	17	59	.05	10	.4	.4	UKF
		2	4 6	14.33	19	17.41	155	22.51	5.35	1.7	2.0	25	120	.13	8	.8	.9	SWR
		2	425	30.28	19	54.38	157	36.61	8.00	3.8		14	342	.17	198	65.4	74.5	DIS
		2	1153	10.22	19	26.95	155	29.19	8.99	1.9	1.7	20	70	.14	13	.9	5.0	UKF
		2	1340	40.96	19	20.19	155	12.97	8.82	1.7	1.6	18	68	.10	6	.7	1.5	UER
		2	1417	49.94	18	26.72	156	43.43	73.24	3.6		20	334	.12	145	84.7	41.3	DIS
		2	16 9	10.96	18	59.01	155	16.17	10.15	2.2	1.7	14	288	.11	39	9.2	1.1	PPL
		2	1712	11.24	19	24.19	155	16.87	2.12	.9	2.0	8	84	.03	1	.3	.8	SPC
		2	2119	8.56	19	22.97	155	27.21	9.75	1.5	1.6	22	49	.10	12	.6	1.3	UKF
		2	2330	25.18	19	18.85	155	13.75	7.13	1.5	1.4	21	87	.12	7	.8	1.9	POL
		3	0 0	27.91	19	19.32	155	13.51	7.18	1.7	1.5	23	69	.14	7	.8	1.8	UER
		3	033	42.69	18	56.91	155	16.81	15.85	2.5	2.2	27	240	.09	39	2.1	13.2	PPL
		3	048	18.98	18	59.41	155	15.84	14.03	2.9	3.2	28	233	.10	36	1.7	58.6	PPL
		3	211	44.57	19	12.94	155	21.97	35.29	2.6	2.6	30	159	.11	12	1.2	2.3	LSW
		3	435	42.91	18	54.67	155	15.28	9.66		1.9	24	263	.12	43	3.2	.5	PPL
		3	622	27.50	19	17.41	155	12.79	8.85	1.8	1.6	21	148	.08	9	.7	1.1	POL
		3	714	6.86	18	57.60	155	12.80	15.92	2.3	2.1	22	281	.15	57	4.1	24.5	PPL
		3	1457	36.16	19	22.84	155	3.12	8.87	2.4	2.0	21	120	.13	13	1.0	1.9	MER
		3	2034	36.27	18	56.29	155	18.64	15.32		1.2	16	241	.13	39	5.1	21.5	PPL
		4	131	51.21	19	25.59	155	27.97	8.44	1.8	1.4	24	58	.12	13	.7	1.3	UKF
		4	2 9	8.99	19	26.56	155	22.93	7.94	2.6	2.6	28	85	.11	11	.6	1.0	UKF
		4	345	46.61	19	26.69	155	24.89	7.12	2.1	2.3	27	54	.10	11	.5	1.0	UKF
		4	559	13.30	19	18.36	155	14.87	7.70	1.7	1.0	16	125	.06	7	.5	1.2	POL
		4	1218	46.57	19	24.75	155	17.31	4.33	.8	1.0	8	178	.09	5	1.5	3.1	SPC
		4	1616	12.04	19	38.82	156	4.73	43.02	2.1	.8	14	238	.19	47	5.4	6.4	KON
		4	17 5	14.61	19	24.39	155	17.12	2.50	1.0	1.0	8	118	.07	2	.8	1.9	SPC
		4	18 9	37.83	18	54.16	155	17.58	10.26		1.3	20	249	.11	43	2.4	.6	PPL
		4	1928	58.61	19	24.22	155	16.61	2.20	1.1	1.3	10	82	.05	2	.4	1.0	SPC
		4	2036	2.57	19	24.27	155	16.77	1.84	.8	1.3	10	76	.12	2	1.0	.4	SPC
		4	23 0	52.60	19	24.23	155	17.20	2.34	.8	1.2	9	75	.13	2	1.4	3.3	SPC
		5	019	38.41	19	24.09	155	16.69	2.17	1.1	1.4	10	80	.07	2	.6	1.3	SPC
		5	148	33.86	19	19.48	155	12.62	3.48	1.6	1.0	18	83	.14	7	.8	2.4	UER
		5	345	55.01	19	24.42	155	16.28	1.05	.9	1.2	9	88	.05	2	.5	.4	SPC
		5	514	5.28	19	24.09	155	16.50	2.17	1.1	1.3	9	88	.08	2	.8	1.7	SPC
		5	7 8	21.93	19	28.14	155	23.89	11.59	2.1	1.7	22	65	.12	12	.9	.4	UKF
		5	13 3	1.36	19	24.35	155	16.69	1.12	.9	2.0	10	77	.14	2	.8	.5	SPC
		5	1438	49.82	19	18.17	155	16.77	7.18	2.0	2.6	25	120	.11	6	.7	1.1	KOA
		5	16 4	49.24	19	24.34	155	17.08	1.91	.9	1.5	9	85	.13	2	1.2	.5	SPC
		5	1843	27.79	19	24.26	155	16.82	1.90	.9	1.5	11	70	.12	2	.9	.4	SPC
		5	1923	13.64	19	19.26	155	10.13	10.14	1.8	1.5	20	102	.09	7	.8	.5	UER
		5	1959	45.56	19	33.09	155	44.04	9.41	2.8	2.2	25	113	.16	18	1.2	.9	MOK
		6	119	56.73	19	19.25	155	14.44	8.63	2.3	2.3	28	72	.11	6	.6	.8	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	OCT	6	337	44.86	19	28.31	155	52.56	9.14	1.9	1.7	17	0	138	.14	23	1.6	.9	KON
		6	458	50.43	19	20.63	155	13.46	6.50	1.8	1.5	23	0	61	.15	7	.9	1.6	UER
		6	5 1	58.61	19	24.27	155	16.55	2.00	1.1	1.8	10	0	83	.12	2	.9	2.6	SPC
		6	659	21.32	19	24.26	155	16.47	1.80	.9	1.8	11	0	56	.06	2	.4	.2	SPC
		6	927	5.18	19	13.06	155	26.55	41.05		1.7	23	0	146	.10	18	1.4	4.1	LSN
		6	1323	35.56	19	19.09	155	15.16	7.25	2.0	1.9	22	0	89	.11	6	.7	1.3	KOA
		6	1330	41.22	19	24.04	155	16.81	1.77	1.0	1.8	10	0	50	.10	2	.8	.3	SPC
		6	15 8	33.42	19	16.88	155	22.17	5.32	1.5	1.9	18	0	127	.14	8	1.1	1.2	SWR
		6	1523	21.67	19	16.88	155	22.20	6.05	1.8	2.1	22	0	127	.12	8	.9	2.2	SWR
		6	2134	42.05	19	24.13	155	16.49	2.14	1.1	1.7	11	0	87	.11	2	.8	1.8	SPC
		6	2154	43.83	19	23.54	155	26.31	8.71	1.3	1.3	22	0	48	.07	12	.4	1.1	UKF
		6	22 2	41.97	19	23.85	155	26.33	7.94	1.7	1.7	24	0	48	.12	12	.7	1.5	UKF
		7	317	56.53	19	14.18	155	27.29	60.38	2.7	2.4	15	0	121	.17	17	4.9	11.6	LSW
		7	321	54.70	19	6.50	155	24.36	31.42	2.3	1.9	11	0	270	.16	28	16.4	28.3	LSW
		7	437	37.68	19	24.27	155	16.78	2.93	1.2	2.0	9	0	76	.12	3	1.2	3.0	SPC
		7	630	55.32	19	24.22	155	17.58	.71	.7	2.0	9	0	83	.13	4	.8	3.3	SPC
		7	1411	50.00	19	21.88	155	3.06	6.25	2.0	.9	20	0	173	.14	12	1.2	1.8	MER
		7	1934	16.40	19	24.38	155	16.82	3.18	1.2	1.6	10	0	74	.07	2	.6	1.2	SPC
		7	2328	39.28	19	24.85	155	16.90	1.87	.8	1.1	10	0	112	.17	3	1.7	.8	SPC
		8	137	46.62	19	24.23	155	16.84	1.90	1.0	1.3	10	0	66	.03	2	.2	.1	SPC
		8	1159	52.24	19	19.18	155	15.56	5.93	1.8	1.3	21	0	110	.11	6	.7	1.5	KOA
		8	18 5	58.01	19	16.70	155	23.91	8.41	3.4	4.0	29	0	119	.20	10	1.1	1.6	SWR
		8	2354	52.39	19	20.62	155	13.28	6.73	1.6	1.2	23	0	60	.12	7	.7	1.4	UER
		9	254	56.97	19	34.21	156	29.00	21.14	2.5	1.6	26	2	283	.20	76	3.0	19.1	DIS
		9	648	18.92	19	19.96	155	12.62	5.89	1.6	1.5	21	0	75	.12	6	.8	2.1	UER
		9	822	1.19	19	22.18	155	18.08	1.23		.6	8	0	86	.03	4	.2	.2	KOA
		9	2041	18.59	19	21.81	155	4.79	9.14	2.1	2.8	26	0	80	.13	10	.9	.7	MER
		9	2113	10.67	19	17.78	155	14.34	7.19	1.9	1.7	24	0	105	.09	8	.6	1.1	POL
		9	2314	21.66	19	51.49	155	45.10	6.52	2.9	3.1	23	1	242	.12	44	1.6	1.1	KON
		10	037	29.84	19	24.23	155	16.52	2.00	.9	1.7	10	0	84	.15	2	1.1	3.0	SPC
		10	125	6.50	19	6.27	155	24.42	41.04	1.6	.2	16	1	217	.08	26	2.3	2.7	LSW
		10	234	42.25	19	24.26	155	16.78	1.79	.9	1.7	10	0	75	.12	2	1.0	.5	SPC
		10	1143	12.12	19	40.07	155	9.85	12.40	2.0	1.6	19	0	91	.10	21	1.9	1.2	HIL
		10	1314	46.52	19	22.63	155	29.71	9.21	1.8	1.7	16	0	65	.11	16	.8	1.5	UKF
		10	1322	14.76	19	29.82	155	53.15	9.99	3.0	2.3	23	0	115	.19	22	1.5	.6	KON
		10	1952	29.35	19	29.76	155	53.12	9.36	1.9		15	0	178	.12	30	2.5	.8	KON
		11	0 2	2.22	19	16.67	155	23.52	7.28	2.1	3.1	28	0	123	.16	9	.9	1.6	SWR
		11	029	43.66	19	17.45	155	25.99	8.67	1.7	2.0	26	0	101	.11	10	.7	1.1	HEA
		11	430	48.99	19	19.29	155	15.97	9.53	2.6	3.2	30	0	95	.08	6	.4	.3	KOA
		11	520	42.35	19	20.56	155	6.59	8.46	2.6	3.0	29	0	72	.09	9	.5	.5	UER
		11	1338	55.12	19	26.92	155	28.21	9.80	1.9	1.5	21	0	67	.14	12	.9	1.2	UKF
		11	1540	36.77	19	19.04	155	13.99	9.27	1.7	2.0	23	0	68	.08	7	.6	.9	UER
		11	1621	20.56	19	19.26	155	9.82	7.76	1.6	.7	19	0	124	.11	8	1.0	2.0	UER
		11	1625	36.49	19	18.19	155	29.90	8.33	2.4	2.5	25	0	47	.19	12	1.0	2.3	HEA
		11	2130	45.23	19	21.52	155	29.65	8.81	1.8	1.8	23	0	67	.14	11	.8	1.9	HEA
		12	050	53.98	18	54.23	155	16.65	11.54	2.6	2.0	25	3	249	.16	42	7.0	6.6	PPL
		12	821	20.40	18	55.98	155	19.01	14.19	2.7	3.0	23	0	281	.12	40	5.6	50.7	PPL
		12	1138	59.74	18	48.46	155	14.05	6.50	2.7	1.9	14	0	309	.06	54	11.7	3.6	PPL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	OCT	12	1312	20.94	19	16.92	155	23.47	6.51	2.1	2.6	24	0	120	.16	9	.9	2.5	SWR
		12	1316	2.39	19	18.02	155	15.32	10.19	2.5	2.9	28	0	115	.10	6	.7	.3	KOA
		12	1528	49.48	19	22.73	155	14.68	30.72	2.1	2.1	26	0	88	.09	4	.9	1.6	DEP
		12	1830	53.90	19	14.72	155	32.10	4.30	2.2	1.4	22	0	189	.12	16	1.1	1.2	LSW
		12	1833	2.66	19	26.62	154	54.38	10.04		1.2	17	0	227	.15	28	3.0	.5	LER
		12	1957	9.23	18	55.55	155	17.30	11.72	2.7	2.9	25	0	245	.12	40	5.5	99.0	PPL
		13	120	35.38	19	17.05	155	23.19	5.64	1.2	1.3	20	0	132	.12	8	.8	2.4	SWR
		13	155	3.50	19	31.78	155	28.21	5.31	2.1	1.8	24	0	83	.16	14	.8	1.9	MER
		13	3 8	1.89	19	18.08	155	13.30	8.71	2.0	2.0	24	0	91	.09	8	.6	1.0	POL
		13	1317	16.76	19	26.72	155	24.94	8.49	2.0	1.9	24	0	54	.11	11	.6	1.1	UKF
		13	1346	31.99	19	24.38	155	17.15	13.22	1.6	1.6	24	0	59	.06	2	.5	.6	DEP
		13	1359	44.25	19	22.35	155	28.64	9.87	2.6	3.1	29	0	48	.12	11	.6	.4	UKF
		13	1521	43.34	19	25.03	155	25.33	11.80	1.8	1.5	19	0	65	.07	10	.5	.4	UKF
		13	1627	51.58	19	19.87	155	15.57	7.28	1.5	.7	20	0	91	.10	6	.7	1.5	KOA
		13	1817	6.71	19	.14	155	15.98	10.69	2.2	1.5	23	0	230	.09	53	2.7	.3	PPL
		13	1817	39.08	19	4.91	156	12.31	42.92	3.2		14	1	303	.07	64	6.5	4.6	DIS
		13	1951	21.33	19	.95	155	15.68	10.42	1.7	1.5	18	0	244	.13	38	5.4	.8	PPL
		13	23 8	36.79	19	39.87	155	36.73	12.10	2.1	1.8	21	0	170	.13	22	2.2	.5	MOK
		14	010	50.09	19	40.23	155	36.70	11.66	1.7	1.0	17	1	171	.16	22	2.9	.7	KKU
		14	1 0	43.91	19	25.01	155	25.05	7.88	1.4	1.3	18	0	68	.07	9	.5	1.3	UKF
		14	412	35.93	19	21.30	155	6.30	6.67	1.9	1.8	23	0	88	.13	8	.9	1.6	UER
		14	623	36.70	19	19.54	155	48.62	7.53	2.5	1.3	21	0	215	.15	26	2.1	1.1	KON
		14	1721	13.50	19	9.91	155	42.30	17.74	2.5	1.4	15	0	258	.12	42	5.9	30.9	HEA
		14	1910	11.40	19	27.09	155	35.25	54.34	1.8	.1	19	2	54	.15	4	2.2	2.6	MOK
		14	1943	46.80	19	20.25	155	11.61	10.17	2.8	3.5	33	0	79	.10	7	.6	.3	UER
		15	413	11.61	19	22.25	156	1.05	13.21	2.4	1.1	18	2	293	.16	31	6.6	44.7	KON
		15	7 5	52.93	19	18.50	155	13.24	8.25	2.4	2.7	28	0	85	.11	8	.6	1.0	POL
		15	1159	23.92	19	19.67	155	25.07	31.23	2.2	1.7	15	0	108	.10	12	1.4	2.6	HEA
		15	1322	58.22	18	54.60	155	16.87	16.69	2.7	2.4	25	1	248	.12	42	2.8	18.2	PPL
		15	1918	56.28	19	17.54	155	13.00	8.98	2.1	2.1	28	0	129	.11	9	.6	.7	POL
		15	1957	58.55	19	21.19	155	25.86	9.09	1.6	1.5	17	0	74	.09	9	.6	.9	HEA
		15	2025	.64	18	55.08	155	15.65	11.33	2.6	2.0	20	0	247	.14	43	4.6	99.0	PPL
		15	2122	22.92	19	17.58	155	21.65	6.28	1.8	2.0	23	0	122	.13	9	.8	1.9	SWR
		16	015	53.87	19	49.74	155	50.53	18.13	1.7	1.5	15	2	292	.19	39	4.4	6.4	KON
		16	444	32.49	19	17.24	155	23.56	4.69	1.7	2.5	24	0	117	.17	9	1.0	1.7	SWR
		16	721	49.16	19	16.93	155	22.24	6.69	1.4	1.2	16	0	126	.14	8	1.2	2.9	SWR
		16	13 1	30.40	19	16.35	155	23.59	6.45	2.2	2.7	27	0	125	.15	9	.9	2.2	SWR
		16	1412	45.88	19	27.22	155	28.47	9.81	2.5	2.4	31	0	63	.11	12	.6	.3	UKF
		16	2023	2.91	19	20.37	155	7.13	6.71		1.6	23	0	98	.15	7	1.0	2.6	UER
		17	016	19.59	19	17.49	155	21.59	7.63	1.7	2.1	21	0	124	.11	8	.7	1.1	SWR
		17	1056	56.05	19	17.73	155	21.63	7.62	2.1	2.6	15	0	130	.13	9	1.1	2.5	SWR
		17	1417	48.80	19	24.35	155	16.58	17.48	1.7	1.2	12	0	159	.05	6	.9	1.3	DEP
		17	2343	5.84	19	15.83	155	22.63	10.65	2.1	2.4	18	0	165	.08	15	.9	.6	LSW
		18	3 5	51.02	19	17.73	155	14.96	9.16	1.1	.1	8	0	157	.04	6	1.0	2.0	POL
		18	3 6	5.25	19	20.77	155	20.42	29.18		1.5	13	0	109	.08	6	1.3	2.4	DEP
		18	628	30.05	19	20.81	155	13.40	5.60		.1	12	0	190	.11	7	1.7	2.7	UER
		18	10 5	26.48	19	26.70	155	22.75	8.22	1.7	2.1	12	0	104	.06	11	.6	1.2	UKF
		18	1156	44.14	19	21.03	155	13.50	9.78	2.3	2.5	20	0	66	.08	6	.7	1.9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	RS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	OCT	18	1333	57.83	19	23.25	155	26.46	10.03	2.5	2.6	22	0	95	.06	12	.4	.4	UKF
		18	2017	47.32	19	19.88	155	24.98	12.62	2.4	2.6	15	0	197	.05	12	.9	.2	SWR
		18	2040	23.52	19	31.79	156	.28	9.33	2.8	2.0	7	0	336	.03	43	9.5	1.0	KON
		19	1 5	46.54	19	8.53	155	55.47	31.38	3.5	3.6	30	0	133	.15	21	1.5	3.8	LSW
		19	3 2	1.74	19	18.38	155	13.24	6.92		.9	16	0	148	.09	8	1.8	2.8	POL
		19	1243	14.63	19	25.40	155	24.81	7.80	2.2	2.4	22	0	58	.11	9	.7	1.3	UKF
		19	1251	3.22	19	19.91	155	10.67	8.86		1.3	18	0	102	.08	7	.6	.8	UER
		19	1357	1.91	19	20.13	155	12.22	6.41	1.6	1.5	23	0	76	.10	6	.6	1.2	UER
		19	14 0	18.88	19	21.12	155	4.30	5.75	2.0	1.6	17	0	90	.15	10	1.2	2.7	MER
		19	1857	23.76	19	15.81	155	23.73	8.27	2.3	2.5	24	0	129	.14	14	1.0	1.3	LSW
		19	2050	40.89	19	19.67	155	16.18	51.68		1.0	22	0	92	.08	5	1.2	1.5	DEP
		19	2254	44.20	19	16.63	155	23.69	7.50	1.9	2.2	17	0	121	.15	13	1.2	3.6	SWR
		20	027	35.93	18	56.87	155	17.87	17.69	2.5	2.3	22	0	240	.14	39	3.7	13.8	PPL
		20	559	8.25	18	55.70	155	17.49	13.41	2.1	1.7	16	0	258	.12	40	3.7	99.0	PPL
		20	647	17.91	19	27.48	155	27.82	7.92	2.2	2.1	26	0	72	.15	13	.9	1.5	UKF
		20	658	54.83	18	54.27	155	16.16	8.85	1.6	.9	9	1	305	.08	48	2.4	1.1	PPL
		20	1114	39.90	19	51.08	155	23.90	18.70	2.4	1.7	25	2	106	.12	39	1.2	4.7	KKU
		20	1411	6.59	19	20.12	155	10.38	8.29		1.1	19	0	108	.10	7	.8	1.6	UER
		20	1434	50.36	18	55.83	155	18.16	11.93		1.9	15	0	254	.11	41	3.9	99.0	PPL
		20	1441	48.83	19	24.56	155	16.48	8.47	1.2		13	0	90	.05	2	.5	.9	LPC
		20	1811	45.08	19	24.46	155	17.04	6.29	1.3	2.2	18	0	52	.13	2	.9	1.2	LPC
		20	2039	4.08	18	54.70	155	15.04	8.80		1.8	14	0	265	.11	43	3.6	1.0	PPL
		20	21 8	25.45	18	55.79	155	17.28	9.64	1.9	.8	12	1	256	.06	40	1.8	.3	PPL
		20	23 0	42.60	19	55.61	155	41.24	28.46	2.4	1.2	23	2	126	.10	36	1.3	4.2	KOH
		20	2324	14.12	19	20.86	155	13.36	6.68		.1	16	0	62	.08	7	.7	1.8	UER
		21	1422	8.41	19	17.64	155	15.48	7.83	1.7	1.5	20	0	127	.06	6	.5	.9	KOA
		21	2010	3.99	19	17.60	155	15.35	9.66	1.9	2.4	25	0	128	.09	6	.7	.6	KOA
		22	046	26.03	19	6.26	155	12.37	10.11	2.1	2.5	27	0	216	.13	24	2.5	.4	PPL
		22	158	1.43	19	27.36	155	35.42	9.78	1.8	1.9	13	0	157	.19	16	5.7	9.7	MOK
		22	3 5	28.48	19	16.76	155	22.67	6.93		1.9	21	0	126	.12	7	.9	2.0	SWR
		22	327	22.77	19	19.78	155	11.72	7.75		1.9	19	0	87	.08	6	.6	1.3	UER
		22	5 7	42.79	19	29.03	155	43.31	9.79		1.1	12	0	116	.15	13	1.8	1.0	MOK
		22	1029	2.12	19	19.54	155	13.20	6.87		1.1	18	0	72	.11	7	.8	2.1	UER
		22	1239	13.92	19	46.16	155	23.23	16.89	3.0	3.6	33	0	81	.10	30	.7	3.7	KKU
		22	1547	13.60	18	55.88	155	17.21	10.40	2.7	2.8	24	0	244	.11	40	3.5	.7	PPL
		22	1634	17.12	19	13.92	155	21.55	33.08		.7	20	2	220	.07	14	1.3	2.3	LSW
		22	1652	54.88	18	55.37	155	17.40	11.71	3.1	3.7	31	1	245	.09	41	1.8	3.8	PPL
		22	2120	58.06	19	22.08	156	1.94	12.13	2.8	2.5	21	0	264	.22	32	10.8	1.0	KON
		23	032	3.52	19	19.86	155	12.67	7.58	2.2	2.6	26	0	76	.12	6	.7	1.4	UER
		23	129	1.93	19	19.72	155	11.83	7.30	1.7	1.4	20	0	87	.09	6	.6	1.4	UER
		23	145	5.01	19	24.40	155	16.32	1.75	.7	1.0	10	0	81	.06	2	.5	.2	SPC
		23	2 5	14.62	18	55.82	155	17.46	12.09	2.7	2.4	24	0	248	.11	40	3.5	99.0	PPL
		23	4 2	17.10	19	20.14	155	11.29	8.38		1.4	23	0	96	.10	7	.7	1.3	UER
		23	5 8	42.81	18	53.28	155	14.60	9.22	2.6	2.6	23	0	254	.10	46	4.1	1.1	PPL
		23	533	15.10	19	18.88	155	13.48	10.13	2.9	3.8	31	0	73	.10	7	.6	.3	POL
		23	546	57.03	19	18.64	155	13.57	6.54	1.4	1.2	22	0	84	.09	7	.6	1.4	POL
		23	555	28.96	19	18.49	155	13.52	7.44		.5	16	0	85	.06	8	.6	1.6	POL
		23	6 3	39.51	19	18.46	155	13.54	6.61			19	0	87	.07	6	.6	1.2	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	RS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	OCT	23	843	32.07	18	57.83	155	17.55	10.64	2.0	1.2	11	1	303	.06	41	2.8	.9	PPL
		23	858	26.96	19	18.75	155	13.48	7.75	1.6	1.2	18	0	75	.07	7	.5	1.4	POL
		23	1028	9.18	19	24.17	155	15.76	1.78	.8		10	0	67	.04	2	.3	.1	SPC
		23	1042	36.21	19	16.86	155	22.25	7.38	1.6	2.2	22	1	127	.13	8	.8	1.9	SWR
		23	1258	.51	20	5.22	155	27.28	2.12	2.4	1.8	14	1	271	.16	60	2.0	2.1	DIS
		23	1735	50.61	19	17.77	155	14.26	8.70	2.1	2.9	27	0	98	.10	8	.6	.8	POL
		23	1842	28.50	19	16.54	155	21.96	6.66	1.0	1.3	15	0	153	.10	8	1.2	2.4	SWR
		23	2027	33.69	19	26.77	155	25.70	11.64	1.5	1.2	10	0	194	.04	12	2.1	7.5	UKF
		24	254	29.18	19	17.23	155	22.45	6.51	1.6	2.2	30	0	122	.16	8	.9	1.7	SWR
		24	348	32.41	19	16.88	155	21.91	5.92	1.5	1.6	20	0	129	.12	8	.9	2.3	SWR
		24	429	44.54	19	18.93	155	12.50	6.27		1.1	20	0	96	.09	7	.7	1.9	POL
		24	538	44.95	19	23.80	155	16.89	1.71	1.1	1.5	12	0	47	.09	2	.6	.5	SPC
		24	632	30.90	18	55.59	155	17.71	15.24	2.7	2.4	24	1	249	.11	40	2.5	24.2	PPL
		24	812	30.72	19	10.72	156	13.19	41.97			17	2	285	.14	62	4.2	3.0	DIS
		24	1416	6.76	18	57.38	155	18.74	10.31	2.5		19	1	241	.11	37	1.6	.4	PPL
		25	149	36.75	19	20.40	155	13.88	7.03	1.5	1.8	24	0	68	.12	6	.7	1.3	UER
		25	251	42.16	19	19.06	155	13.48	8.17	1.8	2.1	24	0	72	.09	7	.5	1.1	UER
		25	13 6	49.68	19	18.57	155	15.39	6.60			18	0	128	.07	6	.6	1.0	KOA
		25	15 3	5.98	18	57.81	155	18.02	7.92	1.9	.7	11	2	266	.12	37	3.7	1.6	PPL
		25	16 7	20.90	18	54.05	155	16.84	34.81	2.1		14	1	255	.12	44	4.6	7.3	PPL
		25	1615	10.31	20	11.19	154	45.20	25.29			8	0	306	.09	82	24.0	35.2	DIS
		25	1632	11.15	19	18.99	155	13.51	9.96	2.7	3.2	26	0	72	.08	7	.5	.3	POL
		25	20 5	44.87	19	29.09	155	41.21	9.56		.7	11	0	159	.14	9	1.9	7.3	MOK
		25	2258	20.15	19	36.28	155	40.66	4.46	2.5	2.7	13	0	173	.16	18	1.8	3.0	MOK
		25	2259	22.35	19	36.43	155	40.52	2.30	1.6		13	0	175	.16	18	1.9	4.1	MOK
		26	0 0	41.74	19	24.36	155	17.36	.72	.2	1.0	9	0	102	.07	2	.4	.3	SPC
		26	1155	11.93	19	10.69	155	32.67	10.40	2.3	1.9	17	0	139	.17	24	1.5	.8	LSW
		26	15 3	8.65	19	20.09	155	12.83	6.43	1.7	1.2	21	0	71	.12	6	.7	1.4	UER
		26	1620	19.15	19	24.20	155	17.16	12.78		1.3	15	0	64	.07	4	.8	.3	LPC
		26	1930	18.58	19	25.33	155	24.75	10.39	2.5	2.9	24	0	78	.11	9	.6	.4	UKF
		26	2337	40.30	19	19.20	155	28.34	9.97	3.3	3.9	25	0	52	.11	9	.7	.3	HEA
		26	2355	18.43	19	19.11	155	28.53	9.42	2.0	2.6	22	0	52	.10	9	.6	1.2	HEA
		27	4 4	14.18	19	20.09	155	13.55	6.64	1.8	1.9	22	0	68	.13	7	.8	1.5	UER
		27	630	44.91	19	16.43	155	22.67	5.11	1.3	1.8	14	0	147	.10	8	1.1	1.3	SWR
		27	631	25.37	19	16.55	155	23.10	2.80		2.2	21	0	126	.14	8	.9	2.6	SWR
		27	828	37.18	18	56.50	155	17.78	10.20	2.5	1.6	11	1	307	.12	44	9.4	2.3	PPL
		27	15 9	13.63	18	57.12	155	17.73	10.10	2.5	1.7	17	1	278	.07	38	2.9	.3	PPL
		27	1736	18.09	19	19.67	155	15.51	7.30	1.6	1.1	19	0	95	.10	7	.8	1.7	KOA
		27	18 3	16.66	19	19.32	155	13.10	7.47	2.0	2.0	21	0	77	.11	8	.9	1.5	UER
		27	1923	37.81	18	54.96	155	16.69	9.94	3.2	3.1	27	0	247	.07	41	2.1	.4	PPL
		27	1935	52.87	19	18.92	155	13.37	10.20	3.7	3.9	29	0	76	.11	7	.8	.3	POL
		27	1938	34.40	19	19.36	155	12.26	5.83	1.7	.1	17	0	90	.09	7	.7	2.0	UER
		27	1941	57.62	19	18.06	155	13.20	5.17		1.0	18	0	95	.10	6	.9	.7	POL
		27	20 9	5.18	19	24.16	155	15.83	1.80	1.0	1.8	9	0	80	.03	2	.3	.1	SPC
		27	2031	51.87	19	58.83	155	43.39	9.22		.7	20	1	149	.15	52	3.6	4.2	KOH
		28	350	5.50	19	26.19	155	28.45	8.46	1.4	.7	15	0	120	.10	12	.8	2.4	UKF
		28	420	9.28	18	54.82	155	17.68	10.12	2.6	1.8	21	1	259	.10	42	2.8	.7	PPL
		28	710	9.34	19	19.31	155	15.51	6.88	1.6	1.5	19	0	106	.08	6	.6	1.0	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	OCT	28	1015	21.29	19	24.47	155	17.39	.78	.6	1.4	10	0	71	.08	2	.4	1.9	SPC
		28	1230	32.61	19	22.96	155	26.44	12.08	1.8	1.1	16	0	99	.05	12	.5	1.6	UKF
		28	1246	.97	19	21.03	155	25.63	10.91	1.9	1.0	19	0	76	.13	9	.8	.8	HEA
		28	1545	28.00	19	17.10	155	23.61	6.23	2.2	2.2	22	0	166	.15	9	1.3	2.4	SWR
		28	2151	45.71	20	12.61	155	46.44	9.35	2.1	1.4	11	0	295	.15	89	16.0	99.0	KOH
		29	111	40.15	19	24.04	155	25.78	6.72	2.2	2.5	28	0	84	.15	11	.8	2.5	UKF
		29	136	42.92	19	21.64	154	59.92	8.74		1.2	21	2	198	.21	17	2.8	2.1	LER
		29	531	1.56	19	17.42	155	15.24	7.33	1.7	1.9	23	0	160	.09	6	.7	1.0	KOA
		29	553	53.52	19	24.19	155	15.85	1.62		.7	10	0	65	.06	2	.4	.2	SPC
		29	1228	35.84	19	16.31	155	23.56	5.61		1.4	18	0	125	.15	9	1.1	3.3	SWR
		29	18 1	1.84	19	27.11	155	27.61	8.37	2.0	1.7	17	0	66	.11	13	.8	2.5	UKF
		29	19 9	51.44	19	14.41	155	16.49	27.38	1.8	1.0	23	1	232	.07	15	1.3	1.2	HLP
		29	21 4	58.33	19	18.95	155	15.78	7.64	2.0	2.2	27	0	99	.10	5	.5	.9	KOA
		29	2257	51.54	19	11.33	155	17.33	39.91		.8	24	5	220	.09	19	1.3	1.9	HLP
		29	2341	55.26	19	19.35	155	14.08	7.04	1.6	1.8	25	0	86	.13	6	.8	1.4	UER
		29	2352	56.57	19	22.69	155	16.95	27.48	1.2	.7	14	0	83	.05	2	1.8	3.5	DEP
		29	2353	49.16	19	15.00	155	21.72	29.52	1.5	.2	15	2	229	.04	12	.9	1.6	LSW
		30	1 7	35.66	19	22.20	155	4.55	9.55	2.1	2.1	22	0	92	.12	11	1.0	5.0	MER
		30	126	13.23	19	10.08	155	33.71	5.28	1.7	1.7	15	0	112	.13	25	1.1	2.8	LSW
		30	223	16.67	19	17.52	155	22.51	6.30	1.3	1.7	24	0	119	.15	8	.9	2.1	SWR
		30	4 3	47.58	19	16.99	155	21.09	24.78	1.3	.5	17	0	222	.05	9	1.2	2.0	SWR
		30	510	57.72	19	19.16	155	15.14	7.17	1.9	2.1	30	0	86	.12	6	.6	.9	KOA
		30	631	42.93	19	2.73	155	15.74	11.17	1.6		21	0	256	.13	29	3.7	.5	PPL
		30	825	2.88	19	20.56	155	12.94	6.90	1.6	1.6	10	0	86	.11	11	1.1	2.4	UER
		30	16 7	8.98	19	13.34	155	16.31	39.89	1.9	1.4	15	2	239	.03	18	.7	1.2	HLP
		30	1726	17.68	19	18.47	155	15.67	8.08	1.7	1.2	22	0	135	.09	5	.6	1.0	KOA
		30	1747	34.86	18	55.13	155	17.20	21.21	3.1	3.1	29	1	246	.08	42	2.0	8.0	PPL
		30	1953	20.87	19	4.31	155	4.82	20.67	2.3	1.7	25	2	260	.08	34	1.8	3.9	PPL
		30	20 5	3.04	19	31.94	156	26.87	7.10		2.0	29	0	280	.20	72	9.3	99.0	DIS
		30	2010	40.65	19	17.63	155	13.25	8.38		1.5	19	0	105	.08	9	.7	1.1	POL
		30	2123	48.33	19	22.35	155	29.73	8.67	1.8	2.0	26	0	43	.12	12	.6	1.8	UKF
		31	147	20.45	19	26.93	155	29.21	8.41	1.3	.7	17	0	70	.13	12	.9	2.0	UKF
		31	2 1	34.28	19	26.54	155	29.68	7.38	1.5	1.4	20	0	68	.15	12	.9	2.2	UKF
		31	3 3	48.62	19	15.02	155	25.45	32.95		1.8	27	2	138	.10	11	1.0	2.2	LSW
		31	411	.24	19	19.92	155	15.57	11.63	.9		13	0	195	.12	6	2.7	7.0	KOA
		31	450	53.75	19	12.01	155	38.50	9.15	3.8	4.2	32	0	101	.18	22	1.1	1.1	HEA
		31	8 9	38.04	19	17.89	155	21.77	6.35	1.9	2.1	26	0	118	.14	9	.8	2.1	SWR
		31	1535	46.74	19	20.04	155	12.72	8.01		1.2	17	0	140	.06	6	.5	1.0	UER
		31	1711	12.55	19	18.70	155	15.34	7.45		1.5	19	0	123	.06	6	.5	.9	KOA
		31	1913	39.43	19	18.71	155	15.38	7.64		1.0	17	0	123	.06	6	.5	.7	KOA
		31	2047	36.22	19	22.56	155	14.05	34.14	2.4	2.1	28	0	59	.08	4	.9	1.7	DEP
	NOV	1	312	57.97	19	2.44	155	15.75	7.35	2.4	2.4	17	0	267	.15	31	4.2	2.6	PPL
		1	442	18.79	19	17.13	155	21.98	7.37	1.6	.8	14	0	170	.12	8	1.4	1.7	SWR
		1	1022	3.97	18	55.88	155	17.62	11.87	3.2	3.6	29	0	243	.09	40	2.1	99.0	PPL
		1	1646	1.45	19	24.27	155	15.65	3.47	.9	1.9	9	0	76	.16	2	1.6	4.5	SPC
		1	1816	21.85	19	9.49	155	32.20	32.65	2.5	2.4	30	0	125	.14	16	1.4	3.4	LSW
		1	2126	47.63	19	27.70	155	29.83	9.17		1.6	13	0	79	.10	11	.7	3.0	UKF
		1	2148	51.39	19	27.74	155	29.88	9.46		2.5	11	0	80	.08	11	.7	1.3	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	1	2211	34.80	19	19.11	155	13.21	6.60	2.0	2.4	26	0	77	.10	8	.6	1.1	UER
		2	229	21.63	19	24.10	155	15.75	3.69	.9	1.7	9	0	65	.14	3	1.6	3.9	SPC
		2	235	39.50	19	26.88	155	30.14	11.78		.7	9	0	123	.07	11	1.1	.6	MOK
		2	454	35.09	19	24.53	155	17.36	.86	1.1	1.9	9	0	89	.10	3	.5	.6	SPC
		2	12 3	34.17	19	18.76	155	13.99	6.93	1.7		20	0	95	.12	7	.8	1.4	POL
		2	1539	4.73	19	27.51	155	24.92	7.58	2.0		21	0	66	.12	12	.7	1.7	UKF
		2	1659	13.29	19	24.28	155	16.20	1.78	.8	1.4	10	0	73	.07	2	.6	.2	SPC
		2	1834	35.01	19	24.38	155	16.39	1.78	.6	1.2	9	0	79	.08	2	.7	.3	SPC
		2	1925	31.24	18	54.53	155	17.07	15.51	3.0	2.6	29	1	248	.12	42	2.3	22.5	PPL
		2	2120	10.56	18	55.73	155	27.88	35.82	2.0		23	2	252	.12	38	2.4	2.3	DIS
		3	313	52.57	19	27.44	155	27.99	9.80	1.9	1.7	24	0	50	.10	12	.6	.4	UKF
		3	431	16.32	19	18.53	155	13.85	7.52		1.2	23	0	94	.14	8	.9	1.4	POL
		3	910	.69	19	17.64	155	18.20	32.16	2.6	2.4	33	0	130	.09	8	.8	1.4	KOA
		3	910	56.24	19	17.47	155	18.26	31.72	2.4	2.2	33	0	132	.10	8	1.0	1.6	KOA
		3	10 6	41.72	19	19.05	155	15.77	6.79	1.6	1.4	22	0	115	.09	6	.6	1.2	KOA
		3	1226	59.29	19	20.53	155	12.44	8.47	1.6	1.7	25	0	69	.11	7	.6	1.2	UER
		3	1311	36.90	19	18.87	155	15.48	7.03	1.6	1.3	24	0	97	.10	6	.6	1.2	KOA
		3	1511	29.96	19	25.94	155	17.62	13.72	1.0	.1	15	0	118	.05	4	.5	.7	DEP
		3	1717	23.13	19	17.75	155	18.29	31.76	2.5	2.4	33	0	128	.09	9	.8	1.3	KOA
		4	3 1	27.68	19	24.21	155	16.06	1.66	.7	1.0	10	0	66	.08	2	.6	.3	SPC
		4	312	53.62	19	20.56	155	7.10	6.82		1.2	24	0	95	.12	7	.8	1.4	UER
		4	7 2	36.76	19	22.23	155	4.39	2.65	1.2	.8	16	0	142	.15	15	1.1	3.0	MER
		4	814	57.85	19	16.13	155	21.48	28.86	1.3		13	1	275	.04	10	1.8	1.9	SWR
		4	820	12.39	19	12.85	155	23.13	5.04	2.0	2.2	21	0	161	.16	12	1.3	1.7	LSW
		4	918	17.48	19	26.70	155	22.63	9.27	1.5	.6	14	0	112	.06	10	.5	1.7	UKF
		4	10 0	50.28	19	18.67	155	15.22	7.78	1.6	1.1	22	0	123	.09	6	.6	1.0	KOA
		4	12 9	21.51	19	51.32	155	22.00	24.66		.7	19	2	144	.12	40	2.5	3.5	KKU
		4	1515	58.09	19	46.32	156	9.35	28.22			11	1	313	.11	63	4.1	4.3	KOH
		4	1950	41.74	19	19.92	155	12.03	8.46	2.5	3.1	32	0	82	.11	6	.6	.8	UER
		5	110	43.02	19	17.82	155	13.19	8.77		1.1	21	0	103	.11	9	.8	1.0	POL
		5	251	58.34	19	17.94	155	18.24	31.28		.4	19	0	158	.06	9	.9	1.8	KOA
		5	8 6	36.19	18	51.54	155	14.80	8.32	2.6	2.0	21	0	296	.07	49	5.3	1.5	PPL
		5	856	7.99	19	19.39	155	11.93	7.00		1.8	23	0	93	.10	6	.7	1.5	UER
		5	1059	16.53	19	24.19	155	16.20	1.72	.8	1.5	11	0	67	.08	2	.6	.3	SPC
		5	11 4	35.01	19	20.21	155	8.09	7.26			22	0	84	.09	9	.6	1.5	UER
		5	1218	52.89	19	17.43	155	34.10	7.82	2.5		20	0	98	.16	15	1.1	2.5	HEA
		5	1247	14.67	19	24.21	155	15.59	2.13	1.0	1.6	10	0	73	.07	2	.5	7.0	SPC
		5	1546	2.08	19	14.08	155	39.41	2.72	2.5	1.5	22	0	196	.14	23	1.4	1.7	HEA
		5	1627	55.81	19	17.48	155	18.49	30.96	1.8	1.2	25	0	132	.08	9	.8	2.0	KOA
		6	1 8	16.21	19	21.19	155	16.23	35.12	2.0	1.6	31	0	67	.10	4	.8	1.8	DEP
		6	153	10.94	19	27.02	155	51.71	10.33			16	0	122	.18	20	1.7	.7	KOH
		6	2 5	28.24	19	20.42	155	18.74	30.39	4.6	4.7	36	0	53	.11	6	.8	1.5	DEP
		6	221	52.09	19	19.72	155	18.79	28.41	1.7	1.0	25	0	57	.08	7	.8	1.3	DEP
		6	244	49.45	19	21.10	155	15.74	25.71	1.5	.7	25	0	69	.06	5	.7	1.2	DEP
		6	3 2	49.04	19	22.36	155	18.83	27.76		1.3	29	0	64	.11	5	.9	1.6	DEP
		6	313	34.17	19	24.19	155	16.15	1.71	1.1	1.5	12	0	67	.08	2	.6	.2	SPC
		6	317	11.91	19	24.10	155	16.05	1.63	1.2	1.7	12	0	62	.08	2	.5	.2	SPC
		6	321	18.52	19	19.82	155	18.67	30.82	4.1	5.9	35	0	59	.09	7	.7	1.2	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	6	323	55.58	19	19.91	155	18.80	28.35		1.3	25	0	56	.09	7	1.0	1.8	DEP
		6	4 2	56.32	19	20.01	155	18.70	29.53	3.8	3.9	36	0	57	.10	7	.7	1.3	DEP
		6	414	10.46	19	17.81	155	47.56	8.72	2.5	1.8	24	0	89	.15	25	1.0	.9	KON
		6	429	17.92	19	19.91	155	18.77	29.59	2.1	1.7	31	0	56	.07	7	.6	1.1	DEP
		6	5 9	19.96	19	19.61	155	18.71	29.97	1.8	1.5	29	0	60	.10	7	.8	1.7	DEP
		6	559	23.59	19	20.94	155	30.00	8.73	1.3	1.0	18	0	98	.13	17	1.0	1.7	HEA
		6	8 7	4.88	19	20.92	155	6.45	6.25	2.1		24	0	95	.15	7	.9	1.1	UER
		6	1658	55.17	19	24.07	155	16.01	1.52	1.1	2.1	14	0	60	.10	2	.4	.3	SPC
		6	2010	39.36	19	22.66	155	25.56	10.11	1.6	1.4	24	0	54	.11	10	.6	.4	UKF
		6	21 4	55.39	19	24.21	155	16.08	1.66	.7	1.1	9	0	68	.04	2	.4	.2	SPC
		6	2321	8.23	19	18.74	155	13.05	7.33		1.2	19	0	152	.10	8	.8	1.1	POL
		6	2348	40.11	19	17.61	155	12.91	7.27		1.6	22	0	163	.09	9	.7	1.0	POL
		7	132	44.34	19	18.17	155	15.27	6.76		1.4	21	0	137	.12	6	.8	1.3	KOA
		7	516	15.64	19	24.00	155	15.72	1.78	1.6	2.0	17	0	67	.09	3	.4	.3	SPC
		7	635	30.13	19	24.24	155	17.25	.72	.5	1.1	10	0	75	.10	2	.5	.3	SPC
		7	1135	27.63	19	25.29	155	16.61	13.79	1.6		21	0	48	.06	5	.5	.7	DEP
		7	1526	12.46	19	21.77	155	17.20	34.79	2.4	2.0	33	0	43	.09	3	.7	1.5	DEP
		7	1554	28.20	19	17.23	155	29.27	7.49	2.0	1.6	23	0	144	.22	12	1.5	2.7	HEA
		7	1728	31.21	19	21.59	155	18.26	29.73		1.1	20	0	64	.06	5	.9	1.4	DEP
		7	1744	37.78	19	16.83	155	22.66	5.66	1.1	1.4	18	0	124	.11	8	.9	2.5	SWR
		7	1912	14.39	19	21.91	155	16.68	27.96	3.2	3.6	36	0	53	.10	4	.7	1.2	DEP
		7	2122	17.04	19	24.09	155	15.81	1.59	1.3	2.3	19	0	57	.10	3	.4	.2	SPC
		7	2213	40.37	19	19.33	155	13.67	7.31	1.6	1.9	26	0	84	.13	6	.8	1.1	UER
		8	047	11.58	19	22.65	155	25.38	9.45	1.6	2.1	26	0	54	.11	10	.6	.8	UKF
		8	419	30.33	19	20.79	155	3.05	7.97	1.9	1.8	18	1	123	.12	17	1.4	2.3	MER
		8	451	19.12	19	17.60	155	14.26	7.67		1.0	15	0	147	.08	8	1.3	2.0	POL
		8	959	38.46	19	17.64	155	52.76	13.24	3.6	4.0	28	0	185	.11	27	1.2	2.2	KON
		8	1429	36.45	19	56.25	155	21.04	7.10	2.4	2.2	18	0	246	.15	37	3.5	1.0	KKU
		8	18 5	1.58	19	20.81	155	11.25	7.91	1.8	2.0	21	0	74	.11	8	.8	1.4	UER
		8	22 1	11.86	19	45.26	155	17.76	23.04	1.5	1.6	24	2	120	.11	29	1.6	4.5	KKU
		8	2358	36.45	19	29.68	155	54.32	10.19	2.8	2.4	23	0	136	.18	22	1.9	.6	KON
		9	026	18.85	19	18.65	155	14.94	7.80		1.5	20	0	119	.09	7	.6	1.0	POL
		9	253	25.95	19	18.64	155	15.45	6.89	1.7	1.2	19	0	127	.09	6	.7	.9	KOA
		9	455	6.37	19	18.86	155	15.24	7.84	1.6	1.6	23	0	117	.08	6	.5	.7	KOA
		9	456	59.77	19	22.57	155	25.12	10.23	1.4	1.3	20	0	58	.06	10	.4	.4	UKF
		9	549	12.25	19	23.59	155	17.18	1.56	.8		11	0	56	.08	2	.5	.2	SPC
		9	657	40.22	19	24.15	155	16.53	7.50	1.5		11	0	63	.03	2	.4	.6	LPC
		9	1423	49.50	18	58.07	156	30.40	53.78	3.3		33	0	312	.12	89	20.0	11.1	DIS
		9	1549	8.60	19	18.56	155	15.26	6.40		1.3	17	0	127	.08	6	.6	1.4	KOA
		9	1737	29.27	19	20.67	155	13.43	6.45		.5	19	0	61	.10	7	.7	1.6	UER
		9	1827	36.27	19	18.09	155	21.39	5.95	1.6	1.8	19	0	118	.13	8	1.0	2.2	SWR
		10	032	30.51	19	19.16	155	13.40	7.16	1.7	2.0	25	0	74	.16	7	1.0	1.5	UER
		10	046	51.28	19	26.19	155	26.37	7.57	1.7	1.5	19	0	98	.08	13	.5	1.5	UKF
		10	126	29.98	19	21.49	155	2.16	8.67	4.3	4.6	28	0	203	.12	13	1.5	.8	MER
		10	221	11.56	19	19.84	155	11.72	8.37	1.7	2.3	26	0	86	.12	6	.7	1.1	UER
		10	431	34.49	19	22.16	155	15.38	35.49	2.8	3.4	34	0	56	.09	4	.7	1.3	DEP
		10	450	45.17	19	24.24	155	17.31	.72	1.1	2.5	11	0	70	.09	2	.3	1.5	SPC
		10	657	35.79	19	30.04	155	52.48	9.38	2.4	1.6	13	0	181	.18	59	3.2	1.1	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	10	9 2	27.64	19	21.37	155	1.34	7.56	2.6	3.1	22	0	180	.11	15	.9	1.6	MER
		10	1622	5.02	19	17.78	155	22.12	5.91	2.0	2.4	21	0	118	.16	8	1.1	2.7	SWR
		10	1744	46.44	19	20.03	155	20.71	22.36	1.3	2.0	9	0	185	.27	7	13.1	11.4	DEP
		10	2227	12.29	19	26.36	155	24.85	8.25	2.5	2.9	30	0	56	.14	12	.7	1.1	UKF
		11	020	59.95	19	19.14	155	13.84	6.78	1.6	1.4	16	0	85	.05	7	.4	1.2	UER
		11	559	11.90	19	24.17	155	15.87	3.58	1.9	2.9	22	0	55	.12	2	.6	1.0	SPC
		11	6 9	12.26	19	21.55	155	15.53	9.59	3.1	3.6	31	0	63	.08	4	.4	.3	KOA
		11	841	38.06	19	23.68	155	17.13	2.91	1.8		21	0	48	.16	2	.4	1.0	SPC
		11	10 5	32.00	19	12.55	155	21.23	5.41		1.4	18	0	177	.10	13	1.0	1.6	LSW
		11	10 8	55.49	18	56.93	155	17.52	14.38	2.5	2.2	20	2	283	.12	34	2.4	33.0	PPL
		11	1038	53.57	19	18.35	155	13.75	6.00		1.5	18	0	93	.12	8	.9	2.2	POL
		11	1642	51.96	19	24.27	155	16.06	1.80	.7		9	0	71	.08	2	.8	.3	SPC
		11	2052	53.21	19	16.82	155	22.25	6.66	1.6	1.5	16	0	126	.12	8	1.0	2.5	SWR
		11	2313	36.83	18	55.50	155	16.45	19.16	2.0	1.6	23	0	265	.17	42	8.4	16.2	PPL
		12	3 3	38.39	19	17.39	155	27.83	11.72	1.4	1.3	22	0	90	.14	9	1.2	.4	HEA
		12	543	41.63	19	24.28	155	16.34	1.81	.6	.8	10	0	72	.07	2	.6	.2	SPC
		12	838	36.53	19	16.55	155	22.67	7.95	1.8	1.9	22	0	128	.17	8	1.2	2.0	SWR
		12	17 4	15.16	19	23.47	155	17.06	1.44	1.0	1.3	11	0	56	.10	5	.7	.3	SPC
		12	2030	29.67	19	23.73	155	17.19	1.70	1.5	2.8	20	0	51	.13	2	.6	.3	SPC
		12	2051	48.91	19	23.62	155	16.91	1.98	1.2	2.0	13	0	44	.06	2	.4	.2	SPC
		12	2348	59.03	19	23.15	155	17.05	1.50	.8	1.8	11	0	62	.10	2	.7	.3	SPC
		13	153	25.04	19	23.20	155	17.09	1.46	.7	1.1	11	0	60	.07	3	.5	.2	SPC
		13	255	45.27	19	13.58	155	32.14	8.82	2.2	2.2	30	0	72	.20	11	1.1	1.5	LSW
		13	1157	34.58	19	23.74	155	17.14	1.46	.9	1.7	10	0	85	.07	2	.6	.3	SPC
		13	1213	59.54	19	27.26	155	28.21	9.58	2.0	1.4	23	0	65	.10	12	.7	.5	UKF
		13	1521	38.87	19	19.44	155	9.70	7.38		1.5	23	0	94	.11	8	.8	1.8	UER
		13	1533	6.15	19	19.56	155	9.68	7.32		1.2	24	0	91	.12	8	.8	1.5	UER
		13	1536	13.30	19	23.06	155	16.97	1.70	.8	1.3	11	0	65	.09	2	.6	.3	SPC
		13	1559	41.33	19	19.06	155	13.45	7.14	1.7	1.4	19	0	77	.11	7	.8	1.8	UER
		13	18 3	24.44	19	24.02	155	17.15	1.61	.9	1.9	13	0	53	.08	2	.5	.2	SPC
		13	1844	9.26	19	24.04	155	17.17	1.65	1.0	2.6	14	0	53	.07	2	.4	.2	SPC
		13	23 2	4.91	19	21.49	155	3.36	8.83	3.7	4.2	31	0	161	.12	11	1.0	.6	MER
		14	041	36.55	19	23.87	155	17.26	3.11	2.3	3.4	27	0	36	.15	2	.7	1.3	SPC
		14	123	25.71	19	20.41	155	20.47	32.05	3.7	4.0	32	0	68	.11	6	.8	1.8	DEP
		14	151	45.88	19	.08	155	29.35	35.47	3.2	3.6	31	1	212	.12	30	1.7	2.8	LSW
		14	2 3	21.69	19	20.69	155	20.60	28.95		1.3	23	0	88	.07	6	.7	1.4	DEP
		14	3 5	11.60	19	21.67	155	2.73	6.80	2.1	2.0	21	0	135	.12	12	.8	1.3	MER
		14	312	16.60	19	22.18	155	3.14	5.98	2.0	2.3	21	0	121	.13	12	1.0	2.2	MER
		14	358	10.23	19	23.12	155	17.08	1.44	.8	2.4	13	0	63	.07	2	.4	.2	SPC
		14	5 7	43.57	19	24.13	155	17.32	18.58	1.9	1.9	28	0	45	.09	4	.6	1.1	DEP
		14	758	45.86	18	56.75	155	33.98	38.43	3.0	2.9	14	0	239	.09	38	3.3	5.1	DIS
		14	1113	19.74	19	20.46	155	17.49	7.69	1.8	1.8	27	0	37	.11	5	.5	.8	KOA
		14	1354	25.66	19	22.17	155	18.12	.98	1.0	1.0	10	0	77	.05	4	.3	.3	KOA
		14	1554	51.24	19	24.26	155	15.98	1.80	.9	1.1	11	0	69	.05	2	.4	.2	SPC
		14	1756	15.73	19	19.00	155	13.19	7.62	1.8	1.2	19	0	79	.09	8	.6	1.5	UER
		15	436	45.55	19	24.43	155	17.01	1.00	.3	1.3	11	0	58	.13	2	.7	.4	SPC
		15	1255	21.24	19	19.20	155	13.41	10.68	4.4	4.4	29	0	72	.08	7	.5	.2	UER
		15	13 1	16.12	19	18.58	155	13.46	8.81		.7	15	0	136	.05	7	.7	1.6	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	15	13 5	43.82	19	18.95	155	15.49	8.26	1.8	1.5	24	0	73	.10	7	.6	1.0	POL
		15	1311	55.21	19	18.80	155	13.30	6.95	1.1	.3	14	0	79	.04	8	.3	1.0	POL
		15	1312	2.66	19	18.95	155	13.27	7.37		.9	18	0	140	.10	8	.8	1.7	POL
		15	1313	27.29	19	18.51	155	13.39	7.27		1.0	19	0	81	.10	8	.8	1.8	POL
		15	1322	52.72	19	18.99	155	14.02	8.13	1.1	.6	16	0	92	.04	7	.4	1.0	POL
		15	1328	33.97	19	18.81	155	13.34	7.17		.8	17	0	78	.10	8	.8	2.0	POL
		15	1333	16.63	19	18.90	155	13.29	7.19	1.1	.6	14	0	78	.05	8	.4	.6	POL
		15	1339	37.09	19	19.06	155	13.88	7.63		.8	19	0	87	.11	7	.8	1.2	UER
		15	1454	27.11	19	19.11	155	13.45	7.34	1.4	1.4	18	0	72	.09	7	.6	1.4	UER
		15	1522	11.62	19	18.61	155	13.45	8.42	1.2	.1	16	0	82	.07	7	.6	1.7	POL
		15	1751	3.23	18	59.40	155	29.50	37.67	2.6	2.0	33	3	216	.12	32	1.8	2.7	DIS
		15	19 4	15.78	19	18.72	155	13.12	7.04	1.2	.7	17	0	85	.10	8	.8	2.1	POL
		15	2015	23.68	19	20.03	155	7.94	8.60	1.3	.8	16	0	133	.07	9	.8	1.7	UER
		15	2020	36.52	19	18.26	155	13.39	7.15	1.1	.6	15	0	83	.07	8	.6	1.6	POL
		15	2038	49.81	19	18.62	155	13.15	8.62	1.7	2.2	22	0	108	.08	8	.6	1.0	POL
		15	21 2	21.62	19	18.98	155	13.06	8.24	1.9	1.9	26	0	83	.10	8	.6	.9	POL
		16	555	3.14	19	18.88	155	13.21	7.69	1.8	.7	24	0	80	.10	8	.6	1.1	POL
		16	1340	6.25	19	19.49	155	13.00	8.67	2.3	2.0	29	0	76	.11	7	.6	.9	UER
		16	1720	52.49	19	18.52	155	13.45	7.71		.5	20	0	83	.09	8	.6	1.0	POL
		16	1745	.23	19	16.67	155	13.47	8.44		.5	20	0	183	.09	9	.7	1.0	POL
		16	1843	13.36	19	26.06	155	28.58	9.65	2.6	2.2	32	0	68	.14	12	.7	.3	UKF
		16	1919	6.92	19	19.42	155	10.96	8.89	2.2	1.6	28	0	99	.11	7	.6	.8	UER
		16	2132	31.10	19	22.31	155	17.65	32.40	2.2	1.1	31	0	31	.09	3	.8	1.4	DEP
		16	23 4	30.93	19	18.94	155	12.95	8.05	1.7	1.0	24	0	86	.10	8	.6	.9	POL
		16	2315	7.44	19	18.90	155	15.10	7.88	1.6	1.4	28	0	92	.11	6	.6	.9	KOA
		17	1 2	19.54	19	14.49	155	29.51	8.94		1.0	24	0	81	.16	13	1.0	1.4	LSW
		17	1 8	39.81	19	19.23	155	12.91	7.06	1.7	1.2	26	0	82	.11	7	.6	1.1	UER
		17	7 1	54.64	19	21.93	155	17.90	1.77		.3	12	0	84	.09	4	.6	.0	KOA
		17	1027	42.87	19	18.69	155	13.29	7.24		1.2	19	0	81	.06	8	.5	.9	POL
		17	12 7	31.08	19	19.11	155	13.52	7.10	1.6	1.8	23	0	78	.10	7	.6	1.3	UER
		17	1242	15.74	19	23.19	155	16.94	1.81	1.3	2.1	15	0	59	.06	2	.3	.2	SPC
		17	1559	6.48	19	13.32	156	10.17	26.21	2.9	1.9	14	2	285	.19	53	3.0	10.0	DIS
		17	1453	30.21	19	25.20	155	25.15	7.96	2.3	2.5	23	0	55	.08	10	.5	1.0	UKF
		17	1720	54.66	19	18.86	155	13.10	6.95		1.3	23	0	84	.11	8	.7	1.2	POL
		17	1810	30.86	19	19.42	155	13.26	7.48	2.2	2.3	26	0	72	.12	7	.7	1.1	UER
		17	1848	51.00	19	20.30	155	12.29	10.00	2.4	2.9	31	0	73	.11	6	.7	.3	UER
		17	20 3	38.52	19	23.19	155	24.76	10.38	1.3	1.2	19	0	63	.05	9	.3	.6	UKF
		17	2125	14.66	19	21.82	155	18.34	1.32	1.1	1.0	13	0	72	.13	4	1.0	1.6	KOA
		17	2144	24.67	19	26.07	155	28.46	8.98	2.1	2.1	30	0	62	.15	12	.7	1.3	UKF
		17	2340	34.19	19	21.27	155	26.15	9.90	1.8	1.8	30	0	71	.14	9	.7	.5	HEA
		18	218	19.17	19	20.41	155	13.02	7.38	1.9	1.1	25	0	65	.16	6	1.0	1.4	UER
		18	752	50.58	19	22.10	155	4.84	7.23	1.2	.9	16	0	132	.13	10	1.8	5.0	MER
		18	912	16.52	19	23.03	155	17.02	1.74	.8	1.1	12	0	66	.09	2	.5	.3	SPC
		18	1215	59.77	19	26.64	155	29.05	9.42	2.1	2.2	21	0	68	.08	12	.5	1.3	UKF
		18	1310	2.02	19	22.53	155	3.75	8.66	3.1	3.6	50	0	106	.14	12	1.0	.7	MER
		18	1336	57.00	19	19.10	155	13.32	7.69		1.0	19	0	75	.09	7	.7	1.4	UER
		18	1430	34.13	19	20.05	155	12.37	10.26	2.9	3.2	30	0	76	.11	6	.7	.5	UER
		18	1539	45.56	19	15.37	155	25.03	34.56	2.3	1.5	27	0	122	.10	12	1.0	2.3	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	18	1552	5.25	19	18.37	155	13.02	8.13	1.7	1.5	21	0	96	.09	8	.6	.9	POL
		18	1641	4.77	19	21.85	155	25.56	8.73	1.7	1.5	19	0	76	.15	10	.9	2.4	HEA
		18	1839	40.85	19	14.77	155	29.81	10.57	2.1	1.4	23	0	78	.15	13	1.1	.5	LSW
		18	22 5	4.92	19	20.07	155	11.75	7.88	2.2	2.2	30	0	81	.15	6	.8	1.2	UER
		18	23 2	52.50	19	19.87	155	11.69	8.21	2.0	2.4	28	0	85	.14	6	.9	1.4	UER
		18	23 5	59.21	19	19.87	155	11.72	7.51		1.0	22	0	86	.11	6	.8	1.3	UER
		19	1020	13.39	19	18.84	155	12.64	9.12		1.0	18	0	95	.08	8	.7	1.4	POL
		19	1411	48.91	19	18.90	155	12.93	8.04	1.7	1.4	22	0	87	.09	8	.6	1.2	POL
		19	1458	17.79	19	18.39	155	13.13	6.84		1.0	20	0	91	.09	8	.6	1.5	POL
		19	1510	52.74	19	17.75	155	22.77	5.94	1.7	1.6	23	0	116	.15	7	.9	2.4	SWR
		19	1935	40.19	19	23.05	155	17.18	1.61	.8	1.1	10	0	80	.06	5	.5	.2	SPC
		19	2334	1.74	19	20.76	155	13.21	7.53		.5	18	0	77	.12	6	1.0	1.3	UER
		20	650	13.87	19	28.40	155	22.72	5.95	2.0	1.3	16	0	135	.07	12	.6	1.5	UKF
		20	7 8	33.50	19	18.30	155	13.28	6.24		1.3	21	0	88	.09	8	.6	1.5	POL
		20	1319	46.32	19	18.65	155	13.76	8.38	2.1		26	0	67	.12	7	.8	1.1	POL
		20	1321	24.95	19	19.68	155	13.78	6.64	1.6		21	0	76	.14	6	.9	2.0	UER
		20	1341	44.22	19	33.74	155	41.00	9.22	3.0	2.1	21	0	94	.16	15	1.1	1.1	MOK
		20	2059	22.25	19	20.31	155	8.23	6.82	1.8	1.5	26	0	80	.14	9	.9	1.5	UER
		20	2128	56.02	19	20.07	155	7.46	8.87	2.1	2.3	26	0	97	.11	8	.8	.8	UER
		20	23 5	19.26	19	19.72	155	8.44	6.71	1.8	1.6	26	0	81	.12	10	.8	1.5	UER
		21	044	49.49	19	26.91	155	22.07	7.33	2.2	2.2	27	0	94	.11	10	.6	1.3	UKF
		21	245	23.98	19	24.61	155	16.82	7.76	1.7	1.4	14	0	81	.10	2	1.0	1.7	LPC
		21	22 8	13.97	19	18.40	155	12.99	8.35	1.2	.5	10	0	159	.05	8	1.1	2.3	POL
		21	2247	37.01	19	19.70	155	20.24	33.71		1.1	15	0	77	.10	5	1.3	3.6	DEP
		22	621	6.95	19	18.66	155	14.03	10.10	2.0		20	0	152	.07	8	.8	.3	POL
		22	1155	33.56	19	19.11	155	8.76	8.51			13	0	107	.04	10	.5	.9	UER
		22	1318	19.63	19	27.13	155	29.16	9.89			10	0	79	.10	11	.9	1.1	UKF
		22	2329	1.57	19	20.12	155	10.85	7.71			14	0	193	.12	7	1.3	1.9	UER
		23	149	14.25	19	25.68	155	16.45	14.24	3.0		30	0	48	.09	3	.5	.8	DEP
		23	332	50.28	19	24.21	155	26.55	10.85		1.2	16	0	144	.06	12	.7	.4	UKF
		23	19 7	.48	19	21.50	155	18.69	2.09	1.2	1.4	16	0	74	.07	5	.4	27.8	KOA
		23	2319	45.52	19	17.92	155	16.85	8.03	4.7	2.0	30	0	125	.12	6	.7	.8	KOA
		24	0 7	16.73	19	29.05	155	53.23	8.95	2.0	1.4	15	0	136	.12	24	1.8	.7	KOA
		24	825	10.99	19	19.01	155	13.16	8.40		.8	19	0	80	.12	8	.9	2.2	UER
		24	20 5	11.97	19	31.10	155	28.28	5.16	2.3	2.4	18	0	101	.15	13	1.0	2.3	UER
		25	012	16.01	19	18.45	155	13.55	6.92		1.3	24	0	84	.10	8	.7	1.1	POL
		25	145	42.41	19	18.35	155	13.64	6.70		1.1	24	0	88	.09	8	.6	1.0	POL
		25	224	25.37	19	23.75	155	17.41		.8	2.0	28	0	46	.14	2	.6	.6	SPC
		25	632	13.87	19	19.64	155	8.61	8.30	1.9	2.0	24	0	77	.11	10	.8	.9	UER
		25	754	49.69	19	18.71	155	15.64	7.59	.9	.5	13	0	126	.06	5	.5	1.4	KOA
		25	9 2	30.65	19	26.27	155	29.11	12.05		1.5	20	0	65	.10	12	.9	.4	UKF
		25	1839	41.04	19	25.97	155	28.33	9.50	2.2	1.9	25	0	63	.13	13	.7	1.2	UKF
		25	2252	20.48	19	26.83	155	14.67	31.06	2.1	1.8	30	0	51	.09	5	.7	1.5	DEP
		26	158	39.89	19	25.81	155	25.28	7.22	1.8	1.5	17	0	71	.08	11	.6	2.2	UKF
		26	216	15.56	19	25.68	155	16.57	15.40		1.2	16	0	118	.07	5	.6	1.2	DEP
		26	217	28.69	19	28.41	155	45.45	9.38	2.5	1.6	19	0	213	.14	14	2.2	.9	KOA
		26	235	50.24	19	30.76	155	51.74	9.49	1.9	1.4	15	1	190	.14	28	2.6	1.2	KOA
		26	453	31.56	19	19.75	155	12.51	7.06		1.5	22	0	79	.11	6	.7	1.2	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	RMS	GAP DEG	SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	26	6 5	19.54	19	17.75	155	21.43	7.17	1.7	1.4	14	0	138	.07	8	.6	1.0	SWR
		26	2141	12.60	18	48.13	155	13.92	30.44	2.8	2.3	26	1	275	.18	55	3.9	8.3	PPL
		27	221	15.42	18	59.99	155	16.25	13.07	3.2		32	0	230	.11	33	2.1	.0	PPL
		27	222	51.14	19	.47	155	16.68	13.11	2.7	2.4	28	0	228	.12	32	2.2	99.0	PPL
		27	739	34.60	20	2.52	156	29.51	12.99	3.0	2.7	18	0	322	.18	96	45.5	99.0	DIS
		27	12 4	59.09	19	19.46	155	15.23	6.80	.8	1.1	18	0	99	.11	6	.8	1.8	KOA
		27	1615	40.88	19	34.90	155	58.24	9.11	3.6	3.2	30	0	247	.16	23	2.6	.8	KOA
		27	1739	48.44	19	58.87	155	27.03	40.05	1.9	1.1	18	1	280	.09	42	3.2	3.8	KKII
		27	1859	12.30	19	18.97	155	13.33	6.92		1.0	18	0	76	.12	7	.9	2.2	POL
		27	2055	54.18	19	28.13	155	33.85	45.08	2.3	2.1	16	2	89	.19	5	3.8	6.1	MOK
		28	150	9.19	19	22.41	155	9.44	5.09	1.7	1.5	23	0	78	.16	10	1.0	1.2	UER
		28	440	1.67	19	18.97	155	12.03	6.30		1.1	21	0	102	.13	7	.9	1.7	POL
		28	13 2	48.07	19	18.96	155	15.44	6.74		1.2	16	0	116	.10	6	.8	1.7	KOA
		28	1459	25.63	19	19.95	155	6.39	6.29		1.1	19	0	119	.15	7	1.3	5.5	UER
		28	2159	7.04	19	23.04	155	24.62	9.95	1.1	1.1	18	0	63	.06	9	.4	.5	UKF
		28	2241	10.59	19	13.01	155	21.84	35.16		1.3	27	0	159	.11	14	1.4	2.4	LSW
		29	125	19.91	19	16.75	155	25.82	8.40	1.9	2.5	24	0	128	.12	11	.8	1.6	HEA
		29	335	40.59	19	22.08	155	2.84	8.62		5.9	28	0	129	.13	12	1.1	.7	MER
		29	347	46.75	19	21.98	155	1.11	6.25		2.5	16	0	188	.15	16	2.3	1.7	MER
		29	353	47.08	19	20.57	155	3.97	6.07		1.7	15	0	125	.11	16	1.1	1.3	MER
		29	4 1	27.53	19	18.85	155	12.89	12.16		1.0	12	0	89	.08	8	1.0	.6	POL
		29	4 5	32.00	19	20.73	155	6.45	6.81		1.4	21	0	99	.12	7	.8	1.2	UER
		29	410	20.59	19	22.75	155	4.02	5.95		1.9	22	0	101	.09	12	.5	.9	MER
		29	410	56.09	19	20.63	155	3.83	6.21		1.9	14	0	100	.15	11	1.3	2.1	MER
		29	413	53.00	19	20.09	155	3.68	7.91		3.1	20	0	131	.12	11	1.2	.8	MER
		29	415	20.89	19	19.49	155	13.70	6.42		1.5	17	0	77	.10	7	.7	1.7	UER
		29	438	26.73	19	19.41	155	13.42	8.28	2.6	3.5	28	0	69	.10	7	.6	.7	UER
		29	444	27.82	19	20.97	155	4.41	5.62		.8	19	0	96	.13	10	.9	1.7	MER
		29	446	9.98	19	20.89	155	4.59	5.57		1.2	14	0	98	.11	10	.8	1.7	MER
		29	447	40.06	19	20.90	155	.94	8.33		7.2	24	0	198	.13	16	1.6	1.1	LER
		29	834	56.13	19	22.75	155	5.21	.60	3.7	4.0	12	0	202	.11	11	1.7	41.6	MER
		29	837	38.44	19	23.77	155	4.42	1.30		2.8	11	0	154	.14	12	1.3	42.4	MER
		29	842	12.78	19	20.41	155	4.70	5.96	4.3	3.9	13	0	118	.05	10	.5	.6	MER
		29	843	59.97	19	8.63	155	15.37	5.93	4.8	3.7	11	0	201	.19	26	4.1	4.9	PPL
		29	855	57.89	19	19.28	155	20.93	1.19		3.2	7	0	121	.10	6	1.2	.0	SWR
		29	858	24.23	19	21.13	155	15.58	9.78		2.5	12	0	85	.09	5	1.1	2.7	KOA
		29	859	34.94	19	19.36	155	7.37	6.56		2.6	19	0	113	.13	8	.8	1.2	UER
		29	9 2	50.04	19	23.41	155	16.07	.43		2.5	10	0	108	.47	5	1.8	1.6	SPC
		29	912	34.49	19	19.56	155	14.97	7.59	2.8	2.6	19	0	78	.15	5	.9	1.1	UER
		29	913	20.15	19	17.84	155	15.75	4.97	3.6	4.0	7	0	179	.11	8	2.1	3.2	KOA
		29	918	5.71	19	24.15	155	3.73	2.52	2.9	3.4	13	0	170	.12	11	1.2	3.0	MER
		29	921	46.69	19	19.61	155	20.97	4.65		3.3	11	0	113	.15	8	1.7	2.7	SWR
		29	926	2.12	19	22.62	154	59.70	13.95	3.3	3.9	4	0	255	.04	17	54.6	32.8	LER
		29	935	24.33	19	21.57	154	55.65	.25	3.3	3.0	7	0	292	.19	23	17.3	69.4	LER
		29	938	25.73	19	16.81	155	16.28	9.07	2.4	1.4	10	0	90	.13	8	1.1	1.2	KOA
		29	938	58.61	19	19.59	155	20.98	.34	3.0	2.6	10	0	113	.16	6	1.5	8.6	SWR
		29	951	10.14	19	20.85	155	9.09	9.86	3.8	2.9	19	0	166	.10	10	1.1	.4	UER
		29	954	25.12	19	23.88	155	13.27	9.19	2.6	2.5	10	0	106	.06	5	.7	1.4	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	RMS	GAP DEG	SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	29	956	4.76	19	14.57	155	22.53	4.01	3.0	2.5	18	0	148	.12	14	1.0	1.6	LSW
		29	958	27.60	19	20.47	155	8.08	6.78	2.8	2.6	19	0	81	.09	4	.7	1.0	UER
		29	10 0	45.48	19	23.44	155	3.23	5.99	3.7	2.9	16	0	179	.14	13	1.3	1.8	MER
		29	10 3	44.55	19	19.20	155	20.90	3.18		3.2	10	0	123	.11	6	1.1	3.2	SWR
		29	10 7	51.43	19	20.33	155	3.59	1.09		3.8	10	0	173	.16	12	1.5	53.0	MER
		29	1010	1.25	19	12.95	154	.28	8.40	3.5	1.8	6	0	347	.39	114	99.0	.0	DIS
		29	1013	25.82	19	17.35	155	19.84	6.45	3.3	2.3	15	0	135	.19	11	1.6	3.7	SWR
		29	1014	7.85	19	16.72	155	22.71	5.26	2.9	2.6	13	0	134	.13	11	1.3	1.8	SWR
		29	1016	20.17	19	17.63	155	12.41	4.75	2.6	1.7	17	0	210	.14	9	1.8	.8	POL
		29	1016	52.64	19	21.42	155	7.46	5.75		3.2	7	0	88	.12	17	5.6	16.7	UER
		29	1018	7.91	19	21.58	155	15.18	7.65	2.5	1.3	14	0	62	.15	4	1.2	1.9	KOA
		29	1019	5.18	19	21.49	155	15.56	9.57	3.7	4.0	20	0	70	.11	4	.8	.8	KOA
		29	1033	36.82	19	11.88	155	27.91	8.83	2.7	2.6	16	0	147	.12	20	1.2	1.7	LSW
		29	1035	19.55	19	13.99	154	55.86	82.26	3.5	2.3	11	0	271	.20	28	35.7	92.3	DIS
		29	1037	9.51	19	15.15	155	8.48	4.22		2.6	14	0	255	.14	13	3.6	1.8	POL
		29	1039	17.91	19	19.59	155	21.64	1.84	2.6	2.9	9	0	117	.05	7	.5	99.0	SWR
		29	1045	1.03	19	19.33	155	20.71	1.40	3.3	3.8	10	0	118	.12	6	1.2	.0	SWR
		29	11 0	29.66	19	17.92	154	59.62	16.12	2.7	1.9	17	0	237	.49	23	11.6	16.8	DIS
		29	11 1	9.09	19	19.33	155	6.90	7.80	3.5	4.0	15	0	125	.11	7	1.2	2.8	UER
		29	11 9	58.65	19	6.46	154	50.71	18.80	3.0	2.5	10	0	303	.53	42	72.8	77.8	DIS
		29	1111	49.30	19	20.39	155	7.04	6.72	2.6	2.3	8	0	99	.15	13	2.7	5.8	UER
		29	1116	58.38	19	21.29	155	6.84	7.09	2.8	2.1	18	0	92	.10	8	.7	.9	UER
		29	1121	58.52	19	18.83	155	17.51	7.91		2.8	14	0	115	.11	7	1.2	2.0	KOA
		29	1124	28.21	19	20.48	155	5.65	3.56	2.2	2.3	11	0	112	.14	8	1.3	2.6	MER
		29	1126	28.06	19	15.32	154	54.96	8.78	2.9	2.9	11	0	278	.11	55	9.3	2.7	DIS
		29	1128	22.51	19	16.84	155	12.14	9.11	2.3	1.4	9	0	196	.13	10	3.1	5.7	POL
		29	1138	17.03	19	26.10	155	26.69	25.50	3.4	3.4	20	0	56	.11	15	1.1	3.1	UKF
		29	1144	16.81	19	17.96	155	12.05	6.07	2.3	1.6	11	0	137	.15	8	1.5	2.7	POL
		29	1146	25.28	19	20.47	155	11.19	7.09	2.8	2.4	17	0	97	.14	8	.9	1.4	UER
		29	1151	38.86	19	20.38	154	58.73	1.41	3.0	3.8	6	0	277	.17	20	20.8	98.6	LER
		29	1157	21.69	19	19.49	155	5.96	6.52	2.7	2.8	6	1	140	.12	8	5.7	10.4	MER
		29	1159	44.69	19	19.88	155	4.63	1.42	2.3	2.5	7	0	162	.05	16	2.2	2.4	MER
		29	12 5	52.85	19	23.62	155	.49	12.06	3.2	4.1	7	0	177	.12	17	5.6	1.4	LER
		29	12 8	10.01	19	20.98	155	7.87	3.77		1.6	8	0	80	.09	9	1.2	2.5	UER
		29	1210	6.49	19	19.69	155	20.67	1.35	2.3	3.1	11	0	110	.20	6	1.9	99.0	SWR
		29	1218	47.93	19	24.50	155	24.14	11.28	2.5	3.2	10	0	92	.04	10	.5	.4	UKF
		29	1222	27.54	19	16.04	155	21.93	8.34	3.4	3.8	20	0	142	.10	8	1.0	1.1	SWR
		29	1224	27.02	19	16.72	155	21.92	7.12	3.3	4.0	22	0	175	.15	8	1.5	1.9	SWR
		29	1226	55.84	19	23.11	155	14.49	9.83	2.7	2.6	13	0	181	.10	14	1.4	.5	POL
		29	1228	12.86	19	19.72	155	20.56	2.90	3.1	4.1	17	0	88	.11	9	.7	2.6	SWR
		29	1240	54.20	19	23.27	155	2.95	5.32	3.1	2.8	8	0	186	.04	14	1.6	1.7	MER
		29	1243	30.22	19	10.32	154	54.30	8.93	2.6	1.4	7	0	288	.16	55	19.0	50.5	DIS
		29	1245	35.45	19	15.67	155	15.41	6.75	2.8	3.9	13	0	191	.10	12	1.4	5.0	HLP
		29	1252	13.86	19	16.77	155	22.27	6.20	2.6	2.3	14	0	135	.12	8	1.0	1.7	SWR
		29	1254	2.17	19	20.50	155	15.83	6.16	2.4	1.6	10	0	108	.07	6	.8	1.8	KOA
		29	1255	4.95	19	20.67	155	17.13	7.73	2.6	1.7	13	0	68	.07	5	.6	.6	KOA
		29	1329	23.06	19	4.83	155	12.13	10.23	3.5	4.0	18	0	221	.13	30	2.6	.5	PPL
		29	1333	56.94	19	20.97	155	17.72	7.78	2.3	1.1	13	0	67	.16	6	1.4	1.6	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	29	1344	36.48	19	18.68	155	9.88	4.10	2.3	1.9	12	0	126	.12	7	1.0	1.5	POL
		29	1345	29.66	19	23.18	155	.96	2.34	2.7	1.8	9	0	158	.10	16	1.6	2.3	LER
		29	1348	23.34	19	24.14	155	13.39	8.16	2.4	1.4	9	0	180	.01	5	.3	.4	GLN
		29	1349	48.90	19	19.59	155	3.36	3.54	2.9	3.0	13	1	202	.13	18	2.1	1.3	MER
		29	1412	58.68	19	24.26	154	58.45	7.09	3.1	3.5	16	0	178	.20	20	3.0	2.1	LER
		29	1414	33.34	19	19.96	155	15.70	8.92	3.4	3.6	15	0	118	.15	9	1.4	1.2	KOA
		29	1429	43.44	19	20.19	155	11.41	6.94	2.1	1.0	8	0	93	.02	7	.3	1.3	UER
		29	1442	45.09	19	23.19	155	1.33	7.11	4.1	4.3	11	0	258	.19	26	9.7	5.4	MER
		29	1452	22.12	19	18.42	155	11.34	4.66	2.8	2.6	15	0	127	.16	7	1.2	1.6	POL
		29	1457	16.24	19	21.53	155	19.10	1.37	2.0	2.9	13	0	62	.12	5	.7	.0	SWR
		29	1459	37.40	19	21.83	155	18.59	.88		1.1	9	0	81	.10	4	.5	.7	KOA
		29	15 7	9.00	19	19.75	155	7.52	5.42	2.3	1.9	13	0	102	.13	8	1.0	1.0	UER
		29	1514	38.02	19	20.31	155	16.09	.14	2.6	1.9	15	0	112	.40	7	2.4	2.5	KOA
		29	1517	3.49	19	22.18	155	3.11	5.29	3.4	3.3	7	0	172	.10	12	1.9	2.3	MER
		29	1526	45.66	19	20.58	155	4.31	7.37	3.0	3.5	16	0	110	.10	10	.9	1.0	MER
		29	1528	54.02	19	17.39	155	22.17	7.26	2.3	3.0	19	0	130	.12	8	.8	1.1	SWR
		29	1535	37.96	19	21.53	155	19.34	.23	2.7	3.4	14	0	121	.20	6	1.2	4.3	SWR
		29	1539	54.08	19	20.10	155	16.80	9.17	2.6	2.4	12	0	135	.11	7	1.7	.9	KOA
		29	1542	51.44	19	22.47	154	59.02	.04	2.8		8	0	195	.50	17	11.8	99.0	LER
		29	1550	21.57	19	15.02	155	14.92	5.62	2.7	1.6	16	0	199	.16	10	2.1	2.6	POL
		29	1552	33.67	19	19.61	155	21.28	1.28	2.3	2.5	7	0	115	.14	7	1.1	1.6	SWR
		29	1557	2.32	19	22.44	155	5.44	7.14	2.5	2.9	20	0	76	.10	10	.5	.9	MER
		29	16 2	16.41	19	16.42	155	21.07	7.23	2.2	2.4	17	0	140	.17	9	1.8	2.0	SWR
		29	16 5	54.81	19	19.84	155	21.70	7.85	3.0	3.2	7	0	182	.08	16	4.1	1.3	SWR
		29	16 7	44.95	19	16.97	155	21.23	7.25	2.6	1.9	19	0	135	.13	9	1.1	1.5	SWR
		29	1611	49.96	19	23.14	155	.52	6.20	3.0		11	0	221	.11	17	2.8	1.5	LER
		29	1617	23.18	19	19.69	155	18.69	8.23		1.1	8	0	105	.08	7	1.8	3.1	KOA
		29	1621	12.72	19	19.30	155	8.02	6.03		2.2	15	0	163	.09	10	1.8	2.9	UER
		29	1623	8.08	19	21.71	155	18.95	1.58	2.0	1.6	9	0	83	.19	5	1.4	.0	KOA
		29	1626	17.79	19	20.19	155	6.78	7.05		2.6	13	0	146	.09	12	.9	.9	UER
		29	1627	7.08	19	22.49	155	1.16	1.22	4.0	3.6	10	0	182	.12	18	2.0	46.6	MER
		29	1629	29.26	19	24.59	155	24.00	9.25	3.5	2.8	21	0	80	.15	8	.9	1.0	UKF
		29	1645	57.29	19	24.29	155	3.55	.33	3.0	3.9	15	0	108	.12	12	.9	73.6	MER
		29	1649	32.[illegible]	19	20.48	155	13.34	6.43		.6	12	0	61	.10	6	.9	2.5	UER
		29	1650	52.41	19	19.85	155	12.17	7.89	2.3		11	0	190	.09	8	1.7	2.4	UER
		29	1657	35.31	19	19.78	155	11.75	9.25	2.3	1.2	10	0	87	.06	6	1.0	2.4	UER
		29	1659	28.60	19	21.90	155	16.29	4.25		1.3	7	0	173	.12	6	2.1	5.0	KOA
		29	17 2	23.60	19	18.55	155	9.99	5.52		1.4	12	0	124	.08	7	1.7	4.0	POL
		29	17 5	33.44	19	20.21	155	11.93	12.09		1.2	9	0	204	.08	8	2.3	8.3	UER
		29	17 7	47.61	19	21.39	155	4.72	6.23		2.6	13	0	242	.11	15	3.4	1.2	MER
		29	1713	52.05	19	19.94	155	17.66	5.54		2.8	13	0	99	.12	5	1.0	1.6	KOA
		29	1724	35.60	19	19.72	155	6.28	7.66		3.8	11	0	127	.12	8	1.7	1.6	UER
		29	1728	22.15	19	19.90	155	18.97	7.31	2.7	1.8	11	0	104	.08	8	.9	1.1	KOA
		29	1730	24.11	19	22.68	154	59.96	7.10	2.5	2.7	12	0	230	.12	17	2.9	1.5	LER
		29	1733	.91	19	19.23	155	6.45	8.08	3.5	3.3	16	0	138	.14	8	1.2	1.0	UER
		29	1739	22.38	19	24.01	155	.15	5.71	3.4	3.8	18	0	160	.11	15	.8	1.1	LER
		29	1745	18.17	19	23.83	154	59.03	5.76	3.9	4.0	18	0	177	.11	14	1.3	1.1	LER
		29	1752	38.06	19	22.01	155	18.37	1.53			8	0	78	.09	4	.9	99.0	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	29	1755	7.88	19	24.02	155	15.02	9.22		2.6	13	0	173	.09	6	1.2	1.7	GLN
		29	18 9	.96	19	16.93	155	20.22	9.63		4.0	19	0	137	.11	8	1.0	.4	SWR
		29	1823	37.61	19	16.64	154	58.36	10.69		4.2	18	0	246	.21	24	6.1	.9	DIS
		29	1827	34.44	19	24.03	155	3.42	2.48		2.8	10	0	176	.13	12	2.5	70.9	MER
		29	1831	36.91	19	15.76	155	8.84	4.98	2.4	2.2	15	0	230	.10	12	2.0	1.1	POL
		29	1837	50.70	19	23.22	154	59.25	5.83	3.7	3.1	22	0	182	.14	15	1.4	1.9	LER
		29	1841	37.34	19	20.06	155	18.57	7.57		1.5	10	0	90	.04	6	.4	1.1	KOA
		29	1842	20.24	19	20.25	155	15.66	7.50		2.5	16	0	84	.11	6	.8	1.2	KOA
		29	1850	41.17	19	14.74	155	21.48	9.92	2.7	3.1	18	0	192	.15	11	1.9	.9	LSN
		29	1852	56.32	19	25.97	155	6.61	.20	3.9	4.0	4	0	217	.08	57	7.6	99.0	GLN
		29	1856	38.54	19	22.49	154	52.87	7.19	3.8	3.7	16	0	247	.15	30	5.3	2.0	LER
		29	19 5	19.96	19	21.40	155	9.12	8.40	3.0	2.6	17	0	101	.09	8	.7	.5	UER
		29	19 7	1.51	19	28.32	155	24.75	26.41	3.1	1.9	21	0	67	.14	15	1.5	3.5	UKF
		29	1910	28.18	19	7.59	155	13.47	9.18	3.3	2.7	19	0	223	.13	24	2.2	1.4	PPL
		29	1913	37.03	19	19.45	155	19.82	8.75	2.1	1.9	19	0	80	.10	6	.7	.7	SWR
		29	1914	20.91	19	19.43	155	6.42	8.04	2.8	2.5	9	0	133	.05	8	.8	.9	UER
		29	1920	28.49	19	23.32	155	.23	7.01	2.8	2.9	21	0	168	.19	16	1.7	1.8	LER
		29	1925	15.74	19	19.13	154	58.75	5.92	2.4	1.5	7	0	278	.23	26	25.2	12.2	DIS
		29	1928	56.05	19	19.20	155	22.08	6.98	2.6	3.2	17	0	109	.16	8	1.1	1.7	SWR
		29	1935	31.48	19	13.37	155	23.07	3.59	3.5	3.3	20	0	153	.14	15	1.0	1.9	LSN
		29	1946	52.21	19	17.84	155	4.45	2.12	2.4	1.8	16	0	218	.16	12	2.3	2.2	MER
		29	1950	5.01	19	20.95	155	5.38	2.85	2.4	1.6	10	0	105	.10	8	.9	2.9	MER
		29	1951	.32	19	19.82	155	19.66	7.85		.7	11	0	91	.09	6	.8	2.1	SWR
		29	1952	56.37	19	14.74	155	13.24	8.02	2.8	2.3	12	0	175	.16	12	1.9	1.6	POL
		29	1955	13.37	19	15.88	155	11.62	4.92	2.7		19	0	201	.14	12	1.3	1.0	POL
		29	1959	1.54	19	19.14	155	21.00	6.25	2.9	2.5	9	0	125	.08	7	1.0	2.2	SWR
		29	20 1	56.56	19	23.65	155	.04	6.77		3.0	13	0	166	.20	15	2.0	3.5	LER
		29	20 5	40.41	19	18.16	155	20.08	5.87	2.1	1.4	15	0	154	.12	7	1.1	1.9	SWR
		29	2010	11.93	19	20.20	155	20.03	9.57	2.5	2.1	20	0	72	.10	6	.8	.4	SWR
		29	2010	56.25	19	14.90	154	57.22	19.26	2.6	1.8	13	0	263	.43	26	23.1	13.4	DIS
		29	2015	.25	19	20.27	155	21.21	1.41	2.2	1.0	9	0	100	.27	7	2.5	99.0	SWR
		29	2015	27.28	19	25.19	155	22.46	10.36	4.5	4.1	22	0	79	.13	9	.8	.6	UKF
		29	2020	51.26	19	19.85	155	19.79	9.00	2.2	2.3	16	0	73	.14	6	1.1	.9	SWR
		29	2040	53.55	19	17.76	155	4.56	2.09	3.3	3.3	22	0	219	.16	12	2.0	3.1	MER
		29	2042	45.41	19	20.03	155	20.40	9.94	2.6	2.4	21	0	80	.21	5	1.5	.7	SWR
		29	2043	50.65	19	15.62	155	15.52	8.65	2.6	1.8	20	0	158	.16	13	1.4	1.0	HLP
		29	2045	12.42	19	22.25	155	3.36	5.45	2.8	2.3	14	0	165	.10	12	1.2	1.2	MER
		29	2048	8.33	19	17.54	154	49.28	2.80	2.5	1.4	10	0	288	.34	33	23.2	5.6	DIS
		29	2049	25.24	19	24.67	155	16.06	.46	1.8	1.3	9	0	143	.14	3	.8	.7	SPG
		29	2051	18.06	19	15.24	155	14.89	6.22	2.2	1.7	17	0	197	.16	10	2.0	2.3	POL
		29	2057	9.62	19	18.98	155	11.55	7.98	2.5	1.8	18	0	107	.13	7	1.0	1.4	POL
		29	2059	40.07	19	21.27	155	7.43	6.56	2.5	1.8	19	0	87	.14	8	1.1	1.5	UER
		29	21 0	31.40	19	19.65	155	20.00	16.97			8	0	138	.13	6	4.9	12.5	DEP
		29	21 6	32.08	19	24.27	155	13.57	8.96	1.4	1.0	10	0	189	.07	6	2.6	3.6	GLN
		29	21 8	4.71	19	20.01	155	18.98	9.53	3.1	2.6	25	0	66	.11	7	.7	.4	KOA
		29	21 9	3.54	19	16.65	155	22.01	7.16	3.1	3.9	20	0	137	.14	8	1.0	1.4	SWR
		29	2121	15.91	19	22.47	155	2.65	7.06	2.4	2.0	10	0	183	.10	13	1.4	1.9	MER
		29	2124	43.23	19	23.72	155	3.98	1.13	2.4	2.2	10	0	102	.08	12	.6	21.4	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	29	2132	4.50	19	20.22	155	20.24	9.52	2.5	2.7	20	0	75	.10	5	.7	.3	SWR
		29	2135	51.34	19	21.14	155	6.16	2.89	2.8		16	0	92	.17	8	1.2	3.5	UER
		29	2137	16.92	19	19.36	155	20.69	7.33	2.5		15	0	117	.07	6	.6	1.3	SWR
		29	2154	33.87	19	22.63	155	5.87	6.82	3.0	3.2	24	0	120	.14	10	.8	1.3	MER
		29	22	3 18.84	19	17.89	155	22.31	6.85	2.5	2.6	25	0	126	.19	8	1.2	1.7	SWR
		29	22	8 32.12	19	19.59	155	20.73	7.86	2.1	1.5	16	0	111	.17	6	1.2	1.5	SWR
		29	22	9 12.48	19	22.17	155	5.14	5.86	2.6	2.2	17	0	78	.10	10	.7	1.4	MER
		29	2210	34.57	19	19.02	155	1.22	6.67	2.9	2.2	19	0	218	.10	16	1.9	1.0	MER
		29	2224	43.73	19	20.57	155	20.16	6.78	1.6	1.2	18	0	85	.16	6	1.0	1.9	SWR
		29	2245	8.62	19	19.65	155	15.31	7.55	2.7	1.6	19	0	95	.12	6	.8	1.0	KOA
		29	2251	38.14	19	23.74	154	51.59	35.07	3.0	2.5	7	0	308	.30	31	72.1	67.8	LER
		29	2257	40.59	19	24.69	155	.82	.62	2.2	1.4	17	0	144	.22	17	1.9	41.8	LER
		29	23	1 11.29	19	19.38	155	20.35	9.60	2.7	2.3	24	0	91	.10	5	.7	.4	SWR
		29	23	8 18.81	19	19.31	155	20.74	6.56	2.0	1.3	14	0	119	.09	6	.8	1.7	SWR
		29	23	9 36.99	19	20.10	155	20.04	8.76	2.1	1.9	23	0	74	.19	6	1.1	1.1	SWR
		29	2311	33.52	19	20.93	155	17.56	8.53	2.4	1.4	16	0	67	.09	5	.8	.8	KOA
		29	2313	57.99	19	19.91	155	19.46	7.17		1.0	12	0	117	.05	7	.5	1.2	SWR
		29	2314	25.19	19	20.26	155	18.54	6.82	2.1	1.4	13	0	71	.08	6	.6	1.3	KOA
		29	2321	48.28	19	20.46	155	20.04	9.00	2.5	2.7	25	0	70	.13	6	.7	.8	SWR
		29	2342	59.10	19	24.33	154	54.94	8.36	3.1	2.9	20	0	260	.17	26	5.0	1.2	LER
		29	2352	54.92	19	22.85	155	2.60	3.21	2.3	1.7	16	0	183	.09	14	.9	1.2	MER
		29	2357	3.05	19	22.74	155	.14	6.48	2.3	1.9	14	0	177	.11	16	1.4	1.3	LER
		30	012	11.90	19	19.29	155	9.50	4.05	1.6	1.5	16	0	96	.18	8	1.2	1.9	UER
		30	013	47.70	19	26.22	155	24.13	8.89	3.1	2.4	28	0	66	.13	9	.6	.9	UKF
		30	016	37.45	19	20.45	155	19.54	5.87	2.2	2.2	24	0	78	.18	6	1.0	2.0	SWR
		30	029	2.86	19	24.81	155	23.55	8.47	2.4	1.9	19	0	90	.10	9	.6	.9	UKF
		30	030	13.70	19	26.97	154	57.47	6.39	2.5	1.5	11	0	163	.12	26	1.5	1.9	LER
		30	037	51.07	19	16.33	155	17.25	6.79	2.8	2.3	19	0	182	.10	7	.9	.9	HLP
		30	044	28.40	19	20.82	155	19.48	6.71	2.2	2.2	21	0	73	.11	5	.7	1.1	SWR
		30	048	37.40	19	20.20	155	17.16	5.20	2.4	1.5	14	0	80	.07	5	.5	.8	KOA
		30	111	35.13	19	16.31	155	22.22	7.01	2.6	2.2	20	0	138	.15	8	1.1	2.7	SWR
		30	112	14.51	19	20.55	155	7.69	6.63	2.5	1.9	12	0	86	.11	8	1.0	1.9	UER
		30	115	41.55	19	20.70	155	18.56	8.23	1.9	1.3	24	0	54	.11	6	.7	.7	KOA
		30	116	16.57	19	19.60	155	6.42	8.00	1.8	2.0	14	0	82	.16	10	1.2	1.4	UER
		30	121	41.18	19	20.78	155	6.59	9.48		3.8	25	0	96	.09	7	.7	.5	UER
		30	159	43.68	19	21.81	155	6.65	7.80	2.8	2.6	23	0	100	.17	9	1.1	1.3	UER
		30	2	1 58.34	19	20.87	155	18.40	6.36	1.9	1.2	19	0	67	.11	5	.7	1.4	KOA
		30	2	4 43.88	19	19.23	155	5.93	7.59	2.5	1.5	18	0	149	.09	9	.8	.8	MER
		30	2	6 31.74	19	14.10	155	23.97	7.60		3.6	24	0	147	.14	12	1.1	1.7	LSW
		30	2	9 13.70	19	15.78	155	9.23	4.29	1.9	2.2	22	0	184	.13	12	1.3	.9	POL
		30	217	35.96	19	19.37	155	20.85	9.81	2.4	2.4	25	0	97	.10	6	.6	.3	SWR
		30	219	33.27	19	18.80	155	22.10	9.38	2.8	2.7	22	0	116	.17	9	1.1	1.1	SWR
		30	225	16.22	19	13.99	154	48.05	7.84	2.9	1.6	7	0	296	.13	35	24.5	6.6	DIS
		30	227	39.44	19	17.95	155	23.62	1.44		1.1	12	0	124	.10	9	.7	22.2	SWR
		30	228	6.77	19	20.57	155	18.65	7.08	1.9	1.3	17	0	73	.13	6	.9	1.5	KOA
		30	232	3.57	19	21.56	155	18.29	5.89	1.6	.8	14	0	64	.12	5	.9	1.9	KOA
		30	234	48.55	19	22.08	155	3.30	5.89	2.8	2.2	13	2	116	.13	12	1.0	2.4	MER
		30	239	25.76	19	20.26	155	19.60	8.70	2.0	1.1	13	0	82	.08	6	.7	1.7	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	30	250	47.00	19	20.32	155	19.73	9.83	2.6		24	0	83	.13	6	.9	.4	SWR
		30	251	26.21	19	23.09	155	13.56	25.19	2.2	1.2	14	0	82	.06	5	1.0	2.1	UER
		30	253	15.43	19	19.92	155	20.59	7.95	2.0	1.6	19	0	102	.13	6	.9	1.3	SWR
		30	255	16.17	19	19.99	155	18.89	8.05	1.9	1.4	13	0	100	.07	7	.6	.8	KOA
		30	256	1.79	19	20.36	155	18.90	7.95	2.1	1.8	20	0	51	.11	6	.7	1.0	KOA
		30	257	36.18	19	24.45	155	.24	.18	2.1	1.2	14	0	154	.13	15	1.2	24.8	LER
		30	3	1 31.67	19	20.75	155	9.18	8.85	3.7	3.7	22	0	67	.11	8	.8	.9	UER
		30	313	3.02	19	21.37	155	8.28	8.83	3.1	3.4	22	0	85	.08	9	.8	.8	UER
		30	318	12.39	19	17.26	155	23.47	8.62	2.6		19	0	129	.18	9	1.4	1.9	SWR
		30	323	54.07	19	21.90	155	7.07	6.92	2.4	2.1	20	0	96	.16	9	.9	1.4	UER
		30	325	45.64	19	14.21	155	14.82	6.81	2.6	2.2	16	0	206	.10	12	1.1	1.2	POL
		30	328	27.07	19	25.67	154	54.53	8.70	3.5	3.4	21	0	216	.12	18	1.9	.9	LER
		30	337	58.53	19	20.34	155	20.33	9.56	2.4	2.8	21	0	104	.13	10	.9	.4	SWR
		30	349	35.07	19	14.73	155	23.14	6.02	2.9	2.8	21	0	165	.15	14	1.4	2.0	LSW
		30	358	58.92	19	9.41	155	15.40	10.22	2.8	2.1	12	0	255	.17	20	5.5	1.1	PPL
		30	4	1 58.73	19	21.98	155	.75	6.23	2.3	1.9	13	1	227	.16	16	3.1	1.8	LER
		30	4	6 30.22	19	22.07	155	3.41	3.65	2.3	1.8	14	1	163	.14	12	.9	1.8	MER
		30	4	9 13.52	19	19.71	155	20.18	8.29	1.9	1.9	19	0	82	.12	6	.8	.9	SWR
		30	411	6.78	19	13.38	155	27.71	9.81	2.3	2.2	9	0	141	.08	17	1.1	.7	LSW
		30	417	31.27	19	19.56	155	8.60	8.15	1.9	.8	10	0	78	.05	10	.6	1.6	UER
		30	427	19.33	19	18.28	155	11.57	3.76	2.1	1.4	15	0	130	.13	8	1.0	2.3	POL
		30	434	58.14	19	20.93	155	11.29	7.52	2.3	1.5	22	0	69	.13	8	.8	1.2	UER
		30	441	4.57	19	22.98	155	1.09	5.97	3.0	2.8	17	0	158	.09	15	.7	1.2	MER
		30	444	30.36	19	20.49	155	18.24	10.41	2.8	2.3	9	0	157	.24	19	4.6	1.7	KOA
		30	445	27.07	19	9.59	155	17.17	9.64	2.5	1.5	17	0	191	.11	24	1.5	.5	PPL
		30	448	48.12	19	22.93	155	1.82	3.23	1.9	1.4	14	2	146	.14	14	1.0	1.7	MER
		30	453	43.36	19	21.73	155	3.36	6.68	2.4	1.7	10	1	163	.06	16	1.2	1.0	MER
		30	455	31.46	19	20.23	155	20.82	1.73	2.2	1.2	7	0	152	.03	6	.5	.0	SWR
		30	456	10.84	19	21.71	155	18.34	6.44	1.6	1.0	16	0	56	.10	4	.7	1.3	KOA
		30	459	7.65	19	24.54	155	13.33	8.19	2.7	2.3	18	0	63	.09	6	.6	1.1	GLN
		30	5	4 39.52	19	20.27	155	19.55	7.21	1.9	1.5	20	0	63	.12	6	.7	1.0	SWR
		30	5	8 28.89	19	22.11	155	3.67	5.94	3.4	3.4	26	0	107	.12	12	.7	1.3	MER
		30	512	37.89	19	22.37	155	1.74	7.22	2.2	1.5	12	1	204	.15	15	3.4	1.3	MER
		30	516	33.35	19	23.77	154	59.30	5.81	2.7	2.3	17	0	174	.14	14	1.5	2.2	LER
		30	521	21.38	19	20.29	155	20.55	8.52	2.3	2.5	25	0	79	.15	6	.9	1.0	SWR
		30	542	34.72	19	16.92	155	8.73	13.24	1.9	2.0	15	0	267	.30	10	6.1	7.6	POL
		30	545	24.63	19	21.25	155	3.81	7.24	3.0	2.6	14	1	96	.12	11	.9	1.4	MER
		30	554	46.85	19	21.75	155	3.59	6.12	2.8	2.0	11	0	156	.07	11	.8	1.2	MER
		30	559	23.92	19	20.49	155	19.73	7.98	2.1	1.7	18	0	81	.09	6	.6	.9	SWR
		30	6	6 42.51	19	25.72	154	56.15	6.11	2.3	2.6	16	0	188	.21	16	2.6	2.1	LER
		30	610	12.25	19	19.14	155	20.80	8.40	2.6	2.4	18	0	102	.13	6	.8	.7	SWR
		30	623	13.40	19	20.17	155	18.95	9.31	2.9	3.0	19	0	71	.10	7	.7	.7	KOA
		30	632	49.59	19	23.78	154	59.54	5.84	2.6	2.4	10	0	226	.11	34	2.8	1.8	LER
		30	657	43.92	19	20.41	155	18.65	8.60	2.2	2.7	25	0	55	.11	6	.6	.6	KOA
		30	7	0 15.62	19	16.96	155	22.34	6.64	2.6	2.5	24	0	133	.17	8	1.1	1.8	SWR
		30	7	2 47.35	19	20.03	155	20.04	8.91	3.0	3.1	14	0	75	.12	15	1.0	1.2	SWR
		30	711	28.67	19	20.09	155	20.48	5.86	1.9	1.6	21	0	81	.14	5	.8	1.5	SWR
		30	715	50.98	19	23.93	154	58.41	4.28	2.6	2.4	19	0	183	.13	15	1.3	1.6	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	30	724	20.29	19	19.08	155	20.15	9.02	2.4	2.5	21	0	95	.11	6	.9	.6	SWR
		30	727	21.99	19	20.27	155	6.65	7.40	3.1	2.7	24	0	107	.14	7	.8	1.1	UER
		30	736	6.77	19	15.59	155	6.98	11.08	2.4	1.6	13	0	231	.12	13	2.5	.7	POL
		30	742	34.34	19	23.29	155	3.55	7.69	2.6	1.9	13	0	165	.10	13	1.0	1.2	MER
		30	749	53.58	19	19.82	155	19.50	8.08	2.3	2.0	23	0	67	.16	7	.9	.8	SWR
		30	753	6.98	19	19.16	155	11.84	6.78	2.8	2.6	26	0	100	.14	7	.7	1.0	UER
		30	754	45.29	19	15.43	155	7.78	5.65	2.9	2.8	9	1	274	.08	25	1.5	1.8	POL
		30	8	0 14.61	19	21.72	155	15.12	9.65	2.9	3.4	14	0	64	.13	15	1.0	.6	KOA
		30	8	6 5.95	19	21.14	155	2.86	5.64	2.3	1.4	6	0	188	.24	17	11.9	10.1	MER
		30	827	40.90	19	20.34	155	17.13	8.86	2.2	1.7	19	0	77	.11	5	.8	1.2	KOA
		30	833	23.66	19	20.74	155	17.61	7.66	1.6	1.4	14	0	65	.09	5	.7	1.7	KOA
		30	836	23.52	19	17.22	155	21.89	4.69	1.7	1.6	17	0	132	.15	9	1.1	2.0	SWR
		30	844	40.48	19	18.36	155	22.11	7.52	2.3	2.4	16	0	147	.09	9	.7	.9	SWR
		30	845	51.42	19	20.62	155	18.36	8.09	2.1	2.2	14	0	79	.07	5	.6	1.3	KOA
		30	847	3.72	19	22.31	155	2.08	3.08	2.5	2.4	18	0	147	.16	14	1.1	2.0	MER
		30	854	6.47	19	24.26	155	13.49	9.88	1.9	1.6	12	0	90	.07	5	.9	.5	GLN
		30	856	34.55	19	20.42	155	18.57	8.23	1.9	1.8	15	0	86	.06	6	.5	.6	KOA
		30	857	17.81	19	22.87	155	2.13	2.21	2.0	1.5	14	1	140	.17	14	1.0	2.5	MER
		30	859	54.46	19	25.63	154	59.75	.78	2.3	1.6	8	0	146	.03	13	.3	27.7	LER
		30	9	5 7.11	19	20.96	155	17.99	6.67	1.9	1.8	12	0	108	.07	6	.6	.8	KOA
		30	9	7 3.32	19	22.64	155	.61	5.91	2.4	1.7	12	0	171	.12	16	1.2	2.7	LER
		30	9	8 8.83	19	19.76	155	5.16	2.31	2.7	2.9	12	0	165	.14	15	1.6	7.0	MER
		30	912	11.47	19	19.05	155	18.42	9.07	2.1	2.3	10	0	171	.08	9	1.1	2.7	KOA
		30	914	38.72	19	20.60	155	18.61	6.60		1.5	19	0	81	.12	6	.8	1.3	KOA
		30	915	41.43	19	20.31	155	19.84	7.94	1.6	1.3	11	0	108	.07	6	.6	.7	SWR
		30	926	57.12	19	19.43	155	20.73	7.94	1.7	1.4	13	0	115	.08	6	.6	.8	SWR
		30	933	30.77	19	20.71	154	58.19	3.96	2.8	2.8	20	0	221	.16	18	3.0	1.7	LER
		30	935	21.68	19	20.66	155	13.09	7.80	2.1	1.4	11	0	77	.03	6	.4	.4	UER
		30	942	20.32	19	20.52	155	19.83	7.88		1.3	13	0	141	.09	6	.9	1.0	SWR
		30	946	10.30	19	17.90	155	23.64	2.75	1.7	1.9	11	0	147	.09	9	.8	3.2	SWR
		30	946	52.77	19	16.85	155	21.01	9.13	2.5	1.8	13	0	161	.08	9	.9	.9	SWR
		30	949	36.97	19	23.55	154	58.79	6.42	3.1	3.3	25	0	183	.17	15	1.6	1.5	LER
		30	951	51.35	19	19.93	155	17.49	8.81	2.6	3.3	25	0	98	.13	7	.7	.7	KOA
		30	954	23.60	19	19.98	155	20.95	4.22	1.9	.7	8	0	143	.04	6	.5	2.6	SWR
		30	954	35.26	19	19.25	155	12.26	6.67	2.0	1.2	12	0	92	.04	7	.4	.7	UER
		30	957	20.21	19	18.98	155	14.56	9.82	1.9	.9	11	0	126	.07	7	1.0	3.4	POL
		30	957	33.37	19	20.92	155	19.10	2.90	1.8	1.8	9	0	88	.12	6	1.2	11.5	SWR
		30	958	40.12	19	21.10	155	19.18	1.71		1.3	10	0	86	.06	6	.4	.6	SWR
		30	959	38.67	19	20.83	155	9.87	8.55	2.4	2.8	23	0	90	.13	7	.9	.8	UER
		30	10	3 15.42	19	19.64	155	20.61	7.60		1.3	13	0	109	.13	6	1.1	1.7	SWR
		30	10	4 2.89	19	19.32	155	20.49	6.44		1.5	9	2	161	.14	6	2.4	3.0	SWR
		30	10	4 46.13	19	27.19	154	51.84	8.59	3.1	3.2	25	0	267	.10	24	1.9	.6	LER
		30	10	7 56.98	19	28.09	155	22.68	4.85	2.0	1.5	6	0	140	.06	12	1.4	3.9	UKF
		30	1014	16.29	19	24.68	155	2.06	.92	2.3	2.0	13	0	189	.19	14	2.1	52.3	MER
		30	1015	59.57	19	15.72	155	22.82	5.74	2.2	2.4	22	0	141	.13	8	.9	2.3	LSW
		30	1019	36.09	19	19.33	155	19.56	6.40		1.3	13	0	99	.13	7	1.1	2.5	SWR
		30	1021	46.24	19	25.17	155	1.73	.66	2.5	2.2	13	0	127	.13	15	.9	80.2	GLN
		30	1028	51.83	19	20.46	155	17.63	7.60		.9	10	0	68	.05	5	.6	1.5	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	30	1030	54.02	19	21.68	155	15.27	9.78	3.2	3.4	28	0	61	.09	4	.5	.3	KOA
		30	1034	45.81	19	24.44	155	16.75	12.84	1.9	2.0	22	0	66	.09	2	.7	.5	LPC
		30	1035	30.79	19	23.02	154	57.82	4.72	2.7	2.5	8	0	204	.07	21	1.3	2.0	LER
		30	1040	46.88	19	21.51	155	14.90	2.00	1.6	1.4	7	0	150	.15	5	2.1	.0	UER
		30	1047	14.49	19	21.59	154	56.70	2.83	3.2	3.7	13	0	267	.16	23	7.4	2.7	LER
		30	1050	26.84	19	21.75	155	5.84	6.55	2.0	1.6	16	0	110	.12	9	.8	1.8	MER
		30	1053	44.26	19	19.34	155	20.31	8.05	1.9	1.9	16	0	113	.11	5	.8	1.0	SWR
		30	1054	50.00	19	22.36	155	14.63	11.02		.7	12	0	73	.10	4	1.2	4.6	UER
		30	11	2 3.34	19	20.32	155	7.60	7.38	1.8	1.3	19	0	91	.13	8	.9	.9	UER
		30	11	2 38.79	19	22.54	155	6.66	6.83	1.8	2.0	18	0	125	.11	11	.8	1.1	UER
		30	11	6 13.80	19	18.72	155	14.07	7.95	1.9	1.4	11	0	98	.11	7	1.2	3.8	POL
		30	11	7 15.71	19	20.06	155	20.71	3.75	1.6	1.2	6	0	137	.04	6	.9	5.1	SWR
		30	11	8 18.23	19	19.95	155	20.98	4.91	1.5	1.5	9	0	105	.09	6	1.0	4.0	SWR
		30	1112	39.35	19	16.03	154	54.50	5.12	2.3	2.2	8	0	283	.30	51	25.9	8.9	DIS
		30	1118	54.90	19	21.53	155	19.07	1.77	1.5	1.3	7	0	93	.05	5	.5	.0	SWR
		30	1124	46.78	19	20.83	155	17.79	8.27	2.3	2.6	23	0	43	.12	5	.7	.7	KOA
		30	1131	40.79	19	18.95	155	20.69	9.88	1.8	1.4	12	0	129	.09	6	.9	1.8	SWR
		30	1133	56.32	19	19.77	155	20.42	8.42		1.5	13	0	142	.07	5	.8	.8	SWR
		30	1140	53.39	19	19.36	155	20.62	8.43		1.6	15	0	116	.06	6	.6	.9	SWR
		30	1145	3.47	19	19.09	155	21.27	7.78	1.6	1.6	14	0	107	.08	7	.7	1.0	SWR
		30	1145	44.98	19	20.14	155	20.76	5.13	1.9	1.7	13	0	134	.09	6	.8	1.5	SWR
		30	1146	33.27	19	18.97	155	11.22	7.19	2.1	2.3	21	0	110	.15	6	1.1	1.5	POL
		30	1154	7.64	19	19.49	155	12.15	5.92	2.3	2.2	21	0	89	.14	6	.9	1.6	UER
		30	1157	19.71	19	20.21	155	20.36	8.46	2.4	2.9	24	0	77	.08	5	.5	.5	SWR
		30	1158	40.60	19	20.05	155	19.65	7.40	1.5	1.5	14	0	86	.10	6	.6	1.3	SWR
		30	1159	10.46	19	19.41	155	12.12	7.28	1.6	1.2	11	0	91	.05	6	.6	1.8	UER
		30	12	4 32.28	19	20.93	155	17.32	8.48	2.5	2.7	27	0	48	.12	5	.6	.6	KOA
		30	12	8 15.24	19	24.47	155	13.51	9.20	1.4	1.3	11	0	199	.04	6	1.1	1.6	GLN
		30	12	8 48.82	19	19.79	155	15.59	8.75	1.6	1.3	10	0	104	.03	6	.4	1.1	KOA
		30	1210	47.81	19	20.24	155	18.28	8.06	1.9	2.0	21	0	65	.10	6	.7	.8	KOA
		30	1213	19.57	19	19.05	155	20.26	8.41	1.9	2.3	21	0	115	.16	9	1.1	1.0	SWR
		30	1220	13.22	19	19.94	155	19.38	7.94	2.3	3.2	14	0	83	.08	7	.6	1.0	SWR
		30	1222	15.21	19	20.74	155	18.23	7.47		1.1	15	0	64	.09	5	.7	1.5	KOA
		30	1229	55.81	19	14.35	155	19.07	8.12	2.5	2.6	26	0	162	.14	11	.8	1.0	HLP
		30	1234	39.79	19	20.39	155	18.93	8.23	2.1	2.2	25	0	50	.12	6	.6	.7	KOA
		30	1244	39.15	19	18.56	155	12.03	8.14	2.6	3.0	25	0	114	.13	8	.9	1.2	POL
		30	1247	31.16	19	20.49	155	20.45	2.42	1.5	1.0	14	1	90	.08	6	.5	8.0	SWR
		30	1252	21.77	19	20.02	155	14.52	8.92	1.6	.6	10	0	110	.02	5	.3	1.0	UER
		30	1258	24.37	19	20.26	155	20.46	1.26		.9	7	0	94	.08	5	.9	.0	SWR
		30	13	2 43.24	19	19.59	155	20.36	6.64	1.9	1.7	18	0	107	.13	5	.9	2.0	SWR
		30	13	7 56.95	19	20.08	155	19.82	8.09	1.5	1.6	16	0	70	.11	6	.7	.8	SWR
		30	1311	31.78	19	20.06	155	12.29	5.87	1.9	1.4	12	0	77	.05	6	.4	1.2	UER
		30	1312	26.12	19	20.87	155	10.55	10.71	1.9	1.5	14	0	116	.09	8	1.3	.5	UER
		30	1316	52.40	19	20.41	155	15.27	7.87	.8	.7	13	0	79	.11	6	1.0	2.5	KOA
		30	1317	48.05	19	18.99	155	19.50	7.03	2.0	1.3	11	1	147	.11	7	1.4	1.6	SWR
		30	1322	43.94	19	20.06	155	20.93	5.09	1.5	1.5	11	0	102	.07	6	.6	1.0	SWR
		30	1338	21.65	19	18.69	155	22.59	2.00	1.6	1.6	9	0	235	.06	9	1.5	.0	SWR
		30	1341	50.96	19	20.82	155	19.26	5.89	1.4	1.4	11	0	83	.13	5	1.1	3.0	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	30	1346	40.79	19	21.41	155	16.99	1.52	1.6	1.6	10	0	79	.05	5	.4	99.0	KOA
		30	1348	4.33	19	20.25	155	19.97	7.71	1.5	1.1	9	0	118	.06	6	.8	1.7	SWR
		30	1352	12.49	19	22.18	155	1.24	6.48	2.6	2.4	14	0	216	.11	15	1.5	1.2	MER
		30	1353	13.36	19	19.75	155	20.46	6.85	1.7	1.3	15	0	117	.16	5	1.3	2.0	SWR
		30	1354	20.76	19	20.46	155	20.33	1.56	1.9	1.5	9	0	117	.08	5	.7	.0	SWR
		30	1357	17.81	19	22.68	155	5.10	3.35	2.6	2.5	21	1	173	.13	13	.9	1.6	MER
		30	14	3 7.64	19	20.13	155	20.93	2.86	1.8	1.4	6	0	137	.02	6	.5	5.1	SWR
		30	14	8 38.89	19	19.93	155	12.68	8.42	3.6	3.8	26	0	75	.11	6	.7	.8	UER
		30	1410	10.97	19	24.17	155	3.56	1.27	3.2	3.3	16	1	108	.14	12	1.0	1.8	MER
		30	1414	19.87	19	18.41	155	12.78	2.36	1.9	.6	11	1	102	.09	8	.5	7.9	POL
		30	1415	17.76	19	16.43	155	12.84	5.54	2.0	1.7	18	0	100	.10	9	.8	2.0	POL
		30	1415	58.77	19	20.50	155	20.33	6.30	2.2	2.4	16	0	138	.13	6	.9	1.0	SWR
		30	1417	39.66	19	25.76	155	23.96	8.72	1.9	1.7	16	0	88	.09	9	.6	1.1	UKF
		30	1423	27.43	19	20.56	155	17.47	7.47		1.0	11	0	69	.06	5	.6	1.5	KOA
		30	1424	40.69	19	21.10	155	6.39	2.55	1.9	2.0	12	0	95	.14	7	1.1	3.7	UER
		30	1428	25.19	19	20.07	155	18.75	7.94	1.5	1.6	14	0	95	.06	7	.5	.9	KOA
		30	1440	2.76	19	20.52	155	20.65	.57	1.7	1.8	10	0	120	.06	6	.6	3.6	SWR
		30	1441	36.21	19	18.43	155	23.56	4.96	2.0	1.9	11	0	123	.13	9	1.3	2.0	SWR
		30	1442	32.96	19	20.18	155	17.23	6.90		1.0	9	0	153	.03	5	.5	1.1	KOA
		30	15	4 44.07	19	19.37	155	12.42	6.51	2.3	2.0	24	0	87	.12	7	.8	1.2	UER
		30	15	5 22.96	19	20.38	155	12.14	2.16	1.8	.7	12	2	75	.14	7	1.1	63.3	UER
		30	1511	44.05	19	20.21	155	20.55	2.73	1.6	1.3	10	2	129	.10	6	.9	7.5	SWR
		30	1516	53.94	19	17.19	155	21.63	7.45	1.8	1.6	14	0	149	.11	9	1.0	1.3	SWR
		30	1518	54.64	19	20.02	155	16.88	7.04		.8	11	0	86	.05	5	.6	1.3	KOA
		30	1519	31.57	19	20.44	155	19.87	7.10	2.0	2.1	19	1	107	.16	6	1.1	1.5	SWR
		30	1524	41.33	19	21.17	155	17.66	8.76	2.8	3.2	21	0	94	.11	4	1.1	.6	KOA
		30	1527	29.24	19	20.05	155	21.09	2.01	1.8	1.6	8	0	104	.09	6	.9	.0	SWR
		30	1543	46.72	19	23.68	154	59.07	5.34	2.4	1.8	19	0	178	.18	15	2.1	1.7	LER
		30	1550	53.03	19	19.85	155	20.00	8.25	1.9	1.6	16	0	77	.11	6	.8	.9	SWR
		30	1553	40.29	19	20.11	155	13.31	11.17	1.9	1.1	9	0	188	.04	7	1.0	4.0	UER
		30	1556	58.82	19	20.80	155	5.82	3.74	2.0	1.6	16	0	102	.20	7	1.3	2.7	MER
		30	1557	50.36	19	21.79	155	12.96	5.66	2.1	1.9	7	0	198	.09	5	3.1	2.3	UER
		30	1558	33.21	19	20.28	155	20.32	6.73	1.8	1.7	21	0	76	.14	5	.8	1.7	SWR
		30	1559	28.00	19	20.98	155	18.52	6.34		1.3	13	0	69	.09	5	.8	1.9	KOA
		30	16	6 8.30	19	24.92	154	57.92	5.97	2.6	1.9	17	0	176	.13	14	1.5	2.1	LER
		30	16	7 40.13	19	19.92	155	19.07	7.93		1.3	13	0	84	.08	7	.8	1.1	SWR
		30	1614	12.13	19	15.70	155	21.60	8.61		1.1	11	0	218	.05	9	.9	1.6	LSW
		30	1621	11.58	19	25.82	155	24.58	9.46	2.1	1.9	18	0	80	.09	9	.6	1.0	UKF
		30	1628	27.00	19	20.39	155	20.66	4.73	1.8	1.7	14	0	166	.10	6	1.0	1.6	SWR
		30	1634	50.07	19	23.25	155	.32	5.65	2.0	1.7	13	0	220	.15	17	2.5	2.1	LER
		30	1637	18.55	19	24.20	154	59.19	6.94	2.9	3.1	22	0	170	.16	14	1.7	1.4	LER
		30	1639	14.09	19	20.05	155	6.55	5.94	2.5	2.4	21	0	167	.13	12	1.5	2.3	UER
		30	1646	49.69	19	21.69	155	5.85	10.90	2.2	1.8	10	0	134	.11	13	1.7	.7	MER
		30	1652	44.30	19	21.27	155	16.03	8.07	2.6	2.5	20	0	69	.10	4	.6	.7	KOA
		30	1658	31.96	19	18.49	155	21.95	9.19	2.2	2.8	19	0	113	.12	8	.8	1.0	SWR
		30	1710	9.77	19	24.95	155	24.63	7.15	2.0	1.7	17	0	77	.09	9	.5	2.0	UKF
		30	1710	37.59	19	24.47	155	2.86	1.99	2.3	1.3	10	0	117	.06	13	.6	.0	MER
		30	1711	.52	19	19.88	155	19.36	7.11	2.4	2.4	14	0	77	.09	7	.7	1.2	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	30	1716	47.09	19	17.11	155	21.75	6.29	1.8	2.2	18	0	144	.14	9	1.3	2.9	SWR
		30	1720	17.47	19	19.29	155	15.78	6.28		.7	8	0	207	.10	6	2.7	3.4	KOA
		30	1720	24.44	19	21.75	155	4.86	8.24	3.5	3.8	24	0	79	.12	10	.8	1.5	MER
		30	1726	26.06	19	.12	154	40.77	8.24	2.0	1.6	8	0	332	.11	74	77.9	.0	DIS
		30	1732	55.29	19	24.85	155	24.78	8.89	1.8	1.7	19	0	74	.11	9	.7	2.2	UKF
		30	1733	33.74	19	28.28	155	22.01	7.92	2.3	1.5	11	0	141	.12	11	1.2	1.9	UKF
		30	1736	59.75	19	11.65	155	28.01	8.49	2.8	2.9	19	0	148	.16	20	1.5	3.3	LSW
		30	1741	55.39	19	21.53	155	6.71	7.20	2.0	2.1	12	0	96	.08	8	.6	1.3	UER
		30	1744	56.21	19	21.84	155	6.02	6.41	2.2	1.7	18	0	79	.13	9	.8	1.5	UER
		30	1751	52.11	19	20.32	155	18.63	9.57	2.4	2.7	25	0	74	.12	6	.7	.3	KOA
		30	1758	49.76	19	16.93	155	20.35	6.47	2.3	1.8	13	1	166	.08	8	.7	1.5	SWR
		30	1810	8.12	19	19.40	155	19.69	9.62	1.9	1.1	8	0	138	.05	7	1.3	4.2	SWR
		30	1811	10.87	19	19.88	155	18.52	7.80	1.3	1.1	10	1	104	.07	7	1.1	1.2	KOA
		30	1812	16.42	19	20.35	155	18.57	7.15	1.1	.9	9	0	87	.05	6	.7	1.9	KOA
		30	1813	47.19	19	15.31	155	16.12	8.07	2.1	2.5	21	0	167	.12	13	1.1	1.2	HLP
		30	1810	8.12	19	19.40	155	19.69	9.62	1.9	1.1	8	0	138	.05	7	1.3	4.2	SWR
		30	1811	10.87	19	19.88	155	18.52	7.80	1.3	1.1	10	1	104	.07	7	1.1	1.2	KOA
		30	1812	16.42	19	20.35	155	18.57	7.15	1.1	.9	9	0	87	.05	6	.7	1.9	KOA
		30	1813	47.19	19	15.31	155	16.12	8.07	2.1	2.5	21	0	167	.12	13	1.1	1.2	HLP
		30	1814	58.88	19	20.41	155	20.50	3.82	1.9	1.8	8	0	169	.10	6	1.6	7.9	SWR
		30	1819	1.48	19	20.41	155	12.01	7.89	2.2	2.2	12	0	138	.07	8	.7	1.0	UER
		30	1820	1.22	19	21.26	155	19.46	7.00	2.1	2.1	8	0	133	.12	6	2.2	6.7	SWR
		30	1822	54.46	19	18.72	155	11.25	4.70	2.1	2.2	19	0	118	.14	7	.9	1.2	POL
		30	1825	16.24	19	15.45	155	15.95	5.37	1.8	1.6	8	0	222	.06	13	1.6	1.0	HLP
		30	1827	52.97	19	19.16	155	6.73	1.23	2.4	2.6	23	0	166	.15	12	1.1	23.1	UER
		30	1829	14.73	19	22.19	155	6.81	6.72	2.4	2.3	17	0	108	.10	9	1.1	1.2	UER
		30	1830	56.77	19	20.58	155	16.37	7.12		.8	10	0	80	.06	5	.7	1.9	KOA
		30	1841	15.46	19	14.48	155	19.53	8.19	2.2	2.2	15	0	187	.11	13	1.5	4.3	HLP
		30	1851	43.05	19	22.37	154	59.77	6.95	2.2	1.6	13	0	188	.17	16	2.2	6.5	LER
		30	1854	51.46	19	18.07	155	19.97	6.68		1.0	13	0	122	.09	7	.8	1.8	SWR
		30	19	6 43.40	19	19.67	155	20.83	8.27	2.1	2.3	21	0	131	.15	8	1.0	1.5	SWR
		30	1912	58.80	19	19.38	155	11.78	6.69	1.9	1.5	18	0	95	.12	6	.8	1.3	UER
		30	1914	35.82	19	20.71	155	6.40	6.63	2.1	1.9	19	0	100	.16	7	1.0	1.6	UER
		30	1916	25.01	19	19.55	155	20.34	7.89	2.1	2.3	21	0	81	.11	5	.7	1.0	SWR
		30	1920	39.39	19	20.64	155	20.45	5.20	2.2	1.6	16	0	120	.12	6	.8	1.2	SWR
		30	1921	9.45	19	22.01	155	15.25	9.79	3.2	3.2	22	0	72	.08	4	.6	.3	KOA
		30	1923	17.77	19	20.19	155	15.56	28.06	2.0	1.6	19	1	157	.10	6	2.0	2.2	DEP
		30	1927	10.32	19	22.25	155	17.82	1.63	1.9	1.8	11	0	84	.10	4	.8	99.0	KOA
		30	1928	5.10	19	22.64	155	1.63	6.85	2.6	2.0	19	0	204	.17	18	2.8	1.8	MER
		30	1933	50.27	19	21.38	155	13.40	8.43	1.9		9	0	173	.04	6	.7	1.2	UER
		30	1938	46.50	19	17.31	155	21.09	7.14	1.7	1.4	13	0	127	.14	8	1.3	2.0	SWR
		30	1939	9.48	19	19.78	155	14.42	6.02	2.2	1.6	15	0	69	.12	5	.8	2.0	UER
		30	1941	46.26	19	24.09	154	59.20	5.96	2.6	2.6	21	0	171	.16	14	1.2	1.7	LER
		30	1943	50.34	19	18.95	155	22.15	9.10	2.6	2.7	27	0	103	.15	9	.8	.9	SWR
		30	1945	39.67	19	14.91	155	9.94	9.13	2.3	2.4	24	0	199	.13	15	1.5	.8	POL
		30	1947	36.80	19	23.90	155	13.55	8.19	1.8	.9	10	0	161	.05	5	1.3	1.9	GLN
		30	1947	58.30	19	18.57	155	21.23	5.40	2.1	1.8	14	0	111	.07	7	.5	.7	SWR
		30	1950	12.11	19	17.90	154	59.24	25.42	2.6	2.2	19	0	258	.52	25	18.7	18.9	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	30	20 9	32.69	19	20.04	155	18.61	7.22		.9	11	0	92	.05	6	.5	1.5	KOA
		30	2024	32.23	19	19.32	155	12.27	1.56	1.6	.8	10	0	91	.11	7	1.0	99.0	UER
		30	2025	6.23	19	21.73	155	12.00	2.00		.8	8	0	117	.09	7	1.0	.0	UER
		30	2025	29.44	19	20.11	155	19.13	7.80	1.5	1.4	13	0	86	.07	7	.6	1.0	SWR
		30	2027	7.25	19	17.30	155	21.19	8.01	1.9	1.3	13	0	127	.13	8	1.1	1.9	SWR
		30	2031	18.62	17	57.29	154	58.91	5.00		1.4	12	0	344	.40	158	99.0	99.0	DIS
		30	2037	34.94	19	20.21	155	19.23	7.76	1.8	1.8	17	0	87	.10	6	.7	1.0	SWR
		30	2041	16.58	19	19.68	155	20.45	8.12	1.6	1.2	16	0	87	.07	5	.5	.6	SWR
		30	2043	16.77	19	20.20	155	19.72	6.49	1.5	1.3	13	0	107	.09	6	.8	1.4	SWR
		30	2045	46.10	19	20.66	155	18.14	7.84	1.8	1.8	21	0	60	.08	5	.4	.6	KOA
		30	2046	43.10	19	21.49	155	6.11	6.39	2.3	1.7	15	0	106	.15	8	1.2	2.7	UER
		30	2050	56.46	19	20.07	155	19.38	7.82		.8	12	0	111	.06	7	.6	1.4	SWR
		30	2057	18.34	19	22.59	155	2.97	5.97	3.7	4.2	29	0	124	.17	13	1.0	1.8	MER
		30	21 6	47.54	19	17.19	155	22.02	6.68	1.8	1.5	14	0	125	.13	8	1.2	3.0	SWR
		30	2113	53.29	19	18.94	155	19.26	9.55	1.7	1.7	13	0	92	.09	7	1.0	.5	SWR
		30	2117	5.19	19	18.25	155	5.85	2.12	2.3	2.4	21	0	186	.16	10	1.5	2.7	MER
		30	2118	40.29	19	18.02	155	21.67	6.69	2.1	2.7	27	0	117	.14	8	.7	1.3	SWR
		30	2121	22.38	19	24.97	155	1.69	.35	2.1	1.8	13	0	130	.21	15	1.8	99.0	MER
		30	2122	17.48	19	18.56	155	23.40	5.62	1.9	2.1	20	0	106	.10	10	.6	1.5	SWR
		30	2124	42.52	19	18.55	155	11.37	5.56	1.6	1.1	10	0	122	.07	7	.8	2.7	POL
		30	2139	21.79	19	17.94	155	8.98	14.95	1.6	.9	15	1	187	.11	8	2.2	2.1	POL
		30	2139	53.65	19	20.11	155	15.65	2.93	1.4	1.7	19	0	81	.13	6	.6	1.7	KOA
		30	2157	35.02	19	19.97	155	13.32	6.01		1.1	19	0	66	.16	6	1.0	2.6	UER
		30	2158	26.03	19	19.20	155	6.60	6.95	2.5	2.6	28	0	136	.14	8	.9	1.1	UER
		30	22 0	32.51	19	18.60	155	20.20	8.61		.7	11	0	137	.05	6	.6	1.4	SWR
		30	22 2	50.10	19	17.55	155	21.21	7.82		1.4	16	0	124	.13	8	1.0	1.6	SWR
		30	2210	55.25	19	20.51	155	18.57	6.71	2.0	2.0	25	0	55	.15	6	.6	1.4	KOA
		30	2211	45.86	19	18.62	155	13.72	7.45		1.2	11	0	90	.06	7	.7	2.1	POL
		30	2218	49.98	19	24.85	155	12.58	.12	1.7	1.7	17	0	88	.21	7	1.1	5.4	GLN
		30	2222	50.38	19	18.25	155	23.48	5.56	2.0	2.4	20	0	108	.13	9	.6	1.7	SWR
		30	2224	19.43	19	20.58	155	13.47	7.46		.9	13	0	62	.07	7	.8	.9	UER
		30	2226	4.93	19	20.18	155	9.30	7.97		1.5	15	0	76	.07	8	.6	1.0	UER
		30	2226	53.77	19	14.53	155	16.51	7.08		1.3	14	0	170	.14	10	1.7	2.1	HLP
		30	2237	6.33	19	21.09	155	17.66	7.70	2.4	2.5	25	0	30	.09	5	.5	.7	KOA
		30	2240	42.06	19	19.81	155	3.53	4.89	3.7	3.9	30	0	157	.16	12	1.4	.9	MER
		30	2249	52.41	19	16.25	155	21.77	5.92		1.3	17	0	136	.12	9	1.0	2.1	SWR
		30	2251	.80	19	21.90	155	7.17	7.87	3.0	3.2	26	0	73	.13	8	.7	1.0	UER
		30	2257	21.12	19	18.56	155	11.96	3.89	1.6	1.2	13	0	115	.10	7	.8	2.0	POL
		30	23 1	8.18	19	20.30	155	19.29	7.98	2.2	2.9	26	0	52	.11	6	.6	.7	SWR
		30	23 4	27.68	19	21.88	154	59.16	1.65	2.1	1.5	16	0	203	.21	17	3.8	23.7	LER
		30	2310	37.91	19	17.79	155	21.75	6.66	1.7	1.7	20	0	120	.13	9	.9	2.2	SWR
		30	2313	19.10	19	20.63	155	17.60	6.78	1.7	1.3	19	0	68	.14	5	.9	1.5	KOA
		30	2317	47.68	19	20.04	155	17.24	6.58	1.5	1.1	17	0	82	.12	5	.9	1.2	KOA
		30	2322	11.78	19	20.65	155	18.58	7.47		.9	11	0	153	.13	6	1.7	3.2	KOA
		30	2328	57.70	19	21.05	155	4.22	5.94	2.4	2.1	21	0	91	.15	10	1.0	1.7	MER
		30	2350	41.26	19	21.26	155	19.09	1.46		1.0	11	0	83	.08	6	.6	99.0	SWR
	DEC	1	0 2	25.07	19	14.42	155	17.50	6.76	2.9	3.5	23	0	171	.18	10	1.4	2.1	HLP
		1	010	42.34	19	20.41	155	20.98	5.22	1.9	2.1	24	0	73	.10	5	.5	.7	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	1	011	34.46	19	19.87	155	20.10	8.38	1.6	.9	16	0	97	.10	6	.7	1.0	SWR
		1	013	15.88	19	19.98	155	21.12	4.23	1.5	1.2	11	0	106	.05	7	.5	1.0	SWR
		1	015	42.28	19	30.17	154	49.95	9.93	2.8	2.3	16	0	320	.08	30	3.8	.4	LER
		1	025	10.47	19	25.56	154	55.27	9.73	2.6	1.7	17	0	204	.13	17	2.1	.6	LER
		1	025	55.30	19	21.36	155	19.12	2.03	1.2	1.5	11	1	82	.06	6	.5	76.1	SWR
		1	028	29.65	19	19.14	155	8.95	6.81		1.1	12	0	92	.06	9	.6	1.5	UER
		1	029	44.86	19	19.89	155	20.04	8.97	1.6	.7	11	0	96	.04	6	.4	.5	SWR
		1	034	55.36	19	19.93	155	12.97	12.48		.6	11	0	71	.10	7	1.4	.7	UER
		1	041	35.47	19	24.44	155	3.50	.25	3.1	3.9	18	0	108	.22	12	1.5	98.0	MER
		1	045	4.85	19	21.08	155	12.69	8.12	1.9	1.9	26	0	61	.14	6	.7	.9	UER
		1	046	15.57	19	16.87	155	21.88	7.75	2.5	3.3	29	0	129	.14	8	.8	1.0	SWR
		1	051	28.03	19	22.42	155	3.69	5.63	2.3	2.3	18	0	158	.12	12	.8	1.6	MER
		1	053	54.68	19	19.13	155	5.74	12.50		.9	11	0	156	.13	9	1.8	.6	MER
		1	059	15.71	19	20.55	155	17.48	7.32		.5	10	0	94	.04	5	.5	1.1	KOA
		1	1 5	38.50	19	19.57	155	20.54	8.46	1.8	2.1	23	0	83	.14	6	.8	1.0	SWR
		1	1 7	15.99	19	17.84	155	19.76	7.15		1.3	20	0	125	.14	8	.9	1.4	SWR
		1	1 7	48.74	19	20.79	155	19.64	2.45		.9	7	1	99	.06	6	.5	12.2	SWR
		1	1 8	32.70	19	20.18	155	20.60	4.89	1.9	2.1	17	0	97	.06	6	.4	.8	SWR
		1	110	19.49	19	18.37	155	22.40	7.76	1.7	1.7	18	0	111	.12	8	.8	1.2	SWR
		1	114	51.67	19	18.23	155	10.48	7.57	1.6	1.2	12	0	158	.13	12	2.1	2.8	POL
		1	120	4.50	19	17.47	155	21.75	7.66		1.8	19	0	123	.16	9	1.5	1.9	SWR
		1	125	43.27	19	25.08	155	16.41	15.40	2.6	2.3	28	0	47	.08	3	.5	.8	DEP
		1	130	39.26	19	22.20	155	2.66	5.71	2.5	2.4	17	0	133	.11	13	.8	1.4	MER
		1	134	7.01	19	19.85	155	20.85	2.26	1.8	1.3	13	0	147	.13	6	1.3	38.3	SWR
		1	136	36.16	19	20.24	155	17.16	7.48	1.9	.7	16	0	79	.10	5	.7	.9	KOA
		1	137	36.59	19	19.29	155	11.73	6.63	1.9	1.4	17	0	98	.06	7	.4	.8	UER
		1	139	23.19	19	19.95	155	7.85	1.95	1.8	1.9	9	0	151	.04	10	.5	.0	UER
		1	141	56.96	19	16.31	155	21.04	4.38	1.8	1.5	20	0	138	.15	9	1.0	1.7	SWR
		1	144	51.88	19	9.00	155	18.81	9.28	2.3	2.5	21	0	189	.14	19	1.5	1.3	PPL
		1	150	52.22	19	17.31	155	21.80	6.02		1.5	15	0	124	.10	9	.8	2.1	SWR
		1	151	52.38	19	24.23	155	13.41	8.33		1.1	12	0	182	.04	6	.6	.8	GLN
		1	153	57.25	19	18.67	155	13.44	6.61	1.1	.6	14	2	136	.06	7	.5	.9	POL
		1	154	16.43	19	28.11	155	22.67	5.64		1.1	9	0	133	.06	12	.8	1.8	UKF
		1	159	43.22	19	21.11	155	14.77	7.78	1.5	1.3	20	0	64	.11	5	.7	.9	UER
		1	2 1	12.85	19	18.89	155	15.05	7.12		.9	15	0	84	.09	8	.7	1.2	POL
		1	2 1	53.95	19	20.67	155	8.68	6.84	1.5	1.1	17	0	72	.15	9	1.1	1.9	UER
		1	2 2	15.90	19	20.16	155	13.01	7.54	.8	.5	12	0	68	.05	7	.4	1.7	UER
		1	2 6	21.09	19	18.54	155	11.03	6.05	1.1	.8	10	0	125	.04	7	.5	1.9	POL
		1	2 8	4.39	19	21.30	155	7.92	5.54	1.5	1.6	21	0	83	.17	9	1.1	2.6	UER
		1	210	12.77	19	20.49	155	20.25	5.35	1.8	2.4	14	0	137	.07	6	.6	3.7	SWR
		1	219	31.10	19	21.65	155	18.91	1.02	1.5	1.4	9	0	196	.11	5	2.0	.8	KOA
		1	222	40.42	19	21.18	155	19.08	1.99	.7	.5	10	0	84	.05	6	.4	.0	SWR
		1	225	47.90	19	20.44	155	18.48	7.53	1.5	1.1	14	0	84	.04	6	.3	.7	KOA
		1	230	54.75	19	25.21	154	58.77	6.37	3.1	3.3	18	0	185	.12	20	1.9	1.2	LER
		1	233	2.08	19	20.15	155	20.58	1.21	2.2	2.1	14	0	97	.11	6	.7	99.0	SWR
		1	235	58.35	19	18.90	155	21.25	5.78	1.8	1.6	24	0	103	.16	7	.9	2.2	SWR
		1	237	45.62	19	21.18	155	18.48	6.41	2.1	2.4	24	0	46	.13	5	.7	1.2	KOA
		1	238	23.09	19	20.93	155	17.42	8.36	1.5	1.3	13	0	59	.09	5	.8	1.9	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	RMS	GAP DEG	SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	1	238	46.02	19	18.98	155	21.20	6.86	1.9	1.8	14	0	101	.13	7	1.0	2.5	SWR
		1	242	17.26	19	24.47	155	13.45	8.20	2.7	2.6	28	0	63	.12	6	.6	1.0	GLW
		1	251	12.13	19	20.04	155	19.38	7.70	1.5	.9	18	0	56	.10	7	.6	.8	SWR
		1	252	12.77	19	24.20	154	59.18	5.98	2.4	1.9	14	0	170	.16	14	1.7	2.9	LER
		1	254	58.13	19	19.41	155	12.34	5.21	1.6	1.2	12	0	88	.03	7	.3	.6	UER
		1	3	2 32.26	19	21.00	155	17.83	7.20	1.7	1.8	15	0	64	.08	5	.5	1.3	KOA
		1	3	3 29.88	19	24.48	154	50.33	11.50	2.3	1.5	14	1	278	.16	26	6.1	.7	LER
		1	3	6 22.75	19	19.68	155	13.45	6.40	1.8	1.8	20	0	66	.12	7	.8	1.2	UER
		1	3	7 45.72	19	20.11	155	18.35	7.12	.8	1.3	11	0	84	.05	6	.5	1.2	KOA
		1	3	9 5.22	19	20.66	155	10.77	7.61	2.0	2.3	15	0	109	.05	8	.5	1.0	UER
		1	323	52.27	19	17.99	155	21.20	7.50		1.2	13	0	119	.08	8	.7	.8	SWR
		1	325	10.63	19	18.21	155	21.99	8.11	1.7	1.8	22	0	114	.11	9	.7	1.0	SWR
		1	325	55.53	19	17.33	155	21.24	5.27	2.0	1.9	16	0	126	.12	8	.9	1.1	SWR
		1	334	50.84	19	22.70	155	6.04	7.11	2.6	2.7	23	0	71	.16	10	.9	1.4	UER
		1	340	50.89	19	19.16	155	12.44	6.93		.9	13	0	92	.11	7	1.0	1.9	UER
		1	346	34.84	19	18.19	155	21.17	7.68	1.9	1.5	16	0	117	.11	7	.8	1.3	SWR
		1	412	36.78	19	25.68	154	59.32	.15	2.4	2.1	12	0	150	.19	12	2.0	52.9	LER
		1	414	1.62	19	19.16	155	14.27	6.98	1.6	.6	12	1	93	.05	7	.5	.9	UER
		1	414	18.74	19	18.43	155	11.44	3.40	1.3	1.0	11	0	126	.06	7	.6	5.0	POL
		1	431	19.37	19	19.86	155	7.49	.82	3.1	3.8	7	0	154	.04	11	.6	.0	UER
		1	447	54.09	19	19.58	155	14.55	7.45	2.2	1.5	25	0	71	.09	6	.5	.8	UER
		1	448	31.12	19	17.58	155	21.20	6.50	1.9	1.5	9	0	124	.08	8	.9	2.3	SWR
		1	453	14.31	19	21.36	155	19.17	.65		1.3	10	0	82	.06	6	.5	1.7	SWR
		1	456	50.98	19	20.89	155	13.73	5.61		.7	10	0	104	.04	7	.4	1.3	UER
		1	458	39.30	19	20.07	155	17.19	6.19	1.5	1.3	21	0	82	.14	5	.8	1.3	KOA
		1	5	6 42.88	19	20.89	155	10.75	7.58	1.7	1.5	16	0	107	.06	8	.6	.7	UER
		1	5	8 34.69	19	17.92	155	10.38	4.79	1.7	1.5	20	0	139	.11	8	.7	.9	POL
		1	5	9 49.07	19	20.60	155	13.72	6.99		1.4	17	0	56	.14	7	.9	1.5	UER
		1	511	10.69	19	20.17	155	19.24	7.73	1.8	1.6	21	0	52	.10	7	.6	.8	SWR
		1	513	10.20	19	20.56	155	20.81	4.30	1.8	2.3	21	0	70	.11	6	.6	1.3	SWR
		1	516	43.07	19	20.62	155	20.61	3.58	1.7	1.2	18	3	116	.14	6	.8	3.4	SWR
		1	517	19.81	19	16.82	155	11.58	12.28	2.1	1.5	13	0	198	.22	11	4.5	1.4	POL
		1	524	37.10	19	16.96	155	21.85	6.56	2.2	1.9	24	0	128	.15	9	.9	2.1	SWR
		1	525	32.49	19	16.89	155	22.07	5.79	1.8	1.6	16	0	128	.13	8	1.1	2.5	SWR
		1	533	12.18	19	14.32	155	16.42	12.18		1.5	15	0	177	.36	11	2.8	.8	HLP
		1	534	55.44	19	23.89	154	58.83	6.62	2.7	2.3	24	0	178	.15	15	1.4	1.1	LER
		1	540	1.58	19	17.56	155	21.19	7.82	1.9	1.7	18	0	124	.13	8	.9	1.6	SWR
		1	545	49.24	19	20.54	155	16.35	8.50		1.0	14	0	80	.05	5	.5	1.0	KOA
		1	546	38.47	19	13.03	155	24.03	4.40	2.2	2.1	19	0	152	.16	13	1.2	1.8	LSW
		1	548	59.78	19	20.90	155	5.67	5.79	1.8	.9	14	0	101	.11	8	1.2	3.8	MER
		1	556	37.17	19	20.67	155	17.52	8.54	2.1	2.1	25	0	36	.12	5	.6	.6	KOA
		1	6	0 44.28	19	20.12	155	19.38	7.87	1.5	.9	14	0	110	.07	7	.6	1.5	SWR
		1	610	10.34	19	16.76	155	21.99	6.76		1.3	15	0	129	.13	8	1.1	2.4	SWR
		1	612	34.81	19	20.35	155	18.96	7.02		.8	9	0	95	.06	6	.6	1.8	KOA
		1	613	42.15	19	19.04	155	21.12	7.81		1.3	16	0	99	.10	7	.7	.9	SWR
		1	618	58.58	19	12.69	155	23.72	5.36	2.2	2.5	18	0	162	.16	13	1.4	1.7	LSW
		1	621	18.08	19	19.31	155	12.07	3.41		.7	11	0	94	.08	6	.7	5.7	UER
		1	621	49.24	19	20.13	155	18.61	8.85		.6	11	0	90	.06	6	.7	2.4	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	1	626	4.53	19	20.08	155	10.29	6.80		.9	15	0	129	.07	7	1.2	2.3	UER
		1	626	22.31	19	20.09	155	18.87	7.41	1.0	1.0	11	0	98	.05	7	.5	1.3	KOA
		1	635	10.97	19	21.11	155	17.72	7.91	2.4	2.1	19	0	64	.10	5	.6	.8	KOA
		1	637	26.62	19	24.71	155	5.21	.16	2.1	1.8	12	0	111	.07	13	.6	99.0	MER
		1	638	24.90	19	20.29	155	11.10	6.99	1.9	1.6	20	0	80	.16	7	1.1	1.8	UER
		1	648	12.71	19	20.19	155	20.26	4.88	1.5	1.4	14	0	69	.11	5	.6	1.5	SWR
		1	650	26.20	19	20.44	155	20.30	1.94	1.4	1.7	13	0	118	.10	5	.7	.0	SWR
		1	654	30.47	19	12.32	155	10.98	.71	2.1	1.4	10	0	258	.14	18	5.4	99.0	POL
		1	656	37.25	19	17.05	155	22.44	6.72	2.4	2.6	26	0	124	.17	8	1.0	1.7	SWR
		1	7	6 57.29	19	18.02	155	20.82	4.61		1.5	13	0	120	.13	7	1.2	3.8	SWR
		1	7	9 35.60	19	8.79	155	16.35	10.38	2.7	2.6	28	0	191	.12	17	1.5	.4	PPL
		1	710	21.31	19	7.43	155	13.15	.72	2.6	2.0	12	0	252	.12	22	3.4	99.0	PPL
		1	714	42.20	19	19.07	155	21.07	8.12	2.1	2.2	26	0	98	.12	7	.7	1.0	SWR
		1	736	24.45	19	20.00	155	13.80	8.14	2.3	2.0	22	0	58	.12	6	.7	1.5	UER
		1	738	7.89	19	20.81	155	17.50	8.20	1.8	1.4	15	0	66	.05	5	.4	1.2	KOA
		1	738	51.74	19	21.39	155	19.16	1.51	1.5	1.7	13	0	82	.09	6	.5	.0	SWR
		1	744	8.59	19	21.04	155	19.47	1.98	.5	1.0	10	0	92	.06	6	.5	.0	SWR
		1	745	1.79	19	19.25	155	20.07	8.59	2.1	1.9	26	0	84	.15	6	.8	1.0	SWR
		1	746	41.86	19	20.93	155	14.35	7.19	.8	.8	13	0	86	.06	6	.6	1.2	UER
		1	750	42.16	19	18.63	155	20.31	7.13		1.0	11	0	105	.10	6	1.2	2.3	SWR
		1	755	41.14	19	20.10	155	7.11	7.43	2.0	1.7	16	0	103	.11	7	1.0	1.5	UER
		1	756	58.24	19	21.59	154	58.65	.36	3.1	3.2	11	0	213	.20	18	4.0	99.0	LER
		1	759	15.72	19	17.42	155	21.41	8.56	2.8	2.8	24	0	125	.12	9	.7	.9	SWR
		1	8	6 8.19	19	24.39	155	2.92	3.29	2.1	1.8	19	1	117	.15	13	.9	1.7	MER
		1	8	6 53.67	19	20.44	155	15.97	5.95	2.6	2.6	24	0	114	.15	6	.8	1.3	KOA
		1	8	9 18.12	19	17.62	155	21.55	7.54		1.2	14	0	122	.12	9	1.0	2.4	SWR
		1	8	9 57.54	19	19.72	155	16.00	4.58		.6	9	0	97	.04	7	.4	1.2	KOA
		1	810	5.63	19	19.13	155	21.53	7.67	2.2	2.3	18	0	107	.12	9	.9	1.5	SWR
		1	813	.16	19	17.16	155	22.07	6.58	2.5	2.6	29	0	125	.15	8	.8	1.6	SWR
		1	822	31.88	19	20.27	155	19.76	8.02	2.3	2.5	23	0	60	.15	6	.9	1.5	SWR
		1	824	37.58	19	22.56	155	6.04	7.21	3.2	3.2	22	0	116	.11	10	.7	1.0	UER
		1	826	17.75	19	14.18	155	24.92	4.17	1.5	1.2	11	0	136	.08	11	.8	1.7	LSW
		1	826	59.03	19	21.45	155	27.08	53.14		.9	8	0	321	.21	19	61.8	77.3	HEA
		1	828	51.85	19	20.45	155	18.41	8.02		1.0	12	0	82	.08	6	.8	1.8	KOA
		1	851	22.95	19	26.41	155	28.62	10.44	3.4	3.1	22	0	65	.12	14	.8	.8	UKF
		1	928	47.68	19	19.41	155	12.39	7.12	2.3	2.4	24	0	87	.10	7	.6	1.2	UER
		1	933	51.46	19	17.47	155	21.69	7.50	2.7	2.6	25	0	123	.13	9	.8	1.4	SWR
		1	10	9 55.20	19	23.43	154	58.71	8.73	3.7	3.9	24	1	186	.15	15	1.1	.4	LER
		1	1035	48.35	19	20.04	155	6.10	2.28	2.5	2.5	24	0	121	.20	8	1.3	3.2	UER
		1	12	7 10.91	19	9.25	155	20.08	10.13	2.6	2.5	25	0	215	.14	18	1.8	.6	PPL
		1	1217	5.79	19	17.16	155	20.25	7.75	2.0	2.5	28	0	132	.13	8	.8	1.0	SWR
		1	1219	3.15	19	21.64	155	7.46	8.87	3.3	3.4	25	0	77	.08	9	.5	.6	UER
		1	1223	54.20	19	19.84	155	17.67	8.60	2.4	2.4	24	0	81	.11	6	.6	1.0	KOA
		1	1247	29.56	19	17.90	155	21.07	8.41	2.2	2.1	21	0	121	.16	8	1.1	1.4	SWR
		1	1249	30.84	19	20.05	155	16.13	3.79	2.4	2.6	23	0	87	.13	6	.6	1.2	KOA
		1	1352	58.41	19	21.70	155	15.38	8.11	1.9	2.1	23	0	61	.13	4	.7	1.1	KOA
		1	1410	48.51	19	21.43	155	18.90	4.68	2.1	2.6	17	0	47	.12	5	.7	1.4	KOA
		1	1539	25.30	19	17.79	155	20.98	6.94		2.4	21	0	159	.12	8	.9	1.2	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	1	1627	36.46	19	23.87	154	59.42	8.21	3.0	3.1	19	0	171	.16	14	1.9	1.4	LER
		1	1833	4.41	19	22.04	155	6.87	8.05	3.5	3.2	27	0	76	.11	9	.6	.7	UER
		1	19 3	48.56	19	19.36	155	11.77	8.02	2.7	3.0	27	0	96	.11	6	.7	.9	UER
		1	1930	35.35	19	18.75	155	20.80	7.31	2.4	2.5	29	0	112	.15	6	.8	1.2	SWR
		1	21 2	9.71	19	22.01	155	7.06	7.27	2.9	3.1	23	0	72	.12	9	.6	.9	UER
		1	2126	30.06	19	20.18	155	13.35	7.79	2.4	2.5	24	0	63	.11	6	.6	.8	UER
		1	2143	45.77	19	18.80	155	21.11	9.78	2.5	2.7	22	0	136	.13	7	.9	.8	SWR
		1	2259	35.76	19	20.22	155	7.95	5.97	2.1	2.4	23	0	86	.13	9	.9	2.2	UER
		1	2315	40.71	19	21.11	155	6.33	8.12	2.2	2.5	21	0	95	.09	7	.8	.7	UER
		1	2335	34.61	19	24.05	155	24.26	11.07	2.3	2.3	20	0	74	.06	8	.4	.4	UKF
		1	2337	28.83	19	20.14	155	19.10	9.52	2.9	2.9	29	0	55	.11	7	.6	.4	SWR
		2	015	48.11	19	21.73	155	15.30	9.17	3.6	4.2	29	0	60	.11	4	.5	.4	KOA
		2	040	22.19	19	22.49	155	6.71	7.20	2.7	2.7	23	0	67	.12	10	.8	.9	UER
		2	126	5.92	19	19.26	155	18.98	8.51	2.0	2.4	21	0	83	.11	8	.7	1.0	KOA
		2	129	50.30	19	20.14	155	6.69	6.81	2.4	2.5	19	0	109	.11	7	.8	1.2	UER
		2	140	49.39	19	19.66	155	6.91	7.52	2.4	2.6	23	0	117	.12	7	1.0	.7	UER
		2	322	37.03	19	18.57	155	23.35	4.96	2.3	2.6	18	0	119	.13	8	1.0	1.5	SWR
		2	336	55.90	19	18.32	155	12.68	9.04	1.9	2.2	21	0	108	.10	8	.7	1.0	POL
		2	358	41.64	19	19.89	155	19.40	9.57	2.7	2.6	24	0	84	.09	7	.6	.3	SWR
		2	524	17.79	19	21.73	155	3.45	5.91	2.7	2.9	24	1	112	.19	11	1.2	1.8	MER
		2	545	55.77	19	27.21	154	52.32	9.95	3.1	3.1	25	0	265	.16	23	3.1	.5	LER
		2	620	28.99	19	16.93	155	11.79	8.81	3.0	3.1	22	0	195	.11	11	1.1	.9	POL
		2	724	5.66	19	18.67	155	20.82	9.22	3.3	3.3	27	0	114	.11	7	.6	.5	SWR
		2	753	.30	19	16.40	155	11.64	9.64	2.5	2.4	21	0	170	.13	12	1.4	.5	POL
		2	756	53.03	19	20.33	155	9.12	8.66	2.2	2.4	24	0	72	.07	8	.4	.5	UER
		2	1011	19.33	19	22.50	155	1.13	6.74	3.2	3.4	22	0	215	.14	15	1.8	1.2	MER
		2	1017	20.69	19	19.73	155	12.18	7.31	2.7	2.9	24	0	84	.12	6	.8	1.2	UER
		2	1118	45.36	19	23.70	154	59.55	7.67	3.1	3.5	22	0	172	.16	14	1.6	1.4	LER
		2	1421	18.52	19	18.83	155	23.59	6.41	3.2	3.5	25	0	117	.13	9	.8	1.2	SWR
		2	16 0	22.62	19	19.41	155	19.37	9.39	3.0	3.0	26	0	70	.09	7	.4	.4	SWR
		2	1650	42.05	19	20.52	155	8.07	8.51	2.4	2.9	23	0	81	.09	9	.6	.6	UER
		2	1856	25.17	19	22.02	155	6.11	7.46	2.6		26	0	75	.11	9	.6	.8	UER
		2	2131	50.87	19	20.97	155	20.63	5.09	2.5	2.6	14	0	143	.16	13	1.1	1.7	SWR
		2	2232	45.35	19	21.04	154	56.56	6.34	3.0	3.1	13	1	240	.16	21	3.6	3.5	LER
		3	246	55.22	19	18.64	155	20.80	9.64	3.3	3.3	20	0	151	.11	11	.9	.4	SWR
		3	343	57.01	19	19.97	155	11.88	8.45	2.9	3.1	16	0	169	.12	10	1.3	1.0	UER
		3	430	20.82	19	20.43	155	12.70	7.51	2.8	3.0	18	0	191	.15	8	1.8	1.3	UER
		3	453	58.64	19	25.79	155	23.37	9.84	3.5	3.4	21	0	47	.13	16	.8	.5	UKF
		3	5 5	36.55	19	19.34	155	11.41	10.05	3.8	4.0	19	0	172	.14	11	1.7	.4	UER
		3	538	1.04	19	23.62	154	59.07	6.19	4.2	4.2	19	1	192	.14	15	1.1	1.2	LER
		3	731	45.34	19	17.21	155	21.78	6.61	2.3	2.6	18	0	157	.15	18	1.4	1.9	SWR
		3	749	25.08	19	24.18	155	24.41	9.13	2.7	2.8	13	0	78	.10	18	.8	1.1	UKF
		3	1023	4.95	19	9.46	155	18.34	10.20	3.1	3.4	18	0	192	.09	26	1.4	.4	PPL
		3	1113	43.34	19	22.01	155	2.62	6.47	3.0	2.9	19	0	176	.14	13	1.8	2.5	MER
		3	1119	23.04	19	21.66	154	56.97	5.23	4.0	4.2	10	0	207	.10	18	2.3	4.0	LER
		3	1147	57.93	19	17.33	155	21.81	5.58	1.7	2.4	19	0	168	.15	9	1.4	2.4	SWR
		3	1151	16.83	19	24.02	155	2.46	5.08	2.5	2.7	17	0	156	.11	13	1.0	1.7	MER
		3	1235	46.64	19	20.42	155	20.51	4.71	3.1	3.5	19	0	107	.09	6	.6	1.1	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	3	1250	22.98	19	22.32	155	1.75	6.89	4.2	4.2	22	0	187	.08	15	1.0	.8	MER
		3	1311	52.31	19	22.02	155	7.74	7.92	2.9	3.1	22	0	164	.10	13	1.0	.9	UER
		3	1312	44.34	19	14.96	155	24.59	12.21	3.0	2.8	12	1	302	.14	16	3.0	.7	LSW
		3	1314	28.89	19	23.59	154	58.84	5.44		2.5	21	0	201	.16	15	1.8	1.7	LER
		3	1346	44.69	19	18.98	155	17.72	8.56	2.7	3.2	22	0	104	.12	7	.8	.9	KOA
		3	1529	1.47	19	19.73	155	17.46	7.69	1.9	2.3	15	0	86	.07	6	.6	1.2	KOA
		3	1743	53.11	19	24.15	155	2.67	.72	2.0	2.5	18	0	155	.11	13	1.2	40.0	MER
		3	1748	26.59	19	23.74	154	58.26	6.17	3.0	3.1	23	0	193	.17	15	1.9	1.8	LER
		3	1756	32.63	19	24.05	155	26.54	9.53	2.6	2.6	26	0	48	.08	12	.5	.4	UKF
		3	1757	25.82	19	16.56	155	23.47	6.20	2.2	2.6	23	0	175	.16	9	1.3	2.1	SWR
		3	1851	9.58	19	21.90	155	15.04	7.93	1.8	2.5	20	0	58	.11	4	.7	.9	KOA
		3	19 7	47.28	19	19.16	155	12.47	7.39	1.8	2.5	23	0	91	.14	7	.9	1.3	UER
		3	2027	56.92	19	19.93	155	4.92	7.56	3.5	3.8	23	0	178	.08	15	.8	.5	MER
		3	2043	53.97	19	18.29	155	20.51	9.07	3.2	3.2	26	0	123	.13	6	.7	.7	SWR
		3	2119	12.48	19	19.73	155	3.57	1.91	2.3	2.7	20	1	194	.12	17	1.3	1.7	MER
		3	2244	55.49	19	19.77	155	12.72	6.07	1.6	2.3	21	0	76	.16	7	1.0	2.2	UER
		3	2311	16.00	19	20.42	155	20.57	3.95	2.2	2.8	19	0	92	.12	6	.7	1.4	SWR
		4	029	55.04	19	20.51	155	20.44	5.46	2.4	2.8	20	0	75	.09	6	.5	.6	SWR
		4	059	2.17	19	23.91	154	58.83	4.78	3.6	4.1	12	1	228	.14	20	1.4	2.9	LER
		4	1 9	8.27	19	22.71	154	56.25	9.16	4.0	4.2	20	0	217	.18	19	2.9	1.3	LER
		4	141	33.68	19	19.89	155	12.00	9.16	3.0	3.3	24	0	83	.12	6	.8	1.2	UER
		4	156	43.03	19	19.41	155	12.43	6.68	1.7		25	0	87	.16	7	1.0	1.5	UER
		4	157	42.18	19	18.75	155	9.50	9.80	2.5	2.7	21	0	112	.09	8	.9	.4	POL
		4	214	43.90	19	21.36	155	18.93	1.50	2.0	2.5	11	0	80	.09	5	.6	99.0	KOA
		4	3 0	53.32	19	21.58	154	57.66	6.91	2.4	2.6	19	0	218	.13	19	2.1	1.9	LER
		4	350	4.91	19	22.72	155	6.44	7.77	2.9	3.1	25	0	166	.13	14	1.2	.9	UER
		4	414	37.22	19	24.40	154	56.93	7.55	2.8	2.8	26	1	199	.22	16	3.0	2.0	LER
		4	425	12.75	19	20.03	155	19.27	7.79	1.9	2.4	25	0	59	.10	7	.6	.7	SWR
		4	448	30.82	19	19.97	155	15.66	8.94	2.3	2.7	23	0	83	.10	6	.6	.7	KOA
		4	454	18.35	19	20.08	155	17.24	4.08	2.7	2.7	10	0	81	.10	5	1.0	1.7	KOA
		4	537	55.42	19	22.00	155	6.97	6.44	2.2	2.7	22	0	130	.11	11	.8	1.5	UER
		4	548	50.09	19	20.42	155	20.45	4.38	1.9	2.5	15	0	91	.10	6	.6	1.8	SWR
		4	6 8	2.87	19	20.05	155	19.59	7.42	2.2	2.6	13	0	81	.09	7	.8	1.9	SWR
		4	644	5.58	19	21.69	155	6.88	8.27	2.3	2.9	23	2	133	.17	11	1.0	1.2	UER
		4	733	30.40	19	20.61	155	20.69	5.19	3.0	3.1	25	0	77	.13	6	.8	.9	SWR
		4	747	12.59	19	17.29	155	22.06	6.82	1.8	2.4	25	0	131	.15	8	1.0	1.6	SWR
		4	759	12.81	19	17.26	155	22.03	7.76	1.8	2.5	23	0	131	.14	8	1.0	1.4	SWR
		4	8 5	29.01	19	23.06	155	5.63	7.89	2.8	2.7	23	0	136	.16	15	1.1	1.4	MER
		4	1015	26.44	19	19.17	155	21.04	8.65		2.5	19	0	104	.12	7	.9	1.3	SWR
		4	1021	24.74	19	19.47	155	5.47	5.38		3.1	19	0	178	.11	15	1.1	1.0	MER
		4	1029	8.47	19	19.77	155	5.59	.90	2.5	3.0	20	1	183	.12	14	1.1	1.3	MER
		4	1035	11.25	19	23.63	154	56.99	4.70	3.5	4.1	17	0	206	.11	17	1.6	1.3	LER
		4	1040	10.05	19	24.87	154	56.89	5.14	2.3	2.8	16	0	195	.22	16	2.9	4.0	LER
		4	11 7	21.84	19	19.65	155	5.29	5.53	2.0	3.1	17	0	177	.08	15	.8	1.3	MER
		4	1119	48.83	19	21.59	155	4.78	7.48	3.7	4.1	20	1	241	.12	15	1.9	.8	MER
		4	1139	10.05	19	21.01	154	57.79	6.38	3.5	4.1	24	0	213	.13	19	1.9	1.3	LER
		4	1213	18.57	19	20.73	155	6.40	6.99	2.3	2.8	22	0	147	.11	12	.9	1.1	UER
		4	1238	51.04	19	19.03	155	13.60	8.62	2.6	2.9	24	0	64	.12	7	.8	1.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	WS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	4	1353	16.49	19	18.97	155	1.37	5.03	2.6	2.9	15	0	223	.14	21	2.9	2.1	MER
		4	1421	52.83	19	26.43	154	52.04	8.64	3.7	3.9	26	1	266	.10	22	1.2	.5	LER
		4	1559	9.95	19	20.58	155	20.29	.33	2.0	2.7	13	0	113	.10	6	.6	.0	SWR
		4	17 0	27.81	19	24.35	155	2.64	5.43	2.4	2.7	18	0	121	.11	11	.8	1.2	MER
		4	1732	17.31	19	20.97	155	4.67	8.25	3.6	4.0	25	0	98	.13	9	.9	.9	MER
		4	1754	42.35	19	17.52	155	22.16	7.39	2.6	3.2	26	0	121	.17	8	1.1	1.5	SWR
		4	1953	26.66	19	22.90	154	58.16	2.42	2.6	2.8	11	1	199	.17	14	2.2	4.3	LER
		4	1955	3.36	19	16.90	155	20.78	7.47	1.8	2.6	24	0	133	.15	8	.9	1.7	SWR
		4	20 9	49.57	19	21.46	155	8.14	5.69	2.5	3.0	24	0	70	.17	9	1.0	3.4	UER
		4	21 4	31.53	19	22.66	155	6.17	7.97	3.1	3.6	26	0	75	.11	10	.5	.7	UER
		4	2156	54.28	19	21.98	155	.16	5.74	3.1	3.1	27	0	189	.12	16	1.2	.9	LER
		4	2210	31.85	19	25.10	155	12.57	7.51	2.5	2.6	28	0	64	.14	7	.7	1.1	GLN
		4	2320	11.07	19	20.26	155	18.84	6.83	2.8	3.2	26	0	53	.12	6	.5	.5	KOA
		5	030	21.14	19	23.60	155	1.76	6.60	2.1	2.6	21	0	167	.20	14	2.6	2.3	MER
		5	2 8	37.53	19	23.63	155	1.81	2.06	2.5	3.6	16	1	200	.18	14	1.5	4.4	MER
		5	214	12.85	19	20.64	155	7.17	8.17	1.9	2.7	20	0	135	.09	11	.7	.6	UER
		5	256	21.02	19	23.58	155	16.96	12.81	1.8	2.3	26	0	61	.10	3	.7	.2	LPC
		5	526	45.89	19	14.45	155	12.17	8.23	2.6	3.1	25	0	185	.13	13	.9	.9	POL
		5	716	9.84	19	19.68	155	7.27	8.30	2.8	2.8	22	1	182	.09	12	1.0	.6	UER
		5	8 3	12.54	19	20.44	155	20.57	4.87	2.1	2.7	21	0	75	.09	5	.5	.8	SWR
		5	10 9	8.54	19	22.01	155	15.14	9.56	3.3	3.7	27	0	57	.11	4	.5	.5	KOA
		5	1027	26.77	19	23.88	154	59.74	7.44	2.5	2.6	19	0	167	.13	14	1.1	1.7	LER
		5	11 1	21.01	19	21.73	155	12.94	9.38	2.2	2.6	22	0	55	.13	5	.9	1.3	UER
		5	1113	29.73	19	24.63	155	3.02	2.74	2.3	2.5	22	1	114	.15	10	.8	2.2	MER
		5	1219	56.92	19	21.94	155	7.56	7.97	2.0	2.3	21	0	78	.14	9	.9	1.2	UER
		5	1220	47.20	19	21.66	155	7.31	7.71	3.1	3.3	25	0	75	.07	8	.4	.6	UER
		5	1226	17.42	19	23.41	154	53.18	8.75	2.9	2.6	18	1	270	.15	22	2.1	1.3	LER
		5	1341	24.37	19	16.40	155	15.64	8.78	1.9	2.5	20	0	157	.09	11	.7	1.1	HLP
		5	14 1	8.83	19	20.91	155	17.81	7.97	2.0	2.6	19	0	51	.07	5	.4	.8	KOA
		5	1421	15.18	19	17.92	155	21.01	4.88	2.2	2.8	21	0	121	.12	7	.8	1.1	SWR
		5	1527	51.46	19	21.29	155	8.40	8.53	2.1	2.5	20	0	85	.10	9	.7	.6	UER
		5	1551	47.90	19	19.44	155	12.73	2.78	2.4	2.8	24	0	82	.19	7	.9	3.4	UER
		5	1625	29.30	19	16.49	155	15.39	5.69	1.8	2.3	17	0	156	.11	8	.9	1.8	HLP
		5	1811	55.16	19	17.36	155	21.30	8.85	3.8	4.1	26	0	126	.14	10	.8	1.2	SWR
		5	1822	22.04	19	17.18	155	21.67	6.78	1.8	2.2	23	0	126	.14	9	.8	2.0	SWR
		5	1851	59.56	19	17.32	155	21.42	5.81	2.0	2.7	23	0	126	.11	9	.7	1.8	SWR
		5	19 8	32.06	19	16.45	155	21.91	7.84	1.8	2.5	22	0	133	.13	8	.9	2.2	SWR
		5	1939	40.07	19	20.30	155	16.72	9.40	2.7	3.0	29	0	81	.09	5	.5	.6	KOA
		5	2025	40.82	19	20.47	154	51.77	11.57	2.9	2.9	17	0	263	.17	20	6.6	.7	LER
		5	2242	57.92	19	20.35	155	8.36	8.66	2.5	2.7	26	0	78	.10	9	.6	.6	UER
		5	2316	45.53	19	20.89	155	17.97	11.79	1.9	2.3	25	0	53	.10	5	.7	.3	KOA
		5	2352	13.27	19	17.84	155	21.62	6.46	2.3	3.0	26	0	119	.14	8	.8	1.6	SWR
		6	016	13.77	19	21.19	155	5.64	3.42	1.9	2.5	21	0	93	.13	8	1.0	1.9	MER
		6	032	16.85	19	21.51	155	8.78	7.12	2.3	2.7	25	0	63	.14	8	.8	1.5	UER
		6	038	54.29	19	21.56	155	8.51	6.95	2.3	2.7	26	0	65	.13	8	.8	1.5	UER
		6	137	59.09	19	23.80	154	58.99	6.79	3.0	3.5	24	0	178	.13	14	1.3	1.1	LER
		6	218	13.71	19	20.62	155	7.32	8.33	2.0	2.4	19	0	132	.09	11	.7	1.0	UER
		6	229	18.92	19	19.92	155	12.95	6.70	2.2	2.5	23	0	125	.14	7	.9	1.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	WS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	6	237	16.06	19	18.46	155	20.74	8.98	2.8	2.9	28	0	113	.11	7	.6	.7	SWR
		6	255	13.21	19	20.81	155	7.84	7.46	2.4	2.7	21	0	122	.13	10	.9	1.2	UER
		6	350	26.30	19	20.09	155	17.44	5.60	3.1	3.2	28	0	79	.11	5	.5	1.0	KOA
		6	353	25.27	19	16.88	154	55.10	8.89	2.5	3.2	12	0	265	.24	29	11.8	3.9	DIS
		6	357	40.10	19	17.58	155	22.42	7.46	2.5	3.2	25	0	119	.09	8	.6	.9	SWR
		6	412	2.60	19	20.26	155	20.35	4.57	2.1	2.6	15	0	93	.08	5	.6	1.5	SWR
		6	422	59.66	19	23.77	154	59.05	6.04	2.3	2.7	23	0	187	.17	15	1.7	1.5	LER
		6	543	2.28	19	18.14	155	23.58	3.08	2.1	2.9	22	0	109	.14	9	.8	2.1	SWR
		6	612	15.20	19	27.67	154	50.60	8.01	2.4	2.5	19	1	274	.16	23	2.2	1.2	LER
		6	638	25.26	19	20.79	155	11.05	8.96	2.0	2.6	21	0	98	.08	8	.5	.7	UER
		6	731	28.01	19	22.18	155	5.13	9.35	2.8	3.2	22	0	150	.11	14	1.0	.9	MER
		6	8 7	25.09	19	25.71	154	58.89	7.83	2.6	3.3	13	0	189	.16	20	3.8	3.0	LER
		6	816	9.16	19	17.98	155	23.30	1.79	2.1	2.8	16	0	111	.08	8	.7	23.1	SWR
		6	841	24.04	19	21.45	155	6.21	8.46	1.9	2.4	20	0	85	.11	8	.9	1.5	UER
		6	9 4	9.14	19	18.98	155	20.01	8.55	2.4	2.9	21	0	91	.10	6	.6	1.2	SWR
		6	925	18.99	19	21.93	155	6.59	8.00	2.8	3.3	21	0	82	.08	9	.5	.7	UER
		6	1031	56.16	19	19.98	155	8.74	8.65	2.4	3.0	23	0	76	.09	9	.7	.7	UER
		6	1151	16.27	19	24.22	155	2.40	6.01	2.4	2.9	18	0	156	.14	14	1.4	3.8	MER
		6	1152	55.27	19	13.99	155	20.42	8.41	1.9	2.9	21	0	172	.12	12	1.0	1.5	HLP
		6	1310	46.44	19	22.75	155	1.88	7.43	3.1	3.6	24	0	167	.18	14	2.0	1.5	MER
		6	1331	3.51	19	20.01	155	8.90	7.10	1.8	2.3	18	0	102	.08	9	.6	1.3	UER
		6	1350	49.58	19	21.97	155	18.02	17.74	2.3	2.9	13	0	74	.13	4	1.7	2.5	DEP
		6	1452	13.97	19	19.87	155	16.42	8.55	2.7	3.1	27	0	91	.12	5	.6	.8	KOA
		6	15 0	55.46	19	20.29	155	20.40	4.26	2.0	2.6	15	0	93	.08	5	.6	1.4	SWR
		6	1534	7.87	19	23.38	155	25.21	9.22	2.2	2.7	25	0	56	.11	10	.6	.8	UKF
		6	1553	.34	19	22.00	155	6.96	7.35	2.3	3.1	25	0	73	.11	9	.7	1.2	UER
		6	1616	25.65	19	18.77	155	22.22	7.97	2.2	2.6	30	0	107	.16	9	.8	1.3	SWR
		6	1632	5.95	19	23.02	155	1.54	6.51	2.6	3.3	22	0	150	.11	14	.8	2.0	MER
		6	1815	21.68	19	20.31	155	6.44	7.07	1.9	2.5	21	0	109	.08	7	.5	.9	UER
		6	1817	3.67	19	17.89	155	21.61	8.24	2.5	3.1	27	0	119	.13	8	.7	1.2	SWR
		6	19 0	56.97	19	21.01	155	8.93	7.66	2.3	2.6	23	0	73	.11	8	.6	1.0	UER
		6	1910	8.98	19	20.21	155	7.33	9.53	3.0	3.8	25	0	97	.09	8	.7	.4	UER
		6	2048	52.55	19	19.84	155	7.95	6.50	2.2	2.5	23	0	91	.13	9	.8	2.0	UER
		6	22 4	35.72	19	21.30	155	9.85	7.42	1.9	2.2	20	0	69	.12	8	.8	1.5	UER
		6	2213	44.90	19	20.55	155	18.73	6.87	1.8	2.5	20	0	93	.14	6	.9	1.9	KOA
		6	2244	3.59	19	21.93	155	6.72	5.88	1.9	2.3	21	0	75	.17	9	1.0	3.2	UER
		6	2245	11.82	19	21.73	155	15.38	8.72	1.9	2.7	22	0	60	.11	4	.7	.9	KOA
		6	2257	23.36	19	14.26	155	20.74	7.41	1.9	2.6	24	0	154	.17	12	1.1	2.4	HLP
		7	041	19.08	19	21.79	155	7.28	7.31	2.9	3.5	27	0	74	.10	8	.6	.9	UER
		7	058	38.77	19	21.01	155	5.79	8.45	2.0	2.6	20	0	97	.10	8	.8	1.2	MER
		7	145	18.58	19	28.06	155	23.00	7.00	2.7	3.0	28	0	92	.16	13	.8	1.6	UKF
		7	238	42.05	19	22.07	155	1.09	5.62	2.4	2.7	25	0	172	.11	15	.8	1.4	MER
		7	347	20.88	19	21.66	155	15.45	9.97	3.3	3.8	29	0	61	.09	4	.4	.5	KOA
		7	433	53.41	19	20.70	155	4.27	7.24	2.6	3.1	25	0	104	.12	10	.9	1.0	MER
		7	549	55.41	19	20.78	155	9.03	7.37	1.9	2.7	24	0	65	.13	8	.6	1.7	UER
		7	6 7	56.07	19	16.98	155	22.21	6.61	1.8	2.4	25	0	126	.16	8	1.0	1.8	SWR
		7	631	31.51	19	29.86	154	49.86	9.24	1.9	1.8	19	0	311	.09	24	3.3	.6	LER
		7	645	36.45	19	19.15	155	21.94	7.46	2.1	2.7	29	0	99	.15	8	.8	1.3	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	7	652	50.83	19	20.27	155	20.42	11.91	2.1	2.4	27	0	70	.09	5	.6	.2	SWR
		7	658	44.66	19	20.38	155	20.69	5.40	2.0	2.6	22	0	79	.13	6	.7	.9	SWR
		7	718	26.85	19	19.34	155	19.24	8.88	2.4	2.9	24	0	63	.12	7	.6	.7	SWR
		7	726	6.10	19	18.11	155	11.22	5.39		2.0	21	0	139	.14	8	.8	.9	POL
		7	732	59.74	19	20.49	155	20.39	5.11	2.3	3.0	24	0	66	.10	6	.5	.8	SWR
		7	8 4	14.92	19	22.42	155	6.50	6.49	1.9	1.5	24	0	69	.14	10	.8	1.5	UER
		7	1010	25.91	19	21.33	155	3.21	7.77	2.2	2.7	18	0	118	.13	12	1.6	3.0	MER
		7	1148	54.39	19	20.97	155	6.43	6.06	1.9	2.6	21	0	94	.12	7	.8	1.0	UER
		7	1238	19.34	19	19.52	155	12.75	6.96	2.0	2.5	23	0	80	.14	7	.8	1.8	UER
		7	1254	34.57	19	19.81	155	6.61	5.67	1.9	2.7	21	0	119	.10	7	.6	1.5	UER
		7	15 9	22.46	19	16.47	155	12.11	6.22	3.3	3.7	25	0	159	.17	11	1.1	2.1	POL
		7	1335	19.77	19	21.49	155	3.03	6.71	2.3	2.5	16	0	125	.13	12	1.6	3.3	MER
		7	1358	49.87	19	19.49	155	13.58	7.82	2.3	2.7	27	0	66	.13	7	.8	1.1	UER
		7	14 3	59.20	19	17.89	155	21.62	5.13	2.8	3.3	26	0	119	.15	8	.8	1.1	SWR
		7	1425	34.82	19	19.70	155	9.46	8.70	1.8	2.5	21	0	86	.09	8	.7	.8	UER
		7	1550	5.14	19	22.09	155	1.06	5.51	2.3	2.2	19	0	172	.12	15	.9	1.4	MER
		7	16 6	59.13	19	20.33	155	20.36	2.89	1.9	2.5	15	0	92	.07	5	.5	2.4	SWR
		7	1616	30.59	19	20.06	155	8.54	8.57	1.8	2.5	20	0	77	.09	9	.7	.9	UER
		7	1635	15.95	19	21.00	155	5.04	4.26	2.0	2.5	18	0	99	.10	9	.7	1.5	MER
		7	1638	9.15	19	14.41	155	20.44	.00	1.9	2.7	18	0	159	.14	12	1.2	99.0	HLP
		7	17 9	2.07	19	21.33	155	15.59	7.71	1.4	1.7	19	0	66	.12	4	.8	1.4	KOA
		7	17 9	42.73	19	18.16	155	20.17	7.31	1.7	2.5	22	0	120	.12	7	.8	1.6	SWR
		7	1731	27.96	19	20.57	155	12.82	7.26	1.9	2.5	19	0	65	.11	6	.7	1.6	UER
		7	1750	43.33	19	29.71	154	49.45	7.75	3.0	3.0	19	0	276	.15	25	5.6	1.2	LER
		7	19 7	34.44	19	21.78	155	6.53	8.74	2.4	3.2	23	0	78	.13	9	.8	1.1	UER
		7	1956	43.81	19	24.61	155	2.62	5.99	2.3	2.6	23	0	120	.11	11	.8	1.8	MER
		7	2040	50.34	19	21.77	155	3.29	8.59	2.8	3.1	24	0	117	.14	12	1.1	.9	MER
		7	2144	45.08	19	19.79	155	12.07	7.87	1.7	2.4	22	0	84	.13	6	.8	1.6	UER
		7	2234	55.46	19	19.23	155	19.31	7.61	1.7	2.7	22	0	67	.12	7	.8	1.3	SWR
		7	2356	42.06	19	23.22	155	.90	6.39	2.4	2.6	23	0	159	.14	14	1.1	1.8	LER
		8	027	43.54	19	19.04	155	19.90	8.64	2.0	2.6	21	0	87	.10	6	.7	.9	SWR
		8	048	32.71	19	20.34	155	20.58	5.17	2.1	2.8	17	0	94	.10	6	.6	1.0	SWR
		8	1 8	55.35	19	28.39	155	8.92	28.44	3.2	3.0	20	0	172	.17	16	2.9	4.3	GLN
		8	224	51.12	19	18.69	155	20.79	9.58	3.2	3.2	29	0	107	.10	6	.6	.4	SWR
		8	357	44.67	19	26.80	154	53.04	8.31	2.4	2.9	16	0	243	.18	20	3.6	1.6	LER
		8	435	57.29	19	22.21	155	6.43	7.08	2.9	3.2	27	0	72	.12	9	.7	1.0	UER
		8	440	15.08	19	18.61	155	8.07	5.19	1.9	2.8	23	0	100	.12	9	.6	.7	POL
		8	521	41.52	19	20.85	155	17.69	7.80	1.9	2.4	24	0	38	.12	5	.6	.9	KOA
		8	6 8	53.74	19	18.24	155	23.27	4.33	1.7	2.6	23	0	113	.14	8	.8	1.3	SWR
		8	6 9	42.70	19	28.79	154	50.53	8.00	2.7	2.6	17	0	271	.16	23	5.0	1.4	LER
		8	620	14.37	19	22.23	155	18.52	12.11	2.9	3.5	29	0	67	.08	4	.5	.2	KOA
		8	7 3	15.34	19	19.60	155	19.20	8.32	1.9	2.6	23	0	57	.09	7	.5	.9	SWR
		8	748	5.28	19	17.91	155	21.14	6.97	1.7	2.5	18	0	120	.13	8	1.0	2.2	SWR
		8	749	34.52	19	21.04	155	4.98	6.35	2.3	2.8	20	0	97	.16	9	1.0	2.4	MER
		8	8 2	45.29	19	20.50	155	6.47	8.46	2.2	3.2	21	0	104	.09	7	.6	.7	UER
		8	829	9.15	19	22.50	155	6.03	7.70	2.6	3.2	23	0	78	.12	10	.7	1.3	UER
		8	855	53.61	19	28.62	154	50.47	8.48	3.0	3.4	21	1	274	.12	23	1.6	.8	LER
		8	9 2	53.10	19	21.30	155	15.55	13.56	3.4	3.7	29	0	66	.08	4	.5	.7	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	8	916	54.42	19	22.32	155	2.96	7.57		3.4	18	0	125	.08	13	.7	1.3	MER
		8	10 8	39.58	19	22.29	155	2.27	7.64	3.6	4.1	23	0	143	.11	13	.6	1.3	MER
		8	1016	25.93	19	19.09	155	13.03	6.44	2.0	2.6	22	0	82	.11	8	.7	1.2	UER
		8	1034	27.34	19	29.00	154	53.98	9.80	2.4	2.3	17	0	252	.16	23	4.5	.8	LER
		8	1259	45.16	19	18.16	155	23.60	5.61	2.5	3.3	21	0	108	.15	9	.4	2.6	SWR
		8	1334	21.43	19	19.53	155	18.78	9.05	2.3	3.1	25	0	58	.11	7	.6	.7	KOA
		8	1526	43.69	19	19.95	155	6.96	4.84	3.4	4.0	21	0	145	.10	12	.9	1.0	UER
		8	17 3	26.11	19	21.62	155	3.03	7.41	2.1	2.7	19	0	125	.11	12	1.3	2.7	MER
		8	1733	48.05	19	20.63	155	17.71	8.18	2.0	2.3	25	0	47	.08	5	.4	.6	KOA
		8	1750	48.62	19	18.69	155	21.91	9.62	2.4	3.1	28	0	108	.15	8	.8	.5	SWR
		8	18 2	31.63	19	22.05	155	1.15	5.51	2.7	3.2	26	0	171	.15	15	1.2	2.5	MER
		8	1920	38.05	19	22.67	155	6.40	6.47	2.3	2.5	22	0	79	.14	10	.9	2.0	UER
		8	1925	55.80	19	19.26	155	12.33	7.28	2.0	2.4	26	0	91	.11	7	.6	.9	UER
		8	1947	31.87	19	21.96	155	6.89	9.53	3.2	3.3	23	0	76	.09	9	.6	.4	UER
		8	2036	34.92	19	19.96	155	19.57	6.45	2.2	2.7	21	0	61	.14	7	.9	1.9	SWR
		8	2129	.79	19	19.31	155	13.82	8.47	2.4	2.7	24	0	62	.11	6	.7	1.1	UER
		8	2133	45.83	19	21.11	155	6.18	9.30	2.6	2.6	25	0	93	.09	8	.5	.7	UER
		8	22 4	19.19	19	18.06	155	21.22	6.59	2.1	2.6	20	0	118	.13	8	.9	1.9	SWR
		8	2235	45.65	19	20.06	155	6.79	8.68	3.2	3.2	26	0	110	.11	7	.7	.5	UER
		8	2239	11.25	19	23.16	155	4.50	7.72	2.6	2.9	22	0	94	.11	12	.7	1.3	MER
		9	021	17.31	19	24.21	155	13.57	8.75	2.4	2.6	25	0	87	.10	6	.5	.8	GLN
		9	2 5	9.84	19	21.27	155	17.69	8.36	2.8	3.1	27	0	41	.12	4	.6	.8	KOA
		9	250	5.10	19	19.41	155	14.33	8.53	2.7	2.6	24	0	69	.11	6	.7	1.1	UER
		9	254	15.14	19	22.28	155	4.02	5.95	3.0	3.3	26	0	100	.13	11	.7	1.6	MER
		9	256	13.11	19	22.01	155	3.94	7.13	2.3	3.0	23	0	100	.15	11	1.0	1.9	MER
		9	512	10.16	19	17.25	155	21.97	7.25	2.7	3.2	24	0	124	.14	8	.8	1.9	SWR
		9	624	26.06	19	18.06	155	21.12	7.49	1.7	2.6	20	0	119	.11	8	.8	1.8	SWR
		9	7 2	.06	19	21.63	155	15.11	9.85	3.2	3.5	27	0	61	.09	4	.5	.5	KOA
		9	727	54.04	19	19.44	155	12.39	6.03	1.7	2.3	21	0	87	.12	7	.7	1.4	UER
		9	744	35.73	19	19.42	155	12.49	8.33	2.2	2.6	24	0	86	.12	7	.8	1.0	UER
		9	932	40.96	19	18.28	155	20.79	8.96	3.6	3.9	25	0	117	.09	7	.5	.8	SWR
		9	10 1	21.81	19	21.69	155	16.44	2.00	2.2	3.0	10	0	75	.16	5	1.5	.0	KOA
		9	10 8	52.66	19	16.57	155	22.32	5.90	1.8	2.5	22	0	130	.13	8	.9	2.7	SWR
		9	1018	8.34	19	21.40	155	7.25	8.48	4.4	3.1	22	0	79	.09	8	.6	.9	UER
		9	1044	11.52	19	21.88	155	3.02	8.38	2.8	3.6	17	0	125	.08	12	.7	1.0	MER
		9	1319	52.94	19	20.91	155	6.46	9.50	3.0	3.1	20	0	95	.09	7	.8	.5	UER
		9	1322	35.94	19	20.01	155	6.88	6.92	2.2	2.6	19	0	109	.08	7	.7	1.0	UER
		9	1334	36.95	19	20.74	155	48.95	10.85	3.0	2.7	29	0	112	.19	19	1.4	.5	KON
		9	1355	54.52	19	21.66	155	7.59	9.16	4.0	4.1	25	0	77	.11	5	.7	.5	UER
		9	14 7	44.41	19	22.44	155	3.75	6.17	2.4	2.9	16	0	106	.09	11	.7	1.1	MER
		9	1411	56.18	19	19.36	155	11.63	8.65	2.6	2.9	25	0	97	.13	7	.9	1.4	UER
		9	1715	58.65	19	21.12	155	1.63	7.07	2.5	3.0	16	0	180	.11	13	1.2	1.1	MER
		9	1726	39.16	19	27.81	154	51.65	8.18	2.6	2.7	19	0	267	.14	22	3.4	1.0	LER
		9	1813	38.89	19	20.09	155	19.29	6.62	1.5	2.4	22	0	54	.13	7	.8	1.6	SWR
		9	1822	24.89	19	18.97	155	9.91	4.30	2.4	3.2	18	0	109	.13	7	.9	1.2	POL
		9	2010	20.29	19	19.68	155	19.34	7.80	2.2	2.5	22	0	60	.15	7	.9	1.5	SWR
		9	2043	2.13	19	17.69	155	21.55	7.55	2.1	2.6	20	0	121	.14	9	.9	2.1	SWR
		9	2114	40.32	19	22.00	155	6.65	8.30	1.9	2.4	20	0	75	.08	8	.6	1.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	9	2210	15.05	19	20.50	155	11.83	7.61	2.3	2.6	22	0	74	.11	7	.7	1.4	UER
		10	050	43.39	19	19.47	155	13.53	6.32	2.0	2.5	21	0	67	.13	7	.8	1.7	UER
		10	138	46.50	19	17.72	155	22.12	7.73	1.9	2.6	24	0	119	.14	8	.8	1.3	SWR
		10	341	24.55	19	19.96	155	7.67	8.23	2.2	2.6	19	0	95	.09	6	.7	.9	UER
		10	6 6	59.44	19	22.00	155	5.45	8.29	2.0	2.4	24	0	76	.13	8	.8	.9	MER
		10	613	53.78	19	22.80	155	1.88	12.91	2.1	2.5	15	0	146	.21	11	2.7	.7	MER
		10	628	38.36	19	19.58	155	9.03	8.50	1.8	2.3	21	0	83	.09	9	.7	1.3	UER
		10	637	42.52	19	19.24	155	20.10	8.44	2.4	2.7	27	0	85	.15	6	.6	1.2	SWR
		10	7 7	1.29	19	21.48	154	58.21	2.92	2.3	2.9	16	1	219	.17	12	2.5	2.2	LER
		10	737	13.64	19	27.05	154	51.41	8.53	2.2	2.3	14	0	270	.18	22	5.4	1.4	LER
		10	913	48.85	19	20.78	155	17.63	6.70	2.2	2.4	16	0	65	.10	5	.8	1.4	KOA
		10	1011	11.71	19	19.47	155	9.98	10.80	2.2	2.5	14	0	135	.13	8	1.9	.6	UER
		10	1025	57.57	19	18.35	155	23.31	5.59	2.0	2.7	18	0	111	.14	11	.9	2.5	SWR
		10	1118	36.98	19	21.95	155	25.19	10.67	3.1	3.4	26	0	57	.14	10	.8	.4	HEA
		10	1152	32.68	19	21.01	155	5.94	9.57	3.4	3.8	25	0	96	.10	7	.6	.4	MER
		10	12 3	11.91	19	23.08	155	.57	7.11	2.5	2.8	22	0	166	.15	9	1.5	1.0	LER
		10	1224	52.78	19	19.70	155	11.99	7.89	2.2	2.6	23	0	86	.15	6	1.0	1.7	UER
		10	1351	47.57	19	23.79	155	4.07	6.62	2.6	3.1	22	0	101	.10	11	.6	1.2	MER
		10	1422	54.20	19	20.81	155	7.13	9.49	2.5	2.8	20	0	90	.08	8	.6	.6	UER
		10	1538	16.78	19	15.64	155	19.21	5.18	2.2	2.7	20	0	152	.16	10	1.0	1.4	HLP
		10	1543	16.88	19	20.06	155	12.03	9.85	4.0	4.0	26	0	79	.11	6	.7	.4	UER
		10	1623	48.58	19	19.02	155	20.11	8.51	2.4	2.9	26	0	91	.15	6	.9	1.1	SWR
		10	1855	26.44	19	20.93	155	2.52	8.47	2.4	2.7	16	0	162	.08	12	.8	1.1	MER
		10	2116	32.39	19	27.55	154	51.54	8.18	2.3	2.5	18	0	268	.16	22	4.4	1.1	LER
		10	2237	6.07	19	19.85	155	5.55	6.83	2.6	2.9	21	0	133	.06	9	.5	.7	MER
		10	2343	8.04	19	20.58	154	59.57	8.52	2.3	2.6	21	0	213	.12	13	1.8	1.1	LER
		10	2350	57.64	19	20.16	155	8.65	8.43	2.9	3.1	25	0	74	.13	9	.9	1.0	UER
		11	0 9	58.65	19	20.37	155	7.25	8.22	2.1	2.4	20	0	96	.12	8	1.0	1.4	UER
		11	040	19.10	19	19.40	155	19.19	8.71	2.4	2.4	21	0	60	.13	7	.8	.9	SWR
		11	045	50.46	19	23.29	154	59.13	5.40	2.5	2.6	24	1	183	.11	9	1.1	1.1	LER
		11	156	58.20	19	20.71	155	16.47	6.92	1.4	2.2	17	0	74	.09	5	.6	1.1	KOA
		11	246	53.68	19	24.28	155	13.36	8.98	2.7	2.7	26	0	87	.12	6	.5	.8	GLN
		11	311	14.54	19	20.82	155	7.34	7.50	2.3	3.0	20	0	87	.09	8	.6	.9	UER
		11	316	34.24	19	29.05	154	46.94	9.57	2.6	2.9	21	1	286	.12	29	3.5	.4	DIS
		11	350	11.31	19	21.05	155	4.48	8.75	3.1	3.2	22	0	94	.11	9	.8	1.1	MER
		11	541	19.06	19	21.90	155	7.13	8.87	3.2	3.5	26	0	73	.09	8	.6	.8	UER
		11	723	32.63	19	26.83	154	52.87	8.19	2.5	2.7	19	0	248	.12	20	2.4	1.0	LER
		11	738	48.32	19	27.25	154	51.65	8.92	2.4	2.7	21	0	268	.15	22	3.5	1.0	LER
		11	824	13.01	19	28.34	155	13.99	22.29	2.3	2.3	24	0	54	.13	11	1.0	2.7	DEP
		11	826	14.46	19	20.74	155	17.72	8.69	1.8	2.3	19	0	48	.06	5	.5	.7	KOA
		11	827	4.44	19	20.92	155	18.31	7.73	1.4	2.1	17	0	55	.05	5	.4	.8	KOA
		11	9 9	40.76	19	27.28	154	53.70	8.47	2.3	2.6	22	0	220	.18	18	3.0	1.2	LER
		11	924	35.20	19	27.24	154	52.47	7.76	2.4	2.6	15	0	262	.13	21	3.3	1.4	LER
		11	938	37.76	19	22.53	155	5.65	9.67	2.2	2.8	18	0	80	.11	7	1.0	3.7	MER
		11	1047	41.20	19	24.27	154	57.95	6.40	2.3	3.0	22	2	184	.13	12	1.0	1.6	LER
		11	1117	27.57	19	25.47	154	57.58	4.44	2.4	3.0	15	0	173	.12	12	1.2	.9	LER
		11	1215	55.62	19	21.49	155	15.44	8.97	3.4	3.7	24	0	63	.11	4	.6	.8	KOA
		11	1310	43.12	19	21.41	155	3.70	7.06	3.3	3.8	24	0	101	.10	11	.6	1.0	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	11	1314	51.64	19	20.78	155	3.45	6.92	2.0	2.6	18	0	117	.16	10	1.7	1.6	MER
		11	21 3	17.52	19	22.28	155	6.68	8.48	2.4	2.8	21	0	76	.10	8	.8	1.3	UER
		11	2353	27.17	19	20.64	155	17.64	8.00	1.9	2.7	21	0	42	.10	5	.6	.8	KOA
		12	0 6	11.45	19	21.35	155	13.06	9.01	2.3	2.8	23	0	56	.11	6	.7	1.0	UER
		12	041	4.79	19	18.88	155	21.26	7.81	2.6	3.2	23	0	104	.17	7	1.0	1.8	SWR
		12	447	34.10	19	21.07	155	17.41	11.91	2.4	3.1	28	0	42	.09	4	.6	.2	KOA
		12	735	10.84	19	20.18	155	8.57	8.06	2.2	3.0	23	0	75	.11	9	.7	1.0	UER
		12	825	13.67	19	20.22	155	16.82	8.24	2.5	2.9	25	0	82	.12	5	.7	1.1	KOA
		12	933	6.02	19	19.50	155	12.55	6.70	2.3	2.9	19	0	83	.14	7	.9	2.0	UER
		12	11 2	37.43	19	21.97	155	.54	6.25	2.8	3.4	22	0	183	.14	16	1.5	1.2	LER
		12	1129	59.17	19	20.22	155	4.96	7.16	2.4	2.7	21	0	125	.10	8	.6	.9	MER
		12	1151	32.79	19	19.77	155	17.53	8.27	2.1	2.8	20	0	85	.07	6	.5	1.0	KOA
		12	1229	15.09	19	20.86	155	17.74	8.22	2.3	3.0	21	0	40	.08	5	.5	.7	KOA
		12	1327	49.70	19	20.35	155	19.07	7.98	2.3	2.9	19	0	48	.08	6	.5	1.1	SWR
		12	1328	52.21	19	18.98	155	21.00	8.48	1.8	2.7	20	0	100	.11	7	.7	1.1	SWR
		12	1421	23.44	19	17.40	155	22.26	3.86	2.5	3.2	22	0	121	.19	8	1.1	2.3	SWR
		12	1424	55.33	19	20.93	155	17.59	7.47	1.6	2.5	17	0	95	.11	5	1.0	1.4	KOA
		12	1437	43.25	19	20.04	155	6.59	7.83	2.5	2.7	21	0	114	.08	7	.6	.9	UER
		12	1536	54.63	19	21.18	155	8.26	9.27	4.0	4.1	26	0	71	.11	9	.7	.5	UER
		12	1556	58.86	19	21.24	155	8.73	8.19	2.7	3.3	25	0	66	.12	8	.7	.9	UER
		12	1651	7.72	19	22.48	155	2.40	6.98	3.2	3.6	23	0	138	.09	12	.6	1.1	MER
		12	1753	32.33	19	19.11	155	13.95	7.40	2.3	2.5	24	0	66	.13	7	.8	1.6	UER
		12	1854	13.02	19	21.74	155	3.31	6.52	2.1	2.5	21	0	116	.09	11	.6	.9	MER
		12	20 9	38.02	19	18.09	155	20.96	7.49	1.7	2.5	22	0	119	.15	7	.9	2.1	SWR
		12	2043	18.61	19	22.09	155	6.45	9.22	2.6	3.0	23	0	74	.10	7	.6	.8	UER
		13	042	3.56	19	19.50	155	18.64	9.65	2.6	3.2	27	0	63	.12	7	.7	.5	KOA
		13	053	36.33	19	22.66	155	3.18	8.42	4.1	4.3	25	0	119	.12	12	.8	1.1	MER
		13	145	26.73	19	19.38	155	19.22	8.80	2.9	3.3	28	0	61	.11	7	.6	.8	SWR
		13	231	48.78	19	19.42	155	12.15	7.81	2.2	2.7	25	0	90	.12	6	.7	1.3	UER
		13	3 0	7.53	19	22.20	155	5.35	6.11	1.9	2.6	22	0	86	.13	8	.8	1.7	MER
		13	412	52.30	19	20.88	155	8.85	5.48	2.7	3.4	28	0	67	.13	8	.6	.7	UER
		13	5 0	54.81	19	21.12	155	10.98	8.94	2.8	3.4	25	0	79	.12	9	.8	1.0	UER
		13	526	51.48	19	22.29	154	58.68	5.61	2.2	2.6	25	0	202	.15	11	1.4	1.5	LER
		13	7 7	58.52	19	29.93	155	47.82	10.03	2.9	2.6	17	0	98	.17	21	1.5	.7	KON
		13	724	12.43	19	22.40	155	.61	6.59	2.3	2.6	24	0	175	.12	11	.9	1.2	LER
		13	757	37.90	19	17.47	155	21.53	5.51	2.3	3.1	26	0	124	.15	9	.8	2.4	SWR
		13	8 2	4.40	19	19.75	155	19.68	8.74	1.7	2.6	20	0	92	.14	7	.8	.8	SWR
		13	837	2.81	19	21.40	155	15.43	9.13	2.6	2.9	13	0	139	.08	4	.9	1.5	KOA
		13	1015	6.87	19	24.65	155	22.24	10.35	1.8	2.5	23	0	83	.08	9	.4	.5	UKF
		13	1117	43.01	19	53.21	154	31.92	7.28	3.4	4.1	29	0	317	.13	61	22.4	99.0	DIS
		13	1255	18.62	19	15.84	155	22.56	.95	2.0	2.6	19	0	155	.20	8	1.6	48.1	LSW
		13	1319	33.34	19	19.94	155	18.97	7.13	1.7	2.6	16	0	74	.11	7	.8	1.8	KOA
		13	1521	41.70	19	16.77	155	22.96	6.92	1.8	2.6	19	0	124	.13	8	1.0	2.3	SWR
		13	1551	25.29	19	22.31	155	5.47	6.43	2.2	2.5	24	1	85	.14	8	.7	1.3	MER
		13	1737	1.16	19	19.85	155	19.30	6.97	1.5	2.5	23	0	57	.14	7	.8	1.6	SWR
		13	20 2	13.66	19	18.25	155	20.50	8.87	2.6	3.1	28	0	118	.16	6	.9	1.2	SWR
		13	2137	49.57	19	20.59	155	8.11	8.61	2.2	2.7	20	0	79	.13	9	1.0	1.3	UER
		14	047	22.25	19	18.16	155	23.50	5.59	2.1	3.1	21	0	109	.12	9	.7	2.0	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	14	1 4	53.84	19	18.27	155	23.34	1.70	2.2	2.9	19	0	109	.12	8	.7	38.5	SWR
		14	135	1.04	19	18.59	155	23.57	5.17	1.7	2.6	20	0	106	.12	8	.7	.9	SWR
		14	245	14.67	19	20.76	155	4.12	5.83	2.4	2.8	25	0	100	.13	9	.8	1.5	MER
		14	430	.62	19	16.90	155	21.39	6.76	1.8	2.6	24	0	131	.14	9	.6	1.5	SWR
		14	432	28.72	19	16.92	155	21.39	7.66	2.2	2.8	25	0	130	.15	9	1.0	2.1	SWR
		14	540	43.06	19	20.16	155	6.48	8.62	2.1	2.5	23	0	112	.10	7	.8	.6	UER
		14	718	9.53	19	20.66	155	17.75	8.21	2.3	3.2	24	0	48	.11	5	.6	1.0	KOA
		14	959	51.84	19	22.35	155	6.56	6.67	2.5	2.8	23	0	71	.15	8	.9	1.7	UER
		14	1048	49.26	19	20.64	155	6.53	9.41	3.4	3.6	28	0	100	.08	7	.5	.4	UER
		14	1147	7.38	19	21.87	155	15.13	9.21	3.0	3.2	27	0	58	.11	4	.7	.8	KOA
		14	1149	58.63	19	19.61	155	7.48	7.92	2.4	3.0	17	0	105	.10	8	.8	2.1	UER
		14	14 9	27.21	19	18.70	155	20.86	9.51	3.5	3.7	27	0	107	.12	7	.6	.4	SWR
		14	1557	18.82	19	17.14	155	21.65	8.18	2.5	3.3	26	0	127	.16	9	.9	1.5	SWR
		14	1617	51.02	19	20.17	155	16.71	9.12	2.8	3.0	25	0	84	.09	5	.5	.8	KOA
		14	17 5	54.09	19	20.24	155	7.12	8.79	2.5	2.8	20	0	100	.09	7	.8	1.0	UER
		14	2051	58.79	19	21.02	155	6.80	9.10	2.1	2.9	22	0	90	.07	7	.5	.6	UER
		14	2153	10.47	19	20.94	155	17.64	7.30	2.3	2.9	23	0	40	.10	5	.6	1.0	KOA
		15	752	49.07	19	21.43	155	25.27	9.41	2.2	2.9	25	0	68	.10	10	.6	.7	HEA
		15	9 3	28.48	19	17.18	155	22.41	6.81	1.8	2.3	21	0	123	.14	8	1.0	2.4	SWR
		15	924	11.25	19	19.23	155	13.51	8.24	2.5	2.8	23	0	69	.10	7	.7	1.3	UER
		15	948	24.37	19	19.27	155	10.30	3.66	2.5	3.3	16	0	103	.11	7	.8	1.7	UER
		15	1256	45.60	19	20.85	155	17.65	8.36	2.5	2.8	22	0	40	.09	5	.6	.9	KOA
		15	1323	56.66	19	21.49	155	15.25	8.82	2.8	3.2	18	0	63	.10	4	.6	.6	KOA
		15	1425	.83	19	23.70	154	58.16	6.96	3.0	3.3	22	2	189	.15	11	1.1	1.8	LER
		15	2034	45.92	19	21.18	155	7.02	9.49	2.4	2.6	22	0	85	.10	8	.7	1.0	UER
		15	2058	48.90	19	18.86	155	20.12	8.16	2.2	2.6	24	0	96	.14	6	.8	1.1	SWR
		15	2235	51.63	19	21.22	155	13.57	8.34	2.7	3.0	24	0	53	.14	7	.8	1.4	UER
		15	2242	24.42	19	21.08	155	2.68	8.94	2.6	3.1	17	0	143	.07	12	.7	1.3	MER
		16	147	26.52	19	22.19	155	6.77	9.22	2.8	3.3	21	0	76	.08	9	.5	.6	UER
		16	239	30.55	19	19.47	155	12.66	6.90	1.7	2.3	20	0	82	.11	7	.8	1.7	UER
		16	240	48.77	19	19.55	155	12.90	6.00	1.6	1.8	22	0	77	.11	7	.7	1.6	UER
		16	244	10.87	19	24.22	155	13.09	8.09	1.6	2.2	16	0	156	.10	6	.9	1.6	GLN
		16	246	38.58	19	18.46	155	20.58	2.18	1.4	1.4	14	0	112	.10	6	.7	21.7	SWR
		16	351	12.16	19	19.35	155	19.67	7.42		1.6	15	0	102	.09	7	.7	1.8	SWR
		16	4 8	11.26	19	19.74	155	15.24	7.11		1.5	17	0	93	.06	6	.5	1.1	KOA
		16	433	44.21	19	19.63	155	6.75	6.68		2.2	20	0	121	.10	7	.8	1.5	UER
		16	436	45.97	19	17.19	155	20.02	7.91	1.5	1.5	18	0	133	.08	8	.7	1.4	SWR
		16	457	19.18	19	19.66	155	12.59	6.14		.4	12	0	80	.05	7	.5	1.5	UER
		16	511	46.06	19	20.37	155	9.77	6.80		1.7	17	0	99	.11	7	.8	1.7	UER
		16	529	49.32	19	21.45	155	14.91	7.54	1.7	2.1	28	0	63	.13	5	.7	1.0	UER
		16	543	17.18	19	24.97	155	12.88	7.29	3.1	3.1	29	0	91	.13	7	.7	1.1	GLN
		16	559	7.02	19	27.88	154	52.27	8.69		1.0	12	0	264	.15	21	4.1	1.3	LER
		16	622	56.89	19	21.14	155	12.91	12.13		1.0	13	0	75	.10	6	1.1	3.4	UER
		16	641	8.14	19	18.90	155	16.16	6.60		.9	13	0	122	.07	6	.6	1.4	KOA
		16	649	5.76	19	21.27	155	7.84	6.88	1.8	2.1	21	0	75	.10	9	.7	1.6	UER
		16	655	16.93	19	20.70	155	4.04	2.71		1.5	16	0	101	.15	9	1.0	3.0	MER
		16	714	20.31	19	24.05	154	57.72	8.76	2.4	2.0	21	1	190	.17	12	1.4	1.9	LER
		16	734	17.35	19	29.61	154	50.67	7.25		1.4	16	2	270	.13	23	2.5	1.0	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	16	735	35.43	19	17.84	155	21.35	6.61		1.9	17	0	120	.09	8	.7	1.6	SWR
		16	737	25.49	19	22.36	155	5.73	7.01	1.9	2.3	20	0	81	.13	7	.9	1.7	MER
		16	753	41.25	19	20.47	155	7.62	7.67	1.9	2.3	20	0	88	.09	8	.7	1.0	UER
		16	759	23.80	19	25.39	155	15.97	12.18	1.5	1.5	20	0	116	.13	4	1.1	.5	LPC
		16	8 8	41.62	19	18.02	155	21.57	7.18	1.7	2.1	22	0	116	.14	8	.9	2.0	SWR
		16	925	24.87	19	19.02	155	20.27	8.80	2.5	3.1	25	0	93	.14	6	.9	1.2	SWR
		16	1138	45.27	19	18.34	155	23.72	2.32	1.7	2.2	15	0	141	.14	9	1.0	8.3	SWR
		16	1140	22.77	19	20.86	155	9.84	8.84	1.8	2.3	17	0	98	.06	7	.6	.9	UER
		16	1355	11.34	19	22.34	155	5.80	8.88	2.7	2.9	20	0	98	.07	7	.5	.6	MER
		16	1616	50.34	19	19.37	155	12.48	7.89	2.8	2.9	28	0	87	.14	7	.8	1.2	UER
		16	1619	40.80	19	23.24	155	24.24	9.97	2.4	2.7	26	0	62	.10	8	.6	.3	UKF
		16	1629	18.65	19	21.12	155	13.29	8.65	1.7	2.6	18	0	61	.09	6	.7	1.5	UER
		16	1749	18.28	19	20.01	155	19.25	8.28	2.6	3.3	22	0	54	.13	7	.8	1.5	SWR
		16	1827	22.18	19	20.73	155	17.91	7.44	1.8	2.6	17	0	58	.06	5	.4	.8	KOA
		16	20 8	22.87	19	19.34	155	11.89	6.82	2.3	2.9	22	0	95	.12	6	.8	1.5	UER
		16	2310	30.85	19	21.49	155	8.15	9.34	2.4	3.0	20	0	79	.08	9	.6	.9	UER
		16	2327	24.76	19	19.42	155	18.98	8.94	1.9	2.5	21	0	53	.10	8	.6	.9	KOA
		17	0 7	4.31	19	19.48	155	11.14	7.99	2.1	2.5	23	0	97	.10	7	.7	1.3	UER
		17	017	37.49	19	20.89	155	6.54	8.15	2.5	2.7	21	0	95	.10	7	.7	1.0	UER
		17	040	25.81	19	26.68	154	50.98	7.88	3.4	3.6	25	2	272	.17	23	2.6	1.4	LER
		17	048	42.66	19	20.63	155	17.92	6.21	1.4	2.3	18	0	57	.13	5	.8	1.7	KOA
		17	439	57.85	19	27.23	154	51.62	8.17	2.8	3.3	24	2	268	.13	22	2.0	.9	LER
		17	548	58.80	19	21.79	155	6.97	9.34	3.1	3.2	22	0	76	.10	8	.6	.7	UER
		17	736	40.00	19	23.26	155	4.00	7.82	2.0	2.5	16	0	102	.08	10	.7	1.4	MER
		17	834	2.12	19	20.29	155	13.81	6.80	1.6	2.2	23	0	82	.13	6	.8	1.5	UER
		17	954	30.16	19	21.75	155	15.56	9.41	3.8	3.9	28	0	60	.09	4	.5	.6	KOA
		17	1116	31.03	19	12.39	155	27.18	4.86		2.4	19	0	118	.18	18	1.3	2.1	LSN
		17	1142	27.66	19	20.94	155	4.72	5.60	2.7	3.0	21	0	99	.12	9	.8	2.1	MER
		17	1437	21.34	19	20.85	155	2.85	8.59	2.8	3.2	15	0	136	.05	11	.6	1.0	MER
		17	18 7	58.53	19	19.71	155	13.29	7.06	2.7	2.9	24	0	69	.15	7	.9	1.8	UER
		17	1812	25.24	19	19.26	155	12.76	8.54	2.1	2.5	21	0	84	.09	7	.6	1.3	UER
		18	0 8	16.12	19	20.20	155	16.74	8.05	2.0	2.3	19	0	83	.07	5	.5	1.0	KOA
		18	357	14.95	19	20.49	155	7.09	9.24	2.1	2.5	20	0	96	.07	7	.5	1.0	UER
		18	514	17.75	19	19.61	155	12.59	6.48	1.9	2.5	24	0	81	.13	7	.8	1.8	UER
		18	535	11.79	19	20.07	155	8.08	8.33	2.4	2.7	23	0	85	.09	9	.6	1.0	UER
		18	547	45.21	19	17.19	155	22.28	5.82	2.2	2.5	21	0	123	.14	8	.9	2.6	SWR
		18	553	53.15	19	17.25	155	22.53	6.58	2.2	2.6	20	0	123	.13	8	.8	2.2	SWR
		18	7 6	49.53	19	20.41	155	17.69	9.04	2.4	2.6	22	0	62	.10	5	.6	.8	KOA
		18	715	6.88	19	20.42	155	12.89	7.03	1.9	2.5	19	0	66	.10	6	.7	1.3	UER
		18	721	2.48	19	28.58	154	51.92	8.26	2.4	2.6	18	0	308	.12	21	2.6	.9	LER
		18	811	21.25	19	19.46	155	14.09	7.70	1.6	2.5	19	0	66	.09	6	.6	1.2	UER
		18	818	57.28	19	22.30	155	7.04	7.95	2.4	3.1	19	0	85	.11	8	.8	1.9	UER
		18	1017	44.60	19	18.54	155	22.22	7.21	2.2	2.8	25	0	110	.16	9	.9	1.6	SWR
		18	1110	1.36	19	20.42	155	16.52	7.65	1.8	2.6	21	0	80	.09	6	.5	1.0	KOA
		18	1314	17.93	19	19.31	155	19.17	8.14	2.3	2.7	21	0	61	.12	7	.9	1.3	SWR
		18	1414	41.48	19	20.74	155	9.80	8.59	2.1	2.6	22	0	70	.11	7	.8	1.0	UER
		18	1425	39.15	19	19.24	155	12.34	5.89	1.7	2.4	18	0	91	.11	7	.8	2.2	UER
		18	1715	18.10	19	19.33	155	12.48	6.72	1.7	2.3	21	0	87	.14	7	.9	2.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	18	1815	54.21	19	19.58	155	12.40	7.05	2.2	2.6	24	0	84	.10	6	.6	1.4	UER
		18	1822	26.53	19	20.61	155	17.00	8.87	2.0	2.6	21	0	73	.13	5	.9	1.3	KOA
		18	19 2	29.84	19	17.45	155	21.54	4.94	1.7	2.6	20	0	124	.13	9	.8	1.4	SWR
		18	1916	30.51	19	13.66	155	22.79	9.06	2.4	2.9	23	0	156	.12	12	.9	1.3	LSW
		18	1953	42.68	19	21.99	155	7.00	7.64	2.5	2.8	22	0	76	.12	8	.8	1.2	UER
		18	2045	41.15	19	19.78	155	7.46	6.93	2.3	2.8	21	0	102	.14	8	1.0	2.4	UER
		18	2118	22.21	19	20.45	155	7.34	9.50	2.2	2.7	22	0	93	.15	8	1.2	.8	UER
		18	2243	20.56	19	24.34	155	16.65	.60	1.6	2.3	10	0	112	.09	4	.5	.2	SPC
		19	258	5.57	19	22.90	155	4.97	9.87	2.7	2.9	19	0	86	.10	9	.9	3.1	MER
		19	536	46.43	19	19.16	155	13.29	6.84	2.1	2.5	23	0	75	.09	7	.6	1.2	UER
		19	6 7	1.66	19	18.09	155	23.39	5.57	2.1	2.8	20	0	110	.11	8	.6	.8	SWR
		19	913	43.44	19	25.82	155	28.36	10.10	3.8	3.9	30	0	60	.14	13	.7	.5	UKF
		19	1355	37.21	19	15.67	155	16.12	5.72	2.9	3.2	23	0	190	.13	8	1.3	2.1	HLP
		19	14 3	25.33	19	19.24	155	19.11	8.47	2.4	2.6	27	0	60	.13	8	.7	.9	SWR
		19	1555	46.64	19	20.40	155	6.34	6.35	2.6	2.7	24	0	108	.12	7	.8	1.7	UER
		19	1642	22.41	19	18.45	155	20.73	8.87	3.1	3.3	30	0	113	.10	7	.5	.6	SWR
		19	18 4	16.25	19	26.01	155	16.54	17.11	3.1	3.2	25	0	97	.09	14	.7	1.2	DEP
		19	1857	51.59	19	19.77	155	19.71	7.45	2.3	2.8	22	0	67	.13	6	.8	1.4	SWR
		19	2024	39.19	19	22.82	155	2.83	9.36	2.5	2.8	20	0	126	.09	12	.7	1.1	MER
		19	2159	22.58	19	19.45	155	12.69	6.58	2.0	2.3	24	0	82	.13	7	.8	1.8	UER
		19	23 1	11.61	19	23.65	155	16.75	12.83	2.6	2.7	29	0	73	.08	3	.6	.2	LPC
		20	033	15.95	19	19.76	155	7.56	9.79	2.8	3.1	23	0	100	.11	8	.9	.5	UER
		20	412	38.16	19	20.39	155	6.60	8.80	2.2	2.4	22	0	105	.07	7	.5	.7	UER
		20	731	21.06	19	21.64	155	13.05	9.45	1.9	2.4	20	0	73	.10	6	.7	1.3	UER
		20	743	29.45	19	21.34	155	13.01	8.72	1.6	2.5	20	0	56	.10	6	.7	1.4	UER
		20	8 5	24.23	19	19.94	155	12.90	7.08	2.4	2.8	15	0	170	.07	7	.7	1.3	UER
		20	840	32.03	19	22.59	155	5.30	7.89	2.4	2.7	21	0	89	.09	8	.5	.9	MER
		20	1355	48.09	19	18.40	155	23.59	5.66	2.9	3.5	24	0	109	.18	9	.9	3.6	SWR
		20	1414	57.25	19	21.56	155	2.77	8.94	3.0	3.2	20	0	134	.10	12	.8	.9	MER
		20	1936	43.42	19	17.03	155	21.58	8.90	2.9	3.6	29	0	128	.17	9	1.0	1.6	SWR
		20	2330	44.52	19	22.83	155	1.71	6.62	3.4	3.8	29	3	149	.15	11	.8	1.2	MER
		21	028	21.74	19	16.76	155	21.96	6.95	1.8	2.4	23	0	130	.14	8	.9	2.2	SWR
		21	036	.07	19	24.08	155	24.08	9.15	2.2	2.5	25	0	65	.08	8	.4	.8	UKF
		21	122	35.96	19	21.94	155	15.06	9.19	2.3	2.5	20	0	58	.07	4	.5	.8	KOA
		21	642	40.11	19	20.20	155	11.86	8.29	2.0	2.4	21	0	78	.10	7	.7	1.1	UER
		21	821	4.13	19	22.12	155	15.46	5.32	2.3	2.6	20	0	56	.07	4	.4	.5	KOA
		21	1126	16.54	19	19.08	155	21.86	7.52	2.0	2.5	26	0	101	.16	8	.9	2.0	SWR
		21	1229	42.25	19	19.55	155	12.31	7.22	2.5	2.5	27	0	86	.15	6	.9	1.4	UER
		21	1257	52.19	19	20.94	155	4.43	5.76	2.2	2.7	24	0	97	.13	9	.8	1.9	MER
		21	1329	42.81	19	22.51	155	5.79	7.31	2.8	3.0	25	0	81	.13	7	.7	1.1	MER
		21	1340	21.74	19	21.52	155	5.86	8.01	2.6	3.0	23	0	85	.10	7	.7	1.0	MER
		21	14 0	4.87	19	20.77	155	6.60	7.93	2.3	2.8	26	0	97	.12	7	.7	1.2	UER
		21	1413	13.19	19	21.78	155	14.96	9.44	2.6	2.8	27	0	59	.12	4	.6	.8	UER
		21	1453	55.49	19	21.74	155	17.83	32.54	2.5	2.5	32	0	27	.09	4	.7	1.4	DEP
		21	1525	48.77	19	20.28	155	16.61	8.34	2.1	2.2	26	0	82	.10	6	.5	.8	KOA
		21	1612	37.08	19	19.60	155	18.66	9.63	2.7	3.0	30	0	61	.11	7	.6	.4	KOA
		21	1745	59.76	19	17.38	155	21.16	9.65	3.1	3.5	28	0	126	.17	8	1.0	.6	SWR
		21	18 1	52.76	19	20.57	155	17.71	8.79	2.3	2.6	29	0	51	.10	5	.5	.8	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	21	2259	7.98	19	19.23	155	13.77	7.46	2.4	2.6	28	0	64	.17	7	.9	1.4	UER
		21	2321	29.94	19	19.16	155	11.97	7.61	2.5	2.8	27	0	98	.14	7	.9	1.2	UER
		22	143	59.49	19	20.43	155	19.69	6.83	2.0	2.2	28	0	58	.16	6	.8	1.7	SWR
		22	649	38.91	19	19.23	155	12.24	9.07	2.9	3.1	27	0	93	.14	7	.9	1.0	UER
		22	651	47.38	19	19.50	155	12.49	8.35	2.4	2.4	27	0	84	.14	7	.9	1.2	UER
		22	916	36.46	19	27.69	154	51.61	9.42	2.9	3.2	26	0	266	.15	22	2.6	.8	LER
		22	10 1	45.09	19	20.56	155	6.75	6.84	2.5	2.4	24	0	99	.16	7	1.1	1.8	UER
		22	1312	8.29	19	18.86	155	21.91	9.52	2.7	3.1	25	0	105	.13	8	.7	.6	SWR
		22	1328	58.85	19	23.08	155	26.05	9.27	2.5	2.5	25	0	50	.14	11	.8	1.2	UKF
		22	1539	43.52	19	19.02	155	14.00	5.92		1.2	17	0	109	.12	7	.9	2.1	UER
		22	1540	25.12	19	21.66	155	1.90	5.85	2.1	2.6	22	0	161	.18	13	1.4	2.1	MER
		22	2128	55.16	19	14.43	155	9.51	7.37	2.6	3.2	25	0	194	.16	14	1.3	1.5	POL
		22	2134	55.52	19	22.88	155	5.98	9.13	2.6	2.8	24	0	72	.10	8	.6	.8	MER
		22	2227	35.48	19	27.85	154	52.30	8.74	2.8	3.0	24	0	264	.18	21	3.2	1.0	LER
		23	058	.80	19	20.95	155	13.36	9.53	2.7	2.9	26	0	56	.12	6	.6	.6	UER
		23	1 4	30.75	19	15.47	155	9.67	9.58	2.3	2.7	24	0	185	.12	14	1.2	.4	POL
		23	133	12.56	19	23.56	154	59.45	5.79	2.3	2.5	26	1	175	.16	9	1.3	1.7	LER
		23	151	16.65	19	20.31	155	7.33	9.79	2.8	3.3	24	0	96	.09	8	.7	.4	UER
		23	350	55.80	19	20.52	155	7.72	9.68	3.6	4.0	29	0	86	.08	8	.5	.2	UER
		23	4 4	13.82	19	21.56	155	2.45	8.46	3.4	3.7	27	0	146	.12	12	1.0	.8	MER
		23	619	33.31	19	23.50	155	4.39	8.75	3.1	3.4	25	0	96	.10	10	.6	.7	MER
		23	958	37.42	19	12.68	155	26.32	10.69	3.0	3.0	28	0	142	.15	16	1.2	.4	LSW
		23	1051	21.26	19	21.45	155	6.33	8.29	2.8	3.0	22	0	85	.11	7	.8	1.4	UER
		23	1311	40.83	19	12.07	155	27.80	9.77	2.8	2.4	28	0	147	.19	17	1.5	.6	LSW
		23	1312	51.06	19	12.64	155	28.17	10.49	3.4	3.4	28	0	143	.16	16	1.2	.5	LSW
		23	14 4	53.56	19	21.81	155	1.35	7.98	2.8	3.0	25	0	171	.12	12	1.1	1.0	MER
		23	14 6	57.10	19	18.36	155	16.24	8.06	2.4	2.6	25	0	114	.10	5	.6	1.0	KOA
		23	1624	16.00	19	25.19	155	24.16	9.81	2.8	2.9	31	0	65	.14	9	.6	.4	UKF
		23	1641	40.11	19	25.66	155	17.88	12.77	3.8	4.2	36	0	39	.08	5	.4	.2	LPC
		23	1647	8.11	19	25.68	155	16.04	12.72	3.6	3.7	35	0	48	.08	5	.5	.2	LPC
		23	1727	42.26	19	26.14	154	54.26	8.54	2.7	2.7	27	0	216	.09	18	1.4	.5	LER
		23	1841	47.11	19	21.89	155	6.89	8.97	3.7	4.1	29	0	75	.08	8	.5	.4	UER
		23	2033	43.78	19	19.38	155	19.34	8.38	2.2	2.6	29	0	65	.14	7	.7	1.1	SWR
		23	21 5	14.34	19	24.15	155	15.95	1.46	2.0	2.9	17	0	113	.12	5	.6	.3	SPC
		23	2127	43.25	19	17.56	155	20.87	9.22	2.7	3.1	28	0	125	.14	8	.7	.9	SWR
		24	044	34.90	19	20.24	155	16.60	9.44	3.1	3.5	29	0	83	.10	6	.5	.6	KOA
		24	126	21.09	19	20.59	155	11.78	8.96	2.6	3.0	24	0	72	.13	7	.8	1.2	UER
		24	139	3.69	19	21.65	155	5.44	8.73	2.7	3.0	27	0	83	.12	8	.7	.7	MER
		24	319	12.94	19	21.42	155	3.68	7.52	2.5	3.3	21	0	102	.12	11	.9	1.3	MER
		24	431	39.36	19	16.55	155	12.50	9.93	3.5	3.8	28	0	156	.10	11	.8	.3	POL
		24	616	51.04	19	19.04	155	20.12	9.01	2.5	2.6	31	0	90	.13	6	.7	.7	SWR
		24	1158	9.82	19	17.31	155	21.25	6.76	2.4	2.8	29	0	127	.15	8	.8	1.4	SWR
		24	1335	40.83	19	20.82	155	11.45	8.41	2.4	2.7	24	0	73	.12	8	.8	1.2	UER
		24	1337	7.84	19	20.85	155	11.05	8.97	2.1	2.1	22	0	76	.10	8	.7	.9	UER
		24	1451	53.66	19	20.97	155	17.67	7.33	2.4	2.8	27	0	33	.12	5	.6	.9	KOA
		24	1643	45.79	19	26.10	154	56.23	7.84	3.1	3.3	28	0	182	.15	14	1.5	.9	LER
		24	1839	16.04	19	19.47	155	12.56	8.17	2.7	2.9	29	0	84	.15	7	.9	1.3	UER
		24	19 4	.29	19	23.85	155	23.58	8.73	2.5	2.8	30	0	69	.12	8	.8	.8	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	24	2016	31.80	19	24.72	154	56.82	8.53	2.4	2.3	21	0	192	.14	13	1.7	1.4	LER
		24	2043	14.26	19	20.64	155	6.79	8.97	2.4	2.7	21	0	97	.10	7	.7	1.4	UER
		24	2211	43.04	19	20.14	155	19.41	6.51	1.9	2.6	28	0	56	.17	7	.8	1.7	SWR
		25	132	44.43	19	11.76	155	27.74	9.54	2.6	2.7	24	0	149	.14	17	1.2	.5	LSW
		25	158	48.89	19	25.56	155	16.99	1.06	2.4	3.3	16	0	95	.16	5	1.2	1.2	SPC
		25	818	17.78	19	26.16	155	27.93	8.28	2.4	2.4	26	0	61	.14	13	.8	1.8	UKF
		25	1926	45.22	19	21.69	155	15.21	9.61	3.2	3.4	29	0	60	.10	4	.6	.4	KOA
		26	015	20.69	19	20.12	155	8.47	7.41	2.6	3.0	30	0	78	.12	9	.7	1.1	UER
		26	058	53.62	19	20.99	155	13.12	8.97	2.4	2.7	26	0	58	.12	6	.7	1.1	UER
		26	231	28.89	19	20.18	155	16.95	8.57	2.6	2.6	28	0	82	.12	5	.6	.9	KOA
		26	432	20.35	19	27.10	155	49.88	10.89	3.1	3.1	31	0	102	.14	21	.9	.4	KON
		26	524	31.11	19	22.31	155	5.22	6.52	2.8	3.1	22	0	81	.15	8	1.1	1.8	MER
		26	723	21.40	19	16.94	155	21.64	9.62	2.9	3.2	30	0	129	.14	9	.9	.5	SWR
		26	927	8.36	19	20.53	155	6.54	9.51	3.5	3.9	24	0	102	.09	6	.8	.5	UER
		26	1332	54.22	19	22.27	155	5.15	9.16	3.7	4.0	28	0	79	.09	8	.6	.5	MER
		26	1852	19.80	19	24.46	155	13.12	8.72	2.4	2.6	22	0	88	.10	6	.7	1.1	GLN
		26	1914	53.46	19	17.51	155	22.64	7.19	2.4	2.9	26	0	119	.17	10	.9	1.9	SWR
		26	2019	18.89	19	18.12	155	20.89	7.73	2.3	2.5	11	0	124	.16	14	1.5	3.0	SWR
		26	2051	32.83	19	18.46	155	21.31	8.40	2.5	2.9	13	0	147	.12	14	1.1	1.7	SWR
		26	2053	57.19	19	21.90	155	15.29	9.65	3.2	3.6	15	0	65	.09	20	.7	.4	KOA
		26	2251	27.55	19	21.74	154	59.85	5.86	2.9	3.1	13	0	243	.09	16	2.5	1.3	LER
		26	2255	24.94	19	56.47	155	48.14	8.47	4.2		15	0	179	.16	40	1.4	1.7	KOH
		27	232	52.42	19	17.19	155	22.15	10.12	3.7	4.0	14	0	132	.23	15	2.2	.9	SWR
		27	716	36.30	19	20.26	155	11.94	8.33	3.9	4.0	9	2	127	.10	23	1.0	2.8	UER
		27	15 3	26.49	19	18.91	155	21.81	8.59	2.8	3.3	30	0	104	.14	8	.7	.9	SWR
		27	1550	30.61	19	19.93	155	6.58	8.06	3.1	3.1	24	0	116	.11	7	.7	1.0	UER
		27	1559	41.51	19	25.89	155	16.22	1.00	1.9	2.2	11	0	174	.14	5	.9	.7	SPC
		27	1630	2.17	19	26.06	155	24.36	8.96	3.1	3.0	32	0	63	.14	9	.7	1.1	UKF
		27	23 0	46.72	19	18.74	155	21.95	7.86	2.4	2.9	30	0	107	.15	8	.8	1.1	SWR
		28	839	24.62	19	23.31	155	.87	6.56	2.4	2.7	23	0	158	.17	9	1.2	1.6	LER
		28	9 8	39.29	19	19.57	155	12.64	6.91	2.5	2.8	26	0	81	.15	7	.9	1.6	UER
		28	10 2	30.04	19	22.14	155	4.99	8.18	2.8	3.0	23	0	80	.12	9	.9	1.2	MER
		28	1133	9.11	19	19.78	155	7.75	4.13	2.3	2.6	22	0	96	.12	8	.7	1.2	UER
		28	1759	22.70	19	20.62	155	17.75	7.82	2.1	2.5	23	0	50	.10	5	.5	.9	KOA
		28	18 2	21.76	19	19.36	155	12.33	6.07	2.2	2.5	26	0	89	.15	7	.8	1.8	UER
		28	1823	54.60	19	18.87	155	20.19	9.78	2.5	2.7	30	0	96	.17	6	.9	.7	SWR
		28	1933	.59	19	29.62	154	49.46	9.65	2.8	2.9	27	1	276	.11	25	3.0	.3	LER
		28	2045	51.36	19	20.34	155	6.12	11.28	2.6	3.0	15	0	112	.07	7	.8	.5	UER
		29	228	57.69	19	21.10	155	6.16	8.87	2.6	3.0	24	0	93	.10	7	.6	.8	UER
		29	338	54.65	19	20.33	155	4.72	5.53	2.3	2.2	25	0	122	.10	8	.6	1.1	MER
		29	832	33.96	19	19.97	155	12.53	7.51	2.2	2.5	20	0	76	.11	6	.8	1.2	UER
		29	926	29.71	19	21.35	155	6.33	5.79	1.5	1.5	18	0	87	.11	7	.9	3.1	UER
		29	938	48.77	19	20.20	155	17.99	7.13		1.3	11	0	89	.10	5	1.0	2.0	KOA
		29	939	40.60	19	19.31	155	11.47	8.08		.7	12	0	99	.05	7	.5	1.4	UER
		29	956	17.75	19	17.16	155	23.57	.92		2.0	22	0	117	.18	9	1.0	45.1	SWR
		29	1016	35.91	19	18.71	155	19.81	5.49		1.4	18	0	96	.09	7	.6	.5	SWR
		29	1029	59.08	18	56.20	155	21.04	15.99	2.1	1.5	22	0	273	.11	40	5.0	41.1	DIS
		29	1034	35.75	19	18.76	155	8.04	8.20		.5	11	0	206	.25	11	4.8	6.8	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	29	1052	58.91	19	20.77	155	17.92	7.55	1.8	2.2	24	0	50	.12	5	.7	1.1	KOA
		29	1133	1.96	19	24.24	155	16.52	1.15	1.1	1.6	9	0	121	.13	3	.7	.5	SPC
		29	12 6	50.91	19	21.12	155	4.55	1.42		1.9	21	0	92	.14	9	.8	27.0	MER
		29	12 8	32.63	19	21.38	155	3.25	6.20	1.5	1.5	21	0	134	.12	11	.9	1.3	MER
		29	1212	21.37	19	22.41	155	5.19	7.03	1.4	1.5	16	0	117	.14	8	1.3	1.7	MER
		29	1230	36.46	19	23.52	155	23.92	9.37	2.4	2.5	29	0	65	.15	7	.8	1.1	UKF
		29	1246	39.29	19	20.05	155	8.94	6.66	1.8	2.0	19	0	74	.11	9	.8	1.8	UER
		29	1321	26.36	19	18.28	155	23.33	1.46	1.3	2.2	18	0	112	.13	8	.9	48.7	SWR
		29	1324	58.06	19	20.11	155	13.55	5.91		.9	13	0	67	.13	6	1.0	2.7	UER
		29	1325	46.51	19	24.71	154	57.22	7.13	2.2	2.3	21	0	188	.16	12	2.0	1.5	LER
		29	1434	6.06	19	18.52	155	20.05	6.96	1.5	1.3	15	0	107	.06	6	.5	1.0	SWR
		29	1445	47.05	19	19.42	155	11.75	6.68	1.2	1.6	19	0	94	.12	6	.9	2.1	UER
		29	15 7	52.98	19	21.02	155	10.03	6.93		1.2	16	0	67	.10	8	.9	1.7	UER
		29	1610	1.04	19	23.63	155	16.30	21.18	1.9	.8	23	0	88	.07	3	.7	1.1	DEP
		29	1610	25.83	19	20.93	155	5.64	1.97	1.9	2.2	21	0	100	.17	8	1.1	27.3	MER
		29	1615	23.86	19	20.17	155	13.24	7.39		.4	13	0	65	.10	6	.9	1.2	UER
		29	1618	18.20	19	21.80	155	6.26	5.67		1.6	20	0	86	.11	7	.7	2.0	UER
		29	1629	55.60	19	21.64	155	3.80	5.06		1.5	16	0	101	.12	11	.6	2.2	MER
		29	1642	26.95	19	19.41	155	14.43	7.53	1.3	1.6	18	0	95	.14	6	1.1	2.1	UER
		29	1649	41.30	19	19.87	155	9.50	8.57	1.8	2.2	23	0	83	.12	8	.8	1.0	UER
		29	1654	1.62	19	19.94	155	7.80	4.32		1.4	19	0	93	.12	9	.8	1.4	UER
		29	1723	32.36	19	21.86	155	13.19	11.01	1.4	1.6	16	0	66	.04	6	.4	1.0	UER
		29	1726	25.34	19	20.45	155	12.33	6.04	1.4	1.7	22	0	74	.12	7	.7	1.8	UER
		29	1749	10.16	19	23.80	155	15.15	2.01	1.6		12	0	94	.12	3	.9	99.0	SPC
		29	1749	27.10	19	23.62	155	15.66	.21	1.8	1.8	8	0	100	.13	5	1.1	1.1	SPC
		29	1759	17.85	19	18.00	155	12.14	4.68	.9	1.2	14	0	133	.09	9	.6	1.2	POL
		29	18 0	6.21	19	26.65	154	53.27	8.56		.8	14	0	247	.18	20	4.7	1.7	LER
		29	1835	17.32	19	26.22	154	54.54	8.48		1.2	19	2	210	.15	17	2.2	1.1	LER
		29	1856	59.27	19	23.13	155	4.68	7.05		1.6	21	0	101	.15	9	1.0	1.5	MER
		29	1910	7.74	19	23.45	154	59.54	5.81		1.4	21	0	175	.14	9	1.2	1.5	LER
		29	1927	52.07	19	24.29	155	16.13	1.52	.6	1.4	10	1	131	.06	3	.5	.2	SPC
		29	1929	25.42	19	20.60	155	13.32	7.97		1.3	16	0	60	.06	7	.4	1.0	UER
		29	1934	28.07	19	17.03	155	23.70	.42		2.0	22	0	118	.18	9	1.1	75.8	SWR
		29	1945	2.48	19	20.63	155	13.18	7.81		1.5	22	0	63	.12	6	.8	1.3	UER
		29	2019	34.56	19	21.18	155	13.19	8.82	2.1	2.4	26	0	56	.11	6	.7	1.0	UER
		29	2026	16.97	19	20.15	155	6.55	9.15	2.9	3.3	26	0	111	.09	7	.6	.5	UER
		29	2037	15.52	19	19.71	155	7.51	5.59		2.0	18	0	102	.11	8	.8	1.8	UER
		29	2039	55.34	19	20.19	155	6.51	8.81	2.8	3.1	25	0	111	.09	7	.6	.6	UER
		29	2130	36.33	19	23.06	155	5.06	8.64	2.5	2.5	22	0	85	.13	9	.8	1.1	MER
		29	2139	55.76	19	20.41	155	9.87	8.08		1.1	16	0	76	.06	7	.5	1.1	UER
		29	2141	37.92	19	25.84	154	56.34	7.62		1.3	17	0	184	.16	14	2.1	1.5	LER
		29	2149	50.50	19	20.22	155	17.36	6.52	1.5	1.6	23	0	66	.13	5	.7	1.1	KOA
		29	22 0	37.58	19	19.47	155	9.89	7.65	1.4	1.8	22	0	95	.14	8	1.0	2.1	UER
		29	2257	17.57	19	19.88	155	8.58	8.80	2.3	2.6	21	0	77	.09	9	.6	.8	UER
		29	2311	5.26	19	21.44	155	4.95	5.90		1.4	16	0	86	.15	9	1.2	3.1	MER
		29	2333	23.08	19	21.66	155	6.05	6.43		2.0	20	0	82	.12	7	.9	1.7	UER
		29	2338	28.87	19	21.82	155	6.80	6.04	1.6	1.7	19	0	76	.12	8	.8	1.9	UER
		29	2359	41.79	19	20.74	155	11.24	8.77	1.8	1.6	19	0	82	.06	8	.5	.9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	30	055	19.67	19	20.40	155	17.75	7.84		1.4	16	0	65	.07	5	.6	1.1	KOA
		30	116	30.74	19	19.89	155	13.65	6.83		.6	14	0	71	.11	6	.9	1.8	UER
		30	119	2.29	19	18.14	155	22.46	8.16		1.8	22	0	113	.11	6	.7	1.3	SWR
		30	131	50.49	19	20.09	155	20.90	3.82	.8	1.5	13	0	138	.09	6	.7	2.9	SWR
		30	143	29.30	19	20.67	155	12.45	7.46	2.2	2.5	27	0	67	.15	7	.8	1.0	UER
		30	215	53.24	19	20.26	155	9.76	6.82		1.5	16	0	78	.07	7	.6	1.3	UER
		30	226	41.66	19	19.64	155	19.18	6.43		1.4	16	0	83	.08	7	.6	1.3	SWR
		30	253	56.40	19	19.83	155	8.64	3.82		1.7	20	0	76	.17	9	1.0	1.9	UER
		30	259	1.40	19	20.45	155	15.45	4.47		1.2	15	0	63	.12	6	.7	1.4	UER
		30	3	1 59.37	19	21.16	155	7.90	5.31		1.4	18	0	76	.14	9	.9	1.2	UER
		30	312	13.65	19	20.54	155	18.28	7.49		1.5	15	0	65	.08	5	.6	1.3	KOA
		30	329	20.02	19	22.73	155	6.13	6.91	1.9	2.3	22	0	75	.13	8	.9	1.5	UER
		30	332	23.87	19	19.09	155	13.40	5.99		1.6	19	0	73	.10	7	.7	1.7	UER
		30	334	44.77	19	25.41	155	.51	8.72		1.8	16	0	183	.36	11	5.6	2.8	LER
		30	355	53.76	19	27.09	154	53.85	8.40		1.0	14	0	217	.17	18	3.5	1.8	LER
		30	411	24.59	19	25.00	155	25.85	7.66		1.5	25	0	55	.14	10	.7	1.7	UKF
		30	420	20.38	19	23.21	155	4.46	6.29		1.7	20	0	105	.16	10	1.1	1.6	MER
		30	421	36.54	19	22.75	155	4.97	7.62		1.6	17	0	95	.09	9	.6	1.4	MER
		30	422	32.13	19	20.57	155	7.78	6.84		2.0	22	0	85	.15	9	1.0	2.4	UER
		30	423	58.85	19	23.02	155	5.28	6.27	1.9	1.8	21	0	88	.11	8	.7	1.1	MER
		30	426	17.25	19	20.64	155	13.47	7.03		1.3	13	0	61	.05	7	.4	1.3	UER
		30	442	23.92	19	22.25	155	8.64	8.75		1.4	17	0	92	.08	9	.7	1.0	UER
		30	448	18.94	19	19.60	155	11.82	8.37		1.2	13	0	90	.07	6	.7	1.6	UER
		30	450	10.58	19	19.49	155	8.06	4.51		1.1	14	0	142	.12	11	1.0	1.9	UER
		30	451	3.08	19	17.73	155	21.63	4.29		1.4	20	0	121	.17	9	1.0	2.0	SWR
		30	512	8.28	19	17.90	155	22.25	5.90		1.2	24	0	116	.15	8	.8	2.3	SWR
		30	512	35.26	19	17.85	155	22.25	7.69	2.2	2.4	30	0	117	.16	8	.9	1.2	SWR
		30	518	53.97	19	21.32	155	19.10	2.33	.6	.4	9	0	82	.09	6	.5	12.4	SWR
		30	532	.52	19	27.30	154	52.65	9.31	1.9	1.2	18	2	257	.19	20	2.8	1.1	LER
		30	543	49.64	19	20.21	155	9.59	7.54		1.1	14	0	78	.10	8	.9	1.9	UER
		30	553	19.77	19	20.73	155	11.05	7.75		1.5	19	0	80	.11	8	.8	1.4	UER
		30	6	1 5.76	19	22.56	155	25.02	10.19	1.2	1.2	14	0	60	.05	10	.4	1.7	UKF
		30	636	38.34	19	20.05	155	8.77	6.45	1.2	.9	14	0	118	.11	9	1.1	2.3	UER
		30	640	30.84	19	21.55	155	3.56	6.55		1.4	17	0	122	.12	11	1.1	1.7	MER
		30	643	38.00	19	25.95	155	29.75	9.45		1.1	15	0	64	.13	13	.9	3.0	UKF
		30	645	.33	19	21.23	155	9.55	7.50		1.1	15	0	77	.11	8	.9	1.6	UER
		30	653	50.41	19	21.27	155	14.28	6.74		1.5	20	0	58	.15	6	.9	1.9	UER
		30	724	10.29	19	21.66	155	15.27	8.80		.6	14	0	61	.08	4	.7	1.6	KOA
		30	815	10.91	19	20.21	155	5.99	5.62	2.3	2.4	23	0	117	.14	8	.9	2.8	MER
		30	818	13.60	19	22.08	155	26.94	8.17	1.7	1.7	24	0	59	.13	10	.7	1.6	UKF
		30	821	24.14	19	23.67	154	58.74	8.54	2.8	2.7	24	0	182	.15	10	1.7	1.2	LER
		30	824	58.75	19	20.12	155	19.78	6.69	1.7	2.3	28	0	63	.15	6	.8	1.4	SWR
		30	920	40.84	19	22.59	155	6.09	9.21	3.6	3.1	25	0	74	.11	7	.6	.7	UER
		30	922	19.90	19	21.59	155	6.11	4.59	2.5	2.4	17	2	83	.22	7	1.0	2.9	UER
		30	1032	16.74	19	19.99	155	19.81	7.42	1.9	2.5	27	0	65	.15	6	.8	1.3	SWR
		30	1344	27.34	19	27.65	154	51.45	9.05	2.6	2.4	24	0	269	.14	22	3.0	.9	LER
		30	1613	34.37	19	23.21	155	16.41	1.89	2.0	2.5	16	0	56	.11	5	.6	.4	SPC
		30	1647	52.95	19	20.12	155	9.04	8.70	2.2	2.5	25	0	74	.11	8	.7	.9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	30	17 9	38.82	19	19.69	155	4.56	2.59	2.8	3.2	24	0	152	.15	9	1.1	1.8	MER
		30	1752	7.32	19	28.11	154	51.00	9.00	2.4	2.3	21	0	270	.15	25	5.9	1.0	LER
		30	22 4	47.96	19	28.26	154	50.68	7.82	2.6	2.4	19	0	271	.20	25	6.0	1.6	LER
		31	431	48.87	19	16.75	155	22.11	8.88	2.9	3.3	26	0	129	.14	8	.8	.7	SWR
		31	6	7 57.45	19	21.49	155	8.52	8.78	2.3	2.8	25	0	80	.11	8	.7	.9	UER
		31	711	10.15	19	17.32	155	22.10	5.48	2.0	2.5	30	0	123	.20	8	1.0	1.4	SWR
		31	847	43.71	19	30.01	155	16.36	26.01	3.0	2.9	17	0	184	.09	12	1.4	2.2	GLN
		31	934	14.34	19	21.62	155	2.41	7.12	3.2	3.6	25	0	146	.13	12	.9	1.3	MER
		31	1337	58.84	19	20.46	155	6.72	9.24	2.6	3.0	24	0	102	.10	7	.7	.6	UER
		31	1358	16.60	19	21.29	155	11.41	9.12	2.5	2.8	22	0	78	.09	8	.6	.8	UER
		31	1559	2.42	19	21.09	155	11.44	7.68	2.2	2.6	25	0	69	.12	8	.8	1.2	UER
		31	1711	5.06	19	19.02	155	20.33	9.01	2.5	2.9	29	0	94	.16	6	.9	.9	SWR
		31	1742	.62	19	20.39	155	16.60	9.61	2.9	3.1	29	0	80	.09	6	.8	.4	KOA
		31	1927	12.18	19	24.41	155	12.81	9.10	2.8	2.9	25	0	88	.10	7	.5	.8	GLN

TABLE 6. HVO SUMMARY LIST - MAG 3.5 AND ABOVE

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	1	029	5.59	19	14.28	155	26.11	5.16	3.5		22	0	119	.18	15	1.4	1.6	LSW
		1	1 2	7.25	19	10.55	155	20.87	7.66	4.1		23	0	176	.18	15	1.6	2.8	HLP
		1	241	10.86	19	12.83	155	21.30	5.95	4.6		19	0	164	.15	13	1.3	3.1	LSW
		1	3 5	45.82	19	13.26	155	22.40	9.30	3.5		20	0	164	.16	12	1.7	2.1	LSW
		1	911	35.42	19	14.46	155	22.64	9.49	3.5		27	0	151	.18	11	1.2	1.7	LSW
		1	946	45.66	19	14.40	155	24.31	5.81	4.3	4.1	22	0	140	.15	11	1.2	2.6	LSW
		1	1027	5.19	19	12.50	155	22.26	2.51	3.6	3.6	28	0	161	.17	12	1.1	3.1	LSW
		1	1033	47.74	19	19.12	155	13.90	11.30	3.4	3.8	20	0	127	.19	7	1.6	.7	UER
		1	1046	49.39	19	16.61	155	23.97	7.92	4.4	4.3	25	0	133	.15	15	1.1	1.7	SWR
		1	1128	54.56	19	10.95	155	21.80	7.74	4.1	3.9	27	0	171	.16	14	1.2	2.0	LSW
		1	1344	29.79	19	20.06	155	21.93	2.96	3.0	3.6	15	0	182	.19	11	2.1	2.9	SWR
		1	1410	58.84	19	19.78	155	21.33	3.32	3.1	3.6	19	0	151	.11	8	.8	2.2	SWR
		1	1535	18.87	19	17.72	155	14.04	10.29	3.7	3.6	25	0	172	.08	9	.8	.3	POL
		1	21 3	55.79	19	11.98	155	20.90	9.42	3.4	3.5	26	0	168	.17	16	1.2	1.8	HLP
		1	2117	52.68	19	17.43	155	24.44	1.78	3.1	3.9	23	0	110	.16	10	.9	28.2	SWR
		1	2137	20.36	19	26.00	155	27.66	9.63	3.6	3.7	32	0	44	.16	13	.8	.5	UKF
		1	2326	58.07	19	14.01	155	23.28	6.16	4.2	4.2	25	0	153	.12	11	.9	2.3	LSW
		1	2356	50.00	19	17.70	155	16.07	9.76	3.7	3.3	28	0	125	.10	5	.6	.4	KOA
		2	239	9.72	19	12.06	155	23.90	10.81	3.6	3.4	23	0	172	.12	14	1.4	.5	LSW
		2	327	43.12	19	13.04	155	23.19	6.15	5.0	4.7	24	0	158	.19	12	1.5	3.8	LSW
		2	339	53.43	19	11.25	155	22.45	9.68	3.6	3.5	18	0	194	.08	17	1.2	.4	LSW
		2	4 8	23.05	19	16.63	155	24.58	8.44	3.4	3.5	26	0	132	.14	12	.9	1.5	SWR
		2	825	29.20	19	20.43	155	20.28	3.22	2.9	3.7	27	0	66	.12	5	.5	1.5	SWR
		2	1148	16.63	19	19.95	155	19.68	2.60	2.8	3.5	20	0	63	.13	6	.7	3.2	SWR
		2	1533	19.51	19	19.76	155	21.26	1.02	2.6	3.6	26	0	86	.14	7	.6	1.2	SWR
		2	1548	36.81	19	11.20	155	22.19	8.21	3.5	3.7	23	0	188	.11	14	1.2	1.9	LSW
		3	145	50.39	19	10.22	155	23.08	9.86	3.9	.1	30	0	171	.19	16	1.5	.9	LSW
		3	333	39.83	19	13.14	155	24.42	9.46	3.4	3.7	27	0	151	.15	13	1.0	1.3	LSW
		3	732	49.30	19	12.26	155	21.72	9.62	4.9	4.7	26	0	164	.17	12	1.4	.8	LSW
		3	811	42.43	19	14.63	155	23.43	8.89	3.4	3.8	26	0	144	.16	10	1.1	1.6	LSW
		3	814	46.08	19	13.01	155	23.00	9.73	3.5	3.5	25	0	163	.13	12	1.2	.7	LSW
		3	9 9	35.27	19	16.90	155	22.49	10.32	3.3	3.6	27	0	125	.17	7	1.1	.7	SWR
		3	1027	9.55	19	14.45	155	22.68	5.80	3.5	3.9	28	0	151	.15	11	.9	2.3	LSW
		3	1117	28.94	19	15.39	155	22.09	10.12	3.8	3.9	26	0	144	.12	9	1.0	.4	LSW
		3	1153	10.10	19	19.28	155	21.29	3.36	3.1	3.5	24	0	95	.11	7	.6	1.7	SWR
		3	1247	8.91	19	14.56	155	22.33	8.30	3.5	3.6	28	0	152	.14	11	1.0	1.6	LSW
		3	1630	9.44	19	17.45	155	43.06	15.50	3.7	2.8	5	0	355	.23	48	97.8	97.8	HEA
		3	2035	52.38	19	20.27	155	7.65	8.98	4.4	4.2	26	0	91	.10	8	.7	.8	UER
		4	213	28.10	19	14.45	155	23.27	4.89	3.7	3.8	27	0	147	.15	11	.9	1.2	LSW
		4	358	15.22	17	52.96	155	41.40	71.81	3.7		15	0	336	.40	164	84.9	84.4	DIS
		4	15 2	26.61	19	14.47	155	22.28	10.26	3.7	3.8	26	0	153	.11	11	.8	.6	LSW
		4	1532	5.22	19	14.89	155	22.39	9.70	5.0	4.8	28	0	144	.16	10	1.1	.7	LSW
		4	1610	31.55	19	13.31	155	23.10	5.39	3.4	3.5	22	0	162	.11	12	.9	1.1	LSW
		4	1613	18.24	19	13.92	155	21.94	7.26	3.5	3.5	26	0	153	.17	12	1.3	2.6	LSW
		4	1622	57.97	19	17.18	155	22.89	8.69	3.0	3.5	26	0	121	.16	8	1.1	1.5	SWR
		4	1624	53.85	19	15.48	155	20.90	4.93	3.2	3.6	27	0	146	.17	10	.9	1.4	HLP
		4	1650	36.82	19	13.44	155	22.21	5.71	3.0	3.7	18	0	173	.10	19	1.4	3.0	LSW
		4	1928	3.14	19	13.57	155	24.94	9.25	3.9	3.9	26	0	141	.13	13	1.1	1.2	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JAN	5	048	39.62	19	13.59	155	23.28	6.02	4.1	4.1	24	0	155	.12	11	1.0	2.4	LSW
		6	1747	2.90	19	16.61	155	24.05	8.68	4.5	4.3	27	0	119	.18	10	1.1	1.7	SWR
		8	552	50.23	19	15.32	155	20.55	7.73	4.1	4.0	26	0	152	.14	10	1.0	1.4	HLP
		8	813	31.33	19	14.62	155	20.38	7.88	3.5	3.9	24	0	157	.13	11	.9	1.3	HLP
		17	13 9	9.13	19	17.92	155	23.61	5.44	3.0	3.7	23	0	110	.13	11	.8	1.0	SWR
	FEB	7	646	52.37	19	14.85	155	32.72	9.26	3.6	3.9	30	0	67	.18	13	1.0	1.3	LSW
		20	1440	44.87	19	25.57	155	35.98	3.49	3.5	3.8	26	0	94	.16	20	1.0	1.8	MOK
		21	1119	40.47	19	21.51	155	6.48	9.29	3.4	3.6	23	0	139	.09	12	.7	.8	UER
	MAR	10	014	12.67	19	25.53	155	28.29	9.61	4.0	3.8	31	0	60	.14	13	.7	.4	UKF
		26	10 6	7.73	19	27.23	155	35.47	.80	4.4	4.2	25	0	83	.17	4	.9	1.4	MOK
		29	1456	26.36	19	17.15	155	22.57	4.48		4.7	17	0	123	.17	7	1.1	2.7	SWR
	APR	4	13 9	55.86	19	19.24	155	13.69	10.75	3.9	3.9	24	0	66	.10	7	.8	.4	UER
		4	1335	17.35	19	19.22	155	13.64	10.38	3.5	3.7	27	0	67	.11	7	.6	.3	UER
		5	8 3	3.20	19	16.70	155	22.87	7.49	3.0	3.6	27	0	125	.13	8	.8	1.4	SWR
		5	1024	9.91	19	16.63	155	23.03	7.74	3.5	3.5	28	0	125	.18	8	1.1	1.8	SWR
		5	1156	58.28	19	17.02	155	22.64	7.08	3.8	4.0	26	0	123	.18	7	1.0	2.1	SWR
		6	1215	55.40	19	18.69	155	13.31	10.34	3.8	3.9	27	0	80	.09	8	.6	.3	POL
		7	424	56.27	19	24.85	155	36.13	4.70	3.9	3.9	22	0	240	.15	23	2.7	1.9	MOK
		10	1418	40.24	19	20.45	155	8.32	9.61	3.3	3.5	24	0	77	.10	9	.7	.5	UER
		17	2330	14.73	19	18.31	155	13.26	10.05	3.5	3.7	31	0	88	.10	8	.6	.3	POL
		18	322	28.98	19	18.56	155	13.35	10.21	3.7	3.8	30	0	81	.10	8	.6	.3	POL
		29	148	7.45	19	24.56	155	16.65	15.05	3.4	3.7	33	0	64	.10	2	.6	.9	DEP
		30	642	28.95	19	28.56	155	35.14	2.64	3.5	3.5	24	0	132	.16	17	1.1	2.0	MOK
	MAY	1	2118	4.06	18	2.67	155	43.69	59.22	3.0	4.0	29	0	327	.21	136	55.4	23.5	DIS
		7	1752	36.27	19	48.80	156	42.11	10.62	3.7	2.9	31	0	254	.20	103	7.1	99.0	DIS
		7	2130	6.81	19	28.44	155	35.50	.89	3.0	3.5	25	0	61	.13	3	.5	.5	MOK
		10	1932	51.91	19	20.26	155	7.58	9.49	4.0	4.1	29	0	92	.10	8	.7	.7	UER
		19	613	10.36	19	25.67	155	37.08	4.30	3.5	3.8	26	0	140	.10	18	.5	.9	MOK
		21	2232	58.18	20	18.72	155	36.78	23.10	4.7	4.3	16	4	191	.10	61	1.5	4.3	DIS
		24	22 4	45.75	19	24.88	155	25.06	10.82	3.5	3.6	31	0	41	.16	9	.9	.4	UKF
		28	2 1	55.86	18	.72	153	31.80	47.57	4.6	4.2	34	0	339	.12	220	78.6	27.0	DIS
		29	646	48.92	19	25.13	155	36.50	3.20	3.6	3.3	26	0	82	.16	8	.7	1.8	MOK
		29	1214	14.07	19	22.67	155	4.83	9.48	3.9	4.0	29	0	87	.11	11	.8	.7	MER
		30	2245	37.02	19	27.21	155	36.33	3.26	3.2	3.5	26	0	70	.15	4	.7	1.0	MOK
	JUN	5	811	3.14	19	19.10	155	48.28	9.57	3.6	2.2	29	0	169	.14	26	1.2	.4	KON
		7	1153	57.62	19	11.75	155	36.48	9.76	3.6	3.7	24	0	116	.15	24	1.2	.6	HEA
		8	532	28.96	19	20.58	155	7.99	9.52	3.4	3.6	28	0	81	.10	9	.7	.4	UER
		14	231	41.62	19	25.71	157	47.45	2.04	3.8	2.8	25	0	336	1.01	207	99.0	.0	DIS
		14	2247	6.82	19	25.90	155	35.97	2.44	2.9	3.5	26	0	51	.16	6	.7	2.2	MOK
		15	013	40.48	19	19.98	155	8.78	9.06	2.8	3.5	28	0	73	.11	9	.7	.8	UER
		21	922	21.03	19	24.74	155	36.87	.07	3.5	3.6	24	0	53	.17	9	.7	5.2	MOK
		21	1334	56.79	19	27.25	155	28.80	9.76	3.5	3.4	34	0	43	.13	11	.7	.3	UKF
		25	239	41.76	19	25.45	155	36.23	3.23	3.2	3.6	28	0	67	.15	16	.8	1.5	MOK
	JUL	4	1740	54.89	19	22.37	155	19.03	30.47	4.2	4.2	36	0	38	.10	5	.7	1.3	DEP
		5	2318	17.62	19	29.43	155	38.42	.00	4.3	4.3	11	0	213	.15	43	2.7	37.4	MOK
		5	2325	45.16	19	28.15	155	38.00	.20	4.2	4.2	7	0	210	.16	56	3.7	56.4	MOK
		7	539	48.74	19	32.28	155	27.78	6.27	3.6	3.4	30	0	69	.15	18	.8	2.3	NER
		7	828	22.09	19	32.17	155	27.65	6.94	3.6	3.3	17	0	159	.17	21	2.1	3.4	NER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	JUL	7	1447	42.51	19	32.38	155	29.52	2.75	4.7	4.6	30	0	119	.20	13	1.4	2.3	NER
		7	1839	52.34	19	31.79	155	27.61	5.43	4.2	4.3	33	0	67	.14	15	.8	1.9	NER
		7	2032	36.15	19	32.51	155	27.80	4.92	3.5	3.6	31	0	78	.15	15	.8	1.4	NER
		8	1	9 7.71	19	31.82	155	28.35	7.60	3.6	3.5	25	0	76	.17	14	1.1	2.5	NER
		8	1056	35.18	19	31.52	155	28.41	7.61	3.3	3.5	30	0	74	.16	13	1.0	2.5	NER
		8	20 7	2.68	19	32.29	155	27.89	7.56	3.9	3.8	33	0	69	.15	15	.9	1.6	NER
		9	349	27.55	19	32.18	155	28.06	7.77	3.4	3.6	31	0	82	.14	14	.9	1.5	NER
		9	547	42.70	19	32.57	155	27.95	8.56	3.9	4.0	30	0	80	.19	15	1.3	1.6	NER
		9	840	3.50	19	31.88	155	28.17	8.43	4.5	4.3	35	0	68	.15	14	.9	1.1	NER
		9	1334	23.80	19	32.51	155	27.50	7.41	3.4	3.7	32	0	69	.15	15	.8	1.6	NER
		18	2119	58.22	19	20.74	155	6.89	9.40	3.4	3.5	22	0	139	.10	11	.8	.7	UER
		22	1512	36.48	19	39.17	155	57.80	18.57	4.1	4.3	19	0	266	.15	42	9.2	8.3	KON
		26	2314	59.23	19	50.86	155	33.58	30.89	3.7	3.5	32	0	200	.15	34	1.8	4.9	KKU
		30	1331	22.36	19	31.98	155	36.00	9.93	3.9	3.8	26	0	128	.12	9	1.1	.4	MOK
	AUG	5	1551	36.72	19	16.35	155	22.98	7.45	3.0	3.6	15	0	148	.11	19	1.1	1.5	SWR
		5	1653	51.04	19	16.34	155	23.42	7.07	3.0	3.6	25	0	126	.15	9	.9	1.6	SWR
		18	7	8 57.14	19	38.56	156	1.21	37.42	3.9	3.8	25	1	226	.13	44	2.0	3.1	KON
		24	545	35.22	19	22.00	155	16.75	35.15	3.6	3.1	30	0	50	.11	4	1.1	1.9	DEP
		27	734	44.22	19	26.95	155	28.44	10.14	4.0	4.0	31	0	39	.15	12	.9	.4	UKF
		31	2	1 40.38	18	55.43	155	16.55	10.20	2.1	5.3	16	1	258	.10	42	3.3	.7	PPL
	SEP	3	22	4 16.39	18	52.42	155	15.08	10.89	3.0	3.7	24	0	256	.13	45	4.7	99.0	PPL
		10	834	13.49	19	19.79	155	8.56	9.17	3.6	3.8	13	0	177	.12	21	2.0	.9	UER
		21	1946	5.24	19	20.20	155	12.48	10.10	3.2	3.6	28	0	73	.11	6	.8	.3	UER
		22	210	7.08	19	23.78	155	26.10	9.39	3.4	3.6	26	0	49	.12	11	.6	.8	UKF
		28	039	.71	18	59.24	155	16.27	14.83	3.9	4.0	31	0	233	.11	35	1.9	16.2	PPL
	OCT	1	2134	39.58	19	19.16	155	13.47	10.27	3.7	4.0	29	0	71	.08	7	.5	.2	UER
		2	425	30.28	19	54.38	157	36.61	8.00	3.8		14	2	342	.17198		65.4	74.3	DIS
		2	1417	49.94	18	26.72	156	43.43	73.24	3.6		20	0	334	.12143		84.7	41.3	DIS
		8	18	5 38.01	19	16.70	155	23.91	8.41	3.4	4.0	29	0	119	.20	10	1.1	1.6	SWR
		14	1943	46.80	19	20.25	155	11.61	10.17	2.8	3.5	33	0	79	.10	7	.6	.3	UER
		19	1	5 46.54	19	8.53	155	33.47	31.38	3.5	3.6	30	0	133	.15	21	1.5	3.8	LSW
		22	1239	13.92	19	46.16	155	23.23	16.89	3.0	3.6	33	0	81	.10	30	.7	3.7	KKU
		22	1652	54.88	18	55.37	155	17.40	11.71	3.1	3.7	31	1	245	.09	41	1.8	3.8	PPL
		23	533	15.10	19	18.88	155	13.48	10.13	2.9	3.8	31	0	73	.10	7	.6	.3	POL
		26	2337	40.30	19	19.20	155	28.34	9.97	3.3	3.9	25	0	52	.11	9	.7	.3	HEA
		27	1935	52.87	19	18.92	155	13.37	10.20	3.7	3.9	29	0	76	.11	7	.8	.3	POL
		31	450	53.75	19	12.01	155	38.50	9.15	3.8	4.2	32	0	101	.18	22	1.1	1.1	HEA
	NOV	1	1022	3.97	18	55.88	155	17.62	11.87	3.2	3.6	29	0	243	.09	40	2.1	99.0	PPL
		6	2	5 28.24	19	20.42	155	18.74	30.39	4.6	4.7	36	0	53	.11	6	.8	1.5	DEP
		6	321	18.52	19	19.82	155	18.67	30.82	4.1	3.9	35	0	59	.09	7	.7	1.2	DEP
		6	4	2 56.32	19	20.01	155	18.70	29.53	3.8	3.9	36	0	57	.10	7	.7	1.3	DEP
		7	1912	14.39	19	21.91	155	16.68	27.96	3.2	3.6	36	0	53	.10	4	.7	1.2	DEP
		8	959	38.46	19	17.64	155	52.76	13.24	3.6	4.0	28	0	185	.11	27	1.2	2.2	KON
		10	126	29.98	19	21.49	155	2.16	8.87	4.3	4.6	28	0	203	.12	13	1.3	.8	MER
		11	6	9 12.26	19	21.55	155	15.53	9.59	3.1	3.6	31	0	63	.08	4	.4	.3	KOA
		13	23	2 4.91	19	21.49	155	3.56	8.83	3.7	4.2	31	0	161	.12	11	1.0	.6	MER
		14	123	25.71	19	20.41	155	20.47	32.05	3.7	4.0	32	0	68	.11	6	.8	1.8	DEP
		14	151	45.88	19	.08	155	29.35	35.47	3.2	3.6	31	1	212	.12	30	1.7	2.8	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	15	1255	21.24	19	19.20	155	13.41	10.68	4.4	4.4	29	0	72	.08	7	.5	.2	UER
		18	1310	2.02	19	22.53	155	3.75	8.66	3.1	3.6	30	0	106	.14	12	1.0	.7	MER
		27	1615	40.88	19	34.90	155	58.29	9.11	3.6	3.2	30	0	247	.16	23	2.6	.8	KON
		29	335	40.59	19	22.08	155	2.84	8.62		5.9	28	0	129	.13	12	1.1	.7	MER
		29	438	26.73	19	19.41	155	13.42	8.28	2.6	3.5	28	0	69	.10	7	.6	.7	UER
		29	447	40.06	19	20.90	155	.94	8.33		7.2	24	0	198	.13	16	1.6	1.1	LER
		29	834	56.13	19	22.75	155	5.21	.60	3.7	4.0	12	0	202	.11	11	1.7	41.6	MER
		29	842	12.78	19	20.41	155	4.70	5.96	4.3	3.9	13	0	118	.05	10	.5	.6	MER
		29	843	59.97	19	8.63	155	15.37	5.93	4.8	3.7	11	0	201	.19	26	4.1	4.9	PPL
		29	913	20.15	19	17.84	155	15.75	4.97	3.6	4.0	7	0	179	.11	8	2.1	3.2	KOA
		29	926	2.12	19	22.62	154	59.70	13.95	3.3	3.9	4	0	255	.04	17	54.6	32.8	LER
		29	951	10.14	19	20.85	155	9.09	9.86	3.8	2.9	19	0	166	.10	10	1.1	.4	UER
		29	10 0	45.48	19	23.44	155	3.23	5.99	3.7	2.9	16	0	179	.14	13	1.3	1.8	MER
		29	10 7	51.43	19	24.33	155	3.59	1.09		3.8	10	0	173	.16	12	1.5	53.0	MER
		29	1010	1.25	19	12.95	154	.28	8.40	3.5	1.8	6	0	347	.39	119	99.0	.0	DIS
		29	1019	5.18	19	21.49	155	15.56	9.57	3.7	4.0	20	0	70	.11	4	.8	.4	KOA
		29	1045	1.03	19	19.33	155	20.71	1.40	3.3	3.8	10	0	118	.12	6	1.2	.0	SWR
		29	11 1	9.09	19	19.33	155	6.90	7.80	3.5	4.0	15	0	125	.11	7	1.2	2.8	UER
		29	1151	38.86	19	20.38	154	58.73	1.41	3.0	3.8	6	0	277	.17	20	20.8	98.6	LER
		29	12 5	52.85	19	23.62	155	.49	12.06	3.2	4.1	7	0	177	.12	17	3.6	1.4	LER
		29	1222	27.54	19	16.04	155	21.93	8.34	3.4	3.8	20	0	142	.10	8	1.0	1.1	SWR
		29	1224	27.02	19	16.72	155	21.92	7.12	3.3	4.0	22	0	175	.15	8	1.3	1.9	SWR
		29	1228	12.88	19	19.72	155	20.56	2.90	3.1	4.1	17	0	88	.11	9	.7	2.6	SWR
		29	1245	35.45	19	15.67	155	15.41	6.75	2.8	3.9	13	0	191	.10	12	1.4	3.0	HLP
		29	1329	23.06	19	4.83	155	12.13	10.23	3.5	4.0	18	0	221	.13	30	2.6	.5	PPL
		29	1412	58.68	19	24.26	154	58.45	7.09	3.1	3.5	16	0	178	.20	20	3.0	2.1	LER
		29	1414	33.34	19	19.96	155	15.70	8.92	3.4	3.6	15	0	118	.15	9	1.4	1.2	KOA
		29	1442	45.09	19	23.19	155	1.33	7.11	4.1	4.3	11	0	258	.19	26	9.7	5.4	MER
		29	1526	45.66	19	20.58	155	4.31	7.37	3.0	3.5	16	0	110	.10	10	.9	1.0	MER
		29	1627	7.08	19	22.49	155	1.16	1.22	4.0	3.6	10	0	182	.12	18	2.0	46.6	MER
		29	1629	29.26	19	24.59	155	24.00	9.25	3.5	2.8	21	0	80	.15	8	.9	1.0	UKF
		29	1645	57.29	19	24.29	155	3.55	.33	3.0	3.9	15	0	108	.12	12	.9	73.6	MER
		29	1724	35.60	19	19.72	155	6.28	7.66		3.8	11	0	127	.12	8	1.7	1.6	UER
		29	1733	.91	19	19.23	155	6.45	8.08	3.5	3.3	16	0	138	.14	8	1.2	1.0	UER
		29	1739	22.38	19	24.01	155	.15	3.71	3.4	3.8	18	0	160	.11	15	.8	1.1	LER
		29	1745	18.17	19	23.83	154	59.03	5.76	3.9	4.0	18	0	177	.11	14	1.3	1.1	LER
		29	18 9	.96	19	16.93	155	20.22	9.63		4.0	19	0	137	.11	8	1.0	.4	SWR
		29	1823	37.61	19	16.64	154	58.36	10.69		4.2	18	0	246	.21	24	6.1	.9	DIS
		29	1837	50.70	19	23.22	154	59.25	5.83	3.7	3.1	22	0	182	.14	15	1.4	1.9	LER
		29	1852	56.32	19	25.97	155	6.61	.20	3.9	4.0	4	0	217	.08	57	7.6	99.0	GLN
		29	1856	38.54	19	22.49	154	52.87	7.19	3.8	3.7	16	0	247	.15	30	5.3	2.0	LER
		29	1935	31.48	19	13.37	155	23.07	3.59	3.5	3.3	20	0	153	.14	13	1.0	1.9	LSW
		29	2015	27.28	19	25.19	155	22.46	10.36	4.5	4.1	22	0	79	.13	9	.8	.6	UKF
		29	21 9	3.54	19	16.65	155	22.01	7.16	3.1	3.9	20	0	137	.14	8	1.0	1.4	SWR
		30	121	41.18	19	20.78	155	6.59	9.48		3.8	25	0	96	.09	7	.7	.5	UER
		30	2 6	31.74	19	14.10	155	23.97	7.60		3.6	24	0	147	.14	12	1.1	1.7	LSW
		30	3 1	31.67	19	20.75	155	9.18	8.85	3.7	3.7	22	0	67	.11	8	.8	.9	UER
		30	328	27.07	19	25.67	154	54.53	8.70	3.5	3.4	21	0	216	.12	18	1.9	.9	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	NOV	30	1047	14.49	19	21.59	154	56.70	2.83	3.2	3.7	13	0	267	.16	23	7.4	2.7	LER
		30	14 8	38.89	19	19.93	155	12.68	8.42	3.6	3.8	26	0	75	.11	6	.7	.8	UER
		30	1720	24.44	19	21.75	155	4.86	8.24	3.5	3.8	24	0	79	.12	10	.8	1.5	MER
		30	2057	18.34	19	22.59	155	2.97	5.97	3.7	4.2	29	0	124	.17	13	1.0	1.8	MER
		30	2240	42.06	19	19.81	155	3.53	4.89	3.7	3.9	30	0	157	.16	12	1.4	.9	MER
	DEC	1	0 2	25.07	19	14.42	155	17.50	6.76	2.9	3.5	23	0	171	.18	10	1.4	2.1	HLP
		1	041	35.47	19	24.44	155	3.50	.25	3.1	3.9	18	0	108	.22	12	1.5	98.0	MER
		1	431	19.37	19	19.86	155	7.49	.82	3.1	3.8	7	0	154	.04	11	.6	.0	UER
		1	10 9	55.20	19	23.43	154	58.71	8.73	3.7	3.9	24	1	186	.15	15	1.1	.9	LER
		1	1833	4.41	19	22.04	155	6.87	8.05	3.5	3.2	27	0	76	.11	9	.6	.7	UER
		2	015	48.11	19	21.73	155	15.30	9.17	3.6	4.2	29	0	60	.11	4	.5	.4	KOA
		2	1421	18.52	19	18.83	155	23.59	6.41	3.2	3.5	25	0	117	.13	9	.8	1.2	SWR
		3	453	58.64	19	25.79	155	23.37	9.84	3.5	3.4	21	0	47	.13	16	.8	.5	UKF
		3	5 5	36.55	19	19.34	155	11.41	10.05	3.8	4.0	19	0	172	.14	11	1.7	.4	UER
		3	538	1.04	19	23.62	154	59.07	6.19	4.2	4.2	19	1	192	.14	15	1.1	1.2	LER
		3	1119	23.04	19	21.66	154	58.97	5.23	4.0	4.2	10	0	207	.10	18	2.3	4.0	LER
		3	1250	22.98	19	22.32	155	1.75	6.89	4.2	4.2	22	0	187	.08	15	1.0	.8	MER
		3	2027	56.92	19	19.93	155	4.92	7.56	3.5	3.8	23	0	178	.08	15	.8	.5	MER
		4	059	2.17	19	23.91	154	58.83	4.78	3.8	4.1	12	1	228	.14	20	1.9	2.9	LER
		4	1 9	8.27	19	22.71	154	56.25	9.16	4.0	4.2	20	0	217	.18	19	2.9	1.3	LER
		4	1035	11.25	19	23.63	154	56.99	4.70	3.5	4.1	17	0	206	.11	17	1.6	1.3	LER
		4	1119	48.83	19	21.59	155	4.78	7.48	3.7	4.1	20	1	241	.12	15	1.9	.8	MER
		4	1139	10.05	19	21.01	154	57.79	6.38	3.5	4.1	24	0	213	.13	19	1.9	1.3	LER
		4	1421	32.83	19	26.43	154	52.04	8.64	3.7	3.9	26	1	266	.10	22	1.2	.5	LER
		4	1732	17.31	19	20.97	155	4.67	8.25	3.6	4.0	25	0	98	.13	9	.9	.9	MER
		4	21 4	31.33	19	22.66	155	6.17	7.97	3.1	3.6	26	0	75	.11	10	.5	.7	UER
		5	2 8	37.53	19	23.63	155	1.81	2.06	2.5	3.6	16	1	200	.18	14	1.5	4.4	MER
		5	10 9	8.54	19	22.01	155	15.14	9.56	3.3	3.7	27	0	57	.11	4	.5	.5	KOA
		5	1811	55.16	19	17.36	155	21.30	8.85	3.8	4.1	26	0	126	.14	10	.8	1.2	SWR
		6	137	59.09	19	23.80	154	58.99	6.79	3.0	3.5	24	0	178	.13	14	1.3	1.1	LER
		6	1310	46.44	19	22.75	155	1.88	7.43	3.1	3.6	24	0	167	.18	14	2.0	1.5	MER
		6	1910	8.98	19	20.21	155	7.33	9.53	3.0	3.8	25	0	97	.09	8	.7	.4	UER
		7	041	19.08	19	21.79	155	7.28	7.51	2.9	3.5	27	0	74	.10	8	.6	.9	UER
		7	347	20.88	19	21.66	155	15.45	9.97	3.3	3.8	29	0	61	.09	4	.4	.5	KOA
		7	13 9	22.46	19	16.47	155	12.11	6.22	3.3	3.7	25	0	159	.17	11	1.1	2.1	POL
		8	620	14.37	19	22.23	155	18.52	12.11	2.9	3.5	29	0	67	.08	4	.5	.2	KOA
		8	9 2	53.10	19	21.30	155	15.55	13.56	3.4	3.7	29	0	66	.08	4	.5	.7	DEP
		8	10 8	39.58	19	22.29	155	2.27	7.64	3.6	4.1	23	0	143	.11	13	.8	1.3	MER
		8	1526	43.69	19	19.95	155	6.96	4.84	3.4	4.0	21	0	145	.10	12	.9	1.0	UER
		9	7 2	.06	19	21.63	155	15.11	9.85	3.2	3.5	27	0	61	.09	4	.5	.5	KOA
		9	932	40.96	19	18.28	155	20.79	8.96	3.6	3.9	25	0	117	.09	7	.5	.8	SWR
		9	1018	8.34	19	21.40	155	7.25	8.48	4.4	3.1	22	0	79	.09	8	.6	.9	UER
		9	1044	11.52	19	21.88	155	3.02	8.38	2.8	3.6	17	0	125	.08	12	.7	1.0	MER
		9	1355	54.52	19	21.66	155	7.59	9.16	4.0	4.1	25	0	77	.11	8	.7	.5	UER
		10	1152	32.68	19	21.01	155	5.94	9.57	3.4	3.8	25	0	96	.10	7	.8	.4	MER
		10	1543	16.88	19	20.06	155	12.03	9.85	4.0	4.0	26	0	79	.11	6	.7	.4	UER
		11	541	19.06	19	21.90	155	7.13	8.87	3.2	3.5	26	0	73	.09	8	.6	.8	UER
		11	1215	55.62	19	21.49	155	15.44	8.97	3.4	3.7	24	0	63	.11	4	.6	.8	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1975	DEC	11	1310	43.12	19	21.41	155	3.70	7.06	3.3	3.8	24	0	101	.10	11	.6	1.0	MER
		12	1536	54.63	19	21.18	155	6.26	9.27	4.0	4.1	26	0	71	.11	9	.7	.5	UER
		12	1651	7.72	19	22.48	155	2.40	6.98	3.2	3.6	23	0	138	.09	12	.6	1.1	MER
		13	053	36.33	19	22.66	155	3.18	8.42	4.1	4.3	25	0	119	.12	12	.8	1.1	MER
		13	1117	43.01	19	53.21	154	31.92	7.28	3.4	4.1	29	0	317	.13	61	22.4	99.0	DIS
		14	1048	49.26	19	20.64	155	6.53	9.41	3.4	3.6	28	0	100	.08	7	.5	.4	UER
		14	14 9	27.21	19	18.70	155	20.86	9.51	3.5	3.7	27	0	107	.12	7	.6	.4	SWR
		17	040	25.81	19	26.68	154	50.98	7.88	3.4	3.6	25	2	272	.17	23	2.6	1.4	LER
		17	954	30.16	19	21.75	155	15.36	9.41	3.8	3.9	28	0	60	.09	4	.5	.6	KOA
		19	913	43.44	19	25.82	155	28.36	10.10	3.8	3.9	30	0	60	.14	13	.7	.5	UKF
		20	1355	48.09	19	18.40	155	23.59	5.66	2.9	3.5	24	0	109	.18	9	.9	3.6	SWR
		20	1936	43.42	19	17.03	155	21.58	8.90	2.9	3.6	29	0	128	.17	9	1.0	1.6	SWR
		20	2330	44.52	19	22.83	155	1.71	6.62	3.4	3.8	29	3	149	.15	11	.8	1.2	MER
		21	1745	39.76	19	17.38	155	21.16	9.65	3.1	3.5	28	0	126	.17	8	1.0	.6	SWR
		23	350	55.80	19	20.52	155	7.72	9.68	3.6	4.0	29	0	86	.08	8	.5	.2	UER
		23	4 4	13.82	19	21.56	155	2.45	8.46	3.4	3.7	27	0	146	.12	12	1.0	.8	MER
		23	1641	40.11	19	25.66	155	17.88	12.77	3.8	4.2	36	0	39	.08	5	.4	.2	LPC
		23	1647	8.11	19	25.68	155	18.04	12.72	3.6	3.7	35	0	48	.08	5	.5	.2	LPC
		23	1841	47.11	19	21.89	155	6.89	8.97	3.7	4.1	29	0	75	.08	8	.5	.4	UER
		24	044	34.90	19	20.24	155	16.60	9.44	3.1	3.5	29	0	83	.10	6	.5	.6	KOA
		24	431	39.36	19	16.55	155	12.50	9.93	3.5	3.8	28	0	156	.10	11	.8	.3	POL
		26	927	8.36	19	20.53	155	6.54	9.51	3.5	3.9	24	0	102	.09	6	.8	.5	UER
		26	1332	54.22	19	22.27	155	5.15	9.16	3.7	4.0	28	0	79	.09	8	.6	.5	MER
		26	2053	57.19	19	21.90	155	15.29	9.65	3.2	3.6	15	0	65	.09	20	.7	.4	KOA
		26	2255	24.94	19	56.47	155	46.14	8.47	4.2		15	0	179	.16	40	1.4	1.7	KOH
		27	232	52.42	19	17.19	155	22.15	10.12	3.7	4.0	14	0	132	.23	15	2.2	.9	SWR
		27	716	38.30	19	20.26	155	11.94	8.33	3.9	4.0	9	2	127	.10	23	1.0	2.8	UER
		30	920	40.84	19	22.59	155	6.09	9.21	3.6	3.1	25	0	74	.11	7	.6	.7	UER
		31	934	14.34	19	21.62	155	2.41	7.12	3.2	3.6	25	0	146	.13	12	.9	1.3	MER

Table 7. Felt earthquakes of magnitude ≥3.0

Jan 1-5 earthquake swarm following volcanic activity at Kilauea. Many hundreds of earthquakes felt in the Ka'u and Puna districts of Hawaii. Records obscured, only well-recorded, large events are listed.

Date	Time H	M	S	Magnitude	Felt report
Jan 1	01	02	06	4.1	Glenwood, Pahala, Volcano, Hilo
1	02	41	10	4.6	Captain Cook, Hilo, Pahala, Volcano Kamuela
1	03	05	45	3.6	Hilo, Pahala
1	05	18	12	3.5	Hilo, Pahala
1	09	11	35	3.6	Hilo, Pahala
1	09	46	45	4.3	Hilo, Volcano, Pahala
1	10	27	04	3.6	Hilo, Pahala
1	10	46	48	4.3	Hilo, Pahala, Puna
1	11	28	54	4.1	Hilo, Pahala
1	15	35	18	3.7	Hilo, Pahala
2	03	27	42	4.9	Volcano, Kamuela, Hilo, Pahala
2	03	49	07	3.0	South Kona, Hilo, Pahala
3	01	45	50	3.9	Hilo, Pahala, Volcano
3	07	32	49	4.9	Pahala, Glenwood, Kamuela, Volcano, Kealakekua, Captain Cook, Hilo
3	08	14	45	3.5	Pahala, Volcano
3	11	17	28	3.7	Volcano, Pahala
3	20	35	52	4.4	Keaau, Kealakekua, Kamuela, Hilo, Volcano, Pepeekeo, Glenwood, Pahala, Pahoa
4	02	13	27	3.8	Hilo, Pahala, Volcano
4	15	32	04	4.9	Volcano, Kamuela, Kealakekua, Hilo (Island-wide)
4	19	28	03	3.8	Pahala, Volcano
5	00	48	39	4.0	Pahala, Volcano, Hilo
6	17	47	02	4.4	Pahala, Volcano
8	05	52	49	4.1	South Kona, Volcano, Pahala
8	08	13	31	3.5	South Kona, Pahala
Feb 7	04	04	43	3.3	Volcano, Hawaii National Park
7	06	46	52	3.6	South Kona
19	15	42	48	3.2	Hilo
21	11	19	40	3.5	Hilo, Pahoa
Mar 10	00	14	12	4.0	Hilo, Captain Cook, Volcano, Mt. View, Pahala
16	20	57	58	3.2	Volcano
26	10	06	03	4.3	Mauna Loa Observatory, Hawaiian Volcano Observatory, South Kona, Pahala

Felt earthquakes of magnitude ≥3.0

Date	Time H	M	S	Magnitude	Felt report
Apr 4	13	09	55	3.9	Hilo, Pahoa
4	13	35	17	3.5	Kahuku, Hilo, Pahoa
5	10	24	09	3.5	Kahuku
5	11	56	57	3.8	Kahuku
6	12	15	55	3.8	Hilo, Hawaii National Park, Pohakuloa, Volcano
10	14	18	40	3.4	Volcano
11	06	22	24	3.3	Volcano
17	23	30	14	3.6	Volcano, Mt. View, Hilo
18	03	22	28	3.7	Volcano, Glenwood, Hilo
24	14	46	55	3.1	Kapapala
29	01	14	20	3.3	Kona
29	01	48	07	3.5	Glenwood, Keaau, Volcano
29	19	23	09	3.4	Kapapala
May 10	19	32	51	3.9	Hilo, Volcano, Kurtistown
21	22	32	58	4.7	Island-wide of Hawaii, Maui, Oahu
22	04	46	53	3.2	Kapapala
27	16	15	34	3.0	Kapapala
29	12	14	13	3.9	Volcano, Hilo, Pahoa, Kurtistown
Jun 7	11	53	57	3.7	Ocean View Estates
21	13	34	56	3.6	Volcano

Jul 5 earthquake swarm following volcanic activity of Mauna Loa. Many quakes were felt but only the well recorded, large events are listed.

Date	Time H	M	S	Magnitude	Felt report
Jul 4	17	40	55	4.1	Island-wide
5	23	18	18	4.3	Hilo, Volcano, Pahala, Kona
5	23	25	47	4.2	Hilo, Volcano, Pahala, Kona
7	05	39	48	3.6	Volcano
7	14	47	42	4.7	Southern parts of the island
7	18	39	52	4.2	Hilo, Volcano, Pahala, Kona
8	01	09	07	3.6	Pahala
8	20	07	02	3.9	Hilo, Volcano, Pahala, Kona
9	05	47	43	3.9	Hilo, Volcano, Pahala, Kona
9	08	40	03	3.4	Island-wide
18	21	19	58	3.4	Hilo
22	15	12	33	4.4	Kona
26	23	14	59	3.7	Kona
30	13	31	22	3.9	Waimea, Pahala, South Kona
Aug 5	07	36	39	3.3	Kapapala
18	07	08	56	3.9	Kona
24	05	45	35	3.6	Volcano
27	07	34	44	4.1	Volcano, South Kona, Keaau, Pahoa, Hualalai
Sep 10	08	34	11	3.5	Volcano, Hilo
21	19	46	05	3.2	Kurtistown, Hilo, Volcano

TILT INSTRUMENTATION

In addition to the seismic network, a network of spirit-level tilt stations (dry), borehole tiltmeters, and water-tube (wet) tilt stations is maintained. The network is located on the summits and flanks of Kilauea and Mauna Loa Volcanoes. In December 1975 the tilt network consisted of:

54 spirit level tilt stations (dry)

8 borehole tiltmeters

10 water-tube tilt stations (wet)

1 continuous recording Ideal-Arrowsmith tiltmeter

Dry and wet tilt stations are generally occupied at irregular intervals. Critical stations are measured more frequently than the entire network. Digital borehole tiltmeters data are telemetered by VHF radio and recorded at the observatory. An Ideal-Arrowsmith mercury-pool capacitor-type tiltmeter with a 1 m base is located at the Uwekahuna vault, and the analog signal is recorded at the observatory.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table .

Table 8.--Tilt Coordinates at Uwekahuna

Date (1975)	N-S	E-W
Jan 5	716	341
12	709	336
19	706	337
26	706	336
Feb 2	707	330
9	707	330
16	708	328
23	710	326
Mar 2	711	324
9	712	323
16	715	321
23	716	319
30	717	315
Apr 6	718	314
13	720	313
20	721	313
27	723	310
May 4	725	309
11	727	307
18	728	311
25	728	312
Jun 1	728	312
8	731	310
15	731	305
22	732	306
29	734	303

Table 8.--Tilt Coordinates at Uwekahuna (Continued)

Date (1975)	N-S	E-W
Jul 6	735	302
13	737	301
20	737	302
27	739	299
Aug 3	739	298
10	742	296
17	745	294
24	747	291
31	751	285
Sep 7	752	286
14	755	277
21	756	277
28	759	276
Oct 5	759	277
12	760	275
19	759	272
26	760	268
Nov 2	760	268
9	762	264
16	763	262
23	766	259
30	679	342
Dec 7	601	406
14	588	409
21	582	405
28	576	406

Table 9.--U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N. Deg. Min.	Long. W. Deg. Min.			
Tree Molds	TM	19 - 26.3	155 - 17.3		50.79	NS. and EW.
Sand Spit	SS	19 - 24.1	155 - 16.8		25.40	Equilateral triangle.
Keamoku	Kea	19 - 25.1	155 - 19.0		47.55	do
Ahua Kamokukolau	Kam	19 - 22.7	155 - 16.6		50.79	do
Kipuka Nene	KN	19 - 19.4	155 - 16.7		47.73	do
Hilina Pali	HP	19 - 18.2	155 - 18.6		47.73	do
Kapapala Ranch	Kap	19 - 20.5	155 - 23.8		50.79	do
Mehana	M	19 - 26.2	155 - 14.3		25.00	do
Uwekahuna	U	19 - 25.5	155 - 17.4		50.79	do
Uwekahuna Vault		19 - 25.4	155 - 17.6	Daily	3.48	NS. and EW.

Table 10--Tilt coordinates and changes at bases around Kilauea caldera. (See fig 10)

Tilt base	Date (1975)	Tilt N-S	Coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1975)
Uwekahuna (U)	14 Apr	742.7	268.0	14.23	N42.0°W	14 Jan
Tree Molds (TM)	14 Apr	565.5	485.8	5.11	N17.8°W	14 Jan
Sand Spit (SS)	15 Apr	947.1	743.5	9.25	N25.2°W	15 Jan
Keamoku (Kea).	16 Apr	751.3	271.3	9.10	N53.3°W	16 Jan
Ahua Kamokukolau (Kam).	15 Apr	465.9	603.2	14.49	S10.9°E	15 Jan
Kipuka Nene (KN)	17 Apr	256.7	517.9	1.09	S42.5°W	17 Jan
Hilina Pali (HP)	17 Apr	397.1	526.1	0.46	S35.0°W	28 Jan
Kapapala Ranch (Kap).	16 Apr	573.5	454.0	2.92	S43.2°E	16 Jan
Mehana (M)	14 Apr	620.3	592.0	1.41	N81.9°E	14 Jan

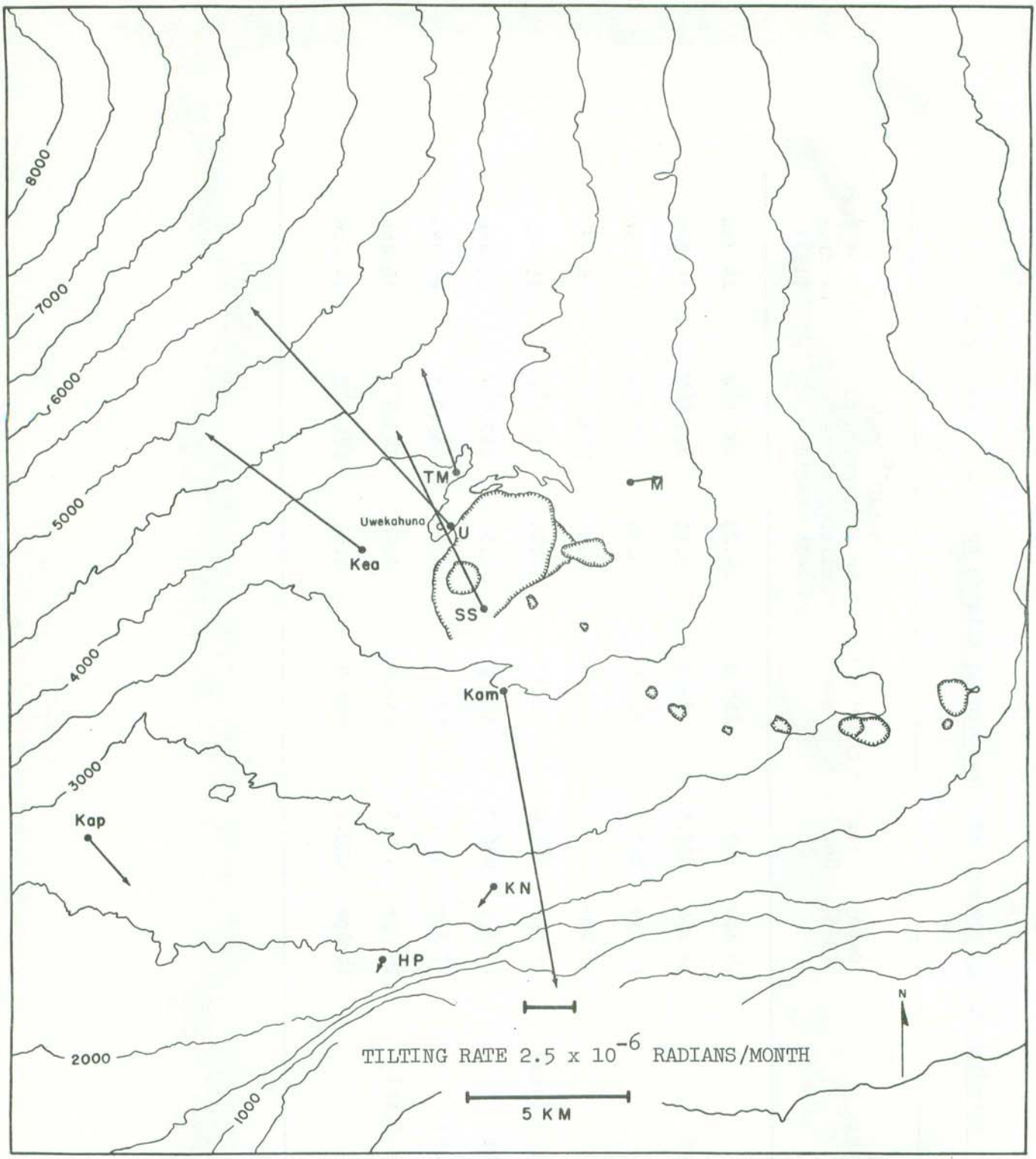

Figure 10 January to April 1975 tilting of the ground around Kilauea Caldera. The vector depicting tilt at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 9 for explanation of abbreviations.

Table 11. Tilt coordinates and changes at bases around Kilauea caldera. (See fig.11)

Tilt base	Date (1975)	Tilt Coordinates N-S	E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1975)
Uwekahuna (U)	15 Sep	788.2	233.0	11.17	N37.5°W	14 Apr
Tree Molds (TM)	17 Sep	592.3	478.1	5.34	N15.9°W	14 Apr
Sand Spit (SS)	19 Sep	1018.3	683.0	17.86	N40.3°W	15 Apr
Mehana (M)	17 Sep	627.1	603.7	2.59	N60.2°E	14 Apr
Keamoku (Kea)	15 Sep	781.6	225.3	10.88	N56.6°W	16 Apr
Ahua Kamokukolau (Kam)	16 Sep	352.7	605.2	21.09	S1.0°E	15 Apr
Kipuka Nene (KN)	22 Sep	252.2	517.0	0.88	S11.6°W	17 Apr
Hilina Pali (HP)	18 Sep	398.1	518.1	1.60	N82.9°W	17 Apr
Kapapala Ranch (Kap)	19 Sep	570.4	455.6	0.67	S27.5°W	16 Apr

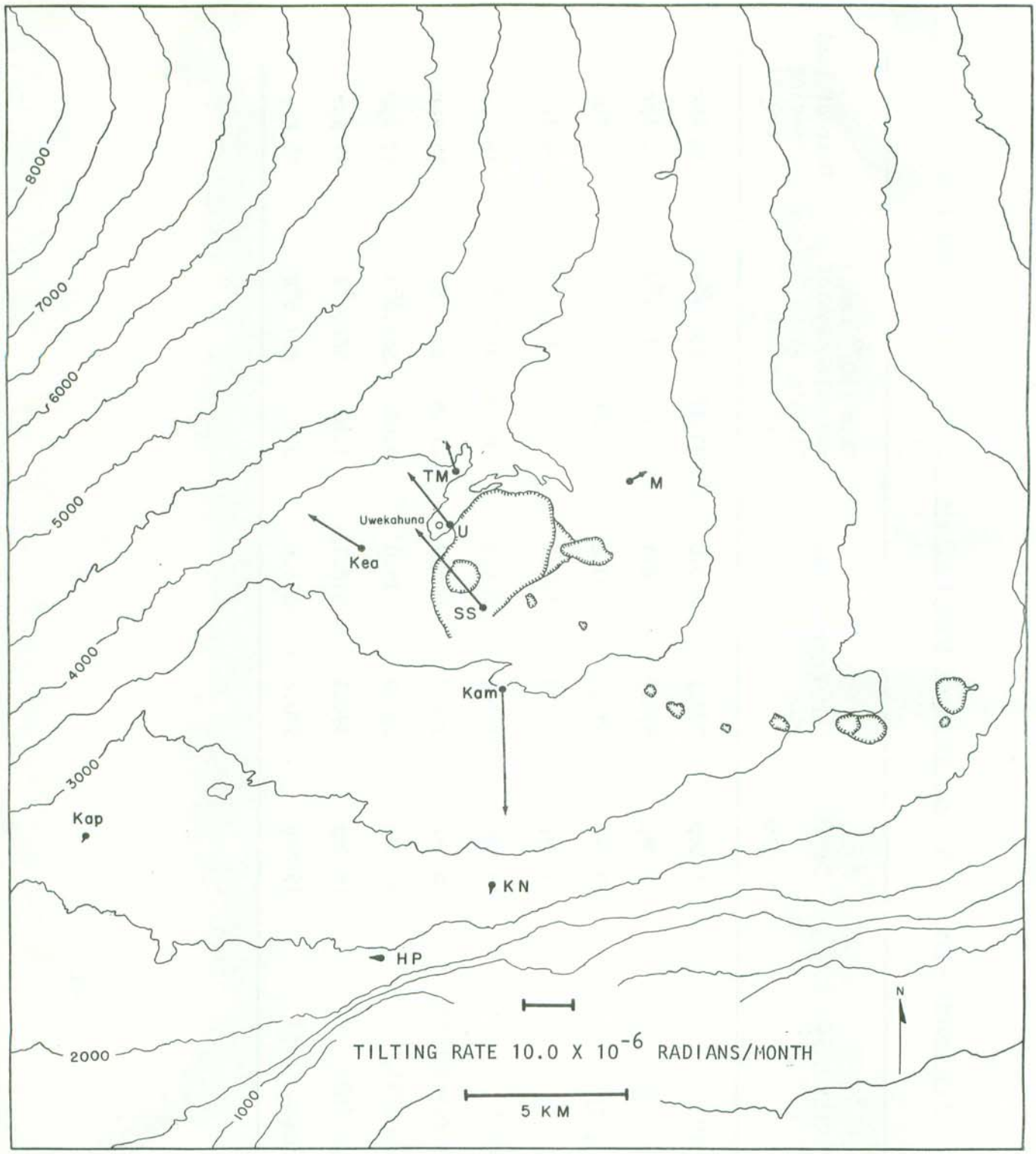

Figure 11 April to September 1975 tilting of the ground around Kilauea Caldera.

Table 12. Tilt coordinates and changes at bases around Kilauea caldera. (See fig.12)

Tilt base	Date (1975)	Tilt Coordinates N-S	E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1975)
Uwekahuna (U)	19 Dec	591.1	369.1	75.69	S34.6°E	15 Sep
Tree Molds (TM)	16 Dec	489.7	518.7	36.41	S21.6°E	17 Sep
Sand Spit (SS)	18 Dec	841.7	820.5	73.87	S37.9°E	19 Sep
Mehana (M)	16 Dec	562.0	562.0	25.52	S32.6°W	17 Sep
Keamoku (Kea)	17 Dec	600.9	480.2	100.80	S54.7°E	15 Sep
Ahua Kamokukolau (Kam)	18 Dec	656.2	560.5	98.96	N8.4°W	16 Sep
Kipuka Nene (KN)	15 Dec	141.2	589.7	47.40	S33.2°E	22 Sep
Hilina Pali (HP)	15 Dec	285.9	565.0	41.46	S22.7°E	18 Sep
Kapapala Ranch (Kap)	17 Dec	518.3	506.0	22.42	S44.1°E	19 Sep

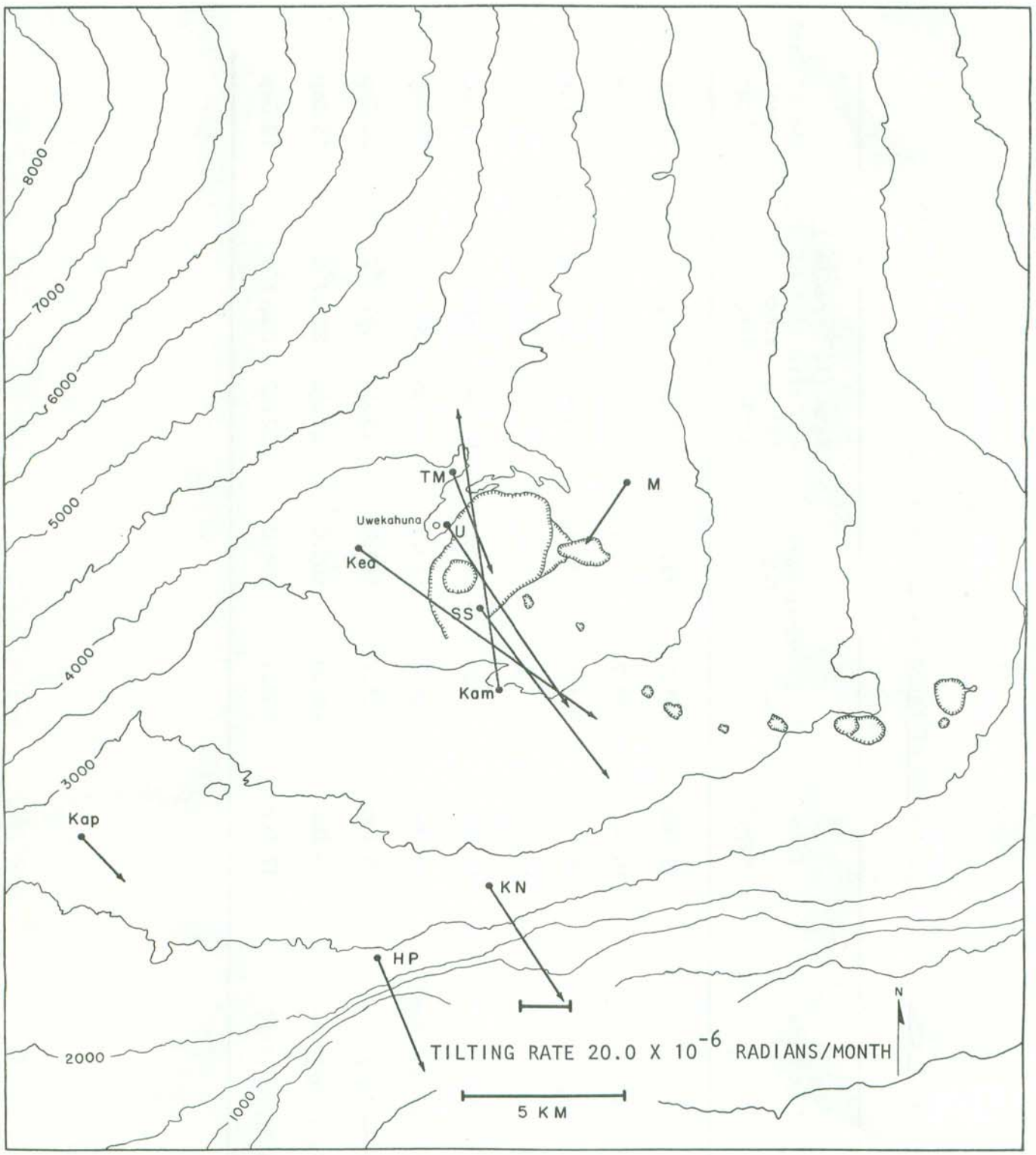

Figure 12. September to December 1975 tilting of the ground around Kilauea Caldera.

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Hawaiian Volcano Observatory
1976 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 76
January to December 1976
By Robert Y. Koyanagi, Karen Meagher,
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Chronological Summary
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Open-File Report 2007-1336
U.S. Department of the Interior
U.S. Geological Survey

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 76

JANUARY TO DECEMBER 1976

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California

1978

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 76
JANUARY TO DECEMBER 1976

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summaries present data gathered during the year together with a chronological narrative intended to describe in geologic terms the volcanic activity associated with the seismic events and tilt data included. The seismic, tilt, and chronological summaries are offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has recently shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters and repeated measurements at numerous spirit-level tilt stations ("dry" tilt). To maintain continuity with past summaries, we will continue to publish weekly data from the Uwekahuna vault tiltmeter (Kilauea summit) and from water-tube tilt stations as they are reoccupied. A comprehensive summary of the numerous and varied tilt and deformation data now gathered is beyond the scope of this publication.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 (Koyanagi, et al.) for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

Publication of the summary represents a group effort by the staffs of the Hawaiian Volcano Observatory and the National Center for Earthquake Research in Menlo Park, California.

1976 CHRONOLOGICAL SUMMARY

No eruptive activity occurred at either Kilauea or Mauna Loa during 1976 -- the first such quiet year on the Island of Hawaii since 1966. Perhaps the most impressive feature recorded at HVO was the continued high seismicity along Kilauea's south flank, reflecting aftershock activity from the November 1975 M = 7.2 earthquake.

The large deflation at the summit of Kilauea related to this earthquake finally bottomed out in February, with a total southeasterly tilt of 241 microradians at Uwekahuna Vault. Extensive Geodimeter and leveling studies of the entire Kilauea network, carried out during the winter and spring, showed that the Kilauea summit area subsided 1.7 meters, and that along the coast between Halape and Keauhou Landing subsidence was as much as 3.5 meters (Tilling et al., 1976). The entire Kilauea area moved seaward in a horizontal component, including areas mauka of the two main rift zones. Preliminary displacement solutions indicate a maximum horizontal displacement vector of 8-9 meters southward at Kalue.

Through the remainder of 1976 the Kilauea summit area showed a distinctive pattern of ground deformation, different from that observed for the past 10 years, that appears to reflect continued adjustment to effects of the 1975 earthquake and related aftershocks. Weak summit inflation--only a few microradians per month--was accompanied by sizable continued seaward horizontal motions of the entire summit area that tended to overwhelm the effect of the inflation. On June 21 and again on July 14 this pattern was interrupted by an abrupt 5-10 microradians of summit deflation accompanied by swarms of sharp earthquakes along the upper east rift zone. Both events were interpreted as marking draining of lava from the summit area into the the east rift zone, with accumulation of lava occurring mainly along upper parts of the rift system. Some connection with lower parts of the east rift zone was also indicated, however, by strikingly increased steaming, centered on the south flank of the prehistoric Heiheihulu cone, that broke out in the spring, and by sizable extensions along geodimeter lines in the same area.

An unusual espisode of large prolonged aseismic deflation at the summit of Kilauea occurred in August and September. Deflation continued at a rate of almost 2 microradians per day, totaling about 40 microradians and finally stopping at about the same level reached during the major subsidence associated with the November, 1975 earthquake. During the deflation episode levels of seismic activity were in no way anomalous, and this deflation episode thus appears unique for the 20-year period for which modern tilt data are available. Previous deflations of similar magnitude have been associated either with a flank eruption or with pronounced local seismicity that marked the locus of shallow intrusive activity. At year's end Kilauea was again in a pattern of steady slow inflation.

Mauna Loa was characterized throughout 1976 by continued summit inflation, accompanied by a surprisingly low level of seismic activity. Earthquake frequency, which was at a high level for 14 months before the July 1975 summit eruption, decreased to near-background levels by late fall 1975 and fluctuated little during the following year. Dry-tilt and Geodimeter measurements showed, however, that the summit area had begun to reinflate immediately after the 1975 eruption, and inflation continued at a high rate through 1976. Tilt

occurred at a rate of 3-5 microradians per month, and Geodimeter lines across Mokuaweoweo extended by as much at 15 mm/month. Measurements at Mauna Loa's summit for the time interval August-December 1976 suggested a slight slowing in the rate of inflation, but the changes were too small to be interpreted with confidence. Much HVO staff effort during 1976 was directed to increasing the geodetic baseline control for Mauna Loa, especially Geodimeter and dry-tilt nets.

Reoccupation for the first time of the "super triangle" Geodimeter lines between Mauna Loa, Mauna Kea, and Hualalai, showed an outward directed displacement vector for the north rim of Mokuaweoweo consistent with summit inflation, and permitted for first time tying to a stable base line the geometry of summit inflation. Both these results and the dry-tilt data demonstrated that the center of Mauna Loa inflation is asymmetric with respect to Mokuaweoweo caldera, lying near the southeast margin of the caldera. This asymmetry is strikingly similar to that long and well documented at Kilauea.

The continued summit inflation of Mauna Loa, as well as the historic record for this volcano in which flank eruptions have typically followed summit activity within a few years, led to the forecast by HVO of a probable Mauna Loa rift eruption within three years after the July 1975 summit activity (Lockwood, et al., 1976). Considerable staff activity was directed toward briefing civil defense and other state and local government officials about contingency planning, should Mauna Loa erupt along its northeast rift and threaten Hilo. Additional planning and several field exercises were devoted to enhancing techniques of lava diversion. At the end of the year the HVO staff was becoming increasingly uncertain about the Mauna Loa prediction, however, because of the continued seismic lull as well as the obvious fact that the 25-year period of inactivity at Mauna Loa between 1950 and 1975 was itself atypical in terms of the historic record for this volcano. One obvious major need, for both Mauna Loa and Kilauea, is the reliable geologic understanding of recurrence intervals for different types of activity, that would extend our frame of reference back beyond the 150 years of written history for these volcanoes.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In January 1976 the seismometer network consisted of 40 stations spread over an area with a diameter of 125 kilometres on the island of Hawaii (Figs. 1 and 2). Of these 40 stations, two are low-gain multicomponent stations (optical), six are two-component, three are three-component, and twenty-nine are vertical only. The coverage is most complete on and around the main center of seismic and volcanic activity, Kilauea Volcano. Other stations in the network are part of a larger net located on other volcanoes of the island of Hawaii. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording. During 1976, station DAN on the southeast rift of Mauna Loa was added, and station SCA was moved a short distance and renamed WIL.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated or added during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1976. Listed are station name, three letter code, coordinates in degrees and minutes, elevation in meters, and other data described below.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or VHF radio. The VCO frequencies are listed in Table 1. These telemetering stations are now all of Type 1, the NCER standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from thirty-two stations are recorded on two Develocorders using 16mm microfilm. Beginning in late 1975, FM signals from the telemetering network were recorded directly on one inch magnetic tape. Selected larger events are copied onto condensed library tapes which are currently archived in Menlo Park.

Develocorder records are read on a film viewer with 20x magnification. Arrivals are read to the nearest 0.05 second. The recorded arrival times, amplitudes (where readable), and other key data are routinely sent to N.C.E.R. in Menlo Park for computer processing.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Kipapa station operated by Honolulu Observatory). The less sensitive short period records are used primarily for S data and amplitude measurements for magnitude calculations to supplement readings from 16mm film. Optical seismographs listed in Table 1 are of four types. Types numbered three and four are electro-mechanical systems of high and low gain respectively. Hilo and Haleakala are each equipped with two low-gain Wood-Anderson torsion seismographs. Long period Press-Ewing seismographs record in three components in the Uwekahuna vault. The paper (optical) records as well as the 16mm develocorder microfilm are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnifcation of the standard NCER system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an

individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20x Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited,and major changes in attenuation or recalibrations are listed in Table 1 along with the dates they took place. Minor changes in CAL factors may not be listed if they are less than 20%.

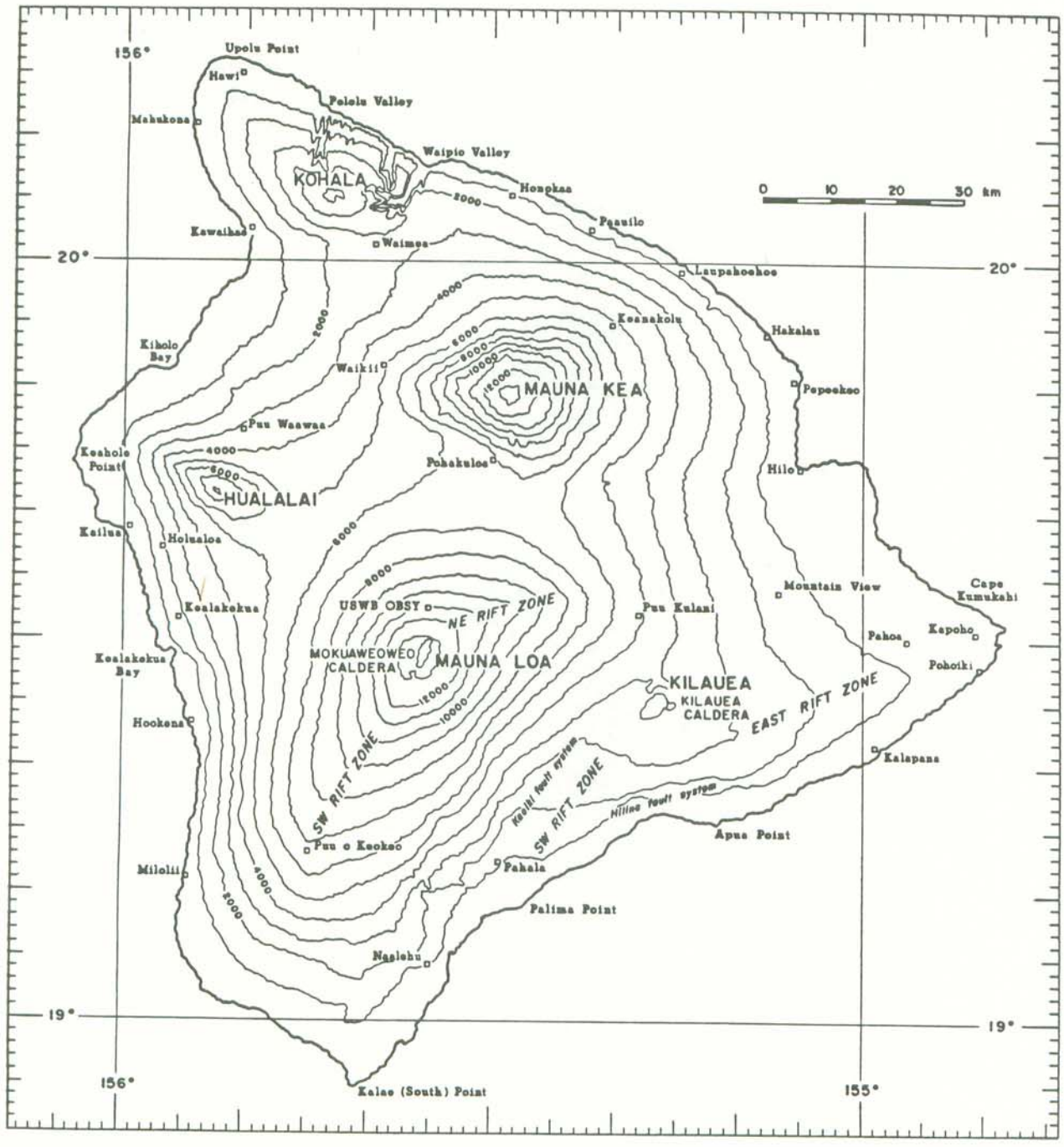

Figure 1 Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

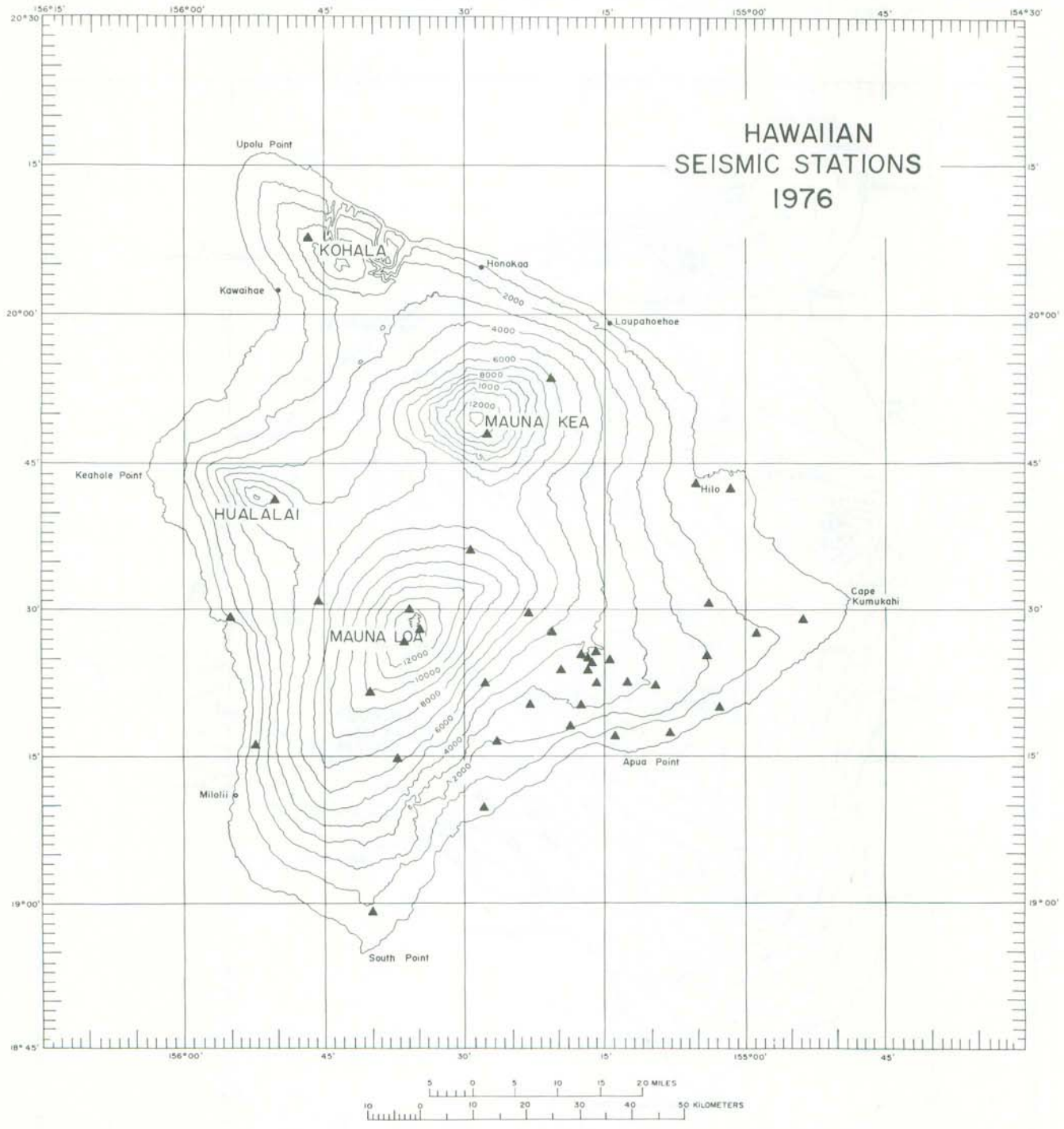

Figure 2 Map of the island of Hawaii showing seismic stations operated by the U.S. Geological Survey.

TABLE 1.Seismometer stations in Hawaii operated by the U. S. Geological Survey, 1976.

Station Name	Code	LAT-N	LON-W	Delay	ELEV	VCO	Old Type/Cal	Date of Change	New Type/Cal
AHUA	AHU	19 22.40	155 15.90	.06	1070	2380	1 3.8	76/09/29	1 4.3
AINAPO	AIN	19 22.50	155 27.62	.33	1524	1020	1 8.5		
	AINE					2380	1		
	AINN					2720	1		
CAPTAIN COOK	CAC	19 29.29	155 55.09	.15	323	1360	1 3.3	76/01/22	1 5.4
CONE PEAK	CPK	19 23.70	155 19.70	-.04	1038	1700	1 4.0		
	CPKH					1020	1		
DANDELION	DAN	19 21.42	155 40.04	-.07	3003	2380	none	76/05/10	1 4.8
DESERT	DES	19 20.20	155 23.30	-.10	815	680	1 4.8	76/03/16	1 4.2
ESCAPE ROAD	ESR	19 24.68	155 14.33	.01	1177	1360	1 1.7	76/09/21	1 2.0
HALE POHAKU	HPU	19 46.85	155 27.50	.42	3396	2720	1 4.5	76/10/02	1 4.7
HILINA PALI	HLP	19 17.96	155 18.63	.18	707	2040	1 5.0	76/01/05	1 4.0
HUALALAI	HUA	19 41.25	155 50.32	.58	2189	1700	1 2.2	76/01/27	1 2.6
HUMUULA	HSS	19 36.31	155 29.13	.35	2445	1700	1 6.2		
	HSSE					680	1		
	HSSN					2720	1		
KAAPUNA	KAA	19 15.98	155 52.28	.00	524	1020	1 4.9	76/12/01	1 5.2
KAENA	KAE	19 17.35	155 7.95	.15	37	2380	1 2.2	76/10/27	1 1.3
KAHUKU	KHU	19 14.90	155 37.10	.08	1939	1700	1 3.5		
KALALUA	LUA	19 24.55	155 04.25	-.02	622	1020	1		
KANEKII	KII	19 30.56	155 45.90	.18	1841	1700	1 7.1		
	KIIE					1020	1		
	KIIN					1360	1		
KAPAPALA RANCH	KPR	19 16.40	155 26.70	.05	610	1700	1 4.33	76/01/26	1 6.0
KEANAKOLU	KKU	19 53.39	155 20.58	.86	1863	2380	1 2.3		
KIPUKA NENE	KPN	19 20.10	155 17.40	.07	924	1360	1 5.0	76/08/16	1 6.4
KOHALA	KOH	20 7.69	155 46.77	.21	1166	2380	1 2.4		
MAUNA LOA	MLO	19 29.80	155 23.30	.24	2010	1360	1 10.5	76/01/29	1 10.0
	MLOH					2040	1		
MAUNA LOA X	MLX	19 27.60	155 20.70	.27	1474	1360	1 2.1		
	MLXH					2720	1		
MAKAOPUHI	MPR	19 22.07	155 9.85	-.01	881	2720	1 2.1	76/01/12	1 3.3
MOKUAWEOWEO	MOK	19 29.28	155 35.98	.28	4104	2040	1 7.5	76/09/23	1 5.4
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	.17	409	680	1 3.2	76/11/18	1 7.8
NATIONAL GUARD	NAG	19 42.12	155 1.72	.63	18	1360	1 8.5	76/02/11	1 10.2
NORTH PIT	NPT	19 24.90	155 17.00	-.06	1115	680	1 9.0	76/08/17	1 4.4
OUTLET	OTL	19 23.40	155 16.80	.02	1084	1360	1 4.15	76/09/22	1 4.9
	OTLH					2040	1		
PAU	PAU	19 22.62	155 13.10	-.06	994	2040	1 3.8		
	PAUH					1020	1		
POLIOKEAWE PALI	POL	19 17.02	155 13.47	.10	169	2720	1 4.8		
PUU HOHUAULA	PHO	19 28.90	154 53.40	.03	215	2720	1 4.8	76/01/06	1 1.9
PUU PILI	PPL	19 9.50	155 27.87	.24	35	1360	1 2.2		
RIM	RIM	19 23.90	155 16.60	.02	1128	1020	1 7.3		
	RIMH					2040	1		
SOUTH POINT	SPT	18 58.91	155 39.92	-.07	244	2040	1 3.6		
SOUTHWEST RIFT	SWR	19 27.26	155 36.30	.14	4048	1020	1 2.4		
SUMMIT CABIN	SCA	19 28.20	155 35.08	.30	4048	1700	1 11.5	76/12	off
TANGERINE	TAN	19 27.79	154 58.51	.02	351	1020	1	76/03/17	1 8.0
WAHAULA	WHA	19 19.90	155 2.92	.06	29	680	1 3.66	76/10/27	1 2.3
WALDRON LEDGE	WLG	19 25.49	155 15.69	-.02	1067	2380	1 2.2		
WILKINS	WIL	19 28.15	155 35.02	.30	4037		none	76/12	1 5/1

TABLE 1. (continued) Optical Seismographs

HALEAKALA Z	HAL	20 46.00	156 15.00		2090	3	0.71
HALEAKALA EW	HAE	20 46.00	156 15.00		2090	WA	1.0
HALEAKALA NS	HAN	20 46.00	156 15.00		2090	WA	1.0
HILO Z	HIL	19 43.20	155 5.30	.64	20	3.	1.0
HILO EW	HIE	19 43.20	155 5.30	.64	20	WA	1.0
HILO NS	HIN	19 43.20	155 5.30	.64	20	WA	1.0
KIPAPA	KIP	21 25.40	158 .90		76	3	0.56
UWEKAHUNA Z	UWE	19 25.40	155 17.60	.06	1240	3	0.7
UWEKAHUNA Z	USZ	19 25.40	155 17.60	.06	1240	4.	1.0
UWEKAHUNA EW	USE	19 25.40	155 17.60	.06	1240	4.	1.0
UWEKAHUNA	PEZ	19 25.40	155 17.60		1240	PE	
UWEKAHUNA	PEE	19 25.40	155 17.60		1240	PE	
UWEKAHUNA	PEN	19 25.40	155 17.60		1240	PE	

Table 2. -- Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO. USGS Model J302 was introducted in 1974.

Type 3. Consists of:

a) EV-17 - Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 2000X), or Observatory-built electronmagnetic seismometer approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnitication approximately 1500X at 2Hz.

Experimental type amplifier systems are not given type numbers.
Type 2 instruments have been discontinued.

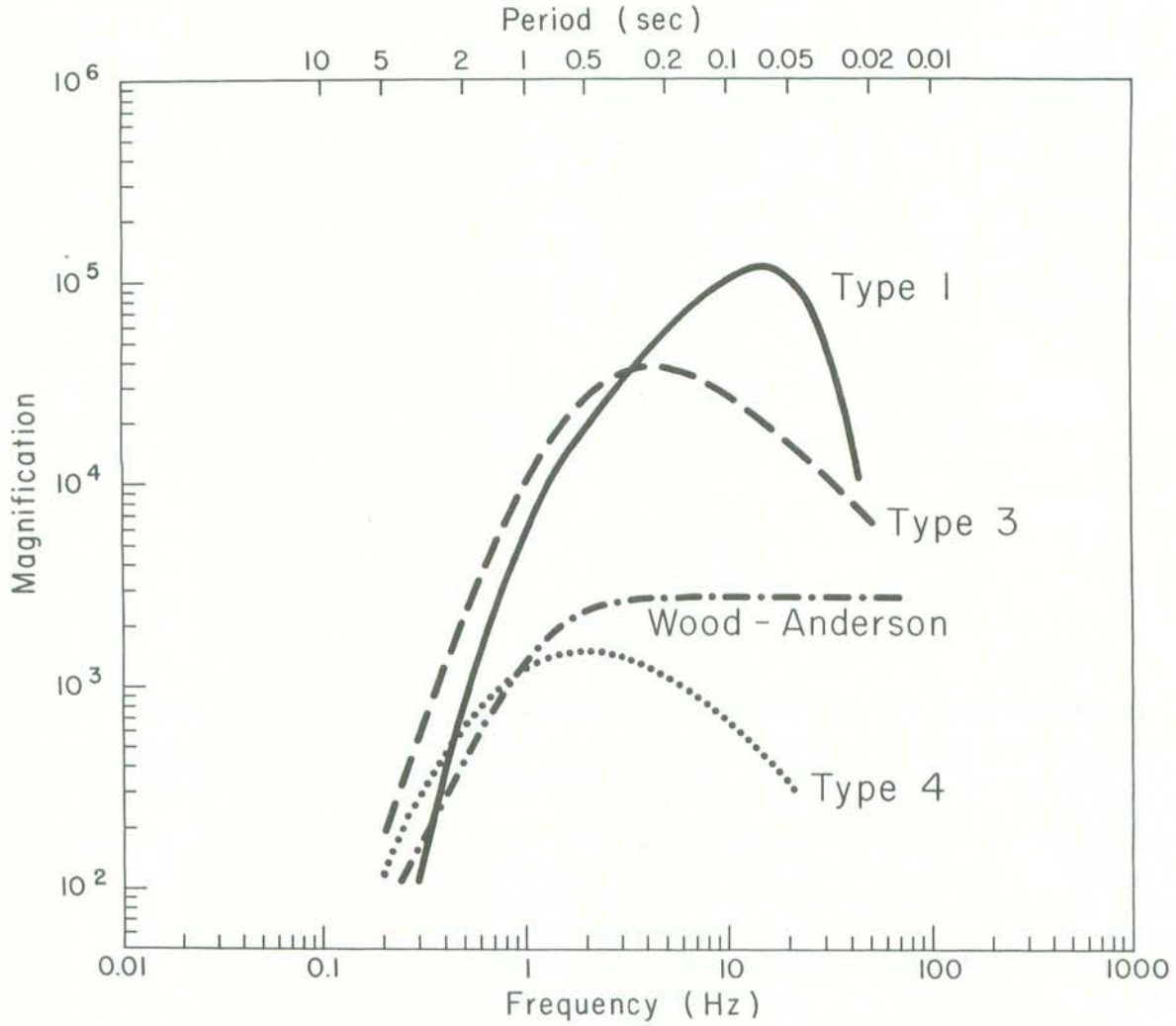

Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard NCER seismometer recorded on Develocorder film. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an individual station.

SEISMIC DATA PROCESSING

Earthquakes are located by the combined efforts of HVO and NCER in Menlo Park. Develocorder films are read at HVO, and lists of P and S arrival times, event amplitude and duration, clock correction, etc. are sent to Menlo Park. Data are then keypunched, computer locations are made using the program HYPOELLIPSE (Lahr, et al., in preparation), and problem events are reread at HVO and rerun. Card and magnetic tape copies of all arrival time (phase) and output summary data (one card per event), are kept in Menlo Park. All computer output (including first motion plots) are on microfiche, and copies are available for inspection at HVO and in Menlo Park.

The crustal model used consists of flat, homogeneous layers and contains a embedded low velocity zone. It is a modified version of Crosson's (1976) model and is:

LAYER	VELOCITY (km/sec)	DEPTH TO TOP (km)
1	2.00	0.0
2	3.25	0.8
3	6.00	2.0
4	6.40	5.5
5	5.30	9.5
6	8.30	13.0

An empirical set of station delays or corrections were used in the locations, and are given in Table 1. They have been adjusted so the mean delay of Kilauea stations is zero, and are most appropriate for locating earthquakes on the south side of the island.

Magnitudes for most events were computed using both recorded amplitudes on calibrated stations and signal or coda duration on short-period vertical stations. Amplitude magnitudes used by HVO are based on readings from Wood-Anderson seismographs. Amplitudes read from other instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors of Table 1. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, KAA, OTL, or PPL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed to about twice the noise level, or to about 1 cm peak-to-peak on the Develocorder viewer. A plot of log (F-P time) versus local (amplitude) magnitude appears in Figure 4. The bilinear relation shown in the figure is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

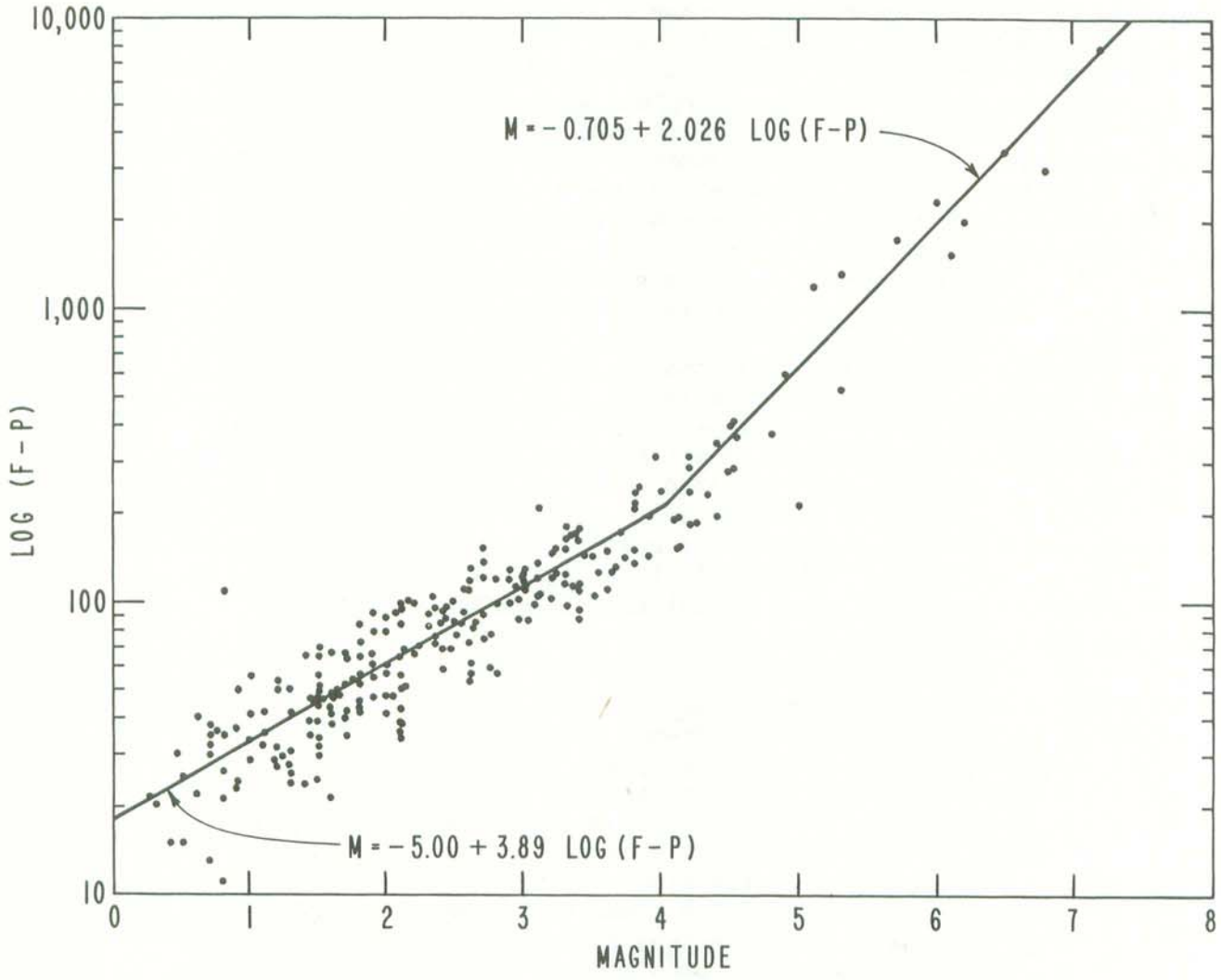

Figure 4. Relationship between signal duration (F-P time) and local magnitude for a large number of earthquakes which occurred during 1975 and 1976. Local magnitude is determined from amplitudes read on Wood-Anderson and other calibrated seismographs. The dual linear relationship between magnitude and log(F-P) appears to hold over a magnitude range of 7 units.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south flank of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0 to 2.5. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters of all depths are given in Figures 5, 6, 7 and 8. The epicenter maps are on two scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and in some cases on its depth. Figure 9 is a map of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figure 9. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.5 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea. Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano. Earthquake categories are: Kilauea Summit 30 km, earthquakes from about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves from intermediate depths roughly 5-10 km beneath the summit region: Kilauea Summit Shallow, earthquakes from within a few km beneath the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone of Kilauea; Koae, earthquake from along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; South Flank, faults on the south flank of Kilauea; Mauna Loa L-P, earthquakes characterized by low-frequency waves from Mauna Loa volcano; Mauna Loa S-P earthquakes from within a few kilometers beneath the summit of Mauna Loa; Offshore PPL, earthquakes from mostly offshore areas south of Puu Pili station.

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P		
Jan 1				1	16	37	570	890	131	292	7	1		LPD-1, offshore-1
2				1	9	78	481	807	128	266	2		3	
3					5	84	131	451	116	126		11		Kona-3
4				5	6	146	469	865	141	59	1	2	3	
5	2m				17	216	325	656	99	59				Power outage 1900-2100, LPD-1
6					21	170	327	666	78	106	2	1	1	
7					12	88	397	756	16	105	9	10		Kona-2
8					35	56	329	665	81	101	7	6		NER-1
9					13	154	365	676	79	173	4	5		Kona-2, LPD-1
10	3m			2	38	71	402	761	90	185	2	3	2	LPD-2, NER-2
11				5	44	88	369	664	93	151	2	3		LPD-3
12				2	40	66	310	670	75	128	2	2	1	
13	17m		5m	3	9	89	329	915	114	142	2	4	8	Kona-2, LPD-12
14				1	59	113	391	985	99	150	16	14	1	LPD-2
15				9	37	85	439	926	77	158	11	5		LPD-2
16		20m		12	55	149	438	823	83	177	2	18	3	
17		10m		5	5	126	402	736	72	196	1	1		LPD-3
18					5	170	417	1035	72	208	3	6		LPD-2, Kona-1
19	31m			2	34	125	432	922	96	132	14	8		LPD-1, NER-2
20	10m			2	41	109	353	912	94	102	18	13	3	Kona-1, LPD-3, NER-1
21	15m			3	31	136	276	909	120	75	17	7		Kona-1, Kohala-1, 15 km-1, LPD-6
22	2m			3	119	135	316	925	100	105	9	11		LPD-9, Kona-1
23	3m			1	118	105	127	496	83	125	4	15		Kona-1
24	7m[1/]			1	8	119	263	825	110	121	9	8	17	LPD-1
25				4	13	125	362	877	103	118	4	3	1	Mauna Kea-1, LPD-2
26				3	20	126	313	819	146	88	9	9		Kona-2, LPD-1, NER-2
27				1	14	94	266	691	93	73	25	5	2	LPD-3, NER-1
28				3	11	87	326	884	103	120	10	5	1	
29	2m				9	118	329	1009	87	148	3	8	2	
30				1	19	263	320	816	119	100	2	2		Kona-1
31				2	14	227	294	892	284	92			3	LPD-2

1/MOK-Tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Feb 1	6m			1	11	123	326	934	134	110		1	1	
2				1	23	146	246	995	143	215	3	3		Mauna Kea-1, Kona-2
3	2m			1	23	141	261	985	151	241		7		
4					13	192	167	790	69	65	1	4	1	LPD-1
5					3	72	242	582	87	107	1	5	9	Heavy rains, LPD-1
6		5m		1	15	155	237	691	38	91		11	1	Electrical storm
7				1	11	87	216	752	86	126	2	7	3	15 km-1, LPD-1
8					8	100	228	776	90	74		1		
9					2	86	213	807	92	71	3	4		Kona-2
10					24	326	183	903	161	70	4	4		LPD-1
11	4m[1/]	3m[1/]			6	208	231	874	150	72		10	1	NER-2, Kona-1
12				1	7	146	175	600	97	67	4	4	1	LPD-2, Kona-1
13	20m				1	67	41	222	25	70		8		High winds
14						104	174	530	54	93	1	5		Heavy rains
15	15m					71	31	253	43	59		6		High winds
16					7	122	123	612	68	50				Heavy rains, Kona-1
17					7	150	150	646	68	62	2	8	2	Kona-1
18				1	9	183	165	732	90	60	2	12		
19	4m			3	10	202	219	779	74	48	8	2		
20	2m				22	141	145	660	41	79	3	3		Kohala-1, LPD-1, Kona-3
21	36m			1	8	98	202	551	43	73	3	1	1	
22	5m	2m		1	23	118	221	593	41	59	2			LPD-2
23	9m				1	64	126	717	56	34	4			Kona-1
24				3	6	120	121	655	65	31	5	9		NER-2
25			2m[1/]	4	26	511	119	750	27	99	1	28		LPD-1, NER-5
26	25m				14	263	64	627	15	51	2	16		NER-4, Kona-1
27		3m	10m	2	8	143	52	858	20	99	2	9		NER-3
28			10m	1	12		65	835	25	98	4	8	1	NER (2), Kona (2), Electrical storm
29					25		177	857	74	97	6	3		

1/MOK-Tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Mar 1				1	1	97	174	677	72	92	2	4		Kona-2
2				1	2	103	192	754	56	77	3	1	1	
3	4m			1	29	220	152	880	81	74		5		LPD-2, Kona-2
4					7	135	168	842	114	84		1	1	NER-1, Kona-1
5	10m				10	113	41	328	43	66	32	2		
6	2m			1	23	123	40	413	54	50	1	6		
7				1	14	110	141	717	62	66	2	2		
8	4m	7m[1/]			12	91	152	671	88	80	21	13		
9				1	15	256	158	820	75	94	4	3		
10				1	28	185	148	826	62	82	1	2		LPD-5
11				3	50	98	168	733	79	80	1	2		LPD-8, Kona-1
12				1	15	172	161	697	60	74	1	2		LPD-1
13				2	9	180	177	841	79	75		1		Kona-2
14				1	35	161	140	737	90	75	1	2		LPD-11
15	3m	7m		1	17	183	144	757	78	86	2	2		LPD-8
16				1	13	150	140	697	77	77	4	2		NER-1, LPD-7
17				1	15	128	156	804	79	83	11	3		LPD-2
18	2m			3	42	185	139	791	77	86	7	8		Kona-2
19	10m[1/]	20m			34	130	52	1017	14	72	1	5		Mauna Kea-1
20	6m[1/]		20m	3	69	99	76	711	15	55	11	2		
21				1	59	109	152	570	43	60		1		Kona-1
22		2m		4	11	135	121	582	53	65	5	6		LPD-4
23				1	9	158	120	661	51	61	1	8		Kona-1
24	37m		11m[1/]		9	135	135	647	60	64	8	3		Offshore-1, Kona-1
25				2	5	146	132	641	79	86	11	13		Kona-3
26					6	129	39	316	48	49		10	1	
27					79	143	38	346	58	69		5		
28	7m		3m	1	1	82	107	552	65	36	7	9		Kona-2
29		10m[1/]		2	13	71	133	564	49	27	13	17		LPD-1
30				2	9	70	101	471	43	44	13	20		LPD-1, Kona-2
31				1	1	56	85	433	19	44	35	18		

[1/] MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Apr 1					8	62	81	488	33	68	22	10		LPD-1
2					22	438	99	711	49	51	7	6		Kona-2
3		8m		2	17	191	74	714	65	56	7	5		LPD-1
4					4	87	102	486	21	48	3	2		Kona-3
5			2m[1/]		24	104	80	402	37	36	7	5		High winds
6					4	121	77	449	48	35	9	2		High winds
7	2m[1/]		4m[1/]		11	147	110	594	43	47	5	4		High winds
8				3		186	103	654	6	46	3	4		LPD-1
9					11	169	58	815	11	40		9		NER-3, Kona-1
10					24	163	37	579	6	34		3		Power outage 1200-1300
11		20m			29	161	55	573	17	61	5	6		NER-1, Kona-1
12				2	3	172	115	589	37	45	3	12		
13	2m			1	18	166	88	475	48	32	3	2		
14		6m		2	34	99	93	527	37	46	20	5		Kona-1
15	15m			2	1	91	94	494	41	61	7	3		Kona-1
16					7	114	37	273	37	64		5		
17					28	160	30	338	47	70		6		
18				3	9	452	110	972	91	38		1		Kona-1
19				2	10	137	118	546	54	63	5	11		Kona-2
20					8	70	109	448	49	42	2	3		Kona-1
21	5m				9	118	125	532	55	53	9	5		Kulani-1, Offshore-1, LPD-1, Kona-1
22	48m 3m[1/]			2	9	105	101	484	50	52		8		Kulani-1
23					21	107	75	432	27	57	2	1		
24				1	11	159	104	584	68	68		1		Kona-1
25				2	11	209	129	636	67	71	4			LPD-9
26					7	261	142	583	75	49	5	3		Kona-3
27				2	13	229	104	507	71	75	9	11		
28	8m			1	15	223	131	629	78	56	11	6		Kona-1, LPD-5, NER-5
29	10m			2	13	178	135	572	65	70	2	6		Kona-2
30	32m				20	155	52	354	10	54	9	13	1	LPD-6

[1/] MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	30KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P		
May 1	69m	10m		2	23	177	132	424	54	65	2	9		Kona-1, Mauna Kea-1 LPD-53, NER-1
2	174m	2m[1/]		1	9	190	133	458	77	104		3		Kona-3, LPD-12, NER-1
3	22m				12	152	106	543	61	83	26	9		Kona-3, LPD-19, NER-5
4					14	161	87	504	42	66	4	3		LPD-10, Kona-2
5				1	5	172	87	633	50	72	10	6		Kulani-3, LPD-4, NER-6, Kona-3
6					4	196	85	503	64	86	20	33		NER-1, Kona-1
7					1	160	20	249	51	49	5	43		
8	40m					182	29	258	53	79	19	26		
9				1	2	117	94	471	36	64	10	10		Mauna Kea-1, NER-2, Kona-3
10					8	157	86	557	64	76	18	8		NER-2, Kona-1
11				2	32	182	86	474	53	81	17	8		NER-4
12		5m			37	173	27	237	10	20	8	16		Kona-1, Mauna Kea-1
13		2h			437	136	23	233	4	52	1	2		
14	23m				50	149	35	389	7	67	6	2		
15		20m		3	148	226	46	429	5	37	4	2		
16				1	47	94	97	486	44	77	32	14		Kona-2
17		8m			49	199	106	462	67	97	12	9		LPD-5, Kona-1
18				1	8	126	97	397	70	87	11	3	1	Mauna Kea-1, 15 km-1
19				2	1	222	88	588	62	87	17	87		NER-1, Kona-1
20					3	234	71	317	32	66	11	6		
21					6	204	86	373	45	59	10	3		LPD-7, Kona-1
22			10m[1/]		1	219	86	350	34	42	12	4		LPD-4
23				1	5	244	61	405	47	50	7	8		NER-1
24	3m			2	2	237	75	388	38	63	15	4		NER-1
25	1m				9	274	82	446	37	75	11			
26				3	2	286	88	457	56	95	9	2		
27				3	1	257	85	396	42	61	5	2		LPD-6
28						382	32	227	50	58		5		
29					2	326	32	385	66	36	1	3		
30					1	386	57	408	77	38	1	6		
31					13	290	113	525	55	22		1		Kohala-7

1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank					Mauna Loa	Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P		
Jun 1	5m				7	325	86	509	49	31	7	1		
2		7m1/			56	308	84	590	68	60	7	3		LPD-4, Kona-1
3				4	78	271	109	552	62	71	1	1		NER-1
4	2m	4m1/		7	91	332	105	686	76	52	3	1		Kona-1
5	22m			1	302	299	91	498	47	34	2	2		Kona-2
6				3	107	341	127	427	52	58	5	1		Kohala-1, Kona-1
7	16m			1	10	276	74	393	51	47		1		Kohala-5
8	10m				10	312	85	448	42	73	3	1		Kona-1
9	2m			1	14	326	52	579	30	78	2	1		
10	11m				79	335	56	544	78	61	2	1		Mauna Kea-1
11	5m	15m		1	98	294	28	429	18	39	7			Offshore-1, NER-8
12		8m	5m1/		44	347	23	445	14	3	5	3		NER-4
13				1	4	344	86	519	55	56	1	2		NER-2, Kona-1
14	3m				6	241	86	373	44	38	3	2		Kona-1
15					5	210	71	460	47	33	2	2		NER-1, Kohala-1
16					3	144	63	299	34	36	6	2		Kona-1
17	5m				3	207	52	319	36	43	6	5		
18	6m				6	205	53	387	42	39	22	6		Kohala-1
19					5	286	54	479	73	35	12	17		NER-1
20				1	4	352	67	423	53	34	8	6		Mauna Kea-1
21					6	142	39	3134	22	29	10	8		East Rift swarm
22					27	133	73	828	59	56	29	8		NER-5, Kona-2
23		28m1/		1	14	126	87	660	23	51	14	10		NER-2
24				1	20	163	71	382	11	53	6	8		NER-1, Kona-1
25					15	218	20	253	54	31	2	2		
26	15m					298	30	257	64	31		7		
27	4m1/			2		277	97	531	34	52	7	9		Kohala-1, Kona-1
28				4	8	231	72	440	20	32	17	2		
29	35m			1	8	263	78	432	25	34	2	5		Kona-1
30					1	245	73	396	19	44	31	3		

1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Jul 1				3	8	228	69	380	21	59		5		
2	21m				3	268	72	364	44	45	5	2		
3					5	282	75	401	33	33		1		LPD-2
4					6	88	6	105	2	10		2		High winds
5					2	349	49	395	31	39		2		Kona-1
6					4	277	59	451	21	42				Kona-1
7				2	7	117	38	188	17	21	1			Power outage 2000-0700
8				1	24	125	46	352	19	26		2		Power outage 0100-0730, Mauna Kea-1
9						96	22	161	46	32		37		
10						150	25	315	39	38		2		Kona-1
11				4	57	140	47	613	16	56		9		
12	6m			1	17	119	40	636	28	32	1	2		KOH-1, LPD-3
13	24m				8	126	42	767	46	41	4	2		Kona-1, KOH-1, LPD-1, NER-3
14	15m[1/]			1	16	320	62	1677	26	42	3	4		NER-1, Kona-2
15					7	105	90	591	41	44	3	2		Kona-1, LPD-1, NER-1
16				2	9	106	55	534	39	49		5		Kona-4, LPD-1, NER-1
17	8m[1/]			4	34	132	51	548	41	47	4			Kona-3, LPD-1, NER-5
18				2	28	138	46	435	40	46	2	4		LPD-1, NER-4
19				2	7	167	57	497	48	29	2	3		NER-4, LPD-1, Kona-1
20				2	5	164	62	376	34	17	1	1		
21				2	2	114	41	470	30	31	2	1		LPD-2
22				3	27	160	57	478	48	26	2	1		LPD-1, NER-1
23					12	329	19	525	19	21			2	LPD-1, Kona-1
24					9	319	49	732	9	29	4	6	1	
25		7m			2	193	45	439	33	45	2	3		LPD-1
26	41m	6m			3	341	63	422	38	28	1	3		Kona-1
27	36m				9	221	59	587	23	34	9	3		LPD-4
28			3m[1/]	2	20	254	64	560	34	29	28	3		LPD-2
29				1	13	245	64	435	53	30	6	1		LPD-1, Kona-1
30				2	16	296	70	568	39	39	7	3		LPD-2, Kona-1, NER-4
31				1	14	302	51	635	51	29		3		LPD-1

1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P		
Aug 1					16	191	42	434	16	30	1	2		NER-1
2					7	184	55	350	26	40	19	19		Kona-2
3				1	4	144	59	282	20	33	5	11		LPD-1
4					1	176	42	302	30	19	6	28		
5	5m				5	257	59	469	38	41	13	12		Kona-1
6					28	319	18	318	74	34	1	6		
7	7m				2	264	14	290	73	41	1	7		Kona-1
8					10	214	50	468	24	41		8		
9				4	13	320	55	504	29	38	9	7		
10	7m[1/]				4	270	56	427	33	39	29	3		NER-1
11	2m[1/] 4m				1	255	54	411	26	31	16	2		Kona-1
12					4	223	49	214	22	33		3		Kona-2
13	3m[1/]				3	345	22	353	6	27	13	4		NER-1, Kona-2
14			10m[1/]	1	6	431	20	494	6	21	12	6		Kona-1
15					10	262	33	494	30	48	3	26	3	
16				1	1	332	66	572	58	29	16	6		Kona-2, LPD-1
17	2m			1	4	267	68	584	47	98	14	7		LPD-1
18				2	2	201	61	652	44	32	4	3		NER-1, Kona-1
19					8	246	77	509	30	33	7	9		Kona-2
20	7m				5	209	55	445	37	27	3	3		Distant-2, NER-2
21	3m	3m			11	238	63	521	68	38	4	1		LPD-3, NER-2
22					6	118	33	211	27	26	1	8	5	
23	6m			1	13	108	77	295	40	41	5	2		LPD-2, NER-1
24	14m				5	65	85	301	39	28	11	1		LPD-12, Kona-1, NER-1
25				1	10	99	59	339	56	33	4	5		LPD-1, NER-3
26					13	90	97	413	46	25	10	2		Kohala-1
27					3	146	21	196	41	32	2	11		Kona-3
28			5m		4	131	21	211	42	28			1	NER-1
29					27	129	55	226	39	65	3	19	1	NER-4
30	52m			2	13	153	63	303	43	35	1	2		LPD-3
31	4m				13	167	82	322	43	44	2	3		Kona-3, LPD-1, Mauna Kea-1

1/ MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquake											
				Kilauea Summit			Kilauea Flank				Mauna Loa				
	Deep	Intermediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Offshore PPL	Remarks and Events of Interest
Sep 1					11	117	76	359	40	27				NER-5, Mauna Kea-1, Kona-1
2				2	25	106	54	375	59	36	2	6	1	Mauna Kea-1, NER-4
3					35	125	43	300	64	84	29	15	2	
4					28	77	65	172	44	48	40	10		Kona-4, NER-1
5				2	25	83	69	258	52	45	4	5	1	NER-2, Kona-1
6	4m[1/]				9	102	63	365	43	33	4	2		LPD-6, NER-1
7				2	20	83	79	384	52	31	4	3		Mauna Kea-2
8				2	10	52	71	261	15	29	4			Kona-1, LPD-1, NER-1
9	10m			3	7	72	56	225	23	33	3	1	3	LPD-1, Kona-2
10		9m	10m[1/]		11	271	28	286	3	56	10	10	3	Kona-1
11					11	363	12	291	1	171	10	1	2	LPD-2, NER-3
12				2	21	211	76	334	35	200	5			Kohala-1
13	6m	3m		1	7	171	54	320	34	116	13			LPD-2, Kona-3
14					5	99	60	197	5	71	17	4		Mauna Kea-4
15					3	75	39	212	8	62	10	2		
16				2	17	78	80	299	26	83	6			Offshore-1, Kona-1
17				2	7	82	74	330	49	80	4	4		LPD-2, Kohala-1
18		20m		1	55	209	75	339	40	56	12	3		NER-1
19		4m	15m[1/]		16	99	72	340	38	82	29	1		
20				3	15	65	76	287	26	69	31	2		LPD-4, Kona-3
21				1	3	52	75	278	49	36	16	1		Kona-3
22	8m			2	11	79	67	352	38	41	15	1		
23		11m			27	87	76	342	40	47	16	2		NER-5, Kona-1
24	33m		2m		22	70	24	155	42	45	2	9		
25		5m			127	81	28	131	38	35	14	7		Kona-1
26		3m			53	69	68	348	29	46	5	3	1	
27					32	70		321		44	3	2		Kona-2, LPD-2, NER-1
28					25	75	75	394	26	31	1	2		NER-1
29				2	23	88	87	382	47	42		4		Kona-1
30					53	84	81	421	40	30	10			Kona-1

[1/] MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Oct 1	35m	10m		2	150	110	15	293	12	39	3	9		
2		97m												
		3m[1/]			287	106	34	232	9	22	3	2		LPD-4
3				1	58	114	89	402	32	41	1	4		Kona-1, Kulani-1
4				4	49	91	88	390	38	39	1	3		Kona-2, LPD-3, NER-1
5				2	26	108	83	451	25	24	1	3		Kohala-1, LPD-1, Kona-1
6		7m			147	82	81	422	48	34	4	4		
7		16m			128	95	67	264	15	34	8			LPD-2, Kona-1
8				2	32	76	64	249	19	27	4	1		Kona-2
9	4m			3	30	106	61	301	11	29	3	2		LPD-1, NER-1
10		19m		4	91	92	37	251	11	34	4	1		Offshore-1, LPD-4
11	5m[1/]	6m		3	46	175	24	254	1	25	3	9		NER-1
12		24m		3	135	159	32	264	4	19		2	3	NER-3
13				1	36	175	31	229	3	23	3	2		NER-1
14		110m		5	102	167	19	197	10	19	2	4		Kona-1
15	8m				9	210	17	167	55	31	1	10	1	
16					187	245	26	198	70	47	3	5		
17	8m	55m			121	200	31	230	11	24	1	6	3	
18		14m			47	242	22	219	12	23	3	6		Kona-4
19					23	204	30	217	1	13	1	1	1	NER-2, Kona-2
20		74m		4	180	180	36	283	13	32	2	6		NER-1, Kona-2
21		30m			111	227	21	256	8	39	2	1		NER-2, Kohala-1
22		4m		2	35	153	40	219	11	12	7			Kona-2, LPD-9, NER-1
23					27	176	10	247	4	25	1			
24		65m		3	121	213	21	231	6	26		3	1	LPD-1, NER-1, Kona-1
25		40m		1	101	222	26	186	7	18	2	3		LPD-1
26				1	60	300	25	194	12	28	4	6		LPD-1
27				1	6	287	29	235	11	37	1	5		NER-1
28					17	385	32	274	13	52	2	9		NER-1, LPD-1, Distant-2
29					7	233	45	188	59	32	11	12		NER-1
30		136m			72	245	23	243	16	31	1	6		LPD-1, NER-1, Kona-2
31					20	276	40	267	5	22	3	3	2	LPD-3, NER-2

1/MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank				Mauna Loa			
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P	Off-shore PPL	Remarks and Events of Interest
Nov 1	9m[1/]			4	27	346	45	325	11	26	15	2		NER-1, LPD-8
2					21	285	32	307	34	32	3	2		Kona-2
3		7m		1	20	302	34	187	18	23	2	4		LPD-1, NER-2
4					20	324	26	154	8	28	2	2	2	NER-1
5				2	24	256	45	135	14	41	4	8		NER-2, Kona-2
6					3	398	33	189	11	39	2	5		NER-1, Kona-2
7				2	3	349	24	211	12	38	3	8	1	LPD-3, NER-1
8					44	374	41	224	21	36	10	10		
9		3m[1/]			21	397	17	277	11	41	2	9		Distant-1, Kona-1
10				1	20	352	23	259	19	51	23	16	1	LPD-1
11					9	321	21	208	9	27	7	4		LPD-2
12				1	1	317	15	155	50	30	1	8		Mauna Kea-1
13					2	549	23	161	42	28	2	6		
14		5m			34	350	21	260	4	27		5		Maui-1, LPD-1
15					5	322	24	303	1	30	1	5		Maui-1, NER-1
16				3	9	384	14	181	3	29		1	1	NER-1
17	26m	80m[1/]		1	23	468	15	173	5	39	45	2		LPD-2, Kona-1
18		24m		5	28	425	34	180	9	41	7	7	2	Kona-1
19				1	39	370	36	127	46	34	347	21	1	NER-1
20					32	374	30	132	31	41	306	4		NER-5
21	19m			1	62	419	19	154	4	28	223	1		NER-1
22	28m	5m		2	51	385	32	166	9	29	152	39		Kona-2, LPD-2, NER-4
23		14m[1/] 20m			92	389	33	176	43	32	67	27	1	
24		5m			22	343	22	144	10	38	36	18	1	NER-5, Kona-2, LPD-2
25	6m				28	354	21	186	10	26	17	46		NER-1, Kona-1
26					27	371	14	194	9	34	24	17		NER-4, Kona-4
27	47m				14	364	26	203	5	36	7	17		LPD-1, NER-2, Kona-1
28		7m			13	356	41	194	6	33	8	19		NER-2
29		3m[1/]			13	388	30	159	1	21	14	17		Maui-1, NER-2
30					20	379	39	283	3	27	8	12		NER-1

[1/] MOK-tremor beneath Mauna Loa Volcano

Date (1976)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank				Mauna Loa		Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	30 KM	L-P	S-P	SW Rift and Kaoiki	Upper East Rift	Koae	Lower East Rift	L-P	S-P		
Dec 1	38m				13	406	43	274	2	45	2	9		NER-3, LPD-5, Kona-1
2				2	19	345	30	275	15	41	11	2		NER-2, Kona-1
3					3	396	28	209	35	38	1	4		
4					4	431	22	220	37	26	2	4		NER-3
5					13	332	32	273	6	53	5	4		Kona-1
6	30m			1	18	403	33	203	2	29	6	2		
7				2	23	383	30	207	7	30	3	2		Kona-1
8		5m		1	14	493	26	185	1	29	4	10		NER-2
9		5m			17	467	38	193	3	26	6	5		Kona-1, NER-1
10					12	272	44	176	15	25	2	4		LPD-4
11	23m				19	167	42	143	37	38	13	7	3	
12				2	19	333	48	245	2	17	7	10	2	
13					23	486	20	217	32	26		7		Mauna Kea-2, NER-4
14	20m			1	42	319	48	266	15	11	7	5		Kulani-2, LPD-2
15					12	501	114	474		72	13	15	2	NER-2
16					4	767	20	147	35	23		9		
17				2	4	358	64	496	10	20	5	3		LPD-7
18	31m			1	3	161	26	211	4	8	3	4		NER-2, Kulani-1
19		9m			20	303	30	146	5	57	8	21	3	
20				1	18	372	39	270	7	10	4	8		
21		7m		3	19	422	24	259	11	21	8	1	1	NER-1
22					7	338	49	232	1	11	5	17	1	
23					24	296	21	264	8	20	10	1		NER-1
24	60m[1/]	5m		3	32	318	21	258	5	24	14			Kona-1
25				1	19	311	35	330	9	20	3	1		NER-2, Kona-1
26				1	9	355	38	377	9	24	4			NER-1, Kona-2
27		3m[1/]			20	361	25	299	18	12	8	4		
28		5m[1/]		1	5	481	28	338	21	19	8	2		NER-1
29	30m	8m[1/]		1	20	296	26	355	18	21	15	2	1	LPD-7
30						519	19	168	77	4		9		
31						414	5	137	37	9	8	7		

[1/] MOK-tremor beneath Mauna Loa Volcano

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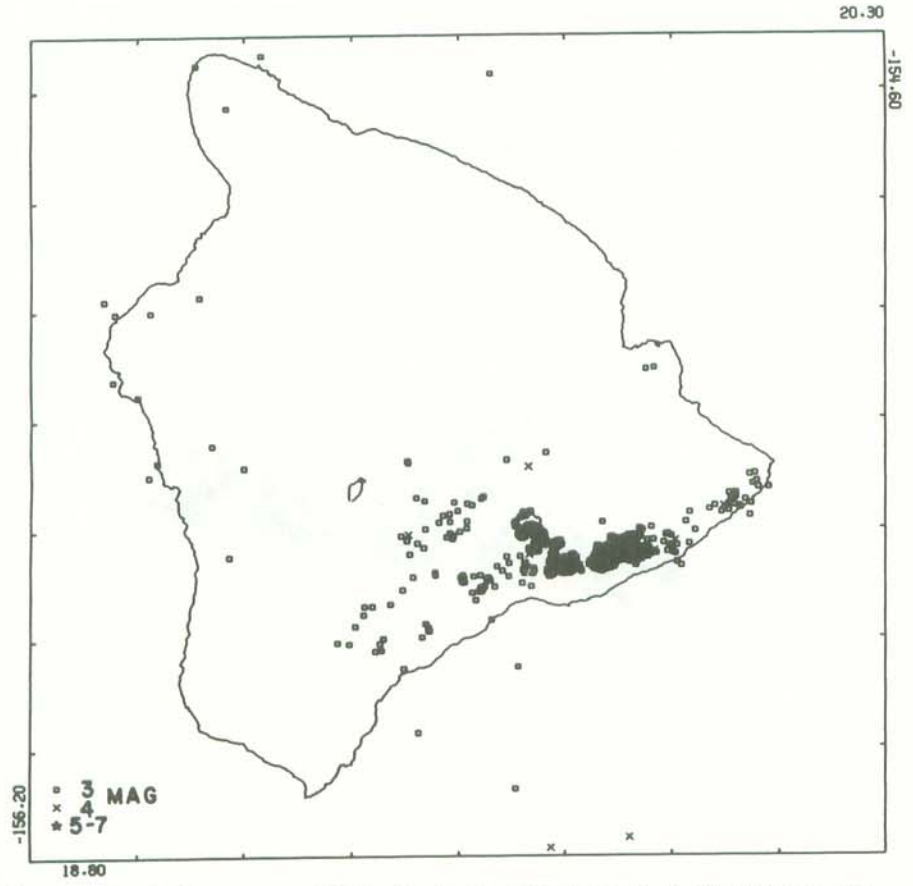

Figure 5 Epicenter plot of magnitude 3 and above earthquakes for the year 1976.

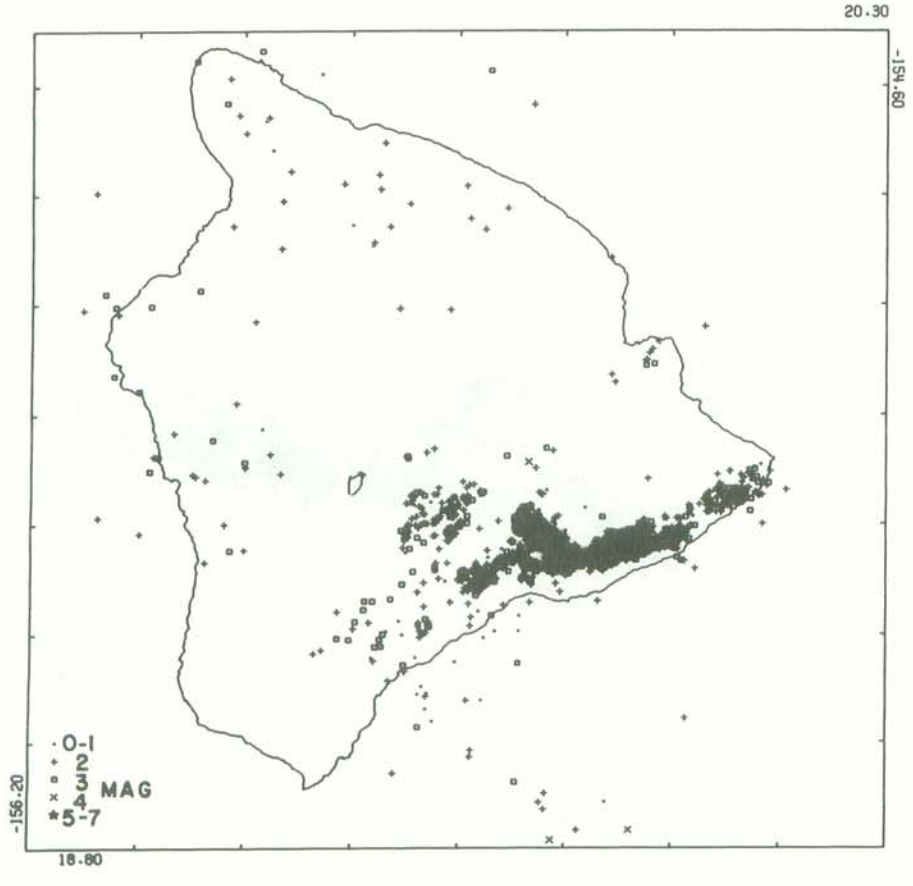

Figure 6. Epicenter plot of all events located for the year 1976.

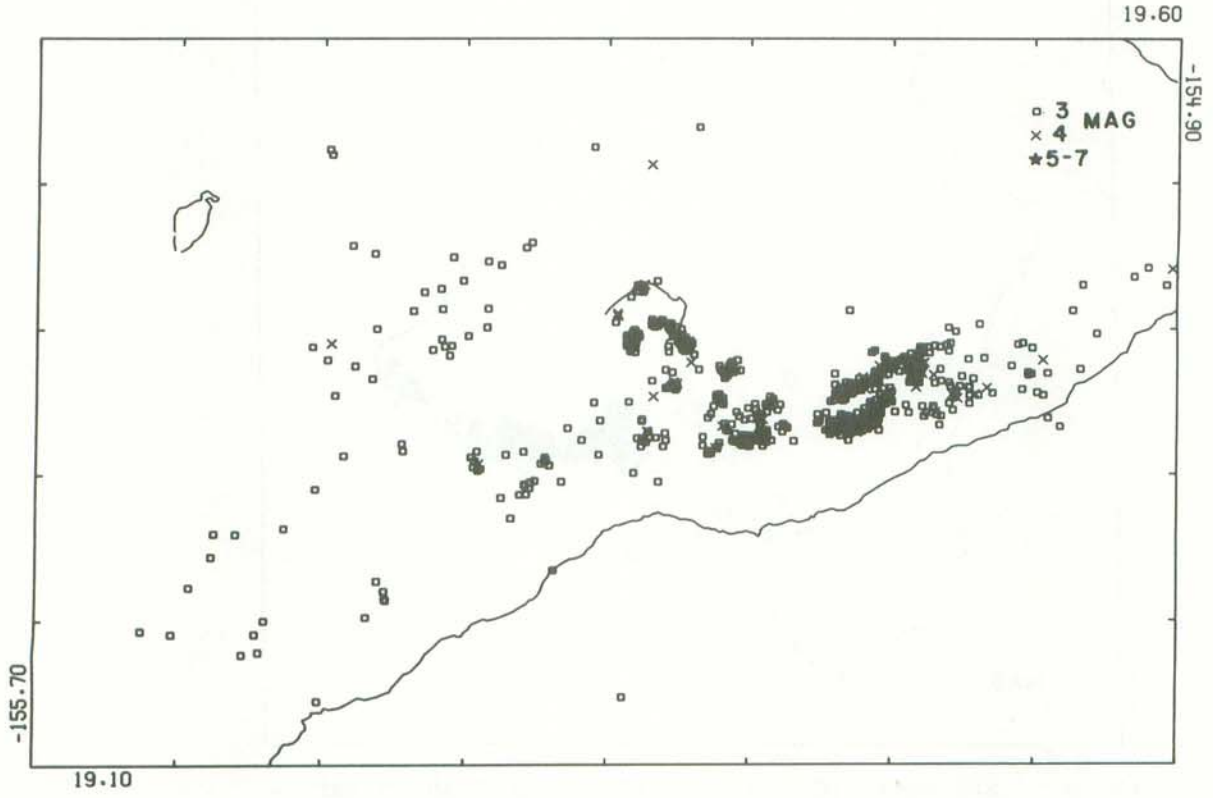

Figure 7. Epicenter plot of Mauna Loa and Kilauea earthquakes magnitude 3 and above for the year 1976.

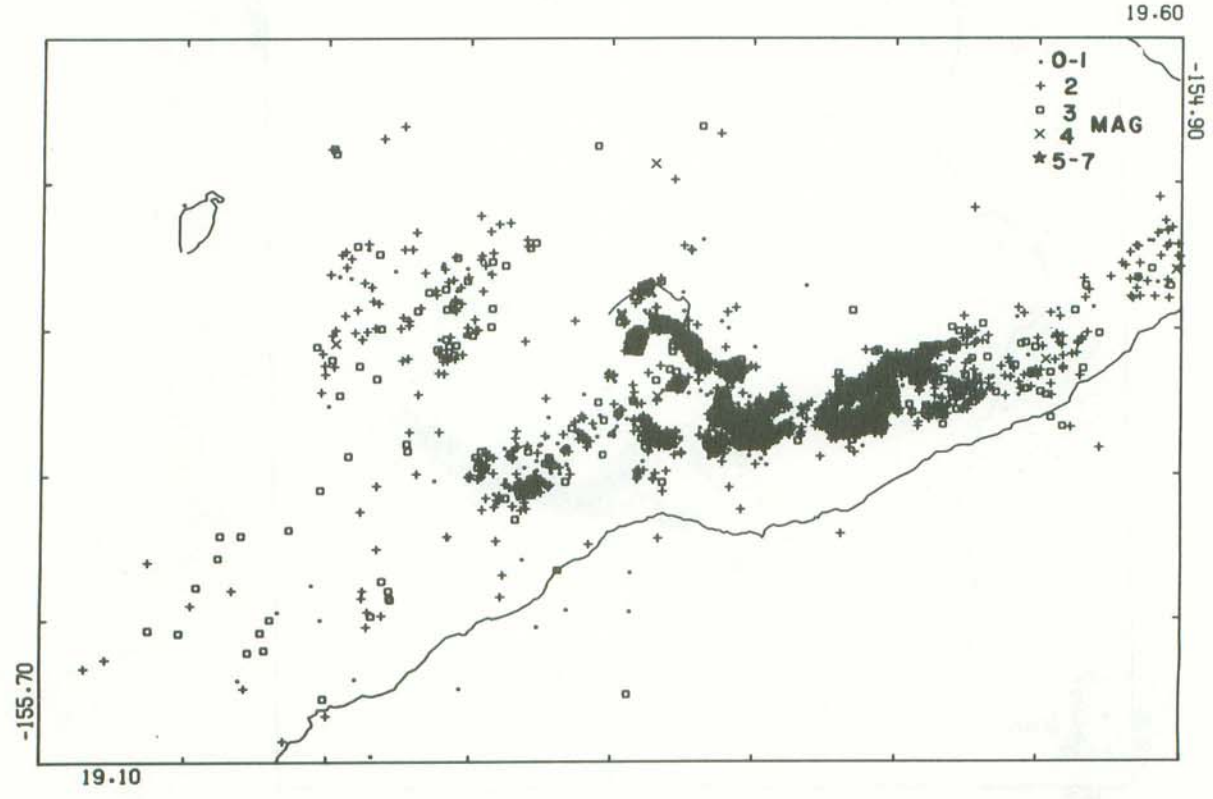

Figure 8. Epicenter plot of all Mauna Loa and Kilauea earthquakes located for the year 1976.

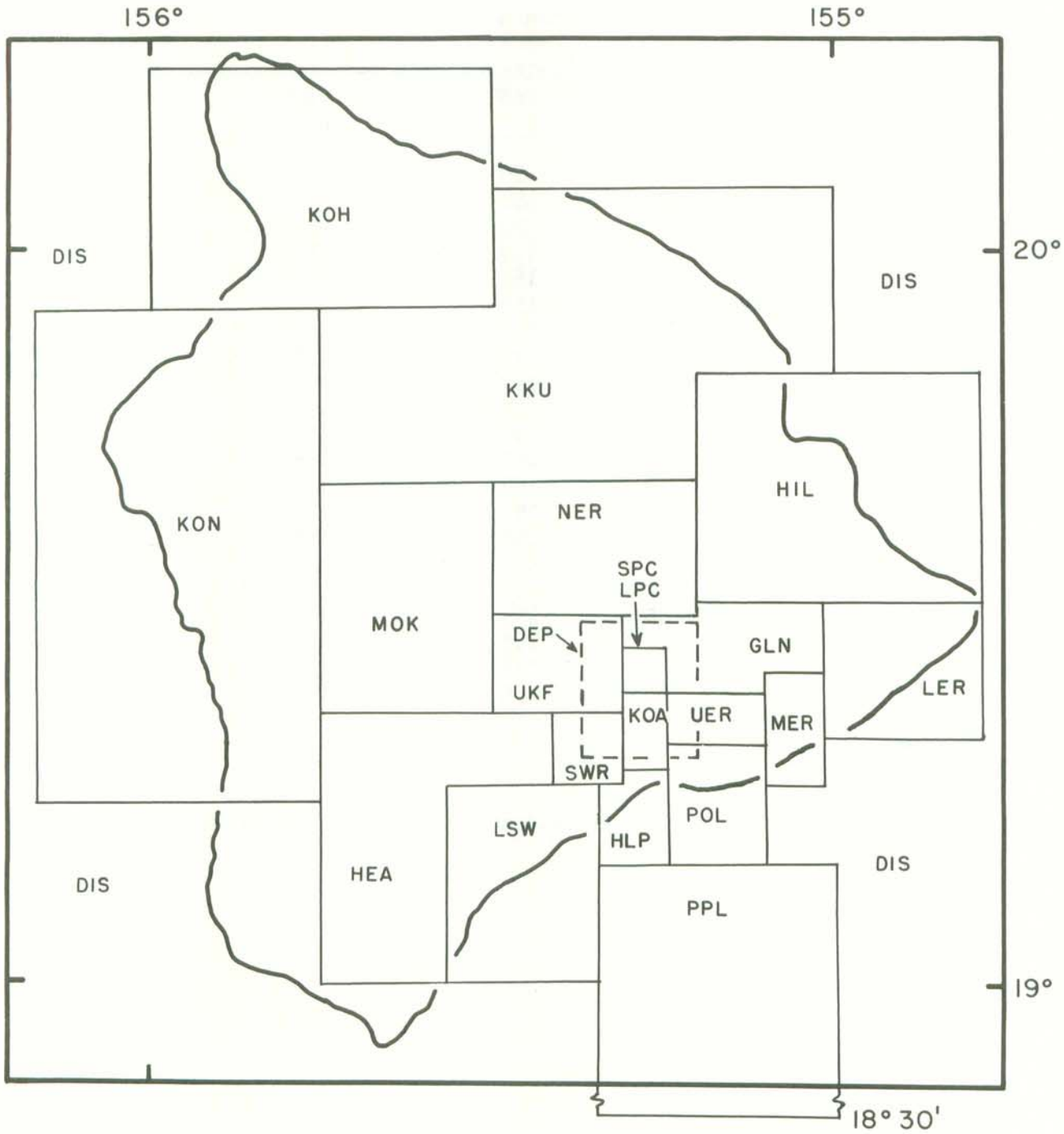

Figure 9. Map indicating limits of areas for specific mnemonic codes used in the remarks column of the earthquake summary. DEP is a code applied to earthquakes with depths greater than 13 kilometres in the Kilauea region. SPC is used for depths between 0 and 6 km, and LPC is used between 6 and 13 km.

Table 4. Coordinates of named regions.

Name	(Limits)								
	NORTH		SOUTH		EAST		WEST		DEPTHS
	D	M	D	M	D	M	D	M	0
SPC	19	27	19	23	155	15	155	19	0 - 6
LPC	19	27	19	23	155	15	155	19	6 - 13
DEP	19	29	19	18	155	22	155	22	13 - 70
UER	19	23	19	19	155	6	155	15	
KOA	19	23	19	17	155	15	155	19	
SWR	19	22	19	16	155	19	155	25	
UKF	19	29	19	22	155	19	155	30	
MER	19	25	19	16	155	1	155	6	
LER	19	31	19	20	154	47	155	1	
POL	19	19	19	10	155	6	155	15	
LSW	19	16	19	0	155	21	155	34	
PPL	19	10	18	30	155	0	155	21	
HLP	19	17	19	10	155	15	155	21	
MOK	19	40	19	22	155	30	155	45	
GLN	19	31	19	23	155	1	155	19	
KON	19	55	19	15	155	45	156	10	
HEA	19	22	19	0	155	25	155	45	
KOH	20	15	19	55	155	30	156	0	
NER	19	40	19	29	155	12	155	30	
HIL	19	50	19	31	154	47	155	12	
KKU	20	5	19	40	155	0	155	45	
DIS	EVERYPLACE ELSE								
BLS	QUARRY BLAST								

When coordinates imply an overlap, precedence is given as shown in Figure 9.

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = \left(\Sigma R_i^2 / NR \right)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standrad error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 9 for location of mnemonic code.

Table 5 lists all events located during 1976. Table 6 lists only events of magnitude 3.5 or larger.

TABLE 5. HVO EARTHQUAKE SUMMARY LIST PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	1	0 2	48.09	18	50.09	155	4.68	16.61	3.6	4.1	28	0	269	.10	54	3.9	29.5	PPL
		1	120	25.68	19	19.92	155	10.87	8.08	2.1	2.5	27	0	88	.15	7	.9	1.4	UER
		1	854	19.82	18	40.44	155	2.80	50.32	4.7	4.2	15	1	310	.08	78	6.0	14.1	PPL
		1	1536	47.31	19	21.71	155	15.08	9.34	3.5	3.9	30	0	60	.10	4	.4	.5	KOA
		1	2052	16.02	19	22.70	155	6.25	6.44	2.3	2.6	29	0	69	.15	8	.8	1.6	UER
		2	214	55.86	19	23.34	154	58.95	7.08	2.5	2.4	28	0	184	.13	10	1.2	.9	LER
		2	3 5	32.22	19	20.24	155	12.36	7.66	2.6	2.6	29	0	74	.13	6	.7	.9	UER
		2	311	36.82	19	22.40	155	4.31	7.06	2.3	2.5	27	0	94	.15	10	.9	1.5	MER
		2	19 8	23.79	19	20.05	155	7.69	7.11	2.9	3.4	27	0	93	.11	8	.8	1.1	UER
		2	2011	27.16	19	19.43	155	12.70	5.93	2.1	2.4	27	0	82	.14	7	.7	1.5	UER
		2	2018	21.43	19	22.31	155	7.00	5.98	2.3	2.5	30	0	68	.16	8	.9	2.0	UER
		3	137	13.34	19	20.42	155	19.29	9.13	2.5	2.7	30	0	51	.18	6	1.0	1.0	SWR
		3	537	1.25	19	17.60	155	20.78	7.87	2.1	2.6	29	0	125	.16	8	.9	1.3	SWR
		3	918	56.06	19	27.20	154	53.50	8.64	2.9	2.9	23	1	258	.11	19	2.4	.7	LER
		3	1352	3.34	19	17.38	155	22.08	6.00	1.9	2.3	23	0	133	.15	8	1.0	2.6	SWR
		3	1519	32.13	19	21.49	155	7.75	7.21	2.3	2.3	20	0	74	.12	9	.8	1.3	UER
		3	1532	22.26	19	19.75	155	19.42	6.54	1.9	2.4	25	0	61	.16	7	.9	1.8	SWR
		3	1834	25.26	19	19.67	155	13.34	6.62	2.2	2.8	28	0	68	.13	7	.7	1.0	UER
		3	2335	41.36	19	21.76	155	2.54	7.32	2.1	2.2	21	2	165	.15	13	1.5	1.1	MER
		4	157	55.96	19	27.42	154	55.81	7.82	2.3	2.3	25	1	243	.16	16	2.7	1.0	LER
		4	451	7.70	19	22.45	155	1.51	3.28	2.4	2.7	22	0	179	.17	11	1.2	1.4	MER
		4	5 8	9.16	19	19.44	155	13.14	7.79	2.0	2.5	26	0	74	.15	7	.9	1.3	UER
		4	521	39.41	19	20.31	155	8.67	7.10	1.8	2.1	25	0	73	.14	9	.9	1.7	UER
		4	557	26.71	19	24.23	155	16.18	1.64	1.3	2.1	10	0	125	.07	3	.5	.3	SPC
		4	620	50.96	19	28.56	154	52.23	9.76	2.3	2.3	22	0	263	.17	22	6.9	.6	LER
		4	727	58.90	19	22.60	155	5.06	7.23	1.9	1.7	24	0	93	.13	8	.7	1.3	MER
		4	1256	39.63	19	24.52	154	59.04	5.88	2.6	2.8	25	0	210	.17	11	2.2	1.6	LER
		4	1424	2.39	19	20.89	155	10.70	7.80	2.8	3.1	29	0	71	.12	8	.6	.9	UER
		4	2030	30.24	19	22.75	155	5.62	7.46	2.6	3.1	27	0	85	.13	8	.7	1.1	MER
		4	2342	26.70	19	19.47	155	19.40	8.60	2.3	2.8	27	0	65	.15	7	.8	1.0	SWR
		5	634	43.45	19	19.67	155	19.29	8.75	2.4	2.6	29	0	59	.15	7	.8	1.0	SWR
		5	941	30.46	19	19.74	155	12.75	3.95		1.2	17	0	76	.14	7	.8	2.3	UER
		5	1021	16.61	19	22.38	155	6.78	4.08		1.0	18	1	105	.17	8	1.0	2.6	UER
		5	1052	19.62	19	20.05	155	16.62	7.16	1.5	1.4	9	0	170	.07	5	1.3	2.6	KOA
		5	11 4	18.96	19	17.76	155	25.50	7.09	1.9	1.5	22	0	122	.18	12	1.2	3.1	HEA
		5	1111	15.10	19	20.44	155	8.78	8.25	1.8	1.6	23	0	70	.07	9	.5	.8	UER
		5	1120	6.87	19	19.54	155	20.73	5.06	1.5	1.5	19	0	125	.18	6	1.2	1.4	SWR
		5	1130	28.44	19	18.41	155	19.91	1.90		1.2	14	0	189	.19	7	2.0	99.0	SWR
		5	1138	22.91	19	27.28	155	28.33	8.72	2.0	1.3	12	0	106	.07	12	.7	2.8	UKF
		5	1243	43.97	19	24.63	155	16.41	35.83	2.5	2.9	16	1	135	.09	4	1.8	2.7	DEP
		5	1249	24.10	19	19.19	155	21.08	6.87	1.6	1.2	17	0	136	.14	7	1.2	1.7	SWR
		5	1254	47.75	19	18.17	155	21.17	7.03	1.7	1.6	18	0	117	.13	8	.9	1.7	SWR
		5	1327	22.74	19	20.08	155	16.33	8.17	2.0	2.3	26	0	87	.14	6	.8	1.1	KOA
		5	1353	40.46	19	21.39	155	10.91	7.59	1.8	1.9	25	0	64	.12	9	.7	1.0	UER
		5	1417	59.77	19	21.97	155	6.41	7.27	1.9	2.2	24	0	76	.12	7	.7	1.2	UER
		5	1421	40.27	19	19.95	155	8.44	7.31		1.1	20	0	79	.13	10	1.0	2.0	UER
		5	1439	4.26	19	18.41	155	11.89	1.17	2.2	2.3	24	1	121	.19	8	1.1	1.6	POL
		5	1451	29.28	19	14.52	155	21.79	7.76	1.9	1.4	22	0	155	.09	11	.6	1.3	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	5	1530	52.83	19	18.11	155	21.27	6.01	1.7	1.4	20	0	118	.13	8	.8	2.0	SWR
		5	1625	59.31	19	17.82	155	21.31	6.99	1.7	1.1	15	0	158	.11	8	1.1	2.3	SWR
		5	1629	32.01	19	17.89	155	21.54	3.36	1.7	1.1	21	0	119	.16	8	1.0	2.2	SWR
		5	17 4	4.11	19	22.95	155	24.34	9.50	2.2	2.0	28	0	61	.11	8	.5	.7	UKF
		5	17 5	31.42	19	22.08	155	2.39	5.90	2.2	1.8	20	0	160	.16	13	1.2	2.4	MER
		5	1723	18.81	19	20.21	155	19.41	6.61		.9	11	0	108	.06	6	.6	1.5	SWR
		5	1745	45.86	19	22.02	155	6.70	6.84	1.9	2.0	21	0	78	.15	8	1.0	1.8	UER
		5	18 0	17.10	19	23.95	155	23.70	8.91	1.9	2.1	23	0	68	.11	7	.6	1.2	UKF
		5	2223	27.03	19	20.51	155	5.89	1.24	2.2	2.4	14	0	110	.21	8	1.5	55.7	MER
		5	2311	21.63	19	15.61	155	8.29	3.81	2.1	2.2	20	0	221	.13	12	2.1	1.6	POL
		5	2317	44.84	19	19.54	155	12.72	6.51	3.4	2.5	13	0	80	.17	7	1.5	3.0	UER
		6	043	37.58	19	18.71	155	23.77	5.49	3.0	3.3	28	0	103	.17	9	.8	1.1	SWR
		6	047	2.75	19	19.24	155	12.94	5.60	1.6	1.2	17	0	81	.15	8	1.0	2.9	UER
		6	054	34.51	19	12.39	155	19.91	4.23	2.0	1.4	19	0	196	.09	14	1.1	1.1	HLP
		6	1 1	3.77	19	22.48	155	5.39	7.05		1.1	18	0	110	.12	8	.9	2.2	MER
		6	153	22.51	19	20.90	155	12.63	7.76	1.6	1.4	22	0	63	.11	6	.7	1.0	UER
		6	2 9	7.38	19	22.42	155	5.78	7.15	2.1	2.2	23	0	81	.12	7	.7	1.2	MER
		6	236	57.85	19	19.53	155	15.05	8.20	1.6	.9	17	0	96	.10	6	.7	1.3	KOA
		6	242	2.58	19	19.14	155	19.86	6.54	1.6	.7	14	0	120	.09	6	.8	1.6	SWR
		6	244	35.32	19	19.81	155	16.49	8.51	2.0	2.2	26	0	92	.12	5	.7	1.0	KOA
		6	258	12.78	19	20.02	155	16.71	7.06	1.5	.8	15	0	87	.09	5	.7	1.4	KOA
		6	316	6.23	19	19.00	155	13.36	7.81		.6	10	0	136	.05	7	.8	2.1	UER
		6	323	27.33	19	20.53	155	17.78	8.11	1.5	1.2	15	0	66	.08	5	.6	1.2	KOA
		6	525	42.28	19	25.58	155	24.59	11.84		1.1	14	0	79	.06	10	.6	2.4	UKF
		6	532	17.73	19	21.84	155	6.42	7.88	1.9	1.4	22	0	78	.15	7	.9	1.7	UER
		6	626	58.37	19	20.98	155	11.18	8.38	2.1	2.0	24	0	69	.14	8	.8	1.3	UER
		6	719	44.42	19	21.31	155	19.20	1.53		.8	10	0	83	.06	6	.5	99.0	SWR
		6	724	2.05	19	20.04	155	11.33	7.44	1.8	1.8	24	0	84	.14	7	.8	1.2	UER
		6	745	8.98	19	20.54	155	9.13	8.53	1.8	1.5	22	0	69	.08	8	.5	.7	UER
		6	752	7.19	19	17.51	155	20.69	7.98	2.1	2.1	27	0	126	.18	7	1.1	1.5	SWR
		6	758	29.20	19	20.44	155	10.08	7.52	1.7	1.3	22	0	76	.14	7	.9	1.8	UER
		6	8 6	12.76	19	21.80	155	8.35	8.07	2.8	2.9	26	0	65	.10	8	.5	.9	UER
		6	958	33.64	19	19.13	155	19.05	8.67	2.6	2.8	27	0	60	.12	8	.7	.8	SWR
		6	1258	52.02	19	26.69	154	53.65	8.54	3.2	3.3	25	0	226	.13	19	1.9	.8	LER
		6	1517	45.74	19	21.54	155	6.70	8.08	2.5	3.0	25	0	81	.12	7	.7	1.1	UER
		7	016	39.36	19	18.69	155	20.66	9.64	3.7	3.7	30	0	106	.11	6	.7	.4	SWR
		7	144	33.33	19	27.20	154	53.21	7.69	3.8	3.9	28	1	238	.09	19	.9	.5	LER
		7	952	33.40	19	18.96	155	23.34	6.20	2.4	2.5	25	0	102	.15	8	.8	1.6	SWR
		7	1031	13.26	19	20.65	155	17.57	7.37	2.3	2.7	25	0	57	.14	5	.7	1.0	KOA
		7	1051	8.52	19	17.69	155	21.88	7.05	2.4	2.8	26	0	120	.17	9	1.0	1.6	SWR
		7	1135	7.85	19	22.28	155	5.70	7.89	3.1	3.2	28	0	81	.11	7	.6	1.0	MER
		8	222	53.36	19	47.65	156	2.54	7.79	3.3	3.2	23	0	234	.16	43	2.6	1.2	KON
		8	817	42.30	19	21.38	155	13.26	8.71	2.3	2.0	26	0	54	.12	6	.7	.9	UER
		8	1925	7.08	19	20.22	155	16.55	9.23	2.8	3.4	29	0	84	.09	6	.4	.5	KOA
		8	22 7	53.11	19	21.44	155	8.23	7.31	2.5	3.0	23	0	69	.12	9	.8	1.2	UER
		9	911	19.37	19	19.61	155	12.61	6.58	2.3	2.8	26	0	80	.17	7	.9	1.8	UER
		9	2140	45.84	19	19.81	155	12.91	6.51	1.9	3.0	25	0	73	.19	7	1.1	2.1	UER
		10	139	.58	19	21.97	155	2.54	7.12	2.9	3.3	28	0	138	.13	13	.9	.9	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	10	4 7	4.26	19	20.74	155	6.60	8.98	3.0	3.3	27	0	97	.09	7	.6	.7	UER
		10	510	25.42	19	21.19	155	13.38	7.42	2.6	3.2	29	0	55	.15	6	.8	1.2	UER
		10	1029	7.83	19	20.24	155	18.33	29.43	2.9	3.0	32	0	62	.10	6	.8	1.4	DEP
		10	11 8	15.74	19	23.44	155	.46	6.61	2.6	3.0	25	0	163	.14	9	.9	1.3	LER
		10	1534	51.74	19	24.06	155	24.14	10.75	2.5	2.7	24	0	64	.06	8	.4	.2	UKF
		10	1652	22.99	19	20.72	155	6.85	7.08	2.5	2.8	25	0	95	.11	7	.7	1.2	UER
		10	2051	50.55	19	22.04	155	8.34	8.57	2.4	2.8	27	0	64	.14	9	.9	1.2	UER
		11	133	6.65	19	20.32	155	16.78	8.96	2.6	2.8	28	0	80	.09	5	.5	.6	KOA
		11	734	5.42	19	18.92	155	20.02	9.04	2.1	2.6	28	0	92	.12	6	.6	.8	SWR
		11	1226	9.77	20	1.20	155	36.98	17.99	2.7	2.7	25	5	172	.18	44	1.4	7.7	KOH
		11	14 5	40.17	19	30.77	155	16.17	24.49	4.2	4.2	32	0	61	.11	13	.7	1.8	GLN
		12	348	32.91	19	21.90	155	6.67	9.31	3.0	3.2	28	0	76	.11	8	.7	.8	UER
		12	829	10.09	19	20.43	155	13.19	5.95	2.0	2.1	15	0	166	.11	7	1.0	2.1	UER
		12	855	17.11	19	19.55	155	15.23	7.34		1.2	20	0	97	.10	6	.7	1.2	KOA
		12	925	33.36	19	21.18	155	6.00	7.76	1.9	2.0	25	0	92	.13	7	.8	1.4	UER
		12	938	5.95	19	24.21	155	15.97	1.51	1.7	1.6	17	0	124	.13	3	.6	.3	SPC
		12	938	48.69	19	19.17	155	7.38	6.33	1.9	1.1	19	0	116	.12	8	.9	1.8	UER
		12	949	20.79	19	20.73	155	11.01	8.64	1.7	1.3	18	0	80	.09	8	.7	1.4	UER
		12	951	31.95	19	24.13	155	15.93	1.57	1.6	1.7	12	0	121	.07	3	.4	.2	SPC
		12	1045	1.26	19	24.06	155	15.92	1.57	1.8	2.2	15	0	113	.11	3	.5	.4	SPC
		12	1113	38.78	19	21.03	155	13.43	9.30	2.7	2.9	29	0	55	.13	7	.7	.8	UER
		12	1133	11.32	19	19.87	155	16.08	7.55	1.7	1.7	23	0	88	.15	6	.9	1.3	KOA
		12	1241	26.15	19	21.12	155	7.89	7.64		1.6	20	0	81	.09	9	.8	1.2	UER
		12	1329	56.19	19	22.00	155	14.76	8.78	2.0	2.2	27	0	60	.16	4	.9	1.2	UER
		12	1344	56.35	19	19.59	155	12.47	6.16	2.4	2.9	29	0	83	.14	6	.8	1.3	UER
		12	1416	43.09	19	19.70	155	12.62	5.03		.9	18	0	79	.12	8	.7	1.3	UER
		12	1442	51.60	19	20.10	155	8.54	8.13		1.2	19	0	89	.09	9	.8	1.1	UER
		12	1734	57.69	19	19.59	155	20.84	6.86	1.7	2.0	21	0	112	.12	6	.7	1.4	SWR
		12	1737	34.49	19	19.64	155	16.30	6.86		1.0	16	0	98	.09	5	.6	1.3	KOA
		12	1746	24.82	19	20.46	155	13.11	7.40		1.3	21	0	63	.13	6	.9	1.6	UER
		12	1755	32.61	19	21.63	155	6.21	9.23	2.4	2.3	25	0	82	.11	7	.7	.9	UER
		12	1840	8.08	19	21.52	155	6.77	7.07	1.9	1.9	23	0	81	.12	7	.8	1.6	UER
		12	1950	16.70	19	27.96	154	55.00	4.21	2.5	2.1	26	0	165	.17	16	1.9	1.1	LER
		12	2013	14.70	19	19.21	155	12.12	7.15	2.6	2.7	27	0	95	.14	7	.8	1.2	UER
		12	2017	12.11	19	20.61	155	12.26	6.72		1.1	24	0	79	.13	7	.8	1.3	UER
		12	2027	14.98	19	19.78	155	12.43	6.65	1.6	1.4	22	0	80	.15	6	.9	2.0	UER
		12	2043	54.80	19	20.78	155	13.66	6.90		.9	18	0	62	.11	7	.8	1.5	UER
		12	21 7	.19	19	19.07	155	12.36	3.76		1.1	21	0	95	.15	7	.8	2.0	UER
		12	2138	32.63	19	20.29	155	17.35	6.82	1.5	1.7	22	0	62	.12	5	.7	1.1	KOA
		12	2339	12.12	19	21.37	155	13.77	8.24		.9	18	0	73	.09	6	.7	1.0	UER
		12	2356	20.82	19	21.01	155	6.91	8.96	3.2	3.2	29	0	89	.11	7	.7	.6	UER
		13	022	31.91	19	19.50	155	12.44	6.05	2.0	2.1	26	0	85	.16	7	.9	1.8	UER
		13	029	56.12	19	24.91	154	57.66	7.79	2.2	1.9	23	0	180	.16	12	1.8	1.2	LER
		13	046	20.82	19	19.97	155	11.96	6.82	2.1	2.1	27	0	81	.15	6	.9	1.3	UER
		13	233	18.22	19	17.48	155	21.72	3.61	1.3	1.3	21	0	123	.15	9	1.0	2.2	SWR
		13	256	43.88	19	19.92	155	14.24	7.22		1.3	24	0	65	.12	6	.7	1.1	UER
		13	344	.09	19	20.51	155	8.55	8.71	2.3	2.2	25	0	73	.10	10	.7	.9	UER
		13	350	23.70	19	20.74	155	7.14	5.86		1.2	23	0	91	.16	8	1.1	2.9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	13	439	6.71	19	21.31	155	8.43	6.97		1.4	23	0	68	.14	9	.9	2.0	UER
		13	459	26.05	19	17.79	155	22.49	6.23		1.3	21	0	116	.14	8	.9	2.3	SWR
		13	516	41.93	19	21.32	155	11.19	8.81		1.1	21	0	90	.10	8	.7	1.2	UER
		13	534	23.25	19	19.88	155	7.06	8.35	1.9	1.2	21	0	153	.24	12	1.6	1.9	UER
		13	542	.26	19	20.15	155	6.91	5.66		.8	20	0	106	.12	7	.9	2.0	UER
		13	6 8	25.24	19	19.47	155	13.88	7.46	2.1	1.6	24	0	62	.14	6	.8	1.5	UER
		13	617	54.90	19	18.97	155	13.63	5.54	1.6	1.3	22	0	69	.12	7	.6	1.7	POL
		13	638	8.13	19	23.66	154	59.36	4.41		1.2	21	0	175	.15	9	1.4	1.3	LER
		13	659	19.41	19	28.12	154	54.60	4.02		1.3	21	0	168	.18	16	2.2	1.7	LER
		13	7 7	3.08	19	19.76	155	12.21	6.39	1.7	1.1	18	0	83	.14	6	.9	2.3	UER
		13	722	38.73	19	17.71	155	21.51	5.61		.9	19	0	121	.18	8	1.3	3.1	SWR
		13	745	54.53	19	19.72	155	12.37	5.98	1.8	1.5	25	0	82	.16	6	.9	1.8	UER
		13	847	23.20	19	20.26	155	13.91	8.24		1.3	15	0	70	.08	6	.6	1.4	UER
		13	921	23.76	19	23.12	155	4.90	7.28		1.9	19	0	97	.19	9	1.4	3.5	MER
		13	943	28.27	19	19.28	155	20.30	5.34	.7	1.2	12	0	158	.04	6	.4	.6	SWR
		13	955	34.85	19	20.40	155	17.73	7.29	1.8	2.4	22	0	65	.10	5	.6	1.1	KOA
		13	1023	26.17	19	21.57	155	10.79	7.61	2.1	2.5	23	0	85	.12	8	.8	1.1	UER
		13	1038	18.30	19	20.24	155	7.21	2.60	1.0	1.2	14	0	99	.14	8	1.0	16.3	UER
		13	1046	45.80	19	19.98	155	17.77	7.34	.6	1.1	8	0	130	.06	6	1.0	2.6	KOA
		13	1118	46.07	19	21.34	154	59.75	3.76	1.4	1.8	14	2	206	.18	12	1.8	2.5	LER
		13	1137	56.28	19	19.12	155	13.68	6.94		1.6	18	0	82	.12	7	.9	2.0	UER
		13	1139	57.47	19	19.06	155	11.50	8.37	1.2	1.0	11	0	144	.02	7	.3	.6	UER
		13	1143	46.43	19	20.34	155	16.70	7.33		1.6	14	0	80	.06	6	.5	1.0	KOA
		13	1213	35.54	19	21.17	155	8.13	7.45	2.1	2.6	19	0	75	.12	9	.9	2.1	UER
		13	1248	57.81	19	20.68	155	2.94	6.82	2.1	2.8	18	0	131	.09	11	1.0	1.2	MER
		13	1340	57.79	19	21.35	155	7.82	9.34		2.3	16	0	107	.08	9	.8	1.8	UER
		13	1412	34.18	19	17.04	155	21.97	3.41	1.1	1.7	20	2	126	.20	8	1.2	3.7	SWR
		13	1423	19.98	19	21.60	155	2.62	5.94		1.0	9	1	157	.14	12	1.8	3.8	MER
		13	1443	51.46	19	19.52	155	8.05	8.53		1.9	17	0	92	.07	9	.6	1.5	UER
		13	1531	34.65	19	20.82	155	11.08	6.79	1.1	1.5	14	0	72	.14	8	1.0	2.1	UER
		13	16 1	35.23	19	22.29	155	6.54	6.56	2.2	2.9	22	0	71	.15	8	1.0	1.7	UER
		13	16 4	19.69	19	22.30	155	5.23	7.08		2.1	16	0	88	.13	8	1.0	2.8	MER
		13	1616	33.99	19	20.03	155	7.07	9.13	2.4	3.0	28	0	105	.11	7	.7	.7	UER
		13	1621	32.48	19	20.41	155	8.92	6.90		1.6	14	0	116	.12	8	1.1	2.7	UER
		13	1658	40.29	19	20.67	155	9.68	7.48		1.4	14	0	71	.11	7	1.0	2.2	UER
		13	1659	26.34	19	21.47	155	2.99	7.16		1.1	8	0	144	.03	12	.6	1.1	MER
		13	17 8	36.59	19	24.83	154	59.12	10.25		1.1	8	0	163	.32	11	9.1	2.4	LER
		13	17 9	54.34	19	20.68	155	9.91	8.64	1.4	2.3	16	0	72	.08	7	.6	1.4	UER
		13	1720	24.39	19	18.96	155	16.32	7.53	.8	1.1	12	2	120	.05	6	.5	.9	KOA
		13	1728	36.76	19	21.26	155	13.95	10.03	1.0	1.1	14	0	60	.04	6	.5	1.4	UER
		13	1747	56.18	19	20.41	155	9.04	8.74		1.9	16	0	70	.08	8	.7	1.5	UER
		13	1756	25.20	19	20.35	155	20.69	2.81		1.6	7	2	126	.11	6	.8	6.9	SWR
		13	1816	43.54	19	21.57	155	8.28	6.64		2.2	18	0	77	.13	9	.9	2.2	UER
		13	1819	11.66	19	26.49	155	24.15	7.91	1.2	1.1	13	0	94	.09	10	.9	3.0	UKF
		13	1824	9.61	19	17.58	155	20.61	5.52		1.3	7	2	237	.04	7	1.7	.7	SWR
		13	1843	54.02	19	22.38	155	5.04	6.42	1.1	1.4	19	0	92	.15	8	1.1	3.0	MER
		13	1850	27.59	19	19.71	155	18.04	5.51	.6	1.1	11	0	78	.05	6	.5	.8	KOA
		13	19 3	50.39	19	19.82	155	17.89	5.13		1.3	15	0	77	.09	6	.6	.9	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	13	19 5	4.99	19	19.63	155	17.89	5.68	.7	1.2	11	0	131	.07	6	.7	1.3	KOA
		13	19 5	51.95	19	19.58	155	17.91	5.28	.7	1.3	11	0	82	.05	6	.5	.5	KOA
		13	1916	25.61	19	19.64	155	17.90	5.70	.7	1.6	12	0	80	.09	6	.8	1.4	KOA
		13	1925	51.27	19	20.79	155	13.50	7.29	1.4	1.8	16	0	60	.11	7	.8	1.6	UER
		13	1937	46.02	19	19.63	155	18.10	4.85		1.7	11	0	80	.04	6	.4	.8	KOA
		13	1953	6.27	19	24.75	155	16.62	13.29		1.1	21	0	91	.09	4	.7	1.0	DEP
		13	20 9	52.18	19	23.67	155	24.86	6.70	1.8	2.1	18	0	76	.09	9	.6	1.8	UKF
		13	2021	41.02	19	20.13	155	7.06	2.64		1.4	14	0	104	.12	7	.9	4.2	UER
		13	2026	40.00	19	24.03	154	49.89	5.72	2.4	2.0	21	1	283	.20	24	2.5	2.6	LER
		13	2027	43.11	19	26.29	155	23.23	4.00	1.1	1.3	11	2	131	.14	10	.7	3.3	UKF
		13	2046	33.27	19	23.57	155	25.32	7.29	1.3	1.5	14	0	133	.09	10	.9	2.0	UKF
		13	2113	55.98	19	21.91	155	5.20	7.99	1.8	2.2	21	0	86	.18	8	1.3	1.8	MER
		13	2126	44.80	19	20.89	155	8.44	7.22		2.0	17	0	72	.09	9	.7	1.7	UER
		13	22 5	3.17	19	21.65	155	5.70	.48		1.0	7	0	98	.07	7	1.0	99.0	MER
		13	22 9	25.35	19	19.21	155	12.18	7.36		1.3	15	0	94	.15	7	1.4	2.8	UER
		13	2230	19.30	19	20.37	155	17.65	7.39	.8	1.1	16	0	67	.13	5	1.0	1.9	KOA
		13	2243	35.00	19	20.88	155	9.02	7.47	.6	1.3	8	0	100	.05	8	.7	1.4	UER
		13	23 1	54.03	19	20.52	155	6.75	6.76	1.0	1.5	13	0	169	.16	9	1.8	4.2	UER
		13	23 2	57.90	19	19.85	155	16.29	6.29		1.2	17	0	93	.13	5	1.0	1.9	KOA
		13	23 5	28.72	19	20.14	155	10.65	6.88	1.1	1.2	16	0	166	.11	8	1.2	1.9	UER
		13	2318	9.76	19	21.67	155	6.83	7.04		1.3	18	0	78	.16	8	1.2	2.2	UER
		13	2320	27.73	19	20.79	155	10.90	7.71		1.1	17	0	82	.11	8	.8	1.6	UER
		13	2346	8.94	19	19.07	155	22.54	6.57		1.2	14	0	129	.15	9	1.5	2.7	SWR
		14	012	39.23	19	21.27	155	.77	5.86	1.3	1.3	19	0	218	.23	13	3.3	2.4	LER
		14	1 4	.00	19	19.80	155	11.59	6.74		2.3	23	0	87	.12	6	.7	1.6	UER
		14	2 9	22.85	19	18.39	155	11.43	5.57	1.1	1.0	15	0	127	.14	7	1.2	3.6	POL
		14	213	48.59	19	21.70	155	15.16	7.30		1.2	16	0	60	.11	4	.8	1.4	KOA
		14	235	46.78	19	20.19	155	7.68	7.20	2.2	2.6	25	0	91	.10	8	.6	1.0	UER
		14	248	37.61	19	21.73	155	8.39	8.71	2.5	3.1	29	0	65	.13	8	.7	.9	UER
		14	346	18.39	19	20.80	155	10.69	7.01		1.1	18	0	72	.13	8	1.0	1.9	UER
		14	4 8	56.19	19	22.03	155	1.09	6.33		1.5	20	0	173	.17	12	1.5	2.3	MER
		14	414	58.41	19	19.83	155	12.56	4.21		1.2	19	0	78	.17	6	1.0	1.7	UER
		14	427	6.56	19	18.76	155	12.16	8.00		1.0	6	0	125	.02	7	.7	2.0	POL
		14	434	15.09	19	17.89	155	23.46	5.18		1.4	16	0	149	.11	8	.8	1.0	SWR
		14	450	36.79	19	22.19	155	2.63	4.09		1.1	12	0	152	.11	13	1.0	1.7	MER
		14	452	14.09	19	27.05	155	23.54	9.62		1.6	17	0	93	.10	11	1.0	3.9	UKF
		14	544	41.32	19	21.81	155	15.43	8.33		2.0	23	0	59	.15	4	.9	1.5	KOA
		14	545	43.30	19	21.06	155	7.49	7.00	1.0	1.0	12	0	82	.16	8	1.5	3.9	UER
		14	552	5.89	19	26.39	155	27.18	8.45	1.1	1.1	11	0	118	.14	13	1.9	5.2	UKF
		14	556	19.84	19	20.16	155	7.18	7.84		1.6	19	0	101	.10	7	.7	1.0	UER
		14	557	15.92	19	19.99	155	12.71	4.55		2.1	21	0	73	.17	6	1.0	1.5	UER
		14	622	29.79	19	21.98	155	8.40	10.24	1.1	1.2	16	0	79	.08	9	.7	2.6	UER
		14	625	43.46	19	21.37	155	6.37	6.74		1.4	19	0	86	.14	7	1.0	2.0	UER
		14	629	57.79	19	21.21	155	12.16	8.64		1.0	14	0	65	.14	7	1.3	2.5	UER
		14	645	9.74	19	21.10	155	8.26	7.45		1.5	17	0	82	.12	9	1.1	2.2	UER
		14	710	50.60	19	18.07	155	20.58	5.69		1.1	13	0	205	.11	7	1.3	2.4	SWR
		14	713	54.91	19	18.55	155	16.67	6.45		1.6	22	0	113	.16	6	1.0	1.9	KOA
		14	722	26.97	19	19.90	155	12.47	5.90		2.0	23	0	77	.15	6	.9	2.2	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	14	729	16.68	19	21.77	155	2.87	5.00		1.2	13	0	147	.14	12	1.5	1.5	MER
		14	729	42.23	19	21.48	155	7.07	4.96		1.0	8	0	106	.08	8	1.1	2.3	UER
		14	746	12.78	19	26.17	155	29.54	8.83	1.1	1.0	11	0	137	.07	13	1.1	3.1	UKF
		14	750	2.06	19	20.91	155	17.91	6.29	2.1	2.7	18	0	44	.13	5	.8	1.8	KOA
		14	8 3	27.61	19	22.22	155	6.52	8.95	3.2	3.3	29	0	71	.11	8	.6	.7	UER
		14	846	42.25	19	20.12	155	6.61	7.68	2.1	2.6	28	0	111	.12	7	.6	1.0	UER
		14	1034	27.90	19	17.18	155	21.45	7.27	2.6	3.1	28	0	127	.18	9	1.0	1.7	SWR
		14	12 9	51.84	19	22.15	155	6.54	7.35	2.3	3.0	25	0	72	.12	8	.7	1.4	UER
		14	16 9	14.54	19	17.93	155	21.26	6.78	2.4	2.6	24	0	120	.13	8	.8	1.4	SWR
		14	2043	14.29	19	22.90	155	4.21	7.22	2.0	2.6	25	0	98	.10	10	.5	.9	MER
		15	721	47.45	19	20.16	155	7.80	7.78	2.2	2.5	24	0	90	.12	9	.7	1.3	UER
		15	934	47.09	19	20.12	155	9.08	9.10	2.2	2.8	29	0	75	.11	8	.6	.5	UER
		15	1038	23.91	19	20.19	155	8.61	8.17	2.3	2.9	29	0	74	.08	9	.4	.5	UER
		15	1241	45.31	19	24.55	155	17.59	14.21	4.4	4.5	35	0	46	.09	4	.5	.8	DEP
		15	1259	26.09	19	24.65	155	17.60	16.07	4.5	4.7	34	0	46	.10	4	.6	1.0	DEP
		15	1357	51.81	19	23.20	155	3.64	7.69	2.5	2.9	29	0	109	.13	11	.8	.9	MER
		15	22 7	45.62	19	22.64	155	6.49	7.66	2.4	2.8	27	0	66	.11	8	.6	.9	UER
		15	2212	49.26	19	22.27	155	.08	5.60	2.5	2.7	28	0	185	.12	11	.9	1.2	LER
		15	2217	43.92	19	22.23	155	.24	5.65	2.5	3.1	27	0	183	.12	11	1.1	.9	LER
		15	2350	33.50	19	23.24	155	.08	6.85	2.4	3.1	27	0	171	.15	9	1.2	1.1	LER
		16	1428	39.50	19	28.36	155	22.35	7.93	2.9	2.8	28	0	99	.14	11	.7	1.4	UKF
		16	1929	13.84	19	22.49	155	6.53	8.43	3.7	4.0	29	0	68	.09	8	.7	.6	UER
		16	20 0	3.85	19	21.29	154	59.61	2.18	3.2	3.8	25	0	206	.12	12	1.2	1.5	LER
		16	2337	1.23	19	21.63	155	15.10	8.34	2.5	2.9	30	0	61	.14	4	.8	.9	KOA
		17	1520	5.29	19	24.22	155	17.48	14.69	2.8	2.9	32	0	39	.09	4	.5	.9	DEP
		17	1613	28.37	19	19.85	155	11.47	7.45	2.3	2.8	27	0	87	.13	6	.7	1.2	UER
		17	2041	39.33	19	27.23	154	49.95	9.40	2.6	2.5	23	0	276	.14	25	4.4	.8	LER
		18	236	51.83	19	26.41	154	52.47	8.24	2.9	3.0	28	0	256	.12	21	2.2	.7	LER
		18	449	28.37	19	21.73	155	15.30	9.70	3.6	3.8	31	0	60	.09	4	.5	.3	KOA
		18	538	56.91	19	26.75	154	51.17	8.53	2.8	3.1	27	0	271	.14	23	3.4	.9	LER
		18	817	52.38	19	20.21	155	6.80	8.06	1.9	2.7	24	0	106	.12	7	.8	1.3	UER
		18	1137	26.46	19	22.20	154	59.44	1.73	2.4	3.1	25	0	195	.18	10	1.8	13.9	LER
		18	1319	21.23	19	22.92	155	5.79	7.23	2.7	2.8	30	0	75	.14	8	.8	1.2	MER
		18	1343	47.09	19	21.73	154	59.42	.07		2.4	11	0	203	.07	11	1.1	14.3	LER
		18	14 5	10.92	19	21.77	155	7.01	9.35	3.6	4.0	30	0	76	.10	8	.6	.5	UER
		18	1413	37.89	19	21.65	155	7.62	7.03	3.6	3.7	31	0	73	.09	8	.5	.7	UER
		18	1520	31.05	19	20.43	155	3.91	6.40	2.6	3.0	28	0	112	.15	9	1.1	1.0	MER
		18	1528	51.19	20	2.61	155	42.98	6.67	2.8	2.8	26	0	149	.16	41	1.0	1.2	KOH
		18	2357	46.47	19	22.56	155	5.92	7.94	3.6	3.5	32	0	71	.10	7	.5	.7	MER
		19	0 2	16.64	19	23.13	155	7.26	6.97	1 9	2.7	27	0	62	.17	10	1.0	2.0	GLN
		19	10 6	25.49	19	24.05	155	15.85	1.44	1.9	2.7	13	0	117	.13	3	.6	.4	SPC
		19	1853	37.22	19	18.97	155	22.23	7.15	1.7	2.5	23	0	103	.17	9	1.3	2.0	SWR
		19	2320	54.07	19	24.69	155	13.10	8.17	2.0	2.7	25	0	59	.09	6	.5	.9	GLN
		20	355	50.91	19	22.05	155	4.18	6.27	1.9	2.7	26	0	95	.12	10	.6	1.1	MER
		20	1113	53.89	19	22.56	155	13.81	.50	1.2	2.6	9	0	98	.06	4	.4	.4	UER
		20	15 0	32.72	19	21.82	155	3.57	7.31	2.5	3.0	27	0	108	.13	11	1.0	1.0	MER
		21	013	18.76	19	29.53	154	51.47	8.09	2.4	2.4	24	2	266	.17	22	2.1	1.0	LER
		21	522	17.72	19	21.92	155	6.70	7.89	3.0	3.2	28	0	75	.10	8	.5	.9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	21	1141	21.24	19	22.02	155	7.21	8.48	4.1	4.2	24	0	178	.12	10	1.3	.9	UER
		21	1529	12.82	19	19.96	155	8.43	9.12	2.6	3.0	30	0	79	.12	10	.8	.5	UER
		21	2155	8.76	19	27.53	154	51.84	8.06	2.4	2.8	20	0	269	.14	21	3.2	.8	LER
		21	2225	24.22	19	23.91	155	3.29	8.20	2.5	3.0	25	0	125	.10	11	.8	.7	MER
		22	348	48.29	19	21.78	155	7.25	7.27	2.1	3.0	26	0	74	.11	8	.5	.9	UER
		22	412	3.95	19	20.09	155	8.49	8.50	2.8	3.4	28	0	77	.09	9	.5	.7	UER
		22	737	4.20	19	22.60	155	1.15	6.77	2.3	2.8	23	0	162	.14	11	1.2	1.0	MER
		22	1332	4.59	19	24.32	155	17.42	14.89	2.4	2.7	32	0	40	.09	4	.5	.9	DEP
		22	2016	24.70	19	19.87	155	8.64	8.31	2.3	3.0	29	0	76	.09	9	.5	.7	UER
		23	145	47.84	19	18.54	155	23.63	4.57	2.2	3.0	23	0	105	.13	9	.7	1.2	SWR
		23	247	40.05	19	21.63	155	4.98	8.96	3.7	4.0	31	0	82	.13	9	.8	.6	MER
		23	5 2	52.40	19	19.57	155	9.99	8.17	1.8	2.8	29	0	93	.12	8	.7	1.2	UER
		23	659	12.14	19	19.33	155	11.82	8.54	2.0	2.7	21	0	96	.14	6	1.0	1.9	UER
		23	739	20.97	19	20.69	155	17.62	9.06	1.9	2.8	27	0	39	.14	5	.7	.5	KOA
		23	752	20.09	19	19.46	155	13.97	7.02	2.1	2.8	21	0	64	.13	6	.8	1.8	UER
		23	820	14.11	19	21.82	155	7.92	8.91	3.2	3.5	26	0	79	.10	8	.6	.7	UER
		23	1017	15.49	19	19.73	155	11.58	9.90	2.7	3.3	29	0	89	.14	6	.9	.4	UER
		23	2059	15.03	19	18.30	155	20.61	7.71	1.7	2.7	29	0	117	.15	7	.8	1.3	SWR
		24	052	27.98	19	19.93	155	10.39	2.33	2.0	3.0	18	0	124	.20	7	1.2	3.5	UER
		24	1 2	47.29	19	23.07	155	4.19	8.47	2.4	2.9	29	0	99	.10	10	.6	.7	MER
		24	251	7.39	19	20.31	155	7.31	7.69	1.9	2.7	29	0	96	.13	8	.8	.7	UER
		24	847	47.24	19	18.79	155	23.30	5.24	1.9	2.6	24	0	104	.14	8	.7	1.0	SWR
		24	1347	14.73	19	19.42	155	7.82	.48	2.4	3.1	23	0	99	.14	9	.9	6.1	UER
		24	1455	43.66	19	26.10	155	15.93	.47	1.9	2.5	19	2	107	.13	3	.5	.2	SPC
		24	1643	26.73	19	20.42	155	16.65	8.84	1.9	2.6	22	0	79	.09	5	.5	1.0	KOA
		25	016	42.31	19	19.50	155	12.69	6.23	2.0	2.5	25	0	81	.16	7	.9	1.8	UER
		25	126	15.87	19	18.91	155	7.73	5.04	1.9	2.5	15	0	110	.14	9	1.2	2.0	POL
		25	212	10.73	19	21.45	155	3.37	6.38	2.0	2.7	21	0	128	.14	11	1.1	1.9	MER
		25	413	16.98	18	54.26	155	14.22	9.86	2.9	2.8	22	0	257	.12	44	4.5	.7	PPL
		25	1851	48.54	19	23.90	155	15.30	1.62	2.2	2.7	18	0	96	.11	3	.5	.3	SPC
		25	1933	31.12	19	20.88	155	5.40	6.77	2.5	3.2	27	0	102	.14	8	.8	1.0	MER
		26	956	9.68	19	19.50	155	16.73	8.05	2.7	3.0	26	0	98	.13	6	.7	1.1	KOA
		26	1055	58.65	19	25.79	154	54.45	8.49	3.0	3.4	27	0	216	.16	17	2.3	1.1	LER
		26	1119	27.86	19	20.09	155	7.83	8.03	2.5	2.9	25	0	90	.14	9	.9	1.3	UER
		26	1123	6.89	19	47.51	155	30.71	31.84	2.9	2.6	31	1	95	.14	21	1.1	2.7	KKU
		26	13 0	4.04	19	27.33	154	53.15	8.59	2.4	2.6	26	0	240	.17	19	2.8	.9	LER
		26	1622	3.95	19	25.35	154	55.72	7.29	2.1	2.7	26	0	200	.17	15	2.2	1.4	LER
		27	0 2	57.51	19	19.58	155	12.24	6.95	2.1	2.8	30	0	86	.15	6	.8	1.2	UER
		27	131	18.79	19	20.12	155	7.68	1.31	1.8	2.5	20	1	148	.13	10	.9	1.7	UER
		27	535	51.38	19	21.20	155	6.17	8.69	3.6	3.8	31	0	91	.11	7	.7	.5	UER
		27	610	27.17	19	21.01	155	13.36	8.95	2.5	2.7	29	0	56	.12	6	.6	.7	UER
		27	1134	4.58	19	20.57	155	5.28	6.64	2.9	3.3	31	0	112	.13	8	.7	.9	MER
		27	2047	58.40	19	32.02	155	13.39	11.27	2.1	2.5	28	0	65	.12	17	.7	.3	NER
		27	2226	28.16	19	20.28	155	6.64	9.25	4.0	4.1	31	0	107	.10	7	.7	.5	UER
		28	330	37.81	18	53.24	155	14.88	9.15	2.6	2.6	21	0	260	.08	45	2.4	.6	PPL
		28	348	15.92	19	20.12	155	7.44	8.47	1.9	2.8	24	0	97	.11	8	.6	.9	UER
		28	641	27.79	19	19.02	155	20.04	9.30	2.2	2.8	25	0	90	.14	6	.8	1.1	SWR
		28	956	41.57	19	22.97	155	6.34	6.24	2.5	2.9	29	0	69	.16	8	.8	1.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	28	1620	18.59	19	20.49	155	6.90	9.29	2.8	2.7	29	0	99	.12	7	.8	.7	UER
		28	1845	25.87	19	19.74	155	11.33	8.79	2.5	3.1	26	0	90	.11	6	.6	1.0	UER
		28	2010	15.30	19	21.30	155	13.28	8.60	2.2	3.0	26	0	54	.12	6	.7	1.0	UER
		29	2 7	24.32	19	11.55	155	37.53	9.85	3.0	3.4	25	0	97	.22	21	1.5	.7	HEA
		29	5 0	56.17	19	20.61	155	6.46	9.04	3.2	3.4	27	0	102	.10	7	.7	.5	UER
		29	1019	56.47	19	22.74	154	59.64	8.66	4.7	4.9	33	0	184	.14	10	1.2	.9	LER
		29	1415	54.41	19	20.17	155	8.06	7.71	2.1	2.6	27	0	85	.13	9	.7	.9	UER
		29	1423	57.95	19	23.24	155	4.59	7.59	2.1	2.9	25	0	141	.13	9	.9	.9	MER
		29	2346	47.54	19	20.12	155	7.66	5.51	2.2	2.5	29	0	93	.13	8	.8	1.6	UER
		30	134	16.89	19	19.89	155	12.29	9.17	2.2	2.8	27	0	80	.11	6	.6	.9	UER
		30	2027	14.32	19	19.31	155	13.25	10.09	2.8	3.1	26	0	74	.13	7	.8	.4	UER
		31	122	.20	19	26.61	155	22.54	9.17	3.1	3.1	29	0	74	.14	10	.7	1.2	UKF
		31	8 7	17.22	19	24.13	155	15.64	1.88	2.2	2.7	23	0	63	.11	3	.5	.5	SPC
		31	1247	20.56	19	20.29	155	16.53	9.33	2.8	3.3	32	0	82	.11	6	.5	.4	KOA
		31	1345	48.81	19	25.27	154	54.51	8.15	2.2	2.3	25	0	220	.14	17	2.0	.9	LER
		31	1632	9.40	19	20.77	155	7.37	7.36	1.9	2.7	28	0	88	.11	8	.6	1.0	UER
		31	1759	11.76	19	27.86	154	53.62	8.41	2.4	3.3	24	0	217	.16	18	2.6	1.1	LER
		31	20 7	26.96	19	22.10	155	4.83	7.52	3.3	3.9	28	0	82	.13	9	.7	.9	MER
	FEB	1	916	5.08	19	22.20	155	6.84	8.57	2.2	2.4	26	0	71	.09	8	.5	.9	UER
		1	1741	9.45	19	19.07	155	19.95	9.77	2.6	2.9	28	0	87	.13	6	.6	.6	SWR
		2	332	18.25	19	20.93	155	11.12	8.87	2.2	2.6	28	0	70	.14	8	.8	1.1	UER
		2	549	52.21	19	27.65	154	55.20	7.87	1.8	1.9	16	4	185	.19	16	1.8	1.1	LER
		2	11 2	34.78	19	21.81	155	15.11	8.31	1.9	2.5	26	0	59	.12	4	.6	.9	KOA
		2	1217	7.63	19	23.83	155	16.80	1.51	1.7	2.3	15	0	80	.10	3	.5	.3	SPC
		2	1433	23.44	19	21.26	155	8.25	9.31	2.1	2.5	26	0	71	.07	9	.4	.5	UER
		3	739	57.67	19	20.75	155	4.02	5.57	2.0	2.5	25	0	114	.15	10	1.0	1.7	MER
		3	758	21.54	19	26.45	154	53.66	7.88	2.4	2.4	22	0	227	.17	19	2.9	1.4	LER
		3	1350	16.10	19	54.09	155	43.97	8.91	2.7	2.4	10	3	247	.08	42	.9	.8	KKU
		3	1454	23.30	19	20.40	155	13.68	8.52	2.0	2.4	21	0	57	.08	6	.5	.9	UER
		3	1642	13.45	19	22.68	155	5.95	8.74	3.4	3.7	30	0	72	.11	7	.6	.6	MER
		3	1737	6.19	19	18.37	155	20.48	9.56	2.5	3.1	28	0	115	.15	6	.9	.7	SWR
		3	2045	21.72	19	20.30	155	11.73	7.14	1.7	2.6	22	0	77	.12	7	.7	1.5	UER
		3	2050	58.46	19	21.67	155	15.18	9.78	3.5	3.8	29	0	61	.08	4	.4	.3	KOA
		3	21 3	35.93	19	23.25	155	4.70	8.07	2.3	2.9	25	0	91	.13	9	.9	1.4	MER
		3	21 5	25.71	19	29.11	154	52.11	6.93	2.4	2.7	19	0	263	.18	20	4.1	1.4	LER
		4	5 2	37.85	19	23.38	155	.67	6.75	2.4	3.0	24	0	160	.08	9	.7	.5	LER
		4	848	41.68	19	20.29	155	4.57	7.03	2.0	2.6	23	0	124	.11	8	.9	1.0	MER
		4	1029	49.54	19	21.63	155	7.61	7.96	2.8	3.3	27	0	73	.11	8	.6	.9	UER
		4	1150	51.72	19	21.27	155	2.29	6.04	2.6	2.9	24	0	156	.13	12	1.0	1.7	MER
		4	1533	39.32	19	39.55	155	6.40	.96	2.1	2.2	9	0	246	.17	33	3.9	50.2	HIL
		5	1 7	21.20	19	19.11	155	11.50	9.01	1.8	2.2	18	0	104	.09	7	.7	1.2	UER
		5	1149	4.48	19	21.42	155	8.12	8.14	3.1	3.6	28	0	71	.12	9	.7	.9	UER
		5	1457	58.60	19	24.09	155	15.11	2.00	1.9	3.1	12	0	117	.22	3	1.8	.0	SPC
		5	1919	16.71	19	20.45	155	7.11	9.27	3.2	3.6	28	0	96	.08	7	.6	.4	UER
		6	1 1	6.19	19	19.65	155	20.07	7.03	1.9	2.5	26	0	75	.14	6	.7	1.4	SWR
		6	139	.29	19	21.59	155	8.17	7.40	2.6	3.0	27	0	68	.16	9	.9	1.7	UER
		6	240	7.96	19	20.82	155	8.69	8.34	2.2	2.9	27	0	69	.12	8	.7	1.1	UER
		6	844	15.49	19	28.00	154	51.45	8.47	2.4	2.5	24	0	268	.15	22	3.4	1.1	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	FEB	6	845	22.08	19	20.68	155	13.05	8.10	2.0	2.9	26	0	62	.12	6	.7	.9	UER
		6	1848	31.45	19	25.60	155	25.49	9.42	2.4	2.5	28	0	52	.11	11	.5	.8	UKF
		6	2346	29.99	19	29.53	154	51.34	7.77	2.7	2.8	23	0	267	.16	22	3.4	1.0	LER
		7	5	8 55.01	19	21.36	155	8.16	11.20	2.2	2.7	17	0	71	.07	9	.6	.4	UER
		7	529	35.26	19	20.15	155	6.69	9.14	2.4	2.8	27	0	109	.09	7	.5	.6	UER
		7	742	42.77	19	19.10	155	22.05	5.96	1.8	2.7	21	0	101	.14	8	.9	1.9	SWR
		7	2248	12.26	19	19.77	155	7.46	7.82	3.2	3.7	27	0	103	.09	8	.5	.8	UER
		7	2346	41.99	19	20.46	155	6.78	9.29	2.0	2.7	24	0	101	.09	7	.6	.5	UER
		8	2	5 10.83	19	22.44	154	58.92	6.61	2.1	2.4	23	3	197	.15	15	1.3	1.7	LER
		8	540	55.17	19	14.61	155	34.62	10.35	2.7	3.0	25	0	114	.19	19	1.6	.6	HEA
		8	9	3 49.18	19	19.43	155	19.10	9.06	1.7	3.2	27	0	57	.13	7	.7	.8	SWR
		8	1441	32.43	19	18.01	155	19.77	6.64	2.0	2.8	24	0	123	.17	7	1.0	1.9	SWR
		9	020	21.18	19	22.90	154	58.92	6.33	2.2	2.5	27	0	191	.15	10	1.4	1.1	LER
		9	929	57.42	19	24.25	155	16.15	1.76	1.7	2.2	16	1	70	.14	2	.6	.4	SPC
		9	1041	52.28	19	21.33	155	2.37	6.01	2.1	2.5	16	0	152	.10	12	.9	1.2	MER
		9	1216	48.31	19	25.73	155	28.18	9.51	2.7	2.6	26	0	49	.14	13	.8	1.4	UKF
		9	1457	17.20	19	21.86	155	3.61	5.97	2.0	2.5	18	0	122	.09	11	.6	1.1	MER
		9	1853	48.76	19	22.99	155	4.95	7.22	2.1	2.7	22	0	96	.11	9	.7	1.4	MER
		10	638	25.33	19	19.42	155	16.49	9.00	2.3	2.8	29	0	97	.11	6	.6	.9	KOA
		10	839	39.73	19	20.33	155	13.27	6.97	1.6	2.5	21	0	63	.13	6	.8	1.5	UER
		10	1639	53.69	19	20.06	155	12.28	7.01	1.8	2.6	19	0	77	.10	6	.7	1.4	UER
		10	1646	17.38	19	18.26	155	23.24	5.05	1.1	1.9	15	0	146	.09	8	.6	.9	SWR
		10	1655	26.92	19	23.39	155	2.64	7.34	2.1	2.2	22	0	126	.12	11	1.0	.8	MER
		10	1744	30.45	19	23.71	155	16.70	1.68	1.6	2.2	15	0	80	.09	3	.5	.3	SPC
		10	1820	8.55	19	20.33	155	6.87	9.50	2.8	3.5	25	0	102	.09	7	.6	.6	UER
		10	1956	7.78	19	21.31	155	7.39	7.85	2.5	2.8	24	0	79	.10	8	.6	1.0	UER
		11	6	6 52.37	19	23.23	155	16.84	1.93	1.8	2.8	20	0	57	.13	2	.6	.3	SPC
		11	650	53.65	19	19.33	155	12.29	7.23	1.7	2.5	23	0	90	.11	7	.7	1.5	UER
		11	1457	22.73	19	28.20	154	49.40	8.01	2.5	2.4	19	0	277	.15	25	6.4	1.2	LER
		11	1513	39.03	19	27.49	154	52.44	9.25	2.5	2.9	21	0	264	.09	20	1.8	.6	LER
		11	1740	5.06	19	21.75	155	6.24	7.43	2.1	2.6	26	0	80	.13	9	.7	1.2	UER
		11	1847	3.99	19	20.21	155	7.08	6.83	1.9	2.2	24	0	102	.10	7	.6	1.2	UER
		11	21	6 34.24	19	20.74	155	8.68	8.56	1.8	2.6	25	0	70	.09	8	.5	.8	UER
		11	2219	30.53	19	17.81	155	21.24	5.70	1.7	2.4	22	0	121	.14	8	.8	2.3	SWR
		12	457	32.16	19	18.63	155	22.21	7.91	2.1	2.8	27	0	109	.12	9	.7	1.0	SWR
		12	618	26.21	19	21.67	155	3.51	7.25	3.2	3.8	28	0	109	.12	11	.8	.8	MER
		12	1531	19.56	19	20.84	155	6.41	6.99	2.1	2.6	23	0	97	.09	7	.5	1.0	UER
		12	1726	53.56	19	22.06	155	17.96	4.05	2.0	2.4	18	0	51	.12	4	.6	1.5	KOA
		12	1949	46.81	19	25.06	155	17.01	.90	1.7	2.6	12	0	150	.07	2	.6	.3	SPC
		12	2114	43.35	19	18.68	155	23.01	4.97	1.7	2.7	20	0	106	.11	8	.6	1.0	SWR
		13	049	51.86	19	31.33	155	57.70	9.68	3.6	3.1	27	0	234	.15	22	2.1	.4	KON
		13	712	29.09	19	22.12	155	4.99	7.14	2.9	3.1	28	0	80	.10	9	.5	1.0	MER
		13	1327	27.05	19	20.83	155	6.55	9.46	2.9	3.1	26	0	96	.09	7	.7	.6	UER
		13	2227	59.83	19	21.03	155	6.00	8.84	2.8	3.1	25	0	96	.10	7	.6	.9	UER
		14	049	47.22	19	22.07	155	3.02	7.14	2.7	3.1	24	0	124	.11	12	.7	1.0	MER
		14	1356	27.52	19	27.03	154	54.87	8.14	2.2	2.4	17	0	190	.14	17	2.1	1.0	LER
		14	2025	29.40	19	20.76	155	10.50	9.10	2.0	2.5	16	0	87	.08	8	.7	1.1	UER
		15	1028	53.34	19	21.44	155	6.00	8.39	2.3	3.1	16	0	111	.09	8	.7	1.1	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	FEB	15	2319	46.79	19	19.25	155	12.36	7.37	2.4	3.0	25	0	91	.12	7	.7	1.4	UER
		16	359	20.30	19	20.14	155	7.34	7.83	2.6	3.1	24	0	98	.15	8	.9	1.5	UER
		16	845	26.30	19	19.53	155	15.31	8.20	1.6	1.5	18	0	98	.08	6	.6	1.2	KOA
		16	856	10.72	19	22.39	155	13.22	4.14	2.1	2.7	19	0	51	.10	5	.6	1.2	UER
		16	1043	59.96	19	20.61	155	6.47	7.85	2.1	1.4	21	0	102	.12	7	.9	1.5	UER
		16	1045	24.32	19	21.15	155	2.59	5.93	2.2	1.5	23	0	164	.16	12	1.4	1.7	MER
		16	1136	11.46	19	21.83	155	13.01	1.83	1.4	1.4	7	0	162	.04	6	.8	.4	UER
		16	1219	34.16	19	19.49	155	12.58	7.33	1.8	2.0	22	0	83	.13	7	.9	1.7	UER
		16	1320	37.99	19	19.90	155	7.24	11.54		1.4	16	0	105	.11	8	1.2	.5	UER
		16	1411	48.31	19	20.56	155	6.58	8.42	2.5	2.7	24	0	101	.11	7	.7	.8	UER
		16	1418	26.81	19	19.76	155	16.74	7.12		1.1	17	0	94	.12	5	.9	1.7	KOA
		16	1419	2.53	19	19.79	155	15.16	8.11	1.6	1.6	20	0	91	.07	6	.5	.9	KOA
		16	1517	21.38	19	19.74	155	15.31	8.01		1.1	18	0	93	.06	6	.5	1.0	KOA
		16	1537	20.33	19	18.67	155	13.85	8.67		1.5	14	0	94	.07	7	.7	1.2	POL
		16	1549	5.28	19	23.10	155	17.06	1.63	1.0	1.3	9	0	121	.06	3	.6	.3	SPC
		16	17	0 23.77	19	19.24	155	20.99	5.87	1.6		19	0	123	.13	6	.9	2.0	SWR
		16	17	0 39.01	19	21.69	155	15.15	9.48	2.9	3.3	27	0	64	.10	4	.6	.7	KOA
		16	17	5 7.00	19	18.22	155	19.84	6.45		1.3	14	0	156	.09	7	1.2	1.6	SWR
		16	19	3 54.17	19	26.90	154	52.60	9.16		1.0	12	0	275	.11	20	3.7	.9	LER
		16	1917	22.52	19	23.57	155	2.52	7.62	2.1	1.5	19	0	144	.11	10	.8	1.3	MER
		16	1918	32.94	19	22.04	155	1.85	5.18	2.1	1.6	19	0	177	.17	12	2.1	1.6	MER
		16	1920	1.75	19	19.12	155	13.47	9.71	1.7	.7	21	0	77	.13	7	.9	1.2	UER
		16	20	3 28.08	19	20.84	155	29.96	8.63	2.0	1.4	21	0	58	.12	12	.9	1.2	HEA
		16	2056	7.40	19	19.07	155	16.38	6.92		1.1	13	0	116	.05	6	.5	1.2	KOA
		16	2128	39.21	19	30.54	154	50.09	8.85	2.5	1.6	19	0	320	.11	24	3.8	.8	LER
		16	2150	33.41	19	22.91	155	.38	4.01		1.4	18	0	199	.26	10	2.8	2.1	LER
		16	22	8 19.92	19	20.44	155	18.52	7.43		1.4	15	0	70	.06	6	.5	1.0	KOA
		16	2222	37.86	19	18.56	155	21.19	1.50		1.4	15	0	111	.10	7	.7	.0	SWR
		16	2241	46.16	19	19.16	155	15.44	7.00		.6	15	0	110	.06	6	.4	1.2	KOA
		16	23	7 25.54	19	19.49	155	11.92	4.79		1.6	18	0	173	.10	6	.7	.9	UER
		17	017	15.37	19	28.07	154	51.61	7.74		1.2	18	0	267	.15	22	3.9	1.1	LER
		17	026	5.94	19	21.16	155	4.01	6.67	2.5	2.6	23	0	102	.17	10	1.3	2.2	MER
		17	029	17.69	19	17.57	155	20.63	7.21	2.1	2.3	25	0	126	.14	7	.9	1.2	SWR
		17	054	2.35	19	23.71	155	24.25	9.95		1.1	15	0	63	.08	8	.7	1.2	UKF
		17	140	55.45	19	17.71	155	22.50	7.88		1.2	15	0	157	.13	8	1.3	1.5	SWR
		17	237	58.15	19	20.30	155	10.38	8.52		1.1	17	0	88	.09	7	.7	1.6	UER
		17	241	6.19	19	20.62	155	8.52	7.60		.6	19	0	73	.13	9	1.0	1.3	UER
		17	324	46.46	19	22.28	155	4.16	15.66		2.0	15	0	151	.12	10	2.8	4.4	MER
		17	343	16.98	19	34.43	155	45.99	7.39	2.5	1.7	13	0	133	.15	20	1.5	2.2	KON
		17	411	59.03	19	20.71	155	11.75	7.29		1.3	17	0	142	.15	7	1.4	2.4	UER
		17	532	2.18	19	23.91	155	16.00	3.00	1.9	2.3	18	2	105	.15	3	.7	2.0	SPC
		17	553	7.59	19	23.61	154	59.97	5.63	2.4	2.3	20	0	167	.13	9	1.3	2.0	LER
		17	6	4 21.92	19	19.64	155	12.30	7.10		1.4	16	0	146	.08	6	.6	1.2	UER
		17	6	6 42.83	19	19.86	155	7.69	7.30	1.9	2.2	24	0	96	.10	8	.6	.9	UER
		17	610	22.45	19	24.03	155	13.06	8.10	1.6	1.5	19	0	62	.11	6	.7	1.3	GLN
		17	7	4 6.97	19	20.36	155	9.35	7.62		1.4	20	0	73	.10	8	.7	1.4	UER
		17	721	43.25	19	22.01	155	6.13	6.91		1.6	23	0	76	.14	7	.9	1.6	UER
		17	726	57.11	19	24.41	155	16.22	1.83	.9	1.1	8	0	138	.04	3	.4	.2	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	FEB	17	752	16.59	19	24.14	155	15.93	1.67	1.7	2.2	14	0	113	.13	3	.7	.6	SPC
		17	8 2	24.76	19	22.47	155	5.00	7.50		1.5	18	0	93	.12	9	.9	1.8	MER
		17	1552	5.06	19	20.01	155	12.12	6.97	2.0	2.6	22	0	79	.12	6	.8	1.5	UER
		17	17 0	21.74	19	17.65	155	21.11	7.08	2.0	2.5	17	0	123	.13	8	1.1	2.4	SWR
		17	1931	59.20	19	13.23	155	34.04	9.39	2.7	2.9	22	1	122	.18	20	1.4	1.6	HEA
		18	425	36.76	19	20.12	155	7.47	8.12	2.5	3.0	25	0	96	.11	8	.7	.8	UER
		18	514	37.65	19	20.25	155	6.71	6.79	1.9	2.8	23	0	107	.10	7	.6	1.2	UER
		18	1050	47.59	19	27.07	154	52.51	8.67	2.4	2.1	21	1	259	.15	21	2.2	.8	LER
		18	1840	52.61	19	25.82	155	16.46	.69	2.8	4.1	21	1	128	.15	2	.6	1.2	SPC
		18	1848	55.63	19	25.49	155	16.45	.56	1.7	2.6	15	2	147	.10	2	.4	.2	SPC
		18	2020	23.77	19	17.41	155	21.18	7.48	1.9	2.6	21	0	126	.11	8	.8	1.3	SWR
		19	616	29.44	19	19.27	155	11.88	7.32	2.2	2.7	22	0	97	.11	7	.7	1.6	UER
		19	641	55.48	19	21.13	155	4.01	6.48	2.0	2.7	20	0	134	.11	10	.9	1.1	MER
		19	938	41.33	19	28.56	154	49.92	9.13	2.4	2.3	19	2	274	.15	24	2.7	1.0	LER
		19	2239	13.35	19	26.46	155	25.11	7.88	2.9	2.9	28	0	68	.12	11	.6	1.0	UKF
		19	2321	45.75	19	21.56	155	1.97	8.19	2.5	2.7	25	0	161	.11	13	1.0	.7	MER
		20	533	1.70	19	22.31	155	6.34	7.99	2.2	2.6	24	0	73	.12	7	.7	1.1	UER
		20	736	10.04	19	19.53	155	13.86	9.72	2.4	2.9	21	0	61	.10	6	.7	2.3	UER
		20	1332	45.36	19	18.03	155	22.05	8.68	2.1	2.7	19	0	116	.11	9	.8	1.1	SWR
		20	1951	14.91	20	24.95	156	1.29	31.75	5.1	4.6	5	0	162	.00	83	34.8	55.7	DIS
		21	136	29.96	19	17.27	155	21.66	7.51	2.4	2.9	27	0	125	.18	9	1.2	1.4	SWR
		21	4 0	4.66	19	20.65	155	6.82	8.16	1.9	2.6	24	0	97	.09	7	.5	.8	UER
		21	958	55.73	19	19.56	155	11.56	7.50	2.0	2.7	25	0	93	.09	6	.6	1.0	UER
		22	1251	27.47	19	22.51	155	5.21	9.03	2.5	3.0	21	0	90	.08	8	.6	1.1	MER
		22	1352	28.08	19	21.57	155	6.35	7.49	1.9	1.8	19	0	83	.14	7	1.1	2.0	UER
		22	2126	57.89	19	16.71	155	22.21	3.13	1.8	2.6	18	0	129	.15	8	1.0	3.8	SWR
		23	020	8.08	19	21.12	155	13.18	8.54	2.0	2.6	21	0	57	.09	6	.6	1.0	UER
		23	426	47.70	19	13.87	155	22.61	5.43		2.2	19	3	159	.12	12	.7	1.2	LSW
		23	7 2	28.80	19	22.18	155	12.98	2.77	1.4	2.4	15	0	62	.08	5	.6	1.5	UER
		23	736	.02	19	20.37	155	8.35	9.46	2.2	2.8	19	0	78	.08	9	.6	1.1	UER
		23	855	49.91	19	22.98	155	4.92	7.48	2.6	3.0	22	0	87	.12	9	.7	1.2	MER
		23	945	23.48	19	21.61	155	15.24	9.19	3.2	3.3	25	0	62	.11	4	.6	.9	KOA
		23	950	13.85	19	24.83	155	24.75	10.34	2.6	2.9	18	0	86	.08	9	.6	.5	UKF
		23	1150	2.34	19	24.75	155	24.63	9.03	2.8	2.8	20	0	85	.14	9	1.0	1.6	UKF
		23	1731	16.80	19	20.74	155	12.92	8.33	2.3	2.9	25	0	62	.08	6	.5	.5	UER
		23	1828	47.92	19	19.09	155	7.94	6.94	1.9	2.2	20	0	100	.10	9	.8	1.7	UER
		24	248	43.18	19	21.56	155	7.22	7.13	1.9	2.6	22	0	77	.09	8	.5	1.2	UER
		24	550	19.19	19	22.20	155	6.65	8.59	4.2	4.2	29	0	71	.11	8	.6	.7	UER
		24	6 4	15.91	19	22.12	155	6.24	7.09	1.9	2.2	23	0	87	.13	7	.7	1.4	UER
		24	9 0	.18	19	27.51	155	28.33	11.12	1.9	2.1	19	0	71	.10	12	.6	.6	UKF
		24	1442	32.63	19	23.27	155	4.81	7.82	3.2	3.6	23	0	129	.11	9	.7	1.0	MER
		24	1623	9.77	19	22.13	155	6.58	7.29	1.9	2.5	24	0	72	.10	8	.6	.9	UER
		24	1918	30.56	19	21.12	155	7.96	9.38	3.1	3.5	31	0	76	.11	9	.7	.4	UER
		25	325	47.55	19	20.09	155	13.08	6.90	1.7	2.5	24	0	67	.08	7	.5	.8	UER
		25	1030	35.10	19	22.36	155	6.64	8.41	2.4	2.7	23	0	76	.10	8	.6	1.0	UER
		25	1035	50.63	19	19.85	155	7.92	8.26	2.2	2.7	25	0	91	.11	9	.6	.7	UER
		25	1038	13.60	19	20.21	155	8.16	8.16	2.7	3.3	25	0	82	.13	9	.8	1.1	UER
		25	1048	25.20	19	19.42	155	11.74	6.34	2.0	2.4	25	0	94	.14	6	.8	1.7	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	FEB	25	11 2	43.48	19	20.21	155	17.03	7.23	1.8	2.4	21	0	81	.13	5	.8	1.2	KOA
		25	1348	20.37	19	22.17	155	6.35	8.98	3.9	4.2	31	0	73	.09	7	.5	.4	UER
		25	1957	6.62	19	20.08	155	8.61	8.16	2.0	2.6	28	0	75	.11	9	.6	.7	UER
		25	2258	5.60	19	22.69	155	24.98	9.56	1.9	2.3	30	0	57	.15	9	.8	.5	UKF
		26	342	21.55	19	24.09	155	16.06	1.40	1.5	2.3	14	0	110	.13	3	.6	.4	SPC
		26	1423	37.39	19	24.01	155	15.62	1.91		2.2	14	0	113	.06	3	.4	.3	SPC
		26	18 3	54.85	19	19.29	155	16.45	8.43	1.6	2.3	17	0	109	.05	6	.4	.6	KOA
		27	048	11.32	19	22.07	155	6.65	9.39	2.7	3.2	21	0	111	.07	8	.6	.5	UER
		27	1135	6.58	19	19.71	155	15.56	9.67	2.5	3.1	27	0	85	.09	6	.5	.3	KOA
		27	1526	18.92	19	21.13	155	10.99	8.35	2.5	3.1	25	0	68	.12	9	.6	.9	UER
		27	1758	35.41	19	21.90	155	7.05	8.00	2.9	3.3	28	0	74	.09	8	.4	.7	UER
		28	622	37.16	19	23.32	155	24.62	9.39	2.9	3.1	27	0	60	.12	9	.6	1.0	UKF
		28	1047	55.02	19	23.28	154	59.78	6.93	2.2	2.4	20	0	174	.12	9	1.2	1.2	LER
		28	1112	2.43	19	21.16	155	7.35	9.48	2.3	2.6	23	0	82	.10	8	.6	.8	UER
		28	1212	55.61	19	23.21	155	4.68	8.07	2.7	3.3	24	0	91	.10	9	.5	.9	MER
		28	1526	58.09	19	18.04	155	26.26	8.14	1.9	2.5	24	0	95	.17	9	.9	1.6	HEA
		28	1738	35.85	19	19.18	155	12.07	8.78	2.5	2.8	22	0	97	.09	7	.6	1.0	UER
		28	2037	49.12	19	21.89	155	15.09	9.94	2.0	2.5	22	0	58	.08	5	.5	.7	KOA
		28	2355	25.89	19	22.42	155	6.36	8.12	3.3	3.6	25	0	69	.11	8	.6	.8	UER
		29	1133	.35	19	25.85	155	16.24	1.09	2.1	2.6	15	3	119	.16	4	1.0	.6	SPC
		29	1446	11.92	19	17.73	155	21.09	8.34	2.7	3.2	24	0	122	.13	8	.9	1.2	SWR
		29	18 3	10.88	19	19.68	155	15.54	8.78	2.0	2.9	23	0	86	.07	6	.4	.7	KOA
		29	1941	58.83	19	20.28	155	6.61	9.13	3.1	3.5	27	0	107	.11	7	.8	.5	UER
	MAR	1	325	44.79	19	23.62	155	3.11	7.28	2.3	2.6	21	0	117	.13	11	.9	1.4	MER
		1	517	11.98	19	19.46	155	8.49	7.92	1.9	2.3	19	0	81	.08	10	.5	.8	UER
		1	854	57.59	19	19.35	155	16.28	8.20	2.0	2.7	24	0	97	.07	6	.5	.6	KOA
		2	023	44.65	19	25.26	155	16.79	.79	1.6	2.6	9	0	158	.06	3	.7	.2	SPC
		2	433	33.70	19	18.98	155	13.57	9.10	2.5	2.9	28	0	70	.09	7	.6	.8	POL
		2	812	33.82	19	23.49	154	58.28	6.02	2.5	2.8	23	0	190	.15	11	1.5	1.9	LER
		2	938	7.81	19	20.29	155	12.21	6.55	1.6	1.4	20	0	74	.16	6	1.1	2.2	UER
		2	946	27.07	19	20.77	155	11.14	8.99		1.4	18	0	72	.07	8	.6	1.0	UER
		2	10 6	32.52	19	19.25	155	11.91	6.50		1.2	20	0	97	.16	7	1.1	2.4	UER
		2	1026	23.53	19	22.46	155	5.32	8.01	1.9	2.3	23	0	88	.15	8	1.0	1.5	MER
		2	11 4	22.70	19	19.29	155	12.84	8.15		1.4	19	0	82	.07	7	.5	1.1	UER
		2	1114	30.99	19	20.10	155	13.21	7.73		.9	19	0	66	.13	6	1.0	1.9	UER
		2	1150	12.64	19	20.76	155	11.77	9.21	1.7	1.8	23	0	70	.09	8	.6	1.0	UER
		2	1228	2.97	19	20.92	155	13.31	7.88		1.7	20	0	60	.13	6	.9	1.1	UER
		2	1343	42.38	19	17.80	155	23.66	4.86	2.2	2.6	22	0	111	.16	9	.8	1.4	SWR
		2	1452	39.66	19	19.36	155	16.43	6.76		1.0	18	0	106	.11	6	.8	1.3	KOA
		2	1531	21.05	19	19.93	155	16.87	6.61		1.1	18	0	88	.10	5	.7	1.3	KOA
		2	1634	16.63	19	21.54	155	13.53	8.95	2.0	2.2	24	0	100	.10	6	.7	.9	UER
		2	1653	56.25	19	19.76	155	13.56	6.91		.9	20	0	71	.16	6	1.1	2.4	UER
		2	1750	45.08	19	19.09	155	13.93	8.11		1.1	16	0	88	.08	7	.7	1.5	UER
		2	1814	27.57	19	19.43	155	15.06	6.43		.9	18	0	99	.11	6	.8	1.8	KOA
		2	1832	56.05	19	19.01	155	13.01	7.03		1.5	20	0	83	.10	8	.7	1.6	UER
		2	1852	25.90	19	20.05	155	17.04	7.45		1.5	19	0	84	.13	5	.7	1.1	KOA
		2	1939	44.97	19	20.89	155	10.44	7.77	1.7	1.4	23	0	70	.12	8	.8	1.4	UER
		2	1941	29.95	19	17.86	155	24.01	1.29	1.9	2.2	24	0	109	.18	9	.9	36.9	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAR	2	2059	40.60	19	20.70	155	6.30	7.23		1.0	25	0	101	.13	7	.8	1.6	UER
		2	2114	17.46	19	21.34	155	7.14	6.76	1.9	2.0	25	0	81	.15	8	1.0	1.6	UER
		2	2148	47.22	19	26.69	155	25.17	9.95		1.4	23	0	54	.11	11	.7	1.4	UKF
		2	2153	27.15	19	19.50	155	12.15	8.00		1.0	18	0	88	.10	6	.7	1.5	UER
		2	22 3	51.64	18	52.45	155	14.36	10.83	2.8	2.4	25	0	256	.11	46	3.6	99.0	PPL
		2	2221	15.40	19	20.94	155	13.07	7.38		.9	21	0	59	.14	6	.9	1.7	UER
		2	2229	31.30	19	24.31	155	13.34	8.95		.9	19	0	88	.09	6	.7	1.0	GLN
		2	2249	16.06	19	21.44	155	14.21	9.48		1.3	22	0	59	.09	6	.6	.9	UER
		2	23 0	13.23	19	19.22	155	11.79	6.91	2.4	2.6	29	0	99	.15	7	.9	1.4	UER
		2	2325	22.48	19	22.05	155	1.35	6.08		2.0	23	0	167	.16	12	1.3	1.9	MER
		3	045	21.56	19	19.98	155	8.41	8.38		1.1	19	0	80	.08	10	.5	.9	UER
		3	046	50.86	19	17.41	155	21.78	1.99		1.5	20	2	123	.17	9	.9	1.6	SWR
		3	1 3	50.67	19	20.68	155	17.61	8.14	1.5	1.5	24	0	39	.08	5	.4	.6	KOA
		3	351	11.79	19	19.16	155	15.29	7.27		1.2	17	0	108	.05	6	.4	.9	KOA
		3	420	49.25	19	18.89	155	21.16	7.02	1.9	2.2	26	0	103	.15	7	.8	1.7	SWR
		3	428	59.39	19	19.91	155	18.74	28.07		1.1	23	0	68	.08	7	1.0	1.9	DEP
		3	440	44.10	19	21.20	155	6.07	7.11		1.9	24	0	91	.13	7	.9	1.8	UER
		3	530	16.50	20	9.93	155	15.68	3.24	2.9	2.7	18	2	299	.09	57	1.8	.7	DIS
		3	6 0	57.64	19	25.16	155	28.11	8.82	2.5	2.5	33	0	43	.15	12	.7	1.0	UKF
		3	6 2	6.99	19	25.06	155	27.87	8.42	2.3	2.1	28	0	55	.12	12	.6	1.2	UKF
		3	638	49.03	19	18.63	155	11.66	7.90		1.3	22	0	117	.14	7	1.0	2.0	POL
		3	652	1.22	19	23.72	155	15.25	4.63	2.5	3.3	27	0	89	.12	3	.6	.7	SPC
		3	726	36.53	19	17.21	155	22.98	6.23		1.4	19	0	120	.14	11	1.0	3.0	SWR
		3	934	44.56	19	20.97	155	2.90	5.63	2.4	2.7	26	0	132	.14	11	1.0	1.4	MER
		3	952	32.24	19	17.06	155	22.64	8.03	1.7	1.4	17	2	123	.13	11	.9	2.6	SWR
		3	1249	50.81	19	20.06	155	7.18	8.98	2.6	2.8	25	0	103	.10	7	.7	.5	UER
		3	13 6	10.20	19	25.61	155	16.53	.64	2.2	3.1	19	0	117	.12	4	.6	.5	SPC
		3	1634	39.39	19	20.06	155	6.96	8.63	2.9	3.2	28	0	107	.09	7	.6	.5	UER
		3	2048	47.28	19	22.24	155	5.11	8.43	2.0	2.6	21	0	79	.10	8	.6	1.2	MER
		4	235	11.76	19	18.40	155	23.52	5.17	2.1	2.6	24	0	107	.14	8	.7	1.0	SWR
		4	630	47.68	19	24.25	155	16.02	1.63	1.8	2.6	16	0	114	.07	3	.3	.2	SPC
		4	22 8	42.63	19	21.48	155	7.76	8.64	2.5	3.2	27	0	74	.10	8	.6	.8	UER
		4	2212	11.39	19	18.85	155	13.22	7.72	2.2	2.8	27	0	81	.12	8	.7	.9	POL
		5	234	25.88	19	20.82	155	11.11	8.89	2.5	3.1	27	0	71	.13	8	.8	1.3	UER
		5	316	52.46	19	24.76	155	7.80	11.10	2.6	3.2	30	0	75	.11	10	.8	.3	GLN
		5	548	14.28	19	20.96	155	9.54	7.95	2.1	2.8	26	0	66	.14	7	.9	1.6	UER
		5	710	6.93	19	24.11	155	16.01	1.39	1.9	3.0	17	0	112	.12	3	.5	.3	SPC
		5	913	28.34	19	20.04	155	8.41	7.31		3.1	25	0	79	.14	9	.9	1.7	UER
		5	1142	51.29	19	16.68	155	22.97	6.51	1.8	2.5	26	0	125	.18	8	1.1	2.6	SWR
		5	2156	14.98	19	12.94	155	22.70	10.99	2.3	2.8	28	0	157	.14	12	1.1	.4	LSW
		6	613	12.70	19	22.67	155	5.92	9.04	2.9	3.4	29	0	72	.11	7	.7	.7	MER
		6	745	47.00	19	19.76	155	8.71	7.40	1.8	2.4	24	0	75	.12	9	.7	1.4	UER
		6	8 9	26.31	19	23.29	155	24.90	10.26	2.5	3.1	29	0	58	.13	9	.7	.4	UKF
		6	1149	5.00	19	21.23	155	13.35	9.49	2.7	3.3	27	0	54	.09	6	.5	.6	UER
		6	1223	4.59	19	21.60	155	1.95	6.04	3.5	4.0	29	0	160	.11	13	.7	1.1	MER
		6	19 3	44.53	19	23.31	155	16.99	1.90	2.6	3.4	16	0	62	.09	3	.5	.3	SPC
		6	2338	34.21	19	22.37	155	3.94	7.40	2.8	3.3	19	0	112	.10	12	.8	1.8	MER
		7	749	14.09	19	19.35	155	12.01	10.29	3.1	3.4	18	0	93	.09	6	.7	.8	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAR	7	834	24.07	19	20.80	155	6.14	6.78	1.9	2.4	12	2	318	.17	16	4.6	2.3	UER
		7	927	32.08	19	20.81	155	10.46	8.00		1.4	20	0	72	.11	8	.8	1.5	UER
		7	10 5	39.83	19	18.04	155	20.21	6.96		1.3	10	0	127	.09	7	1.1	2.3	SWR
		7	11 9	17.48	19	26.09	155	29.06	8.89	1.9	1.7	13	0	120	.12	13	1.3	6.6	UKF
		7	1120	37.15	19	24.53	155	3.09	7.57	2.4	2.7	18	0	128	.11	13	.9	1.4	MER
		7	1123	54.42	19	21.00	155	10.72	8.58	2.2	2.2	17	0	81	.07	8	.6	1.2	UER
		7	12 0	51.74	19	20.47	155	12.47	8.27		1.3	22	0	69	.12	7	.8	1.6	UER
		7	1319	55.56	19	23.59	155	16.84	1.67	1.4	2.0	15	0	68	.09	3	.4	.3	SPC
		7	1416	9.40	19	19.12	155	12.32	5.93		1.1	19	0	94	.14	7	1.0	2.5	UER
		7	1456	43.27	19	22.12	155	18.02	1.71	1.0	1.5	11	0	80	.08	4	.5	99.0	KOA
		7	1457	37.14	19	20.47	155	17.83	6.83		1.3	17	0	65	.08	5	.5	1.0	KOA
		7	1523	47.63	19	24.50	155	.84	6.94		1.6	20	0	169	.14	9	1.3	1.5	LER
		7	1542	27.42	19	19.07	155	12.63	7.70	1.7	1.4	20	0	90	.09	7	.6	1.0	UER
		7	16 9	2.44	19	25.79	155	9.77	11.63		1.4	23	0	45	.13	8	.9	.4	GLN
		7	1625	34.64	19	21.78	155	7.17	8.24	3.7	4.0	30	0	74	.12	8	.6	.8	UEP
		7	1635	3.83	19	23.78	155	16.93	1.76	1.6	2.1	14	0	47	.06	3	.3	.2	SPC
		7	1818	56.52	19	20.54	155	13.31	8.04		1.3	22	0	60	.12	7	.8	1.4	UER
		7	1825	1.59	19	26.59	155	25.21	10.64		1.3	16	0	71	.09	11	.9	.5	UKF
		7	1928	35.40	19	19.65	155	11.67	7.52	1.7	2.0	29	0	90	.13	6	.7	1.1	UER
		7	1936	9.93	19	20.59	155	17.84	6.99		1.1	16	0	70	.10	5	.7	1.5	KOA
		7	1953	46.47	19	17.59	155	22.53	5.92	1.8	2.0	26	0	118	.17	8	1.0	2.5	SWR
		7	2131	24.57	19	19.26	155	14.06	7.58	1.6	1.5	23	0	67	.12	6	.8	1.3	UER
		7	2139	5.42	19	19.32	155	11.80	6.88		1.7	25	0	96	.13	7	.8	1.5	UER
		7	2152	1.96	19	19.43	155	11.72	7.64		1.0	20	0	94	.14	6	1.0	2.2	UER
		7	2231	13.16	19	19.67	155	7.72	6.62		1.5	23	0	98	.11	8	.7	1.8	UER
		7	2234	32.76	19	19.41	155	12.95	5.93		1.3	20	0	78	.15	7	.9	2.3	UER
		7	2236	10.58	19	19.68	155	11.87	6.87	1.7	1.5	25	0	88	.11	6	.6	.8	UER
		7	2341	4.05	19	19.04	155	12.58	6.85		1.5	19	0	92	.09	7	.6	1.2	UER
		8	0 0	10.96	19	19.06	155	12.10	5.94		1.2	21	0	99	.12	7	.8	1.9	UER
		8	042	18.85	19	19.46	155	13.50	6.92	2.1	2.4	29	0	68	.18	7	1.0	1.4	UER
		8	047	7.83	19	21.74	155	14.93	9.20	2.1	2.7	24	0	59	.10	4	.5	.7	UER
		8	117	21.98	19	19.56	155	18.62	4.91		1.0	18	0	67	.15	7	.9	1.3	KOA
		8	136	1.39	19	30.25	154	50.78	8.12		1.3	15	0	318	.14	23	4.0	1.1	LER
		8	243	8.58	19	19.24	155	15.34	7.47		.9	16	0	106	.10	6	.7	1.5	KOA
		8	3 1	36.64	19	20.63	155	9.33	7.25		1.0	22	0	69	.16	8	1.1	2.0	UER
		8	322	54.48	19	20.27	155	8.97	7.39		1.3	24	0	71	.11	8	.7	1.4	UER
		8	352	22.10	19	21.21	155	3.67	6.22		1.5	21	0	115	.12	10	.9	1.6	MER
		8	4 7	40.64	19	21.79	155	2.88	6.90		2.2	24	0	146	.14	12	1.2	1.0	MER
		8	427	26.41	19	21.77	155	4.91	6.72		1.3	23	0	90	.13	9	.8	1.4	MER
		8	439	24.53	19	27.31	154	52.87	9.94		1.1	18	0	250	.16	20	3.2	.6	LER
		8	446	4.17	19	28.07	154	54.57	5.44		1.5	18	0	171	.20	17	2.9	2.1	LER
		8	5 1	36.68	19	18.71	155	22.20	7.82	1.9	2.2	26	0	108	.17	9	1.0	1.3	SWR
		8	546	51.00	19	19.34	155	11.31	5.87		1.1	21	0	100	.11	7	.8	1.6	UER
		8	549	33.14	19	12.91	155	28.54	8.12	2.1	2.1	25	0	140	.14	16	1.1	1.4	LSN
		8	6 2	12.52	19	28.04	154	54.86	5.04		1.9	22	0	165	.13	16	1.3	.9	LER
		8	641	46.06	19	20.87	155	7.24	6.84	1.9	2.4	23	0	87	.13	8	.9	1.5	UER
		8	10 6	10.48	19	22.09	155	5.37	6.76	1.9	2.9	25	0	84	.12	8	.6	1.2	MER
		8	1536	57.08	19	17.66	155	21.28	7.97	2.5	3.2	29	0	123	.16	8	1.0	1.3	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAR	9	238	42.37	19	22.28	155	5.28	6.91	2.5	3.3	28	0	77	.15	8	.8	1.2	MER
		9	443	59.18	19	23.79	154	59.19	6.54	2.2	2.6	28	0	175	.17	10	1.4	1.3	LER
		9	5 5	17.66	19	18.54	155	20.65	9.37	2.8	3.5	30	0	110	.09	6	.5	.4	SWR
		9	21 6	17.50	19	21.80	155	.77	5.81	2.1	2.4	24	0	183	.11	12	.8	1.0	LER
		9	2322	22.80	19	19.13	155	13.65	8.07	2.0	2.6	24	0	67	.10	7	.6	1.0	UER
		10	026	52.24	19	24.13	155	16.11	1.45	1.6	2.5	13	0	110	.08	3	.4	.3	SPC
		10	049	26.40	19	19.95	155	6.79	7.13	1.8	2.6	27	0	74	.11	9	.7	1.3	UER
		10	613	34.98	19	20.79	155	13.21	8.80	2.2	2.6	27	0	59	.10	6	.6	.8	UER
		10	8 7	36.01	19	21.07	155	6.32	8.71	2.1	2.8	26	0	93	.09	7	.6	.6	UER
		10	932	54.04	19	20.18	155	19.58	7.75	2.2	2.6	27	0	59	.12	6	.7	1.0	SWR
		10	952	20.49	19	18.23	155	23.38	6.42	2.4	3.0	29	0	109	.18	8	.9	2.2	SWR
		10	1832	40.95	19	20.30	155	7.13	9.05	2.8	3.6	26	0	99	.13	7	.9	.7	UER
		10	2141	14.15	20	2.21	155	33.10	26.35	3.1	2.3	33	0	191	.14	30	1.4	3.9	KOH
		11	231	33.54	19	20.62	155	6.56	8.50	2.2	3.0	29	0	100	.10	7	.7	.5	UER
		11	4 0	10.65	19	21.49	155	15.22	8.77	2.0	2.8	28	0	63	.14	4	.7	.9	KOA
		11	4 2	42.23	19	21.60	155	15.45	8.98	3.1	3.6	25	0	67	.11	5	.7	.8	KOA
		11	628	31.83	19	21.75	155	15.30	9.27	2.0	2.7	29	0	60	.13	4	.5	.6	KOA
		11	933	16.86	19	20.50	155	13.80	8.59	2.3	2.6	27	0	56	.10	6	.6	.9	UER
		11	1019	32.18	19	20.34	155	8.05	8.10	2.4	2.7	25	0	83	.10	9	.5	.8	UER
		11	1422	48.08	19	20.93	155	11.24	8.91	2.8	3.1	28	0	70	.13	8	.7	1.1	UER
		12	339	5.14	19	19.64	155	15.77	34.35	2.9	2.8	31	0	88	.10	6	.9	1.6	DEP
		12	518	.94	19	20.04	155	8.47	8.29	2.2	2.6	25	0	78	.09	9	.5	.7	UER
		12	14 0	31.94	19	17.25	155	21.70	9.51	2.5	2.8	25	0	125	.14	9	.8	.7	SWR
		12	21 1	12.47	19	19.65	155	11.66	7.41	2.2	2.8	23	0	90	.09	6	.6	1.1	UER
		12	2110	17.30	19	30.03	154	50.74	9.18	3.3	3.4	12	1	269	.13	29	3.3	1.3	LER
		13	616	16.38	19	8.69	155	30.14	11.26	3.5	3.5	28	3	156	.13	24	1.0	.4	LSW
		13	1012	14.16	19	20.19	155	8.05	6.64	2.2	2.6	23	0	85	.13	9	.8	1.8	UER
		13	1141	19.57	19	18.29	155	23.68	8.15	2.5	3.1	28	0	107	.15	9	.8	1.2	SWR
		13	1642	37.02	19	19.15	155	22.00	5.87	2.2	2.8	23	0	100	.15	8	.8	1.8	SWR
		13	2022	3.78	19	49.45	155	53.06	11.94	3.0	3.2	28	0	193	.19	37	1.9	.7	KON
		14	322	32.68	19	23.66	155	16.68	2.26	2.2	2.9	21	0	75	.15	3	.7	1.9	SPC
		14	354	42.19	19	19.33	155	12.51	7.51	2.4	2.7	27	0	87	.15	7	.9	1.1	UER
		14	1114	58.13	19	22.94	155	25.02	7.89	2.2	2.3	24	0	57	.13	9	.7	1.4	UKF
		14	2110	40.26	19	23.68	155	15.09	1.01	2.2	2.7	23	1	82	.15	3	.5	.5	SPC
		15	1526	12.53	19	17.91	155	23.54	.77	1.9	2.3	26	2	111	.18	9	.7	.6	SWR
		15	1532	25.41	19	19.47	155	12.38	6.93	2.2	2.6	24	0	86	.14	7	.9	1.4	UER
		15	1555	26.14	19	17.96	155	23.60	8.83	2.2	2.8	27	0	110	.14	9	.9	1.0	SWR
		15	1953	2.46	19	22.79	155	26.64	9.63	2.0	2.3	26	0	51	.13	12	.6	.5	UKF
		16	648	16.94	19	21.82	155	7.13	9.27	2.8	3.0	27	0	74	.12	8	.7	.7	UER
		16	12 2	32.67	19	19.65	155	7.51	8.94	2.2	2.8	21	0	103	.10	8	.9	.6	UER
		16	2341	17.49	19	20.54	155	6.56	7.92	2.1	2.9	27	0	102	.11	6	.6	.9	UER
		17	237	56.03	19	20.85	155	6.53	8.75	2.2	2.9	27	0	96	.13	7	.6	.8	UER
		17	341	30.32	19	17.15	155	21.91	7.60	2.2	2.9	30	0	126	.16	9	.9	1.3	SWR
		17	1158	28.69	19	20.06	155	12.10	6.94	2.3	2.7	26	0	79	.15	6	.8	1.2	UER
		17	1443	31.14	19	20.14	155	8.51	7.00	2.1	2.7	27	0	77	.14	9	.8	1.3	UER
		17	1936	18.08	19	19.83	155	12.36	6.54	1.6	2.4	26	0	80	.15	6	.9	1.4	UER
		17	2332	40.10	19	20.84	155	6.80	9.29	2.5	2.9	30	0	93	.10	7	.7	.5	UER
		18	541	43.63	19	21.20	155	10.66	7.86	1.8	2.6	26	0	68	.13	9	.8	1.1	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAR	18	1154	54.43	19	24.18	155	16.15	1.48	2.2	3.0	16	0	111	.08	3	.4	.2	SPC
		19	3 4	1.31	19	24.36	155	15.72	3.96	2.7	3.3	26	0	89	.11	5	.5	.8	SPC
		19	3 8	23.68	19	20.56	155	8.76	6.94	2.1	3.1	27	0	70	.16	8	1.0	1.6	UER
		19	414	15.18	19	11.99	155	32.42	10.60	2.8	3.0	27	1	132	.16	21	1.2	.5	LSW
		19	1324	30.32	19	21.32	155	3.43	8.11	3.9	4.1	29	0	110	.12	11	.8	1.0	MER
		19	1555	6.57	19	20.90	155	2.96	6.62	2.4	2.8	25	0	129	.11	11	.8	1.0	MER
		20	3 5	36.30	19	18.74	155	9.16	5.99	1.9	2.3	27	0	102	.14	8	.8	1.9	POL
		20	7 8	49.48	19	20.63	155	6.74	7.63	2.2	2.8	25	0	98	.09	7	.5	.9	UER
		20	1313	19.86	19	19.83	155	6.53	9.21	3.1	3.5	27	0	120	.09	7	.7	.5	UER
		21	850	38.46	19	21.86	155	15.16	8.13	2.2	2.6	26	0	59	.12	4	.7	.9	KOA
		21	931	33.54	19	22.23	155	15.26	9.78	3.3	3.6	20	0	55	.11	4	.8	1.6	KOA
		21	1358	.16	19	20.90	155	11.30	7.48	2.6	3.0	25	0	75	.14	8	.8	1.3	UER
		21	1745	48.58	19	20.34	155	6.70	8.40	2.6	2.9	23	0	105	.08	7	.6	.7	UER
		21	2031	24.60	19	20.22	155	8.61	8.42	3.2	3.6	27	0	74	.11	9	.6	.7	UER
		21	23 9	36.13	19	19.81	155	16.13	7.93	2.5	2.6	24	0	89	.09	6	.5	1.0	KOA
		21	2355	24.10	19	19.32	155	11.82	6.82	2.2	2.6	18	0	96	.12	6	.9	1.5	UER
		22	115	7.94	19	22.72	155	5.32	8.26	2.7	3.0	26	0	80	.11	8	.6	1.0	MER
		22	727	41.74	19	17.16	155	21.73	8.60	2.4	3.3	28	0	126	.17	9	1.0	1.3	SWR
		22	1745	49.37	19	20.24	155	7.08	6.95	1.9	2.0	23	0	101	.12	7	.8	1.3	UER
		22	2048	26.94	19	21.85	155	5.03	8.75	3.3	3.5	29	0	77	.11	8	.7	.6	MER
		22	2111	26.71	19	21.14	155	20.81	29.44	2.4	2.4	29	0	63	.12	6	1.0	2.0	DEP
		22	2119	56.70	19	20.44	155	6.66	9.59	3.1	3.2	25	0	103	.09	7	.7	.3	UER
		23	6 1	17.06	19	25.52	155	14.99	36.79	2.1		17	2	128	.09	5	2.3	1.9	DEP
		23	1438	11.08	19	19.83	155	11.53	7.89	2.8	3.1	27	0	87	.14	6	.8	1.1	UER
		23	15 6	3.24	19	18.82	155	18.38	9.48	3.7	3.9	30	0	84	.13	8	.6	.7	KOA
		23	1623	53.31	19	21.35	155	7.69	7.08	1.8	2.7	26	0	76	.12	8	.7	1.0	UER
		23	1725	57.51	19	22.95	155	14.00	2.09	2.1	2.9	20	0	63	.13	3	.6	4.1	UER
		24	418	33.99	19	20.55	155	6.48	7.91	2.6	3.4	27	0	103	.11	7	.6	.9	UER
		24	1049	4.40	19	17.72	155	21.25	7.47	2.3	2.5	17	0	122	.10	8	.8	1.6	SWR
		24	1218	9.85	19	22.54	155	13.03	4.59	2.5	2.9	26	0	78	.16	5	.7	1.0	UER
		24	1533	14.87	19	23.04	155	4.42	7.48	2.6	3.0	20	0	95	.12	10	.8	1.5	MER
		24	17 6	28.03	19	20.97	155	5.96	8.05	2.2	2.9	22	0	97	.09	7	.6	1.2	MER
		24	1722	24.35	19	19.63	155	11.55	7.45	2.0	2.5	25	0	91	.10	6	.7	1.0	UER
		24	2214	.81	20	5.73	155	32.46	27.47	2.9	2.5	32	3	211	.16	36	1.2	2.1	KOH
		25	720	51.92	19	20.33	155	8.46	8.07	2.1	2.6	22	0	76	.08	9	.5	.7	UER
		25	18 8	45.75	19	22.26	155	5.09	8.57	2.7	3.1	25	0	80	.11	8	.6	1.0	MER
		25	1940	57.42	19	18.81	155	15.34	9.39	2.3	2.8	25	0	94	.08	6	.5	.6	KOA
		26	657	55.03	19	19.28	155	15.30	7.63	1.9	2.6	25	0	88	.10	6	.6	.8	KOA
		26	844	47.75	19	20.67	155	10.80	9.43	2.9	3.5	18	0	74	.08	8	.6	1.2	UER
		26	1050	39.98	19	21.34	155	7.68	7.42	2.6	3.2	28	0	76	.14	8	.7	1.1	UER
		26	1356	31.39	19	19.45	155	16.49	8.75	2.6	3.4	24	0	97	.10	6	.6	.9	KOA
		26	1444	25.45	19	23.11	155	17.04	1.89	1.8	2.7	11	0	87	.07	3	.5	.3	SPC
		26	1721	55.84	19	19.86	155	8.20	8.45	2.3	3.2	18	0	85	.07	9	.6	.9	UER
		26	1830	46.82	19	21.97	155	15.07	9.80	2.1	2.8	24	0	57	.10	4	.5	.5	KOA
		27	932	52.58	19	22.03	155	6.85	7.56	1.9	2.5	22	0	73	.11	8	.7	1.1	UER
		27	933	41.63	19	21.92	155	6.78	7.75	1.9	2.7	23	0	75	.11	8	.7	1.5	UER
		27	2248	53.85	19	19.92	155	10.36	9.52	2.1	2.8	28	0	87	.11	7	.7	.4	UER
		28	927	53.31	19	18.76	155	22.37	7.05	2.3	2.8	26	0	107	.15	9	.9	1.8	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAR	28	1559	9.53	19	23.11	155	3.44	8.29	2.0	2.5	17	0	126	.11	11	1.0	.9	MER
		28	1911	24.10	19	21.43	155	3.19	7.00	2.0	2.6	18	0	135	.09	11	.9	.8	MER
		28	2352	21.96	19	20.33	155	19.19	8.44	2.3	2.8	23	0	50	.12	7	.7	1.0	SWR
		29	5 9	52.00	19	21.83	155	15.19	9.73	3.7	4.0	27	0	59	.12	4	.7	.5	KOA
		29	536	33.78	19	17.99	155	24.01	8.95	2.1	2.7	24	0	108	.14	9	.8	1.5	SWR
		29	831	29.84	19	24.08	155	15.43	13.40	3.0	3.2	32	0	45	.13	3	.7	1.1	DEP
		29	1014	54.11	19	21.32	155	6.33	8.68	2.3	2.8	23	0	88	.11	7	.7	.8	UER
		29	1036	46.25	19	19.18	155	21.58	7.75	2.0	2.6	26	0	98	.14	8	.8	1.2	SWR
		29	1730	45.49	19	18.94	155	19.85	9.22	2.1	2.8	27	0	89	.10	6	.6	.7	SWR
		29	23 6	55.53	19	17.64	155	21.11	5.55	1.7	2.6	19	0	127	.11	8	.8	1.9	SWR
		30	457	17.49	19	20.08	155	13.65	7.90	2.1	2.9	23	0	60	.15	6	1.0	1.2	UER
		30	1452	10.26	19	20.01	155	7.32	9.50	3.4	3.7	29	0	101	.10	8	.8	.5	UER
		30	20 4	39.43	19	19.82	155	12.35	7.37	2.2	2.7	28	0	114	.14	8	.9	1.2	UER
		31	1540	44.96	19	24.86	155	24.66	8.74	2.3	2.6	31	0	37	.13	9	.6	.9	UKF
		31	2030	58.17	19	18.99	155	13.56	7.93		2.6	27	0	70	.11	7	.7	1.0	POL
	APR	1	549	2.18	19	20.26	155	7.44	9.56	2.4	2.8	26	0	95	.08	8	.6	.3	UER
		2	338	7.71	19	21.53	155	.69	4.14	2.1	2.3	25	0	189	.18	12	1.8	1.2	LER
		2	354	46.86	19	20.35	154	59.41	9.86	2.7	3.1	26	0	214	.19	14	2.6	.7	LER
		2	814	6.50	19	20.62	155	6.50	9.37	4.6	4.6	33	0	101	.10	7	.6	.4	UER
		2	828	26.31	19	20.46	155	7.09	8.63	2.5	2.3	30	0	97	.11	7	.8	.5	UER
		2	829	33.35	19	20.58	155	7.95	7.07	2.4	2.4	28	0	82	.10	9	.6	1.0	UER
		2	914	11.70	19	38.57	155	59.93	6.64	3.4	3.6	24	2	221	.21	29	1.6	1.2	KON
		2	955	3.26	19	19.86	155	12.98	8.41	3.6	3.9	28	0	72	.09	7	.5	.7	UER
		2	18 1	59.38	19	20.11	155	13.57	7.70	2.2	2.7	32	0	61	.13	6	.6	.8	UER
		2	2114	54.30	19	24.28	155	15.77	1.68	2.2	2.9	24	0	46	.12	3	.5	.3	SPC
		2	2331	38.25	19	24.08	155	15.84	1.34	1.9	2.6	18	0	45	.13	3	.5	.4	SPC
		3	143	42.22	19	23.72	155	17.02	3.91	3.0	3.6	32	0	37	.16	3	.6	.9	SPC
		3	635	43.03	19	22.47	155	29.74	7.95	2.2	2.7	32	0	43	.16	12	.8	1.4	UKF
		3	13 0	21.73	19	19.20	155	12.36	7.15	2.0	2.7	27	0	92	.12	7	.7	1.3	UER
		3	1740	55.66	19	29.39	154	52.32	6.21	2.5	2.9	27	4	262	.17	20	1.2	1.3	LER
		4	124	51.43	19	23.58	155	28.56	9.00	2.0	2.6	27	0	49	.12	14	.6	1.1	UKF
		4	949	24.06	19	26.72	154	55.75	6.70	2.2	2.7	12	0	179	.08	15	1.0	1.3	LER
		4	1547	46.83	19	24.17	155	15.40	1.89	2.2	2.5	17	0	114	.13	3	.7	.6	SPC
		4	2036	42.19	19	22.72	155	2.81	7.26	2.0	2.3	23	0	127	.15	12	1.2	1.1	MER
		5	10 2	4.01	19	12.17	155	27.69	4.19	2.3	2.5	21	0	109	.13	17	.8	1.3	LSW
		5	2250	40.52	19	20.16	155	11.95	7.70	2.0	2.6	28	0	78	.13	6	.7	1.2	UER
		6	249	26.94	19	19.46	155	8.70	6.92	1.8	2.3	16	0	100	.09	10	.9	1.9	UER
		6	312	52.13	19	20.59	155	12.54	9.21	3.4	3.7	29	0	67	.13	7	.8	.9	UER
		6	425	42.76	19	22.76	155	13.94	3.36	2.1	2.4	18	0	89	.10	4	.6	1.4	UER
		6	613	3.29	19	20.33	155	7.22	8.51	1.9	2.4	27	0	97	.10	8	.5	.7	UER
		6	1954	40.30	19	24.26	155	15.93	1.66	1.7	2.3	18	0	114	.08	3	.4	.2	SPC
		7	115	15.92	19	25.71	155	24.43	8.93	2.2	2.5	26	0	62	.12	9	.6	1.3	UKF
		7	1736	58.02	19	17.63	155	21.06	7.68	2.0	2.3	23	0	124	.13	8	.7	1.4	SWR
		7	2124	53.17	19	22.30	155	5.25	7.33	2.1	2.6	23	0	78	.14	8	.9	1.9	MER
		8	154	4.63	19	18.29	155	20.23	8.22	1.7	2.8	26	0	117	.14	6	.8	1.3	SWR
		8	439	19.98	19	20.23	155	9.05	9.34	2.6	3.2	29	0	73	.09	8	.6	.4	UER
		8	1054	22.21	19	8.86	155	17.30	5.48	3.1	3.4	24	0	194	.15	19	1.8	14.7	PPL
		8	2323	11.12	19	22.60	155	6.00	7.69	2.3	2.8	27	0	71	.13	7	.7	1.1	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	APR	9	1 6	32.97	19	19.03	155	13.46	7.93	2.3	2.7	26	0	73	.11	7	.6	1.1	UER
		9	136	24.79	19	27.17	154	56.16	6.40	2.4	2.8	21	0	165	.14	14	1.3	1.8	LER
		9	1712	22.33	19	22.16	155	12.95	4.92	2.7	3.3	22	0	65	.12	5	.6	.9	UER
		10	127	14.82	19	20.14	155	9.14	8.64	2.2	3.1	25	0	75	.11	8	.7	1.1	UER
		10	232	14.67	19	17.56	155	21.57	6.22	1.7	2.1	27	0	123	.16	9	.9	1.7	SWR
		10	746	25.11	19	20.30	155	8.75	8.04	1.8	2.2	20	0	71	.10	9	.7	1.0	UER
		10	2017	43.32	19	49.03	156	3.76	12.99	2.8	3.2	17	0	239	.18	61	4.8	99.0	KON
		11	337	39.89	19	17.53	155	21.45	7.32	1.7	2.5	25	0	123	.14	9	.9	1.2	SWR
		11	4 2	30.45	19	20.46	155	17.69	8.37	1.5	2.4	20	0	57	.07	5	.5	.8	KOA
		11	548	21.35	19	24.26	155	15.68	3.24	2.3	3.2	23	0	63	.11	2	.6	1.3	SPC
		11	1030	58.17	19	21.34	155	6.49	9.06	2.7	3.1	27	0	86	.10	7	.7	.6	UER
		11	1453	27.55	19	33.95	155	55.92	9.63	2.7	2.2	19	0	226	.17	19	2.4	.6	KON
		11	1535	49.18	19	20.95	155	3.56	5.33	3.4	3.7	26	0	99	.14	10	1.0	.9	MER
		11	1546	4.60	19	20.50	155	9.12	8.74	2.5	3.2	29	0	69	.13	8	.7	.7	UER
		12	5 7	29.25	19	20.83	155	4.70	7.28	2.8	3.3	25	0	103	.12	9	.7	1.1	MER
		12	726	23.45	19	18.94	155	21.56	9.41	3.0	3.5	27	0	103	.12	8	.7	.8	SWR
		12	1157	52.61	19	20.48	155	13.90	8.61	2.0	2.4	24	0	57	.12	6	.7	1.2	UER
		12	2249	37.69	19	20.00	155	8.54	7.86	1.8	2.0	23	0	77	.09	9	.5	1.0	UER
		13	020	.74	19	21.24	155	8.24	7.24	2.1	2.5	19	0	147	.10	10	1.0	1.3	UER
		13	1234	45.95	19	19.38	155	18.92	8.50	2.1	2.6	27	0	55	.14	8	.8	.9	KOA
		13	1652	16.38	19	17.48	155	22.34	2.95	1.7	2.2	23	0	120	.18	8	1.0	3.1	SWR
		14	136	20.53	19	19.25	155	12.03	6.18	2.4	2.7	27	0	95	.11	6	.6	1.2	UER
		14	332	5.75	19	19.47	155	11.88	7.00	2.2	2.6	27	0	92	.14	6	.8	1.4	UER
		14	653	38.79	19	19.49	155	12.21	8.29	2.7	3.1	28	0	88	.12	6	.7	.9	UER
		14	1458	29.19	19	21.10	155	13.12	7.52	2.5	2.6	27	0	57	.14	6	.8	1.1	UER
		14	17 7	1.27	19	16.59	155	12.51	5.07	2.2	2.7	31	0	164	.17	11	1.1	1.0	POL
		14	22 1	36.02	19	27.63	154	53.07	8.16	3.3	3.5	29	0	244	.15	19	2.3	.9	LER
		15	329	14.60	19	21.73	155	2.71	6.30	2.1	2.5	27	0	135	.13	12	.8	1.4	MER
		15	543	26.74	19	21.60	155	.24	5.54	2.4	2.8	30	0	195	.18	12	1.6	1.9	LER
		15	733	5.01	19	22.87	155	14.79	1.21	2.0	2.5	17	0	68	.12	3	.6	.4	UER
		15	749	18.58	19	21.30	155	8.76	9.70	2.3	2.6	27	0	65	.10	8	.7	.3	UER
		15	9 1	7.27	19	19.53	155	19.20	8.49	2.4	2.9	29	0	59	.12	7	.7	.8	SWR
		15	2037	17.75	19	21.03	155	10.74	8.18	2.2	2.5	27	0	69	.14	8	.8	1.2	UER
		15	21 1	9.02	19	16.53	155	28.61	9.24	2.0	2.8	25	0	84	.14	11	.8	1.0	HEA
		15	2247	28.27	19	21.25	155	4.32	6.64	2.0	2.5	21	0	204	.15	16	2.1	1.6	MER
		16	0 1	49.66	19	20.00	155	9.37	8.12		2.3	20	0	198	.12	12	1.2	1.3	UER
		16	2 9	27.95	19	25.44	154	51.26	6.89	2.7	3.0	17	0	285	.04	23	1.5	.3	LER
		16	338	4.17	19	27.09	154	50.31	8.85		2.5	14	0	291	.16	24	7.7	1.4	LER
		16	841	17.26	19	21.58	155	13.09	9.34	2.1	2.6	21	0	147	.11	6	.8	.7	UER
		16	2257	48.23	19	18.99	155	11.59	6.71		1.3	14	0	107	.08	7	.6	1.4	POL
		17	216	.62	19	20.08	155	7.68	9.14	2.6	3.1	29	0	93	.10	8	.6	.5	UER
		17	1732	11.48	19	18.96	155	13.76	8.09	2.1	2.4	23	0	86	.08	7	.6	.8	POL
		18	729	47.96	19	20.92	155	11.75	9.15	2.9	3.2	27	0	69	.10	8	.6	.8	UER
		18	1031	56.74	19	24.10	155	16.03	1.60	2.1	2.5	15	0	111	.09	3	.4	.3	SPC
		18	1350	14.55	19	21.72	155	15.39	8.50	2.1	2.7	25	0	61	.11	4	.6	.9	KOA
		18	1458	16.12	19	23.35	155	14.85	2.13	2.2	2.6	17	0	72	.07	3	.3	3.5	GLN
		18	1858	14.88	19	23.04	155	14.39	3.43	1.7	2.4	16	0	53	.05	3	.3	.8	GLN
		18	2159	22.16	19	24.19	155	16.11	1.76	1.7	2.6	16	0	113	.10	3	.5	.3	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	APR	18	2312	14.03	19	21.00	155	13.19	9.17	2.3	3.0	23	0	58	.11	6	.7	1.2	UER
		19	1057	27.25	19	21.32	155	13.24	8.03	1.9	2.4	27	0	55	.13	6	.6	.8	UER
		19	1133	38.07	19	21.78	155	4.39	6.77	2.0	2.6	27	0	88	.14	10	.8	1.1	MER
		19	2029	.96	19	22.68	155	5.95	6.87	1.9	2.5	28	0	72	.17	7	.9	1.4	MER
		19	2241	58.01	19	19.47	155	12.55	7.02	2.1	2.8	30	0	84	.16	7	.8	1.1	UER
		20	144	52.25	19	20.41	155	12.42	7.29	2.6	3.3	29	0	71	.15	7	.8	1.2	UER
		20	311	19.36	19	19.68	155	12.43	7.06	2.1	2.7	29	0	82	.12	6	.6	.9	UER
		20	711	3.11	19	21.70	155	15.25	9.50	3.5	3.7	31	0	60	.11	4	.5	.5	KOA
		20	926	18.62	19	20.41	155	11.88	8.33	2.4	2.6	23	0	75	.12	7	.8	1.5	UER
		20	1511	28.63	19	22.78	155	1.20	6.83	2.4	2.7	23	0	159	.14	10	1.2	1.1	MER
		20	1925	44.68	19	21.26	155	6.34	8.14	1.9	2.5	23	0	89	.12	7	.8	1.4	UER
		20	1934	15.46	19	19.95	155	11.82	7.48	1.7	2.3	26	0	83	.10	6	.6	.9	UER
		21	1423	10.63	19	19.69	155	10.52	7.55	1.8	2.6	25	0	105	.13	7	.9	1.3	UER
		21	1813	34.49	18	47.70	155	.30	49.81	4.6	4.2	22	0	278	.09	63	4.8	9.0	PPL
		22	2 3	38.70	19	22.22	155	5.13	8.27	2.3	2.6	23	0	79	.11	8	.6	1.0	MER
		22	4 5	10.35	19	19.58	155	8.18	6.15	1.9	2.4	23	0	88	.14	9	.9	2.0	UER
		22	554	4.92	19	31.50	155	18.64	11.84	3.4	3.6	32	0	61	.14	15	.8	.3	NER
		22	833	.97	19	18.57	155	20.64	9.76	3.4	3.7	26	0	109	.11	6	.7	.4	SWR
		22	11 5	49.30	19	29.11	155	36.14	11.18	2.2		15	0	103	.13	18	1.3	.5	MOK
		22	2015	14.37	19	21.02	155	6.08	8.86	2.2	2.9	25	0	95	.10	7	.6	.8	UER
		23	145	15.82	19	21.40	155	7.56	6.54	2.2	2.4	24	0	76	.13	8	.8	1.9	UER
		23	336	44.64	19	22.44	155	5.32	9.22	2.3	2.9	23	0	78	.10	8	.7	.9	MER
		23	1229	53.77	19	21.88	155	5.15	8.95	4.2	4.3	28	0	77	.11	8	.7	.6	MER
		23	1851	53.08	19	19.38	155	10.11	8.93	2.7	3.1	31	0	99	.11	7	.6	.5	UER
		24	358	29.49	19	21.85	155	2.57	6.02	2.2	2.6	25	0	139	.13	13	.9	1.3	MER
		24	1754	11.09	19	19.92	155	19.70	8.31	2.3	3.0	26	0	64	.13	6	.6	.8	SWR
		24	2055	31.31	19	20.88	155	11.18	8.14	2.3	2.7	27	0	70	.14	8	.9	1.3	UER
		25	825	21.65	19	19.80	155	15.66	7.12	2.0	2.5	16	0	85	.09	6	.6	1.3	KOA
		25	1449	11.98	19	16.55	155	21.85	6.99	2.3	2.9	25	0	133	.12	8	.8	1.3	SWR
		25	15 3	20.35	19	16.18	155	22.09	8.86	2.8	3.3	25	0	141	.13	8	1.0	1.1	SWR
		25	1632	28.03	19	22.87	155	4.63	7.52	2.3	2.6	26	0	91	.13	9	.7	1.1	MER
		25	1639	58.83	19	23.15	155	3.63	8.53	2.0	2.5	24	0	109	.11	11	.7	.7	MER
		25	1820	24.91	19	21.46	155	3.32	7.04	2.3	2.8	26	0	115	.11	11	.8	.7	MER
		26	637	17.42	19	19.99	155	12.45	8.69	2.2	2.7	25	0	76	.14	6	.9	1.3	UER
		26	8 4	4.58	19	23.32	155	16.87	1.94	1.7	2.7	18	0	54	.10	3	.5	.4	SPC
		26	1142	30.62	19	16.87	155	21.71	7.40	2.2	2.9	27	0	130	.14	9	.9	1.3	SWR
		26	2144	41.56	19	23.26	155	16.96	5.40	3.1	3.8	26	0	44	.10	5	.4	.6	SPC
		27	539	40.27	19	20.12	155	6.68	9.25	2.6	2.9	26	0	110	.10	7	.7	.6	UER
		27	1146	47.28	19	21.30	155	10.72	9.29	2.4	2.8	25	0	68	.11	9	.7	.8	UER
		27	1317	51.64	19	17.03	155	22.50	5.60	2.4	3.0	26	0	124	.19	7	1.1	3.6	SWR
		27	1340	12.13	19	24.37	155	15.72	3.09	2.7	3.4	27	0	84	.13	3	.5	1.3	SPC
		27	2121	24.52	19	24.09	155	15.87	1.57	1.8	2.5	22	0	88	.13	3	.5	.3	SPC
		27	22 3	57.51	19	24.09	155	15.91	1.46	2.0	2.9	16	0	113	.09	3	.4	.2	SPC
		28	259	47.08	19	21.64	155	3.31	6.74	2.3	2.6	26	0	116	.14	11	.9	1.1	MER
		28	322	6.29	19	19.33	155	12.37	7.53	2.2	2.7	28	0	89	.14	7	.8	1.3	UER
		28	1355	2.65	19	19.84	155	7.05	6.22	2.3	2.6	24	0	110	.11	7	.8	1.7	UER
		28	1611	50.88	19	23.69	154	59.17	8.21	2.5	2.5	26	0	177	.14	10	1.5	1.0	LER
		28	2148	17.39	19	20.83	155	7.98	7.53	2.1	2.6	28	0	79	.13	9	.7	1.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	APR	29	130	38.26	19	23.36	155	16.85	3.85	2.5	3.4	30	0	53	.14	3	.6	.8	SPC
		29	1334	51.60	19	25.63	155	16.50	.54	2.2	3.2	22	0	48	.13	4	.6	.5	SPC
		29	14 8	35.88	19	21.65	155	15.33	10.00	2.4	3.0	29	0	61	.12	4	.6	.4	KOA
		30	0 6	51.19	19	24.84	155	23.09	10.42	2.7	3.1	33	0	76	.12	9	.6	.3	UKF
		30	537	36.24	19	25.97	155	16.48	.55	1.0	1.6	8	0	182	.09	4	.7	2.9	SPC
		30	6 5	11.69	19	26.04	155	16.55	.74	1.0		7	0	186	.10	4	1.0	3.0	SPC
		30	1358	36.78	19	20.10	155	7.40	8.53	2.2	2.3	22	0	98	.09	8	.6	.6	UER
		30	14 3	40.66	19	5.42	155	28.55	29.61	2.5		17	0	188	.18	23	2.8	6.5	LSW
		30	1436	25.38	19	17.54	155	22.09	4.89	2.1	2.4	26	0	121	.16	8	.8	1.2	SWR
		30	2143	34.73	19	22.50	155	30.15	9.67	2.3	2.4	28	0	50	.13	13	.7	.5	MOK
		30	2145	23.93	19	21.53	155	.48	6.14	2.6	3.1	28	0	193	.16	12	1.5	1.2	LER
		30	2318	29.50	19	19.31	155	12.38	6.63	1.7	2.1	26	0	89	.12	7	.7	1.5	UER
	MAY	1	024	54.37	19	26.11	154	55.82	7.59	2.3	2.2	25	0	188	.13	15	1.5	1.0	LER
		1	239	15.72	19	25.94	155	24.96	7.55	2.2	2.5	31	0	56	.14	10	.7	1.1	UKF
		1	319	53.57	19	2.40	155	26.89	51.54		1.5	14	0	299	.07	33	8.8	12.8	LSW
		1	322	34.95	19	5.55	155	27.48	56.22		1.7	18	1	191	.14	24	2.9	2.7	LSW
		1	343	31.23	19	20.83	155	4.23	6.79	2.7	3.2	31	0	98	.13	9	.8	.8	MER
		1	357	46.38	19	25.61	154	53.37	9.55		1.6	16	0	238	.13	19	3.1	.6	LER
		1	613	58.83	19	21.63	155	2.89	6.54	2.4	2.6	26	0	130	.11	12	.7	.8	MER
		1	854	1.01	19	18.86	155	13.60	9.45	2.4	3.0	28	0	70	.09	7	.5	.6	POL
		1	921	52.26	19	23.41	155	17.11	1.53		2.8	11	0	58	.06	3	.4	.2	SPC
		1	1437	26.45	19	26.98	154	52.93	8.71	2.3	2.8	24	0	246	.13	20	2.2	.7	LER
		1	1852	4.85	19	18.43	155	23.46	6.63	3.2	4.0	31	0	107	.17	9	.8	1.6	SWR
		1	2115	11.27	19	27.50	154	54.14	8.43	2.3	2.4	21	0	201	.14	18	2.1	.8	LER
		2	2 5	46.14	19	19.98	155	8.11	8.42	2.0	2.4	26	0	86	.13	9	.7	.9	UER
		2	952	8.66	19	21.13	155	10.78	9.05	2.0	2.7	24	0	80	.12	9	.8	.9	UER
		2	2039	1.60	19	7.96	155	30.01	32.22	2.9	2.5	28	0	160	.18	18	1.9	4.4	LSW
		2	2040	57.43	19	6.91	155	31.83	60.13	3.3	2.7	28	0	159	.21	20	4.0	9.8	LSW
		3	156	48.39	19	19.88	155	7.29	9.36	2.5	3.0	28	0	104	.11	8	.8	.5	UER
		3	158	49.07	19	22.40	155	7.01	7.70	2.0	2.8	27	0	67	.13	9	.7	1.1	UER
		3	7 8	12.59	19	22.35	155	.97	7.30	2.6	2.8	27	0	169	.15	11	1.2	1.0	LER
		3	1120	58.36	19	20.08	155	12.74	6.95	2.5	3.0	29	0	72	.16	7	.8	1.6	UER
		3	15 5	28.83	19	18.06	155	16.15	7.60	1.8	2.5	30	0	120	.13	5	.8	1.1	KOA
		4	1816	37.44	19	19.57	155	13.45	9.21	2.4	2.9	30	0	67	.13	7	.8	1.0	UER
		5	515	4.76	19	13.22	155	28.50	10.30	2.4	2.8	28	0	139	.16	16	1.2	.5	LSW
		5	10 6	53.96	19	27.01	155	23.55	8.61	2.3	2.5	30	0	75	.14	11	.7	1.4	UKF
		5	1832	20.28	19	24.14	155	15.99	1.53	2.2	3.1	25	0	88	.11	3	.4	.2	SPC
		5	2317	51.14	19	56.20	155	21.18	30.32	2.4	2.4	39	4	192	.19	37	1.0	1.4	KKU
		5	2326	14.79	19	21.04	155	8.58	6.43	2.9	3.4	31	0	69	.13	8	.7	1.3	UER
		6	026	16.34	19	23.28	155	3.96	8.65	2.7	3.1	33	0	103	.12	11	.7	.5	MER
		6	027	29.35	19	23.11	155	3.58	8.38	2.9	3.4	31	0	110	.10	11	.6	.6	MER
		6	4 3	5.18	19	19.62	155	10.79	8.44	2.1	2.6	31	0	94	.12	7	.7	1.0	UER
		6	17 2	48.21	19	19.29	155	16.45	8.96	2.6	2.9	28	0	99	.11	6	.7	.8	KOA
		6	2010	4.50	19	21.02	155	8.90	8.50	2.0	2.4	27	0	65	.14	8	.8	1.0	UER
		7	2136	16.96	19	20.57	155	7.12	9.34	2.6	3.0	25	0	94	.10	7	.7	.5	UER
		8	727	16.08	19	23.44	155	16.88	2.07	2.2	3.2	29	0	66	.17	3	.7	1.6	SPC
		8	8 6	20.25	19	17.43	155	21.31	6.26	2.6	3.1	27	0	131	.16	8	1.0	2.2	SWR
		9	241	7.80	19	23.37	155	15.07	4.90	2.3	2.9	26	0	55	.11	3	.6	.6	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAY	9	614	43.37	19	21.55	155	7.95	9.72	3.4	3.6	30	0	71	.08	9	.5	.3	UER
		9	838	17.08	19	17.60	155	21.67	5.50	2.3	2.3	29	0	122	.15	9	.8	1.1	SWR
		10	827	4.45	19	23.27	155	4.48	7.73	3.5	3.6	32	0	94	.12	10	.5	.8	MER
		10	935	5.64	19	23.79	155	2.76	8.33	2.4	2.5	26	0	122	.10	10	.7	.6	MER
		11	822	40.20	19	18.15	155	15.68	9.24	2.1	2.6	26	0	165	.11	8	.9	.9	KOA
		11	919	43.50	19	20.39	155	7.10	9.47	2.9	3.1	26	0	98	.08	7	.6	.4	UER
		12	555	11.56	19	20.33	155	11.66	9.26	3.7	4.2	31	0	77	.10	7	.6	.7	UER
		12	931	3.08	19	24.05	155	28.01	9.63	2.2	2.6	26	0	53	.12	13	.8	.4	UKF
		12	11 6	21.18	19	24.16	155	15.76	3.63	2.2	2.9	20	0	108	.09	3	.5	1.0	SPC
		12	19 6	51.79	19	19.72	155	11.96	6.59	1.7	2.2	20	0	86	.12	6	.8	1.8	UER
		12	2241	17.13	19	23.27	155	17.15	1.64	1.7	2.3	17	0	56	.11	3	.6	.3	SPC
		13	054	19.59	19	19.42	155	12.43	7.06	1.7	2.2	26	0	86	.13	7	.8	1.3	UER
		13	2 7	29.38	19	19.18	155	12.51	8.40	2.3	2.6	28	0	90	.12	7	.8	1.0	UER
		13	635	36.89	19	21.44	155	7.41	7.77	2.2	2.5	25	0	77	.11	8	.7	1.0	UER
		13	638	10.77	19	21.20	155	7.40	8.22	2.2	2.6	25	0	81	.09	8	.6	.8	UER
		13	919	21.08	19	21.31	155	3.32	7.03	2.7	3.1	25	0	114	.10	11	.8	.7	MER
		13	1141	.27	19	26.58	154	53.05	9.46	2.8	3.1	25	0	243	.10	20	1.6	.5	LER
		13	1435	42.54	19	18.82	155	11.48	7.86	1.8	1.8	17	0	113	.08	7	.6	1.4	POL
		13	1445	49.95	19	23.70	155	16.67	1.74	2.2	3.0	15	0	77	.09	3	.5	.3	SPC
		13	2313	46.61	19	17.66	155	21.40	5.78	1.9	2.5	21	0	128	.16	8	1.0	2.7	SWR
		13	2315	32.50	19	17.21	155	21.25	6.67	1.7	2.1	19	0	133	.12	9	1.0	1.9	SWR
		14	225	38.07	19	25.68	154	55.87	6.40	2.1	2.0	17	0	193	.13	15	2.1	3.2	LER
		14	544	42.18	19	22.19	155	6.27	6.83	2.4	2.7	24	0	72	.12	7	.7	1.1	UER
		14	652	35.93	19	20.15	155	5.03	5.60	2.0	2.2	24	0	128	.12	8	.7	1.3	MER
		14	815	43.80	19	22.72	154	59.26	6.26	2.2	2.5	24	0	189	.11	9	1.2	1.0	LER
		14	912	42.17	19	17.38	155	30.51	9.56	3.1	3.2	28	0	100	.14	13	.9	.6	HEA
		14	1950	4.15	19	19.99	155	9.16	8.73	2.0	2.5	27	0	78	.09	8	.6	.7	UER
		15	454	26.32	19	19.62	155	11.49	7.21	1.7	2.1	25	0	92	.13	6	.8	1.5	UER
		15	646	.77	19	20.42	155	7.73	7.33	2.0	2.4	22	0	87	.10	8	.7	1.4	UER
		15	740	51.48	19	19.91	155	12.13	7.45	2.5	2.8	28	0	81	.10	6	.6	1.0	UER
		15	744	1.63	19	26.74	154	52.76	3.63	2.4	2.5	19	3	259	.18	20	1.7	1.7	LER
		15	850	2.45	19	22.38	155	12.98	3.14	2.1	2.4	21	0	53	.12	5	.6	1.2	UER
		15	14 9	19.99	19	22.99	155	30.24	8.89	2.4	2.4	26	0	45	.14	13	.7	1.1	MOK
		15	1444	.76	19	19.59	155	11.08	8.21	1.9	2.3	27	0	95	.13	7	.8	1.3	UER
		15	1846	23.74	19	20.02	155	8.57	7.56	2.1	2.2	25	0	76	.11	9	.7	1.1	UER
		15	1910	31.63	19	21.99	155	6.68	7.52	2.2	2.6	21	0	74	.10	8	.6	1.0	UER
		15	2139	58.45	19	25.77	155	16.76	4.02	2.6	3.3	31	0	67	.18	5	.7	1.5	SPC
		15	2150	24.66	19	23.83	155	16.84	1.19	2.0	2.7	18	0	71	.12	3	.6	.4	SPC
		16	324	19.34	19	24.19	155	16.06	1.67	1.3	2.2	14	0	124	.07	3	.4	.3	SPC
		16	328	57.68	19	21.60	155	7.59	8.15	2.4	3.0	29	0	74	.09	8	.5	.6	UER
		16	4 7	9.40	19	27.24	155	14.62	31.65	2.3	2.4	35	0	52	.11	8	.8	1.8	DEP
		16	436	33.24	19	24.15	155	15.79	1.78	1.8	2.6	18	0	88	.10	3	.5	.4	SPC
		16	926	39.90	19	27.69	155	14.13	23.57	2.1	1.9	32	0	53	.11	9	.8	1.7	DEP
		16	1239	20.42	19	19.96	155	16.10	7.86	1.5	2.0	27	0	87	.11	6	.6	1.0	KOA
		16	15 6	29.40	19	24.03	155	16.18	1.81	1.7	2.5	13	0	133	.08	3	.7	.4	SPC
		16	1542	42.10	19	23.25	155	14.38	4.43	2.0	2.4	24	0	45	.14	3	.7	1.0	GLN
		16	16 8	38.64	19	21.08	155	2.45	5.55	2.1	2.2	24	0	153	.19	12	1.3	1.6	MER
		16	1915	34.97	19	20.16	155	11.78	7.21	1.7	2.0	28	0	79	.16	7	.9	1.5	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAY	16	2153	5.05	19	24.57	155	29.29	9.23	2.4	2.2	28	0	54	.12	13	.6	.9	UKF
		16	2222	9.13	19	20.23	155	7.29	8.19	2.2	2.7	27	0	98	.11	8	.6	.7	UER
		17	125	7.07	19	19.91	155	12.19	6.37	1.6	1.8	29	0	80	.16	6	.9	1.6	UER
		17	145	6.09	19	19.78	155	16.26	9.60	3.6	3.8	32	0	91	.09	5	.5	.4	KOA
		17	2 7	51.71	19	29.44	154	50.99	7.04		1.9	22	0	269	.19	22	4.9	1.3	LER
		17	627	30.37	19	22.69	155	6.25	8.12	2.6	3.0	29	0	68	.12	8	.6	.8	UER
		17	847	17.06	19	27.52	154	54.51	5.57	2.3	2.7	26	0	189	.15	17	1.7	1.0	LER
		17	953	41.08	19	17.90	155	21.21	7.60	2.1	2.5	27	0	120	.14	8	.8	1.2	SWR
		17	10 9	24.15	19	19.65	155	6.57	8.10	2.2	2.3	24	0	124	.12	7	.9	.6	UER
		17	1016	34.64	19	19.48	155	12.27	6.63	2.0	2.1	27	0	87	.12	6	.7	1.2	UER
		17	1759	16.67	19	23.76	155	16.68	6.86	1.8	2.8	13	0	65	.19	3	1.6	2.0	LPC
		17	1840	32.47	19	25.27	154	56.03	6.60		2.1	25	0	196	.13	14	1.6	1.1	LER
		17	2054	49.19	19	19.66	155	8.60	9.51	3.0	3.6	28	0	78	.09	10	.6	.2	UER
		17	2136	18.60	19	20.42	155	4.64	7.41	3.1	3.4	30	0	118	.12	8	.8	.6	MER
		18	121	41.29	19	19.35	155	13.64	7.78	2.2	2.5	30	0	66	.15	7	.8	1.2	UER
		18	520	58.16	19	22.16	155	12.97	6.96	2.5	3.2	29	0	55	.09	5	.4	.8	UER
		18	616	41.31	19	19.76	155	7.48	8.63	3.5	4.0	32	0	102	.12	8	.8	.6	UER
		18	7 5	6.62	19	9.08	155	24.41	39.27		1.1	17	0	225	.09	21	3.9	6.9	LSW
		18	1044	56.03	19	19.39	155	11.43	5.96	2.0	2.2	28	0	97	.15	7	.9	1.8	UER
		18	1348	50.13	19	21.84	155	17.85	24.01	2.0	1.8	28	0	58	.08	4	.7	1.2	DEP
		18	1410	58.49	19	19.45	155	15.87	9.91	2.4	2.8	30	0	91	.10	6	.6	.3	KOA
		18	1455	20.13	19	24.04	155	26.93	9.31	2.2	2.4	30	0	49	.12	12	.6	.8	UKF
		18	1540	51.26	19	18.99	155	13.59	6.99	2.0	2.1	26	0	70	.13	7	.8	1.5	POL
		18	1824	17.92	19	20.14	155	8.46	7.33	2.2	2.5	19	0	78	.11	9	.8	1.8	UER
		18	22 2	.51	18	38.95	155	4.49	28.60		1.6	25	2	289	.13	72	4.1	20.3	PPL
		18	2244	35.55	19	19.97	154	58.58	9.97	2.5	2.7	30	0	221	.15	14	2.2	.5	DIS
		18	2246	47.68	19	20.09	155	6.72	8.33	2.2	2.4	28	0	110	.10	7	.7	.5	UER
		18	2347	52.55	19	58.52	155	18.64	7.29	2.8	2.1	22	0	256	.17	42	5.4	1.0	KKU
		19	132	20.99	19	26.26	155	29.92	8.22	2.1	2.0	30	0	67	.16	11	.8	1.6	UKF
		19	4 0	11.21	19	27.20	155	29.29	9.30	2.5	2.6	32	0	60	.15	12	.7	1.3	UKF
		19	1114	1.65	19	22.82	155	2.08	7.34	2.5	3.0	29	0	142	.13	11	.9	.8	MER
		19	1456	16.55	19	24.40	155	15.84	2.27	1.9	2.7	21	0	110	.14	3	.7	2.7	SPC
		19	1712	5.53	19	19.80	155	7.74	9.29	3.8	4.1	31	0	96	.12	8	.8	.6	UER
		19	1727	4.61	19	19.29	155	12.09	8.53	2.5	2.9	31	0	94	.14	6	.8	.9	UER
		19	1756	8.15	19	19.20	155	12.29	8.81	2.5	3.0	32	0	93	.12	7	.7	.7	UER
		19	1839	26.53	19	27.11	154	53.46	8.63	2.6	2.8	27	0	229	.11	19	1.6	.5	LER
		19	2314	36.30	19	20.49	155	11.88	7.06	2.0	2.6	30	0	73	.16	7	.9	1.4	UER
		20	221	7.08	19	29.43	155	53.81	10.41	2.8	2.3	29	2	202	.24	25	2.6	.7	KON
		20	420	50.43	19	22.26	155	13.18	2.89	1.7	2.0	26	0	48	.13	5	.6	1.2	UER
		20	542	41.62	19	23.17	155	14.48	4.98	2.3	2.8	26	0	50	.10	3	.4	.5	GLN
		20	6 2	54.81	19	24.46	155	26.62	8.49	1.8	1.9	28	0	50	.14	11	.7	2.0	UKF
		20	631	25.44	19	23.20	155	14.94	1.80	1.6	2.3	17	0	70	.09	3	.4	.5	GLN
		20	7 8	3.24	19	20.20	155	13.36	7.90	1.6	1.9	26	0	64	.11	6	.6	.9	UER
		20	1418	3.31	19	21.29	155	3.07	7.21	2.5	2.9	27	0	124	.13	11	1.0	.7	MER
		20	19 9	57.38	19	20.61	155	5.86	8.13	2.6	3.1	31	0	107	.11	7	.7	.5	MER
		20	1917	42.81	19	21.67	155	4.98	5.52		2.1	26	0	81	.16	9	.9	1.6	MER
		20	20 9	28.08	19	20.44	155	11.64	8.99	2.2	2.6	31	0	76	.16	7	.8	.9	UER
		20	2142	50.87	19	21.39	155	2.41	6.34	2.1	2.5	30	0	149	.17	12	1.0	1.2	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAY	20	2313	38.38	19	20.68	155	6.73	8.32	2.2	2.6	28	0	97	.10	7	.5	.6	UER
		21	653	37.22	19	19.53	155	12.32	6.67	1.7	2.3	28	0	86	.17	6	1.0	1.6	UER
		21	757	23.93	19	18.16	155	16.91	3.22	2.0	2.6	25	0	121	.20	6	1.2	2.1	KOA
		21	932	40.61	19	18.18	155	16.62	5.16	2.2	2.8	24	0	118	.13	6	.7	.8	KOA
		21	1439	48.98	19	21.19	155	48.03	11.24	3.1	2.8	27	0	136	.17	18	1.3	.6	KON
		21	1722	20.28	19	20.66	155	9.09	7.61	1.8	2.2	28	0	67	.15	8	.8	1.2	UER
		21	1949	27.92	19	20.26	155	8.90	7.57	1.8	2.3	30	0	70	.16	9	.8	1.2	UER
		21	1953	9.83	19	21.08	155	6.06	9.27	3.2	3.5	31	0	94	.11	7	.8	.5	UER
		22	234	3.72	19	19.83	155	7.44	8.14	1.9	2.4	29	0	102	.10	8	.6	.5	UER
		22	253	55.36	19	23.69	154	58.91	6.21	2.2	2.3	27	0	180	.21	10	1.9	1.6	LER
		22	15 5	17.18	19	20.67	155	9.17	8.03	1.8	2.1	27	0	67	.14	8	.9	1.0	UER
		22	1852	8.44	19	21.68	155	15.11	10.51	3.7	4.0	31	0	60	.09	4	.5	.2	KOA
		22	2218	2.64	19	19.62	155	10.46	8.83	1.9	2.4	30	0	94	.13	7	.6	.7	UER
		22	2234	32.49	19	20.62	155	7.60	8.08	2.0	2.5	26	0	87	.14	8	.8	.8	UER
		23	427	55.52	19	28.66	155	23.60	6.82	2.1	2.0	25	0	71	.16	13	.9	1.9	UKF
		23	449	33.07	19	20.42	155	4.25	7.73	2.0	2.6	31	0	116	.11	9	.9	.6	MER
		23	557	57.33	19	18.06	155	16.88	9.64	2.4	3.1	31	0	121	.12	6	.6	.6	KOA
		23	831	48.93	19	27.69	154	52.51	9.27	2.4	2.4	24	0	263	.13	20	2.3	.8	LER
		23	1311	13.83	19	22.06	155	6.12	6.09	1.9	2.6	28	0	75	.15	7	.9	1.7	UER
		23	1731	20.18	19	20.44	155	6.81	9.38	4.0	4.0	31	0	101	.11	7	.8	.5	UER
		23	1734	59.58	19	20.79	155	11.62	7.74	2.6	2.7	22	0	152	.18	8	1.4	1.3	UER
		23	18 3	25.75	19	20.49	155	6.72	7.74	1.9	2.2	26	0	101	.12	7	.7	.8	UER
		23	2324	7.63	20	54.93	156	23.40	49.09	4.3	4.2	34	2	206	.14	169	3.2	1.6	DIS
		24	121	50.68	19	21.00	155	13.47	9.72	1.6	2.2	28	0	55	.13	7	.8	.7	UER
		24	244	4.17	19	20.56	155	8.09	7.71	2.1	2.6	29	0	80	.14	9	.7	1.0	UER
		24	546	55.74	19	21.12	155	13.49	9.67	2.0	2.4	29	0	54	.13	7	.7	.5	UER
		24	816	57.79	19	24.34	155	19.58	12.20	2.0	2.0	30	0	45	.11	5	.8	.3	UKF
		24	1130	17.52	19	19.15	155	11.82	6.95	1.7	2.1	27	0	100	.13	7	.8	1.4	UER
		24	1234	49.03	19	6.27	155	28.08	23.18		1.8	24	4	185	.13	25	1.2	2.7	LSW
		24	1641	.12	19	24.02	155	15.79	1.50	1.5	2.5	15	0	112	.11	5	.5	.3	SPC
		25	531	34.45	19	21.53	155	7.44	8.14	2.6	3.0	30	0	76	.12	8	.6	.7	UER
		25	731	17.19	19	21.69	155	17.10	31.71	2.7	2.3	33	0	47	.09	3	.7	1.4	DEP
		25	949	57.32	19	28.07	154	54.58	5.44		2.0	23	0	171	.15	17	1.8	1.0	LER
		25	2113	38.98	19	21.94	155	2.03	6.09	2.1	2.2	29	0	153	.14	12	.9	1.2	MER
		25	2146	49.04	19	21.10	155	13.21	8.70	1.6	2.1	27	0	57	.14	6	.8	1.2	UER
		26	2 6	9.27	19	24.07	155	15.88	1.56	1.3	2.0	14	0	113	.13	5	.6	.4	SPC
		26	650	54.40	19	20.59	155	4.29	5.19	2.0	1.9	27	0	109	.18	9	1.4	1.1	MER
		26	8 5	30.60	19	19.65	155	7.54	9.03	1.9	2.2	28	0	103	.15	8	1.2	.9	UER
		26	830	16.42	19	23.41	155	17.31	1.47	1.8	2.5	14	0	55	.08	3	.5	.3	SPC
		26	1138	4.28	19	21.75	155	6.42	6.85	2.0	2.2	27	0	83	.14	7	.8	1.2	UER
		26	1312	49.61	19	21.82	155	6.30	6.55	1.9	2.0	26	0	78	.13	7	.8	1.2	UER
		26	1413	58.67	19	19.27	155	13.93	5.95	2.1	2.0	26	0	65	.15	6	.9	1.6	UER
		26	16 3	34.91	19	19.83	155	11.02	8.34	2.3	2.6	28	0	89	.13	7	.8	1.1	UER
		26	1738	12.45	19	19.61	155	8.16	9.10	2.7	3.2	29	0	88	.09	9	.6	.5	UER
		26	1948	.19	19	19.86	155	8.74	8.40	2.2	2.4	28	0	74	.10	9	.6	.6	UER
		26	2233	7.53	19	25.98	155	24.14	9.11	3.1	3.2	31	0	66	.13	9	.6	1.1	UKF
		26	2238	9.00	19	19.93	155	7.70	7.59	1.9	2.4	28	0	95	.13	8	.7	.7	UER
		26	2240	54.28	19	20.21	155	7.61	6.83	1.9	2.2	29	0	93	.14	8	.8	1.3	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAY	26	2347	5.78	19	17.33	155	15.82	9.75	2.1	2.6	30	0	133	.13	6	.9	.3	KOA
		27	022	54.32	19	22.12	155	17.92	4.77	1.8	2.2	15	0	82	.13	4	.8	1.2	KOA
		27	026	.69	19	23.76	155	29.81	9.34	1.9	2.0	27	0	50	.12	13	.6	.9	UKF
		27	250	24.48	19	23.68	155	16.92	2.71	1.8	2.4	19	0	66	.11	3	.6	1.3	SPC
		27	337	33.64	19	20.19	155	7.21	8.24	2.1	2.1	28	0	100	.14	8	.8	1.0	UER
		27	1349	9.15	19	19.23	155	11.66	6.87	1.9	2.0	26	0	100	.12	7	.7	1.2	UER
		27	1357	40.84	19	23.27	155	30.48	9.93	2.9	3.1	32	0	59	.14	13	.7	.4	MOK
		27	1816	44.71	19	24.66	154	59.46	6.58	2.3	2.5	26	0	198	.15	11	1.6	1.1	LER
		27	1921	31.12	19	27.28	154	53.30	9.49	2.6	2.8	29	0	234	.11	19	1.6	.6	LER
		27	1951	9.49	19	27.45	154	55.91	7.26	2.3	2.6	26	0	163	.15	15	1.5	.8	LER
		27	23 7	53.47	19	19.57	155	12.33	5.63	1.6	2.1	31	0	85	.18	6	.9	1.8	UER
		28	050	32.59	19	16.97	155	22.77	6.01	1.8	2.2	27	0	123	.19	7	1.1	2.4	SWR
		28	337	3.05	19	28.46	154	54.68	5.74	2.3	2.3	24	0	152	.15	16	1.6	1.1	LER
		28	719	23.27	19	24.04	155	15.67	1.50	1.6	2.3	18	0	113	.13	3	.6	.4	SPC
		28	12 8	45.51	19	23.03	155	4.84	8.11	3.3	3.7	26	0	98	.09	9	.5	.6	MER
		28	14 1	19.91	19	22.10	155	6.72	9.25	2.4	2.6	24	0	72	.11	8	.8	.5	UER
		28	1455	32.92	19	20.39	155	7.90	9.39	2.3	2.7	24	0	85	.13	9	.9	.7	UER
		28	1622	4.15	19	24.10	155	15.88	2.51	1.9	2.1	17	0	108	.11	3	.6	2.0	SPC
		28	1812	19.28	19	20.09	155	8.17	8.80	2.5	2.7	22	0	83	.09	9	.6	.6	UER
		28	1958	46.27	19	21.67	155	3.11	6.47	2.6	3.0	26	0	122	.11	12	.5	.8	MER
		28	2320	36.62	19	23.27	155	17.00	2.94	2.3	3.2	23	0	57	.13	3	.6	1.3	SPC
		29	129	29.39	19	22.76	155	4.85	8.69	2.7	3.1	29	0	87	.12	9	.8	.6	MER
		29	311	39.48	19	21.99	155	6.31	7.24	1.9	2.1	25	0	76	.12	7	.6	.8	UER
		29	1220	55.60	19	23.63	155	16.90	1.73	1.5	2.1	9	0	107	.08	3	.7	.3	SPC
		29	1714	42.83	19	22.12	155	13.21	1.93	1.7	2.0	10	0	140	.06	5	.7	.3	UER
		29	1727	25.32	19	19.94	155	12.09	7.27	2.1	2.4	15	0	190	.08	8	1.0	2.0	UER
		29	1858	6.45	19	19.42	155	12.45	7.46	2.0	2.3	14	0	213	.07	8	1.1	2.1	UER
		29	1927	51.16	19	24.89	155	16.12	13.45	2.8	2.9	16	0	134	.08	3	.9	1.0	DEP
		29	1950	24.64	19	20.32	155	6.60	8.26	2.2	2.6	27	0	106	.09	7	.7	.4	UER
		30	1010	9.71	19	23.21	155	14.66	5.06	2.5	2.7	26	0	46	.09	3	.4	.5	GLN
		30	11 2	26.73	19	22.14	155	13.14	5.89	2.3	2.9	24	0	72	.11	6	.6	1.2	UER
		30	1131	14.78	19	21.91	155	12.92	2.04	1.7	1.8	22	0	59	.09	5	.4	2.3	UER
		30	1229	9.53	19	23.32	155	14.97	3.28	1.9	2.2	20	0	70	.13	3	.7	1.6	GLN
		30	1632	32.58	19	20.23	155	6.30	9.42	2.6	3.4	26	0	80	.11	9	.8	.5	UER
		30	17 4	38.84	19	23.06	155	4.73	7.54	2.7	3.2	29	0	90	.12	9	.6	.8	MER
		30	1743	16.73	19	18.85	155	15.03	7.97	1.6	2.0	26	0	92	.11	7	.7	1.0	KOA
		30	19 7	53.92	19	22.76	155	24.66	11.21	1.9	2.4	26	0	59	.09	9	.6	.3	UKF
		30	1944	28.24	19	23.42	155	14.75	2.45	1.8	2.2	19	0	66	.11	3	.6	2.2	GLN
		30	2022	58.31	19	19.76	155	11.92	7.25	2.0	2.2	27	0	86	.12	6	.7	1.0	UER
		30	2051	24.01	19	17.83	155	21.41	7.80	1.7	2.1	21	0	127	.13	8	1.0	1.5	SWR
		31	146	3.02	19	27.38	154	52.62	8.78	2.4	2.6	24	0	263	.16	21	4.9	1.0	LER
		31	410	51.23	19	23.56	155	17.10	2.67	2.0	2.8	24	0	58	.15	3	.7	1.5	SPC
		31	431	57.01	19	23.92	155	17.00	2.44	1.3	2.0	16	0	63	.14	3	.8	2.0	SPC
		31	627	21.09	20	14.77	155	53.55	31.66	3.6	3.3	9	0	303	.04	70	5.8	9.7	KOH
		31	744	31.69	19	23.67	155	17.11	3.69	2.6	3.4	25	0	58	.13	3	.6	1.1	SPC
		31	748	59.15	19	23.63	155	17.17	1.88	1.4	2.3	15	0	55	.13	3	.7	.4	SPC
		31	831	51.29	20	4.95	155	44.97	17.16	2.9		22	0	149	.18	60	7.6	13.2	KOH
		31	832	9.99	20	15.86	155	46.17	2.68	4.1	3.9	6	2	175	.07	75	10.1	5.6	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAY	31	839	2.57	19	21.14	155	11.72	8.59	2.4	2.5	31	0	65	.13	8	.7	.7	UER
		31	853	52.70	20	8.80	155	48.76	28.95	3.0	2.1	18	2	296	.18	55	16.0	17.6	KOH
		31	955	50.30	20	6.84	155	47.98	24.61	3.0	2.7	22	3	137	.23	54	2.2	3.4	KOH
		31	1036	53.76	20	8.17	155	45.75	22.80	2.9	1.8	21	0	158	.10	52	2.6	3.2	KOH
		31	1155	13.56	19	18.28	155	21.71	6.10	1.8	1.9	29	0	115	.18	8	1.0	2.5	SWR
		31	1156	46.16	19	19.68	155	12.10	7.07	1.7	2.0	25	0	85	.12	6	.7	1.3	UER
		31	1713	23.66	19	20.96	155	13.37	8.79	2.2	2.5	30	0	56	.13	6	.7	1.0	UER
		31	1748	42.42	19	17.68	155	21.96	6.98	2.3	2.7	31	0	120	.19	9	1.0	1.9	SWR
		31	1750	40.98	19	23.76	155	17.01	2.64	1.7	2.1	19	0	62	.10	3	.5	1.3	SPC
		31	1921	7.38	19	23.83	155	16.85	3.64	2.2	2.5	24	0	70	.13	3	.6	1.0	SPC
	JUN	1	5 8	35.86	19	19.96	155	8.48	8.38	2.2	2.3	27	0	79	.09	9	.5	.5	UER
		1	10 2	22.18	19	20.11	155	11.53	9.01	2.9	3.4	26	0	82	.10	8	.5	.6	UER
		1	1317	55.15	19	20.91	155	11.47	9.06	2.8	2.8	30	0	69	.11	8	.5	.6	UER
		1	1343	15.00	19	27.56	154	51.91	9.36	2.6	2.5	20	0	266	.11	21	2.3	.7	LER
		1	1616	16.40	19	41.36	155	2.92	2.31	3.0	3.2	29	0	198	.17	28	1.4	2.5	HIL
		1	1628	53.28	19	19.38	155	19.19	8.20	1.7	1.8	29	0	60	.12	7	.7	1.0	SWR
		1	1635	23.71	19	20.26	155	7.80	9.56	2.7	3.2	31	0	88	.11	9	.8	.3	UER
		1	1923	8.13	19	21.88	155	4.98	7.32	2.0	2.1	27	0	89	.15	9	.9	1.2	MER
		1	2026	24.27	19	27.14	155	23.06	8.97	2.6	2.3	31	0	85	.13	11	.6	1.2	UKF
		2	339	47.11	19	19.81	155	15.27	7.68	2.0	2.1	29	0	81	.12	6	.7	1.0	KOA
		2	353	38.16	19	22.14	155	.28	6.00	2.4	2.1	27	0	212	.12	11	1.4	1.0	LER
		2	851	36.92	19	25.97	154	55.43	7.57		2.2	23	0	250	.13	17	3.1	1.3	LER
		2	1514	25.55	19	23.90	155	15.26	3.82	2.2	2.6	22	0	95	.12	3	.7	1.1	SPC
		2	2150	50.79	19	19.78	155	22.06	4.60	1.9	2.3	25	0	89	.13	8	.6	1.2	SWR
		3	0 4	50.43	19	20.02	155	13.69	7.05	2.1	2.4	29	0	60	.15	6	.8	1.1	UER
		3	2 1	11.72	19	20.06	155	3.97	7.48	2.7	3.1	29	0	135	.11	9	.9	.6	MER
		3	7 6	50.18	19	19.67	155	11.76	6.82	1.7	2.0	27	0	89	.17	6	1.0	1.8	UER
		3	922	35.52	19	20.98	155	10.75	9.24	2.2	2.5	25	0	69	.08	8	.5	.6	UER
		3	945	28.07	19	19.80	155	13.88	7.91	2.3	2.7	27	0	60	.14	6	.8	1.1	UER
		3	1115	35.44	19	17.71	155	19.96	9.56	2.4	3.1	30	0	126	.10	7	.6	.5	SWR
		3	1525	42.50	19	20.24	155	7.27	9.41	2.2	2.6	25	0	98	.09	8	.7	.5	UER
		3	1845	24.60	19	19.76	155	25.32	8.27	1.8	2.2	29	0	87	.18	7	1.0	1.5	HEA
		3	2038	53.35	19	26.63	154	51.90	8.94	2.4	2.3	29	0	268	.14	22	2.5	.8	LER
		3	23 5	23.47	19	22.17	155	25.12	9.38	2.2	2.3	34	0	53	.14	10	.6	.7	UKF
		4	3 7	22.72	19	21.38	155	13.41	7.90	1.7	2.3	31	0	53	.15	6	.8	1.0	UER
		4	446	13.06	19	22.00	155	1.12	5.38	2.1	2.4	29	0	173	.14	12	1.1	.8	MER
		4	545	12.13	19	24.23	155	15.57	1.40	1.5	2.2	18	0	115	.16	3	.8	.5	SPC
		4	723	12.36	19	17.65	155	21.35	7.47	2.3	2.6	30	0	122	.15	8	.8	1.6	SWR
		4	1031	10.64	19	19.37	155	12.09	6.54	2.2	2.5	30	0	92	.16	6	.9	1.5	UER
		4	1419	44.77	19	21.53	155	7.78	8.40	2.1	2.3	26	0	73	.10	8	.6	.8	UER
		4	1427	46.90	19	15.49	155	24.96	34.08	2.9	2.6	34	0	121	.12	12	1.0	2.2	LSW
		4	15 3	3.14	19	4.72	155	21.43	30.41		1.1	28	0	203	.09	25	1.3	2.5	LSW
		4	1535	30.87	19	15.41	155	24.93	33.07		1.1	28	0	122	.10	12	1.1	2.4	LSW
		4	1832	38.81	19	20.24	155	8.47	9.21	2.8	3.4	30	0	77	.10	9	.7	.5	UER
		4	2250	51.27	19	21.54	155	7.10	9.37	4.1	4.4	32	0	78	.12	8	.7	.5	UER
		4	2343	15.42	19	21.39	155	7.98	9.53	2.9	3.2	27	0	72	.11	9	.7	.4	UER
		4	2348	4.12	19	25.22	155	24.65	9.22	2.3	2.7	33	0	60	.14	9	.6	1.0	UKF
		5	142	44.34	19	19.90	155	6.55	8.42	2.2	2.5	28	0	118	.10	7	.7	.5	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUN	5	247	2.62	19	21.34	155	7.95	7.89	1.8	2.0	26	0	73	.14	9	.8	1.0	UER
		5	1056	54.18	19	20.12	155	11.51	7.81	2.0	2.0	24	0	82	.10	7	.6	1.0	UER
		5	1118	20.99	19	21.59	155	7.40	8.05	2.2	2.4	27	0	75	.12	8	.6	.9	UER
		5	1344	44.20	19	25.52	155	16.52	.46	1.6	2.5	18	0	117	.13	4	.7	.5	SPC
		5	14 4	2.03	19	25.51	155	16.43	.32	1.0	2.1	13	0	169	.18	4	1.5	1.0	SPC
		5	17 0	54.97	19	17.89	155	16.87	9.01	1.7	2.2	31	0	124	.13	6	.7	.9	KOA
		5	1752	22.73	19	19.70	155	11.79	7.18	2.0	2.4	29	0	88	.13	6	.7	1.2	UER
		5	2046	5.20	19	3.73	155	27.66	45.20	2.6		23	2	201	.11	23	2.1	1.4	LSW
		5	2138	30.53	19	20.50	155	4.09	6.45	2.5	3.0	28	0	111	.15	9	.9	1.2	MER
		6	037	20.02	19	24.33	155	14.75	3.28	1.6	2.3	21	0	97	.14	4	.8	1.2	GLN
		6	343	14.87	19	19.33	155	16.37	9.52	3.1	3.4	32	0	98	.08	6	.4	.3	KOA
		6	5 0	54.19	19	19.34	155	11.88	6.82	1.7	1.9	29	0	95	.13	6	.7	1.3	UER
		6	913	19.19	19	20.57	155	12.87	8.43	2.8	2.2	22	0	64	.13	7	.8	1.1	UER
		6	1714	3.95	19	21.46	155	6.60	7.60	2.2	2.4	31	0	83	.12	7	.6	.8	UER
		6	1928	59.14	19	20.29	155	17.04	30.88	2.3	2.1	31	0	79	.09	5	.8	1.5	DEP
		7	719	47.08	19	18.52	155	13.32	8.05	2.1	2.3	27	0	103	.15	8	1.1	1.5	POL
		7	1039	37.57	19	19.15	155	15.64	31.40	3.5	3.3	35	0	93	.09	6	.7	1.3	DEP
		7	1126	10.28	19	24.06	155	15.97	1.55	1.9	2.5	19	0	107	.10	3	.4	.3	SPC
		7	2120	37.03	19	20.72	155	7.13	8.99	2.2	2.5	26	0	91	.13	8	.9	.7	UER
		7	2256	19.84	20	8.57	155	45.40	23.69	2.9	2.2	18	3	159	.07	52	1.6	2.0	KOH
		8	210	10.84	19	25.58	155	17.10	.68	1.7	2.7	19	0	116	.17	5	.9	.6	SPC
		8	1413	49.47	19	21.76	155	3.30	6.36	2.2	2.8	27	0	116	.15	11	.8	1.2	MER
		8	1743	32.63	19	27.01	154	54.14	8.82	2.3	2.4	24	0	209	.18	18	2.6	1.0	LER
		8	1949	42.96	19	21.94	155	7.01	7.23	2.6	3.2	30	0	73	.12	8	.6	.9	UER
		8	2132	46.00	19	20.70	155	13.26	7.69	1.9	2.4	30	0	59	.14	6	.8	1.1	UER
		9	831	22.18	19	19.56	155	12.43	6.92	2.4	2.8	31	0	84	.14	6	.8	1.3	UER
		9	11 3	42.72	19	13.21	155	27.39	10.35	2.7	3.4	28	0	142	.12	17	.9	.4	LSW
		9	1133	6.46	19	12.34	155	17.20	42.70		1.3	18	0	194	.07	19	1.5	3.3	HLP
		9	1137	4.34	19	21.10	155	13.20	8.87	2.2	2.6	29	0	57	.12	6	.7	.9	UER
		9	1439	43.64	19	19.74	155	7.54	7.74	2.2	2.5	27	0	101	.12	8	.7	.6	UER
		9	1827	51.14	19	27.85	154	52.77	7.66	2.4	2.6	24	0	260	.14	20	2.4	1.0	LER
		9	2211	2.41	19	20.60	155	11.25	8.81	2.8	3.2	31	0	74	.10	8	.6	.7	UER
		10	015	3.85	19	20.07	155	7.32	8.55	3.3	3.7	32	0	100	.11	8	.7	.6	UER
		10	746	33.78	19	10.32	155	39.32	8.16	2.7	2.7	26	0	112	.20	21	1.3	1.5	HEA
		10	2018	53.34	19	21.25	155	8.41	8.42	2.2	2.8	26	0	79	.11	9	.7	.8	UER
		10	22 5	5.23	19	19.78	155	8.51	9.55	3.2	3.7	33	0	79	.09	10	.6	.2	UER
		10	2318	45.63	19	12.83	155	27.32	9.73	2.7	3.0	22	0	145	.16	18	1.3	.5	LSW
		10	2328	36.60	19	20.36	155	13.70	10.23	2.4	2.9	30	0	57	.10	6	.6	.3	UER
		10	2344	39.42	19	23.47	155	14.82	2.03	1.8	2.5	20	0	73	.11	3	.5	3.1	GLN
		11	016	55.97	19	23.30	155	14.84	1.65	2.0	2.6	20	0	70	.12	3	.5	.4	GLN
		11	3 5	35.62	19	47.43	155	25.05	18.00	2.6	2.5	33	0	81	.10	22	.7	1.9	KKU
		11	1437	49.53	18	55.52	155	17.60	16.99	2.6	3.1	21	0	249	.15	40	3.9	20.0	PPL
		12	328	13.91	19	20.15	155	9.33	8.56	1.8	2.5	27	0	77	.12	8	.8	.9	UER
		12	6 6	8.28	19	20.76	155	6.64	8.96	2.8	3.3	30	0	96	.10	7	.7	.5	UER
		12	1242	15.55	19	20.27	155	8.04	9.12	3.1	3.4	25	0	84	.07	9	.5	.4	UER
		12	1359	49.28	19	23.67	155	16.92	1.80	1.1	2.0	12	0	71	.06	3	.4	.2	SPC
		12	14 0	31.31	19	23.65	155	16.77	1.56	1.3	2.2	13	0	76	.08	3	.5	.3	SPC
		12	1932	20.92	19	21.80	155	4.18	7.06	2.6	3.2	29	0	93	.12	10	.6	.9	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUN	13	1421	41.00	19	20.20	155	8.22	9.25	3.0	3.4	29	0	81	.09	9	.6	.4	UER
		14	048	22.04	19	24.70	156	4.44	31.79	2.9	2.5	23	1	254	.15	39	3.2	1.4	KON
		14	631	39.00	19	23.14	155	14.77	4.05	2.5	3.0	26	0	61	.14	3	.7	1.0	GLN
		14	7 4	21.03	19	20.00	155	7.43	7.94	2.2	2.5	26	0	99	.14	8	.8	.9	UER
		14	1417	15.19	19	24.25	155	15.84	4.37	3.2	3.9	24	0	109	.14	3	.8	1.0	SPC
		14	1432	41.09	19	19.08	155	13.36	9.28	2.8	3.2	25	0	74	.12	7	.8	1.0	UER
		14	17 0	34.34	19	19.97	155	8.25	8.94	2.6	3.1	27	0	83	.12	9	.8	.6	UER
		15	423	39.28	19	21.37	155	8.37	8.16	2.9	3.3	31	0	68	.08	9	.4	.4	UER
		15	5 0	32.52	19	27.42	155	28.80	9.51	3.4	3.4	33	0	62	.14	11	.6	.4	UKF
		15	815	31.95	19	22.87	155	6.31	7.22	2.7	3.1	30	0	69	.13	8	.6	1.0	UER
		15	852	10.59	19	12.59	155	35.77	10.49	2.9	2.8	27	0	116	.18	23	1.3	.5	HEA
		15	1846	41.01	19	23.47	155	16.96	3.39	2.3	3.0	23	0	63	.13	3	.7	1.2	SPC
		16	917	15.92	19	21.81	155	4.84	7.79	3.4	3.6	31	0	79	.09	9	.5	.6	MER
		16	1744	18.20	19	23.17	155	14.62	5.07	2.6	3.1	27	0	56	.10	3	.4	.5	GLN
		16	1746	33.78	19	24.39	155	23.84	9.46	2.4	2.7	31	0	44	.13	8	.7	.9	UKF
		16	2117	42.41	19	17.56	155	27.93	8.47	2.4	2.7	29	0	45	.15	9	.7	1.3	HEA
		17	9 7	39.53	19	19.32	155	11.99	6.74	2.5	2.8	30	0	94	.14	6	.8	1.3	UER
		17	955	13.71	19	18.98	155	13.65	6.96	2.5	3.0	29	0	68	.16	7	.9	1.5	POL
		18	12 1	11.60	19	22.53	155	6.06	7.50	3.4	3.6	28	0	69	.11	7	.6	.9	UER
		18	1426	16.76	19	23.08	155	4.73	7.32	2.3	2.6	21	0	90	.13	9	.9	1.4	MER
		18	1513	14.08	19	23.97	155	23.78	8.39	2.3	2.8	30	0	45	.13	7	.6	.9	UKF
		19	943	42.80	19	20.88	155	11.28	8.54	2.5	2.6	27	0	70	.12	8	.6	.7	UER
		19	1549	22.61	19	19.44	155	12.45	6.87	2.3	2.7	30	0	86	.15	7	.8	1.1	UER
		19	1748	13.42	19	19.31	155	11.76	9.26	2.6	2.9	29	0	97	.13	7	.8	.7	UER
		20	021	26.55	19	18.94	155	16.43	8.61	2.0	2.6	28	0	104	.12	6	.7	.9	KOA
		20	025	11.27	19	23.50	155	15.04	4.82	3.1	3.4	29	0	76	.10	3	.4	.5	SPC
		20	3 6	23.81	19	11.44	155	32.81	10.64	3.1	3.5	23	0	132	.17	22	1.3	.6	LSW
		20	1624	10.79	19	22.23	155	12.69	5.49	2.5	3.0	26	0	79	.12	5	.7	.7	UER
		21	344	51.92	19	22.34	154	58.91	6.71	2.5	2.7	29	0	199	.16	10	1.7	1.3	LER
		21	453	37.14	19	54.73	155	33.63	19.98	2.7	2.4	28	1	140	.15	33	1.1	4.2	KKU
		21	513	56.13	19	24.13	155	16.15	1.62	2.0	2.6	13	0	109	.16	3	1.0	.6	SPC
		21	915	18.16	19	24.15	155	15.34	2.08		2.9	19	0	108	.10	3	.5	3.1	SPC
		21	952	3.60	19	22.91	155	14.06	3.29	2.0	2.8	22	2	61	.11	3	.6	1.2	UER
		21	1427	49.74	19	22.00	155	13.04	7.19	2.5	3.1	23	0	53	.08	7	.5	.9	UER
		21	1446	46.29	19	22.41	155	11.88	1.40	1.9	2.1	20	0	90	.10	6	.7	.5	UER
		21	1456	11.34	19	22.24	155	12.61	3.43	2.0	2.2	22	0	60	.14	5	.8	1.4	UER
		21	1539	5.68	19	22.49	155	13.27	6.80	2.9	3.6	26	0	54	.10	6	.5	1.0	UER
		21	17 2	18.46	19	21.99	155	12.55	1.98	2.0	2.0	20	0	59	.10	6	.5	18.3	UER
		21	1742	57.46	19	22.29	155	12.95	2.94	1.9	2.1	21	0	52	.11	5	.6	1.1	UER
		21	1752	32.44	19	22.01	155	13.00	5.03	2.2	2.6	27	0	51	.15	6	.7	.9	UER
		21	1816	27.24	19	22.15	155	12.92	5.39	3.1	3.5	28	0	50	.12	5	.5	.5	UER
		21	1835	54.31	19	22.23	155	13.13	4.84	2.0	2.0	28	0	49	.15	5	.6	.8	UER
		21	1848	49.42	19	22.19	155	13.16	3.21	2.0	2.0	24	0	49	.15	5	.8	1.4	UER
		21	1859	45.86	19	22.15	155	13.41	6.57	2.7	2.7	27	0	49	.09	6	.5	.8	UER
		21	19 1	13.17	19	21.93	155	12.89	1.71	1.9	2.1	22	0	52	.11	5	.5	.4	UER
		21	19 3	34.10	19	22.27	155	13.13	6.15	3.4	3.7	27	0	54	.09	6	.4	1.0	UER
		21	19 6	27.29	19	22.29	155	13.03	4.43	2.0	2.4	26	0	49	.15	5	.7	1.0	UER
		21	1922	11.60	19	22.43	155	13.36	3.72	1.9	2.2	21	0	85	.14	6	.7	1.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUN	21	1927	7.43	19	22.28	155	13.01	5.80	2.0	2.3	25	0	49	.15	5	.7	1.2	UER
		21	1935	13.32	19	22.49	155	13.34	2.92	2.0	1.9	22	0	47	.11	6	.6	1.6	UER
		21	1936	29.86	19	22.10	155	12.95	6.06	3.1	3.6	20	0	61	.13	9	.8	2.6	UER
		21	1941	6.18	19	22.17	155	13.05	5.63	2.5	2.7	29	0	50	.18	6	.9	1.7	UER
		21	1951	1.33	19	22.26	155	13.10	2.00	1.8	2.1	20	0	49	.09	5	.4	1.1	UER
		21	20 0	34.66	19	22.34	155	13.23	5.30	3.3	3.9	26	0	63	.13	7	.6	.7	UER
		21	2012	17.12	19	22.66	155	14.04	4.14	2.1	2.1	23	0	48	.14	4	.7	1.1	UER
		21	2013	11.07	19	22.41	155	12.82	4.68	2.2	2.2	25	0	49	.14	5	.6	.9	UER
		21	2015	12.03	19	22.81	155	5.04	9.38	3.2	3.5	30	0	84	.11	9	.7	.6	MER
		21	2035	46.04	19	22.63	155	14.08	4.48	1.9	2.2	24	0	70	.15	4	.7	1.0	UER
		21	2038	50.23	19	20.25	155	13.47	7.13	1.6	2.0	26	0	65	.16	6	.9	1.5	UER
		21	2118	37.95	19	22.40	155	12.85	2.01	1.8	2.2	22	0	49	.09	5	.5	1.1	UER
		21	2120	46.81	19	23.23	155	13.17	5.30	2.5	2.6	27	0	58	.19	5	.8	.9	GLN
		21	2127	28.99	19	23.17	155	14.84	5.42	3.0	3.4	20	0	64	.13	3	.7	1.4	GLN
		21	2143	23.51	19	23.16	155	14.63	5.52	2.0	2.5	26	0	46	.13	3	.6	1.1	GLN
		21	2148	12.93	19	21.35	155	12.44	.53	1.9	2.4	19	0	60	.19	6	.8	4.4	UER
		21	2152	1.73	19	22.39	155	13.25	5.62	2.4	2.8	23	0	73	.08	6	.5	.9	UER
		21	22 2	3.43	19	22.32	155	14.03	1.66	1.6	1.9	18	0	81	.10	4	.6	.5	UER
		21	22 6	37.46	19	23.16	155	14.57	3.65	1.9	2.3	23	0	59	.13	3	.6	1.1	GLN
		21	22 8	13.01	19	22.43	155	13.45	2.72	2.0	2.1	23	0	48	.14	4	.7	1.4	UER
		21	2241	19.86	19	22.36	155	12.75	4.87	2.8	3.6	28	0	77	.16	5	.7	.9	UER
		21	2323	47.47	19	23.13	155	14.36	2.29	1.8	2.2	23	0	46	.12	3	.5	1.7	GLN
		21	2338	14.28	19	22.61	155	14.09	1.89	1.8	1.9	19	0	49	.12	5	.6	29.5	UER
		21	2355	30.06	19	28.52	154	50.37	8.31	3.1	3.0	25	0	272	.12	24	3.6	.7	LER
		22	023	5.35	19	22.65	155	14.19	4.02	2.0	2.4	29	0	49	.15	4	.7	1.0	UER
		22	029	47.86	19	22.69	155	14.23	3.45	2.1	2.5	27	0	56	.15	4	.7	1.2	UER
		22	031	15.47	19	22.44	155	14.04	4.40	2.4	2.7	30	0	50	.16	4	.7	1.0	UER
		22	032	19.69	19	22.22	155	12.90	1.96	2.0	2.5	22	0	50	.11	5	.6	.4	UER
		22	034	47.50	19	22.81	155	13.98	2.13	1.5	2.2	20	0	47	.11	4	.5	2.0	UER
		22	036	31.15	19	22.48	155	14.19	5.44	2.3	2.5	25	0	50	.11	7	.5	.6	UER
		22	041	10.92	19	22.54	155	14.12	1.63	1.7	1.9	20	0	49	.10	4	.5	.6	UER
		22	047	40.90	19	22.81	155	14.04	.43	1.7	2.0	19	0	69	.12	5	.5	2.7	UER
		22	057	41.18	19	22.30	155	13.87	2.10	1.9	2.2	17	0	76	.12	4	.7	2.9	UER
		22	1 9	6.92	19	22.68	155	13.91	2.11	2.0	2.4	20	0	48	.11	4	.5	2.0	UER
		22	111	53.59	19	22.51	155	13.97	2.13	1.6	2.0	18	0	60	.11	4	.6	2.4	UER
		22	2 0	39.89	19	23.17	155	14.74	1.64	1.7	2.1	19	0	65	.12	3	.6	.4	GLN
		22	2 5	.77	19	22.38	155	14.59	1.70	1.6	1.9	20	0	52	.14	4	.6	.6	UER
		22	224	59.79	19	22.57	155	14.23	.46	1.5	1.9	18	0	76	.11	4	.5	.6	UER
		22	239	18.64	19	22.44	155	14.18	1.07	1.7	2.1	19	0	55	.14	4	.7	.6	UER
		22	246	24.50	19	22.37	155	14.22	.62	1.4	1.9	16	0	78	.13	4	.7	2.6	UER
		22	247	42.04	19	22.97	155	14.35	.08	1.4	2.0	17	0	65	.13	3	.6	.4	UER
		22	252	14.27	19	22.57	155	14.23	.44	1.2	2.1	16	0	76	.14	4	.7	.7	UER
		22	257	5.09	19	23.23	155	14.73	1.34	1.8	2.2	20	0	66	.12	3	.5	.4	GLN
		22	3 4	39.56	19	22.64	155	14.46	2.53	3.2	4.0	32	0	50	.15	4	.6	1.5	UER
		22	311	37.13	19	22.80	155	14.66	.82	1.6	2.3	16	0	88	.13	4	.6	.6	UER
		22	341	9.92	19	23.13	155	14.60	5.37	3.0	3.5	30	0	46	.11	3	.4	.4	GLN
		22	359	.46	19	22.21	155	14.32	.34	1.5	2.1	14	0	101	.13	5	.8	1.1	UER
		22	422	19.15	19	22.60	155	6.09	6.63	1.9	2.0	26	0	78	.11	7	.6	1.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUN	22	425	46.32	19	22.34	155	14.13	.05	2.0	3.0	23	0	51	.14	4	.5	.4	UER
		22	433	38.46	19	19.99	155	7.00	9.15	2.6	3.2	29	0	108	.10	7	.8	.5	UER
		22	522	1.67	19	22.19	155	14.30	.11	1.6	2.6	20	0	53	.13	5	.6	.4	UER
		22	531	10.65	19	23.17	155	14.78	1.64	1.5	1.9	14	0	66	.09	3	.5	.3	GLN
		22	549	44.07	19	21.87	155	14.32	1.09	1.8	2.3	22	0	56	.11	5	.4	.6	UER
		22	6 1	44.11	19	23.27	155	14.72	1.76	1.6	2.2	17	0	66	.11	3	.5	.6	GLN
		22	630	35.60	19	22.71	155	14.58	1.00	1.1	1.9	12	0	87	.15	4	.6	.5	UER
		22	643	13.21	19	22.46	155	14.04	.63	1.6	2.7	18	0	79	.10	4	.5	.5	UER
		22	646	41.04	19	23.16	155	14.52	1.75	1.4	2.0	18	0	59	.14	3	.7	.9	GLN
		22	710	31.16	19	22.62	155	14.51	.15	1.1	2.0	12	0	85	.10	4	.6	.4	UER
		22	742	17.23	19	23.55	155	15.16	1.52	1.5	2.1	14	0	87	.09	3	.5	.3	SPC
		22	8 6	25.88	19	22.45	155	14.22	.42	1.2	2.4	12	0	83	.10	4	.5	.7	UER
		22	8 8	17.17	19	20.02	155	8.63	7.78	2.0	2.5	27	0	75	.10	9	.5	.8	UER
		22	820	20.78	19	20.12	155	12.88	7.47	1.8	2.0	28	0	70	.11	6	.6	.9	UER
		22	833	7.26	19	23.41	155	14.88	2.00	1.7	2.3	12	0	76	.04	3	.3	.0	GLN
		22	1237	36.76	19	46.90	156	2.24	3.95	2.9	2.7	20	1	232	.14	47	1.5	1.9	KON
		22	1451	34.89	19	22.92	155	14.21	4.07	2.2	2.7	19	0	57	.11	3	.7	1.3	UER
		22	2029	28.30	19	21.03	155	13.27	9.33	2.3	2.9	29	0	57	.11	6	.5	.6	UER
		22	2149	8.13	19	19.41	155	12.08	6.26	2.0	2.5	27	0	91	.18	6	1.1	1.8	UER
		22	2353	54.35	19	23.28	155	14.50	3.51	2.4	2.8	25	0	45	.13	3	.6	1.1	GLN
		23	052	25.03	19	21.58	155	15.54	2.17	2.9	3.7	29	0	62	.16	4	.6	2.0	KOA
		23	541	38.22	19	22.67	155	25.18	9.52	2.4	2.7	30	0	56	.14	10	.7	.5	UKF
		23	1413	10.74	19	19.80	155	8.64	8.13	2.4	2.9	26	0	76	.12	9	.7	.7	UER
		24	256	57.19	19	23.21	155	14.55	3.64	2.1	2.7	22	0	47	.14	3	.8	1.2	GLN
		24	15 2	4.26	19	27.10	154	53.51	7.72	2.7	2.8	21	0	228	.15	19	2.7	1.0	LER
		24	1640	8.68	19	19.15	155	13.50	8.33	2.2	2.7	25	0	77	.12	7	.7	1.1	UER
		24	1947	53.85	19	20.31	155	11.90	9.23	3.6	3.8	29	0	76	.10	7	.5	.5	UER
		24	2017	27.31	19	20.93	155	16.73	29.76	2.4	2.3	32	0	70	.11	6	.9	1.6	DEP
		25	129	52.49	19	23.27	155	16.91	3.77	2.5	3.5	25	0	45	.14	3	.7	1.0	SPC
		25	144	9.16	19	23.34	155	14.90	1.92	2.3	3.0	22	0	68	.14	3	.7	14.1	GLN
		25	814	31.80	19	14.07	155	20.29	7.31	2.8	3.4	29	0	157	.15	12	1.0	1.6	HLP
		25	17 1	29.50	19	23.24	155	4.20	8.38	2.5	2.9	18	0	99	.11	10	1.0	1.7	MER
		26	1523	50.27	19	27.76	154	47.28	7.56	2.8	2.6	18	0	295	.07	29	9.0	2.6	LER
		26	2248	37.68	19	19.44	155	16.02	9.18	2.6	2.9	28	0	93	.09	5	.6	.7	KOA
		27	2318	7.02	19	23.19	155	14.56	5.09	2.5	2.9	27	0	55	.09	3	.4	.4	GLN
		28	8 6	54.39	21	1.41	156	3.54	4.00	3.4	3.1	3	2	360	.00	35	99.0	93.0	DIS
		28	11 0	39.55	19	31.66	155	45.13	9.55	2.5	2.5	21	0	77	.20	17	1.3	.7	KON
		28	1546	13.68	19	40.37	155	6.79	7.63	2.5	2.7	9	0	270	.11	36	4.5	50.8	HIL
		28	2318	53.52	20	7.18	156	20.46	13.21	3.2	2.3	6	2	220	.06	72	1.6	.0	DIS
		29	1 3	38.30	19	22.79	155	5.72	7.34	2.5	2.7	27	0	75	.14	7	.8	1.1	MER
		29	1627	14.88	19	17.84	155	16.24	7.83	2.6	2.9	30	0	123	.14	5	.8	1.0	KOA
		29	1748	6.12	19	20.61	155	8.02	9.15	2.5	2.9	26	0	80	.08	9	.5	.4	UER
		30	139	6.56	19	21.50	155	3.27	6.21	2.6	3.0	27	0	117	.16	11	1.0	1.4	MER
		30	617	47.31	20	13.33	155	39.55	6.64	3.2	.8	12	1	286	.12	71	2.0	1.2	KOH
	JUL	1	057	3.81	19	19.48	155	11.93	8.61	2.4	2.9	28	0	91	.14	6	.8	1.0	UER
		1	1817	26.42	19	26.98	155	24.65	6.41	2.4	2.8	29	0	56	.15	11	.7	2.1	UKF
		2	031	28.57	19	23.42	155	14.71	3.31	2.6	3.3	28	0	45	.18	3	.8	1.4	GLN
		2	211	2.44	19	19.48	155	10.97	8.57	2.2	2.5	29	0	97	.11	7	.6	.8	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUL	2	557	37.96	19	15.78	155	31.62	9.63	2.6	3.0	28	0	119	.20	14	1.3	.8	LSW
		2	1311	55.49	19	21.68	155	15.01	8.61	2.4	2.9	29	0	60	.11	4	.6	.6	KOA
		2	2317	39.84	19	9.45	155	33.74	36.18	2.5		28	0	120	.21	18	2.3	6.1	LSW
		3	039	27.62	19	23.54	155	16.86	3.35	2.4	3.1	27	0	67	.11	3	.5	.8	SPC
		3	1325	6.86	19	19.32	155	12.52	6.60	2.0	2.5	28	0	87	.15	7	.9	1.4	UER
		4	8 7	6.30	19	19.12	154	57.40	10.28	2.4	2.6	21	0	239	.18	16	4.2	.7	DIS
		4	1215	28.20	19	20.84	155	10.93	8.88	2.0	2.2	22	0	71	.07	8	.5	.8	UER
		4	1236	4.91	19	24.27	155	16.14	1.70	1.3	1.9	10	0	127	.05	3	.5	.2	SPC
		5	140	43.57	19	24.07	155	3.59	8.08	3.1	3.6	21	0	119	.12	11	1.0	.8	MER
		5	1714	23.00	19	20.22	155	13.27	6.94	2.1	2.5	27	0	64	.15	6	.9	1.3	UER
		5	1824	7.37	19	22.96	155	25.33	9.88	2.1	2.5	27	0	55	.14	10	.6	.6	UKF
		6	13 2	9.34	19	24.11	155	16.04	1.58	1.8	2.5	18	0	62	.12	2	.5	.3	SPC
		6	1345	47.97	19	21.61	155	15.27	9.41	3.2	3.5	28	0	62	.09	4	.5	.6	KOA
		6	1518	11.24	19	23.45	155	14.98	1.77	2.6	3.2	23	0	73	.12	3	.5	.4	GLN
		6	17 4	8.35	19	23.81	155	16.70	2.33	2.7	3.3	24	0	77	.14	3	.6	1.8	SPC
		6	18 7	18.28	19	23.37	155	14.45	3.32	2.5	2.9	23	0	52	.15	3	.8	1.5	GLN
		6	2145	4.23	19	23.44	155	14.60	2.17	2.1	2.7	20	0	59	.11	3	.5	2.1	GLN
		7	1749	6.58	19	24.26	155	15.75	4.37	2.5	3.3	21	0	109	.11	3	.6	.9	SPC
		7	2139	17.01	19	23.29	155	15.43	5.44	2.6	3.2	12	0	74	.11	20	.8	2.5	SPC
		7	2159	40.11	19	24.03	155	15.72	.82	2.0	2.7	9	0	71	.11	24	1.0	38.1	SPC
		8	1016	3.45	19	24.16	155	14.39	29.53	2.8	2.6	29	0	40	.07	4	.6	1.3	DEP
		8	21 1	31.23	19	19.38	155	11.61	6.83	2.2	2.6	27	0	97	.11	7	.7	1.0	UER
		9	033	3.45	19	54.37	155	33.78	24.45	2.4	1.6	30	3	242	.15	58	2.9	1.8	KKU
		9	1 7	4.52	19	19.46	155	12.03	6.27	2.2	2.7	28	0	91	.13	6	.7	1.4	UER
		9	651	17.52	19	20.20	155	7.51	8.95	2.6	2.9	12	0	94	.11	10	1.6	1.2	UER
		9	17 2	19.72	19	20.40	155	6.72	8.45	3.2	3.3	25	0	103	.08	7	.6	.4	UER
		10	741	36.58	19	20.22	155	11.37	9.21		2.3	26	0	80	.10	7	.5	.5	UER
		10	1150	24.82	19	20.51	155	13.61	10.56	3.0	3.4	26	0	57	.07	6	.5	.2	UER
		10	1541	3.55	19	22.48	155	15.94	30.72	2.8	2.9	30	0	57	.11	5	.9	1.7	DEP
		10	1920	26.79	19	19.48	155	11.52	8.08	1.6	2.5	22	0	95	.10	6	.7	1.0	UER
		11	1754	57.25	19	23.31	155	14.69	5.35	2.6	3.3	26	0	45	.12	3	.6	.5	GLN
		11	22 6	5.05	19	20.91	155	6.82	9.26	2.8	3.2	29	0	91	.11	7	.8	.5	UER
		11	2326	10.83	19	21.11	155	13.35	9.48	3.2	3.5	31	0	55	.09	6	.5	.4	UER
		12	0 4	15.48	19	19.75	155	9.97	7.65	2.3	2.8	28	0	89	.13	8	.8	1.1	UER
		12	1 1	41.87	19	23.42	155	14.97	2.51	2.3	2.7	21	0	72	.08	3	.4	2.1	GLN
		12	734	39.42	19	20.98	155	18.59	12.19	2.8	3.3	33	0	52	.10	5	.6	.2	KOA
		12	923	24.80	19	22.51	155	12.85	4.68	2.5	3.2	27	0	78	.18	5	.9	1.1	UER
		12	1245	35.20	19	23.10	155	14.73	4.41	3.0	3.3	23	0	59	.12	3	.7	.9	GLN
		13	0 0	45.44	19	15.43	155	16.00	6.57	2.1	2.6	26	0	166	.11	9	.8	1.3	HLP
		13	1648	55.74	19	9.50	155	28.79	46.96	3.1		28	0	135	.12	18	1.5	4.2	LSW
		13	18 0	53.97	19	19.39	155	15.68	8.06	2.1	2.6	28	0	91	.12	6	.7	1.1	KOA
		13	2121	5.18	19	22.51	155	5.05	7.57	2.6	2.8	31	0	82	.13	8	.6	1.0	MER
		13	2329	44.43	19	20.07	155	7.98	7.66	2.5	2.8	26	0	87	.12	9	.7	1.2	UER
		13	2343	46.16	19	23.43	155	14.85	1.87	2.1	2.5	23	0	72	.10	3	.5	10.4	GLN
		14	2 5	2.37	19	23.21	155	14.55	4.89	3.3	3.7	25	0	55	.12	3	.6	.7	GLN
		14	936	54.38	19	20.30	155	11.44	8.78	1.6	1.8	21	0	79	.08	7	.6	1.1	UER
		14	1014	49.18	19	21.70	155	15.06	8.18	1.6	1.9	21	0	60	.11	4	.7	1.1	KOA
		14	1040	31.68	19	20.46	155	11.00	8.45		1.0	16	0	77	.13	8	1.3	2.2	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUL	14	1044	58.74	19	19.64	155	16.28	8.01		.6	9	0	98	.03	5	.4	1.2	KOA
		14	1049	26.62	19	22.39	155	13.32	2.00		.6	7	0	133	.03	5	.5	.2	UER
		14	1057	55.09	19	23.97	155	29.69	9.58	1.9	2.1	21	0	51	.12	13	.7	2.2	UKF
		14	1342	48.03	19	22.31	155	13.08	3.27		1.5	14	0	78	.16	5	1.2	2.8	UER
		14	1346	56.49	19	22.31	155	12.89	2.92		1.6	12	0	105	.06	5	.5	1.2	UER
		14	1348	44.93	19	21.59	155	12.87	1.26		1.3	13	0	82	.16	6	1.0	1.2	UER
		14	1353	13.97	19	21.96	155	12.95	1.80	1.7	1.8	12	0	100	.07	5	.6	.3	UER
		14	1356	20.35	19	22.30	155	12.83	5.32	2.6	3.3	22	0	77	.14	7	.7	1.0	UER
		14	1359	47.28	19	22.20	155	12.85	1.95		1.9	13	0	103	.06	5	.5	.2	UER
		14	14	8 2.09	19	22.33	155	12.97	2.99	2.0	2.6	15	0	70	.08	5	.6	2.2	UER
		14	1414	38.07	19	22.65	155	12.76	4.88	3.1	3.8	25	0	97	.14	8	.7	1.0	UER
		14	1419	34.16	19	22.57	155	12.80	3.49	2.6	3.3	23	0	82	.13	5	.7	1.5	UER
		14	1427	7.70	19	22.05	155	12.90	.06	1.4	1.4	7	0	117	.06	5	.9	99.0	UER
		14	1435	40.85	19	21.94	155	12.51	1.42		1.2	12	0	104	.19	6	1.4	1.1	UER
		14	1442	40.90	19	22.25	155	13.12	1.79	1.7	2.2	14	0	91	.09	5	.7	.4	UER
		14	1447	12.28	19	22.74	155	14.12	2.13	1.5	1.5	14	0	85	.06	4	.4	5.7	UER
		14	1448	13.27	19	22.25	155	12.38	1.34	2.6	2.8	18	0	100	.14	8	.9	.6	UER
		14	1450	43.68	19	22.43	155	12.59	1.74	2.0	1.9	16	0	111	.11	5	.8	.3	UER
		14	1452	39.70	19	22.31	155	12.92	1.83	1.7	1.8	14	0	103	.08	5	.6	.3	UER
		14	1458	44.07	19	22.33	155	12.65	1.77		2.2	17	0	81	.11	5	.7	.4	UER
		14	15	1 34.25	19	21.98	155	13.09	1.68		1.4	10	0	144	.05	5	.5	.3	UER
		14	1511	51.94	19	22.48	155	13.24	2.70	2.0	2.4	18	0	68	.11	5	.6	1.5	UER
		14	1520	25.87	19	21.92	155	12.72	1.60	1.4		13	0	99	.07	6	.5	.4	UER
		14	1521	47.00	19	22.21	155	12.78	2.93	1.8	2.2	18	0	76	.10	5	.6	1.4	UER
		14	1524	11.01	19	22.00	155	12.83	6.26	2.5	2.6	24	0	74	.10	6	.6	1.3	UER
		14	1525	42.58	19	21.81	155	12.50	1.02	1.4	1.1	12	0	107	.09	6	.7	.9	UER
		14	1527	55.57	19	21.91	155	12.84	1.35	1.9	2.7	18	0	91	.11	5	.6	.6	UER
		14	1534	38.56	19	22.00	155	12.76	1.31	1.4	1.5	14	0	100	.07	6	.5	.4	UER
		14	1536	54.46	19	22.19	155	13.04	5.48	2.2	3.1	20	0	74	.09	6	.6	.6	UER
		14	1554	3.24	19	22.55	155	12.64	1.42		2.3	14	0	113	.13	5	1.0	.5	UER
		14	16	0 26.25	19	22.35	155	12.44	1.59		2.3	13	0	112	.07	5	.7	.3	UER
		14	16	1 56.14	19	22.72	155	12.51	5.32	2.3	3.0	22	0	89	.14	5	.7	.8	UER
		14	16	7 55.43	19	22.58	155	13.59	4.84		2.2	13	0	96	.12	6	1.0	2.9	UER
		14	1610	1.70	19	22.13	155	13.15	1.90	1.8	1.9	12	0	86	.08	5	.7	.3	UER
		14	1621	47.06	19	22.73	155	12.64	1.71		1.8	14	0	117	.06	5	.5	.2	UER
		14	1625	19.53	19	22.36	155	12.57	2.03	2.2	3.0	19	0	82	.10	5	.5	1.7	UER
		14	1630	19.56	19	22.31	155	12.39	1.67	2.6	3.4	21	0	84	.10	6	.6	.4	UER
		14	1633	40.14	19	22.22	155	12.44	1.54	1.4	1.7	14	0	109	.08	6	.7	.3	UER
		14	1640	10.43	19	22.38	155	12.64	1.74	1.7	1.6	15	0	82	.08	5	.6	.3	UER
		14	1654	6.82	19	23.24	155	11.92	.14	1.4	1.6	12	0	178	.19	5	1.8	1.4	GLN
		14	1655	59.12	19	22.63	155	12.59	1.66	1.7	2.0	15	0	115	.09	5	.7	.3	UER
		14	1657	17.12	19	22.29	155	12.60	4.42	2.2	2.2	16	0	109	.10	5	.8	1.4	UER
		14	17	5 55.96	19	22.55	155	12.74	6.41	2.6	3.0	20	0	96	.05	9	.5	.9	UER
		14	1735	2.97	19	22.53	155	12.60	3.64	2.1	2.4	17	0	61	.07	5	.5	1.0	UER
		14	1742	8.11	19	22.39	155	12.61	2.75	1.7	2.1	16	0	82	.09	5	.6	1.5	UER
		14	1744	53.86	19	22.43	155	12.52	5.69	2.0	2.2	18	0	50	.09	5	.5	1.1	UER
		14	1749	59.37	19	22.47	155	12.09	4.11	2.2	2.9	25	0	89	.16	6	1.0	1.4	UER
		14	1831	22.31	19	20.10	155	9.02	8.64	2.2	2.6	24	0	74	.11	11	.8	.6	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUL	14	2035	22.09	19	23.42	155	14.77	1.10	1.9	2.1	13	0	70	.09	3	.4	.3	GLN
		14	2037	13.06	19	23.25	155	14.65	1.18	1.9	2.6	20	0	63	.11	3	.4	.4	GLN
		14	2119	30.82	19	22.99	155	14.61	.29	1.8	2.7	19	0	65	.16	3	.6	.7	UER
		14	2221	43.49	19	22.19	155	14.04	2.00	1.7	2.1	14	0	71	.11	5	.7	.0	UER
		14	2241	51.36	19	19.97	155	9.08	7.70	2.4	2.9	28	0	77	.14	9	.9	1.2	UER
		14	2311	54.50	19	21.36	155	14.72	.22	1.4	1.4	12	0	83	.08	5	.5	2.5	UER
		15	016	56.78	19	22.66	155	14.33	.43	1.2	1.4	11	0	92	.05	4	.3	.3	UER
		15	2 7	30.44	19	25.37	155	16.21	.48	1.3		11	0	151	.19	4	1.5	.8	SPC
		15	218	36.34	19	22.16	155	12.61	1.93	1.4	1.8	13	0	106	.05	6	.4	.2	UER
		15	221	48.51	19	23.06	155	14.77	2.00	1.1	1.8	10	0	115	.20	3	1.7	.0	GLN
		15	248	8.31	19	22.69	155	14.71	.33	1.9	2.8	20	0	69	.12	4	.5	.5	UER
		15	313	19.75	19	22.12	155	12.67	1.88	1.4	1.9	15	0	105	.07	6	.5	.2	UER
		15	437	30.48	19	22.62	155	14.61	.38	2.0	2.9	21	0	72	.14	4	.6	.6	UER
		15	547	50.03	19	22.18	155	13.57	2.00	1.3	1.8	12	0	87	.12	5	.9	.0	UER
		15	854	39.83	19	21.66	155	7.67	7.81	3.3	3.5	28	0	72	.14	8	.7	.8	UER
		16	111	28.75	19	10.70	155	32.65	8.83	3.2	3.8	27	0	136	.18	23	1.3	1.4	LSW
		16	447	5.75	19	19.70	155	11.56	9.34	2.5	3.1	28	0	90	.13	6	.8	.7	UER
		16	7 4	4.17	19	19.39	155	16.50	9.47	2.5	3.2	30	0	98	.12	6	.7	.7	KOA
		16	1128	47.24	19	20.19	155	6.70	8.06	2.4	2.9	24	0	108	.11	7	.8	.7	UER
		16	2156	22.76	19	23.31	155	14.52	4.21	2.1	2.9	23	0	54	.15	3	.8	1.2	GLN
		17	026	11.30	19	20.00	155	8.59	8.42	2.3	2.8	29	0	76	.09	9	.6	.4	UER
		17	344	33.04	19	21.15	155	17.10	.56	1.7	2.7	16	0	66	.14	4	.7	2.7	KOA
		18	117	52.60	19	19.19	155	13.95	9.73	2.7	3.0	28	0	62	.13	7	.8	.5	UER
		18	250	45.49	19	20.42	155	7.93	8.45	2.4	3.1	27	0	84	.10	9	.6	.5	UER
		18	1549	51.00	19	19.15	155	15.98	8.78	2.2	2.4	26	0	98	.13	6	.8	1.1	KOA
		18	1947	18.76	19	22.08	155	5.06	7.59	2.1	2.2	23	0	90	.11	8	.7	1.1	MER
		18	2044	59.82	19	23.49	155	14.80	3.85	2.2	2.5	20	0	48	.11	3	.6	1.1	GLN
		18	2331	25.59	19	19.83	155	7.64	9.32	3.4	4.0	27	0	98	.10	8	.8	.5	UER
		19	051	15.95	19	19.89	155	7.67	9.51	3.0	3.4	29	0	96	.09	8	.7	.3	UER
		19	929	46.72	19	23.28	155	14.46	3.80	2.2	2.7	20	0	54	.13	3	.8	1.2	GLN
		19	1358	29.12	19	20.29	155	7.24	6.57	2.3	2.8	29	0	97	.14	8	.8	1.3	UER
		19	1858	30.65	19	22.99	155	5.95	7.43	2.4	2.7	25	0	73	.11	8	.6	.7	MER
		19	2019	8.00	19	23.53	155	14.44	2.18	2.1	2.8	22	0	53	.15	3	.7	3.2	GLN
		20	023	7.67	19	21.23	155	13.12	9.33	2.2	2.8	28	0	56	.13	6	.7	.8	UER
		21	237	5.32	19	19.42	155	12.71	7.84	2.6	3.1	32	0	82	.17	7	1.0	1.4	UER
		21	610	5.58	19	24.04	155	15.67	1.31	1.8	2.7	17	0	113	.13	3	.6	.4	SPC
		22	240	53.05	19	22.63	155	4.62	9.20	3.7	4.1	34	0	90	.13	9	.8	.5	MER
		22	1753	13.31	19	19.92	155	11.19	7.33	2.4	2.9	28	0	87	.14	7	.8	1.3	UER
		22	2149	45.42	19	23.77	155	14.85	4.82	3.2	3.6	31	0	56	.14	3	.5	.7	GLN
		22	2314	4.27	19	23.45	155	14.41	4.08	2.2	2.9	23	0	53	.12	3	.7	1.0	GLN
		23	132	50.83	19	20.68	155	3.40	7.71	2.8	3.3	29	0	100	.14	10	1.2	.7	MER
		23	7 2	5.36	19	24.13	155	15.92	1.36	1.9	2.8	18	0	113	.15	3	.7	.5	SPC
		23	9 4	52.08	19	23.83	154	57.41	7.57	2.7	3.0	22	0	196	.12	12	1.1	1.2	LER
		23	1017	8.43	19	23.54	155	14.73	3.88	2.7	3.2	21	0	65	.07	3	.4	.7	GLN
		23	15 4	23.83	19	20.39	155	13.45	9.71	1.8	2.4	23	0	60	.10	6	.7	1.1	UER
		23	1938	17.12	19	20.05	155	8.59	9.55	3.7	4.0	32	0	80	.10	10	.6	.3	UER
		24	0 3	49.14	19	20.73	155	11.23	9.33	1.9	2.5	24	0	73	.11	8	.7	1.0	UER
		24	122	14.65	19	13.35	155	35.54	10.32	3.4	3.5	29	0	115	.19	17	1.2	.5	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUL	24	2053	44.16	19	23.05	155	6.85	8.47	2.9	3.1	29	0	65	.08	9	.4	.6	GLN
		24	2346	30.98	19	23.34	155	14.74	5.03	3.3	3.9	28	0	45	.12	3	.5	.6	GLN
		25	114	38.87	19	20.00	155	13.14	7.85	2.1	2.5	25	0	68	.08	7	.5	.8	UER
		25	2252	54.61	19	18.85	155	13.75	9.50	2.7	3.2	32	0	66	.13	7	.8	.7	POL
		26	418	4.91	19	23.28	155	14.50	5.04	2.5	2.9	29	0	49	.12	3	.5	.6	GLN
		26	1533	8.29	19	21.82	155	6.10	7.86	2.7	2.9	30	0	79	.11	7	.7	.6	UER
		27	714	26.85	19	22.27	155	4.89	9.39	4.0	4.1	32	0	83	.12	9	.9	.5	MER
		27	12 8	15.96	19	11.97	155	30.27	42.28	2.8		24	0	157	.18	19	4.4	8.3	LSW
		27	2037	12.69	19	23.49	155	14.57	4.70	3.6	4.0	30	0	46	.12	3	.5	.6	GLN
		27	2214	6.43	19	21.46	155	7.59	8.01	2.9	3.3	29	0	75	.11	8	.6	.8	UER
		27	2339	53.27	19	20.02	155	7.00	7.60	2.4	2.9	25	0	107	.11	7	.6	.9	UER
		28	358	37.44	19	19.57	155	11.52	6.81	2.4	3.0	28	0	93	.15	6	.9	1.5	UER
		28	16 3	19.82	19	23.73	155	23.92	9.67	3.5	3.3	31	0	66	.12	7	.6	.5	UKF
		28	1839	6.19	19	19.63	155	14.28	7.35	2.2	2.7	26	0	68	.11	6	.6	1.0	UER
		28	2334	22.78	19	20.13	155	8.57	8.29	2.6	3.1	28	0	76	.12	9	.7	.6	UER
		29	135	59.43	19	23.64	155	14.75	2.58	2.2	2.8	22	0	68	.12	3	.6	1.9	GLN
		29	257	38.83	19	23.54	155	14.64	4.17	2.7	3.1	22	0	62	.13	3	.7	1.1	GLN
		29	341	.63	19	20.96	155	2.70	6.24	2.5	3.0	30	0	143	.12	11	.9	.7	MER
		29	856	57.57	19	29.17	154	50.55	7.76	2.9	3.3	27	0	271	.15	23	3.7	.9	LER
		29	1043	12.25	19	21.46	155	6.24	7.77	2.4	2.7	28	0	85	.15	7	.9	.8	UER
		29	1429	54.89	19	21.79	155	7.74	7.69	2.5	3.0	25	0	79	.14	8	.6	1.1	UER
		29	1953	6.94	19	19.51	155	15.94	8.90	2.5	2.9	29	0	91	.14	6	.8	.8	KOA
		29	2246	35.39	19	23.07	155	15.42	4.91	2.9	3.3	28	0	72	.19	4	.8	.9	SPC
		30	2 6	31.54	19	19.60	155	11.24	8.26	2.8	3.0	30	0	93	.13	6	.8	.8	UER
		30	5 9	43.69	19	20.40	155	6.66	8.04	3.8	4.1	33	0	104	.09	7	.5	.4	UER
		30	8 2	34.99	19	20.50	155	6.76	9.26	2.7	3.1	29	0	100	.09	7	.7	.4	UER
		30	1825	47.04	19	21.28	155	6.13	8.59	2.8	3.4	31	0	89	.12	7	.8	.5	UER
		30	2319	14.05	19	20.27	155	12.19	8.62	3.0	3.5	31	0	75	.13	6	.6	.6	UER
		31	943	46.96	19	21.17	155	6.20	8.36		2.9	28	0	91	.12	7	.8	.6	UER
		31	955	24.01	19	23.46	155	14.73	5.17	3.1	3.3	20	0	64	.10	5	.5	.6	GLN
		31	1137	1.21	19	19.48	155	16.24	8.80	2.3	2.8	27	0	95	.11	5	.7	.8	KOA
		31	1312	44.26	19	19.89	155	16.31	7.86	2.2	2.9	28	0	90	.14	5	.8	1.0	KOA
		31	1651	36.05	19	24.28	155	15.86	4.61	3.3	3.8	29	0	109	.12	3	.5	.6	SPC
	AUG	1	9 2	55.71	19	21.57	155	6.35	8.22	2.7	3.2	17	0	180	.09	15	1.5	.9	UER
		1	1151	33.27	19	23.19	155	14.53	1.76	3.0	3.3	21	0	46	.12	3	.6	31.5	GLN
		1	15 1	17.48	19	21.84	155	5.26	8.16	3.4	3.4	29	0	78	.11	8	.7	.5	MER
		1	1639	18.04	19	23.58	155	14.80	6.21	3.6	3.8	25	0	85	.12	6	.6	1.2	GLN
		1	1647	19.81	19	23.34	155	14.65	1.46	2.5		18	0	68	.11	3	.5	.4	GLN
		1	1648	10.58	19	23.46	155	14.62	1.98	2.5	2.8	16	0	70	.12	3	.5	23.4	GLN
		2	253	49.48	19	16.57	155	23.50	5.36	2.3	2.6	26	0	134	.16	9	.9	1.2	SWR
		2	637	1.42	19	21.52	155	15.11	9.87	3.2	3.5	29	0	62	.10	5	.6	.4	KOA
		3	330	17.09	19	19.35	155	12.62	8.48	3.0	3.4	33	0	85	.15	7	.8	.9	UER
		3	523	31.91	19	26.50	154	53.67	8.88	3.0	3.5	27	0	227	.09	19	1.4	.5	LER
		4	2124	8.35	19	23.45	155	14.47	4.18	2.3	2.9	24	0	53	.14	3	.7	1.0	GLN
		4	22 4	20.39	19	23.42	155	14.57	2.58	2.1	2.6	26	0	45	.15	3	.6	1.9	GLN
		5	957	20.60	19	24.14	155	15.89	1.54	2.2	3.0	19	0	108	.11	3	.5	.3	SPC
		6	338	55.38	19	22.71	155	5.58	8.12	3.2	3.6	30	0	76	.11	8	.6	.6	MER
		6	755	40.42	19	22.51	155	5.92	8.05	2.3	2.9	26	0	71	.13	7	.8	1.1	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	AUG	6	1450	31.83	19	24.22	155	15.33	1.26	2.3	3.2	18	0	115	.09	3	.4	.4	SPC
		7	131	45.35	19	21.29	155	2.69	6.59	3.3	3.8	27	0	140	.11	12	.8	.8	MER
		7	1142	19.32	19	19.17	155	11.98	9.06	3.1	3.8	23	0	98	.10	7	.7	.9	UER
		7	1414	31.87	19	19.67	155	7.77	7.91	2.8	3.3	21	0	97	.10	9	.8	.9	UER
		7	2247	41.02	19	21.51	155	6.15	7.81	2.4	2.9	25	0	85	.11	7	.7	.7	UER
		8	510	32.20	19	23.95	155	15.19	1.93	1.9	2.8	17	0	58	.09	3	.3	18.8	SPC
		8	1411	29.25	19	23.46	155	14.91	4.68	2.6	2.9	21	0	97	.10	3	.5	.6	GLN
		8	19 4	12.23	19	19.69	155	10.01	8.43	2.2	2.6	24	0	91	.13	8	.8	1.0	UER
		9	13 1	39.94	19	23.54	155	14.42	1.72	2.2	2.5	22	0	52	.10	3	.4	.7	GLN
		9	13 9	33.49	19	23.37	155	14.62	4.99	3.4	3.7	30	0	45	.13	3	.5	.6	GLN
		9	1757	33.62	19	20.97	155	11.27	8.09	2.5	2.9	30	0	69	.13	8	.6	.7	UER
		10	158	46.17	19	21.31	155	13.28	7.93	2.5	3.0	29	0	54	.14	6	.8	.9	UER
		10	19 3	47.59	19	19.17	155	13.31	10.12	3.5	3.8	32	0	74	.10	7	.6	.2	UER
		11	119	4.60	19	23.41	155	14.44	3.97	2.7	3.2	29	0	44	.13	3	.5	.8	GLN
		11	3 5	24.73	19	23.59	155	14.78	3.50	2.5	2.8	26	0	49	.13	3	.6	1.1	GLN
		11	1630	11.09	19	20.48	155	11.50	8.20	2.7	3.3	29	0	76	.14	7	.8	1.0	UER
		12	720	18.70	19	19.37	155	13.61	8.63	2.4	2.9	29	0	66	.14	7	.8	1.0	UER
		13	753	18.24	19	28.98	155	2.67	10.63	2.4	2.7	22	0	87	.11	9	1.0	.4	GLN
		13	1624	11.76	19	42.73	155	2.59	.16	2.4	2.8	14	0	206	.14	34	2.1	41.6	HIL
		13	2023	20.87	19	23.95	155	15.35	4.41	2.7	3.3	25	0	63	.12	3	.6	.8	SPC
		14	020	11.88	19	24.07	155	15.72	2.16	1.5	2.0	13	0	113	.11	3	.7	9.8	SPC
		14	231	.47	19	23.50	155	14.60	2.27	2.1	2.4	19	0	59	.12	3	.6	2.9	GLN
		14	938	48.16	19	22.07	155	7.17	8.15	2.5	2.7	28	0	77	.08	6	.5	.6	UER
		14	1334	46.02	20	.19	156	4.85	10.43	2.9	2.3	15	3	261	.17	60	4.2	1.6	DIS
		14	17 1	.37	19	21.44	155	8.07	8.44	3.2	3.6	29	0	71	.10	9	.5	.6	UER
		14	1753	34.07	19	20.38	155	12.60	8.04	2.5	2.9	26	0	69	.12	6	.7	1.2	UER
		14	2237	8.83	19	19.18	155	11.97	8.62	2.6	3.3	30	0	98	.17	7	1.0	1.2	UER
		15	117	51.35	19	20.19	155	13.20	7.31	2.2	2.6	27	0	65	.10	6	.6	1.0	UER
		15	2128	7.49	19	23.53	155	15.03	4.05	2.2	2.7	20	0	51	.09	3	.5	.9	SPC
		15	2323	15.72	19	23.27	155	14.53	1.84	2.1	2.5	18	0	55	.12	3	.5	31.7	GLN
		16	0 6	58.48	19	23.22	155	14.56	3.56	2.1	2.6	19	0	47	.07	3	.4	1.0	GLN
		16	231	8.43	19	21.89	155	3.90	7.44	2.4	3.5	18	0	114	.08	10	.7	.6	MER
		16	848	24.91	19	20.60	155	12.08	6.70	2.5	2.6	27	0	71	.16	7	.9	1.5	UER
		16	1856	16.77	19	20.33	155	7.73	9.08	2.8	3.3	27	0	134	.10	10	.8	.6	UER
		17	0 0	33.52	19	21.25	155	13.36	9.44	2.6	3.0	28	0	54	.12	6	.7	.8	UER
		17	423	39.90	19	27.44	154	52.91	7.93	2.7	3.0	26	0	252	.20	20	3.6	1.0	LER
		17	822	45.53	19	23.79	155	17.21	1.75	1.8	2.7	20	0	53	.10	3	.4	.3	SPC
		17	1725	34.44	19	24.23	155	15.36	2.15	2.3	3.2	26	0	109	.16	3	.7	3.1	SPC
		18	615	38.53	19	22.27	155	6.70	7.69	2.7	3.0	29	0	70	.16	8	.9	1.2	UER
		18	642	48.37	19	22.53	155	6.58	6.56	2.4	2.6	27	0	70	.15	8	.9	1.5	UER
		18	1129	42.91	19	23.42	155	14.79	1.80	2.0	3.0	20	0	45	.09	3	.4	.5	GLN
		18	1140	29.36	19	23.53	155	14.78	4.55	2.7	3.1	24	0	44	.09	3	.4	.7	GLN
		18	1147	31.62	19	23.70	155	14.58	2.20	2.7	2.8	24	0	44	.14	3	.6	2.7	GLN
		18	1348	49.33	19	31.82	155	27.68	6.47	2.6	2.7	26	0	77	.14	15	.7	3.6	NER
		18	1541	6.94	19	20.11	155	13.04	9.27	2.2	3.0	29	0	68	.13	7	.8	.8	UER
		19	12 7	42.51	19	19.47	155	11.80	9.76	2.7	3.2	30	0	93	.12	6	.8	.4	UER
		19	16 7	44.48	18	58.37	155	22.67	31.68	3.1	2.7	30	0	230	.11	34	2.0	3.6	DIS
		19	2039	4.00	19	19.73	155	11.31	8.71	2.4	2.9	29	0	90	.13	6	.7	.9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	AUG	20	022	45.09	19	21.89	155	4.98	7.61	2.3	2.8	28	0	78	.13	9	.7	.9	MER
		20	328	30.79	19	22.07	155	4.96	6.88	2.6	3.3	29	0	80	.16	9	.9	1.3	MER
		20	11 6	22.66	19	22.10	155	4.77	6.43	2.3	2.5	25	0	95	.15	9	.9	1.5	MER
		20	1225	43.17	19	20.51	155	6.51	7.35	2.6	2.8	27	0	103	.13	7	.8	1.2	UER
		20	1319	23.28	19	21.83	155	15.11	8.54	2.1	2.6	25	0	59	.13	4	.8	.9	KOA
		21	254	17.41	19	27.09	155	27.86	9.70	2.9	3.0	35	0	43	.13	13	.6	.3	UKF
		21	1557	4.96	19	19.74	155	8.01	8.16	2.4	2.9	27	0	90	.11	9	.6	.6	UER
		21	1951	14.24	19	19.52	155	12.59	7.66	2.4	2.7	30	0	82	.15	7	.8	1.2	UER
		22	5 3	18.27	19	20.68	155	13.66	8.43	2.1	2.5	31	0	56	.16	7	.8	1.0	UER
		22	1626	55.87	19	22.95	155	14.34	4.34	2.2	3.3	22	0	66	.12	3	.7	1.1	UER
		22	17 9	18.33	19	24.93	155	24.87	9.48	2.4	2.9	23	0	58	.10	9	.5	.8	UKF
		22	1726	14.98	19	20.50	155	7.95	8.32	2.2	2.6	24	0	83	.11	9	.7	.7	UER
		22	1736	37.78	19	20.76	155	13.61	9.58	2.5	2.8	24	0	62	.09	7	.6	.4	UER
		23	1132	2.33	19	24.21	155	2.29	7.46	2.9	3.4	28	0	127	.11	9	.7	.6	MER
		23	1834	23.30	19	23.49	155	21.71	9.75	2.1	2.5	23	0	59	.09	9	.5	.3	UKF
		23	2349	7.25	19	20.17	155	7.32	7.38	2.4	2.9	29	0	98	.10	8	.6	.8	UER
		24	2 9	23.73	19	20.94	155	11.09	7.11	2.1	2.5	27	0	70	.15	8	.9	1.3	UER
		24	1937	1.90	19	17.51	155	21.61	5.87	2.1	2.6	33	0	123	.18	9	.9	2.0	SWR
		25	20 6	32.36	19	19.95	155	9.96	8.45	2.3	2.7	27	0	85	.12	7	.7	.8	UER
		26	319	43.60	19	21.78	155	15.06	10.15	3.6	4.0	31	0	59	.10	4	.6	.3	KOA
		26	710	45.38	19	21.62	155	8.22	8.87	2.2	2.7	26	0	68	.09	9	.5	.5	UER
		26	736	13.04	19	19.66	155	15.91	8.21	2.0	2.6	29	0	89	.14	6	.8	1.0	KOA
		26	1451	14.03	19	19.84	155	10.64	8.40	2.2	2.7	27	0	89	.12	7	.7	.8	UER
		27	050	44.29	19	22.17	155	8.40	7.91	2.5	3.0	31	0	61	.16	8	.7	1.0	UER
		28	734	59.95	19	21.41	154	59.85	1.88	2.5	3.2	18	1	203	.12	12	1.4	1.0	LER
		28	1859	55.45	19	21.29	155	13.39	9.66	3.0	3.6	30	0	55	.09	6	.5	.3	UER
		28	1817	47.52	19	22.02	155	6.76	7.62	2.3	2.9	22	0	73	.12	8	.8	1.5	UER
		29	1331	42.73	19	20.00	154	58.91	4.78	2.5	3.0	14	3	238	.18	14	2.2	1.4	LER
		29	1549	6.23	19	21.24	155	1.53	7.40	2.1	2.1	21	0	184	.19	13	2.2	1.4	MER
		29	2036	25.54	19	27.89	154	52.91	7.68	2.9	3.5	18	0	258	.14	19	3.2	1.0	LER
		29	23 7	14.28	19	20.27	155	13.78	8.39	2.0	2.4	17	0	69	.09	6	.6	.9	UER
		30	654	13.35	19	21.46	155	6.12	6.70	2.1	2.4	23	0	86	.12	7	.8	1.2	UER
		30	1035	50.88	19	20.62	155	13.08	7.84	2.1	2.7	28	0	62	.16	6	.8	1.1	UER
		30	2143	46.64	19	20.57	155	12.13	9.01	2.3	2.9	31	0	71	.15	7	.7	.8	UER
		30	22 4	23.91	19	12.31	155	32.08	41.68	2.5	1.8	31	0	84	.18	20	2.0	5.2	LSW
		31	258	14.50	19	20.57	155	6.67	8.34	2.2	2.6	30	0	100	.12	7	.7	.6	UER
		31	1041	8.47	19	23.42	155	29.67	10.18	4.0	4.1	35	0	40	.13	13	.6	.3	UKF
		31	1120	3.78	19	20.57	155	7.40	8.36	2.2	2.7	28	0	90	.12	8	.6	.7	UER
		31	14 0	38.53	19	19.89	155	7.01	9.05	3.4	3.8	30	0	110	.12	7	.9	.6	UER
		31	2041	8.04	19	19.60	155	11.81	7.73	2.2	2.5	28	0	90	.11	6	.6	.9	UER
	SEP	1	029	52.15	19	56.50	155	31.85	13.73	2.8	2.5	36	3	158	.17	33	1.0	20.6	KOH
		1	639	35.71	19	23.90	155	28.35	9.11	2.2	2.6	31	0	47	.14	14	.7	1.1	UKF
		1	1729	10.43	19	22.31	155	4.23	7.69	2.5	2.9	25	0	95	.14	10	.9	1.0	MER
		1	2034	34.25	19	19.40	155	11.06	8.39	2.7	3.4	33	0	99	.15	7	.8	.9	UER
		2	1020	26.76	19	21.18	155	3.20	7.62	3.5	4.0	31	0	118	.11	11	.8	.5	MER
		2	20 1	49.06	19	2.71	154	58.44	37.61	2.8	2.4	31	4	278	.11	37	2.3	2.6	DIS
		2	2216	9.45	19	23.44	155	3.52	7.29	2.6	3.0	29	0	111	.12	11	.6	.9	MER
		3	116	1.41	19	19.60	155	7.73	7.68	2.4	2.5	30	0	99	.11	8	.5	.7	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	SEP	3	116	55.89	19	19.77	155	10.60	8.90	3.1	3.5	33	0	91	.12	7	.7	.6	UER
		3	728	27.24	19	20.91	155	16.92	2.52	1.8	2.5	18	0	69	.15	5	.8	2.5	KOA
		3	12 6	55.99	19	21.06	155	8.06	8.45	2.9	3.1	26	0	75	.10	9	.5	.6	UER
		3	15 5	9.27	19	22.50	155	5.57	7.08	2.3	2.6	23	0	84	.13	8	.7	1.0	MER
		3	1523	20.02	19	22.93	155	24.70	9.57	2.9	3.5	19	0	82	.11	9	.8	.8	UKF
		3	1543	28.17	19	22.86	155	5.48	8.23	2.8	3.2	25	0	78	.12	8	.7	1.0	MER
		3	22 3	41.40	19	28.89	154	50.99	7.62	3.5	3.8	27	0	269	.14	22	3.2	.9	LER
		3	2329	57.62	19	21.86	155	5.24	8.44	2.7	3.1	26	0	78	.12	8	.9	.6	MER
		4	121	32.09	19	20.28	155	7.96	9.00	2.5	3.0	28	0	85	.09	9	.7	.5	UER
		4	10 1	22.22	19	30.21	155	47.91	9.90	2.9	2.3	20	0	86	.20	21	1.4	.7	KON
		4	1121	11.00	19	23.39	155	3.51	8.81	2.6	2.9	21	0	111	.10	11	.9	.5	MER
		4	1310	54.24	19	19.79	155	16.32	9.62	3.9	4.0	33	0	91	.10	5	.5	.4	KOA
		4	2333	29.61	19	23.00	155	59.79	40.13	3.1	2.3	26	1	270	.14	35	2.0	2.8	KON
		5	6 4	9.85	19	19.36	155	16.43	9.63	3.2	3.4	28	0	98	.08	6	.5	.2	KOA
		5	650	15.57	19	20.32	155	8.30	9.60	2.4	2.7	26	0	79	.09	9	.7	.3	UER
		5	1454	26.70	19	46.13	155	46.79	12.44	3.0	2.6	28	0	146	.20	34	1.6	1.0	KON
		6	428	28.36	19	20.77	155	10.00	8.29	2.2	2.8	31	0	71	.14	7	.7	.8	UER
		6	534	15.20	19	26.46	154	54.22	7.97	3.5	4.0	30	0	214	.13	18	1.7	.7	LER
		6	541	18.57	19	23.51	155	2.30	7.39	2.3	2.5	25	0	132	.13	10	.8	.9	MER
		6	752	11.12	19	23.82	155	24.15	9.40	1.9	2.2	27	0	46	.15	8	.8	1.3	UKF
		6	758	26.19	19	19.71	155	11.31	9.22	2.4	3.0	26	0	91	.12	6	.7	.8	UER
		6	1642	52.26	19	23.02	154	58.34	7.35	2.6	2.9	25	0	196	.23	11	2.6	1.9	LER
		6	1919	.38	19	21.23	155	16.05	4.52	3.6	4.2	26	0	76	.13	7	.7	1.0	KOA
		6	2324	43.84	19	23.24	155	3.90	7.59	2.6	2.8	27	0	104	.14	11	.7	1.0	MER
		7	312	57.16	19	22.00	155	8.50	7.16	2.2	2.5	27	0	62	.14	9	.7	1.1	UER
		7	1418	14.00	19	21.36	155	5.99	6.10	2.3	2.7	28	0	88	.14	7	.8	1.4	MER
		7	1436	15.35	19	22.62	155	3.67	6.96	2.4	2.8	26	0	108	.14	11	.9	1.2	MER
		7	1715	15.59	19	22.34	155	5.36	8.46	2.7	3.1	28	0	77	.14	8	.9	.9	MER
		7	2124	10.73	19	21.46	155	15.83	.61	1.8		24	0	64	.14	4	.5	.5	KOA
		7	2124	48.74	19	22.37	155	4.84	8.00	3.0	3.3	28	0	85	.12	9	.6	.8	MER
		7	22 1	16.28	19	22.20	155	4.73	8.28	3.5	4.0	32	0	85	.12	9	.7	.6	MER
		8	4 1	55.52	19	18.45	155	20.83	9.51	3.2	3.6	29	0	113	.09	7	.5	.3	SWR
		8	638	19.24	19	21.45	155	6.19	7.74	2.7	2.9	26	0	86	.13	8	.8	1.1	UER
		8	952	53.05	19	11.66	155	21.16	41.91		1.5	24	1	169	.07	13	1.1	1.8	LSW
		8	1033	58.45	19	19.99	155	5.05	7.00	2.5	2.9	28	0	134	.15	9	.9	1.1	MER
		9	8 3	31.63	19	28.52	154	49.23	8.59	2.9	3.3	16	2	295	.09	39	5.2	1.4	LER
		9	1036	37.75	19	20.03	155	6.82	9.22	2.8	3.2	30	0	110	.11	7	.8	.5	UER
		9	1043	19.61	19	21.39	155	17.04	.26	1.8	2.7	16	0	58	.14	4	.6	.7	KOA
		9	2046	22.11	19	23.35	155	3.67	7.88	2.5	3.0	22	0	108	.11	11	.8	.8	MER
		10	213	10.70	19	28.80	155	52.38	10.26	3.0	2.6	24	0	130	.20	24	1.7	.6	KON
		10	424	23.00	19	17.83	155	16.92	8.99	2.3	2.9	31	0	125	.14	6	.7	.8	KOA
		10	625	18.62	18	48.97	155	13.54	36.33	3.2	4.0	28	2	266	.14	53	2.1	8.1	PPL
		10	858	35.22	19	20.45	155	12.82	7.70	1.6	2.2	24	0	66	.12	6	.7	1.2	UER
		10	2157	47.47	19	20.61	155	8.94	7.69	1.9	2.3	25	0	67	.12	8	.8	1.4	UER
		11	310	49.35	19	25.62	154	57.87	1.30	2.0	2.5	20	2	168	.19	11	1.4	1.9	LER
		11	429	26.78	19	21.36	155	3.39	6.13	2.1	2.5	24	0	112	.12	11	.7	1.2	MER
		11	5 4	30.51	19	22.13	155	4.22	7.61	3.6	4.0	28	0	94	.10	10	.6	.7	MER
		11	632	29.72	19	21.12	155	6.36	9.15	2.6	2.8	29	0	91	.10	7	.6	.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	SEP	11	9 7	52.44	19	26.17	154	56.96	7.23	1.8	2.1	15	0	171	.13	13	1.3	1.5	LER
		11	1340	15.00	19	22.56	155	3.02	7.67	2.2	2.4	25	0	123	.09	12	.7	.6	MER
		11	1343	14.39	19	21.50	155	6.10	8.20	2.1	2.4	22	0	85	.11	7	.7	1.4	UER
		11	18 5	40.11	19	22.71	155	26.87	10.00	1.8	2.3	25	0	52	.09	12	.5	.3	UKF
		11	2352	35.00	19	20.23	155	13.29	8.19	1.8	2.4	22	0	64	.08	6	.5	1.0	UER
		12	357	16.74	19	26.10	154	58.09	3.46	2.1	2.3	14	0	159	.13	11	1.4	1.9	LER
		12	1234	51.87	19	20.08	155	8.51	8.22	2.3	2.9	29	0	77	.13	9	.6	.7	UER
		12	1321	43.29	19	25.81	154	58.01	4.47	2.8	3.3	27	0	164	.18	11	1.4	1.1	LER
		13	3 9	22.53	19	21.98	155	7.39	8.30	2.8	3.0	30	0	70	.11	9	.5	.6	UER
		13	1248	4.32	19	20.90	155	13.10	9.42	2.8	3.4	28	0	59	.11	6	.5	.5	UER
		13	15 8	52.32	19	17.48	155	13.01	9.78	2.4	2.7	28	0	132	.12	9	.9	.5	POL
		13	2352	29.13	19	20.19	155	8.41	8.66	2.3	2.8	28	0	78	.13	9	.6	.8	UER
		14	229	17.68	19	29.06	154	51.98	6.81	2.4	2.9	23	0	264	.18	21	4.0	1.3	LER
		14	1235	57.19	19	20.49	155	4.17	3.63	2.3	2.8	22	0	113	.10	9	.7	1.2	MER
		15	2 1	25.72	19	21.97	155	5.05	8.83	3.6	4.0	32	0	78	.12	8	.8	.5	MER
		15	12 1	7.67	19	23.00	155	5.20	7.67	2.9	3.4	30	0	83	.12	8	.6	.8	MER
		15	1425	48.59	19	22.19	155	6.77	7.44	2.1	2.8	25	0	71	.13	8	.8	1.1	UER
		15	1955	22.63	19	24.87	155	26.11	7.19	2.2	2.6	30	0	55	.15	10	.7	1.7	UKF
		16	617	22.41	19	22.54	155	6.25	7.12	2.4	2.8	29	0	67	.15	8	.8	1.1	UER
		16	936	28.04	19	26.73	154	56.49	1.97	2.4	2.7	16	0	168	.19	14	1.8	36.1	LER
		16	1458	38.48	19	23.15	155	25.26	8.86	2.2	2.8	29	0	55	.13	10	.7	1.0	UKF
		16	1756	56.39	19	20.37	153	39.53	49.87	3.4	3.4	26	0	338	.09	146	59.9	12.7	DIS
		17	230	2.96	19	19.84	155	8.78	8.28	2.5	3.1	28	0	75	.12	9	.6	.6	UER
		17	1147	19.10	19	12.89	155	27.36	9.59	2.8	3.2	29	0	112	.17	15	1.2	.5	LSW
		17	1313	10.77	19	21.63	155	2.71	7.02	2.7	3.1	27	0	136	.14	12	1.0	.8	MER
		17	1815	39.62	19	17.14	155	22.76	7.43	2.2	2.7	30	0	122	.17	7	.9	1.5	SWR
		17	1930	18.72	19	24.74	155	14.95	40.57	2.3		23	0	64	.11	4	1.3	3.8	DEP
		18	2 1	45.88	19	22.28	155	4.69	6.89	2.3	2.6	28	0	86	.13	9	.7	1.1	MER
		18	1114	58.11	19	19.28	155	13.35	6.94	2.2	2.6	30	0	72	.15	7	.8	1.3	UER
		18	1857	17.42	19	19.56	155	12.13	6.94	2.2	2.6	28	0	87	.14	6	.8	1.2	UER
		18	1914	51.75	19	20.52	155	4.87	5.63	2.4	2.7	28	0	114	.13	8	.8	1.2	MER
		19	1544	11.51	19	21.01	155	17.09	1.23	2.0	3.0	13	2	117	.10	4	.7	.4	KOA
		19	2019	26.41	19	23.91	155	2.62	7.50	2.3	2.9	27	0	124	.14	10	1.0	.9	MER
		19	2344	15.17	19	24.02	155	2.98	8.53	2.3	2.8	29	0	117	.12	10	.8	.6	MER
		20	141	19.40	19	20.07	155	7.25	9.24	2.6	3.1	26	0	101	.10	8	.7	.5	UER
		20	1716	38.31	19	21.98	155	6.57	6.60	2.3	2.6	28	0	75	.15	7	.8	1.3	UER
		20	1730	8.99	19	21.40	155	30.29	9.48	2.3	2.6	29	0	38	.13	12	.6	1.0	HEA
		20	1928	25.90	19	21.88	155	16.12	.78	2.0	3.1	21	0	59	.18	4	.7	3.2	KOA
		21	343	27.57	19	20.53	155	6.89	9.09	2.7	3.2	31	0	98	.10	7	.6	.4	UER
		21	935	49.78	19	20.78	155	6.54	9.32	3.2	3.8	29	0	97	.11	7	.7	.5	UER
		21	1621	37.29	19	21.12	155	6.98	6.55	2.4	2.8	25	0	86	.15	7	.9	1.6	UER
		21	19 2	22.92	19	24.88	155	12.74	5.95	2.2	2.5	30	0	46	.14	7	.7	1.2	GLN
		21	2153	2.31	19	19.27	155	16.15	9.35	2.0	2.5	24	0	97	.09	6	.6	.9	KOA
		22	415	3.69	19	20.02	155	11.99	7.07	2.4	2.6	28	0	80	.15	6	.8	1.1	UER
		22	1232	25.30	19	22.13	155	6.29	7.67	2.2	2.6	26	0	73	.13	7	.8	1.0	UER
		22	1718	48.04	19	21.32	155	13.23	9.47	2.2	2.7	27	0	55	.12	6	.6	.7	UER
		23	1521	21.61	19	16.96	155	22.87	6.00	2.1	2.6	25	0	123	.19	8	1.1	3.4	SWR
		24	123	38.61	19	20.03	155	8.68	8.11	2.4	2.7	25	0	74	.14	9	.8	1.0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	SEP	24	157	2.29	19	21.20	155	13.37	9.66	2.6	3.1	33	0	54	.11	6	.6	.3	UER
		24	1228	18.91	19	19.90	155	8.12	9.28	1.9	3.1	20	0	86	.10	9	.8	.9	UER
		24	17 4	22.14	19	21.12	155	49.63	12.22	2.6	3.3	24	0	121	.22	18	2.4	.9	KON
		24	2251	31.28	19	20.61	155	6.68	8.95	2.9	3.7	32	0	99	.11	7	.7	.5	UER
		25	4 2	.06	19	27.33	155	21.50	6.01	2.3	3.3	24	0	78	.15	9	.7	2.2	UKF
		25	1554	55.88	19	26.77	155	23.09	10.24	3.0	3.2	23	0	74	.12	11	.6	.9	UKF
		25	1720	50.41	19	20.43	155	6.84	9.07	2.7	3.3	26	0	101	.11	7	.8	.5	UER
		26	650	44.95	19	24.75	155	26.23	8.54	2.3	3.2	24	0	60	.14	11	.9	1.5	UKF
		26	1834	20.45	19	20.96	155	11.21	7.76	2.3	2.7	25	0	69	.13	8	.8	1.2	UER
		27	331	14.06	18	53.28	155	7.41	40.43	2.7	1.6	35	5	260	.14	47	2.4	4.7	PPL
		27	846	57.71	19	25.51	155	25.78	10.29	2.9	3.2	32	0	48	.12	11	.6	.3	UKF
		27	12 7	54.08	19	19.69	155	12.59	8.60	2.7	3.1	27	0	79	.15	7	.9	1.0	UER
		27	22 8	42.13	19	22.77	155	6.27	7.47	2.6	3.0	30	0	69	.13	8	.7	1.0	UER
		27	2232	18.48	19	22.20	155	4.56	7.50	2.3	2.6	28	0	88	.09	9	.5	.7	MER
		28	431	50.65	19	18.05	155	23.01	9.15	2.3	2.7	31	0	112	.12	8	.5	.5	SWR
		28	914	53.40	19	20.00	155	13.13	10.04	3.7	4.2	34	0	68	.10	7	.6	.2	UER
		28	10 2	49.26	19	20.24	155	8.04	8.99	2.4	2.7	27	0	84	.10	9	.7	.4	UER
		28	1437	30.09	19	19.38	155	13.96	7.88	2.1	2.7	27	0	64	.12	6	.7	1.1	UER
		28	1722	32.47	19	24.64	155	.56	7.64	2.6	2.9	28	0	147	.14	10	1.0	.8	LER
		28	1936	41.81	19	22.21	155	5.09	6.20	2.2	2.7	28	0	79	.12	8	.7	1.1	MER
		29	1258	3.96	19	21.97	155	5.10	8.69	3.3	3.8	29	0	77	.11	8	.8	.5	MER
		30	240	26.94	19	20.98	155	13.19	7.92	2.0	2.6	30	0	58	.15	6	.7	.9	UER
		30	1532	46.37	19	41.98	155	2.86	11.10	2.7	2.5	10	0	248	.38	29	12.4	3.8	HIL
		30	2242	37.12	19	21.95	155	7.02	6.81	2.2	2.4	25	0	73	.14	8	.8	1.2	UER
	OCT	1	114	10.59	19	21.38	155	1.71	6.65	2.7	3.3	30	0	171	.12	13	1.0	.8	MER
		1	6 8	44.92	19	19.51	155	12.11	8.78	2.4	3.0	27	0	89	.14	6	.9	1.1	UER
		1	1250	5.10	19	18.93	155	15.04	7.86	1.7	2.4	23	0	90	.10	7	.6	1.0	KOA
		1	1723	18.19	19	20.51	155	9.92	8.76	2.1	2.6	26	0	75	.09	7	.6	.7	UER
		2	6 8	1.00	19	17.28	155	21.02	7.40	1.7	2.5	26	0	128	.13	8	.8	1.2	SWR
		2	1345	12.60	19	20.88	155	13.14	8.02	1.7	2.4	24	0	59	.12	6	.7	1.1	UER
		3	633	45.09	19	25.65	155	25.07	8.09	2.8	3.2	30	0	55	.14	10	.8	1.2	UKF
		3	753	8.58	19	19.79	155	7.26	9.29	3.4	3.6	31	0	107	.11	8	.8	.5	UER
		3	758	31.21	19	19.96	155	7.26	7.96	2.2	2.8	23	0	103	.07	8	.4	.6	UER
		3	1721	45.50	19	20.32	155	8.02	9.55	3.1	3.6	31	0	84	.10	9	.6	.3	UER
		4	518	52.57	19	20.69	155	6.51	8.80	3.0	3.4	31	0	99	.10	7	.7	.5	UER
		4	534	4.72	19	20.09	155	12.09	7.22	2.2	2.7	27	0	78	.14	6	.8	1.1	UER
		5	558	50.57	19	20.11	155	6.59	9.45	3.8	4.1	30	0	112	.11	7	.8	.5	UER
		5	955	39.64	19	22.19	155	4.79	7.46	3.5	3.9	30	0	84	.10	9	.5	.7	MER
		5	16 7	50.67	20	.63	155	32.92	40.40	2.8	2.4	33	0	183	.15	27	1.6	4.1	KOH
		6	822	12.93	19	18.17	155	23.49	6.08	2.6	3.6	30	0	109	.18	9	.9	2.0	SWR
		6	938	9.78	19	20.48	155	11.52	8.79	2.2	2.8	25	0	75	.10	7	.6	.8	UER
		6	1758	12.54	19	14.99	155	27.91	8.19	2.4	2.7	27	0	132	.15	14	1.3	1.4	LSW
		6	1914	18.17	19	19.18	155	11.42	9.72	2.5	3.0	28	0	103	.12	7	.9	.4	UER
		7	311	37.96	19	22.68	155	5.39	9.26	3.5	3.9	31	0	79	.10	8	.6	.4	MER
		7	6 3	44.37	19	20.77	155	4.23	7.07	2.4	3.0	28	0	101	.11	9	.7	.8	MER
		7	1051	7.96	19	20.25	155	9.06	8.84	2.7	3.4	31	0	72	.12	8	.7	.6	UER
		7	18 1	29.87	19	22.36	155	5.46	7.29	2.1	2.6	26	0	75	.14	8	.8	1.2	MER
		7	2152	58.47	19	1.68	155	28.52	34.10	3.3	3.3	39	4	203	.14	27	1.2	2.3	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	OCT	7	22 9	14.10	19	22.00	155	6.20	6.90	2.4	2.8	29	0	76	.15	7	.9	1.4	UER
		8	1358	8.12	19	19.79	155	8.58	9.29	2.5	3.2	25	0	77	.11	9	.7	.5	UER
		8	1629	29.80	19	33.19	155	51.58	26.50	3.3	3.3	37	2	147	.18	15	1.3	2.8	KON
		8	2253	53.01	19	23.12	155	6.72	9.17	3.2	3.7	29	0	66	.12	9	.7	.7	GLN
		9	1611	53.75	19	22.74	155	29.85	9.87	2.9	3.2	31	0	88	.16	14	.9	.4	UKF
		10	5 1	26.28	19	30.12	155	15.37	9.40	2.2	2.7	31	0	101	.15	13	.7	1.1	GLN
		10	650	59.26	19	20.57	155	4.54	6.43	2.0	3.1	28	0	112	.14	8	.8	1.2	MER
		10	1217	16.39	19	22.12	155	6.45	7.12	2.4	2.6	23	0	73	.15	9	.9	1.4	UER
		10	13 5	45.84	19	21.56	155	8.13	9.31	2.6	3.4	29	0	69	.11	9	.7	.5	UER
		10	1740	38.75	19	19.56	155	11.03	8.26	2.2	2.6	25	0	95	.11	7	.7	.9	UER
		10	1931	50.85	19	24.02	155	27.76	9.21	2.5	3.0	32	0	44	.17	13	.8	1.4	UKF
		11	1619	5.05	19	21.00	155	11.17	9.61	2.2	2.6	24	0	76	.11	8	.8	.5	UER
		11	1619	57.69	19	23.44	155	2.60	7.78	2.2	2.5	23	0	127	.12	11	.8	1.0	MER
		11	1621	5.02	19	23.43	155	2.08	8.71		1.2	9	0	136	.06	10	.8	1.8	MER
		11	2011	47.47	19	29.51	155	43.95	10.18	2.3	2.5	21	0	69	.17	14	1.1	.6	MOK
		12	1437	51.22	19	11.69	155	28.32	6.91	2.2	2.7	20	0	112	.19	16	1.4	3.2	LSW
		12	19 8	39.31	19	20.50	155	3.80	5.78	2.0	2.3	22	0	105	.16	9	1.1	1.4	MER
		12	1914	14.39	19	27.27	155	14.65	31.91	2.5	2.9	32	0	53	.10	8	.7	1.8	DEP
		12	23 4	48.64	19	53.05	155	6.89	30.22	2.4	2.0	32	6	241	.15	38	1.3	1.6	KKU
		13	18 8	2.45	19	20.30	155	16.46	30.62	2.5	2.8	33	0	82	.10	6	.8	1.4	DEP
		13	2120	48.49	19	22.93	155	4.75	7.61	2.4	2.7	24	0	89	.10	9	.5	.8	MER
		13	2237	40.67	19	20.27	155	11.90	9.04	1.7	2.5	26	0	77	.13	7	.7	.9	UER
		13	2328	39.99	19	17.04	155	23.32	6.52	1.9	2.9	24	0	120	.16	8	.9	2.1	SWR
		14	819	48.75	19	26.51	154	55.23	9.05	2.8	3.3	16	0	192	.15	16	2.4	1.3	LER
		14	950	49.25	19	15.19	155	18.97	49.01	2.3	2.2	31	0	158	.11	10	1.4	3.2	HLP
		14	1211	17.59	19	19.35	155	12.53	7.63	2.0	2.7	23	0	86	.13	7	.8	1.4	UER
		14	1336	20.13	19	25.24	155	17.17	9.16	1.2	1.9	10	0	147	.11	5	1.7	2.6	LPC
		14	1417	8.59	19	22.19	155	5.00	7.47	2.0	2.7	23	0	92	.11	8	.7	.9	MER
		14	1815	56.20	19	27.54	155	21.27	6.92	2.7	3.0	27	0	50	.12	9	.6	1.2	UKF
		14	1818	16.87	19	27.41	155	21.61	6.29	2.4	2.8	23	0	86	.12	9	.6	1.7	UKF
		14	2317	6.95	19	22.67	155	5.12	9.09	2.7	3.5	28	0	82	.12	8	.8	.8	MER
		15	020	38.91	19	19.55	155	13.95	7.73	2.5	3.2	29	0	63	.14	6	.8	1.1	UER
		15	148	28.41	19	24.16	155	26.60	9.53	2.1	2.8	30	0	49	.11	12	.5	.4	UKF
		15	1256	17.65	19	15.54	155	33.64	8.20	2.5	3.0	23	0	173	.19	17	1.7	1.9	LSW
		15	2355	13.79	19	26.94	155	24.56	7.55	2.6	3.1	26	0	58	.13	10	.7	1.6	UKF
		16	1921	20.53	19	20.28	155	9.75	9.11	2.1	2.3	23	0	78	.08	7	.5	.6	UER
		17	312	22.68	19	19.63	155	12.22	10.04	2.5	3.3	26	0	85	.09	6	.6	.3	UER
		17	557	16.75	19	20.04	155	8.27	9.33	2.7	3.6	29	0	82	.10	9	.6	.4	UER
		17	949	11.99	19	21.60	155	6.07	8.78	2.6	3.6	26	0	83	.12	7	.7	.9	UER
		17	15 8	26.18	19	21.96	155	27.94	9.58	2.8	3.3	31	0	54	.15	10	.8	.4	HEA
		17	2242	15.07	19	22.09	155	5.06	7.96	2.0	2.6	24	0	79	.08	8	.5	.8	MER
		17	2245	7.10	19	20.74	155	4.25	6.29	2.0	2.7	23	0	102	.09	9	.6	.7	MER
		18	044	30.52	19	5.14	155	27.64	44.67	2.4	2.4	25	2	185	.11	24	1.7	1.4	LSW
		18	128	50.67	19	26 32	155	25.94	9.55	2.3	2.9	32	0	32	.12	12	.5	.5	UKF
		18	133	50.08	19	23.87	155	26.87	9.43	2.1	2.9	26	0	53	.12	13	.6	.7	UKF
		18	739	15.52	19	26.63	154	56.35	4.92	2.4	2.9	26	4	172	.20	14	1.3	1.4	LER
		18	1754	8.90	19	19.62	155	11.69	7.39	2.0	2.9	27	0	91	.14	6	.8	1.2	UER
		18	1932	50.31	19	37.23	155	48.93	11.15	1.8	2.4	20	0	126	.16	27	1.3	.6	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	OCT	18	2249	24.00	19	31.39	155	58.23	9.80	2.4	2.7	17	0	237	.15	23	3.0	.6	KON
		19	2 5	45.98	19	26.14	154	55.82	8.27	2.7	3.2	21	0	187	.12	15	1.4	.8	LER
		19	457	23.72	19	19.82	155	52.42	10.80	2.7	2.9	19	0	167	.17	22	1.6	.6	KON
		19	851	1.02	19	22.31	155	4.68	7.04	2.0	2.5	26	0	87	.11	9	.6	.8	MER
		19	1037	26.00	19	17.90	155	24.10	7.21	1.8	2.7	21	0	108	.15	10	1.0	1.9	SWR
		19	2311	50.41	19	20.31	155	6.99	9.03	2.7	3.6	28	0	101	.11	7	.7	.6	UER
		20	237	28.37	18	50.09	155	10.55	51.18	2.8	2.9	31	3	265	.12	50	2.7	3.3	PPL
		20	327	6.96	19	17.82	155	21.02	5.16	1.7	2.9	21	0	122	.11	8	.7	1.1	SWR
		21	154	22.20	20	12.87	155	49.77	27.95		2.3	14	4	304	.14	62	2.6	1.3	KOH
		21	2 2	23.77	19	27.32	154	53.35	8.24	1.6	2.6	20	0	233	.15	19	3.0	1.2	LER
		21	225	25.95	19	27.18	154	51.82	8.48	2.9	3.5	30	0	267	.09	22	1.7	.5	LER
		21	9 6	29.70	19	24.09	155	23.13	11.57		3.2	24	0	83	.07	8	.5	.2	UKF
		21	953	33.30	19	21.31	155	26.21	9.79	2.0	2.7	23	0	71	.15	9	.7	.8	HEA
		21	1322	24.64	19	19.80	155	7.99	8.48	2.0	2.8	25	0	90	.10	9	.8	.6	UER
		22	1019	41.56	19	23.96	155	50.24	11.52	1.9	2.4	15	0	126	.15	15	1.3	.6	KON
		22	1030	24.34	19	20.28	155	6.56	8.02	1.9	3.0	23	0	108	.11	7	.7	1.3	UER
		22	1242	49.14	19	19.79	155	11.50	9.44	2.7		25	0	88	.12	6	.8	.8	UER
		22	1243	23.91	19	20.29	155	11.42	10.38	3.4	4.1	12	0	104	.16	8	1.4	2.0	UER
		22	14 5	30.73	19	22.06	154	59.97	5.55		2.3	18	0	190	.14	11	1.4	2.0	LER
		22	1411	25.90	19	21.20	155	3.33	8.19	3.5	3.9	28	0	113	.11	11	.9	.6	MER
		22	16 0	15.12	19	19.26	155	11.75	7.30	2.0	2.6	28	0	98	.12	7	.7	1.1	UER
		22	1624	40.51	19	20.04	155	11.53	9.75	2.1	3.0	23	0	83	.10	7	.7	.3	UER
		23	919	6.64	19	20.49	155	5.31	6.30	2.0	2.8	24	0	114	.14	8	.8	1.5	MER
		23	19 4	17.91	19	19.60	155	14.25	8.06	2.2	2.9	24	0	68	.12	6	.8	1.3	UER
		24	1 9	54.38	19	19.66	155	16.17	9.38	1.5	2.1	18	0	98	.07	5	.6	1.0	KOA
		24	2 0	53.33	19	28.18	154	54.39	8.15	1.8	2.3	18	2	172	.21	17	1.9	1.4	LER
		24	519	46.49	19	20.02	155	8.19	9.32	2.6	3.5	26	0	84	.10	9	.7	.5	UER
		24	622	44.73	19	20.01	155	6.34	5.82	2.1	2.6	24	0	118	.14	7	.9	2.1	UER
		24	818	53.98	19	22.14	155	.24	5.64	2.5	3.4	27	0	185	.13	11	1.1	1.4	LER
		24	833	54.79	19	22.29	154	59.87	5.10		2.2	14	0	188	.12	10	1.6	1.1	LER
		24	1245	27.08	19	18.83	155	22.31	7.74	2.3	3.1	24	0	105	.15	9	.9	1.8	SWR
		24	1841	23.82	19	27.44	155	14.96	31.31	2.4	2.6	31	0	52	.11	8	.9	2.0	DEP
		24	2010	26.46	19	21.19	155	7.83	7.48	1.8	2.4	23	0	76	.12	9	.7	1.1	UER
		24	21 6	1.26	19	26.58	154	54.04	9.55	1.9	2.1	14	0	217	.15	18	3.0	.7	LER
		25	247	25.47	19	10.61	155	33.34	10.16	2.9	3.4	28	3	134	.15	23	1.0	.4	LSW
		25	525	11.76	19	19.82	155	11.81	6.79	1.8	2.6	27	0	85	.15	6	.8	1.3	UER
		25	526	1.86	19	21.00	155	8.48	6.43	1.8	2.4	19	0	70	.18	9	1.2	2.5	UER
		25	2321	51.81	19	23.33	155	3.25	7.56		2.3	23	0	116	.12	12	.9	.7	MER
		25	2323	39.05	19	22.80	155	5.03	8.63	2.5	3.2	29	0	84	.10	9	.6	.5	MER
		25	2344	50.84	19	23.25	155	3.49	6.53		2.3	20	0	111	.13	11	.7	1.3	MER
		26	657	44.92	19	20.38	155	8.83	8.52	2.0	2.8	24	0	138	.09	10	.6	.7	UER
		26	7 7	25.35	19	21.74	155	15.18	9.98	3.3	3.6	27	0	62	.11	4	.7	.5	KOA
		26	738	40.84	19	20.48	155	6.94	7.32	1.9	2.6	23	0	98	.12	7	.9	1.3	UER
		26	754	41.58	19	19.73	155	8.28	8.91	2.1	2.9	24	0	85	.08	9	.6	.5	UER
		26	839	17.80	19	19.75	155	8.31	8.82	2.3	3.2	28	0	84	.10	9	.7	.5	UER
		26	17 4	24.75	19	23.81	155	2.88	8.45	2.5	2.2	16	0	120	.10	11	.8	1.0	MER
		27	431	43.91	19	17.69	155	15.83	9.23	2.8	3.4	31	0	124	.14	5	.7	.8	KOA
		27	536	57.17	19	19.58	155	15.57	7.52	1.7	2.6	24	0	87	.11	6	.6	.9	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	OCT	27	1224	6.58	19	20.74	155	7.15	8.73	2.2	3.3	25	0	91	.10	8	.6	.8	UER
		27	2151	55.51	19	19.37	155	15.59	8.28	1.6	2.6	20	0	90	.08	6	.5	1.0	KOA
		27	23 7	56.51	19	22.22	155	3.07	7.39		2.6	20	0	122	.11	12	.7	.9	MER
		28	041	27.13	19	31.19	155	29.70	6.20	2.4	3.3	28	0	71	.18	11	.8	2.7	NER
		28	523	59.88	19	23.32	155	2.97	7.44	1.8	2.5	24	0	121	.17	11	1.1	1.5	MER
		28	654	13.13	19	20.02	155	8.56	8.42	1.8	3.0	25	0	76	.12	9	.7	.8	UER
		28	1355	4.31	19	19.31	155	15.66	8.94	1.8	2.6	17	0	107	.07	6	.5	1.0	KOA
		28	1550	20.88	19	21.22	155	11.13	8.72	2.4	3.3	21	0	86	.12	9	.8	1.6	UER
		28	2115	42.14	19	47.34	156	6.27	27.21	2.0	2.2	19	3	245	.12	51	1.7	2.4	KON
		29	349	37.04	19	29.88	154	51.33	4.03	2.3	3.0	19	2	267	.17	22	2.1	1.2	LER
		29	355	23.61	19	59.00	155	29.64	35.77	2.3	2.5	38	4	184	.16	34	1.2	2.0	KKU
		29	1915	42.40	19	27.77	154	52.22	7.97	2.7	2.6	25	1	264	.17	21	2.2	1.1	LER
		30	045	4.00	19	21.49	155	7.29	8.05	2.4	3.0	27	0	78	.13	8	.7	1.0	UER
		30	427	3.82	19	20.46	155	7.96	7.64	2.0	2.3	21	0	83	.09	9	.6	.8	UER
		30	9 3	54.74	19	19.89	155	8.41	8.22	2.2	3.1	27	0	80	.09	10	.5	.5	UER
		30	1538	56.43	19	26.14	155	24.11	10.63	2.0	2.8	23	0	66	.11	9	.6	.7	UKF
		30	1810	37.14	19	29.21	155	53.48	9.67	1.9	2.3	15	0	101	.14	23	1.5	.6	KON
		31	349	34.14	19	20.30	155	13.16	9.16	2.1	2.8	27	0	64	.13	6	.8	.9	UER
		31	610	19.67	19	20.07	155	11.40	9.37		2.4	23	0	83	.08	7	.5	.6	UER
		31	13 8	17.70	19	23.44	154	59.07	5.89	1.6	2.1	13	0	181	.12	9	1.7	3.3	LER
		31	1649	45.78	19	20.39	155	7.71	7.47		2.4	21	0	88	.10	8	.7	1.3	UER
		31	2149	10.28	19	9.11	155	33.51	34.26		2.5	28	0	125	.14	18	1.5	3.8	LSW
	NOV	1	151	46.87	19	28.31	155	22.82	5.71	2.2	2.7	22	0	69	.14	12	.8	2.0	UKF
		1	442	1.53	19	18.76	155	29.13	9.50	2.4	3.3	28	0	39	.15	11	.9	1.1	HEA
		1	746	10.02	19	29.77	154	53.55	3.69	1.7	2.6	16	0	203	.17	18	3.4	2.3	LER
		1	746	10.02	19	29.77	154	53.55	3.69	1.7	2.6	16	0	203	.17	18	3.4	2.3	LER
		1	813	50.79	19	19.76	155	12.00	7.16	2.0	2.8	16	0	85	.16	6	1.2	3.3	UER
		1	10 1	23.83	19	21.14	155	6.69	6.81	1.8	2.7	22	0	88	.12	7	.7	1.5	UER
		1	12 6	42.52	19	31.40	155	29.79	8.38	2.3	3.0	22	0	100	.16	12	.9	2.7	NER
		1	1533	42.80	19	41.88	155	2.97	1.15	2.0	2.8	10	0	248	.14	32	3.8	53.9	HIL
		1	1617	56.56	19	26.02	155	24.73	8.30	1.7	2.7	24	0	58	.16	10	.9	1.9	UKF
		2	1410	32.35	19	56.54	155	49.39	27.97	2.4	2.7	29	4	181	.16	42	1.5	1.9	KOH
		2	1756	55.87	19	25.95	154	54.99	8.42		1.7	13	2	223	.12	16	2.0	.9	LER
		2	1815	46.37	19	19.10	155	13.42	10.12	3.7	4.0	29	0	73	.08	7	.5	.2	UER
		2	1915	4.41	19	26.81	154	53.90	9.95		1.5	13	0	230	.17	18	3.8	.9	LER
		2	1936	16.05	19	22.50	155	5.86	8.74	3.3	3.7	29	0	71	.12	7	.7	.7	MER
		2	2230	6.49	19	19.48	155	15.96	8.42	1.7	2.6	24	0	92	.11	5	.7	1.0	KOA
		3	219	26.43	20	18.63	155	51.04	25.97		2.3	7	2	317	.04	72	3.6	3.4	DIS
		3	331	51.36	19	20.70	155	5.81	8.14		2.4	23	0	105	.11	8	.7	.8	MER
		3	432	28.66	19	27.41	154	54.62	5.13	2.0	2.4	17	2	188	.15	17	1.8	1.3	LER
		3	740	57.15	19	20.83	155	6.91	5.98		2.4	21	0	92	.15	7	1.0	2.0	UER
		3	755	23.35	19	20.87	155	9.70	8.59	1.9	2.7	26	0	68	.12	7	.6	.6	UER
		3	19 3	51.33	19	19.88	155	16.48	35.27	2.2	2.3	31	0	91	.09	5	.8	1.5	DEP
		4	238	59.98	19	20.78	155	6.19	8.02	1.9	2.7	26	0	100	.11	7	.6	.9	UER
		4	313	43.13	19	26.62	155	23.39	7.42	2.0	2.6	27	0	95	.14	11	.8	1.5	UKF
		4	315	31.39	19	20.86	155	11.48	7.00	1.8	2.6	13	0	79	.09	9	.9	1.8	UER
		4	324	18.85	19	25.36	154	56.12	9.74	1.5	2.2	12	0	219	.11	14	2.4	.6	LER
		4	358	26.17	19	19.31	155	11.56	7.35	1.7	2.4	22	0	99	.11	7	.7	1.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	NOV	4	413	37.02	19	20.69	155	3.13	6.55		2.4	18	0	117	.10	10	1.1	1.5	MER
		4	623	1.37	19	19.94	155	10.30	9.57	2.0	2.8	23	0	87	.10	7	.8	.3	UER
		4	10 3	59.29	19	22.32	155	2.67	7.04	2.0	2.3	21	0	132	.11	12	.9	.7	MER
		4	1024	12.35	19	19.71	155	8.59	8.79		2.6	21	0	78	.10	10	.7	.8	UER
		4	1444	55.87	19	24.38	155	16.14	2.59	2.3	3.1	19	0	115	.13	3	.8	2.4	SPC
		4	16 8	48.74	19	21.08	155	6.66	7.89	3.0	3.1	27	0	90	.13	7	.8	.8	UER
		4	1748	16.84	19	19.79	155	17.04	8.21	1.5	2.5	17	0	90	.13	5	1.1	1.7	KOA
		4	2248	54.88	19	19.81	155	7.69	8.82	2.4	3.1	25	0	97	.11	8	.7	.6	UER
		5	223	44.13	19	25.29	154	58.03	5.94		2.1	12	0	170	.06	11	.7	.9	LER
		5	258	29.68	19	21.38	155	8.19	8.37	2.7	3.4	27	0	70	.12	9	.6	.7	UER
		5	621	14.13	19	15.31	155	22.90	3.48		2.7	24	0	137	.14	9	.9	1.7	LSW
		5	1134	27.13	19	19.41	155	15.52	9.72	2.7	3.3	26	0	88	.09	6	.5	.6	KOA
		5	1257	6.56	19	21.94	155	6.98	7.83	2.0	2.6	23	0	73	.12	8	.7	1.0	UER
		5	1347	48.53	19	22.97	154	58.54	5.04	2.0	2.3	16	0	194	.14	10	2.4	1.4	LER
		5	1446	58.16	19	19.91	155	11.78	9.25		2.1	22	0	84	.08	6	.6	.9	UER
		5	20 9	9.86	19	23.86	154	57.91	7.70		2.4	17	0	190	.15	11	2.0	1.4	LER
		5	2041	33.38	19	21.04	155	16.09	34.12	2.7	2.8	32	0	70	.09	5	.7	1.6	DEP
		5	21 4	1.40	19	28.02	155	23.17	5.64	1.8	2.6	23	0	50	.12	12	.6	2.2	UKF
		6	613	36.76	19	22.20	155	25.36	9.65	1.6	2.5	22	0	57	.14	10	.9	.9	UKF
		6	1211	14.62	19	31.39	155	29.90	5.61	2.5	2.8	24	0	101	.16	11	.8	8.5	NER
		6	13 9	54.50	19	19.80	155	7.20	8.34	2.0	2.4	26	0	108	.12	8	.7	.8	UER
		6	1412	14.23	19	22.92	155	4.72	8.22	2.1	2.4	21	0	90	.08	12	.4	.7	MER
		6	1450	54.92	19	22.31	155	.05	7.05		2.0	16	0	185	.10	10	1.1	1.2	LER
		6	1738	37.07	19	28.01	154	52.20	7.44	1.8	2.5	19	3	264	.15	21	1.6	1.0	LER
		6	1835	41.51	19	21.26	155	2.55	7.31	2.1	2.5	20	0	147	.08	12	.9	.6	MER
		6	2340	47.26	19	23.58	155	25.04	9.75	3.3	3.6	30	0	57	.12	9	.6	.5	UKF
		7	237	55.24	19	20.86	155	12.18	9.66	2.0	2.9	24	0	67	.09	7	.6	.4	UER
		7	648	39.25	19	19.68	155	6.85	8.71	2.1	2.8	25	0	117	.09	7	.6	.5	UER
		7	725	32.18	19	23.38	155	16.98	1.62	1.0	2.1	10	0	63	.10	3	.7	.3	SPC
		7	727	30.26	19	24.16	155	16.02	1.59	1.8	2.5	15	0	113	.10	3	.5	.3	SPC
		7	1050	25.98	19	19.50	155	12.23	7.16	2.0	2.7	21	0	88	.12	6	1.0	1.5	UER
		7	11 1	13.83	19	22.08	154	58.21	7.81	2.2	2.6	14	0	209	.06	12	1.0	.7	LER
		7	1536	37.69	19	19.45	155	11.66	7.59	1.7	2.7	23	0	94	.12	6	.8	1.5	UER
		7	1623	.27	19	20.11	155	18.82	29.06		2.4	29	0	54	.09	7	.8	1.5	DEP
		7	1854	56.85	19	15.54	155	34.53	8.80	2.2	3.0	21	0	169	.20	18	1.6	2.7	HEA
		8	015	24.88	19	19.78	155	7.64	7.38	1.9	2.8	25	0	98	.13	8	.8	1.5	UER
		8	434	7.94	19	20.49	155	11.11	9.18	1.7	2.6	22	0	77	.09	8	.6	.9	UER
		8	645	46.31	19	20.05	155	13.18	9.66	1.8	2.5	24	0	67	.11	6	.7	.5	UER
		8	1250	18.48	19	22.16	155	30.12	9.82	1.8	2.4	21	0	72	.10	12	.7	3.2	MOK
		8	1315	6.64	19	23.30	155	17.21	1.52	1.4	2.5	12	0	57	.08	3	.5	.3	SPC
		8	1818	20.39	19	18.93	155	13.53	9.65	1.7	2.7	22	0	72	.11	7	.7	.7	POL
		8	1916	18.84	19	23.02	155	4.35	7.54	1.6	2.5	17	0	96	.10	10	.7	1.5	MER
		8	1951	5.80	19	22.36	155	6.00	7.92	2.9	3.7	29	0	70	.10	7	.5	.7	UER
		9	040	2.31	19	26.05	154	56.15	7.21	1.6	2.2	13	0	184	.06	14	.7	.9	LER
		9	516	25.14	19	22.71	155	4.62	7.36		2.6	24	0	90	.12	9	.6	.9	MER
		9	813	11.48	19	20.99	155	13.19	8.61		2.5	20	0	58	.11	6	.8	1.4	UER
		9	12 7	8.24	19	26.02	154	54.58	8.63	1.9	2.7	14	0	211	.20	17	4.2	2.0	LER
		9	1419	44.59	19	19.08	155	13.92	10.04	1.7	2.7	23	0	88	.12	7	1.0	.4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	NOV	9	1533	3.39	19	20.60	155	4.14	8.06	3.8	4.1	32	0	107	.12	9	.9	.6	MER
		9	1717	32.00	19	20.74	155	3.67	6.84	2.0	2.6	21	0	96	.10	9	1.0	1.2	MER
		9	1728	43.41	19	20.87	155	3.80	6.81	2.0	2.7	19	0	89	.10	10	.7	1.3	MER
		9	1741	28.81	19	20.08	155	8.39	8.26	1.7	2.5	24	0	79	.09	9	.5	.7	UER
		9	2034	15.64	19	20.59	155	6.37	8.85	2.0	2.7	26	0	103	.10	7	.7	.8	UER
		9	2034	58.98	19	20.15	155	7.40	10.08	1.8	2.7	17	0	97	.11	8	1.0	1.4	UER
		9	2056	7.84	19	20.09	155	6.88	7.89	1.8	2.6	22	0	107	.12	7	.8	1.0	UER
		10	015	34.81	19	23.88	155	16.93	1.71	1.6	2.7	16	0	76	.06	3	.3	.2	SPC
		10	632	14.88	19	21.90	155	4.41	8.45	2.0	2.7	20	0	88	.11	10	.8	1.3	MER
		10	1047	26.68	19	20.86	155	11.54	10.01	1.7	2.7	21	0	73	.10	8	.7	.4	UER
		10	12 1	6.21	19	20.90	155	11.79	10.01	2.0	2.7	23	0	68	.08	8	.6	.3	UER
		10	12 5	28.09	19	4.70	155	23.12	24.26	2.4	2.7	30	4	208	.18	26	1.8	3.5	LSW
		10	1815	16.62	19	20.71	155	11.73	9.94	3.1	3.7	29	0	71	.10	7	.7	.3	UER
		11	058	35.60	19	19.50	155	22.10	5.18	1.4	2.7	19	0	120	.08	8	.5	.8	SWR
		11	224	.30	19	27.31	154	50.41	8.91		2.0	9	0	290	.11	24	5.9	1.3	LER
		11	239	39.05	19	20.64	155	12.59	7.62	1.6	2.5	25	0	66	.16	7	.9	1.5	UER
		11	437	56.93	19	45.58	154	56.39	35.85	2.5	2.6	33	3	235	.17	31	1.9	2.5	HIL
		11	716	27.18	19	21.41	155	4.99	7.45	2.1	2.8	24	0	87	.13	9	.8	1.1	MER
		11	932	29.44	19	19.39	155	11.62	10.16	1.9	3.0	21	0	96	.09	7	.7	.5	UER
		11	1222	23.64	19	23.89	155	16.93	1.75	1.9	3.3	17	0	67	.06	3	.3	.2	SPC
		11	1236	10.71	19	21.49	155	3.53	7.17	1.8	2.7	15	0	123	.09	11	1.0	1.3	MER
		11	1313	10.42	19	23.22	155	17.08	1.63	.9	1.8	10	0	82	.04	3	.3	.1	SPC
		11	14 0	41.65	19	23.32	155	17.02	1.76	1.8	3.1	15	0	61	.06	3	.3	.2	SPC
		11	2249	14.00	19	22.10	155	6.99	6.81	1.8	2.4	21	0	71	.11	8	.7	1.5	UER
		12	059	37.05	19	27.66	154	55.37	5.13		1.6	8	0	182	.11	15	1.9	1.3	LER
		12	220	18.69	19	25.75	154	54.64	8.37		1.8	9	0	238	.12	17	3.5	2.2	LER
		12	222	44.23	19	27.56	154	50.71	7.68		2.1	9	0	289	.19	23	11.9	2.3	LER
		12	319	12.69	19	27.28	155	26.81	9.43	1.9	2.7	22	0	63	.09	14	.5	.9	UKF
		12	722	55.05	19	23.56	155	16.91	1.77	1.1	2.1	9	0	69	.06	3	.5	.3	SPC
		12	1654	46.51	19	21.34	155	2.46	7.12	3.5	4.1	31	0	148	.13	12	1.0	.7	MER
		12	20 7	21.45	19	56.64	155	36.00	11.20	3.5		26	0	145	.14	28	1.9	.7	KOH
		12	20 8	44.96	19	57.41	155	22.84	8.23	2.7	2.8	19	0	193	.15	40	1.8	1.1	KKU
		13	918	49.51	19	13.99	155	17.17	11.03	2.1		12	0	242	.08	16	1.8	4.5	HLP
		13	1114	3.35	19	21.97	155	5.07	9.18	3.7	4.1	28	0	77	.11	8	.7	.6	MER
		13	2050	29.48	19	26.25	155	23.13	8.13	2.0	2.7	26	0	80	.15	10	.8	1.5	UKF
		14	419	23.06	19	25.52	155	16.52	15.46	3.0	3.3	31	0	48	.07	4	.5	.7	DEP
		14	5 9	13.44	19	19.16	155	16.56	9.52	2.2	3.2	28	0	102	.12	6	.8	1.3	KOA
		14	522	45.80	19	23.26	155	16.87	1.79	1.7	2.6	16	0	46	.12	3	.7	.3	SPC
		14	12 0	51.05	19	21.30	155	2.32	6.85	2.1	3.0	22	0	154	.10	12	1.0	.8	MER
		14	1817	5.50	19	26.35	154	52.34	8.14	2.4	3.0	18	2	259	.10	21	1.2	.7	LER
		14	2040	36.96	19	20.18	155	8.52	8.83	2.3	3.0	28	0	76	.13	9	.6	.7	UER
		14	2325	14.40	19	23.66	155	16.89	1.78	1.3	2.7	14	0	67	.06	3	.3	.2	SPC
		15	233	42.09	19	23.40	154	58.30	6.03	1.9	2.9	20	0	191	.17	11	1.9	1.6	LER
		15	5 3	6.85	19	9.95	155	40.19	8.16	2.5	2.9	17	2	206	.22	22	2.0	4.1	HEA
		15	917	7.99	19	20.80	155	13.02	8.22		2.3	18	0	69	.12	6	1.0	1.8	UER
		15	1035	59.09	19	21.07	155	8.43	8.36	2.7	3.2	28	0	70	.11	9	.6	.7	UER
		15	1316	45.28	19	22.02	155	5.73	7.59	1.7	2.6	22	0	79	.10	7	.6	1.0	MER
		15	2252	45.71	19	24.11	155	16.09	1.36	1.5	2.6	14	0	110	.06	3	.3	.2	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	NOV	16	040	34.83	19	24.14	155	16.14	1.61	1.5	2.7	12	0	119	.07	3	.5	.3	SPC
		16	056	29.30	19	22.38	155	4.87	8.16	2.2	3.0	23	0	84	.13	9	.9	.9	MER
		16	223	35.43	19	22.59	155	4.70	9.20	3.6	4.1	32	0	88	.12	9	.8	.5	MER
		16	3 6	20.89	19	14.42	155	37.56	9.37	1.8	2.6	17	0	105	.20	19	1.5	2.7	HEA
		16	8 5	27.96	19	23.53	155	16.76	1.92	1.1	2.3	10	0	73	.07	3	.6	.3	SPC
		16	1123	22.09	19	23.38	155	16.98	1.89	2.1	3.0	13	0	63	.07	3	.5	.3	SPC
		16	12 3	48.16	19	17.80	155	16.22	8.09	1.7	2.9	17	0	127	.11	5	.8	1.7	KOA
		16	1944	33.56	19	25.78	155	16.72	.43	2.3	3.4	14	0	164	.10	4	.8	.6	SPC
		17	551	48.55	19	32.32	155	14.17	24.99	3.7	3.7	32	0	66	.11	17	.7	2.1	NER
		17	721	14.03	19	19.80	155	12.30	7.59	1.7	2.6	23	0	81	.12	6	.8	1.5	UER
		17	1213	8.59	19	23.05	155	16.84	1.96	2.1	3.0	16	0	53	.14	3	.8	.5	SPC
		17	1232	43.66	19	20.45	155	13.62	9.09	1.6	2.5	17	0	65	.07	6	.4	.7	UER
		17	2315	44.58	19	24.51	155	16.10	13.70	1.6	2.4	27	0	72	.09	4	.5	.9	DEP
		18	3 4	38.48	19	19.66	155	19.23	8.78	1.6	2.5	21	0	57	.10	7	.7	1.1	SWR
		18	3 7	20.46	19	26.87	155	23.60	8.27	2.0	2.7	21	0	74	.11	11	.7	1.3	UKF
		18	433	18.19	19	20.83	155	13.50	9.65	2.3	3.1	27	0	56	.10	7	.6	.4	UER
		18	1444	26.76	19	16.61	155	21.65	7.40	1.8	2.7	17	0	133	.12	9	1.1	2.3	SWR
		18	1555	41.88	19	23.66	154	58.15	6.37	1.7	2.5	10	0	189	.11	11	1.7	1.6	LER
		18	1744	19.43	19	23.72	155	2.06	8.27		2.4	19	0	134	.12	10	.9	1.5	MER
		18	2122	58.71	19	23.28	155	17.02	1.96	1.3	2.4	12	0	59	.05	3	.3	.2	SPC
		18	2224	43.77	19	23.87	155	16.89	3.79	3.0	3.8	24	0	69	.13	3	.7	1.0	SPC
		19	318	8.70	18	59.10	155	22.58	31.13	2.9	2.9	31	0	227	.10	33	1.8	3.2	DIS
		19	352	14.10	19	23.55	154	58.13	4.97		2.4	12	0	191	.11	11	1.6	1.2	LER
		19	1447	29.41	19	24.36	155	26.58	8.68	2.1	1.8	20	0	53	.11	12	.7	1.9	UKF
		19	1613	52.84	19	18.21	155	16.84	9.52	2.4	2.7	24	0	120	.10	6	.7	1.1	KOA
		19	2254	37.19	19	20.11	155	13.47	9.86	2.1	2.5	27	0	62	.10	6	.7	.5	UER
		20	711	1.33	19	23.34	155	17.07	2.76	2.4	3.2	22	0	59	.12	3	.5	1.3	SPC
		20	23 8	27.02	19	24.10	155	15.72	1.50	2.0	2.6	22	0	45	.13	3	.5	.3	SPC
		21	257	53.32	19	19.98	155	7.76	9.35	2.8	3.2	25	0	93	.10	8	.7	.5	UER
		21	541	3.94	19	21.10	155	6.62	6.57	1.9	1.8	23	0	90	.13	7	.9	1.6	UER
		21	2035	13.51	19	22.23	155	6.72	8.13	2.5	3.3	27	0	71	.11	8	.5	1.0	UER
		21	2046	44.06	19	23.03	155	4.79	7.84	2.6	3.3	27	0	89	.12	9	.7	.9	MER
		21	2250	42.86	19	19.74	155	8.66	7.45	1.7	2.7	23	0	76	.08	9	.5	1.0	UER
		22	130	3.87	19	23.38	155	16.90	1.78	2.3	3.1	10	0	66	.06	3	.5	.2	SPC
		22	3 2	47.72	19	24.07	155	15.98	1.44	1.6	2.8	13	0	111	.08	3	.4	.3	SPC
		22	513	50.38	19	20.56	155	7.44	9.05	2.0	3.0	28	0	90	.15	8	.9	.8	UER
		22	620	54.94	19	23.35	155	17.25	1.57	1.6	2.9	12	0	56	.06	3	.4	.2	SPC
		22	10 5	32.00	19	25.56	155	23.50	11.51	2.4	2.9	25	0	73	.09	9	.6	.3	UKF
		22	1319	20.78	19	23.67	155	16.97	2.00	1.8	2.8	13	0	70	.06	3	.4	1.1	SPC
		22	1540	49.89	19	23.44	155	16.86	2.15	2.3	3.4	18	0	66	.10	3	.5	1.2	SPC
		22	1831	19.81	19	19.86	155	7.12	8.11	2.0	2.6	23	0	108	.10	7	.7	.8	UER
		23	033	7.40	19	21.10	155	6.29	8.00	2.1	2.9	23	0	92	.11	7	.7	.9	UER
		23	327	55.02	19	30.76	155	48.00	10.03	2.4	3.1	17	0	90	.16	20	1.2	.6	KON
		23	332	47.70	19	22.76	155	4.86	7.98	2.2	3.1	25	0	87	.13	9	.7	1.1	MER
		23	12 3	.15	19	22.19	155	18.11	.90	1.3	2.6	13	0	71	.06	4	.3	.3	KOA
		23	14 3	6.66	19	22.15	155	18.16	1.22	1.6	2.7	10	0	70	.03	4	.1	.1	KOA
		23	14 6	20.49	19	22.18	155	.10	5.53	2.2	3.0	16	0	186	.14	11	1.6	2.2	LER
		23	1412	14.97	20	10.09	155	50.10	16.54	3.0	3.2	15	5	311	.13	72	1.9	46.6	KOH

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	NOV	23	1541	47.61	19	25.99	154	53.66	8.14	2.4	3.3	18	0	230	.11	19	2.4	1.0	LER
		23	1713	2.44	19	21.17	155	6.05	8.49	2.5	3.2	23	0	92	.09	7	.6	1.1	UER
		23	2224	54.58	19	23.09	155	17.05	1.69	1.6	3.0	14	0	43	.06	3	.3	.2	SPC
		24	0	3 2.50	19	20.16	155	7.21	8.49	2.1	3.0	24	0	100	.09	8	.6	.9	UER
		24	852	54.62	19	20.03	155	11.43	8.74	1.7	2.7	24	0	84	.11	7	.7	.9	UER
		24	1157	37.56	19	20.94	155	6.25	8.39	2.2	3.2	23	0	96	.11	7	.8	.8	UER
		25	637	27.42	19	23.47	155	17.06	2.70	2.2	3.3	18	0	63	.12	3	.6	1.5	SPC
		25	736	1.38	18	56.53	155	31.28	27.37	2.0	2.4	23	4	256	.13	35	2.2	1.4	DIS
		25	843	33.53	19	21.79	155	15.34	9.33	1.5	2.4	16	0	60	.06	4	.5	1.0	KOA
		25	11	5 40.25	19	23.74	155	16.95	1.68	2.5	3.2	14	0	72	.05	3	.3	.2	SPC
		25	1430	34.57	19	28.87	154	49.83	9.94	1.8	2.4	14	1	318	.17	24	4.3	.7	LER
		25	18	5 14.53	19	26.99	154	54.07	8.67	2.3	2.9	14	0	212	.10	18	1.8	.7	LER
		25	1935	7.12	19	19.98	155	10.77	9.07	2.2	3.0	22	0	86	.12	7	.9	.9	UER
		25	2135	11.02	19	21.18	155	6.21	9.54	2.7	3.0	25	0	91	.11	7	.8	.5	UER
		26	2	7 22.64	19	22.78	155	2.75	7.24	2.4	3.2	23	0	128	.09	12	.6	1.2	MER
		26	349	14.70	19	24.25	155	16.07	1.61	2.1	3.2	18	0	114	.07	3	.3	.2	SPC
		26	635	59.15	19	20.96	155	13.06	8.93	1.7	2.5	19	0	59	.09	6	.7	1.2	UER
		26	1012	29.35	19	24.87	155	.80	7.29		2.6	20	0	142	.12	10	.9	1.0	LER
		26	1015	58.54	19	24.23	155	15.87	4.49	3.1	3.8	27	0	46	.13	3	.6	.8	SPC
		26	1317	4.61	19	19.19	155	13.78	8.32	2.0	2.5	20	0	64	.09	7	.6	1.2	UER
		26	1329	45.02	19	24.30	155	16.19	1.73	1.4	2.6	12	0	115	.05	3	.4	.2	SPC
		26	2216	46.21	19	19.47	155	15.73	9.83	1.9	2.9	24	0	90	.11	6	.7	.5	KOA
		26	23	6 5.48	19	25.34	154	55.11	8.11		2.5	9	0	209	.13	17	2.9	1.7	LER
		27	335	34.05	19	20.41	155	11.58	8.58	1.7	2.5	22	0	76	.13	8	.9	1.7	UER
		27	5	8 16.98	20	13.71	155	20.55	23.32	2.5	3.3	15	1	301	.04	81	7.1	10.4	DIS
		27	638	5.52	19	29.79	155	58.65	10.31	2.6	3.3	23	3	238	.22	26	2.8	.7	KON
		27	927	38.80	19	22.46	155	5.10	7.99	2.2	3.0	23	0	81	.12	11	.7	1.1	MER
		27	1241	14.98	19	25.42	155	25.45	7.23	2.1	2.9	19	0	69	.11	10	.7	1.6	UKF
		27	1915	36.46	19	23.89	155	16.88	1.70	1.4	2.8	12	0	78	.06	3	.4	.2	SPC
		28	242	55.65	19	22.49	155	28.67	9.80	2.1	3.1	26	0	48	.11	12	.5	.4	UKF
		28	256	42.01	19	23.37	155	16.91	2.02	1.6	2.9	18	0	64	.10	3	.5	1.3	SPC
		28	539	52.58	19	20.31	155	12.84	8.61	1.6	2.8	24	0	68	.11	7	.7	1.1	UER
		28	1214	16.32	19	23.53	155	17.17	2.29	2.7	3.6	21	0	56	.12	3	.5	1.6	SPC
		28	1426	29.42	19	26.92	155	29.05	9.55	2.3	2.8	24	0	58	.11	11	.7	.5	UKF
		28	2021	5.24	19	17.59	155	21.53	7.52	2.0	3.4	24	0	122	.13	9	.8	1.3	SWR
		29	5	1 27.55	19	21.16	155	6.42	8.99	2.2	3.4	25	0	90	.10	8	.6	.8	UER
		29	7	6 30.61	19	18.85	155	13.58	7.42		2.6	19	0	71	.14	7	1.0	2.0	POL
		29	9	3 47.43	19	27.09	154	51.98	7.75		2.6	17	1	267	.15	21	1.7	1.3	LER
		29	1036	25.35	19	21.22	155	13.41	9.68	1.6	2.8	16	0	57	.08	7	.7	1.9	UER
		29	1041	.19	19	28.96	154	50.85	8.21		2.5	13	0	316	.10	23	3.4	1.0	LER
		29	1858	15.46	19	26.56	155	29.26	10.18	1.9	2.6	22	0	68	.13	12	.7	.9	UKF
		29	2210	28.00	20	57.05	156	23.23	42.02	3.3	3.7	3	2	360	.00	25	89.7	41.8	DIS
		30	120	37.03	19	19.28	155	13.87	9.04	1.7	2.6	20	0	63	.10	6	.6	1.2	UER
		30	1746	10.06	19	19.46	155	11.39	9.31	3.3	3.8	28	0	96	.10	7	.6	.6	UER
		30	1818	45.29	19	19.34	155	11.28	9.65	3.0	3.5	29	0	100	.11	7	.7	.3	UER
		30	1937	30.25	19	19.52	155	16.21	9.60	2.5	3.4	32	0	94	.11	5	.6	.7	KOA
	DEC	1	020	25.96	19	20.75	155	13.63	8.46		2.6	26	0	55	.09	7	.6	.9	UER
		1	257	42.94	19	23.11	155	17.14	1.47	1.4	2.7	14	0	48	.05	3	.3	.2	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	DEC	1	444	17.47	19	21.64	155	15.23	9.40	3.1	3.8	32	0	61	.10	4	.5	.6	KOA
		1	622	59.48	19	19.72	155	8.66	8.64	1.9	2.9	22	0	76	.10	9	.6	.7	UER
		1	1057	37.57	19	20.35	155	13.42	9.40	1.7	2.7	18	0	63	.06	6	.5	1.0	UER
		1	11	0 36.04	19	20.60	155	13.22	9.40	1.6	2.6	20	0	62	.10	6	.8	1.1	UER
		1	1527	12.27	19	12.33	155	28.29	43.57	1.9	2.0	15	1	111	.13	17	2.5	2.7	LSW
		2	015	33.29	19	23.63	155	17.18	1.45	1.4	2.6	14	0	61	.07	3	.4	.2	SPC
		2	1448	40.65	19	23.23	155	17.24	1.55	1.8	2.9	17	0	55	.09	3	.5	.3	SPC
		2	1613	44.54	19	22.06	155	6.75	8.42	2.9	3.4	27	0	73	.10	8	.5	.7	UER
		2	2251	2.35	19	21.27	154	59.39	8.58		2.5	18	0	208	.16	12	2.4	1.6	LER
		3	118	17.02	19	27.29	155	26.47	8.90	2.0	2.8	26	0	62	.13	14	.7	1.2	UKF
		3	859	30.21	19	27.99	155	26.31	11.59		2.7	22	0	64	.13	14	.9	.4	UKF
		3	20	2 9.78	19	20.00	155	10.47	9.64	2.2	3.2	25	0	86	.12	7	.9	.4	UER
		3	2138	39.19	19	21.09	155	6.83	9.02	2.6	2.7	26	0	88	.09	7	.6	.4	UER
		3	2232	4.31	19	23.64	155	16.89	3.01	2.2	3.4	20	0	44	.10	3	.5	1.0	SPC
		4	050	43.65	19	22.51	155	.92	9.29	2.8	3.2	29	0	168	.11	11	1.0	.6	LER
		4	341	14.24	19	59.34	155	43.82	12.89	2.7	2.8	29	5	143	.15	37	.7	1.0	KOH
		4	350	50.82	19	20.05	155	8.13	8.82	3.0	3.8	29	0	85	.11	9	.7	.5	UER
		4	6	5 1.49	19	19.94	155	8.36	8.49	1.9	2.6	21	0	81	.11	10	.8	.6	UER
		5	250	29.66	19	23.25	155	16.94	2.21	1.9	3.0	17	0	46	.06	3	.3	.7	SPC
		5	257	18.06	19	23.49	155	17.02	1.93	2.1	3.5	17	0	46	.10	3	.5	.3	SPC
		5	727	29.27	19	21.86	155	6.55	6.77	1.9	3.1	22	0	77	.13	7	.8	1.4	UER
		5	833	34.19	19	20.81	155	11.06	9.11	2.5	2.8	23	0	73	.10	8	.6	.7	UER
		5	1711	59.17	19	22.17	155	6.41	9.02	2.5	3.4	26	0	72	.11	7	.7	.6	UER
		5	1753	31.63	19	20.33	155	13.09	7.67		2.7	18	0	65	.11	6	.8	1.7	UER
		5	2139	19.84	19	24.81	155	25.01	9.24	2.3	3.3	29	0	64	.14	10	.8	1.1	UKF
		6	047	31.78	19	22.35	155	6.45	8.02	2.5	3.4	27	0	70	.10	8	.5	.9	UER
		6	258	47.30	19	20.40	155	7.83	9.25	2.3	3.3	27	0	86	.13	9	.9	.6	UER
		6	350	10.96	19	21.41	155	13.13	9.07	1.9	2.7	22	0	67	.11	6	.8	1.2	UER
		6	610	12.33	19	19.26	155	13.46	8.30	1.9	2.8	24	0	70	.13	7	.8	1.4	UER
		6	626	58.13	19	21.53	155	7.61	9.45	3.8	4.1	29	0	74	.10	8	.6	.5	UER
		6	1449	51.30	19	23.94	155	17.04	1.77	1.9	2.6	17	0	61	.09	3	.4	.3	SPC
		6	2127	57.97	19	19.24	155	12.38	5.88	1.7	2.7	24	0	91	.13	7	.8	1.6	UER
		6	2221	50.60	19	23.60	155	17.04	1.70	1.8	2.7	15	0	66	.08	3	.4	.2	SPC
		7	3	1 33.09	19	25.05	155	24.40	8.37	1.6	2.5	21	0	79	.11	9	.8	1.1	UKF
		7	14	0 17.78	19	24.28	155	17.67	14.55	3.0	3.3	31	0	46	.09	4	.5	.9	DEP
		7	1435	.04	19	19.59	155	16.57	6.49	1.5	2.4	20	0	99	.14	5	.9	1.6	KOA
		7	2024	28.93	19	19.09	155	12.14	7.29	1.7	2.5	23	0	98	.09	7	.6	1.0	UER
		7	2340	22.17	19	23.97	155	16.86	2.99	2.7	3.6	25	0	47	.13	3	.6	1.2	SPC
		8	331	26.73	19	22.19	155	16.44	13.90	1.8	2.2	23	0	52	.11	4	.8	1.1	DEP
		8	550	32.12	19	19.87	155	12.50	6.70	1.6	2.5	24	0	78	.16	6	1.0	1.7	UER
		8	552	10.89	19	20.75	155	13.63	8.79	1.7	2.7	20	0	62	.10	7	.7	1.1	UER
		8	1149	16.95	19	18.97	155	26.64	26.08	3.4	3.4	34	0	82	.10	7	.8	1.5	HEA
		8	1415	42.67	19	20.09	155	10.57	8.99	2.9	3.7	29	0	84	.08	7	.5	.6	UER
		8	1850	26.35	19	25.54	155	16.73	.58	2.0	3.3	16	0	142	.09	4	.6	.3	SPC
		8	1947	21.24	19	18.95	155	23.54	5.81	2.5	3.4	26	0	102	.14	9	.7	1.6	SWR
		8	21	2 42.43	19	23.99	155	16.28	2.00	1.8	2.6	14	0	106	.14	3	.9	.0	SPC
		8	22	2 37.58	19	22.08	155	.54	4.35		2.4	17	0	181	.09	11	.8	.7	LER
		9	625	50.51	19	19.58	155	11.73	9.45	1.7	2.7	23	0	91	.10	6	.7	.7	UER

EAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
976	DEC	9	652	26.91	19	21.16	155	13.11	8.00	2.1	3.1	29	0	57	.12	6	.6	1.0	UER
		9	7 0	16.58	19	21.08	155	6.39	8.21	2.2	3.1	28	0	92	.13	7	.7	1.1	UER
		9	732	24.37	19	19.95	155	7.31	8.62	1.9	2.8	23	0	103	.13	8	.9	.8	UER
		9	1129	32.75	19	17.70	155	21.87	6.19	1.9	2.6	21	0	120	.16	9	1.0	2.7	SWR
		9	1345	55.47	19	23.41	155	16.94	3.96	2.3	3.1	19	0	65	.10	3	.5	.9	SPC
		9	15 7	28.68	19	22.16	155	6.15	8.26	2.2	3.4	24	0	107	.11	7	.7	.7	UER
		9	1528	49.90	19	23.73	155	17.19	2.76	3.0	3.8	24	0	62	.13	3	.6	1.3	SPC
		9	22 9	30.12	19	19.76	155	26.57	9.01	1.8	2.7	27	0	79	.12	6	.7	1.2	HEA
		10	848	45.65	19	23.33	155	4.18	8.37	2.9	3.3	33	0	99	.13	10	.8	.6	MER
		10	9 7	58.59	19	23.48	155	17.27	2.91		2.6	24	0	39	.13	3	.6	1.4	SPC
		10	1416	27.06	19	23.37	155	16.98	1.82	2.1	3.0	20	0	46	.12	3	.6	.3	SPC
		10	1715	33.79	19	41.54	155	2.02	7.85	2.9	3.0	22	0	203	.19	28	2.4	2.0	HIL
		10	1729	59.80	19	43.14	155	2.25	.67	2.5	2.4	12	0	255	.17	30	6.2	99.0	HIL
		10	1750	10.37	19	27.07	155	29.45	9.75	2.2	2.1	26	0	72	.11	12	.6	.4	UKF
		11	1118	4.17	19	19.92	155	12.65	10.16	2.0	2.5	25	0	75	.09	6	.6	.3	UER
		11	1255	47.62	19	22.79	155	6.46	7.20	2.2	2.5	23	0	74	.15	8	1.0	1.7	UER
		11	1751	47.04	19	20.75	155	12.04	9.40	2.3	3.5	24	0	69	.10	7	.7	.9	UER
		11	2339	36.54	19	12.14	155	28.15	9.82	2.9	3.1	27	1	105	.20	17	1.5	.6	LSW
		12	11 5	54.81	19	21.53	155	4.32	6.36	2.0	2.8	22	0	99	.10	10	.6	.9	MER
		12	1218	56.88	19	13.62	155	27.69	8.40	2.2	3.1	26	0	140	.15	16	1.0	1.4	LSW
		12	14 5	44.83	19	24.89	155	16.13	13.32	2.1	2.6	25	0	74	.08	5	.5	.8	DEP
		12	16 2	52.48	19	20.35	155	13.73	10.14	2.2	3.2	25	0	57	.10	6	.6	.3	UER
		12	1832	4.84	19	25.95	155	15.92	.17	1.8	3.1	12	0	158	.07	4	.5	.5	SPC
		12	1841	37.39	19	19.77	155	8.10	8.26	1.9	2.6	23	0	88	.10	9	.6	.8	UER
		12	2336	38.55	19	21.49	155	3.73	6.29	2.0	2.8	22	0	149	.13	11	1.0	1.3	MER
		12	2357	29.50	19	25.13	155	24.70	8.69	1.6	2.6	21	0	76	.09	9	.5	1.2	UKF
		13	348	59.94	19	24.35	155	26.59	9.02	1.8	2.6	25	0	57	.11	12	.6	1.0	UKF
		13	5 0	.72	19	23.42	155	17.00	1.92	2.0	3.0	21	0	38	.09	3	.4	.3	SPC
		13	6 8	17.28	19	19.21	155	12.05	6.81	1.7	2.9	26	0	96	.13	7	.8	1.4	UER
		13	1726	42.07	19	20.20	155	7.42	9.67	3.4	4.0	29	0	96	.12	8	.9	.4	UER
		13	2241	58.50	19	21.24	155	13.44	9.28	1.9	2.5	23	0	56	.10	6	.7	.9	UER
		14	4 6	22.77	19	22.38	154	56.08	6.57	2.5	3.1	21	0	207	.16	12	2.1	1.7	LER
		14	636	30.37	19	19.83	155	12.63	9.08	2.1	2.6	25	0	77	.12	6	.8	1.0	UER
		14	12 2	42.38	20	1.02	155	23.25	10.14	2.4	2.4	19	2	222	.10	45	1.4	.3	KKU
		14	1352	21.29	19	19.75	155	8.43	8.75	2.2	2.8	26	0	81	.10	10	.5	.6	UER
		14	1725	32.35	19	24.80	155	28.76	9.81	2.2	2.9	32	0	42	.13	13	.7	.4	UKF
		15	120	24.52	19	27.67	155	21.64	7.90	2.4	2.7	21	0	98	.10	10	.6	1.2	UKF
		15	330	9.83	19	26.11	154	53.63	8.93	1.7	2.6	16	0	226	.12	18	2.5	1.0	LER
		15	440	42.94	19	19.60	155	11.94	9.81	2.9	3.5	33	0	89	.12	6	.7	.3	UER
		15	2210	34.16	19	17.22	155	21.67	7.46	1.8	2.5	26	0	126	.16	9	1.0	1.5	SWR
		16	5 4	15.78	19	32.32	155	26.82	25.15	2.2	2.5	31	0	67	.10	17	.7	1.8	NER
		16	6 2	37.42	19	20.84	155	4.59	7.39	2.0	2.6	24	0	102	.11	9	.8	1.0	MER
		16	21 8	48.78	19	19.01	155	13.85	7.03	1.9	2.8	22	0	65	.13	7	.8	1.8	UER
		16	2121	35.55	19	25.32	155	17.05	.57	2.2	3.7	19	0	48	.14	4	.7	.2	SPC
		17	013	40.53	19	23.38	155	16.97	1.93	1.6	2.8	17	0	46	.06	3	.3	.2	SPC
		17	335	18.12	19	25.57	155	16.50	.46	1.7	3.2	15	0	126	.16	4	1.0	.6	SPC
		17	339	14.61	19	25.69	155	16.70	.80	2.9	4.1	28	0	48	.10	4	.3	.5	SPC
		17	1916	54.17	19	20.40	155	7.72	8.33	2.6	3.0	29	0	88	.10	8	.7	.5	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	DEC	17	2031	43.29	19	20.00	155	6.92	9.49	3.2	3.7	31	0	109	.09	7	.7	.5	UER
		18	4 1	.60	19	20.14	155	7.01	9.39	4.8	4.9	32	0	104	.09	7	.6	.5	UER
		18	553	36.78	19	21.45	155	6.33	8.47	2.1	2.8	28	0	85	.12	7	.7	.9	UER
		18	612	27.81	19	21.10	155	7.75	8.36	2.5	2.8	29	0	78	.11	9	.6	.7	UER
		18	615	24.37	19	21.89	155	6.82	6.79	2.3	3.0	25	0	75	.12	8	.7	1.1	UER
		18	814	39.99	19	20.27	155	7.49	8.91	2.4	2.8	28	0	93	.13	8	.9	.6	UER
		18	857	47.82	19	13.44	155	30.67	34.79	2.4		14	2	196	.18	26	3.7	3.2	LSW
		18	1050	39.49	19	23.96	155	15.31	2.26	2.4	3.2	23	0	45	.09	3	.4	2.1	SPC
		18	1412	15.18	19	23.64	155	2.95	7.90	2.0	2.5	27	0	120	.12	11	.8	.8	MER
		18	18 2	22.18	19	20.08	155	13.27	8.41	2.0	2.6	30	0	65	.16	6	.9	1.2	UER
		19	110	33.88	19	21.66	155	7.83	6.53	2.8	3.3	14	0	71	.10	9	.8	1.5	UER
		19	145	7.14	19	21.38	155	8.29	7.92	2.4	3.0	14	0	69	.08	10	.7	.9	UER
		19	1650	36.91	19	20.39	155	8.04	8.88	2.4	3.1	25	0	83	.08	9	.6	.4	UER
		20	117	53.65	19	20.26	155	6.60	9.54	1.9	2.7	24	0	108	.13	7	.8	1.0	UER
		20	817	43.26	19	20.53	155	11.75	8.22	1.7	2.2	24	0	74	.08	7	.5	.9	UER
		20	1246	1.42	19	21.41	155	7.95	9.34	2.0	2.7	26	0	73	.10	9	.6	.6	UER
		20	1253	7.49	19	21.39	155	7.56	7.36	2.1	2.7	24	0	77	.09	8	.5	.9	UER
		20	1330	13.98	19	21.81	155	15.14	8.13	1.7	2.7	25	0	59	.12	4	.6	.9	KOA
		20	1932	28.54	19	23.15	155	25.41	8.84	2.2	3.0	26	0	54	.13	10	.7	.9	UKF
		20	2239	50.19	19	23.17	155	14.58	3.47	1.8	2.7	16	0	60	.07	3	.4	1.1	GLN
		20	2317	55.16	19	21.41	155	2.32	6.65	2.1	2.7	23	0	152	.09	12	.8	.7	MER
		21	224	19.42	19	23.87	155	16.96	1.64	1.5	2.5	14	0	74	.06	3	.4	.1	SPC
		21	245	32.26	19	19.55	155	15.80	9.61	1.8	2.8	23	0	89	.09	6	.5	.6	KOA
		21	529	34.49	19	20.91	155	12.98	7.95	1.6	2.6	24	0	60	.13	6	.8	1.2	UER
		21	11 2	39.38	19	22.09	155	6.84	7.71	1.9	2.7	22	0	72	.13	8	.8	1.6	UER
		22	1 0	31.72	19	20.94	155	10.91	10.03	1.9	2.9	21	0	70	.08	8	.6	.4	UER
		22	5 9	34.67	19	23.46	155	16.92	1.74	2.0	3.3	22	0	41	.12	3	.5	.3	SPC
		22	9 3	32.43	19	24.27	155	15.94	2.90	2.2	3.3	22	0	83	.11	3	.5	1.4	SPC
		22	15 5	50.93	19	23.52	155	17.16	1.42	1.4	2.7	9	0	60	.06	3	.5	.2	SPC
		23	426	6.76	19	20.15	155	12.20	6.08	1.6	2.5	26	0	76	.11	6	.6	1.0	UER
		23	730	24.96	19	19.27	155	26.68	8.86	2.3	3.1	29	0	80	.17	6	.9	1.4	HEA
		23	1125	3.65	19	19.34	155	15.67	7.59		2.4	18	0	106	.07	6	.5	1.0	KOA
		23	1349	45.80	19	27.19	154	53.42	8.83	2.4	3.1	21	0	231	.14	19	2.3	.7	LER
		23	1450	2.92	19	20.69	155	3.16	6.89		2.6	20	0	115	.09	10	.8	1.0	MER
		23	19 7	47.28	19	22.03	155	6.73	6.65	1.9	2.9	25	0	73	.15	8	.9	1.6	UER
		23	2141	47.75	19	27.46	154	53.39	8.41	1.7	2.3	13	0	231	.16	19	3.4	1.3	LER
		23	2212	51.45	19	27.24	154	53.06	8.96	1.8	2.6	18	0	243	.13	20	2.7	.8	LER
		24	133	42.00	19	29.42	154	54.94	9.65	1.7	2.4	18	2	245	.17	19	2.4	.7	LER
		24	1150	31.73	19	24.38	155	16.17	1.72	1.8	2.5	15	0	132	.07	3	.4	.2	SPC
		24	22 1	20.45	19	23.36	155	16.96	1.86	1.7	2.9	18	0	62	.08	3	.4	.3	SPC
		25	640	3.89	19	20.29	155	8.43	8.00	1.8	2.5	25	0	77	.11	9	.7	.6	UER
		25	643	32.56	19	20.50	155	8.13	9.53	2.8	3.4	25	0	80	.09	9	.7	.4	UER
		25	7 1	14.76	19	40.20	156	2.73	6.04	3.3	3.4	26	2	274	.17	34	3.5	1.1	KON
		25	813	7.45	19	22.54	155	4.87	6.93	2.0	3.0	25	0	85	.13	9	.7	1.1	MER
		25	950	.59	19	24.78	154	58.43	7.89	2.2	3.3	19	0	172	.14	12	1.4	1.0	LER
		25	22 0	21.48	19	23.10	155	17.31	11.83	1.7	2.3	24	0	50	.06	3	.5	.2	LPC
		25	22 1	27.40	19	20.17	155	13.39	8.60	1.8	2.3	20	0	65	.11	6	.8	1.4	UER
		25	2252	41.83	19	23.25	155	14.66	2.68	1.7	2.5	16	0	64	.07	3	.4	1.8	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	DEC	25	2341	2.27	19	23.95	155	16.92	1.66	1.3	2.4	15	0	68	.04	3	.2	.1	SPC
		26	019	57.97	19	23.40	155	14.94	1.97	1.5	2.4	13	0	76	.05	5	.3	.0	GLN
		26	113	52.67	19	19.76	155	11.41	7.97	2.3	3.0	26	0	89	.12	6	.7	1.0	UER
		26	429	27.16	19	19.52	155	8.67	8.35	1.9	2.6	19	0	79	.09	10	.6	1.3	UER
		26	522	31.71	19	23.66	155	17.02	1.90	1.9	2.9	18	0	62	.10	3	.5	.3	SPC
		26	632	44.40	19	23.16	155	14.55	5.52	1.7	2.5	14	0	59	.06	3	.5	1.2	GLN
		26	649	31.72	19	23.23	155	14.53	3.79	1.6	2.5	15	0	59	.05	3	.5	.8	GLN
		26	1043	22.34	19	23.93	155	16.87	1.66	1.7	3.0	15	0	70	.05	3	.3	.2	SPC
		26	1753	31.54	19	23.31	155	14.66	4.05	2.0	2.9	16	0	59	.06	3	.4	.8	GLN
		26	1835	51.58	19	25.92	155	28.49	9.69	1.9	2.7	19	0	61	.06	14	.4	.3	UKF
		26	1843	17.19	19	22.82	155	25.07	9.56	1.7	2.8	22	0	56	.07	10	.4	.6	UKF
		26	2343	9.16	19	47.76	155	58.54	7.82	2.9	3.5	19	0	220	.19	42	5.8	1.6	KON
		27	323	21.53	19	18.74	155	23.17	5.66	1.5	2.5	22	0	105	.13	8	.8	1.8	SWR
		27	326	19.72	19	24.50	155	26.84	10.20	2.0	2.6	24	0	51	.10	12	.5	.4	UKF
		27	415	20.58	19	23.61	155	14.75	5.22	3.3	4.0	30	0	44	.12	5	.4	.6	GLN
		27	526	2.45	19	23.31	155	14.88	3.62	1.8	2.5	15	0	67	.06	3	.4	.9	GLN
		27	6 7	22.11	19	19.25	155	12.78	7.88	1.9	2.8	25	0	84	.14	7	.9	1.5	UER
		27	624	27.46	19	19.45	155	16.55	9.63	3.1	3.5	32	0	97	.10	6	.6	.5	KOA
		27	919	27.01	19	24.00	155	14.89	2.89	2.5	3.4	21	0	82	.12	4	.6	1.5	GLN
		27	1213	54.01	19	11.42	155	36.25	10.20	3.1	3.2	26	0	118	.20	20	1.4	.6	HFA
		27	1637	24.48	19	23.22	155	17.11	1.59	1.3	2.2	11	0	59	.06	3	.4	.2	SPC
		27	1730	1.84	19	20.36	155	13.49	9.33	2.0	2.9	20	0	64	.08	6	.6	.8	UER
		28	733	51.20	19	21.28	155	29.50	9.54	2.7	3.0	26	0	72	.12	11	.8	.6	HFA
		28	8 2	13.60	19	21.91	155	14.98	9.64	2.3	2.8	28	0	58	.12	4	.7	.4	UER
		28	1517	36.61	19	23.88	155	16.86	1.94	2.8	3.5	19	0	70	.09	3	.4	.2	SPC
		28	1624	41.58	19	18.38	155	23.56	5.15	2.1	2.7	19	0	107	.06	9	.5	.8	SWR
		28	1937	4.91	19	19.21	155	12.16	9.77	3.2	3.8	29	0	95	.11	7	.7	.3	UER
		29	159	18.76	19	22.00	155	18.17	1.56	1.9	2.6	15	0	53	.09	4	.5	.0	KOA
		29	345	37.31	19	23.32	155	17.19	1.52	2.4	3.4	18	0	55	.05	3	.2	.1	SPC
		29	4 0	7.59	19	23.31	155	17.07	1.54	1.4	2.3	11	0	60	.07	3	.5	.5	SPC
		29	452	11.12	19	29.80	154	49.05	8.70	1.8	2.5	11	0	321	.10	26	5.2	1.2	LER
		29	811	17.14	19	19.33	155	12.41	8.77	2.6	3.6	27	0	88	.12	7	.7	1.0	UER
		29	10 6	7.76	19	26.16	154	52.91	8.90	2.4	2.2	13	0	246	.09	20	3.1	.8	LER
		29	1110	25.46	19	23.51	155	14.92	2.95	2.4	2.9	15	0	77	.06	3	.4	1.2	GLN
		29	1242	18.25	19	19.80	155	11.17	7.25	2.0	2.6	23	0	89	.11	7	.7	1.1	UER
		29	15 6	16.40	19	23.12	155	14.61	5.54	2.1	2.9	14	0	61	.05	3	.5	.8	GLN
		29	1644	25.63	19	19.84	155	11.26	9.15	2.9	3.5	24	0	88	.09	6	.5	.7	UER
		29	1810	.90	19	23.05	155	4.35	7.39	2.0	2.5	18	0	96	.09	10	.6	1.3	MER
		29	1926	26.92	19	23.48	155	14.49	4.59	3.0	3.8	24	0	54	.10	3	.5	.8	GLN
		29	2035	20.16	19	20.53	155	11.57	8.17	2.2	3.0	22	0	74	.15	7	1.0	1.9	UER
		30	047	41.50	18	27.18	155	20.11	11.66	3.8	4.1	9	0	316	.07	92	23.5	.0	DIS
		30	419	51.59	19	19.52	155	15.93	9.58	3.0	3.8	30	0	91	.08	6	.4	.3	KOA
		31	842	9.41	19	17.54	155	21.51	6.11	2.0	3.0	19	0	123	.13	9	.9	2.4	SWR
		31	1841	52.01	19	23.09	155	17.45	2.85	2.5	2.8	20	0	127	.16	5	1.0	1.7	SPC
		31	19 3	1.25	19	22.33	155	15.54	9.24	2.9	3.4	25	0	130	.11	4	.7	.6	KOA
		31	2251	16.02	19	21.63	155	2.73	6.81	2.4	3.2	18	0	206	.12	14	2.1	1.2	MER

TABLE 6. HVO SUMMARY LIST - MAG 3.5 AND ABOVE

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JAN	1	0 2	48.09	18	50.09	155	4.68	16.61	3.6	4.1	28	0	269	.10	54	3.9	29.5	PPL
		1	854	19.82	18	40.44	155	2.80	50.32	4.7	4.2	15	1	310	.08	78	6.0	14.1	PPL
		1	1536	47.31	19	21.71	155	15.08	9.34	3.5	3.9	30	0	60	.10	4	.4	.5	KOA
		7	016	39.36	19	18.69	155	20.66	9.64	3.7	3.7	30	0	106	.11	6	.7	.4	SWR
		7	144	33.33	19	27.20	154	53.21	7.69	3.8	3.9	28	1	238	.09	19	.9	.5	LER
		11	14 5	40.17	19	30.77	155	16.17	24.49	4.2	4.2	32	0	61	.11	13	.7	1.8	GLN
		15	1241	45.31	19	24.55	155	17.59	14.21	4.4	4.5	35	0	46	.09	4	.5	.8	DEP
		15	1259	26.09	19	24.65	155	17.60	16.07	4.5	4.7	34	0	46	.10	4	.6	1.0	DEP
		16	1929	13.84	19	22.49	155	6.53	8.43	3.7	4.0	29	0	68	.09	8	.7	.6	UER
		16	20 0	3.85	19	21.29	154	59.61	2.18	3.2	3.8	25	0	206	.12	12	1.2	1.5	LER
		18	449	28.37	19	21.73	155	15.30	9.70	3.6	3.8	31	0	60	.09	4	.5	.3	KOA
		18	14 5	10.92	19	21.77	155	7.01	9.35	3.6	4.0	30	0	76	.10	8	.6	.5	UER
		18	1413	37.89	19	21.65	155	7.62	7.03	3.6	3.7	31	0	73	.09	8	.5	.7	UER
		18	2357	46.47	19	22.56	155	5.92	7.94	3.6	3.5	32	0	71	.10	7	.5	.7	MER
		21	1141	21.24	19	22.02	155	7.21	8.48	4.1	4.2	24	0	178	.12	10	1.3	.9	UER
		23	247	40.05	19	21.63	155	4.98	8.96	3.7	4.0	31	0	82	.13	9	.8	.6	MER
		23	820	14.11	19	21.82	155	7.92	8.91	3.2	3.5	26	0	79	.10	8	.6	.7	UER
		27	535	51.38	19	21.20	155	6.17	8.69	3.6	3.8	31	0	91	.11	7	.7	.5	UER
		27	2226	28.16	19	20.28	155	6.64	9.25	4.0	4.1	31	0	107	.10	7	.7	.5	UER
		29	1019	56.47	19	22.74	154	59.64	8.66	4.7	4.9	33	0	184	.14	10	1.2	.9	LER
		31	20 7	26.96	19	22.10	155	4.83	7.52	3.3	3.9	28	0	82	.13	9	.7	.9	MER
	FEB	3	1642	13.45	19	22.68	155	5.95	8.74	3.4	3.7	30	0	72	.11	7	.6	.6	MER
		3	2050	58.46	19	21.67	155	15.18	9.78	3.5	3.8	29	0	61	.08	4	.4	.3	KOA
		5	1149	4.48	19	21.42	155	8.12	8.14	3.1	3.6	28	0	71	.12	9	.7	.9	UER
		5	1919	16.71	19	20.45	155	7.11	9.27	3.2	3.6	28	0	96	.08	7	.6	.4	UER
		7	2248	12.26	19	19.77	155	7.46	7.82	3.2	3.7	27	0	103	.09	8	.5	.8	UER
		10	1820	8.55	19	20.33	155	6.87	9.50	2.8	3.5	25	0	102	.09	7	.6	.6	UER
		12	618	26.21	19	21.67	155	3.51	7.25	3.2	3.8	28	0	109	.12	11	.8	.8	MER
		13	049	51.86	19	31.33	155	57.70	9.68	3.6	3.1	27	0	234	.15	22	2.1	.4	KON
		18	1840	52.61	19	25.82	155	16.46	.69	2.8	4.1	21	1	128	.15	2	.6	1.2	SPC
		20	1951	14.91	20	24.95	156	1.29	31.75	5.1	4.6	5	0	162	.00	83	34.8	55.7	DIS
		24	550	19.19	19	22.20	155	6.65	8.59	4.2	4.2	29	0	71	.11	8	.6	.7	UER
		24	1442	32.63	19	23.27	155	4.81	7.82	3.2	3.6	23	0	129	.11	9	.7	1.0	MER
		24	1918	30.56	19	21.12	155	7.96	9.38	3.1	3.5	31	0	76	.11	9	.7	.4	UER
		25	1348	20.37	19	22.17	155	6.35	8.98	3.9	4.2	31	0	73	.09	7	.5	.4	UER
		28	2355	25.89	19	22.42	155	6.36	8.12	3.3	3.6	25	0	69	.11	8	.6	.8	UER
		29	1941	58.83	19	20.28	155	6.61	9.13	3.1	3.5	27	0	107	.11	7	.8	.5	UER
	MAR	6	1223	4.59	19	21.60	155	1.95	6.04	3.5	4.0	29	0	160	.11	13	.7	1.1	MER
		7	1625	34.64	19	21.78	155	7.17	8.24	3.7	4.0	30	0	74	.12	8	.6	.8	UER
		9	5 5	17.66	19	18.54	155	20.65	9.37	2.8	3.5	30	0	110	.09	6	.5	.4	SWR
		10	1832	40.95	19	20.30	155	7.13	9.05	2.8	3.6	26	0	99	.13	7	.9	.7	UER
		11	4 2	42.23	19	21.60	155	15.45	8.98	3.1	3.6	25	0	67	.11	5	.7	.8	KOA
		13	616	16.38	19	8.69	155	30.14	11.26	3.5	3.5	28	3	156	.13	24	1.0	.4	LSW
		19	1324	30.32	19	21.32	155	3.43	8.11	3.9	4.1	29	0	110	.12	11	.8	1.0	MER
		20	1313	19.86	19	19.83	155	6.53	9.21	3.1	3.5	27	0	120	.09	7	.7	.5	UER
		21	931	33.54	19	22.23	155	15.26	9.78	3.3	3.6	20	0	55	.11	4	.8	1.6	KOA
		21	2031	24.60	19	20.22	155	8.61	8.42	3.2	3.6	27	0	74	.11	9	.6	.7	UER
		22	2048	26.94	19	21.85	155	5.03	8.75	3.3	3.5	29	0	77	.11	8	.7	.6	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	MAR	23	15 6	3.24	19	18.82	155	18.38	9.48	3.7	3.9	30	0	84	.13	8	.6	.7	KOA
		26	844	47.75	19	20.67	155	10.80	9.43	2.9	3.5	18	0	74	.08	8	.6	1.2	UER
		29	5 9	52.00	19	21.83	155	15.19	9.73	3.7	4.0	27	0	59	.12	4	.7	.5	KOA
		30	1452	10.26	19	20.01	155	7.32	9.50	3.4	3.7	29	0	101	.10	8	.8	.5	UER
	APR	2	814	6.50	19	20.62	155	6.50	9.37	4.6	4.6	33	0	101	.10	7	.6	.4	UER
		2	914	11.70	19	38.57	155	59.93	6.64	3.4	3.6	24	2	221	.21	29	1.6	1.2	KON
		2	955	3.26	19	19.86	155	12.98	8.41	3.6	3.9	28	0	72	.09	7	.5	.7	UER
		3	143	42.22	19	23.72	155	17.02	3.91	3.0	3.6	32	0	37	.16	3	.6	.9	SPC
		6	312	52.13	19	20.59	155	12.54	9.21	3.4	3.7	29	0	67	.13	7	.8	.9	UER
		11	1535	49.18	19	20.95	155	3.56	5.33	3.4	3.7	26	0	99	.14	10	1.0	.9	MER
		12	726	23.45	19	18.94	155	21.56	9.41	3.0	3.5	27	0	103	.12	8	.7	.8	SWR
		14	22 1	36.02	19	27.63	154	53.07	8.16	3.3	3.5	29	0	244	.15	19	2.3	.9	LER
		20	711	3.11	19	21.70	155	15.25	9.50	3.5	3.7	31	0	60	.11	4	.5	.5	KOA
		21	1813	34.49	18	47.70	155	.30	49.81	4.6	4.2	22	0	278	.09	63	4.8	9.0	PPL
		22	554	4.92	19	31.50	155	18.64	11.84	3.4	3.6	32	0	61	.14	15	.8	.3	NER
		22	833	.97	19	18.57	155	20.64	9.76	3.4	3.7	26	0	109	.11	6	.7	.4	SWR
		23	1229	53.77	19	21.88	155	5.15	8.95	4.2	4.3	28	0	77	.11	8	.7	.6	MER
		26	2144	41.56	19	23.26	155	16.96	5.40	3.1	3.8	26	0	44	.10	5	.4	.6	SPC
	MAY	1	1852	4.85	19	18.43	155	23.46	6.63	3.2	4.0	31	0	107	.17	9	.8	1.6	SWR
		9	614	43.37	19	21.55	155	7.95	9.72	3.4	3.6	30	0	71	.08	9	.5	.3	UER
		10	827	4.45	19	23.27	155	4.48	7.73	3.5	3.6	32	0	94	.12	10	.5	.8	MER
		12	555	11.56	19	20.33	155	11.66	9.26	3.7	4.2	31	0	77	.10	7	.6	.7	UER
		17	145	6.09	19	19.78	155	16.26	9.60	3.6	3.8	32	0	91	.09	5	.5	.4	KOA
		17	2054	49.19	19	19.66	155	8.60	9.51	3.0	3.6	28	0	78	.09	10	.6	.2	UER
		18	616	41.31	19	19.76	155	7.48	8.63	3.5	4.0	32	0	102	.12	8	.8	.6	UER
		19	1712	5.53	19	19.80	155	7.74	9.29	3.8	4.1	31	0	96	.12	8	.8	.6	UER
		21	1953	9.83	19	21.08	155	6.06	9.27	3.2	3.5	31	0	94	.11	7	.8	.5	UER
		22	1852	8.44	19	21.68	155	15.11	10.51	3.7	4.0	31	0	60	.09	4	.5	.2	KOA
		23	1731	20.18	19	20.44	155	6.81	9.38	4.0	4.0	31	0	101	.11	7	.8	.5	UER
		23	2324	7.63	20	54.93	156	23.40	49.09	4.3	4.2	34	2	206	.14	169	3.2	1.6	DIS
		28	12 8	45.51	19	23.03	155	4.84	8.11	3.3	3.7	26	0	98	.09	9	.5	.6	MER
		31	627	21.09	20	14.77	155	53.55	31.66	3.6	3.3	9	0	303	.04	70	5.8	9.7	KOH
		31	832	9.99	20	15.86	155	46.17	2.68	4.1	3.9	6	2	175	.07	75	10.1	5.6	DIS
	JUN	4	2250	51.27	19	21.54	155	7.10	9.37	4.1	4.4	32	0	78	.12	8	.7	.5	UER
		7	1039	37.57	19	19.15	155	15.64	31.40	3.5	3.3	35	0	93	.09	6	.7	1.3	DEP
		10	015	3.85	19	20.07	155	7.32	8.55	3.3	3.7	32	0	100	.11	8	.7	.6	UER
		10	22 5	5.23	19	19.78	155	8.51	9.55	3.2	3.7	33	0	79	.09	10	.6	.2	UER
		14	1417	15.19	19	24.25	155	15.84	4.37	3.2	3.9	24	0	109	.14	3	.8	1.0	SPC
		16	917	15.92	19	21.81	155	4.84	7.79	3.4	3.6	31	0	79	.09	9	.5	.6	MER
		18	12 1	11.60	19	22.53	155	6.06	7.50	3.4	3.6	28	0	69	.11	7	.6	.9	UER
		20	3 6	23.81	19	11.44	155	32.81	10.64	3.1	3.5	23	0	132	.17	22	1.3	.6	LSW
		21	1539	5.68	19	22.49	155	13.27	6.80	2.9	3.6	26	0	54	.10	6	.5	1.0	UER
		21	1816	27.24	19	22.15	155	12.92	5.39	3.1	3.5	28	0	50	.12	5	.5	.5	UER
		21	19 3	34.10	19	22.27	155	13.13	6.15	3.4	3.7	27	0	54	.09	6	.4	1.0	UER
		21	1936	29.86	19	22.10	155	12.95	6.06	3.1	3.6	20	0	61	.13	9	.8	2.6	UER
		21	20 0	34.66	19	22.34	155	13.23	5.30	3.3	3.9	26	0	63	.13	7	.6	.7	UER
		21	2015	12.03	19	22.81	155	5.04	9.38	3.2	3.5	30	0	84	.11	9	.7	.6	MER
		21	2241	19.86	19	22.36	155	12.75	4.87	2.8	3.6	28	0	77	.16	5	.7	.9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	JUN	22	3 4	39.56	19	22.64	155	14.46	2.53	3.2	4.0	32	0	50	.15	4	.6	1.5	UER
		22	341	9.92	19	23.13	155	14.60	5.37	3.0	3.5	30	0	46	.11	3	.4	.4	GLN
		23	052	25.03	19	21.58	155	15.54	2.17	2.9	3.7	29	0	62	.16	4	.6	2.0	KOA
		24	1947	53.85	19	20.31	155	11.90	9.23	3.6	3.8	29	0	76	.10	7	.5	.5	UER
		25	129	52.49	19	23.27	155	16.91	3.77	2.5	3.5	25	0	45	.14	3	.7	1.0	SPC
	JUL	5	140	43.57	19	24.07	155	3.59	8.08	3.1	3.6	21	0	119	.12	11	1.0	.8	MER
		6	1345	47.97	19	21.61	155	15.27	9.41	3.2	3.5	28	0	62	.09	4	.5	.6	KOA
		11	2326	10.83	19	21.11	155	13.35	9.48	3.2	3.5	31	0	55	.09	6	.5	.4	UER
		14	2 5	2.37	19	23.21	155	14.55	4.89	3.3	3.7	25	0	55	.12	3	.6	.7	GLN
		14	1414	38.07	19	22.65	155	12.76	4.88	3.1	3.8	25	0	97	.14	8	.7	1.0	UER
		15	854	39.83	19	21.66	155	7.67	7.81	3.3	3.5	28	0	72	.14	8	.7	.8	UER
		16	111	28.75	19	10.70	155	32.65	8.83	3.2	3.8	27	0	136	.18	23	1.3	1.4	LSW
		18	2331	25.59	19	19.83	155	7.64	9.32	3.4	4.0	27	0	98	.10	8	.8	.5	UER
		22	240	53.05	19	22.63	155	4.62	9.20	3.7	4.1	34	0	90	.13	9	.8	.5	MER
		22	2149	45.42	19	23.77	155	14.85	4.82	3.2	3.6	31	0	56	.14	3	.5	.7	GLN
		23	1938	17.12	19	20.05	155	8.39	9.55	3.7	4.0	32	0	80	.10	10	.6	.3	UER
		24	122	14.65	19	13.35	155	35.54	10.32	3.4	3.5	29	0	115	.19	17	1.2	.5	HEA
		24	2346	30.98	19	23.34	155	14.74	5.03	3.3	3.9	28	0	45	.12	3	.5	.6	GLN
		27	714	26.85	19	22.27	155	4.89	9.39	4.0	4.1	32	0	83	.12	9	.9	.5	MER
		27	2037	12.69	19	23.49	155	14.57	4.70	3.6	4.0	30	0	46	.12	3	.5	.6	GLN
		28	16 3	19.82	19	23.73	155	23.92	9.67	3.5	3.3	31	0	66	.12	7	.6	.5	UKF
		30	5 9	43.69	19	20.40	155	6.66	8.04	3.8	4.1	33	0	104	.09	7	.5	.4	UER
		30	2319	14.05	19	20.27	155	12.19	8.62	3.0	3.5	31	0	75	.13	6	.6	.6	UER
		31	1651	36.05	19	24.28	155	15.86	4.61	3.3	3.8	29	0	109	.12	3	.5	.6	SPC
	AUG	1	1639	18.04	19	23.58	155	14.80	6.21	3.6	3.8	25	0	85	.12	6	.6	1.2	GLN
		2	637	1.42	19	21.52	155	15.11	9.87	3.2	3.5	29	0	62	.10	5	.6	.4	KOA
		3	523	31.91	19	26.50	154	53.67	8.88	3.0	3.5	27	0	227	.09	19	1.4	.5	LER
		6	338	55.38	19	22.71	155	5.58	8.12	3.2	3.6	30	0	76	.11	8	.6	.6	MER
		7	131	45.35	19	21.29	155	2.69	6.59	3.3	3.8	27	0	140	.11	12	.8	.8	MER
		7	1142	19.32	19	19.17	155	11.98	9.06	3.1	3.8	23	0	98	.10	7	.7	.9	UER
		9	13 9	33.49	19	23.37	155	14.62	4.99	3.4	3.7	30	0	45	.13	3	.5	.6	GLN
		10	19 3	47.59	19	19.17	155	13.31	10.12	3.5	3.8	32	0	74	.10	7	.6	.2	UER
		14	17 1	.37	19	21.44	155	8.07	8.44	3.2	3.6	29	0	71	.10	9	.5	.6	UER
		16	231	8.43	19	21.89	155	3.90	7.44	2.4	3.5	18	0	114	.08	10	.7	.6	MER
		26	319	43.60	19	21.78	155	15.06	10.15	3.6	4.0	31	0	59	.10	4	.6	.3	KOA
		28	1859	55.45	19	21.29	155	13.39	9.66	3.0	3.6	30	0	55	.09	6	.5	.3	UER
		29	2036	25.54	19	27.89	154	52.91	7.68	2.9	3.5	18	0	258	.14	19	3.2	1.0	LER
		31	1041	8.47	19	23.42	155	29.67	10.18	4.0	4.1	35	0	40	.13	13	.6	.3	UKF
		31	14 0	38.53	19	19.89	155	7.01	9.05	3.4	3.8	30	0	110	.12	7	.9	.6	UER
	SEP	2	1020	26.76	19	21.18	155	3.20	7.62	3.5	4.0	31	0	118	.11	11	.8	.5	MER
		3	116	55.89	19	19.77	155	10.60	8.90	3.1	3.5	33	0	91	.12	7	.7	.6	UER
		3	1523	20.02	19	22.93	155	24.70	9.57	2.9	3.5	19	0	82	.11	9	.8	.8	UKF
		3	22 3	41.40	19	28.89	154	50.99	7.62	3.5	3.8	27	0	269	.14	22	3.2	.9	LER
		4	1310	54.24	19	19.79	155	16.32	9.62	3.9	4.0	33	0	91	.10	5	.5	.4	KOA
		6	534	15.20	19	26.46	154	54.22	7.97	3.5	4.0	30	0	214	.13	18	1.7	.7	LER
		6	1919	.38	19	21.23	155	16.05	4.52	3.6	4.2	26	0	76	.13	7	.7	1.0	KOA
		7	22 1	16.28	19	22.20	155	4.73	8.28	3.5	4.0	32	0	85	.12	9	.7	.6	MER
		8	4 1	55.52	19	18.45	155	20.83	9.51	3.2	3.6	29	0	113	.09	7	.5	.3	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	SEP	10	625	18.62	18	48.97	155	13.54	36.33	3.2	4.0	28	2	266	.14	53	2.1	8.1	PPL
		11	5 4	30.51	19	22.13	155	4.22	7.61	3.6	4.0	28	0	94	.10	10	.6	.7	MER
		15	2 1	25.72	19	21.97	155	5.05	8.83	3.6	4.0	32	0	78	.12	8	.8	.5	MER
		21	935	49.78	19	20.78	155	6.54	9.32	3.2	3.8	29	0	97	.11	7	.7	.5	UER
		24	2251	31.28	19	20.61	155	6.68	8.95	2.9	3.7	32	0	99	.11	7	.7	.5	UER
		28	914	53.40	19	20.00	155	13.13	10.04	3.7	4.2	34	0	68	.10	7	.6	.2	UER
		29	1258	3.96	19	21.97	155	5.10	8.69	3.3	3.8	29	0	77	.11	8	.8	.5	MER
	OCT	3	753	8.58	19	19.79	155	7.26	9.29	3.4	3.6	31	0	107	.11	8	.8	.5	UER
		3	1721	45.50	19	20.32	155	8.02	9.55	3.1	3.6	31	0	84	.10	9	.6	.3	UER
		5	558	50.57	19	20.11	155	6.59	9.45	3.8	4.1	30	0	112	.11	7	.8	.5	UER
		5	955	39.64	19	22.19	155	4.79	7.46	3.5	3.9	30	0	84	.10	9	.5	.7	MER
		6	822	12.93	19	18.17	155	23.49	6.08	2.6	3.6	30	0	109	.18	9	.9	2.0	SWR
		7	311	37.96	19	22.68	155	5.39	9.26	3.5	3.9	31	0	79	.10	8	.6	.4	MER
		8	2253	53.01	19	23.12	155	6.72	9.17	3.2	3.7	29	0	66	.12	9	.7	.7	GLN
		14	2317	6.95	19	22.67	155	5.12	9.09	2.7	3.5	28	0	82	.12	8	.8	.8	MER
		17	557	16.75	19	20.04	155	8.27	9.33	2.7	3.6	29	0	82	.10	9	.6	.4	UER
		17	949	11.99	19	21.60	155	6.07	8.78	2.6	3.6	26	0	83	.12	7	.7	.9	UER
		19	2311	50.41	19	20.31	155	6.99	9.03	2.7	3.6	28	0	101	.11	7	.7	.6	UER
		21	225	25.95	19	27.18	154	51.82	8.48	2.9	3.5	30	0	267	.09	22	1.7	.5	LER
		22	1243	23.91	19	20.29	155	11.42	10.38	3.4	4.1	12	0	104	.16	8	1.4	2.0	UER
		22	1411	25.90	19	21.20	155	3.33	8.19	3.5	3.9	28	0	113	.11	11	.9	.6	MER
		24	519	46.49	19	20.02	155	8.19	9.32	2.6	3.5	26	0	84	.10	9	.7	.5	UER
		26	7 7	25.35	19	21.74	155	15.18	9.98	3.3	3.6	27	0	62	.11	4	.7	.5	KOA
	NOV	2	1815	46.37	19	19.10	155	13.42	10.12	3.7	4.0	29	0	73	.08	7	.5	.2	UER
		2	1936	16.05	19	22.50	155	5.86	8.74	3.3	3.7	29	0	71	.12	7	.7	.7	MER
		6	2340	47.26	19	23.58	155	25.04	9.75	3.3	3.6	30	0	57	.12	9	.6	.5	UKF
		8	1951	5.80	19	22.36	155	6.00	7.92	2.9	3.7	29	0	70	.10	7	.5	.7	UER
		9	1533	3.39	19	20.60	155	4.14	8.06	3.8	4.1	32	0	107	.12	9	.9	.6	MER
		10	1815	16.62	19	20.71	155	11.73	9.94	3.1	3.7	29	0	71	.10	7	.7	.3	UER
		12	1654	46.51	19	21.34	155	2.46	7.12	3.5	4.1	31	0	148	.13	12	1.0	.7	MER
		12	20 7	21.45	19	56.64	155	36.00	11.20	3.5		26	0	145	.14	28	1.9	.7	KOH
		13	1114	3.35	19	21.97	155	5.07	9.18	3.7	4.1	28	0	77	.11	8	.7	.6	MER
		16	223	35.43	19	22.59	155	4.70	9.20	3.6	4.1	32	0	88	.12	9	.8	.5	MER
		17	551	48.55	19	32.32	155	14.17	24.99	3.7	3.7	32	0	66	.11	17	.7	2.1	NER
		18	2224	43.77	19	23.87	155	16.89	3.79	3.0	3.8	24	0	69	.13	3	.7	1.0	SPC
		26	1015	58.54	19	24.23	155	15.87	4.49	3.1	3.8	27	0	46	.13	3	.6	.8	SPC
		28	1214	16.32	19	23.53	155	17.17	2.29	2.7	3.6	21	0	56	.12	3	.5	1.6	SPC
		29	2210	28.00	20	57.05	156	23.23	42.02	3.3	3.7	3	2	360	.00	25	89.7	41.8	DIS
		30	1746	10.06	19	19.46	155	11.39	9.31	3.3	3.8	28	0	96	.10	7	.6	.6	UER
		30	1818	45.29	19	19.34	155	11.28	9.65	3.0	3.5	29	0	100	.11	7	.7	.3	UER
	DEC	1	444	17.47	19	21.64	155	15.23	9.40	3.1	3.8	32	0	61	.10	4	.5	.6	KOA
		4	350	50.82	19	20.05	155	8.13	8.82	3.0	3.8	29	0	85	.11	9	.7	.5	UER
		5	257	18.06	19	23.49	155	17.02	1.93	2.1	3.5	17	0	46	.10	3	.5	.3	SPC
		6	626	58.13	19	21.53	155	7.61	9.45	3.8	4.1	29	0	74	.10	8	.6	.5	UER
		7	2340	22.17	19	23.97	155	16.86	2.99	2.7	3.6	25	0	47	.13	3	.6	1.2	SPC
		8	1415	42.67	19	20.09	155	10.57	8.99	2.9	3.7	29	0	84	.08	7	.5	.6	UER
		9	1528	49.90	19	23.73	155	17.19	2.76	3.0	3.8	24	0	62	.13	3	.6	1.3	SPC
		11	1751	47.04	19	20.75	155	12.04	9.40	2.3	3.5	24	0	69	.10	7	.7	.9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	REMK
1976	DEC	13	1726	42.07	19	20.20	155	7.42	9.67	3.4	4.0	29	0	96	.12	8	.9	.4	UER
		15	440	42.94	19	19.60	155	11.94	9.81	2.9	3.5	33	0	89	.12	6	.7	.3	UER
		16	2121	35.55	19	25.32	155	17.03	.57	2.2	3.7	19	0	48	.14	4	.7	.2	SPC
		17	339	14.61	19	25.69	155	16.70	.80	2.9	4.1	28	0	48	.10	4	.5	.5	SPC
		17	2031	43.29	19	20.00	155	6.92	9.49	3.2	3.7	31	0	109	.09	7	.7	.5	UER
		18	4	1 .60	19	20.14	155	7.01	9.39	4.8	4.9	32	0	104	.09	7	.6	.5	UER
		26	2343	9.16	19	47.76	155	58.54	7.82	2.9	3.5	19	0	220	.19	42	3.8	1.6	KON
		27	415	20.58	19	23.61	155	14.75	5.22	3.3	4.0	30	0	44	.12	3	.4	.6	GLN
		27	624	27.46	19	19.45	155	16.53	9.63	3.1	3.5	32	0	97	.10	6	.6	.5	KOA
		28	1517	36.61	19	23.88	155	16.86	1.94	2.8	3.5	19	0	70	.09	3	.4	.2	SPC
		28	1937	4.91	19	19.21	155	12.16	9.77	3.2	3.8	29	0	95	.11	7	.7	.3	UER
		29	811	17.14	19	19.33	155	12.41	8.77	2.6	3.6	27	0	88	.12	7	.7	1.0	UER
		29	1644	25.63	19	19.84	155	11.26	9.15	2.9	3.5	24	0	88	.09	6	.5	.7	UER
		29	1926	26.92	19	23.48	155	14.49	4.59	3.0	3.8	24	0	54	.10	3	.5	.8	GLN
		30	047	41.50	18	27.18	155	20.11	11.66	3.8	4.1	9	0	316	.07	92	23.3	.0	DIS
		30	419	51.59	19	19.52	155	15.93	9.58	3.0	3.8	30	0	91	.08	6	.4	.3	KOA

TILT INSTRUMENTATION

In addition to the seismic network, a network of spirit-level tilt stations (dry), borehole tiltmeters, and water-tube (wet) tilt stations is maintained. The network is located on the summits and flanks of Kilauea and Mauna Loa Volcanoes. In December 1976 the tilt network consisted of:

73 spirit level tilt stations (dry)

8 borehole tiltmeters

10 water-tube tilt stations (wet)

1 continuous recording Ideal-Arrowsmith tiltmeter

Dry and wet tilt stations are generally occupied at irregular intervals. Critical stations are measured more frequently than the entire network. Digital borehole tiltmeters data are telemetered by VHF radio and recorded at the observatory. An Ideal-Arrowsmith mercury-pool capacitor-type tiltmeter with a 1 m base is located at the Uwekahuna vault, and the analog signal is recorded at the observatory.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Location of and essential data on each tiltmeter station are listed in table 8.

Table 7.--Tilt Coordinates at Uwekahuna

Date (1976)	N-S	E-W
Jan 4	573	402
11	569	401
18	567	399
25	564	401
Feb 1	562	401
8	560	399
15	569	398
22	558	398
29	575	396
Mar 7	556	396
14	557	392
21	556	393
28	556	391
Apr 4	556	389
11	557	388
18	558	390
25	558	387
May 2	558	388
9	559	388
16	560	390
23	561	387
30	561	385
Jun 6	562	384
13	561	382
20	560	382
27	559	383

Table 7.--Tilt Coordinates at Uwekahuna (Continued)

Date (1976)	N-S	E-W
Jul 4	560	380
11	559	382
18	558	387
25	558	385
Aug 1	558	380
8	558	382
15	558	379
22	556	377
29	582	389
Sep 5	549	399
12	545	408
19	540	412
26	536	412
Oct 3	535	410
10	534	407
17	536	402
24	537	397
31	538	393
Nov 7	539	388
14	539	386
21	541	382
28	541	381
Dec 5	543	379
12	543	377
19	543	373
26	544	369

Table 8.--U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N. Deg. Min.	Long. W. Deg. Min.			
Tree Molds	TM	19 - 26.3	155 - 17.3		50.79	NS. and EW.
Sand Spit	SS	19 - 24.1	155 - 16.8		25.40	Equilateral triangle.
Keamoku	Kea	19 - 25.1	155 - 19.0		47.55	do
Ahua Kamokukolau	Kam	19 - 22.7	155 - 16.6		50.79	do
Kipuka Nene	KN	19 - 19.4	155 - 16.7		47.73	do
Hilina Pali	HP	19 - 18.2	155 - 18.6		47.73	do
Kapapala Ranch	Kap	19 - 20.5	155 - 23.8		50.79	do
Mehana	M	19 - 26.2	155 - 14.3		25.00	do
Uwekahuna	U	19 - 25.5	155 - 17.4		50.79	do
Uwekahuna Vault		19 - 25.4	155 - 17.6	Daily	3.48	NS. and EW.

Table 9. Tilt coordinates and changes at bases around Kilauea caldera. (See fig.10)

Tilt base	Date (1976)	Tilt coordinates N-S	E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1975)
Uwekahuna (U on fig.10)	11 May	597.6	346.8	8.96	N73.7°W	19 Dec
Tree Molds (TM)	11 May	494.7	513.3	1.50	N47.7°W	16 Dec
Sand Spit (SS)	14 Apr	805.8	855.2	12.69	S44.0°E	18 Dec
Keamoku (Kea)	13 Apr	576.5	496.6	7.49	S33.9°E	17 Dec
Ahua Kamokukolau (Kam)	14 Apr	703.6	554.9	12.14	N6.8°W	18 Dec
Kipuka Nene (KN)	21 Apr	156.2	576.7	4.65	N41.0°W	15 Dec
Hilina Pali (HP)	15 Apr	309.7	550.8	6.80	N30.9°W	15 Dec
Kapapala (Kap)	13 Apr	513.9	517.4	3.10	S69.0°E	17 Dec
Mehana (M)	12 Apr	548.8	560.2	3.39	S7.8°W	16 Dec

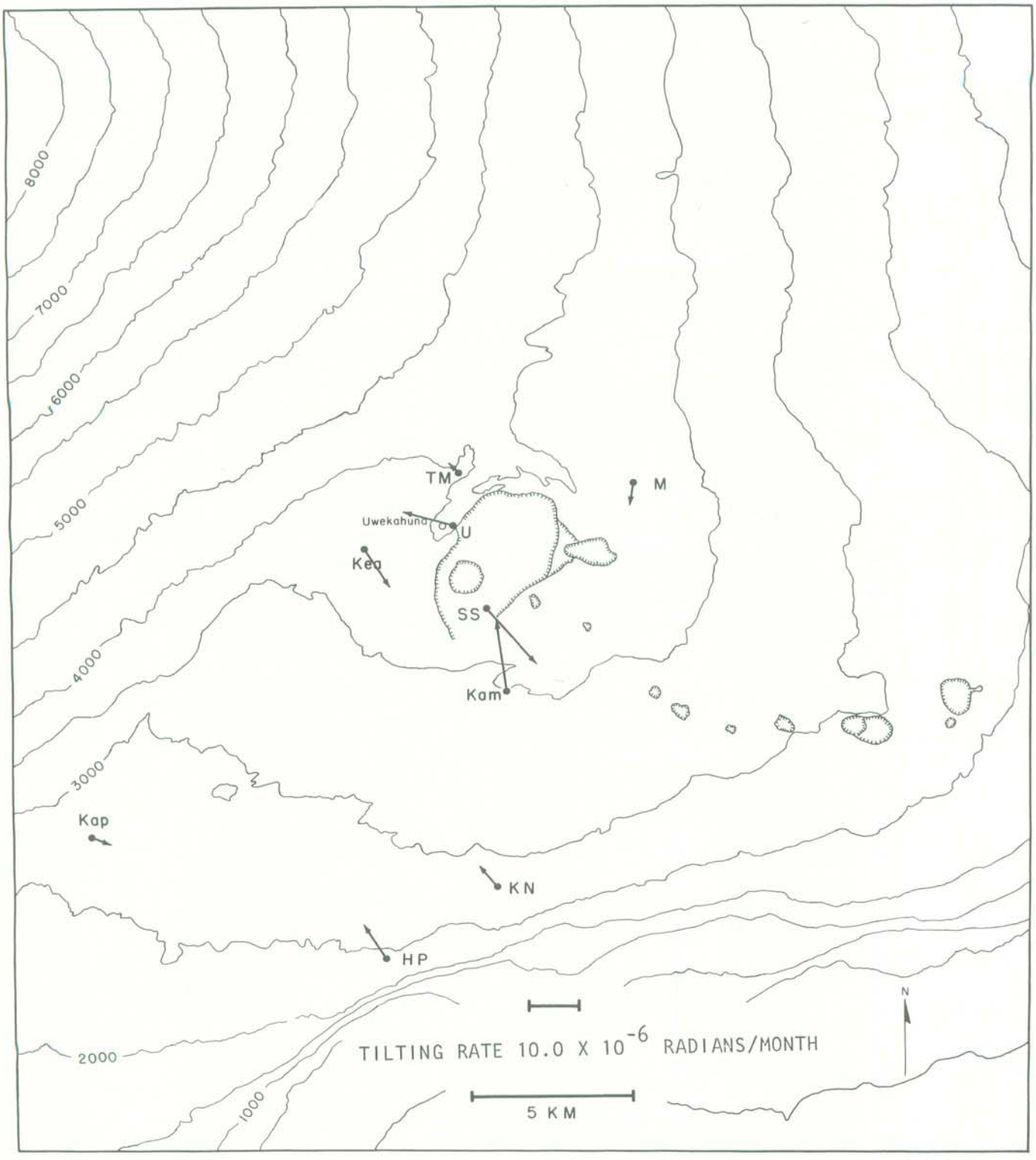

Figure 10 December 1975 to April 1976 tilting of the ground around Kilauea Caldera. The vector depicting tilt at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 8 for explanation of abbreviations.

Table 10. Tilt coordinates and changes at bases around Kilauea caldera. (See fig. 11)

Tilt base	Date (1976)	Tilt coordinates N-S	E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1976)
Uwekahuna (U on fig. 11)			Not Occupied This Epoch			
Tree Molds (TM)			Not Occupied This Epoch			
Sand Spit (SS)			Not Occupied This Epoch			
Keamoku (Kea)			Not Occupied This Epoch			
Ahua Kamokukolau (Kam)			Not Occupied This Epoch			
Kipuka Nene (KN)	28 Sep	164.6	564.0	2.82	N57.8°W	21 Apr
Hilina Pali (HP)			Not Occupied This Epoch			
Kapapala (Kap)	27 Sep	514.7	522.1	0.85	N80.0°E	13 Apr
Mehana (M)	27 Sep	535.9	558.6	2.32	S7.2°W	12 Apr

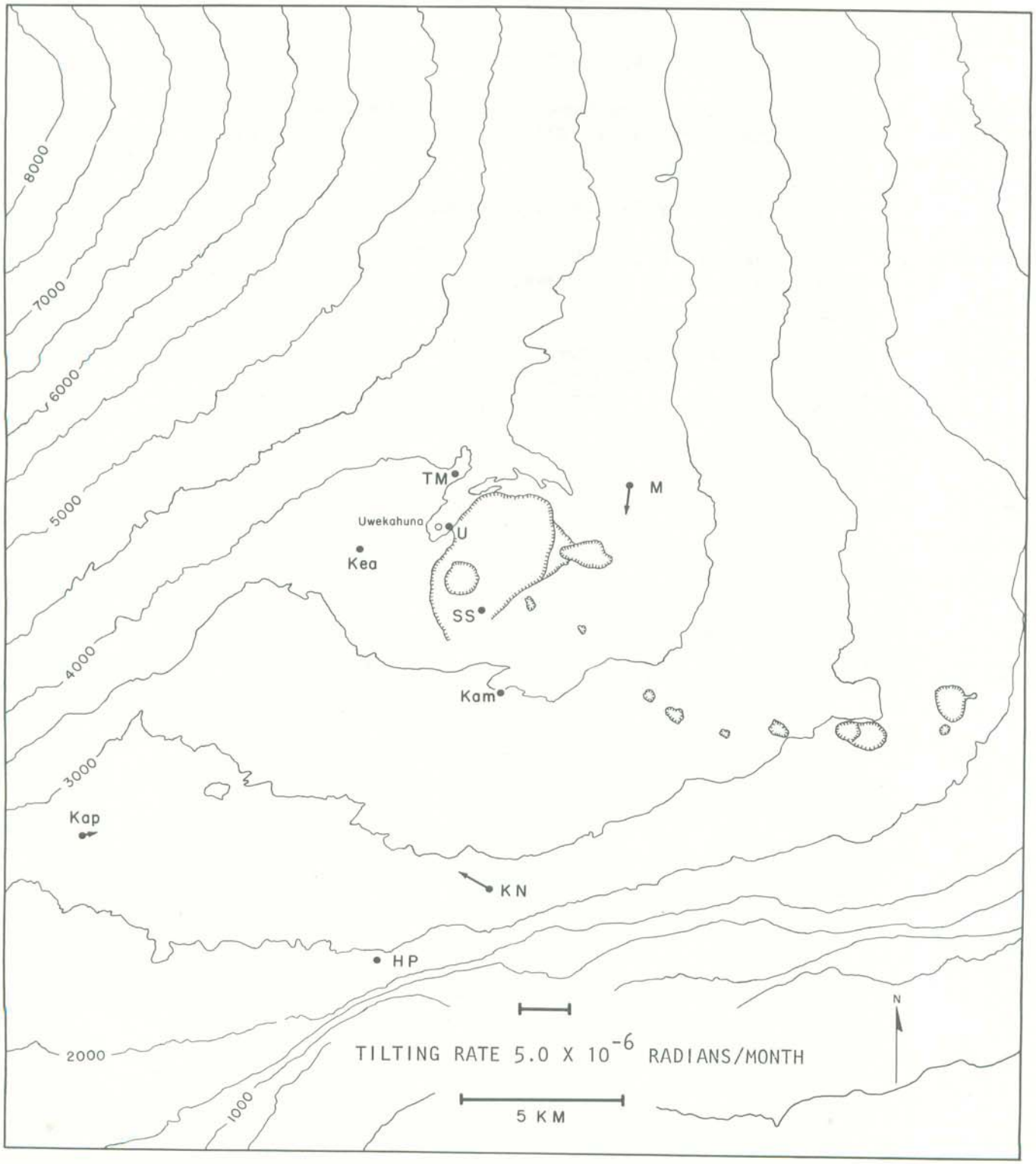

Figure 11 April to September 1976 tilting of the ground around Kilauea Caldera.

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☆ GPO 789-107/88

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Hawaiian Volcano Observatory
1977 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 77
January to December 1977
By Robert Y. Koyanagi, Karen Meagher,
Fred W. Klein, and Gary S. Puniwai

Chronological Summary
By John P. Lockwood

Open-File Report 2007-1337
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 77

JANUARY TO DECEMBER 1977

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California

1978

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 77
JANUARY TO DECEMBER 1977

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summaries present data gathered during the year together with a chronological narrative intended to describe in geologic terms the volcanic activity associated with the seismic events and tilt data included. The seismic, tilt, and chronological summaries are offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has recently shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters and repeated measurements at numerous spirit-level tilt stations ("dry" tilt). To maintain continuity with past summaries, we will continue to publish weekly data from the Uwekahuna vault tiltmeter (Kilauea summit) and from water-tube tilt stations as they are reoccupied. A comprehensive summary of the numerous and varied tilt and deformation data now gathered is beyond the scope of this publication.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 (Koyanagi, et al.) for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

Publication of the summary represents a group effort by the staffs of the Hawaiian Volcano Observatory and the National Center for Earthquake Research in Menlo Park, California.

Chronological Summary-1977

by

John P. Lockwood

Mauna Loa and Kilauea volcanoes both were known to be inflating as 1977 began. Seismic activity was at a low level beneath Mauna Loa, but microearthquakes were numerous beneath Kilauea's caldera and upper east rift zone. Although small amounts of lava had reached Kilauea's surface in response to the M=7.2 earthquake of 29 November, 1975, no significant eruption had occurred on this volcano since 31 December, 1975. This was the longest period of Kilauea eruptive quiescence since 1955-59.

On the evening of 8 February, however, at 1850 hours, several felt earthquakes signalled the onset of a seismic crisis that was to last for seven hours. During this period the Ideal-Aerosmith tiltmeter recorded a precipitous 7 rad deflation at Kilauea's summit, hence an eruption was anticipated. Lava never reached the surface, however. Geodetic measurements during the following days revealed that a major intrusion of lava had occurred in the upper east rift zone between Kokoolau and Pauahi craters. Geodimeter lines across the intrusive zone showed extension up to 25 cm. Continuously recording tiltmeters also documented the transfer of magma from Kilauea's summit to her upper east rift. Electrical self-potential, magnetometer, and strain measurements on open cracks in the area, combined with the geodetic and seimic data, make this magma-transfer episode the best-documented such event in Kilauea's history.

The Mauna Loa summit geodimeter network was reoccupied in July, and a significant decrease in the rate of inflation was observed. On Kilauea, however, geodimeter, tilt, and levelling surveys documented that a significant inflation had occurred near Heiheiahulu, a 1750 (?) satellite shield on the middle east rift zone. Microearthquakes were also abnormally frequent near Heiheiahulu. This new information and the events of 8 February now amply demonstrated that magma was no longer being stored for long periods in a holding reservoir beneath Kilauea's summit--the "gate valve" to the east rift zone was open, and magma was now entering the rift zone (Dzurisin and others, 1979).

Another seismic crisis began on the evening of 12 September at 2130 hours, and precipitous deflation of Kilauea's summit was recorded by tiltmeters again, as on 8 February. This time deflation continued, however, and seismic activity accompanied by harmonic tremor demonstrated subsurface magma migration well east of the 8 February intrusion area. Twenty-two hours later, shortly after 1900 hours on 13 September, glow was sighted on the middle east rift zone by a fisherman at sea. Aerial inspection that evening showed that an en echelon set of low fountains was erupting from a three-km-long zone between Puu Kalalua and Puu Kauka. During the night the zone of ground cracking and discontinuous, short-lived fountaining lengthened to about 5.5 km, but by morning fountaining was restricted to an area near the eastern end of the active zone. A lava flow moved about a kilometer southeast and

threatened an isolated ranch house by the evening of 15 September. Eruptive activity waxed and waned for the next several days, until on 18 September a new vent opened on the west end of the active zone, west of Kalalua. Eruptive activity was irregular and minor for the next week, and no lava was erupted on 21, 22, 24, or 25 September.

On the early morning of 26 September a major eruptive phase began at vents near the middle of the active zone at 590 m elevation. Fountains varied from 50-130 m in height and a major lava flow headed east-northeast. On 28 September it turned south-southeast, toward the coastal village of Kalapana. Almost all lava produced by the 26 September vent was now channeled into the Kalapana flow, and the flow advanced at 20-300 m/hr., reaching 365 m elevation by day's end. By the end of 29 September, the flow had reached about 140 m elevation. The flow continued to advance toward Kalapana slowly and on 30 September, the decision was made to evacuate the village. Various methods to attempt lava diversion in order to protect the village were discussed, but the probability of success was considered so low that it was decided to let the lava run its course.

On the morning of 1 October, the eruptive fountains appeared to be waning, and the lava flow began to thicken and widen above Kalapana, greatly slowing its rate of advance. The fountains ceased activity at 1610 hours, and advance of the flow front slowed to less than 1 m/day by 3 October. All forward movement of the flow front had ceased by the end of October. The flow front stopped at 43 m elevation, less than 700 m from the nearest home in its path, after advancing 10 km from its eruptive source. The 1977 eruption of Kilauea was now over; 8 km^2 of rain forest had been covered by approximately 35 x 10^6 m^3 of new lava, and a 35 m-high spatter cone, named Puu Kia'i, had been built at the site of the principal (26 September-10 October) vent. After a week of diminishing harmonic tremor, Kilauea seismicity returned to low levels, and the northern part of the summit area began to reinflate at a steady rate.

Occupation of the Mauna Loa geodetic net at year's end showed this volcano was also reinflating, at the same rate that had prevailed prior to the diminished rate noted in July. This inflation was not accompanied by any noticeable increase in seismicity.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In January 1977 the seismometer network consisted of 41 stations spread over an area with a diameter of 125 kilometres on the island of Hawaii (Figs. 1 and 2). Of these 41 stations, two are low-gain multicomponent stations (optical), six are two-component, three are three-component, and twenty-nine are vertical only. The coverage is most complete on and around the main center of seismic and volcanic activity, Kilauea Volcano. Other stations in the network are part of a larger net located on other volcanoes of the island of Hawaii. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording. During 1977 station PLA was added on the east flank of Mauna Loa, and station TAN was replaced by stations HUL and KLU on the lower east rift.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated or added during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1977. Listed are station name, three letter code, coordinates in degrees and minutes, elevation in meters, and other data described below.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or VHF radio. The VCO frequencies are listed in Table 1. These telemetering stations are now all of Type 1, the NCER standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from thirty-two stations are recorded on two Develocorders using 16mm microfilm. Beginning in late 1975, FM signals from the telemetering network were recorded directly on one inch magnetic tape. Selected larger events are copied onto condensed library tapes which are currently archived in Menlo Park.

Develocorder records are read on a film viewer with 20x magnification. Arrivals are read to the nearest 0.05 second. The recorded arrival times, amplitudes (where readable), and other key data are routinely sent to N.C.E.R. in Menlo Park for computer processing.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Kipapa station operated by Honolulu Observatory). The less sensitive short period records are used primarily for S data and amplitude measurements for magnitude calculations to supplement readings from 16mm film. Optical seismographs listed in Table 1 are of four types. Types numbered three and four are electro-mechanical systems of high and low gain respectively. Hilo and Haleakala are each equipped with two low-gain Wood-Anderson torsion seismographs. Long period Press-Ewing seismographs record in three components in the Uwekahuna vault. The paper (optical) records as well as the 16mm develocorder microfilm are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnifcation of the standard NCER system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an

individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20x Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited,and major changes in attenuation or recalibrations are listed in Table 1 along with the dates they took place. Minor changes in CAL factors may not be listed if they are less than 20%.

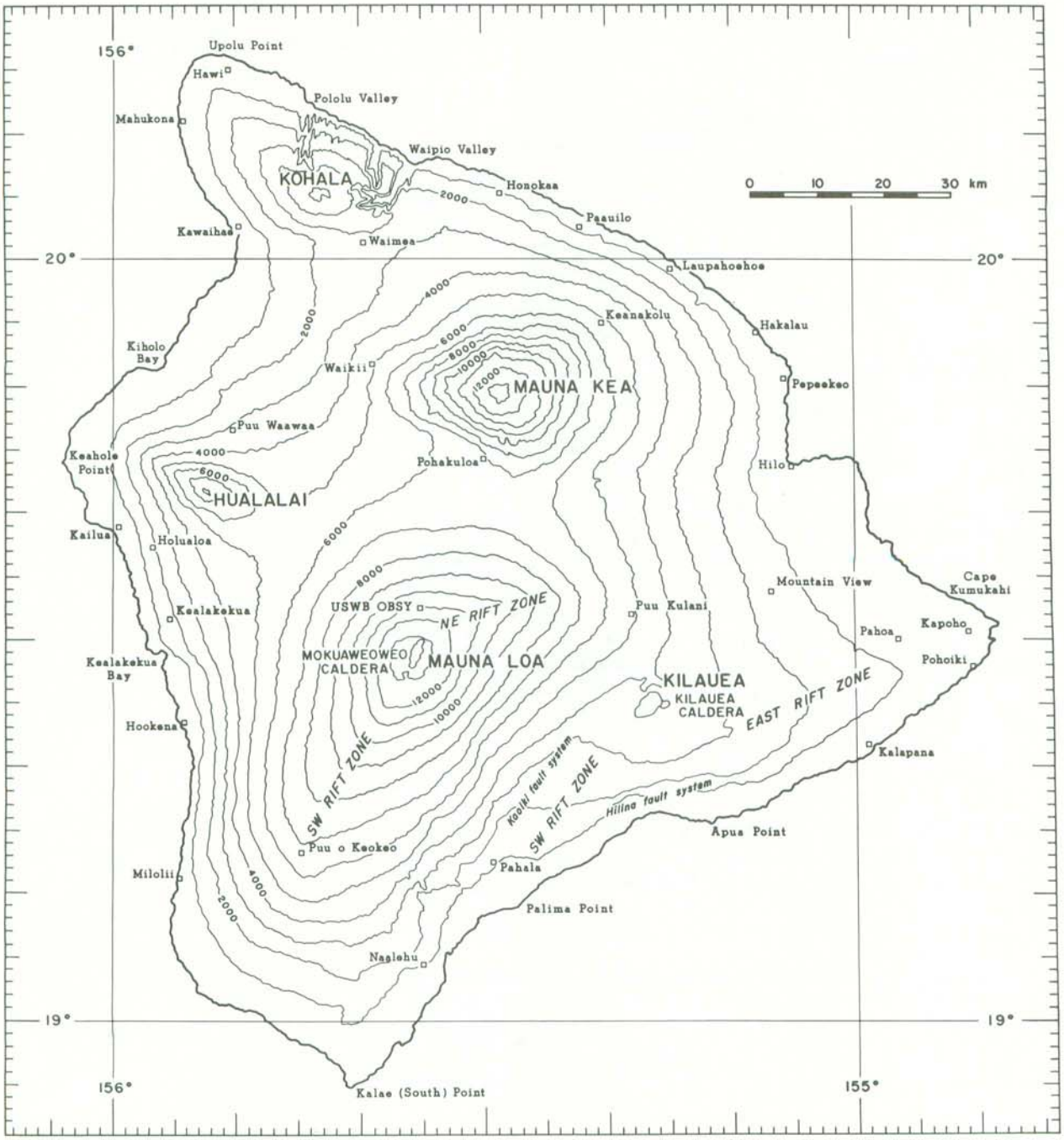

Figure 1 Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

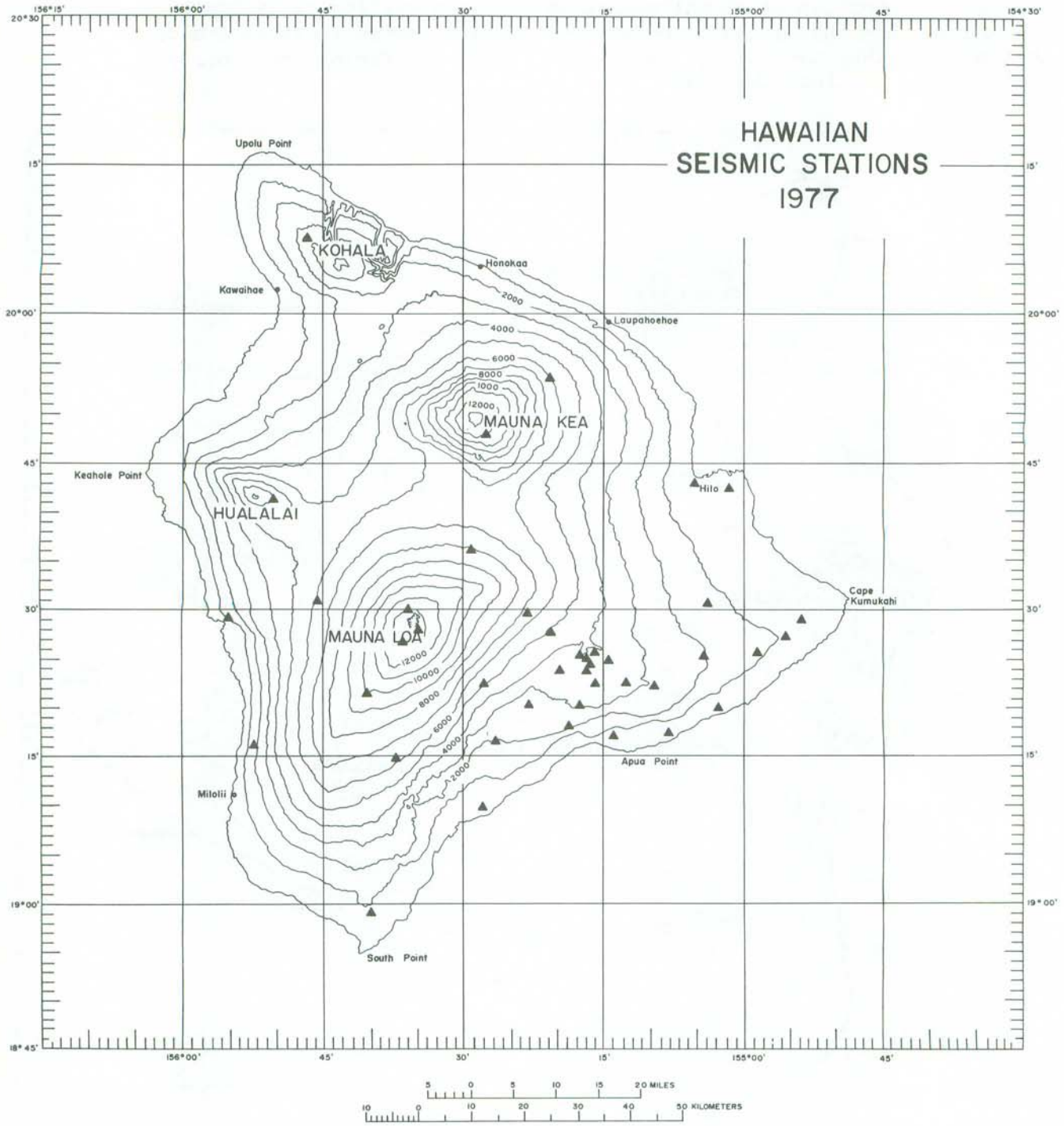

Figure 2 Map of the island of Hawaii showing seismic stations operated by the U.S. Geological Survey.

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1977.

Station Name	Code	LAT-N	LON-W	Delay	ELEV	VCO	Old Type/Cal	Date of Change	New Type/Cal
AHUA	AHU	19 22.40	155 15.90	.06	1070	2380	1 4.3		
AINAPO	AIN	19 22.50	155 27.62	.33	1524	680	1 8.5		
	AINE					2380	1		
	AINN					2720	1		
CAPTAIN COOK	CAC	19 29.29	155 55.09	.15	323	1360	1 5.4	11/30/77	1 1.1
CONE PEAK	CPK	19 23.70	155 19.70	-.04	1030	1700	1 4.0		
	CPKH					1020	1		
DANDELION	DAN	19 21.42	155 40.04	-.07	3003	2380	1 7.0		
DESERT	DES	19 20.20	155 23.30	-.10	815	680	1 4.2		
ESCAPE ROAD	ESR	19 24.68	155 14.33	.01	1177	2720	1 2.8	10/31/77	1 1.2
HALE POHAKU	HPU	29 46.85	155 27.50	.42	3396	2720	1 4.7	10/25/77	1 3.3
HEIHEIAHULU	HUL	19 25.13	155 58.72	.02	369	1020	none	4/17/77	1 4.2
HILINA PALI	HLP	19 17.96	155 18.63	.18	707	2040	1 4.0		
HUALAIAI	HUA	19 41.25	155 50.32	.58	2189	1700	1 2.6	8/03/77	1 3.8
HUMUULA	HSS	19 36.31	155 29.13	.35	2445	1700	1 6.2	3/22/77	1 8.4
	HSSE					680	1		
	HSSN					3060	1		
KAAPUNA	KAA	19 15.98	155 52.28	.00	524	1020	1 5.2	11/30/77	1 5.6
KAENA	KAE	19 17.35	155 7.95	.15	37	2380	1 1.3		
KAHUKU	KHU	19 14.90	155 37.10	.08	1939	1700	1 3.5		
KALALUA	LUA	19 24.55	155 04.25	-.02	622	1020	1 0.6	10/06/77	1 4.6
KALIU	KLU	19 27.48	154 55.26	.00	271	2380	none	9/15/77	1
KANEKII	KII	19 30.56	155 45.90	.18	1841	2040	1 7.1	3/16/77	1 5.5
	KIIE					1020	1		
	KIIN					1360	1		
KAPAPALA RANCH	KPR	19 16.40	155 26.70	.05	610	1700	1 6.0	6/16/77	1 5.0
KEANAKOLU	KKU	19 53.39	155 20.58	.86	1863	2380	1 2.3	8/31/77	1 4.8
KIPUKA NENE	KPN	19 20.10	155 17.40	.07	924	1360	1 6.4		
KOHALA	KOH	20 7.69	155 46.77	.21	1166	2380	1 2.4	11/08/77	1 2.2
MAUNA LOA	MLO	19 29.80	155 23.30	.24	2010	3060	1 10.0	5/03/77	1 9.2
	MLOH					2040	1		
MAUNA LOA X	MLX	19 27.60	155 20.70	.27	1474	2380	1 2.1		
	MLXH					2720	1		
MAKAOPUHI	MPR	19 22.07	155 9.85	-.01	881	2720	1 3.1	9/09/77	1 1.6
MOKUAWEOWEO	MOK	19 29.28	155 35.98	.28	4104	2040	1 5.4	8/12/77	1 1.6
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	.17	409	680	1 7.8	12/15/77	1 5.2
NATIONAL GUARD	NAG	19 42.12	155 1.72	.63	18	1360	1 10.2	12/27/77	1 2.4
NORTH PITT	NPT	19 24.90	155 17.00	-.06	1115	680	1 4.4	12/15/77	1 5.2
OUTLET	OTL	19 23.40	155 16.80	.02	1084	1360	1		
	OTLH					2040	1		
PAU	PAU	19 22.62	155 13.10	-.06	994	2040	1 3.8	6/21/77	1 6.2
	PAUH					1020	1		
POLIOKEAWE PALI	POL	19 17.02	155 13.47	.10	169	1360	1 4.8		
PUU HOHUAULA	PHO	19 28.90	154 53.40	.03	215	2720	1 1.9	3/31/77	1 4.2
PUU PILI	PPL	19 9.50	155 27.87	.24	35	1360	1 2.2		
PUU ULAULA	PLA	19 32.00	155 27.67	-.08	2992	2040	none	9/07/77	1 7.4
RIM	RIM	19 23.90	155 16.60	.02	1128	1020	1 7.3		
	RIMH					2040	1		
SOUTH POINT	SPT	18 58.91	155 39.92	-.07	244	2040	1 3.6		
SOUTHWEST RIFT	SWR	19 27.26	155 36.30	.14	4048	1020	1 2.4	7/26/77	1 4.7
TANGERINE	TAN	19 27.79	154 58.51	.02	351	1020	1 8.0	4/07/77	none
WAHAULA	WHA	19 19.90	155 2.92	.06	29	1020	1 2.3		
WALDRON LEDGE	WLG	19 25.49	155 15.69	-.02	1067	2380	1 2.2	6/17/77	none
WILKINS	WIL	19 28.15	155 35.02	.30	4037		1 5.1	5/25/77	1 4.0

Table 1. (continued)

Optical Seismographs

HALEAKALA Z	HAL	20 46.00	156 15.00		2090	3	0.71
HALEAKALA EW	HAE	20 46.00	156 15.00		2090	WA	1.0
HALEAKALA NS	HAN	20 46.00	156 15.00		2090	WA	1.0
HILO Z	HIL	19 43.20	155 5.30	.64	20	3.	1.0
HILO EW	HIE	19 43.20	155 5.30	.64	20	WA	1.0
HILO NS	HIN	19 43.20	155 5.30	.64	20	WA	1.0
KIPAPA	KIP	21 25.40	158 .90		76	3	0.56
UWEKAHUNA Z	UWE	19 25.40	155 17.60	.06	1240	3	0.7
UWEKAHUNA Z	USZ	19 25.40	155 17.60	.06	1240	4.	1.0
UWEKAHUNA EW	USE	19 25.40	155 17.60	.06	1240	4.	1.0
UWEKAHUNA	PEZ	19 25.40	155 17.60		1240	PE	
UWEKAHUNA	PEE	19 25.40	155 17.60		1240	PE	
UWEKAHUNA	PEN	19 25.40	155 17.60		1240	PE	

Table 2. -- Seismic Instrumentation Types

Type 1. Consists of:

a) EV-17 - Electrotech EV-17 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model JE202. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO. USGS Model J302 was introducted in 1974.

Type 3. Consists of:

a) EV-17 - Electrotech EV-17 (as described above), Hall-Sears HS-10 0.5 sec. period moving coil seismometer or Observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier (voltage gain, 2000X), or Observatory-built electronmagnetic seismometer approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnitication approximately 1500X at 2Hz.

Experimental type amplifier systems are not given type numbers.
Type 2 instruments have been discontinued.

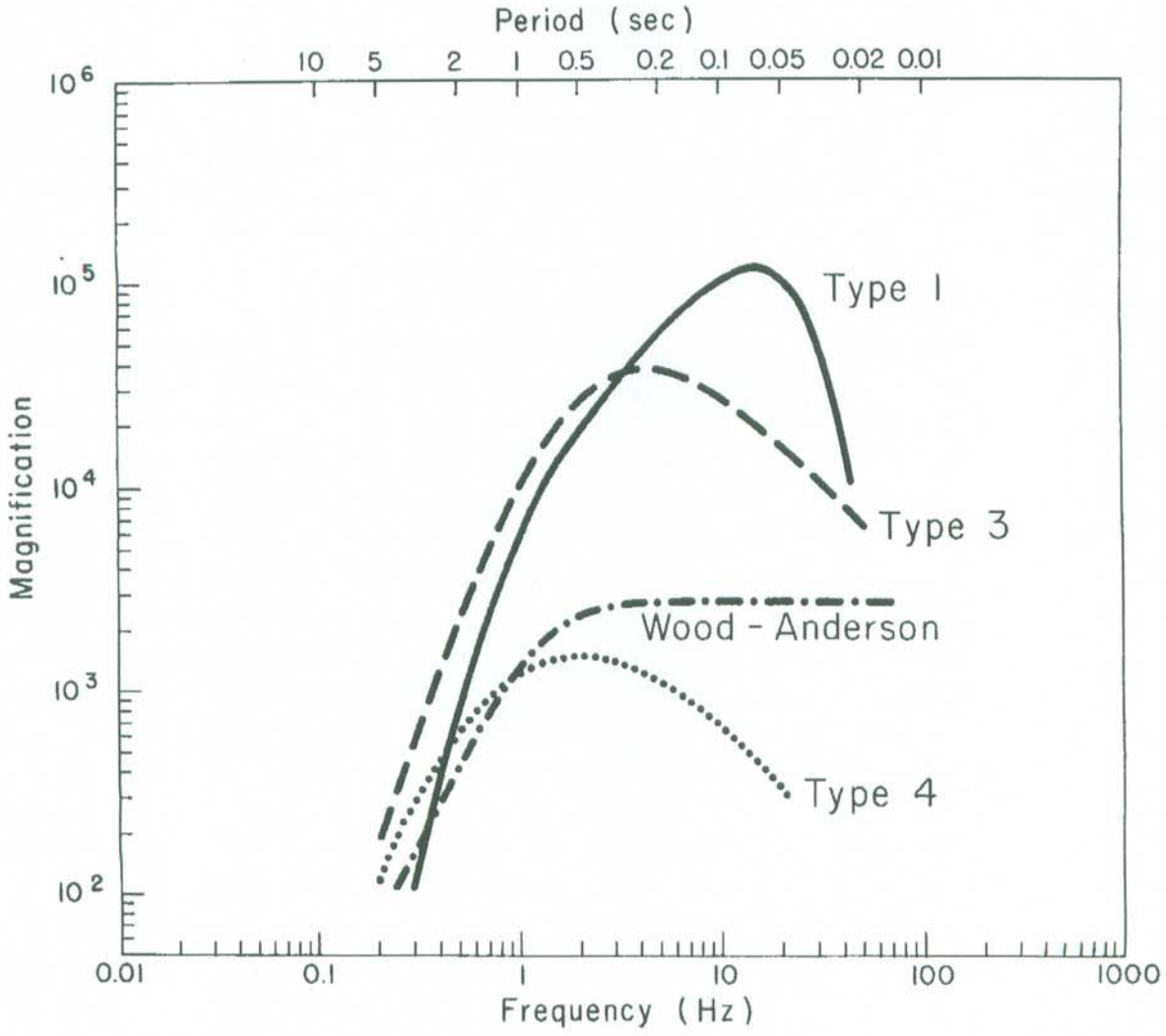

Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard NCER seismometer recorded on Develocorder film. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an individual station.

SEISMIC DATA PROCESSING

Earthquakes are located by the combined efforts of HVO and NCER in Menlo Park. Develocorder films are read at HVO, and lists of P and S arrival times, event amplitude and duration, clock correction, etc. are sent to Menlo Park. Data are then keypunched, computer locations are made using the program HYPOINVERSE (Klein, 1978), and problem events are reread at HVO and rerun. Card and magnetic tape copies of all arrival time (phase) and output summary data (one card per event), are kept in Menlo Park.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

Velocity (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

An empirical set of station delays or corrections were used in the locations, and are given in Table 1. They have been adjusted so the mean delay of Kilauea stations is zero, and are most appropriate for locating earthquakes on the south side of the island.

Magnitudes for most events were computed using both recorded amplitudes on calibrated stations and signal or coda duration on short-period vertical stations. Amplitude magnitudes used by HVO are based on readings from Wood-Anderson seismographs. Amplitudes read from other instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors of Table 1. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, KAA, OTL, or PPL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed to about twice the noise level, or to about 1 cm peak-to-peak on the Develocorder viewer. A plot of log (F-P time) versus local (amplitude) magnitude appears in Figure 4. The bilinear relation shown in the figure is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

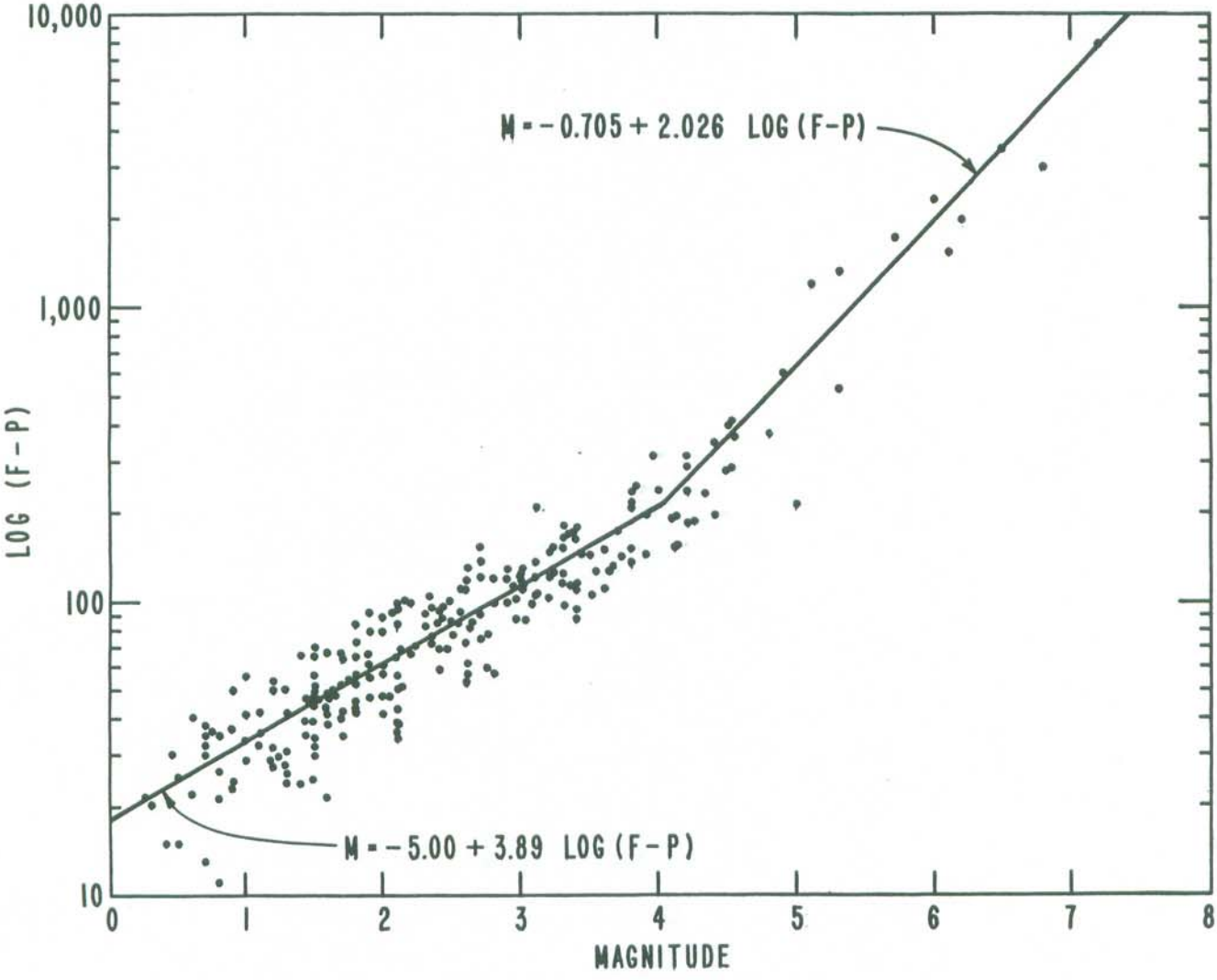

Figure 4. Relationship between signal duration (F-P time) and local magnitude for a large number of earthquakes which occurred during 1975 and 1976. Local magnitude is determined from amplitudes read on Wood-Anderson and other calibrated seismographs. The dual linear relationship between magnitude and log(F-P) appears to hold over a magnitude range of 7 units.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south flank of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0 to 2.5. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters of all depths are given in Figures 5, 6, 7 and 8. The epicenter maps are on two scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and in some cases on its depth. Figure 9 is a map of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figure 9. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.5 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea. Tremor is separated into three categories: Deep, Intermediate, and Shallow, on the basis of relative amplitude on seismographs in the summit region. Unless otherwise stated, tremor is presumed to be associated with movement of magma within the central complex of Kilauea Volcano. Earthquake categories are: Kilauea Summit 30 km, earthquakes from about 30 km beneath the summit region; Kilauea Summit long-period, earthquakes characterized by low-frequency waves from intermediate depths roughly 5-10 km beneath the summit region: Kilauea Summit Shallow, earthquakes from within a few km beneath the caldera region; SW Rift and Kaoiki, earthquakes along the southwest rift zone of Kilauea and the adjacent portions of the Kaoiki fault system; Upper East Rift, earthquakes from the upper east rift zone of Kilauea; Koae, earthquake from along the northeast-trending Koae fault system south of the caldera; Lower East Rift, earthquakes from the lower east rift zone of Kilauea; South Flank, faults on the south flank of Kilauea; Mauna Loa L-P, earthquakes characterized by low-frequency waves from Mauna Loa volcano; Mauna Loa S-P earthquakes from within a few kilometers beneath the summit of Mauna Loa; Offshore PPL, earthquakes from mostly offshore areas south of Puu Pili station.

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa			Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift		
Jan 1				415			202	8	17		4			
2				309	7		313	49	20	4	6	5		
3				404	10		322	18	63	13	6	7		
4				392	1	1	253	17	70	2	28			Mauna Kea-1
5	6m			416	11	3	345	25	26	14	8	4		Distant-2
6				619	28	3	446	28	32	19	13	1		
7				349	11		443	19	52	3	9	1	1	LPD-1
8				501	4	1	463	25	50	3	9	4	3	
9	13m			250	1		240	27	29	20	13			LPD-1
10	52m			366	8	3	203	24	11	11	2			
11	10m			364	9	9	180	37	24	6	4	4		
12				573	2		264	30	23	1	4			
13		41m		441	16		607	51	71	4	19	4	2	
14		30m		558	2		382	14	24		4			
15		14m		662	5		206	29	19	6	4			Kona-3
16		5m[1]/		413	4	1	249	49	17	21	5			Kona-1
17	5m			446			447	46	16	29	6	1		
18	41m	3m[1]/		363	4		205	28	17	20	5		2	LPD-6
19		5m 5m[1]/		336	32		226	24	22	40		1		
20		3m		311	50		260	33	17	40	3			
21				360	23		298	27	18	20				LPD-1
22		19m 3m[1]/		333	53	2	427	21	25	6				
23		15m		238	50		314	41	25	14	1			
24		3m 9m[1]/		201	86	1	210	34	21	21	1			
25		5m		219	38		214	32	14	3				
26		14m		236	40		263	19	24	13		1		
27		10m 3m[1]/		319	80		265	26	22	7			1	
28				364	87		560	30	66	14	16	2		
29				373	80		505	36	63	4	8	9		
30				282	20		273	18	43	10	7			
31	13m	2m		302	18	1	294	11	33	23	12	3		Distant-1

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa			Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift		
Feb 1				289	6	5	355	16	37	3	5	3		LPD-1, Distant-1
2	35m			333	6	2	381	22	50	5	2	3		LPD-10, Distant-1
	3m[1]/													
3	31m			323	10	1	400	5	30	2	6	1		Distant-1
4				548	10		250	14	17		4	3		
5				550	4		274	17	31	1	5	5		
6	3m			351	8	2	353	11	34	6		1		LPD-1
7		5m		335	4		352	6	45	8	12			
8				249	26		1841	14	39	1	8			East Rift Swarm, LPD-2
9		15m		150	47	1	618	12	40	10	2			
10		5m		61	45		770	23	41	5	1		1	Kona-1
11		25m												
		15m[1]/		138	40		674	24	34	119	10			
12		19m												
		20m[1]/		94	28	1	708	23	37	44	7			Distant-2
13				94	9	2	832	28	56	8	12			Kona-2
14	36m			84	20		594	21	48	7	7	1		
15				74	6		358	21	52	40	4			Kona-2
16				64	3	1	364	13	47	14	4			Kona-2
17				57	13		393	18	73	31	4			LPD-1, Kona-2
18				74	15	1	405	28	48	33	2			
19		3m		47	4	2	340	19	71	15	7	1		LPD-1
20				61	12		364	22	39	1	1			Kona-1
21				50	3	1	312	37	77	1		1		LPD-2
22	16m			51	1		204	49	28	3	2		1	
23	2m			42	9		190	26	18	14	6			Kohala-2, Kona-2
24				50	2		238	79	39	36	41	2		LPD-1, Kona-1
25		13m[1]/		78	4	1	162	124	20	34	16	2		
26		44m[1]/		117	5		206	63	28	10	6	1	1	
27				75	1		271	24	43	9	16	1		LPD-2, Kona-1
28	20m			46	12		261	27	40	30	1			LPD-2, Kona-2, Kohala-2

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Intermediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift	Offshore PPL	Remarks and Events of Interest
Mar 1	6m	5m[1]/	3m[1]/	42	4		206	13	38	24	1	1		Kona-2
2	2m	4m[1]/		60	9	2	210	18	48	46	6	1	2	LPD-3
	2m[1]/													
3	31m			70	20		157	10	49	66	2			Kona-4
4				58			118	21	21	10	7	2	1	
5				47	1		76	41	19	1	1		1	Kona-1
6	2m			17	1		92	16	25	23				Kona-2
7				29	21		136	16	31	13	2			
8		2m		38	23		203	23	37	18				Kona-1
9	2m			42	2		271	24	53	42	4		1	
10	7m[1]/			38	11	1	268	20	55	37		1		Kona-2
11	9m	20m[1]/		106	28		364	40	68	23	42	3		
12				85	28		311	67	43	13	81	7		
13				109	1		188	20	19	2	5			
14				93	7	1	206	22	16	5	3		1	
15	2m	4m[1]/		65	1	1	198	10	42	67	1			Mauna Kea-1, LPD-1, Kona-1
16	5m			125	11	2	226	26	22	10	1	2		
17		10m		93	9		148	29	18	3	1			
18	6m[1]/	5m		49	19	1	153	27	35	30	1			Kona-6, Distant-3
19	3m			83	14		263	11	27	38	4			Mauna Kea-1, Kona-2
20				89	7	2	223	18	50	21	2	2		Kona-3, Mauna Kea-1
21				63	7		201	17	35	68	2	1		
22				50	12		193	28	44	17				
23				38	9		175	24	24	25	3			LPD-1
24	45m	7m[1]/		45	4	2	233	18	31	21	2			Kona-2
25				89	13		301	54	67	237	6	4		
26				136	64		383	128	54	183	3	11		
27				67	26		276	32	41	31				LPD-1
28				83	18	1	240	13	38	43	3			
29				66	28		305		38	21	1	1		
30				80	13		270		28	7				Kona-2
31		14m		73	13	2	306	2	38	12	1			

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa			Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift		
Apr 1	9m	7m		97	13		306		40	50	1	1		Kona-1, LPD-4
2				95	6	1	346		61	46	1	1		LPD-1, Kona-1
3				124	3	1	309	5	54	48	2			Kona-1
4				111	9	1	334	3	48	34	1			LPD-1
5	12m			114	15	2	282	2	33	19	3			
6	47m	4m		81	11	1	273	12	47	21	5	1		LPD-2, Kona-1
7	3m1/			87	13	2	239	18	48	24	3			
8	60m			96	31	1	136	15	55	3	2			LPD-20, Kona-3
9		10m		117	32		171	58	45	2	5	1	1	
10				74	175		264	28	44	37	4			LPD-1, Kona-4
11				79	33	1	237	22	38	83	2	5	3	Kona-1
12		9m		72	32		161	11	30	23	5			LPD-3, Distant-1
13				68	12		192	3	26	40	5			Kohala-1, LPD-10, Mauna Kea-1
14				77	5	1	224	10	43	29	5			Kona-1
15				59	11	2	207	5	21	25	6			
16		4m		97	20		245	20	35	35				LPD-7, Distant-2
17				96	7	1	258	19	57	18	5			Kona-3
18	24m	2m		80	9		278	18	45	12	4			LPD-3, Distant-1
19				111	5	2	325	12	44	51	4			Kona-1
20	10m1/	3m1/		110	23		321	19	46	102	7	1		Kona-1, LPD-3, Mauna Kea-34
21		8m 2m1/		128	20	2	163	19	32	10	8	1		LPD-3, Mauna Kea-4
22	31m			204	62		384	56	51	204	15	16		
23	14m			238	59		350	27	52	196	14	12	1	Distant-2
24				202	18		232	40	29	45	9	1		Mauna Kea-2, LPD-1, Kona-3
25		3m1/		211	18	1	323	18	42	158	2			LPD-7, Distant-5, Kona-1
26		4m		180	20		335	24	40	194	3	4		Distant-8, LPD-5, Kona-1
27		7m		163	15	3	295	17	45	226	9		1	Distant-11, LPD-6, Kona-2
28		18m1/		167	7		286	15	32	225	5	2		LPD-7, Distant-1
29		5m		166	2	4	170	18	24	23				
30		1m		204	3	1	136	21	30	43	1	3		Kona-1

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift	Off-shore PPL	Remarks and Events of Interest
May 1	7m			182	30		276	18	28	218	1			Distant-2, Kona-1, LPD-5
2		27m		169	23	1	338	27	44	154	2		1	Mauna Kea-1, LPD-4, Kona-1
3	39m	13m		161	27		279	12	45	176	3	2		Kohala-1, LPD-21, Mauna Kea-2
4		9m 1m[1]/		119	11	1	237	12	34	141	6	1		LPD-20, Mauna Kea-1
5				157	4		294	14	47	235	6			LPD-16, Mauna Kea-1
6		11m 3m[1]/		128	20		222	18	23	37	1	3		
7		15m 3m[1]/		103	11	1	167	34	15	49		5	1	Distant-1
8		14m		132	6		257	21	46	214		4		Mauna Kea-4, LPD-17, Kona-2
9		27m		153	20		366	18	40	88	3	1		Distant-1, LPD-9, Mauna Kea-1
10	2m	20m		110	13		371	19	39	1	1	1		LPD-2, Kona-1
11	35m	5m		93	3		381	30	34	8		2		LPD-33, Kona-2
12	78m 4m[1]/	3m		122	4		309	18	56	22		5		Kohala-11, LPD-11, Kona-3
13	14m			171	6		332	17	31	186	3	4		LPD-4
14	4m	5m		126	2	1	330	23	41	245	3	1		Mauna Kea-2, LPD-11, Kona-4
15	6m	3m		132	4		308	22	58	240		1		Kona-1, LPD-3, Mauna Kea-1
16	14m	16m		149	12		289	21	53	240	2			LPD-14, Kona-2
17		9m 3m[1]/		170	3		356	27	61	224	2			LPD-15, Kona-3
18		2m		133	4		315	26	43	239			1	LPD-5, Kona-3
19	1m 9m[1]/	3m[1]/		157	6	1	249	12	39	267			4	LPD-1, Kona-2
20	5m			134	22		311	32	61	145	8	5		Distant-2
21	32m	12m		111	7		280	38	37	183	8	9		Kona-2
22				95	1		227	15	38	117	3			
23	3m			90	1		198	7	45	45		4		Mauna Kea-1

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank			Mauna Loa			Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift		
May 24				134	5		203	8	21	24	2			LPD-1, Distant-1
25	6m			137	12		193	14	29	6	3			Mauna Kea-2, Kona-2, LPD-3, Distant-1
26				115	7	3	196	20	35	73	6	2		LPD-3, Kona-1
27				131	5	2	125	18	22	8	8	3		Kona-3
28				176	3		154	33	26	16	9	5		
29				243	2		128	24	25	7	2	5		
30	46m	5m		89	2		249	22	32	16		4	1	Kona-4, LPD-7, Mauna Kea-1
31				109		2	240	25	43	8		6		LPD-5, Kona-3

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift	Off-shore PPL	Remarks and Events of Interest
Jun 1		10m		90	2	2	258	14	35	10	5	1		Kona-3, Mauna Kea-1, LPD-7, Kohala-1
2				100	7	1	251	17	38	5	4	1		LPD-5, Kona-2
3				96	6		201	26	20	3	2	1		Kona-2, Kohala-1
4		2m[1]/		127	5	1	202	32	42	1	1		4	
5		5m		157	6	2	469	27	40	55		1		Kona-1, LPD-11, Mauna Kea-1
6		6m		169	13		314	24	44	33		3		LPD-1, Kona-1
7				190	14	1	369	30	46	51	1	1		Kona-1, LPD-2, Mauna Kea-2
8				147	8		387	26	34	88	2	2		LPD-6, Kona-1
9		2m[1]/		91	7	2	203	26	23	5	2	2	3	LPD-2
10				262	21		152	28	29	10	2	3		
11				374	13	8	137	27	21	3				
12				84	11		158	21	24		1			Kona-2
13				149	2		162	24	28	1	1	2		Kona-1
14		14m		181	10		208	22	49	66	4	7		LPD-5, Kona-2
15				167	3		180	13	49	54	2	1		LPD-2, Kona-3
16				175	6	1	201	17	38	22				Mauna Kea-1, LPD-1, Kona-1
17		5m		186	8		147	14	33	9	2	1		Distant-1, Kona-4
18		5m 6m[1]/		196	32	2	141	17	31	19	1	2	1	Kona-1
19	37m 2m[1]/			202	17	1	250	19	50	9	1	4		Kona-1, LPD-2, Mauna Kea-1
20		8m		131	16		272	14	44	2				LPD-2, Kona-1
21		51m		159	12	1	230	29	26	4				Mauna Kea-1, LPD-5, Kona-2
22		53m		154	40		321	17	56	7	2	2		LPD-2
23	3m	16m		102	10		280	20	38	8	1	1		Kona-2, LPD-1, Mauna Kea-1
24		12m		236	3	1	143	25	29	4				Kona-2
25		23m		304	2		164	50	21	7	2	3		
26	16m	12m		192	4		271	18	48	13				LPD-4, Kona-3
27	20m	6m		163	8		311	15	41	11	4	1		LPD-13, Kona-2

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank			Mauna Loa			Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift		
Jun 28	3m	21m		198	7	1	266	1	44	25	1			Kona-3, LPD-5, Kohala-1
29	3m	12m		220	14	2	274	16	33	31				Kona-3
30		16m		249	5	1	389	28	37	36		2		LPD-6

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes											
				Kilauea Summit			Kilauea Flank			Mauna Loa			Off-shore PPL	Remarks and Events of Interest
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift		
Jul 1		6m		194	12		250	59	31	9	2			Mauna Kea-1
2		7m		152	10		205	39	30	11	3			Distant-2, Kona-1
3		3m		211	6		234	26	21	5				Distant-1
4		5m		458	7		342	10	44	10				Mauna Kea-1, LPD-1, Kona-5
5		2m		504	12		364	11	47	4		1		LPD-4
6		3m		414	8		380	8	46			1		LPD-1, Kona-2
7		35m		300	20		333	18	35	8	1			Mauna Kea-1, LPD-2, Kona-1
8		12m		332	7	2	410	12	43	10				Kona-2, Mauna Kea-1
9	30m	6m		355	22	1	391	18	46	27	1	2		Kona-2
10		5m		581	35		300	16	43	27	1	2		LPD-2
11		40m		529	39	2	255	9	26	22		1		Kona-2
12		9m		354	8		255	10	34	26	4	2		Kona-2
13				328	5		278	27	35	35		1	1	
14		10m		336	25		190	11	30	28				LPD-1, Kona-1
15				334	2		126	19	14	6		4		
16				388	4		154	35	29	5		3		
17		10m		217	23		242	8	51	17				Kona-3
18		12m		216	15		333	18	49	8	2	2		Kona-2, Mauna Kea-1
19	3m1/	4m		245	11	1	261	19	45	5		1		LPD-6, Kona-1
20		4m		352	5		268	20	41	5		2		Kona-4
21				240	1	1	232	20	53		3	1		Kona-3
22		9m		170	15		195	32	21	2	1			LPD-1
23		21m		134	14		152	34	19	1	1			Distant-1
24				166	10	1	253	25	55			1		Kohala-1
25				153	3		260	23	46		2	3		
26				166	17	2	273	24	50	3	3		2	Kona-2, Mauna Kea-1
27				88	17		218	25	49	1		1		
28		2m		94	10	2	236	13	43	1	1	3		
29		8m		116	7	3	270	28	53		3			Kona-5
30		5m		125	21	1	217	24	59	1	3	4		Kona-3
31	20m			135	7		205	14	37	1	1			Kona-1

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift	Off-shore PPL	Remarks and Events of Interest
Aug 1				186	8	1	322	15	50	1	1			Kona-1
2		4m		182	7	1	273	19	38	1	3			Kona-5
3				117	17		286	34	39					
4				136	9	1	277	29	47	1	1	1		LPD-2, Kona-1
5		11m		95	2		203	75	44	2		3		Kona-3
6				123	9		190	51	36					
7		5m		179	28		430	29	55	1				LPD-3, Mauna Kea-2
8				203	58		219	63	38	3	3	1	4	Kona-3
9		4m		207	21		243	44	49	3				LPD-1, Kona-2
10		10m		208	73		240	59	48				2	Kona-1
11				201	47		201	10	44					Kona-1, Mauna Kea-1
12		2m		213	15	1	230	50	32	1	1	1	3	Mauna Kea-1, LPD-1, Kona-4
13		33m		219	8		250	25	36	4		2		Kohala-1, LPD-3, Kona-1
14	14m			154	10		134	53	44	1	1			Kona-1
15	10m	3m		376	6		249	33	27	2	1	1	4	LPD-3, Kona-1
16	9m	2m		266	25		295	88	52	1	2	1	1	LPD-2, Kona-1
17		10m		378	9	1	299	31	39	11		1		Mauna Kea-1, LPD-2, Kona-1
18	2m			160	28		238	56	38	10	5	1		Kona-2
19		8m		243	17		147	63	16	28	3			Kona-2
20		6m		283	5		114	43	17	6				LPD-1
21	2m			128	28		204	112	18	6	4	2		Kohala-2, Kona-1
22	6m	7m		331	5	1	228	28	35	2	1	1		Mauna Kea-6, Kohala-1, LPD-7, Distant-20
23	42m			98	17		296	50	32	9	3	4		Kona-1
24		16m		154	9		236	10	27	2		1		LPD-1
25	6m	6m		281	6	1	182	32	32	4	2			LPD-3, Kona-1
26	7m			71	10		276	32	29	6		2		Kona-1
27	64m			122	8		281	44	23	7	3		2	Kona-4
28				364	2		415	40	24	4	3	1		LPD-2
29	37m			382	10	2	302	25	51	4	2	2		Kohala-2, Mauna Kea-1, LPD-2, Kona-1
30	17m			222	10		244	38	29	3	2		1	Kona-2
31	5m	6m		387	18	1	280	20	28	2	1			Kona-2, Mauna Kea-1

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift	Off-shore PPL	Remarks and Events of Interest
Sep 1	16m	7m		192	11		188	41	33	1	3	2		
2				361	33	1	252	21	44	5	9			LPD-1, Mauna Kea-1
3	2m	6m		334	5	1	304	21	20	1	2	1		LPD-2, Mauna Kea-3
4		22m		428	10	3	416	20	41	2	1			Kona-1
5		3m		426	9	2	550	88	53	8	2	1		Mauna Kea-3, Distant-1, LPD-1, Kona-2
6	6m	10m		284	9		601	63	32		7	2	2	Kona-1
7		10m		264			385	47	67	1	6	6		
8		7m		260	1		378	88	51	2	1	2		
9		10m		364	7	1	359	22	16	2	3			
10	15m	26m		265	19		580	34	16	1	2			Kona-1, Distant-1
11	7m	5m		351	19	2	655	43	33	20	4	2		LPD-2, Mauna Kea-1, Kona-1
12	11h	2m		313	53		2048	16	36	24	4	3		15 km-1, LPD-1, East Rift Swarm (continuous tremor)
13				429	139		1987	61	24			2		East Rift eruption
14				874	65		1219	216	51		2	5		Kona-1
15		90m		384	703	2	906	50	55	10		3		Mauna Kea-1, Kohala-1
16	3m			1134	61		664	50	46				1	Kona-2
17		37m[1/]		878	5		635	21	18			1		Kona-1
18				1525	403	1	360	29	29	14	1			Kona-1
19		80m		2012	365		277	27	36	20		4		Kohala-1
20		4m		2145	530		308	13	27			7		
21	3m			2388	671		336	18	39	1	1	2	1	Kona-1
22	3m			2130	396		411	10	27	1	1			
23		8m		1859	422		358	15	78	11	4			Mauna Kea-1, Kona-4
24				2142	932	2	348	18	29	12	2			Kona-2, Distant-1
25	4m			2164	885		317	16	29	8				Kohala-1
26				1950	880	2	309	16		8	3	1		Kona-1, Mauna Kea-1, Kohala-1
27				1797	890		260	17	64			1		Mauna Kea-1
28				2090	644	1	317	12	48			2		
29	86m			893	332		284	8	32					Kona-1
30	10m			1158	274		432	9	44					

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift	Off-shore PPL	Remarks and Events of Interest
Oct 1		88m		1058	270	3	435	19	52	42	2			Distant-1, LPD-2, Kona-1
2		13m		1372	1084		315	15	30	31				Kona-1
3		2m		880	610		338	7	34	22				
4	2m			1158	325		298	6	19		2	2		
5		2m		1123	842		267	3	22		1			
6		7m		1048	1130		309	14	27	10		1		
7		7m		1525	2386		305	11	51	1			3	
8		8m		736	1952		294	8	24				2	
9	4m	2m[1/]		557	2153		315	11	53		2			Kona-3, Distant-3
		12m												
10				541	281	3	323	13	42	102				Mauna Kea-2, LPD-7, Kona-1
11		11m		110	748		257	9	59			1	2	Mauna Kea-1, Kona-1
12	26m	3m		258	831		324	19	41			3		Kona-1
13	3m			429	868		265	9	35			2		Kona-1
14				621	108	3	285	18	35	68	1			Kona-1
15	2m			506	220	1	273	9	40	70			1	LPD-7
16				729	406		251	10	30	10	2			Mauna Kea-1
17		8m		1010	454	1	231	7	26	31	2	1		Mauna Kea-1
18		5m		1114	461		223	6	38	22	2	1		Kona-2
19		15m		1070	1431		154	1	25	6	1	5		
20		2m		879	521		180	3	26	3	1			Kona-1, LPD-7, Distant-1
21				856	14		98	19	10		5			LPD-1
22				649	8	1	134	37	7	7	10			
23		4m		552	2	1	121	47	12	2	2	1		
24				897	465		236	15	29	6	1	1		LPD-1, Kona-2
25	5m			1094	5		171	6	22	5	6	6		Distant-8, Kona-2
26		5m		459	226	2	185	2	37	1	4			Kona-1
27				472	77		259	8	29		1			LPD-1, Kona-1
28	3m			376	5		230	5	44			3		Kona-1
29	8m			549	7		152	32	6			3		
30				372	30		201	18	27	2	1	2		
31	3m	9m		201	11		179	4	32			3	1	Kona-1

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift	Off-shore PPL	Remarks and Events of Interest
Nov 1		5m 12m[1/]		343	7		161	25	25			3		Kona-1
2		4m		201	8		179	10	31	3	1	11		Kona-1
3	5m	8m		205	9		171	11	19	1	3	4		Kona-1
4	4m			142	20		135	16	44	4	5			LPD-1, Kona-3
5				125	8	1	123	16	36	2	1	2		LPD-6, Kona-1
6	6m	4m		145	9	3	134	13	52					LPD-1, Mauna Kea-2
7				94	3		143	9	23			4		Kona-3
8	55m	2m		92	1		145	12	32	1	3	6	3	LPD-1
9	4m			98	4	5	149	17	34		5	3		Kona-2
10	8m	2m		112	1	1	186	17	31	1	6	6		
11		3m		100		2	106	41	23	2				
12	67m	3m		86	3		99	41	16	5	1			LPD-6, Kona-5
13				122	2	1	145	10	26	1				
14		5m		108	2	1	159	5	40		2	5	1	
15		3m		142	19		196	17	53					Mauna Kea-1, LPD-1, Kona-1
16		3m		143	11	3	213	27	51	1	1	1		LPD-1, Kona-2
17	3m			106	2		167	13	59		3	3	1	Kona-2
18	16m	13m		91	1		137	14	43		3	3	1	
19				133	2		159	24	67	1				Kona-3
20		3m		130	5		165	10	51		7	7		Kona-2
21				115	4		164	13	57		4	9	1	Mauna Kea-1, Kona-2
22	8m			88	4		135	15	46	4	4		1	Mauna Kea-2, Kona-3
23	4m	10m		148	8	2	206	17	40			1		Kona-4
24				95	7		130	10	44		4	4		Kona-3, Mauna Kea-1
25				143	2		160	8	39	1	1			
26	2m			158	7	7	162	5	31			1		LPD-2
27				187	9	2	181	11	32	3	2			LPD-2
28				101	2		144	7	43		5	1	3	Kona-1
29		7m		183	12	2	191	6	40		5			Mauna Kea-1, Kona-1
30	22m			109	36		165	10	62	5	19	1	1	Kona-4

1/Tremor beneath Mauna Loa Volcano

Date (1977)	Tremor (m = minutes h = hours)			Earthquakes										
				Kilauea Summit			Kilauea Flank			Mauna Loa				
	Deep	Inter-mediate	Shallow	S-P	L-P	30 KM	Upper East Rift	Lower East Rift	SW Rift and Kaoiki	L-P	S-P	NE Rift	Off-shore PPL	Remarks and Events of Interest
Dec 1				137	5	1	172	9	54	1	8	5		
2				122	4	1	100	31	15	9	2	2		Kona-2
3	25m			100	1		107	36	15	3		1		Mauna Kea-1
4		2m		207	4	2	213	13	56	1	4	3		Kona-1, LPD-2, Mauna Kea-1
5				186	8	4	205	15	55	1	4			LPD-3, Kona-2
6	16m	7m		187	9	1	184	13	52	1	3			Kohala-1, Mauna Kea-2, Kona-1
7	5m	8m		114	4	1	167	14	59	1	1	1		Kona-2
8	11m	2m		106	4		166	13	48		1		1	Mauna Kea-1, Kona-3
9				110	1		139	11	49		2		3	Kona-4, Kohala-2
10		1m		95			161	8	57	1				
11	2m	14m		211	3	1	202	19	37			2		15 km-1, Kona-4, LPD-4, Mauna Kea-2
12	40m			97	8		153	14	56	2	1	1		Kona-1
13		13m		115	10	1	136	8	33	2		1	2	Kona-1
14	5m			78	5	1	148	10	40				3	Kona-1
15	6m			64	4		109	10	30			1		Kona-1, Kohala-1
16				175	7	2	157	11	25	5		4		Mauna Kea-3
17				154	3	1	147	11	34	3	2	1		Kohala-1, Kona-1
18		7m		68	1	1	123	5	44	2		2	1	Kohala-1, Kona-1, Mauna Kea-1
19		2m		86	2		137	6	34	1		2	2	
20			6m[1/]	206	9	1	188	15	42		2			Kona-2
21		6m		129	4		130	11	52	1	1	4		Mauna Kea-1, Kona-1
22	1m	13m		125	1	3	156	7	19					
23	45m			123	6		96	21	16		1		15	Kona-2
24	11m	6m		91	10		79	22	19	4	2	3		
25		9m		96	7	1	80	29	20	15		2	1	
26				186	1		175	24	36	2	1	1		Mauna Kea-1
27		33m		138	3	2	140	11	32			1		Kona-2
28	9m	3m		148	5	1	151	18	46	2	1	6		Mauna Kea-1, Kona-3
29				220	8	2	239	21	43	3	4	1		Kona-2, Mauna Kea-2, LPD-2, Kohala-1
30	3m			150	3		156	14	55	2	2	1		Mauna Kea-1
31				139	2	2	178	10	45	3	5			LPD-1

1/Tremor beneath Mauna Loa Volcano

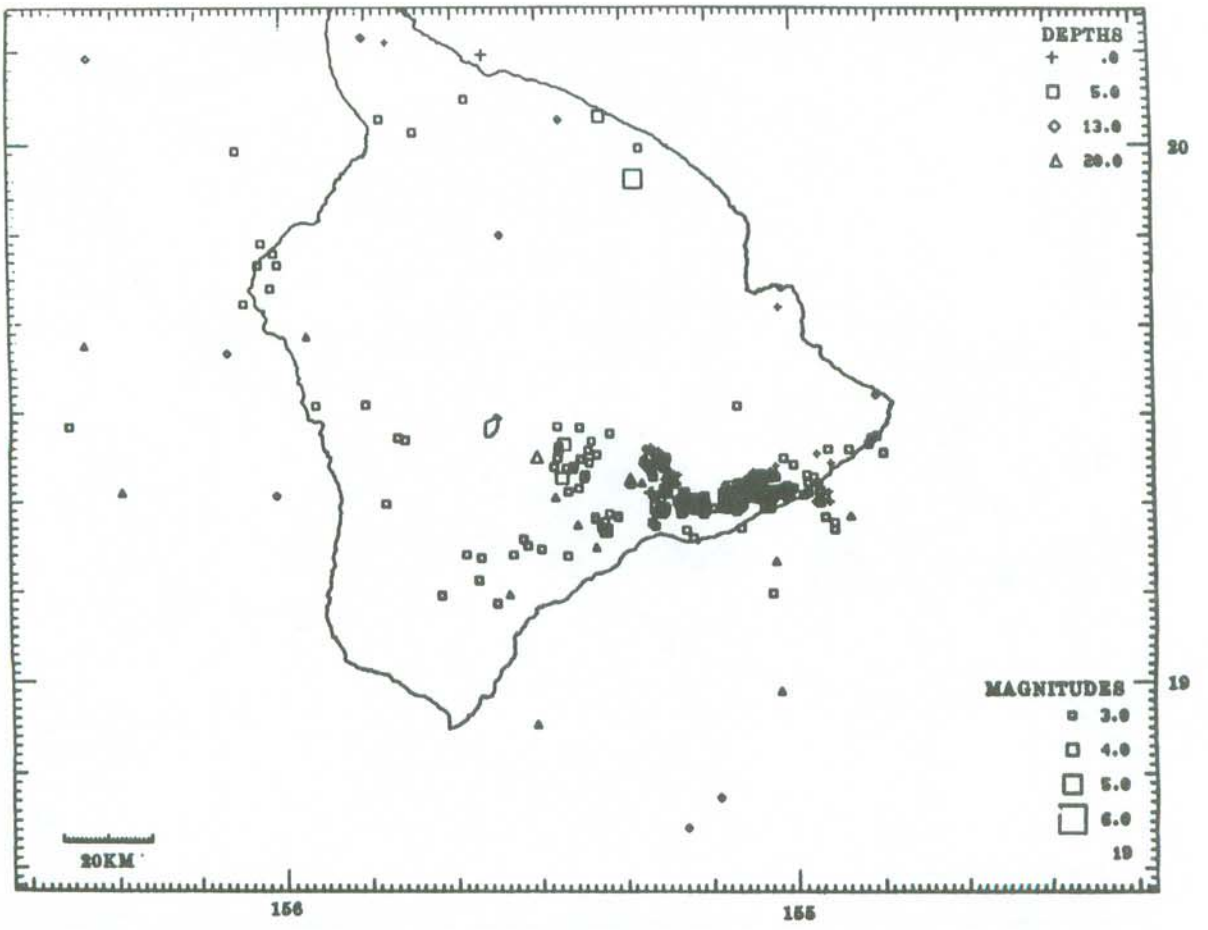

Figure 5 Epicenter plot of magnitude 3 and above earthquakes for the year 1977.

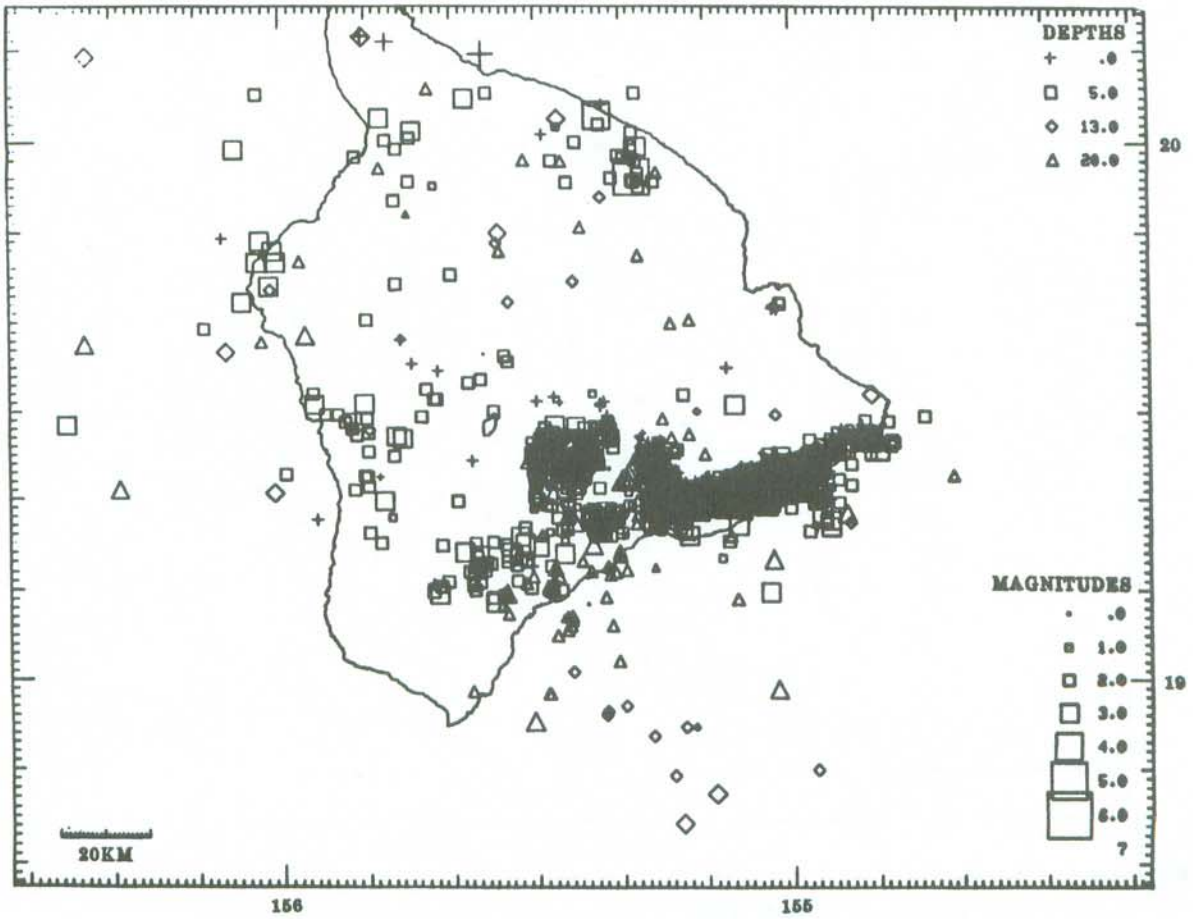

Figure 6. Epicenter plot of all events located for the year 1977.

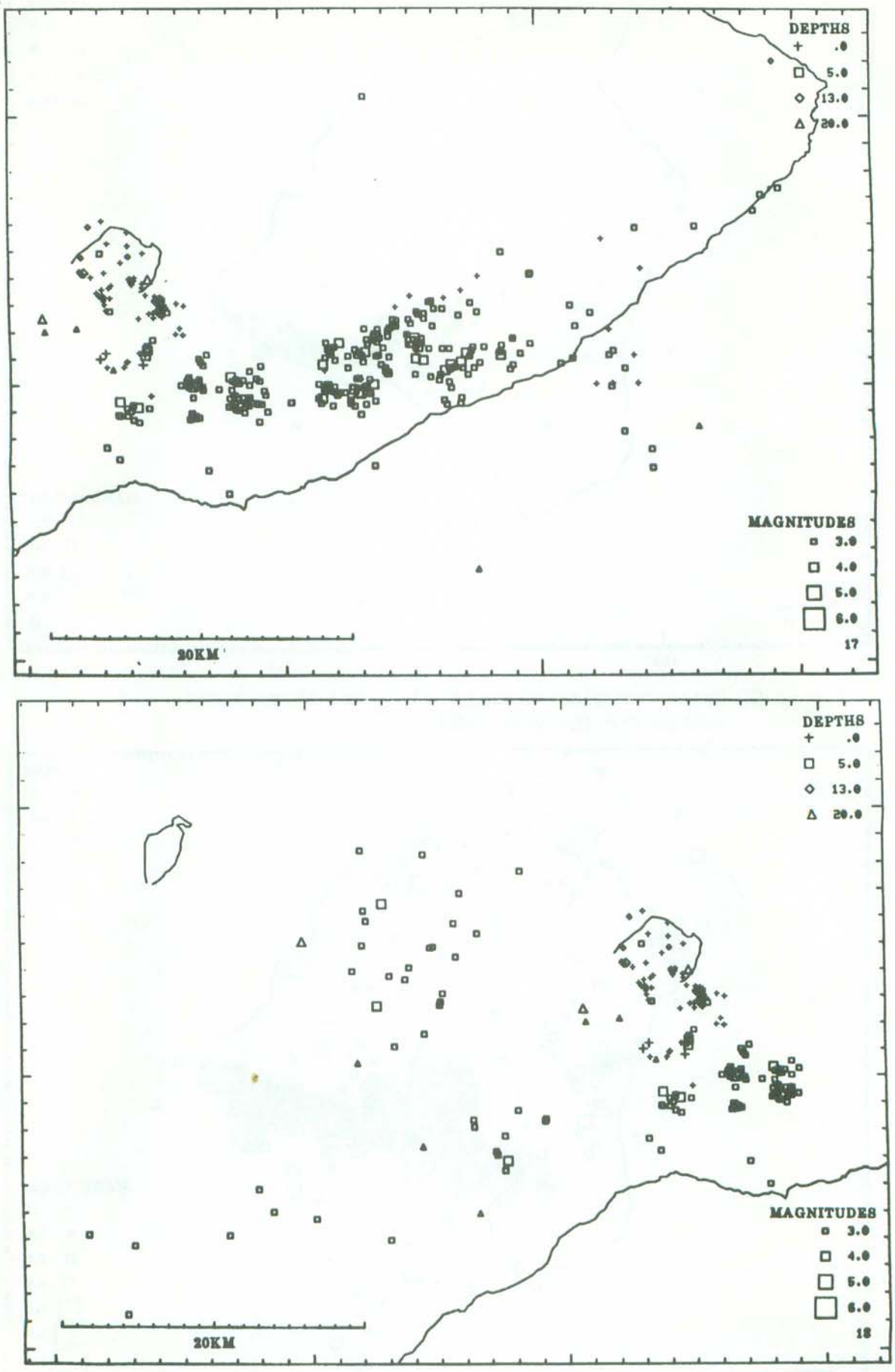

Figure 7. Epicenter plot of Mauna Loa and Kilauea earthquakes magnitude 3 and above for the year 1977.

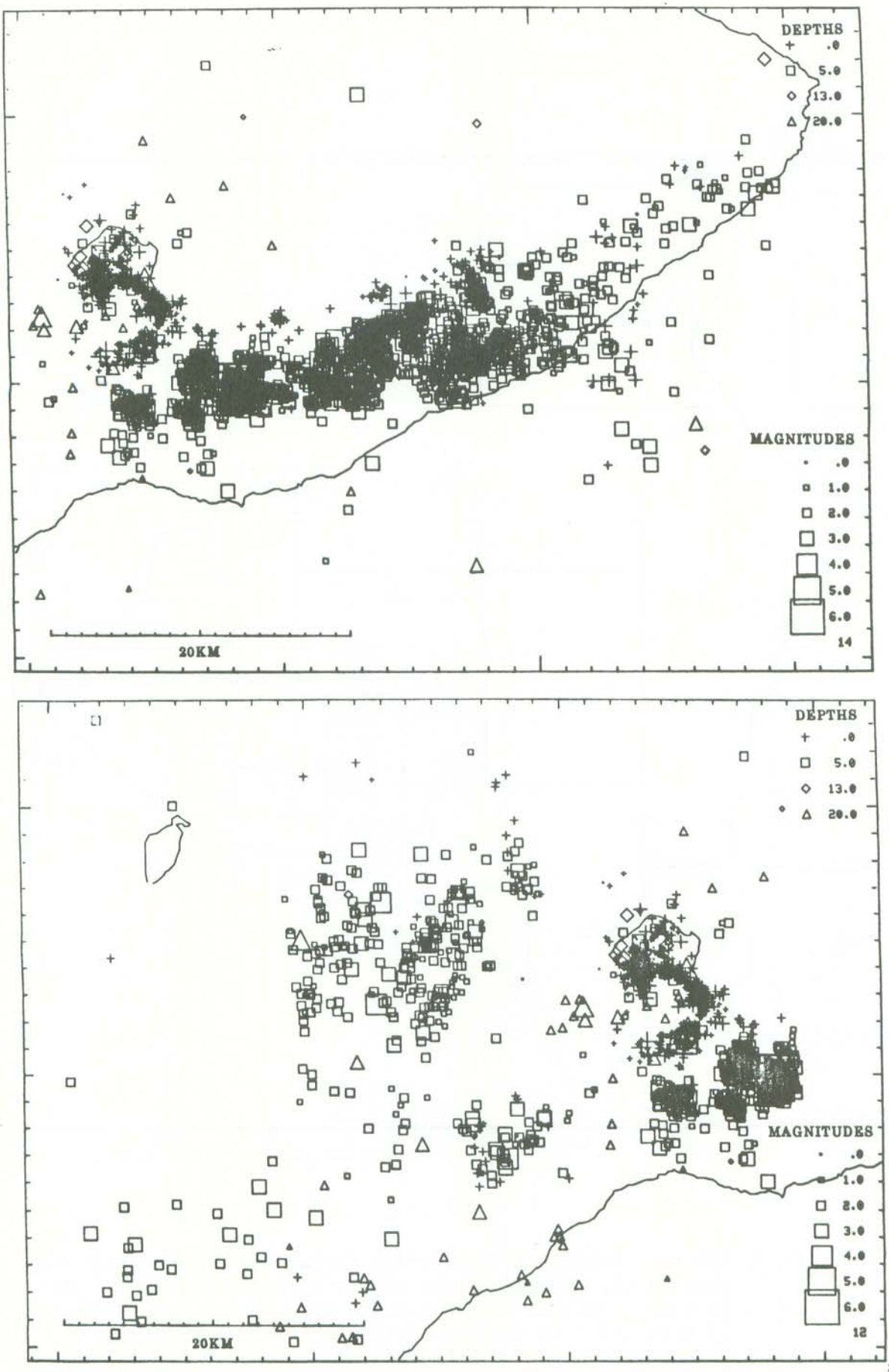

Figure 8. Epicenter plot of all Mauna Loa and Kilauea earthquakes located for the year 1977.

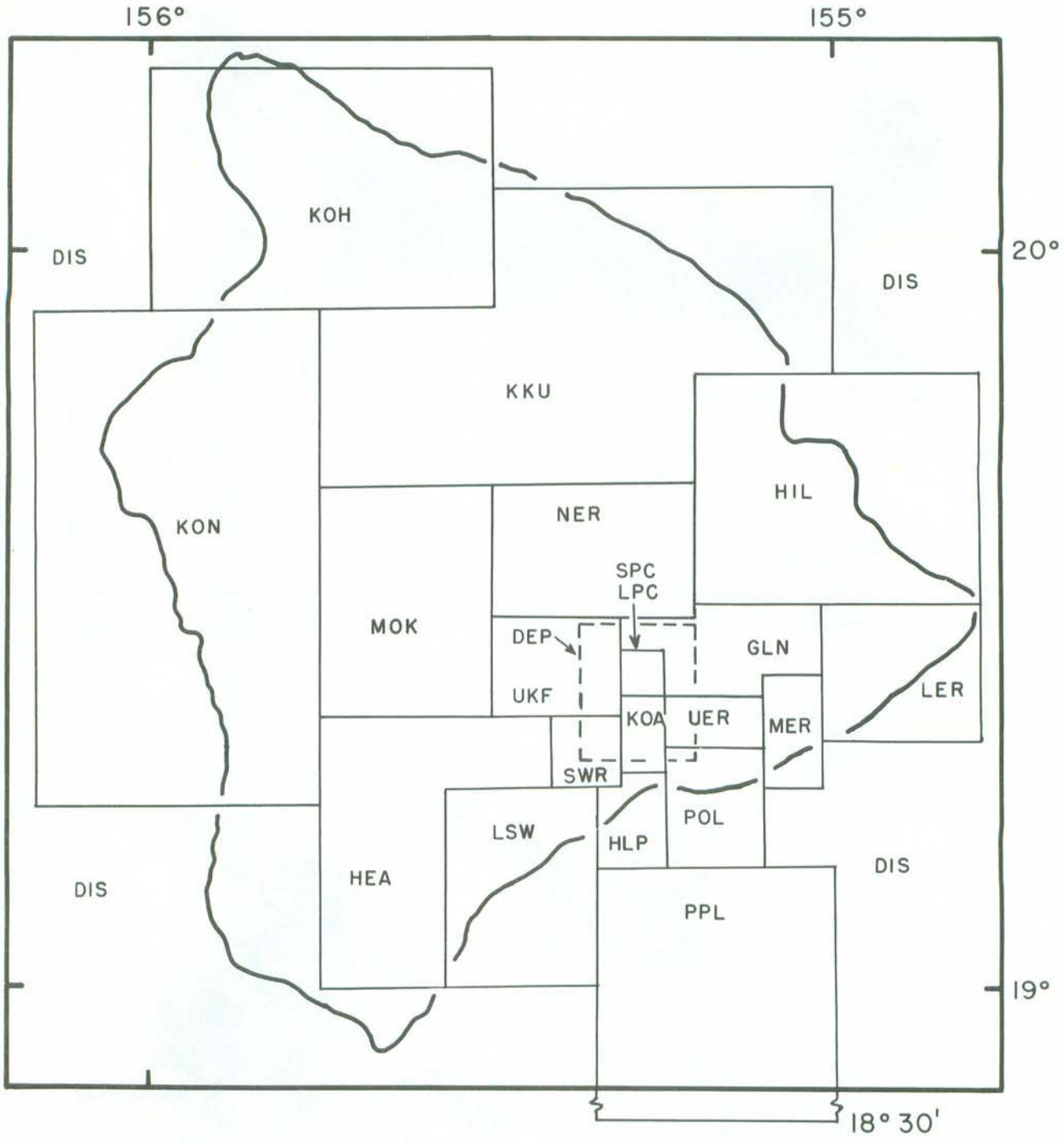

Figure 9. Map indicating limits of areas for specific mnemonic codes used in the remarks column of the earthquake summary. DEP is a code applied to earthquakes with depths greater than 13 kilometres in the Kilauea region. SPC is used for depths between 0 and 6 km, and LPC is used between 6 and 13 km.

Table 4. Coordinates of named regions.

Name	Limits								
	NORTH		SOUTH		EAST		WEST		DEPTHS
	D	M	D	M	D	M	D	M	0
SPC	19	27	19	23	155	15	155	19	0 - 6
LPC	19	27	19	23	155	15	155	19	6 - 13
DEP	19	29	19	18	155	22	155	22	13 - 70
UER	19	23	19	19	155	6	155	15	
KOA	19	23	19	17	155	15	155	19	
SWR	19	22	19	16	155	19	155	25	
UKF	19	29	19	22	155	19	155	30	
MER	19	25	19	16	155	1	155	6	
LER	19	31	19	20	154	47	155	1	
POL	19	19	19	10	155	6	155	15	
LSW	19	16	19	0	155	21	155	34	
PPL	19	10	18	30	155	0	155	21	
HLP	19	17	19	10	155	15	155	21	
MOK	19	40	19	22	155	30	155	45	
GLN	19	31	19	23	155	1	155	19	
KON	19	55	19	15	155	45	156	10	
HEA	19	22	19	0	155	25	155	45	
KOH	20	15	19	55	155	30	156	0	
NER	19	40	19	29	155	12	155	30	
HIL	19	50	19	31	154	47	155	12	
KKU	20	5	19	40	155	0	155	45	
DIS	EVERYPLACE ELSE								
BLS	QUARRY BLAST								

When coordinates imply an overlap, precedence is given as shown in Figure 9.

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of North latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = \left(\sum R_i^2/NR\right)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standrad error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 9 for location of mnemonic code.

Table 5 lists all events located during 1977. Table 6 lists only events of magnitude 3.5 or larger.

TABLE 5. HVO EARTHQUAKE SUMMARY LIST PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JAN	1	426	35.33	19	19.69	155	6.95	9.11	3.7	4.0	31	2	183	.09	7	1.0	.9	29	UER
		1	1137	23.25	19	22.88	155	14.54	5.45	2.4	2.8	16	0	150	.06	3	.9	.7	15	UER
		2	446	25.06	19	21.01	155	8.35	8.48	2.6	3.1	23	1	186	.09	3	.9	1.0	22	UER
		2	716	30.72	19	20.42	155	9.20	9.21	2.2	2.7	22	0	191	.07	3	1.4	1.1	21	UER
		2	828	43.26	19	22.80	155	5.09	8.55	2.0	2.6	16	0	210	.08	4	2.6	1.0	15	MER
		2	15	1	11.32	20	.16	155	47.75	9.54	2.6	2.9	24	2	174	.16	14	1.3	2.0	21	KOH
		2	16	9	21.81	19	22.49	155	25.49	8.92	1.8	2.9	20	0	54	.08	4	.8	1.5	20	UKF
		2	2133		2.89	19	23.21	155	14.97	2.96	2.4	3.3	16	0	114	.08	2	.6	.6	16	GLN
		2	2140		36.67	19	23.00	155	14.85	3.27	2.1	3.0	15	1	61	.08	2	.6	.6	14	GLN
		2	2248		56.77	19	19.71	155	7.56	8.54	2.3	3.2	19	0	206	.06	6	2.5	1.2	17	UER
		3	212		35.41	19	21.75	155	4.47	7.48	2.0	2.7	18	0	203	.12	5	1.9	1.3	18	MER
		3	232		44.85	19	21.39	155	13.03	7.69	1.8	2.6	19	0	161	.13	2	1.3	1.1	18	UER
		3	1524		16.21	19	21.10	155	6.28	8.77	2.4	3.0	26	0	93	.07	6	.7	1.3	26	UER
		3	17	5	51.56	19	23.92	155	15.80	3.39	3.0	3.7	27	0	31	.07	2	.5	.6	25	SPC
		4	057		6.13	19	20.42	155	12.90	8.97	2.1	2.7	18	0	67	.04	4	.8	1.4	18	UER
		4	157		10.18	19	23.48	155	17.18	3.64	3.0	3.7	32	1	55	.13	0	.4	.7	30	SPC
		4	855		45.90	19	23.33	155	16.87	2.88	2.9	3.7	14	2	54	.11	0	.5	.6	9	SPC
		4	1023		37.86	20	4.76	155	38.45	7.80	3.1	3.5	31	2	162	.14	38	1.1	1.4	25	KOH
		4	1425		13.23	19	23.24	155	14.85	3.84	3.6	4.1	29	0	47	.08	2	.5	.8	27	GLN
		4	1446		34.16	19	23.23	155	14.79	3.37	1.8	2.4	14	0	66	.05	3	.6	.8	10	GLN
		4	1454		43.37	19	23.01	155	14.73	3.25	2.3	3.3	18	1	60	.11	2	.7	.8	14	GLN
		4	1521		52.59	19	23.54	155	15.39	2.65	1.8	2.7	17	1	88	.07	2	.5	.6	16	SPC
		4	2014		39.53	19	22.15	155	4.96	8.07	2.0	2.8	24	0	81	.08	5	.7	1.2	22	MER
		5	146		5.13	19	19.68	155	12.57	7.53	1.7	2.6	19	0	81	.05	5	.8	1.6	18	UER
		5	425		44.56	19	19.83	155	11.10	7.99	1.7	2.4	21	0	90	.10	5	.9	1.6	21	UER
		5	439		54.63	19	20.09	155	12.01	7.59	1.7	2.4	21	0	80	.11	5	.7	1.5	16	UER
		5	556		36.07	19	21.40	155	6.56	9.47	2.2	2.9	28	1	86	.09	6	.7	.9	25	UER
		5	615		34.73	19	22.08	155	16.11	31.81	2.3	2.6	31	1	58	.10	1	1.2	1.5	27	DEP
		5	959		30.90	19	21.08	155	2.69	6.41		2.6	18	0	162	.10	2	1.5	1.7	16	MER
		5	1522		3.85	19	21.02	155	51.36	8.98	1.9	2.6	16	2	147	.17	9	1.2	2.3	15	KON
		5	16	9	38.28	19	22.86	155	17.50	12.59	1.5	2.3	24	1	41	.09	1	.8	.8	23	KOA
		5	1725		2.01	19	19.21	155	15.59	8.85	1.8	2.7	22	0	94	.06	4	.7	1.3	22	KOA
		5	22	7	35.94	18	58.58	155	37.91	37.96	2.7	2.7	26	2	266	.13	27	2.4	1.6	22	DIS
		5	2326		26.84	19	20.32	155	13.35	8.91	1.6	2.6	22	0	63	.07	4	.8	1.5	17	UER
		5	2356		29.92	19	25.69	155	24.35	9.45	2.4	3.1	29	0	49	.10	8	.6	1.3	26	UKF
		6	311		24.49	19	22.79	155	14.50	3.42	2.0	2.6	15	1	71	.08	2	.6	.9	5	UER
		6	435		30.36	19	19.70	155	12.43	7.09		2.6	20	0	83	.10	5	.8	1.7	19	UER
		6	443		24.79	19	59.19	155	46.48	9.62	1.7	2.3	21	3	125	.19	16	1.3	1.7	20	KOH
		6	515		58.96	19	20.34	155	8.73	8.15	1.6	2.4	22	0	72	.08	4	.8	1.6	17	UER
		6	6	3	49.33	19	19.02	155	13.40	6.37	1.9	2.6	21	0	76	.11	4	.8	1.8	19	UER
		6	833		10.38	18	56.95	155	19.71	14.84		2.3	29	1	242	.19	27	2.3	2.4	26	PPL
		6	1212		53.48	19	23.57	155	15.46	2.68	1.7	2.1	15	1	89	.07	2	.5	.7	11	SPC
		6	1225		43.79	19	25.38	155	25.01	9.13	1.8	2.5	24	0	56	.11	7	.7	1.9	18	UKF
		6	1453		47.60	19	21.05	155	13.08	8.39	1.6	2.6	21	0	59	.07	3	.8	1.5	16	UER
		6	1515		29.69	19	20.38	155	12.97	9.63	1.6	2.5	19	0	67	.06	4	.9	1.5	18	UER
		6	1817		12.68	19	23.13	155	14.82	3.44	2.2	3.2	19	0	47	.06	2	.6	.8	19	GLN
		6	1918		29.92	19	20.62	155	9.51	8.76	1.8	2.6	22	0	72	.07	3	.8	1.5	20	UER
		6	2144		47.86	19	23.79	155	15.27	3.20	1.4	2.4	12	0	95	.05	2	.6	.8	8	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JAN	6	2352	6.67	19	19.10	155	11.79	7.32	2.6	3.3	24	0	103	.09	5	.8	1.5	22	UER
		7	048	33.70	19	13.72	155	36.96	9.44	2.6	3.1	29	0	197	.22	2	1.6	1.3	26	HEA
		7	522	57.60	19	23.34	155	14.96	3.25	2.2	2.8	17	1	73	.09	2	.6	.8	16	GLN
		7	15	1.70	19	23.79	155	15.82	3.16	2.4	3.0	24	0	64	.11	2	.6	.7	23	SPC
		7	2059	59.20	19	20.16	155	12.05	7.89	2.4	2.8	29	0	79	.08	5	.7	1.0	29	UER
		8	0	2 38.71	19	19.50	155	8.44	9.67	2.9	4.0	34	2	82	.08	4	.6	.8	32	UER
		8	2224	44.19	19	23.98	155	15.93	3.50	2.4	3.3	27	0	44	.08	2	.6	.6	26	SPC
		8	2240	54.67	19	24.00	155	15.90	3.24	2.4	3.1	25	0	44	.09	2	.5	.6	21	SPC
		9	1137	27.35	19	20.93	155	6.15	8.05	2.0	2.7	24	1	98	.08	6	.7	1.1	20	UER
		9	1348	36.66	19	21.56	155	5.99	7.97	1.9	2.4	20	0	85	.09	6	.9	1.9	18	MER
		9	1745	22.51	19	18.99	155	15.79	8.31	1.7	2.6	21	0	100	.08	4	.8	1.4	16	KOA
		9	2125	52.17	19	19.11	155	13.33	8.72	1.5	2.2	18	0	75	.07	4	.9	1.7	14	UER
		9	2232	19.73	19	26.94	154	53.04	8.78	1.8	2.7	13	0	244	.11	4	2.8	1.1	12	LER
		10	4	7 59.69	19	19.16	155	12.08	7.38	1.7	2.6	23	0	98	.10	5	.7	1.3	20	UER
		10	951	47.52	19	20.71	155	10.85	8.13	2.7	3.2	26	1	75	.07	3	.6	1.2	24	UER
		10	1212	56.89	19	23.68	155	16.71	2.93	2.4	3.4	23	0	74	.10	1	.4	.6	18	SPC
		10	1654	42.31	19	46.81	155	57.83	26.55	2.8	2.6	28	2	268	.22	17	2.6	2.6	24	KON
		11	017	47.90	19	21.18	155	7.53	7.98	1.8	2.7	25	0	80	.09	7	.7	1.8	22	UER
		11	1655	21.63	19	22.36	155	4.64	7.70	2.0	2.5	23	0	88	.09	4	.7	1.2	21	MER
		11	1733	9.91	19	23.03	155	16.89	3.22	2.0	3.3	19	1	58	.06	1	.5	.6	18	SPC
		11	2120	17.37	19	25.84	154	54.54	6.45	1.8	2.7	18	1	215	.14	6	1.8	2.5	12	LER
		11	2129	25.91	19	24.03	155	16.18	2.91	1.6	2.5	14	0	103	.07	2	.6	.6	13	SPC
		12	3	5 59.27	19	24.22	155	17.65	17.60	3.9	4.1	36	1	29	.12	2	.6	1.2	33	DEP
		12	712	51.37	19	19.54	155	11.51	9.48	2.5	3.1	25	0	94	.08	6	.7	1.2	25	UER
		12	745	12.23	19	21.13	155	4.56	6.90	2.2	2.7	22	1	93	.10	4	.7	1.2	17	MER
		12	1520	42.67	19	13.92	155	26.94	9.17	2.9	3.4	28	0	141	.13	5	.9	1.3	26	LSW
		13	4	1 3.84	19	20.62	155	7.70	9.42	2.6	2.7	26	2	83	.07	6	.6	1.1	24	UER
		13	754	17.68	19	23.83	155	15.45	3.12	2.2	3.1	20	2	66	.08	3	.5	.7	18	SPC
		13	834	32.32	19	23.33	155	14.74	3.70	3.0	3.4	24	0	46	.08	3	.6	.8	24	GLN
		13	1134	5.04	19	17.41	155	16.04	8.17	2.4	2.8	24	0	137	.10	5	.8	1.1	24	KOA
		13	1151	1.06	19	17.40	155	15.77	8.66	2.4	2.7	26	0	137	.10	4	.7	.8	26	KOA
		14	1326	42.38	19	19.83	155	7.21	9.93	4.6	4.5	32	0	108	.07	5	.8	.6	29	UER
		14	1441	51.72	19	18.03	155	23.42	3.96	2.3	2.8	20	0	124	.11	4	.8	2.1	20	SWR
		14	2130	30.95	19	20.23	155	7.72	8.33	2.3	2.7	21	0	92	.07	5	.9	1.7	21	UER
		14	2158	45.82	19	24.16	155	17.72	17.06	2.9	3.2	33	2	34	.11	2	.7	.9	29	DEP
		14	2218	15.51	19	19.94	155	7.24	9.57	2.9	3.1	29	1	105	.10	5	.8	.9	26	UER
		14	23	1 53.07	19	22.96	155	14.42	3.66	2.1	2.5	21	0	48	.07	2	.6	.8	20	UER
		15	428	16.78	19	23.07	155	14.62	3.55		2.8	22	0	48	.06	3	.6	.8	22	GLN
		15	1820	18.68	19	22.47	155	29.70	9.98		2.8	19	0	49	.13	4	.7	1.5	18	UKF
		16	10	0 52.78	19	23.23	155	14.77	3.29	1.6	2.6	12	0	67	.04	3	.6	.9	10	GLN
		16	2244	58.01	19	23.10	155	14.79	2.45	1.8	2.3	11	0	91	.04	2	.6	.8	9	GLN
		17	5	3 48.16	19	19.51	155	8.58	8.23	2.2	3.3	23	0	79	.07	4	1.0	1.3	22	UER
		17	512	46.46	19	20.26	155	8.52	8.21	1.8	2.7	23	0	76	.09	5	.8	1.9	19	UER
		17	515	16.91	19	21.44	155	49.85	12.18	2.3	2.5	18	1	54	.13	11	1.0	.9	18	KON
		17	835	32.32	19	23.56	155	16.96	2.89	1.6	2.6	9	0	67	.04	0	.7	.7	9	SPC
		17	1154	50.24	19	23.10	155	16.96	2.64	1.7	2.6	12	1	64	.04	1	.5	.7	11	SPC
		17	1720	58.03	19	22.91	155	14.53	3.91	2.5	3.1	21	0	65	.06	3	.6	.9	20	UER
		17	2356	2.45	19	23.15	155	14.99	3.09	2.2	3.2	12	0	68	.04	2	.6	.8	12	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JAN	18	011	49.50	19	23.35	155	14.86	5.31	1.5	2.0	11	0	72	.03	3	.6	.9	10	GLN
		18	014	6.43	19	23.15	155	14.79	3.17	2.3	2.9	15	0	64	.04	2	.6	.7	15	GLN
		18	435	26.43	19	19.26	155	16.37	7.94	1.5	2.5	18	0	100	.09	2	.9	1.6	17	KOA
		18	732	50.12	19	23.39	155	16.93	2.91	2.6	3.4	25	1	36	.10	0	.4	.5	20	SPC
		18	1241	37.30	19	20.16	155	8.02	7.50		2.6	15	0	88	.07	3	1.1	3.2	13	UER
		18	1327	15.07	19	27.10	154	51.28	8.94	2.5	3.0	23	1	270	.09	5	2.3	1.0	19	LER
		18	1615	31.32	19	23.46	155	16.92	2.93	1.2	2.4	12	1	66	.06	0	.5	.7	11	SPC
		18	18 3	55.28	19	24.03	155	15.74	3.07	2.0	3.0	17	1	112	.05	2	.6	.7	15	SPC
		18	1814	1.60	19	19.58	155	10.17	8.50		2.6	25	0	95	.09	6	.8	1.5	22	UER
		18	1915	27.87	19	14.87	155	33.67	8.37	2.2	2.9	25	0	118	.16	6	.9	1.4	22	LSW
		18	2155	43.60	19	18.61	155	15.15	9.45	2.5	2.9	22	0	99	.08	4	.8	1.0	21	KOA
		19	153	34.97	19	23.30	155	17.05	2.83	1.2	2.4	12	1	57	.06	0	.5	.7	10	SPC
		19	252	13.60	19	22.67	155	4.46	8.28	2.4	3.0	21	1	93	.07	4	.6	1.1	18	MER
		19	349	51.94	19	19.58	155	11.35	9.91	2.4	2.9	28	0	95	.06	6	.8	.9	25	UER
		19	356	9.07	19	29.62	155	2.08	14.00		2.8	6	0	119	.78	3	5.1	7.2	3	GLN
		19	426	12.85	19	5.64	155	26.70	41.37	1.8	2.1	14	1	205	.12	7	2.1	2.5	6	LSW
		19	429	2.94	19	6.09	155	26.29	41.05	1.9	2.1	13	0	194	.10	7	2.9	5.4	7	LSW
		19	1011	10.85	19	19.66	155	11.17	7.11	1.8	2.6	20	0	93	.10	6	.8	2.0	18	UER
		19	1212	59.05	19	23.99	155	28.95	10.46	2.8	2.9	29	0	39	.10	4	.7	1.2	22	UKF
		19	2358	33.60	19	20.77	155	13.02	8.69	1.6	2.3	21	0	62	.07	3	.7	1.1	19	UER
		20	220	27.97	19	19.30	155	11.02	9.11	3.4	3.8	30	3	103	.10	6	.6	1.0	27	UER
		20	736	38.38	19	20.74	155	3.07	6.83		2.6	16	0	123	.09	2	1.1	1.7	16	MER
		20	1121	43.13	19	27.34	154	50.59	7.40	2.5	3.2	15	2	273	.10	6	1.6	1.3	14	LER
		20	1439	34.89	19	18.64	155	10.91	8.05	2.7	3.3	25	1	123	.09	5	.7	1.4	22	POL
		21	111	38.35	19	23.49	155	15.07	3.30	1.9	2.7	12	0	85	.05	3	.7	.8	11	SPC
		21	928	54.12	19	23.79	155	15.58	3.06	1.4	2.1	14	0	97	.05	3	.6	.7	14	SPC
		21	1211	44.15	19	19.58	155	3.13	6.75	2.1	2.5	23	0	201	.12	1	1.5	1.6	17	MER
		21	13 0	47.85	19	20.42	155	12.66	8.00	1.6	2.3	21	0	69	.08	4	.8	1.2	19	UER
		21	1331	2.64	19	20.69	155	13.82	8.10	1.6	2.3	19	0	66	.08	4	.8	1.3	16	UER
		21	18 4	57.73	19	19.31	155	3.07	7.44	2.4	3.1	23	0	43	.11	1	1.4	1.0	17	MER
		21	2018	39.05	19	20.03	155	3.59	5.80	2.0	2.6	21	0	135	.11	1	1.3	1.2	16	MER
		21	2026	3.67	19	24.76	155	25.33	10.18	1.7	2.2	23	0	52	.10	6	.7	1.7	18	UKF
		21	2140	33.08	19	19.26	155	15.60	8.79	1.6	2.5	28	1	93	.07	4	.6	.8	22	KOA
		21	2147	26.69	19	19.20	155	2.75	7.13	2.1	2.5	20	0	208	.13	1	1.7	1.0	17	MER
		21	2152	1.93	19	23.90	155	16.19	3.35	2.0	2.6	25	1	45	.08	2	.5	.6	21	SPC
		21	2246	23.44	19	19.43	155	11.84	7.17	1.8	2.3	27	0	94	.12	5	.8	1.2	22	UER
		22	038	27.78	19	19.94	155	13.12	10.53	2.7	3.3	33	0	70	.08	5	.6	.7	31	UER
		22	114	.59	19	17.26	155	23.60	3.95	1.6	2.1	16	1	117	.09	5	.8	2.7	16	SWR
		22	320	17.31	19	24.03	155	16.21	3.20	1.8	2.5	21	1	77	.07	2	.5	.6	20	SPC
		22	514	16.52	19	19.29	155	19.12	7.94	1.6	2.0	24	0	89	.10	5	.7	1.2	16	SWR
		22	525	40.82	19	23.68	155	15.32	3.02	1.1	1.9	14	0	94	.05	3	.5	.7	11	SPC
		22	732	42.69	19	21.32	155	15.25	10.23	3.6	4.0	32	0	66	.06	2	.6	.7	26	KOA
		22	8 2	44.18	19	23.04	155	14.62	3.87	3.1	3.5	26	0	53	.07	5	.6	.8	23	GLN
		22	832	15.10	19	22.62	155	14.58	2.89	2.0	3.5	11	0	120	.04	3	.6	.8	8	UER
		22	836	33.23	19	23.20	155	14.76	3.45	1.4	1.8	11	0	105	.03	5	.7	.9	7	GLN
		22	856	32.74	19	17.39	155	12.65	11.32	1.8	1.8	14	0	213	.05	10	1.7	1.9	0	POL
		22	937	4.27	19	22.74	155	14.57	2.51	1.8	1.9	11	0	88	.03	2	.5	.8	0	UER
		22	959	36.32	19	22.76	155	14.68	2.51	1.4	1.6	12	0	86	.03	2	.5	.7	0	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JAN	22	958	19.73	19	23.41	155	14.78	3.62	1.6	2.4	19	0	64	.06	3	.6	.8	18	GLN
		22	1142	15.39	19	22.61	155	14.00	3.51	1.8	1.9	17	0	59	.05	2	.6	.7	0	UER
		22	1153	7.36	19	55.44	155	26.56	10.09	1.6	2.1	15	1	244	.10	11	2.7	.9	0	KKU
		22	1236	28.17	21	15.07	160	33.76	6.92	5.1	3.6	26	4	331	.26265		60.2	78.6	1	DIS
		22	1441	22.38	19	20.00	155	13.13	6.67		1.6	21	0	69	.09	5	.8	1.5	16	UER
		22	15 0	1.60	19	23.52	155	15.25	2.90	1.4	1.7	11	0	85	.07	2	.7	.8	0	SPC
		22	1526	55.92	19	23.94	155	15.74	3.12	1.8	2.2	18	0	109	.07	2	.5	.5	15	SPC
		22	1627	31.61	19	23.91	155	15.73	3.25	1.4	1.8	12	0	109	.05	2	.7	.6	0	SPC
		22	19 9	10.44	19	40.26	155	49.90	6.91	2.6	2.5	23	0	135	.17	2	.9	1.1	15	KON
		22	1950	38.63	19	19.59	155	8.04	7.84		1.6	22	0	92	.07	4	.8	1.5	0	UER
		22	20 2	.10	19	23.25	155	14.66	3.28	3.0	3.6	25	1	47	.10	3	.6	1.0	21	GLN
		22	20 3	29.77	19	23.25	155	14.90	3.36	2.0	1.4	14	0	70	.03	2	.6	.7	0	GLN
		22	2017	58.32	19	23.16	155	14.87	3.13	1.2	1.9	15	0	67	.06	2	.6	.7	0	GLN
		22	21 7	58.20	19	23.14	155	14.79	3.38	1.4	1.9	12	0	64	.04	2	.6	.9	9	GLN
		22	2113	56.91	19	21.20	155	1.33	6.66		1.6	20	0	186	.09	4	1.2	1.4	0	MER
		22	2159	1.87	19	20.95	155	11.61	9.24		1.6	22	0	69	.05	4	.7	1.3	0	UER
		22	2313	22.79	19	20.07	155	7.83	6.05	1.8	1.6	21	0	92	.14	5	.9	2.6	16	UER
		22	2358	10.93	19	28.56	154	49.45	2.83	1.1	.7	10	1	293	.10	7	3.5	3.2	0	LER
		23	056	46.83	19	23.31	155	15.07	3.18	1.1	1.5	12	1	74	.06	2	.6	.8	0	SPC
		23	2 1	37.25	19	23.20	155	14.81	3.24	1.1	1.6	9	0	110	.03	2	.8	1.0	0	GLN
		23	239	26.97	19	23.76	155	15.54	3.11	1.3	1.9	14	0	100	.04	3	.6	.7	12	SPC
		23	321	56.01	19	26.29	154	55.96	5.77		.2	8	2	60	.14	5	2.3	3.7	0	LER
		23	431	27.09	19	22.81	155	2.27	8.00	2.3	2.2	25	0	140	.12	5	1.0	1.1	20	MER
		23	435	51.93	19	20.23	155	8.25	7.90	1.8	2.2	21	0	81	.07	4	.7	1.4	0	UER
		23	438	55.47	19	17.68	155	21.97	5.96		.9	12	0	219	.09	5	1.7	3.3	0	SWR
		23	537	35.46	19	15.37	155	26.94	9.20		1.3	13	0	79	.07	2	1.4	1.0	0	LSW
		23	641	31.21	19	19.79	155	16.44	8.99	2.3	2.6	29	0	93	.07	2	.7	1.0	22	KOA
		23	715	52.23	19	19.68	155	11.07	8.63	1.7	2.5	27	0	93	.08	5	.7	1.1	19	UER
		23	741	58.65	19	19.50	155	10.97	7.92		1.2	21	0	98	.10	5	.8	1.4	0	UER
		23	1049	1.84	19	20.32	155	12.01	8.78	4.0	4.3	36	1	76	.09	5	.6	.7	34	UER
		23	18 9	30.19	19	22.82	155	16.82	3.05	2.0	3.1	15	1	56	.09	1	.5	.7	13	KOA
		23	2032	3.16	19	19.63	155	10.67	9.69	2.6	3.2	32	1	95	.08	5	.6	.9	27	UER
		24	146	19.19	19	21.05	155	1.71	6.46		2.4	20	1	182	.14	3	1.4	1.6	17	MER
		24	2 5	26.85	19	20.20	155	12.30	8.27	1.6	2.6	28	0	76	.09	5	.8	1.0	25	UER
		24	3 4	32.54	20	.01	155	25.34	10.38	2.0	2.1	17	4	282	.12	15	1.6	.7	10	KKU
		24	3 7	58.46	19	18.09	155	23.64	10.26	2.8	3.7	35	0	109	.12	4	.6	.8	34	SWR
		24	1532	21.67	19	22.92	155	2.57	8.46	2.0	2.5	20	0	132	.11	4	1.1	1.4	13	MER
		25	339	8.15	19	.90	155	25.97	15.24		2.1	31	3	40	.23	16	1.8	1.0	29	LSW
		25	541	9.30	19	27.20	154	52.94	6.75	1.7	2.1	16	1	247	.12	3	1.8	2.1	13	LER
		25	542	22.08	19	19.22	155	11.94	7.41	2.4	3.0	29	1	98	.11	5	.7	1.3	27	UER
		25	552	.27	19	18.55	155	8.41	7.91	1.9	2.6	23	0	85	.10	2	.8	1.2	20	POL
		25	1042	56.48	19	19.32	155	15.53	7.78	1.7	2.3	17	0	105	.10	4	.9	1.9	15	KOA
		25	1128	51.99	19	19.67	155	11.13	7.68	1.9	2.5	20	0	94	.08	5	.8	1.4	20	UER
		25	1130	10.97	19	19.19	155	12.06	8.77	2.6	3.1	26	1	97	.11	5	.7	1.0	23	UER
		25	1524	57.42	19	21.50	155	6.72	7.72	1.9	2.5	22	0	83	.08	6	.8	1.5	20	UER
		25	1917	9.04	19	21.36	155	4.60	7.65	1.9	2.4	24	0	87	.09	4	.8	1.5	22	MER
		25	2139	58.06	19	19.63	155	11.65	8.29	2.3	3.0	29	3	90	.12	6	.6	1.0	24	UER
		26	041	28.43	19	22.49	155	4.45	8.21	2.3	3.0	24	2	93	.07	4	.6	1.0	19	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JAN	26	046	17.51	19	19.14	155	11.80	7.13	1.7	2.4	23	0	101	.08	5	.7	1.2	19	UER
		26	927	37.52	19	27.32	155	29.36	11.96	2.0	2.4	24	1	73	.13	9	.9	1.3	16	UKF
		26	1533	22.44	19	21.33	155	8.22	8.97	2.4	3.2	22	0	71	.06	3	.8	1.1	20	UER
		26	1536	13.19	19	20.94	155	8.04	8.70	1.7	2.5	19	0	76	.08	4	.8	1.5	11	UER
		26	2113	10.46	19	20.44	155	5.89	8.78	2.7	3.1	29	2	113	.08	5	.6	1.0	24	MER
		26	23 6	24.56	19	19.59	155	11.04	7.84	1.9	2.6	26	0	96	.06	5	.7	1.1	25	UER
		27	1222	38.06	19	19.96	155	8.28	8.44	1.8	2.6	21	0	83	.06	5	.8	1.7	20	UER
		27	1234	5.05	19	19.22	155	15.81	9.13	2.6	3.1	24	1	96	.06	3	.7	1.2	23	KOA
		27	1358	9.06	19	21.84	155	5.91	9.46	3.0	3.4	22	1	80	.11	6	.9	1.5	21	MER
		27	1424	32.15	19	25.02	155	28.76	10.63	2.2	2.6	24	0	56	.11	5	.8	1.8	18	UKF
		27	1552	22.19	19	19.95	155	11.35	8.31	1.8	2.6	22	0	86	.10	5	.9	1.5	21	UER
		27	1810	9.55	19	21.15	155	12.96	9.09	2.1	3.0	23	0	59	.07	3	.7	1.1	21	UER
		27	1855	37.88	19	19.33	155	12.26	7.13	1.7	2.5	20	0	92	.08	5	.8	1.9	19	UER
		27	2221	6.87	19	18.34	155	23.66	6.01	2.1	3.1	22	0	108	.11	4	.8	2.0	19	SWR
		28	733	32.21	19	23.36	155	17.06	2.87	2.1	3.0	18	1	60	.06	0	.4	.5	16	SPC
		28	1939	16.10	19	22.12	155	5.05	7.51	1.9	2.0	22	0	120	.09	5	.9	1.4	22	MER
		29	5 8	46.47	19	20.60	155	13.32	8.21	1.6	2.0	25	0	61	.11	4	.7	1.1	24	UER
		29	1125	43.45	19	20.49	155	5.92	9.13	3.4	3.6	33	1	111	.09	5	.8	.6	32	MER
		29	1614	52.09	19	19.34	155	8.84	8.47	2.1	2.7	25	0	86	.08	4	.9	1.1	25	UER
		29	17 8	17.83	19	19.29	155	15.62	8.78	1.9	2.5	25	0	92	.07	4	.7	1.0	25	KOA
		29	2055	55.78	19	19.98	155	13.13	8.11	1.9	2.4	26	0	69	.09	5	.7	1.1	26	UER
		29	2248	49.72	19	21.44	155	4.68	9.07	4.1	4.3	35	1	86	.09	4	.8	.6	33	MER
		30	1023	32.57	19	18.93	155	12.32	7.27	1.7	2.0	26	0	100	.09	4	.7	1.3	24	POL
		30	1351	48.27	19	19.76	155	11.56	7.05	2.0	2.4	28	0	89	.12	5	.8	1.2	27	UER
		30	1628	56.24	19	11.18	155	37.26	12.02	3.3	3.1	32	0	115	.23	7	.9	.8	30	HEA
		30	1644	24.21	19	26.80	154	58.04	6.89	2.2	2.4	25	2	161	.11	2	1.1	.9	22	LER
		30	2155	22.66	19	23.44	155	16.90	3.07	2.1	2.8	24	0	41	.09	0	.5	.6	23	SPC
		30	22 2	37.18	19	25.32	155	16.79	1.84	2.1	3.3	19	0	47	.10	1	.5	.5	18	SPC
		31	2 5	34.43	19	21.04	155	2.91	6.81	2.0	2.4	26	1	151	.11	2	1.1	1.1	25	MER
		31	354	50.67	19	19.35	155	12.78	7.75	1.7	2.3	29	0	83	.09	4	.7	1.0	29	UER
		31	556	24.36	19	22.96	155	17.07	2.79	1.4	2.2	16	0	70	.06	1	.6	.6	16	KOA
		31	823	56.22	19	20.85	155	3.50	6.33	2.0	2.3	27	0	116	.12	2	1.2	1.1	25	MER
		31	923	36.70	19	21.57	155	8.29	8.38	2.5	3.0	30	1	67	.08	3	.6	.9	27	UER
		31	1953	19.63	19	27.82	154	51.55	8.59	2.4	2.3	27	2	267	.13	4	2.4	.9	23	LER
		31	2120	51.98	20	58.15	156	6.76	7.75	3.3	3.3	16	3	288	.45	27	16.4	14.5	5	DIS
	FEB	1	448	51.93	19	17.97	155	27.75	9.77	2.1	2.6	28	0	65	.11	3	.7	1.0	26	HEA
		1	722	1.31	19	23.74	155	15.54	3.20	1.6	2.3	16	0	84	.07	3	.6	.8	16	SPC
		1	2128	.89	19	14.79	155	41.35	7.62	2.9	2.9	32	1	189	.19	7	1.0	1.1	28	HEA
		1	2341	35.18	19	23.89	155	15.91	3.03	1.8	2.6	17	1	105	.08	2	.6	.6	12	SPC
		2	541	43.04	19	30.03	155	35.21	7.51	2.0		11	0	159	.11	2	3.8	4.8	9	MOK
		2	647	44.83	19	19.30	155	15.62	8.87	1.8	2.3	27	0	92	.07	4	.6	.8	26	KOA
		2	811	29.30	19	23.14	155	4.18	8.72	3.0	3.3	32	2	110	.08	3	.8	.8	29	MER
		2	1753	44.48	19	28.27	155	22.13	2.55	1.8	2.2	18	0	98	.09	4	.8	1.5	17	UKF
		2	18 8	40.47	19	28.11	155	22.12	6.06	2.0	2.2	17	0	51	.09	9	.8	5.9	14	UKF
		2	19 5	18.37	19	27.59	155	22.11	4.25	1.8	2.3	19	0	49	.15	8	.7	28.5	17	UKF
		3	040	.31	19	22.08	155	4.67	6.19	2.1	2.6	27	0	85	.12	5	.8	1.7	26	MER
		3	151	.77	19	6.47	155	26.24	40.76		1.4	22	0	192	.08	6	1.9	5.3	22	LSW
		3	223	8.82	19	23.34	155	15.10	2.98	2.1	2.9	25	0	46	.08	2	.5	.6	18	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	FEB	3	450	25.24	19	39.29	156	9.05	6.50	2.9	2.3	21	0	268	.18	31	7.3	2.1	20	KUN
		3	852	5.01	19	23.61	155	15.44	2.74	1.9	2.2	15	0	91	.07	2	.5	.6	13	SPC
		3	10 0	48.16	19	25.64	155	25.06	9.31	2.1	2.2	29	0	51	.11	7	.7	1.7	26	UKF
		3	1229	19.61	19	23.32	155	16.94	3.02	2.2	2.7	20	0	56	.07	0	.4	.5	20	SPC
		3	1511	27.68	19	23.95	155	15.78	3.13	2.1	2.7	18	0	110	.05	2	.5	.6	18	SPC
		3	1520	49.70	19	20.94	155	4.50	9.87	4.5	4.6	37	1	99	.09	3	.9	.6	33	MER
		3	1533	22.35	19	20.81	155	7.34	7.92	2.2	2.9	20	0	88	.11	5	.8	2.0	11	UER
		3	1610	1.30	19	20.60	155	4.44	7.81	2.3	2.6	29	0	111	.10	3	.9	.9	29	MER
		3	2052	19.20	19	21.90	155	5.16	8.37	2.6	3.2	32	0	78	.07	5	.8	.7	30	MER
		4	1 7	41.60	19	21.82	155	4.22	6.65	2.4	2.8	31	0	92	.12	4	.8	1.1	28	MER
		4	123	32.86	19	19.29	155	3.58	8.49	2.5	3.0	30	0	201	.11	2	1.4	.8	27	MER
		4	322	42.71	19	21.38	155	7.21	5.59	1.8	2.0	22	0	82	.11	5	.8	2.6	21	UER
		4	359	22.16	19	4.93	155	27.84	43.22	2.6		14	0	293	.08	9	7.5	9.5	14	LSW
		4	425	14.62	20	2.62	155	27.36	16.54	3.7	3.8	19	2	15	.12	53	12.0	98.3	15	KKU
		4	445	12.70	19	20.42	155	13.52	8.83	1.9	2.2	14	0	168	.06	4	1.3	1.9	14	UER
		4	652	38.91	18	39.54	155	5.14	7.00	2.9	3.1	18	0	310	.31	68	32.4	99.0	16	PPL
		4	2121	33.15	19	23.64	155	2.74	9.09	2.5	2.9	29	0	124	.08	3	1.0	.7	27	MER
		4	2157	24.62	19	19.24	155	15.55	8.63	1.6	2.0	20	0	109	.08	4	.8	1.4	19	KOA
		4	2316	24.99	19	18.92	155	13.58	8.55	1.9	1.9	25	1	71	.08	4	.7	1.4	24	POL
		5	10 2	34.94	19	21.72	155	15.15	9.46	1.8	2.2	21	0	61	.07	2	.8	1.2	21	KOA
		5	1418	19.37	19	19.60	155	12.99	7.79	1.6	2.0	19	0	76	.09	5	1.0	1.7	18	UER
		5	1537	50.81	19	24.05	155	16.18	3.16	2.1	2.8	14	0	104	.06	2	.7	.5	14	SPC
		5	2245	.81	19	19.13	155	16.00	9.60	1.6	2.1	19	1	114	.07	3	.9	1.4	17	KOA
		6	017	26.44	19	23.88	155	15.90	3.56	2.5	3.4	27	0	37	.09	2	.6	.7	27	SPC
		7	327	15.97	19	22.77	155	4.66	7.77	2.4	2.9	32	1	91	.10	3	.6	.9	30	MER
		7	724	53.09	19	18.84	155	13.36	10.16	2.8	3.2	33	2	78	.10	3	.6	.9	31	POL
		7	1125	21.92	19	23.88	155	16.11	2.68	1.7	2.2	14	0	100	.08	2	.6	.6	14	SPC
		7	1633	15.52	19	24.94	155	23.35	10.77	2.6	2.5	32	1	44	.11	7	.6	.9	30	UKF
		7	2028	11.19	19	22.98	155	14.71	3.08	1.9	2.3	20	0	49	.08	2	.6	.7	20	UER
		7	2030	56.21	19	22.91	155	14.79	2.91	1.6	2.2	15	0	68	.07	2	.6	.7	15	UER
		7	2036	31.10	19	22.91	155	14.81	2.63	1.9	2.3	20	0	67	.10	2	.6	.7	20	UER
		8	047	48.76	19	22.82	155	14.87	2.90	1.5	2.4	15	0	69	.08	2	.6	.7	13	UER
		8	147	38.21	19	17.19	155	22.79	8.62	2.6	3.1	36	0	122	.17	6	.8	1.0	33	SWR
		8	310	40.67	19	23.39	155	14.90	3.25	1.9	2.6	23	0	46	.09	3	.6	.7	23	GLN
		8	1413	3.58	19	23.03	155	14.77	3.41	1.6	2.1	12	0	88	.04	2	.6	.9	12	GLN
		8	1431	56.50	19	23.80	155	15.87	2.91	1.6	2.1	14	0	101	.07	2	.5	.6	12	SPC
		8	1447	2.07	19	23.05	155	14.63	3.03	3.1	3.7	29	0	48	.10	3	.5	.6	28	GLN
		8	1449	42.34	19	23.20	155	14.75	2.89	2.1	2.6	17	0	65	.13	3	.7	.8	10	GLN
		8	1450	29.97	19	23.18	155	14.65	3.00	2.5	3.1	22	0	47	.12	3	.7	.8	18	GLN
		8	16 5	40.78	19	29.04	154	51.59	6.87	2.4	2.3	20	1	266	.17	3	1.7	1.4	20	LER
		8	1844	26.57	19	22.51	155	14.19	1.64	2.3	2.8	22	0	50	.07	4	.5	1.7	21	UER
		8	1850	40.27	19	22.86	155	14.77	3.70	2.5	3.2	24	0	49	.11	3	.6	1.4	23	UER
		8	1851	19.29	19	23.07	155	14.13	.15	3.4	3.7	18	1	72	.15	8	.7	2.3	10	GLN
		8	1853	51.85	19	22.74	155	14.84	1.64	2.6	2.9	23	0	50	.11	3	.5	.8	22	UER
		8	1855	8.95	19	23.37	155	15.30	2.89	2.9	3.1	35	1	34	.09	2	.5	.6	29	SPC
		8	1858	47.87	19	22.71	155	14.30	1.77	2.1	2.2	21	0	49	.09	4	.6	2.0	14	UER
		8	19 2	22.21	19	22.74	155	14.48	6.44	3.5		28	0	54	.12	6	.7	1.8	25	UER
		8	19 4	42.29	19	22.56	155	15.01	.00	2.4	3.0	18	0	52	.20	4	.5	2.0	15	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	FEB	8	19 7	44.66	19	22.52	155	14.45	2.76	1.8	1.9	15	0	75	.06	2	.6	.7	9	UER
		8	1911	19.05	19	22.57	155	14.68	.48	2.6	3.1	19	1	74	.11	4	.5	.8	16	UER
		8	1920	24.11	19	22.99	155	14.38	1.62	1.5	1.8	11	0	77	.11	2	.7	.8	6	UER
		8	1921	42.65	19	23.11	155	14.98	2.65	1.9	2.3	16	0	72	.07	1	.6	.4	12	SPC
		8	1923	31.85	19	23.18	155	14.76	3.87	3.1	4.0	33	0	48	.11	3	.6	1.0	26	GLN
		8	1926	51.36	19	23.56	155	15.41	3.28	2.3	2.9	21	0	45	.14	4	.6	1.7	15	SPC
		8	1928	29.96	19	22.93	155	14.72	3.23	3.3	4.1	34	0	49	.12	2	.5	.7	30	UER
		8	1934	34.98	19	22.62	155	14.58	2.30	1.8	1.9	15	0	75	.12	2	.7	1.0	11	UER
		8	1939	30.24	19	22.26	155	14.06	3.50	2.0	2.4	14	0	82	.28	5	1.1	3.7	13	UER
		8	1941	13.32	19	22.41	155	14.64	1.84	2.4	2.1	22	0	53	.13	2	.4	.6	17	UER
		8	1942	18.41	19	22.73	155	14.72	2.39	1.9	2.1	21	0	50	.12	2	.5	.6	16	UER
		8	1943	43.92	19	22.53	155	14.50	2.17	2.3	2.5	21	0	51	.08	2	.5	.6	21	UER
		8	1951	13.75	19	23.17	155	13.76	1.49	1.9	2.3	12	0	53	.15	2	.6	.6	9	GLN
		8	1954	26.64	19	21.91	155	14.17	1.06	3.0	3.6	21	0	55	.12	3	.6	1.4	15	UER
		8	1957	5.92	19	22.71	155	14.84	1.92	1.9	2.1	17	0	75	.08	2	.6	.6	16	UER
		8	20 2	28.50	19	22.97	155	13.84	1.37	2.9	3.5	26	0	47	.17	1	.5	.6	26	UER
		8	20 4	53.64	19	22.25	155	14.65	1.30	1.9	2.1	18	0	76	.10	2	.5	.7	17	UER
		8	2011	20.48	19	22.65	155	14.56	1.77	2.3	2.8	29	0	66	.11	2	.5	.6	28	UER
		8	2017	58.88	19	22.79	155	14.92	1.56	2.3	2.1	20	0	68	.13	2	.5	.6	17	UER
		8	2019	13.82	19	23.34	155	14.94	3.35	2.9	3.2	26	0	46	.08	2	.5	.7	23	GLN
		8	2022	13.54	19	22.32	155	14.69	1.15	1.9	2.6	7	0	150	.03	2	1.2	.7	6	UER
		8	2024	28.30	19	21.90	155	13.88	.81	2.4	3.4	11	0	88	.20	2	.9	1.4	10	UER
		8	2027	22.52	19	22.71	155	15.46	1.88	2.3	2.5	29	0	52	.12	1	.4	.5	29	KOA
		8	2035	1.88	19	22.91	155	13.95	.83	1.7	2.1	16	0	66	.17	2	.6	.7	16	UER
		8	2038	27.00	19	21.95	155	14.33	1.29	1.7	2.1	20	0	82	.09	3	.5	.8	19	UER
		8	2044	6.01	19	22.63	155	14.78	1.78	3.1	3.4	28	0	51	.11	2	.5	.6	27	UER
		8	2047	50.50	19	22.14	155	13.99	1.84	2.3	3.5	12	0	84	.05	2	.6	.8	11	UER
		8	2050	9.45	19	22.79	155	14.88	1.10	2.3	2.4	13	0	69	.10	2	.6	.6	13	UER
		8	2057	12.69	19	22.90	155	15.01	1.01	1.8	2.1	18	0	67	.10	2	.5	.6	15	KOA
		8	21 8	9.71	19	22.76	155	15.03	1.39	2.5	2.6	23	0	51	.10	2	.5	.6	22	KOA
		8	21 9	39.03	19	22.73	155	15.13	1.72	1.8	1.9	13	0	72	.09	2	.5	.6	13	KOA
		8	2110	42.64	19	22.84	155	14.30	1.44	1.8	2.0	16	0	81	.11	2	.7	.6	14	UER
		8	2114	1.86	19	22.78	155	14.91	1.26	2.9	3.5	25	0	62	.11	2	.5	.6	24	UER
		8	2118	1.76	19	22.56	155	14.71	1.65	1.5	1.8	15	0	73	.05	2	.5	.7	15	UER
		8	2120	36.88	19	22.35	155	14.53	1.50	2.0	2.2	19	0	76	.07	2	.4	.6	19	UER
		8	2122	11.87	19	23.08	155	14.93	3.29	1.8	1.6	18	0	48	.08	2	.6	.8	17	GLN
		8	2122	27.98	19	23.10	155	15.10	2.87	1.9	1.8	9	0	114	.10	2	.7	.9	9	SPC
		8	2127	35.58	19	22.52	155	15.56	1.41	3.3	3.6	28	2	53	.13	1	.5	.6	20	KOA
		8	2130	6.44	19	23.08	155	14.95	3.13	2.1	2.3	25	0	48	.08	2	.5	.6	23	GLN
		8	2132	8.49	19	22.81	155	15.06	1.54	1.8	2.2	14	0	76	.04	2	.5	.6	14	KOA
		8	2137	32.07	19	22.55	155	14.81	1.26	1.3	2.2	17	0	72	.15	2	.5	.6	16	UER
		8	2144	58.07	19	22.78	155	14.89	1.62	2.6	3.4	29	0	51	.09	2	.4	.6	28	UER
		8	2150	30.52	19	22.70	155	15.16	1.46	2.5	3.3	31	0	51	.11	1	.4	.5	30	KOA
		8	2156	24.62	19	22.69	155	14.43	.81	2.4	2.8	15	0	72	.12	2	.5	.8	15	UER
		8	2211	42.49	19	22.46	155	14.63	3.50	2.0	2.2	26	0	52	.10	2	.6	.8	25	UER
		8	2212	53.53	19	22.74	155	14.80	1.54	1.9	2.1	17	0	69	.09	2	.5	.7	17	UER
		8	2217	16.67	19	22.54	155	14.61	1.66	2.3	2.6	29	0	51	.09	2	.5	.6	28	UER
		8	2223	48.30	19	23.10	155	14.86	2.60	2.0	2.2	20	0	48	.09	2	.5	.8	19	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	FEB	8	2224	50.84	19	23.28	155	14.78	3.62	2.7	3.0	27	0	47	.12	3	.6	1.3	25	GLN
		8	2235	38.70	19	23.02	155	14.74	3.41	1.9	2.2	21	0	48	.09	3	.6	1.0	18	GLN
		8	2238	17.81	19	22.75	155	14.94	1.36	1.8	2.2	15	0	68	.08	2	.5	.6	15	UER
		8	2243	22.44	19	22.24	155	14.79	1.50	2.1	2.9	25	0	55	.09	2	.5	.6	25	UER
		8	2247	28.42	19	23.01	155	14.85	3.04	1.8	2.0	17	0	65	.08	2	.6	.7	17	GLN
		8	2249	30.38	19	22.66	155	14.64	1.53	2.8	3.4	30	0	51	.10	2	.4	.6	30	UER
		8	2317	47.74	19	22.97	155	15.12	1.56	1.9	2.4	19	0	65	.08	2	.5	.6	19	KOA
		8	2336	55.32	19	22.05	155	13.14	2.54	2.1	2.1	11	0	98	.04	5	.9	2.5	11	UER
		8	2342	9.06	19	22.07	155	13.20	3.29	2.4	2.7	28	0	50	.11	1	.5	.8	28	UER
		8	2347	6.70	19	22.02	155	13.21	3.01	2.3	2.5	24	0	50	.09	1	.6	.8	24	UER
		8	2356	5.93	19	22.34	155	14.65	1.37	1.8	2.4	12	0	75	.07	2	.5	.8	11	UER
		9	016	45.71	19	21.92	155	13.14	2.38	1.5	2.0	18	0	51	.09	1	.5	.7	16	UER
		9	044	13.44	19	23.33	155	15.14	3.08	2.2	2.3	28	0	46	.09	2	.5	.6	27	SPC
		9	5 1	46.31	19	20.33	155	6.91	8.76	2.0	2.5	30	0	103	.09	6	.7	1.0	27	UER
		9	917	39.45	19	22.74	155	15.01	3.09	2.9	3.6	23	1	51	.14	2	.5	.7	16	KOA
		9	922	1.02	19	23.09	155	4.27	8.31	3.3	3.8	30	2	98	.09	6	.6	1.1	26	MER
		9	1318	18.91	19	19.13	155	15.18	9.74	2.8	3.2	19	1	90	.05	4	.9	1.4	17	KOA
		9	1630	21.64	19	23.20	155	16.92	2.71	1.7	3.0	16	1	60	.07	0	.4	.6	14	SPC
		9	1755	23.70	19	21.32	155	7.18	8.30	2.8	3.1	30	0	82	.07	5	.6	1.2	27	UER
		9	1946	2.59	19	21.52	155	4.99	8.11	2.9	3.4	26	2	85	.09	5	.7	1.1	13	MER
		9	2114	46.96	19	23.25	155	14.78	3.49	2.9	3.7	26	0	47	.07	3	.5	.7	25	GLN
		9	2122	36.30	19	23.23	155	14.86	3.09	2.5	3.4	22	1	63	.08	2	.5	.7	9	GLN
		9	2220	55.42	19	20.72	155	11.36	9.18	1.7	2.6	26	0	73	.06	4	.7	1.1	21	UER
		10	3 3	29.26	19	24.80	155	25.17	10.22	2.6	3.1	33	0	41	.12	6	.6	1.1	30	UKF
		10	5 6	35.54	19	17.08	155	22.70	7.46	2.1	3.0	30	0	123	.16	6	.8	1.5	24	SWR
		10	723	58.75	19	19.54	155	10.09	7.96	1.8	2.3	25	0	96	.08	5	.7	1.4	20	UER
		10	1448	7.79	19	24.05	155	16.01	3.31	1.7	2.4	16	0	106	.07	2	.5	.6	12	SPC
		10	1727	43.35	19	6.68	155	26.08	31.79	2.4	1.9	26	2	191	.08	6	1.4	2.1	25	LSW
		10	1853	32.03	19	20.01	155	11.59	8.73	1.6	2.4	25	0	84	.10	5	.7	1.1	23	UER
		10	1935	32.90	19	28.78	155	52.39	7.73	2.2	2.4	23	2	128	.19	5	1.0	1.0	16	KON
		10	1957	28.85	19	20.44	155	5.95	8.58	2.7	3.3	34	2	112	.12	5	.7	.8	31	MER
		10	2316	36.20	19	21.78	155	6.22	7.81	2.4	3.0	26	0	81	.09	6	.8	1.0	26	UER
		11	133	40.87	19	20.33	155	11.80	8.40	1.9	2.5	27	0	77	.09	5	.6	.9	25	UER
		11	520	51.38	19	21.84	155	6.36	7.83	2.2	2.7	27	0	79	.10	6	.8	1.0	26	UER
		11	531	7.87	19	19.67	155	11.55	6.66	1.7	2.2	24	0	91	.12	5	.8	1.3	23	UER
		11	739	22.45	19	19.23	155	15.27	7.65	1.6	2.6	25	0	107	.11	4	.8	1.1	24	KOA
		11	1357	52.54	19	21.85	155	12.63	3.20	2.2	2.9	17	0	57	.05	2	.6	.9	16	UER
		11	1922	4.58	19	20.42	155	4.07	6.29		2.4	19	0	116	.10	2	1.0	1.8	17	MER
		11	2028	31.60	19	22.71	154	58.01	7.65	2.8	3.4	29	2	206	.11	9	1.2	.9	26	LER
		12	0 9	32.56	19	17.24	155	16.38	10.41	2.5	3.5	31	1	137	.08	4	.6	.5	27	KOA
		12	3 8	38.63	19	20.21	155	9.56	8.14	1.6	2.3	20	0	78	.07	4	.8	1.5	20	UER
		12	419	6.15	19	24.49	155	26.10	9.41	1.6	2.3	20	0	61	.08	5	.8	2.2	17	UKF
		12	518	8.87	19	18.17	155	24.25	8.62	1.9	2.9	29	0	106	.13	4	.7	1.2	25	SWR
		12	1247	49.58	19	20.21	155	11.38	9.65	1.7	2.3	20	0	81	.05	4	.9	1.7	19	UER
		12	1422	48.01	19	22.38	155	5.67	7.93	2.0	2.8	22	0	73	.09	5	.8	1.2	21	MER
		12	1612	15.35	19	19.54	155	11.37	7.73	2.2	2.8	24	0	95	.08	5	.7	1.2	20	UER
		12	1953	30.30	19	18.73	155	15.75	7.93		2.4	18	0	127	.08	4	.9	1.8	14	KOA
		12	2036	41.12	19	20.66	155	10.49	8.59	1.5	2.1	18	0	74	.07	3	.9	1.6	14	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	FEB	12	2346	59.68	19	18.65	155	14.65	7.70	1.7	2.1	18	0	44	.07	4	1.0	1.7	17	POL
		13	546	57.74	19	20.07	155	8.12	8.49	1.1	2.0	20	0	85	.06	5	.9	2.0	19	UER
		13	756	14.06	19	20.25	155	13.67	10.19	2.3	3.2	27	2	58	.07	5	.6	1.2	23	UER
		13	1124	25.23	19	20.64	155	5.64	8.63	2.4	2.6	32	2	109	.10	5	.6	.9	29	MER
		13	1553	49.74	19	19.24	155	13.59	8.29	2.1	2.4	26	0	68	.09	4	.8	1.1	25	UER
		13	2126	5.63	19	24.84	155	27.25	10.31	2.6	2.6	35	0	35	.12	4	.6	.9	34	UKF
		13	2248	56.56	19	33.16	155	38.19	6.57	2.1	2.3	24	1	172	.21	8	1.3	2.8	23	MOK
		13	2348	59.16	19	19.31	155	15.54	8.36	1.9	2.6	28	0	90	.09	4	.7	.8	28	KOA
		14	2 4	22.86	19	29.11	155	49.96	7.69	2.6	2.1	28	4	87	.22	8	.9	1.2	26	KON
		14	2240	42.98	19	21.26	155	4.70	8.85	2.5	2.5	30	0	91	.09	4	.9	.7	29	MER
		14	2330	21.76	19	19.53	155	11.03	7.05	1.8	2.2	29	0	97	.10	5	.7	1.1	29	UER
		15	254	9.41	19	18.89	155	13.46	4.59	1.6	2.0	28	1	75	.13	3	.7	2.7	27	POL
		15	428	50.42	19	20.90	155	11.11	8.49	2.3	2.5	33	0	72	.10	3	.6	.9	33	UER
		15	1347	19.22	19	27.30	155	25.53	10.34	2.6	2.6	29	0	76	.11	10	.7	1.2	28	UKF
		16	4 9	29.30	19	21.05	155	13.03	7.75	2.2	2.5	33	0	60	.13	3	.6	.9	31	UER
		16	955	14.26	19	20.32	155	13.58	7.37	1.6	2.3	26	0	66	.11	4	.8	1.2	26	UER
		16	1811	41.15	19	19.82	155	13.04	8.56	1.9	2.3	28	0	72	.08	5	.7	.9	28	UER
		17	335	16.58	19	21.13	155	6.29	8.04	2.2	2.6	30	0	93	.10	6	.7	1.1	30	UER
		17	514	27.48	19	20.86	155	13.02	8.57	2.1	2.2	28	0	61	.08	3	.6	.8	28	UER
		17	756	46.49	19	21.58	155	3.97	7.51	2.4	2.8	29	1	110	.10	4	.9	.9	28	MER
		17	1824	38.66	19	19.67	155	12.05	6.16	2.5	2.8	31	0	88	.12	6	.7	1.2	31	UER
		17	2255	39.45	19	16.63	155	23.53	7.28	2.2	2.5	28	0	123	.12	6	.8	1.2	25	SWR
		18	358	29.13	19	23.14	155	2.08	8.30	2.1	2.1	29	0	141	.14	5	1.1	.7	29	MER
		18	751	56.44	19	19.20	155	11.58	7.24	2.2	2.5	31	0	102	.10	5	.7	1.1	30	UER
		18	1839	2.94	19	20.84	155	10.62	7.88	2.0	2.0	28	0	72	.11	3	.7	1.0	27	UER
		18	2344	47.78	19	19.94	155	9.06	8.43	1.8	2.2	31	0	78	.11	4	.7	.9	30	UER
		19	332	43.25	19	17.02	155	22.46	5.69	1.8	2.2	31	0	23	.17	6	.8	2.2	29	SWR
		19	1634	55.37	19	20.24	155	11.54	8.59	2.2	2.4	29	0	80	.07	5	.7	.9	29	UER
		19	2346	18.44	19	20.47	155	4.36	5.18	2.4	2.6	27	0	116	.11	3	1.0	1.9	27	MER
		20	049	35.34	19	21.36	155	6.69	7.15	2.2	2.4	28	0	85	.09	6	.7	1.2	25	UER
		20	116	7.93	19	22.08	155	6.27	7.00	2.1	2.4	30	1	75	.11	6	.6	1.4	29	UER
		20	156	50.66	19	20.79	155	6.73	7.11	2.0	2.4	29	0	96	.10	6	.7	1.3	28	UER
		20	312	21.80	19	20.05	155	12.10	7.67	2.2	2.5	32	0	80	.11	5	.6	.9	30	UER
		20	340	23.86	19	20.12	155	7.82	8.02	2.1	2.5	26	0	91	.08	5	.7	1.0	26	UER
		20	732	52.12	19	25.18	154	57.23	.31	2.4	2.7	25	2	183	.22	5	1.9	.6	20	LER
		20	17 0	30.67	19	21.66	155	4.74	8.96	2.9	3.2	15	1	128	.07	5	.8	1.2	8	MER
		20	1729	42.86	19	19.38	155	16.29	10.14	3.7	4.0	37	1	27	.09	2	.5	.6	34	KOA
		20	1742	15.87	19	18.80	155	15.42	7.14	2.0	2.5	32	0	99	.13	4	.7	1.0	30	KOA
		20	1748	4.88	19	18.82	155	15.53	7.64	2.0	2.2	31	0	100	.13	4	.7	.9	30	KOA
		20	1813	16.55	19	21.71	155	6.41	5.84	2.2	2.4	23	0	81	.12	6	.8	2.7	22	UER
		20	2236	56.16	20	.82	155	29.29	4.81	2.7	2.1	37	6	142	.20	33	.9	1.2	34	KKU
		20	2349	20.33	19	19.30	155	16.27	9.17	2.2	2.7	30	0	99	.10	3	.6	.8	30	KOA
		21	154	54.14	19	20.11	155	9.05	6.65	2.1	2.4	31	0	75	.10	4	.7	1.2	30	UER
		21	1159	49.12	19	21.41	155	7.97	8.66	3.1	3.6	36	2	72	.09	4	.5	.8	32	UER
		21	1229	22.14	19	20.83	155	9.55	8.34	2.1	2.6	27	0	70	.09	5	.8	.9	19	UER
		21	17 7	54.40	19	22.30	155	5.00	7.39	2.6	3.0	31	0	82	.13	4	.7	1.1	28	MER
		22	145	19.28	19	19.51	155	11.83	6.96	1.8	2.2	30	0	93	.11	5	.7	1.0	30	UER
		22	412	40.24	19	17.54	155	21.27	7.69	2.0	2.3	32	0	125	.13	5	.7	1.1	31	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	FEB	22	1219	35.26	19	21.27	155	5.95	7.12	2.3	2.7	29	2	91	.10	6	.6	1.3	26	MER
		22	1545	30.56	19	21.25	155	8.12	8.72	2.5	3.1	31	2	72	.09	3	.6	.9	27	UER
		22	1646	11.75	19	19.10	155	11.44	8.26	2.6	2.8	31	2	107	.09	5	.6	1.0	29	UER
		22	1713	8.18	19	20.18	155	12.89	6.88	1.6	2.4	19	0	70	.11	5	.8	1.8	16	UER
		22	1729	3.94	19	20.07	155	13.64	9.80	2.9	3.3	36	2	61	.08	5	.5	.6	32	UER
		22	2129	6.24	19	20.90	155	7.24	8.09	1.9	2.4	27	0	88	.09	5	.8	.9	23	UER
		22	2249	31.93	19	19.41	155	9.87	6.47	1.8	2.5	28	0	98	.12	5	.8	1.4	25	UER
		23	014	37.90	19	20.81	155	10.99	8.02	2.1	2.4	30	0	72	.12	3	.6	.9	28	UER
		23	1150	23.31	19	21.97	155	1.11	8.21	2.5	2.6	51	2	175	.13	5	1.1	.7	26	MER
		23	1723	25.21	20	11.61	155	50.42	4.70	3.4	2.9	38	3	155	.17	56	1.2	1.5	31	KOH
		24	015	39.78	19	35.27	155	44.75	.01	2.5	2.2	19	2	172	.23	9	1.2	.6	16	MOK
		24	2 8	22.90	19	21.93	155	6.22	5.80	2.2	2.5	30	0	77	.13	6	.8	1.6	26	UER
		24	528	36.96	19	20.62	155	10.67	8.35	2.4	2.8	31	0	76	.11	3	.6	1.0	28	UER
		24	1010	45.32	19	20.82	155	2.28	6.71	2.6	2.7	26	2	170	.14	2	.9	1.1	24	MER
		24	1029	44.28	19	24.94	155	46.76	11.77	2.5	2.1	21	1	74	.13	11	1.0	1.1	17	KON
		24	1548	32.04	19	22.28	155	4.48	7.76	2.8	2.8	29	1	91	.09	4	.7	.9	28	MER
		24	2118	6.14	19	19.75	155	9.90	7.05	1.8	2.1	26	0	90	.13	4	.8	1.4	26	UER
		24	22 0	14.17	19	21.05	155	2.89	5.97	2.0	2.1	23	0	135	.15	2	1.2	1.4	23	MER
		25	622	25.39	19	19.39	155	11.20	6.89	2.0	2.2	31	0	100	.12	6	.7	1.0	31	UER
		25	1151	14.09	19	20.54	155	6.54	8.51	2.2	2.9	24	0	103	.06	6	.8	1.0	22	UER
		25	1346	34.45	19	25.82	154	57.21	2.69	2.2	2.4	15	0	174	.27	4	1.5	3.5	12	LER
		25	1750	51.94	19	20.65	155	2.95	5.74	3.1	3.7	25	0	131	.09	1	1.1	1.4	21	MER
		25	1815	31.15	19	19.25	155	14.22	7.70		2.1	19	0	91	.09	4	.8	1.7	17	UER
		26	1 0	52.30	19	26.48	154	52.21	6.74	1.9	1.8	16	2	263	.15	5	1.8	3.0	15	LER
		26	351	28.03	19	25.41	154	56.95	.03	2.0	2.1	11	2	58	.17	5	1.0	.4	5	LER
		26	814	23.52	19	21.76	155	6.16	7.69	2.1	2.4	27	0	81	.10	6	.7	1.5	24	UER
		26	924	31.70	19	20.18	155	13.02	9.03	2.1	2.8	26	1	68	.10	5	.7	1.2	22	UER
		26	11 0	38.28	19	19.02	155	11.55	8.80		2.0	21	0	107	.08	5	.8	1.6	17	UER
		26	1434	48.11	19	18.57	155	15.12	7.27		2.0	19	0	126	.07	4	.9	1.7	14	KOA
		26	1444	32.87	19	21.81	155	4.87	8.48	2.0	2.6	18	0	80	.08	5	.9	1.5	14	MER
		26	1451	22.30	19	22.43	155	4.55	8.95	2.0	2.6	24	0	90	.06	4	.9	1.1	22	MER
		26	1725	27.07	19	13.91	155	32.49	8.53	2.3	2.7	28	0	125	.17	8	1.0	1.3	20	LSW
		26	1953	44.95	19	20.80	155	7.53	7.36	1.4	2.1	24	0	86	.10	5	.7	1.6	19	UER
		26	2145	37.44	19	23.74	155	2.05	7.69	1.3	2.1	20	0	136	.15	4	1.0	1.8	16	MER
		26	2324	47.59	19	22.48	155	4.40	7.56		2.3	21	0	105	.12	4	.8	1.4	17	MER
		27	350	1.77	19	25.43	154	57.57	4.25	2.8	3.6	28	0	175	.18	5	1.3	2.1	22	LER
		27	1014	30.85	19	24.72	155	26.15	9.09	2.5	2.6	31	0	50	.12	5	.6	1.3	30	UKF
		27	14 7	53.71	19	21.58	155	4.56	7.80	3.0	3.4	30	0	82	.10	4	.9	.8	27	MER
		27	1713	36.74	19	19.80	155	8.12	9.24	2.8	3.1	34	1	88	.07	5	.6	.8	31	UER
		27	1859	22.94	19	28.37	155	27.95	10.24	3.1	2.7	34	0	51	.12	9	.6	1.3	32	UKF
		27	2149	51.86	19	24.15	155	.31	8.60	3.1	3.2	33	2	158	.15	7	1.0	.7	30	LER
		28	1 5	19.00	19	19.71	155	11.38	7.66	2.2	2.3	29	0	91	.10	5	.7	1.1	29	UER
		28	146	36.58	19	21.64	155	14.66	9.33	2.5	2.8	29	0	45	.08	3	.6	.7	29	UER
		28	716	43.60	19	18.92	155	15.86	9.31	2.5	2.7	35	1	100	.11	4	.5	.7	31	KOA
		28	18 6	35.60	19	19.93	155	10.08	6.68	2.0	2.2	26	0	86	.11	4	.8	1.2	26	UER
	MAR	1	335	17.26	19	23.33	155	2.47	7.47	2.4	2.4	29	0	132	.16	4	1.0	1.0	28	MER
		1	539	20.88	19	57.12	155	48.37	20.15		2.0	33	1	175	.12	20	2.0	6.7	30	KOH
		1	6 5	46.56	19	19.23	155	15.68	9.02	2.0	2.3	29	0	94	.09	3	.7	.8	29	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	MAR	1	14 0	15.68	19	20.94	155	5.04	7.30	2.0	2.2	24	0	101	.11	4	1.0	1.4	24	MER
		1	1551	32.07	19	20.52	155	7.74	4.76	2.2	2.5	27	0	87	.12	5	.8	2.1	25	UER
		1	2113	51.36	19	23.90	155	1.54	8.21	2.1	2.3	29	0	145	.17	5	1.2	.8	26	MER
		2	419	12.47	19	20.77	155	13.21	6.67	1.8	2.4	32	0	60	.13	5	.7	1.1	31	UER
		2	1436	.04	18	44.01	155	12.94	16.92	3.1	2.5	30	2	294	.17	54	5.3	98.9	29	PPL
		2	1455	50.08	19	23.58	155	2.56	9.91	2.4	2.7	29	0	132	.15	4	1.2	.7	23	MER
		2	1544	37.31	18	49.27	155	13.87	14.27	2.7	2.1	30	1	272	.19	45	5.4	9.8	28	PPL
		2	1639	9.70	19	21.70	155	4.90	8.70	3.0	3.4	32	2	81	.08	5	.7	.7	28	MER
		2	19 6	5.25	19	27.26	155	25.14	8.56	2.8	2.9	33	0	56	.12	6	.6	1.4	31	UKF
		3	620	47.60	19	32.53	155	43.07	8.69	2.4	1.5	25	0	68	.17	6	.9	1.8	24	MOK
		3	2232	23.00	19	23.06	155	24.79	8.69	3.1	3.3	36	2	40	.14	5	.6	1.2	32	UKF
		4	115	41.36	19	36.65	156	6.43	13.23	3.4	3.6	39	4	38	.18	29	1.5	1.5	30	KON
		4	548	.81	19	24.69	155	25.82	11.28	2.3	2.4	31	0	51	.11	5	.6	.9	31	UKF
		5	924	22.86	19	19.43	155	11.80	9.26	2.6	2.9	25	0	95	.09	5	.7	1.0	23	UER
		5	1149	59.40	19	21.66	155	.44	7.23	2.9	2.8	22	2	192	.08	5	1.1	.8	16	LER
		5	2123	38.04	19	23.99	155	.24	7.33	2.2	2.4	15	1	227	.16	7	2.8	1.4	14	LER
		6	1522	3.59	19	25.19	154	54.90	6.13	2.2	2.3	21	2	216	.14	7	1.2	1.6	12	LER
		7	1510	51.80	19	24.26	155	17.84	16.56	3.3	3.1	36	1	29	.11	2	.6	.7	31	DEP
		7	19 5	20.87	19	24.15	155	29.52	8.77	2.6	2.4	32	0	57	.12	5	.7	1.3	30	UKF
		7	2222	40.44	19	18.82	155	13.55	9.10	2.8	3.0	33	0	72	.11	3	.6	.7	31	POL
		8	1 4	40.64	19	55.96	155	20.94	10.90	2.1	2.1	33	3	191	.12	36	1.4	1.0	29	KKU
		8	3 1	48.82	19	19.85	155	3.87	5.55	2.3	2.2	20	0	153	.17	2	1.6	2.6	17	MER
		8	349	50.33	19	20.21	155	7.68	6.63	2.3	2.6	29	2	93	.13	5	.7	1.4	26	UER
		8	619	4.04	19	20.40	155	3.80	8.46	2.7	3.3	29	2	113	.10	2	.9	.8	25	MER
		8	839	38.59	19	27.30	155	51.11	9.54	2.6	1.8	14	0	118	.14	8	1.4	1.6	12	KON
		8	1033	40.35	19	20.33	155	10.82	8.39	2.4	2.8	27	2	81	.09	4	.6	1.1	24	UER
		8	12 7	18.20	19	22.67	155	27.11	10.36	2.4	2.8	30	0	52	.10	1	.6	.9	26	UKF
		8	1625	38.63	19	19.59	155	10.96	7.52	2.2	2.5	28	0	96	.10	5	.8	1.2	27	UER
		9	029	17.40	19	25.02	155	30.29	44.21	4.0	4.0	30	2	42	.20	7	1.2	3.2	15	MOK
		9	214	52.50	19	19.98	155	12.99	7.29	2.0	2.4	31	0	71	.12	5	.7	1.0	30	UER
		9	6 2	37.93	19	21.02	155	13.14	6.99	2.0	2.6	29	0	59	.14	3	.7	1.0	26	UER
		9	1046	20.98	18	53.63	155	16.40	16.99	2.9	2.4	34	3	253	.22	36	2.5	64.1	32	PPL
		9	1615	30.07	19	20.14	155	11.92	8.63	2.8	3.1	34	2	80	.12	5	.5	.8	31	UER
		9	1948	17.91	19	23.35	155	2.52	8.61	2.3	2.2	27	0	130	.13	4	1.1	.8	27	MER
		9	2231	8.57	19	24.05	155	24.14	9.34	2.4	2.6	35	2	38	.13	7	.5	1.0	32	UKF
		10	317	15.69	19	20.32	155	13.65	9.01	3.0	3.4	37	2	59	.10	4	.5	.7	34	UER
		10	437	9.05	19	19.22	155	13.55	4.52	1.9	2.3	30	0	74	.11	4	.7	2.0	28	UER
		10	1157	21.77	19	23.00	155	1.81	8.40	2.4	2.7	28	1	147	.14	5	.8	.8	27	MER
		10	1248	41.59	19	26.72	154	48.41	10.31	2.3	2.3	21	1	283	.14	10	3.2	1.1	20	LER
		10	17 3	3.98	19	20.93	155	7.93	10.17	2.9	3.4	27	1	137	.07	4	.8	.6	19	UER
		11	748	26.37	19	16.75	155	23.17	2.98	1.9	2.3	28	0	124	.16	6	.8	2.7	28	SWR
		11	1432	8.07	19	21.35	155	6.04	7.15	2.1	2.3	23	1	89	.13	6	.8	1.5	22	UER
		12	040	7.79	19	19.85	155	8.56	9.47	3.0	3.5	33	2	82	.09	5	.6	.8	31	UER
		12	1051	33.30	19	20.04	155	13.11	9.35	2.6	2.7	30	0	69	.06	5	.6	.8	30	UER
		12	16 4	4.33	19	23.20	155	2.37	7.93	2.1	1.9	25	1	135	.13	4	.8	1.0	24	MER
		12	1858	17.32	19	19.12	155	15.56	8.94	1.9	2.1	26	0	111	.08	4	.7	.8	26	KOA
		12	1934	50.58	19	20.06	155	13.02	9.29	2.4	2.7	30	0	70	.10	5	.6	.8	29	UER
		12	23 0	41.38	19	27.39	155	21.52	8.63	2.4	1.9	24	0	67	.10	5	.7	1.4	24	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	MAR	13	413	26.47	19	18.93	155	13.52	9.46	3.1	3.2	34	2	72	.09	4	.6	.8	32	POL
		13	640	17.82	19	20.54	155	5.87	8.62	2.6	2.8	31	2	110	.10	5	.6	1.1	29	MER
		13	1256	50.19	19	19.02	155	13.03	7.18	1.7	2.0	19	0	84	.08	4	.8	1.8	14	UER
		13	19 2	53.02	19	19.54	155	13.47	8.81	2.0	3.0	30	1	69	.10	5	.7	.9	29	UER
		14	842	19.43	18	56.01	155	22.09	14.08	2.8	2.7	19	1	282	.11	27	2.7	1.3	14	DIS
		15	244	35.32	19	19.31	155	11.83	9.87	2.9	3.6	34	0	97	.09	5	.7	.6	34	UER
		15	252	1.24	19	19.52	155	11.75	9.12	2.6	3.3	30	0	93	.09	6	.7	1.1	27	UER
		15	535	54.71	19	20.72	155	13.21	8.89	1.9	2.5	24	0	60	.08	4	.6	1.0	23	UER
		15	655	33.19	19	19.53	155	16.01	7.78	1.6	2.4	26	0	93	.10	3	.7	1.1	24	KOA
		15	2218	1.39	19	26.17	155	24.66	8.56	2.6	2.6	31	0	51	.12	7	.6	1.7	30	UKF
		16	620	49.87	19	19.30	155	15.72	7.66	1.9	2.5	29	0	94	.11	3	.8	1.0	28	KOA
		16	17 4	14.42	19	20.18	155	13.34	6.80	1.6	1.8	20	0	64	.13	5	.9	1.5	17	UER
		16	1833	58.56	19	20.00	155	11.28	8.20	2.3	3.0	31	2	86	.10	5	.6	1.0	27	UER
		16	2356	52.01	19	19.83	155	7.93	8.44	1.9	2.8	24	0	93	.08	5	.9	1.0	23	UER
		17	418	39.87	19	23.39	155	2.36	9.57		2.6	24	0	133	.10	4	1.2	.9	23	MER
		17	531	6.00	19	19.85	155	4.48	5.49	2.0	2.7	21	0	146	.07	3	1.2	1.5	20	MER
		17	7 4	33.95	19	9.62	155	34.07	36.12	2.6	2.8	35	1	136	.11	11	1.3	2.2	30	HEA
		17	731	17.83	19	19.49	155	12.02	7.84	2.4	3.0	27	1	91	.09	5	.7	1.0	25	UER
		17	2240	10.86	19	22.65	155	4.69	8.34	2.6	3.2	28	1	89	.10	4	.7	1.1	24	MER
		18	123	11.68	19	22.19	155	6.11	7.58		2.3	24	0	76	.10	5	.8	1.2	23	UER
		18	233	57.37	19	21.75	155	5.91	8.19	1.9	2.5	26	1	81	.12	6	.7	1.0	22	MER
		18	456	21.84	19	22.64	155	24.92	10.17	2.9	3.2	37	3	45	.13	5	.5	.8	33	UKF
		18	519	9.44	19	20.68	155	12.88	9.75	1.6	1.9	16	0	69	.03	4	1.1	2.0	16	UER
		18	1333	7.32	19	22.15	155	17.96	33.67	3.2	3.2	35	1	33	.10	5	1.0	1.4	32	DEP
		19	026	49.86	19	27.27	154	51.05	10.28	2.7	2.6	25	1	271	.17	5	3.1	1.0	20	LER
		19	1220	15.32	19	21.91	155	6.22	7.39	2.0	2.4	21	0	78	.12	6	.7	1.4	21	UER
		19	1248	59.43	19	20.27	155	11.77	8.65	2.4	2.6	29	0	79	.10	5	.6	.9	26	UER
		19	1343	58.14	19	22.65	155	29.10	9.90	2.3	2.6	32	0	45	.09	3	.6	1.2	30	UKF
		19	1914	58.63	19	32.01	154	50.76	15.68	2.6	3.1	20	1	264	.19	7	3.1	1.2	16	HIL
		20	036	44.72	19	22.84	155	1.90	6.80	2.3	2.3	27	0	147	.15	5	1.0	1.1	26	MER
		20	044	44.92	20	1.96	155	22.49	9.14	2.7	2.1	17	2	310	.08	16	2.6	1.0	13	KKU
		20	711	29.17	19	21.37	155	1.54	7.37	2.3	2.5	24	0	178	.12	4	1.3	.8	23	MER
		20	14 7	39.93	19	49.92	155	34.45	16.74	3.3	3.2	34	1	108	.13	25	.9	30.4	32	KKU
		21	159	23.10	19	19.75	155	15.22	6.28	1.8	2.1	28	0	82	.12	4	.7	1.0	27	KOA
		21	459	24.73	19	22.20	155	4.14	8.12	3.4	3.9	31	1	97	.10	4	.8	.8	29	MER
		21	630	24.55	19	24.64	155	29.51	8.16	2.3	2.4	31	0	50	.11	5	.7	1.8	29	UKF
		21	11 1	27.43	19	18.41	155	15.15	7.03	1.8	2.2	28	0	103	.11	4	.8	1.1	26	KOA
		21	13 1	56.33	19	21.69	155	15.06	8.93	2.5	3.0	29	0	61	.11	2	.6	.8	26	KOA
		21	1350	19.71	19	19.35	155	15.90	8.21	2.1	2.5	27	0	94	.10	3	.7	.9	25	KOA
		21	16 8	10.69	19	27.31	154	53.39	4.70	2.5	2.5	25	1	231	.12	3	1.9	1.3	23	LER
		21	2256	48.16	19	24.17	155	24.63	8.75	2.1	2.4	33	0	38	.14	6	.6	1.3	31	UKF
		22	956	37.71	19	21.49	155	6.61	7.39	2.0	2.2	27	0	84	.10	6	.7	1.2	24	UER
		23	1423	8.88	19	21.43	155	6.68	6.55	1.9	2.0	23	0	84	.14	6	.8	1.7	23	UER
		23	16 9	39.96	19	19.71	155	11.45	8.00	2.3	2.6	24	0	91	.07	5	.7	1.0	23	UER
		24	720	35.92	19	20.40	155	11.02	8.80	2.2	2.4	28	0	79	.09	4	.7	.8	27	UER
		24	959	52.82	19	22.28	155	6.96	7.93	2.8	2.7	31	0	70	.12	5	.7	1.1	29	UER
		24	1937	.41	19	20.76	155	6.44	7.37	3.5	4.0	36	1	73	.11	4	.6	.8	32	UER
		24	2243	41.30	19	15.97	155	12.14	8.92	2.9	3.4	30	0	177	.13	8	1.1	1.0	30	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	MAR	25	246	3.28	19	20.55	155	8.36	5.60	2.5	3.2	33	2	76	.13	4	.6	1.5	29	UER
		25	325	59.23	19	19.50	155	11.35	9.97	2.8	3.3	37	2	97	.11	5	.5	.6	35	UER
		25	1317	44.69	19	20.73	155	1.04	6.79	2.5	3.0	21	1	202	.11	4	1.2	.6	20	MER
		25	1648	6.41	19	18.33	155	20.89	9.71	2.8	3.3	32	0	117	.12	4	.6	.8	30	SWR
		25	2014	59.17	19	19.97	155	8.07	8.75	2.2	2.6	25	0	87	.07	5	.9	.9	25	UER
		25	2321	34.96	19	14.92	155	23.45	29.83	2.7	3.7	19	0	143	.16	6	2.1	5.4	13	LSW
		26	123	53.87	19	19.53	155	10.89	6.91	2.0	2.2	24	0	97	.10	5	.7	1.2	23	UER
		26	3 8	1.76	19	21.05	156	19.34	34.72	3.4	2.9	34	0	273	.16	45	6.4	3.4	31	DIS
		26	350	2.94	19	19.35	155	11.66	7.70	1.7	2.0	26	0	98	.10	5	.8	1.4	26	UER
		26	1845	48.39	19	22.37	155	28.88	10.25	2.6	2.8	30	0	67	.10	2	.6	1.0	30	UKF
		26	1919	53.73	19	21.66	155	4.84	8.73	2.4	2.6	28	0	81	.08	5	.9	.7	28	MER
		26	2343	47.37	19	22.04	155	6.96	8.07	2.3	2.6	26	0	73	.10	5	.8	1.3	26	UER
		27	437	58.69	19	21.48	155	15.23	9.91	3.6	3.8	34	2	64	.08	2	.5	.7	32	KOA
		27	858	6.85	19	21.36	155	4.27	7.24	2.9	3.6	31	2	85	.12	4	.7	1.2	28	MER
		27	17 3	25.54	19	24.04	155	23.99	9.64	2.7	2.8	37	2	30	.12	7	.5	.9	31	UKF
		28	355	57.67	19	22.16	155	5.24	7.18	2.6	2.9	27	0	77	.12	5	.7	1.2	24	MER
		28	845	9.73	19	20.54	155	13.25	8.87	2.1	2.5	28	0	62	.11	4	.6	.8	26	UER
		28	1431	39.77	19	12.51	155	30.64	4.61	2.6	2.4	27	1	136	.15	10	1.0	4.3	25	LSW
		28	2353	58.10	19	20.04	155	12.83	9.05	2.1	2.6	25	0	72	.08	5	.7	1.1	25	UER
		29	1256	41.03	19	14.11	155	38.73	9.59	3.3	3.2	27	0	232	.22	3	2.4	1.3	24	HEA
		29	1615	13.97	19	20.16	155	8.85	7.98	2.2	2.4	26	0	72	.08	4	.7	1.1	26	UER
		30	1517	38.04	19	43.98	156	1.31	8.54	3.6	3.4	36	0	226	.23	20	2.4	1.4	34	KON
		31	1934	57.89	19	22.17	155	4.64	5.10	2.0	2.3	18	0	134	.16	5	.9	3.4	18	MER
	APR	1	231	44.68	19	19.92	155	8.49	6.04	1.8	2.2	23	0	91	.10	5	.9	1.5	23	UER
		1	441	44.78	19	20.21	155	6.88	6.58	2.3	2.8	28	0	106	.11	6	.8	1.5	26	UER
		1	8 6	11.22	19	15.82	155	32.05	9.25	2.9	3.2	28	0	118	.15	9	.9	1.5	27	LSW
		1	1315	21.05	19	24.87	154	59.75	3.63	2.3	2.3	20	0	157	.13	8	1.1	3.9	18	LER
		1	2354	43.82	19	20.87	155	6.87	6.85	2.8	3.1	30	2	93	.12	6	.7	1.2	24	UER
		2	1344	14.82	19	20.21	155	6.97	7.08	2.5	2.9	25	0	105	.12	6	.8	1.1	21	UER
		2	2024	57.15	19	16.47	155	15.46	33.08		1.0	18	0	188	.12	8	3.1	4.3	18	HLP
		2	2058	50.88	19	19.94	155	7.98	8.56	3.2	3.5	31	0	89	.09	5	.8	.8	29	UER
		3	112	11.11	19	19.24	155	15.68	9.42	2.0	2.5	28	0	126	.06	3	.8	.9	25	KOA
		3	1052	8.55	19	20.22	155	12.64	7.75	2.3	2.5	30	0	112	.11	5	.8	.9	28	UER
		3	1352	24.04	19	19.67	155	11.70	8.72	2.3	2.6	29	0	114	.10	6	.7	.8	29	UER
		4	2226	56.22	19	20.58	155	11.82	8.35	2.0	2.2	28	0	103	.09	4	.7	.9	28	UER
		6	225	8.30	19	22.57	155	3.92	8.01	2.3	2.4	23	0	159	.12	4	1.1	.9	23	MER
		6	517	16.11	19	19.88	155	8.00	8.10	2.4	2.5	24	0	90	.10	5	.9	1.3	24	UER
		6	522	56.10	19	22.08	155	6.29	6.56	3.0	3.1	26	0	87	.12	6	.8	1.4	25	UER
		6	628	13.86	19	20.10	155	17.03	7.17	2.0	2.5	28	0	109	.13	1	.8	1.1	28	KOA
		6	1033	58.27	19	27.30	154	51.65	10.05	2.8	2.7	23	0	268	.10	4	5.0	.9	21	LER
		6	11 0	25.20	19	21.44	155	4.81	9.07	3.6	3.9	32	0	87	.08	4	1.0	.6	31	MER
		6	11 1	52.16	19	21.75	155	4.56	8.31	3.1	3.6	13	0	85	.06	4	1.1	1.6	13	MER
		6	12 4	40.52	19	24.07	155	2.37	.12	2.6	3.1	18	0	128	.29	3	1.0	2.3	17	MER
		6	1731	41.26	19	17.01	155	6.47	9.34	3.3	3.7	29	0	202	.10	3	1.4	.7	29	POL
		7	8 8	59.66	19	19.92	155	8.88	7.90		2.7	28	0	72	.08	4	.8	.9	27	UER
		7	10 3	18.28	19	19.89	155	10.75	6.92	2.1	2.3	25	0	123	.09	4	.9	1.1	24	UER
		7	1617	32.62	19	25.23	154	57.05	7.95	2.6	2.7	25	0	184	.20	9	1.9	1.2	24	LER
		8	219	50.33	19	25.27	155	25.44	11.04	2.4	2.3	30	0	52	.11	6	.6	1.0	29	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	APR	9	040	15.99	19	9.75	155	33.66	36.09	2.2	2.1	21	1	117	.19	10	1.5	2.1	4	LSW
		9	4 7	4.02	19	21.17	155	11.08	7.87	1.5	1.9	26	0	104	.12	3	.8	1.0	20	UER
		9	5 4	4.91	19	20.22	155	30.29	8.61	2.0	2.0	26	2	37	.13	6	.6	1.6	21	HEA
		9	6 5	22.27	19	21.04	155	11.57	8.04	2.2	2.7	28	0	97	.11	4	.8	1.0	25	UER
		9	629	47.02	19	6.88	155	27.09	38.97	1.5	1.6	22	1	187	.09	5	1.7	3.7	14	LSW
		9	633	13.87	19	7.24	155	26.59	36.16	1.5	1.6	17	2	187	.12	5	2.9	3.5	8	LSW
		10	122	1.40	19	20.57	155	12.24	9.05	1.7	2.3	25	0	71	.08	4	.8	1.2	23	UER
		10	931	57.83	19	24.89	155	27.91	10.20	2.9	3.1	34	0	35	.11	4	.6	1.0	31	UKF
		10	1259	53.88	19	20.37	155	8.38	2.84	2.4	2.7	29	0	77	.10	4	.6	1.4	29	UER
		10	2031	16.33	19	18.84	155	16.52	9.60	3.0	3.3	36	2	106	.11	3	.6	.7	32	KOA
		10	23 7	40.40	19	18.05	155	20.72	4.25	1.9	2.2	21	0	36	.11	4	.9	2.2	16	SWR
		11	0 9	2.45	19	20.72	155	12.90	8.87	2.5	2.7	32	1	64	.12	4	.6	.8	28	UER
		11	613	11.98	19	18.18	155	21.47	6.50	2.2	2.3	31	0	117	.14	5	.7	1.2	28	SWR
		11	2236	30.92	19	24.23	155	25.09	10.53	2.1	2.3	29	0	46	.13	5	.7	1.2	27	UKF
		13	12 6	16.19	20	11.04	155	47.58	3.29	3.2	2.6	29	0	298	.15	55	8.5	5.9	28	KOH
		13	2224	23.12	20	1.06	155	18.56	10.23	2.8	2.5	25	1	215	.08	15	1.5	1.0	23	KKU
		14	159	45.26	19	24.63	154	59.52	7.59	2.3	2.5	27	1	162	.21	8	1.3	1.1	27	LER
		14	2148	24.79	19	22.78	155	4.89	7.24	2.4	2.8	28	0	87	.14	4	.7	1.1	28	MER
		15	1541	15.28	19	17.93	155	24.01	8.24	2.2	2.7	32	0	109	.13	4	.7	1.0	28	SWR
		15	22 2	43.17	19	19.41	155	10.82	8.02	2.1	2.5	27	0	100	.10	5	.7	1.1	27	UER
		16	0 9	25.41	19	22.45	155	5.10	7.58	2.6	3.0	31	1	76	.11	4	.6	.9	29	MER
		16	326	5.47	19	24.95	155	17.04	7.64	1.6	3.0	19	0	85	.12	0	.8	1.4	17	LPC
		17	1 7	41.75	19	19.42	155	13.50	5.72	1.9	2.2	30	0	75	.14	4	.7	1.3	29	UER
		17	138	42.91	19	55.76	155	18.54	10.53	2.7	2.8	31	2	245	.10	6	1.6	.8	29	KKU
		17	14 5	37.92	19	31.08	155	30.08	2.06	2.3	2.2	26	0	92	.12	10	.6	9.9	23	MOK
		17	2142	33.02	19	21.98	155	25.29	8.98	2.3	2.7	34	0	59	.12	4	.6	1.0	30	HEA
		18	444	3.73	19	27.24	155	29.15	10.81	2.3	2.1	32	0	54	.11	9	.6	1.1	32	UKF
		19	1 5	15.97	19	21.15	155	6.08	6.48	1.9	2.3	26	0	94	.12	6	.8	2.0	26	UER
		19	149	26.07	19	18.89	155	13.23	6.87	2.3	2.3	32	0	81	.10	3	.7	1.0	31	POL
		19	2138	19.29	19	21.80	155	6.39	7.01	2.2	2.8	26	0	80	.12	6	.7	1.3	26	UER
		19	23 4	19.47	19	20.76	155	6.17	8.56	2.9	3.4	31	1	102	.09	6	.7	.9	27	UER
		20	127	51.76	19	19.25	155	13.73	5.97	1.8	2.3	28	0	64	.12	4	.7	1.3	28	UER
		20	624	43.90	19	23.97	155	26.27	6.87	2.4	2.6	31	0	41	.15	4	.6	1.8	30	UKF
		20	1314	53.18	19	22.01	155	30.22	9.25	2.6	2.8	33	0	53	.11	5	.6	1.2	33	MOK
		20	1625	27.26	19	20.23	155	8.58	8.72	2.1	2.6	31	0	75	.08	4	.7	.9	31	UER
		20	1849	23.01	19	56.12	155	18.48	10.47	5.0	4.3	32	2	265	.11	6	1.9	.8	23	KKU
		20	1923	59.97	19	56.43	155	17.88	9.57	2.9	2.7	21	1	200	.15	7	1.6	.9	19	KKU
		21	125	28.05	19	59.58	155	18.64	8.49	2.6	2.4	20	0	209	.09	12	2.0	1.2	20	KKU
		21	151	31.99	19	19.11	155	16.02	9.84	3.6	3.7	38	2	99	.11	3	.5	.6	34	KOA
		21	153	22.98	19	23.61	155	3.05	4.72	2.5	2.8	25	0	109	.16	3	.9	1.9	23	MER
		21	427	39.45	19	24.26	155	.27	8.17	2.1	2.4	28	0	152	.16	3	1.2	.8	28	LER
		21	927	46.60	19	58.02	155	16.08	11.08	2.3	2.7	23	3	23	.14	10	2.0	.7	15	KKU
		21	931	9.58	19	58.24	155	19.52	12.90	2.7	2.9	20	2	207	.09	9	1.5	.9	14	KKU
		21	16 3	51.36	19	23.39	155	1.04	8.57	2.7	2.9	29	2	156	.12	5	.9	.7	22	MER
		21	21 1	13.64	19	19.83	155	13.07	8.77	1.7	2.1	24	0	71	.06	5	.7	1.1	19	UER
		21	22 7	1.47	19	19.49	155	15.94	8.75	1.7	2.4	24	0	93	.08	3	.7	1.0	21	KOA
		21	2255	16.71	19	19.83	155	10.33	8.35	2.1	2.7	32	3	90	.09	4	.6	1.1	28	UER
		22	944	.12	19	19.16	155	15.61	10.10	4.0	4.1	35	0	93	.10	4	.7	.6	33	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	APR	22	1059	18.36	19	20.98	155	4.80	11.40	3.6	4.0	30	1	99	.17	4	1.0	.6	28	MER
		22	2145	23.26	19	20.98	155	13.26	9.84	3.2	3.6	36	2	59	.09	3	.5	.7	34	UER
		23	1344	56.30	19	19.63	155	10.27	7.80	2.1	2.4	29	0	94	.09	5	.6	1.0	28	UER
		23	17 5	2.21	19	22.91	155	1.75	7.20	2.1	2.3	24	1	149	.17	5	1.1	1.2	23	MER
		24	455	41.67	19	47.94	156	.92	10.36	3.0	3.1	33	2	228	.28	22	1.9	1.1	33	KON
		24	817	47.75	19	19.39	155	12.88	3.69	2.0	2.4	17	0	174	.09	6	1.2	3.8	17	UER
		24	920	9.32	19	20.83	155	10.40	7.35	2.0	2.3	29	0	72	.10	3	.7	1.0	29	UER
		24	2030	46.99	19	22.21	155	25.69	9.42	2.3	2.8	32	1	59	.13	3	.6	1.0	30	UKF
		24	21 5	49.41	19	23.00	155	30.26	8.56	2.2	2.4	33	0	44	.13	5	.6	1.4	31	MOK
		25	030	15.79	19	29.39	155	43.56	8.52	2.2	2.3	23	3	68	.11	5	.9	1.4	23	MOK
		25	741	11.46	19	37.63	156	23.36	36.02	3.2	2.7	25	1	282	.19	52	7.3	3.8	24	DIS
		25	1027	3.93	19	20.23	155	11.00	8.98	3.2	3.6	37	2	83	.10	4	.5	.7	30	UER
		25	1820	53.10	19	19.92	155	13.47	9.37	3.5	4.0	36	0	65	.10	5	.6	.6	35	UER
		25	1842	34.80	19	19.83	155	12.39	7.98	2.1	2.8	30	0	81	.11	5	.7	.9	28	UER
		25	1937	12.15	19	21.62	155	30.19	8.76	2.5	2.8	33	0	56	.12	5	.6	1.2	28	HEA
		25	22 6	50.22	19	24.44	155	24.27	9.31	2.5	3.0	33	0	41	.12	7	.6	1.1	32	UKF
		26	544	9.87	19	18.85	155	23.50	5.01	2.4	2.7	31	0	30	.14	3	.7	1.6	30	SWR
		26	14 2	56.93	19	41.67	155	2.44	2.30	2.6	2.8	22	0	201	.22	21	1.9	15.5	22	BLS
		26	2011	51.51	19	21.10	155	12.85	8.70	1.9	2.6	29	0	60	.11	3	.6	.9	28	UER
		26	2146	51.77	19	17.84	155	13.13	9.14	1.9	2.5	29	0	145	.11	9	.7	.7	29	POL
		26	2328	57.28	18	58.34	155	28.72	27.06	2.6	1.8	29	1	229	.15	20	2.4	2.1	27	DIS
		27	313	40.43	19	17.94	155	47.06	10.72	1.7	1.4	23	2	135	.16	10	1.0	.9	21	KON
		27	1224	32.84	19	55.88	155	17.82	9.58	2.9	2.7	23	1	247	.14	7	1.6	.8	22	KKU
		27	1341	7.52	19	22.56	155	24.75	9.48	2.1	2.5	28	0	44	.09	5	.6	1.1	27	UKF
		27	1940	44.40	19	20.83	155	11.34	8.17	2.4	2.9	34	2	71	.12	4	.5	.9	30	UER
		27	2248	33.71	19	19.42	155	7.36	7.81	2.5	3.0	32	2	113	.12	4	.7	1.1	30	UER
		28	5 1	21.64	19	30.93	155	27.41	3.28	1.8	1.8	30	1	50	.17	8	.6	3.3	30	NER
		28	631	31.74	18	54.64	155	11.39	13.17		1.3	30	2	263	.12	40	2.2	3.1	28	PPL
		28	1955	32.93	19	20.40	155	13.46	7.03	1.9	2.2	28	0	63	.14	4	.8	1.1	27	UER
		28	2215	56.06	19	18.95	155	13.49	8.02	2.2	2.5	30	0	73	.10	4	.7	1.0	29	POL
		29	331	1.53	19	27.31	155	29.52	8.92	1.9	1.9	32	0	55	.13	9	.6	1.4	32	UKF
		29	1224	39.40	19	19.21	155	12.29	7.71	2.4	2.7	24	0	94	.06	5	.7	1.2	23	UER
		29	1823	32.96	19	19.57	155	10.75	2.87	1.8	2.4	21	0	96	.13	5	.7	1.9	21	UER
		30	323	38.07	19	19.25	155	12.22	8.65	2.4	2.5	27	1	94	.07	5	.8	1.3	25	UER
		30	2056	59.91	19	18.93	155	13.55	10.29	3.1	3.4	33	1	71	.10	4	.6	.6	32	POL
	MAY	1	354	29.21	19	16.72	155	13.60	15.45	1.9	1.9	21	0	159	.13	9	1.5	.7	20	POL
		1	9 2	31.75	19	22.92	155	25.16	8.54	2.1	2.3	33	0	44	.10	4	.6	1.2	30	UKF
		1	13 7	21.78	19	56.66	155	15.65	38.39	2.7	1.8	31	2	222	.12	11	1.7	2.4	28	KKU
		1	1714	13.72	19	24.22	155	1.71	7.96	2.1	2.1	26	1	125	.20	5	1.2	1.0	26	MER
		2	747	54.70	19	22.48	155	5.69	6.85	2.0	2.3	29	0	69	.13	5	.7	1.5	27	MER
		2	854	5.85	20	3.01	155	22.60	8.44	3.7	4.0	36	1	218	.10	18	1.7	1.0	35	KKU
		2	16 6	47.10	19	20.51	155	11.28	9.80	3.1	3.5	35	2	76	.08	4	.5	.7	31	UER
		2	1937	4.50	19	21.70	154	57.50	7.52	2.2	2.6	27	0	221	.15	7	2.1	1.1	25	LER
		2	2358	21.40	19	21.26	155	26.61	9.43	2.6	2.6	32	0	69	.14	5	.7	1.1	31	HEA
		3	136	11.33	19	25.89	155	29.54	8.87	2.3	2.3	35	0	39	.12	7	.6	1.4	31	UKF
		3	3 5	14.14	19	21.25	155	7.01	8.28	2.7	3.3	35	1	86	.11	5	.6	.8	33	UER
		3	1658	37.40	19	20.52	155	12.84	7.40	1.9	2.2	25	0	66	.11	4	.8	1.1	25	UER
		4	4 5	49.81	19	19.76	155	10.94	8.16	2.1	2.6	27	0	92	.08	5	.6	.9	26	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	MAY	4	422	58.31	20	11.50	155	50.35	13.47	3.0	2.9	38	5	5	.15	56	1.0	2.6	32	KOH
		4	924	13.87	19	17.34	155	12.67	11.07	2.6	2.8	33	0	153	.10	9	1.0	.7	31	POL
		4	925	49.80	19	21.91	155	6.52	6.60	2.5	2.8	29	0	77	.10	6	.7	1.4	29	UER
		4	11 5	22.15	19	16.82	155	12.92	9.22	2.8	3.1	34	1	160	.12	1	.7	.9	31	POL
		4	1151	47.94	19	10.16	155	30.84	11.69	2.4	2.1	25	0	147	.12	14	.9	1.0	25	LSW
		4	12 0	24.83	19	21.35	155	7.08	5.98	1.9	2.2	26	0	82	.13	5	.8	1.8	26	UER
		4	1617	54.42	19	19.63	155	11.92	7.98	2.2	2.7	30	0	89	.10	6	.7	.9	29	UER
		4	2041	16.59	19	21.35	155	10.52	8.03	2.1	2.2	27	0	65	.11	2	.7	1.1	27	UER
		5	512	19.29	19	19.32	155	8.49	9.19	3.2	3.6	20	2	82	.09	4	1.1	1.0	18	UER
		5	1243	42.26	19	15.82	155	23.42	2.04	2.1	2.3	19	0	140	.21	6	1.1	3.8	19	LSW
		5	1619	44.15	19	17.44	155	21.44	7.76	2.1	2.5	27	0	125	.10	5	.7	1.2	27	SWR
		5	2013	58.84	19	20.35	155	9.09	7.66	1.9	2.4	28	0	72	.09	3	.7	1.2	28	UER
		6	057	19.77	19	19.95	155	12.49	7.66	2.0	2.4	27	0	77	.11	5	.7	1.0	27	UER
		6	4 7	44.25	19	21.21	155	6.09	6.30	2.0	2.2	29	0	92	.11	6	.7	1.6	28	UER
		6	849	56.54	19	19.56	155	10.99	8.42	1.8	1.9	21	0	96	.08	5	1.0	1.7	18	UER
		6	1133	6.89	19	16.33	155	20.14	8.88	1.8	2.1	23	1	144	.09	4	.8	1.4	16	SWR
		6	12 2	34.51	19	19.08	155	15.49	8.49	1.7	2.1	20	0	94	.04	4	.8	1.5	19	KOA
		6	1756	29.92	19	20.56	155	9.66	8.13	1.7	2.0	24	1	73	.07	3	.8	1.5	22	UER
		7	547	47.01	19	19.73	155	12.14	6.48	1.7	1.8	25	1	86	.09	6	.7	1.6	21	UER
		7	616	2.99	19	19.42	155	9.63	7.93	1.8	2.1	25	0	97	.08	5	.7	1.3	23	UER
		7	1231	28.63	19	19.03	155	15.22	8.31	1.9	2.3	21	0	92	.08	4	.7	1.1	20	KOA
		7	1435	33.84	19	18.38	155	13.18	8.56	1.8	2.1	19	1	91	.10	3	.9	1.9	15	POL
		7	17 9	39.12	19	21.40	155	25.09	9.89	1.7	2.1	20	1	72	.10	4	.8	1.4	18	HEA
		7	1840	49.91	19	23.92	156	47.44	16.62	3.1	2.7	29	4	32	.25	92	7.0	57.0	18	DIS
		7	1911	18.81	19	27.40	155	12.07	27.51	2.8	2.7	34	0	50	.09	6	.9	2.0	30	DEP
		8	210	46.81	19	19.98	155	8.46	7.96	1.8	2.0	24	0	79	.07	5	.8	1.4	21	UER
		8	639	28.42	19	20.07	155	13.57	8.83	1.6	1.7	21	1	69	.05	5	.7	1.1	15	UER
		9	813	4.03	19	20.95	155	.97	6.17	2.4	2.4	30	0	200	.11	4	1.4	.9	29	LER
		9	1058	27.65	19	19.92	155	13.67	9.43	2.7	3.1	35	2	61	.11	5	.5	.7	33	UER
		9	12 4	3.42	19	25.74	154	54.84	7.75	2.3	2.1	18	0	210	.13	6	2.3	1.4	17	LER
		10	636	52.65	19	24.27	155	16.00	7.57	1.6		18	0	81	.11	2	.8	1.3	17	LPC
		10	729	2.38	19	20.21	155	8.42	6.95	1.8	2.0	29	0	78	.10	4	.8	1.5	29	UER
		10	1942	11.15	19	19.96	155	8.34	9.17	2.7	3.3	35	1	82	.09	5	.6	.8	33	UER
		10	1953	52.26	19	18.97	155	15.33	8.55	2.4	2.6	33	2	95	.12	4	.6	.9	31	KOA
		10	20 7	3.31	19	29.56	155	53.35	8.05	2.6	2.0	23	1	237	.14	13	2.0	1.1	23	KON
		10	22 6	6.19	19	19.18	155	11.54	6.75	1.7	2.0	27	0	103	.10	5	.7	1.1	27	UER
		11	754	21.39	19	21.64	155	6.16	7.38	2.2	2.5	28	0	83	.13	6	.7	1.2	27	UER
		11	1232	8.62	19	17.91	155	26.42	12.42	2.6	2.5	15	0	126	.06	7	1.1	3.3	14	HEA
		11	2255	8.84	19	19.73	155	9.79	5.99	2.1	2.3	28	0	90	.10	4	.7	1.2	28	UER
		11	2311	6.37	19	18.77	155	13.47	9.72	3.1	3.5	37	1	76	.10	3	.6	.7	33	POL
		11	2316	59.60	19	18.68	155	13.27	8.15	1.7	2.2	25	0	83	.08	3	.7	1.0	23	POL
		12	448	44.79	19	20.18	155	11.54	7.91	2.3	2.5	31	0	82	.08	5	.6	.9	30	UER
		12	534	27.39	19	21.30	155	5.86	4.30	2.0	2.4	27	0	91	.13	6	.8	3.6	25	MER
		12	1522	43.52	19	21.70	155	6.50	6.90	2.4	2.5	25	0	81	.12	6	.7	1.4	24	UER
		12	1723	32.40	19	7.19	155	31.03	47.54			25	1	167	.13	18	1.8	2.7	25	LSW
		12	2134	4.12	19	21.35	155	3.50	7.83	2.8	3.2	30	1	108	.11	3	.8	.8	29	MER
		12	23 8	42.19	19	16.00	155	22.65	2.90	2.1	2.3	25	1	155	.11	7	.8	2.2	24	SWR
		12	2338	23.82	19	16.47	155	23.31	6.54	2.3	2.9	28	0	126	.16	6	.9	1.6	27	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	MAY	13	140	53.23	19	58.39	155	51.24	9.48	2.8	2.5	31	2	85	.17	19	1.4	1.2	29	KOH
		13	10 3	39.34	19	20.23	155	11.81	6.99	2.2	2.7	28	0	79	.12	5	.7	1.1	28	UER
		13	11 9	7.81	19	25.86	155	25.71	4.18	2.4	2.6	30	0	48	.14	7	.6	8.7	30	UKF
		13	1145	57.00	19	23.40	154	57.15	7.75	2.2	2.2	28	1	206	.17	4	1.6	1.0	27	LER
		13	1337	38.97	19	26.31	154	55.33	5.94	2.2	2.5	20	1	195	.16	6	1.3	2.1	19	LER
		13	2052	48.52	19	22.21	155	2.02	9.42	2.4	2.8	35	2	151	.12	5	1.0	.6	33	MER
		13	2211	54.88	19	20.11	155	6.65	6.45	2.3	2.4	34	2	112	.10	6	.6	.9	31	UER
		14	0 4	47.86	19	20.56	155	3.12	7.03	2.3	2.6	31	1	118	.12	1	.9	.9	29	MER
		14	055	51.62	19	20.11	155	3.52	4.62	2.1	2.4	27	0	129	.13	1	1.1	1.5	26	MER
		14	128	49.37	19	21.98	155	2.54	6.48	2.1	2.3	31	2	140	.13	4	.7	1.2	29	MER
		14	5 0	2.55	19	20.01	155	6.76	8.36	2.4	2.8	31	1	113	.12	5	.7	1.0	30	UER
		14	535	10.79	19	19.87	155	13.50	9.67	2.9	3.5	37	1	64	.11	5	.5	.6	36	UER
		14	1728	3.73	19	22.84	155	3.29	8.90	2.2	2.3	30	0	112	.10	4	1.0	.7	28	MER
		14	20 1	4.74	19	21.41	155	7.26	6.61	2.4	2.9	33	1	80	.12	5	.6	1.2	31	UER
		14	2127	13.02	19	22.06	155	5.90	8.96	3.6	3.8	37	1	76	.09	5	.6	.7	36	MER
		14	2132	22.68	19	22.44	155	5.70	8.49	3.2	3.6	36	0	69	.09	5	.7	.7	36	MER
		15	514	19.74	19	20.55	155	12.36	9.10	2.0	2.4	29	0	70	.09	4	.6	.8	29	UER
		15	713	32.15	19	55.62	155	18.44	10.72	2.4	2.3	31	3	245	.12	6	1.6	.8	29	KKU
		15	1956	38.78	19	17.56	155	21.42	7.22	2.3	2.6	31	0	125	.14	5	.7	1.2	30	SWR
		15	20 0	35.31	19	22.11	155	6.75	8.15	2.4	2.9	33	1	73	.10	5	.6	.9	32	UER
		15	2056	41.29	19	19.91	155	11.18	7.45	2.3	2.8	34	2	88	.11	5	.6	1.1	31	UER
		16	457	4.34	19	21.28	155	7.13	8.13	2.5	2.9	33	2	83	.11	5	.6	1.0	30	UER
		16	723	43.74	19	25.07	154	56.00	.44	2.0	2.3	23	1	200	.28	5	1.4	.8	21	LER
		16	1735	8.65	19	24.15	155	.34	8.69	2.1	2.2	28	3	154	.15	3	.9	.9	25	LER
		17	6 8	58.29	19	19.60	155	11.50	7.54	2.0	2.4	28	0	94	.10	5	.7	1.0	27	UER
		17	818	53.73	19	22.28	155	4.72	7.93	2.0	2.4	25	0	81	.09	4	.9	1.1	25	MER
		17	1750	50.13	19	20.86	155	13.17	9.20	2.6	3.1	32	1	60	.10	3	.6	.8	31	UER
		17	1832	42.73	19	22.15	155	5.84	8.47	3.3	3.8	33	0	74	.09	5	.7	.7	31	MER
		17	19 7	4.16	19	19.30	155	28.45	8.52	2.2	2.3	28	0	58	.13	6	.7	1.5	27	HEA
		17	2011	25.64	19	20.43	155	4.20	6.17	2.0	2.6	28	0	117	.12	2	1.0	1.4	28	MER
		17	2110	28.00	19	26.60	154	55.10	7.92	2.4	2.7	28	1	194	.18	5	1.6	1.0	27	LER
		17	23 2	40.69	19	21.96	155	3.71	6.30	2.1	2.5	25	0	105	.16	4	.8	1.4	24	MER
		18	611	50.59	19	20.85	155	12.60	7.77	1.9	2.2	29	0	65	.10	5	.6	.8	29	UER
		18	1014	32.42	19	19.00	155	15.89	9.45	3.0	3.2	36	2	99	.09	5	.5	.7	32	KOA
		18	1046	43.04	19	30.83	155	50.16	10.23	3.3	3.2	32	0	108	.17	7	.8	.6	32	KON
		18	1746	15.99	19	21.68	155	15.22	8.80	2.0	2.6	29	0	61	.09	2	.5	.7	29	KOA
		18	2135	35.17	19	11.95	155	38.14	9.57	2.4	2.3	34	2	109	.25	6	1.0	1.3	32	HEA
		18	22 7	16.66	19	20.33	155	6.94	8.19	2.3	2.3	33	2	102	.10	6	.6	1.1	31	UER
		18	23 6	21.71	19	21.33	155	15.25	9.31	2.9	3.3	35	2	66	.11	2	.5	.8	32	KOA
		19	456	55.06	19	20.85	155	12.79	8.85	2.2	2.6	28	0	63	.10	5	.6	.8	28	UER
		19	526	49.97	19	29.07	155	15.20	30.33	2.5	2.4	32	0	100	.11	8	1.0	2.4	32	GLN
		19	23 1	11.08	19	20.07	155	11.66	6.42	2.0	2.3	31	0	81	.12	5	.7	1.1	29	UER
		20	015	12.16	19	23.90	155	29.61	9.32	2.2	2.5	32	0	43	.12	4	.7	1.4	32	UKF
		20	726	43.00	19	22.11	155	.47	6.20	2.1	2.2	25	0	199	.21	6	2.1	1.2	24	LER
		20	1120	56.24	19	24.84	154	58.86	5.63	2.1	2.2	25	0	168	.22	1	1.3	1.1	24	LER
		20	21 0	48.87	19	17.17	155	23.72	6.36	2.1	2.3	28	0	118	.14	5	.8	1.3	28	SWR
		21	1647	57.69	19	26.51	154	51.56	9.21	2.9	3.2	26	1	270	.13	6	2.7	.7	25	LER
		21	1657	34.09	19	38.57	155	57.16	37.29	3.4	3.2	28	2	210	.15	15	1.1	2.6	18	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	MAY	23	115	20.58	19	25.20	154	58.50	6.53	2.1	2.4	22	2	167	.14	0	.9	1.2	18	LER
		23	358	32.92	19	18.97	155	12.81	5.75	2.2	2.5	29	0	90	.12	4	.7	1.4	29	POL
		23	426	54.89	19	18.14	155	16.60	8.97	2.3	2.9	32	0	121	.11	4	.7	.6	31	KOA
		23	718	45.59	19	21.69	155	6.12	3.83	2.5	2.6	31	2	82	.11	6	.6	2.3	28	UER
		23	1029	28.55	19	17.39	155	25.66	36.71	3.1	2.8	34	0	126	.09	3	1.2	2.3	32	HEA
		23	1127	2.46	19	20.11	155	13.54	9.47	2.1	2.4	28	0	69	.09	5	.7	.6	27	UER
		23	1349	28.43	19	20.41	155	11.27	8.11	2.3	2.6	29	0	78	.11	4	.7	1.1	28	UER
		23	1947	17.18	18	54.59	155	12.65	16.73		2.1	32	2	257	.15	38	3.2	52.9	31	PPL
		24	146	17.31	19	23.69	155	16.07	2.84	2.3	2.8	21	0	44	.12	2	.5	.6	21	SPC
		25	721	36.05	19	19.13	155	16.40	6.99	1.6	2.2	27	0	115	.12	3	.8	1.1	25	KOA
		25	1738	7.07	19	20.51	155	6.01	8.69	3.1	3.3	35	1	110	.10	6	.7	.8	30	UER
		26	211	42.39	19	20.73	155	13.09	8.96	2.6	3.3	37	2	62	.13	4	.6	.8	30	UER
		26	438	39.60	19	19.48	155	11.99	6.91	2.1	2.2	29	0	91	.10	5	.7	1.0	28	UER
		26	448	5.12	19	20.58	155	5.72	8.22	2.2	2.2	29	2	110	.09	5	.7	1.1	25	MER
		26	449	3.53	19	20.42	155	5.65	7.86	2.2	2.2	28	2	115	.08	5	.6	1.3	25	MER
		26	516	47.22	19	21.27	155	4.69	9.00	2.6	2.8	33	2	90	.10	4	.7	.7	30	MER
		26	1440	40.79	19	19.52	155	11.35	7.33	2.1	2.3	31	0	95	.11	5	.7	1.0	30	UER
		26	2347	36.65	19	19.07	155	21.93	3.52	1.9	2.2	16	0	131	.09	3	.9	1.5	16	SWR
		27	623	20.80	19	19.86	155	8.16	9.14	2.5	3.1	36	2	86	.09	5	.7	.7	33	UER
		27	725	31.96	19	22.71	155	28.80	8.66	2.2	2.3	29	0	50	.10	2	.7	1.3	29	UKF
		27	1418	29.86	19	20.69	156	.89	14.05	2.8	3.1	12	2	272	.26	17	3.2	1.1	12	KON
		27	17 5	44.26	19	20.26	155	11.42	8.63	2.4	2.6	23	2	81	.10	4	.6	1.3	21	UER
		27	2042	42.48	19	18.05	155	23.33	4.31	2.3	2.4	21	0	147	.08	4	.9	2.2	21	SWR
		28	5 4	42.19	19	20.63	155	13.41	8.91	2.0	2.3	26	0	60	.07	4	.7	1.2	25	UER
		28	527	15.65	19	18.89	155	13.40	9.17	1.7	2.2	26	0	77	.06	3	.8	1.0	26	POL
		28	738	59.68	19	26.21	155	24.47	7.53	2.3	2.6	21	0	61	.13	7	.8	2.2	21	UKF
		28	2311	32.22	19	24.13	155	.33	8.79	2.6	3.1	27	2	155	.13	3	.9	.9	25	LER
		29	643	12.41	19	25.30	155	23.42	8.12	2.8	3.2	35	3	45	.14	7	.5	1.4	31	UKF
		29	1820	23.29	19	21.42	155	4.93	8.27	2.1	2.5	24	2	88	.11	4	.8	1.9	19	MER
		29	2048	48.70	19	17.94	155	14.62	9.87	2.2	2.8	20	1	133	.08	3	.9	1.3	19	POL
		29	2254	15.25	19	20.31	155	11.96	9.27	2.4	2.5	28	1	76	.07	5	.7	.9	26	UER
		30	927	13.06	19	12.23	155	19.60	45.94		2.2	17	2	172	.07	11	2.1	3.3	17	HLP
		30	1253	54.17	19	18.90	155	13.38	7.54	2.0	2.4	27	0	77	.11	3	.8	1.0	26	POL
		30	1310	5.97	19	20.66	155	6.01	8.36	3.2	3.9	32	1	106	.12	6	.6	.9	30	UER
		30	1325	47.51	19	23.34	154	57.68	10.16	2.5	2.5	26	0	201	.12	4	1.8	.7	25	LER
		31	133	20.36	19	23.26	155	15.18	3.00	2.2	2.6	22	0	47	.09	2	.5	.6	21	SPC
		31	925	53.94	19	20.91	155	6.95	7.23	2.0	2.5	25	0	91	.12	6	.8	1.4	23	UER
		31	18 9	16.63	19	19.26	155	11.65	6.98	2.4	3.0	32	0	100	.11	5	.7	1.0	27	UER
		31	1813	7.57	19	21.67	155	2.86	6.31	2.1	2.5	23	0	133	.13	3	.9	1.2	22	MER
		31	22 6	18.68	19	19.17	155	13.60	7.43	1.9	2.2	31	0	68	.12	4	.7	1.0	30	UER
	JUN	1	531	27.86	19	19.26	155	10.95	9.10	2.6	3.2	33	2	103	.13	6	.6	.8	31	UER
		1	830	11.82	19	20.15	155	9.50	7.71	1.9	2.3	26	0	79	.09	4	.7	1.2	26	UER
		1	1846	30.64	20	5.30	156	2.78	7.73	2.9	2.9	36	3	177	.20	28	.7	1.4	30	DIS
		1	2244	46.01	19	22.83	155	29.66	9.38	2.3	2.4	32	0	47	.11	4	.7	1.3	32	UKF
		2	310	10.04	19	20.37	155	13.21	7.69	1.9	2.3	29	0	64	.14	4	.7	1.0	28	UER
		2	353	29.07	19	24.45	155	18.09	17.42	2.4	2.5	31	0	69	.10	2	.8	1.2	28	DEP
		2	840	47.39	19	12.45	155	16.12	43.69		1.2	27	0	180	.11	10	1.6	3.6	26	HLP
		2	17 5	14.10	19	34.55	155	41.75	4.98	2.7	1.9	27	0	97	.18	10	.9	2.6	27	MOK

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JUN	3	439	21.02	19	22.10	155	6.10	6.97	2.0	2.4	26	0	75	.09	6	.7	1.4	26	UER
		3	8 2	22.53	19	25.10	155	25.36	6.80	2.1	2.3	30	0	50	.15	6	.6	2.3	29	UKF
		3	910	48.13	19	21.58	155	5.01	8.14	2.4	2.6	22	0	84	.06	5	.9	1.2	19	MER
		3	1235	20.10	19	21.22	155	5.92	7.51	1.9	1.8	23	1	93	.10	6	.8	1.6	20	MER
		3	1354	48.19	19	55.65	155	44.93	11.29	2.5	1.9	27	7	23	.33	23	.9	1.3	25	KOH
		3	1546	52.36	19	18.96	155	10.99	8.24	2.1	2.2	23	1	112	.09	6	.7	1.1	17	POL
		3	1929	38.60	19	20.88	155	6.17	8.87	2.4	2.5	28	3	99	.09	6	.6	1.0	22	UER
		3	1951	59.12	19	18.88	155	8.83	8.17	1.8	2.1	27	1	97	.10	3	.7	1.1	21	POL
		3	2139	27.75	19	21.99	155	4.37	8.12	2.3	2.5	21	2	88	.10	5	.6	1.3	15	MER
		4	033	58.50	19	28.10	154	53.40	6.01	1.6	1.7	15	2	229	.11	2	2.0	1.4	12	LER
		4	142	52.69	19	25.85	154	56.22	6.30	3.1	3.5	27	2	187	.18	5	1.5	1.3	16	LER
		4	332	55.15	19	20.83	155	13.17	8.54	2.2	2.6	33	2	60	.10	3	.6	.9	26	UER
		4	732	6.10	19	19.19	155	13.94	9.21	2.1	2.3	26	0	66	.08	4	.7	1.0	23	UER
		4	8 1	6.91	19	27.91	154	54.03	3.96	1.4	1.6	17	3	197	.13	2	2.2	3.0	12	LER
		4	843	59.95	19	26.09	155	17.02	15.84	1.4	1.9	30	1	48	.09	2	.8	.7	28	DEP
		4	952	32.68	19	19.79	155	9.62	7.68	1.8	1.9	23	2	86	.09	4	.7	1.4	22	UER
		4	1452	41.26	19	21.45	155	6.67	8.32	1.9	1.9	24	1	84	.10	6	.9	1.3	23	UER
		4	1547	43.99	19	21.77	155	1.06	5.24	1.3	1.7	16	2	179	.19	5	1.3	2.4	15	MER
		4	1623	35.04	19	16.32	155	23.37	6.13	1.8	1.8	17	2	195	.12	6	1.0	2.3	12	SWR
		4	2115	24.13	20	.07	155	18.60	9.34	1.3	1.5	10	1	285	.08	13	2.9	1.3	9	KKU
		5	0 5	40.00	19	24.07	155	16.10	2.87	1.8	2.2	17	1	107	.11	2	.6	.7	13	SPC
		5	1253	8.62	19	54.98	155	17.77	10.17	1.2	2.0	18	3	265	.21	6	1.7	.8	18	KKU
		5	1810	12.65	19	20.96	155	12.97	8.47	1.9	2.5	31	0	60	.13	3	.6	.8	31	UER
		5	2157	38.04	19	22.25	155	30.21	8.78		2.5	33	0	52	.13	5	.7	1.2	31	MOK
		5	2342	18.92	19	21.66	155	4.91	9.31	5.1	4.6	35	0	81	.09	5	.9	.5	35	MER
		6	033	4.15	19	22.85	155	4.41	7.43	2.4	2.6	28	0	88	.10	5	.7	1.1	27	MER
		6	348	52.94	19	21.19	155	.74	5.64	2.5	3.1	30	1	198	.11	5	.9	.8	27	LER
		6	529	38.56	19	22.64	155	4.53	7.85	2.6	2.9	33	1	86	.09	4	.6	.9	30	MER
		6	1058	37.78	19	19.52	155	11.28	8.99	3.4	3.6	35	0	96	.11	5	.6	.7	34	UER
		6	1441	6.48	19	22.73	155	4.76	8.40	2.9	3.5	31	1	81	.10	4	.7	.8	29	MER
		6	1954	20.13	19	20.94	155	9.76	7.76	1.8	2.1	29	0	68	.10	2	.7	1.1	29	UER
		6	2049	11.30	19	19.63	155	11.91	7.55	2.3	3.0	31	0	89	.10	6	.7	.9	28	UER
		6	2114	18.98	19	30.73	155	56.16	10.85	3.0	3.0	30	0	221	.12	3	2.0	.7	29	KON
		6	23 1	27.78	19	19.81	155	11.97	7.91	2.5	3.0	31	1	86	.08	6	.6	.8	30	UER
		6	2316	24.63	19	25.99	155	28.10	8.05	2.2	2.4	33	0	44	.10	7	.6	1.5	32	UKF
		7	028	50.07	19	22.23	155	5.72	7.38	2.6	3.2	36	2	73	.13	5	.5	1.0	33	MER
		7	545	24.25	19	22.82	155	4.69	8.13	2.4	2.7	32	2	83	.11	3	.6	.9	29	MER
		7	1438	38.17	19	21.78	155	6.83	7.65	2.3	2.6	30	0	78	.09	5	.6	1.0	28	UER
		7	17 6	57.87	19	21.05	155	5.88	6.48	1.9	2.4	26	0	96	.11	6	.8	1.6	26	MER
		8	231	11.38	19	19.35	155	16.04	7.82	1.9	2.4	31	0	96	.13	3	.7	1.0	30	KOA
		8	1135	19.56	19	19.23	155	11.31	7.96	2.8	3.4	33	2	104	.09	6	.6	.9	31	UER
		8	1326	2.37	19	46.70	156	.55	7.10	3.1	3.3	34	1	226	.21	21	1.3	1.0	32	KON
		9	1 8	7.69	19	20.75	155	2.55	6.90	2.2	2.5	25	0	158	.12	2	1.2	1.0	25	MER
		9	1458	15.24	19	21.21	155	6.17	8.23	2.1	2.4	24	2	92	.10	6	.8	1.6	21	UER
		9	2024	57.16	19	22.25	155	5.48	7.81	1.9	1.9	24	3	72	.12	5	.7	1.3	17	MER
		10	241	28.57	19	19.78	155	10.53	8.42	1.9	2.5	25	0	92	.08	4	.6	1.2	23	UER
		10	313	1.14	19	20.39	155	11.74	6.47	1.6	2.0	25	0	77	.11	5	.7	1.4	23	UER
		10	441	44.30	19	21.07	155	5.97	9.28	2.3	2.6	27	0	96	.09	6	.7	1.1	26	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JUN	10	451	2.24	19	17.72	155	21.40	8.19	2.0	2.1	27	2	122	.12	5	.7	1.4	22	SWR
		10	1957	9.83	19	20.25	155	3.89	6.95	2.1	2.3	20	0	123	.13	2	1.2	1.9	19	MER
		10	2127	2.14	19	20.73	155	13.48	8.39	1.9	2.3	24	0	57	.08	4	.7	1.3	23	UER
		11	330	2.45	19	28.62	155	21.67	6.81	2.4	2.4	20	2	85	.13	4	.7	1.9	16	UKF
		11	621	47.12	19	23.44	155	17.03	2.98	2.2	2.8	21	1	61	.07	0	.4	.5	20	SPC
		11	1137	19.36	19	21.55	155	6.70	9.55	2.6	3.2	24	0	82	.08	6	1.0	1.1	22	UER
		11	1652	6.92	19	19.74	155	12.52	8.87	2.5	2.8	26	0	83	.10	5	.8	1.1	25	UER
		11	1828	41.56	19	58.39	155	18.61	10.68	2.7	2.6	24	1	18	.10	10	3.3	.9	21	KKU
		12	516	36.23	19	20.14	155	11.70	9.18	2.1	2.5	25	0	81	.09	5	.7	1.0	25	UER
		12	1220	33.02	19	19.93	155	11.30	9.10	2.0	2.1	22	0	87	.07	5	.7	1.2	21	UER
		12	1259	22.59	19	18.45	155	15.69	8.34	1.6	1.9	20	0	38	.08	4	.8	1.2	15	KOA
		12	1746	8.09	19	21.93	155	1.45	7.98		1.9	23	1	169	.12	5	1.4	.9	17	MER
		12	2129	44.90	19	18.81	155	13.31	8.37	2.1	2.1	24	1	80	.08	3	.7	1.3	15	POL
		12	2310	12.14	19	18.85	155	13.86	8.22	2.1	2.4	26	1	67	.07	3	.7	1.1	20	POL
		13	419	42.11	19	16.23	155	22.95	8.36	1.9	2.2	20	0	149	.10	7	.9	1.5	19	SWR
		13	931	15.13	19	20.83	155	10.85	8.27	2.4	2.6	26	1	73	.08	3	.6	1.0	22	UER
		13	1748	42.84	19	21.61	155	3.12	7.62	2.0	1.9	24	1	123	.14	3	1.1	1.1	22	MER
		13	2214	54.06	19	25.71	155	25.15	5.96	1.9	2.3	23	0	51	.12	7	.7	3.3	22	UKF
		14	047	50.33	19	37.80	156	2.25	41.34	2.7	1.8	30	5	47	.18	22	1.4	1.9	28	KON
		14	219	40.21	19	20.89	155	12.99	8.49	2.1	2.2	26	1	61	.10	3	.7	1.1	25	UER
		14	446	37.35	19	18.36	155	13.21	8.92	1.7	2.0	26	0	91	.09	3	.7	1.0	21	POL
		14	1522	.85	19	19.28	155	10.82	10.07	3.1	3.9	37	1	104	.10	5	.7	.6	35	UER
		15	639	46.05	19	26.79	155	24.28	4.86	2.1	2.6	30	0	52	.13	6	.6	4.4	27	UKF
		15	14 4	16.67	19	21.08	155	7.44	7.79	3.1	3.6	37	3	83	.11	5	.6	.9	33	UER
		15	1450	33.16	19	21.74	155	1.04	7.90	2.6	3.1	28	1	180	.11	5	1.1	.7	27	MER
		15	1955	15.57	19	15.16	155	35.29	7.24	2.5	2.6	30	0	111	.18	3	.9	1.5	28	HEA
		15	2357	33.92	19	21.88	155	6.66	4.62	1.8	2.4	27	0	77	.16	6	.9	3.3	26	UER
		16	156	35.95	19	25.45	155	25.05	6.87	2.0	2.3	30	0	50	.12	7	.6	2.3	30	UKF
		16	338	56.83	19	26.63	155	27.30	10.39	2.6	2.8	33	0	46	.12	8	.6	1.1	32	UKF
		16	659	35.00	19	19.36	155	29.02	8.25	2.1	2.3	28	1	109	.12	6	.8	1.6	28	HEA
		16	2141	58.54	19	16.14	155	19.94	4.48	2.1	2.5	11	0	192	.16	9	1.8	48.6	11	SWR
		16	22 1	59.34	19	28.07	154	54.40	4.39	2.1	2.5	26	0	177	.19	2	2.1	2.4	25	LER
		17	456	51.05	19	21.10	155	6.91	8.25	3.0	3.5	35	2	88	.10	5	.6	.8	32	UER
		17	6 5	36.63	19	55.28	155	30.54	43.40	3.5	3.2	34	0	247	.11	18	3.2	4.5	34	DIS
		17	843	11.25	19	21.80	155	5.37	8.40	2.1	2.1	26	4	80	.11	5	.6	1.0	20	MER
		18	510	1.12	19	22.54	155	50.02	11.74	2.6	2.1	26	5	41	.15	13	.8	.9	22	KON
		18	915	59.62	19	18.99	155	13.80	6.92	1.7	2.0	20	0	87	.12	4	.9	1.9	17	POL
		18	1138	52.13	19	23.91	154	59.40	8.81	2.1	2.1	23	5	172	.14	3	.9	.8	17	LER
		18	1214	44.47	19	20.50	155	13.24	8.27	1.9	2.1	23	0	62	.09	4	.7	1.0	22	UER
		18	1227	38.64	19	21.89	155	14.94	4.86	2.4	2.1	17	3	77	.23	2	.7	1.7	12	UER
		19	728	15.07	19	19.68	155	7.90	9.08	2.9	3.3	35	3	95	.08	4	.5	.7	30	UER
		19	1657	15.63	19	22.43	155	5.57	7.39	2.4	3.0	32	1	69	.10	5	.6	1.1	28	MER
		20	249	57.12	19	23.86	155	16.14	2.64	1.4	2.3	16	0	73	.12	2	.6	.6	16	SPC
		20	546	44.35	19	20.66	155	3.43	7.28	2.9	3.6	29	1	100	.10	2	.9	1.0	28	MER
		20	614	8.57	19	20.36	155	11.93	8.01	2.1	2.5	29	1	76	.11	5	.6	1.0	29	UER
		21	015	57.45	19	20.47	155	28.16	27.62	2.8	3.2	34	1	56	.10	4	1.0	1.6	33	HEA
		21	2 0	37.66	19	10.34	155	28.52	35.85	2.9	2.5	29	0	160	.11	12	1.4	3.1	28	LSW
		21	643	28.20	19	19.63	155	6.41	9.09	2.4	2.8	29	2	128	.08	5	.6	1.0	27	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JUN	21	652	37.84	19	20.39	155	5.47	5.60	2.4	2.8	27	2	117	.20	5	.8	2.4	22	MER
		21	850	36.60	19	28.80	154	48.61	10.74	2.7	2.5	22	2	279	.12	19	3.4	1.2	20	LER
		22	345	21.76	19	20.03	155	6.47	9.80	3.7	4.0	35	1	117	.09	6	.8	.6	34	UER
		22	1215	26.71	19	18.87	155	13.39	7.57	2.1	2.6	28	0	77	.11	3	.7	1.0	27	POL
		22	1352	26.17	19	18.41	155	13.64	6.99	2.0	2.2	29	0	72	.11	3	.8	1.1	29	POL
		22	1414	38.32	19	41.88	155	1.91	2.09	2.4	3.0	21	0	204	.19	22	1.8	14.6	21	BLS
		22	2358	31.33	19	20.38	155	13.48	8.92	2.5	2.7	29	0	59	.09	4	.6	.7	28	UER
		23	028	24.14	19	21.71	155	15.09	8.00	2.0	2.3	31	0	60	.14	2	.7	.9	30	KOA
		23	036	28.34	19	42.35	156	4.49	9.04	3.4	2.8	30	2	279	.16	29	1.8	1.1	28	KON
		23	1511	23.10	19	21.61	155	8.65	4.19	1.9	2.4	24	0	82	.14	6	.8	3.0	23	UER
		23	1910	8.54	19	22.84	155	26.03	9.12	2.2	2.6	31	0	51	.10	3	.6	1.0	31	UKF
		23	2238	21.45	19	19.60	155	13.25	8.58	2.2	2.6	31	1	71	.11	5	.6	.9	29	UER
		24	2133	40.45	19	15.96	155	22.95	7.18	1.9	2.3	17	0	153	.08	7	1.0	2.4	17	LSW
		25	555	28.90	19	46.64	156	2.74	6.57	3.1	3.3	27	2	278	.20	24	1.5	1.6	24	KON
		25	835	19.21	19	19.80	155	12.77	8.47	2.9	2.9	32	3	76	.11	5	.6	1.0	29	UER
		25	1411	14.95	19	28.17	155	24.56	11.26	2.8	2.6	27	2	46	.14	4	.7	1.1	24	UKF
		26	352	23.34	19	20.34	155	12.58	6.79	1.6	2.0	25	0	71	.10	4	.7	1.3	25	UER
		26	11 8	51.65	19	21.39	155	8.10	8.31	2.5	3.1	29	0	72	.10	3	.7	1.0	28	UER
		27	5 6	34.39	19	20.58	155	5.93	7.42	2.4	2.7	30	1	108	.13	5	.7	1.2	29	MER
		27	1243	27.91	19	22.60	155	3.14	6.49	2.8	3.1	31	2	117	.12	4	.7	.8	27	MER
		27	1318	28.19	19	21.01	155	12.89	9.22	2.3	2.6	27	0	60	.09	3	.7	.8	26	UER
		27	1759	19.50	19	20.96	155	5.75	7.14	2.4	2.8	32	2	100	.17	5	.7	1.5	30	MER
		27	20 4	8.61	19	23.93	155	16.19	2.85	1.6	2.2	14	0	99	.11	2	.6	.8	13	SPC
		27	2247	14.78	19	22.70	155	3.09	5.81	2.0	2.6	24	0	117	.24	5	1.0	4.7	22	MER
		28	132	57.80	19	33.54	155	36.77	7.91	2.6	2.2	26	1	95	.13	8	.8	1.3	25	MOK
		28	654	4.87	19	22.26	155	5.54	7.14	2.0	2.1	27	0	73	.12	5	.7	1.4	25	MER
		28	1728	31.52	19	49.38	156	6.94	2.42	2.9	2.3	21	2	296	.24	33	2.9	3.0	20	KON
		28	2023	32.24	19	19.56	155	11.50	7.36	1.9	2.3	26	0	94	.10	6	.8	1.2	26	UER
		29	124	36.13	19	21.10	155	15.29	10.28	3.7	4.0	31	2	39	.09	3	.5	.7	29	KOA
		29	426	19.87	19	20.83	154	58.13	5.85	2.2	2.2	26	2	266	.23	9	5.4	1.7	24	LER
		29	9 3	4.19	19	19.88	155	10.60	5.29	2.4	2.8	25	2	89	.11	4	.7	1.8	23	UER
		29	15 8	24.42	19	19.21	155	11.55	4.48	2.1	2.4	26	2	101	.13	5	.7	2.7	24	UER
		29	1637	23.31	19	20.55	155	2.95	7.45	2.3	2.7	26	1	190	.12	8	.9	1.0	25	MER
		29	1721	45.52	19	21.08	155	5.64	6.54	2.5	2.9	24	0	178	.11	7	1.1	1.3	23	MER
		29	1727	41.27	19	19.90	155	6.45	8.15	2.3	2.5	25	0	110	.08	5	.7	1.2	24	UER
		29	1754	17.37	19	9.29	155	33.91	10.17	2.3	2.4	25	1	138	.15	12	1.0	1.5	23	LSW
		29	1917	40.71	19	20.09	155	11.13	7.76	2.3	2.9	27	0	85	.09	4	.7	1.0	27	UER
		29	1932	21.52	19	17.26	155	13.83	7.76	2.2	2.5	26	0	117	.11	1	1.0	.9	26	POL
		30	358	18.82	19	19.41	155	13.34	5.15	2.0	2.5	29	0	73	.13	4	.7	1.6	28	UER
		30	13 4	2.43	19	19.56	155	11.40	8.24	2.2	2.8	29	0	94	.09	5	.7	.9	27	UER
		30	1727	1.12	19	21.73	155	6.69	7.25	1.9	2.3	26	0	79	.13	6	.7	1.4	26	UER
	JUL	1	728	39.08	19	21.36	155	5.84	7.50	2.5	2.8	32	2	89	.13	6	.7	1.1	29	MER
		1	814	56.36	19	20.04	155	8.20	9.61	3.2	3.7	32	0	84	.10	5	.8	.6	26	UER
		1	1244	58.22	19	59.46	155	17.66	9.80	3.0	3.0	28	4	275	.12	12	1.9	.9	21	KKU
		1	1723	35.94	19	20.17	155	8.65	8.93	2.1	2.6	27	0	104	.08	4	.8	1.0	25	UER
		1	2011	16.11	19	25.45	154	49.52	7.71	1.8	1.6	15	2	284	.09	9	2.4	1.2	10	LER
		2	320	12.79	19	19.93	155	6.67	7.99	2.3	2.5	27	1	147	.09	5	.9	1.3	20	UER
		2	1132	51.74	19	20.87	155	7.65	5.41	1.9	2.1	18	2	122	.21	4	1.5	3.2	16	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JUL	2	1729	44.02	19	26.94	154	53.16	7.17	2.1	1.9	15	2	36	.11	4	1.8	1.3	12	LER
		2	19 5	14.83	19	19.82	155	8.92	8.10	1.9	2.4	24	0	98	.08	5	.8	1.1	22	UER
		2	1925	42.44	19	21.99	155	5.68	8.33	2.5	2.7	24	1	141	.11	5	.9	1.2	21	MER
		3	0 2	49.63	19	20.71	155	11.03	7.93	2.3	2.3	30	1	74	.11	3	.7	.9	23	UER
		3	141	59.93	19	25.25	155	30.66	12.52	2.2	2.0	21	0	54	.12	7	.8	1.2	21	MOK
		3	222	18.61	19	18.79	155	12.44	7.65	1.9	2.1	24	3	102	.10	4	.6	1.1	20	POL
		3	447	54.40	19	18.61	155	15.71	9.28	2.3	2.4	29	1	106	.12	4	.8	.9	24	KOA
		3	646	34.10	19	58.57	154	4.18	6.95	2.4	1.8	24	5	335	.12	102	58.0	75.6	16	DIS
		3	811	36.58	19	27.91	154	51.10	7.30	2.1	1.7	14	4	278	.14	4	1.9	1.2	8	LER
		3	827	19.46	19	20.16	155	13.74	8.19	1.4	1.6	19	0	70	.09	5	.8	1.5	13	UER
		3	2233	15.13	19	27.66	154	52.45	5.07	1.9	1.6	16	3	273	.12	3	1.5	2.1	11	LER
		4	240	57.76	19	19.29	155	6.76	8.90	2.9	3.3	26	1	159	.12	4	.8	1.4	21	UER
		4	259	58.10	19	26.48	154	52.42	6.75	2.5	2.6	24	3	266	.22	5	1.9	1.5	20	LER
		4	327	15.28	19	19.66	154	56.76	9.63	1.5	1.7	16	1	240	.16	11	2.0	1.3	9	DIS
		4	420	6.07	20	2.66	155	48.33	9.73	3.3	3.2	35	3	278	.20	40	3.2	1.4	31	KOH
		4	1844	52.23	19	18.64	155	15.19	8.00	2.2	2.7	29	0	99	.10	4	.7	.9	27	KOA
		4	2050	17.69	20	9.44	156	22.98	15.27	3.2	3.3	30	3	314	.20	77	21.4	35.7	29	DIS
		4	2130	30.18	19	19.49	155	8.58	8.94	2.8	3.4	31	0	106	.10	4	.9	.6	31	UER
		4	2152	46.95	20	4.19	155	22.05	4.95	2.7	2.6	31	3	269	.11	20	1.1	1.3	28	KKU
		5	711	54.21	19	18.68	155	21.91	7.44	2.5	3.4	34	1	110	.16	4	.7	1.2	31	SWR
		5	759	42.03	19	26.41	155	27.14	11.89	4.1	4.3	33	2	45	.12	7	.6	.6	26	UKF
		5	823	4.69	19	26.97	155	27.05	11.02	2.4	2.8	14	0	125	.11	8	1.7	1.6	13	UKF
		6	724	5.22	19	21.06	155	12.70	8.32	2.1	2.2	26	0	62	.11	3	.6	1.0	25	UER
		6	850	18.47	19	19.40	155	6.40	9.40	3.5	3.9	34	2	135	.10	5	.7	.7	31	UER
		6	11 6	25.70	19	22.19	155	3.01	8.06	2.2	2.2	28	1	125	.14	4	.9	1.0	26	MER
		6	1431	50.60	19	16.78	155	22.33	4.93	1.9	2.2	22	0	128	.16	7	.9	3.0	22	SWR
		7	740	31.28	19	20.74	155	12.94	7.30	2.1	2.5	25	0	63	.13	4	.7	.9	24	UER
		7	1330	54.43	19	19.48	155	11.96	7.58	2.3	2.4	28	0	92	.10	5	.7	1.0	27	UER
		7	1640	35.24	19	18.70	155	13.62	2.94	2.1	2.4	19	1	171	.11	7	1.0	2.0	16	POL
		7	2025	50.90	19	50.55	155	24.77	22.67	2.9	2.4	18	3	27	.07	35	3.0	4.6	15	KKU
		7	2359	19.46	19	19.38	155	10.12	7.91	2.1	2.2	14	0	179	.06	5	1.4	2.1	13	UER
		8	051	54.52	19	9.95	155	27.35	8.98	2.6	2.6	15	2	176	.21	1	1.8	1.8	13	LSW
		8	952	17.91	19	18.05	155	21.15	6.84	2.0	2.1	26	0	120	.13	4	.8	1.4	25	SWR
		8	1014	36.34	19	26.09	154	48.54	9.03	2.9	2.7	27	1	282	.16	10	3.2	1.1	26	LER
		8	17 4	2.58	19	20.09	155	7.94	5.24	2.3	2.6	30	2	89	.15	5	.7	1.5	26	UER
		9	116	30.25	19	23.29	155	16.90	3.16	3.1	3.9	33	0	37	.14	2	.5	.8	32	SPC
		9	138	54.29	19	20.06	155	11.73	9.65	2.9	3.4	35	1	82	.11	5	.5	.6	33	UER
		9	915	51.28	19	26.80	155	23.60	9.98	2.3	2.6	28	0	47	.14	6	.7	1.3	28	UKF
		9	2149	4.49	19	23.52	155	15.47	3.10	1.9	2.6	22	0	43	.08	2	.6	.8	22	SPC
		10	126	15.13	19	19.97	155	12.86	7.49	1.9	2.3	29	0	72	.12	5	.7	1.1	29	UER
		10	4 1	52.09	19	23.12	154	58.04	6.48	2.2	2.2	27	0	199	.19	4	1.9	1.2	27	LER
		10	1045	59.83	19	20.80	154	59.13	6.35	3.0	3.2	31	1	28	.18	7	1.6	1.2	28	LER
		10	1555	7.79	19	24.38	154	59.95	6.07	2.1	2.2	19	0	157	.11	3	.9	1.4	19	LER
		11	0 0	50.91	19	24.66	154	58.72	6.88	2.2	2.6	25	1	193	.15	1	1.6	.9	25	LER
		11	912	55.33	19	20.78	155	5.89	6.08	2.1	2.7	27	1	103	.13	5	.8	1.9	25	MER
		11	1236	57.48	19	23.99	155	16.54	8.55	2.1	2.7	19	0	46	.17	2	.8	1.4	19	LPC
		11	1351	53.82	19	21.24	155	2.61	6.67	2.4	2.7	25	0	137	.11	2	1.0	1.2	24	MER
		11	19 5	9.66	19	20.15	155	10.69	8.55	2.5	3.2	33	1	84	.13	4	.6	.9	30	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JUL	12	338	14.03	19	21.89	155	.65	6.77	2.3	2.8	28	1	184	.17	5	1.2	.9	27	LER
		12	859	40.14	19	18.72	155	13.59	10.12	3.1	3.5	34	0	72	.11	3	.7	.6	34	POL
		12	1459	23.65	19	21.50	155	1.44	9.01	2.6	3.1	33	1	177	.11	4	1.1	.6	31	MER
		12	1717	12.25	19	20.22	155	12.71	8.16	2.3	2.7	34	1	71	.11	5	.6	.9	32	UER
		12	23 7	21.00	19	18.89	155	6.94	8.86	2.5	3.1	54	2	139	.13	5	.7	.8	31	POL
		13	1420	46.16	19	21.64	155	.61	4.11	2.4	2.6	27	0	189	.16	5	1.3	2.1	26	LER
		13	1947	24.97	19	20.98	154	58.67	6.47	2.5	3.2	25	0	217	.16	8	2.2	1.6	22	LER
		13	2055	14.95	19	16.91	154	55.58	7.95	3.0	3.2	30	2	248	.19	14	1.9	1.2	28	DIS
		13	2057	17.28	19	17.61	154	55.63	5.83	2.6	3.0	28	2	257	.23	14	2.2	1.8	26	DIS
		13	2115	26.75	19	21.19	154	58.77	7.67	2.1	2.3	26	0	214	.17	7	2.1	1.3	25	LER
		13	2116	51.16	19	20.97	154	59.12	6.91	2.3	2.4	27	0	213	.15	8	1.8	1.4	24	LER
		14	053	35.32	19	20.89	155	10.83	7.80	2.3	2.4	32	2	71	.13	3	.6	1.1	30	UER
		14	145	48.07	19	20.50	155	12.59	8.15	2.3	2.8	31	1	69	.10	4	.6	.9	30	UER
		14	155	47.21	19	24.66	155	.09	7.39	1.9	2.2	27	1	141	.16	3	.9	1.0	26	LER
		14	216	42.95	19	21.39	154	59.21	8.07	2.1	2.3	23	0	208	.15	7	2.1	1.4	22	LER
		14	2350	39.69	19	23.22	155	15.25	2.65	2.4	2.9	24	1	48	.13	2	.5	.6	21	SPC
		15	419	50.17	19	19.50	155	10.47	6.93	2.1	2.5	30	0	98	.11	5	.7	1.0	29	UER
		15	643	35.89	19	18.25	154	56.70	7.41	2.9	3.3	29	2	238	.20	11	1.9	1.3	27	DIS
		15	1216	46.05	19	18.97	155	11.68	7.06	2.3	2.4	23	1	108	.12	5	.7	1.3	19	POL
		16	126	43.67	19	19.41	155	15.59	7.60	2.0	2.0	21	0	88	.07	4	.7	1.3	20	KOA
		16	128	28.57	19	29.66	155	54.75	8.51	2.4	2.1	17	3	215	.11	1	2.7	1.0	17	KON
		16	222	36.32	19	20.53	155	10.60	8.54	2.2	2.3	22	2	77	.10	3	.6	1.5	18	UER
		16	15 2	13.66	19	20.98	155	8.15	8.09	2.0	2.1	19	1	75	.09	4	.7	2.0	13	UER
		16	18 9	18.54	19	20.81	155	2.56	5.63	2.2	2.3	22	1	174	.19	2	1.4	2.0	21	MER
		17	055	40.99	19	20.42	155	5.98	7.06	2.3	2.1	20	1	112	.11	5	1.1	2.3	18	MER
		18	448	22.74	19	20.21	155	11.80	8.62	2.8	3.2	34	2	79	.12	5	.6	.9	31	UER
		18	629	45.81	19	20.13	155	11.82	8.61	2.6	3.0	31	2	80	.08	5	.5	.9	29	UER
		18	7 3	56.75	19	20.15	155	11.82	7.39	2.1	2.2	27	0	80	.11	5	.7	1.0	26	UER
		18	1739	28.21	19	26.95	155	27.23	8.90	2.3	2.2	27	1	64	.11	8	.6	1.4	25	UKF
		19	358	11.13	19	18.98	155	11.49	8.91	3.0	3.4	53	2	110	.12	5	.6	.8	30	POL
		19	510	13.90	19	19.71	155	11.13	7.65	1.9	2.2	29	1	92	.10	5	.7	1.1	28	UER
		19	723	23.04	19	22.34	155	26.80	9.05	2.2	2.1	28	0	56	.16	1	.6	1.3	27	UKF
		20	1836	34.92	19	23.18	155	2.69	6.81	2.0	2.5	27	0	123	.18	4	.9	1.2	26	MER
		21	1 8	59.07	19	22.52	155	25.31	9.20	1.8	2.3	25	0	51	.11	4	.6	1.1	25	UKF
		21	258	14.25	19	19.07	155	11.73	8.99	2.8	3.4	29	2	105	.12	5	.7	1.1	27	UER
		21	5 0	14.48	19	23.60	155	26.29	10.02	2.9	3.3	30	0	44	.14	3	.6	.9	30	UKF
		21	640	42.84	19	19.43	155	11.55	7.58	2.1	2.4	24	0	97	.09	6	.7	1.1	24	UER
		21	1757	5.92	19	18.60	155	15.58	8.61	2.7	3.1	32	2	104	.12	4	.6	1.1	30	KOA
		21	1810	44.04	19	20.27	155	8.76	6.52	2.0	2.5	28	0	72	.11	4	.7	1.3	27	UER
		21	2046	25.55	19	18.89	155	13.66	7.55	2.0	2.2	24	0	69	.10	5	.7	1.1	23	POL
		21	2110	29.44	19	21.78	155	.64	4.05	2.1	2.2	19	0	187	.14	5	1.2	2.2	19	LER
		22	1038	50.23	19	18.91	155	13.28	9.04	1.9	2.1	23	0	79	.07	4	.8	1.2	18	POL
		22	11 3	50.88	19	22.78	154	41.07	44.07	2.6	2.5	28	2	306	.12	24	2.6	1.6	26	DIS
		22	12 1	45.19	19	23.66	155	15.44	3.25	2.4	3.0	24	0	36	.09	3	.5	.7	22	SPC
		23	051	29.56	19	20.66	155	12.84	8.83	1.6	2.0	22	0	65	.08	4	.6	1.0	17	UER
		23	649	38.15	19	19.88	155	7.71	8.65	1.8	2.2	23	1	97	.09	5	.7	.7	18	UER
		24	2 6	2.63	19	23.53	155	28.66	9.54	2.1	2.2	32	3	49	.18	5	.7	1.4	29	UKF
		24	1217	9.96	19	19.97	155	11.15	8.36	2.3	2.2	26	1	87	.11	5	.6	1.0	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JUL	25	2 3	11.35	19	20.82	155	13.46	8.07	2.5	2.8	31	0	58	.12	3	.7	1.0	30	UER
		25	1310	30.03	19	24.35	154	56.01	.46	2.9	3.2	27	2	208	.21	5	1.2	.6	25	LER
		25	1419	57.89	19	9.50	155	41.68	9.39	3.0	3.3	29	0	157	.30	13	1.4	1.5	25	HEA
		26	628	22.74	19	22.37	155	1.33	7.41	2.3	2.4	28	2	164	.15	5	.9	.9	25	MER
		26	1041	39.60	19	20.06	155	11.68	9.15	2.6	3.0	34	2	83	.10	5	.6	.9	31	UER
		26	2317	54.89	19	20.90	155	7.01	8.45	2.6	2.6	31	0	91	.11	5	.7	1.0	30	UER
		27	738	12.02	19	24.37	155	37.89	1.35	2.2	2.2	11	0	75	.49	6	1.9	6.0	9	MOK
		27	8 8	18.99	19	18.87	155	16.37	9.62	3.1	3.3	37	2	106	.12	3	.6	.7	31	KOA
		27	1032	5.82	19	21.56	155	25.57	8.83	2.9	3.2	36	2	69	.16	4	.5	1.0	32	HEA
		27	1519	25.31	19	17.37	155	21.65	5.97	1.8	2.1	24	0	125	.14	5	.8	1.7	24	SWR
		28	518	51.77	19	24.95	155	25.45	7.90	2.1	2.4	29	0	50	.13	6	.6	1.8	28	UKF
		28	742	26.96	19	23.01	155	3.35	7.93	2.1	2.4	26	0	109	.11	3	.9	1.0	25	MER
		28	1342	8.56	19	21.10	155	6.96	4.22	2.2	2.3	28	0	88	.13	5	.7	2.8	25	UER
		28	2356	35.30	19	20.57	155	16.54	30.18	3.4	3.4	35	3	78	.18	2	.9	1.6	30	DEP
		29	158	34.46	19	24.83	155	25.15	7.72	2.4	2.6	32	0	36	.15	6	.6	1.8	30	UKF
		29	2 0	1.16	19	20.49	155	13.52	8.71	2.2	2.3	29	0	59	.10	4	.6	.9	28	UER
		29	1736	26.43	19	21.33	155	6.00	7.68	2.2	2.4	30	0	90	.11	6	.7	1.1	29	UER
		29	1740	39.90	19	21.30	155	6.07	7.97	2.4	2.8	30	2	90	.10	6	.6	1.1	28	UER
		29	1935	20.06	19	21.05	155	2.09	7.25	2.2	2.5	28	2	170	.16	3	1.0	.8	26	MER
		30	042	58.92	19	20.28	155	7.02	8.68	2.7	3.0	31	0	102	.10	6	.8	.9	31	UER
		30	1528	51.81	19	23.87	154	56.43	9.00	2.4	2.4	27	2	209	.17	5	1.4	.9	22	LER
		31	0 4	19.77	19	22.73	155	2.39	8.86	3.0	3.3	32	2	170	.12	5	.9	.7	30	MER
		31	443	22.85	19	24.15	155	2.44	8.69	1.2	1.0	21	0	144	.14	3	1.2	1.0	20	MER
		31	522	6.28	19	21.35	155	2.91	8.58	2.3	2.4	29	2	182	.12	6	.9	.7	24	MER
		31	723	8.47	19	20.50	155	10.62	8.23	2.0	2.2	26	1	83	.09	3	.6	1.1	25	UER
	AUG	1	18 2	8.00	19	20.02	155	7.54	8.33	2.1	2.2	28	0	98	.10	5	.8	1.0	27	UER
		1	1948	3.74	19	10.26	155	28.32	7.39	2.5	2.4	27	0	136	.20	2	1.4	1.4	27	LSW
		1	2022	36.14	19	11.97	155	26.08	.10	2.3	2.5	27	0	101	.17	5	.6	2.6	27	LSW
		2	637	35.75	19	26.91	155	29.66	9.32	2.2	2.2	30	0	56	.13	9	.7	1.4	28	UKF
		2	1444	30.30	19	18.57	155	13.44	8.86	2.5	2.9	33	2	79	.11	3	.7	1.0	30	POL
		2	15 4	59.54	19	19.37	155	15.18	6.97	2.1	2.2	29	0	86	.13	4	.7	1.1	28	KOA
		3	235	10.04	19	20.01	155	8.26	9.25	2.8	3.3	35	1	82	.09	5	.6	.8	33	UER
		3	1022	41.92	18	58.32	155	28.86	33.86	2.6	1.9	28	1	233	.13	19	2.1	3.3	27	DIS
		3	1750	5.11	19	24.68	155	25.48	8.22	2.1	2.3	28	0	49	.13	6	.6	1.6	27	UKF
		4	135	23.65	19	20.58	155	13.33	7.16	2.0	2.4	33	0	61	.12	4	.6	.9	31	UER
		4	426	1.43	19	19.83	155	12.46	9.60	2.7	3.1	33	1	79	.11	5	.6	.8	31	UER
		4	1555	37.95	19	22.74	155	2.02	7.46	2.3	2.5	31	2	146	.14	5	.8	.9	29	MER
		5	550	58.19	19	19.94	155	7.85	8.20	2.2	2.3	24	0	93	.10	5	.9	1.1	24	UER
		5	744	25.52	19	24.19	155	1.34	7.64	2.3	2.3	29	1	131	.20	5	1.0	1.1	28	MER
		5	1931	12.12	19	20.67	155	2.08	4.68	2.4	1.9	21	1	183	.14	2	1.3	1.7	17	MER
		5	2119	59.99	19	21.21	155	6.31	7.16	2.1	1.8	24	3	90	.12	6	.7	1.7	21	UER
		6	2239	58.52	19	49.05	156	2.44	9.54	3.1	2.3	22	2	280	.13	26	1.9	1.7	21	KON
		7	653	54.91	19	19.42	155	10.62	9.45	2.8	2.9	33	1	100	.11	5	.7	.8	30	UER
		7	9 4	9.97	19	17.77	155	22.42	7.10	2.3	3.0	35	2	118	.14	5	.6	1.2	33	SWR
		7	13 1	18.15	19	10.74	155	31.36	35.08	2.7	2.6	32	0	142	.11	13	1.3	2.8	30	LSW
		7	1841	58.93	19	25.19	155	24.96	9.50	2.3	2.7	33	1	36	.15	7	.6	1.1	32	UKF
		7	2154	20.32	19	20.07	155	13.30	10.29	4.1	4.2	38	2	66	.10	5	.5	.6	36	UER
		8	143	41.36	19	11.57	155	28.38	1.35	2.4	2.6	27	0	116	.15	4	1.3	3.8	27	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	AUG	8	334	32.48	19	13.28	155	2.43	48.26	3.3	3.2	35	2	220	.11	12	1.4	2.5	33	DIS
		8	652	22.36	19	12.22	155	27.80	47.61	2.6	2.5	36	4	147	.12	8	1.3	1.7	34	LSW
		8	711	28.07	19	24.51	155	1.85	10.10	2.3	2.8	32	2	116	.10	4	.8	.7	30	MER
		8	815	38.31	19	20.36	155	10.76	7.38	2.0	2.2	29	0	80	.12	4	.7	1.1	28	UER
		8	1224	35.61	19	20.35	155	11.77	10.48	2.4	2.4	30	1	77	.12	5	.6	.8	25	UER
		8	1247	45.99	19	20.64	155	12.84	8.08	1.9	2.0	28	0	65	.16	4	.7	1.1	26	UER
		8	20 4	15.92	19	11.48	155	27.53	42.75	2.6	2.5	33	1	117	.13	4	1.4	3.0	32	LSW
		9	136	35.44	19	20.93	155	11.57	8.28	2.2	2.2	33	1	39	.10	4	.6	.9	25	UER
		9	1620	56.73	19	20.72	155	15.95	.82	1.8	2.3	13	0	76	.08	3	.5	1.0	13	KOA
		10	124	14.01	19	19.44	155	11.79	6.74	2.4	2.7	35	2	95	.12	5	.6	1.0	28	UER
		10	1919	16.79	19	19.26	155	11.56	8.19	3.8	4.0	35	3	101	.09	5	.6	.8	29	UER
		10	2018	59.48	19	26.86	154	55.59	6.40	2.3	2.0	24	0	180	.14	5	1.7	1.2	24	LER
		10	2343	4.94	19	19.98	155	13.97	9.26	3.2	3.7	32	2	59	.10	5	.5	.7	28	UER
		11	022	33.64	19	17.66	155	16.84	10.29	2.8	3.1	28	0	129	.14	3	.9	.7	24	KOA
		11	640	41.45	19	19.80	155	13.09	8.57	2.7	3.2	31	2	72	.13	5	.6	.9	28	UER
		11	741	51.88	19	18.40	155	15.85	8.28	2.2	2.2	23	0	111	.10	5	.7	1.2	21	KOA
		11	1323	28.34	19	57.90	155	26.97	27.55	2.3	1.6	29	4	250	.12	14	1.6	2.5	26	KKU
		12	1333	58.49	19	19.79	155	48.02	12.18	3.4	3.3	31	0	98	.12	10	.9	.7	31	KON
		12	1530	18.47	19	38.11	155	46.03	3.98	2.5	2.2	13	1	148	.32	9	1.6	11.7	13	KON
		12	1615	14.32	20	.47	155	44.86	9.57	2.9	2.4	29	2	149	.16	14	1.1	1.5	26	KOH
		12	1812	19.36	19	19.75	155	8.51	5.56	2.2	2.2	27	0	79	.11	5	.9	1.6	26	UER
		13	033	42.49	19	19.21	155	13.81	7.27	2.3	2.4	23	0	85	.09	4	.9	1.2	20	UER
		13	748	3.74	19	20.40	155	2.76	6.72	2.6	3.1	27	2	154	.13	1	.8	1.1	22	MER
		13	1224	28.46	20	9.71	155	36.36	4.61	4.1	3.8	37	2	231	.36	19	2.9	2.1	28	KOH
		14	1140	45.61	19	24.64	155	15.89	2.32	1.9	2.6	11	0	133	.26	2	1.3	1.0	10	SPC
		14	1146	35.19	19	23.48	155	15.76	6.22	2.7	2.9	20	2	53	.19	3	.7	1.7	16	LPC
		14	2229	10.86	19	20.07	155	8.38	9.88	2.2	2.1	21	2	181	.14	5	1.3	1.1	18	UER
		15	1011	49.24	19	20.42	155	12.02	7.62	2.0	2.3	23	0	75	.10	5	.8	1.1	21	UER
		15	1833	41.95	19	20.62	155	15.39	.44	1.8	2.4	14	0	175	.11	4	1.0	1.7	14	KOA
		15	1836	15.09	19	19.59	155	15.12	.20	2.7	3.6	26	2	106	.24	4	.6	.7	24	KOA
		15	21 8	20.53	19	20.89	155	2.57	6.15	2.3	2.6	25	2	153	.15	2	1.0	1.5	20	MER
		15	2134	9.09	19	26.47	155	24.51	.76	2.3	2.6	23	2	47	.15	7	.6	.8	21	UKF
		16	013	27.79	19	21.09	155	1.34	12.11	2.3	2.3	20	2	252	.14	8	2.7	1.1	16	MER
		16	21 5	10.03	19	20.89	155	6.27	8.74	2.3	2.1	27	1	98	.12	6	.8	1.0	25	UER
		17	156	51.55	19	14.08	155	33.21	10.31	2.8	3.0	32	3	121	.19	7	.9	1.2	30	LSW
		17	356	3.72	19	19.22	155	15.69	6.76	2.1	1.9	29	0	94	.13	6	.7	1.2	22	KOA
		17	443	.49	19	20.48	155	5.87	8.15	2.5	2.6	27	2	112	.10	5	.6	1.1	23	MER
		17	515	5.96	19	21.06	155	5.86	8.20	2.9	3.2	29	2	97	.11	5	.6	1.1	26	MER
		17	1452	49.06	19	24.01	154	53.18	9.27	2.6	2.8	26	0	247	.12	9	3.1	.9	24	LER
		17	18 7	5.55	19	21.23	155	2.76	6.81	2.0	2.2	28	2	140	.13	2	.8	1.1	26	MER
		18	321	44.21	19	23.86	155	2.51	9.59	2.0	2.2	28	1	120	.13	4	1.1	.8	28	MER
		18	827	6.64	19	25.79	155	27.76	10.76	2.7	3.0	34	0	42	.12	6	.6	.9	30	UKF
		18	20 9	30.56	19	19.74	155	11.06	8.70	2.4	2.4	29	2	92	.13	5	.6	1.0	24	UER
		18	2130	44.02	19	22.19	155	6.32	7.74	2.4	2.3	27	0	73	.10	6	.7	1.2	23	UER
		18	2318	55.01	19	20.18	155	3.64	5.72	2.1	2.3	28	1	125	.16	1	1.0	1.4	25	MER
		19	340	17.33	19	21.67	155	17.99	2.97	1.6	2.1	18	0	53	.10	4	.6	1.5	18	KOA
		19	819	13.34	19	19.71	155	7.05	10.15	4.2	4.1	36	1	114	.09	5	.7	.5	33	UER
		19	851	48.70	19	19.13	155	26.56	7.57	2.0	2.2	21	1	114	.15	6	.8	1.6	18	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	AUG	19	937	.64	19	24.88	155	27.58	9.87	2.4	2.3	23	3	53	.14	4	.6	1.4	16	UKF
		19	1023	24.99	19	20.24	155	9.56	7.70	1.8	1.9	16	0	78	.08	3	1.1	2.0	14	UER
		19	1644	30.75	19	21.24	155	6.90	6.72	2.0	1.9	24	2	86	.11	5	.7	1.8	20	UER
		19	2033	33.55	19	23.32	155	16.82	3.21	1.5	1.8	14	1	65	.05	2	.5	.9	12	SPC
		21	238	47.50	19	19.91	155	12.52	7.62	1.6	1.5	19	0	78	.09	5	.8	1.6	15	UER
		21	432	44.30	19	22.43	155	2.92	7.18	1.9	1.9	16	1	126	.08	5	.8	1.7	10	MER
		21	1046	16.99	19	19.90	155	7.92	8.45	2.0	1.9	28	2	92	.09	5	.6	1.1	26	UER
		21	1443	45.24	20	1.26	155	44.64	6.59	3.1	2.4	32	2	271	.22	38	3.6	1.4	29	KOH
		21	1959	42.51	19	28.44	154	51.88	4.96	2.0	2.1	22	1	265	.20	5	1.8	1.6	22	LER
		21	23 1	39.87	19	26.76	155	24.03	6.91	2.0	2.0	28	2	44	.17	6	.6	2.4	24	UKF
		22	040	26.14	19	55.14	155	42.14	9.08	1.7	1.6	18	0	140	.19	25	1.2	1.6	15	KOH
		22	411	30.79	19	22.13	155	5.44	7.59	2.0	1.8	26	2	74	.11	5	.6	1.2	22	MER
		22	846	11.08	19	22.12	155	10.70	3.54	2.0	1.9	25	0	57	.08	2	.6	1.0	22	UER
		22	925	49.47	19	23.71	155	16.94	2.55	1.6	2.3	9	0	71	.07	2	.6	.9	8	SPC
		22	1158	56.84	19	23.85	155	16.19	2.57	1.6	2.2	12	0	97	.10	2	.7	.7	12	SPC
		22	1233	49.10	19	21.33	155	6.01	7.71	2.2	2.2	28	2	90	.13	6	.6	1.2	25	UER
		22	1722	40.24	18	34.45	154	58.70	22.30	2.2	2.9	25	0	319	.18	81	23.0	17.6	23	BLS
		22	1811	53.28	18	49.96	154	57.15	13.11	2.7	2.9	15	0	303	.24	56	18.0	99.0	14	BLS
		22	1842	56.75	19	9.65	155	2.81	7.05	2.3	3.1	24	1	256	.90	19	11.0	4.6	22	BLS
		22	2112	54.66	19	17.43	154	53.42	19.52	1.6	2.6	19	0	267	.43	17	9.8	5.2	17	BLS
		22	2128	.93	19	15.29	155	7.46	6.94	1.1	2.8	18	2	2265.58		11	32.9	34.9	13	BLS
		22	2142	16.54	17	33.59	152	5.40	6.88	3.5	3.0	25	7	349	.62364		60.3	78.6	20	BLS
		22	2357	15.17	19	26.77	155	24.07	9.16	2.7	3.5	35	2	45	.15	6	.5	1.3	30	UKF
		23	232	46.10	19	19.34	155	11.64	6.23	2.1	2.2	27	2	99	.14	5	.7	1.4	25	UER
		23	11 5	32.66	19	22.12	155	25.57	8.90	2.1	1.9	26	0	106	.12	4	.8	1.3	25	UKF
		23	1128	46.44	19	22.16	155	14.69	1.90	2.1	2.2	18	2	77	.24	2	.7	.6	16	UER
		23	1227	53.58	19	22.16	155	6.23	7.57	2.4	2.0	26	1	74	.13	6	.7	1.4	24	UER
		23	1646	59.62	19	23.93	155	15.96	3.16	1.9	2.1	16	0	106	.09	3	.7	.8	16	SPC
		23	20 5	49.07	19	20.77	155	6.33	8.83	2.2	2.0	29	2	101	.11	6	.7	1.0	27	UER
		23	21 2	33.34	19	20.57	155	10.86	8.43	2.1	2.1	27	2	77	.10	3	.6	1.2	23	UER
		24	041	16.12	19	23.55	155	21.62	8.06			18	0	82	.12	3	.9	1.9	18	UKF
		24	316	29.85	19	16.53	155	27.14	8.27	2.1	1.9	29	0	110	.12	1	.8	1.1	28	HEA
		24	1025	9.58	19	20.22	155	13.24	8.34	2.5	3.0	22	0	66	.10	5	.7	1.3	18	UER
		24	1316	9.91	19	20.88	155	2.01	6.90	2.6	2.8	28	1	178	.18	2	1.1	.9	23	MER
		24	1952	46.92	19	20.67	155	12.72	8.57	1.9	2.1	26	0	66	.10	4	.6	.9	26	UER
		24	20 7	13.81	19	19.46	155	11.33	9.94	3.6	3.8	37	2	97	.09	6	.5	.6	33	UER
		24	2132	22.19	19	19.65	155	11.34	8.25	2.1	2.1	29	0	93	.11	5	.6	1.0	28	UER
		25	1613	36.93	19	19.63	154	54.64	11.26	2.5	2.7	22	1	253	.15	12	2.6	1.1	17	DIS
		25	1924	46.98	19	19.70	155	16.34	8.92	2.5	2.7	30	0	93	.12	2	.7	.8	28	KOA
		25	2232	17.53	19	23.78	155	15.99	2.72	2.0	2.9	22	1	43	.11	3	.5	.7	19	SPC
		26	20 2	16.40	19	19.31	155	8.91	9.51	2.1	2.3	32	2	87	.10	4	.6	1.0	28	UER
		27	531	34.97	19	20.83	155	6.09	7.57	2.0	1.8	28	1	101	.12	6	.7	1.5	25	UER
		27	1012	54.09	19	21.63	155	20.56	31.14	2.5	2.5	36	1	66	.11	4	.8	1.7	28	DEP
		27	1811	8.33	19	19.82	155	6.22	9.22	2.5	2.3	30	1	126	.10	6	.7	.8	28	UER
		28	444	12.57	19	20.81	155	1.25	7.49	2.3	2.0	24	2	199	.19	3	1.3	1.2	20	MER
		28	1618	48.23	19	6.15	155	21.23	41.26	2.5	2.3	31	2	207	.11	22	1.8	2.1	31	LSW
		29	153	5.86	19	18.93	155	15.65	6.69	2.0	2.0	32	3	120	.16	4	.6	1.1	28	KOA
		29	328	45.91	19	24.05	155	22.89	9.05	2.0	2.3	31	2	43	.12	6	.5	1.2	29	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	AUG	29	1216	25.18	19	10.31	155	28.91	36.73	2.6	2.3	31	0	153	.12	12	1.5	2.9	27	LSW
		29	1723	2.48	19	23.63	155	16.81	3.00	1.9	2.7	20	0	45	.11	2	.6	.7	16	SPC
		29	2137	53.29	19	20.20	155	6.62	9.23	2.9	3.2	33	1	111	.10	6	.7	.7	30	UER
		30	035	7.24	19	22.86	155	4.07	8.08	2.8	3.2	31	1	94	.09	3	.7	.9	28	MER
		30	1 4	46.29	19	59.17	156	5.39	10.05	3.4	3.4	36	1	186	.27	36	1.7	1.4	32	DIS
		30	246	21.34	19	22.61	155	27.37	10.35	3.9	4.0	37	1	61	.14	0	.5	.8	33	UKF
		30	423	49.76	19	23.24	155	14.74	2.74	2.1	2.7	23	0	46	.17	3	.6	.8	23	GLN
		30	443	9.67	19	20.81	155	3.69	6.75	2.2	2.2	27	3	91	.13	2	.7	1.2	23	MER
		30	510	46.01	19	31.56	155	28.03	4.87	2.5	2.7	34	0	53	.17	1	.6	1.6	33	NER
		30	6 6	58.79	19	19.54	155	12.53	7.34	2.0	2.2	31	2	84	.15	5	.7	1.0	28	UER
		30	1412	43.24	19	22.70	155	4.28	7.80	2.8	2.9	30	1	90	.14	3	.7	1.1	25	MER
		30	2038	16.00	19	19.98	155	29.90	9.26	2.3	2.1	30	0	66	.13	6	.7	1.5	26	HEA
		30	2157	45.60	19	21.39	155	6.97	8.07	2.6	2.6	30	2	82	.09	5	.6	1.0	27	UER
		30	2233	11.35	19	20.39	155	6.84	7.48	2.1	2.0	27	2	103	.14	6	.7	1.4	24	UER
		31	049	29.89	19	20.80	155	8.93	9.44	1.9	1.9	28	1	67	.11	3	.6	1.0	21	UER
		31	514	.84	19	22.46	155	48.48	1.62		1.9	18	3	145	.21	14	.9	1.1	15	KON
		31	521	38.69	19	19.74	155	12.98	5.90	1.9	1.6	33	2	74	.13	5	.6	1.1	28	UER
		31	1153	17.40	19	23.07	155	2.67	6.83	2.5	3.0	30	2	125	.17	4	.7	1.2	26	MER
		31	1237	5.57	19	18.41	155	13.17	8.34	2.2	2.4	31	0	91	.11	3	.7	.8	29	POL
		31	1414	35.11	19	22.11	155	6.81	6.62	2.7	3.1	33	1	73	.12	5	.7	1.4	31	UER
		31	1537	20.69	19	20.07	155	8.21	7.61	2.3	2.3	32	2	84	.13	5	.6	1.3	29	UER
		31	2044	41.43	20	5.46	155	18.14	5.82	2.7	2.8	22	3	300	.29	23	2.3	1.6	20	DIS
		31	2325	23.87	19	19.44	155	11.49	6.81	2.1	2.1	33	2	97	.13	6	.6	1.1	27	UER
	SEP	1	641	59.08	19	21.84	155	6.52	8.23	2.3	2.6	28	2	78	.10	6	.6	1.1	26	UER
		1	7 9	38.22	19	23.08	155	24.23	8.93	1.8	1.9	29	0	41	.12	6	.6	1.3	29	UKF
		1	1340	3.86	19	42.23	155	1.47	7.79	2.5	2.9	26	0	208	.23	23	1.7	1.5	26	HIL
		1	1718	34.29	19	24.38	155	26.15	9.81	2.2	2.3	32	1	40	.15	4	.6	1.2	27	UKF
		1	1836	21.38	19	19.47	155	11.82	5.97	1.9	1.9	31	2	93	.10	5	.6	1.3	26	UER
		2	0 5	57.52	19	22.15	155	3.43	7.67	2.0	2.1	27	0	112	.13	4	.9	1.0	24	MER
		2	224	29.19	19	24.71	155	23.35	10.81	1.9	2.0	27	1	42	.12	7	.6	1.1	21	UKF
		2	4 1	49.50	19	23.66	155	15.49	2.66	1.9	2.5	24	0	44	.11	2	.5	.7	23	SPC
		2	526	48.44	19	23.56	155	15.30	2.88	1.7	1.9	16	0	83	.11	2	.7	.8	16	SPC
		2	948	40.22	19	20.83	155	5.92	4.63	2.1	2.3	25	2	102	.14	6	.9	5.8	19	MER
		2	1120	44.23	19	22.49	155	3.11	7.99	2.3	2.3	27	1	119	.15	4	.9	1.0	24	MER
		2	1813	15.51	19	20.74	155	12.82	7.69	2.0	2.1	31	1	64	.13	4	.6	1.0	28	UER
		2	2322	14.16	19	23.07	155	14.93	3.12	1.6	2.1	15	0	64	.07	2	.6	.8	14	GLN
		3	040	17.69	19	22.87	155	3.76	9.02	2.8	3.0	33	0	101	.10	3	.9	.6	29	MER
		3	321	59.09	19	24.75	155	28.92	8.67	2.2	2.0	33	0	50	.16	5	.6	1.3	32	UKF
		3	356	59.63	19	16.31	155	23.49	3.11	1.8	2.2	29	0	127	.14	6	.9	2.9	28	SWR
		3	1810	37.28	19	21.21	155	6.12	7.20	2.3	2.7	28	0	92	.11	6	.7	1.3	27	UER
		3	1816	42.44	19	19.71	155	11.62	7.34	1.7	2.1	29	0	90	.10	5	.7	1.0	29	UER
		3	1940	42.17	19	22.79	155	16.69	6.99	2.9	3.4	14	0	85	.11	12	1.2	7.7	13	KOA
		4	416	15.17	19	23.04	155	16.84	2.60	1.9	2.5	22	0	41	.12	2	.5	.8	21	SPC
		4	921	57.90	19	22.98	155	29.93	7.93	1.9	2.1	32	0	47	.13	4	.7	1.4	31	UKF
		4	1144	33.10	19	26.14	155	27.85	10.10	3.1	3.3	35	0	48	.14	7	.7	1.0	32	UKF
		5	159	21.19	19	26.84	155	45.81	7.64	3.1	2.9	30	1	58	.14	7	.7	1.4	30	KON
		5	416	59.91	19	27.27	154	50.74	5.79	2.4	1.9	26	2	272	.22	6	2.2	1.5	25	LER
		5	820	37.84	19	21.77	155	12.67	2.93	1.9	2.5	26	0	56	.11	2	.6	.8	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	5	940	35.90	21	44.11	157	46.65	8.84	4.2	2.6	37	7	344	1.10	274	59.0	79.5	35	DIS
		5	1934	2.24	19	21.90	155	7.35	5.21	1.8	2.2	29	0	73	.16	4	.8	2.3	27	UER
		5	2323	44.53	19	19.83	155	11.41	8.43	2.0	2.3	28	0	89	.08	5	.6	.9	25	UER
		5	2331	33.07	19	20.80	155	10.77	7.49	2.0	2.1	31	0	73	.13	3	.7	1.0	31	UER
		6	2 8	48.98	19	19.98	155	8.25	8.92	2.9	3.1	33	0	83	.09	5	.7	.7	32	UER
		6	227	52.62	19	19.25	155	15.79	10.32	2.4	3.1	31	0	95	.10	3	.7	.6	30	KOA
		6	541	33.93	19	18.78	155	13.23	9.18	2.8	3.2	34	0	83	.11	3	.7	.8	32	POL
		6	625	49.42	19	23.66	155	16.10	2.96	1.6	2.4	13	0	92	.10	2	.7	.9	13	SPC
		6	916	14.01	19	20.08	155	12.89	8.53	1.9	2.4	27	0	71	.09	5	.7	1.1	25	UER
		6	934	17.85	19	26.53	155	23.60	9.62	2.1	2.3	28	0	48	.12	6	.7	1.4	27	UKF
		6	1617	13.29	19	21.70	155	2.86	6.77	2.0	1.9	26	0	132	.16	3	1.1	1.2	24	MER
		6	1621	27.14	19	44.56	155	25.68	15.48	2.6	2.4	31	0	68	.10	5	.7	1.1	27	KKU
		6	1739	47.53	19	22.97	155	14.81	2.63	1.9	2.2	20	0	60	.16	2	.6	.7	20	UER
		6	1741	11.62	19	23.02	155	14.90	2.90	2.3	2.9	26	0	48	.12	2	.6	.8	23	GLN
		6	2312	1.06	19	19.85	155	18.20	40.25	2.7	2.2	34	0	71	.08	1	1.1	2.3	29	DEP
		7	310	5.29	19	16.40	154	58.03	12.06	2.4	1.8	22	2	238	.37	16	4.3	1.5	20	DIS
		7	1351	6.71	19	22.52	155	19.32	31.26	4.5	4.3	33	0	49	.10	2	1.0	1.9	27	DEP
		7	1357	13.80	19	22.91	155	15.55	25.93		2.0	26	0	50	.09	1	1.1	2.4	25	DEP
		7	1431	2.77	19	23.08	155	24.75	8.60		2.3	28	0	39	.13	5	.6	1.4	27	UKF
		7	1655	11.20	19	18.98	155	15.68	7.83		2.0	28	0	118	.12	4	.7	1.0	26	KOA
		7	2050	37.14	19	22.75	155	19.97	29.62		2.2	34	0	54	.11	2	1.0	1.8	31	DEP
		8	135	8.96	19	27.39	154	53.54	6.43		2.1	27	0	226	.12	3	2.2	1.0	25	LER
		8	252	13.23	19	19.29	155	8.70	7.10		2.0	28	0	84	.11	4	.8	1.3	26	UER
		8	746	14.03	19	21.85	155	12.53	3.40		2.1	20	0	74	.08	2	.6	.9	20	UER
		8	1129	33.30	19	22.09	155	6.28	7.92	2.4	2.7	31	0	75	.10	6	.7	1.0	31	UER
		8	1832	12.92	19	23.27	155	1.12	7.90	2.1	2.0	26	0	156	.16	5	1.3	.8	26	MER
		8	1922	59.36	19	20.21	155	6.95	8.34	1.9	2.2	26	0	105	.10	6	.9	1.0	26	UER
		8	2230	52.57	19	20.26	155	11.16	7.35	2.1	2.3	32	0	82	.12	4	.7	1.0	31	UER
		8	2339	49.86	19	24.05	155	17.54	16.44	2.9	2.8	32	0	36	.10	2	.7	.8	31	DEP
		9	049	14.80	19	20.82	155	9.26	7.07	1.8	2.0	25	0	67	.09	3	.7	1.4	24	UER
		9	355	20.29	19	23.00	155	14.90	2.95	1.5	1.8	19	0	66	.13	2	.6	.7	18	GLN
		9	658	22.37	19	18.74	155	13.59	9.39	2.3	2.7	31	0	72	.09	3	.6	.8	30	POL
		9	10 0	55.25	19	9.49	155	28.13	33.32	2.7	2.7	30	2	145	.15	1	1.2	2.5	24	LSW
		9	1031	39.42	19	20.80	155	7.28	7.82	1.9	2.0	19	2	89	.10	5	.9	1.4	14	UER
		9	1149	38.10	19	22.79	155	19.45	29.51	2.3	2.4	30	2	54	.10	2	1.0	1.1	24	DEP
		9	1325	26.68	19	20.04	155	7.57	8.62	2.2	2.4	24	0	97	.10	5	.8	1.3	20	UER
		9	17 9	55.21	19	20.65	155	7.46	9.04	3.4	3.5	32	1	90	.09	5	.6	.8	28	UER
		9	2235	34.76	19	25.32	155	27.40	10.71	2.1	2.3	30	1	45	.15	5	.7	1.3	25	UKF
		10	450	2.94	19	23.69	155	16.77	2.84	2.3	2.6	20	1	71	.10	2	.5	.7	16	SPC
		10	753	55.52	19	21.96	155	9.22	3.71	1.7	2.0	19	0	71	.07	1	.8	1.1	17	UER
		10	1111	39.61	19	23.25	155	30.46	8.98	2.4	2.1	22	0	103	.15	5	.9	2.1	18	MOK
		10	1159	54.51	19	20.65	155	13.13	7.70	1.5	1.9	22	1	63	.12	4	.9	1.4	16	UER
		10	1257	57.60	19	20.80	155	11.30	8.48	1.8	1.9	20	0	98	.10	3	.9	1.5	18	UER
		10	13 3	47.72	19	24.05	155	16.03	3.04	1.9	2.3	16	1	108	.06	2	.5	.7	14	SPC
		10	1323	8.76	19	21.39	155	3.14	7.00	2.0	2.4	21	2	122	.10	3	.8	1.1	17	MER
		10	14 4	41.87	19	23.29	155	14.69	3.19	1.8	2.1	13	0	70	.07	2	.7	.8	11	GLN
		10	2150	9.33	19	23.44	155	23.80	8.95	1.6	1.9	23	1	66	.11	6	.7	1.4	23	UKF
		11	014	17.77	20	5.91	155	42.72	20.22	2.1	1.8	27	5	98	.17	8	1.1	2.8	18	KOH

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	11	021	23.99	19	19.33	155	11.61	8.09	1.7	2.2	22	0	99	.10	5	.8	1.4	20	UER
		11	534	22.45	19	19.53	155	9.41	7.05		1.5	21	1	91	.09	5	.8	1.6	21	UER
		11	938	21.38	19	21.38	155	15.58	27.57	2.3	2.1	33	2	66	.09	2	.9	1.4	29	DEP
		11	950	42.40	19	47.86	155	34.35	20.43	2.5	2.6	31	2	179	.11	12	1.1	2.6	30	KKU
		11	11 1	53.36	19	23.98	155	15.94	2.14	1.4	2.4	18	1	106	.15	3	.5	.7	18	SPC
		11	11 5	42.19	19	23.47	155	15.24	3.40	1.4	2.1	15	2	99	.10	2	.6	.9	13	SPC
		11	12 3	41.81	19	19.65	155	11.73	7.14	1.7	2.2	27	0	91	.10	6	.8	1.3	25	UER
		11	1350	11.79	19	19.70	155	9.83	8.09	1.8	2.1	23	0	91	.10	4	.8	1.5	23	UER
		11	1837	49.57	19	20.53	155	7.50	6.82	2.3	2.9	28	0	90	.12	5	.7	1.4	27	UER
		11	2018	46.84	19	22.17	155	19.65	30.61	2.1	1.8	42	7	46	.11	3	.8	1.0	35	DEP
		11	2215	15.33	19	31.29	155	41.84	8.79	2.4	1.9	26	3	61	.19	7	.7	2.0	22	MOK
		11	2244	32.67	19	21.76	155	12.65	2.93	1.8	2.4	24	0	56	.08	2	.5	.8	24	UER
		12	037	18.67	19	20.19	155	11.55	8.65	2.2	3.0	32	0	62	.11	5	.7	.9	32	UER
		12	836	26.77	19	21.24	155	25.63	10.07		2.3	28	0	75	.12	4	.7	1.3	26	HEA
		12	9 3	21.59	19	19.77	155	10.71	8.59	2.4	3.1	30	1	106	.10	5	.6	1.0	28	UER
		12	10 8	25.67	19	23.96	155	15.77	3.48	2.0	3.1	26	0	72	.11	3	.6	.8	25	SPC
		12	1041	11.34	19	17.11	155	23.25	3.43		2.3	27	0	131	.22	6	.9	3.7	25	SWR
		12	1244	16.65	19	25.92	155	17.50	15.57	2.9	3.4	34	2	29	.13	2	.6	.7	31	DEP
		12	1641	29.44	19	23.69	155	18.08	9.60		1.4	12	0	93	.10	3	1.2	2.0	11	LPC
		12	1754	5.38	19	24.66	154	58.45	8.40	1.6	1.7	29	4	174	.16	1	1.0	1.1	25	LER
		12	19 1	29.53	19	21.32	155	6.47	3.94	1.6	2.1	31	2	88	.17	6	.7	3.2	29	UER
		12	19 9	25.89	19	19.78	155	8.32	6.68		1.9	29	0	83	.11	5	.7	1.4	25	UER
		12	1931	2.66	19	23.28	155	16.68	3.84		3.1	22	0	42	.09	2	.6	1.3	20	SPC
		12	2133	21.66	19	22.11	155	11.47	2.59	1.6	2.0	18	0	94	.15	3	.9	1.4	14	UER
		12	22 4	35.56	19	21.72	155	10.55	6.11	2.4	2.6	27	1	61	.19	5	.7	1.6	22	UER
		12	2212	1.09	19	21.50	155	12.61	3.74	2.1	2.2	24	2	98	.22	2	.8	1.4	19	UER
		12	2229	2.72	19	21.78	155	13.00	2.55	1.3	2.0	20	0	54	.08	2	.5	.7	18	UER
		12	2246	53.88	19	21.26	155	12.69	1.33	1.9	2.3	23	2	60	.14	3	.5	.7	20	UER
		12	2248	24.35	19	21.50	155	12.71	2.15	2.1	2.3	17	2	58	.14	2	.6	.8	13	UER
		12	23 6	34.27	19	19.27	155	11.72	5.21	1.4	1.5	25	0	99	.13	5	.8	1.8	24	UER
		12	23 7	15.74	19	25.01	155	16.86	3.80		2.4	6	0	148	.14	0	1.6	1.4	2	SPC
		12	2341	41.23	19	22.42	155	10.21	3.18	1.8	2.1	24	0	53	.21	1	.8	1.0	20	UER
		12	2354	10.10	19	22.20	155	9.92	3.27	1.9	2.1	23	0	55	.12	0	.7	.8	22	UER
		13	024	55.21	19	22.45	155	10.08	3.69	2.2	2.7	26	0	53	.10	1	.7	.9	20	UER
		13	028	4.65	19	23.87	155	17.02	1.24		2.0	8	0	73	.17	2	.6	1.0	7	SPC
		13	049	59.47	19	22.37	155	9.81	3.13	1.8	1.5	20	0	50	.14	1	.7	.8	17	UER
		13	050	17.29	19	22.36	155	9.95	3.27	1.9	2.5	15	0	53	.10	1	.7	.8	12	UER
		13	1 4	39.88	19	25.23	155	15.98	4.18	3.0	3.5	33	0	46	.16	3	.6	1.9	32	SPC
		13	115	4.56	19	19.58	155	29.93	8.27	2.3	2.3	29	2	70	.17	7	.7	1.6	28	HEA
		13	116	8.33	19	22.57	155	10.13	3.58	2.5	2.7	31	0	52	.13	1	.6	1.0	30	UER
		13	132	46.23	19	24.58	155	17.27	2.01	1.1	1.9	9	0	81	.12	1	.8	.6	9	SPC
		13	150	49.12	19	22.70	155	9.89	3.49	2.0	2.4	26	0	55	.15	6	.8	3.0	23	UER
		13	158	39.70	19	22.35	155	9.90	.32	2.6	2.9	30	2	54	.13	6	.6	.7	24	UER
		13	218	16.88	19	20.71	155	7.41	8.88	2.6	2.5	27	1	89	.17	6	.7	1.0	23	UER
		13	227	45.67	19	22.77	155	8.00	3.82	1.9	2.0	23	0	59	.16	4	.6	1.9	17	UER
		13	3 1	32.26	19	22.30	155	10.13	2.38	2.4	2.6	25	2	54	.20	1	.6	.6	21	UER
		13	3 3	41.39	19	23.50	155	17.06	2.50	1.9	2.0	11	0	55	.19	3	.8	1.1	11	SPC
		13	340	29.89	19	24.05	155	17.24	.02	.9	2.2	8	0	66	.51	2	1.0	2.4	8	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	13	357	5.61	19	21.84	155	6.46	8.24	3.0	3.0	35	2	78	.11	6	.6	.9	31	UER
		13	358	22.53	19	21.66	155	7.11	7.86	2.2	1.6	26	2	78	.12	7	.6	1.3	22	UER
		13	421	2.18	19	22.16	155	10.70	2.22	2.2	2.3	26	1	57	.34	2	.7	.9	24	UER
		13	432	1.51	19	21.58	155	9.60	2.81	2.0	2.2	28	2	60	.18	1	.6	.8	26	UER
		13	446	.51	19	23.78	155	16.89	2.49	1.9	2.1	9	0	74	.10	2	.6	.9	9	SPC
		13	447	13.45	19	21.87	155	10.24	3.24	2.5	2.6	29	1	59	.14	1	.6	.8	27	UER
		13	5 1	46.29	19	25.10	155	18.36	.00	1.1	1.8	8	0	140	.15	2	.9	1.3	6	SPC
		13	512	35.16	19	27.03	155	18.16	2.40	1.7	1.9	9	0	170	.42	4	2.4	4.1	9	GLN
		13	6 0	4.45	19	21.62	155	6.32	8.76	3.3	3.4	37	2	82	.11	6	.5	.8	32	UER
		13	6 2	57.84	19	19.73	155	2.94	5.98	2.4	1.9	21	2	200	.12	0	1.1	1.8	18	MER
		13	6 4	13.42	19	19.60	155	2.83	8.84	2.7	2.3	34	2	203	.13	1	1.1	.7	30	MER
		13	611	45.26	19	22.45	155	9.88	3.63	2.0	1.7	23	0	55	.10	1	.7	1.0	19	UER
		13	7 5	35.99	19	22.36	155	10.10	3.54	2.4	2.8	27	0	53	.13	1	.7	.9	25	UER
		13	727	11.20	19	22.44	155	9.87	3.27	1.8	1.3	21	0	70	.09	1	.6	.8	20	UER
		13	727	34.94	19	20.90	155	7.37	5.76	2.1	1.5	21	0	86	.14	7	.9	2.7	20	UER
		13	727	48.62	19	19.41	155	11.53	7.65	2.6	2.6	23	2	97	.10	6	.6	1.1	16	UER
		13	747	50.88	19	22.97	155	17.54	.68	1.3	1.9	9	0	80	.46	3	1.1	2.4	8	KOA
		13	756	32.84	19	21.03	155	2.16	7.08	2.4	2.4	27	0	168	.15	2	1.3	.8	26	MER
		13	758	1.49	19	22.48	155	10.00	3.24	2.0	1.8	18	0	96	.11	1	.7	.8	17	UER
		13	821	55.39	19	19.88	155	1.64	7.63	2.6	2.1	16	2	221	.19	2	2.2	1.2	12	MER
		13	832	10.44	19	22.34	155	9.67	3.68	1.8	1.6	14	0	94	.05	1	.9	.9	11	UER
		13	839	3.99	19	23.92	155	16.97	1.10	1.6	1.5	9	0	74	.15	2	.6	1.1	1	SPC
		13	839	44.29	19	21.84	155	5.21	8.87	2.9	1.9	13	0	80	.09	5	1.1	1.4	9	MER
		13	841	45.34	19	20.40	155	2.28	7.09	1.8	1.9	17	1	189	.13	1	1.5	1.1	14	MER
		13	857	51.29	19	20.67	155	16.93	1.61	1.4	1.1	8	1	122	.05	1	1.0	.6	7	KOA
		13	9 0	35.28	19	22.74	155	3.62	.20	2.2	2.8	15	2	105	.35	4	1.0	.8	9	MER
		13	939	50.10	19	23.74	155	3.27	2.27	2.1	2.2	12	0	104	.09	2	.6	.9	9	MER
		13	10 7	1.70	19	23.96	155	5.00	4.17		.9	7	0	109	.07	2	1.1	1.5	6	MER
		13	1018	1.21	19	23.32	155	16.98	1.97	1.6		10	1	82	.14	3	.7	1.2	8	SPC
		13	1046	15.00	19	24.33	155	16.67	3.25	1.8	1.9	11	1	109	.08	1	.9	.9	4	SPC
		13	1053	26.86	19	24.60	155	16.59	2.71	1.3		8	1	136	.05	1	1.0	.7	3	SPC
		13	1055	57.41	19	23.19	155	6.69	2.94		1.0	10	2	116	.07	5	1.1	2.0	10	GLN
		13	1113	31.57	19	23.97	155	16.72	1.72	1.7	2.1	10	1	88	.14	2	.6	1.0	3	SPC
		13	1127	29.85	19	20.47	155	7.92	6.51	2.0	1.8	21	1	85	.12	5	.7	1.9	16	UER
		13	1130	2.66	19	24.32	155	15.78	3.96	1.7	1.2	9	1	126	.13	3	.9	1.5	7	SPC
		13	1137	35.17	19	24.49	155	16.33	1.42	1.3	1.2	11	1	134	.11	1	.6	.7	8	SPC
		13	1152	34.84	19	24.15	155	17.07	3.86	1.8	1.4	8	1	75	.09	1	1.1	1.9	2	SPC
		13	1159	41.09	19	20.79	155	16.34	1.05	1.4	1.9	11	0	74	.12	2	.6	.9	8	KOA
		13	1213	13.75	19	23.25	155	3.68	.78	3.3	3.8	25	0	101	.20	3	.7	1.3	22	MER
		13	1215	42.33	19	21.72	155	2.94	7.05	2.5	2.7	9	1	130	.10	3	1.4	3.7	6	MER
		13	1230	26.81	19	22.25	155	3.41	6.06	2.6	2.9	18	1	113	.19	4	1.3	4.3	12	MER
		13	1232	4.93	19	20.98	155	10.92	12.00	1.7	1.0	15	1	100	.10	3	1.1	1.9	12	UER
		13	1237	15.04	19	23.75	155	16.97	1.96	1.8	1.6	8	1	82	.08	2	.6	1.0	6	SPC
		13	1237	34.53	19	23.68	155	3.91	1.67	2.3	2.5	17	1	93	.14	2	.6	.6	10	MER
		13	1244	47.45	19	23.55	155	2.98	4.47	1.6	1.8	8	0	111	.21	7	1.6	21.2	5	MER
		13	1253	15.93	19	25.54	155	16.15	1.91	2.8		17	1	48	.14	2	.5	.7	16	SPC
		13	1258	4.16	19	23.24	155	17.09	3.05	1.8	1.7	13	1	58	.06	3	.5	1.0	11	SPC
		13	13 1	12.96	19	24.40	155	15.01	2.29	2.0	2.1	7	0	189	.04	4	.9	1.0	4	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	13	13 2	33.93	19	21.28	154	59.62	9.05	2.3	1.8	21	1	207	.11	6	1.4	1.5	14	LER
		13	1312	4.79	19	20.95	155	16.85	1.56	1.7	1.7	9	0	76	.10	2	.6	.7	8	KOA
		13	1321	41.13	19	20.73	155	16.83	1.77		1.4	8	0	151	.11	2	1.0	.7	7	KOA
		13	1325	36.80	19	23.71	155	17.19	8.13	2.2	1.6	8	1	86	.06	2	1.2	1.4	2	LPC
		13	1343	12.33	19	24.17	155	3.87	4.31	1.6	1.5	14	1	90	.11	1	.8	.6	11	MER
		13	1346	14.90	19	19.05	155	15.92	6.07		1.1	9	0	117	.07	3	1.2	2.6	8	KOA
		13	1346	44.51	19	23.53	155	3.03	.21	3.1	3.4	22	2	110	.19	3	.6	.5	10	MER
		13	1350	49.46	19	22.93	155	5.61	.02	2.5	3.0	17	0	69	.18	4	.8	2.1	13	MER
		13	1417	58.42	19	20.02	155	8.18	7.15		1.5	20	0	115	.12	5	.8	1.6	11	UER
		13	1437	14.88	19	23.86	155	16.79	2.06	1.7	1.8	10	1	81	.12	2	.6	.9	7	SPC
		13	1443	35.79	19	21.32	155	3.61	4.61	1.8	1.5	17	3	105	.15	3	1.3	3.5	16	MER
		13	1453	17.15	19	24.38	155	2.65	3.01	1.9	1.9	7	0	106	.16	7	1.3	8.3	3	MER
		13	1456	45.87	19	23.92	155	4.33	3.22		1.6	8	0	102	.04	8	1.2	12.3	4	MER
		13	15 1	38.89	19	24.48	155	16.26	1.95		.4	8	2	62	.09	2	1.3	1.3	4	SPC
		13	15 8	31.75	19	24.08	155	17.13	1.37	1.3		8	1	94	.04	3	.6	1.2	5	SPC
		13	1510	23.47	19	21.11	155	17.19	3.50	1.2	1.5	8	1	125	.31	2	1.4	1.7	7	KOA
		13	1510	34.12	19	24.48	155	2.51	2.48			6	0	107	.13	3	1.0	1.5	4	MER
		13	1515	49.55	19	25.27	155	3.89	3.26	1.9	1.6	9	0	116	.11	1	2.3	.9	3	GLN
		13	1518	24.74	19	20.69	155	3.81	7.61	2.4	2.1	15	2	97	.15	2	.9	1.6	8	MER
		13	1526	9.55	19	24.59	155	3.24	2.99		2.9	7	0	94	.07	2	.9	.9	7	MER
		13	1545	54.76	19	19.72	155	3.55	6.39	2.2	1.9	23	4	170	.13	1	.8	1.4	20	MER
		13	1550	55.48	19	21.44	155	2.70	8.08	2.8	2.6	27	2	140	.17	3	1.0	1.2	22	MER
		13	16 1	28.65	19	21.78	155	1.05	4.18	2.8	3.2	18	3	179	.24	5	1.4	4.3	13	MER
		13	16 6	43.25	19	23.80	155	16.79	1.99	1.8		9	0	78	.09	2	.6	.8	7	SPC
		13	16 9	55.88	19	21.48	155	2.47	5.93		1.2	18	1	147	.15	3	1.3	1.9	17	MER
		13	1614	53.09	19	23.86	155	4.27	4.49		1.6	6	0	102	.04	8	1.2	40.0	6	MER
		13	1624	40.26	19	30.70	155	6.80	12.39	3.1	1.9	10	0	219	.40	17	5.2	15.1	7	GLN
		13	1632	28.78	19	20.17	155	3.54	5.59	2.0	1.9	15	2	123	.17	1	1.6	2.7	15	MER
		13	1635	18.31	19	21.57	155	6.61	5.38	1.9	1.9	14	0	82	.09	6	.9	3.4	11	UER
		13	1642	54.29	19	20.40	155	3.39	3.24	2.0	1.7	12	1	98	.15	1	1.4	1.3	10	MER
		13	1645	7.18	19	24.05	155	17.03	1.61	1.5	1.4	9	1	77	.13	2	.6	1.0	3	SPC
		13	1652	1.31	19	21.07	155	7.67	7.63	1.5	1.7	12	0	121	.11	4	1.1	2.3	9	UER
		13	1655	45.84	19	21.67	155	3.14	5.74	2.1	2.0	17	2	122	.13	3	.8	2.7	14	MER
		13	17 1	15.90	19	21.37	155	2.70	6.75	2.2	2.1	16	2	140	.11	3	.9	2.2	12	MER
		13	17 8	56.74	19	21.15	155	3.92	4.93	1.9		15	2	92	.18	3	.9	3.1	8	MER
		13	1715	4.60	19	23.75	155	16.94	2.44	1.6	1.3	7	1	125	.09	2	.7	1.1	3	SPC
		13	1717	55.41	19	20.16	155	3.22	8.03	2.6	2.5	23	3	106	.11	1	.8	.9	20	MER
		13	1723	32.25	19	20.97	155	3.24	6.90	2.0	1.7	18	4	115	.10	2	.9	2.2	16	MER
		13	1731	7.28	19	24.74	155	16.85	6.03	2.1	1.6	9	1	131	.19	0	2.8	3.5	6	LPC
		13	1744	20.29	19	19.91	155	3.41	7.48	2.8	3.0	22	3	152	.11	1	.9	1.5	14	MER
		13	1755	24.06	19	20.79	155	17.03	1.56	1.2	1.6	9	0	111	.09	1	.7	.7	8	KOA
		13	1757	42.65	19	25.29	155	17.65	6.78	2.3		8	1	76	.17	0	3.5	2.2	4	LPC
		13	1758	21.62	19	23.69	155	17.33	4.47	2.0	.7	10	1	78	.17	3	.9	2.0	8	SPC
		13	1759	28.83	19	19.84	155	3.25	6.98	2.6	2.4	32	2	35	.14	1	.9	.9	29	MER
		13	18 0	27.50	19	16.93	154	57.27	4.17	2.6	1.7	14	3	257	.28	11	7.7	22.3	10	DIS
		13	18 9	36.21	19	21.13	155	6.49	6.74	1.9	.5	23	2	92	.14	6	.7	2.2	21	UER
		13	1810	4.57	19	20.25	155	3.70	7.26	2.5	1.9	21	2	121	.14	1	1.0	1.9	9	MER
		13	1822	40.87	19	21.07	155	2.44	5.82	2.0	.9	19	1	156	.14	2	1.1	1.7	17	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	13	1824	27.05	19	25.45	155	16.43	7.35	2.1	1.0	7	1	202	.21	1	3.7	3.2	5	LPC
		13	1830	17.46	19	19.51	155	2.14	4.66	2.3	1.1	24	4	208	.20	2	1.0	1.9	19	MER
		13	1839	18.32	19	23.71	155	17.09	1.67	1.6	1.6	10	1	67	.12	2	.6	1.0	7	SPC
		13	1848	15.81	19	21.27	155	2.45	6.74		2.1	19	0	151	.18	3	1.7	2.2	19	MER
		13	1852	15.07	19	21.76	155	2.86	5.33	1.8	1.6	25	2	132	.20	3	.9	3.1	22	MER
		13	1855	11.79	19	21.48	155	2.85	7.09	2.5	2.5	29	3	134	.13	3	.7	1.1	24	MER
		13	1912	24.08	19	19.52	155	3.01	7.67	3.7	3.7	33	3	197	.13	1	.8	.6	29	MER
		13	1918	13.39	19	23.68	155	16.85	2.98	1.6	.5	7	1	82	.11	2	.9	2.0	5	SPC
		13	1939	.35	19	23.68	155	16.76	1.50	1.5	1.6	8	1	82	.15	2	.6	1.1	7	SPC
		13	1951	10.73	19	20.99	155	11.63	10.12	2.1	1.3	14	0	90	.07	4	1.1	1.8	12	UER
		13	20 2	26.25	19	20.12	155	1.32	7.13	2.3	1.9	27	2	207	.16	3	1.2	.8	20	MER
		13	20 5	58.94	19	20.69	155	2.16	6.98	2.6	2.4	29	3	179	.14	2	.9	1.0	26	MER
		13	2017	.79	19	24.32	155	16.67	1.94	1.9	2.4	12	1	108	.19	1	.7	.8	11	SPC
		13	2017	.36	19	21.88	155	3.08	6.49		2.1	13	0	124	.09	4	1.1	1.9	12	MER
		13	2019	54.13	19	24.38	155	15.98	2.29	1.6	1.4	9	1	129	.11	2	.7	1.0	8	SPC
		13	2023	8.43	19	23.40	154	59.35	10.84	1.9	1.3	13	1	209	.14	3	1.5	1.2	12	LER
		13	2023	56.59	19	22.06	154	59.11	9.27	2.3	2.2	29	4	202	.21	6	1.1	1.0	25	LER
		13	2038	16.42	19	21.39	155	6.09	8.93	2.7	3.2	30	4	88	.10	6	.6	1.0	24	UER
		13	2047	2.63	19	21.07	155	2.12	7.37	2.4	2.1	24	2	168	.11	3	.9	1.1	18	MER
		13	2113	3.12	19	23.78	155	2.43	.34	2.1	1.9	15	2	120	.21	4	.7	.7	12	MER
		13	2115	16.57	19	20.46	155	2.20	7.09	2.5	2.8	25	2	189	.17	2	.9	1.1	21	MER
		13	2125	58.41	19	20.54	155	.59	7.09	2.5	2.2	28	2	208	.13	4	1.1	.9	22	LER
		13	2128	41.93	19	24.06	155	15.87	2.95	.9	.6	8	0	117	.02	3	.9	1.2	8	SPC
		13	2131	56.52	19	20.86	155	3.01	8.37	3.7	4.0	33	2	127	.09	2	.9	.6	30	MER
		13	2136	52.46	19	20.55	155	2.42	6.47	2.8		25	3	194	.13	8	.9	1.7	17	MER
		13	2142	8.64	19	24.24	155	17.07	2.61	1.9	1.7	9	0	79	.09	1	.9	1.0	8	SPC
		13	2145	42.49	19	24.87	155	2.45	3.32	2.1	1.9	18	0	101	.16	3	.9	2.9	17	MER
		13	2150	18.41	19	23.54	155	17.65	.92	1.6	1.0	8	1	99	.14	3	.6	1.3	7	SPC
		13	2150	44.57	19	20.92	155	3.71	5.26	1.9	1.1	14	0	93	.17	2	1.6	3.5	13	MER
		13	22 6	31.85	19	24.29	155	17.04	4.41	1.6	1.6	8	1	79	.22	1	2.0	3.0	6	SPC
		13	22 7	23.48	19	20.41	155	2.12	7.14	2.4	1.9	24	2	194	.16	2	1.1	1.1	20	MER
		13	22 9	57.61	19	23.76	155	2.58	1.49	1.8	1.6	18	1	117	.12	3	.7	1.0	17	MER
		13	23 1	36.01	19	21.66	155	2.71	7.30	2.4	1.9	26	1	141	.13	3	1.2	1.0	25	MER
		13	23 3	16.37	19	20.39	155	8.38	5.97	2.0	2.4	24	1	77	.14	4	.8	1.7	22	UER
		13	23 6	9.03	19	24.04	155	17.34	1.29	1.4	.9	10	1	57	.09	2	.5	1.0	8	SPC
		13	2314	14.19	19	23.81	155	16.75	2.59	1.9	2.4	9	1	80	.09	2	.6	1.2	6	SPC
		13	2318	25.21	19	21.52	155	1.37	5.42	2.0	1.2	20	1	178	.17	4	1.1	2.3	18	MER
		13	2332	6.57	19	21.01	154	59.39	9.18	2.5	2.4	27	2	211	.13	7	1.3	.8	21	LER
		13	2336	45.91	19	24.29	155	16.70	4.10	1.5	1.3	9	1	104	.08	1	1.4	1.8	7	SPC
		13	2342	33.64	19	20.92	155	1.93	6.05	2.1	1.9	22	1	179	.15	3	1.1	1.4	19	MER
		13	2354	3.70	19	23.21	155	1.94	6.98	2.2	1.9	19	1	139	.19	6	1.0	2.0	17	MER
		14	0 3	12.89	19	24.21	155	17.15	2.24	1.8	2.4	13	1	69	.09	1	.7	.9	7	SPC
		14	0 5	48.98	19	20.74	155	3.10	7.20	2.2	1.8	22	2	121	.12	2	1.0	1.3	17	MER
		14	017	20.57	19	22.15	155	5.80	8.59	3.5	3.7	41	3	75	.10	5	.5	.7	37	MER
		14	020	17.68	19	20.99	155	17.04	1.60	3.8	4.2	24	0	64	.10	2	.4	.6	21	KOA
		14	025	22.81	19	20.57	155	17.51	2.11	1.9	1.8	12	1	65	.08	1	.7	.7	11	KOA
		14	042	25.41	19	21.28	155	17.03	1.80	1.2	.7	9	0	115	.08	2	.6	.8	8	KOA
		14	045	14.05	19	23.97	155	16.86	1.54	1.4	1.4	9	1	89	.05	2	.5	.9	7	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	14	045	18.86	19	23.20	154	58.75	7.21	1.8	2.1	13	0	190	.23	4	2.0	1.4	9	LER
		14	046	17.84	19	20.96	155	2.93	3.47	1.8	1.3	11	0	133	.14	2	1.6	2.1	10	MER
		14	059	40.36	19	23.86	155	16.64	.42	1.9	2.0	11	1	86	.20	2	.6	1.0	8	SPC
		14	1 1	57.46	19	20.60	155	11.96	5.66		.8	13	0	149	.18	4	1.3	3.1	13	UER
		14	1 8	40.29	19	21.01	155	2.90	5.76	2.1	1.7	16	0	134	.17	2	2.2	3.4	16	MER
		14	114	13.83	19	24.88	155	1.64	3.98	1.8	1.8	14	0	110	.11	5	1.0	4.9	14	MER
		14	117	14.14	19	24.35	155	2.82	.20	1.9	1.7	16	1	104	.15	7	.7	.9	16	MER
		14	120	52.67	19	19.63	155	7.15	7.14	1.9	1.8	22	1	114	.13	4	.9	1.5	21	UER
		14	138	50.64	19	20.73	155	16.47	1.14	1.9	1.9	14	1	75	.14	2	.6	.7	13	KOA
		14	142	9.43	19	24.35	155	16.06	2.61	2.4	2.4	13	1	128	.09	2	.7	.7	12	SPC
		14	146	49.81	19	23.98	155	16.65	3.08	1.5	1.1	7	0	82	.15	2	.9	1.4	6	SPC
		14	148	30.07	19	24.65	155	1.33	4.49	1.8	1.3	13	0	120	.14	5	1.0	4.5	11	MER
		14	2 1	7.10	19	20.97	155	16.36	1.56	1.8	2.4	10	0	71	.04	2	.6	.8	9	KOA
		14	219	26.95	19	21.21	155	6.90	5.23	2.0	2.0	19	2	86	.11	5	.6	3.0	17	UER
		14	226	4.21	19	23.82	155	16.84	2.38	1.6	2.1	11	1	77	.28	2	.8	1.2	10	SPC
		14	236	6.71	19	23.99	155	16.98	3.00	1.6	1.8	10	0	76	.06	2	.6	1.0	10	SPC
		14	242	45.84	19	23.47	155	2.11	5.57	2.2	1.6	26	2	131	.22	7	.8	2.7	21	MER
		14	247	17.72	19	22.23	155	6.18	5.62	2.0	1.4	23	3	72	.20	6	.8	3.0	20	UER
		14	255	41.23	19	23.27	155	17.14	7.02	2.0	1.0	10	2	72	.24	3	1.2	2.1	7	LPC
		14	255	56.87	19	20.40	155	2.51	6.86	2.1	1.8	20	1	187	.15	1	1.1	1.5	19	MER
		14	259	56.34	19	20.29	155	1.68	7.03	2.3	2.0	25	3	202	.19	2	1.2	1.2	20	MER
		14	3 3	15.10	19	20.92	155	6.88	7.65		1.0	18	0	93	.14	6	1.0	1.7	18	UER
		14	310	20.45	19	23.74	155	16.13	7.31	2.2	2.0	8	1	111	.13	3	1.5	1.9	7	LPC
		14	314	52.84	19	20.82	155	8.04	7.19	1.7	1.1	21	0	78	.14	4	.8	1.7	20	UER
		14	320	39.94	19	24.31	155	16.11	1.47	1.0	1.0	10	1	128	.11	2	.5	.8	8	SPC
		14	330	5.62	19	24.54	155	2.21	2.95	2.3	2.4	27	0	110	.18	4	.8	1.5	25	MER
		14	338	27.28	19	21.10	155	15.89	.76	1.9	2.1	13	1	70	.07	2	.5	.7	12	KOA
		14	339	5.83	19	20.84	155	2.57	6.42	2.7	2.6	22	2	155	.11	2	.9	1.7	20	MER
		14	342	13.80	19	21.89	155	2.80	5.60	2.2	1.1	23	3	133	.14	4	.8	1.6	19	MER
		14	348	15.68	19	20.70	155	.45	6.85	2.5	2.4	27	3	207	.19	5	1.1	1.2	19	LER
		14	355	4.26	19	24.48	155	2.81	.02	2.3	2.4	18	3	102	.17	7	.8	.6	15	MER
		14	423	.45	19	21.56	155	15.66	1.68	1.2	.9	10	0	71	.03	2	.6	.8	10	KOA
		14	424	36.82	19	20.31	155	6.25	7.66	2.3	2.0	21	2	112	.12	6	.7	1.2	12	UER
		14	428	4.54	19	24.04	155	17.53	1.79	2.3	2.3	12	1	58	.13	2	.6	.9	11	SPC
		14	431	6.74	19	24.95	155	2.05	3.96	2.2	2.6	24	0	104	.12	4	.8	3.1	21	MER
		14	435	40.77	19	25.10	155	3.02	6.66	2.1	1.6	16	0	90	.13	8	.8	3.0	15	GLN
		14	452	54.29	19	19.21	155	12.40	5.51		.8	17	0	93	.09	4	.8	2.1	15	UER
		14	5 4	22.42	19	21.45	154	55.60	12.71	1.9	1.8	16	0	236	.10	9	3.4	1.2	15	LER
		14	514	32.37	19	23.76	155	17.26	1.46	1.9	2.3	12	1	48	.12	2	.5	.9	10	SPC
		14	517	19.60	19	22.94	154	56.46	11.33	2.2	1.8	18	1	197	.15	4	1.7	1.0	15	LER
		14	518	41.65	19	22.20	154	58.58	8.32	3.2	3.4	29	2	37	.16	5	1.3	.9	24	LER
		14	523	14.35	19	23.37	155	2.50	5.72	2.0	2.1	16	1	128	.21	7	1.6	6.5	12	MER
		14	524	53.60	19	24.01	155	17.57	1.95	1.1	1.0	9	1	81	.05	2	.6	1.0	8	SPC
		14	529	57.16	19	20.92	155	3.01	6.99	2.2	2.6	26	2	128	.17	2	1.0	1.4	23	MER
		14	532	16.56	19	22.48	154	59.98	7.57	2.1	1.9	28	4	185	.22	5	.9	1.7	23	LER
		14	534	24.11	19	22.49	155	.54	6.65	2.2	1.9	28	3	176	.16	6	.8	1.3	25	LER
		14	553	16.98	19	24.01	155	2.47	6.20	2.4	2.4	27	1	115	.14	7	.8	1.7	21	MER
		14	610	30.28	19	24.12	155	17.71	.01	1.3	1.0	11	1	70	.40	2	.8	1.7	9	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	14	611	57.81	19	20.56	155	3.20	7.16	2.3	1.9	30	3	111	.15	1	.9	1.0	25	MER
		14	617	27.75	19	23.08	154	56.97	5.04	2.1	2.4	21	3	212	.41	5	1.7	2.6	17	LER
		14	619	28.08	19	21.64	155	15.63	3.32	1.2	1.1	12	0	71	.08	2	.7	.9	12	KOA
		14	620	54.01	19	20.67	155	3.27	7.85	3.2	3.4	32	2	109	.10	2	.8	.8	28	MER
		14	633	11.38	19	23.81	155	16.50	3.25	1.4	1.1	9	0	89	.16	2	.9	1.2	9	SPC
		14	640	5.56	19	24.57	155	16.72	5.56	1.6	1.1	11	1	124	.12	1	1.8	2.1	8	SPC
		14	650	48.00	19	24.11	155	16.65	2.36	1.4	1.4	11	1	97	.09	2	.6	.8	9	SPC
		14	655	12.15	19	21.44	155	3.98	3.76	2.2	1.7	21	2	94	.13	3	1.3	2.8	17	MER
		14	7 4	29.09	19	23.27	154	57.44	8.97	2.6	2.4	23	3	250	.15	4	2.2	1.1	20	LER
		14	7 8	18.93	19	22.15	155	1.27	4.25	2.0	2.2	17	2	169	.19	5	1.9	6.3	15	MER
		14	712	11.80	19	25.33	155	16.29	.56	.9	1.3	10	1	163	.18	2	1.3	.8	8	SPC
		14	715	16.34	19	23.69	154	55.85	.11	1.6	1.8	10	2	218	.55	6	2.5	1.0	8	LER
		14	726	52.84	19	20.87	155	2.60	7.29	2.6	2.6	25	3	152	.16	2	.9	1.0	20	MER
		14	730	3.42	19	22.20	154	59.01	8.70	2.6	2.4	23	3	201	.14	5	.8	.9	20	LER
		14	813	56.33	19	24.34	155	2.73	3.03	2.4	2.3	25	0	105	.13	7	1.6	10.7	25	MER
		14	823	12.83	19	21.97	155	3.07	5.81	1.8	2.0	20	0	124	.13	4	1.0	1.5	16	MER
		14	834	4.33	19	20.92	155	4.65	4.71	2.1	1.9	24	0	124	.12	4	1.0	2.5	22	MER
		14	834	51.74	19	21.48	155	1.89	1.42	2.3	1.9	21	0	174	.16	3	1.6	2.1	20	MER
		14	835	24.95	19	24.93	155	1.44	5.42	2.4	3.1	16	0	111	.20	5	1.1	2.8	14	MER
		14	842	15.46	19	19.94	154	57.20	9.61	3.1	3.0	29	0	230	.24	10	2.8	1.0	26	DIS
		14	846	34.81	19	24.30	154	56.67	6.73	2.3	2.0	25	0	201	.16	4	1.9	1.1	17	LER
		14	9 1	58.88	19	21.51	155	5.85	6.56		1.7	20	0	108	.13	6	.8	2.1	20	MER
		14	911	34.59	19	21.72	155	.80	5.08	2.3	2.8	26	0	185	.12	5	1.0	1.6	25	LER
		14	931	59.50	19	21.72	155	6.74	8.16	2.8	3.3	30	0	79	.09	6	.7	1.0	29	UER
		14	942	13.83	19	24.17	155	3.00	6.26	2.4	2.4	25	0	139	.19	8	1.0	2.1	22	MER
		14	10 8	7.97	19	21.22	155	16.24	1.43	1.7	1.6	9	0	87	.05	2	.6	.8	9	KOA
		14	1012	43.96	19	20.78	155	6.91	5.27	2.0	1.6	23	0	95	.15	6	.9	3.5	23	UER
		14	1013	46.50	19	21.75	155	1.51	7.34	2.4	2.4	22	0	180	.12	4	1.5	.8	19	MER
		14	1015	40.93	19	21.67	155	11.03	10.24	1.7	1.6	19	0	97	.12	2	1.1	1.4	18	UER
		14	1018	28.82	19	21.41	155	7.02	6.83	2.2	1.8	25	0	82	.11	5	.7	1.5	20	UER
		14	1019	35.76	19	21.00	155	1.91	6.77	2.0	1.9	21	0	186	.16	3	1.6	1.1	19	MER
		14	1029	57.99	19	21.43	155	1.40	6.18	2.4	2.4	20	0	191	.12	4	1.5	.9	20	MER
		14	1036	49.13	19	22.40	154	59.38	8.19	2.6	2.5	24	0	222	.21	5	2.4	1.1	22	LER
		14	1041	53.87	19	19.45	155	3.38	7.63	2.8	2.9	30	2	196	.13	1	.9	.7	23	MER
		14	1044	42.42	19	24.07	155	17.40	1.60	2.1	3.4	11	1	55	.14	2	.5	.9	9	SPC
		14	11 3	19.06	19	21.91	155	2.11	5.78	2.1	2.2	25	0	158	.17	4	1.3	1.7	22	MER
		14	11 7	38.24	19	21.55	155	.33	6.88	3.4	3.6	32	1	215	.15	5	1.6	.9	25	LER
		14	1118	16.95	19	21.54	155	3.29	5.10	2.0	1.8	22	0	118	.14	3	1.2	2.7	20	MER
		14	1129	15.22	19	21.44	155	2.15	8.51	2.9	3.1	16	2	166	.11	3	1.3	1.6	10	MER
		14	1137	33.04	19	22.52	155	1.23	6.81	2.5	2.0	21	0	163	.15	6	1.0	1.2	16	MER
		14	1144	50.51	19	21.93	155	2.79	4.90	2.0	1.8	20	0	134	.14	4	1.1	3.2	18	MER
		14	1149	13.56	19	24.90	155	16.21	3.09	2.1	2.6	9	1	149	.46	1	2.4	1.5	8	SPC
		14	1150	8.32	19	21.11	155	7.11	9.16	3.6	3.8	36	2	87	.11	5	.6	.8	28	UER
		14	1222	57.37	19	21.78	155	1.31	7.78	2.1	2.1	24	0	184	.13	4	1.6	.9	19	MER
		14	1246	56.98	19	21.26	154	56.98	9.30	2.9	2.8	19	2	262	.08	8	2.4	1.0	15	LER
		14	1250	5.67	19	21.00	155	3.16	6.71	2.3	2.1	17	0	195	.14	2	1.7	1.2	15	MER
		14	13 0	52.78	19	21.48	154	58.19	8.70	2.9	2.8	28	1	253	.19	7	2.3	1.0	24	LER
		14	13 9	15.91	19	35.01	155	7.75	3.51	2.4	1.9	11	0	249	.46	29	6.5	90.5	9	HIL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	14	1311	21.21	19	21.79	155	3.13	6.81	2.7	2.3	21	2	123	.11	4	1.0	1.7	17	MER
		14	1312	39.55	19	21.71	155	3.42	6.46	2.2	1.7	21	0	113	.11	3	1.0	1.6	14	MER
		14	1326	5.38	19	28.88	155	22.14	3.62	2.3	1.8	12	0	134	.09	3	1.3	1.6	11	UKF
		14	1334	54.72	19	28.29	155	21.81	6.95	2.2	2.3	12	0	142	.12	4	1.2	2.6	12	UKF
		14	1341	58.53	19	19.94	155	7.79	8.41	1.9	1.7	23	0	94	.09	5	1.0	1.0	21	UER
		14	14 2	19.60	19	21.20	155	3.73	6.08		1.4	16	0	144	.14	3	1.5	1.9	10	MER
		14	14 6	21.27	19	20.96	155	.63	8.53	2.7	2.7	31	1	203	.14	5	1.7	.8	24	LER
		14	1426	8.49	19	25.08	155	24.21	10.99	1.9	2.1	20	0	44	.11	8	.7	1.2	18	UKF
		14	1452	10.97	19	24.24	155	2.76	1.02	2.3	2.2	23	2	107	.19	7	.7	1.0	17	MER
		14	15 0	42.82	19	20.74	155	2.54	8.75	2.7	2.8	28	2	166	.15	2	1.3	.7	22	MER
		14	16 9	33.64	19	23.38	155	5.79	7.42	2.5	2.1	23	0	127	.13	8	.8	1.5	20	MER
		14	1641	48.58	19	21.19	155	2.35	7.44	2.4	1.9	22	0	157	.13	3	1.3	.8	16	MER
		14	1710	42.93	19	24.32	154	57.10	6.47	2.0	1.9	19	0	199	.16	3	1.8	1.3	17	LER
		14	1748	39.75	19	23.93	155	17.30	.00	1.6	1.6	11	1	60	.21	2	.5	1.1	10	SPC
		14	18 4	47.33	19	24.61	155	16.26	2.81	3.0	3.3	34	0	28	.14	1	.5	.6	31	SPC
		14	18 8	47.03	19	20.46	155	8.20	5.99	1.8	1.5	22	0	79	.13	4	.8	1.7	19	UER
		14	1859	45.41	19	21.21	155	15.33	.29	3.4	4.1	32	1	67	.28	2	.5	1.0	31	KOA
		14	19 7	25.60	19	21.94	155	3.31	7.06	2.3	2.0	22	0	166	.14	4	1.3	1.2	20	MER
		14	1912	22.93	19	24.09	155	16.56	.53	1.6	2.1	11	1	100	.19	2	.6	.9	10	SPC
		14	1918	3.76	19	26.71	155	15.55	.22	1.8	2.2	10	1	57	.15	4	.7	1.5	8	SPC
		14	1935	17.48	19	21.19	155	2.07	6.03	2.1	2.1	26	2	167	.15	3	1.0	1.3	19	MER
		14	1937	11.76	19	19.46	155	9.74	6.95	2.3	2.1	24	2	151	.10	5	.8	1.1	19	UER
		14	1959	21.06	19	22.58	155	.05	6.91	2.2	2.1	28	1	182	.23	5	1.4	1.0	24	LER
		14	20 8	12.27	19	23.84	155	2.28	6.06	2.5	2.5	25	1	122	.15	7	.7	1.7	22	MER
		14	2013	44.77	19	24.44	155	16.09	2.61	2.2	2.5	20	1	53	.09	2	.5	.5	19	SPC
		14	2018	7.93	19	21.85	155	2.57	7.89	2.5	2.8	26	0	141	.18	4	1.3	1.0	23	MER
		14	2128	1.37	19	20.80	155	1.47	5.55	2.1	2.0	23	2	195	.13	3	.9	1.3	19	MER
		14	2129	1.65	19	23.63	155	2.17	6.69	2.6	2.6	16	1	127	.16	7	1.2	1.8	13	MER
		14	2131	58.93	19	20.80	155	2.42	6.21	2.3	2.2	25	2	164	.17	2	.9	1.3	20	MER
		14	2149	27.70	19	21.34	155	16.27	1.47	1.8	1.9	16	0	66	.11	2	.6	.8	14	KOA
		14	2155	13.01	19	21.25	155	2.18	6.29	2.2	1.6	24	1	170	.21	3	1.4	1.5	19	MER
		14	2221	14.51	19	23.75	155	17.40	3.51	2.1	2.1	9	1	77	.14	3	.8	1.4	7	SPC
		14	2225	16.18	19	23.28	154	55.80	4.17	2.3	2.1	26	0	222	.29	6	1.9	2.5	22	LER
		14	2232	54.44	19	23.87	155	16.26	1.41	1.9	2.7	8	1	104	.18	3	.7	1.5	7	SPC
		14	2254	2.78	19	22.24	154	54.71	12.27	2.3	2.2	22	2	239	.13	13	2.2	1.0	18	LER
		14	23 3	41.82	19	23.83	155	2.42	6.33	2.3	2.4	26	1	119	.16	7	.7	1.8	24	MER
		14	23 9	25.97	19	20.56	154	59.12	5.92	2.1	2.0	20	1	263	.21	7	4.9	1.7	16	LER
		14	2319	57.51	19	21.06	155	2.65	6.54	2.2	2.1	26	1	146	.12	2	.9	1.3	20	MER
		14	2343	57.11	19	21.59	155	3.41	7.88	2.3	1.9	27	2	113	.11	5	.8	1.0	20	MER
		14	2346	20.72	19	20.87	155	4.07	6.76	2.1	2.4	28	1	96	.16	3	.9	1.2	22	MER
		15	0 9	1.68	19	21.10	155	3.13	6.36	2.7	2.8	32	2	122	.12	2	.8	1.3	25	MER
		15	010	51.71	19	24.06	155	17.85	1.77	1.6	2.5	8	1	85	.20	3	.7	1.4	7	SPC
		15	038	13.86	19	21.68	154	58.21	2.85	2.2	2.3	20	0	213	.18	7	1.9	3.5	19	LER
		15	041	41.88	19	23.78	154	59.11	7.73	2.2	1.7	22	0	198	.16	3	1.9	1.0	19	LER
		15	1 0	9.30	19	23.99	155	16.00	2.91	2.0	2.6	16	1	45	.10	3	.6	.8	15	SPC
		15	1 7	41.12	19	24.31	155	1.81	5.79	2.0	2.2	21	0	120	.20	6	.9	2.1	18	MER
		15	123	56.61	19	21.80	154	59.32	5.11	2.9	2.5	24	0	29	.26	6	1.9	1.6	20	LER
		15	132	21.86	19	20.05	154	56.16	4.84	3.1	3.5	32	2	235	.20	10	1.6	1.4	29	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	15	136	36.27	19	21.11	154	56.30	2.55	2.9	3.3	24	2	233	.20	9	2.0	2.4	22	LER
		15	142	8.30	19	24.99	155	16.60	1.22	1.7	1.6	10	1	149	.12	1	1.0	.6	9	SPC
		15	151	50.38	19	24.30	155	16.84	1.78	1.6	1.6	10	1	95	.12	1	.6	.8	9	SPC
		15	156	36.85	19	20.92	155	12.73	7.37	1.8	1.6	27	0	63	.14	3	.7	.9	26	UER
		15	218	19.62	19	23.66	154	58.25	7.90	2.5	2.6	27	1	195	.20	3	1.5	.9	25	LER
		15	225	39.34	19	24.44	155	16.77	1.48	1.8	2.1	16	1	64	.11	1	.5	.4	14	SPC
		15	229	34.75	19	23.54	155	2.23	3.82	1.9	1.3	24	1	127	.22	7	1.0	5.2	22	MER
		15	245	23.21	19	21.09	155	1.67	6.14	1.9	1.1	21	0	226	.23	3	2.4	1.4	18	MER
		15	250	20.57	19	22.16	155	14.75	1.08	1.9	2.8	15	0	76	.08	2	.5	.8	15	UER
		15	3 5	30.64	19	22.26	155	14.64	1.31	1.8	2.2	11	0	76	.05	2	.5	.8	11	UER
		15	310	23.28	19	21.21	155	15.53	.00	2.6	3.2	27	3	68	.14	2	.4	.3	24	KOA
		15	318	20.07	19	23.94	155	16.39	2.02	1.4	1.8	12	0	99	.16	2	.6	.8	11	SPC
		15	323	23.82	19	24.40	155	16.89	1.75	1.6	1.9	17	1	47	.10	1	.5	.5	16	SPC
		15	327	46.88	19	23.23	155	6.42	3.04	1.9	1.3	20	0	71	.15	6	.8	4.1	19	GLN
		15	340	52.15	19	19.88	155	9.86	7.47	1.8	1.3	22	0	87	.12	4	.7	1.2	20	UER
		15	421	50.66	19	23.72	155	6.17	2.27	2.1	2.2	24	0	63	.15	7	.7	4.8	22	GLN
		15	439	48.40	19	24.24	155	2.51	3.69	2.6	2.4	26	0	111	.20	7	.9	7.9	24	MER
		15	443	31.79	19	24.94	155	25.89	3.27	1.6	1.6	17	0	90	.14	5	.7	3.3	16	UKF
		15	452	48.51	19	24.53	155	16.91	1.29	1.4	2.0	16	1	100	.23	1	.7	.5	14	SPC
		15	5 5	11.19	19	21.19	155	1.93	6.09	2.0	1.5	24	0	171	.19	3	1.4	1.3	22	MER
		15	5 7	46.86	19	24.18	155	16.09	.01	2.5	2.9	17	1	82	.49	2	.9	1.4	15	SPC
		15	525	26.89	19	24.72	155	2.10	.90	2.4	2.6	29	1	108	.22	6	.7	1.3	28	MER
		15	6 5	22.53	19	23.93	155	2.54	3.47	2.0	2.1	23	1	115	.18	7	.9	4.5	21	MER
		15	615	47.85	19	23.19	155	6.16	2.43	1.8	1.8	16	0	120	.14	7	.8	4.4	15	GLN
		15	621	46.00	19	21.20	155	16.80	1.52	3.2	4.0	35	0	29	.12	2	.4	.7	32	KOA
		15	624	47.43	19	24.42	155	1.73	4.62	2.1	2.0	22	0	120	.16	5	.9	3.6	21	MER
		15	646	20.20	19	19.21	155	7.20	8.46	3.6	3.7	36	1	123	.10	4	.6	.6	35	UER
		15	651	53.97	19	21.91	155	3.59	4.45		1.5	21	1	108	.21	4	1.4	4.9	19	MER
		15	711	23.94	19	24.93	155	18.22	.00	.9	2.2	7	0	95	.21	1	.8	1.2	7	SPC
		15	720	20.90	19	20.78	155	2.50	5.33	2.4	2.5	25	2	160	.15	2	.9	1.4	23	MER
		15	729	52.42	19	24.36	155	16.88	1.95	1.4	1.9	10	1	94	.07	1	.7	.7	7	SPC
		15	730	39.27	19	24.50	155	2.66	2.37	2.5	2.5	27	1	104	.13	7	.6	2.0	24	MER
		15	741	54.29	19	20.56	155	3.15	6.50	2.5	2.1	24	0	116	.11	1	1.3	1.1	24	MER
		15	8 9	3.48	19	21.73	155	20.09	26.71	2.9	.9	22	3	70	.10	4	1.0	1.5	22	DEP
		15	812	8.04	19	20.81	155	15.78	1.23	2.0	2.4	14	0	97	.08	3	.6	1.0	13	KOA
		15	825	19.52	19	22.31	154	59.07	8.02	2.2	1.9	25	2	199	.20	5	1.3	.9	20	LER
		15	829	25.93	19	21.38	155	16.20	1.65	1.6	1.8	9	0	68	.04	2	.6	.8	8	KOA
		15	9 4	32.71	19	24.52	155	17.17	1.51	2.1	2.4	17	1	54	.13	1	.5	.4	14	SPC
		15	917	29.99	19	23.12	155	2.02	5.70	2.2	1.9	23	1	139	.16	6	.8	2.0	22	MER
		15	926	23.09	19	21.27	155	6.17	7.55	2.2	1.8	26	1	91	.15	6	.7	1.6	25	UER
		15	937	58.82	19	21.59	154	53.21	6.58	2.6	2.9	27	2	251	.22	14	2.2	1.5	25	LER
		15	945	39.60	19	24.26	154	56.29	.89	2.0	2.1	21	1	206	.20	5	1.0	.8	19	LER
		15	948	21.33	19	20.32	155	4.03	5.38	1.9	1.2	16	0	121	.15	2	1.3	2.1	15	MER
		15	958	9.08	19	24.17	155	17.03	1.74	2.0	2.1	10	1	78	.16	1	.6	.9	10	SPC
		15	959	31.88	19	22.37	154	56.20	4.41	2.5	2.7	27	2	225	.21	7	1.7	2.1	25	LER
		15	10 5	57.35	19	22.68	154	56.17	4.03	2.5	2.8	25	0	225	.28	6	2.4	2.6	23	LER
		15	1020	32.79	19	21.24	155	3.80	5.57	2.2	2.2	26	2	96	.12	3	.7	1.8	23	MER
		15	1029	53.01	19	23.17	155	2.38	6.26	2.5	2.1	25	1	130	.14	6	.8	1.7	24	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	15	1030	42.55	19	23.19	154	59.05	10.72	2.3	2.0	17	1	213	.16	4	1.9	.9	15	LER
		15	1036	22.14	19	24.06	155	17.43	2.58	1.6	.8	8	1	82	.08	2	.8	1.5	7	SPC
		15	1036	35.84	19	24.06	155	17.13	1.85	1.9	2.0	10	2	92	.25	2	.7	1.2	9	SPC
		15	1049	16.68	19	22.37	155	.31	7.85	2.2	1.9	26	1	182	.18	6	1.2	1.0	25	LER
		15	1052	48.63	19	21.33	155	15.69	.04	2.1	2.8	24	3	66	.23	2	.4	.3	20	KOA
		15	1059	20.48	19	22.32	154	59.50	7.97	2.4	1.9	24	2	193	.18	5	1.0	1.0	20	LER
		15	11	4 56.36	19	22.38	155	5.17	.17	2.3	2.8	21	1	74	.25	6	.8	1.1	20	MER
		15	1114	36.72	19	22.09	154	57.29	4.62	3.5	3.9	31	0	217	.17	6	1.8	1.6	29	LER
		15	1124	55.52	19	22.06	155	.07	8.00	2.5	2.4	25	1	190	.15	6	1.0	.9	23	LER
		15	1142	49.66	19	22.66	155	1.70	7.41	2.4	2.5	25	2	153	.22	6	.9	1.3	23	MER
		15	1155	28.27	19	20.66	155	2.58	7.11	2.7	2.6	29	2	159	.12	2	.6	.9	27	MER
		15	1157	44.48	19	24.55	155	2.08	1.91	2.2	2.1	29	0	111	.20	6	.9	4.4	28	MER
		15	12	3 42.05	19	20.01	154	57.80	4.76	3.1	3.7	27	2	231	.17	9	1.5	1.7	24	LER
		15	1222	35.87	19	23.36	155	17.04	2.55	1.1	1.0	9	0	62	.07	3	.6	1.1	9	SPC
		15	1224	11.72	19	23.21	155	6.36	2.95	2.0	1.0	21	0	89	.14	6	.9	4.3	20	GLN
		15	1315	26.55	19	22.66	155	.07	7.51	2.3	2.2	26	2	180	.24	5	1.0	1.3	23	LER
		15	1329	2.46	19	23.17	155	6.04	2.93	2.0	1.8	24	0	64	.15	7	.7	4.9	23	GLN
		15	1336	9.84	19	23.32	155	2.09	6.57	2.2	1.4	27	2	134	.17	7	.7	1.5	24	MER
		15	1338	.96	19	24.25	155	2.04	2.33	2.6	2.9	27	0	118	.19	6	.9	4.9	23	MER
		15	1345	40.75	19	18.95	155	13.87	4.65	2.4	.9	16	0	89	.12	4	.9	3.2	16	POL
		15	1350	18.65	19	20.90	154	58.40	.41	2.2	2.4	27	2	218	.14	8	1.6	.6	23	LER
		15	1356	2.58	19	23.55	155	24.29	9.13	1.9	1.2	18	0	71	.12	6	.8	1.6	18	UKF
		15	1356	41.54	19	24.24	155	16.89	.01	2.6	3.1	17	2	89	.43	1	.7	1.2	16	SPC
		15	14	6 30.08	19	27.49	155	17.60	2.29	1.6	1.8	10	1	198	.26	4	1.4	2.6	9	GLN
		15	1410	21.98	19	20.42	155	8.49	5.56	2.1	2.4	26	1	75	.15	4	.7	1.8	21	UER
		15	1446	1.87	19	21.25	155	1.52	7.80	3.0	3.1	33	2	182	.12	4	.8	.8	27	MER
		15	15	2 2.15	19	21.44	155	11.05	10.95	1.7	.8	15	0	84	.08	2	1.0	1.9	13	UER
		15	1510	40.39	19	20.17	155	3.24	6.12		.9	20	0	107	.15	1	1.4	1.1	16	MER
		15	1526	3.24	19	21.65	155	.92	5.44	2.4	1.6	23	2	184	.14	5	.8	1.4	20	LER
		15	1530	29.45	19	24.38	155	17.14	.99	1.3	2.0	9	0	72	.10	1	.6	.8	9	SPC
		15	1538	10.60	19	23.45	155	17.55	8.15	2.2	1.4	8	1	101	.28	3	1.9	2.6	7	LPC
		15	1548	56.47	19	23.02	155	.28	3.06	2.0	1.5	18	1	172	.23	5	1.2	2.2	15	LER
		15	1613	39.76	19	19.47	155	7.29	6.23	2.0	1.8	25	1	114	.13	4	.8	1.6	22	UER
		15	1617	22.55	19	23.12	155	2.01	6.49	2.3	1.8	22	1	140	.19	6	.8	1.8	19	MER
		15	1618	37.86	19	26.15	155	16.99	4.44	2.4	3.1	11	2	178	.27	2	2.1	.8	10	SPC
		15	1633	13.92	19	20.46	155	.44	6.45	2.1	2.0	26	0	209	.14	4	1.8	1.1	24	LER
		15	1655	57.01	19	22.51	155	5.09	11.94	2.1	1.7	26	1	75	.11	6	.8	.8	23	MER
		15	17	5 15.87	19	20.92	155	7.08	6.76	2.1	2.3	29	1	90	.12	5	.6	1.4	26	UER
		15	1721	50.53	19	18.96	155	11.63	6.54	2.0	1.2	24	0	106	.09	5	.8	1.7	24	POL
		15	1742	13.09	19	21.08	155	6.38	7.44	2.5	3.0	29	1	93	.13	6	.6	1.2	27	UER
		15	1759	57.44	19	21.22	155	1.56	7.35	2.4	2.4	30	1	182	.15	3	1.0	.8	29	MER
		15	1817	3.70	19	23.90	155	17.19	.29	1.2	1.4	9	1	68	.09	2	.5	1.0	7	SPC
		15	1817	32.38	19	25.82	155	16.53	2.60	2.1	2.8	13	1	176	.26	2	1.6	.7	11	SPC
		15	1842	20.43	19	20.26	155	15.51	26.92	1.9	1.2	20	0	79	.11	3	1.8	3.6	20	DEP
		15	1849	4.85	19	23.74	155	2.87	4.47	2.3	2.0	27	1	56	.13	7	.8	8.3	22	MER
		15	1850	5.45	19	20.55	155	3.65	9.30	4.0	4.0	37	1	157	.10	7	.9	.7	27	MER
		15	1857	.85	19	22.20	154	59.63	9.21	2.0	1.7	24	0	143	.15	1	1.8	1.1	19	LER
		15	19	9 17.01	19	23.26	155	5.95	.55	2.3	2.6	26	2	72	.13	7	.6	.8	24	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	15	1940	3.98	19	19.62	155	3.70	6.67	2.7	2.8	28	2	174	.13	1	.8	1.2	24	MER
		15	1956	25.31	19	24.21	155	2.84	2.45	1.9	1.8	19	0	106	.13	7	.8	5.9	19	MER
		15	2013	16.52	19	21.48	155	.97	6.28	2.1	1.7	26	1	188	.21	5	1.1	1.4	23	LER
		15	2150	49.99	19	22.25	154	57.99	5.05	2.2	1.0	20	0	211	.26	6	1.9	2.3	20	LER
		15	22	0 39.06	19	23.51	155	6.12	.02	1.9	1.9	24	2	64	.17	7	.7	.7	21	GLN
		15	2227	6.31	19	21.59	155	15.84	1.28	1.9	1.9	18	0	64	.08	2	.5	.7	18	KOA
		15	23	1 27.81	19	23.60	155	17.16	.35	2.2	2.8	13	3	55	.36	2	.8	1.0	11	SPC
		15	2310	48.70	19	22.04	155	1.96	6.80	2.2	2.1	25	2	155	.24	4	.9	1.6	23	MER
		15	2329	31.95	19	21.37	155	15.85	1.34	1.3	.9	9	0	89	.09	2	.7	.9	8	KOA
		15	2333	28.46	19	21.10	154	57.29	5.27	2.5	3.0	28	1	225	.26	8	2.0	1.9	27	LER
		15	2335	22.39	19	21.42	155	16.07	1.24	1.3	1.3	12	0	67	.09	2	.6	.8	12	KOA
		15	2347	58.61	19	18.70	155	13.49	5.05	2.0	1.8	33	2	75	.15	3	.6	1.5	30	POL
		15	2355	11.72	19	24.06	155	17.28	1.64	1.4	1.4	8	1	89	.11	3	.6	1.1	7	SPC
		16	0	9 54.82	19	45.28	155	40.15	9.80	2.3	1.7	20	4	205	.25	19	2.0	1.2	18	KKU
		16	046	56.27	19	20.54	155	7.15	6.25	2.3	1.9	26	2	96	.13	6	.7	2.2	23	UER
		16	122	11.09	19	20.73	155	8.41	5.31	1.6	2.4	20	0	74	.16	4	.9	2.1	18	UER
		16	128	12.65	19	23.26	155	24.38	9.27	1.6	1.0	14	0	78	.10	6	.8	1.7	14	UKF
		16	133	22.67	19	20.63	154	56.67	5.28	2.5	3.1	25	1	233	.26	9	2.1	1.9	22	LER
		16	159	53.08	19	23.37	155	5.91	.32	1.9	1.8	24	1	65	.17	7	.6	.9	22	MER
		16	2	5 17.32	19	23.70	155	17.54	.10	1.9	2.1	11	1	85	.25	2	.5	1.3	10	SPC
		16	210	22.22	19	24.04	155	17.25	.15	1.2	1.8	9	1	79	.35	2	.8	1.6	8	SPC
		16	228	27.31	19	23.44	155	2.25	5.81	2.1	1.9	24	2	129	.16	7	.8	2.2	22	MER
		16	243	34.68	19	22.41	155	13.75	3.26	1.3	1.0	10	0	109	.17	1	1.3	1.2	8	UER
		16	248	9.93	19	24.14	155	16.82	.12	2.1	2.6	15	3	52	.39	2	.7	.9	13	SPC
		16	3	7 42.48	19	20.66	154	59.69	7.13	2.5	2.1	32	2	213	.14	6	1.1	.8	28	LER
		16	315	22.36	19	26.37	155	15.73	6.55	2.0	2.4	9	1	205	.34	4	3.0	2.1	8	LPC
		16	321	44.68	19	24.61	155	17.37	1.44	1.1	1.7	8	1	103	.07	2	.6	.8	7	SPC
		16	328	18.00	19	20.75	155	1.73	6.71	2.1	1.8	26	2	192	.15	3	.9	1.1	22	MER
		16	4	9 55.79	19	22.56	155	3.10	1.00	2.1	2.2	24	2	164	.17	9	1.1	1.2	21	MER
		16	435	21.09	19	23.43	155	17.69	.43	2.0	2.3	10	1	104	.57	3	1.1	2.5	9	SPC
		16	5	0 51.72	19	20.39	155	2.39	6.80	2.1	1.8	25	2	184	.17	1	.8	1.3	21	MER
		16	5	6 52.26	19	21.11	155	11.36	11.27	1.6	.9	18	0	68	.07	3	.8	.9	17	UER
		16	5	8 51.25	19	21.44	154	57.18	5.77	2.1	2.6	18	1	236	.14	7	1.4	1.7	12	LER
		16	526	28.33	19	23.94	154	57.37	6.48	2.6	.5	18	0	201	.20	3	2.2	1.3	13	LER
		16	652	9.65	19	19.45	155	13.42	5.03	1.6	.9	15	0	72	.14	5	.9	3.4	13	UER
		16	710	16.39	19	23.43	155	24.39	10.64	1.7	1.2	16	0	73	.09	6	.9	2.4	14	UKF
		16	713	50.66	19	28.45	155	23.43	5.21	1.9	1.9	19	0	86	.13	3	.9	2.2	17	UKF
		16	748	21.40	19	21.53	155	6.51	3.91	1.9	.8	21	1	99	.15	6	.9	3.5	21	UER
		16	749	24.90	19	24.08	155	16.89	2.41	1.8	2.4	8	1	83	.11	2	.6	.9	7	SPC
		16	757	59.48	19	23.31	155	6.26	3.10	1.8	2.1	16	0	89	.14	7	.9	4.9	16	GLN
		16	821	28.78	19	21.90	155	15.48	3.46	1.3	1.3	20	0	70	.15	1	.6	.9	19	KOA
		16	851	23.26	19	21.17	155	8.14	7.75	2.7	2.8	33	2	73	.12	3	.6	1.2	30	UER
		16	852	20.52	19	20.67	155	7.54	5.62	2.3	1.6	17	1	88	.12	5	.8	1.9	14	UER
		16	913	12.63	19	23.65	155	17.49	1.67	1.8	2.1	8	1	73	.08	3	.5	1.1	7	SPC
		16	915	47.76	19	24.53	155	16.52	.06	1.3	1.9	8	1	138	.16	1	.6	.9	7	SPC
		16	920	33.74	19	20.06	154	57.17	4.59	3.1	3.7	29	1	235	.20	10	1.4	1.4	28	LER
		16	925	32.75	19	23.63	155	16.56	.02	1.6	1.7	10	1	132	.25	3	.7	1.3	7	SPC
		16	941	59.31	19	24.44	155	17.12	2.48	1.6		8	0	109	.12	2	.7	1.1	5	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	16	1045	.45	19	22.86	154	59.39	7.27	2.1	1.5	23	2	190	.17	4	1.3	2.0	19	LER
		16	11 9	29.16	19	12.63	155	32.56	9.35	2.2	1.3	20	0	129	.12	9	.9	1.5	19	LSW
		16	1127	7.91	19	23.41	155	5.87	.41	2.1	2.3	29	2	74	.16	7	.6	.8	27	MER
		16	1137	43.88	19	21.36	155	3.74	8.58	3.3	3.6	58	2	100	.10	3	.7	.7	32	MER
		16	1147	8.62	19	21.73	155	3.09	5.01	2.0	1.9	24	1	123	.19	3	1.0	2.7	21	MER
		16	1159	6.43	19	19.86	155	6.14	6.99	2.0	1.8	27	2	127	.12	6	.8	1.7	25	UER
		16	12 3	39.10	19	22.43	154	59.85	7.74	2.8	2.6	30	2	187	.13	5	.9	.8	27	LER
		16	1223	53.05	19	20.79	155	3.57	5.96	2.0	1.9	22	1	96	.17	2	1.1	2.0	19	MER
		16	1226	.58	19	19.11	155	10.98	3.90	2.0	1.8	25	1	108	.15	6	.7	2.5	21	UER
		16	1244	30.45	19	20.23	155	12.90	5.76	1.9	1.3	25	0	69	.13	5	.8	1.4	24	UER
		16	1245	35.12	19	21.48	154	59.31	9.20	2.2	1.8	24	2	212	.19	7	1.6	1.1	21	LER
		16	1248	44.19	19	21.97	155	5.69	6.33	1.9	1.3	20	0	77	.17	6	1.0	3.8	20	MER
		16	1257	16.74	19	22.81	155	24.66	8.30	1.6	2.2	23	0	63	.12	5	.7	1.6	21	UKF
		16	13 2	49.98	19	23.07	155	2.07	7.57	2.4	2.8	28	2	139	.17	6	.8	1.2	23	MER
		16	1359	11.10	19	27.58	155	21.74	6.81	3.2	3.2	35	1	67	.15	5	.7	1.4	30	UKF
		16	14 1	28.33	19	19.49	155	9.64	6.09	2.0	2.1	29	1	93	.10	5	.7	1.4	28	UER
		16	14 5	6.67	19	22.69	155	1.04	7.36	1.9	1.8	23	0	183	.15	6	1.4	1.0	19	MER
		16	1429	43.12	19	23.85	155	17.18	.21	2.4	2.9	18	2	54	.40	2	.7	.8	15	SPC
		16	1440	58.05	19	19.83	154	57.85	2.13	1.9	1.7	17	0	239	.25	9	3.4	10.7	17	DIS
		16	1519	13.28	19	23.34	155	17.49	.09	1.4	1.8	10	2	88	.31	3	.7	1.4	9	SPC
		16	1522	53.95	19	21.48	154	59.70	7.21	2.0	1.9	22	1	22	.20	6	1.3	1.2	20	LER
		16	16 1	49.65	19	20.98	155	2.03	7.20	2.5	2.4	31	1	174	.10	3	.9	.7	28	MER
		16	1639	42.19	19	27.81	155	21.08	6.81	1.3	1.3	8	0	196	.11	5	2.1	3.8	8	UKF
		16	17 1	25.54	19	13.44	155	8.35	8.99		1.3	20	0	236	.13	15	2.6	1.2	20	POL
		16	1711	35.92	19	24.40	155	3.00	.93	2.0	2.1	17	2	100	.11	8	.6	.9	16	MER
		16	1715	51.20	19	27.75	155	21.31	8.00	1.6	1.6	12	0	163	.11	5	1.3	3.1	11	UKF
		16	1718	33.72	19	24.34	155	16.78	.76	1.1	1.8	9	0	102	.14	1	.6	.8	8	SPC
		16	1726	33.25	19	23.61	155	5.82	2.07	1.9	1.0	19	0	75	.11	8	.8	5.7	18	MER
		16	1728	31.46	19	21.44	155	15.98	1.41	1.5	.9	13	0	68	.07	2	.5	.7	11	KOA
		16	1735	43.15	19	23.91	155	17.45	.02	1.5	1.9	9	1	129	.39	2	.7	1.6	7	SPC
		16	1738	22.74	19	20.87	155	1.99	6.77	2.3	2.3	24	1	179	.14	2	.9	1.5	22	MER
		16	1740	59.97	19	23.06	155	24.94	7.42	2.3	1.9	28	2	84	.19	5	.6	1.9	25	UKF
		16	1743	.56	19	21.33	155	6.56	4.78	1.8	1.5	23	1	87	.12	6	.8	4.7	22	UER
		16	1835	10.12	19	22.25	155	2.97	4.32	2.0	1.9	24	0	125	.14	4	1.0	4.2	23	MER
		16	1840	36.34	19	20.39	155	4.82	6.25	2.6	3.1	31	0	121	.11	3	.8	1.5	30	MER
		16	1854	4.73	19	21.37	155	1.32	3.88	1.9	1.8	25	0	183	.23	4	1.3	2.8	22	MER
		16	1922	47.97	19	24.07	155	2.56	4.05	2.0	2.4	23	1	112	.16	7	.8	6.2	22	MER
		16	1937	49.31	19	23.72	155	26.86	11.16	2.9	3.1	35	1	48	.13	3	.5	.7	33	UKF
		16	20 4	33.52	19	21.86	155	6.30	6.76	2.5	2.6	29	2	79	.13	6	.6	1.8	24	UER
		16	2026	13.25	19	19.42	155	3.67	8.04	3.3	3.2	32	2	189	.10	2	.8	.8	28	MER
		16	2037	31.23	19	19.52	155	3.27	6.76	2.2	2.7	26	1	201	.14	1	1.0	1.1	25	MER
		16	2042	4.81	19	22.89	155	2.09	6.82	2.0	2.0	22	2	142	.17	6	.8	1.7	19	MER
		16	21 5	15.27	19	22.06	155	3.27	4.55	1.9	1.5	20	0	117	.15	4	1.1	4.3	19	MER
		16	21 6	18.45	19	20.35	154	59.35	8.83	1.8	1.6	20	0	217	.14	9	2.5	1.6	19	LER
		16	2113	7.99	19	19.09	155	11.51	5.83	2.0	1.8	29	1	106	.16	5	.8	1.4	25	UER
		16	2136	26.43	19	23.00	154	58.66	7.57	1.3	1.8	20	0	217	.16	4	1.9	1.2	18	LER
		16	2158	56.15	19	20.74	155	13.14	6.50	1.4	1.3	23	0	61	.12	4	.8	1.4	21	UER
		16	2159	29.26	19	20.91	155	8.41	6.49	2.0	2.4	30	2	73	.13	3	.6	1.5	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	16	22 1	13.63	19	22.20	155	1.24	2.30	1.3	1.3	18	0	170	.20	5	1.8	3.7	16	MER
		16	23 1	17.99	19	22.57	155	.53	5.97	1.9	1.6	23	0	178	.16	6	1.1	1.6	16	LER
		16	2314	7.06	19	20.96	155	6.18	3.99	2.0	1.8	29	3	98	.16	6	.8	3.5	26	UER
		16	2321	55.75	19	23.18	155	5.94	.19	2.0	2.1	27	2	66	.15	7	.7	.7	24	MER
		16	2344	5.63	19	23.83	155	2.54	2.63	1.9	1.3	26	1	116	.16	3	.7	1.2	24	MER
		16	2345	9.71	19	20.82	155	2.29	7.56	3.0	3.4	32	2	168	.09	2	.8	.7	27	MER
		16	2353	3.29	19	24.11	155	15.46	.43	1.8	2.6	11	1	112	.23	2	.6	1.5	10	SPC
		17	0 4	31.47	19	20.67	155	2.04	6.92	2.1	1.6	27	2	185	.20	2	.9	1.2	20	MER
		17	0 5	2.07	19	21.39	155	15.22	1.54	1.9	2.3	14	0	65	.08	2	.5	1.0	14	KOA
		17	018	14.55	19	23.76	155	17.18	.34	2.1	2.6	14	2	48	.50	2	.9	1.1	11	SPC
		17	052	15.95	19	20.86	155	14.80	2.51	1.3	1.5	11	0	86	.09	4	.7	1.6	10	UER
		17	1 1	19.69	19	25.67	155	23.16	14.01	1.5	1.3	14	0	97	.11	7	1.1	1.7	13	UKF
		17	1 2	48.99	19	21.13	155	2.83	7.24	2.1	2.0	26	1	137	.11	2	.8	1.3	23	MER
		17	129	41.51	19	25.51	155	25.86	9.83	1.7	1.3	16	0	65	.14	6	.8	2.5	13	UKF
		17	145	35.65	19	21.15	155	3.05	5.20	1.9	1.9	22	2	126	.14	2	.9	2.0	18	MER
		17	148	8.65	19	21.14	155	6.82	4.84	1.9	1.8	25	2	88	.14	6	.7	3.9	20	UER
		17	213	16.59	19	24.39	155	3.12	.60	1.9	1.6	16	1	98	.10	8	.6	1.0	15	MER
		17	220	17.40	19	23.68	155	24.26	9.28	1.5	1.3	15	0	75	.11	6	.9	1.6	15	UKF
		17	239	6.11	19	24.09	155	17.00	1.29	1.7	2.4	12	0	77	.15	2	.6	.9	11	SPC
		17	313	52.47	19	23.74	154	59.29	6.98		1.3	19	0	188	.24	3	1.8	1.4	14	LER
		17	4 1	47.09	19	21.27	154	57.12	7.83	3.0	3.4	31	2	218	.13	8	1.3	.9	29	LER
		17	444	33.96	19	22.72	155	15.25	26.21	2.3	2.1	34	2	51	.18	1	.9	1.8	29	DEP
		17	454	23.30	19	20.97	155	11.45	11.11	1.8	1.8	19	0	69	.08	3	.8	1.4	17	UER
		17	5 4	58.73	19	23.30	155	2.36	5.91	2.2	2.1	28	2	129	.16	6	.8	2.0	22	MER
		17	537	53.10	19	20.25	155	3.17	7.31	2.4	2.4	27	2	101	.14	1	1.0	1.1	22	MER
		17	712	6.80	19	23.59	155	2.44	5.52	1.9	1.6	21	0	122	.14	7	.9	2.3	21	MER
		17	720	13.87	19	20.57	155	3.06	6.20	2.0	1.6	27	2	122	.14	1	.7	1.3	22	MER
		17	817	18.51	19	21.21	155	.20	8.74	2.3	2.4	18	2	221	.18	8	1.2	1.8	14	LER
		17	849	18.42	19	24.36	155	16.39	.03	1.8	2.4	11	0	126	.40	2	.8	1.4	9	SPC
		17	947	54.91	19	18.99	155	.34	6.38	2.1	2.0	15	1	254	.16	12	2.6	2.3	13	DIS
		17	953	57.59	19	23.86	155	17.09	4.59	2.0	1.3	7	1	125	.11	3	1.2	1.8	6	SPC
		17	955	48.04	19	21.89	155	15.37	3.86	1.6	2.0	14	1	132	.08	1	.6	1.0	11	KOA
		17	1020	25.57	19	18.83	155	13.44	9.59	2.8	3.0	19	1	171	.08	7	1.0	1.5	17	POL
		17	1024	22.02	19	23.05	155	2.10	4.38	1.9	1.8	14	1	203	.13	7	2.3	13.6	13	MER
		17	11 3	7.77	19	19.93	155	8.44	8.29	2.1	2.4	19	3	199	.11	5	1.2	2.0	16	UER
		17	12 2	47.92	19	20.72	155	5.37	.85	2.7	2.9	9	0	213	.32	8	3.9	14.2	9	MER
		17	1249	29.77	19	19.23	155	2.07	3.69	1.7	1.9	25	0	212	.14	2	1.7	1.2	22	MER
		17	1330	2.20	19	21.72	155	2.86	6.07	1.9	2.0	27	3	135	.22	3	.9	1.8	25	MER
		17	1411	2.77	19	23.83	155	15.23	5.00	2.1	2.1	8	1	981	1.50	2	8.3	12.4	6	SPC
		17	1443	37.77	19	18.31	155	15.61	6.91		1.8	25	0	139	.07	4	.8	1.1	25	KOA
		17	1446	53.85	19	21.70	155	1.63	4.86	2.0	2.0	24	1	169	.14	4	.9	2.3	23	MER
		17	1519	23.71	19	21.87	155	6.35	8.57	3.7	4.0	39	3	78	.11	6	.5	.8	34	UER
		17	16 8	.90	19	25.15	155	23.79	8.30		1.5	20	0	60	.12	8	.7	2.1	20	UKF
		17	1618	57.03	19	20.49	155	8.54	6.25	2.1	2.4	31	1	74	.12	4	.7	1.3	25	UER
		17	1726	20.63	19	21.16	154	58.67	6.34	2.2	2.0	28	2	215	.21	7	1.2	1.1	25	LER
		17	1729	30.28	19	21.96	155	24.93	10.46		1.3	14	0	101	.09	4	.9	2.2	13	SWR
		17	1828	56.00	19	21.80	155	6.50	6.11	2.1	1.9	25	0	79	.11	6	.7	1.8	24	UER
		17	1836	48.68	19	21.94	155	6.24	2.65	2.0	1.2	26	1	78	.17	6	.7	2.2	23	UER

YEAR	MON	ORIGIN DA	TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	17	1851	13.29	19	21.09	155	2.92	4.80	2.0	1.9	22	0	134	.22	2	1.4	2.8	20	MER
		17	1855	27.45	19	19.63	155	16.05	7.33	1.5	1.9	26	1	100	.13	3	.7	1.2	25	KOA
		17	1916	59.24	19	20.60	155	5.84	7.50	2.2	1.8	23	0	108	.10	5	.9	1.1	22	MER
		17	2034	37.54	19	23.94	155	3.54	3.71	2.0	1.6	25	0	97	.14	8	.8	11.7	23	MER
		17	2246	21.22	19	21.08	154	59.19	8.15	2.1	2.0	30	2	212	.23	7	1.5	1.0	25	LER
		17	2331	6.89	19	23.77	155	16.63	.00	2.8	3.7	26	2	45	.54	2	.8	1.0	21	SPC
		18	0	3 50.71	19	23.98	155	17.23	.01	1.7	2.3	10	1	79	.31	2	.6	1.3	8	SPC
		18	055	13.76	19	23.68	155	2.54	5.25	2.1	1.9	24	0	119	.15	7	.9	2.8	23	MER
		18	058	1.57	19	17.70	154	56.15	6.52	2.2	1.6	27	1	254	.17	15	2.0	1.5	22	DIS
		18	110	45.33	19	21.36	155	1.00	5.64	2.1	1.9	25	1	189	.20	4	1.0	1.6	23	MER
		18	2	3 48.30	19	23.04	155	6.38	.03	1.9	1.9	26	2	62	.19	6	.7	.9	22	GLN
		18	235	2.56	19	23.33	155	5.02	2.43	3.0	3.8	28	0	77	.12	3	.7	1.2	28	MER
		18	338	44.34	19	24.11	155	16.94	.27	2.0	2.8	12	1	81	.16	2	.5	.9	9	SPC
		18	356	52.55	19	24.45	155	16.32	2.25	1.0	1.0	8	1	132	.14	2	.9	.8	7	SPC
		18	434	23.45	19	24.72	155	16.10	.10	1.1	1.5	10	1	143	.28	2	1.0	1.0	8	SPC
		18	5	3 21.53	19	24.04	155	16.82	.00	1.8	2.4	10	1	86	.26	2	.6	1.1	9	SPC
		18	5	4 59.77	19	23.84	155	17.06	.02	2.2	2.9	12	2	53	.27	2	.6	1.0	10	SPC
		18	515	20.94	19	20.97	155	2.04	5.75	2.1	2.3	30	2	175	.14	3	.8	1.3	28	MER
		18	524	55.20	19	20.39	155	.72	8.99	2.7	2.8	34	2	209	.12	4	1.1	.7	31	LER
		18	551	25.80	19	23.99	155	2.51	3.32	2.0	2.0	29	2	114	.22	3	.8	1.6	27	MER
		18	639	28.45	19	20.54	155	2.24	7.44	2.1	2.2	31	2	184	.17	2	1.1	.8	28	MER
		18	836	27.17	19	20.86	155	.74	5.25	2.1	2.0	28	2	203	.22	4	1.0	1.5	25	LER
		18	941	12.17	19	24.15	155	28.46	9.86	2.4	2.2	25	3	53	.15	3	.6	1.4	20	UKF
		18	10	2 54.97	19	20.68	155	16.71	1.62	1.3	1.9	7	0	154	.11	2	1.2	.8	7	KOA
		18	1012	42.83	19	21.38	155	5.23	6.95	1.9	1.7	18	0	213	.14	8	1.7	1.5	17	MER
		18	1058	59.24	19	21.69	155	6.46	7.46	3.1	3.3	34	1	81	.11	6	.6	1.1	32	UER
		18	1315	44.89	19	21.98	155	6.37	6.73	2.9	2.8	34	2	76	.11	7	.6	1.5	31	UER
		18	1516	11.39	19	24.74	155	28.58	7.18		1.4	19	0	63	.12	4	.8	2.3	18	UKF
		18	1627	46.39	19	18.94	155	11.98	6.44	2.2	2.0	28	2	105	.14	4	.7	1.4	25	POL
		18	1657	58.98	19	20.80	155	12.47	7.69		.7	19	0	67	.14	4	.9	1.6	19	UER
		18	1734	42.42	19	21.31	155	6.98	4.19		1.8	28	0	84	.16	5	.8	3.2	24	UER
		18	1853	16.92	19	27.18	155	23.82	7.21	1.8	1.9	15	1	50	.15	5	.8	2.5	12	UKF
		18	20	3 31.03	19	23.80	154	57.73	7.33	2.0	1.6	19	1	216	.11	3	1.7	1.1	19	LER
		18	2041	9.14	19	22.93	154	58.76	9.72	1.7	1.1	18	1	216	.11	4	1.3	1.0	16	LER
		18	2043	47.93	19	22.04	154	58.84	8.40	1.7	1.3	25	2	29	.23	6	1.4	1.0	21	LER
		18	2131	17.94	19	21.44	155	3.19	5.23	1.9	1.3	25	2	120	.15	3	.8	2.1	21	MER
		18	2142	27.35	19	21.13	155	1.26	5.44	2.0	2.0	27	1	190	.17	4	.9	1.3	25	MER
		18	22	1 10.89	19	23.91	155	16.98	.08	1.9	2.7	11	1	74	.23	2	.5	1.2	9	SPC
		18	22	3 42.67	19	21.15	155	.23	5.05	1.6	1.6	18	0	204	.21	5	1.8	5.2	16	LER
		18	22	8 49.69	19	25.26	155	13.94	10.01	2.1	2.1	9	1	275	.50	1	4.9	3.5	5	GLN
		18	2321	.04	19	21.93	154	58.15	9.06	1.4	1.4	21	1	212	.20	6	2.3	1.2	15	LER
		18	2344	46.64	19	20.66	155	1.36	8.40	2.1	1.8	24	2	201	.23	3	1.1	1.2	19	MER
		18	2349	5.07	19	21.72	154	59.53	8.28	2.2	1.8	23	2	203	.19	7	1.1	1.4	15	LER
		19	114	22.55	19	20.88	155	.91	4.48	2.1	1.9	25	1	202	.14	4	1.2	3.0	22	LER
		19	145	55.09	19	20.39	154	56.36	6.82	2.6	2.4	28	2	232	.14	10	1.5	1.2	24	LER
		19	259	10.03	19	18.76	155	13.42	10.19	3.5	3.5	39	2	77	.10	3	.5	.6	34	POL
		19	337	50.23	19	20.76	155	15.42	.04	3.5	4.1	32	1	74	.20	3	.4	.7	23	KOA
		19	346	17.85	19	21.02	155	15.27	.29	1.9	1.9	15	2	70	.10	3	.4	.6	13	KOA

YEAR	MON	ORIGIN DA	TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	19	356	13.56	19	22.49	155	4.50	7.55	2.4	2.3	27	1	86	.11	6	.6	1.2	21	MER
		19	448	10.69	19	21.29	155	15.32	1.54	1.9	2.3	16	0	67	.08	2	.5	.9	14	KOA
		19	520	42.06	19	20.99	155	16.29	1.64		1.3	8	0	85	.05	3	.7	.8	7	KOA
		19	535	13.21	19	20.96	155	.87	7.08	2.0	1.8	27	3	201	.18	4	.9	1.0	21	LER
		19	612	44.70	19	20.89	155	16.00	.14	2.8	3.5	34	3	73	.13	3	.4	.4	27	KOA
		19	654	26.26	19	21.02	155	15.20	.00	2.1	2.4	22	2	70	.15	3	.4	.4	19	KOA
		19	658	51.07	19	19.71	155	3.68	5.58	1.9	1.0	22	2	167	.13	1	.9	1.6	20	MER
		19	714	39.41	19	21.16	155	8.09	7.56	3.1	3.6	37	3	74	.12	4	.6	1.1	33	UER
		19	753	46.27	19	20.96	155	16.32	1.39	1.5	2.1	20	1	72	.08	3	.5	.7	17	KOA
		19	9	1 45.11	19	21.59	155	7.78	8.77	4.0	4.2	39	2	73	.10	4	.5	.8	34	UER
		19	1049	38.13	19	21.09	155	2.95	7.02	2.5	2.7	28	3	131	.18	2	.8	1.3	26	MER
		19	1117	59.18	19	18.96	155	30.39	7.50		1.4	17	0	109	.15	8	.9	3.5	17	HEA
		19	12	3 22.64	19	19.53	155	11.45	7.44	1.8	1.9	27	0	95	.12	5	.7	1.1	27	UER
		19	1257	17.98	19	20.94	155	15.39	.01	2.5	2.8	28	3	71	.12	3	.4	.4	25	KOA
		19	1436	56.16	19	23.97	155	15.79	2.81	1.9	2.1	21	1	40	.09	3	.5	.6	18	SPC
		19	1517	31.77	19	21.43	155	2.58	7.43	3.0	3.3	32	2	144	.13	3	.6	.8	30	MER
		19	1545	6.58	19	21.15	155	.52	7.91	1.9	1.4	25	2	30	.19	5	1.4	.9	19	LER
		19	16	3 14.22	19	14.71	155	29.85	11.22	3.0	3.3	36	2	130	.19	13	.8	.7	28	LSW
		19	1631	33.54	19	19.85	155	11.88	6.05	1.4	1.0	21	0	86	.13	5	.8	1.6	18	UER
		19	1640	59.31	19	18.46	155	5.65	6.33	2.4	2.4	33	2	184	.18	5	.8	1.3	31	MER
		19	1738	37.77	19	26.03	155	28.15	7.95	2.3	2.1	35	2	48	.12	7	.5	1.4	31	UKF
		19	1825	23.46	19	24.94	155	23.50	10.23	2.8	2.7	36	1	37	.13	7	.6	.8	32	UKF
		19	1931	50.69	19	26.00	154	57.26	5.71		1.2	19	0	188	.16	3	1.5	1.5	18	LER
		19	1958	1.38	19	21.20	155	7.80	5.09		1.0	25	0	78	.16	4	.8	2.7	22	UER
		19	2122	51.67	19	30.83	155	22.52	1.04	2.0	2.3	20	2	68	.15	2	.6	.8	12	NER
		19	2334	39.77	19	21.85	155	3.08	5.86	2.1	2.1	22	2	123	.12	4	.7	1.5	19	MER
		20	322	19.69	19	21.73	155	.75	7.60	2.1	2.0	28	2	186	.16	5	.9	1.1	23	LER
		20	340	1.98	19	23.66	154	58.06	7.19	1.9	1.3	18	0	197	.13	3	1.5	1.2	15	LER
		20	426	40.12	19	12.48	155	28.03	36.48	2.4	1.0	23	2	149	.10	17	1.4	2.0	23	LSW
		20	437	24.30	19	20.95	155	1.59	7.33	2.1	1.2	26	2	188	.18	3	1.0	1.2	24	MER
		20	525	37.41	19	20.63	155	6.60	5.64	2.0	1.1	27	2	101	.14	6	.7	3.1	24	UER
		20	536	6.21	19	30.66	155	22.55	1.28	2.0	2.2	19	1	75	.12	2	.6	.8	15	NER
		20	946	.85	19	31.09	155	22.15	4.15	2.0	2.6	17	1	143	.22	10	1.2	10.0	16	NER
		20	1226	51.65	19	55.65	155	16.01	11.30	2.4	2.5	29	2	252	.10	9	2.4	.9	22	KKU
		20	1247	28.42	19	18.94	155	14.26	7.23	2.0	2.1	29	2	99	.13	4	.7	1.3	23	POL
		20	1556	9.49	19	21.31	155	3.47	5.27	2.0	1.9	28	2	109	.14	3	.7	1.8	20	MER
		20	1645	8.27	19	18.96	155	11.63	7.23	1.9	1.9	28	1	109	.12	5	.7	1.2	25	POL
		20	1744	6.88	19	22.05	155	15.22	34.65		1.7	30	0	58	.09	1	1.3	2.2	28	DEP
		20	1920	38.01	19	22.79	154	59.37	9.17	2.0	2.1	27	0	188	.16	5	1.6	.8	25	LER
		20	1956	50.77	19	25.67	155	13.81	7.11	1.4	1.2	11	1	178	.16	2	1.5	1.4	9	GLN
		20	2036	44.40	19	22.25	154	59.92	8.86	1.8	1.6	24	0	189	.17	6	1.7	.8	24	LER
		20	21	1 41.48	19	21.52	155	6.58	6.11	1.9	1.6	26	2	84	.14	6	.7	2.1	24	UER
		20	2145	30.74	19	18.80	155	13.56	9.05	1.8	1.4	21	0	72	.11	3	.9	1.2	20	POL
		20	23	8 17.66	19	24.75	155	25.31	8.10		1.4	13	0	70	.10	6	.9	2.7	12	UKF
		20	2315	58.07	19	25.21	155	25.70	11.42	1.6	1.8	20	0	59	.12	6	.8	1.3	18	UKF
		20	2331	14.51	19	27.00	155	22.20	7.71	2.3	2.6	30	4	40	.14	6	.5	1.4	20	UKF
		21	138	27.26	19	25.84	155	15.36	2.49	1.4	2.1	8	1	187	.08	3	1.3	.9	7	SPC
		21	142	36.67	19	21.42	155	6.20	6.69	1.9	1.4	28	1	87	.15	6	.7	1.9	21	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	21	814	47.28	19	31.95	155	23.46	6.10	1.8	1.7	14	0	109	.16	4	1.1	2.8	13	NER
		21	823	32.74	19	28.01	154	54.00	4.82	1.9	1.8	17	0	196	.13	2	2.7	2.2	13	LER
		21	829	4.64	19	27.16	154	52.68	5.11	1.9	1.7	19	3	255	.14	3	1.5	1.6	16	LER
		21	857	17.44	19	18.96	155	9.95	7.97		1.5	24	0	111	.10	5	.9	1.4	24	POL
		21	9	3 50.39	19	25.14	155	25.00	12.16		1.9	21	0	73	.12	7	.9	1.7	17	UKF
		21	920	38.77	19	23.96	155	14.97	1.46	2.1	2.4	12	1	911	.19	2	2.6	3.9	10	GLN
		21	1229	1.31	19	19.89	155	6.51	9.73	2.6	2.5	33	2	120	.10	5	.7	.7	28	UER
		21	13	2 .52	19	21.66	155	3.65	5.09	2.1	2.1	21	1	106	.14	3	1.2	3.3	19	MER
		21	1823	7.66	19	26.73	155	24.32	8.04	2.2	2.3	20	0	46	.11	6	.8	2.2	16	UKF
		21	2136	15.53	19	25.20	155	15.76	2.83	2.0	2.3	22	1	44	.18	3	.6	.8	19	SPC
		21	2253	17.32	19	24.54	155	24.82	9.34	1.5	1.3	20	0	70	.11	6	.7	1.7	16	UKF
		22	028	37.29	19	25.65	155	13.54	7.82	2.1	1.6	8	1	279	.34	2	4.5	3.2	7	GLN
		22	141	27.29	19	21.83	155	6.90	7.71	2.1	2.3	31	2	76	.12	5	.6	1.4	25	UER
		22	341	8.85	19	23.49	154	59.18	6.20		1.4	14	0	209	.11	3	1.7	1.9	14	LER
		22	427	49.15	19	20.25	155	.59	8.87	2.0	1.8	28	2	210	.16	4	1.3	.9	20	LER
		22	432	37.42	19	24.19	155	26.27	8.58		1.3	15	0	51	.12	4	.9	2.1	13	UKF
		22	648	14.21	19	21.04	155	3.38	4.99	1.9	1.9	23	1	109	.17	2	1.0	2.5	19	MER
		22	8	0 49.37	19	27.99	155	22.95	6.58	2.2	2.3	26	1	50	.19	3	.7	2.0	24	UKF
		22	10	5 37.34	19	19.13	155	12.49	4.12	2.0	2.2	27	1	92	.13	4	.7	2.7	22	UER
		22	1522	14.71	19	26.50	155	29.56	11.65	1.9	2.3	16	0	67	.13	8	1.0	2.3	14	UKF
		22	1623	20.10	19	24.91	155	24.20	11.73	1.7	1.8	17	0	65	.09	7	1.0	2.5	16	UKF
		22	1846	12.46	19	20.98	155	2.97	7.12	2.1	2.4	23	1	130	.11	2	.9	1.0	21	MER
		23	018	11.73	19	22.62	155	4.56	7.67	2.1	2.2	29	3	85	.10	6	.6	1.3	19	MER
		23	126	14.10	19	24.45	155	17.16	7.13	1.5	2.2	17	0	60	.11	1	.7	1.5	17	LPC
		23	2	8 44.01	19	21.20	155	2.83	8.37	3.9	4.2	39	2	136	.10	2	.7	.6	35	MER
		23	259	56.68	19	24.94	155	15.42	2.22	2.9	3.8	34	1	36	.14	2	.5	.7	31	SPC
		23	442	33.71	19	21.55	155	6.61	7.83	2.5	2.8	33	2	82	.09	6	.6	1.1	27	UER
		23	724	43.20	19	31.82	155	12.71	5.65	2.6	2.5	6	0	323	.84	14	98.5	76.1	5	MER
		23	728	35.38	19	21.36	155	2.58	7.92	2.1	2.3	28	0	146	.13	3	1.1	.8	27	MER
		23	959	59.42	19	21.52	155	2.11	6.30	2.1	1.9	26	1	159	.16	5	.8	1.2	24	MER
		23	1033	40.05	19	16.84	155	22.51	8.77	3.4	4.0	36	1	128	.17	6	.7	.9	33	SWR
		23	1312	42.81	19	20.52	155	13.49	5.78	1.6	1.6	26	0	64	.13	4	.8	1.5	25	UER
		23	1611	40.58	19	20.77	155	2.99	6.41	2.7	2.8	28	2	129	.11	2	.7	1.3	23	MER
		23	1739	11.46	18	56.34	155	21.87	16.61	2.7	1.9	34	4	266	.20	27	3.2	38.5	30	DIS
		23	1828	30.24	19	20.19	155	2.76	7.13	2.4	2.5	30	2	167	.14	1	.8	1.1	28	MER
		23	1942	53.96	19	20.86	155	2.20	5.65	2.0	1.7	24	0	172	.21	2	1.3	1.5	21	MER
		24	425	33.38	19	58.52	155	20.25	12.51	2.3	2.1	32	3	202	.14	39	1.0	1.7	30	KKU
		24	455	3.81	19	20.90	155	5.51	7.47	2.0	1.9	30	4	103	.16	5	.6	1.3	24	MER
		24	816	21.26	19	20.82	155	7.44	7.20	2.1	2.3	31	2	88	.15	5	.7	1.5	30	UER
		24	952	32.45	19	18.49	155	14.96	6.55		1.3	18	0	126	.08	4	.9	1.8	18	POL
		24	1031	37.43	19	21.13	155	3.05	7.07	2.1	2.4	26	1	126	.14	2	.9	1.2	23	MER
		24	1126	39.03	19	20.79	155	2.86	6.87	2.1	1.8	23	1	139	.18	2	1.2	1.4	22	MER
		24	12	0 9.73	19	19.21	155	11.93	6.09	1.7	1.8	25	0	98	.11	5	.7	1.3	23	UER
		24	1215	39.77	19	21.46	155	6.27	7.87	2.3	2.2	32	2	86	.11	6	.6	1.1	29	UER
		24	1225	40.29	19	21.31	155	2.70	5.57	2.1	2.2	22	1	141	.11	5	.7	1.4	21	MER
		24	1228	57.82	19	18.83	155	13.39	7.35	1.9	2.0	28	1	77	.12	3	.7	1.2	25	POL
		24	1420	25.80	19	18.86	155	13.19	7.87	2.0	1.9	29	0	83	.11	3	.7	1.0	27	POL
		24	1644	32.09	19	19.92	155	12.99	5.81	1.8	1.5	22	1	72	.13	5	.7	2.0	20	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	24	1652	5.55	19	24.26	155	17.18	.77	1.9	2.7	9	0	68	.11	1	.6	.9	8	SPC
		24	2016	.14	19	59.91	157	46.74	2.60	3.6	2.6	43	11	235	.27	160	2.9	1.4	35	DIS
		25	047	45.98	19	24.08	155	16.37	16.78	1.7	1.3	29	2	61	.09	2	.7	.8	29	DEP
		25	5	4 58.60	19	19.98	155	11.57	6.46	1.6	1.2	21	0	90	.15	5	.8	1.8	19	UER
		25	611	3.79	19	23.60	155	16.97	.35	2.5	3.2	19	0	47	.41	2	.7	1.4	18	SPC
		25	817	43.80	19	24.70	155	23.88	9.25	2.8	2.8	35	3	30	.12	8	.5	1.0	32	UKF
		25	1510	52.95	19	21.08	155	16.29	1.44	1.7	2.4	16	0	70	.09	3	.6	.8	16	KOA
		25	1623	45.42	19	18.87	155	16.12	8.30	2.4	2.6	29	0	104	.14	3	.8	1.2	29	KOA
		25	1920	59.59	19	20.30	155	13.43	5.16	1.9	2.0	23	1	62	.10	4	.7	2.1	22	UER
		25	1958	3.75	19	19.21	155	8.02	9.28	2.7	3.1	33	2	97	.08	3	.6	1.0	31	UER
		25	2259	44.73	19	20.93	154	59.60	5.77	2.3	2.1	29	2	210	.18	6	1.1	1.3	25	LER
		26	241	56.75	19	20.59	155	3.32	5.95	2.4	2.6	28	2	104	.13	1	.7	1.3	25	MER
		26	757	3.81	19	20.59	155	7.70	6.23	1.9	2.2	16	0	195	.12	5	1.9	2.5	16	UER
		26	817	29.96	19	21.49	155	1.74	2.97	1.9	1.8	23	0	171	.23	4	1.5	2.5	23	MER
		26	10	7 57.86	19	26.93	155	21.88	5.80	1.8	1.7	18	1	49	.13	6	.7	3.3	16	UKF
		26	1044	25.82	19	39.91	155	14.21	40.94	2.0	1.0	31	6	45	.12	17	1.2	1.4	29	NER
		26	1227	55.83	19	21.72	155	6.41	6.25	1.9	1.4	23	0	81	.13	6	.8	2.7	20	UER
		26	1328	29.92	19	21.52	155	1.07	3.55	2.0	1.9	23	2	184	.14	4	1.0	2.3	18	MER
		26	1349	3.99	19	24.61	155	24.49	10.54	1.7	1.5	15	0	75	.09	7	.9	2.5	15	UKF
		26	1458	26.04	19	20.81	155	8.30	5.34	2.0	2.1	26	1	74	.14	4	.7	2.3	25	UER
		26	1615	22.27	19	19.12	155	25.42	9.20	1.8	1.9	28	0	115	.13	4	.8	1.2	26	HEA
		26	1742	25.09	19	21.23	155	5.77	8.83	2.3	2.6	26	0	93	.10	6	.7	1.0	22	MER
		26	18	5 39.71	19	20.58	155	3.46	7.97	3.2	3.7	33	0	95	.09	2	1.0	.7	32	MER
		26	1952	26.73	19	22.98	154	58.76	6.96	3.0	3.4	29	1	193	.12	4	1.0	.8	26	LER
		26	2125	14.99	19	21.49	155	2.50	5.23	2.1	1.9	26	1	146	.11	3	.8	1.7	24	MER
		27	233	51.18	19	20.13	155	3.49	8.13	2.9	3.3	33	1	125	.10	1	.9	.6	32	MER
		27	442	7.91	19	19.04	155	13.57	7.08		1.2	19	0	70	.10	4	.8	1.6	18	UER
		27	543	27.58	19	19.63	155	8.04	4.58		1.2	21	0	91	.12	4	.8	3.1	19	UER
		27	722	28.90	19	19.41	155	18.90	5.71		1.4	17	1	87	.10	3	.9	1.3	17	KOA
		27	858	2.86	19	17.73	155	23.57	3.13	1.7	1.4	15	0	164	.13	5	1.1	2.6	15	SWR
		27	1035	21.03	19	24.63	155	17.14	1.42	.6	.7	9	0	69	.07	1	.6	.4	9	SPC
		27	1042	46.40	19	24.69	155	17.26	1.22	.6	1.4	9	0	92	.05	1	.6	.4	8	SPC
		27	1139	10.43	19	18.68	155	13.39	6.44	1.7	1.4	16	0	80	.09	3	.9	2.4	16	POL
		27	1159	18.72	19	24.52	155	17.18	1.48	.5	.8	8	0	82	.08	1	.7	.5	8	SPC
		27	1215	20.42	19	17.63	155	23.60	3.21	1.7	1.6	20	0	165	.10	5	1.0	2.4	20	SWR
		27	1223	55.73	19	24.55	155	17.14	1.40	.6	.8	9	0	69	.07	1	.6	.4	8	SPC
		27	1225	59.43	19	24.68	155	17.03	1.29	.6	.8	9	0	88	.07	0	.6	.5	9	SPC
		27	1231	21.06	19	24.49	155	17.10	1.40	.3	.5	7	0	81	.08	1	.6	.4	7	SPC
		27	1243	34.66	19	24.50	155	17.25	1.61	.7	1.1	10	0	74	.05	1	.6	.3	10	SPC
		27	1253	47.59	19	24.45	155	17.26	1.62	.9	1.3	9	0	72	.05	1	.7	.4	8	SPC
		27	1255	18.06	19	24.11	155	17.08	.47	.7	1.1	9	0	76	.09	1	.4	.5	8	SPC
		27	1256	5.84	19	24.10	155	17.24	2.08	.6	.3	8	0	122	.08	1	.8	.5	8	SPC
		27	1337	59.90	19	19.34	155	7.25	6.10		1.1	17	0	118	.09	4	1.1	2.9	17	UER
		27	1358	32.68	19	24.59	155	17.20	1.13	.2	.6	9	0	74	.11	1	.6	.4	8	SPC
		27	14	1 6.95	19	24.25	155	17.31	3.36		.3	6	0	125	.04	1	1.5	1.4	5	SPC
		27	14	5 9.60	19	24.48	155	17.12	1.68	.7	.7	9	0	74	.07	1	.6	.4	8	SPC
		27	1417	28.14	19	24.26	155	17.15	2.12	.5	.4	8	0	126	.09	1	.8	.5	8	SPC
		27	1420	50.31	19	24.53	155	17.16	1.21	.3	.3	9	0	67	.12	1	.6	.4	9	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	27	1433	53.71	19	24.71	155	17.39	.88	.1	.6	8	0	105	.11	1	.6	.5	8	SPC
		27	15 4	1.00	19	24.77	155	17.15	1.38	.7	.9	9	0	89	.04	0	.7	.4	9	SPC
		27	1534	17.20	19	19.99	155	6.23	7.21	2.6	3.4	35	2	84	.11	5	.6	1.1	31	UER
		27	16 9	10.51	19	24.59	155	17.28	1.25	.6	1.1	9	0	83	.04	1	.5	.3	8	SPC
		27	1618	25.72	19	24.51	155	17.14	1.41	.3	.5	8	0	82	.06	1	.7	.5	8	SPC
		27	1622	37.05	19	12.76	155	37.26	9.56	2.3	1.9	27	2	111	.23	4	1.1	1.4	25	HEA
		27	1632	17.18	19	24.66	155	17.08	1.47	.3	.4	9	0	78	.07	1	.7	.4	9	SPC
		27	1746	12.58	19	24.54	155	17.32	.88	.2	.6	8	0	87	.07	1	.5	.5	8	SPC
		27	1754	18.21	19	24.89	155	17.26	1.66	.2	.6	7	0	199	.09	0	1.0	.6	6	SPC
		27	1756	18.55	19	24.41	155	17.15	1.52	.4	.4	9	0	70	.06	1	.6	.4	8	SPC
		27	18 4	52.22	19	10.08	155	28.87	36.54	2.7	2.3	31	0	155	.12	17	1.4	2.9	24	LSW
		27	18 9	49.73	19	19.77	155	8.42	6.68		1.4	18	0	81	.08	5	.9	2.4	18	UER
		27	1819	23.19	19	24.77	155	17.35	1.42	.2	.5	9	0	112	.04	1	.7	.4	8	SPC
		27	1825	42.05	19	24.50	155	17.20	1.60	.6	1.2	8	0	84	.07	1	.7	.5	8	SPC
		27	1827	1.69	19	24.63	155	17.06	1.22	.2	.8	7	0	80	.03	1	.6	.4	7	SPC
		27	1829	27.65	19	24.70	155	17.00	1.44	.3	.6	8	0	95	.11	0	.7	.5	8	SPC
		27	1852	46.48	19	25.25	154	56.42	6.31	2.1	2.1	27	1	193	.14	4	1.1	1.1	22	LER
		27	1920	25.90	19	24.57	155	17.07	1.51	.3	.6	9	0	80	.08	1	.6	.4	8	SPC
		27	1939	13.67	19	24.65	155	17.26	1.26	.4	.5	9	0	87	.06	1	.6	.4	8	SPC
		27	1944	20.20	19	18.98	155	16.24	5.60		.6	19	0	120	.11	3	.8	1.9	18	KOA
		27	1956	16.73	19	24.45	155	17.19	1.43	.3	.3	9	0	70	.07	1	.6	.3	8	SPC
		27	20 5	44.14	19	24.52	155	17.18	1.62	.7	.6	10	0	67	.08	1	.6	.4	10	SPC
		27	20 6	3.97	19	24.79	155	17.23	1.18	.4	.5	9	0	104	.07	0	.6	.4	8	SPC
		27	2044	38.89	19	24.61	155	17.16	1.32	.5	.2	9	0	74	.08	1	.6	.4	9	SPC
		27	2057	40.04	19	24.61	155	17.38	1.27	.5	.7	8	0	94	.08	1	.6	.4	8	SPC
		27	21 2	45.82	19	22.14	155	26.69	7.09	2.1	2.1	30	0	64	.15	2	.7	1.5	29	UKF
		27	2121	6.19	19	21.82	155	2.63	4.99	1.9	1.3	28	1	139	.13	4	.8	2.4	25	MER
		27	2131	56.80	19	24.23	155	17.31	1.41	.4	.3	7	0	99	.09	1	.6	.6	7	SPC
		27	2133	37.65	19	24.61	155	17.17	1.14	.2	.4	9	0	73	.11	1	.6	.4	8	SPC
		27	2137	40.46	19	21.24	155	16.27	1.38		1.0	11	0	68	.05	2	.6	1.2	9	KOA
		27	22 7	30.99	19	24.43	155	17.32	1.45	.6	.7	9	0	76	.07	1	.6	.5	9	SPC
		27	2220	40.70	19	20.16	155	13.57	5.47		.6	17	0	68	.11	5	.8	2.6	16	UER
		27	2225	44.61	19	24.58	155	17.39	1.19	.2	.5	8	0	91	.11	1	.6	.6	8	SPC
		27	2228	14.44	19	24.64	155	17.35	1.26	.2	.5	7	0	94	.06	1	.6	.6	7	SPC
		27	2311	41.08	19	25.76	155	25.27	8.81	1.7	1.5	21	0	54	.12	7	.8	2.4	19	UKF
		28	017	49.34	19	24.59	155	17.27	1.60	.6	.9	10	0	82	.08	1	.6	.3	8	SPC
		28	023	5.29	19	24.45	155	17.27	1.44	.3	.6	8	0	88	.06	1	.6	.5	8	SPC
		28	037	20.74	19	22.27	155	1.28	4.49	2.0	1.7	25	2	166	.18	5	1.1	5.7	23	MER
		28	143	17.50	19	21.45	155	14.54	1.38	1.3	2.1	14	0	61	.05	3	.5	1.1	13	UER
		28	2 0	34.49	19	24.30	154	57.29	6.12	2.0	1.8	22	1	193	.12	3	1.0	1.6	20	LER
		28	241	2.74	19	24.50	155	17.16	1.20	.6	.8	9	0	67	.03	1	.5	.4	6	SPC
		28	335	34.01	19	24.57	155	17.31	1.47	.6	1.1	9	0	85	.06	1	.6	.4	9	SPC
		28	337	26.55	19	24.63	155	17.13	1.35	.5	.6	9	0	69	.08	1	.7	.4	7	SPC
		28	6 7	4.18	19	24.55	155	17.16	1.38	.5	.6	8	0	69	.07	1	.6	.4	7	SPC
		28	636	46.72	19	24.59	155	16.90	1.20	.6	1.4	10	0	105	.11	1	.6	.4	9	SPC
		28	648	24.12	19	20.85	155	7.84	6.35	2.0	2.4	26	2	81	.12	4	.7	2.0	24	UER
		28	650	11.05	19	24.56	155	16.91	1.56	.6	1.2	9	0	101	.12	1	.7	.5	7	SPC
		28	7 0	28.39	19	18.54	155	19.84	6.33		1.0	15	0	164	.12	2	1.1	2.3	15	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	28	7 2	23.05	19	24.56	155	17.20	1.44	.3	.4	8	0	81	.07	1	.7	.5	7	SPC
		28	722	52.64	19	19.32	155	14.17	5.56		1.2	18	0	69	.09	4	.7	2.3	18	UER
		28	738	1.12	19	20.77	155	5.41	7.96	3.7	4.0	35	1	103	.09	2	.8	.7	34	MER
		28	747	12.78	19	21.21	155	3.70	5.32	2.1	2.4	26	2	99	.13	3	.7	1.7	22	MER
		28	834	44.47	19	19.68	155	12.89	8.52	2.0	1.6	17	0	76	.09	5	1.1	2.0	16	UER
		28	1144	13.61	19	25.46	155	27.49	11.02	2.0	2.4	28	2	65	.12	5	.6	.9	21	UKF
		28	1239	57.36	19	21.01	155	2.87	5.30	1.9	2.1	18	1	137	.21	2	1.3	2.9	15	MER
		28	1312	39.11	19	17.88	155	23.37	3.50	1.7	1.9	13	0	163	.09	4	1.1	2.3	13	SWR
		28	1335	56.20	19	23.88	155	17.19	2.69	1.2	1.4	11	0	65	.07	1	.6	.5	7	SPC
		28	1410	47.26	19	20.47	155	17.11	2.06	1.3	1.6	13	0	75	.08	1	.7	.7	11	KOA
		28	1539	18.95	19	20.82	155	4.48	7.72		1.5	22	0	103	.13	3	1.4	2.3	17	MER
		28	1612	37.38	19	24.23	155	17.53	2.33	1.3	1.6	8	1	101	.09	1	.8	.9	7	SPC
		28	1627	55.18	19	25.31	155	16.02	2.15	2.3	2.7	22	1	77	.10	2	.4	.6	21	SPC
		28	1649	10.96	19	24.44	155	17.06	1.92	1.1	1.4	11	1	77	.13	1	.7	.5	9	SPC
		28	17 9	5.00	19	24.85	155	16.00	3.87	.8	.6	9	1	149	.17	2	1.2	1.1	7	SPC
		28	19 2	49.20	19	24.72	155	17.09	1.49	.5	.3	9	1	74	.09	0	.7	.5	7	SPC
		28	19 4	7.78	19	24.43	155	17.22	1.57	.4		7	0	87	.05	1	.6	.5	7	SPC
		28	1915	24.09	19	24.17	155	17.23	2.04	.5		8	1	98	.10	1	.6	.6	7	SPC
		28	2017	49.75	19	24.59	155	17.07	1.65	.6	.1	7	1	79	.08	1	.6	.7	6	SPC
		28	2042	.48	19	18.46	155	12.28	7.83	2.2	2.2	34	3	114	.17	3	.7	1.2	26	POL
		28	2159	39.18	19	21.18	155	16.46	1.48		1.6	10	0	132	.07	2	.6	.9	9	KOA
		28	22 6	46.04	19	21.39	155	1.59	4.93		1.6	17	0	176	.15	4	1.2	3.1	14	MER
		28	2210	39.32	19	24.49	155	17.19	1.52	.6	.6	10	1	84	.08	1	.6	.5	8	SPC
		28	2242	.61	19	12.94	155	36.05	9.04	2.3	2.2	23	0	115	.16	4	1.0	1.5	18	HEA
		28	2257	27.33	19	24.31	155	17.42	1.37	.7	.4	10	1	101	.13	1	.5	.5	8	SPC
		28	2320	37.52	19	24.37	155	17.12	1.65	.8	.5	11	1	73	.10	1	.6	.5	9	SPC
		28	2329	16.68	19	22.29	154	57.67	5.47	2.2	2.3	28	2	213	.18	6	1.3	1.6	25	LER
		29	351	48.28	19	26.56	155	30.88	12.09		1.1	14	0	69	.10	8	1.0	3.5	14	MOK
		29	414	7.26	19	23.98	155	15.58	2.86	1.3	1.9	12	0	109	.06	2	.7	.5	9	SPC
		29	546	54.31	19	24.16	155	15.86	6.19	1.8	1.9	8	0	1201	.25	1	8.2	14.9	6	LPC
		29	7 9	51.22	19	23.82	155	17.12	2.05	.8	.6	9	1	108	.15	1	.8	.7	7	SPC
		29	950	27.73	19	21.43	155	2.70	5.99	2.1	2.5	14	2	140	.17	3	1.1	1.7	9	MER
		29	1042	34.13	19	20.44	155	6.80	6.62	2.0	1.7	26	1	102	.10	6	.7	1.8	21	UER
		29	14 7	34.28	19	23.59	155	16.59	1.84	2.0	2.7	11	1	66	.21	1	.7	.6	9	SPC
		29	1458	46.85	19	25.57	155	24.04	7.64	2.3	2.5	29	0	42	.14	8	.7	2.0	26	UKF
		29	1627	46.98	19	23.92	155	15.47	7.00	1.2	.7	5	0	142	.05	2	2.8	24.6	5	LPC
		29	17 9	17.51	19	24.03	155	17.19	1.98	.9	.8	8	1	102	.08	1	.6	.6	6	SPC
		29	1719	33.55	19	23.75	155	15.83	6.37	1.2	.6	7	1	98	.08	1	2.4	9.1	6	LPC
		29	1919	57.44	19	16.75	155	20.77	6.97		1.7	22	0	146	.13	4	.9	1.9	18	SWR
		29	2047	39.95	19	24.95	155	18.27	2.89	.6	.2	9	1	98	.15	1	.9	.5	8	SPC
		29	2116	20.25	19	23.92	155	18.64	2.20	.8	.8	12	1	110	.16	3	.9	1.4	9	SPC
		29	2140	56.53	19	18.25	155	19.96	8.76	1.7	.3	9	0	246	.18	10	4.5	7.2	7	SWR
		29	2145	9.75	19	24.38	155	17.26	1.40	.5	.5	9	1	100	.11	1	.5	.4	7	SPC
		29	2229	37.53	19	20.49	155	16.70	3.59	1.6	1.5	9	0	159	.11	1	1.4	1.4	8	KOA
		30	014	40.63	19	24.41	155	17.28	1.52	.4	.3	10	1	90	.07	1	.6	.4	8	SPC
		30	043	7.52	19	29.15	155	51.92	8.14	2.6	1.8	14	0	158	.10	6	1.5	1.2	14	KON
		30	114	1.99	19	24.09	155	17.19	1.90	.7	.1	9	1	99	.06	1	.6	.5	7	SPC
		30	157	38.71	19	19.91	155	11.74	7.55		1.8	25	0	85	.09	5	.8	1.3	22	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	30	2 1	54.73	19	24.07	155	15.61	2.70		.2	6	0	128	.01	2	1.0	1.4	5	SPC
		30	314	40.09	19	24.37	155	17.22	1.34	.5	.8	12	1	64	.07	1	.5	.4	10	SPC
		30	4 9	37.58	19	13.60	155	37.23	11.15	2.5	2.6	28	0	108	.24	2	1.5	1.2	27	HEA
		30	445	3.70	19	24.21	155	17.27	1.77	.8	.3	10	1	75	.14	1	.6	.5	8	SPC
		30	5 6	12.50	19	24.79	155	16.79	2.03	.9	1.5	10	1	142	.12	2	.7	.6	9	SPC
		30	512	25.62	19	24.31	155	17.33	1.21	.7	.6	10	1	97	.13	1	.5	.5	8	SPC
		30	516	11.22	19	23.99	155	17.16	1.96	1.0	.7	11	1	76	.07	1	.5	.4	9	SPC
		30	519	57.54	19	24.33	155	17.15	1.44	.7	.4	9	1	87	.10	1	.5	.4	7	SPC
		30	523	58.37	19	21.16	154	59.17	4.87	2.1	2.3	27	1	211	.14	7	1.4	2.1	24	LER
		30	546	34.73	19	24.05	155	22.96	10.87	1.6	1.7	16	0	88	.12	6	1.1	2.6	16	UKF
		30	714	36.18	19	25.73	155	15.98	2.37	2.8	3.6	30	1	56	.10	2	.4	.6	29	SPC
		30	832	52.71	19	23.88	155	15.62	2.79	1.0		7	1	136	.03	3	.7	1.3	6	SPC
		30	937	20.65	19	21.64	155	15.35	3.37	1.2	.5	9	0	157	.10	2	1.0	1.2	8	KOA
		30	11 0	2.75	19	23.82	155	16.45	2.66	1.2	1.6	11	1	92	.11	2	.6	1.0	10	SPC
		30	1123	3.80	19	24.01	155	17.19	.86	1.2	1.2	7	1	120	.12	2	.6	1.1	6	SPC
		30	1615	40.41	19	21.52	155	1.82	5.25		1.8	20	0	168	.11	4	.9	1.5	17	MER
		30	1646	6.44	19	24.39	155	17.29	1.00	.3		7	0	107	.03	1	.6	.7	6	SPC
		30	1655	49.25	19	21.48	155	1.66	7.29	2.2	2.3	28	1	172	.13	4	.9	.9	21	MER
		30	1739	40.37	19	20.67	155	16.79	1.49	2.4	3.3	24	0	74	.10	2	.5	.7	24	KOA
		30	1826	16.31	19	21.41	155	16.24	.76	1.9	2.0	13	1	82	.11	2	.7	.6	12	KOA
		30	22 7	49.55	19	24.30	155	16.48	1.54	.7	.5	8	1	117	.08	2	.6	.8	5	SPC
		30	2227	18.03	19	26.35	155	15.65	.13	2.1	2.9	14	0	81	.27	4	1.0	2.6	12	SPC
	OCT	1	011	38.77	19	21.46	155	14.31	1.58	1.6	1.5	15	0	61	.05	3	.5	.9	12	UER
		1	024	44.80	19	24.35	155	17.09	.82	.3	.2	8	1	76	.12	1	.5	.9	6	SPC
		1	247	24.42	19	21.48	155	16.18	1.61	1.7	1.8	14	0	66	.05	2	.6	.7	12	KOA
		1	722	16.47	19	23.03	155	23.98	9.16	1.9	1.9	26	1	70	.12	5	.7	1.3	18	UKF
		1	750	52.12	19	27.47	154	50.44	5.27	2.1	1.9	17	1	14	.22	6	3.9	2.8	13	LER
		1	752	32.27	19	21.26	155	16.21	.52	2.7	3.9	24	0	67	.39	2	.7	1.8	22	KOA
		1	754	7.35	19	21.42	155	16.30	1.37	1.8	2.2	14	0	65	.10	2	.6	.8	14	KOA
		1	756	3.85	19	21.46	155	16.34	1.41	1.5	1.9	12	0	64	.09	2	.6	.8	12	KOA
		1	1624	7.14	19	20.69	155	16.14	.96	2.7	3.8	31	1	76	.14	3	.5	.7	30	KOA
		1	17 7	39.43	19	20.32	155	15.56	.92	1.3	2.1	13	0	83	.08	3	.6	1.3	12	KOA
		1	1735	47.50	19	19.55	155	12.45	3.14	2.0	2.0	27	2	85	.16	5	.6	1.6	21	UER
		1	1755	39.78	19	26.13	155	27.56	7.12	2.1	1.9	28	2	47	.14	7	.6	1.8	25	UKF
		1	18 6	4.77	19	24.30	155	16.95	1.60	1.2	1.8	10	0	85	.10	1	.7	.7	9	SPC
		1	2012	38.29	19	19.34	155	15.46	7.17	2.0	2.1	28	0	91	.12	4	.7	1.2	27	KOA
		1	2014	28.14	19	26.91	155	21.80	2.86	1.9	1.9	22	2	40	.13	6	.5	1.8	16	UKF
		1	2118	47.27	19	20.77	155	2.78	5.79	2.2	2.5	27	2	143	.14	2	.7	1.3	23	MER
		1	2126	30.61	19	21.60	155	3.97	6.03	2.0	1.8	25	1	95	.12	4	.8	1.8	22	MER
		1	2238	21.61	19	12.59	155	21.82	45.59	2.5	2.0	33	1	163	.13	11	1.4	1.8	30	LSW
		1	2337	37.89	19	19.20	155	21.98	3.57	1.6	2.2	20	0	99	.09	3	.8	1.4	20	SWR
		2	124	28.93	19	12.69	155	21.97	48.30	2.5	2.5	34	1	161	.12	11	1.6	2.9	30	LSW
		2	128	8.72	19	20.78	155	13.65	5.81	1.8	1.9	32	2	55	.16	4	.6	1.3	28	UER
		2	246	8.86	19	25.44	155	25.17	.46	2.0	2.3	29	2	50	.14	7	.5	.7	27	UKF
		2	312	22.95	19	19.46	155	8.25	5.23	2.0	2.2	30	2	88	.15	4	.7	2.1	27	UER
		2	323	45.27	19	17.43	155	21.03	5.52	1.7	2.3	29	0	127	.14	4	.8	1.6	27	SWR
		2	551	27.76	19	24.57	155	16.44	1.58	1.3	1.9	12	1	137	.18	5	.7	.9	9	SPC
		2	7 7	6.05	19	24.30	155	17.19	.99	.6	1.1	8	0	73	.03	1	.5	.8	6	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	OCT	2	821	20.69	19	23.57	155	17.27	2.92	1.1	1.0	8	1	91	.12	3	.8	1.3	5	SPC
		2	847	32.90	19	21.18	155	6.47	7.58	2.3	2.6	29	2	91	.10	6	.6	1.2	27	UER
		2	1158	57.90	19	20.82	155	2.27	5.44	2.1	2.3	28	1	171	.13	2	.8	1.4	25	MER
		2	1413	55.54	19	20.63	155	25.45	7.91	1.9	2.0	25	1	80	.12	4	.6	1.3	23	HEA
		2	1442	.27	19	20.34	155	12.68	6.38	1.9	2.2	27	1	68	.13	4	.6	1.3	25	UER
		2	20 1	3.16	19	26.89	155	21.32	5.66	1.9	2.1	19	0	94	.14	6	.8	3.2	17	UKF
		3	115	3.85	19	24.36	155	25.81	7.75	1.9	1.9	29	2	48	.14	5	.6	1.8	26	UKF
		3	340	39.03	19	29.92	155	11.24	14.05	1.8	1.9	25	0	156	.10	11	.9	1.0	24	GLN
		3	644	32.22	19	21.52	155	2.02	6.82	2.3	2.7	27	2	162	.13	3	.8	1.3	25	MER
		3	954	46.92	19	22.15	155	17.67	5.52	1.8	.9	10	1	227	.55	3	3.8	5.4	9	KOA
		3	1136	16.39	19	24.50	155	17.13	1.12	.3	.7	8	0	81	.10	1	.5	.5	7	SPC
		3	12 9	22.75	19	23.11	155	25.95	8.45	1.7	1.7	19	0	94	.11	7	.8	2.2	19	UKF
		3	1251	30.40	19	24.46	155	17.10	1.91	.7	.5	10	1	81	.11	1	.6	.5	7	SPC
		3	1253	30.15	19	24.47	155	16.46	1.68	.8	.9	10	1	132	.06	1	.5	.5	8	SPC
		3	1319	53.18	19	24.60	155	17.19	1.41	.3	.4	9	1	81	.08	1	.6	.4	7	SPC
		3	1333	15.78	19	20.81	155	2.07	7.13	2.4	2.4	25	2	178	.12	2	1.0	.9	20	MER
		3	14 5	59.71	19	18.06	155	13.51	7.79	2.1	2.2	30	1	81	.11	2	.8	1.1	22	POL
		3	1427	.11	19	21.79	155	24.72	9.71	1.7	1.3	16	0	130	.12	4	1.1	2.3	13	SWR
		3	1454	29.31	19	27.16	155	18.43	4.04	.9	.8	11	2	182	.32	4	2.6	2.4	9	GLN
		3	1640	9.81	19	24.65	155	17.54	1.62	.3	.4	7	0	161	.09	1	.8	.5	7	SPC
		3	1645	1.36	19	21.52	155	15.84	1.61	1.2	1.6	11	0	74	.05	2	.5	.9	11	KOA
		3	1656	10.23	19	23.90	155	17.10	2.00	.6	.3	9	1	102	.06	1	.7	.6	7	SPC
		3	1718	46.14	19	24.33	155	17.17	1.53	.4	.2	9	1	100	.11	1	.8	.5	7	SPC
		3	1759	36.11	19	20.73	155	10.74	8.13	1.6	1.8	25	0	74	.09	3	.8	1.4	25	UER
		3	1810	46.68	19	24.56	155	17.16	1.48	.3	.8	10	1	81	.08	1	.6	.5	7	SPC
		3	1825	19.07	19	24.73	155	16.50	.92	.5	.5	9	1	141	.11	1	.5	.7	6	SPC
		3	1846	57.87	19	24.74	155	17.15	1.44	.5	.7	9	0	75	.09	0	.7	.5	8	SPC
		3	19 3	53.59	19	24.60	155	17.25	1.10	.2	.7	8	0	82	.10	1	.6	.5	7	SPC
		3	2059	23.69	19	21.49	155	1.47	4.25	2.0	2.0	28	2	177	.13	4	.9	2.3	23	MER
		3	2114	49.73	19	18.99	155	15.48	6.66	1.7	2.1	27	0	96	.11	4	.8	1.2	23	KOA
		3	2139	39.05	19	19.37	155	11.98	4.59		1.4	24	0	95	.13	5	.8	3.8	22	UER
		3	2156	19.84	19	24.28	155	17.07	1.36	.4	.3	10	1	84	.09	1	.6	.5	8	SPC
		3	22 3	43.79	19	24.46	155	16.89	1.59	1.6	2.4	9	0	98	.13	1	.7	.6	7	SPC
		3	2231	11.00	19	25.45	155	15.76	1.47	.6	.5	9	1	196	.16	2	1.3	1.5	7	SPC
		3	2320	13.18	19	24.24	155	17.10	1.81	.8	.7	9	1	88	.09	1	.7	.6	8	SPC
		3	2329	30.97	19	24.38	155	17.12	1.55	.5	.6	10	1	84	.09	1	.6	.5	8	SPC
		3	2336	15.36	19	24.61	155	29.48	7.63	2.0	1.8	24	2	78	.16	5	.7	2.2	20	UKF
		3	2356	33.00	19	24.47	155	17.14	1.48	.6	.8	10	1	82	.07	1	.6	.5	8	SPC
		4	023	44.21	19	24.51	155	16.99	1.52	.7	.5	9	1	88	.12	1	.7	.6	7	SPC
		4	220	53.50	19	24.47	155	17.19	1.24	.3	.5	9	1	84	.10	1	.6	.5	7	SPC
		4	234	31.36	19	24.53	155	16.91	1.88	.4	.7	10	1	101	.15	1	.8	.6	8	SPC
		4	328	18.18	19	24.09	155	17.10	1.87	.5	.4	8	1	95	.07	1	.6	.5	6	SPC
		4	5 4	31.39	19	25.04	155	17.14	3.37	.6	.4	9	1	147	.15	1	1.2	.7	7	SPC
		4	625	25.91	19	26.68	155	21.55	5.39	2.0	2.4	23	1	69	.13	6	.6	3.1	19	UKF
		4	658	5.17	19	20.54	155	13.29	5.97	1.5	1.7	23	0	61	.11	4	.8	1.7	22	UER
		4	945	6.14	19	19.41	155	9.66	6.86	1.9	1.3	23	1	96	.11	5	.7	1.7	19	UER
		4	1041	4.51	19	20.21	155	6.96	4.12	3.0	3.1	28	0	105	.13	6	.9	2.6	23	UER
		4	1140	35.10	19	20.44	155	2.51	7.42	2.6	2.6	27	2	174	.17	1	1.1	1.2	20	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	ND FM	REMK
1977	OCT	4	1457	10.76	19	24.38	155	17.19	1.56	.4	.4	10	1	87	.09	1	.6	.5	8	SPC
		4	15 6	30.52	19	21.84	155	15.40	4.24	1.9	1.7	19	0	60	.09	1	.6	1.1	17	KOA
		4	1752	7.81	19	24.32	155	17.06	1.52	.7	.8	10	1	84	.08	1	.6	.5	8	SPC
		4	1833	11.36	19	22.04	155	17.76	2.25	1.4	.6	9	1	231	.27	3	1.5	1.5	7	KOA
		4	1847	49.61	19	24.81	155	17.18	1.23	.1	.3	6	0	169	.02	0	.7	.5	5	SPC
		4	2146	41.07	19	26.87	155	24.17	7.76	1.6	1.4	13	0	65	.12	6	1.0	3.0	13	UKF
		5	213	1.36	19	24.26	155	17.16	2.62	.8	.4	8	1	99	.11	1	.6	.5	6	SPC
		5	324	1.62	19	24.34	155	17.10	1.53	.9	1.1	10	1	85	.11	1	.7	.5	8	SPC
		5	416	48.55	19	21.40	155	6.13	8.18	1.9	1.3	27	1	88	.12	6	.7	1.3	23	UER
		5	546	12.07	19	24.30	155	17.22	1.81	.5	.2	10	1	92	.05	1	.6	.5	7	SPC
		5	6 8	50.62	19	24.44	155	17.22	.91	.3	.2	10	1	87	.12	1	.5	.5	8	SPC
		5	654	26.15	19	24.82	155	17.21	1.19	.1	.3	9	0	92	.12	0	.7	.4	7	SPC
		5	734	39.57	19	23.20	155	17.63	2.42	1.2	1.3	9	1	169	.14	1	.8	.9	8	SPC
		5	1126	4.65	19	24.08	155	17.40	1.96	1.1	1.2	9	1	113	.06	1	.5	.4	8	SPC
		5	1132	47.97	19	25.14	155	17.21	1.47	.3	.5	10	1	149	.11	1	.8	.4	8	SPC
		5	1322	19.73	19	9.99	155	28.57	34.90	2.4	2.0	27	0	156	.12	18	1.5	3.7	27	LSW
		5	1436	29.78	19	24.30	155	25.52	10.69	1.8	1.5	25	0	76	.12	5	.8	1.8	17	UKF
		5	1731	20.18	19	24.78	155	17.76	16.18	3.4	3.4	37	1	26	.12	1	.8	.5	25	DEP
		5	1925	41.01	19	17.63	155	21.86	8.93	2.4	2.9	32	0	129	.17	5	.9	1.0	27	SWR
		5	1952	24.87	19	24.38	155	17.00	1.56	.9	1.0	10	1	83	.12	1	.7	.6	8	SPC
		5	2027	56.17	19	24.65	155	17.29	1.51	.8	1.0	10	0	89	.12	1	.6	.3	10	SPC
		5	2214	2.52	19	24.24	155	17.14	1.71	.7	.5	10	1	90	.12	1	.7	.5	8	SPC
		5	2347	32.60	19	24.42	155	17.25	1.66	1.0	1.2	10	1	89	.13	1	.7	.5	9	SPC
		5	2349	10.75	19	24.51	155	17.16	1.60	.8	1.6	11	1	68	.11	1	.6	.4	9	SPC
		5	2355	24.05	19	24.24	155	17.23	2.07	.8	.8	9	1	96	.04	1	.6	.5	7	SPC
		5	2358	55.26	19	21.55	155	2.30	5.29	2.1	1.9	23	0	153	.12	3	.9	1.6	19	MER
		6	1 8	.02	19	21.60	155	15.54	4.11	2.3	2.5	27	0	63	.11	2	.6	1.0	23	KOA
		6	231	56.68	19	20.13	155	3.96	7.52	2.0	2.0	31	0	132	.11	2	.9	1.0	26	MER
		6	326	21.78	19	21.17	155	1.50	5.36	2.0	1.8	29	2	184	.13	3	.9	1.6	23	MER
		6	411	37.10	19	24.42	155	17.05	1.61	.9	1.0	10	1	80	.09	1	.7	.5	8	SPC
		6	530	42.19	19	25.23	155	23.72	8.77	1.8	1.7	25	1	56	.13	8	.6	1.7	20	UKF
		6	544	49.62	19	21.81	154	59.70	3.84	2.2	2.1	23	0	200	.16	6	1.6	3.8	18	LER
		6	628	.63	19	21.27	155	1.62	5.35	1.9	1.9	23	0	178	.13	3	1.0	1.8	20	MER
		6	825	43.62	19	9.75	155	42.35	10.55	2.5	2.1	22	0	136	.12	21	.8	.9	19	HEA
		6	1229	1.67	19	26.55	154	49.49	9.03	2.3	1.4	22	2	289	.10	8	1.6	1.0	21	LER
		6	15 2	21.03	19	26.10	154	50.24	9.44	2.2	1.9	27	3	25	.13	8	1.6	1.0	23	LER
		6	1558	.97	19	24.33	155	17.13	1.52	.9	1.3	12	1	72	.08	1	.6	.4	10	SPC
		6	16 2	2.06	19	24.26	155	17.13	1.59	1.0	1.3	12	1	71	.10	1	.6	.4	11	SPC
		6	1726	32.08	19	26.06	155	28.14	8.68	2.3	2.2	31	1	49	.13	7	.6	1.4	26	UKF
		6	1818	25.37	19	19.62	155	6.35	7.69	1.9	2.3	29	1	84	.09	4	.7	1.3	25	UER
		6	2057	24.85	19	24.27	155	17.22	1.58	.4	1.0	12	1	65	.11	1	.6	.4	8	SPC
		6	2143	44.52	19	24.23	155	17.25	1.23	.9	.9	12	1	63	.14	1	.5	.5	9	SPC
		6	2220	19.29	19	20.25	155	2.42	6.47	2.1	1.8	28	1	155	.13	1	.8	1.3	26	MER
		7	113	32.80	19	20.39	155	8.66	6.67	2.1	2.3	28	0	70	.10	4	.7	1.6	26	UER
		7	331	37.64	19	21.48	155	2.50	4.56	2.2	2.2	27	1	146	.14	3	.8	2.2	24	MER
		7	337	.64	19	21.56	155	1.19	6.77	2.4	2.7	28	1	182	.13	4	.8	1.2	26	MER
		7	339	14.26	19	22.54	154	59.87	6.91	2.4	2.4	29	2	185	.18	5	.9	1.3	26	LER
		7	434	50.08	19	20.06	155	4.07	4.45	1.9	1.3	29	2	137	.15	2	.9	2.3	25	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	ND FM	REMK
1977	OCT	7	442	14.77	19	19.10	155	15.51	6.38	2.2	1.4	21	0	113	.11	4	.8	1.7	20	KOA
		7	618	2.37	19	22.94	154	57.71	4.87	2.0	1.5	27	2	205	.19	4	1.3	2.1	24	LER
		7	727	23.30	19	24.33	155	17.04	1.49	.4	.3	10	0	80	.11	1	.6	.5	9	SPC
		7	1026	20.63	19	23.77	155	17.14	2.14	.7	.8	9	1	115	.14	1	.8	.7	7	SPC
		7	1039	36.13	19	24.50	155	17.10	1.34	.5	.7	10	1	80	.07	1	.6	.5	8	SPC
		7	1112	10.11	19	24.24	155	16.96	1.75	.5	.3	10	1	83	.12	1	.7	.6	8	SPC
		7	1135	35.62	19	24.25	155	17.02	1.57	.8	.4	10	1	82	.12	1	.7	.6	8	SPC
		7	1140	21.36	19	24.35	155	17.12	1.74	.8	.7	10	1	84	.10	1	.7	.5	7	SPC
		7	1317	40.65	19	18.98	155	12.08	7.15	2.0	2.3	24	1	103	.12	4	.7	1.7	18	POL
		7	1335	41.54	19	21.32	155	2.53	4.76	2.1	2.3	25	1	148	.16	3	.8	2.1	20	MER
		7	1432	54.41	19	21.15	155	15.29	.53	2.2	3.2	27	1	68	.13	3	.4	.7	24	KOA
		7	1521	8.85	19	24.41	155	16.99	1.56	.5	.7	10	1	85	.12	1	.7	.6	8	SPC
		7	1531	22.74	19	27.47	155	21.81	7.34	1.5	1.3	14	0	110	.11	5	1.0	2.7	10	UKF
		7	1543	29.86	19	24.53	155	17.05	1.42	.7	.9	10	1	82	.13	1	.7	.5	8	SPC
		7	1620	39.05	19	24.12	155	17.31	1.60	.9	.7	8	1	105	.07	1	.5	.6	7	SPC
		7	1654	3.17	19	23.60	155	25.61	8.87		1.5	20	0	85	.11	4	.8	1.8	18	UKF
		7	20 8	34.02	19	19.64	155	8.22	5.04	1.8	1.7	24	0	87	.12	4	.9	2.9	23	UER
		7	2041	32.13	19	24.04	155	17.06	2.01	.8	.5	9	1	95	.08	1	.7	.6	6	SPC
		7	2124	7.29	19	24.35	155	17.02	1.80	1.1	1.2	11	1	82	.10	1	.6	.5	10	SPC
		7	2232	15.76	19	24.19	155	17.14	1.79	.5	.4	9	1	92	.11	1	.7	.6	8	SPC
		8	0 3	53.01	19	18.99	155	11.51	6.27	1.8	1.9	24	0	108	.11	5	.8	1.9	24	POL
		8	037	35.07	19	26.52	154	55.22	5.80	1.9	1.8	26	1	193	.13	2	1.4	1.5	23	LER
		8	048	14.88	19	24.29	155	16.86	1.67	.5		10	1	93	.15	1	.7	.6	7	SPC
		8	224	19.06	19	23.60	155	17.11	2.02	.7	.4	9	1	128	.15	0	.8	.7	7	SPC
		8	228	7.65	19	21.96	155	6.78	6.08	2.1	2.4	31	1	75	.10	5	.7	1.7	28	UER
		8	238	56.51	19	23.95	155	17.07	2.38	.6	.4	9	1	96	.15	1	.9	.8	7	SPC
		8	244	35.34	19	24.83	155	25.31	9.23	1.7	1.8	15	0	133	.14	9	1.5	4.0	15	UKF
		8	3 4	46.35	19	24.32	155	17.17	1.40	.4	.2	9	1	89	.10	1	.5	.4	8	SPC
		8	325	41.53	19	24.50	155	17.14	1.35	.3	.5	10	1	82	.08	1	.6	.5	8	SPC
		8	4 1	4.65	19	24.19	155	17.19	1.71	.5	.7	10	1	95	.08	1	.6	.5	7	SPC
		8	412	18.69	19	19.47	155	26.85	9.66	1.9	1.9	23	0	86	.13	6	.8	1.7	20	HEA
		8	451	8.40	19	23.78	155	16.54	1.74	.7	.6	9	1	93	.07	0	.6	.5	7	SPC
		8	5 9	45.60	19	24.47	155	17.20	1.46	.3	.4	10	1	85	.12	1	.6	.5	7	SPC
		8	510	21.23	19	24.26	155	17.24	1.76	.5	.5	8	1	96	.06	1	.6	.5	7	SPC
		8	614	.35	19	24.21	155	17.27	1.97	.5	.1	10	1	98	.09	1	.6	.5	7	SPC
		8	632	38.77	19	23.64	155	17.17	1.74	.7	.1	9	1	132	.13	1	.7	.6	6	SPC
		8	637	49.51	19	18.83	155	26.46	10.60		1.8	16	0	153	.09	6	1.2	2.4	16	HEA
		8	645	34.98	19	24.50	155	17.22	.09	.1	.5	9	1	85	.13	1	.4	.7	7	SPC
		8	1415	24.41	19	21.94	155	5.84	6.55	2.5	2.8	33	2	78	.14	6	.6	1.5	25	MER
		8	1518	19.01	19	20.69	155	7.55	7.21	2.1	2.1	29	2	87	.09	5	.7	1.8	24	UER
		8	16 7	2.04	19	24.19	155	17.08	1.75	.8	1.0	9	1	88	.11	1	.7	.6	8	SPC
		8	1713	52.40	19	27.19	155	21.07	7.48	2.1	2.0	19	0	96	.12	6	.9	1.8	18	UKF
		8	19 1	45.14	19	19.11	155	12.07	5.81	1.7	1.6	25	0	99	.10	5	.8	2.1	24	UER
		8	2139	14.74	19	13.00	155	33.62	10.48	2.7	2.9	30	0	124	.17	7	1.0	1.3	27	LSW
		9	0 5	11.83	19	24.34	155	16.93	1.50	.4	.4	10	1	89	.08	1	.6	.5	8	SPC
		9	338	37.90	19	24.45	155	17.14	1.47	.4	.3	9	1	83	.08	1	.6	.5	7	SPC
		9	524	44.37	19	13.02	155	31.23	7.13	2.2	1.9	26	0	133	.16	11	1.0	2.7	18	LSW
		9	551	29.54	19	20.24	155	11.73	6.62	1.9	2.1	31	2	80	.11	5	.6	1.1	27	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	OCT	9	557	42.99	19	24.23	155	17.25	1.88	.8	.6	10	1	96	.08	1	.6	.5	7	SPC
		9	6 3	13.40	19	24.18	155	17.35	1.44	.4	.4	9	1	104	.13	1	.4	.5	6	SPC
		9	7 9	14.58	19	21.14	155	18.14	.68	1.2	.7	9	1	20	.33	5	1.6	1.2	6	KOA
		9	715	35.68	19	21.92	155	.04	4.97	2.0	2.2	28	1	193	.16	6	1.1	2.1	25	LER
		9	839	17.79	19	20.40	155	13.98	6.80	1.5	1.7	22	0	71	.11	4	.8	1.6	19	UER
		9	859	58.39	19	23.51	155	17.22	2.03	1.3	1.7	8	1	143	.15	1	.7	.7	6	SPC
		9	1316	37.83	19	19.12	155	15.31	7.43	1.6	1.7	22	0	110	.09	4	.9	1.5	19	KOA
		9	1438	51.90	19	23.98	155	15.22	24.90	4.0	4.1	38	1	61	.11	2	.8	1.0	28	DEP
		9	15 4	56.38	19	18.55	155	13.65	6.40	2.2	2.4	33	2	72	.15	3	.7	1.3	27	POL
		9	1943	59.75	19	19.58	155	8.02	8.16	2.3	2.5	30	1	93	.09	4	.7	1.2	28	UER
		9	1948	33.74	19	24.62	155	17.19	2.00	.4	.4	10	1	80	.14	1	.7	.5	7	SPC
		9	1958	14.94	19	20.35	155	6.05	9.54	2.3	2.4	31	0	114	.09	6	.9	.8	27	UER
		9	20 0	1.73	19	22.32	155	17.61	1.96	1.0	.7	9	1	218	.33	2	1.2	1.3	7	KOA
		9	2117	46.71	19	24.52	155	17.05	1.46	.3	.5	10	1	82	.07	1	.6	.5	8	SPC
		9	2217	55.60	19	20.57	155	1.12	7.14	2.7	3.1	32	2	203	.12	5	.7	.9	26	MER
		9	2226	10.19	19	21.78	155	1.12	5.59	2.0	2.4	30	2	178	.16	5	.9	1.5	27	MER
		9	2323	58.68	19	22.20	155	5.59	7.91	3.1	3.4	38	3	73	.10	5	.6	.9	32	MER
		9	2327	33.22	19	21.72	155	6.02	7.41	2.0	2.1	27	2	82	.11	6	.6	1.6	25	UER
		10	133	9.57	19	23.59	155	23.97	10.51	1.6	1.7	20	0	66	.08	6	.9	2.1	19	UKF
		10	232	.31	19	24.37	155	17.15	1.53	.4	1.0	9	1	86	.15	1	.7	.5	8	SPC
		10	246	54.53	19	24.38	155	17.15	1.54	.5	.7	9	0	86	.08	1	.6	.5	8	SPC
		10	351	8.64	19	24.14	155	17.19	2.23	.8	.7	8	1	97	.04	1	.6	.5	6	SPC
		10	413	52.03	19	24.13	155	17.48	.25	.3	.8	8	1	120	.11	2	.4	.8	7	SPC
		10	557	47.40	19	21.85	155	6.01	6.97	2.1	2.1	31	1	80	.11	6	.7	1.7	28	UER
		10	725	5.56	19	15.08	155	48.35	6.31	2.6	1.8	26	3	131	.21	7	1.1	1.9	23	KON
		10	854	14.48	19	14.29	155	20.34	44.91	2.4	1.5	34	4	156	.10	7	1.1	1.4	33	HLP
		10	956	18.70	19	23.17	155	4.42	12.74	2.0	1.8	28	1	87	.11	3	.9	.7	23	MER
		10	1159	48.34	19	20.63	155	9.40	6.68	1.9	2.0	30	1	71	.11	3	.6	1.3	27	UER
		10	1538	18.37	19	9.99	155	37.52	9.80	2.5	2.3	28	2	117	.16	9	1.0	1.3	25	HEA
		10	1559	31.31	19	24.57	155	17.44	1.30	.6	1.5	11	1	69	.18	1	.6	.6	9	SPC
		10	1757	33.67	19	17.31	155	21.56	7.96	1.8	1.7	25	0	126	.12	5	.8	1.9	20	SWR
		10	2152	48.84	19	20.74	155	8.50	5.60	2.1	2.3	30	1	73	.13	3	.7	1.9	28	UER
		11	820	51.64	19	22.57	155	30.26	7.77	2.2	2.2	29	1	90	.14	5	.7	1.6	27	MOK
		11	936	34.03	19	11.95	155	20.85	46.33	2.4	2.1	16	1	205	.09	12	3.4	8.5	13	HLP
		11	947	27.72	19	21.42	155	14.84	6.88	1.4	1.2	14	0	146	.12	4	1.1	2.2	12	UER
		11	1316	48.17	19	13.88	155	20.25	43.51		1.7	25	0	159	.09	8	1.7	4.6	22	HLP
		11	17 1	20.39	19	14.02	155	20.30	46.16	2.5	1.6	28	0	158	.11	8	1.6	3.8	22	HLP
		11	2045	1.33	19	9.80	155	28.58	31.53	2.3	1.7	28	0	113	.12	1	1.4	3.4	22	LSW
		12	2 0	55.10	19	24.11	155	17.20	1.63	.5	.5	8	1	117	.08	1	.5	.5	7	SPC
		12	2 2	19.40	19	26.34	155	23.23	9.61	1.6	1.6	16	0	102	.08	6	.9	2.6	13	UKF
		12	415	47.25	19	25.48	155	24.53	10.95	2.0	2.1	23	0	58	.11	8	.8	1.9	20	UKF
		12	6 8	9.97	19	58.88	155	28.16	17.68	2.2	2.2	24	0	187	.12	36	3.0	99.0	18	KKU
		12	625	17.00	19	24.22	155	16.92	.46	.9	1.8	10	1	85	.08	1	.5	.4	7	SPC
		12	640	50.32	19	21.14	155	2.95	7.27	2.2	2.4	30	2	130	.13	2	.7	1.2	26	MER
		12	10 4	5.63	19	24.65	155	30.56	10.04	2.0	1.6	25	0	86	.11	7	.8	2.1	22	MOK
		12	1016	37.76	19	19.70	155	12.11	5.75	1.8	2.3	25	1	86	.13	6	.7	2.1	18	UER
		12	1033	29.31	19	24.00	155	22.94	8.84	2.6	2.6	32	2	54	.13	6	.6	1.1	24	UKF
		12	1246	43.82	19	19.71	155	11.56	6.31	2.0	2.3	28	0	91	.14	5	.8	1.6	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	OCT	12	1432	20.49	19	19.68	155	12.00	5.84	1.6	1.5	26	0	87	.11	6	.7	2.0	22	UER
		12	1452	17.24	19	10.59	155	42.30	1.69	2.5	2.1	20	2	131	.33	20	1.2	2.2	17	HEA
		12	1815	45.96	19	24.41	155	17.09	1.49	.4	.3	11	1	76	.07	1	.6	.4	8	SPC
		12	1823	15.51	19	19.32	155	12.44	3.78	1.8	1.9	27	1	90	.16	5	.7	2.1	22	UER
		12	1857	41.53	19	27.11	155	46.50	11.33	3.4	3.2	28	0	84	.09	6	.9	.6	27	KON
		13	125	15.38	19	24.18	155	17.08	1.94	.8	.9	9	1	99	.06	1	.6	.6	7	SPC
		13	258	28.25	19	47.35	155	18.01	30.25	2.4	1.9	30	1	161	.12	17	1.4	3.2	27	KKU
		13	441	36.01	19	22.71	154	58.07	6.88	2.0	1.9	30	2	204	.22	5	1.2	1.3	25	LER
		13	7 0	29.30	19	20.25	155	3.88	6.24	2.0	1.7	24	1	124	.12	2	.9	1.6	19	MER
		13	927	3.64	19	19.84	155	12.77	8.06	1.8	2.2	27	0	76	.11	5	.8	1.1	26	UER
		13	1114	56.66	19	20.61	155	.62	4.71	2.0	1.8	21	2	206	.18	4	1.2	2.6	17	LER
		13	12 5	35.76	19	25.96	155	24.39	8.56	1.6	1.4	16	0	62	.12	7	.9	2.6	13	UKF
		13	1316	44.47	19	42.24	155	33.58	13.12	2.4	1.7	20	0	247	.14	13	3.8	1.0	16	KKU
		13	1452	5.10	19	19.97	155	11.37	7.53	2.0	2.0	28	1	87	.10	5	.7	1.3	26	UER
		13	15 3	8.30	19	20.22	155	5.82	8.87	2.6	2.9	28	1	120	.11	5	.7	1.1	25	MER
		13	1632	56.64	19	25.60	154	55.96	5.88	2.1	2.4	26	0	195	.12	4	1.3	1.6	23	LER
		13	1818	55.43	19	20.66	155	2.53	6.74	2.5	3.0	32	2	162	.14	2	.8	1.4	28	MER
		13	2157	25.75	19	20.88	155	3.22	4.27	1.9	1.8	26	2	115	.12	2	.8	1.8	23	MER
		13	2246	59.84	19	20.02	155	3.79	5.99	1.8	1.7	24	1	139	.13	2	.9	1.8	21	MER
		14	4 4	18.04	19	16.15	155	23.24	5.84		1.9	23	0	124	.16	4	.9	2.4	22	SWR
		14	20 4	53.77	19	20.93	155	2.80	4.73	2.0	1.6	26	0	141	.12	2	1.0	2.0	22	MER
		15	154	18.23	19	19.40	155	16.02	5.90	1.5	1.5	25	0	106	.12	3	.7	1.5	24	KOA
		15	420	26.92	19	19.23	155	11.60	5.73	1.7	1.4	26	0	101	.10	5	.8	2.1	23	UER
		15	9 3	8.85	19	25.06	155	24.94	11.03	2.6	2.8	35	0	34	.11	7	.6	.7	34	UKF
		15	12 2	31.18	18	47.32	155	9.13	17.20	3.4	2.8	33	2	287	.17	53	2.5	99.0	32	PPL
		15	19 4	20.36	19	15.97	155	7.53	50.55	2.4	1.7	39	4	196	.11	3	1.3	1.4	37	POL
		15	19 7	23.08	19	21.47	155	15.64	3.27	2.1	2.5	26	2	64	.13	2	.5	.8	24	KOA
		16	637	19.00	19	19.86	155	10.88	7.84	2.1	1.9	31	2	89	.12	5	.7	1.0	29	UER
		16	724	56.94	19	23.48	155	30.01	8.17	1.9	2.0	28	0	84	.11	5	.8	1.9	26	MOK
		16	733	8.23	19	9.18	155	22.08	43.15	2.2	1.1	30	3	216	.14	10	1.6	1.4	27	LSW
		16	1250	21.43	19	20.72	155	19.35	11.39	1.6	1.5	26	2	86	.08	4	.7	.8	26	SWR
		16	14 5	18.98	19	23.41	154	59.54	6.49	2.3	2.7	30	3	177	.15	4	.8	1.2	27	LER
		16	1528	52.58	19	25.31	155	26.59	1.21	1.8	1.9	22	1	53	.11	5	.5	1.5	19	UKF
		16	2216	31.01	19	25.56	155	28.45	9.26	2.7	2.6	34	2	49	.16	6	.6	1.1	31	UKF
		16	2314	16.37	19	21.42	155	6.59	6.50	2.0	1.8	29	2	139	.15	6	.8	2.1	25	UER
		16	2318	50.37	19	23.91	154	59.14	5.47	2.1	2.0	27	0	185	.19	2	1.4	1.2	25	LER
		17	026	59.76	19	19.45	155	10.52	4.92	1.7	1.5	21	0	100	.14	5	.9	3.5	18	UER
		17	2 1	12.45	19	18.05	155	15.11	5.99	1.9	1.7	26	1	139	.12	3	.8	1.4	23	KOA
		17	337	42.36	19	11.22	155	20.56	47.46	2.5	1.7	25	2	222	.10	13	2.1	1.6	25	HLP
		17	623	42.11	19	25.65	155	23.61	11.79	1.8	1.7	23	0	54	.11	8	.8	1.4	22	UKF
		17	1336	10.17	19	24.05	155	26.12	10.62	2.8	3.0	35	2	63	.12	4	.6	.8	32	UKF
		17	1815	54.92	19	21.05	155	2.85	5.70	2.0	2.3	28	0	138	.12	2	.9	1.3	28	MER
		17	21 3	19.19	19	25.50	155	15.68	1.79	1.3	2.0	14	0	126	.08	3	.6	.7	13	SPC
		17	21 7	54.87	19	21.04	155	1.94	4.90	2.1	2.0	28	1	176	.15	3	.9	1.8	24	MER
		17	2111	51.83	19	25.31	155	15.52	1.87	1.0	1.6	12	0	153	.09	2	.7	.6	12	SPC
		18	652	21.35	19	20.80	155	13.57	8.59	2.1	2.4	31	2	59	.12	3	.6	1.0	28	UER
		18	834	29.10	19	20.02	155	13.24	7.40	2.1	2.2	32	2	67	.13	5	.6	1.0	29	UER
		18	11 2	29.06	19	21.07	155	2.73	6.74	1.9	2.2	29	1	143	.12	2	.9	1.2	27	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	OCT	18	1431	26.27	19	21.00	155	12.90	7.61	1.8	2.2	28	1	61	.11	3	.7	1.0	25	UER
		18	1948	52.82	19	19.24	155	7.75	8.37	2.4	2.6	33	1	106	.09	4	.6	.9	30	UER
		18	2129	12.71	19	25.46	155	16.39	1.86	1.6	2.2	17	0	115	.09	2	.6	.5	15	SPC
		18	2330	48.30	19	25.68	155	16.07	1.36	1.3	2.1	17	0	117	.10	2	.6	.8	16	SPC
		19	251	7.35	19	25.44	155	16.20	1.74	1.6	2.4	17	0	95	.10	2	.5	.5	16	SPC
		19	3 6	48.50	19	21.85	155	.13	6.92	2.1	2.2	28	2	193	.19	6	.8	1.1	26	LER
		19	454	55.90	19	20.52	155	3.50	6.19	2.0	1.8	28	1	96	.15	2	.9	1.5	27	MER
		19	5 6	56.78	19	22.34	155	29.90	8.03	2.0	1.8	31	1	90	.15	4	.7	1.4	28	UKF
		19	858	29.81	19	24.32	155	16.95	16.01	2.0	2.1	29	1	42	.11	1	.8	.8	25	DEP
		19	1018	17.35	19	24.27	155	17.16	.86	.9	1.7	6	0	114	.06	1	.5	.7	5	SPC
		19	2120	21.13	19	57.22	156	37.75	7.50		2.1	19	4	335	.31	88	59.9	78.9	17	DIS
		19	2341	36.14	19	20.04	155	4.09	5.56	2.0	1.7	27	2	138	.14	2	.8	1.7	21	MER
		20	525	.33	19	26.96	155	14.16	32.57	2.3	2.4	34	0	69	.10	4	1.1	2.0	25	DEP
		20	7 8	21.83	19	22.23	155	.05	7.82	2.1	2.0	26	2	190	.12	6	1.2	1.0	21	LER
		20	1048	59.29	19	20.46	155	1.02	6.46	2.5	2.7	27	2	208	.12	4	1.0	.9	25	MER
		20	1127	17.61	19	10.87	155	36.80	10.37	2.4	2.0	25	2	118	.11	8	.8	1.2	24	HEA
		20	18 5	47.78	19	19.85	155	13.28	5.74	2.1	2.4	30	1	68	.13	5	.7	1.4	28	UER
		20	19 0	28.21	19	26.57	155	23.66	2.69	1.7	2.1	20	1	47	.12	6	.6	1.8	18	UKF
		20	19 2	2.76	19	21.99	155	2.14	5.81	2.0	1.8	27	1	151	.13	4	.9	1.7	25	MER
		21	137	2.25	19	19.57	155	9.86	6.24	1.9	1.8	29	1	94	.10	5	.7	1.8	25	UER
		21	2 8	15.76	19	18.59	155	15.23	7.26	1.9	1.6	26	0	100	.12	4	.8	1.2	25	KOA
		21	227	22.22	19	24.11	155	25.98	6.97	1.9	1.7	27	2	50	.14	4	.7	2.0	26	UKF
		21	234	59.49	19	12.32	155	21.60	43.81		1.4	33	2	165	.09	12	1.3	2.2	32	LSW
		21	445	52.68	19	19.11	155	15.50	5.65	1.8	1.9	33	1	92	.16	4	.7	1.2	28	KOA
		21	1624	10.71	19	20.43	155	5.71	7.97	2.0	1.8	27	1	114	.10	5	.8	1.2	22	MER
		21	2112	25.06	19	20.70	155	10.50	8.09	1.7	1.7	18	0	88	.10	3	.9	1.7	16	UER
		22	118	7.47	19	27.47	154	52.63	5.74	1.9	1.6	20	2	263	.11	5	1.9	1.2	16	LER
		22	2 1	17.18	19	20.71	155	12.73	7.68	1.9	1.7	22	1	65	.10	4	.7	1.5	20	UER
		22	438	9.12	19	19.68	155	6.40	7.55	2.0	1.7	27	3	128	.09	5	.7	1.6	19	UER
		22	7 9	35.55	19	21.51	155	3.63	6.12	2.0	1.9	22	2	105	.11	3	.8	1.6	18	MER
		23	510	.17	19	19.86	155	6.16	7.38	2.4	2.4	32	1	127	.11	6	.7	1.0	29	UER
		23	1557	24.17	19	20.62	155	7.75	6.55	1.9	1.9	25	2	86	.12	5	.7	1.1	19	UER
		23	2032	18.86	19	22.72	155	26.97	10.56	1.9	2.3	28	0	58	.13	1	.7	1.2	23	UKF
		24	1551	25.47	19	22.98	155	27.57	9.77	1.8	1.9	30	4	58	.11	1	.6	1.0	28	UKF
		24	20 3	23.12	19	13.25	155	32.00	7.49	2.2	2.3	34	3	129	.22	9	.9	1.5	32	LSW
		24	2119	58.08	19	27.55	155	49.79	7.81	2.5	1.9	28	2	98	.15	9	.8	1.2	24	KON
		25	1053	18.53	19	20.94	155	3.33	7.31	2.4	2.0	25	1	111	.14	2	1.0	1.2	21	MER
		25	2141	2.61	19	24.22	155	17.40	1.27	1.1	1.9	9	0	71	.06	1	.5	.8	7	SPC
		25	2256	32.80	19	18.51	155	26.66	8.54		1.7	21	0	154	.12	7	1.2	1.7	17	HEA
		26	1 9	5.76	19	8.57	155	35.14	12.25	2.8	3.2	27	0	135	.15	12	1.0	.8	26	HEA
		26	111	43.43	19	5.20	155	3.94	46.41	3.5	3.2	35	2	262	.12	24	1.8	3.0	24	PPL
		26	2 6	17.00	19	52.05	155	45.26	36.45		1.6	23	1	263	.14	22	2.3	3.9	20	KON
		26	222	18.01	19	20.18	155	5.36	4.76	1.4	1.8	24	0	125	.10	4	1.0	3.7	17	MER
		26	810	10.77	19	19.13	155	8.72	5.37	1.9	2.1	15	1	206	.08	6	1.6	3.4	14	UER
		26	1233	46.75	19	21.13	155	1.69	5.67	2.1	2.4	26	0	176	.13	3	1.2	1.1	24	MER
		26	14 8	21.32	19	21.97	155	5.42	8.00	2.6	2.7	33	2	77	.13	5	.6	1.0	28	MER
		26	1758	57.15	19	20.29	155	11.49	6.97	1.9	1.8	26	0	80	.11	4	.7	1.1	26	UER
		26	2026	27.27	19	19.73	155	39.41	6.24	2.4	2.4	26	3	71	.18	10	.7	1.5	26	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	OCT	26	2156	16.53	19	27.41	154	54.65	4.40	2.2	2.3	28	2	189	.15	1	1.3	1.2	27	LER
		26	23 0	8.02	19	24.10	155	28.69	9.72	2.0	1.9	28	1	52	.16	3	.7	1.3	27	UKF
		27	453	34.73	19	17.84	155	23.89	7.29	1.8	2.0	27	0	125	.15	5	.9	1.4	25	SWR
		27	12 8	16.03	19	20.21	155	4.01	5.73	2.2	2.3	28	2	127	.15	2	.7	1.4	23	MER
		27	1753	42.81	19	23.05	155	26.51	9.90	2.4	2.6	33	0	53	.12	2	.7	.9	32	UKF
		27	2242	59.70	19	19.41	155	12.05	5.43	1.9	1.8	29	2	92	.14	5	.7	1.7	23	UER
		28	2 7	54.30	19	19.15	155	16.48	8.12	2.3	2.4	33	1	102	.15	2	.7	.9	30	KOA
		28	219	37.97	19	20.01	155	12.70	7.97	2.1	2.2	33	2	74	.11	5	.5	.9	31	UER
		28	351	54.86	19	25.15	155	10.20	28.70	2.1	1.8	36	2	37	.12	6	.8	1.9	32	GLN
		28	428	25.66	19	18.69	155	15.81	9.48	3.2	3.4	37	2	104	.13	4	.6	.7	32	KOA
		28	638	9.75	19	19.91	155	6.69	6.65	2.0	2.0	25	2	117	.12	5	.7	1.7	23	UER
		28	1318	22.87	19	25.89	154	53.90	9.01	3.0	3.6	31	1	227	.13	4	1.7	.6	26	LER
		28	1618	23.22	19	19.41	155	7.22	8.99	2.1	2.1	28	2	117	.11	4	.8	1.1	24	UER
		28	1640	59.72	19	19.30	155	7.34	8.70	2.5	3.0	31	2	116	.10	4	.6	1.0	26	UER
		28	18 3	40.49	19	16.08	155	29.51	52.32	2.5	2.1	32	1	175	.13	12	1.7	3.4	23	HEA
		28	2112	19.82	19	26.81	155	21.92	6.89	1.9	1.6	14	1	82	.10	6	.7	2.7	12	UKF
		28	2317	3.23	19	20.80	155	2.41	7.27	2.2	2.2	29	2	164	.16	2	1.0	.9	23	MER
		28	2322	25.60	19	21.61	155	2.68	5.75	2.0	1.7	28	2	139	.13	3	.7	1.6	23	MER
		29	236	57.98	19	23.67	155	17.80	1.96	1.5	2.2	9	1	66	.21	3	.7	1.5	5	SPC
		29	427	57.04	19	23.13	155	2.38	8.60	2.0	1.9	30	2	131	.15	4	.8	1.0	26	MER
		29	8 3	57.36	19	21.43	155	.70	5.84	2.1	2.2	28	1	193	.17	5	1.0	1.4	25	LER
		29	821	1.05	19	20.80	155	11.27	7.02		1.8	11	0	202	.08	3	2.3	3.0	11	UER
		29	834	.59	19	27.04	155	21.65	6.96	1.7	1.8	19	0	77	.13	6	.8	2.3	15	UKF
		29	1256	7.30	20	1.76	155	27.54	8.39		1.6	15	1	213	.19	20	2.0	1.7	14	KKU
		29	2047	14.03	19	23.38	154	59.46	5.37		1.6	14	0	189	.14	4	1.7	2.9	12	LER
		30	245	43.69	19	21.24	155	9.95	7.65	1.8	1.6	28	1	69	.11	2	.6	1.2	24	UER
		30	344	17.88	19	24.76	155	29.31	8.20		1.5	22	0	73	.13	5	.8	2.1	19	UKF
		30	937	52.48	19	26.20	155	29.45	9.88	2.3	2.0	31	2	67	.15	8	.6	1.1	27	UKF
		30	1035	31.58	19	19.97	155	6.80	6.97	3.1	3.3	38	2	113	.09	5	.6	.7	36	UER
		30	1346	16.19	19	20.53	155	11.00	7.65	2.4	2.7	34	2	77	.10	4	.6	1.0	31	UER
		30	1424	2.35	19	19.07	155	13.45	7.94	1.8	2.0	31	0	73	.10	4	.7	.9	28	UER
		30	1442	14.89	19	16.82	155	13.15	8.98	2.2	2.1	34	2	160	.14	1	.7	.9	27	POL
		30	1455	25.17	19	17.15	155	21.51	5.73	1.7	2.2	23	0	130	.15	5	.9	1.7	21	SWR
		30	2332	2.25	19	19.79	155	7.09	7.75	2.6	2.9	32	0	111	.11	5	.8	1.0	31	UER
		31	221	46.16	19	19.34	155	9.68	8.55	3.0	3.4	33	0	98	.09	5	.7	.8	32	UER
		31	548	9.43	19	19.43	155	11.80	5.53	1.9	2.1	30	2	95	.13	5	.7	1.5	27	UER
		31	13 9	43.96	19	19.39	155	6.77	8.67	2.8		29	1	128	.10	4	.9	.9	27	UER
		31	1311	8.97	19	19.73	155	6.66	8.34	2.7	3.1	24	2	122	.09	5	.7	1.3	16	UER
		31	1650	29.38	19	15.08	155	37.36	7.63	2.7	2.6	28	0	148	.20	1	1.2	1.0	27	HEA
		31	19 4	4.22	19	20.71	155	13.00	6.76	1.5	1.9	26	0	62	.13	4	.8	1.2	23	UER
NOV		1	224	5.08	19	25.37	155	30.67	8.95		1.5	23	0	77	.13	8	.8	1.8	21	MOK
		1	533	6.04	19	26.07	155	29.40	11.55		1.4	18	0	63	.11	7	.8	1.5	18	UKF
		1	654	57.38	19	20.64	155	1.93	7.10	2.2	2.4	27	1	189	.13	2	1.0	.8	20	MER
		1	8 3	35.01	19	13.24	155	24.86	37.53	2.4	1.9	26	0	155	.10	13	1.5	2.9	21	LSW
		1	1338	23.39	19	21.25	155	6.78	9.35	3.8	4.1	36	2	86	.09	6	.6	.8	31	UER
		1	1614	50.77	19	25.89	155	21.17	6.52	2.8	2.9	29	2	37	.15	8	.6	2.5	21	UKF
		1	1616	13.28	19	21.89	155	1.52	7.32	1.9	1.8	21	1	168	.16	4	.9	1.6	16	MER
		1	1911	59.91	19	26.70	155	20.94	5.06	1.7	1.8	14	0	77	.13	6	.8	4.5	15	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	NOV	1	1929	50.32	19	26.62	155	21.07	4.92	1.8	1.9	17	0	77	.13	6	.8	5.0	14	UKF
		1	2245	3.97	20	5.40	155	35.78	10.54	2.0	1.6	25	7	14	.22	35	1.8	1.3	23	KOH
		2	122	20.07	19	24.71	155	20.80	1.63	1.8	1.8	21	2	44	.14	6	.5	1.4	16	UKF
		2	154	35.99	19	53.46	155	46.68	9.71		2.1	18	3	251	.31	24	2.2	1.6	14	KON
		2	4 1	44.05	19	35.64	155	33.47	7.53	2.5	2.1	29	0	133	.21	8	1.0	1.7	23	MOK
		2	532	36.71	19	19.34	155	13.20	6.99		1.5	26	0	76	.12	4	.8	1.2	25	UER
		2	831	33.72	19	23.79	155	16.86	.25	1.4	1.9	9	0	75	.44	2	.9	2.1	8	SPC
		2	1547	5.72	19	19.12	155	6.52	8.64	2.2	2.1	28	2	142	.12	4	.7	1.2	23	UER
		2	1550	30.51	19	19.94	155	13.08	7.17	2.0	1.6	25	1	70	.12	5	.7	1.3	23	UER
		2	18 7	6.18	19	17.37	155	22.02	5.32	1.7	1.9	29	0	124	.16	6	.8	2.3	25	SWR
		2	1832	52.06	19	21.97	154	57.83	5.82	2.1	2.4	25	2	215	.16	6	1.1	1.4	22	LER
		2	2117	45.08	19	20.95	155	6.28	7.44	2.1	2.1	28	0	96	.10	6	.7	1.3	23	UER
		2	2322	12.02	19	20.36	155	12.54	6.96	1.5	1.8	29	1	71	.11	4	.7	1.3	27	UER
		3	246	46.87	19	20.32	155	8.75	6.91	1.8	1.7	25	0	71	.12	4	.8	1.7	21	UER
		3	351	24.40	19	21.33	155	6.72	7.41	2.2	2.5	31	2	86	.12	6	.6	1.3	27	UER
		3	436	55.79	19	24.45	155	16.19	16.92		1.6	28	0	62	.10	2	.7	1.1	26	DEP
		3	12 3	6.66	19	19.74	155	8.02	8.63	2.7	3.1	30	1	91	.08	4	.7	1.0	28	UER
		3	1313	53.95	19	19.36	155	11.64	7.24	1.7	1.8	26	0	98	.11	5	.8	1.3	24	UER
		3	1912	26.74	19	27.93	155	51.71	7.91		2.0	14	0	131	.13	6	1.3	1.2	18	KON
		3	2045	33.87	19	19.04	155	9.59	4.27	1.8	2.0	25	0	105	.14	4	.8	2.4	21	UER
		4	053	46.39	19	13.64	155	30.92	38.71		1.4	26	0	67	.14	9	1.5	4.0	22	LSW
		4	256	22.76	19	16.24	155	28.61	11.39		1.6	24	0	126	.17	12	1.0	1.3	20	HEA
		4	656	20.98	19	22.18	155	6.19	7.57	2.4	2.4	30	2	74	.11	6	.6	1.3	23	UER
		4	943	.25	19	19.51	155	12.03	6.25	2.5	2.6	30	0	90	.10	5	.7	1.3	29	UER
		4	1137	46.24	19	18.84	155	16.03	9.78	2.9	3.2	34	1	103	.11	3	.6	.7	26	KOA
		4	1256	10.44	19	21.71	155	6.13	5.96	1.9	2.1	28	1	82	.15	6	.7	2.6	23	UER
		4	1622	13.45	19	18.66	155	15.31	5.94	2.3	2.4	29	1	100	.13	4	.7	1.3	26	KOA
		5	745	.20	19	18.41	155	13.21	6.22	1.8	1.9	27	0	89	.11	3	.7	.9	27	POL
		5	1252	59.91	19	18.87	155	13.99	6.87	1.6	2.0	25	0	94	.10	4	.8	1.3	22	POL
		5	1759	40.76	19	23.71	155	17.07	15.34	2.0	1.9	28	2	60	.09	2	.9	.5	27	DEP
		5	19 0	3.87	19	19.70	155	7.76	8.99	2.9	3.4	32	0	98	.08	4	.8	.7	30	UER
		5	1923	31.31	19	19.61	155	7.88	8.11	2.6	3.0	34	2	96	.11	4	.6	1.1	29	UER
		5	1936	56.64	19	19.66	155	8.25	5.38	1.8	2.1	31	1	86	.13	4	.7	2.0	30	UER
		5	2255	50.35	19	25.41	155	24.67	7.32	1.8	1.9	17	0	62	.10	7	.9	2.9	17	UKF
		6	724	15.23	19	22.76	155	24.91	11.78	3.6	3.8	35	3	42	.12	5	.7	.4	30	UKF
		6	1011	36.82	19	12.50	155	28.41	8.57	2.0	2.1	27	0	144	.14	16	1.1	1.5	22	LSW
		6	15 2	38.84	19	21.42	155	6.38	7.63	2.2	2.2	30	1	87	.13	6	.7	1.3	27	UER
		6	2236	2.43	19	12.49	155	37.28	10.55	2.7	2.9	30	0	113	.25	4	1.1	1.2	29	HEA
		6	2313	36.90	19	19.91	155	13.36	6.54	2.0	2.5	33	1	67	.15	5	.7	1.3	29	UER
		7	010	25.19	19	20.16	155	13.13	6.58	1.6	2.1	28	0	87	.13	5	.8	1.4	26	UER
		7	1448	16.25	19	27.90	155	49.67	13.47	2.6	1.6	14	2	67	.15	8	1.5	.8	14	KON
		7	1717	57.26	19	23.82	155	16.71	14.91	1.8	1.8	26	0	77	.08	2	1.0	.6	20	DEP
		7	2134	46.54	19	29.45	154	44.40	8.87	2.2	1.6	28	5	294	.12	16	1.3	.9	24	DIS
		8	110	16.76	19	25.97	154	53.56	6.60	1.9	1.7	20	1	234	.18	4	2.3	1.5	18	LER
		8	259	49.85	19	22.34	155	24.54	9.45	1.5	1.8	26	0	87	.09	5	.7	1.2	26	UKF
		8	635	8.05	19	19.38	155	11.38	6.59	2.1	1.9	28	0	99	.10	6	.8	1.4	24	UER
		8	938	52.09	19	19.66	155	11.17	7.20	1.8	2.0	26	0	93	.11	5	.8	1.4	19	UER
		8	946	23.71	19	20.80	155	10.56	7.35	2.2	2.0	27	0	73	.10	3	.8	1.2	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	NOV	8	1217	46.23	19	23.25	155	26.37	8.97	1.9	2.4	24	0	50	.13	3	.7	1.5	22	UKF
		8	1429	49.10	19	9.08	155	35.45	10.67	2.4	2.1	21	0	131	.18	11	1.0	1.2	19	HEA
		8	1445	58.21	19	25.47	155	28.29	8.63	2.0	2.1	24	2	58	.12	6	.7	1.8	17	UKF
		8	15 3	48.29	19	19.75	155	10.05	8.00	1.9	2.1	26	0	91	.08	4	.7	1.1	25	UER
		8	1535	26.46	19	19.14	155	11.60	9.21	2.3	2.5	22	2	104	.07	5	.6	.9	16	UER
		8	16 9	34.31	19	19.14	155	10.92	7.50	2.4	2.7	32	1	107	.12	6	.6	1.0	26	UER
		9	0 4	38.67	19	25.42	155	23.16	10.04	1.6	1.9	29	0	50	.13	7	.7	1.1	26	UKF
		9	540	23.62	19	22.95	155	29.85	9.08		1.8	27	0	87	.12	4	.7	1.4	23	UKF
		9	744	55.26	19	19.68	155	7.08	7.45	1.4	1.8	26	0	114	.09	5	.8	1.4	23	UER
		9	1045	52.32	19	25.34	155	49.76	8.53	2.5	2.1	22	1	164	.19	12	1.1	1.1	20	KON
		10	321	45.80	19	44.32	155	46.53	6.47	2.3	2.2	23	1	199	.22	9	1.5	1.8	20	KON
		10	917	38.56	19	19.44	155	15.50	7.48	1.9	2.3	35	1	88	.14	4	.7	1.0	21	KOA
		10	956	31.11	19	20.51	155	12.54	8.81	1.9	2.1	27	1	69	.11	4	.6	1.0	26	UER
		10	12 3	52.27	19	23.90	155	16.37	6.12	2.1	2.4	9	2	104	.17	3	1.3	1.7	7	LPC
		10	1258	32.30	19	36.26	155	33.84	8.42	2.4	1.8	23	2	53	.26	8	1.0	3.0	21	MOK
		10	17 9	46.77	19	20.72	155	13.00	8.56	1.9	1.6	30	1	63	.13	4	.6	1.1	24	UER
		10	1725	28.96	19	20.73	154	59.77	6.50	2.5	2.3	30	2	211	.13	6	1.0	.8	23	LER
		10	20 8	22.51	19	19.45	155	10.94	6.75	1.9	2.0	34	2	99	.15	5	.7	1.3	29	UER
		10	2240	42.32	19	20.38	155	6.65	6.96	2.0	1.8	30	2	106	.15	6	.7	1.6	25	UER
		10	2335	1.76	19	40.30	155	11.99	42.35	2.7	2.5	36	0	110	.11	18	1.2	3.6	31	MIL
		11	1 7	57.72	19	16.52	155	22.42	8.41	2.4	3.0	36	2	131	.17	7	.8	.7	31	SWR
		11	3 7	34.65	19	20.26	155	11.42	6.45	1.6	1.7	25	0	81	.11	7	.7	1.6	24	UER
		11	526	19.51	19	21.51	155	15.16	9.29	1.9	1.9	33	1	63	.14	2	.6	.9	30	KOA
		11	650	55.43	19	19.58	155	10.87	5.34	1.9	2.1	28	2	97	.11	5	.7	1.9	23	UER
		11	910	33.18	19	22.65	155	4.91	8.14	2.9	2.9	29	2	79	.10	4	.6	1.0	24	MER
		11	14 8	10.27	19	19.94	155	6.11	6.73	2.0	1.7	25	2	125	.11	6	.7	1.8	21	UER
		11	1515	30.66	19	20.88	155	3.94	6.05	1.9	1.9	19	3	93	.13	3	.8	1.6	17	MER
		11	1527	43.13	19	27.13	155	21.84	.65	1.9	2.2	23	2	45	.19	6	.5	.8	17	UKF
		11	1546	54.56	19	27.57	154	54.79	5.15	2.1	2.1	20	1	182	.11	1	1.8	1.8	15	LER
		11	1715	49.06	19	19.53	155	11.01	8.24		1.2	17	0	97	.08	5	1.0	2.0	16	UER
		11	1717	.48	19	22.07	155	17.77	.01		.9	11	0	81	.29	3	.7	1.7	11	KOA
		11	2035	44.41	19	20.47	155	11.93	7.71	1.3	1.4	16	0	75	.08	5	1.0	1.7	11	UER
		12	1232	21.71	19	18.69	155	12.24	6.68	2.2	2.3	33	3	108	.18	4	.7	1.3	25	POL
		12	1929	30.48	19	21.31	155	1.58	7.49	1.6	1.3	20	3	178	.11	4	.8	1.2	15	MER
		13	1341	12.53	19	19.98	155	11.09	7.35	2.1	2.3	28	0	87	.11	4	.7	1.0	27	UER
		13	20 5	20.88	19	27.51	155	28.06	7.92	1.8	2.0	27	0	50	.13	8	.7	1.8	27	UKF
		14	134	32.18	19	18.74	155	15.10	6.34	2.1	2.4	29	0	96	.13	4	.7	1.1	29	KOA
		14	148	20.96	19	7.87	155	33.45	48.43	2.2	2.1	25	3	223	.13	10	1.7	2.4	25	LSW
		14	840	28.65	19	19.69	155	10.72	5.75	2.2	1.9	18	0	94	.15	5	1.0	2.7	16	UER
		14	1844	22.40	19	22.28	155	24.74	9.83	1.8	1.9	32	0	47	.12	5	.6	.9	26	UKF
		15	6 9	23.71	19	24.51	155	29.67	9.13	2.2	2.3	31	2	66	.12	5	.5	1.1	26	UKF
		15	16 5	31.82	19	23.53	155	25.99	9.53	2.0	2.2	31	0	50	.13	3	.6	1.1	28	UKF
		15	2241	31.06	19	23.04	155	25.66	8.49	2.1	2.5	32	2	48	.13	4	.6	1.5	27	UKF
		16	228	11.14	19	21.09	155	26.71	8.81	2.6	3.1	36	2	74	.13	3	.5	.8	33	HEA
		16	4 8	8.39	19	19.36	155	7.28	9.42	2.4	2.6	36	0	116	.09	4	.9	.6	33	UER
		16	736	23.36	19	26.19	155	23.91	7.54	1.8	2.1	22	0	68	.12	7	.7	2.1	22	UKF
		16	838	10.37	19	19.40	155	11.26	5.66	1.9	2.1	31	0	99	.11	6	.7	1.4	29	UER
		16	1521	36.65	19	17.20	155	26.60	6.35	1.9	2.4	30	1	125	.14	8	.8	2.2	27	HEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	NOV	16	1529	16.21	19	20.68	155	2.16	5.38	2.1	2.2	29	2	180	.16	2	.8	1.3	24	MER
		16	22 8	18.43	19	20.04	155	8.59	6.47	2.4	3.2	38	2	76	.15	4	.6	1.1	33	UER
		16	2332	10.39	19	19.31	155	11.39	7.04	2.6	3.0	38	2	101	.11	6	.6	1.0	32	UER
		17	2 5	47.19	19	20.38	155	2.84	6.29	2.1	2.2	30	2	140	.18	1	.9	1.3	27	MER
		17	413	58.81	19	25.12	154	50.92	9.24	2.3	2.6	29	2	276	.16	8	1.6	.9	27	LER
		17	1113	58.90	19	13.69	155	20.20	32.52	2.4	2.1	33	1	160	.11	8	1.1	2.1	29	HLP
		17	1126	7.55	19	24.60	155	29.19	10.57	2.1	1.9	30	0	58	.13	5	.7	1.1	27	UKF
		17	1234	12.49	19	9.53	155	33.66	38.64	3.6	3.4	37	1	138	.11	12	1.4	2.3	30	LSW
		17	1359	31.96	19	23.07	155	27.47	7.06	2.0	1.9	26	1	69	.12	1	.7	1.7	22	UKF
		17	16 0	13.86	19	12.03	155	36.36	9.66	2.4	2.1	28	0	117	.20	5	1.1	1.3	27	HEA
		17	18 1	59.31	19	10.44	155	37.81	11.56	2.8	2.8	28	0	217	.19	8	2.2	1.0	25	HEA
		17	2141	49.78	19	8.33	155	34.25	38.17	2.4	2.2	34	0	140	.10	13	1.3	3.0	29	HEA
		18	147	53.67	19	19.76	155	6.94	7.59	1.8	2.2	29	0	115	.10	5	.9	1.2	29	UER
		18	327	.05	19	20.20	155	12.61	7.24	1.8	2.1	32	0	73	.12	5	.7	1.0	29	UER
		18	1025	5.62	19	21.67	155	2.34	7.80	2.7	2.9	31	0	149	.11	3	1.0	.7	26	MER
		18	15 9	7.88	19	22.04	155	5.13	8.11	1.9	1.9	29	0	75	.11	5	.8	1.0	29	MER
		18	1825	39.67	19	26.86	155	23.84	5.11	1.5	1.6	17	0	70	.11	6	.7	3.8	14	UKF
		18	1851	40.19	19	19.53	155	8.13	7.34	2.1	2.2	32	0	90	.10	4	.7	1.1	29	UER
		18	1916	17.14	19	20.17	155	3.88	7.81	3.2	3.4	36	0	128	.10	2	1.0	.7	36	MER
		19	1243	10.77	19	24.35	155	25.99	9.17	2.1	2.2	34	2	40	.13	4	.6	1.3	26	UKF
		19	1311	33.23	19	20.59	155	9.59	7.99	1.8	1.8	25	0	72	.08	3	.7	1.2	21	UER
		19	1423	25.36	19	24.85	155	29.71	7.19		1.6	27	0	51	.10	6	.7	1.8	26	UKF
		19	1429	53.89	19	24.43	155	24.05	10.29	2.3	2.4	29	2	42	.11	7	.6	1.0	25	UKF
		19	2036	36.86	19	19.69	155	12.11	6.29	1.9	1.9	30	0	86	.14	5	.8	1.4	28	UER
		19	2126	12.52	19	19.25	155	7.58	7.95	1.8	1.9	30	1	117	.09	4	.7	1.1	27	UER
		20	158	26.62	19	25.04	155	25.66	9.77	1.9	1.9	31	1	50	.14	6	.6	1.4	24	UKF
		20	1052	45.07	19	19.30	155	2.45	6.30	2.8	2.9	16	1	225	.09	13	1.5	3.0	14	MER
		20	1053	52.77	19	19.77	155	2.43	5.58	2.4	2.1	11	1	222	.09	12	1.5	5.4	8	MER
		20	1330	14.31	19	20.98	155	2.12	4.69	2.0	1.6	15	1	221	.11	10	1.8	12.4	13	MER
		20	1524	30.98	19	26.71	155	28.37	16.71	2.0	1.7	14	0	97	.04	10	1.4	2.9	14	UKF
		20	2140	43.15	19	20.90	155	13.95	9.52	2.2	2.3	17	0	157	.10	4	1.0	1.3	11	UER
		21	337	31.97	19	28.22	155	25.51	12.17	3.0	2.9	21	2	78	.09	5	.8	.9	16	UKF
		21	417	37.52	19	20.16	155	9.17	8.17	2.2	2.3	18	2	180	.09	4	1.1	1.6	14	UER
		21	1246	9.59	19	17.64	155	55.88	1.24	2.7	1.7	17	1	256	.11	22	2.7	1.9	14	KON
		21	1610	49.00	19	26.45	155	28.21	7.69	2.0	1.9	27	2	64	.11	7	.5	2.1	22	UKF
		21	1857	55.23	19	21.86	154	59.56	6.62	2.2	1.8	26	0	200	.14	6	1.6	1.0	23	LER
		22	124	26.02	19	20.65	155	10.59	8.75	2.4	2.2	30	2	76	.10	3	.6	1.0	22	UER
		22	3 4	19.23	19	22.28	155	2.87	8.73	2.1	2.1	29	1	129	.09	4	.8	.8	28	MER
		22	454	42.12	19	36.51	155	36.38	4.02	.9	.8	11	2	219	.16	13	1.5	6.9	11	MOK
		22	938	12.58	19	28.31	156	25.39	6.09	3.1	2.4	24	0	243	.18	53	5.5	3.2	22	DIS
		22	1114	57.71	19	24.42	155	30.01	9.64	1.9	2.1	27	0	71	.14	5	.8	1.5	24	MOK
		22	1124	47.53	19	19.86	155	11.74	9.25	2.1	2.4	31	0	86	.11	5	.6	.8	25	UER
		22	13 6	46.47	19	18.37	155	20.83	10.20	3.3	3.5	36	2	117	.13	4	.6	.5	28	SWR
		22	1714	9.85	19	19.69	155	6.59	9.88	3.2	3.4	35	2	123	.09	5	.7	.6	30	UER
		22	1721	5.29	19	20.66	155	2.04	7.99	2.5	2.7	30	1	165	.10	2	1.0	.7	26	MER
		22	2224	36.90	19	20.48	155	4.06	5.77	1.8	1.9	27	0	113	.14	2	.9	1.6	26	MER
		23	350	35.40	19	28.06	155	29.18	11.45	2.3	2.0	33	0	56	.13	8	.7	.9	29	UKF
		23	359	39.50	19	20.00	155	6.73	9.27	2.5	2.6	32	2	113	.10	5	.7	.8	27	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	NOV	23	634	10.38	19	53.92	155	22.32	15.07	2.2	1.8	22	1	180	.12	35	1.5	6.9	18	KKU
		23	841	.39	19	8.42	155	24.11	42.43			27	3	178	.08	20	1.2	1.9	26	LSW
		23	942	57.86	19	19.78	155	11.60	6.72	1.9	2.0	27	1	88	.12	5	.7	1.2	24	UER
		23	1325	17.74	19	21.31	155	2.59	6.42	2.0	2.2	28	1	146	.14	3	.9	1.1	24	MER
		23	2145	4.73	19	24.82	155	15.96	15.32	2.6	3.1	38	2	29	.11	2	.7	.4	33	DEP
		24	440	50.38	19	43.63	156	1.26	15.07	2.8	2.0	39	5	46	.27	20	1.7	1.2	36	KON
		24	532	7.14	19	22.35	155	30.16	7.88	1.9	1.9	31	0	59	.13	4	.7	1.6	26	MOK
		24	6 9	24.85	19	22.65	155	50.22	9.73	2.6	2.1	27	1	61	.16	13	.8	1.0	24	KON
		24	721	17.76	19	20.42	155	4.31	4.52	2.0	2.4	33	2	118	.18	3	.8	2.2	30	MER
		24	827	28.24	19	19.37	155	12.54	5.62	1.9	1.8	29	1	87	.11	5	.7	1.6	27	UER
		25	050	7.58	19	20.21	155	11.83	9.74	2.1	2.0	32	0	80	.08	5	.6	.8	28	UER
		25	059	.24	19	20.04	155	11.96	5.66	2.1	2.2	32	1	81	.14	5	.6	1.3	28	UER
		25	854	51.35	19	21.11	155	1.47	7.71	3.5	4.0	34	2	186	.12	3	.9	.6	32	MER
		25	9 5	59.72	19	23.20	155	25.59	9.86	2.0	2.1	25	0	53	.12	4	.7	1.5	23	UKF
		25	913	54.06	19	21.44	155	.13	7.31	2.1	2.2	25	2	201	.22	6	1.2	1.2	20	LER
		25	1051	54.97	19	19.97	155	8.24	7.23	1.8	2.1	26	0	84	.11	5	.8	1.4	25	UER
		25	1437	24.23	19	16.73	155	22.40	6.72	1.9	2.4	24	0	146	.11	7	.9	1.7	22	SWR
		25	2237	18.68	19	23.72	155	16.06	2.87	1.6	1.8	15	1	94	.10	2	.5	.8	13	SPC
		26	122	44.65	19	20.34	155	6.62	7.38	2.2	2.7	33	0	107	.11	6	.7	1.0	32	UER
		26	137	46.02	19	27.01	155	28.66	11.30	2.0	1.8	29	0	53	.12	9	.7	.9	28	UKF
		26	651	14.86	19	19.49	155	7.64	7.79	1.8	1.7	29	1	105	.12	4	.8	1.2	26	UER
		26	1223	11.34	19	20.93	155	6.85	4.13	1.8	1.9	22	1	92	.15	6	.8	3.9	20	UER
		26	1336	23.38	19	21.31	155	2.62	7.73	2.6	3.2	32	2	145	.13	3	.8	.8	29	MER
		26	1632	49.93	19	10.32	155	41.42	8.73	2.5	2.0	28	3	127	.20	11	1.0	1.4	25	HEA
		26	1755	13.13	19	21.10	155	.86	5.65	2.0	2.4	26	2	199	.18	4	1.0	1.6	21	LER
		26	2133	10.29	19	19.39	155	4.26	5.90	2.0	2.3	25	2	174	.14	3	.8	1.6	23	MER
		27	839	40.35	19	19.37	155	8.28	6.40	1.9	2.2	30	2	88	.13	4	.7	1.5	26	UER
		27	1057	54.68	19	11.80	155	36.96	10.38	2.7	2.8	30	1	115	.23	6	1.0	1.3	28	HEA
		27	18 2	.28	19	18.68	155	15.11	6.67	1.9	2.3	27	1	97	.13	4	.7	1.3	22	KOA
		27	1845	3.18	19	20.23	155	7.11	8.38	2.6	3.1	35	1	102	.09	6	.6	.9	34	UER
		27	2017	30.94	19	21.38	155	.98	7.80	2.0	2.1	28	1	189	.16	4	1.1	.9	23	LER
		27	22 8	55.60	19	20.48	155	13.31	5.78	1.8	2.3	34	2	62	.17	4	.6	1.4	32	UER
		28	645	33.73	19	13.98	155	20.50	47.69	2.6	2.8	34	0	157	.10	8	1.4	3.0	33	HLP
		28	1137	47.58	19	19.36	155	6.34	8.39	2.1	2.1	29	1	138	.11	5	.8	.9	24	UER
		28	1342	19.19	19	21.59	155	2.69	7.58	2.3	2.2	30	2	138	.14	3	.8	1.0	25	MER
		28	22 3	14.66	19	20.32	155	11.15	9.99	2.7	2.8	37	2	80	.11	4	.5	.7	29	UER
		28	23 3	12.21	19	18.14	155	18.25	33.48	2.1	1.9	32	1	124	.08	1	1.0	2.2	24	DEP
		29	038	42.59	19	16.14	155	49.66	8.55	2.3	2.0	25	0	116	.16	5	1.0	1.2	22	KON
		29	926	19.95	19	17.34	155	18.33	32.72	2.2	1.7	28	2	135	.09	1	1.3	1.6	28	KOA
		29	1211	1.85	19	23.69	155	15.54	3.28	1.5	2.0	12	1	96	.10	3	.6	1.0	11	SPC
		29	1246	54.44	19	23.62	155	15.70	3.14	1.4	2.1	14	1	92	.09	2	.6	.8	13	SPC
		30	138	11.58	19	22.50	155	25.12	9.29	2.2	2.3	36	2	49	.12	4	.5	.8	33	UKF
		30	329	29.29	19	23.72	155	17.55	1.65	1.6	2.2	10	1	64	.12	3	.5	1.0	7	SPC
		30	641	58.79	19	19.64	155	8.42	8.00	2.0	2.5	30	1	83	.10	4	.7	1.3	27	UER
		30	814	23.97	19	20.39	155	2.46	6.73	2.2	2.2	29	2	180	.14	1	.8	1.2	24	MER
		30	11 8	15.80	19	17.63	155	22.41	8.34	2.1	2.0	26	2	120	.12	5	.6	1.0	23	SWR
		30	1237	57.43	19	27.85	155	51.80	7.83		1.9	21	0	129	.16	6	1.4	1.1	20	KON
		30	17 5	14.75	19	22.71	155	59.50	9.09	2.0	1.9	18	0	251	.15	14	3.1	1.0	17	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	NOV	30	1755	24.17	19	19.63	155	4.36	6.58	2.1	2.2	30	2	160	.12	3	.7	1.2	25	MER
	DEC	1	311	13.39	19	18.15	155	26.32	7.80	2.2	2.0	33	2	119	.13	7	.7	.9	29	HEA
		1	321	26.93	19	18.98	155	10.60	9.01	2.6	2.7	36	3	40	.12	6	.6	.9	30	POL
		1	921	43.53	19	19.94	155	10.99	7.42	2.1	2.0	29	2	87	.10	4	.6	1.3	24	UER
		1	1631	1.01	19	27.25	154	52.78	7.37	1.9	2.1	24	0	252	.20	3	3.3	1.1	20	LER
		2	1	9 34.42	19	20.00	155	3.68	7.28	2.1	2.2	28	1	141	.14	1	1.0	.9	23	MER
		2	2	9 37.72	19	21.12	155	13.29	8.90	2.1	2.3	36	3	57	.14	3	.5	.8	31	UER
		2	235	47.51	19	20.12	155	8.81	8.53	2.2	2.2	27	0	73	.12	4	.8	1.2	24	UER
		2	1459	57.37	19	22.14	155	28.46	8.95	1.9	2.1	24	0	115	.13	2	.8	1.4	22	UKF
		2	1830	55.74	19	19.90	155	6.86	9.19	3.1	3.4	33	1	114	.10	5	.7	.9	31	UER
		2	1923	42.43	19	19.37	155	11.24	6.19	1.7	2.1	29	1	101	.11	6	.7	1.3	19	UER
		2	2251	47.27	19	20.44	155	11.62	8.41	1.0	1.9	26	0	77	.09	4	.7	1.1	22	UER
		2	2343	21.72	19	20.84	155	11.22	7.87	1.6	1.9	25	1	72	.11	3	.6	1.3	22	UER
		3	047	12.46	19	20.93	155	2.25	6.66	1.8	2.1	28	5	167	.12	2	.6	1.0	19	MER
		3	3	6 39.30	19	19.82	155	10.16	7.80	1.9	2.2	27	0	90	.10	4	.7	1.2	21	UER
		3	9	6 55.06	19	21.12	155	8.40	5.78	2.5	2.9	17	3	231	.10	3	1.5	1.9	9	UER
		3	1131	49.95	19	19.63	155	10.48	8.20	2.3	2.6	29	0	95	.09	5	.7	1.1	25	UER
		4	040	43.62	19	57.99	155	31.29	43.53	2.0	1.8	36	5	170	.14	21	1.0	1.3	28	KOH
		4	1	5 24.88	19	19.55	155	11.99	6.29	1.9	2.0	31	0	91	.11	5	.7	1.2	22	UER
		4	2	5 19.67	19	19.44	155	11.02	7.17	2.0	2.1	28	1	99	.10	5	.7	1.4	22	UER
		4	238	5.84	19	19.06	155	12.07	6.17	1.4	1.8	23	0	101	.12	5	.8	2.0	18	UER
		4	948	47.28	19	26.51	155	25.19	6.63	2.1	2.4	28	0	52	.16	7	.6	2.5	25	UKF
		4	1657	46.02	19	21.76	155	2.87	6.93	2.0	2.4	28	0	131	.14	3	.9	1.1	26	MER
		4	1735	40.13	19	20.18	155	7.69	7.46	2.0	2.4	31	1	93	.11	5	.7	1.3	27	UER
		4	2225	37.79	19	21.07	155	2.70	8.98	3.2	3.7	38	2	144	.10	2	.8	.5	35	MER
		5	113	42.78	19	23.56	154	57.71	7.63	2.1	2.2	31	3	197	.17	3	.9	.8	23	LER
		5	210	36.61	19	18.08	155	16.27	6.78	1.9	2.4	33	0	29	.14	4	.8	1.1	29	KOA
		5	1520	23.52	19	25.84	155	29.45	8.11	2.1	2.1	30	1	37	.15	7	.6	1.7	28	UKF
		5	1939	2.30	19	22.03	155	19.24	30.89	3.2	3.1	36	1	50	.10	3	.9	1.2	34	DEP
		6	917	22.08	19	57.81	153	56.68	6.98	3.2	2.4	36	4	10	.12	113	24.1	31.2	33	DIS
		6	951	56.64	19	20.10	155	13.56	7.04	2.1	2.5	32	2	61	.14	5	.6	1.1	26	UER
		6	2030	35.76	19	19.45	155	3.80	6.58	2.1	1.9	27	2	183	.17	2	.9	1.4	24	MER
		7	436	16.52	19	19.62	155	13.28	4.47	2.0	2.1	32	0	71	.14	5	.7	2.1	29	UER
		7	1348	26.24	19	20.52	155	7.78	8.87	2.1	2.2	28	2	87	.11	5	.6	1.0	22	UER
		7	1436	27.50	19	20.30	155	5.13	5.85	2.0	1.9	19	0	123	.10	4	.9	2.0	17	MER
		7	16	1 54.18	19	20.15	155	11.44	7.76	2.2	2.4	29	0	82	.09	5	.7	1.0	25	UER
		7	1935	.08	19	19.85	155	11.70	7.20	1.7	2.2	29	0	86	.09	5	.7	1.1	27	UER
		7	2220	2.32	19	20.50	155	13.18	9.59	2.5	2.7	32	1	63	.12	4	.6	.9	23	UER
		8	030	30.67	19	23.05	155	29.99	9.12	2.5	2.4	33	1	87	.13	4	.6	.9	28	UKF
		8	031	30.38	19	23.28	155	29.79	8.70	1.5	1.9	17	0	86	.09	4	.9	1.9	14	UKF
		8	842	25.56	19	20.50	155	2.08	5.36	2.1	2.2	29	2	191	.18	2	.9	1.5	26	MER
		8	1410	29.09	19	10.93	155	32.42	9.57	2.3	2.1	27	1	137	.16	11	1.1	1.4	25	LSW
		8	2348	42.24	19	21.88	155	25.87	8.78	2.2	2.4	33	0	65	.16	3	.7	1.0	32	HEA
		9	155	5.35	19	31.93	155	56.27	11.02	2.9	2.6	24	0	235	.11	5	2.1	.8	21	KON
		9	14	9 42.61	19	19.64	155	10.74	9.78	2.5	2.8	31	0	95	.08	5	.7	.7	28	UER
		9	19	7 43.35	20	20.75	155	58.42	34.25	2.7	2.2	35	5	156	.22	32	2.0	3.2	29	DIS
		9	2239	42.37	19	12.77	155	35.55	9.74	2.4	2.2	30	1	117	.17	5	.9	1.1	22	HEA
		10	1217	14.01	19	20.06	155	4.65	5.86	2.3	2.7	26	2	135	.12	3	.8	1.7	24	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	DEC	10	1539	36.16	19	19.74	155	9.69	6.51	2.1	2.2	33	2	88	.13	4	.6	1.1	29	UER
		10	1913	18.88	19	21.30	155	.74	5.72	2.5	2.9	30	1	195	.11	5	.8	1.0	29	LER
		11	017	15.03	19	20.65	155	5.80	8.27	2.2	2.4	28	1	107	.12	5	.7	1.1	25	MER
		11	7	5 22.62	19	10.80	155	40.71	10.74	2.5	2.1	26	2	120	.23	10	1.1	1.2	25	HEA
		11	823	44.54	19	20.09	155	13.14	7.36	1.9	2.2	28	0	68	.13	5	.7	1.0	25	UER
		11	1856	52.61	19	20.33	155	4.98	5.63	2.3	2.6	25	0	123	.12	4	.9	1.8	22	MER
		11	1929	6.79	19	20.14	155	13.52	7.31	2.1	2.6	33	2	65	.14	5	.6	1.0	28	UER
		12	053	31.96	19	23.03	155	15.65	11.29	1.5	1.6	30	3	59	.12	1	.6	.9	28	LPC
		12	6	1 47.74	19	16.63	155	26.69	8.21	1.9	2.1	28	1	128	.16	9	.9	1.5	24	HEA
		13	121	58.29	19	20.04	155	13.19	9.64	2.6	2.8	33	0	68	.09	5	.6	.6	29	UER
		13	444	54.56	19	16.75	155	31.53	8.91	2.5	2.5	28	0	115	.14	10	.8	1.3	25	HEA
		13	841	2.56	19	26.39	155	29.55	10.91	2.1	1.9	26	0	54	.12	8	.7	1.3	21	UKF
		13	16	0 56.81	19	19.99	155	8.20	7.95	2.7	3.3	30	0	85	.09	5	.7	1.2	28	UER
		13	1937	28.26	19	20.61	155	9.53	7.74	2.0	2.0	30	0	72	.08	3	.6	1.2	25	UER
		14	031	1.84	19	22.54	155	16.80	33.95	2.8	2.9	37	3	44	.11	2	.9	1.3	32	DEP
		14	420	47.71	19	21.26	155	1.50	7.18	2.3	2.1	28	1	182	.13	4	1.0	.7	27	MER
		14	7	3 37.79	19	24.14	155	17.49	.90	1.7	2.4	15	1	56	.12	2	.5	.8	12	SPC
		14	819	32.72	19	19.01	155	10.60	11.45	3.2	3.3	22	3	41	.15	6	.7	.7	18	UER
		14	1239	35.99	19	22.95	155	30.10	8.25	1.9	1.6	24	0	88	.14	4	.8	2.1	19	MOK
		14	2249	25.93	19	7.07	155	26.06	32.39	2.4	1.8	29	1	181	.09	24	1.6	2.2	23	LSW
		15	21	8 5.73	19	22.86	155	24.33	9.28	1.6	1.6	23	0	78	.11	5	.8	1.5	23	UKF
		16	114	22.61	19	22.32	155	5.99	7.59	2.6	2.5	32	2	72	.12	5	.6	1.3	24	MER
		16	7	4 55.16	19	25.56	154	49.79	8.77	2.9	3.0	31	2	279	.17	9	2.4	1.0	28	LER
		16	1321	56.70	19	20.39	155	11.03	8.35	1.7	2.0	26	0	79	.09	4	.7	1.0	22	UER
		16	2329	5.03	19	19.11	155	12.32	7.68	2.4	2.7	32	2	95	.12	4	.6	1.1	23	UFR
		17	147	11.31	19	20.19	155	7.54	7.79	2.4	2.8	34	3	96	.10	5	.6	1.1	27	UER
		17	340	25.64	19	19.01	155	14.04	8.19	2.3	2.4	33	2	69	.12	4	.6	1.0	24	UER
		17	723	40.07	19	29.45	155	21.83	.01	1.7	2.1	23	2	54	.23	3	.7	.9	20	NER
		17	1752	32.40	19	20.98	155	10.79	7.62	1.7	2.0	29	0	70	.10	3	.7	1.1	26	UER
		17	2341	14.96	19	19.37	155	11.28	7.07	1.9	2.3	32	1	100	.11	6	.6	1.0	27	UER
		18	044	51.42	19	26.87	155	21.38	6.06	2.1	2.4	27	1	49	.12	6	.6	2.5	20	UKF
		18	133	51.28	19	19.97	155	6.56	7.53	2.0	1.8	29	0	117	.09	5	.9	1.1	25	UER
		18	9	4 56.37	19	23.90	155	28.31	10.79	3.0	3.2	36	1	50	.13	3	.6	.8	27	UKF
		18	1539	35.51	19	23.41	155	15.19	3.20	1.8	2.1	19	1	76	.09	2	.6	.8	16	SPC
		19	356	12.16	19	20.87	155	13.33	7.82	2.1	2.1	30	1	59	.14	3	.7	.9	23	UER
		19	545	45.51	19	18.61	155	13.50	8.51	2.3	2.6	32	0	76	.10	3	.6	.9	27	POL
		19	854	23.17	19	17.29	155	16.16	9.62	2.0	2.2	26	0	140	.10	5	1.0	.7	19	KOA
		19	935	1.56	19	19.91	155	13.10	9.80	3.2	3.2	34	2	71	.10	5	.5	.7	28	UER
		19	939	13.88	19	27.61	155	28.26	11.11	2.8	2.6	31	1	51	.16	8	.7	1.0	29	UKF
		19	2024	31.07	19	21.63	155	15.26	7.46	2.6	2.8	36	2	62	.14	2	.5	.8	28	KOA
		20	10	7 13.77	19	20.35	155	13.50	7.26	1.8	2.2	29	0	65	.11	4	.7	1.0	28	UER
		20	1053	32.80	19	20.83	155	10.31	8.86	1.8	2.1	27	1	72	.10	2	.6	1.2	26	UER
		20	2052	12.42	19	19.63	155	7.89	7.03	1.9	1.9	27	0	96	.10	4	.8	1.5	25	UER
		21	019	43.85	19	19.25	155	8.69	5.29	1.8	2.2	30	1	88	.12	4	.8	1.6	27	UER
		21	654	12.43	19	19.71	155	10.32	7.35	1.7	2.2	29	0	93	.10	4	.6	1.0	25	UER
		21	1238	14.86	19	21.33	155	22.70	10.24	1.8	2.3	18	0	72	.16	7	.8	1.4	17	SWR
		21	13	7 19.46	19	17.76	155	16.22	8.64	2.0	2.3	32	0	129	.11	4	.7	.8	30	KOA
		21	1352	17.98	19	21.54	155	.02	6.91	2.5	2.6	26	0	200	.16	6	1.6	1.1	24	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	DEC	21	2225	55.07	19	20.14	155	13.74	9.80	3.6	3.7	39	2	59	.09	5	.5	.7	39	UER
		22	735	52.90	19	20.98	155	13.22	9.34	2.3	2.6	33	1	58	.09	3	.6	.7	29	UER
		22	8 0	18.59	19	23.37	155	2.02	8.28	2.2	2.0	30	1	135	.17	5	.9	1.0	28	MER
		22	14 2	48.97	19	19.25	155	8.79	7.69	1.9	2.2	26	1	85	.12	4	.7	1.1	21	UER
		22	1444	4.88	19	23.80	155	15.98	3.16	1.8	2.3	17	1	100	.12	3	.6	.9	13	SPC
		22	19 8	21.55	19	19.48	155	11.82	6.60	2.1	2.2	32	1	93	.11	5	.6	1.1	28	UER
		22	22 5	47.12	19	20.29	155	3.40	6.61	2.1	2.0	25	2	106	.15	1	1.0	1.4	22	MER
		23	156	17.83	19	15.00	155	31.48	10.86	2.9	3.1	32	0	124	.17	10	.9	1.1	29	LSW
		23	723	34.81	19	16.85	155	15.53	8.40	2.1	2.1	26	0	153	.11	4	.8	1.0	21	HLP
		23	1447	29.39	19	12.03	155	23.70	40.33	2.1	1.6	14	1	160	.08	9	1.5	3.4	7	LSW
		23	1543	6.46	19	11.40	155	30.51	35.61	2.7	2.3	34	2	142	.14	13	1.4	2.4	30	LSW
		23	1745	53.17	19	9.87	155	28.76	29.53	1.9	1.6	28	3	112	.13	2	1.4	1.5	26	LSW
		23	2057	35.87	19	19.87	155	4.25	7.01	2.7	2.9	28	2	148	.10	2	.7	1.2	18	MER
		24	010	45.79	19	20.41	155	12.00	8.64	2.2	2.3	25	0	75	.09	5	.7	1.1	23	UER
		24	7 1	51.35	19	19.64	155	11.84	5.95	1.7	1.6	20	0	90	.12	6	.8	2.2	14	UER
		24	1311	.85	19	20.38	155	11.92	8.47	1.7	2.3	25	0	76	.08	5	.7	1.1	23	UER
		24	1412	51.71	19	25.80	154	56.11	5.80	1.6	1.9	15	2	189	.12	3	2.0	1.5	14	LER
		24	1427	5.64	19	31.33	155	42.07	8.62	2.3	2.3	19	0	105	.13	7	1.0	2.0	17	MOK
		24	1824	19.40	19	18.50	155	13.10	7.84	1.4	1.8	22	0	91	.09	3	.9	1.5	19	POL
		24	2157	59.83	19	16.84	155	22.43	5.97	2.1	2.5	30	1	127	.17	6	.8	1.8	26	SWR
		24	2254	50.15	19	20.63	155	11.42	7.83	2.0	2.1	22	1	75	.11	4	.8	1.3	16	UER
		25	422	2.05	19	20.30	155	4.20	6.74	2.9	3.2	30	1	124	.09	2	.7	1.1	29	MER
		25	748	4.89	19	28.22	155	29.35	11.62	1.5	1.6	21	5	52	.13	8	.7	1.4	19	UKF
		25	1947	27.88	19	24.79	155	25.28	10.33	2.5	3.0	32	1	54	.13	6	.7	1.0	30	UKF
		25	2043	44.34	19	19.77	155	8.34	9.89	2.6	3.3	37	1	83	.09	5	.7	.5	32	UER
		26	223	22.72	19	10.62	155	5.82	53.23	2.1	1.6	33	1	219	.08	13	1.8	2.0	32	DIS
		26	537	44.18	19	24.97	155	28.98	9.86	2.2	2.6	35	3	32	.14	5	.5	1.0	26	UKF
		26	834	47.43	19	24.79	155	28.54	10.62	2.4	2.6	35	1	30	.13	5	.6	.8	29	UKF
		26	11 6	17.61	19	48.79	155	34.74	16.49	2.4	2.4	29	2	100	.17	13	.9	3.2	22	KKU
		26	1613	5.70	19	19.32	155	7.31	8.73	2.0	2.1	30	2	117	.12	4	.7	1.0	26	UER
		27	357	50.11	19	18.43	154	53.78	43.13	3.5	2.9	37	0	245	.10	15	3.8	3.9	30	DIS
		27	957	35.18	19	20.62	155	2.89	6.05	2.1	2.1	29	1	137	.13	1	.9	1.1	25	MER
		27	1421	1.68	19	22.32	155	4.33	7.41	2.1	2.3	30	1	90	.15	4	.7	1.1	26	MER
		28	131	49.29	19	20.39	155	.68	6.96	2.1	2.1	28	2	209	.15	4	1.0	.8	23	LER
		28	447	27.24	19	22.91	155	2.14	7.97	2.1	2.0	30	2	140	.15	5	.7	1.0	27	MER
		28	521	26.98	19	22.65	155	4.12	6.99	2.2	2.0	29	2	94	.13	4	.6	1.2	25	MER
		28	725	10.97	19	20.69	155	10.08	8.15	2.0	2.0	32	2	73	.10	3	.6	1.0	26	UER
		28	9 6	35.98	19	19.89	155	8.20	8.21	2.2	2.3	32	2	85	.09	5	.6	1.0	28	UER
		28	12 3	23.94	19	24.16	155	27.19	11.05	2.4	2.6	35	3	46	.14	3	.5	.7	26	UKF
		28	2352	22.30	19	26.55	154	48.17	7.52	2.5	2.4	31	3	284	.16	10	1.6	1.0	26	LER
		29	640	15.77	19	18.99	155	16.44	8.67	2.8	2.7	37	3	103	.12	3	.6	.8	29	KOA
		29	957	52.22	19	19.16	155	6.17	8.57	2.5	2.8	33	2	147	.11	5	.6	.9	30	UER
		29	11 0	20.49	19	24.96	155	15.89	14.94	2.1	2.5	36	1	36	.09	2	.7	.3	29	DEP
		29	2111	14.08	19	20.74	155	13.56	7.06	1.8	2.1	28	1	56	.09	4	.6	1.2	25	UER
		30	121	52.23	19	24.69	155	26.26	7.65	2.1	2.2	33	4	48	.16	4	.6	1.7	25	UKF
		30	635	33.49	19	23.48	155	15.51	2.87	1.8	2.3	21	0	37	.13	2	.5	.7	19	SPC
		30	1150	9.28	19	25.11	155	16.49	1.78	2.1	2.7	20	1	46	.10	1	.5	.4	18	SPC
		30	12 0	20.95	19	25.26	155	16.40	1.94	2.1	2.3	17	1	122	.15	1	.8	.6	16	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	DEC	31	524	55.61	19	38.19	155	45.89	14.52		1.9	12	3	21	.35	10	1.6	1.6	10	KON
		31	625	55.38	19	21.64	155	1.88	8.67	2.4	2.6	29	0	164	.11	4	1.3	.7	28	MER
		31	751	19.14	19	17.96	155	15.79	7.84	2.0	2.2	28	0	150	.11	4	.7	.9	25	KOA
		31	1048	40.10	19	20.14	155	2.48	5.82	2.2	2.4	30	0	198	.21	1	1.3	1.1	27	MER
		31	1754	14.94	19	20.58	155	12.93	7.47	1.9	2.3	31	0	65	.14	4	.7	.9	26	UER
		31	1926	.34	19	23.26	155	16.96	14.74	2.1	2.0	33	2	46	.09	2	.8	.4	28	DEP

TABLE 6. HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	JAN	1	426	35.33	19	19.69	155	6.95	9.11	3.7	4.0	31	2	183	.09	7	1.0	.9	29	UER
		3	17 5	51.56	19	23.92	155	15.80	3.39	3.0	3.7	27	0	31	.07	2	.5	.6	25	SPC
		4	157	10.18	19	23.48	155	17.18	3.64	3.0	3.7	32	1	55	.13	0	.4	.7	30	SPC
		4	855	45.90	19	23.33	155	16.87	2.88	2.9	3.7	14	2	54	.11	0	.5	.6	9	SPC
		4	1023	37.86	20	4.76	155	38.43	7.80	3.1	3.5	31	2	162	.14	38	1.1	1.4	25	KOH
		4	1425	13.23	19	23.24	155	14.85	3.84	3.6	4.1	29	0	47	.08	2	.5	.8	27	GLN
		8	0 2	38.71	19	19.50	155	8.44	9.67	2.9	4.0	34	2	82	.08	4	.6	.8	32	UER
		12	3 5	59.27	19	24.22	155	17.65	17.60	3.9	4.1	36	1	29	.12	2	.6	1.2	33	DEP
		14	1326	42.38	19	19.83	155	7.21	9.93	4.6	4.5	32	0	108	.07	5	.8	.6	29	UER
		20	220	27.97	19	19.30	155	11.02	9.11	3.4	3.8	30	3	103	.10	6	.6	1.0	27	UER
		22	732	42.69	19	21.32	155	15.25	10.23	3.6	4.0	32	0	66	.06	2	.6	.7	26	KOA
		22	8 2	44.18	19	23.04	155	14.62	3.87	3.1	3.5	26	0	53	.07	3	.6	.8	23	GLN
		22	832	15.10	19	22.82	155	14.58	2.89	2.0	3.5	11	0	120	.04	3	.6	.8	8	UER
		22	1236	28.17	21	15.07	160	33.76	6.92	5.1	3.6	26	4	331	.26265		60.2	78.6	1	DIS
		22	20 2	.10	19	23.25	155	14.66	3.28	3.0	3.6	25	1	47	.10	3	.6	1.0	21	GLN
		23	1049	1.84	19	20.32	155	12.01	8.78	4.0	4.3	36	1	76	.09	5	.6	.7	34	UER
		24	3 7	58.46	19	18.09	155	23.64	10.26	2.8	3.7	35	0	109	.12	4	.6	.8	34	SWR
		29	1125	43.45	19	20.49	155	5.92	9.13	3.4	3.6	33	1	111	.09	5	.8	.6	32	MER
		29	2248	49.72	19	21.44	155	4.68	9.07	4.1	4.3	35	1	86	.09	4	.8	.6	33	MER
	FEB	3	1520	49.70	19	20.94	155	4.50	9.87	4.5	4.6	37	1	99	.09	3	.9	.6	33	MER
		4	425	14.62	20	2.62	155	27.36	16.54	3.7	3.8	19	2	15	.12	53	12.0	98.3	15	KKU
		8	1447	2.07	19	23.05	155	14.63	3.03	3.1	3.7	29	0	48	.10	3	.5	.6	28	GLN
		8	1851	19.29	19	23.07	155	14.13	.15	3.4	3.7	18	1	72	.15	8	.7	2.3	10	GLN
		8	19 2	22.21	19	22.74	155	14.48	6.44	3.5		28	0	54	.12	6	.7	1.8	25	UER
		8	1923	31.85	19	23.18	155	14.76	3.87	3.1	4.0	33	0	48	.11	3	.6	1.0	26	GLN
		8	1928	29.96	19	22.93	155	14.72	3.23	3.3	4.1	34	0	49	.12	2	.5	.7	30	UER
		8	1954	26.64	19	21.91	155	14.17	1.06	3.0	3.6	21	0	55	.12	3	.6	1.4	15	UER
		8	20 2	28.50	19	22.97	155	13.84	1.37	2.9	3.5	26	0	47	.17	1	.5	.6	26	UER
		8	2047	50.50	19	22.14	155	13.99	1.84	2.3	3.5	12	0	84	.05	2	.6	.8	11	UER
		8	2114	1.86	19	22.78	155	14.91	1.26	2.9	3.5	25	0	62	.11	2	.5	.6	24	UER
		8	2127	35.58	19	22.52	155	15.56	1.41	3.3	3.6	28	2	53	.13	1	.5	.6	20	KOA
		9	917	39.45	19	22.74	155	15.01	3.09	2.9	3.6	23	1	51	.14	2	.5	.7	16	KOA
		9	922	1.02	19	23.09	155	4.27	8.31	3.3	3.8	30	2	98	.09	6	.6	1.1	26	MER
		9	2114	46.96	19	23.25	155	14.78	3.49	2.9	3.7	26	0	47	.07	3	.5	.7	25	GLN
		12	0 9	32.56	19	17.24	155	16.38	10.41	2.5	3.5	31	1	137	.08	4	.6	.5	27	KOA
		20	1729	42.86	19	19.38	155	16.29	10.14	3.7	4.0	37	1	27	.09	2	.5	.6	34	KOA
		21	1159	49.12	19	21.41	155	7.97	8.66	3.1	3.6	36	2	72	.09	4	.5	.8	32	UER
		25	1750	51.94	19	20.65	155	2.95	5.74	3.1	3.7	25	0	131	.09	1	1.1	1.4	21	MER
		27	350	1.77	19	25.43	154	57.57	4.25	2.8	3.6	28	0	175	.18	5	1.3	2.1	22	LER
	MAR	4	115	41.36	19	36.65	156	6.43	13.23	3.4	3.6	39	4	38	.18	29	1.5	1.5	30	KON
		9	029	17.40	19	25.02	155	30.29	44.21	4.0	4.0	30	2	42	.20	7	1.2	3.2	15	MOK
		12	040	7.79	19	19.85	155	8.36	9.47	3.0	3.5	33	2	82	.09	5	.6	.8	31	UER
		15	244	35.32	19	19.31	155	11.83	9.87	2.9	3.6	34	0	97	.09	5	.7	.6	34	UER
		21	459	24.73	19	22.20	155	4.14	8.12	3.4	3.9	31	1	97	.10	4	.8	.8	29	MER
		24	1937	.41	19	20.76	155	8.44	7.37	3.5	4.0	36	1	73	.11	4	.6	.8	32	UER
		25	2321	34.96	19	14.92	155	23.43	29.83	2.7	3.7	19	0	143	.16	6	2.1	5.4	13	LSW
		27	437	58.69	19	21.48	155	15.23	9.91	3.6	3.8	34	2	64	.08	2	.5	.7	32	KOA
		27	838	6.85	19	21.36	155	4.27	7.24	2.9	3.6	31	2	85	.12	4	.7	1.2	28	MER

TABLE 5.

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	MAR	30	1517	38.04	19	43.98	156	1.31	8.54	3.6	3.4	36	0	226	.23	20	2.4	1.4	34	KON
	APR	2	2058	50.88	19	19.94	155	7.98	8.56	3.2	3.5	31	0	89	.09	5	.8	.8	29	UER
		6	11 0	25.20	19	21.44	155	4.81	9.07	3.6	3.9	32	0	87	.08	4	1.0	.6	31	MER
		6	11 1	52.16	19	21.75	155	4.56	8.31	3.1	3.6	13	0	85	.06	4	1.1	1.6	13	MER
		6	1731	41.26	19	17.01	155	6.47	9.34	3.3	3.7	29	0	202	.10	3	1.4	.7	29	POL
		20	1849	23.01	19	56.12	155	18.48	10.47	5.0	4.3	32	2	265	.11	6	1.9	.8	23	KKU
		21	151	31.99	19	19.11	155	16.02	9.84	3.6	3.7	38	2	99	.11	3	.5	.6	34	KOA
		22	944	.12	19	19.16	155	15.61	10.10	4.0	4.1	35	0	93	.10	4	.7	.6	33	KOA
		22	1059	18.36	19	20.98	155	4.80	11.40	3.6	4.0	30	1	99	.17	4	1.0	.6	28	MER
		22	2145	23.26	19	20.98	155	13.26	9.84	3.2	3.6	36	2	59	.09	3	.5	.7	34	UER
		25	1027	3.93	19	20.23	155	11.00	8.98	3.2	3.6	37	2	83	.10	4	.5	.7	30	UER
		25	1820	53.10	19	19.92	155	13.47	9.37	3.5	4.0	36	0	65	.10	5	.6	.6	35	UER
	MAY	2	854	5.85	20	3.01	155	22.60	8.44	3.7	4.0	36	1	218	.10	18	1.7	1.0	35	KKU
		2	16 6	47.10	19	20.51	155	11.28	9.80	3.1	3.5	35	2	76	.08	4	.5	.7	31	UER
		5	512	19.29	19	19.32	155	8.49	9.19	3.2	3.6	20	2	82	.09	4	1.1	1.0	18	UER
		11	2311	6.37	19	18.77	155	13.47	9.72	3.1	3.5	37	1	76	.10	3	.6	.7	33	POL
		14	535	10.79	19	19.87	155	13.50	9.67	2.9	3.5	37	1	64	.11	5	.5	.6	36	UER
		14	2127	13.02	19	22.06	155	5.90	8.96	3.6	3.8	37	1	76	.09	5	.6	.7	36	MER
		14	2132	22.68	19	22.44	155	5.70	8.49	3.2	3.6	36	0	69	.09	5	.7	.7	36	MER
		17	1832	42.73	19	22.15	155	5.84	8.47	3.3	3.8	33	0	74	.09	5	.7	.7	31	MER
		30	1310	5.97	19	20.66	155	6.01	8.36	3.2	3.9	32	1	106	.12	6	.6	.9	30	UER
	JUN	4	142	52.69	19	25.85	154	56.22	6.30	3.1	3.5	27	2	187	.18	5	1.3	1.3	16	LER
		5	2342	18.92	19	21.66	155	4.91	9.31	5.1	4.6	35	0	81	.09	5	.9	.5	35	MER
		6	1058	37.78	19	19.52	155	11.28	8.99	3.4	3.6	35	0	96	.11	5	.6	.7	34	UER
		6	1441	6.48	19	22.73	155	4.76	8.40	2.9	3.5	31	1	81	.10	4	.7	.8	29	MER
		14	1522	.85	19	19.28	155	10.82	10.07	3.1	3.9	37	1	104	.10	5	.7	.6	35	UER
		15	14 4	16.67	19	21.08	155	7.44	7.79	3.1	3.6	37	3	83	.11	5	.6	.9	33	UER
		17	456	51.05	19	21.10	155	6.91	8.25	3.0	3.5	35	2	88	.10	5	.6	.8	32	UER
		17	6 5	36.63	18	55.28	155	30.54	43.40	3.5	3.2	34	0	247	.11	18	3.2	4.5	34	DIS
		20	346	44.35	19	20.66	155	3.43	7.28	2.9	3.6	29	1	100	.10	2	.9	1.0	28	MER
		22	345	21.76	19	20.03	155	6.47	9.80	3.7	4.0	35	1	117	.09	6	.8	.6	34	UER
		29	124	36.13	19	21.10	155	15.29	10.28	3.7	4.0	31	2	39	.09	3	.5	.7	29	KOA
	JUL	1	814	56.36	19	20.04	155	8.20	9.61	3.2	3.7	32	0	84	.10	5	.8	.6	26	UER
		5	759	42.03	19	26.41	155	27.14	11.89	4.1	4.3	33	2	45	.12	7	.6	.6	26	UKF
		6	850	18.47	19	19.40	155	6.40	9.40	3.5	3.9	34	2	135	.10	5	.7	.7	31	UER
		9	116	30.25	19	23.29	155	16.90	3.16	3.1	3.9	33	0	37	.14	2	.5	.8	32	SPC
	AUG	7	2154	20.32	19	20.07	155	13.30	10.29	4.1	4.2	38	2	66	.10	5	.5	.6	36	UER
		10	1919	16.79	19	19.26	155	11.56	8.19	3.8	4.0	35	3	101	.09	5	.6	.8	29	UER
		10	2343	4.94	19	19.98	155	13.97	9.26	3.2	3.7	32	2	59	.10	5	.5	.7	28	UER
		13	1224	28.46	20	9.71	155	36.36	4.61	4.1	3.8	37	2	231	.36	19	2.9	2.1	28	KOH
		15	1836	15.09	19	19.59	155	15.12	.20	2.7	3.6	26	2	106	.24	4	.6	.7	24	KOA
		19	819	13.34	19	19.71	155	7.05	10.15	4.2	4.1	36	1	114	.09	5	.7	.5	33	UER
		22	2142	16.54	17	33.59	152	5.40	6.88	3.5	3.0	25	7	349	.62364		60.3	78.6	20	BLS
		22	2357	15.17	19	26.77	155	24.07	9.16	2.7	3.5	35	2	45	.15	6	.5	1.3	30	UKF
		24	20 7	13.81	19	19.46	155	11.33	9.94	3.6	3.8	37	2	97	.09	6	.5	.6	33	UER
		30	246	21.34	19	22.61	155	27.37	10.35	3.9	4.0	37	1	61	.14	0	.5	.8	33	UKF
	SEP	5	940	35.90	21	44.11	157	46.65	8.84	4.2	2.6	37	7	3441	.10274		59.0	79.5	35	DIS
		7	1351	6.71	19	22.52	155	19.32	31.26	4.5	4.3	33	0	49	.10	2	1.0	1.9	27	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1977	SEP	9	17 9	55.21	19	20.65	155	7.46	9.04	3.4	3.5	32	1	90	.09	5	.6	.8	28	UER
		13	1 4	39.88	19	25.23	155	15.98	4.18	3.0	3.5	33	0	46	.16	3	.6	1.9	32	SPC
		13	1213	13.75	19	23.25	155	3.68	.78	3.3	3.8	25	0	101	.20	3	.7	1.3	22	MER
		13	1912	24.08	19	19.52	155	3.01	7.67	3.7	3.7	33	3	197	.13	1	.8	.6	29	MER
		13	2131	56.52	19	20.86	155	3.01	8.37	3.7	4.0	33	2	127	.09	2	.9	.6	30	MER
		14	017	20.57	19	22.15	155	5.80	8.59	3.5	3.7	41	3	75	.10	5	.5	.7	37	MER
		14	020	17.68	19	20.99	155	17.04	1.60	3.8	4.2	24	0	64	.10	2	.4	.6	21	KOA
		14	11 7	38.24	19	21.55	155	.33	6.88	3.4	3.6	32	1	215	.15	5	1.6	.9	25	LER
		14	1150	8.32	19	21.11	155	7.11	9.16	3.6	3.8	36	2	87	.11	5	.6	.8	28	UER
		14	1859	45.41	19	21.21	155	15.33	.29	3.4	4.1	32	1	67	.28	2	.5	1.0	31	KOA
		15	132	21.86	19	20.05	154	56.16	4.84	3.1	3.5	32	2	235	.20	10	1.6	1.4	29	LER
		15	621	46.00	19	21.20	155	16.80	1.52	3.2	4.0	35	0	29	.12	2	.4	.7	32	KOA
		15	646	20.20	19	19.21	155	7.20	8.46	3.6	3.7	36	1	123	.10	4	.6	.6	35	UER
		15	1114	36.72	19	22.09	154	57.29	4.62	3.5	3.9	31	0	217	.17	6	1.8	1.6	29	LER
		15	12 3	42.05	19	20.01	154	57.80	4.76	3.1	3.7	27	2	231	.17	9	1.5	1.7	24	LER
		15	1850	5.45	19	20.55	155	3.65	9.30	4.0	4.0	37	1	157	.10	7	.9	.7	27	MER
		16	920	33.74	19	20.06	154	57.17	4.59	3.1	3.7	29	1	235	.20	10	1.4	1.4	28	LER
		16	1137	43.88	19	21.36	155	3.74	8.58	3.3	3.6	38	2	100	.10	3	.7	.7	32	MER
		17	1519	23.71	19	21.87	155	6.35	8.57	3.7	4.0	39	3	78	.11	6	.5	.8	34	UER
		17	2331	6.89	19	23.77	155	16.63	.00	2.8	3.7	26	2	45	.54	2	.8	1.0	21	SPC
		18	235	2.56	19	23.33	155	5.02	2.43	3.0	3.8	28	0	77	.12	3	.7	1.2	28	MER
		19	259	10.03	19	18.76	155	13.42	10.19	3.5	3.5	39	2	77	.10	3	.5	.6	34	POL
		19	337	50.23	19	20.76	155	15.42	.04	3.5	4.1	32	1	74	.20	3	.4	.7	23	KOA
		19	612	44.70	19	20.89	155	16.00	.14	2.8	3.5	34	3	73	.13	3	.4	.4	27	KOA
		19	714	39.41	19	21.16	155	8.09	7.56	3.1	3.6	37	3	74	.12	4	.6	1.1	33	UER
		19	9 1	45.11	19	21.59	155	7.78	8.77	4.0	4.2	39	2	73	.10	4	.5	.8	34	UER
		23	2 8	44.01	19	21.20	155	2.83	8.37	3.9	4.2	39	2	136	.10	2	.7	.6	35	MER
		23	259	56.68	19	24.94	155	15.42	2.22	2.9	3.8	34	1	36	.14	2	.5	.7	31	SPC
		23	1033	40.05	19	16.84	155	22.31	8.77	3.4	4.0	36	1	128	.17	6	.7	.9	33	SWR
		24	2016	.14	19	59.91	157	46.74	2.60	3.6	2.6	43	11	235	.27	160	2.9	1.4	35	DIS
		26	18 5	39.71	19	20.58	155	3.46	7.97	3.2	3.7	33	0	95	.09	2	1.0	.7	32	MER
		28	738	1.12	19	20.77	155	3.41	7.96	3.7	4.0	35	1	103	.09	2	.8	.7	34	MER
		30	714	36.18	19	25.73	155	15.98	2.37	2.8	3.6	30	1	56	.10	2	.4	.6	29	SPC
	OCT	1	752	32.27	19	21.26	155	16.21	.52	2.7	3.9	24	0	67	.39	2	.7	1.8	22	KOA
		1	1624	7.14	19	20.69	155	16.14	.96	2.7	3.8	31	1	76	.14	3	.5	.7	30	KOA
		9	1438	51.90	19	23.98	155	15.22	24.90	4.0	4.1	38	1	61	.11	2	.8	1.0	28	DEP
		26	111	43.43	19	5.20	155	3.94	46.41	3.5	3.2	35	2	262	.12	24	1.8	3.0	24	PPL
		28	1318	22.87	19	25.89	154	53.90	9.01	3.0	3.6	31	1	227	.13	4	1.7	.6	26	LER
	NOV	1	1338	23.39	19	21.25	155	6.78	9.35	3.8	4.1	36	2	86	.09	6	.6	.8	31	UER
		6	724	15.23	19	22.76	155	24.91	11.78	3.6	3.8	35	3	42	.12	5	.7	.4	30	UKF
		17	1234	12.49	19	9.53	155	33.66	38.64	3.6	3.4	37	1	138	.11	12	1.4	2.3	30	LSW
		22	13 6	46.47	19	18.37	155	20.83	10.20	3.3	3.5	36	2	117	.13	4	.6	.5	28	SWR
		25	854	51.35	19	21.11	155	1.47	7.71	3.5	4.0	34	2	186	.12	3	.9	.6	32	MER
	DEC	4	2225	37.79	19	21.07	155	2.70	8.98	3.2	3.7	38	2	144	.10	2	.8	.5	35	MER
		21	2225	55.07	19	20.14	155	13.74	9.80	3.6	3.7	39	2	59	.09	5	.5	.7	39	UER
		27	357	50.11	19	18.43	154	53.78	43.13	3.5	2.9	37	0	245	.10	15	3.8	3.9	30	DIS

TILT INSTRUMENTATION

In addition to the seismic network, a network of spirit-level tilt stations (dry), borehole tiltmeters, and water-tube (wet) tilt stations is maintained. The network is located on the summits and flanks of Kilauea and Mauna Loa Volcanoes. In December 1977 the tilt network consisted of:

82 spirit level tilt stations (dry)

9 borehole tiltmeters

10 water-tube tilt stations (wet)

1 continuous recording Ideal-Arrowsmith tiltmeter

Dry and wet tilt stations are generally occupied at irregular intervals. Critical stations are measured more frequently than the entire network. Digital borehole tiltmeters data are telemetered by VHF radio and recorded at the observatory. An Ideal-Arrowsmith mercury-pool capacitor-type tiltmeter with a 1 m base is located at the Uwekahuna vault, and the analog signal is recorded at the observatory.

TILTING OF THE GROUND AROUND KILAUEA CALDERA

Tilting of the ground around the summit of Kilauea is monitored daily by a short-base water-tube tiltmeter in the Uwekahuna Vault, and at irregular intervals it is measured on a regional scale by means of a network of field tilt-bases and a portable water-tube tiltmeter. The attitude of the ground surface at each tilt-base is reported in terms of north-south and east-west tilt coordinates. Both coordinates at each station were arbitrarily set equal to 500 when measurements at that station were begun. Increasing tilt coordinates correspond to northward and eastward tilting of the earth's surface; that is, to a relative subsidence toward the north and east. A one-unit change in coordinate corresponds to a tilting of 1 microradian (1 mm per km) in the direction indicated.

Table 7.--Tilt Coordinates at Uwekahuna, 1977

Date	N-S	E-W	Date	N-S	E-W
Jan 2	545	366	Jul 3	532	395
9	548	369	10	533	390
16	551	366	17	532	391
23	551	363	24	532	391
30	550	363	31	532	390
Feb 6	550	362	Aug 7	531	391
13	548	368	14	531	388
20	546	382	21	530	387
27	545	389	28	529	385
Mar 6	543	386	Sep 4	530	387
13	542	388	11	525	402
20	540	387	18	475	493
27	539	389	25	448	478
Apr 3	537	392	Oct 2	458	484
10	537	393	9	454	487
17	537	392	16	455	484
24	536	390	23	453	481
May 1	528	390	30	453	478
8	536	391	Nov 6	450	478
15	535	390	13	449	477
22	534	377	20	449	473
29	534	393	27	449	471
Jun 5	540	396	Dec 4	449	468
12	532	393	11	449	467
19	532	395	18	447	467
26	532	397	25	449	460

Table 8.--U.S. Geological Survey water-tube tiltmeter stations in Hawaii

Station	Symbol	Location		Frequency of reading	Base length M	Description
		Lat. N. Deg. Min.	Long. W. Deg. Min.			
Tree Molds	TM	19 - 26.3	155 - 17.3		50.79	NS. and EW.
Sand Spit	SS	19 - 24.1	155 - 16.8		25.40	Equilateral triangle.
Keamoku	Kea	19 - 25.1	155 - 19.0		47.55	do
Ahua Kamokukolau	Kam	19 - 22.7	155 - 16.6		50.79	do
Kipuka Nene	KN	19 - 19.4	155 - 16.7		47.73	do
Hilina Pali	HP	19 - 18.2	155 - 18.6		47.73	do
Kapapala Ranch	Kap	19 - 20.5	155 - 23.8		50.79	do
Mehana	M	19 - 26.2	155 - 14.3		25.00	do
Uwekahuna	U	19 - 25.5	155 - 17.4		50.79	do
Uwekahuna Vault		19 - 25.4	155 - 17.6	Daily	3.48	NS. and EW.

Table 9. Tilt coordinates and changes at bases around Kilauea Caldera. (See fig.10)

Tilt base and location	Date (1977)	Tilt coordinates N-S	E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1976)
Uwekahuna (U on fig.10) Lat. 19° 25.5'N Long. 155° 17.4'W	Not Occupied This Epoch					
Tree Molds (TM) Lat. 19° 26.3'N Long. 155° 17.3'W	3 May	486.9	515.5	0.46	S12.1°W	15 Apr
Sand Spit (SS) Lat. 19° 24.1'N Long. 155° 16.8'W	Not Occupied This Epoch					
Keamoku (Kea) Lat. 19° 25.1'N Long. 155° 19.0'W	Not Occupied This Epoch					
Ahua Kamokukolau (Kam) Lat. 19° 22.7'N Long. 155° 16.6'W	Not Occupied This Epoch					
Kipuka Nene (KN) Lat. 19° 19.4'N Long. 155° 16.7'W	26 Apr	171.3	562.7	0.98	N11.1°W	28 Sep
Hilina Pali (HP) Lat. 19° 18.2'N Long. 155° 18.6'W	26 Apr	336.3	527.3	2.83	N41.5°W	15 Apr
Kapapala (Kap) Lat. 19° 20.5'N Long. 155° 23.8'W	3 May	509.7	531.9	1.51	S62.8°E	27 Sep
Mehana (M) Lat. 19° 26.2'N Long. 155° 14.3'W	Not Occupied This Epoch					

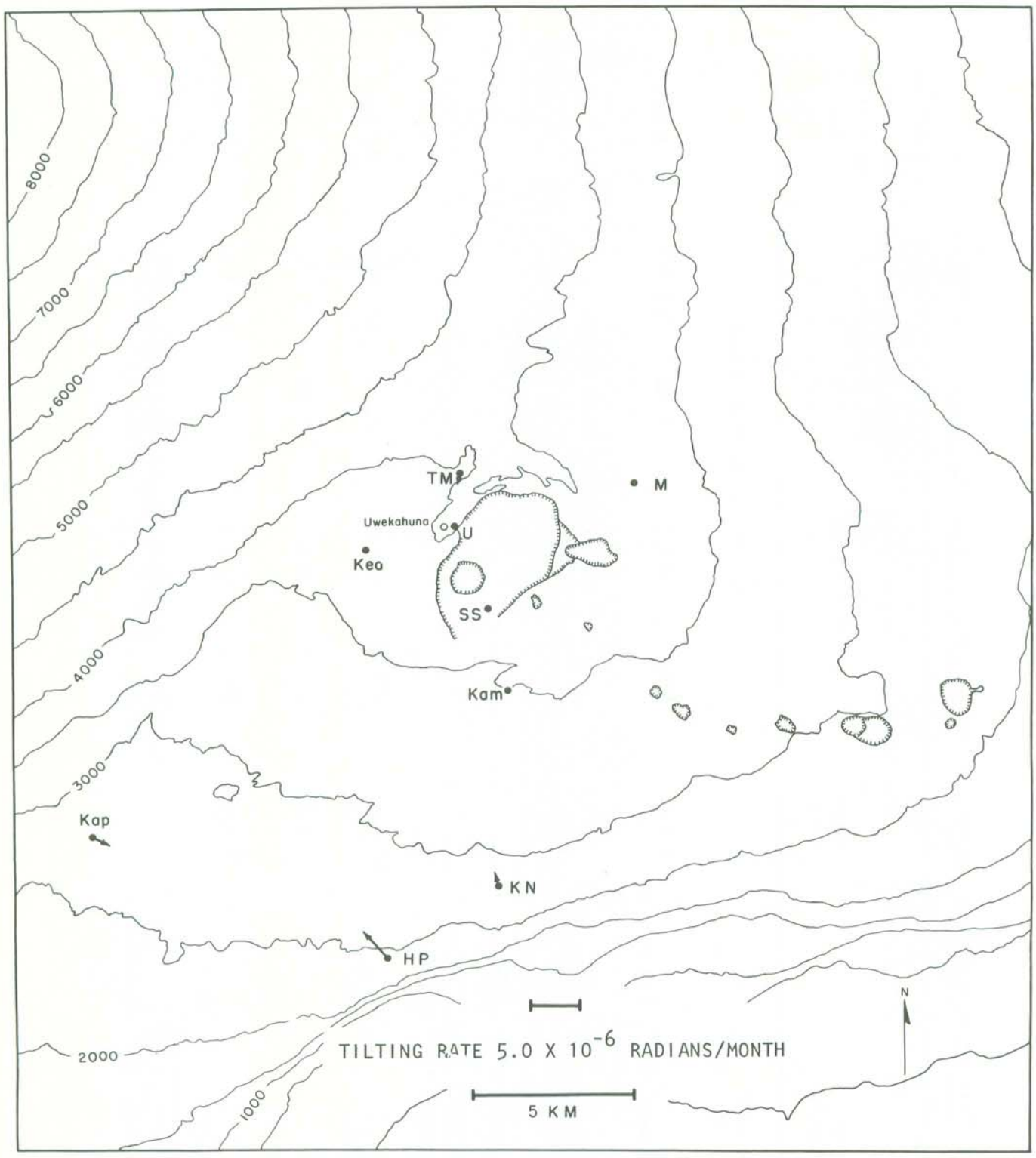

Figure 10 September 1976 to May 1977 tilting of the ground around Kilauea Caldera. The vector depicting tilt at a given tilt base points in the direction of maximum relative subsidence, and its length is proportional to the rate of tilting during the measurement interval. Closed circles represent field tilt bases; open circles, short-base watertube tiltmeters. See Table 8 for explanation of abbreviations.

Table10. Tilt coordinates and changes at bases around Kilauea Caldera. (See fig.11)

Tilt base and location	Date (1977)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1977)
Uwekahuna (U on fig.11) Lat. 19° 25.5'N Long. 155° 17.4'W	Not Occupied This Epoch					
Tree Molds (TM) Lat. 19° 26.3'N Long. 155° 17.3'W	8 Aug	485.2	511.3	1.42	S67.8°W	3 May
Sand Spit (SS) Lat. 19° 24.1'N Long. 155° 16.8'W	Not Occupied This Epoch					
Keamoku (Kea) Lat. 19° 25.1'N Long. 155° 19.0'W	Not Occupied This Epoch					
Ahua Kamokukolau (Kam) Lat. 19° 22.7'N Long. 155° 16.6'W	Not Occupied This Epoch					
Kipuka Nene (KN) Lat. 19° 19.4'N Long. 155° 16.7'W	16 Aug	174.2	552.9	2.74	N73.8°W	26 Apr
Hilina Pali (HP) Lat. 19° 18.2'N Long. 155° 18.6'W	11 Aug	341.4	522.4	1.98	N44.3°W	26 Apr
Kapàpala (Kap) Lat. 19° 20.5'N Long. 155° 23.8'W	9 Aug	508.9	533.3	0.50	S60.1°E	3 May
Mehana (M) Lat. 19° 26.2'N Long. 155° 14.3'W	Not Occu½ied This Epoch					

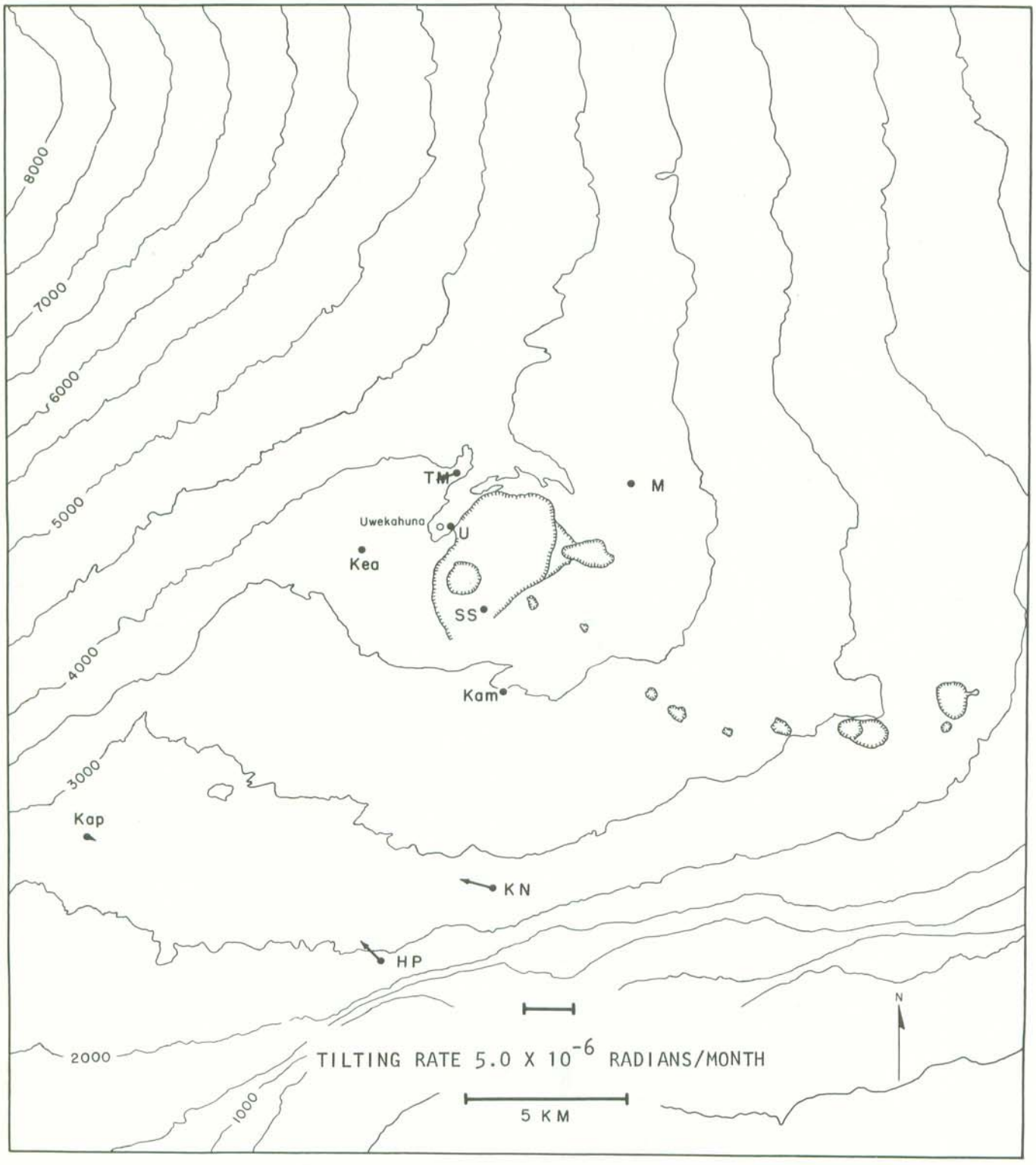

Figure 11 May to August 1977 tilting of the ground around Kilauea Caldera.

Table 11. Tilt coordinates and changes at bases around Kilauea Caldera. (See fig. 12)

Tilt base and location	Date (1977)	Tilt coordinates N-S	Tilt coordinates E-W	Rate (10^{-6} rad/mo) and direction of tilting since last reading		Date of last reading (1977)
Uwekahuna (U on fig. 12) Lat. 19° 25.5'N Long. 155° 17.4'W	5 Dec	477.3	413.0	42.68	S35.1°E	26 Aug
Tree Molds (TM) Lat. 19° 26.3'N Long. 155° 17.3'W	6 Dec	422.0	531.8	16.61	S18.0°E	8 Aug
Sand Spit (SS) Lat. 19° 24.1'N Long. 155° 16.8'W	5 Dec	736.0	963.4	23.26	S50.9°E	10 Aug
Keamoku (Kea) Lat. 19° 25.1'N Long. 155° 19.0'W	6 Dec	483.6	618.4	30.06	S57.4°E	9 Aug
Ahua Kamokukolau (Kam) Lat. 19° 22.7'N Long. 155° 16.6'W	7 Dec	907.6	467.2	44.50	N11.2°W	10 Aug
Kipuka Nene (KN) Lat. 19° 19.4'N Long. 155° 16.7'W	8 Dec	191.8	550.3	4.69	N8.4°W	16 Aug
Hilina Pali (HP) Lat. 19° 18.2'N Long. 155° 18.6'W	8 Dec	349.5	519.0	2.22	N23.0°W	11 Aug
Kapapala (Kap) Lat. 19° 20.5'N Long. 155° 23.8'W	7 Dec	509.1	538.4	1.29	N88.1°E	9 Aug
Mehana (M) Lat. 19° 26.2'N Long. 155° 14.3'W	6 Dec	505.0	540.7	9.96	S35.7°W	8 Aug

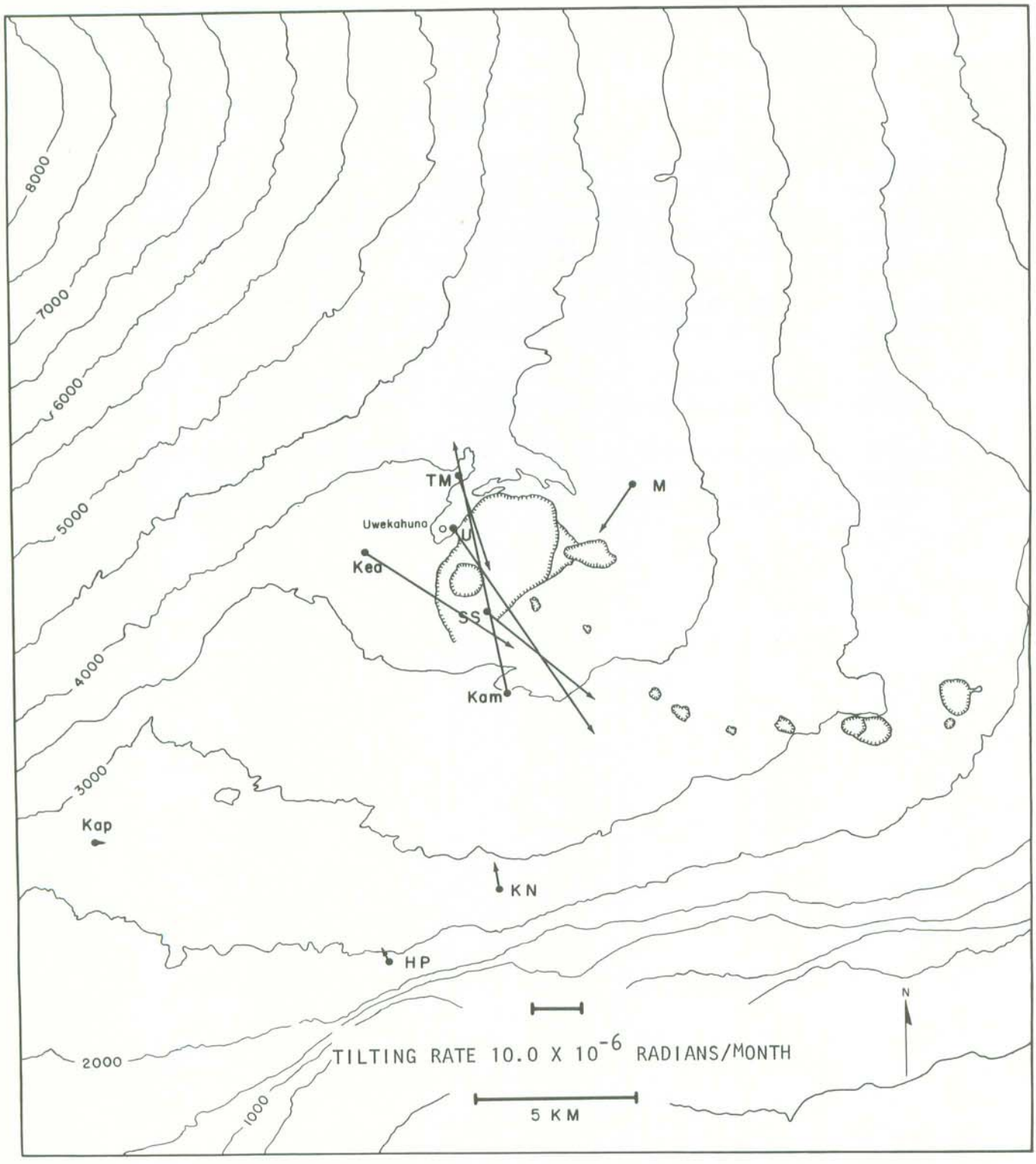

Figure 12 August to December 1977 tilting of the ground around Kalauea Caldera.

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GPO 789-107

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Hawaiian Volcano Observatory
1978 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 78, Part 1

Seismic Data, January to December 1978

By Fred W. Klein, Jennifer S. Nakata, and Robert Y. Koyanagi

Chronological Summary

By Richard B. Moore

Open-File Report 2007-1338

U.S. Department of the Interior

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 78, PART 1

SEISMIC DATA, JANUARY TO DECEMBER 1978

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California

1980

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 78, PART 1

SEISMIC DATA, JANUARY TO DECEMBER 1978

BY

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CHRONOLOGICAL SUMMARY

BY

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summaries present data gathered during the year together with a chronological narrative intended to describe in geologic terms the volcanic activity associated with the seismic events and tilt data included. Beginning with this volume, the summaries will be issued in two parts. Seismic data will appear in Part 1, and water tube tilt and other deformation data will appear in Part 2. The seismic and chronological summaries are offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has recently shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries will be published separately.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network is in preparation by Klein and Koyanagi as a USGS open file report. It is designed as a reference for users of seismograms and phase data, and so includes and goes a bit beyond the information in the station table in this summary.

CHRONOLOGICAL SUMMARY - 1978

by

Richard B. Moore

Neither Kilauea nor Mauna Loa erupted during 1978, only the second such quiet year since 1966. Deflation of the southern summit area near Ahua associated with the September 1977 east rift eruption continued at a gradually diminishing rate until March 1978. A secondary center on the north side of the caldera, however, began to inflate in October 1977, shortly after the eruption ended. Both centers inflated during the rest of 1978, and by year's end about 75% of the level of inflation on September 12, 1977, just prior to the last eruption, had been regained. In October-November 1978, a slow summit deflation that totaled about 15 microradians may have resulted in an inflation documented by try-tilt measurements in the central east rift zone near the 1977 vents. Seismicity remained at moderately high levels in both the summit and east rift zone.

On Mauna Loa, geodimeter and dry-tilt measurements documented the continued slow inflation of the summit and northeast rift zone during the first half of the year. Borehole tiltmeter data showed a slight deflation of the latter area late in 1978. Seismicity remained generally low with no major earthquake swarms or single earthquakes larger than magnitude 4.5.

Reoccupation of the Mauna Loa-Hualalai-Mauna Kea "Super Triangle" geodimeter lines showed horizontal changes lower than instrumental error among the three volcanoes. Geodimeter lines near the summit of Hualalai showed insignificant changes over two years.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In December 1978 the seismometer network consisted of 41 stations spread over an area with a diameter of 125 kilometers on the island of Hawaii (Figs. 1 and 2). Of these 41 stations, two are low-gain multicomponent stations (optical), six are two-component, three are three-component, and twenty-nine are vertical only. The coverage is most complete on and around the main center of seismic and volcanic activity, Kilauea Volcano. Other stations in the network are part of a larger net located on other volcanoes of the island of Hawaii. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1978. Listed are station name, three letter code, coordinates in degrees and minutes, elevation in meters, and other data described below.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or VHF radio. These telemetering stations are now all of Type 1, the NCER standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from thirty-six stations are recorded on two Develocorders using 16mm microfilm. Smoked paper and helicorder drums additionally record a number of critical stations for convenience in rapid assessment of seismicity. FM signals from the telemetering network are also recorded directly on one inch magnetic tape. Selected larger events are copied onto condensed library tapes which are currently archived in Menlo Park.

Develocorder records are read on a film viewer with 20x magnification. Arrivals are read to the nearest 0.05 second. The recorded arrival times, amplitudes (where readable), and other key data are routinely processed on an Eclipse computer which arrived at HVO in November 1978.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Kipapa station operated by the Pacific Tsunami Warning Center). The less sensitive short period records are used primarily for amplitude measurements for magnitude calculations to supplement readings from 16mm film. Optical seismographs listed in Table 1 are of four types. Types numbered three and four are electro-mechanical systems of high and low gain respectively. Hilo and Haleakala are each equipped with two low-gain Wood-Anderson torsion seismographs. Long period Press-Ewing seismographs record in three components in the Uwekahuna vault. The paper records as well as the 16mm develocorder microfilm are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard NCER system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an

to the peak-to-peak amplitude measured in mm on the 20x Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited, and major changes in attenuation or recalibrations are listed in Table 1 along with the dates they took place. Minor changes in CAL factors may not be listed if they are less than 20%.

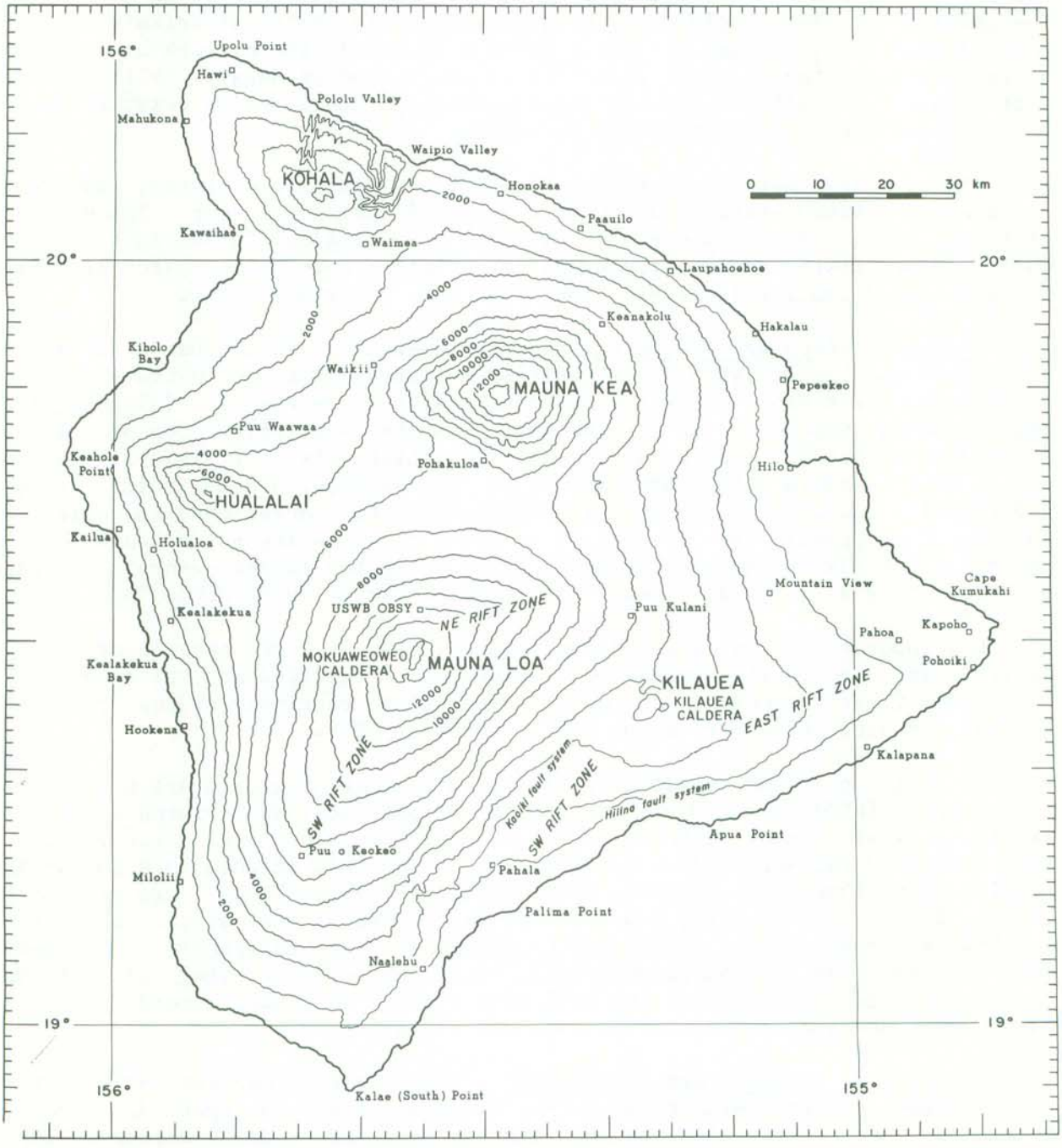

Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

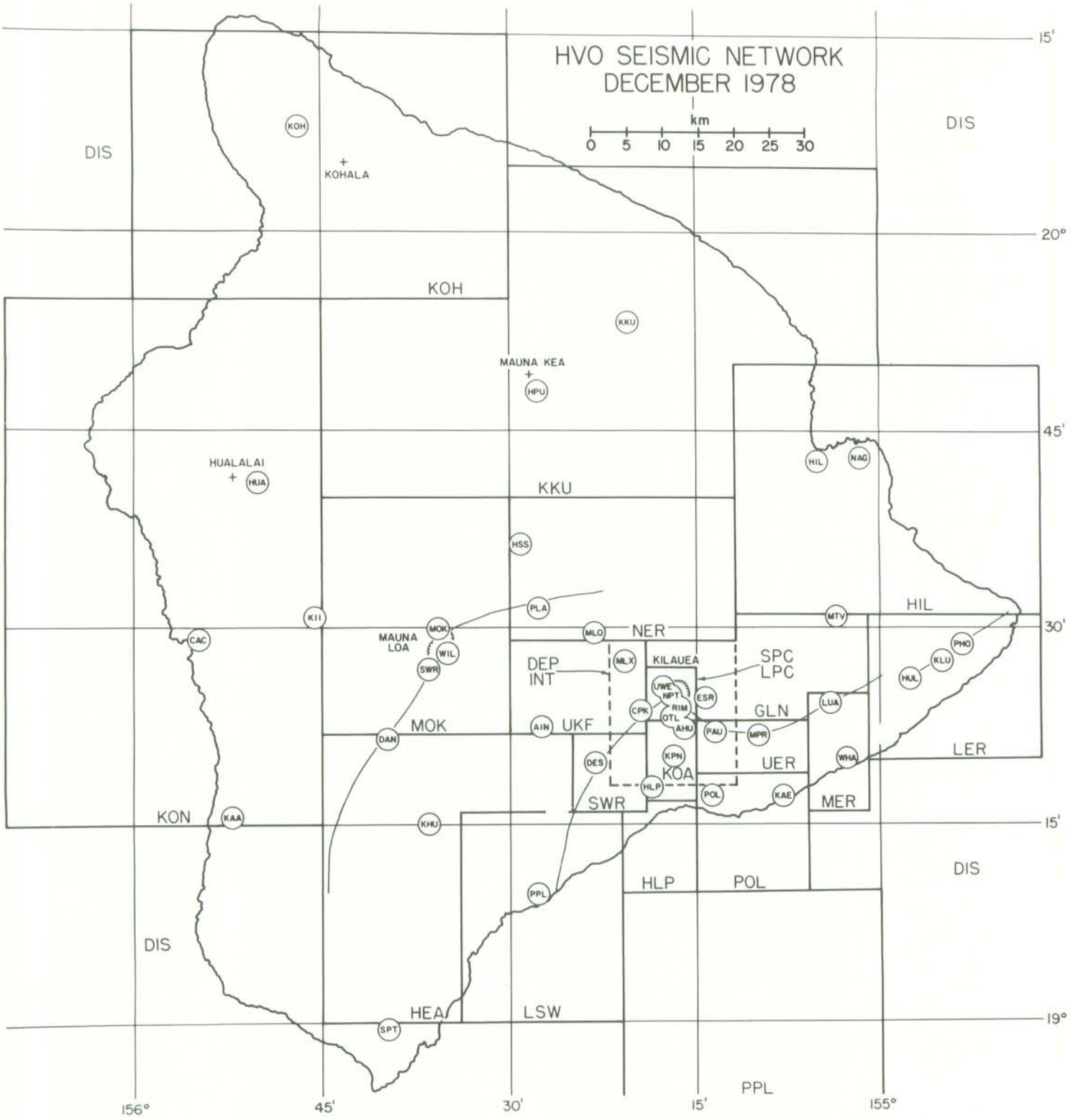

Figure 2. Map of the island of Hawaii showing seismic stations (three letter codes inside circles) and geographic regions (three letter codes inside heavy line boxes).

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1978.

Telemetered type 1 seismographs.

Station Name[1]	Code	LAT-N	LON-W	Elev	Delay 1	Delay 2	Old Cal	Date of Change	New Cal
AHUA	AHU	19 22.40	155 15.90	1070	-.10	-.13	4.3		
AINAPO (3)	AIN	19 22.50	155 27.62	1524	.13	.17	8.5	1/10/78	4.8
CAPTAIN COOK	CAC	19 29.29	155 55.09	323	.00	-.16	11.0		
CONE PEAK (2)	CPK	19 23.70	155 19.70	1030	-.26	-.07	4.6	10/17/78	6.0
DANDELION	DAN	19 21.42	155 40.04	3003	-.27	.03	7.0	6/07/78	6.0
DESERT	DES	19 20.20	155 23.30	815	-.29	-.13	4.4		
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	-.17	-.19	1.2	11/28/78	1.0
HALE POHAKU	HPU	29 46.85	155 27.50	3396	.31	.17	3.3	10/13/78	5.2
HEIHEIAHULU	HUL	19 25.13	155 58.72	369	-.17	-.16	3.0	3/20/78	2.2
HILINA PALI	HLP	19 17.96	155 18.63	707	.02	.07	4.0		
HUALALAI	HUA	19 41.25	155 50.32	2189	.67	.38	3.8		
HUMUULA (3)	HSS	19 36.31	155 29.13	2445	.20	.35	8.4		
KAAPUNA	KAA	19 15.98	155 52.28	524	-.12	-.01	5.6		
KAENA	KAE	19 17.35	155 7.95	37	-.01	.06	1.3		
KAHUKU	KHU	19 14.90	155 37.10	1939	.03	-.03	3.2	8/23/78	6.3
KALALUA	LUA	19 24.55	155 04.25	622	-.25	-.30	4.6	7/05/78	4.4
KALIU	KLU	19 27.48	154 55.26	271	-.17	-.30	--		
KANEKII (3)	KII	19 30.56	155 45.90	1841	.15	.37	5.5		
KEANAKOLU	KKU	19 53.39	155 20.58	1863	.68	.24	4.8	2/10/78	2.0
KIPUKA NENE	KPN	19 20.10	155 17.40	924	-.11	-.08	6.4		
KOHALA	KOH	20 7.69	155 46.77	1166	-.03	-.17	2.2		
MAUNA LOA (2)	MLO	19 29.80	155 23.30	2010	.03	.08	9.2		
MAUNA LOA X (2)	MLX	19 27.60	155 20.70	1474	.06	.15	2.1		
MAKAOPUHI	MPR	19 22.07	155 9.85	881	-.17	-.20	1.6	3/13/78	1.3
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	.15	.16	8.0		
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	-.02	.01	5.2		
NATIONAL GUARD	NAG	19 42.12	155 1.72	18	.54	.30	2.4?	1/05/78	11.0
NORTH PIT	NPT	19 24.90	155 17.00	1115	-.30	-.18	5.2		
OUTLET (2)	OTL	19 23.40	155 16.80	1084	-.19	-.18	4.9		
PAUAHI (2)	PAU	19 22.62	155 13.10	994	-.21	-.24	6.2	10/15/78	4.0
POLIOKEAWE PALI	POL	19 17.02	155 13.47	169	-.02	.03	4.2	7/05/78	2.5
PUU HOHUAULA	PHO	19 28.90	154 53.40	215	-.09	-.24	4.2		
PUU PILI	PPL	19 9.50	155 27.87	35	-.15	-.15	2.4		
PUU ULAULA	PLA	19 32.00	155 27.67	2992	-.03	.13	7.4	6/07/78	6.8
RIM (2)	RIM	19 23.90	155 16.60	1128	-.21	-.13	7.3		
SOUTH POINT	SPT	18 58.91	155 39.92	244	-.17	-.22	3.6		
SOUTHWEST RIFT	SWR	19 27.26	155 36.30	4048	.01	.04	4.7	4/27/78	9.0
WAHAULA	WHA	19 19.90	155 2.92	29	-.10	-.04	2.3		
WILKES CAMP	WIL	19 28.15	155 35.02	4037	.22	.17	4.0	6/07/78	3.7

[1]Numbers in parentheses indicate the total number of seismometers operating if more than a vertical component.

Table 1. (continued)

Optical Seismographs

Station Name	Code	LAT-N	LON-W	Elev	Type	Cal
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	WA	1.0
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	WA	1.0
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0
HILO EW	HIE	19 43.20	155 5.30	20	WA	1.0
HILO NS	HIN	19 43.20	155 5.30	20	WA	1.0
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56
UWEKAHUNA EW	UWH	19 25.40	155 17.60	1240	3	0.7
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0
UWEKAHUNA	PEZ	19 25.40	155 17.60	1240	PE	
UWEKAHUNA	PEE	19 25.40	155 17.60	1240	PE	
UWEKAHUNA	PEN	19 25.40	155 17.60	1240	PE	

Table 2. -- Seismic Instrumentation Types

Type 1. Consists of:

a) Geophone - Electrotech EV-17 or Mark Products L4C 1.0 sec. period vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model J202 or J302. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 3. Consists of:

Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Type 2 instruments have been discontinued.

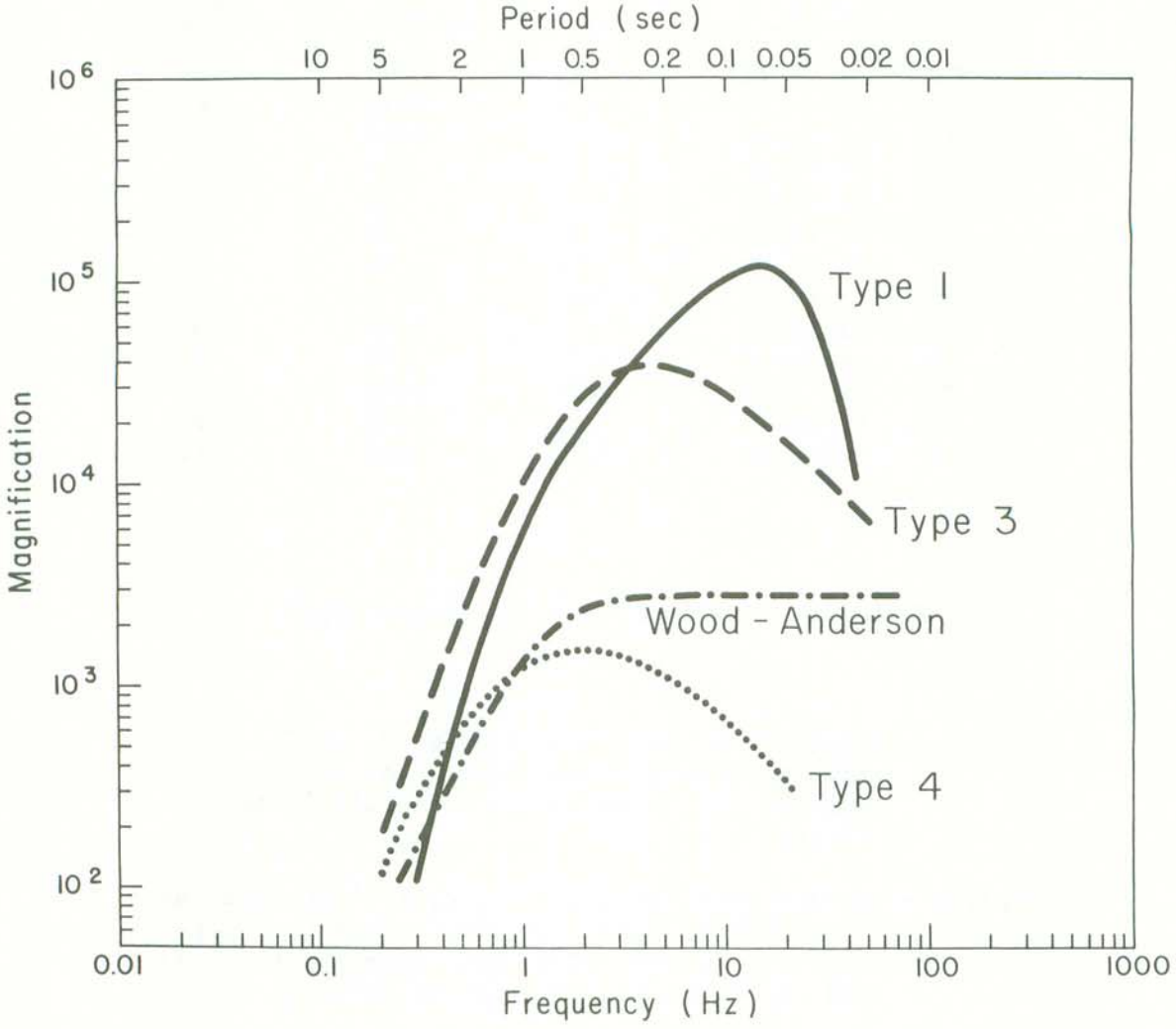

Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard NCER seismometer recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by the factors CAL listed in Table 1 to get the response for an individual station.

SEISMIC DATA PROCESSING

Earthquakes are located by the combined efforts of HVO and NCER in Menlo Park. Develocorder films are read at HVO, and P and S arrival times, event amplitude and duration, clock correction, etc. are input and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival time and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are in fact separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations and signal or coda duration on short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors of Table 1. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, KAA, OTL, PPL, KHU, PHO, or WIL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed nearly to the noise level. A plot of log (F-P time) versus local (amplitude) magnitude appears in Figure 4. The bilinear relation shown in the figure is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

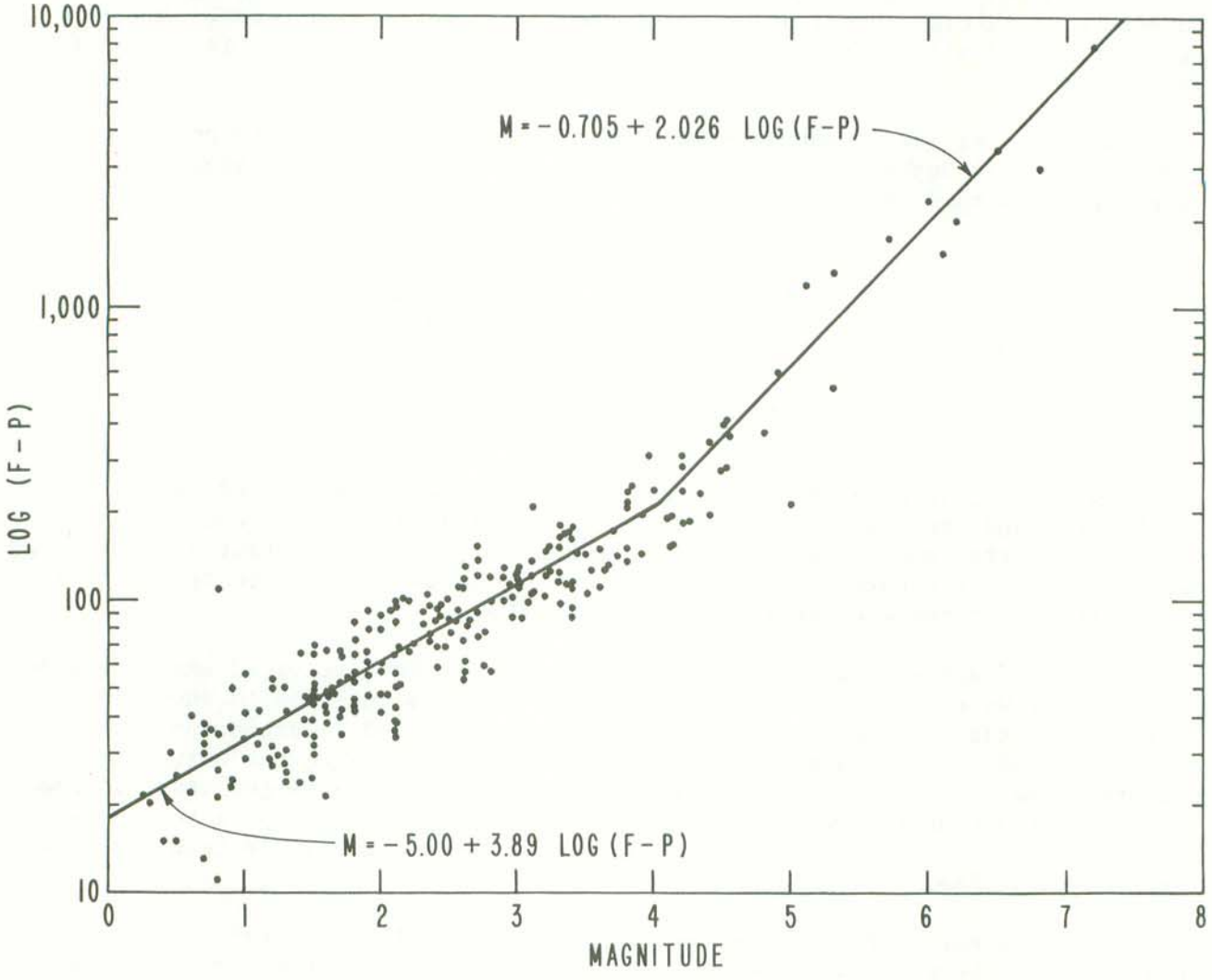

Figure 4. Relationship between signal duration (F-P time) and local magnitude for a large number of earthquakes which occurred during 1975 and 1976. Local magnitude is determined from amplitudes read on Wood-Anderson and other calibrated seismographs. The dual linear relationship between magnitude and log(F-P) appears to hold over a magnitude range of 7 units. The equations used in magnitude determination are:

duration <210 sec $M = -5.2 + 3.89 \log (F-P) + .013 z + .0037 D$

duration >210 sec $M = -.905 + 2.026 \log (F-P) + .013 z + .0037 D$

where z and D are the depth and epicentral distance in km.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south flank of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on Kilauea, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters of all depths are given in Figures 5, 6, 7, 8 and 9. The epicenter maps are on different scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and in some cases on its depth. Figure 2 is a map of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figure 2. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea.

Earthquake categories are:

1) Kilauea summit, short period caldera (SPC): shallow earthquakes beneath the caldera.
2) Kilauea summit, long period caldera (LPC): earthquakes characterized by low frequency signitures, often originating 5-10 km below the caldera.
3) Kilauea summit 30 km (DEP): from about 30 km depth.
4) Kaoiki and southwest rift (UKF/SWR): southwest rift of Kilauea and adjacent Kaoiki fault system.
5) Upper east rift zone of Kilauea including the Koae faults (UER).
6) Lower east rift zone of Kilauea (LER).
7) Offshore PPL: earthquakes from offshore areas south of the Puu Pili station, including Loihi seamount (PPL).
8) Mauna Loa long period (MLP): low frequency events near Mauna Loa summit.
9) Mauna Loa short period (MOK): shallow earthquakes in the Mauna Loa caldera region.

Tremor is separated into four categories: shallow, intermediate and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs in the Kilauea summit region.

Dates of Station Outage or Conditions Affecting Seismic Count

Date (Y-M-D)	Nature of Disturbance	Count Category Affected
78-5-9	High winds, stations out--HUL, PHO, PAU, PLA	SPC, UKF/SWR, UER
78-5-20	Electrical storm, stations out--WHA, ESR, AHU	UER
78-7-18/21	High winds	SPC, UER, UKF/SWR
78-11-6/8	High winds, electrical storm, many stations out	All counts at Kilauea
78-11-13	Film recorder 4-hour outage	All counts
78-12-20	High winds	SPC
78-12-25/26	Film recorder jammed--15 hours	All counts

TABLE 3. KILAUEA SUMMIT KILAUEA FLANK MAUNA LOA TREMOR (MINUTES)

DATE 1978	SHORT PER.	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
JAN 1	124	4		45	152	15			1			
2	242	15	1	41	225	5				5	14	
3	259	20	1	28	220	20			1	7	2	
4	251	24	2	47	253	14		1	3	12	25	
5	221	3	1	45	151	23		2	2	11	5	
6	234	29		42	190	13			1	5	3	
7	222	9		42	193	5		6		3		
8	260	18		46	226	12		3		34		
9	188	3	1	46	203	12		4	2	21		
10	188	11		51	276	23						
11	132	2	2	42	147	9				10		
12	251	9	4	54	241	18						
13	180	16	1	18	125	34		22	1		5	
14	163	6	1	23	90	41		15	2	6		
15	276	6	1	52	218	17				7		
16	259	3	1	38	191	8		1	1	3		
17	78	2		28	115	5						
18	189	3	1	34	149	5		2	15	2		
19	192	1	2	33	140	10		1	20	26		
20	295	7		53	164	9			4	5	4	
21	301	14		60	192	8				2		2
22	304	16	3	53	210	17			1			
23	180	5	3	37	95	5		2	8	8		
24	300	12	2	51	156	19		2	1	5		
25	235	4		36	128	22		1		2		
26	198	2	1	38	159	21			3			
27	219	4		45	178	26			2			
28	225	8		57	166	15			5	7		
29	269	29	3	46	184	11		3	3			
30	300	6	2	49	237	17		1	2			
31	288	14	1	54	194	15		4	2	5		
FEB 1	310	5		37	170	12			1			
2	351	15	5	37	152	12			2	2		
3	265	5		43	169	18			2	30		
4	145	9		17	93	38		2	3	10		
5	276	2	4	37	183	19			1	6		
6	250	3		59	170	17		2	2			
7	265	5	3	62	181	15					4	
8	96	7		34	104	8		1	2			
9	124	5	4	24	118	10			3	14		
10	240	12	1	28	150	19			1	15	2	
11	222	8	5	26	156	7			3	17		
12	257	16		28	172	9		3	1		93	
13	214	5		41	155	9		1	1	38		
14	270	21	5	35	184	12		5	1	3		

	KILAUEA SUMMIT			KILAUEA FLANK			MAUNA LOA		TREMOR (MINUTES)		
DATE 1978	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
FEB15	264	15	3	46	197	13	8			7	9	
16	214	13		36	143	9	3	3		18		
17	268	2		41	164	27	3	2				
18	309	26		33	202	19	22	2				
19	269	5	2	63	210	15	21	5				7
20	335	1		44	155	15	2	15		13		
21	342	3		44	245	11	26	12		5		
22	242			36	152	15	1	15				
23	254	2		39	216	6	14	1			32	
24	279	4		48	170	19	1	5		7		
25	157	3	1	29	99	30	8	4		3		5
26	305	14		62	229	20	9	3				
27	297	5		40	225	19						
28	251	1		34	263	31				3		
MAR 1	201	4		35	246	6				4		
2	225	3		54	183	9	1			15		
3	202	4		31	150	8	3	2		21		
4	270	5		49	175	23		3				
5	313	10	6	42	209	14	2	7		18		7
6	304	7	4	52	174	6		1		8		
7	244	14		34	163	9		1		2	6	
8	183	1	2	37	124	12	1	2				
9	259			34	149	7		1		6		
10	219	2		17	141	7		2		9		
11	249	9	1	27	143	6						
12	214	9		31	126	3		1				
13	324	11	3	26	184	3					2	
14	263	1	1	39	173	2		2			6	
15	131	2		38	129	3	2	1				
16	98	4		13	134	5		1		2		
17	182	2		26	139	14		1		23		
18	70		1	12	79	5				8		
19	275	14	4	32	159	5		1			14	
20	317	10	3	40	143	11						
21	345	28	1	39	186	7		2			15	
22	270	6	1	27	115	8	1	2		7		
23	249	4		30	118	6		2				
24	226	4		30	135	22	1	2		13		
25	218	2		24	134	19						
26	350	9	4	46	201	10					29	
27	240	13		34	122	21		1		8		
28	263	8		25	182	10		2			62	
29	144	2		19	88	8		1				
30	186	4		29	112	14						
31	159	16		19	127	10		1		3		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1978	SHORT PER.	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
APR 1	360	11	1	37	169	8			2			
2	280	15		25	196	3		1				
3	257	2		38	159	3		1	3			
4	340	2		54	108	3			5			
5	143	1		31	89	10			2			
6	180	6		26	95	7			3	8		
7	216	8		28	108	8			1	35		
8	246	4	1	18	95	15		6	2	4		
9	292	1	1	33	160	4			4			
10	315	5	1	25	156	4			5			
11	341	8		37	169	16		2	5	14	36	2
12	188	9		29	108	15		1	6	2		
13	154	4	2	33	127	16		2	4			
14	160	4		23	104	19		2	4	6		
15	148	8		29	106	20		1	6			
16	317	6	1	39	190	14		3	1	2		
17	282	1		46	174	12			1			
18	256	4		46	146	8		1	2		68	
19	278	5	2	36	149	16			3		41	
20	177			38	99	10			5	6		
21	176	5		42	133	11		1	1			
22	345	4	4	34	142	8			3		33	2
23	252	1	4	48	156	18			4		4	
24	208	1	1	33	142	13			2			
25	262	1	1	36	156	7			3		13	
26	163		2	27	92	6						
27	206	1	1	14	91	13		4	7	33		
28	187	3		45	138	11						
29	167	4		12	83	18		5		3		
30	355	20	1	33	165	17		1	5			
MAY 1	435	19	6	29	155	10		2		10		
2	477	6	1	34	149	9			2			
3	268	12		26	152	15				6		
4	228	7	1	31	158	22		1	2	4		
5	234	6		26	114	29			2			
6	221	1		28	132	15		1	4	26		1
7	239	4		32	149	20		1				3
8	231		2	43	117	5			2			
9	90	1		16	79	4						
10	174			22	135	19				9		
11	254	7	1	37	150	5		1		5		
12	264	7		27	170	14		2	2			
13	359	1		28	143	13			5			
14	163	3		32	113	7		2	3	5		
15	407	2	4	24	155	2			1	9	11	2

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1978	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
MAY 16	364	14	4	37	179	11			2			
17	232	11		30	121	6						
18	195	5		27	116	9						
19	311	7	2	22	109	44			2	12		
20	169	8		22	71	30		6	2	5		
21	517	5	2	42	182	15			2			
22	559	3	5	53	232	18		2	3			
23	476	10	3	47	202	12			2		5	
24	208	42		29	113	10			1			
25	288	4		80	152	13			2			
26	210	2		40	105	11			2			
27	261	7		30	130	13			1			3
28	381			30	117	20			4	9		
29	429	7	1	44	144	3			2		12	
30	457	3	1	30	178	9			1			
31	364	7		41	241	22						
JUN 1	344	9		33	144	19						
2	374	9	1	48	147	27			2	3	65	
3	480	3	1	39	168	10		1		6		
4	449	25	1	49	183	22			1			
5	399	15		76	138	22			3	4	14	
6	449	5		64	127	16		3	8	7		
7	395	5	3	40	151	11		5	9			
8	400	4		39	171	17		1	3			
9	308	2		15	65	17		1	1			
10	264	9		39	73	17			5	5		
11	386	4		27	142	10		1	5			10
12	503	2		45	192	17		2	5			
13	426	6		42	145	13		1	4	3		
14	360	11	1	30	107	14			8			
15	286	6		16	84	13		2	6			
16	284	2		48	127	11			4			
17	344	4		53	156	12			3			
18	328	6		54	131	10		2	3			
19	267	17		33	124	9		2	2			
20	290	17		50	139	10			3		102	
21	256	5		43	102	11			1	15		
22	249	7		26	194	8						
23	352	9		34	157	12			1			
24	395	5		41	172	23			1			
25	446	19	1	61	176	12			3			
26	325	24	2	46	176	12		1	1	3		
27	331	18	2	65	161	14						
28	287	18		33	132	22		1				
29	183	6		49	130	27						

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1978	SHORT PER.	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA
JUN30	143	10	2	15	85	5					26	
JUL 1	128	7		19	108	25						
2	167	15	1	47	154	11		6				
3	122	12	8	34	112	16				11	15	
4	164	54	1	36	122	12			1			
5	141	37		28	70	8				30		
6	208	54		25	84	11						
7	165	29		31	95	18						
8	133	27	2	33	127	15			3			
9	120	29		40	110	10			1			
10	123	33		30	88	10		2	1			
11	194	38		35	124	5		1	4		3	
12	166	17		33	91	4			2			
13	281	41		24	116	8			10			
14	491	35	1	43	218	17			18	6		
15	551	34	1	42	193	16			8	5		
16	330	49		36	136	7			7	4		
17	350	27		41	141	8			9			
18	150	1		19	110	7			7			
19	169	2	1	18	52	5			4			
20	218	6		23	63	3						
21	178	98	1	17	91	34			8	30		3
22	124	9	1	33	116	62		4	7			
23	244	42		57	182	14		5	9			
24	246	10	1	37	165	10			6			
25	262	17	1	49	172	7		3	6			
26	162	17	1	25	124	9			4	12		
27	189	8		32	112	23				3		
28	238	8	1	28	125	13			7			
29	217	16		41	100	12			1	3		
30	375	8	1	39	144	12		1	2	15		
31	284	20		34	136	7						
AUG 1	346	22		44	208	7				5		
2	369	20		39	186	6						
3	434	35	1	41	167	16						
4	345	36	2	46	179	18				3		
5	322	38	1	43	135	8		1				3
6	314	8		64	140	9		2	1			
7	321	25		35	166	4		1		12	6	
8	308	4		48	164	21			2			
9	327	3		42	166	15			1			
10	301	5	1	34	149	13		2				
11	286	4		27	108	24				2		
12	293	1	5	23	124	20			1	3		
13	330	10		56	160	10						

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1978	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
AUG14	306	6	1	45	153	14		2		5	
15	345	5	2	44	175	11		2	3		
16	263	4		34	112	8				32	
17	342	13		37	155	12			7		
18	305	13	2	31	160	15					
19	283	3	1	41	126	22					
20	363	3		54	171	20					
21	357	22		39	157	10			2		
22	342	12		42	153	7			6		8
23	286	9		36	166	12					
24	393	18	2	45	181	10				5	
25	392	4		36	173	3		1			9
26	402	12	1	34	181	12		1	2		
27	395	8		48	187	13		4	2		
28	296	15	1	57	185	11		1	1		60
29	227	92		46	153			2	2		6
30	149	33		28	127	5					
31	141	55		41	138	8					
SEP 1	210	11	2	48	72	8		1	1		5
2	178	6	3	31	60	7		1	6		10
3	191	15		38	1	14			1	3	
4	250	120		50	138	18			3		
5	327	25		39	181	2		2			
6	289	15		43	124	16					
7	337	16		40	182	13		2	2		
8	323	23		42	173	17		5	1		
9	355	2	1	68	157	30			1		
10	372	4	1	44	192	6					32
11	274	2		50	171	9			4		
12	248	2	1	39	131	12			3		
13	335	7		55	118	10		3	3	7	
14	347	4		37	126	12		1			
15	334	25	1	16	135	7					
16	480	5	2	34	176	2			1		
17	389	12	2	30	176	6					
18	464	13		45	150	8		2	1		
19	295	16		59	142	7			1	6	3
20	362	5		38	148	8			2		
21	371	9		63	166	13		1	2	8	
22	573	62		49	189	12			2		
23	593	27	4	67	198	21		4	5		
24	524	45		54	197	21		2	8		
25	333	45		52	158	19		1	4	10	
26	362	27		54	159	9			3		
27	490	98		39	160	13				41	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1978	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
SEP28	342	473		44	130	17				52		
29	228	68	2	27	43	25			2	5		
30	307	111		28	61	17				25		
OCT 1	416	63	2	37	139	8			2			
2	398	35		45	150	6			1			
3	415	23	1	52	184	6						
4	343	15	1	60	168	8		4	3			
5	481	9		40	143	11		2	5			
6	457	8		54	139	14			2			
7	460	22	1	45	174	19						
8	365	60		41	140	15			2	7		
9	359	27		45	142	9		1				
10	388	14		65	197	9						
11	351	118		31	140	7		3	1			
12	340	66	2	60	175	8			1	44		
13	284	93	2	51	81	16		3		62	28	
14	438	50	5	36	60	24		5		4		
15	318	5		31	154	13				6	2	
16	311	10		35	144	13			1	3	12	
17	263	12		49	167	18		2	3		13	
18	295	20		56	124	7		1				
19	353	14		60	130	2		2		4		
20	224	9		77	186	13		1	1			
21	201	5		40	127	11						
22	354	12		50	143	11						
23	146	5	1	32	137	18		1				
24	254	7	1	40	148	14		2	2			
25	154	14	3	50	140	9		2	1			
26	190	9	2	54	136	6		1	1	20		
27	157	5		30	140	13		3	1			
28	160	5		53	144	17			1			8
29	123	3	1	51	179	9			2	4		
30	101	3	2	57	117	21			1	6		
31	211	8		68	114	9		12	14			2
NOV 1	113	14	1	39	112	10		3	34			
2	273	14		48	142	8		18	2			
3	157	1	1	17	43	46		28	3		10	5
4	87	2		29	57	35		9	1			
5	153	6		22	113	9		21		4		
6	47	1	1	13	86	7		2				
7		1		23	103	27		36	3			
8	69			42	115	18		41				
9	51	2	1	49	115	13		23				
10	39	8	1	45	111	25		6	3			
11	32	1		51	69	16		10	1		96	

	KILAUEA SUMMIT				KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1978	SHORT PER. CALDERA	LONG PER.	30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
NOV12	63				60	119	14		1			37	
13	43	3	1		36	78	14		1	1		22	
14	63	3			31	100	17		7	1			
15	57	20			48	80	15		6	2			
16	58		1		47	134	34		6			9	
17	52	14	1		60	104	24		2	1			
18	64	5			94	138	34		3	2		17	
19	68				77	87	19		1	1			
20	106	1			27	107	10		4	2		24	
21	82	8			29	119	16		6	2			
22	112	4			22	65	24		1	4			
23	77	7			32	149	16		2				
24	103	1	1		18	48	14			2	20		
25	105	18	2		16	56	39			1	3		
26	102	50	1		38	91	25		1		3	31	
27	80	23			31	142	16			2			
28	97	14			46	51	14		3			19	
29	98	54			42	101	7		1				
30	141	17	3		47	111	14		2		5		
DEC 1	148	32			42	97	14		3	2			
2	143	35			53	156	17		1	3			
3	114	15			47	133	18		2	2	29		
4	137	8	1		46	121	31			1			
5	141	2			46	155	29		3	2	10		
6	121	47			78	114	24		1		11	25	
7	87	17			35	76	20			1			
8	213	7			45	95	12		1	1			
9	245	40	2		61	103	26			2	5	3	
10	184	22			38	93	13		1				
11	97	22			30	74	16		2	1		13	
12	118	3			41	65	10		3	1			
13	160	5			17	78	22		1	1			
14	145	3			17	87	4		1				
15	173	9			16	37	26		1		8		
16	172	10			29	72	7				11		
17	165	11	1		27	73	26		1	1		7	
18	197	32			34	93	24						
19	170	11	3		27	79	17		2	1			
20	56	3			11	73	11		2	1			
21	167	12			21	103	34						
22	212	28			19	97	35		1	4	2		
23	166	25			144	109	35				35		
24	156	24			34	98	31		3	2			
25	82	6			17	48	11		2				
26	235	17			27	273	34		1	2	10		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1978	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
DEC27	177	16	3	31	102	29					
28	215	4	8	37	110	27		2	1		
29	372	3	3	15	74	42		2			48
30	312	10		29	94	20			3		
31	268	8	1	36	120	26		2			

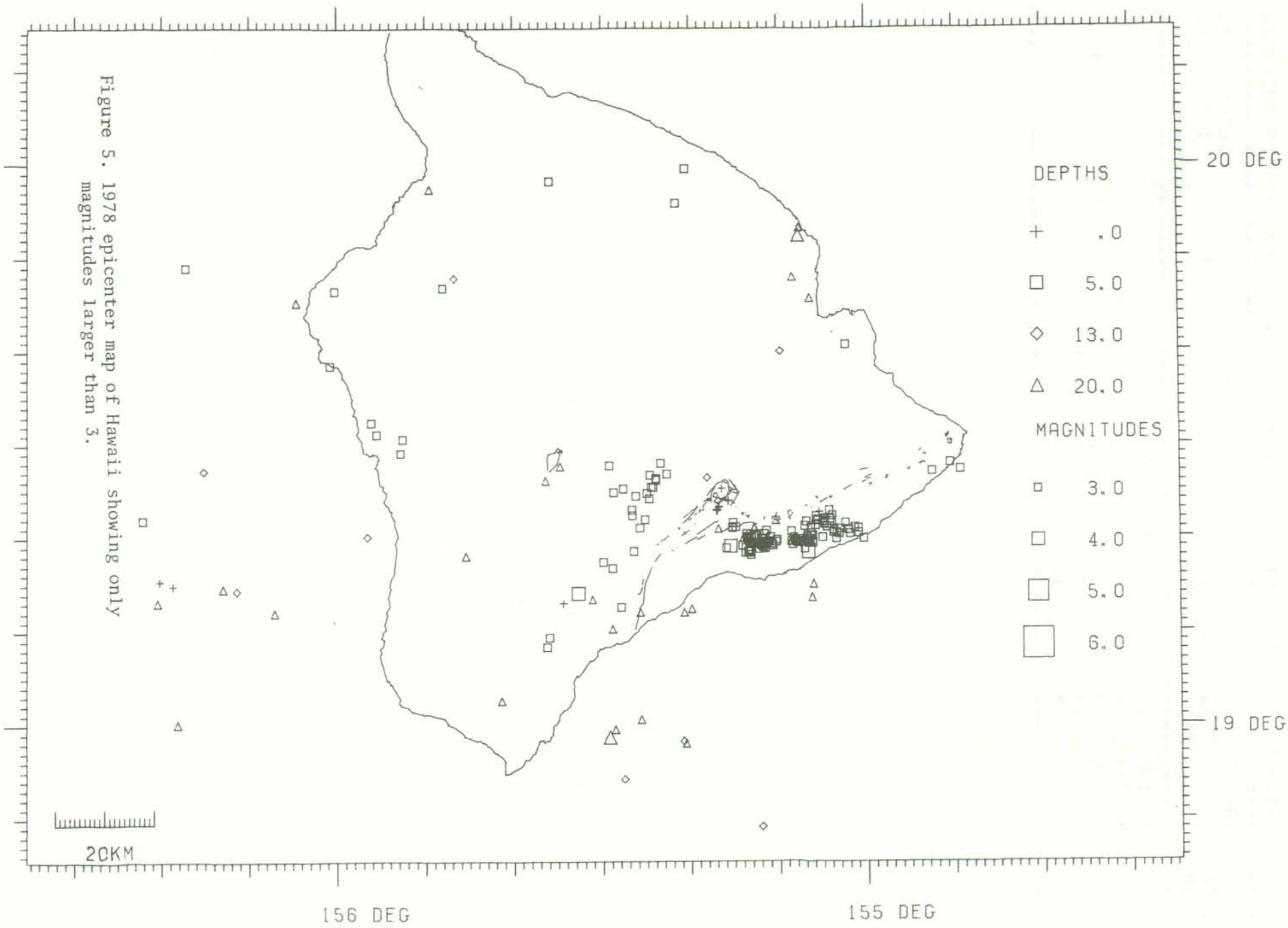

Figure 5. 1978 epicenter map of Hawaii showing only magnitudes larger than 3.

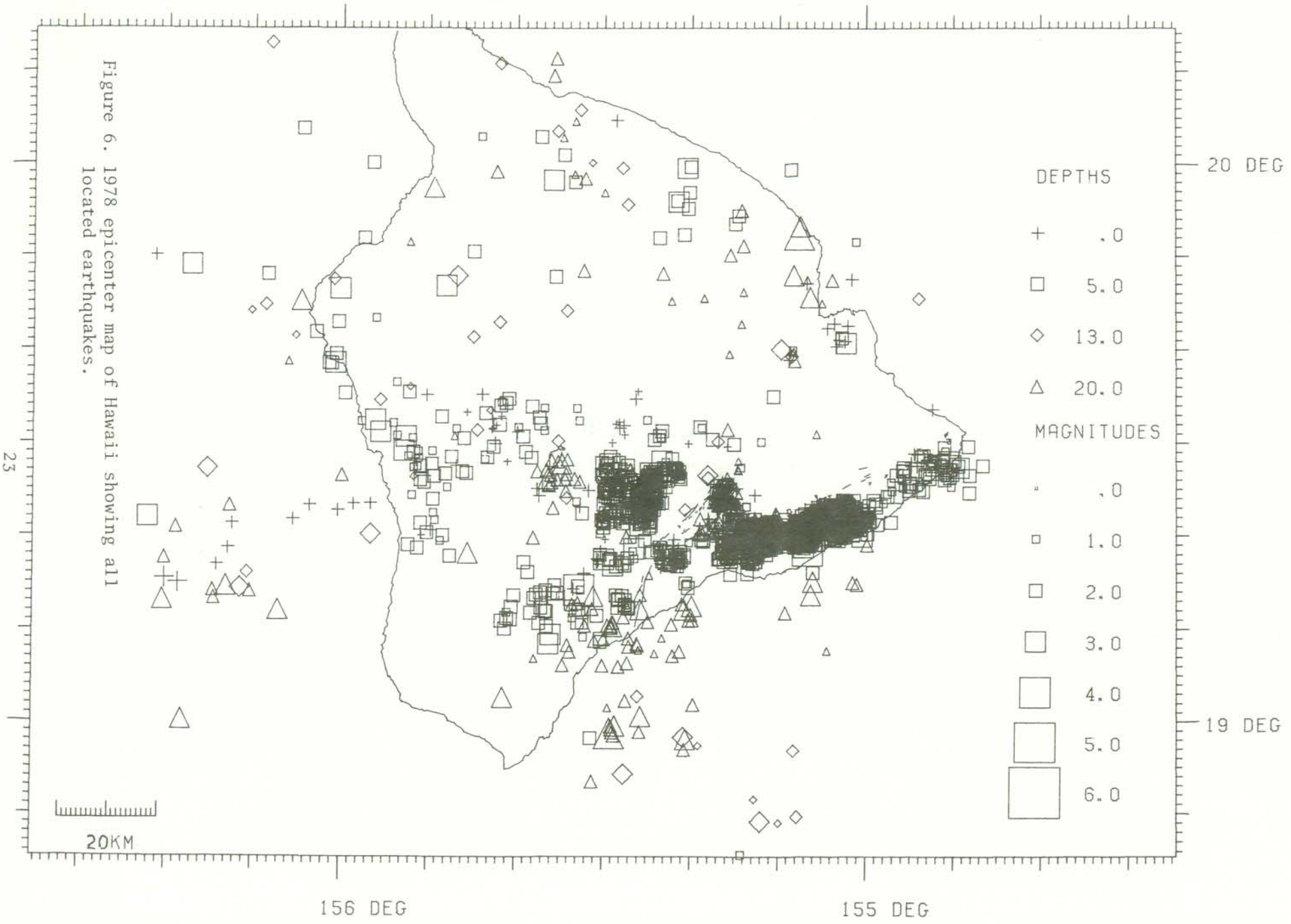

Figure 6. 1978 epicenter map of Hawaii showing all located earthquakes.

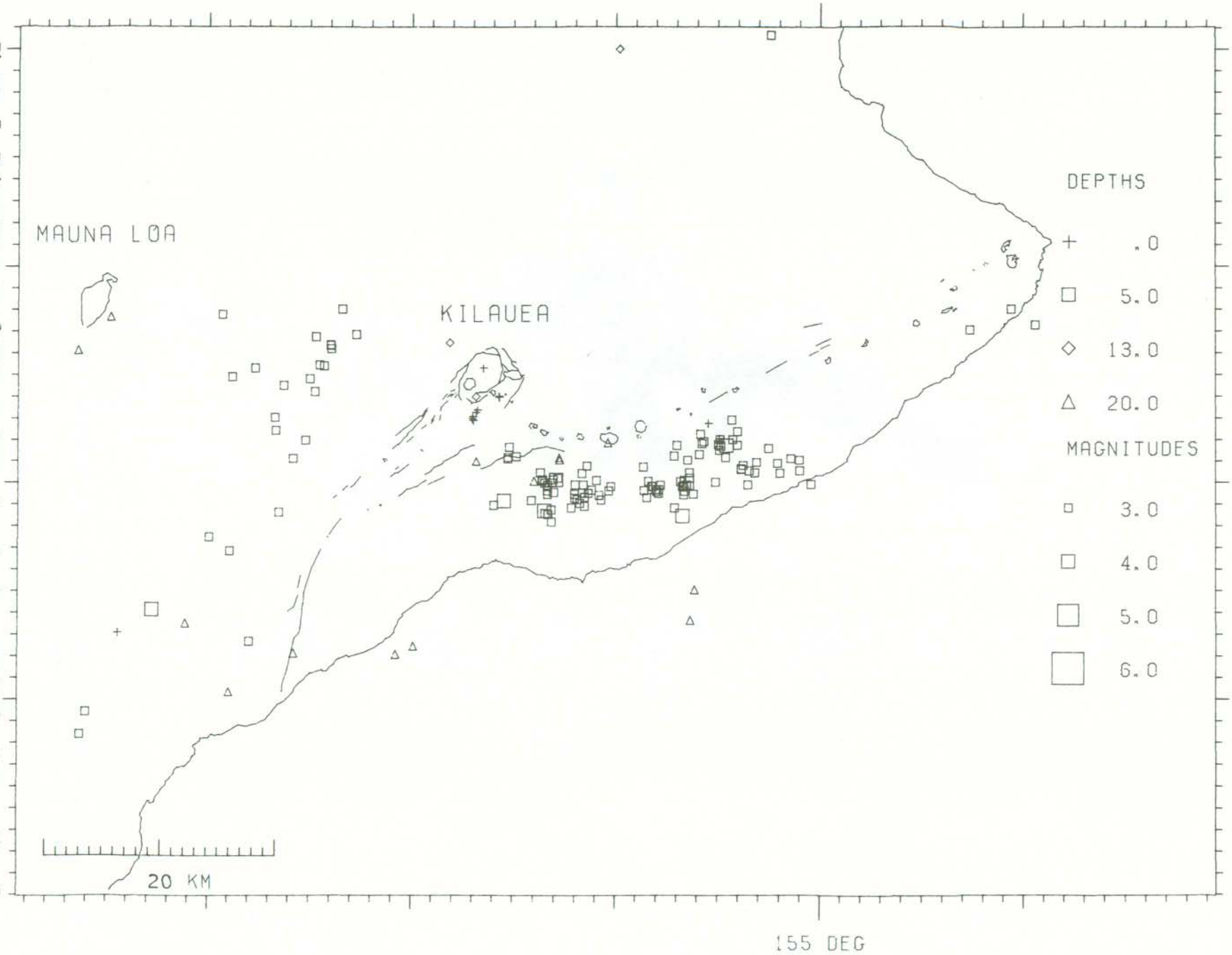

Figure 7. Epicenter map of Kilauea-Mauna Loa showing magnitudes larger than 3.

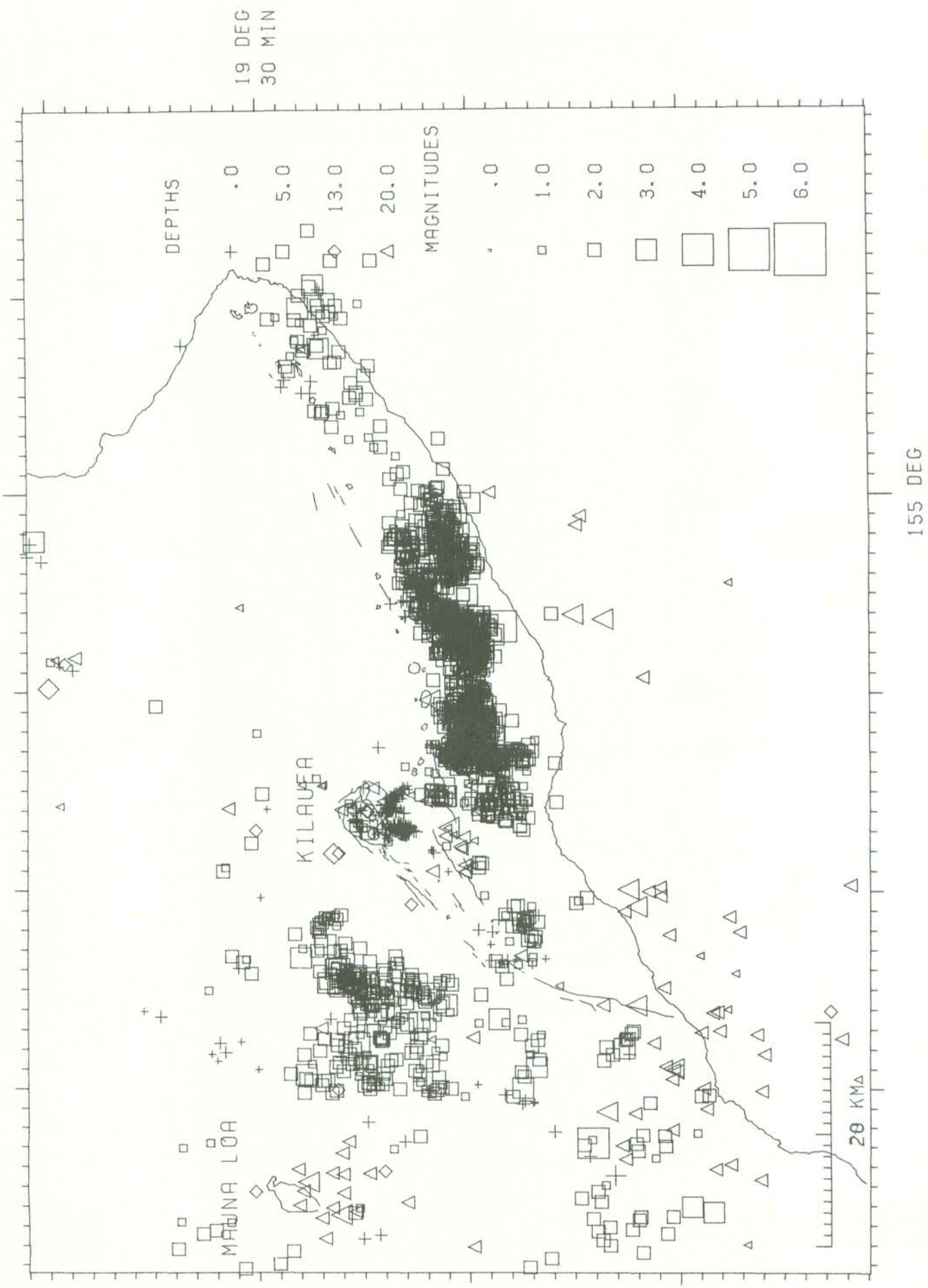

Figure 8. 1978 epicenter map of Kilauea-Mauna Loa showing all located earthquakes.

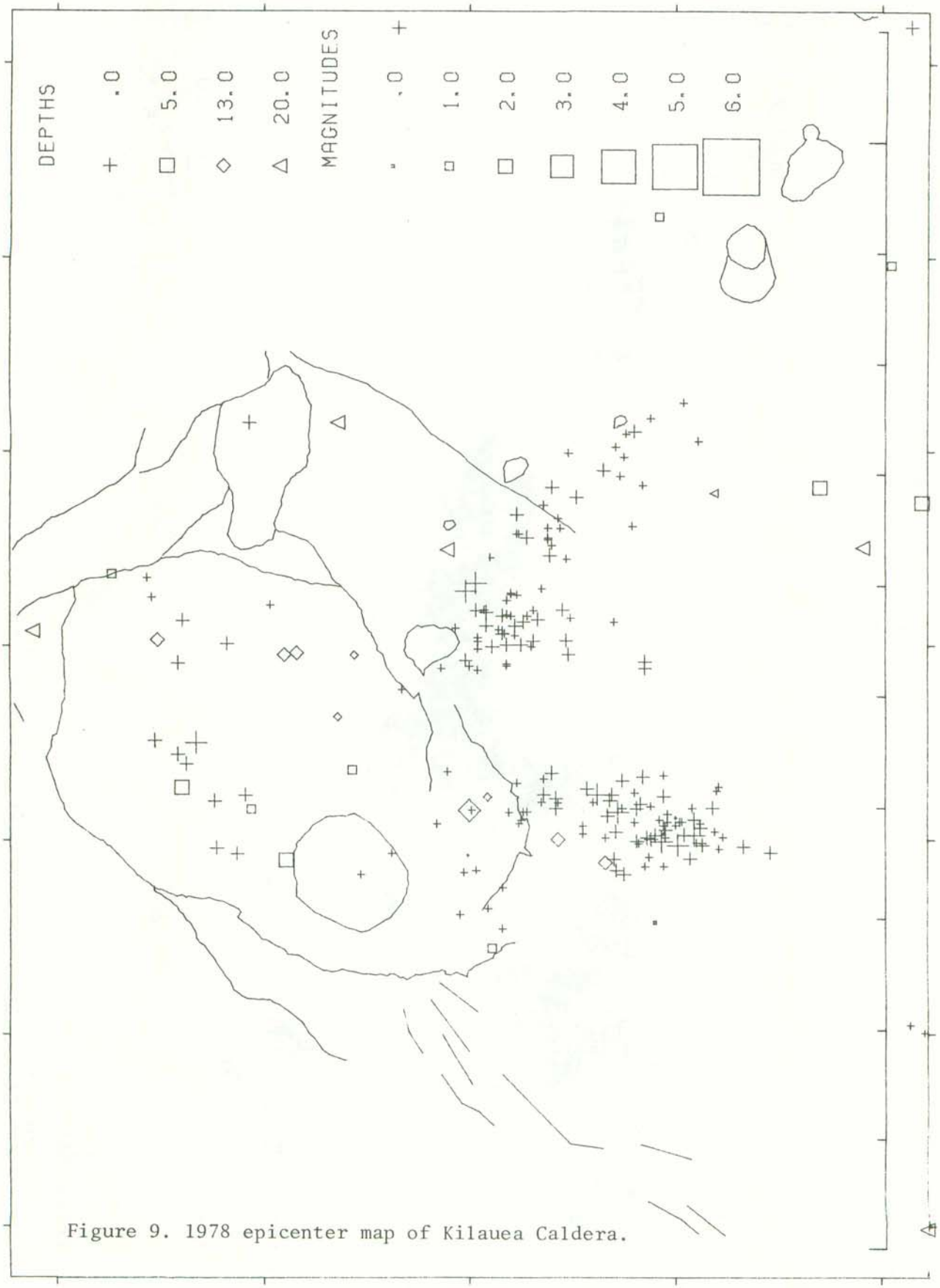

Figure 9. 1978 epicenter map of Kilauea Caldera.

Table 4. Coordinates of named regions.

Name	(Limits)								
	NORTH		SOUTH		EAST		WEST		DEPTHS
	D	M	D	M	D	M	D	M	km
SPC	19	27	19	23	155	15	155	19	0 - 5.5
LPC	19	27	19	23	155	15	155	19	5.5 - 11
INT	19	29	19	18	155	22	155	12	11 - 22
DEP	19	29	19	18	155	22	155	12	22 - 70
UER	19	23	19	19	155	6	155	15	
KOA	19	23	19	17	155	15	155	19	
SWR	19	22	19	16	155	19	155	25	
UKF	19	29	19	22	155	19	155	30	
MER	19	25	19	16	155	1	155	6	
LER	19	31	19	20	154	47	155	1	
POL	19	19	19	10	155	6	155	15	
LSW	19	16	19	0	155	21	155	34	
PPL	19	10	18	30	155	0	155	21	
HLP	19	17	19	10	155	15	155	21	
MOK	19	40	19	22	155	30	155	45	
GLN	19	31	19	23	155	1	155	19	
KON	19	55	19	15	155	45	156	10	
HEA	19	22	19	0	155	25	155	45	
KOH	20	15	19	55	155	30	156	0	
NER	19	40	19	29	155	12	155	30	
HIL	19	50	19	31	154	47	155	12	
KKU	20	5	19	40	155	0	155	45	
DIS	EVERYPLACE ELSE								

When coordinates imply an overlap, precedence is given as shown in Figure 2.

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = (\Sigma R_i^2/NR)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 2 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

* - the location program had a convergence problem, which usually means that the depth may be unreliable.

Table 5 lists all events located during 1978. Table 6 lists only events of magnitude 3.0 or larger.

TABLE 5. HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	JAN	2	8 2	38.01	19	21.11	155	1.21	5.81	2.2	2.4	31	2	191	.13	4	.5	.8	28	MER
		2	1234	23.54	19	17.56	155	15.78	8.62	2.2	2.4	29	0	132	.10	4	.5	.7	22	KOA
		2	1629	13.75	19	27.10	155	22.55	9.58	2.6	2.5	32	1	65	.13	5	.5	.8	26	UKF
		2	20 0	49.73	19	20.03	155	13.25	9.86	2.6	3.2	30	1	66	.08	5	.4	.4	29	UER
		3	0 5	43.10	19	17.78	155	15.99	8.58	2.0	2.5	30	0	124	.11	5	.5	.5	24	KOA
		3	127	59.15	19	19.02	155	12.93	8.51	2.1	2.4	35	1	86	.11	4	.4	.6	30	UER
		3	136	8.46	19	23.16	155	2.24	9.21	2.3	2.7	33	2	133	.11	4	.5	.5	31	MER
		3	2 6	16.39	19	19.09	155	10.62	6.79	1.9	2.0	31	2	109	.13	6	.5	.9	27	UER
		3	730	2.34	19	21.45	155	24.68	8.77	2.0	2.1	26	0	109	.13	3	.6	.9	23	SWR
		3	1031	12.80	19	20.40	155	7.18	7.66	2.3	2.6	18	2	199	.08	6	.7	1.4	14	UER
		3	16 6	8.41	19	20.03	155	11.78	8.30	1.7	2.0	25	1	82	.10	5	.4	.7	22	UER
		3	1857	18.65	19	21.55	155	2.58	6.51	2.0	2.2	27	0	143	.12	3	.6	.7	22	MER
		4	733	21.91	19	20.93	155	13.40	9.01	2.5	2.9	31	2	59	.10	3	.4	.6	26	UER
		4	842	27.33	19	19.43	155	10.83	9.93	3.7	4.1	35	1	100	.10	5	.4	.5	28	UER F
		4	846	11.77	19	20.65	155	11.26	8.35	2.1	2.5	29	1	74	.10	4	.4	.6	26	UER
		4	912	18.94	19	20.43	155	2.70	5.59	2.3	2.1	28	2	159	.13	1	.5	1.0	23	MER
		4	10 0	23.66	19	20.45	155	13.70	9.20	2.7	3.4	34	2	57	.12	4	.4	.6	29	UER
		4	1038	4.43	19	20.38	155	13.41	8.48	2.3	2.7	31	2	63	.10	4	.4	.6	28	UER
		4	1137	37.99	18	58.25	155	31.41	12.71	2.5	2.3	34	2	262	.19	43	2.0	3.3	30	DIS
		4	1142	31.15	19	20.65	155	6.92	4.95	2.1	2.0	30	2	96	.12	6	.5	2.3	26	UER
		4	1343	31.51	19	20.38	155	13.52	9.76	2.3	2.7	33	2	66	.11	4	.4	.5	28	UER
		4	1958	58.56	19	51.56	155	1.18	11.81	1.7	1.0	26	3	252	.25	40	4.0	6.4	20	KKU
		4	23 1	17.72	19	21.12	155	2.12	5.23	2.0	2.4	26	2	167	.13	3	.5	1.1	12	MER
		5	353	13.26	19	20.30	155	9.52	8.54	2.0	2.3	31	1	76	.10	3	.4	.7	24	UER
		5	358	46.70	19	18.96	155	15.97	9.97	3.2	3.4	38	2	100	.10	3	.4	.4	33	KOA F
		5	1213	56.02	19	19.03	154	59.91	44.07	2.8	3.0	34	2	220	.10	6	1.1	1.9	29	DIS
		5	15 9	5.85	19	20.57	155	1.88	5.38	1.9	2.4	24	1	194	.14	2	.7	.9	20	MER
		5	1529	16.43	19	22.81	155	25.14	7.00		2.1	25	0	91	.15	4	.6	1.5	23	UKF
		5	1937	53.04	19	25.83	155	25.19	7.45		1.9	24	0	53	.12	8	.5	1.5	23	UKF
		5	2233	17.33	19	19.93	155	14.73	36.47	2.3	2.6	37	0	72	.10	5	.7	1.4	33	DEP
		5	2255	23.87	19	20.83	155	10.53	7.89	2.0	2.1	29	0	72	.10	3	.4	.7	27	UER
		5	2343	50.28	19	19.36	155	11.23	6.40	2.2	2.1	31	1	101	.12	6	.4	.8	27	UER
		6	854	44.87	19	27.81	155	29.50	9.85	2.5	2.4	35	2	38	.10	8	.3	.6	27	UKF
		6	1033	23.56	19	10.39	155	32.11	47.40	2.9		32	0	111	.13	8	1.1	2.7	22	LSW T
		6	1755	48.98	19	21.72	155	5.80	7.16	2.0	2.0	28	3	82	.14	6	.5	1.2	24	MER
		7	248	50.86	19	20.73	155	9.55	6.90	1.8	1.9	28	2	69	.11	3	.4	1.0	25	UER
		7	1052	36.84	19	17.21	155	13.41	10.10	2.1	2.4	27	0	153	.11	9	.8	.9	24	POL
		7	1452	20.28	19	19.27	155	8.08	8.68	2.3	2.8	32	2	94	.10	4	.4	.7	21	UER
		7	1455	11.32	19	20.29	155	6.14	6.87	2.4	2.5	26	1	114	.11	6	.5	1.3	22	UER
		7	19 9	46.40	19	27.89	154	54.91	4.04	2.2	2.0	27	0	167	.18	1	1.2	1.0	24	LER
		7	2030	35.92	19	59.60	155	20.50	9.71	2.0	2.2	33	2	274	.13	27	1.9	.8	28	KKU F
		7	21 5	57.43	19	25.61	155	24.86	8.65	2.0	2.0	28	0	56	.11	8	.4	1.3	23	UKF
		7	2235	1.51	19	19.74	155	10.25	7.72	2.1	2.4	30	0	92	.09	4	.4	.7	28	UER
		8	752	3.09	19	19.89	155	10.39	7.05	1.9	2.1	26	0	89	.12	4	.6	1.1	25	UER
		8	13 5	54.05	19	19.13	155	15.41	6.67	1.9	2.1	28	0	93	.11	4	.5	1.0	25	KOA
		8	1732	37.69	19	20.11	155	8.42	7.58	2.3	2.6	32	0	79	.10	4	.5	.7	31	UER
		8	23 0	24.09	19	19.47	155	11.78	6.93	1.9	1.9	30	2	94	.13	5	.5	.9	24	UER
		9	050	52.73	19	22.91	155	3.18	7.65	2.0	2.3	32	2	113	.15	4	.6	.7	27	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	JAN	9	1127	16.21	19	19.44	155	9.31	5.90	1.6	2.0	27	0	91	.12	5	.6	1.0	27	UER
		9	2047	32.09	19	26.14	155	21.22	8.59	1.9	2.1	25	3	40	.12	5	.4	1.0	18	UKF
		9	2048	43.65	19	9.18	155	32.28	5.31		1.6	20	1	131	.14	8	.7	3.6	16	LSW *
		10	352	19.23	19	27.94	154	51.33	6.51	1.9	1.4	21	1	268	.22	4	2.3	1.4	20	LER
		10	716	59.09	19	21.51	155	6.38	7.70	2.4	2.8	33	1	84	.11	6	.5	.7	24	UER
		10	14 0	7.29	19	18.96	155	6.85	8.52	2.4	2.7	32	2	139	.11	4	.5	.7	27	POL
		10	1440	57.30	19	20.67	155	4.35	8.80	2.1	2.3	29	2	107	.14	3	.5	.6	25	MER
		10	2132	8.32	19	20.69	155	.66	5.77	2.1	1.9	28	3	206	.18	4	.8	1.2	20	LER
		10	2233	11.45	19	19.55	155	13.06	10.16	3.8	4.1	38	2	75	.10	5	.4	.4	30	UER F
		10	2238	4.02	19	20.13	155	12.54	7.45	1.9	1.9	29	0	74	.13	5	.5	.7	24	UER
		10	23 9	54.40	19	19.63	155	13.37	9.47	2.8	3.2	33	1	69	.10	5	.4	.4	28	UER
		11	4 3	30.13	19	20.72	155	6.83	7.40	2.0	2.3	28	1	96	.08	6	.4	.9	27	UER
		11	2210	18.00	19	19.36	155	10.16	8.12	2.1	2.0	31	2	100	.11	5	.4	.7	27	UER
		12	635	29.84	19	19.64	155	9.70	8.02	2.1	2.0	29	0	90	.11	5	.5	.7	28	UER
		12	1434	6.57	19	31.18	155	55.53	9.95	3.0	3.1	32	0	218	.22	4	1.5	.7	28	KON F
		12	2047	49.03	19	19.63	155	11.28	7.98	1.9	2.2	32	1	94	.13	5	.5	.8	29	UER
		12	2128	.94	19	21.21	154	58.74	5.14	2.1	2.2	26	1	220	.14	7	1.0	1.1	22	LER
		13	153	23.80	19	20.23	155	8.09	8.76	2.2	2.7	32	0	84	.09	5	.4	.6	31	UER
		13	1040	10.72	19	18.98	155	12.25	8.88	2.4	3.0	32	1	100	.11	4	.4	.6	28	POL
		13	1240	2.27	19	20.78	155	1.90	6.95	2.1	2.2	27	3	185	.14	2	.6	.8	21	MER
		13	15 1	19.11	19	26.84	154	51.00	8.36	2.1	2.5	31	4	272	.19	6	1.3	.8	27	LER
		13	1740	42.94	19	21.02	155	13.20	8.76	2.0	2.4	30	1	58	.10	3	.4	.6	25	UER
		13	19 9	28.06	19	20.72	155	13.04	8.80	1.8	1.9	23	1	63	.11	4	.4	.8	21	UER
		13	22 0	20.21	19	20.89	155	12.67	7.93	1.8	1.9	30	3	63	.11	3	.4	.7	27	UER
		14	015	18.89	19	11.00	155	19.84	51.68	2.4	3.1	37	5	178	.10	13	.8	1.0	26	HLP L
		14	016	55.67	19	10.97	155	20.26	49.85	2.2	2.1	32	5	177	.13	13	.9	1.1	20	HLP L
		14	018	40.34	19	7.65	155	21.32	50.95	2.2	2.0	21	1	235	.12	12	1.8	1.5	10	LSW L
		14	1019	54.14	19	24.58	155	25.90	10.69	1.8	1.9	28	1	40	.13	5	.4	.8	24	UKF
		14	11 1	6.11	19	24.81	155	25.89	9.89	1.9	1.8	28	4	50	.11	5	.3	.8	22	UKF
		14	13 5	2.38	19	20.33	155	13.14	7.46	1.8	1.8	25	0	65	.14	4	.6	.9	21	UER
		14	2154	58.44	19	31.51	155	46.81	9.76	1.6	2.3	25	5	87	.13	2	.5	.5	24	KON
		15	341	24.57	19	20.70	155	10.98	8.24	1.9	1.8	28	3	74	.12	3	.4	.8	22	UER
		15	537	14.04	19	20.74	155	11.12	8.66	2.1	2.4	32	1	73	.12	3	.4	.7	30	UER
		15	1625	42.83	19	20.03	155	8.56	5.02	1.9	2.0	30	1	77	.12	4	.5	1.2	27	UER
		15	1838	50.50	19	20.08	155	6.48	8.93	2.5	2.8	31	1	116	.10	6	.5	.6	27	UER
		15	2018	28.85	19	18.86	155	13.51	8.34	2.1	2.5	32	0	73	.14	3	.5	.6	26	POL
		16	538	9.02	19	20.58	155	12.33	8.74	1.9	2.2	31	2	70	.10	4	.4	.6	27	UER
		16	8 4	56.10	19	21.43	154	57.23	7.67	2.6	2.6	21	3	223	.15	7	1.0	1.3	14	LER
		16	1338	9.91	19	19.07	155	11.49	7.44	2.1	2.1	29	1	106	.12	5	.4	.7	27	UER
		16	1352	17.36	19	19.47	155	7.53	8.66	2.1	2.4	27	2	107	.09	4	.5	.7	23	UER F
		16	1427	53.32	19	20.36	155	6.65	7.90	2.5	2.6	32	2	106	.14	6	.5	.8	28	UER
		16	1643	46.56	19	20.88	155	6.65	7.93	2.7	3.2	32	0	95	.12	6	.5	.7	29	UER
		16	22 1	26.31	19	19.89	155	11.78	7.41	1.9	2.0	26	1	85	.10	5	.4	.9	25	UER
		16	2234	45.04	19	20.85	155	2.26	7.32	2.1	2.4	27	1	169	.12	2	.7	.6	22	MER
		17	1741	30.03	19	25.62	155	28.74	8.66	2.3	2.0	31	2	51	.11	6	.4	1.0	25	UKF
		18	0 9	43.35	19	23.02	155	2.18	7.26	2.0	1.9	28	1	137	.16	5	.6	.8	18	MER
		18	4 1	.17	19	24.75	154	53.52	9.63	2.2	2.1	27	1	241	.12	6	1.3	.6	25	LER
		18	16 8	59.85	19	23.74	155	5.58	.04	1.9	2.3	6	0	171	.21	8	2.1	8.8	6	MER L*

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	JAN	18	1944	36.24	20	11.33	155	35.57	35.80	2.4	2.3	29	3	241	.08	21	1.4	1.7	22	KOH	
		18	2020	53.47	19	20.01	155	11.45	7.66	2.1	2.0	33	0	85	.11	5	.5	.6	31	UER	
		18	2126	21.27	19	21.49	155	2.17	8.83	2.3	2.7	32	2	157	.10	3	.5	.5	29	MER	
		19	340	21.13	19	31.65	155	39.74	7.65		1.4	12	3	164	.12	8	.9	1.8	12	MOK	
		19	549	56.22	19	21.27	155	6.47	7.41	1.9	2.2	32	3	89	.13	6	.4	1.0	26	UER	F
		19	623	1.78	19	1.87	155	19.71	38.17	2.3	2.0	32	2	220	.05	20	.9	2.0	29	PPL	
		19	12 4	56.49	19	24.89	155	17.10	8.11	2.0	2.1	12	1	88	.09	0	.5	1.1	11	LPC	LT
		19	1552	10.49	19	45.62	155	6.43	39.00	3.0	3.2	37	2	187	.10	5	.8	1.0	27	HIL	
		19	1938	28.76	19	30.70	155	39.23	7.44	2.3	1.8	19	5	78	.12	6	.5	1.3	19	MOK	
		19	1956	21.79	19	20.22	155	19.06	28.80	2.1	1.9	29	2	84	.08	3	.7	1.2	27	DEP	
		20	340	15.74	19	20.30	155	4.05	7.40	2.1	1.9	31	1	122	.12	2	.7	.7	29	MER	
		20	556	54.97	19	21.97	154	59.87	7.70	2.1	2.0	29	0	194	.11	6	1.0	.6	26	LER	
		20	751	34.81	19	24.16	155	25.33	9.30	2.0	1.9	34	3	56	.17	5	.4	.9	24	UKF	
		20	926	58.34	19	24.64	155	14.85	39.60	2.3	2.3	27	4	89	.09	1	.8	.9	25	DEP	L
		20	1624	8.48	19	20.82	155	12.73	7.39	1.8	1.9	27	0	64	.13	3	.6	.9	23	UER	
		20	2032	25.42	19	24.60	154	48.22	8.42	2.2	2.1	26	5	292	.18	12	.8	.9	23	LER	
		21	026	57.91	19	20.60	155	10.82	8.01	1.9	1.8	27	0	75	.11	3	.5	.7	23	UER	
		21	354	33.50	19	19.28	155	13.34	7.60	1.8	2.1	30	0	73	.12	4	.5	.7	26	UER	
		21	548	39.62	19	19.80	155	10.41	8.14	2.0	2.2	30	0	91	.11	4	.5	.7	29	UER	
		21	12 2	26.21	19	21.37	155	2.91	7.27	2.7	3.1	34	2	132	.11	3	.5	.6	31	MER	
		21	15 9	18.06	19	22.60	155	28.18	10.03	2.4	2.5	33	0	61	.12	1	.4	.7	29	UKF	
		22	2 6	42.47	19	27.29	155	14.38	9.10	2.0	1.9	29	0	40	.11	5	.3	.9	25	GLN	
		22	241	43.40	19	22.69	155	1.95	7.93	2.1	2.0	28	0	147	.12	5	.7	.5	26	MER	
		22	423	24.93	19	20.74	155	2.04	6.39	2.2	2.2	31	2	182	.14	2	.5	.8	25	MER	
		22	541	32.82	19	18.84	155	7.13	8.69	3.3	3.6	37	2	134	.12	3	.5	.4	33	POL	
		22	1349	30.34	19	32.82	155	48.47	9.76		2.2	15	2	108	.13	6	.7	.9	14	KON	
		22	1522	32.11	19	27.84	155	51.42	3.80		1.8	13	3	129	.20	7	.8	3.6	8	KON	
		22	1634	55.95	19	43.40	155	56.08	12.75		1.8	22	3	203	.09	26	1.1	1.1	21	KON	
		22	1920	47.92	19	20.09	155	3.52	6.90	2.1	2.7	32	2	130	.12	1	.5	.8	27	MER	
		22	2021	38.70	19	19.91	155	3.54	9.42	3.7	4.1	36	1	150	.11	1	.7	.4	34	MER	F
		22	2026	15.80	19	20.10	155	3.42	7.36	2.1	2.4	32	2	126	.13	1	.6	.7	29	MER	
		22	2028	27.13	19	20.65	155	3.87	9.33	3.6	4.0	38	3	101	.11	2	.5	.4	33	MER	F
		22	2044	39.79	19	20.68	155	3.68	6.57	2.1	2.3	31	0	94	.14	2	.7	.8	29	MER	F
		22	2255	33.59	19	18.97	155	13.63	7.69	2.2	2.5	31	2	84	.11	4	.4	.7	24	POL	
		23	056	10.31	19	20.17	155	3.49	8.84	2.3	3.0	32	2	122	.11	1	.6	.5	27	MER	
		23	128	8.88	19	17.61	155	27.25	6.95	2.3	2.8	33	1	93	.14	8	.4	.9	28	HEA	
		23	431	57.76	19	20.52	155	3.65	7.06	2.1	2.0	30	0	102	.13	2	.7	.6	24	MER	
		23	528	10.65	19	19.16	155	16.38	30.64		1.4	28	4	114	.09	3	.7	1.0	23	DEP	
		23	817	35.54	19	18.93	155	6.44	5.37	2.2	2.2	17	2	216	.11	8	.9	3.6	15	POL	
		23	1034	21.12	19	19.05	155	52.35	6.24	2.9	2.7	32	3	168	.28	6	.9	1.2	23	KON	F
		23	21 9	41.73	19	30.90	155	27.62	4.48	2.1	1.7	17	1	91	.10	2	.5	1.3	17	NER	
		24	321	9.05	19	21.00	155	1.69	6.56	2.2	2.2	30	1	184	.15	3	.7	.7	28	MER	
		24	332	36.77	19	21.24	155	.78	5.32	2.2	2.4	27	1	211	.15	5	1.1	.8	25	LER	
		24	450	40.40	19	31.39	155	44.40	15.71	2.8	3.0	20	1	74	.20	15	1.0	1.1	16	MOK	
		24	525	14.15	19	31.91	155	42.22	1.65		1.4	16	0	109	.12	7	.7	4.0	15	MOK	
		24	557	1.66	19	25.26	155	26.07	12.08	2.3	2.4	35	3	41	.14	6	.3	.5	31	UKF	
		24	849	1.92	19	19.08	155	6.62	7.97	2.2	2.3	31	2	141	.12	4	.5	.8	27	UER	
		24	1518	17.04	19	20.47	155	6.41	8.77	3.2	3.4	39	3	107	.12	6	.4	.6	35	UER	F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	JAN	24	1852	32.03	19	25.51	155	27.96	9.80	1.9	2.2	32	0	48	.11	6	.4	.7	27	UKF	
		25	3 8	31.54	19	20.81	155	7.16	5.87	1.9	2.1	30	2	91	.11	5	.4	1.5	27	UER	
		25	319	43.44	19	18.79	155	23.57	5.96	2.4	3.1	35	1	104	.15	3	.5	1.0	31	SWR	
		25	516	41.36	19	23.29	155	17.16	3.28	1.7	2.3	11	2	59	.24	3	.7	1.2	11	SPC	L
		25	524	16.51	19	26.80	155	21.32	6.04	1.8	1.8	24	0	77	.16	6	.5	2.0	21	UKF	
		25	559	17.75	19	19.46	155	13.10	7.89	1.8	2.0	28	0	75	.12	5	.5	.6	24	UER	
		25	730	11.72	18	14.05	155	17.08	12.79		2.4	36	2	316	.11	92	8.8	13.1	35	DIS	*
		25	741	40.41	19	19.69	155	10.21	7.71	2.0	2.0	31	0	93	.10	4	.4	.7	26	UER	
		25	844	53.79	19	19.44	155	48.69	8.32		1.3	17	0	148	.11	9	.8	1.2	14	KON	
		25	1628	10.82	19	30.49	155	45.92	8.56	2.6	2.4	25	0	78	.10	0	.5	.7	23	KON	
		25	1836	32.44	19	26.36	155	21.79	8.92	1.9	1.7	23	2	44	.14	6	.4	1.0	21	UKF	
		25	2156	51.20	19	20.63	155	4.21	6.12	2.1	2.1	29	0	108	.13	3	.7	1.0	25	MER	
		26	0 1	30.08	19	42.75	155	14.31	27.55	1.8	.8	22	3	210	.15	16	1.2	1.6	20	KKU	
		26	124	43.26	19	26.86	155	21.37	7.94	2.0	2.1	27	1	49	.16	6	.5	1.1	21	UKF	
		26	154	3.44	19	26.86	155	21.33	6.13	1.8	1.9	23	1	77	.14	6	.6	1.5	20	UKF	
		26	10 8	3.39	19	24.03	155	17.17	1.12	1.6	1.9	17	1	53	.12	2	.3	.5	13	SPC	
		26	1017	7.59	19	20.34	155	9.46	8.29	1.9	1.9	26	0	75	.13	3	.6	1.0	24	UER	
		26	1830	14.63	19	19.41	155	11.77	8.41	2.2	2.0	31	0	96	.10	5	.5	.5	28	UER	
		26	1830	44.56	19	19.20	155	11.44	7.27	2.0	2.3	11	0	175	.11	6	1.0	1.6	7	UER	
		26	1938	21.21	19	26.65	155	48.08	6.32	2.7	3.1	30	1	91	.20	8	.6	1.3	27	KON	
		27	10 5	34.95	19	17.20	155	21.35	7.49	2.1	2.5	22	0	133	.08	5	.6	.9	22	SWR	
		27	1629	36.02	19	20.29	155	2.81	7.08	2.3	2.3	32	2	154	.14	1	.6	.7	29	MER	
		27	2130	40.09	19	20.82	155	8.97	7.98	2.0	2.1	30	1	66	.11	3	.4	.8	28	UER	
		27	2318	27.55	19	22.58	155	24.78	9.94	2.1	1.8	33	1	56	.12	5	.5	.7	29	UKF	
		28	327	2.55	19	18.60	155	15.63	7.18	1.9	2.0	27	0	131	.09	4	.5	.8	24	KOA	
		28	7 4	6.99	19	56.92	155	20.24	9.92	2.6	2.8	28	2	267	.09	23	1.1	.6	24	KKU	
		28	1632	59.51	19	19.82	155	10.24	7.16	2.8	3.3	31	0	90	.10	4	.5	.7	28	UER	
		28	1834	20.78	19	19.77	155	11.51	7.47	2.4	2.6	31	1	89	.10	5	.5	.7	27	UER	
		28	1952	22.03	19	20.69	155	11.66	8.44	2.2	2.6	33	2	72	.16	4	.5	.7	28	UER	
		28	2212	25.72	19	27.82	154	52.75	6.89	2.3	2.3	26	0	261	.17	2	2.3	.8	26	LER	
		28	2230	54.37	19	22.73	155	4.42	7.62	2.0	2.0	28	0	87	.10	3	.5	.8	26	MER	
		29	635	31.41	19	19.81	155	10.41	8.30	2.0	2.3	30	0	91	.08	4	.4	.7	27	UER	
		29	818	56.79	19	21.51	155	.46	7.40	2.5	3.1	30	0	195	.11	5	.9	.6	28	LER	
		30	038	2.57	19	22.00	156	22.19	6.26	3.2	2.9	41	5	244	.13	49	.9	1.3	36	DIS	
		30	1 8	41.34	19	17.61	155	21.83	5.74	1.6	1.7	26	0	122	.13	5	.5	1.3	22	SWR	
		30	451	8.22	19	31.17	155	39.92	.48	2.3	2.0	27	4	80	.14	8	.5	.3	25	MOK	
		30	5 4	30.87	19	19.56	155	3.53	6.09	2.0	2.1	29	1	186	.14	1	.7	.8	24	MER	
		30	918	51.54	19	20.34	155	4.22	8.37	2.4	2.7	33	2	121	.11	2	.5	.6	31	MER	
		30	1241	38.94	19	21.25	155	6.05	6.90	2.3	2.7	31	1	91	.13	6	.5	.9	30	UER	
		30	1411	54.31	19	21.37	155	7.91	8.69	1.9	2.1	26	0	74	.09	4	.5	.7	25	UER	
		30	18 8	58.42	19	20.68	155	2.39	6.91	2.1	2.2	29	1	170	.13	2	.6	.6	24	MER	
		31	311	13.80	19	19.44	155	11.37	4.73	1.8	1.8	28	1	98	.13	6	.5	2.4	22	UER	
		31	539	15.03	19	23.92	155	15.83	2.52	2.3	2.8	30	2	52	.16	3	.4	.5	28	SPC	
		31	1030	42.58	19	20.42	155	2.50	6.17	2.4	2.6	30	3	175	.17	1	.7	.8	27	MER	
		31	1637	59.47	19	19.15	155	6.13	7.09	2.0	1.9	28	3	149	.13	5	.5	1.0	25	UER	
		31	2219	45.73	19	26.94	155	27.49	10.15	1.9	2.1	29	1	54	.10	8	.4	.8	23	UKF	
FEB		1	411	58.69	19	20.16	155	11.97	7.53	1.9	2.1	29	1	79	.12	5	.5	1.0	26	UER	
		2	416	2.25	19	25.21	155	47.87	12.40		1.6	15	2	174	.13	11	1.1	.6	15	KON	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	FEB	2	7 5	28.78	19	20.68	155	3.65	6.62	2.1	2.1	22	2	93	.12	2	.6	1.4	19	MER	
		2	1014	8.84	19	18.57	155	23.65	4.65		1.9	19	0	105	.08	3	.5	1.5	18	SWR	
		2	11 3	47.79	19	20.07	155	14.01	33.45	3.4	3.3	37	1	60	.10	5	.7	.9	30	DEP	
		2	1314	46.48	19	19.26	155	7.00	8.62	2.5	2.5	30	1	126	.10	4	.5	.7	28	UER	
		2	1621	21.66	19	19.68	155	7.89	9.27	3.0	3.1	32	3	95	.10	4	.4	.7	27	UER	
		2	17 5	.07	19	20.35	155	50.19	5.78	2.6	1.9	22	0	176	.12	9	.9	1.3	18	KON	
		2	1932	45.99	19	26.48	155	18.14	15.45	3.5	3.5	37	1	58	.11	2	.4	.3	30	INT	F
		2	2327	53.00	19	20.26	155	11.91	9.39	2.3	2.2	28	2	78	.11	5	.5	.7	26	UER	
		3	1150	42.57	19	19.84	155	8.73	7.49	2.1	2.2	23	0	75	.11	5	.6	1.2	23	UER	
		4	1512	7.31	19	19.47	155	11.12	8.28	1.9	2.4	25	0	98	.09	5	.5	.8	25	UER	
		4	1826	39.67	19	18.94	155	15.55	7.88	1.0	1.6	20	0	119	.08	4	.5	.9	13	KOA	
		4	2053	26.80	20	2.94	155	44.01	11.70	1.8	2.0	24	5	153	.12	10	1.1	1.3	19	KOH	
		5	138	40.41	19	19.93	155	.46	6.92	2.8	3.2	33	3	215	.13	4	.5	.6	26	DIS	
		5	144	4.17	19	20.87	155	12.98	7.52	1.4	1.0	21	1	61	.08	3	.4	.9	19	UER	
		5	1423	36.17	19	33.77	155	36.81	5.28	2.3	1.1	24	2	92	.15	8	.6	2.7	20	MOK	
		5	1829	54.07	19	20.46	155	7.92	5.14	1.9	1.9	31	2	85	.13	5	.5	1.5	27	UER	
		5	1845	25.94	19	24.80	155	28.95	8.04	1.8	1.9	28	0	67	.11	5	.6	1.3	23	UKF	
		5	2034	42.79	19	18.26	155	16.53	8.01	2.2	2.4	28	1	119	.12	4	.5	.8	26	KOA	
		6	022	33.86	19	22.30	155	15.19	7.23	1.9	2.1	29	2	55	.20	1	.5	1.0	21	KOA	
		6	1 3	10.74	19	19.14	155	15.72	9.67	2.6	2.9	34	2	96	.11	3	.4	.5	28	KOA	
		6	128	20.17	19	19.35	155	15.43	9.34	2.4	2.7	33	2	88	.15	4	.5	.7	30	KOA	
		6	4 9	51.96	19	47.51	156	.90	13.45	2.8	2.6	37	5	228	.21	35	1.3	1.7	33	KON	
		6	11 8	24.36	19	21.85	155	30.26	7.37		1.8	21	0	93	.13	5	.6	1.7	20	HEA	
		6	1241	46.94	19	20.25	155	7.99	8.98	2.7	3.1	31	0	86	.10	5	.5	.6	30	UER	
		6	1525	11.99	19	19.85	155	11.70	7.27	1.7	1.6	21	0	86	.10	5	.6	1.2	20	UER	
		6	2159	19.36	19	23.37	155	30.01	9.22	2.3	2.3	33	0	55	.11	5	.4	.9	30	MOK	
		6	22 6	53.49	19	21.81	154	59.71	3.96	2.1	2.1	26	0	200	.15	6	1.1	2.0	23	LER	
		6	2257	46.28	19	23.59	155	26.75	12.63	1.9	1.8	24	0	50	.11	3	.5	.9	23	UKF	
		7	015	25.78	19	21.09	155	3.64	5.54	2.0	2.3	28	0	100	.17	3	.7	1.3	27	MER	
		7	429	27.29	19	58.88	155	33.39	20.43		1.9	15	2	209	.06	25	.9	3.7	15	KOH	
		7	939	14.23	19	19.42	155	9.92	8.33	2.4	3.0	33	0	97	.09	5	.5	.6	29	UER	
		7	12 6	22.99	19	20.16	155	10.50	6.51	1.9	2.3	30	0	83	.13	4	.5	.9	26	UER	
		7	1238	26.86	19	21.69	155	2.19	5.45	2.0	2.3	28	0	154	.14	4	.7	1.1	23	MER	
		7	1352	59.94	19	19.63	155	10.16	6.88	2.0	2.2	25	0	94	.12	5	.6	1.2	23	UER	
		7	1532	26.38	19	40.34	155	3.42	1.77	2.4	3.1	26	1	196	.17	19	1.1	1.5	25	HIL	B
		7	1717	1.32	19	10.55	155	22.23	45.73		2.2	23	2	185	.11	15	1.3	1.2	19	LSW	L
		7	2157	.21	19	19.47	155	11.98	6.35	1.8	1.9	29	2	91	.14	5	.6	1.3	25	UER	
		7	2220	10.59	19	26.65	155	21.27	6.58	1.8	1.9	21	0	80	.12	6	.5	1.8	19	UKF	
		8	328	42.46	19	20.65	155	8.07	5.97	1.9	1.8	25	0	118	.12	4	.6	1.4	25	UER	
		8	553	12.50	19	33.62	154	52.47	3.87	2.1	1.9	26	5	242	.34	9	2.3	4.9	23	HIL	*
		8	6 6	10.51	19	18.68	155	13.58	7.77	2.0	2.5	28	0	73	.13	3	.6	.8	27	POL	
		8	1156	37.30	19	20.75	155	6.12	8.91	2.7	3.0	29	1	103	.10	6	.5	.6	20	UER	
		8	1851	54.52	19	18.31	155	21.25	5.48	1.4	2.1	20	0	159	.13	5	.8	1.7	17	SWR	
		9	5 5	9.56	19	23.15	155	16.09	.00	2.3	2.6	13	0	101	.16	1	.8	1.3	12	SPC	*
		9	632	50.20	19	18.94	155	13.40	9.38	1.9	2.3	27	0	129	.11	7	.6	.7	22	POL	
		9	642	1.52	19	18.23	155	13.22	7.28	2.0	2.0	25	0	92	.10	2	.6	1.0	18	POL	
		10	347	49.64	19	19.92	155	8.94	6.90	2.4	2.6	32	1	76	.12	4	.5	1.0	23	UER	
		10	625	58.17	19	20.21	155	12.50	8.90	2.1	2.4	28	1	73	.11	5	.5	.7	21	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	FEB	10	725	33.48	20	.16	155	31.41	16.62		1.8	23	2	301	.16	44	7.3	76.5	21	KOH	*
		10	13 4	4.71	19	14.21	155	32.62	7.28		1.6	18	2	194	.18	8	1.2	2.8	18	LSW	
		10	1517	44.56	19	21.38	155	50.94	7.63	2.6	2.1	22	1	140	.19	10	.8	1.2	20	KON	
		10	1754	11.51	19	23.10	154	56.88	8.64	2.4	2.8	27	2	190	.19	4	.9	.6	22	LER	
		10	2223	42.73	19	20.08	155	6.74	7.32	2.0	2.3	25	3	111	.11	6	.5	1.1	22	UER	
		10	23 3	39.24	19	21.10	155	24.57	8.97	2.2	2.3	37	2	71	.14	3	.4	.6	28	SWR	
		11	1210	17.19	19	21.77	155	15.13	7.80	2.0	1.9	30	1	72	.14	2	.4	.6	20	KOA	
		11	1422	33.20	19	23.05	155	25.04	10.11	2.3	2.1	33	1	43	.14	5	.5	.7	25	UKF	
		12	5 6	14.47	19	11.91	155	36.55	8.86	3.1	2.8	34	1	92	.25	6	.8	1.1	23	HEA	
		12	1245	32.88	19	35.21	155	43.87	1.25		2.0	15	2	171	.21	9	1.2	1.2	13	MOK	
		12	14 3	16.19	19	8.14	155	27.07	49.11	2.6	2.9	30	0	171	.07	22	1.0	2.5	26	LSW	L
		12	18 5	37.84	19	27.06	155	36.61	45.37	2.9	2.3	23	4	65	.12	1	.9	.8	22	MOK	L
		13	233	57.83	19	23.97	155	17.16	2.34	.8	1.7	15	1	95	.20	2	.7	.7	15	SPC	L
		13	4 4	12.82	19	25.42	155	16.09	2.22	1.9	2.6	21	1	47	.13	2	.3	.4	19	SPC	
		13	1046	37.19	19	21.53	155	6.03	6.23	2.0	2.3	30	3	86	.13	6	.5	1.6	25	UER	
		13	2016	42.55	19	11.20	155	41.01	6.53		2.0	18	1	223	.22	10	1.4	1.7	15	HEA	
		14	10 5	6.39	19	24.00	155	16.85	15.02	3.4	3.7	40	3	35	.11	2	.4	.2	33	INT	F
		14	1314	10.22	19	21.17	155	24.44	8.84	1.8	2.1	28	2	113	.10	3	.5	.7	25	SWR	
		14	1851	32.21	19	19.63	155	29.79	3.25	2.0	1.8	26	3	106	.12	7	.4	1.6	25	HEA	
		14	20 3	50.61	19	19.54	155	6.41	8.04	2.2	2.5	35	4	131	.12	5	.4	.7	32	UER	
		14	2335	47.80	19	26.12	155	15.92	21.75	2.1	2.3	38	5	39	.12	3	.5	.7	28	INT	
		15	637	34.75	19	20.18	155	56.64	14.95	2.9	3.5	27	2	234	.20	11	2.4	1.0	26	KON	
		15	1155	43.37	19	20.57	155	11.21	8.05	2.2	2.6	33	1	75	.12	4	.4	.6	27	UER	
		15	1425	19.00	19	21.20	155	11.27	7.77	2.2	2.7	32	2	67	.15	3	.4	.8	30	UER	
		15	1559	12.84	19	22.57	155	25.40	6.79	1.7	1.3	23	0	72	.14	4	.6	1.4	21	UKF	
		16	8 0	23.53	19	19.43	155	6.36	8.48	2.5	2.9	33	2	136	.12	5	.5	.6	30	UER	
		16	1232	52.80	19	31.46	155	15.88	24.07	2.4	2.3	37	3	51	.13	12	.5	1.1	15	NER	
		16	1252	1.54	19	19.94	155	11.50	7.30	2.1	2.1	31	2	86	.11	5	.4	.8	25	UER	
		16	19 0	2.31	19	26.95	155	29.59	9.49	2.2	2.3	30	1	55	.13	9	.5	1.0	26	UKF	
		16	2022	26.00	20	42.29	155	58.45	2.64	2.5	2.1	19	5	216	.12	30	2.2	1.0	16	DIS	*
		16	2034	25.39	19	20.37	155	12.02	9.13	2.1	2.3	32	3	75	.11	5	.4	.7	25	UER	
		16	2351	40.19	19	20.80	155	6.09	8.03	2.5	2.5	26	0	102	.09	6	.5	.7	22	UER	
		17	2 1	20.16	19	19.92	155	7.68	7.25	2.0	2.1	28	1	97	.12	5	.5	1.1	25	UER	
		17	425	25.71	19	18.50	155	16.02	9.09	2.3	2.5	30	2	138	.12	4	.5	.7	26	KOA	
		17	10 0	3.51	19	21.60	155	5.70	6.80	2.5	2.7	22	2	146	.11	6	.5	1.3	12	MER	
		17	1334	21.24	19	23.64	155	24.35	9.34	2.2	2.4	27	3	72	.13	6	.5	1.1	21	UKF	
		17	1650	48.81	19	23.77	155	25.41	9.10	2.1	2.1	29	1	59	.12	5	.4	.9	27	UKF	
		17	2059	12.91	19	19.51	155	11.19	7.43	1.9	1.9	24	1	96	.10	5	.5	1.0	15	UER	
		18	1451	59.76	19	19.64	155	8.62	9.30	3.0	3.6	32	0	77	.10	4	.5	.4	31	UER	
		19	9 1	51.79	19	20.74	155	13.49	9.97	2.7	3.2	35	1	57	.10	4	.4	.5	30	UER	
		19	1149	47.68	19	.63	155	25.72	41.20	3.1	3.1	37	1	215	.06	17	1.0	2.0	35	LSW	
		19	15 0	50.97	19	21.84	155	.68	7.41	2.4	2.0	20	2	186	.18	5	1.0	1.0	15	LER	
		19	1932	42.27	19	27.10	154	50.47	10.03	2.5	2.7	31	2	280	.14	6	1.1	.6	29	LER	
		19	2011	26.64	19	25.07	155	14.85	1.97	1.8	2.3	21	1	122	.21	1	.6	.5	14	GLN	
		19	2047	58.01	19	24.07	155	34.25	15.27	2.2	2.1	14	0	84	.17	7	1.3	1.8	13	MOK	
		20	734	24.25	19	19.34	155	7.68	8.86	2.4	3.1	34	2	106	.10	4	.4	.6	31	UER	
		21	156	55.90	19	21.93	155	5.69	8.15	3.3	3.4	37	3	79	.12	5	.4	.7	30	MER	
		21	219	50.81	19	22.51	155	5.71	7.73	2.3	2.1	25	0	69	.10	5	.5	.9	19	MER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	FEB	21	324	45.15	19	25.43	155	36.28	23.48		2.2	7	0	250	.07	7	7.1	12.5	6	MOK	*
		21	628	28.66	19	20.67	155	12.70	8.73	2.1	2.2	30	3	66	.13	4	.4	.8	25	UER	
		21	712	48.05	19	23.25	155	25.61	10.43	1.9	1.8	24	0	89	.10	4	.6	.9	22	UKF	
		21	950	24.38	19	20.39	155	3.09	6.37	2.1	2.2	29	2	117	.13	1	.6	1.0	25	MER	
		21	1134	7.09	19	19.51	155	13.54	5.02	1.8	2.1	29	1	66	.15	5	.5	1.5	25	UER	
		21	2224	7.94	19	19.28	155	12.59	1.73	1.9	1.9	34	5	88	.20	4	.4	.8	24	UER	
		22	743	55.09	19	26.06	155	34.41	47.55	2.5	3.0	17	2	74	.14	4	2.0	1.5	14	MOK	
		22	9 1	55.01	19	20.74	155	7.22	8.81	2.4	2.6	32	2	91	.10	5	.4	.7	29	UER	
		22	1846	27.52	19	25.55	155	15.75	1.83	1.1	1.3	9	2	181	.03	3	.7	.4	9	SPC	F
		22	20 1	13.68	19	19.48	155	15.36	7.73	1.9	2.0	27	0	86	.11	4	.5	.7	26	KOA	
		22	2056	15.44	19	29.64	155	15.91	4.74	1.4	1.1	6	1	326	.17	9	3.8	31.9	6	GLN	*
		23	6 6	11.12	19	19.49	155	6.22	9.31	3.1	3.2	36	2	166	.11	5	.5	.4	32	UER	
		23	857	3.39	19	19.54	155	7.61	6.39	2.2	2.1	26	3	104	.09	4	.5	1.1	21	UER	
		23	912	19.24	19	26.56	155	36.09	41.84		2.1	12	3	177	.10	5	2.0	1.3	11	MOK	
		23	948	2.98	19	26.46	154	48.21	12.84	2.5	2.4	29	5	283	.12	28	1.3	.6	21	LER	
		23	1337	41.10	19	25.40	155	16.73	5.97	2.0	2.3	13	1	140	.11	2	.6	.6	12	LPC	
		23	1722	50.73	19	19.81	155	38.08	41.71	2.5	2.4	13	2	224	.19	5	2.0	2.8	9	HEA	
		23	2031	46.58	19	25.80	155	32.74	23.67	2.2	2.1	14	1	114	.12	7	1.1	1.5	13	MOK	
		24	129	39.97	19	19.17	155	10.40	9.61	2.8	3.1	38	2	106	.13	5	.4	.5	32	UER	
		24	459	43.12	19	19.58	155	15.58	6.46	1.9	2.0	33	2	89	.14	3	.4	.8	29	KOA	
		24	837	4.65	19	26.51	155	59.94	22.22	3.1	2.8	31	2	231	.09	10	1.1	1.6	18	KON	
		24	2255	28.17	19	27.25	156	15.25	16.89	3.2	3.1	33	0	263	.16	35	3.5	98.1	29	DIS	F*
		25	929	25.39	19	20.07	155	13.61	9.84	2.8	3.3	36	3	61	.10	5	.4	.5	22	UER	
		25	951	30.98	19	22.38	155	27.42	10.35	2.7	2.9	33	0	64	.11	0	.4	.6	27	UKF	
		25	1132	55.65	19	29.61	155	42.55	8.18	2.4	2.3	23	1	71	.12	12	.6	1.3	17	MOK	
		25	1146	4.59	19	26.23	155	18.11	14.89	2.1	2.4	37	2	58	.09	2	.4	.3	31	INT	
		25	13 7	3.24	19	18.79	155	14.81	6.52	1.9	2.1	25	0	91	.11	4	.5	1.1	21	POL	
		25	1354	1.88	19	24.14	155	24.01	9.27	1.9	2.1	25	0	66	.09	7	.5	.8	20	UKF	
		25	1944	57.30	19	22.17	155	25.61	8.77	2.4	2.9	34	1	59	.13	4	.5	.8	28	UKF	
		26	045	9.91	19	27.88	155	30.20	11.49	1.9	2.2	14	2	81	.52	9	1.5	2.6	0	MOK	L*
		26	053	18.33	19	22.35	155	27.27	9.22	2.4	2.6	38	3	64	.13	1	.4	.6	29	UKF	
		26	221	46.92	19	17.28	155	13.11	8.33	1.9	1.7	27	0	145	.11	1	.6	.8	14	POL	
		26	854	21.17	19	20.16	155	10.71	7.41	1.9	2.4	30	2	83	.09	4	.4	.8	26	UER	
		26	1057	17.24	19	19.69	155	11.35	6.67	1.8	2.0	29	1	91	.13	5	.5	.9	25	UER	
		26	1136	42.69	19	24.04	155	29.49	9.86	2.4	2.8	36	1	42	.09	4	.4	.6	33	UKF	
		26	1213	45.55	19	11.79	155	38.38	8.65	2.2	2.1	30	2	101	.23	6	.8	1.2	24	HEA	
		26	1255	50.18	19	18.46	155	14.51	6.98	1.9	1.7	24	0	116	.12	3	.6	.9	21	POL	
		26	1732	50.44	19	25.38	155	24.28	6.66	1.8	1.9	29	0	45	.16	8	.5	1.7	23	UKF	
		26	1750	6.80	19	21.33	155	8.00	7.28	1.8	2.4	27	1	73	.07	4	.4	1.0	24	UER	
		26	1849	54.34	19	33.52	155	42.93	16.91	1.3	1.6	19	6	118	.24	15	1.2	1.9	16	MOK	
		26	2144	51.92	19	23.21	155	15.39	3.21	1.5	1.8	14	1	77	.13	2	.4	.6	12	SPC	L
		26	2212	12.92	19	23.00	155	35.82	40.47	2.3	2.6	17	3	120	.15	8	1.3	1.2	15	MOK	
		27	2 0	10.94	19	19.41	155	15.65	6.24	2.1	2.5	36	3	91	.17	3	.5	.8	31	KOA	
		27	541	55.61	19	23.84	155	17.25	.62	1.3	2.1	11	1	61	.22	2	.4	.9	9	SPC	L
		27	631	47.53	19	20.60	155	7.96	6.36	2.1	2.4	31	2	81	.12	4	.4	.9	27	UER	
		27	648	26.84	19	16.89	155	22.34	5.58	1.8	2.6	28	0	128	.13	6	.5	1.5	21	SWR	
		27	1151	44.41	19	12.46	155	28.25	2.24	2.1	2.1	24	2	97	.15	6	.5	1.2	19	LSW	
		27	2225	.33	19	28.19	155	34.15	37.51	2.2	2.5	19	3	87	.16	4	1.1	1.6	10	MOK	L

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	FEB	28	040	49.81	19	20.73	155	13.28	7.06	1.6	1.7	28	2	60	.13	4	.4	.9	26	UER	
		28	151	30.94	19	17.01	155	23.37	5.48	1.8	1.9	27	0	121	.15	6	.5	2.4	23	SWR	
		28	224	33.02	19	18.80	155	15.63	7.29	2.0	2.5	29	0	102	.12	4	.5	.9	24	KOA	
		28	230	45.98	19	23.78	155	15.95	2.26	1.2	1.6	16	3	100	.14	3	.3	.5	12	SPC	L
		28	239	45.67	19	13.36	155	38.01	7.44	2.1	2.3	31	1	94	.22	3	.8	1.2	24	HEA	
		28	255	23.32	19	26.55	155	24.10	7.71	1.7	1.9	28	1	54	.17	6	.5	1.7	26	UKF	
		28	1429	24.90	19	20.86	155	4.34	7.25	2.5	2.8	26	1	100	.11	3	.6	1.0	22	MER	
		28	1928	51.35	19	24.16	155	29.23	10.79	2.3	2.1	27	0	49	.09	4	.5	1.0	25	UKF	
	MAR	1	256	43.06	19	18.90	155	13.58	6.17	2.2	2.1	26	2	84	.12	3	.4	1.1	22	POL	
		1	1438	49.92	19	25.31	154	55.01	6.64	2.7	2.5	22	2	213	.14	4	1.3	1.8	15	LER	
		1	1537	49.40	19	26.25	154	50.48	8.54	2.4	2.3	21	1	275	.14	7	1.5	.9	17	LER	
		2	051	3.04	19	19.88	155	13.35	9.72	3.7	4.0	30	3	67	.10	5	.4	.6	22	UER	F
		2	745	13.76	19	19.98	155	11.96	7.41	2.7	2.2	31	0	82	.12	5	.5	.9	26	UER	
		2	1225	35.66	19	25.13	154	55.88	6.14	2.1	1.8	16	0	201	.14	5	1.2	1.8	15	LER	
		2	1646	55.64	19	21.00	155	26.16	11.14	1.8	1.6	19	0	127	.06	4	.6	1.1	15	HEA	
		2	1843	8.60	19	23.58	155	2.26	8.97	2.1	1.9	21	0	125	.11	4	.6	1.0	21	MER	
		2	1920	15.35	19	19.28	155	6.23	9.38	2.8	2.8	33	3	143	.12	5	.5	.6	29	UER	
		2	2018	51.69	19	58.03	155	33.38	9.23	2.4	2.1	32	7	170	.18	29	.7	1.2	28	KOH	
		2	2129	2.63	19	18.50	155	13.57	10.09	2.4	2.4	32	1	74	.11	3	.5	.5	22	POL	
		2	2236	.21	19	22.41	155	32.46	6.44	2.3	2.1	12	2	107	.27	8	1.0	2.5	8	MOK	L
		3	1451	51.39	19	21.57	155	15.02	9.54	2.8	2.9	30	2	63	.10	2	.4	.5	27	KOA	
		3	1617	22.36	20	3.58	155	35.39	15.35	2.5	1.9	27	5	193	.21	21	3.7	6.5	25	KOH	
		3	2019	4.24	20	23.00	156	19.22	14.26	2.9	3.2	34	6	210	.14	43	1.2	1.8	31	DIS	
		4	1 8	17.63	19	26.22	155	28.67	10.94	2.3	1.9	8	2	87	.09	7	.7	.9	3	UKF	L
		4	748	25.94	19	48.45	155	32.31	25.56	2.2	2.4	34	1	100	.09	9	.6	1.7	27	KKU	
		4	1610	52.83	19	24.88	155	31.72	1.10	2.3	2.6	10	1	95	.18	8	.7	1.4	7	MOK	L
		4	1636	18.71	19	20.73	155	9.99	8.08	2.0	1.9	25	0	72	.07	2	.4	.7	25	UER	
		4	1722	9.54	19	2.78	155	26.07	18.76	2.5	2.4	35	4	203	.23	13	1.2	1.8	32	LSW	
		4	2014	33.10	19	10.71	155	32.96	7.02	2.4	2.3	28	2	107	.20	9	.7	1.5	26	LSW	
		4	2045	31.31	19	19.68	155	11.69	6.99	2.0	2.1	30	1	90	.14	5	.5	.8	29	UER	
		5	028	48.93	19	20.36	155	13.37	8.02	2.0	2.2	25	3	63	.12	4	.4	.9	20	UER	
		5	218	56.05	19	24.81	155	34.35	27.34	2.7	2.4	9	1	92	.08	6	1.6	5.1	8	MOK	L
		5	1926	16.56	19	26.03	155	35.36	36.61	2.4	3.4	24	1	72	.14	3	1.0	2.4	16	MOK	L
		5	2214	20.18	19	24.11	155	15.51	29.06	2.2	2.5	40	4	35	.12	2	.5	.9	32	DEP	
		5	2221	15.25	19	20.56	155	8.63	6.82	1.9	2.4	33	0	72	.10	4	.4	.7	28	UER	
		6	15 3	34.53	19	22.78	155	5.48	.14	2.6	3.5	31	0	71	.22	4	.6	1.7	28	MER	*
		6	15 6	43.39	19	22.95	155	5.44	1.48	2.5	3.4	29	0	71	.18	4	.5	1.3	27	MER	
		6	1549	14.51	19	19.48	155	11.32	5.87	2.0	2.0	27	2	97	.12	5	.5	1.1	22	UER	
		6	16 7	43.73	19	18.09	155	15.26	6.95	2.0	1.9	25	2	141	.13	4	.5	1.0	22	KOA	
		6	2252	33.27	19	10.72	155	28.87	32.30	2.4	2.5	32	3	81	.06	3	.7	1.1	29	LSW	
		7	312	29.87	19	19.11	155	8.01	6.07	2.1	2.6	30	0	98	.12	3	.6	1.1	28	UER	
		7	6 9	18.97	19	23.82	155	16.00	2.92	1.8	2.4	13	1	68	.09	3	.4	.5	11	SPC	
		7	621	47.39	19	23.30	155	15.88	3.11	1.5	2.0	11	1	79	.16	2	.5	.8	9	SPC	
		7	738	45.03	19	38.89	155	8.87	.32	2.0	2.3	16	2	235	.11	28	1.5	.7	15	HIL	
		7	740	16.41	19	39.49	155	8.68	.00	1.7	1.4	14	2	238	.15	29	2.1	.7	13	HIL	*
		7	1546	20.75	19	27.09	155	26.93	27.53	2.5	3.3	38	4	39	.10	8	.5	.9	33	UKF	
		8	041	52.35	19	19.61	155	12.23	6.47	2.0	2.2	32	3	86	.16	5	.5	1.0	29	UER	
		8	047	11.62	19	20.52	155	11.70	6.23	1.9	1.8	27	0	75	.15	4	.5	1.1	24	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	MAR	8	16 6	42.80	19	26.11	155	33.31	27.93	2.6	2.9	10	0	72	.09	6	1.4	4.5	10	MOK L
		8	1839	3.80	19	20.46	155	11.79	9.06	2.5	2.4	33	2	75	.13	5	.5	.6	28	UER
		8	2115	57.20	19	21.10	155	11.09	8.60	2.2	2.1	29	2	68	.14	3	.4	.7	27	UER
		9	2 2	39.27	19	26.28	155	30.05	14.91	2.1	2.3	10	0	132	.18	8	1.3	4.3	10	MOK L
		9	433	49.91	19	24.62	155	24.79	10.30	2.3	2.1	32	2	69	.14	6	.4	.7	29	UKF
		9	752	36.12	19	18.86	155	13.62	8.09	2.2	2.4	31	1	85	.11	3	.5	.6	26	POL
		9	1159	19.90	19	17.51	155	13.64	5.85	2.2	2.5	22	2	104	.14	1	.6	1.4	14	POL
		9	1638	57.64	19	21.05	155	2.10	7.16	2.3	2.5	28	1	169	.10	3	.6	.5	27	MER
		9	17 8	4.80	19	23.86	155	27.17	9.06	2.2	2.1	34	1	64	.13	3	.4	.8	32	UKF
		9	1853	57.54	19	20.64	155	7.82	9.05	2.5	2.6	31	1	85	.12	4	.4	.7	29	UER
		9	2316	16.99	19	20.21	155	8.57	8.17	2.3	2.6	31	0	75	.09	4	.5	.7	27	UER
		10	524	43.38	19	19.59	155	7.99	9.55	3.1	3.3	37	3	93	.10	4	.4	.5	30	UER
		10	19 6	23.08	19	22.17	155	2.02	7.43	2.3	2.3	27	0	152	.11	5	.6	.6	26	MER
		10	2017	49.50	19	25.74	155	15.63	5.29	1.7	1.7	10	1	147	.18	3	1.0	1.7	9	SPC
		10	2155	51.22	19	26.14	155	36.43	46.47	2.8	3.3	20	0	69	.15	2	1.4	3.3	20	MOK L
		11	014	22.00	19	22.75	155	.44	7.11	2.1	2.2	25	0	173	.19	5	1.0	1.1	24	LER
		11	3 4	33.16	19	19.60	155	7.90	8.11	2.3	2.3	29	0	96	.08	4	.6	.7	27	UER
		11	10 1	59.31	19	27.15	154	52.51	8.85	2.5	2.7	28	2	260	.15	4	1.4	.6	23	LER
		11	1529	24.84	19	19.04	155	13.52	8.01	1.8	1.9	26	0	80	.09	4	.4	.7	22	UER
		12	046	47.09	19	19.29	155	12.06	4.29	1.8	2.0	28	1	95	.14	5	.5	1.8	24	UER
		12	12 0	34.04	19	15.99	155	32.22	1.05	2.2	2.0	30	2	118	.18	9	.5	.7	26	LSW
		12	1920	44.95	19	19.80	155	7.57	7.08	1.8	2.2	29	1	101	.12	5	.4	.9	27	UER
		12	23 8	18.57	19	27.79	155	29.29	10.78	2.9	3.2	38	2	54	.12	8	.4	.6	36	UKF
		13	846	24.08	19	19.88	155	12.06	8.19	2.2	2.9	30	0	82	.10	5	.4	.6	27	UER
		13	936	13.84	19	31.89	155	27.70	3.81	1.9	2.1	15	2	102	.14	0	.6	.7	15	NER
		13	1115	27.10	19	20.58	155	10.35	8.07	1.9	2.1	26	2	125	.10	3	.5	.9	24	UER
		13	1123	49.54	19	26.03	155	29.10	6.75	2.0	2.3	28	2	52	.11	7	.4	1.4	25	UKF
		13	1456	8.24	19	23.34	155	17.12	14.06	2.1	2.4	32	3	47	.10	3	.5	.3	29	INT
		13	1830	25.33	19	10.16	155	29.07	34.98	2.3	2.3	34	3	104	.06	2	.8	1.1	32	LSW
		13	1947	46.87	19	23.15	155	16.12	2.66	2.3	3.2	21	2	57	.11	1	.3	.5	18	SPC
		14	337	19.18	19	18.00	155	12.99	9.19	1.8	2.1	28	1	142	.11	9	.6	.7	26	POL
		14	723	13.27	19	22.09	155	15.50	27.23	2.8	3.1	40	3	57	.11	1	.5	.8	26	DEP
		14	10 9	28.38	19	19.83	155	6.74	10.03	2.9	3.4	35	2	117	.09	5	.6	.5	29	UER
		14	11 9	1.47	19	19.30	155	20.26	6.63	1.8	1.8	31	1	87	.16	4	.5	.9	27	SWR
		14	1129	51.15	19	19.88	155	6.78	7.75	2.3	2.2	32	2	115	.10	5	.4	.8	26	UER
		14	1512	24.54	19	22.18	155	4.52	8.56	2.3	2.5	31	1	85	.09	4	.5	.5	30	MER
		14	1832	2.65	19	19.35	155	7.76	8.90	2.0	2.4	34	2	104	.12	4	.5	.7	28	UER
		14	19 4	36.18	19	21.77	155	5.62	7.88	2.0	2.1	32	3	81	.14	6	.5	.8	29	MER
		14	2222	6.97	19	21.94	155	.33	8.91	2.4	2.8	34	2	188	.12	6	.7	.5	27	LER
		15	155	45.50	19	18.32	155	21.20	7.01	1.7	2.4	32	4	117	.15	5	.5	1.0	28	SWR
		15	226	11.74	19	24.27	155	26.28	7.59	2.2	2.3	36	3	62	.14	4	.4	1.2	35	UKF
		15	4 2	14.61	19	32.55	155	42.67	1.12	1.5	.8	26	6	83	.13	7	.4	.4	24	MOK
		15	430	1.16	19	24.00	155	25.20	9.45	2.2	1.9	36	3	55	.13	5	.4	.7	30	UKF
		15	430	30.93	19	24.01	155	25.17	8.33	1.7	1.8	15	0	83	.12	5	.7	1.6	13	UKF
		15	727	11.43	19	19.38	155	11.65	7.95	2.2	2.6	32	3	97	.10	5	.4	.7	26	UER
		15	1130	49.87	19	20.99	155	1.88	4.33	2.1	2.2	26	2	178	.11	3	.6	1.2	20	MER
		16	1043	50.85	19	20.51	155	6.57	6.03	2.2	1.9	20	0	104	.12	6	.7	1.9	18	UER
		16	1351	58.40	19	20.67	155	7.01	7.32	2.5	2.5	28	1	95	.11	6	.5	1.0	23	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	MAR	16	14 6	9.41	19	59.71	155	20.10	8.01	2.9	2.8	29	4	207	.14	27	.9	.6	23	KKU F
		16	1556	11.52	19	26.15	155	28.41	.77	2.2	2.0	24	2	78	.13	7	.4	.6	20	UKF
		16	2043	38.02	19	20.86	155	9.52	8.09	2.1	2.0	24	0	101	.10	2	.5	.8	21	UER
		16	2046	22.41	19	20.55	155	6.05	9.01	2.3	2.4	30	0	108	.10	6	.6	.5	24	UER
		17	229	1.71	19	26.77	155	24.68	8.55	3.2	3.5	35	2	31	.14	6	.4	.9	25	UKF
		17	246	14.09	19	20.14	155	13.08	9.75	3.0	3.2	37	2	68	.10	5	.4	.5	26	UER
		17	3 6	14.41	19	21.48	155	6.62	6.40	2.1	2.0	26	2	84	.14	6	.5	1.6	19	UER
		17	1313	18.34	19	20.45	155	11.55	9.11	2.8	2.9	32	3	76	.11	4	.4	.7	21	UER
		17	1544	5.05	19	19.55	155	9.77	6.93	1.9	2.1	27	1	94	.12	5	.5	1.0	24	UER
		17	2037	25.47	19	22.83	155	3.74	8.15	2.0	2.2	28	0	101	.11	3	.6	.5	24	MER
		17	2129	10.72	19	18.96	155	13.33	7.65	2.0	2.0	31	0	77	.13	4	.5	.7	26	POL
		18	345	44.97	19	22.70	155	3.21	9.46	2.4	2.6	29	1	114	.11	4	.6	.5	26	MER
		18	13 1	22.74	19	20.54	155	1.55	7.38	2.0	1.6	17	2	203	.14	3	1.1	.7	15	MER
		18	1450	22.69	19	21.13	155	2.72	7.73	2.1	2.1	16	1	143	.12	2	.8	.7	10	MER
		18	1622	30.02	19	11.77	155	9.26	47.21	2.4	2.5	37	5	236	.12	11	.9	.7	31	POL
		18	1711	4.88	19	20.94	155	1.49	7.80	2.1	1.8	23	3	191	.10	3	.5	.8	15	MER
		18	1856	48.64	19	19.90	155	11.72	6.44	1.7	1.4	16	0	85	.12	5	.6	1.4	14	UER
		18	23 8	20.36	19	41.50	156	5.22	15.94		1.9	20	4	287	.17	26	2.7	8.0	17	KON *
		19	635	51.58	19	22.26	155	1.37	8.75	2.3	2.6	31	2	165	.10	5	.6	.5	26	MER
		19	715	30.13	19	25.94	155	23.90	8.53	1.8	1.8	20	1	53	.11	7	.5	1.2	13	UKF
		19	8 2	18.33	19	22.18	155	6.27	7.09	2.2	2.1	27	1	74	.11	6	.4	1.0	23	UER
		19	13 4	53.72	19	19.59	155	3.65	7.53	2.1	2.4	29	2	178	.11	1	.5	.7	27	MER
		19	1648	9.31	19	17.04	155	13.00	8.24	2.1	1.9	27	1	179	.11	1	.5	.7	20	POL
		19	1832	17.16	19	19.27	155	9.87	8.70	2.1	2.7	35	1	101	.12	5	.4	.6	30	UER
		20	335	20.71	19	18.62	155	12.13	8.83	2.4	2.7	36	2	112	.14	4	.5	.6	32	POL
		20	1148	11.40	19	2.28	155	27.44	38.30	2.7	2.6	36	4	203	.07	13	.9	1.3	29	LSW
		20	1510	3.21	19	27.48	154	49.51	8.49	2.2	2.4	27	5	278	.18	7	1.5	.7	20	LER
		20	1856	8.79	19	19.16	155	16.25	7.23	2.1	2.2	35	1	100	.13	3	.5	.7	25	KOA
		20	1913	25.59	19	21.99	155	25.21	11.40	3.3	3.6	40	2	58	.12	4	.4	.3	35	HEA F
		20	2310	52.73	19	19.76	155	4.00	6.67	2.1	2.3	32	4	158	.14	2	.6	.9	28	MER
		21	354	14.25	19	18.96	155	6.87	6.47	2.0	2.0	30	3	138	.15	4	.5	1.2	25	POL
		21	7 1	14.95	19	20.47	155	11.82	7.50	1.9	2.0	34	3	75	.11	5	.4	.7	31	UER
		21	15 2	17.87	19	20.30	155	7.87	7.50	2.0	2.0	25	1	88	.10	5	.5	1.1	20	UER
		22	726	9.58	19	21.86	155	17.96	3.14	1.2	1.7	17	0	62	.08	3	.4	.7	14	KOA
		22	11 0	40.27	19	23.84	155	17.46	1.61	1.4	1.9	9	1	88	.12	2	.4	.8	8	SPC L
		22	1318	35.80	19	21.75	155	7.35	39.29	2.4	2.6	35	1	75	.10	4	.7	1.6	28	UER
		22	1412	15.84	19	21.64	155	1.74	7.18	2.1	1.9	21	0	168	.13	4	1.0	.6	20	MER
		22	16 3	9.16	19	27.95	155	22.94	7.54	2.0	1.8	22	1	91	.11	3	.6	1.2	18	UKF
		22	1819	28.33	19	21.04	155	3.72	6.41	2.3	2.8	28	1	95	.09	3	.5	.9	23	MER
		22	2054	12.61	19	16.63	155	27.27	9.19	2.0	1.9	19	0	127	.14	10	.7	1.3	19	HEA
		23	1554	44.52	19	17.69	155	21.43	6.15	2.0	2.3	30	0	123	.16	5	.6	1.1	26	SWR
		23	19 8	29.56	19	20.94	155	13.28	7.42	1.9	2.0	33	2	58	.17	3	.5	.8	28	UER
		24	13 6	30.09	19	27.74	154	52.68	45.11	3.0	2.8	38	3	262	.10	3	.8	1.0	31	LER
		24	1857	18.36	19	22.80	155	4.69	7.62	2.3	2.3	27	1	83	.12	3	.5	.9	23	MER
		25	2 0	49.02	19	19.46	155	10.78	7.82	2.2	2.4	30	1	99	.10	5	.4	.6	22	UER
		25	626	2.29	19	19.89	155	8.17	8.56	2.3	2.3	32	1	86	.09	5	.4	.7	29	UER
		25	657	56.43	19	20.88	155	10.74	8.67	2.4	3.0	34	2	71	.10	3	.4	.6	28	UER
		25	1035	56.50	19	26.17	155	23.03	9.12	2.2	2.3	27	1	47	.12	7	.5	.9	21	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	MAR	25	1238	53.64	19	16.14	155	38.70	5.36	2.6	2.5	21	0	183	.17	4	1.6	1.1	17	HEA	
		25	1319	28.00	19	25.16	155	25.55	3.63	2.0	2.1	21	0	55	.12	6	.5	3.3	21	UKF	
		25	1835	31.18	19	20.34	155	11.26	7.14	2.1	2.4	19	0	80	.10	4	.6	1.2	18	UER	
		25	2038	34.31	19	44.91	155	5.08	46.60	1.9	1.6	29	5	190	.10	3	.9	1.0	27	HIL	
		25	2316	59.35	19	26.90	154	55.84	6.15	2.1	1.9	24	2	176	.17	1	1.0	1.0	19	LER	
		26	252	43.33	19	18.51	155	13.56	7.57	2.0	1.9	27	1	85	.12	3	.6	1.0	19	POL	
		26	738	32.29	19	25.96	155	24.68	7.63	2.1	2.1	32	0	65	.13	8	.5	1.3	26	UKF	
		26	10 2	5.67	19	17.73	155	20.76	6.62	2.0	2.0	34	2	125	.17	4	.5	.9	27	SWR	
		26	1446	55.21	19	23.69	155	15.82	3.22	1.6	2.0	17	1	77	.12	2	.4	.6	14	SPC	
		26	1539	14.11	19	20.49	155	3.19	8.50	2.4	2.6	33	2	110	.13	1	.5	.5	27	MER	
		26	1643	59.41	19	24.94	155	28.28	8.33	2.0	1.8	31	3	48	.11	5	.3	1.0	26	UKF	
		26	1811	3.14	19	20.03	155	10.36	6.16	1.7	2.2	32	1	86	.14	4	.6	.9	30	UER	
		26	1912	57.29	19	10.34	155	28.97	33.88	2.9	3.1	39	2	96	.09	2	.8	1.3	36	LSW	
		26	2217	57.37	19	19.13	155	13.35	5.89	2.1	2.4	37	2	74	.13	4	.4	.8	32	UER	
		27	153	39.25	20	10.80	155	41.89	13.33	2.9	2.6	46	9	168	.17	49	.7	1.6	38	KOH	
		27	211	33.72	19	12.25	155	27.09	7.54	2.1	2.3	37	3	121	.15	5	.6	.9	32	LSW	
		27	311	51.72	19	21.14	155	.89	6.17	2.1	2.2	33	3	196	.15	4	.6	.7	25	LER	
		27	419	52.71	19	20.88	155	8.00	9.10	2.4	3.1	35	1	78	.08	4	.4	.4	27	UER	
		27	729	38.76	19	20.23	155	18.72	31.74	2.2	2.4	36	4	55	.09	2	.6	.9	33	DEP	
		27	1131	8.66	19	21.12	155	25.80	10.81	3.1	3.2	34	1	76	.13	4	.4	.6	30	HEA	
		27	1432	6.63	19	19.42	155	8.24	8.08	2.0	2.0	26	2	89	.09	4	.4	.8	20	UER	
		27	2157	50.96	19	28.02	154	50.60	8.01	3.1	3.2	26	1	284	.14	5	1.4	.6	23	LER	
		27	2210	11.37	19	29.64	154	48.37	7.62	2.8	2.3	24	1	301	.16	9	2.0	.8	23	LER	
		28	1023	48.98	19	21.37	155	15.29	9.66	2.2	2.5	31	1	65	.09	2	.5	.5	25	KOA	
		28	1315	40.13	19	20.59	155	11.06	8.75	2.0	2.6	29	0	76	.12	3	.5	.6	26	UER	
		28	1542	46.11	18	49.13	155	12.05	16.34	3.5	3.2	34	3	292	.18	52	5.8	37.1	32	PPL	*
		28	1919	51.02	19	20.97	155	9.93	7.51	1.7	1.8	27	0	69	.11	2	.5	.9	24	UER	
		28	2018	44.14	19	24.62	155	27.04	5.11	2.1	2.1	31	1	52	.17	4	.5	2.2	28	UKF	
		28	22 4	44.53	19	21.03	155	.86	8.06	2.4	2.8	31	1	200	.15	4	.9	.6	27	LER	
		28	2212	24.45	19	22.42	155	28.99	8.58	1.9	1.8	33	0	61	.13	2	.4	.9	31	UKF	
		28	2213	31.27	19	21.02	155	1.04	8.05	2.1	2.2	24	0	197	.14	4	1.2	.6	20	MER	
		28	2341	50.47	19	12.80	155	32.92	42.26	2.5		28	0	82	.22	8	1.5	3.7	25	LSW	LT
		29	156	35.78	19	21.46	155	6.56	8.38	2.7	3.1	32	1	84	.10	6	.4	.5	28	UER	
		29	2 1	23.27	19	17.67	155	12.93	10.89	2.7	3.0	31	0	147	.11	9	.7	.6	26	POL	
		29	310	32.47	19	22.30	155	.56	8.48	2.3	2.8	30	2	179	.09	6	.8	.4	27	LER	
		29	1648	2.45	19	22.43	155	5.70	7.83	2.4	2.6	26	1	70	.10	5	.5	.8	19	MER	
		29	1747	23.14	19	19.73	155	7.28	9.21	2.6	3.0	30	0	109	.10	5	.6	.5	23	UER	
		30	052	43.73	19	25.32	154	54.89	8.59	2.5	2.8	22	0	214	.11	4	1.6	.6	18	LER	
		30	228	.49	19	19.86	155	11.48	6.93	2.1	2.2	23	0	88	.10	5	.6	1.0	20	UER	
		30	3 1	15.06	19	22.01	155	4.94	8.21	2.1	2.2	25	0	75	.08	5	.6	.7	23	MER	
		30	5 0	36.27	19	17.51	155	16.20	8.09	1.9	1.8	24	0	135	.10	5	.6	1.0	22	KOA	
		30	12 9	21.23	19	18.49	155	23.85	5.18	2.2	2.5	23	0	105	.09	3	.5	1.4	21	SWR	
		30	2058	.42	19	22.82	155	2.20	7.62	2.0	2.0	20	0	139	.11	5	.8	.6	19	MER	
		30	21 5	4.39	19	24.07	155	15.91	2.74	1.8	1.8	14	1	110	.10	2	.4	.5	12	SPC	
		31	027	43.24	19	27.16	155	21.70	11.44	2.2	1.9	20	1	94	.11	6	.7	1.0	17	INT	
		31	217	21.44	19	19.72	155	8.34	8.32	2.2	2.3	25	0	84	.12	4	.6	1.0	20	UER	
		31	249	12.67	19	33.18	155	43.44	6.17	2.4	1.8	18	1	85	.11	7	.6	2.6	17	MOK	
		31	523	41.50	19	24.92	155	28.81	10.85	3.3	3.2	35	1	50	.13	5	.5	.6	33	UKF	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	MAR	31	547	2.61	19	20.05	155	8.53	7.85	2.3	2.5	28	0	77	.12	4	.5	.7	25	UER	
		31	1310	57.34	19	20.18	155	7.10	7.86	2.5	2.6	28	0	103	.10	5	.5	.9	24	UER	
		31	1452	34.85	19	19.92	155	7.81	7.60	2.2	2.4	27	0	95	.10	5	.5	.9	23	UER	
		31	1534	18.89	19	19.11	155	11.64	8.41	2.4	2.5	30	1	104	.10	5	.5	.6	27	UER	
	APR	1	658	20.38	19	25.74	155	28.24	11.18	2.8	2.5	34	2	49	.13	6	.4	.5	28	UKF	
		1	13 0	22.64	19	25.49	155	28.49	9.64	2.0	2.2	28	0	58	.10	6	.4	.8	27	UKF	
		1	23 2	3.11	19	19.29	155	11.86	6.19	1.7	2.1	28	0	97	.12	5	.5	.8	27	UER	
		2	342	55.46	19	28.19	154	51.18	8.95	2.3	2.0	29	5	275	.17	4	1.0	.6	24	LER	
		2	639	50.51	19	28.85	154	54.60	2.73	2.1	2.7	25	4	119	.14	2	1.0	.7	23	LER	
		2	1316	49.70	19	18.99	155	15.66	9.44	2.5	3.0	33	0	96	.11	4	.5	.5	30	KOA	
		2	1828	32.98	19	19.90	155	12.01	8.80	3.3	3.4	36	1	83	.09	5	.4	.4	32	UER	F
		2	2137	21.45	19	20.04	155	12.57	7.34	1.9	2.4	30	1	75	.12	5	.5	.6	24	UER	
		3	149	43.19	19	22.97	155	24.49	8.47	1.8	2.2	28	1	79	.11	6	.5	.9	25	UKF	
		3	152	22.17	19	39.27	155	8.56	15.63	2.2	2.4	24	2	164	.07	19	.7	1.2	23	HIL	
		3	237	46.80	19	18.75	155	15.64	9.79	2.5	3.1	35	1	101	.11	4	.4	.4	31	KOA	
		3	15 5	50.40	19	21.56	155	3.17	5.68	2.3	2.6	25	1	177	.11	6	.7	1.4	21	MER	
		3	1540	17.30	19	31.36	155	36.84	8.67	2.0	1.3	22	5	111	.20	4	.7	.9	19	MOK	
		3	2245	17.51	19	19.86	155	2.49	5.10	2.1	2.5	31	2	202	.15	1	.9	.8	26	MER	
		3	2252	54.88	19	19.92	155	2.91	5.14	2.1	2.4	27	1	198	.14	0	.8	.9	24	MER	
		3	2359	43.95	19	23.36	155	2.04	7.08	2.0	2.3	31	3	134	.13	4	.4	.7	28	MER	
		4	8 0	22.26	19	9.44	155	36.04	5.25	2.8	3.2	28	1	111	.15	14	.6	1.5	24	HEA	
		4	15 0	47.12	19	20.13	155	7.66	7.10	2.2	2.5	27	1	94	.08	5	.5	.9	25	UER	
		4	1659	11.61	19	25.06	155	25.22	10.33	2.3	2.6	33	2	63	.12	6	.4	.5	27	UKF	
		4	1742	2.14	19	31.48	155	42.76	2.23	2.2	1.4	21	2	105	.11	6	.6	1.0	19	MOK	
		4	1742	45.13	19	31.59	155	42.69	2.87	2.2	1.5	20	2	105	.10	6	.6	1.2	20	MOK	
		4	2245	54.09	19	23.69	155	15.98	2.90	1.9	2.7	24	1	53	.11	2	.3	.5	17	SPC	
		4	2345	45.75	19	25.24	155	26.20	5.88	2.2	2.2	31	0	56	.13	6	.4	1.8	28	UKF	
		5	125	18.41	19	20.44	155	12.76	5.88	1.9	1.9	31	1	67	.13	6	.5	1.0	28	UER	
		5	427	26.34	19	17.98	155	21.81	7.91	1.9	2.3	26	0	119	.09	5	.4	.7	24	SWR	
		5	522	25.33	19	18.96	155	12.62	4.67	1.8	2.1	31	2	94	.15	4	.5	1.6	20	POL	
		5	630	48.18	19	19.87	155	27.39	28.58	2.2	2.5	32	0	81	.10	5	.7	1.3	25	HEA	
		5	1127	41.23	19	23.80	155	15.85	2.71	1.3	1.8	12	1	102	.06	3	.4	.5	10	SPC	L
		5	1525	13.38	19	10.76	155	32.43	8.30	2.6	2.6	19	1	149	.13	11	.8	1.4	17	LSW	
		5	2052	55.88	19	51.13	155	14.10	23.33	2.2	2.4	26	3	196	.12	12	1.2	2.5	22	KKU	
		5	2328	9.73	19	19.57	155	12.24	6.99	2.1	2.1	30	2	87	.10	5	.4	.7	21	UER	
		6	046	19.62	19	21.37	155	11.28	8.20	2.1	2.1	29	1	64	.13	3	.4	.6	23	UER	
		6	347	14.06	19	19.68	155	8.05	10.08	3.4	3.6	38	2	90	.09	4	.5	.4	31	UER	F
		6	5 3	21.27	19	20.84	155	6.73	5.41	2.0	1.9	26	1	95	.12	6	.5	1.9	24	UER	
		6	658	2.61	19	20.52	155	6.57	4.26	2.0	2.1	20	1	104	.10	6	.5	2.1	17	UER	
		6	1112	4.81	19	20.65	155	1.10	6.33	2.7	2.9	27	2	203	.13	4	.6	.8	20	MER	
		6	14 3	36.05	19	19.82	155	18.74	29.35		1.4	15	2	100	.05	2	1.7	1.3	15	DEP	L
		6	2341	8.71	19	19.83	155	12.30	7.70	2.9	2.9	29	2	81	.11	5	.5	.7	24	UER	
		6	2343	1.70	19	20.33	155	12.20	6.02	2.1	2.0	27	1	74	.18	5	.6	1.0	24	UER	
		7	629	46.72	19	21.80	155	28.82	10.11	2.9	2.3	28	1	64	.09	3	.5	.8	25	HEA	
		7	920	24.49	19	21.31	155	2.62	8.36	2.1	2.1	27	1	145	.11	3	.8	.6	22	MER	
		7	1255	3.99	19	25.83	155	23.48	10.00	2.5	2.1	27	1	49	.11	7	.5	.8	24	UKF	
		7	1522	16.28	19	23.92	155	15.90	2.67	2.7	2.8	21	1	45	.11	3	.4	.5	17	SPC	
		7	1643	43.29	19	52.38	155	7.68	39.27	4.0	4.3	35	0	235	.11	22	2.1	3.4	32	KKU	F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	APR	7	1947	30.94	19	17.31	155	13.43	10.73	2.4	2.8	31	0	152	.10	9	.7	.6	25	POL	
		8	1134	39.73	19	19.95	155	6.72	9.26	2.6	2.9	27	2	115	.09	5	.5	.7	24	UER	
		8	1539	27.08	19	19.72	155	8.24	6.50	1.9	1.9	24	1	86	.07	4	.5	1.3	20	UER	
		9	015	3.38	19	21.21	155	1.96	6.60	2.0	2.3	22	4	170	.11	3	.6	.8	16	MER	
		9	129	27.02	19	22.67	155	4.70	8.06	2.6	3.1	30	2	82	.10	4	.4	.6	26	MER	
		9	4 2	16.16	19	24.49	154	57.65	6.44	1.9	1.4	19	2	186	.18	2	1.0	1.2	15	LER	
		9	411	49.57	19	18.70	155	13.85	8.49	1.7	1.7	21	0	94	.09	3	.5	.8	19	POL	
		10	159	9.54	19	23.72	155	15.45	3.35	2.1	2.8	28	0	37	.08	3	.3	.5	24	SPC	
		10	244	39.71	19	19.10	155	12.30	8.60	2.5	3.0	34	0	95	.12	4	.4	.4	31	UER	
		10	16 3	43.47	19	20.57	155	10.19	7.95	1.9	1.9	30	2	76	.10	3	.4	.7	29	UER	
		10	2123	57.83	19	29.16	155	52.84	6.55	2.9	3.1	28	2	97	.22	4	.8	.9	26	KON	F
		11	732	40.61	19	12.86	155	27.43	1.25	2.1	2.2	29	1	114	.12	6	.4	1.0	27	LSW	
		11	9 4	10.24	19	8.45	155	26.16	44.06	2.4		24	0	241	.10	4	2.2	3.5	16	LSW	T
		11	9 5	11.70	18	58.93	155	25.82	61.67	2.7		23	0	225	.15	20	3.2	6.3	13	DIS	T
		11	1045	44.19	19	26.59	154	50.17	10.22	2.7	2.8	27	3	277	.16	7	1.8	.6	24	LER	
		11	1748	22.34	19	21.56	155	1.67	6.45	2.1	1.8	25	0	171	.14	4	.8	.8	22	MER	
		12	553	41.99	19	17.61	155	16.74	7.48	2.0	2.1	33	4	163	.13	3	.6	.7	29	KOA	
		12	757	2.07	19	19.14	155	13.74	4.00	1.9	2.1	27	1	84	.14	4	.5	1.7	26	UER	
		12	935	28.10	19	21.26	155	7.14	9.25	3.3	3.6	34	1	84	.08	5	.5	.5	29	UER	F
		12	2055	12.67	19	20.83	155	3.77	8.43	3.7	3.9	38	2	90	.09	2	.5	.4	34	MER	F
		12	2144	32.04	19	21.04	155	3.31	3.83	2.0	1.9	27	0	181	.16	7	.9	3.3	23	MER	
		13	010	10.55	19	23.65	155	15.71	3.68	1.4	1.6	10	1	96	.10	2	.5	.7	9	SPC	L
		13	537	14.17	19	17.81	155	23.49	4.74	1.7	1.8	20	0	190	.11	4	1.0	2.2	19	SWR	
		13	631	38.97	19	21.54	155	2.03	7.34	2.2	2.5	27	1	161	.11	3	.7	.6	24	MER	
		13	1034	42.32	19	25.57	155	15.65	2.54	1.7	1.9	13	1	126	.17	3	.5	.6	12	SPC	
		13	1249	59.53	19	20.85	155	3.73	7.35	2.4	2.6	28	1	118	.12	2	.7	.5	25	MER	
		13	1610	56.40	19	22.82	155	28.19	9.74	2.2	2.4	30	0	58	.11	1	.5	.9	26	UKF	
		13	2111	55.16	19	20.23	155	19.08	31.42	2.1	2.3	27	0	49	.10	3	.8	1.5	26	DEP	L
		13	2117	52.97	19	20.12	155	3.48	6.15	2.1	1.9	22	1	126	.12	1	.6	1.1	19	MER	
		13	2210	32.77	19	20.64	155	13.27	9.22	1.9	2.0	19	0	60	.07	4	.5	.8	17	UER	
		14	030	50.88	19	18.13	155	45.51	52.96	3.0	3.7	9	1	313	.12	27	5.7	3.2	8	KON	L
		14	129	10.87	19	27.04	155	21.46	7.36	2.1	1.8	19	1	78	.12	6	.5	1.6	17	UKF	
		14	512	33.02	19	23.74	155	15.88	3.58	2.2	2.8	26	1	43	.08	3	.3	.5	23	SPC	F
		14	6 3	46.11	19	20.94	155	11.39	8.35	1.9	1.9	24	0	70	.12	3	.5	.9	21	UER	
		14	659	17.17	19	23.91	155	17.36	.02	1.4	1.8	9	1	73	.19	2	.4	.9	6	SPC	L*
		14	8 9	41.32	20	5.90	155	32.77	15.32	2.6	2.4	12	3	323	.26	63	39.2	72.9	12	KOH	*
		14	1040	15.51	19	28.12	155	35.97	43.70	2.6	2.7	9	0	75	.10	2	1.9	8.8	9	MOK	L
		14	1048	36.85	19	20.29	155	6.47	8.91	2.3	2.4	21	0	110	.06	6	.5	.7	21	UER	
		14	1515	18.96	19	23.78	155	28.56	8.77	2.3	2.4	25	0	74	.10	3	.5	1.2	24	UKF	
		14	1540	50.23	19	34.72	155	40.82	8.33	2.7	2.4	27	1	98	.13	12	.6	1.0	27	MOK	
		14	1624	29.73	19	34.28	155	41.17	8.99	2.7	2.4	22	0	96	.10	11	.5	1.3	21	MOK	
		14	1655	7.04	19	21.68	155	49.32	7.94		1.2	20	3	172	.14	12	.8	1.1	19	KON	
		14	20 5	27.77	19	20.82	155	8.13	7.32	2.1	2.3	29	1	77	.13	4	.6	.9	26	UER	
		15	1917	54.33	19	26.38	155	24.57	7.72	2.1	2.3	21	0	52	.10	7	.5	1.4	16	UKF	
		16	0 3	24.56	19	26.01	155	24.53	9.26	2.1	2.3	23	0	51	.14	7	.5	1.2	21	UKF	
		16	920	.08	19	21.29	155	2.30	6.45	2.1	2.2	27	2	157	.12	3	.6	.8	24	MER	
		16	13 0	7.81	19	24.80	155	28.69	9.79	2.7	2.7	35	1	31	.13	5	.4	.7	28	UKF	
		16	2230	6.89	19	20.54	155	8.05	7.06	2.1	2.7	33	0	81	.12	4	.4	.7	29	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	APR	17	0 3	17.40	19	25.24	155	16.80	3.86	2.4	3.2	27	1	38	.14	1	.4	.6	25	SPC	
		17	244	55.14	19	21.90	155	6.78	7.88	2.0	2.1	31	2	76	.13	5	.4	.8	27	UER	
		17	247	49.83	19	21.22	155	14.85	10.01	3.0	3.6	36	2	65	.09	4	.4	.4	32	UER	
		17	321	12.23	19	20.17	155	13.81	9.00	2.5	3.1	34	1	72	.16	5	.5	.6	27	UER	
		17	433	13.18	19	18.41	155	14.26	9.30	2.1	2.5	31	1	132	.10	6	.5	.6	27	POL	
		17	1840	54.66	19	21.14	155	1.44	7.39	3.3	3.9	36	1	186	.09	3	.6	.4	33	MER	F
		17	1957	42.00	19	20.89	155	10.71	8.04	2.2	2.2	28	0	71	.13	3	.5	.7	26	UER	
		17	2053	47.88	19	19.94	155	3.53	7.94	2.2	2.4	27	1	147	.10	1	.8	.5	22	MER	
		17	2349	26.69	19	11.99	155	36.71	6.47	2.6	2.3	31	2	208	.22	5	1.1	1.4	20	MEA	
		18	448	55.04	19	20.63	155	3.86	6.96	3.1	3.4	33	1	101	.14	2	.6	.7	25	MER	
		18	915	14.18	19	20.59	155	13.37	7.28	2.0	2.1	30	0	60	.11	4	.5	.8	25	UER	
		18	1339	8.78	19	20.59	155	3.23	7.05	2.2	2.4	26	1	110	.13	1	.7	.9	24	MER	
		18	1610	42.04	19	20.35	155	12.63	8.78	2.0	2.2	24	1	70	.09	4	.4	.6	20	UER	
		18	1715	18.62	19	7.15	155	22.09	38.37		2.1	31	3	192	.08	21	.9	1.5	28	LSW	
		18	1845	26.35	19	20.96	155	5.90	7.96	2.2	2.4	27	0	99	.10	6	.6	.8	27	MER	
		18	2054	27.75	19	19.45	155	12.11	8.00	1.9	2.0	26	1	90	.10	5	.5	.6	24	UER	
		18	2121	6.45	19	18.33	155	30.31	.01	2.1	2.1	26	4	99	.17	9	.5	.3	22	MEA	*
		19	741	7.35	19	27.27	154	55.82	5.19	2.2	2.0	26	2	155	.16	1	1.2	1.2	24	LER	
		19	9 3	34.54	19	21.49	155	29.91	7.80	2.3	2.0	32	1	62	.12	4	.5	.8	28	MEA	
		19	9 4	37.81	19	21.34	155	29.92	7.39	2.2	1.9	23	1	96	.10	5	.5	1.4	22	MEA	
		19	1123	4.30	19	32.10	155	37.26	8.73	2.6	2.1	27	0	114	.12	6	.5	.8	25	MOK	
		19	1156	8.93	19	19.69	155	12.00	7.69	2.3	2.7	30	0	87	.12	6	.5	.7	30	UER	
		19	1636	25.05	19	12.18	155	31.25	37.46	2.7	3.0	38	2	83	.08	8	.7	1.2	31	LSW	
		19	2155	50.94	19	19.91	155	7.63	6.16	2.0	1.9	30	1	98	.12	5	.5	1.3	26	UER	
		20	056	35.18	19	20.42	155	11.41	8.40	2.3	2.6	27	0	77	.09	4	.4	.5	27	UER	
		20	145	55.62	19	22.37	155	6.40	6.94	2.0	1.8	25	0	71	.14	6	.5	1.2	22	UER	
		20	453	43.66	19	20.29	155	3.70	6.23	2.0	1.9	29	2	117	.16	2	.7	.9	27	MER	
		20	1327	9.90	19	22.02	155	4.74	7.76	2.3	2.6	27	1	80	.13	5	.5	.7	22	MER	
		20	1843	32.30	19	20.75	155	11.09	7.79	2.1	2.1	26	0	74	.11	3	.5	.7	23	UER	
		20	2034	33.20	19	21.41	155	2.50	7.33	2.5	2.6	27	1	148	.13	3	.7	.6	25	MER	
		20	2349	3.53	19	19.53	155	11.67	9.50	3.0	3.2	30	1	94	.11	6	.5	.6	29	UER	
		21	039	38.88	19	21.64	155	2.03	6.40	2.2	2.4	29	1	159	.11	4	.6	.7	26	MER	
		21	145	39.55	19	32.28	155	28.25	4.61	2.0	1.6	15	0	114	.10	1	.5	1.1	13	NER	
		21	414	41.39	19	20.28	155	17.32	34.87	2.3	2.5	31	1	75	.08	0	.6	1.4	24	DEP	
		21	838	15.55	19	44.15	155	34.26	16.13	2.3	2.6	30	0	80	.10	13	.6	1.3	29	KKU	
		21	913	22.23	19	21.12	155	2.38	7.42	2.4	2.5	25	0	157	.09	2	.7	.6	20	MER	
		21	11 4	27.70	19	20.78	155	1.55	5.41	2.2	2.1	24	0	194	.20	3	1.2	1.5	22	MER	
		21	1936	37.46	19	20.38	155	7.42	4.38	2.1	2.1	26	0	94	.09	5	.5	2.1	25	UER	
		21	2043	54.60	19	20.82	155	13.57	8.75	2.6	2.6	31	1	62	.10	3	.4	.6	29	UER	
		22	213	45.86	19	23.15	155	4.11	7.73	2.6	2.9	28	1	93	.10	3	.5	.7	25	MER	
		22	3 2	43.46	19	20.84	155	13.60	7.74	2.2	2.0	30	1	61	.13	3	.5	.6	28	UER	
		22	1242	47.69	19	9.06	155	23.30	42.61	1.8	2.0	31	4	178	.11	8	1.0	1.2	26	LSW	
		22	1328	50.93	18	51.48	155	12.80	16.11	1.9	2.0	35	6	280	.21	47	4.5	17.9	32	PPL	
		23	049	20.77	19	19.32	155	12.16	5.79	1.9	1.8	32	2	93	.14	5	.5	.9	23	UER	
		23	2 4	50.07	19	19.60	155	8.92	7.47	1.9	2.3	32	1	83	.10	5	.4	.7	27	UER	
		23	726	24.49	19	21.14	155	15.37	9.00	2.8	3.0	32	1	69	.10	3	.4	.5	28	KOA	
		23	947	21.68	19	17.47	155	21.77	4.16		2.1	25	2	167	.09	6	.6	1.5	19	SWR	
		23	1335	41.04	19	18.63	155	21.47	4.19	1.9	2.2	27	0	111	.13	4	.5	1.5	25	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	APR	23	1520	29.52	19	21.05	155	13.29	7.64	1.9	2.1	33	1	57	.13	3	.4	.6	28	UER
		23	2159	15.67	20	2.98	155	37.27	11.02	2.3	2.5	38	5	183	.10	19	.8	.7	31	KOH
		24	126	48.36	19	22.64	155	4.87	8.32	2.7	3.0	31	1	80	.07	4	.4	.5	27	MER
		24	2 6	56.58	19	19.21	155	15.38	7.26	2.0	1.7	28	1	109	.13	4	.5	.7	24	KOA
		24	421	46.42	19	27.46	155	51.33	6.32		1.3	20	1	113	.12	7	.6	.9	16	KON
		24	838	45.70	19	20.86	155	2.73	4.77	2.0	2.0	26	1	145	.19	2	.9	1.4	19	MER
		24	843	5.89	19	24.52	155	25.00	8.46	2.3	1.6	23	1	71	.10	6	.4	1.2	20	UKF
		24	12 0	31.64	19	20.45	155	12.70	7.77	1.9	2.2	25	0	68	.11	4	.4	.6	22	UER
		24	1422	2.96	19	21.21	155	11.77	7.11	2.4	2.5	33	1	65	.14	3	.5	.7	26	UER
		24	1522	30.45	19	19.95	155	12.33	7.97	2.0	2.1	26	0	79	.10	5	.5	.7	21	UER
		24	16 8	38.96	19	21.80	155	15.27	7.65	2.0	2.4	31	1	60	.15	2	.5	.7	24	KOA
		24	1948	38.12	19	23.35	155	2.05	8.46	2.1	2.3	29	0	134	.12	4	.6	.5	25	MER
		24	2122	12.08	19	19.71	155	10.97	6.42	1.8	2.0	25	1	93	.13	5	.5	1.0	23	UER
		24	23 2	1.06	19	21.90	155	4.04	7.11	2.4	2.1	29	1	95	.10	4	.4	.6	28	MER
		25	227	37.56	19	44.15	156	10.26	13.07		1.1	26	6	255	.25	35	1.2	1.1	24	DIB
		25	354	56.66	19	21.54	155	1.87	6.99	2.1	2.4	29	2	165	.14	4	.7	.7	21	MER
		25	820	35.73	19	20.97	155	5.84	4.83	2.0	1.8	29	1	99	.12	5	.5	2.0	24	MER
		25	1012	11.12	19	21.46	155	7.23	7.86	2.2	2.4	31	1	80	.11	5	.4	.6	24	UER
		25	1139	55.38	19	34.74	155	26.37	.36	2.1	2.0	24	1	53	.12	6	.3	1.3	18	NER
		25	14 3	3.84	19	20.55	155	3.96	5.93	2.0	2.2	27	1	107	.10	2	.5	.9	23	MER
		25	14 8	34.62	19	20.63	155	7.01	7.87	2.1	2.4	26	1	96	.07	6	.5	.8	22	UER
		25	1843	57.16	19	19.69	155	8.65	8.06	2.2	2.9	30	1	77	.09	5	.4	.6	25	UER
		26	054	26.46	19	27.56	155	29.58	7.73	2.2	2.1	30	2	76	.13	9	.3	1.1	27	UKF
		26	128	12.61	19	8.64	155	30.31	11.54	2.3	2.3	31	3	155	.17	5	.8	.6	27	LSW
		26	252	8.61	19	21.52	155	8.05	8.12	1.9	2.2	28	1	70	.09	3	.4	.7	24	UER
		26	3 9	3.40	19	21.76	155	.26	6.40	2.4	2.7	33	2	192	.14	6	.8	.6	25	LER
		26	348	50.20	20	.11	155	56.48	6.49	2.4	2.5	28	3	233	.13	22	1.4	.9	24	KOH
		26	926	41.27	19	21.96	155	26.78	9.74	2.4	2.6	31	1	92	.13	2	.5	.7	27	HEA
		26	15 0	46.10	19	20.37	155	10.88	9.00	2.0	2.2	23	1	80	.09	4	.4	.8	19	UER
		26	1640	56.05	19	20.09	155	11.03	7.86	2.1	2.1	24	1	84	.09	4	.4	.8	22	UER
		26	17 8	21.71	19	20.31	155	11.04	7.93	2.1	2.1	25	1	80	.12	4	.5	.9	22	UER
		26	1914	3.92	19	28.04	154	52.28	7.38	2.3	2.4	20	0	271	.13	3	2.3	.7	20	LER
		26	2033	11.01	19	17.63	155	21.82	6.98	2.1	2.1	29	1	122	.15	5	.5	1.1	25	SWR
		27	157	19.97	19	20.52	155	3.79	5.57	2.1	2.1	28	1	106	.14	2	.6	1.1	25	MER
		27	420	12.60	19	20.89	155	30.00	6.30	2.2	2.1	29	1	99	.17	5	.6	1.5	25	HEA
		27	426	21.40	19	21.03	155	11.56	32.65	2.3	2.6	30	0	68	.07	4	.7	1.2	24	UER
		27	1517	55.92	19	23.65	155	16.81	2.50	1.6	1.9	15	1	69	.09	2	.3	.5	12	SPC
		27	2018	2.53	19	6.10	155	30.10	36.62	2.5		12	2	320	.07	29	2.7	3.4	12	LSW T
		27	2135	8.71	19	21.25	155	4.74	8.56	2.2	2.4	31	2	90	.10	4	.5	.5	29	MER
		28	134	37.55	20	9.51	155	35.84	35.59	3.1	2.8	40	4	175	.09	19	.7	1.5	35	KOH
		28	615	53.02	19	32.38	155	32.80	6.93	2.0	1.6	18	2	150	.13	8	.6	1.4	17	MOK
		28	849	10.59	19	33.70	155	33.07	9.73	2.2	1.4	21	2	155	.11	8	.6	.9	21	MOK
		28	1947	51.63	19	26.87	155	46.12	9.38	2.8	2.2	23	1	77	.12	7	.7	1.1	23	KON
		28	2233	27.56	19	23.25	156	12.69	34.74		2.6	23	3	278	.15	33	2.4	1.3	23	DIB
		29	220	13.37	20	19.04	155	54.94	12.69	2.8	2.6	33	6	160	.10	61	.8	1.3	29	DIB
		29	450	40.91	19	17.15	155	39.15	9.68	2.5	2.3	30	2	82	.15	6	.6	.9	27	HEA
		29	524	57.21	19	19.37	155	11.75	7.14	2.2	2.6	34	2	96	.13	5	.5	.7	30	UER
		29	549	52.63	20	4.66	155	33.33	36.83	1.7	1.9	23	5	209	.11	24	1.3	1.0	23	KOH

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	APR	29	1559	29.48	19	11.81	155	41.07	5.76	1.6	1.8	23	4	148	.24	9	1.1	2.8	11	HEA
		29	1936	31.33	19	18.53	155	14.58	8.19	1.5	1.5	20	0	117	.08	3	.6	.7	17	POL
		29	2042	17.16	19	19.88	155	11.74	6.91	1.7	1.7	20	0	85	.11	5	.6	1.0	16	UER
		29	2329	2.43	19	24.16	155	16.92	1.56	1.4	1.4	7	1	110	.10	1	.4	.6	6	SPC
		30	339	41.75	19	17.98	155	16.26	7.13	2.0	1.8	23	1	158	.09	4	.6	.8	17	KOA
		30	6 1	5.68	19	19.15	155	11.34	7.33	2.2	2.1	29	1	105	.12	5	.5	.7	24	UER
		30	6 9	15.68	19	20.43	155	11.23	9.16	2.6	2.9	34	1	78	.11	4	.5	.6	28	UER
		30	15 8	18.45	19	20.32	155	11.74	8.20	2.1	2.3	29	0	78	.08	5	.4	.6	26	UER
		30	1550	41.49	19	19.90	155	15.38	6.99	2.0	2.2	35	1	91	.13	4	.5	.7	27	KOA
		30	2016	17.97	19	20.31	155	11.76	8.32	2.1	2.4	30	0	78	.10	5	.4	.6	25	UER
		30	2148	17.09	19	29.13	155	49.60	7.37		1.9	25	2	217	.17	7	1.3	.9	21	KON
		30	2355	36.97	19	22.05	154	59.96	5.57	2.0	2.3	24	1	192	.14	6	.8	.7	23	LER
	MAY	1	423	46.57	19	23.33	155	16.88	2.89	1.9	2.1	18	1	64	.07	2	.3	.5	16	SPC
		1	542	55.71	19	19.37	155	11.07	9.71	2.5	2.9	33	1	101	.11	5	.4	.4	28	UER
		1	1328	4.35	19	19.16	155	16.22	7.18	2.1	2.1	31	2	114	.15	3	.5	.7	23	KOA
		1	1429	11.96	19	24.86	155	25.76	.03	2.2	2.2	30	2	55	.16	5	.4	.5	20	UKF *
		1	1546	37.37	19	46.15	155	14.12	28.83	1.9	1.3	33	7	207	.14	16	.8	1.4	31	KKU
		1	1659	21.56	19	18.12	155	15.46	9.57	2.7	2.8	34	0	112	.12	4	.6	.5	27	KOA
		2	540	28.24	19	21.13	155	7.28	7.34	2.2	2.1	30	0	84	.10	5	.5	.8	25	UER
		2	2239	35.93	19	21.66	155	14.12	11.61	2.0	1.9	31	2	55	.10	3	.3	.6	24	INT
		3	729	6.40	19	17.49	155	29.96	7.88	3.3	3.5	36	1	75	.13	10	.5	.8	33	HEA F
		3	756	56.34	19	20.61	155	3.97	6.41	2.1	2.3	31	3	105	.15	2	.6	.9	30	MER
		3	1233	8.12	19	21.79	155	18.00	3.08	1.7	2.0	15	1	64	.11	3	.4	.8	14	KOA
		3	1244	29.48	19	23.57	155	23.32	9.73	1.9	2.1	25	0	43	.11	6	.5	.7	24	UKF
		3	1752	27.79	19	21.64	155	4.68	7.10	2.0	2.1	26	0	80	.11	4	.5	.8	24	MER
		3	2223	53.17	19	16.08	155	6.09	9.95	2.2	2.3	27	1	225	.14	9	1.0	.7	25	POL
		4	316	26.79	19	27.27	155	23.05	8.15	2.0	2.0	22	0	75	.13	5	.5	1.3	21	UKF
		4	739	40.93	19	56.88	155	29.97	36.76		1.9	26	4	240	.11	18	1.0	1.6	24	KKU
		4	1514	24.25	19	23.84	155	15.94	3.27	2.0	2.1	16	1	103	.07	3	.4	.5	15	SPC
		4	19 4	17.23	19	21.17	155	13.46	7.73	2.4	2.8	35	2	53	.14	3	.4	.6	32	UER
		4	1926	10.83	19	22.36	155	24.53	9.47	2.2	2.5	35	2	61	.12	5	.4	.5	28	UKF
		4	1943	26.95	19	19.65	155	7.30	7.93	2.0	2.3	26	1	110	.12	4	.6	.7	24	UER *
		4	21 2	30.28	19	23.69	155	2.32	10.95	2.1	2.2	25	1	122	.08	4	.6	.7	23	MER
		5	1655	54.18	19	26.55	154	50.79	9.62	2.2	2.4	24	2	273	.17	6	1.3	.8	22	LER
		6	220	35.57	19	5.99	155	28.25	28.20	2.4	1.9	29	0	179	.05	7	.8	1.7	27	LSW
		6	316	49.62	19	55.15	155	20.42	10.48	2.7	1.8	22	3	261	.10	3	.9	.5	19	KKU
		6	812	39.39	19	24.51	155	26.25	9.98	3.2	3.2	22	3	86	.13	4	.5	.8	19	UKF
		7	019	31.91	19	21.95	155	14.04	11.32	1.9	2.0	25	0	54	.10	2	.5	.6	25	INT
		7	536	21.72	19	20.65	155	12.59	8.70	1.9	2.0	25	1	67	.11	4	.5	.7	23	UER
		7	935	43.27	19	21.06	155	6.55	5.99		2.0	30	1	92	.12	6	.5	.9	30	UER
		7	1240	9.53	19	18.97	155	13.42	6.31	2.7	2.8	39	3	75	.18	4	.5	.9	36	POL
		7	13 8	50.35	19	9.00	155	30.37	9.66	2.4	2.5	27	2	145	.11	5	.6	.9	25	LSW
		7	1733	17.05	19	21.56	155	5.86	7.49	2.0	1.9	30	1	86	.10	6	.4	.8	27	MER
		8	011	43.32	19	22.57	155	4.07	8.65	2.1	2.4	27	0	95	.10	4	.6	.7	24	MER
		8	1432	57.05	19	47.55	155	1.71	2.92	2.7	2.6	18	1	285	.26	10	5.9	7.6	15	HIL B*
		9	437	16.55	19	20.12	155	6.46	6.99	2.7	2.5	30	1	115	.13	6	.5	.9	27	UER
		9	1228	28.92	19	20.88	155	1.43	6.68	2.1	2.1	16	1	195	.12	3	.9	1.2	14	MER
		9	1737	4.50	19	22.76	155	24.67	9.89	2.2	2.3	28	1	85	.08	5	.3	.6	22	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	FM	REMK
1978	MAY	9	1846	41.16	19	20.17	155	12.02	8.34	2.7	3.1	31	2	78	.12	5	.4	.8	23	UER
		10	240	34.08	19	21.54	155	4.92	8.42	3.1	3.2	34	1	85	.12	5	.5	.5	30	MER
		10	1123	20.44	19	22.86	155	5.94	3.91	2.1	2.2	12	1	247	.14	7	3.4	7.3	11	MER
		10	1245	32.80	19	26.46	155	21.35	5.49	2.0	1.9	22	3	42	.11	6	.4	1.6	18	UKF
		10	1319	4.44	19	23.80	155	15.74	3.07	1.8	2.0	14	1	103	.07	3	.4	.5	13	SPC
		10	1423	57.94	19	19.46	155	6.68	8.63	3.3	3.5	30	1	128	.09	5	.5	.6	29	UER
		10	1429	21.46	19	18.98	155	6.75	7.09	2.2	2.3	30	1	141	.12	4	.6	.9	26	POL
		10	22 5	48.84	19	25.38	155	25.44	10.45	2.7	2.6	31	0	38	.10	7	.4	.7	30	UKF
		11	128	46.53	19	24.94	154	54.03	9.25	2.2	2.6	26	0	232	.12	5	1.8	.5	26	LER
		12	458	26.84	19	20.70	155	10.90	8.47	2.1	2.2	32	2	74	.12	3	.4	.7	28	UER
		12	511	6.14	19	21.12	155	2.41	7.00	2.1	2.2	31	1	156	.13	2	.6	.7	25	MER
		12	516	10.32	19	20.26	155	3.44	8.12	2.8	3.0	35	2	110	.09	1	.5	.4	31	MER
		12	1354	55.95	19	13.94	155	35.28	8.76	2.9	2.8	30	0	196	.21	4	1.2	1.0	25	HEA
		13	445	56.82	19	21.77	155	5.98	5.75	2.3	2.4	32	0	81	.12	6	.5	1.2	30	MER
		13	453	14.98	19	20.34	155	9.52	5.98	1.8	1.8	31	1	76	.14	3	.5	.9	29	UER
		13	732	12.44	19	23.53	155	15.98	2.81	2.0	2.1	26	1	51	.13	2	.4	.5	20	SPC
		13	734	7.60	19	23.82	155	15.77	2.60	1.5	1.9	19	1	81	.28	3	.6	.8	17	SPC
		13	749	50.93	19	23.83	155	15.94	2.44	1.8	2.0	19	1	79	.12	3	.4	.5	17	SPC
		13	9 7	45.73	19	23.75	155	16.00	2.52	1.7	2.3	16	1	48	.13	3	.4	.5	14	SPC
		13	10 9	24.65	19	58.23	155	35.87	10.92	3.0	3.3	33	1	249	.11	26	1.5	.7	29	KOH F
		14	321	52.92	19	19.29	155	11.65	8.70	2.2	2.6	32	0	99	.11	5	.5	.5	29	UER
		14	1039	36.79	19	24.84	155	16.04	15.06	2.1	2.4	31	2	42	.06	2	.5	.3	27	INT
		14	1746	1.00	19	19.71	155	10.85	6.53	2.1	2.3	32	0	93	.13	5	.5	.9	29	UER
		15	147	12.11	19	26.01	155	50.95	7.44	2.6	2.4	22	0	123	.16	9	.6	.9	22	KON F
		15	3 7	24.71	19	20.59	155	6.85	7.69	2.6	2.5	31	2	98	.13	6	.5	.9	27	UER
		15	336	41.27	19	21.85	155	5.78	8.45	2.8	3.2	33	0	80	.13	6	.5	.7	30	MER
		15	341	46.37	19	20.95	155	5.80	8.30	2.8	2.9	33	2	100	.14	5	.4	.7	30	MER
		15	1337	14.64	19	19.83	155	8.48	5.80	1.9	2.0	26	1	80	.10	5	.5	1.2	22	UER
		15	2034	59.81	19	19.27	155	6.82	8.62	2.4	2.7	34	2	131	.09	4	.4	.6	32	UER
		15	2045	41.97	19	20.93	156	18.96	32.36	3.0	2.4	27	2	291	.11	45	3.0	1.6	25	DIS
		16	418	23.84	19	20.11	155	11.40	7.30	2.4	2.9	36	1	83	.12	5	.5	.6	32	UER
		16	456	32.21	19	19.93	155	7.23	7.41	2.0	2.3	31	0	105	.10	5	.5	.7	30	UER
		16	11 9	39.55	19	19.49	155	7.26	5.31	2.1	2.4	31	2	115	.13	4	.5	1.3	27	UER
		16	1724	16.44	19	29.85	155	15.15	9.64	1.9	2.3	35	5	53	.14	9	.3	.8	28	GLN
		16	18 5	19.10	19	20.79	155	5.71	6.69	1.9	2.2	28	0	104	.11	5	.5	1.0	28	MER
		16	1951	50.27	19	19.95	155	11.51	7.04	1.8	2.2	33	0	86	.12	5	.5	.7	30	UER
		16	2235	31.84	19	20.49	155	12.21	7.35	2.0	2.1	35	0	72	.13	4	.5	.6	34	UER
		17	049	46.84	19	21.58	155	30.06	7.68	2.7	2.9	36	0	62	.15	5	.5	.8	33	HEA
		17	1028	52.55	19	21.72	155	30.25	8.68	2.3	2.3	28	1	61	.11	5	.5	.9	25	HEA
		17	1148	58.54	19	20.95	155	12.25	35.08	2.6	2.5	37	1	66	.08	3	.6	.9	33	DEP
		17	1658	25.87	19	20.58	155	8.00	8.29	1.9	1.9	24	1	82	.07	4	.5	.8	22	UER
		17	2213	30.02	19	27.51	155	28.75	6.84	1.9	1.3	23	1	73	.13	9	.5	1.7	23	UKF
		18	1155	12.15	19	51.92	155	57.45	12.71	2.9	2.6	31	4	218	.19	35	3.4	4.9	27	KON *
		18	1215	20.96	19	39.93	155	8.46	11.09	1.8	1.5	21	1	110	.13	12	.6	2.5	21	HIL
		18	1621	22.61	19	27.05	154	50.82	8.34	2.4	2.2	24	1	279	.23	6	2.7	1.1	21	LER
		18	1814	18.07	19	17.46	155	13.47	9.99	2.1	2.1	28	0	149	.11	8	.6	.6	26	POL
		18	1828	9.08	19	15.95	155	13.61	10.34	2.4	2.6	33	3	161	.13	10	.6	.5	28	POL
		18	1833	45.36	19	17.38	155	13.32	10.12	1.9	1.9	27	0	151	.10	9	.6	.5	26	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	FM	REMK
1978	MAY	18	20 7	28.40	19	20.53	155	6.48	7.43	2.4	2.5	30	2	104	.10	6	.4	.7	27	UER
		18	2051	2.20	19	17.19	155	13.38	9.97	1.9	2.3	19	0	177	.09	9	.9	.7	17	POL
		18	2052	6.14	19	17.79	155	13.44	9.83	2.1	2.3	29	0	145	.11	8	.5	.5	27	POL
		18	21 3	16.00	19	19.90	155	6.39	6.82	2.4	2.3	31	2	122	.11	5	.5	1.0	29	UER
		18	2145	29.54	19	21.00	155	11.25	7.78	2.0	2.1	27	1	69	.12	3	.5	.6	26	UER
		18	2332	14.91	19	23.31	155	4.54	7.37	2.5	2.8	34	2	84	.10	2	.4	.7	32	MER
		19	244	23.27	19	25.32	155	25.87	11.75	2.2	2.1	35	1	40	.14	6	.5	.6	33	UKF
		19	722	19.96	19	22.52	155	25.18	10.16	2.6	2.9	37	2	50	.13	4	.4	.6	31	UKF
		19	950	16.21	19	19.66	155	11.56	6.16	1.9	1.9	25	0	91	.12	5	.5	.9	21	UER
		19	1059	48.91	19	18.62	155	26.50	10.19	2.9	3.1	36	1	91	.13	6	.4	.6	31	HEA
		19	12 9	8.13	19	6.13	155	34.68	59.02	2.0	2.5	17	1	153	.09	14	1.8	2.6	4	HEA L
		19	1453	44.39	19	20.14	155	11.75	6.71	1.8	2.2	24	1	81	.13	5	.5	.9	17	UER
		20	2 9	50.29	19	26.85	154	51.73	5.71	1.9	1.8	16	3	282	.13	5	2.0	1.6	11	LER
		20	243	9.06	19	20.64	155	7.80	7.49	1.9	1.7	26	2	85	.09	4	.4	.9	19	UER
		20	344	52.34	19	23.76	155	16.92	2.87	1.5	1.8	17	1	65	.10	2	.3	.5	12	SPC
		20	421	25.27	19	21.60	155	5.98	7.27	2.1	2.6	31	3	84	.09	6	.4	.9	25	MER
		20	548	31.72	19	19.13	155	13.66	8.35	1.8	1.6	24	0	83	.09	4	.4	.8	18	UER
		20	1352	10.80	19	10.41	155	29.51	34.89	2.5	2.6	33	5	102	.09	3	.7	1.0	30	LSW
		20	1554	20.54	19	21.15	155	1.33	7.90	2.5	2.9	26	1	196	.11	8	.7	.6	23	MER
		20	19 5	41.30	19	19.57	155	8.17	7.97	1.8	2.1	25	2	116	.13	4	.5	.7	18	UER
		21	4 8	22.00	19	19.73	155	12.26	5.46	2.1	2.1	29	3	83	.15	5	.5	1.0	20	UER
		21	538	36.65	19	20.13	155	11.00	6.86	2.3	2.0	23	0	84	.10	4	.5	.9	21	UER
		21	1317	51.60	19	19.70	155	13.42	9.61	2.7	3.2	33	1	67	.10	5	.4	.4	29	UER
		21	1716	48.36	19	23.32	155	16.80	2.50	2.4	2.7	27	1	43	.12	3	.3	.6	23	SPC
		22	545	39.97	19	22.40	154	59.84	5.32	2.2	2.5	30	0	188	.15	5	.7	.8	29	LER
		22	819	18.21	19	25.20	155	25.16	6.58	2.1	1.9	30	1	48	.16	7	.4	1.6	26	UKF
		22	820	11.64	19	50.15	155	15.60	36.35	2.5	2.7	36	3	176	.13	11	1.1	1.3	31	KKU
		22	1257	38.28	19	14.72	155	35.62	8.37	2.4	2.2	28	1	111	.20	3	.7	1.1	27	HEA
		22	1610	49.32	19	18.22	155	23.57	4.89	2.3	2.8	16	0	113	.12	4	.7	1.9	16	SWR
		22	21 8	28.21	19	23.97	155	15.82	2.69	1.9	2.4	25	1	43	.10	3	.3	.5	18	SPC F
		22	21 9	26.70	19	18.58	155	13.46	10.25	3.4	3.9	34	0	78	.10	3	.5	.4	32	POL F
		22	2227	4.59	19	20.07	155	7.70	8.44	2.7	3.0	34	1	95	.09	5	.4	.5	31	UER
		22	2345	58.20	19	20.87	155	5.87	6.54	1.9	2.1	26	1	102	.11	5	.5	1.0	24	MER
		23	1 7	12.28	19	21.82	155	2.18	8.88	2.5	2.6	30	1	152	.10	4	.6	.4	26	MER
		23	354	47.12	19	21.39	155	8.53	7.18	1.9	2.0	30	1	67	.12	3	.4	1.0	28	UER
		23	7 9	40.14	19	19.23	155	13.90	7.87	2.0	2.2	30	0	65	.13	4	.5	.6	28	UER
		24	359	15.39	19	20.92	155	2.10	7.48	3.3	3.8	37	2	174	.11	2	.6	.5	37	MER
		24	438	48.64	19	25.45	155	25.71	2.25	2.1	1.9	26	0	56	.17	6	.5	3.2	22	UKF
		24	1222	19.13	19	23.52	155	15.01	3.23	1.8	2.0	13	1	80	.04	2	.4	.6	12	SPC
		24	1652	52.98	19	21.06	155	12.79	36.49	2.9	3.2	34	1	60	.09	3	.7	1.0	30	DEP
		24	1939	47.83	19	21.17	155	12.80	37.99	3.0	3.1	34	0	60	.10	3	.7	1.6	30	DEP
		25	012	13.46	19	18.40	155	13.60	9.54	2.4	3.1	30	2	73	.12	3	.5	.5	26	POL
		25	119	29.91	19	20.16	155	6.41	8.16	2.2	2.3	27	1	114	.09	6	.5	.7	25	UER
		25	123	3.04	19	14.11	156	10.35	31.50		2.3	16	1	315	.09	32	3.8	2.1	16	DIS
		25	8 0	30.97	19	26.25	155	24.62	8.10	3.0	2.9	19	2	77	.13	9	.5	1.4	16	UKF
		25	945	47.39	19	18.93	155	22.09	4.02	2.1	2.3	20	0	149	.11	3	.7	1.2	19	SWR
		25	1248	8.63	19	20.93	155	6.16	8.65	2.4	2.6	32	1	98	.09	6	.4	.6	29	UER
		25	23 0	30.80	19	20.34	155	6.85	8.45	2.7	2.6	31	1	104	.09	6	.4	.5	24	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	MAY	26	043	1.37	19	12.13	155	25.80	35.96	3.0	3.1	36	1	145	.08	6	.8	1.2	35	LSW
		26	056	19.53	19	24.66	155	25.19	6.40	2.1	1.9	32	1	52	.14	6	.4	1.6	27	UKF
		26	955	24.79	19	23.48	155	23.70	10.74	2.6	2.8	35	3	40	.12	6	.4	.5	30	UKF
		26	1211	56.41	19	22.85	155	27.74	4.76	2.6	2.6	32	0	44	.13	1	.4	1.1	32	UKF
		26	1512	6.16	19	41.25	155	2.83	8.39	2.7	3.0	21	0	197	.15	20	1.1	1.8	19	HIL B
		26	1910	9.05	19	19.92	155	6.75	8.87	2.4	2.4	32	1	115	.09	5	.4	.5	30	UER
		26	1911	19.59	19	19.35	155	6.49	8.17	2.0	2.1	26	1	135	.10	5	.5	.7	24	UER
		26	1912	3.16	19	19.68	155	6.52	8.43	2.3	2.4	30	1	126	.09	5	.5	.6	26	UER
		26	2139	39.62	19	17.60	155	16.78	8.87	2.6	2.5	34	1	130	.13	3	.5	.5	32	KOA
		26	2335	45.20	20	3.85	156	4.43	5.03	2.8	2.2	12	2	270	.09	32	2.0	1.4	12	DIS
		27	341	3.11	19	38.56	156	1.43	9.81	3.0	2.4	22	0	226	.11	20	1.5	.9	20	KON
		27	1144	.39	19	39.53	156	.62	8.79	2.8	2.3	17	1	223	.17	18	1.7	.9	17	KON
		28	059	11.62	19	22.63	155	2.61	7.54	2.1	2.0	25	1	132	.13	5	.5	.8	24	MER
		28	059	49.37	19	22.03	155	25.49	9.61	2.2	2.6	28	1	80	.13	4	.5	.7	21	UKF
		28	112	7.48	19	19.48	155	25.28	10.28	1.9	2.1	21	1	145	.11	4	.6	.9	20	HEA
		28	648	4.47	19	20.35	155	5.76	7.90	2.1	2.1	26	1	116	.10	5	.5	.8	25	MER
		28	1033	25.97	19	26.75	155	24.00	2.79	2.0	2.1	20	1	67	.11	6	.4	1.4	19	UKF
		28	1440	36.31	19	20.52	155	12.93	7.52	2.1	2.2	30	1	66	.12	4	.5	.8	28	UER
		28	1825	42.92	19	23.52	155	16.05	1.98	2.1	2.5	18	1	52	.14	3	.4	.7	17	SPC
		29	1032	32.86	19	25.69	155	24.95	6.81	2.4	2.6	29	1	45	.12	8	.4	1.5	25	UKF
		29	1528	4.20	19	26.36	155	21.44	7.83	2.5	2.6	35	3	41	.17	6	.4	.9	31	UKF
		29	17 2	28.18	19	19.76	155	13.37	5.23	1.9	1.9	33	1	67	.19	5	.6	1.3	29	UER
		29	1715	33.27	19	19.11	155	11.66	6.32	2.2	2.3	32	1	104	.15	5	.5	.9	29	UER
		29	1720	.45	19	19.25	155	12.00	8.55	2.5	2.9	33	0	96	.12	5	.4	.6	31	UER
		30	228	55.68	19	19.89	155	9.85	5.70	1.9	2.0	31	0	87	.15	4	.6	1.0	26	UER
		30	1257	39.93	19	19.04	155	12.05	6.62	2.1	2.2	30	1	101	.16	4	.6	.9	25	UER
		30	17 8	57.52	19	19.49	155	7.20	7.70	2.2	2.6	31	1	116	.10	4	.5	.8	29	UER
		30	1759	55.47	19	20.60	155	7.54	8.34	2.2	2.4	31	1	89	.11	5	.5	.6	29	UER
		30	2158	37.49	19	20.24	155	11.77	7.34	1.9	2.1	30	0	79	.12	5	.5	.8	27	UER
		31	414	46.13	19	21.49	155	15.36	9.04	2.1	2.4	32	0	64	.12	2	.4	.5	30	KOA
		31	434	19.89	19	19.98	155	11.40	7.32	1.9	2.1	34	2	86	.15	5	.5	.8	29	UER
		31	750	36.55	18	48.95	155	9.99	16.67	1.9	1.7	34	5	286	.21	52	5.1	63.7	33	PPL *
		31	1433	44.28	19	20.49	155	13.23	7.57	2.0	2.1	30	1	62	.13	4	.5	.7	29	UER
		31	1437	5.62	19	21.11	155	15.26	10.18	3.1	3.3	37	2	69	.09	3	.4	.4	33	KOA
		31	1612	36.50	19	20.25	155	12.22	6.49	1.9	2.0	32	1	76	.17	5	.6	.9	31	UER
		31	1912	9.65	19	19.41	155	18.64	5.93	2.1	2.3	28	1	77	.14	3	.5	.8	27	KOA
		31	1915	30.22	19	19.54	155	18.59	5.92	2.2	2.4	30	1	74	.11	2	.5	.8	28	KOA
		31	1916	55.47	19	19.57	155	18.86	6.42	2.4	3.2	34	1	55	.16	3	.5	.9	31	KOA
		31	22 6	1.22	19	27.60	155	27.22	7.92	2.2	2.1	35	1	46	.14	8	.4	1.0	33	UKF
	JUN	1	119	37.94	19	26.31	155	27.80	8.03	2.3	2.1	35	0	47	.13	7	.4	1.0	34	UKF
		1	154	35.03	19	26.04	155	24.35	8.83	2.4	2.3	36	0	31	.16	7	.5	.9	33	UKF
		1	530	27.42	19	21.01	155	13.20	7.30	1.7	1.6	28	0	58	.15	3	.5	.8	27	UER
		1	6 3	47.48	19	20.93	155	6.18	6.95	1.9	1.8	26	0	98	.09	6	.5	1.0	26	UER
		1	622	24.55	19	15.88	155	15.56	10.04	2.7	2.6	35	1	156	.11	4	.6	.4	33	HLP
		1	633	7.02	19	17.31	155	15.45	8.15	2.3	2.4	30	0	139	.10	4	.6	.7	28	KOA
		1	1259	59.53	19	19.56	155	8.06	6.36	2.0	2.2	17	2	255	.13	6	2.5	1.8	15	UER
		1	1426	59.95	19	24.02	155	25.16	13.29	2.2	2.2	13	1	134	.05	8	.9	2.2	12	UKF
		1	1611	27.19	19	16.88	155	22.75	4.76	1.8	1.8	27	0	126	.16	6	.6	2.3	27	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	JUN	1	19 4	40.23	19	27.04	155	29.81	9.37	2.4	2.3	32	0	72	.11	9	.4	.7	32	UKF
		1	2031	18.13	19	20.19	155	7.20	7.85	2.0	2.1	30	2	102	.13	5	.5	.9	27	UER
		2	132	23.05	19	20.07	155	6.19	7.60	2.0	1.8	28	0	120	.11	6	.6	.8	28	UER
		2	459	52.97	19	19.78	155	11.02	8.32	2.1	2.3	32	1	91	.09	5	.5	.6	30	UER
		2	15 2	2.11	19	40.01	155	9.80	14.44	3.4	3.9	37	1	90	.13	10	.5	.6	34	HIL F
		2	1525	19.50	19	41.89	156	2.91	7.89	2.9	3.0	23	0	283	.14	22	3.4	1.0	19	KON
		2	20 0	45.56	19	23.15	155	1.63	8.00	2.2	2.4	30	0	147	.15	5	.7	.5	27	MER
		2	2237	16.74	19	21.41	155	8.06	8.98	2.0	2.5	31	0	71	.08	3	.4	.5	30	UER
		3	419	54.49	19	27.48	154	54.92	4.89	2.1	2.1	20	0	182	.16	1	1.3	1.1	17	LER
		3	1518	45.72	18	11.09	154	55.01	6.98	2.6	2.3	28	3	325	.14	119	24.9	31.9	24	DIS *
		3	1740	45.95	19	20.42	155	9.55	6.02	1.8	2.0	25	0	75	.13	3	.5	.9	23	UER
		3	22 0	45.03	19	47.86	155	46.74	16.01	3.2	3.5	36	0	129	.11	14	1.1	1.6	35	KON F
		3	2257	49.83	19	20.45	155	3.02	7.13	2.3	2.8	31	0	126	.12	1	.7	.5	28	MER
		4	1212	18.29	19	22.66	155	3.18	7.39	2.0	2.0	27	3	116	.14	4	.5	.8	25	MER
		4	1213	22.89	19	22.21	155	2.84	9.03	2.7	3.0	34	3	130	.12	4	.4	.5	29	MER
		4	1235	59.20	19	20.89	155	6.01	8.61	2.7	3.0	33	1	100	.11	6	.4	.5	30	UER
		4	1248	16.22	19	20.23	155	6.24	6.25	2.1	3.1	31	2	115	.14	6	.5	1.4	25	UER
		4	1840	43.33	19	19.75	155	11.02	8.26	2.4	3.0	28	0	92	.09	5	.4	.6	28	UER
		5	2 9	32.53	19	19.38	155	7.16	9.14	2.5	2.9	35	1	119	.11	4	.4	.4	33	UER
		5	1425	6.20	19	23.84	155	15.85	2.79	2.1	2.7	27	2	47	.11	3	.4	.4	20	SPC
		5	1531	22.26	19	19.63	155	7.71	4.21	1.9	2.0	28	1	100	.12	4	.5	1.9	26	UER
		5	1647	35.24	19	19.12	155	13.36	6.26	2.0	1.9	31	0	74	.15	4	.6	1.0	25	UER
		5	2056	58.73	19	27.53	155	46.81	3.70	2.5	2.1	25	0	180	.14	6	.9	2.1	19	KON
		5	2132	5.29	19	31.62	155	28.17	3.64	2.1	2.0	25	0	97	.13	1	.4	.8	21	NER
		5	22 7	15.09	19	19.66	155	11.44	7.20	1.7	1.8	30	0	92	.11	5	.5	.8	26	UER
		6	440	19.51	19	17.08	155	22.30	5.67	1.9	2.3	29	0	125	.15	6	.6	1.5	24	SWR
		6	1021	53.56	19	23.67	155	15.87	3.04	2.7	2.8	27	1	39	.11	2	.3	.5	25	SPC
		6	1141	38.60	19	23.62	155	15.40	2.48	1.5	2.0	13	1	117	.15	2	.4	.6	9	SPC
		6	1630	16.59	19	23.60	155	15.49	2.93	1.4	2.3	16	0	82	.10	2	.4	.5	16	SPC
		6	2321	33.82	19	23.26	155	16.70	2.61	1.9	2.3	26	1	45	.13	2	.3	.5	18	SPC
		7	249	36.97	19	18.99	155	13.45	8.58	1.9	2.1	31	0	125	.11	7	.6	.6	26	POL
		7	914	30.51	19	30.39	155	24.22	7.21	2.2	2.4	23	3	46	.14	2	.4	1.2	19	NER
		7	1055	34.28	19	30.79	155	23.64	8.03	2.3	2.1	31	1	47	.14	2	.4	.9	28	NER
		7	1653	15.34	19	19.30	155	15.32	8.65	2.0	1.8	30	1	87	.12	4	.5	.6	26	KOA
		7	1820	23.27	19	20.89	155	11.51	7.91	2.1	2.2	31	1	70	.13	4	.4	.8	29	UER
		7	1827	57.59	19	19.89	155	7.89	7.11	2.2	2.2	31	0	93	.11	5	.5	.9	29	UER
		8	934	19.12	19	22.09	155	2.55	8.00	2.2	2.5	28	2	139	.12	4	.5	.6	26	MER
		8	1131	22.81	19	19.48	155	7.33	7.51	2.0	1.9	29	1	113	.09	4	.4	.8	26	UER
		8	1527	47.11	19	42.75	155	3.69	2.28	2.1	2.2	13	1	219	.28	3	3.2	4.9	12	HIL B
		8	1618	18.05	19	20.24	155	6.68	7.89	2.2	2.1	32	0	108	.11	6	.5	.7	32	UER
		8	1625	41.51	19	17.29	155	21.41	8.56	2.1	2.8	29	1	133	.10	5	.5	.7	28	SWR
		8	2054	14.17	19	18.75	155	7.14	8.99	2.5	2.8	35	2	136	.11	3	.5	.5	31	POL
		9	428	2.96	19	14.60	155	32.92	7.31	2.4	2.1	30	0	120	.18	7	.7	1.3	30	LSW
		9	10 0	18.39	19	23.64	155	16.77	2.73	1.9	2.4	17	1	74	.08	2	.3	.5	14	SPC
		9	10 7	9.65	19	19.48	155	11.18	8.21	1.8	2.0	22	0	98	.07	5	.5	.8	16	UER
		9	1055	39.97	19	18.46	155	14.96	7.48	1.9	1.8	23	0	126	.09	4	.5	.6	19	POL
		9	1551	25.56	19	21.31	155	28.39	9.29	1.9	1.8	24	2	68	.11	3	.5	.9	15	HEA
		10	346	4.94	19	19.43	155	7.97	7.28	2.0	2.1	29	2	95	.13	4	.5	1.1	22	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	JUN	10	1852	22.01	19	16.72	155	28.53	9.13	2.4	3.1	28	0	86	.13	11	.5	.9	25	HEA	
		10	20 7	44.63	19	19.87	155	6.67	9.96	3.0	3.3	33	1	117	.09	5	.6	.4	29	UER	
		11	1 7	19.98	19	20.01	155	8.93	7.65	1.6	1.8	25	1	76	.07	4	.4	.5	20	UER	
		11	434	56.35	19	20.61	155	12.02	8.36	1.9	2.1	20	0	71	.08	4	.5	.8	20	UER	
		11	651	30.99	19	27.87	154	52.67	6.19		1.6	21	3	261	.11	2	1.7	.5	14	LER	
		11	934	4.96	19	20.91	155	6.52	6.93	2.3	2.6	30	0	95	.12	6	.5	.9	28	UER	
		11	1248	36.64	19	17.07	155	27.83	8.71	2.4	2.7	31	0	123	.14	10	.6	.9	28	HEA	
		12	240	.62	19	22.29	155	25.16	10.55	2.7	3.1	37	0	53	.12	4	.4	.5	35	UKF	
		12	3 5	58.51	19	20.48	155	13.68	8.62	2.1	2.7	32	0	66	.13	4	.4	.6	24	UER	
		12	318	18.29	18	56.84	156	36.40	.05	3.1	2.6	41	8	306	.12	85	7.2	1.8	34	DIS	*
		12	836	29.61	19	25.40	155	24.58	8.51	2.0	1.9	26	0	47	.12	8	.4	1.1	21	UKF	
		12	1157	12.12	19	24.02	155	15.72	3.28	3.3	3.8	35	1	44	.12	3	.3	.5	31	SPC	F
		12	12 5	27.71	19	23.77	155	15.33	2.73	1.8	2.3	17	1	97	.12	2	.4	.5	16	SPC	F
		12	1324	34.78	19	20.83	155	6.67	6.74	2.4	2.3	29	0	96	.11	6	.5	1.1	27	UER	
		12	16 3	36.39	19	31.31	155	23.33	8.83	2.8	2.9	37	2	49	.18	3	.4	.9	31	NER	
		12	1626	43.12	19	19.70	155	11.75	7.28	2.1	2.1	31	0	89	.13	6	.5	.8	30	UER	
		12	1649	34.98	18	54.32	155	27.64	15.40	3.4	4.1	36	0	249	.09	23	1.8	1.2	32	DIS	F
		12	1826	53.32	19	23.64	155	16.69	2.71	1.6	2.0	18	1	73	.10	2	.3	.5	17	SPC	
		12	2238	37.04	19	25.09	155	16.77	2.21	2.4	3.1	31	2	39	.10	1	.4	.2	28	SPC	F
		13	440	32.83	19	22.99	155	24.81	7.86	2.2	2.4	35	1	59	.19	5	.5	1.3	30	UKF	
		13	442	40.84	19	24.83	155	24.99	10.97	2.9	3.2	36	1	36	.14	6	.4	.5	32	UKF	
		13	654	1.15	19	20.47	155	3.21	6.08	3.4	4.0	37	1	108	.10	1	.6	.5	32	MER	F
		13	7 1	23.19	19	19.92	155	2.96	6.25	2.3	2.6	28	1	140	.14	0	.7	.9	25	MER	
		13	710	7.08	19	18.77	155	13.60	8.54	2.2	2.6	27	0	86	.10	3	.5	.6	24	POL	
		13	843	18.67	19	19.78	155	2.83	5.48	1.9	2.1	23	0	218	.12	0	1.0	.9	16	MER	
		13	1941	11.48	19	20.57	155	3.49	8.69	2.8	3.2	33	1	93	.12	2	.7	.5	28	MER	
		13	2310	47.66	19	20.73	155	2.91	7.01	2.0	1.8	20	3	135	.11	2	.6	1.3	15	MER	
		14	642	38.44	19	21.05	155	6.21	8.74	2.5	2.9	28	2	95	.10	6	.5	.8	25	UER	
		14	720	19.49	19	17.52	155	13.54	7.59	2.0	2.3	28	1	94	.12	1	.5	.7	21	POL	
		14	1813	30.22	19	17.59	155	23.30	39.32	2.4	2.3	34	2	128	.11	5	.8	1.2	27	SWR	
		14	2153	59.10	19	20.26	155	3.05	7.50	2.3	2.3	27	2	117	.13	1	.5	.7	23	MER	
		14	22 5	40.81	19	23.62	155	15.46	3.08	1.8	2.1	19	0	54	.08	2	.4	.5	19	SPC	
		15	125	50.04	19	20.12	155	18.84	30.95		1.4	25	0	80	.08	3	.8	1.5	23	DEP	
		15	454	31.47	19	25.37	155	24.46	8.59	2.4	2.4	32	0	37	.12	8	.4	.9	28	UKF	
		15	8 4	49.93	19	23.74	155	16.86	2.55	1.9	1.9	17	1	68	.09	2	.3	.4	14	SPC	
		15	2222	22.44	19	4.15	156	40.51	22.70	2.4	2.9	10	0	321	.15	87	26.6	17.5	9	DIS	*
		16	624	58.06	19	13.38	155	37.08	7.66	2.4	2.0	27	0	111	.18	3	.7	1.0	21	HEA	
		16	1116	40.50	19	21.77	155	6.41	7.57	2.8	2.9	32	1	80	.12	6	.4	.7	26	UER	
		16	1323	58.90	19	22.63	155	29.09	9.37	2.2	1.9	27	1	89	.09	3	.4	.9	22	UKF	
		16	1425	18.27	19	20.16	155	13.40	8.82	2.3	2.3	33	0	65	.13	5	.5	.5	28	UER	
		16	2110	23.88	19	20.94	155	5.92	8.79	2.6	2.7	35	2	100	.10	6	.4	.5	31	MER	
		16	2144	48.92	19	20.03	155	7.56	8.97	2.7	2.9	34	0	97	.09	5	.5	.4	32	UER	
		17	754	7.87	19	21.71	155	25.33	10.09	2.4	2.7	37	3	85	.13	4	.4	.4	30	HEA	
		17	1036	14.22	19	20.32	155	7.19	6.76	2.3	2.2	29	0	99	.09	6	.4	.8	23	UER	
		17	1126	26.02	18	43.18	155	8.95	16.85	2.9	2.6	30	2	292	.19	59	5.0	98.9	27	PPL	*
		17	1734	23.67	19	20.56	155	1.01	8.92	3.2	3.5	36	2	204	.10	4	.6	.4	33	MER	
		17	1752	27.10	19	21.13	155	1.22	8.28	2.7	3.2	28	0	191	.10	4	.9	.5	23	MER	
		17	1758	1.81	19	28.48	155	47.38	7.16	2.4	2.1	22	0	204	.22	5	1.7	1.2	20	KON	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	JUN	17	2116	7.16	19	19.23	155	13.58	6.88	2.0	2.1	31	0	79	.13	4	.5	.8	28	UER	
		18	021	.52	19	17.07	155	20.80	7.29	1.7	2.0	27	0	132	.10	4	.5	.9	25	SWR	
		18	034	21.07	19	20.12	155	6.74	7.87	2.1	1.8	27	1	110	.09	6	.5	.8	25	UER	
		18	451	28.67	19	21.55	155	3.68	7.38	2.1	2.1	29	1	103	.14	3	.5	.8	28	MER	
		18	535	52.42	19	19.71	155	7.16	7.29	2.0	2.1	29	1	112	.13	5	.5	1.0	27	UER	
		18	855	55.59	19	21.88	155	4.32	6.16	2.3	2.6	26	1	88	.12	4	.5	.9	18	MER	
		19	15 3	32.92	19	18.88	155	15.65	9.22	1.6	2.2	26	0	122	.07	4	.6	.4	24	KOA	
		19	1835	50.66	19	18.33	155	16.46	9.39	2.5	2.7	32	3	115	.12	4	.4	.5	27	KOA	
		19	2336	53.72	20	39.29	155	47.03	6.95	3.5	3.5	38	6	218	.20	50	.9	1.4	34	DIS	*
		20	3 7	55.52	19	21.57	155	1.72	7.65	2.1	2.1	31	1	169	.13	4	.7	.5	29	MER	
		20	312	48.70	19	25.53	155	16.49	2.58	2.0	2.9	22	1	46	.12	1	.4	.3	18	SPC	F
		20	814	56.40	19	19.76	155	8.21	9.04	2.2	2.7	33	1	86	.09	4	.5	.5	24	UER	
		21	020	44.12	19	19.45	155	13.35	10.23	3.6	4.0	38	3	71	.10	5	.4	.5	33	UER	F
		21	135	52.16	19	16.95	155	22.56	7.07	1.8	2.4	27	0	125	.12	6	.6	1.1	22	SWR	
		21	611	32.78	19	20.39	155	13.23	9.09	2.1	2.6	34	1	63	.09	4	.3	.5	24	UER	
		21	1847	35.06	19	16.09	156	10.69	19.97		2.0	11	0	316	.12	32	19.1	9.5	11	DIS	*
		21	1850	2.77	19	14.66	156	13.07	26.31	3.1	4.1	18	0	320	.11	37	17.5	7.3	17	DIS	*
		21	1919	54.17	19	13.15	156	20.48	30.06	2.8	3.8	13	0	327	.08	50	24.7	7.7	13	DIS	*
		21	22 6	10.47	19	20.28	155	8.30	6.28	2.2	2.4	32	1	79	.13	4	.5	1.0	30	UER	
		21	2212	33.68	19	24.26	155	27.47	10.87	2.2	2.3	36	1	47	.13	3	.5	.6	31	UKF	
		22	013	48.74	19	19.95	155	6.83	8.56	2.7	3.1	32	0	113	.10	5	.6	.5	30	UER	
		22	137	4.43	19	20.49	155	6.91	7.38	2.3	2.2	32	1	100	.12	6	.5	.9	27	UER	
		22	1315	7.98	19	19.97	155	11.79	9.08	2.4	2.7	35	2	84	.13	5	.5	.6	30	UER	
		22	22 3	25.68	19	3.36	156	39.01	7.00	3.2	2.8	15	0	321	.13	85	11.1	99.0	15	DIS	*
		22	2235	5.03	19	23.58	155	16.79	3.00	2.2	2.3	24	1	67	.08	2	.3	.4	23	SPC	
		23	147	58.56	19	19.16	155	15.46	10.51	4.4	4.5	38	2	91	.10	4	.5	.4	31	KOA	F
		23	2 2	25.46	19	23.86	155	15.92	3.03	1.6	1.6	14	1	104	.10	3	.4	.6	13	SPC	
		23	219	33.13	19	19.17	155	15.38	6.92	1.6	1.0	25	1	110	.12	4	.4	.7	25	KOA	
		23	225	.73	19	18.14	155	15.10	7.87	2.1	1.9	26	1	137	.10	4	.6	.7	25	KOA	
		23	519	57.26	19	23.27	155	15.13	2.79	1.6	1.3	15	1	75	.12	2	.4	.6	14	SPC	
		23	621	3.31	19	23.48	155	15.24	3.28	2.1	2.0	23	1	83	.10	2	.4	.5	22	SPC	
		23	2341	17.57	19	18.19	155	15.37	9.91	2.6	2.9	35	1	135	.12	5	.6	.5	24	KOA	
		24	114	4.30	18	45.60	155	14.31	12.11		1.3	32	7	286	.19	51	4.5	6.1	30	PPL	
		24	131	14.27	19	19.32	155	11.90	8.21	2.1	2.1	29	0	96	.09	5	.5	.5	24	UER	
		24	658	27.80	19	20.82	155	13.18	9.52	2.1	2.2	28	0	59	.08	3	.4	.4	26	UER	
		24	9 7	27.78	19	20.03	155	15.63	7.49	1.9	2.2	34	0	83	.15	3	.6	.7	25	KOA	
		24	12 5	24.89	19	24.83	155	24.50	9.33	2.0	2.2	31	0	39	.11	7	.4	.7	27	UKF	
		24	13 0	16.06	19	21.91	155	6.59	7.83	2.1	2.1	30	1	77	.11	6	.5	.9	27	UER	
		24	1940	38.59	19	35.56	155	26.11	.93	1.6	1.7	23	4	69	.18	5	.3	.6	17	NER	
		24	1952	20.25	19	20.75	155	12.92	7.76	1.8	1.8	28	0	63	.13	3	.5	.7	23	UER	
		25	0 8	11.27	19	20.00	155	12.45	7.07	1.8	1.7	31	0	77	.13	5	.5	.8	25	UER	
		25	545	.34	19	19.74	155	8.53	6.30	1.8	1.7	28	0	79	.10	5	.5	1.0	21	UER	
		25	931	15.67	19	19.19	155	9.04	7.41	1.9	1.8	30	1	93	.13	4	.5	.9	26	UER	
		25	1349	13.36	19	13.70	155	37.74	9.17	2.6	2.6	27	1	198	.16	3	.9	.8	21	HEA	
		25	1536	35.75	19	27.23	154	51.96	3.48	2.1	1.8	22	2	281	.15	4	1.6	.9	20	LER	
		25	1740	39.15	19	18.55	155	15.24	9.40	2.1	2.4	31	1	129	.09	4	.5	.4	26	KOA	
		25	2039	59.70	19	23.26	155	16.84	3.15	1.5	1.8	17	1	64	.10	2	.4	.6	15	SPC	
		25	2134	45.40	19	20.43	155	3.65	7.12	2.1	2.5	30	2	106	.14	2	.6	.8	24	MER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	JUN	25	2247	14.28	19	21.02	155	.61	7.84	2.1	2.3	28	1	203	.14	5	.8	.6	23	LER	
		25	23 9	29.35	19	10.36	155	36.54	9.31	2.0	2.1	36	5	101	.21	9	.7	1.0	31	HEA	
		26	1214	.18	19	27.71	155	49.65	6.18	2.4	1.9	25	1	96	.20	8	.7	1.6	20	KON	
		26	1656	5.08	19	19.17	155	15.68	30.56	2.2	1.9	36	7	94	.09	4	.6	.6	35	DEP	
		26	1927	36.32	19	21.51	155	.41	7.79	2.1	1.9	27	2	196	.13	5	1.0	.7	22	LER	
		26	2055	14.13	19	18.76	155	8.21	8.68	2.2	2.6	34	2	94	.12	3	.4	.6	24	POL	
		27	023	32.03	19	20.19	154	59.90	5.89	2.1	2.1	28	2	222	.19	5	1.0	.9	21	LER	
		27	740	16.96	19	20.36	155	12.71	7.92	1.9	2.2	30	1	69	.14	4	.5	.8	28	UER	
		27	933	26.02	19	10.33	155	29.04	33.61	2.5	2.2	30	3	98	.06	3	.8	1.3	26	LSW	
		27	1041	31.64	19	20.72	155	13.18	7.44	2.2	2.5	33	0	61	.15	4	.5	.8	26	UER	
		27	2231	5.96	19	24.78	155	25.16	11.04	2.9	3.0	38	0	32	.14	6	.4	.5	35	UKF	
		28	331	4.77	19	23.82	155	15.84	2.98	1.4	1.8	16	1	104	.09	3	.4	.5	9	SPC	
		28	1128	17.70	19	20.84	155	12.82	7.37	1.9	2.1	31	2	62	.14	3	.4	.7	25	UER	
		28	1345	20.80	19	20.14	155	8.37	6.32	1.8	2.0	24	1	79	.11	4	.5	1.4	20	UER	
		28	1953	56.09	19	20.78	155	12.96	7.07	1.6	1.7	29	0	63	.14	3	.5	.8	25	UER	
		28	2331	47.87	19	24.97	155	15.79	1.21	1.1	.9	12	1	120	.13	2	.5	.6	10	SPC	
		29	513	6.70	19	23.84	155	1.99	9.36	1.9	1.6	27	1	126	.14	4	.6	.7	25	MER	
		29	1159	25.98	19	20.38	155	17.89	32.72	2.1	2.4	29	0	69	.09	1	.8	1.5	25	DEP	
		29	1511	29.08	19	19.30	155	13.64	8.20	1.9	2.3	31	1	125	.13	6	.6	.8	27	UER	
		29	1831	10.89	19	21.75	155	6.99	9.23	3.2	3.3	37	2	77	.08	5	.3	.5	34	UER	
		29	20 4	9.50	19	25.50	155	24.31	8.25	2.2	2.2	31	1	58	.11	8	.4	.9	28	UKF	
		29	2216	25.23	19	30.62	155	23.49	6.16	1.9	2.0	28	1	49	.13	2	.4	1.0	23	NER	
		29	2258	39.80	19	20.35	155	7.60	7.04	2.0	1.7	30	2	92	.14	5	.5	1.0	27	UER	
		30	146	11.05	19	20.14	155	6.25	6.87	2.1	1.9	30	1	117	.09	6	.4	.9	27	UER	
		30	712	3.61	19	18.96	155	13.21	8.07	2.1	2.2	31	1	81	.14	4	.5	.8	27	POL	
		30	1228	2.76	19	16.84	155	28.92	10.15	3.3	3.7	37	2	83	.12	11	.4	.5	32	HEA	F
		30	1420	34.92	19	19.63	155	10.35	9.87	3.1	3.3	38	2	94	.10	5	.4	.5	33	UER	
		30	1537	51.13	19	26.34	155	51.73	14.10		1.9	16	4	130	.11	8	.7	.5	14	KON	
		30	1811	33.35	19	19.82	155	7.85	8.03	2.3	2.6	30	2	95	.08	5	.4	.8	27	UER	
		30	2039	6.93	19	20.46	155	7.24	7.81	1.9	1.9	29	0	96	.08	5	.5	.8	25	UER	
		30	21 1	52.21	19	19.03	155	14.88	7.43	1.8	1.8	30	0	88	.12	4	.5	.8	24	UER	
		30	2211	43.81	19	17.44	155	14.77	9.94	1.8	1.7	26	2	157	.12	2	.6	.5	18	POL	
		30	2231	22.10	19	18.35	155	15.48	10.20	2.9	3.0	34	0	106	.11	4	.7	.5	30	KOA	
		30	2235	26.89	19	17.87	155	14.73	7.42	1.7	1.5	20	0	139	.10	3	.6	.7	13	POL	
		30	2239	16.86	19	17.84	155	14.79	8.77	1.7	1.6	23	0	141	.11	3	.8	.5	18	POL	
		30	2246	4.68	19	20.45	155	17.80	31.55	2.3	2.4	36	2	68	.10	1	.7	.9	32	DEP	
		30	2248	37.23	19	19.31	155	12.04	8.15	2.2	2.3	33	3	95	.13	5	.5	.7	24	UER	
	JUL	1	4 9	24.15	19	20.25	155	15.61	6.84	1.5	1.3	24	2	85	.12	3	.4	1.0	16	KOA	
		1	451	40.91	19	14.19	156	14.61	34.69	2.9	2.9	18	4	272	.06	39	1.3	2.2	13	DIS	
		1	511	3.29	19	20.51	155	7.50	6.62	2.1	2.3	31	1	91	.11	5	.5	1.1	28	UER	
		1	653	28.46	19	20.21	155	2.24	6.82	1.7	1.8	26	1	200	.15	1	.7	.7	16	MER	
		1	917	58.44	19	19.68	155	7.09	8.40	2.5		34	1	114	.09	5	.5	.6	29	UER	
		1	918	13.27	19	18.47	155	6.73	7.97	4.2	4.3	23	2	160	.11	3	.5	1.1	2	POL	F
		1	919	37.51	19	19.97	155	7.13	7.02	2.4	2.6	17	0	107	.07	5	.6	1.5	0	UER	
		1	1029	47.07	19	19.65	155	6.95	7.80	1.8	2.1	27	1	118	.09	5	.6	.8	18	UER	
		1	1258	35.88	19	18.36	155	14.48	7.02	1.8	1.8	25	1	118	.09	3	.5	.7	20	POL	
		1	1541	25.84	19	19.73	155	7.25	8.65	2.0	2.3	29	0	109	.09	5	.6	.6	22	UER	
		1	1548	6.56	19	16.98	155	30.75	3.56	2.1	1.8	26	3	70	.13	12	.4	1.7	19	HEA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	JUL	1	2112	54.51	19	27.26	155	22.07	7.24	1.6	1.7	22	1	77	.14	5	.5	1.2	15	UKF	
		2	1329	39.31	19	19.89	155	8.30	8.88	2.3	2.7	33	1	83	.09	5	.5	.5	30	UER	
		2	2133	57.86	19	25.55	154	54.41	8.77	2.2	2.4	30	4	221	.14	4	1.1	.5	21	LER	
		3	1 6	40.27	19	20.66	155	6.70	9.11	2.8	3.0	33	1	99	.09	6	.5	.4	29	UER	
		3	550	47.20	19	46.82	155	48.04	12.35	2.9	3.1	38	2	162	.12	11	.6	.6	35	KON	
		3	1612	45.60	19	20.71	155	12.75	7.84	1.2	1.3	25	0	65	.12	4	.5	.7	17	UER	
		3	21 5	16.33	19	21.72	155	4.86	9.07	3.4	3.6	37	0	80	.11	5	.6	.4	36	MER	F
		3	2254	31.03	19	25.31	155	27.68	11.08	3.0	3.5	37	1	38	.11	5	.4	.5	32	UKF	F
		4	425	48.67	19	22.45	155	49.48	11.37	1.8	2.0	23	2	120	.14	13	.6	.7	20	KON	
		4	618	15.09	19	25.60	155	24.94	9.25	2.2	2.5	33	0	49	.11	7	.4	.8	28	UKF	
		4	634	27.59	19	21.30	155	15.08	7.71	1.9	1.8	26	1	66	.10	3	.5	.8	23	KOA	
		4	738	2.79	19	20.87	155	10.99	8.41	1.9	1.7	27	1	72	.11	3	.5	.7	20	UER	
		4	744	50.22	19	20.87	155	11.22	8.53	2.3	2.6	32	1	71	.10	3	.4	.6	28	UER	
		4	745	28.04	19	26.04	154	56.03	6.32		1.1	14	4	187	.19	3	1.1	1.9	11	LER	
		5	424	2.72	19	21.96	155	6.18	7.69	2.0	1.8	30	2	78	.13	6	.4	.6	25	UER	
		5	430	34.96	19	19.61	155	6.64	7.43	2.8	3.4	37	1	125	.12	5	.5	.5	31	UER	
		5	5 3	12.70	19	21.02	155	5.81	8.61	2.8	2.9	32	1	97	.09	5	.5	.5	27	MER	
		5	1218	52.21	19	33.91	155	38.21	10.14	2.8	1.7	22	0	151	.12	9	.7	1.0	19	MOK	
		5	1817	25.17	19	19.90	155	11.42	8.09	1.9	2.1	29	0	88	.10	5	.5	.8	25	UER	
		5	1913	49.43	19	17.55	155	29.16	6.83	2.3	2.7	31	1	84	.11	10	.4	1.2	29	HEA	
		5	2234	19.05	19	20.24	155	30.39	7.04	1.9	1.7	27	0	66	.12	6	.5	1.4	25	HEA	
		6	1315	18.08	19	21.61	155	6.66	6.55	1.9	2.1	25	0	82	.09	6	.5	1.3	24	UER	
		6	1719	31.24	19	39.72	155	8.37	20.10	2.2	1.4	20	1	174	.10	19	.9	3.5	20	HIL	
		6	2120	12.72	19	25.40	155	15.87	2.33	2.4	2.8	25	1	46	.12	2	.3	.4	23	SPC	F
		7	719	20.15	19	18.60	155	15.25	9.66	2.4	2.7	33	1	128	.10	4	.5	.5	31	KOA	
		7	1131	29.20	19	12.09	156	7.13	26.40	3.1	3.9	12	0	322	.12	27	19.5	7.7	12	DIS	*
		7	1910	6.41	19	19.55	155	8.53	7.44	2.1	2.3	29	1	80	.09	4	.5	.8	27	UER	
		8	211	35.61	19	25.86	155	24.67	8.02	2.4	2.8	34	1	33	.13	8	.4	1.1	32	UKF	
		8	1411	44.94	19	27.52	154	46.71	7.42	2.3	2.1	17	2	292	.14	12	3.0	1.1	14	DIS	
		9	140	50.34	19	18.21	155	15.78	8.99	2.1	2.3	35	2	112	.13	5	.5	.5	31	KOA	
		9	754	38.19	19	21.11	155	13.17	7.07	1.9	2.1	30	1	57	.16	3	.5	.8	29	UER	
		9	845	31.42	19	19.15	155	11.21	8.43	2.4	2.5	29	0	106	.09	6	.5	.6	25	UER	
		9	13 7	56.91	19	22.28	155	5.85	8.48	3.1	3.3	33	0	72	.10	5	.5	.5	30	MER	F
		9	1654	8.29	19	23.03	155	25.69	8.87	2.3	2.3	27	0	93	.10	4	.5	.9	24	UKF	
		9	1837	37.90	19	14.86	155	20.54	8.68	1.9	2.0	32	0	156	.11	7	.6	.6	24	HLP	
		9	1841	32.22	19	20.39	155	3.58	6.94	2.0	2.3	27	1	107	.10	1	.6	.6	24	MER	
		9	19 7	7.34	19	14.46	155	20.36	7.76	1.9	2.1	31	1	162	.12	7	.6	.8	26	HLP	
		9	1943	24.54	19	14.96	155	20.63	8.57	2.2	2.4	33	0	156	.11	7	.6	.6	29	HLP	
		10	4 1	44.70	19	18.79	155	13.43	8.03	2.0	2.2	29	1	80	.13	3	.5	.7	24	POL	
		10	1026	24.86	19	18.65	155	13.22	8.04	2.3	2.4	29	1	84	.10	3	.5	.6	22	POL	
		10	1322	5.77	19	11.47	155	30.72	7.43	2.2	2.1	27	2	90	.16	6	.7	1.2	20	LSW	
		10	1621	40.76	19	21.94	155	3.76	6.51	2.0	1.9	23	1	102	.16	4	.6	1.0	19	MER	
		11	059	47.44	19	19.67	155	8.43	7.25	2.2	2.3	29	1	82	.11	4	.5	.8	25	UER	
		11	347	46.06	19	48.16	155	23.26	24.77	2.4	2.6	36	4	130	.11	8	.6	1.4	29	KKU	
		11	11 4	18.73	19	30.19	155	35.29	14.73	2.4	1.8	23	2	71	.11	2	.5	.5	19	MOK	
		12	330	2.84	19	20.08	155	6.46	7.81	2.1	2.2	29	1	116	.10	6	.6	.7	25	UER	
		12	331	44.62	19	20.36	155	11.25	7.33	1.7	1.7	28	0	80	.13	4	.5	.8	22	UER	
		12	532	37.56	19	20.29	155	9.53	7.36	1.8	2.0	28	0	76	.10	3	.4	.7	24	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	JUL	12	1133	10.16	19	17.98	155	11.45	8.45	2.1	2.1	29	2	168	.17	4	.6	.7	21	POL	
		12	1239	1.91	19	21.25	155	5.95	7.77	2.2	2.3	29	1	146	.12	7	.6	.7	28	MER	
		12	2126	10.78	19	19.32	155	7.34	5.22	2.0	2.1	28	1	116	.12	4	.5	1.5	26	UER	
		12	23 5	57.24	19	23.56	155	15.40	3.06	1.8	1.8	17	1	51	.11	2	.4	.6	16	SPC	
		12	2332	22.22	19	23.94	155	28.83	9.22	2.2	2.1	29	0	48	.14	3	.5	1.1	27	UKF	
		13	529	9.14	19	19.81	155	10.57	8.23	2.2	2.6	33	1	91	.10	4	.4	.6	30	UER	
		13	8 3	48.97	19	13.30	156	14.48	26.86	3.1	2.6	9	0	330	.13	39	43.0	13.8	9	DIS	*
		13	1349	22.63	19	21.98	155	4.33	6.56	2.0	2.0	26	0	88	.12	5	.5	.9	26	MER	
		13	17 6	21.25	19	23.51	155	15.86	3.47	1.4	1.5	13	1	88	.12	2	.5	.7	12	SPC	
		13	2019	38.06	19	25.07	155	37.68	.00	2.5	2.1	11	0	75	.25	5	.9	3.8	11	MOK	*
		13	2052	3.71	19	44.78	156	8.65	16.08	2.9	2.3	30	0	288	.16	33	4.9	99.0	28	KON	*
		13	2129	51.47	19	13.66	155	28.58	6.77	2.4	2.4	27	0	138	.15	15	.7	1.2	26	LSW	
		13	22 1	15.70	19	19.27	155	6.38	8.17	2.2	2.1	29	1	140	.10	5	.6	.7	27	UER	
		14	256	37.19	19	21.18	155	15.28	9.92	3.2	3.3	37	2	68	.09	3	.4	.4	33	KOA	F
		14	1733	45.88	19	23.89	155	16.01	2.71	2.4	2.8	30	1	44	.14	3	.3	.5	22	SPC	F
		14	1849	28.99	19	19.92	155	8.05	5.36	1.8	2.0	23	0	88	.09	5	.5	1.2	17	UER	
		14	1938	39.96	19	20.84	155	6.46	6.72	2.1	2.1	30	1	98	.08	6	.5	.9	25	UER	
		14	22 9	5.25	19	17.21	155	12.66	11.54	3.0	2.9	38	1	147	.11	8	.6	.4	30	POL	
		14	2250	9.39	19	17.44	155	12.93	7.83	1.9	1.9	25	0	142	.13	1	.7	.8	21	POL	
		14	23 2	56.19	19	18.12	155	13.07	9.30	2.0	1.9	29	0	141	.11	8	.6	.5	23	POL	
		15	645	43.66	19	13.69	155	25.79	37.68	2.4	2.4	33	3	129	.12	9	.6	.9	29	LSW	
		15	11 9	54.75	19	17.80	155	47.57	5.27	2.5	1.5	30	4	89	.22	9	.6	1.9	29	KON	
		15	1138	47.15	19	20.20	155	13.20	9.00	2.0	2.2	33	1	66	.11	5	.4	.5	21	UER	
		15	1914	58.30	19	19.67	155	11.67	7.33	1.7	2.0	31	0	90	.13	5	.5	.7	28	UER	
		16	829	41.78	19	21.05	155	1.02	7.84	3.4	3.7	34	0	196	.11	4	.9	.5	33	MER	F
		16	1443	47.73	19	22.80	155	20.70	13.09	2.1	2.3	34	1	50	.12	2	.5	.4	27	INT	
		16	1644	33.76	19	20.75	155	5.68	8.06	1.9	1.9	28	0	106	.11	5	.6	.7	24	MER	
		17	322	31.41	19	22.38	155	2.91	7.48	2.1	2.6	32	1	126	.11	5	.5	.5	26	MER	
		17	1311	20.43	19	28.50	154	53.80	5.09	2.2	2.2	28	2	184	.19	1	1.6	1.1	23	LER	
		17	1448	59.33	19	21.06	155	3.68	5.71	2.0	1.9	30	2	97	.14	3	.5	.9	26	MER	
		17	1525	40.84	19	22.36	155	6.09	7.00	2.0	2.2	28	1	71	.11	5	.5	1.0	23	UER	
		17	1619	16.24	19	20.44	155	13.19	7.12	1.8	1.8	28	0	64	.14	4	.5	.8	23	UER	
		18	331	34.97	19	20.10	155	11.86	7.53	1.9	2.1	30	1	81	.13	5	.5	.7	26	UER	
		18	4 3	55.24	19	20.61	155	10.70	9.29	2.7	3.1	34	1	76	.12	3	.4	.5	30	UER	
		18	429	20.08	19	28.64	154	53.57	5.36	2.3	2.6	11	3	198	.35	1	3.6	2.2	6	LER	
		18	1421	58.69	19	19.81	155	11.13	8.05	1.7	1.9	28	0	90	.09	5	.4	.6	27	UER	
		18	1443	57.66	19	26.48	154	56.64	5.50	2.1	2.3	24	2	171	.13	3	.9	.8	20	LER	
		18	1541	39.67	19	20.76	155	5.99	7.58	2.1	2.3	29	0	103	.11	6	.5	.8	22	MER	
		19	1359	.49	19	21.09	155	7.17	6.98	2.0	1.7	25	0	86	.12	5	.5	.9	24	UER	
		20	018	5.75	19	20.84	155	12.97	7.79	2.1	2.3	26	1	61	.13	3	.5	.7	21	UER	
		20	2 6	1.13	19	20.35	155	11.61	7.00	2.0	1.6	25	0	78	.10	4	.5	.8	21	UER	
		20	235	50.45	19	20.25	155	6.44	7.36	2.5	2.5	28	1	112	.11	6	.5	.9	24	UER	
		20	955	13.70	19	23.76	155	15.43	2.74	1.2	1.2	9	0	98	.12	3	.5	.7	8	SPC	
		21	120	7.34	19	23.00	155	16.93	2.64	1.2	1.5	13	0	68	.07	2	.4	.6	13	SPC	
		21	239	21.69	19	19.92	155	13.00	7.34	2.2	2.6	29	0	71	.12	5	.5	.7	28	UER	
		21	338	15.01	19	19.24	155	8.46	7.77	2.2	2.1	28	0	83	.11	4	.6	.7	27	UER	
		21	943	10.09	19	22.11	155	4.82	7.69	1.7	1.5	21	0	79	.11	5	.6	1.0	15	MER	
		21	1246	21.65	19	19.37	155	12.13	7.50	1.8	1.5	21	0	92	.09	5	.5	.9	19	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	JUL	21	14 9	48.65	19	20.50	155	11.78	7.16		1.6	19	0	74	.10	4	.6	.9	16	UER	
		21	1532	48.53	19	20.92	155	4.52	7.72	1.8	1.9	25	1	100	.13	3	.6	1.0	20	MER	
		21	2250	1.16	19	22.88	155	16.94	3.28	2.4	2.7	26	1	49	.10	2	.3	.6	23	KOA	
		22	022	41.62	19	20.06	155	11.83	7.37	1.6	1.3	25	0	82	.11	5	.5	.9	17	UER	
		22	442	27.57	19	20.05	155	12.40	7.88	1.8	2.2	26	0	77	.11	5	.5	.7	18	UER	
		22	737	17.14	19	22.08	155	5.13	7.12	1.9	2.4	27	1	74	.10	5	.5	.8	25	MER	
		22	1258	55.42	19	21.02	155	7.44	8.10	2.7	3.0	31	2	84	.12	5	.5	.7	27	UER	
		22	1741	32.23	19	20.45	155	13.30	8.11	1.2	1.4	20	0	62	.08	4	.5	.9	13	UER	
		23	0 9	14.31	19	18.80	155	13.52	8.17	1.4	1.4	19	0	83	.08	3	.5	.9	16	POL	
		23	214	52.12	19	20.26	155	13.40	9.19	1.5	1.5	21	0	64	.10	4	.5	.7	14	UER	
		23	315	37.64	19	21.22	155	6.04	8.78	2.2	2.6	30	1	92	.09	6	.5	.6	22	UER	
		23	546	28.27	19	27.08	154	52.65	9.10	3.1	3.6	31	1	255	.11	4	1.6	.4	26	LER	
		23	625	6.95	19	26.77	155	29.59	8.94	2.0	2.1	29	1	44	.10	9	.4	.9	24	UKF	
		23	635	43.06	19	22.55	155	4.40	9.07	2.4	2.9	30	1	88	.09	4	.5	.5	22	MER	
		23	742	54.54	19	23.81	155	16.86	2.83	1.0	1.3	14	1	68	.06	2	.3	.5	8	SPC	
		23	1227	36.60	19	20.10	155	11.10	7.03	2.3	2.3	33	2	84	.10	4	.4	.6	27	UER	
		23	1933	35.19	19	24.77	155	25.42	4.02	2.0	2.0	22	1	54	.15	6	.5	3.1	17	UKF	
		23	2220	23.89	19	20.42	155	4.34	5.63	2.3	2.2	30	0	119	.12	3	.6	1.0	27	MER	
		24	139	42.02	19	21.17	155	2.73	8.52	2.4	2.7	34	1	142	.10	2	.7	.4	27	MER	
		24	612	15.33	19	19.42	155	13.03	10.05	2.6	2.9	35	0	77	.09	5	.4	.3	30	UER	
		24	810	35.11	19	19.14	155	8.02	9.10	2.1	2.1	16	1	98	.08	3	.8	.7	10	UER	
		24	851	4.63	19	24.54	155	29.52	8.26	2.0	2.3	29	1	63	.10	5	.4	1.0	27	UKF	
		24	1020	17.50	19	28.39	155	43.26	7.84		2.0	17	0	86	.13	6	.7	1.7	16	MOK	
		24	1047	6.98	19	21.27	155	2.43	7.47	2.4	2.6	28	1	152	.11	3	.6	.6	23	MER	
		24	11 6	30.39	19	22.11	155	28.65	9.41	2.1	2.3	24	0	63	.10	2	.5	.9	23	UKF	
		24	1136	19.00	19	19.88	155	8.05	7.89	2.3	2.6	27	1	88	.10	5	.5	.9	25	UER	
		24	13 2	5.01	19	10.03	155	41.27	8.02	2.6	2.4	25	0	127	.20	12	.9	1.2	23	HEA	
		24	1644	58.14	19	20.05	155	8.24	5.83	1.8	2.3	28	0	83	.11	5	.5	1.0	22	UER	
		24	2341	57.57	19	50.47	155	44.89	11.55	2.7	2.8	23	0	146	.10	20	.6	.7	23	KKU	
		25	127	44.11	19	20.00	155	8.17	7.70	1.8	2.4	26	0	85	.09	5	.5	.7	25	UER	
		25	324	44.55	19	20.25	155	8.94	8.08	1.9	2.1	26	1	72	.09	4	.5	.8	24	UER	
		25	338	41.72	19	20.78	155	17.20	26.12	2.0	1.8	29	1	60	.08	1	.6	.8	25	DEP	
		25	654	52.62	19	25.94	155	22.67	9.33	2.2	2.6	34	1	46	.14	7	.5	.7	30	UKF	
		25	1529	5.46	19	26.39	155	21.21	8.95	2.0	1.9	23	1	48	.14	6	.5	1.0	12	UKF	
		25	2354	37.38	19	13.66	155	6.36	51.45	3.0	3.3	37	0	208	.09	7	1.3	2.2	32	POL	
		26	1027	8.98	19	30.14	155	16.99	13.90	2.4	2.9	33	2	48	.10	9	.3	.4	30	GLN	
		26	1756	55.43	19	12.39	155	40.52	6.32	2.4	2.1	17	0	215	.20	8	1.2	1.7	16	HEA	
		26	1848	29.86	19	20.80	155	10.50	7.95	2.2	2.7	28	0	72	.12	3	.5	.8	26	UER	
		26	1851	23.34	19	19.81	155	13.09	8.28	2.0	2.5	30	0	72	.12	5	.4	.7	27	UER	
		26	2155	24.16	19	23.10	155	17.43	11.43		.7	12	0	63	.05	3	.8	1.3	12	INT	
		27	035	43.10	19	30.53	155	51.87	7.14		1.9	19	0	164	.17	6	.9	.9	19	KON	
		27	10 9	26.55	19	29.03	155	38.98	5.20	2.7	3.0	28	0	72	.15	5	.5	1.5	24	MOK	F
		27	1040	57.04	19	21.50	155	29.44	7.21	2.3	2.5	27	0	63	.11	4	.4	.9	25	HEA	
		28	230	8.42	19	19.84	155	8.30	8.04	1.9	2.1	30	0	83	.10	5	.5	.8	28	UER	
		28	232	46.54	19	23.89	155	49.50	11.96		2.4	21	1	117	.14	14	.7	.7	19	KON	
		28	1451	45.69	19	28.39	155	38.32	7.15	2.3	1.8	13	0	92	.15	4	.7	1.4	13	MOK	
		28	1528	40.91	19	17.25	155	22.52	5.84	1.8	2.4	26	0	123	.14	6	.5	1.2	23	SWR	
		28	1858	7.70	19	20.28	155	13.32	9.39	2.0	2.4	32	1	63	.14	4	.5	.6	31	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	JUL	29	1 9	19.50	19	19.52	155	7.39	9.43	2.2	2.5	34	2	110	.11	4	.5	.5	30	UER
		29	427	49.60	19	27.05	155	21.61	5.50	1.9	2.1	31	2	41	.14	6	.4	1.6	27	UKF
		29	720	43.26	19	12.31	155	37.20	9.08	2.4	2.7	33	1	94	.27	5	.9	1.2	31	HEA
		29	1210	48.07	19	19.83	155	6.35	7.79	2.0	2.3	27	1	124	.10	5	.5	.8	23	UER
		29	1542	18.99	19	20.12	155	12.95	7.92	1.8	2.2	24	0	69	.13	5	.6	.9	20	UER
		29	1648	52.18	19	23.90	155	15.55	2.85	1.2	1.3	9	1	107	.11	3	.6	.9	8	SPC
		29	19 1	20.90	19	22.86	155	25.13	10.58	2.0	2.2	27	0	89	.09	4	.4	.6	26	UKF
		29	1953	4.33	19	23.89	155	17.56	5.21	1.3	1.2	12	1	59	.15	2	.6	1.1	11	SPC
		29	2155	1.34	19	23.22	155	1.03	8.49	1.9	1.9	27	1	158	.15	5	.7	.7	26	MER
		30	1449	21.90	19	24.32	155	27.42	10.59	1.9	2.3	27	1	51	.12	3	.5	.9	24	UKF
		31	1626	11.11	19	24.16	155	27.51	10.58	2.2	2.4	25	0	48	.10	3	.5	.8	20	UKF
		31	1631	13.29	19	17.70	155	12.97	9.53	2.2	2.4	30	1	146	.12	9	.6	.6	26	POL
		31	1858	53.84	19	24.20	155	27.59	11.38	2.1	2.1	35	1	48	.13	3	.5	.6	29	UKF
		31	20 1	18.89	19	23.78	155	1.46	10.08	2.1	2.4	29	2	138	.10	5	.6	.5	24	MER
		31	2317	49.33	19	23.80	155	15.73	2.94	1.3	1.8	16	1	103	.09	3	.4	.5	15	SPC
	AUG	1	028	5.62	19	24.38	155	17.07	1.59	1.2	1.4	11	0	58	.04	1	.3	.4	11	SPC
		1	435	15.76	19	27.17	155	22.09	7.88	2.6	2.9	33	2	41	.16	5	.4	1.0	28	UKF
		1	12 8	36.49	19	19.90	155	6.54	9.11	3.0	3.4	34	1	119	.10	5	.6	.4	28	UER
		1	14 1	36.28	19	19.98	155	11.42	8.14	2.1	2.3	34	1	86	.10	5	.4	.6	28	UER
		1	16 2	10.96	19	21.32	155	29.81	7.88	1.9	1.9	31	0	64	.13	4	.4	1.0	18	HEA
		1	1611	13.30	19	55.59	155	27.32	14.24	2.4	1.9	31	2	175	.17	36	1.4	4.5	26	KKU
		1	19 8	15.33	19	20.61	155	11.23	8.46	2.1	2.1	30	1	75	.09	4	.4	.6	26	UER
		2	416	39.87	19	22.21	155	25.39	9.01	2.3	2.3	35	1	76	.11	4	.4	.6	31	UKF
		2	1041	18.17	19	20.92	155	13.27	7.74	2.1	2.5	29	0	58	.16	3	.6	.8	26	UER
		2	1117	50.41	19	21.02	155	4.20	6.66	2.1	2.1	29	1	93	.12	3	.6	.9	27	MER
		2	1640	55.72	19	23.60	155	16.66	2.93	2.1	2.5	20	1	70	.09	3	.3	.5	19	SPC
		2	1718	43.66	19	22.88	155	16.92	3.12	1.6	1.9	14	1	57	.09	2	.4	.6	13	KOA
		3	021	49.35	19	18.86	155	16.31	9.49	2.0	2.6	29	0	105	.09	3	.4	.4	27	KOA
		3	2 1	23.44	19	21.92	155	6.55	8.65	2.4	2.9	34	0	77	.10	6	.5	.5	29	UER
		3	6 5	1.02	19	21.60	155	12.71	2.71	1.7	1.6	16	0	87	.08	2	.3	.5	15	UER
		3	946	59.14	19	23.78	155	15.90	2.65	2.0	2.3	19	1	78	.11	3	.4	.5	18	SPC
		4	737	27.82	19	19.89	155	8.07	7.34	1.9	2.5	28	1	88	.14	5	.6	1.1	25	UER
		4	9 3	52.84	19	21.78	155	19.02	31.44	2.2	2.1	31	0	41	.08	4	.7	1.3	28	DEP
		4	1424	15.10	19	45.24	156	4.59	30.87	3.0	3.2	36	0	238	.12	26	1.4	2.0	30	KON F
		4	1648	45.45	19	19.90	155	6.38	7.59	2.4	2.5	30	1	122	.12	5	.5	.9	25	UER
		4	1954	15.74	19	24.29	155	29.87	8.70	2.0	1.8	27	0	52	.11	5	.4	1.0	24	UKF
		4	23 8	47.51	19	20.41	155	11.16	9.66	2.5	2.8	33	1	78	.12	4	.5	.5	28	UER
		5	428	55.61	19	23.35	155	15.10	3.13	2.0	2.4	19	1	56	.10	2	.4	.5	14	SPC
		5	1211	56.59	19	21.95	155	6.22	7.34	2.1	2.0	30	0	77	.11	6	.5	.8	23	UER
		5	1352	52.15	19	18.26	155	24.49	8.73	1.8	2.2	31	0	104	.13	4	.5	.8	26	SWR
		5	20 0	23.43	19	26.40	155	23.99	10.10	3.0	3.2	35	0	42	.13	6	.5	.7	34	UKF
		5	21 7	52.84	19	34.96	155	10.71	11.24	2.1	2.4	30	0	136	.11	15	.5	.8	21	HIL
		5	23 5	3.01	19	23.23	155	3.66	8.20	2.7	3.1	30	0	101	.11	3	.5	.6	24	MER
		6	131	54.22	19	25.84	155	24.26	4.52	1.6	1.9	23	2	54	.14	8	.4	7.6	17	UKF
		6	517	33.02	19	22.00	155	5.55	8.15	2.0	2.4	30	0	77	.12	5	.5	.7	23	MER
		6	1639	57.18	19	20.30	155	12.81	9.15	1.9	2.3	29	0	69	.11	4	.4	.5	22	UER
		7	415	49.60	19	26.86	155	24.69	6.57	2.0	2.1	30	0	49	.15	6	.4	1.5	28	UKF
		7	6 4	1.68	19	21.15	155	2.60	7.13	2.1	2.4	29	0	147	.12	2	.8	.6	28	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	AUG	7	1256	30.33	19	16.76	155	21.59	9.09	2.4	2.5	34	1	133	.15	6	.5	.7	28	SWR
		7	1435	37.83	19	20.42	155	13.05	9.44	2.4	2.6	32	0	65	.13	4	.4	.5	28	UER
		7	22 7	51.11	19	20.72	155	10.37	8.09	2.1	2.1	26	0	74	.08	3	.4	.6	20	UER
		8	115	40.71	19	22.03	155	4.88	8.80	2.7	3.3	34	1	78	.10	5	.5	.5	30	MER
		8	11 1	6.25	19	19.86	155	11.94	9.50	2.8	3.0	34	1	84	.11	5	.4	.5	29	UER
		8	1226	35.42	19	23.12	155	17.00	2.93	2.2	2.6	27	0	64	.06	2	.3	.5	22	SPC
		8	1240	43.13	19	21.86	155	12.81	2.76		2.0	22	0	54	.12	2	.4	.5	17	UER
		8	2110	10.28	19	18.19	155	13.18	10.44	3.7	4.0	36	0	94	.09	2	.6	.5	33	POL F
		9	125	38.81	19	18.83	155	13.53	7.01	2.1	2.1	34	1	83	.12	3	.5	.7	24	POL
		9	223	12.45	19	23.55	155	15.82	3.09		2.1	22	0	43	.12	2	.4	.6	18	SPC
		9	443	22.04	19	27.30	154	49.44	8.62	3.3	3.9	33	0	277	.14	8	3.0	.6	30	LER F
		9	1225	47.02	19	18.37	155	23.75	4.12	1.7	2.1	18	0	158	.08	4	.6	1.3	17	SWR
		9	1522	24.50	19	21.18	155	3.62	7.92	2.4	2.8	24	1	101	.09	3	.6	.7	22	MER
		9	1526	8.41	19	21.31	155	3.59	6.66	2.1	2.4	23	1	105	.12	3	.6	1.0	20	MER
		9	16 6	42.80	19	21.28	155	3.80	6.70	2.0	2.4	24	0	97	.13	3	.7	.8	21	MER
		9	2337	24.91	19	23.82	155	16.10	2.59	1.1	1.4	10	1	100	.09	3	.4	.7	9	SPC
		10	132	40.92	19	30.99	155	23.95	.40	2.1	1.9	15	1	103	.08	3	.6	.4	13	NER
		10	321	34.68	19	24.01	155	17.08	1.21	.8	1.1	9	0	78	.11	2	.4	.6	9	SPC
		10	1136	20.97	19	23.18	155	17.02	2.72	1.4	1.5	13	1	80	.09	2	.4	.6	12	SPC
		10	1216	18.34	19	26.52	154	53.37	8.20	2.2	2.1	26	0	235	.17	4	2.1	.6	25	LER
		10	1327	1.75	19	24.78	155	23.59	9.20	2.1	2.4	27	0	57	.10	7	.4	.9	27	UKF
		10	1444	21.86	19	19.77	155	13.34	7.68	2.0	2.1	26	1	68	.14	5	.5	1.0	22	UER
		11	414	34.67	19	23.64	155	15.28	3.38	1.4	1.6	15	1	91	.08	3	.4	.6	14	SPC
		11	921	39.06	19	22.82	155	16.84	3.42	2.1	2.9	25	1	47	.09	2	.3	.5	18	KOA
		11	948	46.34	19	26.42	154	55.71	6.58	1.7	2.3	19	2	205	.12	2	1.2	.7	16	LER
		11	1054	37.00	19	22.41	155	29.30	8.98	1.7	2.7	28	0	60	.11	3	.4	1.0	27	UKF
		11	1244	29.22	19	27.26	155	21.87	10.43	2.3	2.9	27	2	78	.12	5	.5	.8	23	UKF
		11	1444	58.70	19	41.03	155	3.15	4.48	2.3	3.2	12	0	242	.14	20	2.2	33.4	8	HIL B*
		11	15 8	51.86	20	45.36	155	59.54	15.95	3.1	3.6	31	4	323	.14	73	15.4	44.3	22	DIS *
		11	2316	20.48	19	23.35	155	26.55	8.94	1.7	2.1	21	0	95	.09	2	.5	1.1	18	UKF
		12	052	50.53	19	20.05	155	6.84	9.88	3.3	3.9	36	2	110	.09	5	.5	.4	32	UER F
		12	251	23.14	19	46.49	156	.25	11.39	2.8	3.5	29	3	224	.11	20	1.0	.6	24	KON F
		12	6 1	32.71	19	20.53	155	12.89	8.26	1.4	1.8	26	0	65	.07	4	.5	.7	22	UER
		12	624	19.73	19	20.62	155	12.77	7.35	1.2	1.3	22	0	66	.09	4	.5	.8	14	UER
		12	949	42.75	19	51.50	155	52.24	35.67	1.3	2.6	24	5	190	.09	19	.7	1.1	23	KON
		12	14 6	10.07	19	18.62	155	13.53	9.31	2.4	3.1	32	2	84	.10	3	.4	.5	23	POL
		12	1525	44.22	19	19.60	155	7.74	8.40	1.8	2.2	17	1	100	.08	4	.6	1.4	9	UER
		12	1615	2.79	19	19.68	155	7.99	7.97	1.8	2.1	25	0	92	.10	4	.6	.8	17	UER
		12	1729	9.21	19	22.13	155	25.16	10.34	1.4	1.8	20	0	74	.09	4	.5	1.0	12	UKF
		12	2238	13.98	19	23.81	155	2.70	7.70	2.0	2.6	31	3	114	.14	3	.6	.6	20	MER
		13	531	17.46	19	24.98	155	24.48	9.41	1.8	1.9	23	0	45	.11	7	.5	1.1	19	UKF
		13	1014	36.80	19	20.79	155	10.92	8.06	2.2	2.3	31	1	73	.13	3	.5	.8	25	UER
		13	1237	54.46	19	28.31	155	22.21	8.00	2.1	2.0	23	0	98	.13	3	.6	1.2	18	UKF
		13	2019	39.18	19	23.05	155	16.95	2.88	1.7	2.3	22	1	66	.09	2	.3	.5	17	SPC
		13	2212	28.96	19	56.00	155	21.66	11.30	2.2	1.8	22	2	278	.12	5	1.3	.8	12	KKU
		13	2245	29.27	19	20.86	155	7.33	8.47	2.5	3.1	32	1	88	.11	5	.5	.6	22	UER
		14	1442	9.85	19	41.33	155	44.90	14.49	2.5	2.7	30	3	88	.09	9	.5	.5	27	KKU
		14	1547	16.73	19	20.29	155	12.35	8.11	1.8	1.5	26	0	73	.10	5	.5	.6	19	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	AUG	15	053	2.99	19	32.01	155	28.61	3.98	2.0	1.9	25	1	105	.11	2	.4	.7	21	NER	
		15	316	20.46	19	20.14	155	11.56	8.06	1.8	1.7	28	0	81	.10	5	.4	.7	22	UER	
		15	1040	8.70	19	20.65	155	12.69	7.70	1.8	1.7	29	1	66	.12	4	.4	.4	24	UER	
		15	2120	6.73	19	23.96	155	16.13	2.99	1.3	1.7	15	1	102	.05	2	.3	.5	12	SPC	
		16	1120	53.21	19	21.52	155	.32	5.28	2.1	2.4	23	1	196	.14	5	.8	1.0	22	LER	
		16	1736	13.31	19	25.99	154	51.13	9.48	2.2	2.4	26	1	273	.14	7	2.2	.5	23	LER	
		16	2023	35.63	18	49.63	155	7.88	13.86	2.4	2.6	33	0	284	.16	51	5.1	99.0	31	PPL	*
		17	615	52.70	19	21.73	155	1.23	8.44	2.3	2.4	27	1	177	.10	5	.8	.5	24	MER	
		17	8 6	33.36	19	24.64	155	16.37	16.17	1.8	2.1	30	1	63	.07	1	.5	.4	23	INT	
		17	853	21.17	19	20.41	155	6.21	6.10	2.2	2.5	30	0	110	.10	6	.5	1.2	28	UER	
		17	1724	12.04	19	24.02	155	16.08	3.25	1.9	2.1	14	0	105	.08	2	.4	.5	14	SPC	
		18	0 1	52.27	19	23.25	155	17.18	2.85	2.1	2.4	19	1	74	.09	3	.4	.7	18	SPC	
		18	432	42.00	19	13.52	155	31.16	31.35	3.4	3.7	34	0	68	.06	9	.6	1.3	33	LSW	
		18	2120	44.90	19	25.51	155	24.95	10.39	2.1	2.3	33	0	56	.15	8	.5	.7	33	UKF	
		18	2343	10.04	19	18.41	155	13.35	8.28	2.1	3.1	30	0	84	.14	3	.6	.8	30	POL	
		19	212	29.11	19	55.90	155	21.54	10.52	2.9	3.1	34	2	189	.13	20	.9	.7	29	KKU	
		19	523	25.26	19	32.71	155	37.43	10.45	2.7	2.6	32	0	47	.15	7	.5	.6	32	MOK	
		19	524	21.37	19	22.70	155	1.83	7.52	2.2	2.3	25	0	149	.14	5	.7	.6	25	MER	
		19	954	27.38	19	18.58	155	13.58	7.84	2.1	2.3	32	0	73	.10	3	.5	.7	32	POL	
		19	2018	14.78	19	21.32	155	25.70	8.88	2.0	3.0	33	0	95	.13	4	.5	.8	32	MEA	
		19	22 6	24.92	19	19.32	155	9.99	7.80	1.9	2.1	26	0	101	.09	5	.5	.7	25	UER	
		20	948	6.25	19	26.95	154	55.94	5.97	2.3	2.4	26	0	174	.13	2	.9	.7	23	LER	
		20	1132	58.97	19	21.81	155	4.27	6.02	2.1	1.9	27	0	89	.12	4	.5	1.0	25	MER	
		20	1339	54.29	19	18.38	155	13.52	10.28	2.8	2.9	36	1	76	.11	3	.6	.5	30	POL	
		20	1652	59.95	19	21.50	155	10.88	8.03	2.0	2.1	33	1	63	.12	2	.4	.6	30	UER	
		21	115	59.74	19	19.35	155	8.03	8.94	2.4	2.4	34	1	94	.11	4	.5	.5	31	UER	
		21	556	40.96	19	20.19	155	6.63	9.14	2.5	2.9	34	0	110	.11	6	.6	.5	30	UER	
		21	9 2	44.86	19	19.84	155	8.75	6.02	1.8	2.1	27	0	75	.08	5	.5	.8	19	UER	
		21	2114	24.87	19	25.47	155	24.51	10.97	3.0	3.0	37	1	33	.14	8	.4	.5	33	UKF	
		22	012	58.68	19	23.06	155	17.14	2.73	1.4	1.8	17	2	66	.07	3	.3	.5	13	SPC	
		22	931	11.70	19	22.73	155	2.50	8.32	2.5	2.9	34	1	133	.11	5	.6	.5	30	MER	
		22	1111	27.17	19	19.12	155	7.70	9.35	2.8	3.1	35	2	109	.10	3	.5	.4	30	UER	
		22	1225	50.66	19	21.19	155	7.83	8.60	2.1	2.2	29	0	77	.08	4	.5	.7	28	UER	
		22	2021	59.00	19	26.02	155	26.94	7.09	2.3	2.4	32	0	48	.13	7	.4	1.3	24	UKF	
		23	324	35.80	19	25.55	155	24.23	8.52	2.0	2.0	32	0	41	.14	8	.5	1.0	23	UKF	
		23	1022	48.45	19	20.87	155	24.77	9.23	2.1	2.6	30	0	127	.13	3	.5	.7	28	SWR	
		23	1148	53.12	19	19.82	155	8.16	8.39	3.3	3.8	34	1	87	.11	5	.5	.6	32	UER	
		23	1757	24.55	19	19.57	155	11.31	9.22	2.5	3.1	31	0	95	.12	5	.6	.5	30	UER	
		23	1934	55.96	19	24.71	155	25.78	9.51	2.2	2.2	37	1	39	.14	5	.4	.7	34	UKF	
		23	21 8	54.04	19	23.06	155	16.78	3.69	2.4	3.1	30	1	47	.10	2	.3	.6	30	SPC	
		24	150	39.90	19	19.91	155	11.71	8.28	2.0	2.1	29	1	85	.11	5	.5	.7	26	UER	
		24	5 1	42.86	19	32.33	155	57.72	5.57		1.9	21	0	214	.16	7	1.4	1.0	19	KON	
		24	9 7	33.06	19	26.64	155	26.48	1.71	2.1	2.2	26	0	42	.16	8	.5	4.1	25	UKF	
		24	939	28.07	19	19.93	155	9.96	7.44	1.8	2.1	28	0	86	.09	4	.5	.9	28	UER	
		24	1049	16.18	19	19.91	155	10.87	7.93	2.0	2.3	29	1	89	.11	4	.4	.8	28	UER	
		24	17 9	49.54	19	23.14	155	16.99	2.64	2.2	2.9	28	1	47	.11	2	.3	.5	27	SPC	
		24	1947	8.56	19	23.77	155	15.74	2.96	1.8	2.0	17	1	81	.07	3	.4	.5	16	SPC	
		24	2128	21.13	19	19.47	155	8.58	7.10	2.0	2.2	32	1	79	.10	4	.4	.8	30	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	AUG	25	056	57.22	19	22.67	155	24.91	8.78	2.0	2.3	33	1	64	.14	5	.5	.8	31	UKF	
		25	647	57.61	19	47.39	155	3.92	40.12	2.8	2.9	39	2	220	.12	8	.9	1.4	33	HIL	
		25	1459	54.84	19	24.57	155	16.64	7.30	1.7		23	2	48	.12	1	.5	.8	19	LPC	T
		25	1717	8.38	19	20.10	155	7.50	8.22	2.0	1.8	29	1	97	.11	5	.5	.8	24	UER	
		26	4 8	36.76	19	19.70	155	11.30	8.26	1.7	1.9	27	0	92	.10	5	.5	.6	26	UER	
		26	720	19.45	19	17.65	155	21.70	6.10	2.7	2.5	28	1	122	.12	5	.5	1.0	27	SWR	
		26	1324	34.01	19	23.75	155	16.90	2.43	1.6	1.8	17	1	66	.07	2	.3	.4	15	SPC	
		26	23 2	44.70	19	23.31	155	16.77	2.97	2.2	2.9	31	0	45	.11	2	.3	.5	28	SPC	
		27	227	48.91	19	21.74	155	12.78	5.87	2.4	2.7	28	0	55	.09	5	.4	.9	28	UER	
		27	316	51.33	19	25.75	155	24.49	6.48	2.1	1.9	31	1	46	.13	8	.4	1.3	23	UKF	
		27	633	4.70	19	23.04	155	16.91	3.05	1.6	2.3	19	1	67	.09	2	.3	.5	19	SPC	
		27	933	31.77	19	20.73	155	12.46	9.47	2.1	2.6	31	1	67	.10	4	.4	.4	26	UER	
		27	2046	59.87	19	22.91	155	16.98	4.89	2.9	3.3	34	1	48	.13	2	.4	.7	31	KOA	
		28	9 8	21.65	19	18.61	155	13.95	9.65	2.7	2.7	35	0	69	.10	3	.5	.5	33	POL	
		28	1525	18.49	19	19.85	155	10.55	8.14	2.1	2.6	28	0	90	.11	4	.5	.7	26	UER	
		28	2025	42.04	19	20.25	155	12.72	8.50	1.9	2.3	32	0	71	.12	4	.4	.5	28	UER	
		29	033	36.90	19	18.31	155	15.82	9.00	1.7	2.1	28	0	142	.12	4	.6	.5	25	KOA	
		29	340	17.55	19	23.15	155	17.14	2.70	1.7	2.1	24	1	56	.11	3	.3	.5	20	SPC	
		29	920	45.03	19	19.44	155	11.11	7.47	2.1	2.6	31	0	98	.12	5	.5	.7	26	UER	
		29	1011	30.14	19	22.87	155	17.03	2.91	2.2	2.6	31	1	39	.11	2	.3	.5	30	KOA	
		29	1144	8.82	19	19.05	155	11.78	9.95	3.1	3.5	34	0	104	.09	5	.5	.5	27	UER	F
		29	1229	54.47	19	20.72	155	5.98	6.16	1.9	2.0	27	0	105	.12	6	.5	1.1	26	MER	
		29	1541	6.98	19	17.54	155	16.30	7.30	1.7	2.0	28	0	134	.11	4	.6	.9	23	KOA	
		29	1613	1.59	19	18.41	155	13.42	10.69	2.5	2.7	29	1	81	.11	3	.5	.5	25	POL	
		29	2358	29.25	19	20.20	155	11.45	7.85	1.9	2.0	27	1	81	.12	4	.5	.9	25	UER	
		30	11 9	42.58	19	19.36	155	7.46	6.73	2.4	2.7	27	0	112	.12	4	.6	1.0	22	UER	
		30	1240	15.66	19	20.45	155	1.98	7.03	3.3	3.6	29	1	197	.10	2	.8	.5	28	MER	F
		30	1247	14.89	19	19.33	155	12.08	7.71	2.5	2.3	30	1	94	.10	5	.4	.7	26	UER	
		30	1441	35.10	19	19.89	155	11.23	7.66	2.2	2.7	27	0	88	.11	5	.5	.7	25	UER	
		30	1627	4.14	19	21.46	155	2.72	7.60	2.7	3.1	32	0	139	.12	3	.7	.5	29	MER	
		31	1 3	43.52	19	52.33	155	20.87	10.49	2.8	2.9	30	0	126	.08	2	1.0	.5	25	KKU	F
		31	132	55.11	19	36.02	155	52.16	14.15	1.8	2.0	17	0	175	.09	10	1.1	.5	17	KON	
		31	324	46.64	19	19.53	155	13.80	7.71	1.9	2.1	32	0	61	.15	5	.5	.7	29	UER	
		31	13 7	20.97	18	58.73	155	29.29	38.51	4.3	4.6	36	0	223	.07	19	1.3	2.1	32	DIS	F
		31	1312	28.99	18	58.85	155	29.00	38.57	2.8	2.9	28	0	222	.07	19	1.7	2.7	25	DIS	
		31	1322	54.96	19	19.42	155	12.56	9.94	2.5	3.4	32	1	85	.09	5	.5	.4	29	UER	
		31	1332	45.47	18	59.50	155	29.11	35.94	2.8	2.7	29	1	217	.07	19	1.1	1.8	26	DIS	
		31	1414	53.51	18	59.56	155	28.67	37.25	3.2	3.6	37	2	217	.08	19	1.0	1.5	32	DIS	
		31	1420	33.85	19	19.88	155	9.95	7.02	2.0	2.1	30	0	87	.11	4	.5	.8	29	UER	
		31	1421	15.10	19	19.90	155	9.67	5.78	2.1	2.1	20	0	85	.11	4	.6	1.5	17	UER	
		31	2146	29.09	19	30.09	155	12.10	5.41	1.8	2.1	25	0	57	.14	11	.5	2.4	25	GLN	
		31	2232	6.84	19	23.11	155	32.75	2.26	2.3	2.6	29	0	50	.23	9	.6	10.1	27	MOK	*
SEP		1	4 1	25.15	19	20.38	155	6.37	9.35	2.7	3.1	33	1	109	.08	6	.5	.5	30	UER	
		1	816	47.61	19	18.39	155	15.05	7.73	1.5	1.8	23	0	130	.10	4	.6	.7	17	KOA	
		1	823	25.28	19	21.16	155	17.26	34.30	1.9	2.8	32	0	49	.08	2	.7	1.3	28	DEP	
		1	1458	1.76	18	53.52	155	31.29	37.11	2.1	2.3	23	2	269	.07	18	1.5	2.0	19	DIS	
		1	1748	17.79	19	20.30	155	6.61	7.74	2.0	2.1	27	0	108	.09	6	.5	1.0	24	UER	
		1	1857	10.24	19	21.75	155	1.42	5.63	2.0	2.1	14	1	173	.13	4	1.0	2.3	11	MER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	SEP	1	2245	4.90	19	20.52	155	12.48	8.03	1.5	1.8	25	0	69	.12	4	.5	.8	21	UER	
		2	036	18.00	19	28.57	155	52.38	8.41		1.5	17	3	126	.21	5	1.0	1.0	11	KON	
		2	040	15.20	19	12.34	155	27.19	6.64	2.0	2.3	26	0	123	.14	5	.6	1.3	24	LSW	
		2	056	13.52	19	21.07	155	4.60	7.49	1.8	2.1	27	0	95	.11	4	.6	1.0	18	MER	
		2	247	30.78	19	20.30	155	12.57	7.98	1.5	1.8	23	0	71	.11	4	.5	.7	19	UER	
		2	619	35.80	19	21.74	155	18.11	3.67	1.9	2.1	23	1	49	.09	3	.3	.8	19	KOA	
		2	844	11.50	19	23.19	155	16.84	3.24	2.1	2.6	19	1	61	.07	2	.3	.5	17	SPC	
		2	17	5 4.00	19	32.46	155	56.15	10.79	2.9	3.2	22	0	225	.13	6	1.3	.5	17	KON	
		2	19	4 57.45	19	1.50	155	29.50	30.41	1.9	1.8	23	2	216	.12	15	1.2	1.4	18	LSW	
		2	1932	.45	19	20.33	155	11.56	6.76	1.0	1.3	24	0	78	.12	4	.5	.8	20	UER	
		2	2224	20.64	19	32.11	155	54.09	8.82		1.9	21	4	182	.19	6	.7	.7	15	KON	
		3	110	49.66	18	58.48	155	28.82	38.77	2.7	2.7	31	0	225	.05	19	1.5	2.4	29	DIS	
		3	212	53.50	19	30.77	155	53.66	8.29	2.2	1.6	20	2	192	.19	4	.9	.6	14	KON	
		3	426	10.51	19	18.84	155	12.21	9.60	2.7	3.4	38	1	104	.10	4	.4	.4	33	POL	F
		3	1650	25.05	19	25.40	155	24.20	7.81	2.1	2.5	33	1	40	.13	8	.4	1.1	29	UKF	
		3	1711	8.54	19	22.98	155	16.91	2.26	1.2	1.3	13	1	69	.08	2	.4	.6	10	KOA	
		3	21	0 1.91	19	20.54	155	13.47	9.10	2.2	2.7	32	2	64	.11	4	.4	.6	24	UER	
		4	345	53.36	19	33.99	155	41.78	8.91	2.1	2.5	27	2	92	.11	10	.5	.9	21	MOK	
		4	411	56.81	19	33.25	155	45.62	3.85	1.7	2.0	20	2	86	.12	5	.6	1.7	18	KON	
		4	920	55.58	19	11.50	155	20.05	45.76	2.5	2.6	35	1	175	.07	12	.9	1.6	32	HLP	L
		4	2014	44.10	19	19.31	155	8.49	8.57	3.1	3.3	36	1	82	.09	4	.5	.4	34	UER	
		4	2241	17.23	19	18.83	155	15.12	8.91	2.2	2.1	30	0	118	.12	4	.5	.4	25	KOA	
		5	047	17.38	19	20.55	155	6.44	7.23	2.4	2.3	27	1	105	.11	6	.5	.9	26	UER	
		5	428	18.61	19	19.06	155	11.86	7.31	2.1	2.1	31	0	103	.12	5	.5	.6	26	UER	
		5	618	18.19	19	19.84	155	8.24	9.56	3.2	3.6	37	1	84	.10	5	.5	.4	35	UER	
		5	1026	46.87	19	20.13	155	13.60	10.09	3.7	4.2	34	0	60	.09	5	.4	.4	30	UER	F
		5	1524	23.15	19	22.79	155	16.73	2.89	1.5	1.8	10	1	78	.12	2	.5	.8	7	KOA	
		5	1738	20.55	19	23.07	155	17.01	3.63	2.7	3.3	33	1	38	.10	2	.3	.6	29	SPC	F
		5	1939	43.64	19	20.74	155	4.13	6.20	2.2	2.4	31	0	101	.12	3	.6	.9	25	MER	
		5	2322	35.78	19	21.17	155	6.74	7.10	2.1	2.2	29	0	88	.10	6	.5	1.0	24	UER	
		6	429	7.14	19	19.58	155	11.16	8.23	1.5	1.7	27	0	95	.08	5	.4	.6	23	UER	
		6	448	25.19	19	19.63	155	11.05	8.45	1.9	2.3	28	0	95	.10	5	.5	.6	24	UER	
		6	450	9.83	19	20.33	155	3.65	5.22	1.6	1.8	27	3	113	.14	1	.6	1.1	23	MER	
		6	828	53.07	19	20.18	155	8.13	6.58	1.9	2.0	29	0	83	.13	5	.5	1.1	28	UER	
		6	13	6 35.24	19	23.96	155	15.96	3.18	1.3	1.2	11	1	107	.06	3	.4	.6	10	SPC	
		6	1414	30.06	19	24.04	155	24.21	10.48	2.1	2.3	32	0	41	.13	7	.5	.6	26	UKF	
		6	2349	40.72	19	19.61	155	11.74	8.58	2.3	2.3	28	0	91	.12	6	.5	.8	27	UER	
		7	214	28.38	19	21.36	155	15.36	9.77	2.0	2.2	28	0	66	.11	2	.4	.6	26	KOA	
		7	423	35.08	19	51.99	155	23.68	11.11	2.9	2.6	28	0	199	.09	6	1.2	.4	26	KKU	
		7	442	55.24	19	14.42	156	11.51	16.76	3.2	3.3	23	0	266	.11	40	3.3	84.0	21	DIS	*
		7	758	33.90	19	19.87	155	12.16	5.94	1.9	1.8	24	0	82	.15	6	.6	1.2	22	UER	
		7	1137	46.03	19	21.76	155	4.05	6.79	3.2	3.7	33	0	94	.13	4	.5	.7	30	MER	
		7	1656	53.39	19	.21	156	18.22	26.73	2.9	3.3	22	0	291	.09	54	6.3	4.1	20	DIS	
		7	1838	1.17	19	18.02	155	13.14	9.45	2.1	2.2	34	2	142	.12	8	.5	.5	29	POL	
		7	2033	45.73	19	21.67	155	2.76	7.12	2.2	2.5	29	0	136	.10	3	.6	.6	25	MER	
		8	821	44.70	19	20.88	155	9.71	7.73	2.2	1.7	27	0	69	.12	2	.5	.9	27	UER	
		8	1347	50.54	19	23.57	155	15.35	2.33	1.2	1.3	11	1	90	.24	2	.6	.9	9	SPC	
		8	1548	53.52	19	24.56	155	16.05	14.99	1.9	1.7	27	1	71	.09	2	.6	.3	22	INT	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	SEP	8	18 5	45.28	19	23.70	155	16.01	3.39	1.8	2.1	20	1	73	.10	2	.4	.6	18	SPC	
		9	859	46.45	19	21.58	155	6.38	6.95	2.1	2.1	29	1	83	.13	6	.5	1.2	26	UER	
		9	2224	40.23	19	21.13	155	3.81	6.06	2.3	2.2	26	0	94	.10	3	.6	.9	25	MER	
		10	039	6.25	19	21.72	155	29.94	8.36	2.0	1.9	11	0	152	.10	4	.9	1.9	9	HEA	
		10	2 0	48.15	19	21.05	155	3.25	6.16	1.9	1.9	28	0	116	.12	2	.6	.7	26	MER	
		10	334	56.58	19	23.46	154	58.11	5.45	2.0	1.9	28	1	194	.17	3	1.1	.9	25	LER	
		10	1132	49.18	19	14.32	155	33.48	1.11	2.5	2.3	31	1	120	.17	18	.6	1.0	23	LSW	
		10	1143	40.78	19	23.16	155	16.68	3.04	2.3	2.6	21	1	58	.10	2	.3	.5	20	SPC	
		10	1340	34.50	19	21.58	155	26.40	8.99	1.7	2.0	27	0	121	.13	3	.5	.8	24	MEA	
		10	1833	55.86	19	19.10	155	11.01	9.87	2.4	2.8	34	1	108	.12	6	.5	.4	29	UER	
		10	2114	54.31	19	20.84	155	3.10	6.38	1.9	2.3	26	0	122	.13	2	.7	.8	24	MER	
		11	0 1	47.87	19	23.06	155	16.93	3.34	1.7	2.2	18	1	65	.11	2	.4	.7	16	SPC	
		11	121	57.18	18	58.08	155	20.62	53.32	3.6	4.1	34	0	234	.07	25	1.6	2.6	32	PPL	
		11	3 0	1.37	19	18.79	155	11.44	5.93	1.8	2.1	24	1	115	.11	5	.6	1.5	18	POL	
		11	713	20.19	19	8.29	155	34.14	42.67	2.8		26	1	217	.20	11	1.9	2.3	20	HEA	T
		11	731	55.37	19	23.60	155	15.19	3.31	2.6	2.7	18	1	78	.12	3	.4	.6	10	SPC	F
		11	824	23.92	19	21.04	155	19.06	4.22	1.6	1.8	16	0	87	.09	3	.5	1.4	15	SWR	
		11	1150	38.44	19	20.01	155	12.65	7.81	2.1	2.5	32	2	75	.13	5	.4	.7	26	UER	
		11	12 2	.10	19	19.89	155	12.26	7.58	2.0	2.2	28	0	81	.12	5	.5	.7	23	UER	
		11	1216	59.22	19	20.02	155	12.28	7.92	2.0	2.0	28	0	78	.11	5	.5	.6	27	UER	
		11	1219	51.00	19	20.71	155	12.02	7.38	1.9	2.0	28	0	70	.12	4	.5	.8	23	UER	
		11	1951	39.25	19	20.54	155	3.85	6.39	2.0	1.7	26	0	124	.12	2	.8	.7	21	MER	
		11	2016	6.11	19	20.00	155	6.52	9.60	4.1	4.3	37	1	117	.10	6	.6	.4	33	UER	F
		11	2355	28.08	19	20.77	155	6.47	6.77	2.0	1.8	28	1	99	.10	6	.5	.9	24	UER	
		12	555	5.75	19	20.20	155	8.16	7.75	1.6	1.7	23	0	145	.09	5	.6	.7	23	UER	
		12	712	13.67	19	24.53	155	17.18	1.25	1.1	1.7	12	1	57	.09	1	.4	.3	10	SPC	
		12	714	28.48	19	23.40	154	59.00	8.21	2.1	2.3	27	2	184	.16	3	.8	.8	25	LER	
		12	729	1.36	19	29.90	155	42.36	2.71	2.4	1.6	18	3	123	.13	6	.7	1.2	15	MOK	
		13	330	10.94	19	19.89	155	8.24	8.65	2.4	2.8	31	0	84	.11	5	.6	.6	27	UER	
		13	531	49.53	19	24.56	155	24.79	8.42	1.7	1.9	31	2	49	.12	6	.4	.7	25	UKF	
		13	12 1	55.94	19	20.53	155	3.92	7.95	2.1	2.3	22	0	108	.11	2	.8	.6	18	MER	
		13	1210	2.11	19	23.50	155	2.27	8.07	2.2	2.5	28	0	127	.11	4	.6	.5	27	MER	
		13	1558	32.54	19	21.61	155	2.53	7.37	2.9	3.2	30	1	144	.09	3	.6	.5	25	MER	
		13	1627	9.44	19	24.70	155	25.09	7.74	1.8	2.1	23	1	69	.10	6	.5	1.3	20	UKF	
		13	1634	44.81	19	20.71	155	13.27	5.53	1.6	1.8	20	0	60	.13	4	.6	1.2	18	UER	
		13	1636	16.86	19	20.33	155	12.94	8.20	2.1	2.5	27	0	67	.11	4	.5	.7	26	UER	
		13	1818	4.35	19	25.23	155	17.04	1.40	1.8	2.4	15	1	120	.09	1	.4	.2	15	SPC	
		13	2142	21.17	19	23.12	155	16.83	2.67	1.4	1.9	13	0	62	.08	2	.4	.5	12	SPC	
		13	2231	36.85	19	24.62	155	29.79	8.67	2.9	2.9	34	0	54	.12	5	.4	.7	32	UKF	
		13	2233	30.46	19	25.05	155	29.86	6.93	2.1	1.9	25	0	74	.15	6	.6	1.9	22	UKF	
		13	2238	7.14	19	24.86	155	29.72	10.00	2.9	3.0	34	2	54	.10	6	.4	.6	28	UKF	
		13	2328	59.31	19	20.64	155	12.19	7.45	1.9	1.9	33	0	70	.12	4	.5	.6	28	UER	
		14	2 8	33.14	19	25.25	155	22.92	9.87	2.3	2.4	32	1	38	.12	6	.4	.6	31	UKF	
		14	253	21.41	19	22.82	155	2.15	6.98	2.1	2.4	29	1	141	.12	5	.6	.7	27	MER	
		14	322	45.40	19	21.61	155	1.57	5.19	2.3	2.1	23	0	172	.13	4	.6	1.0	23	MER	
		14	833	47.98	19	22.02	155	1.96	6.24	2.0	1.7	24	0	155	.15	4	.7	1.1	22	MER	
		14	1147	25.36	19	23.04	155	16.87	2.87	1.3	1.4	12	1	65	.05	2	.4	.5	11	SPC	
		14	1156	48.70	19	22.97	155	16.91	3.01	1.7	2.0	15	0	70	.06	2	.3	.5	15	KOA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	SEP	15	0 6	22.57	19	20.73	155	6.44	8.73	2.4	2.7	31	0	101	.10	6	.5	.6	30	UER	
		15	114	41.06	19	20.77	155	6.60	8.38	2.7	3.0	29	0	98	.09	6	.5	.6	29	UER	
		15	332	1.73	19	19.89	155	11.32	7.00	2.0	1.9	30	1	88	.13	5	.5	.7	25	UER	
		15	514	.74	19	25.42	155	16.56	1.87	2.1	2.7	22	1	40	.10	1	.3	.3	20	SPC	F
		15	515	53.10	19	25.38	155	16.61	2.19	2.4	2.7	21	0	75	.11	1	.4	.3	20	SPC	F
		15	715	58.31	20	15.24	156	.24	16.49	3.0	3.0	31	1	307	.20	27	4.9	40.9	26	DIS	*
		15	723	55.65	19	25.33	155	16.50	2.06	2.4	2.6	32	1	37	.10	1	.3	.2	31	SPC	F
		15	1137	31.14	19	24.14	155	16.12	2.57	1.8	2.0	16	0	109	.10	2	.3	.5	15	SPC	
		15	1238	38.01	19	20.01	155	12.31	6.61	1.8	2.1	30	0	79	.13	5	.6	.9	25	UER	
		15	2330	37.73	19	16.94	155	22.58	7.79	2.3	2.6	36	1	125	.19	6	.6	1.0	31	SWR	
		16	2 1	29.59	19	20.87	155	6.08	6.87	1.9	1.9	29	2	100	.12	6	.5	1.0	23	UER	
		16	630	.61	19	23.97	155	15.68	3.67	2.8	3.2	35	1	60	.11	3	.4	.5	33	SPC	F
		16	1529	58.89	19	24.91	155	25.74	8.02	2.0	2.1	34	1	39	.14	6	.4	1.1	30	UKF	
		16	1747	1.85	19	20.12	155	11.68	9.16	2.8	3.1	34	0	81	.08	5	.4	.4	29	UER	
		16	21 2	12.47	19	19.50	155	9.72	8.46	2.3	2.8	32	0	94	.12	5	.5	.6	30	UER	
		16	2141	5.36	19	22.17	155	3.42	6.72	2.6	3.1	30	0	112	.10	4	.4	.6	29	MER	
		17	055	35.29	19	20.22	155	10.34	6.40	1.5	1.9	28	0	82	.11	4	.5	.8	21	UER	
		17	3 7	43.55	19	23.58	155	16.84	2.72	2.1	2.3	26	1	45	.10	2	.3	.4	21	SPC	
		17	351	46.60	19	21.77	155	.24	8.96	2.6	3.1	33	0	192	.10	6	.8	.4	30	LER	
		17	9 6	21.91	19	23.45	155	16.97	2.74	1.4	1.8	17	1	61	.07	3	.3	.5	14	SPC	
		17	921	40.58	19	21.42	155	7.06	4.29	1.8	2.0	30	0	81	.14	5	.6	1.7	25	UER	
		17	1656	52.31	19	19.69	155	10.97	5.26	1.8	1.8	30	1	93	.14	5	.5	1.2	23	UER	
		18	5 0	56.41	19	21.25	155	2.71	5.50	1.9	1.8	31	1	142	.14	3	.6	.9	24	MER	
		18	832	9.31	19	20.35	155	13.24	8.24	2.0	2.1	30	1	64	.10	4	.4	.6	27	UER	
		18	1049	40.74	19	20.48	155	13.21	6.00	1.6	1.8	26	1	62	.13	4	.5	.9	20	UER	
		18	1121	6.23	19	23.08	155	16.90	2.83	1.3	.9	9	1	86	.10	2	.5	.7	8	SPC	
		18	1730	1.13	19	20.87	155	2.84	5.78	2.0	1.8	27	1	139	.12	2	.6	.8	25	MER	
		18	1733	35.55	19	24.72	155	24.42	10.82	2.3	2.4	34	1	33	.13	7	.4	.6	32	UKF	
		18	22 4	5.36	19	20.79	155	6.16	8.25	2.7	2.9	32	1	101	.09	6	.5	.6	31	UER	
		18	23 3	13.56	19	17.04	155	23.82	4.98	1.8	2.0	26	0	118	.19	6	.6	2.3	24	SWR	
		18	2344	29.20	19	23.38	155	16.77	3.58	3.2	3.6	36	0	38	.10	2	.3	.5	33	SPC	F
		18	2346	53.33	19	23.45	155	16.93	2.95	1.1	1.0	7	0	79	.04	3	.4	.7	7	SPC	
		19	024	16.73	19	21.04	155	5.85	8.16	2.3	2.3	32	1	97	.10	6	.5	.7	30	MER	
		19	1 3	35.18	19	22.77	155	16.99	2.90	1.8	2.0	24	1	52	.06	2	.3	.5	22	KOA	
		19	3 4	59.25	19	19.58	155	26.71	8.26	2.0	1.8	28	0	111	.13	6	.6	1.0	28	HEA	
		19	319	34.02	19	23.06	155	16.97	2.15	1.1	.7	8	0	96	.07	2	.4	.8	7	SPC	
		19	843	44.06	19	2.59	155	41.46	43.14	3.1	3.4	36	2	165	.08	7	1.1	2.0	34	HEA	
		19	1048	10.75	19	18.54	155	10.92	8.33	2.2	2.3	34	2	123	.13	5	.5	.6	30	POL	
		19	1242	23.97	19	21.79	155	12.72	2.49	1.8	2.0	24	0	55	.16	2	.4	.7	21	UER	
		19	1541	8.71	19	26.22	155	23.95	9.22	3.3	3.5	40	2	36	.12	7	.4	.7	37	UKF	F
		19	18 1	25.11	19	25.82	155	24.90	5.90	1.5	1.5	31	2	57	.19	8	.4	2.0	29	UKF	
		20	056	10.25	19	19.87	155	12.11	8.30	2.1	2.5	31	1	83	.10	5	.4	.6	28	UER	
		20	1 1	24.88	19	8.89	155	29.97	39.72	2.2	2.8	36	4	152	.08	4	.8	.9	34	LSW	L
		20	1 6	2.97	19	8.75	155	31.03	42.14	2.2		37	5	146	.12	6	.8	.8	34	LSW	LT
		20	410	24.47	19	21.66	155	28.10	8.20	1.7	2.0	30	1	66	.11	2	.4	.7	23	HEA	
		20	1028	56.03	19	18.91	155	11.56	8.66	2.9	3.4	31	0	110	.10	5	.5	.5	28	POL	F
		20	1136	40.11	19	21.68	155	1.17	5.93	2.0	2.1	24	0	179	.20	5	1.0	1.2	21	MER	
		20	1217	56.73	19	23.12	155	3.26	11.09	2.1	2.3	26	1	110	.08	3	.6	.5	25	MER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	SEP	20	1320	26.99	19	30.67	155	52.63	9.63	3.1	3.3	30	0	129	.17	5	.7	.5	26	KON	
		20	1512	27.63	19	23.57	155	17.00	14.45	2.2	2.3	29	1	45	.08	2	.6	.3	28	INT	
		21	0 5	46.43	19	21.70	155	14.84	8.03	1.8	1.8	26	2	60	.14	2	.6	.8	24	UER	
		21	215	12.65	19	53.24	155	7.58	42.98	3.1	3.2	37	2	240	.10	19	1.2	1.6	31	KKU	
		21	1043	36.83	19	26.68	155	45.69	5.71	2.7	2.6	27	3	76	.14	7	.5	1.5	25	KON	
		21	1428	14.37	19	17.45	155	16.96	8.81	2.3	2.6	35	2	133	.14	3	.6	.6	30	KOA	
		21	1615	3.80	19	18.12	155	22.58	6.14	1.7	2.0	27	1	114	.16	4	.5	1.1	22	SWR	
		21	1810	19.91	19	38.74	156	6.03	21.78	1.3	1.4	27	1	242	.13	28	1.6	2.9	25	KON	
		21	2027	55.59	19	19.37	155	11.32	9.90	2.7	3.1	35	0	99	.09	6	.5	.4	33	UER	
		22	127	.14	19	19.20	155	10.74	9.61	3.3	3.7	38	1	105	.12	6	.5	.4	32	UER	F
		22	153	51.08	19	19.92	155	11.18	7.87	2.3	2.7	33	1	87	.11	5	.4	.6	28	UER	
		22	12 0	22.37	19	19.50	155	10.05	6.18	1.9	1.9	31	0	96	.11	5	.5	.9	31	UER	
		22	1456	35.00	19	19.81	155	11.11	7.17	2.0	2.1	25	1	90	.12	5	.5	.8	23	UER	
		22	19 4	48.23	19	19.83	155	10.85	7.67	1.8	1.8	28	1	90	.11	4	.5	.8	27	UER	
		22	1955	59.37	19	23.16	155	3.19	7.52	2.2	2.3	30	1	110	.15	3	.6	.7	29	MER	
		22	20 5	44.04	19	25.95	155	27.87	11.22	2.9	3.0	36	0	34	.13	6	.4	.6	33	UKF	
		22	2340	35.47	19	25.89	155	24.05	7.89	2.2	2.5	30	1	44	.11	7	.4	1.1	29	UKF	
		23	0 7	18.42	19	20.19	155	8.55	8.85	1.9	2.1	28	0	76	.09	4	.5	.6	26	UER	
		23	2 3	57.31	19	23.77	155	15.43	2.97	1.4	1.6	15	1	98	.07	3	.4	.5	14	SPC	
		23	7 5	30.93	19	21.55	155	24.71	8.90	2.0	1.9	32	1	107	.13	4	.5	.6	29	SWR	
		23	714	17.99	19	25.90	155	24.02	7.46	2.1	2.4	28	0	44	.13	7	.5	1.4	26	UKF	
		23	734	3.56	20	23.10	155	44.09	17.52	2.8	2.6	37	6	186	.12	68	1.2	59.0	32	DIS	*
		23	921	52.83	19	24.33	155	16.23	3.25	1.1	1.4	8	1	127	.05	2	.7	.9	7	SPC	
		23	1257	46.36	19	23.72	155	15.85	2.71	1.8	2.0	15	1	77	.10	2	.4	.5	13	SPC	
		23	14 4	35.18	19	21.40	155	7.11	7.54	2.1	2.4	28	1	82	.10	5	.5	.9	24	UER	
		23	1636	22.35	19	20.46	155	13.05	6.74	1.8	1.6	27	1	94	.12	4	.5	.9	24	UER	
		23	2159	5.24	19	19.14	155	11.61	7.45	2.1	2.4	34	2	103	.12	5	.5	.7	32	UER	
		24	114	41.62	19	20.38	155	13.29	7.59	1.7	1.6	30	1	63	.12	4	.5	.7	27	UER	
		24	212	11.39	19	27.15	155	28.09	10.04	2.1	2.2	37	2	38	.12	9	.4	.7	32	UKF	
		24	3 3	29.67	19	32.83	155	41.71	3.94	1.5	1.7	23	2	87	.14	8	.6	3.0	23	MOK	
		24	555	48.94	19	22.90	155	17.02	2.70	1.2	1.4	10	1	131	.08	2	.4	.7	9	KOA	
		24	911	57.16	19	20.19	155	11.29	7.27	1.9	2.0	32	1	82	.13	4	.5	.7	28	UER	
		24	940	42.38	19	23.42	155	23.61	10.50	1.8	1.9	27	1	63	.08	6	.4	.6	25	UKF	
		24	1042	15.62	19	59.09	155	42.32	31.00	2.6	2.4	37	2	132	.08	18	.9	2.3	33	KOH	
		24	1055	55.73	19	23.96	155	15.98	2.70	1.7	2.0	20	1	81	.11	3	.4	.5	18	SPC	
		24	1158	35.53	19	23.05	155	16.99	2.53	1.2	1.3	8	0	74	.06	2	.4	.7	6	SPC	
		24	12 0	38.98	19	23.53	155	15.56	2.28	1.3	1.4	12	0	89	.12	2	.4	.6	11	SPC	
		24	1214	24.81	19	21.12	155	17.78	6.24	1.8	1.6	14	1	89	.12	2	.7	1.6	13	KOA	
		24	1249	9.91	19	22.96	155	16.98	2.81	2.4	3.0	28	0	48	.09	2	.3	.5	27	KOA	
		24	1254	38.87	19	22.81	155	16.96	2.42	1.3	1.5	9	1	94	.07	2	.4	.7	7	KOA	
		24	1530	53.02	19	23.36	155	25.04	10.66	2.4	3.0	35	0	58	.11	5	.4	.4	33	UKF	
		24	1726	47.72	19	20.52	155	8.84	7.13	1.9	1.8	29	0	69	.11	3	.5	.8	26	UER	
		24	1925	35.64	19	23.16	155	2.26	8.43	2.1	1.9	28	0	133	.14	4	.7	.5	28	MER	
		24	2226	58.93	19	20.70	155	13.09	9.21	2.0	2.1	31	0	62	.09	4	.4	.5	30	UER	
		24	23 2	6.46	19	22.92	155	16.84	3.11	1.4	1.5	14	1	71	.08	2	.4	.6	13	KOA	
		25	1 3	18.28	19	47.47	155	6.78	41.28	1.3	1.6	37	5	199	.11	8	.9	1.3	36	HIL	
		25	114	54.73	19	21.26	155	7.02	8.66	2.5	2.7	37	2	84	.12	5	.4	.6	31	UER	
		25	128	21.50	19	20.12	155	13.19	7.11	1.8	1.6	29	1	66	.12	5	.5	.8	28	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	SEP	25	149	54.75	19	22.79	155	17.05	3.35	1.7	1.2	13	1	78	.12	2	.4	.8	12	KOA	
		25	336	1.20	19	28.19	154	52.25	6.70	1.2	1.3	22	1	273	.23	2	3.5	1.1	21	LER	
		25	7 5	31.08	19	22.89	155	14.95	3.04	1.5	1.5	13	0	67	.10	2	.4	.6	12	UER	
		25	834	57.38	19	27.41	154	51.50	8.23	2.5	2.5	26	0	269	.16	4	2.8	.8	24	LER	
		25	1131	42.04	19	23.16	155	15.18	2.45	1.6	1.6	12	1	72	.14	2	.5	.6	11	SPC	
		25	1330	13.54	19	19.51	155	7.89	8.86	3.1	3.3	36	1	98	.09	4	.5	.4	33	UER	
		25	1539	23.10	19	24.16	154	57.66	5.27	2.1	1.9	24	1	190	.15	3	.9	1.0	20	LER	
		25	20 2	33.99	18	58.31	155	20.90	17.32	3.2	3.5	37	1	232	.23	33	2.1	31.8	35	PPL	*
		25	2020	35.19	19	22.93	155	2.82	7.97	1.9	1.6	30	1	123	.12	4	.6	.6	27	MER	
		25	2021	.15	18	56.93	155	20.80	42.35	2.5	2.3	24	1	247	.06	26	1.6	2.7	21	PPL	
		25	2028	21.14	19	21.60	155	7.86	8.16	1.9	1.8	30	1	73	.12	4	.4	.8	28	UER	
		25	2335	31.51	19	20.11	155	10.97	9.74	2.8	3.2	37	1	84	.10	4	.4	.4	34	UER	
		26	016	16.29	19	24.05	155	17.39	1.64	1.0	1.3	10	1	56	.06	2	.3	.5	9	SPC	
		26	514	39.39	19	24.79	155	29.38	8.14	2.1	1.9	31	0	51	.10	5	.4	1.1	27	UKF	
		26	650	29.76	19	20.17	155	11.32	6.90	2.0	1.8	30	1	82	.11	4	.5	.7	29	UER	
		26	951	3.16	19	21.24	155	2.06	5.48	2.0	2.0	25	1	166	.14	3	.6	.8	23	MER	
		26	1443	20.99	19	20.93	155	7.57	7.55	2.4	2.9	30	1	123	.09	5	.4	.8	24	UER	
		26	1912	7.79	19	26.87	155	22.75	9.18	2.9	3.4	36	1	41	.11	6	.4	.7	33	UKF	
		26	1935	44.22	19	26.48	155	23.08	7.22	1.9	2.2	33	2	47	.15	6	.4	1.1	27	UKF	
		27	5 9	16.10	19	19.98	155	8.97	6.74	1.7	2.1	29	0	76	.10	4	.5	.8	23	UER	
		27	1443	38.17	19	23.06	155	16.67	3.43	1.4	1.6	10	1	73	.11	2	.5	.9	9	SPC	
		27	1458	57.45	19	14.95	155	1.59	44.40	2.8	2.9	36	2	219	.08	10	1.0	1.3	30	DIS	
		27	16 7	46.38	19	19.07	155	16.16	9.50	2.3	1.8	27	0	117	.10	3	.4	.6	25	KOA	
		27	2143	51.87	19	23.57	155	16.81	3.13	1.6	1.8	15	1	71	.09	3	.4	.6	14	SPC	
		27	2212	54.73	19	22.15	155	30.21	7.76	2.0	1.8	27	0	92	.11	5	.5	1.3	27	MOK	
		28	2 6	21.12	19	23.34	155	16.99	2.18	1.1	1.5	6	0	92	.04	3	.4	.8	6	SPC	
		28	4 3	12.19	19	21.08	155	12.96	7.84	1.9	1.9	30	1	59	.14	3	.5	.8	26	UER	
		28	519	52.77	19	22.87	155	17.02	3.00	1.4	1.6	12	0	74	.10	2	.4	.7	11	KOA	
		28	752	11.73	19	47.81	155	35.59	12.70	2.3	2.0	17	0	123	.16	14	.8	.7	17	KKU	
		28	1112	59.27	19	19.58	155	22.00	3.30	2.1	2.4	23	1	93	.10	3	.4	.8	21	SWR	
		28	1137	30.06	19	22.80	155	16.75	3.90	1.8	1.8	14	1	77	.12	2	.5	.8	13	KOA	
		28	1538	20.19	19	22.99	155	17.03	3.31	2.9	3.4	33	1	48	.10	2	.3	.5	32	KOA	F
		28	1544	33.90	19	23.13	155	17.09	2.66	1.4	1.4	16	2	64	.06	3	.3	.5	14	SPC	
		28	2134	50.04	19	22.78	155	24.28	8.79	2.2	2.4	31	1	78	.11	5	.5	.7	27	UKF	
		28	2215	11.75	19	21.46	155	25.86	8.80	2.2	1.9	33	3	123	.11	4	.4	.8	29	HEA	
		29	125	51.20	19	59.59	155	27.96	16.66	2.8	2.9	37	3	190	.17	36	1.0	34.5	32	KKU	*
		29	927	41.27	19	23.20	155	16.76	3.51	1.0	1.4	10	1	64	.08	2	.4	.8	8	SPC	
		29	1316	54.29	19	23.08	155	13.79	5.84	1.0	1.3	17	0	47	.57	2	1.7	3.2	10	GLN	
		29	1627	58.34	19	22.31	155	5.72	7.48	2.0	2.0	29	1	72	.12	5	.5	1.1	22	MER	
		29	19 6	6.52	19	17.70	155	23.77	8.20	1.3	1.8	21	0	165	.12	5	.8	1.1	19	SWR	
		29	2159	44.03	19	20.62	155	9.51	8.95	2.0	2.3	31	1	72	.10	3	.4	.6	29	UER	
		30	125	39.72	19	20.21	155	11.14	6.82	1.7	1.5	30	1	82	.11	4	.5	.8	22	UER	
		30	214	47.92	19	25.13	155	17.07	1.60	2.1	2.6	15	0	118	.05	0	.4	.3	15	SPC	
		30	343	36.83	19	19.01	155	22.76	4.80	1.3	1.8	20	0	150	.11	2	.7	1.3	19	SWR	
		30	420	17.09	19	23.30	155	17.10	2.94	2.1	2.5	24	1	58	.08	0	.3	.4	17	SPC	
		30	1118	21.91	19	27.31	155	51.76	7.25	1.7	1.9	22	4	120	.24	7	.7	1.2	18	KON	
		30	1256	24.36	18	56.80	155	8.32	17.06	2.4	2.0	32	1	272	.37	38	5.0	83.2	31	PPL	*
		30	1334	44.96	19	19.40	155	11.41	7.10	2.1	2.4	29	1	98	.09	6	.5	.7	25	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	SEP	30	1356	13.29	19	23.03	155	26.70	9.44	3.6	3.9	38	1	54	.13	2	.4	.7	38	UKF	F
		30	1442	20.64	19	54.33	155	14.73	11.29	2.2	2.4	23	1	233	.09	10	1.4	.7	21	KKU	
		30	1630	44.55	19	20.63	155	12.77	7.38	1.8	1.8	27	0	66	.12	4	.5	.8	22	UER	
		30	1756	.35	19	20.44	155	11.65	7.07	1.7	1.6	24	0	76	.09	4	.5	.7	22	UER	
		30	18 0	2.53	19	20.56	155	11.55	7.31	1.4	1.5	26	0	75	.10	4	.5	.7	21	UER	
		30	22 5	11.51	19	25.30	155	29.38	8.94	1.4	1.6	23	0	58	.10	6	.4	1.1	17	UKF	
	OCT	1	812	5.93	19	23.20	155	16.91	2.49	1.8	2.1	24	2	60	.11	0	.3	.3	20	SPC	
		1	1531	21.70	19	28.52	155	29.26	12.04	2.6	2.7	38	2	35	.14	7	.4	.5	33	UKF	
		1	1910	1.25	19	18.94	155	12.60	5.85	1.8	2.0	32	1	95	.13	4	.5	.9	26	POL	
		2	224	52.81	19	27.14	155	21.95	8.55	2.2	2.4	35	3	42	.14	5	.4	.8	30	UKF	
		2	6 1	15.80	19	25.52	155	15.97	15.64	2.3	2.8	40	5	37	.10	2	.4	.3	36	INT	
		2	1021	41.52	19	19.99	155	7.96	9.43	2.4	2.6	32	1	91	.09	5	.5	.5	28	UER	
		2	14 6	25.22	19	58.39	155	32.20	42.56	2.8	2.7	41	8	169	.10	22	.7	1.2	37	KOH	
		2	1457	54.00	19	22.41	155	29.78	7.51	2.3	2.2	30	1	91	.08	12	.4	1.1	28	UKF	
		2	20 4	49.74	19	18.36	155	13.44	8.85	1.9	2.3	33	0	81	.12	2	.6	.5	27	POL	
		3	431	56.20	19	20.07	155	12.79	7.95	2.1	2.1	33	0	72	.15	5	.5	.6	27	UER	
		3	638	21.88	19	23.82	155	16.11	2.78	1.4	1.8	16	1	98	.11	2	.4	.4	10	SPC	
		3	715	43.10	19	19.11	155	11.98	5.62	1.9	2.0	27	0	100	.13	5	.6	1.0	24	UER	
		3	1158	29.86	19	53.46	155	15.10	10.70	2.2	2.2	26	2	222	.08	10	1.0	.5	16	KKU	
		3	2326	48.38	19	29.07	155	51.22	5.13		1.9	29	2	135	.18	7	.8	1.2	27	KON	
		4	221	5.05	19	20.79	155	12.36	8.45	1.8	1.9	26	0	74	.11	4	.5	.6	22	UER	
		4	342	46.89	19	21.77	155	12.64	2.83	1.7	1.9	23	0	55	.08	2	.4	.5	22	UER	
		4	9 3	39.32	19	17.38	155	21.73	8.46	2.5	3.0	34	1	125	.13	6	.5	.7	30	SWR	
		4	1447	1.22	19	19.95	155	7.98	7.05	1.9	2.0	26	0	89	.09	5	.5	1.0	23	UER	
		5	232	24.42	19	20.90	155	12.98	7.41	1.9	2.0	25	1	61	.13	3	.6	.7	23	UER	
		5	441	37.92	19	20.84	155	12.66	7.98	1.7	1.6	27	0	64	.11	3	.5	.6	25	UER	
		5	6 2	22.51	19	19.67	155	12.14	7.80	2.0	2.1	30	1	86	.12	5	.4	.6	25	UER	
		5	10 1	11.81	19	27.49	155	50.95	7.35	2.6	2.4	27	2	108	.16	8	.7	.8	25	KON	
		6	155	34.52	19	19.87	155	8.30	8.03	2.0	2.1	33	1	83	.13	5	.5	.8	29	UER	
		6	10 8	22.52	19	28.19	155	43.56	8.77	1.7	1.6	23	3	104	.15	6	.6	1.1	20	MOK	
		6	1426	25.30	19	20.17	155	11.65	8.73	2.3	2.4	30	0	81	.09	5	.4	.7	27	UER	
		6	21 7	36.33	19	23.10	155	16.98	3.00	2.2	2.8	29	0	48	.10	1	.3	.3	25	SPC	
		7	543	11.91	19	19.58	155	12.61	9.86	2.3	2.7	34	0	82	.10	5	.5	.4	26	UER	
		7	548	45.46	19	22.93	155	17.10	2.92	2.5	3.4	35	0	37	.10	1	.3	.4	27	KOA	
		7	1210	46.18	19	29.00	155	51.81	8.85	2.8	2.9	33	0	94	.21	6	.7	.6	25	KON	
		7	1811	7.54	19	12.67	155	21.06	47.87	2.3	3.2	28	2	164	.08	11	1.0	1.7	19	LSW	L
		7	2035	13.18	19	26.47	155	24.94	8.03	2.6	2.9	35	0	50	.14	7	.4	1.1	31	UKF	
		8	047	57.22	19	27.98	154	49.98	10.36	2.2	2.4	28	0	280	.12	6	2.5	.6	19	LER	
		8	056	17.02	19	20.17	155	13.36	6.29	1.7	1.6	28	0	65	.15	5	.6	.9	26	UER	
		8	5 8	31.33	19	23.61	155	15.54	2.90	2.0	2.3	24	1	38	.10	2	.3	.4	19	SPC	F
		8	827	1.53	19	20.77	155	7.68	7.11	1.6	1.6	27	2	85	.10	5	.4	.8	27	UER	
		8	1139	48.15	19	25.71	155	50.56	12.33	2.7	2.7	26	0	120	.14	10	.7	.5	25	KON	
		8	2235	59.08	19	19.46	155	12.13	7.78	2.1	2.4	30	0	90	.10	5	.5	.6	26	UER	
		8	2239	45.26	19	20.98	155	3.44	7.21	2.2	2.3	27	0	105	.10	2	.7	.6	22	MER	
		9	135	46.68	19	23.20	155	14.90	3.29	1.9	2.2	19	1	59	.06	2	.4	.4	17	GLN	
		9	140	36.66	19	23.12	155	14.83	2.86	1.5	1.4	16	0	65	.08	2	.4	.5	11	GLN	
		9	212	35.91	19	22.96	155	14.75	3.15	1.5	1.9	16	0	66	.08	2	.4	.5	12	UER	
		9	217	27.74	19	23.19	155	17.01	2.87	2.5	3.1	35	1	36	.10	0	.3	.3	31	SPC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	OCT	9	6 0	55.88	19	20.57	155	10.20	6.75	1.7	2.0	32	0	76	.13	3	.5	.8	24	UER	
		9	855	9.39	19	13.58	155	40.25	9.70	2.6	3.0	26	0	237	.23	6	2.2	1.1	22	HEA	
		9	13 3	14.56	19	23.63	155	26.17	8.87	1.9	2.3	28	1	67	.12	3	.4	.9	26	UKF	
		9	1340	11.16	19	23.25	155	15.03	3.12	1.4	1.6	9	0	105	.05	2	.5	.7	7	SPC	
		9	1344	32.07	19	23.24	155	14.91	2.97	1.5	1.7	13	0	105	.22	2	.7	.8	12	GLN	
		9	1356	39.25	19	23.29	155	14.98	3.31	1.4	1.4	10	0	103	.02	2	.4	.5	10	GLN	
		9	1559	12.78	19	30.72	155	47.05	20.48		1.8	18	0	195	.08	2	1.5	2.4	18	KON	
		9	2112	56.01	19	20.85	155	11.90	7.07	1.9	2.0	29	0	69	.14	4	.5	.8	27	UER	
		9	2257	25.07	19	21.51	155	.11	6.72	2.2	2.0	23	1	200	.13	6	1.0	.7	21	LER	
		10	1 8	38.89	19	23.93	155	15.82	2.99	1.2	1.1	7	0	110	.03	2	.5	.7	7	SPC	
		10	527	12.55	19	19.93	155	11.75	6.94	2.2	2.5	34	1	85	.12	5	.5	.8	29	UER	
		10	1117	22.38	19	57.42	155	49.53	27.85	3.1	3.2	37	0	183	.08	20	1.3	3.0	35	KOH	
		10	1332	26.67	19	23.72	155	16.86	2.71	1.8	1.8	18	1	68	.07	1	.3	.3	16	SPC	
		10	1943	44.69	19	18.55	155	15.11	6.32	2.0	2.1	31	2	127	.13	4	.5	.7	29	KOA	
		10	2157	23.15	19	18.45	155	14.85	8.81	2.4	2.6	33	1	124	.10	4	.5	.5	26	POL	
		10	22 1	44.82	19	23.43	155	16.74	2.91	1.7	2.3	23	1	66	.10	0	.3	.4	19	SPC	
		10	2224	6.54	19	22.91	155	16.90	2.82	2.0	2.6	24	2	47	.09	1	.3	.3	22	KOA	
		10	2255	32.46	19	19.87	155	8.17	8.44	2.1	2.2	30	0	86	.11	5	.6	.7	29	UER	
		11	619	.73	19	25.90	155	24.27	7.60	2.2	2.2	35	1	39	.14	7	.4	1.2	30	UKF	
		11	734	58.48	19	13.11	155	34.47	3.52	3.2	3.3	35	1	81	.23	13	.7	3.2	29	HEA	*
		11	1049	36.77	19	21.03	155	12.92	8.25	2.1	2.4	32	0	60	.13	3	.4	.6	30	UER	
		11	1231	3.10	19	19.62	155	11.45	7.05	2.0	2.2	28	0	93	.10	5	.5	.8	26	UER	
		11	1437	46.22	18	57.36	155	19.18	16.23		1.9	32	0	238	.17	36	2.1	99.0	32	PPL	*
		11	1528	3.72	19	42.23	155	4.51	4.99	2.0	2.8	15	0	194	.19	31	1.5	32.7	13	HIL	B*
		11	1558	46.17	19	24.11	155	16.65	2.36	1.4	1.7	9	1	109	.12	1	.5	.6	7	SPC	
		11	1837	11.36	19	21.06	155	6.13	8.43	2.6	2.8	34	1	95	.11	6	.5	.6	30	UER	
		12	351	58.58	19	22.81	155	15.22	30.99		1.7	30	0	51	.07	1	.7	1.2	27	DEP	
		12	1530	34.01	19	24.08	155	25.09	10.99	1.8	2.1	28	1	76	.09	5	.4	.7	26	UKF	
		12	18 3	56.29	19	19.48	155	12.11	6.51	2.0	2.1	33	0	90	.11	5	.5	.7	28	UER	
		12	1830	13.73	19	21.08	155	4.12	6.36	2.2	2.4	34	2	89	.12	3	.5	.9	27	MER	
		12	2227	36.90	19	20.56	155	13.13	9.27	2.4	3.1	34	0	63	.12	4	.5	.5	31	UER	
		13	052	40.49	19	23.40	155	16.81	2.87	1.3	1.5	16	1	67	.07	0	.3	.4	14	SPC	
		13	1 1	2.23	19	25.13	155	25.19	8.69	1.8	1.8	34	1	49	.13	6	.4	.9	30	UKF	
		13	254	38.57	19	19.86	155	7.49	7.53	2.1	2.3	31	1	102	.10	5	.5	.8	26	UER	
		13	11 0	6.59	19	26.36	155	27.52	9.06	2.3	2.5	31	1	61	.12	7	.4	.9	23	UKF	
		13	1140	5.54	19	12.63	155	33.63	43.44	1.5	2.5	26	1	85	.14	7	1.1	2.4	19	LSW	L
		13	1148	27.58	19	8.99	155	27.17	38.99	2.3		16	1	173	.08	2	1.4	2.7	7	LSW	L
		13	1155	2.48	19	7.74	155	26.01	44.91	1.8	2.1	11	0	186	.08	5	1.9	6.6	6	LSW	L
		13	12 3	18.62	19	11.86	156	39.02	.10		2.6	9	0	324	.15	82	31.1	31.6	7	DIS	B*
		13	1213	17.85	19	12.09	156	38.98	.10		2.7	12	0	324	.28	82	40.6	31.6	11	DIS	*
		13	1230	17.56	19	13.54	156	39.01	.10	3.2	3.2	13	0	317	.17	82	21.6	31.6	13	DIS	B*
		13	1240	19.30	19	15.26	156	39.21	.10	3.2	2.8	12	0	325	.20	81	34.8	31.6	11	DIS	B*
		13	1250	16.09	19	15.43	156	39.21	.10	3.2	3.2	13	0	325	.25	81	35.7	31.6	13	DIS	B*
		13	13 0	21.62	19	14.97	156	18.74	.10	3.0	3.1	15	0	276	.31	46	5.4	31.6	13	DIS	B*
		13	1310	18.84	19	15.44	156	20.29	.10	3.0	3.0	16	0	278	.39	49	6.3	31.6	15	DIS	B*
		13	1320	20.56	19	16.92	156	14.22	.10	2.9	3.0	17	0	267	.29	41	4.1	31.6	17	DIS	B*
		13	1330	22.13	19	18.72	156	12.91	.10	2.5	3.2	22	0	264	.43	36	5.1	31.6	21	DIS	B*
		13	1342	21.27	19	18.29	155	26.67	8.43	1.0	2.1	18	0	118	.12	7	.7	1.3	15	HEA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	OCT	13	1352	19.12	19	23.26	156	3.61	.10	2.4	2.7	23	0	255	.30	19	3.3	31.6	22	KON	B*
		13	14 2	22.47	19	21.75	156	5.52	.10	2.4	2.8	22	0	248	.41	23	4.4	31.6	20	KON	B*
		13	1412	17.54	19	21.34	156	12.44	.10	2.9	2.8	14	0	280	.21	34	3.9	31.6	12	DIS	B*
		13	1422	19.42	19	22.70	156	.43	.10	2.5	2.7	27	0	235	.33	15	2.6	31.6	26	KON	B*
		13	1432	35.44	19	23.42	155	58.65	.10	2.5	2.6	28	0	230	.20	13	1.7	31.6	27	KON	B*
		13	1433	25.49	19	14.75	155	1.14	46.82	2.0	2.4	32	1	220	.08	10	1.6	2.1	20	DIS	
		13	1442	18.06	19	23.45	155	56.68	.10		2.6	24	0	221	.17	11	1.4	31.6	24	KON	B*
		13	1937	20.83	19	20.23	155	12.46	8.22	1.6	2.0	26	0	73	.11	5	.5	.8	22	UER	
		14	113	3.37	19	24.45	155	29.64	5.64	1.6	2.1	24	0	92	.10	12	.5	3.5	16	UKF	
		14	214	8.08	19	19.28	155	11.27	6.90	1.7	2.0	27	0	102	.11	6	.5	.9	25	UER	
		14	333	44.90	19	20.71	155	12.01	8.53	1.8	1.9	28	1	70	.12	5	.5	.8	19	UER	
		14	534	32.19	19	23.00	155	16.89	3.04	.4	1.4	11	0	68	.04	1	.4	.4	7	KOA	
		14	1058	39.46	19	27.14	155	24.10	9.49	1.8	2.4	28	1	45	.13	5	.5	.9	23	UKF	
		14	2039	22.49	19	21.65	155	1.47	8.68	1.7	2.4	27	1	173	.12	4	.8	.6	20	MER	
		15	033	20.60	19	23.75	154	59.27	5.23	1.9	2.4	25	1	177	.15	3	.9	.8	17	LER	
		15	3 1	51.95	19	20.49	155	10.72	8.38	2.2	2.6	28	1	77	.10	3	.4	.7	25	UER	
		15	454	30.12	19	22.13	155	30.03	7.85	1.6	2.3	26	0	112	.12	4	.6	1.0	22	MOK	
		15	535	48.65	19	22.93	155	4.32	8.61	3.6	4.0	36	1	89	.09	3	.5	.4	35	MER	F
		15	1314	6.89	19	23.72	155	23.79	8.97	1.8	2.1	27	0	43	.08	7	.4	.8	25	UKF	
		15	1411	24.01	19	19.70	155	14.32	6.87	2.3	2.5	30	0	86	.11	5	.5	.8	29	UER	
		15	2127	54.95	19	19.76	155	11.65	7.50	2.2	2.8	30	1	89	.11	5	.4	.7	28	UER	
		16	024	.62	19	20.87	155	2.81	7.54	2.1	2.2	21	1	141	.12	2	.9	.7	17	MER	
		16	117	22.48	19	29.46	154	51.16	7.02	2.2	2.4	19	0	268	.12	4	2.6	.9	13	LER	
		16	1148	41.55	19	22.67	155	17.04	2.78	1.9	2.5	22	1	50	.09	4	.3	.8	20	KOA	
		16	2058	42.28	19	27.94	155	41.05	4.48	2.3	1.3	24	3	94	.17	8	.5	5.3	21	MOK	
		16	2219	5.36	19	22.54	155	17.07	3.00	1.7	2.4	20	0	51	.08	4	.4	.9	16	KOA	
		17	235	48.14	19	19.93	155	8.05	9.47	2.2	2.9	31	1	88	.10	5	.5	.5	28	UER	
		17	516	24.23	19	23.28	155	16.86	3.18	2.9	3.7	33	1	38	.11	3	.3	.7	30	SPC	
		17	15 1	2.12	19	20.58	155	49.77	3.56	2.5	2.0	27	1	172	.16	10	.9	2.4	22	KON	
		17	2232	37.48	19	18.10	155	14.58	6.43	1.9	1.9	25	1	133	.13	3	.6	.8	21	POL	
		17	2242	44.65	19	19.89	155	7.80	9.57	3.2	3.7	36	1	95	.11	5	.6	.4	34	UER	
		17	2323	.70	19	22.08	155	4.41	7.73	2.0	2.4	31	1	87	.11	5	.4	.7	27	MER	
		18	247	40.12	19	21.48	155	15.24	9.61	2.2	2.6	32	1	64	.10	2	.4	.5	27	KOA	
		18	540	37.91	19	35.13	155	50.28	3.14	2.7	2.8	20	0	147	.25	14	1.1	40.0	19	KON	*
		18	542	7.08	19	35.44	155	52.29	6.09	2.2	2.4	17	0	215	.17	12	1.1	1.1	13	KON	
		18	546	37.00	19	20.02	155	10.63	7.97	1.8	2.3	30	1	86	.09	4	.4	.6	24	UER	F
		18	616	55.55	19	21.32	155	15.35	9.50	2.8	3.0	36	1	66	.09	2	.4	.4	32	KOA	
		18	1154	55.97	19	20.58	155	8.90	7.30	1.8	1.9	28	0	68	.10	3	.5	.9	27	UER	
		18	1254	31.16	19	24.91	155	25.89	7.42	1.8	1.8	29	0	51	.11	5	.4	1.3	29	UKF	
		18	13 0	42.75	19	20.86	155	6.85	5.22	1.9	1.6	26	1	93	.11	6	.5	2.3	24	UER	
		18	2012	35.90	19	20.88	155	2.44	7.20	2.1	2.0	30	1	161	.17	2	1.0	.7	25	MER	
		18	2037	11.79	19	25.25	155	27.28	9.60	1.9	1.8	28	0	55	.10	5	.5	1.0	26	UKF	
		19	040	5.47	19	20.50	155	2.44	5.21	1.9	1.6	20	1	175	.16	1	1.0	1.2	17	MER	
		19	746	29.72	19	23.77	155	16.71	4.08	1.8	2.0	6	0	119	.09	2	.9	1.6	4	SPC	
		19	828	32.03	19	16.73	155	21.28	2.91		2.4	27	0	134	.15	5	.6	1.9	23	SWR	
		19	1147	27.37	19	20.27	155	13.09	7.38	1.9	2.1	29	0	67	.12	4	.5	.7	29	UER	
		19	1437	4.48	19	23.96	155	16.02	2.74	1.1	1.2	10	1	110	.10	2	.4	.5	9	SPC	
		19	1522	28.62	19	22.99	155	4.44	6.94	1.8	1.8	25	2	87	.10	3	.5	.8	24	MER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	OCT	19	1632	55.72	19	21.45	155	6.22	7.22	2.2	2.3	32	2	86	.12	6	.5	.9	29	UER	
		19	20 2	56.08	19	19.77	155	12.38	4.57	1.9	2.1	25	1	81	.12	5	.5	1.6	23	UER	
		20	021	46.99	19	23.17	155	16.82	3.04	1.9	2.4	22	1	62	.09	0	.3	.4	20	SPC	
		20	215	54.82	19	32.43	155	25.07	9.58	1.0	1.3	22	1	56	.13	5	.5	1.3	20	NER	
		20	751	52.60	19	22.74	155	24.79	9.24	2.2	2.1	28	0	87	.09	5	.4	.7	26	UKF	
		20	1150	56.71	19	17.38	155	30.62	1.23	2.1	1.9	25	0	115	.18	11	.6	16.0	21	HEA	*
		20	1254	2.20	19	17.13	155	28.29	6.05	2.0	1.6	20	1	122	.15	10	.6	1.7	19	HEA	
		20	1610	52.55	19	17.58	156	20.32	32.39		2.2	17	1	276	.10	49	8.8	3.8	16	DIS	
		20	23 9	53.77	19	26.37	155	23.99	8.80	3.3	3.4	36	1	44	.14	7	.4	.9	31	UKF	
		20	2342	10.83	19	26.30	155	24.01	7.83	2.6	2.7	36	0	44	.13	7	.4	1.0	33	UKF	
		21	655	49.82	19	21.37	155	10.60	8.31	2.0	2.1	30	0	64	.11	2	.4	.7	29	UER	
		21	1249	3.73	19	26.37	155	28.90	7.85	2.2	1.8	30	1	52	.10	8	.4	1.4	28	UKF	
		22	241	53.58	19	16.40	155	23.47	3.48	1.8	1.8	23	0	126	.16	7	.7	3.4	21	SWR	
		22	246	2.97	19	25.60	154	55.16	5.00	2.1	2.0	21	0	207	.16	6	1.3	1.4	19	LER	
		22	15 3	14.69	19	19.71	155	11.72	8.36	2.1	2.3	30	0	89	.10	5	.5	.6	28	UER	
		22	1513	1.48	19	12.47	155	19.93	46.84	2.9	3.2	40	3	169	.12	10	.8	1.3	38	HLP	
		22	2347	6.28	19	19.63	155	11.52	7.91	1.9	2.0	30	0	92	.11	5	.4	.6	29	UER	
		23	8 7	39.15	19	20.17	155	12.77	7.65	1.9	2.2	31	1	71	.12	5	.5	.7	28	UER	
		23	1110	37.20	19	18.98	155	23.55	4.38	2.1	2.3	21	0	116	.12	2	.6	1.3	21	SWR	
		23	1339	11.94	19	21.47	155	7.13	6.50	2.0	2.3	30	1	80	.11	5	.5	1.1	25	UER	
		23	1534	3.30	19	19.47	155	11.79	8.87	2.6	2.9	32	0	94	.10	5	.5	.5	29	UER	
		23	1913	22.69	19	20.50	155	12.49	7.38	1.7	1.9	28	0	69	.11	4	.5	.7	26	UER	
		24	023	.49	19	23.29	155	16.96	2.72	1.9	2.2	22	1	57	.10	0	.3	.4	20	SPC	
		24	334	24.35	19	23.07	155	2.15	8.15	2.2	2.3	24	0	137	.16	5	.9	.6	23	MER	
		24	1433	13.99	19	19.47	155	12.04	9.86	2.9	3.3	36	1	91	.10	5	.4	.4	34	UER	
		24	1527	51.40	19	20.01	155	11.20	7.87	1.9	1.9	34	1	86	.11	4	.4	.7	29	UER	
		25	648	13.09	19	20.28	155	3.71	7.16	2.1	2.0	28	1	118	.11	2	.7	.6	26	MER	
		25	841	56.33	19	20.30	155	11.27	7.33	2.4	2.8	31	0	80	.09	4	.4	.7	29	UER	
		25	2053	37.79	19	22.13	155	6.01	7.23	2.1	1.9	28	0	75	.13	5	.5	1.0	28	UER	
		25	2132	56.31	19	19.88	155	7.92	7.81	2.5	2.9	33	1	92	.09	5	.4	.7	32	UER	
		25	2334	48.43	19	19.13	155	13.98	7.67	1.8	1.9	27	0	68	.12	4	.5	.7	25	UER	
		26	228	33.51	19	21.40	155	6.62	7.75	2.1	2.4	30	0	85	.09	6	.5	.7	28	UER	
		26	318	58.82	19	21.96	155	.16	7.12	1.9	2.0	31	1	191	.20	6	1.2	.8	29	LER	
		26	349	5.26	19	20.15	155	6.80	8.91	2.6	2.9	33	0	109	.07	6	.6	.4	30	UER	
		26	615	7.48	19	18.07	155	13.20	8.95	2.2	2.5	31	0	96	.09	2	.6	.5	30	POL	
		26	747	22.19	19	20.17	155	8.21	5.82	1.1	1.7	26	0	83	.11	5	.6	1.2	25	UER	
		27	351	50.63	19	25.67	155	27.44	9.04	2.1	1.9	32	0	42	.11	6	.4	.8	24	UKF	
		27	424	47.76	19	39.50	155	15.78	47.86	1.4	1.4	34	9	146	.09	22	.7	.9	25	NER	
		27	552	38.67	19	18.92	155	13.48	9.12	2.0	2.1	34	1	80	.10	4	.5	.4	32	POL	
		28	552	53.73	19	20.25	155	11.44	7.23	1.7	1.8	31	1	80	.12	4	.5	.7	27	UER	
		28	1057	34.73	19	18.98	155	11.30	9.29	2.0	2.3	30	0	110	.11	5	.6	.6	26	POL	
		28	1237	34.70	21	34.97	157	44.49	1.22	4.1	4.5	38	6	242	.30	33	6.3	1.8	27	DIS	F*
		28	1450	47.11	19	24.00	155	16.11	3.16	1.8	1.7	15	0	104	.08	2	.4	.3	13	SPC	
		28	1644	13.37	19	12.08	155	20.81	48.40	3.2	3.7	35	0	168	.10	12	1.0	2.2	31	HLP	
		29	051	28.19	19	25.18	155	15.99	1.97	2.5	3.2	32	1	40	.10	2	.2	.3	28	SPC	F
		29	328	54.89	19	22.62	155	4.94	7.73	2.4	2.9	33	2	78	.10	4	.4	.6	27	MER	
		29	1155	6.09	19	27.89	155	28.30	10.37	2.8	2.8	37	2	52	.13	8	.4	.7	31	UKF	
		29	1333	53.04	19	33.98	155	41.25	4.56	1.6	1.5	18	1	127	.14	10	.8	5.3	15	MOK	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	OCT	29	1413	16.22	19	18.42	155	23.73	6.96	1.8	1.7	29	0	106	.14	3	.5	1.0	29	SWR	
		29	1651	32.58	19	21.24	155	10.80	6.80	2.1	2.3	32	0	66	.11	2	.5	.8	27	UER	
		29	1725	51.97	19	19.90	155	7.81	6.68	1.8	2.3	28	1	95	.11	5	.5	1.1	27	UER	
		29	1820	7.15	19	21.49	155	2.56	6.79	2.1	2.7	31	1	144	.12	3	.7	.7	24	MER	
		30	550	11.99	19	20.23	155	12.78	8.80	1.5	2.1	29	0	70	.11	4	.4	.6	27	UER	
		30	2025	44.60	19	20.89	155	7.42	7.80	2.0	1.5	27	0	87	.10	5	.5	.8	21	UER	
		31	611	55.69	19	22.17	155	3.67	7.65	2.3	2.4	30	0	105	.10	4	.6	.6	27	MER	
		31	616	43.27	19	20.11	155	11.13	7.65	2.1	2.1	30	0	84	.11	4	.5	.7	26	UER	
		31	7 5	20.19	19	19.57	155	7.84	8.69	1.9	2.0	29	0	98	.11	4	.7	.7	28	UER	
		31	815	42.04	19	24.08	155	26.86	11.98	2.3	2.6	18	1	98	.07	10	.6	.7	15	UKF	
		31	2312	1.42	19	20.23	155	6.39	9.67	2.8	3.2	34	0	113	.10	6	.6	.4	33	UER	
	NOV	1	046	27.40	19	19.65	155	11.86	9.41	2.1	2.4	34	0	89	.11	6	.4	.4	32	UER	
		1	457	57.83	19	19.33	155	11.55	10.00	2.9	3.5	36	0	99	.08	5	.5	.4	35	UER	
		1	5 6	23.61	19	19.75	155	11.48	7.43	2.0	2.1	32	0	90	.11	5	.5	.7	32	UER	
		1	950	40.07	19	18.43	155	15.00	7.40	1.8	1.9	25	0	128	.12	4	.6	.8	22	POL	
		1	1033	43.98	19	21.26	155	2.11	4.83	1.7	1.9	21	1	172	.15	3	.7	1.5	19	MER	
		1	1037	7.62	19	24.71	155	25.97	7.35	2.0	1.8	27	0	50	.14	5	.5	1.5	26	UKF	
		1	1324	34.21	19	25.80	155	24.43	9.78	2.4	2.6	28	0	54	.11	8	.5	1.0	22	UKF	
		1	1833	45.21	19	24.16	154	56.61	8.27	2.6	2.4	28	0	203	.14	4	1.3	.6	26	LER	
		2	5 6	27.51	19	21.39	155	15.01	9.01	1.8	1.8	28	0	64	.09	2	.4	.5	26	KOA	
		2	946	25.50	19	13.23	155	28.28	6.40	2.5	2.3	24	0	96	.20	7	.7	1.9	17	LSW	
		2	1922	30.65	19	27.93	155	35.26	36.06	2.5	2.9	25	1	61	.13	1	.9	2.1	21	MOK	L
		2	2211	29.51	19	20.53	155	11.62	7.46	2.0	1.9	29	0	75	.11	4	.5	.7	26	UER	
		2	2212	11.99	19	20.81	155	10.76	7.38	1.8	1.7	25	0	73	.10	3	.5	.7	25	UER	
		2	2250	32.51	19	34.61	155	55.61	14.58		2.0	27	3	200	.11	10	.9	.5	24	KON	
		2	2358	36.50	19	21.24	155	6.11	6.33	1.9	1.9	28	0	92	.09	6	.5	1.1	27	UER	
		3	346	53.85	19	27.69	155	34.81	37.31	2.7	3.3	24	1	34	.09	3	.7	1.7	18	MOK	L
		3	4 7	13.66	19	45.42	154	54.13	14.94	2.1	2.4	23	2	264	.13	15	2.0	.6	19	HIL	
		3	821	7.60	19	59.37	155	8.71	6.66	2.1	3.1	19	0	282	.21	23	6.2	1.6	14	KKU	
		3	1052	54.67	19	20.34	155	13.27	6.91	1.4	1.7	24	0	64	.09	4	.5	.8	22	UER	
		3	1233	47.52	19	26.56	155	34.35	37.72	1.9	2.4	14	0	67	.05	4	1.0	2.6	3	MOK	L
		3	1339	51.37	19	19.89	155	3.21	5.39	2.1	1.9	23	1	159	.16	1	.9	1.5	16	MER	
		3	18 8	55.71	19	18.36	155	13.25	5.52	1.5	1.6	23	0	88	.12	3	.6	.9	15	POL	
		3	2034	51.76	19	26.87	155	37.67	34.99	2.0	2.6	15	0	95	.20	3	1.6	3.3	0	MOK	L
		3	21 2	38.88	19	21.18	155	3.48	6.78	2.4	2.4	27	1	107	.11	3	.5	.8	22	MER	
		3	2348	7.40	19	15.75	155	24.82	34.97	1.9	2.0	33	3	121	.09	9	.7	.8	25	LSW	
		4	127	7.16	19	20.19	155	13.31	8.82	1.5	1.8	23	0	64	.07	5	.4	.6	17	UER	
		4	729	11.23	19	20.58	155	10.54	8.44	1.5	1.9	29	0	76	.11	3	.4	.7	23	UER	
		5	238	26.60	19	21.14	155	7.13	7.56	1.3	1.3	21	0	85	.09	5	.5	1.2	16	UER	
		5	3 7	3.96	19	20.32	155	3.80	5.73	1.5	1.6	18	0	117	.10	2	.8	1.2	15	MER	
		5	8 1	58.02	19	20.27	155	10.48	8.06	1.8	1.7	23	1	87	.08	4	.4	.8	19	UER	
		5	829	13.98	19	17.38	155	21.47	5.95	1.3	1.6	21	1	126	.12	5	.6	1.3	15	SWR	
		5	1625	1.60	19	19.67	155	11.20	8.99	3.1	3.3	35	1	93	.11	5	.5	.6	31	UER	
		5	17 0	5.03	19	20.70	155	4.61	4.45	2.4	2.6	30	1	108	.12	3	.5	1.3	28	MER	
		6	10 0	39.65	19	21.15	155	7.69	8.63	2.4	2.7	27	1	79	.08	4	.4	.6	26	UER	
		6	2031	6.46	19	20.38	155	10.64	13.50	2.8	2.9	19	0	166	.49	3	2.4	1.3	17	UER	
		6	2034	3.34	19	21.34	155	27.83	11.25	2.3	2.4	13	0	107	.12	18	.7	.9	12	HEA	
		6	2048	16.66	19	19.50	155	8.84	7.93	2.8	3.0	12	0	207	.14	5	1.9	1.0	10	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	NOV	7	1256	57.79	19	48.04	156	8.42	12.35	3.0	2.9	17	1	200	.09	34	1.7	.9	15	KON	
		7	1824	8.48	19	22.32	155	7.06	6.92	2.1	2.4	23	3	167	.13	5	.6	.7	19	UER	
		8	528	28.18	19	21.72	155	9.40	7.48	2.0	2.5	21	0	165	.13	1	.7	.6	19	UER	
		8	633	57.79	19	20.04	155	8.43	8.75	2.8	3.0	22	1	199	.10	5	.9	.7	17	UER	
		8	729	15.15	19	25.24	155	36.12	11.67	1.6	1.3	23	5	51	.13	4	.4	.8	15	MOK	
		8	1314	10.94	19	42.89	155	41.95	14.10	2.3	2.5	15	0	163	.13	15	1.0	.8	15	KKU	
		8	1519	18.01	19	21.64	155	1.68	7.62	1.9	1.9	13	1	229	.12	7	1.6	.9	9	MER	
		8	16	9 13.94	19	11.27	155	27.69	44.01		2.8	18	0	127	.07	3	1.0	3.0	18	LSW	L
		8	1721	42.22	19	19.98	155	13.75	8.21	1.9	2.2	21	0	162	.13	5	.8	.9	18	UER	
		8	2146	39.00	19	20.73	155	8.64	8.18	2.8	3.3	26	1	170	.11	3	.7	.6	23	UER	
		8	2216	17.57	19	17.43	155	21.51	7.46	2.0	2.1	19	1	151	.13	6	.6	1.4	15	SWR	
		9	321	8.02	19	20.31	155	11.07	8.89	2.3	2.4	24	1	191	.13	4	1.0	.8	18	UER	
		9	934	37.59	19	25.47	155	36.36	11.59	2.3	1.7	15	0	71	.12	3	.6	.8	14	MOK	
		9	1436	6.82	19	22.67	155	27.33	8.27	1.7	2.0	20	0	61	.13	1	.5	1.1	18	UKF	
		9	1833	32.36	19	19.58	155	12.15	6.19	1.6	1.6	21	0	87	.11	5	.6	1.1	19	UER	
		10	148	49.55	19	25.28	155	24.48	8.20	2.1	2.1	23	0	60	.11	8	.4	1.2	23	UKF	
		10	533	7.16	19	23.64	155	33.13	7.15	2.1	1.8	13	0	92	.13	9	.6	2.5	13	MOK	
		10	17	2 26.81	19	20.72	155	12.84	7.05	1.6	1.8	20	0	64	.13	4	.6	1.2	19	UER	
		10	20	5 23.36	19	21.80	155	4.99	9.04	3.3	3.7	30	1	79	.11	5	.6	.6	27	MER	
		10	22	0 46.63	19	20.75	155	12.58	6.97	2.0	2.0	26	1	66	.13	4	.5	.8	20	UER	
		10	2344	38.74	19	19.55	155	15.99	31.93	2.4	2.9	26	0	92	.10	5	.7	1.4	25	DEP	
		11	015	27.16	20	4.79	155	28.67	.70	2.6	2.4	25	1	270	.12	25	2.1	1.0	21	KKU	
		11	411	.52	19	18.70	155	13.16	7.71	2.0	2.1	25	1	85	.13	3	.5	.8	24	POL	
		11	629	4.74	19	20.18	155	11.81	9.46	2.4	2.9	26	0	80	.08	5	.4	.6	25	UER	
		11	10	8 25.04	19	21.27	155	14.95	4.68	1.9	1.9	24	1	66	.16	6	.5	4.1	21	UER	
		11	20	5 .52	19	7.56	155	33.90	42.07	2.3	2.4	15	0	143	.17	11	1.6	4.3	3	LSW	L
		12	1	3 40.47	19	22.75	155	3.63	9.05	2.7	2.9	24	1	156	.10	4	.7	.5	20	MER	
		12	5	0 47.98	19	20.86	155	11.53	6.45	2.1	2.2	25	1	70	.14	4	.5	1.1	22	UER	
		12	528	51.20	19	6.80	155	37.98	56.74	1.9		18	3	170	.12	15	1.2	1.0	7	HEA	L
		12	624	12.84	19	19.65	155	7.61	7.01	2.2	2.4	23	1	133	.09	4	.6	1.1	20	UER	
		12	946	38.69	19	23.92	155	25.34	7.58	2.3	2.0	24	0	45	.14	5	.4	1.3	20	UKF	
		12	1239	54.40	19	22.04	155	2.68	8.22	2.3	2.2	22	0	176	.12	5	.9	.6	19	MER	
		12	1458	51.07	19	35.31	155	59.63	9.13	2.4	2.2	16	0	272	.18	14	3.4	1.1	14	KON	
		12	15	8 2.47	19	22.08	155	4.94	.00	3.2	3.7	23	1	150	.25	5	1.0	1.2	20	MER	*
		12	1526	5.15	19	22.39	155	6.20	1.18	2.7	3.1	18	1	131	.11	5	.6	1.0	14	UER	
		12	1718	.18	19	19.75	155	11.57	5.59	2.0	2.2	24	1	89	.11	5	.5	1.1	22	UER	
		12	2158	25.80	19	23.03	155	2.19	8.97	2.4	2.0	26	1	167	.11	5	.7	.5	20	MER	
		12	2159	20.05	19	22.95	155	3.34	8.09	2.2	1.8	21	1	155	.14	3	.7	.7	20	MER	
		13	112	55.02	19	24.35	155	12.82	3.53	2.2	2.3	22	2	47	.10	7	.4	1.7	18	GLN	
		13	232	12.93	19	19.17	155	14.13	8.78	2.9	3.2	28	1	68	.10	4	.5	.6	26	UER	F
		13	959	3.42	19	20.05	155	8.35	6.70	2.2	2.4	26	1	81	.10	5	.5	1.0	22	UER	
		13	1829	51.60	19	8.23	155	26.13	42.74	2.3		10	0	248	.05	4	5.0	9.8	7	LSW	
		13	2212	8.18	19	21.44	154	59.68	7.08	2.2	2.2	23	1	205	.13	6	1.1	.6	18	LER	
		14	1956	19.19	19	21.41	155	1.37	7.68	2.0	2.0	26	3	180	.12	4	.8	.6	21	MER	
		14	2033	12.13	20	12.96	156	8.12	16.09		2.4	26	0	299	.14	38	6.4	99.0	19	DIS	*
		15	337	17.74	19	25.43	155	24.31	9.86	3.2	3.4	34	1	39	.12	8	.4	.6	30	UKF	
		15	741	24.34	19	11.00	155	40.62	6.83	2.6	2.6	23	1	217	.17	10	.9	1.3	18	HEA	
		15	1023	7.48	19	23.01	155	26.76	8.69	2.1	2.1	24	0	55	.14	2	.5	1.0	17	UKF	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	NOV	15	1053	18.98	19	8.40	155	36.33	6.33	2.9	3.1	25	0	118	.17	15	.7	1.3	21	HEA	
		15	1227	21.62	19	19.61	155	11.50	7.57	2.2	2.1	28	0	93	.10	5	.5	.6	24	UER	
		15	1257	52.77	19	20.59	155	3.20	8.19	2.5	2.9	28	1	112	.12	1	.8	.5	22	MER	
		15	1329	29.95	19	20.09	155	7.44	8.87	2.4	3.1	30	1	99	.09	5	.5	.6	27	UER	
		15	14	5 45.40	19	24.82	154	55.27	8.97	2.4	2.6	23	1	213	.15	6	1.5	.7	19	LER	
		15	16	0 27.28	19	21.49	155	5.94	6.27	1.4	1.6	25	1	87	.12	6	.5	1.2	22	MER	
		15	1647	46.75	19	24.24	155	24.74	11.34	3.3	3.4	37	1	31	.12	6	.4	.5	34	UKF	
		15	2126	9.68	19	19.66	155	11.25	6.76	2.0	1.9	28	0	93	.12	5	.5	.8	22	UER	
		15	23	5 12.09	19	17.90	155	20.81	6.18	2.0	2.0	19	0	122	.11	4	.5	1.1	14	SWR	
		16	835	53.29	19	20.04	155	8.13	8.29	2.2	2.5	28	0	85	.11	5	.6	.7	26	UER	
		16	1121	2.65	19	18.46	155	14.02	6.44	1.5	1.6	28	2	77	.12	3	.5	.9	27	POL	
		16	1154	8.93	19	18.03	155	12.89	10.38	2.4	2.9	29	0	141	.08	9	.5	.5	24	POL	
		16	1253	39.80	19	24.51	155	25.97	6.66	2.0	1.8	20	0	69	.13	5	.6	1.9	18	UKF	
		16	15	1 .40	19	17.52	155	13.03	9.93	2.3	2.4	29	1	173	.09	9	.7	.7	23	POL	
		16	1718	5.78	19	20.92	155	6.67	7.92	1.9	1.8	21	0	94	.10	6	.5	.8	18	UER	
		16	2258	40.96	19	22.55	155	4.53	9.20	2.0	1.7	25	0	86	.10	4	.7	.7	19	MER	
		16	2332	54.71	19	47.07	155	6.87	.19	2.3	2.8	28	0	198	.63	13	3.2	9.8	20	HIL	*
		16	2336	4.74	19	23.01	155	6.26	.00	2.1	1.8	13	1	95	.08	5	.5	1.0	13	GLN	*
		16	2347	7.48	19	27.08	154	49.68	3.42	2.4	1.8	11	1	295	.23	7	2.4	2.6	10	LER	
		17	426	53.11	19	26.99	154	49.84	3.15	2.5	2.3	11	2	294	.21	7	2.4	1.9	9	LER	
		17	536	50.65	19	17.73	155	13.18	7.83	2.1	2.1	29	0	107	.13	1	.5	.7	28	POL	
		17	1110	20.96	19	25.16	155	28.63	9.44	2.3	2.4	31	1	38	.12	5	.4	.8	23	UKF	
		17	1124	40.40	19	40.67	155	2.40	10.16	2.9	3.2	23	0	197	.17	19	1.1	1.3	22	HIL	B
		17	1529	48.74	19	40.87	155	2.52	.00	2.3	2.4	11	1	113	.60	3	2.9	7.3	5	HIL	B*
		17	1621	34.36	19	19.11	155	11.99	8.35	2.3	2.4	29	0	100	.13	5	.5	.6	26	UER	
		17	1714	15.24	19	54.90	155	14.35	38.04	2.5	2.1	36	6	241	.11	11	.7	.6	33	KKU	
		17	1951	36.57	19	21.77	155	6.56	8.46	2.2	2.3	30	1	79	.09	6	.5	.7	28	UER	
		17	2043	37.08	19	14.15	155	36.66	8.44	2.7	2.7	29	0	195	.20	2	1.1	.9	25	HEA	
		17	2130	9.03	19	25.32	155	24.63	8.20	2.2	2.4	35	0	33	.12	7	.4	1.0	29	UKF	
		17	2134	21.94	19	23.17	155	2.07	7.22	2.1	1.9	28	1	137	.13	5	.6	.6	25	MER	
		17	2149	1.43	19	21.96	155	4.21	7.89	2.4	2.7	30	0	91	.10	4	.5	.6	25	MER	
		17	2213	15.55	19	19.04	155	13.88	7.99	1.9	2.1	27	1	89	.11	4	.6	.8	19	UER	
		18	158	57.25	19	24.90	155	16.05	15.22	2.5	2.9	33	0	46	.09	2	.5	.3	31	INT	
		18	211	21.73	19	22.47	155	4.51	10.15	2.0	2.0	28	1	85	.08	4	.6	.5	22	MER	
		18	659	39.53	19	25.25	155	28.71	7.15	2.4	2.5	35	1	41	.15	5	.5	1.2	27	UKF	
		18	1227	3.71	19	23.18	155	26.41	8.93	2.0	1.9	26	0	96	.10	2	.4	.8	19	UKF	
		18	1233	15.75	19	22.34	155	4.41	10.20	2.0	1.9	26	1	88	.09	4	.6	.6	21	MER	
		18	1628	53.09	19	21.38	155	5.72	6.56	2.0	1.9	28	1	89	.12	6	.5	1.1	24	MER	
		18	2349	46.33	19	23.12	155	5.41	.87	1.9	2.6	17	0	80	.16	3	.6	1.4	13	MER	
		19	149	56.38	19	22.56	155	2.58	6.98	1.9	1.9	31	2	134	.11	5	.6	.6	26	MER	
		19	835	20.17	19	20.04	155	5.14	9.99	2.6	3.4	19	1	132	.12	4	.9	.5	15	MER	
		19	1259	22.53	19	19.87	155	9.77	8.80	2.4	2.9	30	0	86	.10	4	.4	.7	29	UER	
		19	1341	25.50	19	20.85	155	13.24	9.03	2.5	2.8	31	0	59	.14	3	.5	.6	29	UER	
		19	1432	16.13	19	19.94	155	8.05	7.08	1.8	1.9	28	0	88	.11	5	.5	1.0	24	UER	
		19	1527	38.10	19	21.45	155	5.80	8.02	2.2	2.7	29	1	88	.11	6	.5	.9	25	MER	
		19	1630	53.69	19	25.89	155	24.39	8.62	2.3	2.4	32	1	46	.11	8	.4	.9	27	UKF	
		19	1720	21.63	19	23.93	155	26.12	6.95	2.1	2.0	29	1	43	.13	4	.4	1.3	22	UKF	
		19	1741	49.47	19	20.18	155	11.78	7.87	1.9	2.1	28	0	79	.09	5	.5	.6	25	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	NOV	19	1848	37.13	19	20.03	155	11.55	8.58	1.7	1.8	30	0	84	.09	5	.4	.5	29	UER
		19	19 2	37.76	19	22.55	155	27.89	8.66	2.3	2.3	31	0	61	.12	1	.4	.8	26	UKF
		19	2051	13.53	19	20.89	155	5.72	8.33	2.0	2.2	28	0	101	.11	5	.6	.6	25	MER
		19	2349	17.93	19	21.40	155	13.13	6.85	1.8	1.7	32	1	56	.15	2	.5	.8	26	UER
		20	212	2.57	19	19.81	155	12.33	6.64	1.8	1.7	26	0	82	.13	5	.6	1.0	24	UER
		20	1351	4.85	19	19.84	155	11.70	5.50	1.8	1.7	23	0	86	.11	5	.5	1.4	21	UER
		20	16 8	20.92	19	21.23	155	6.03	6.19	2.2	1.8	24	1	92	.10	6	.5	1.2	22	UER
		20	20 0	8.71	19	20.53	155	6.56	7.58	2.0	2.0	26	0	103	.10	6	.6	.9	25	UER
		20	2014	22.96	19	19.86	155	9.78	6.33	1.8	1.7	26	0	86	.08	4	.5	1.1	25	UER
		21	337	55.91	19	19.05	155	11.41	6.99	2.3	2.1	29	1	107	.09	5	.5	.6	26	UER
		21	910	45.03	19	20.25	155	11.59	7.35		1.8	24	0	79	.10	5	.6	.9	19	UER
		21	1210	30.01	19	17.37	155	13.13	8.02	1.8	1.9	27	0	134	.12	1	.7	.8	22	POL
		21	1423	44.04	19	21.12	155	6.73	6.00	2.0	2.0	24	0	90	.11	6	.5	1.3	23	UER
		22	216	36.21	19	21.77	155	14.97	8.45	2.0	2.3	31	0	60	.15	2	.5	.6	29	UER
		22	526	36.46	19	22.40	155	4.05	9.53	2.6	3.5	34	1	96	.07	4	.5	.4	30	MER
		22	820	42.87	19	12.68	155	27.98	5.24	3.1	3.4	31	0	101	.15	6	.6	1.6	28	LSW
		22	824	3.42	19	12.62	155	27.55	6.68	2.4	2.7	30	0	111	.17	6	.6	1.3	21	LSW
		22	839	37.14	19	20.83	155	5.93	7.91	1.8	2.4	25	0	102	.08	6	.5	.9	21	MER
		22	954	38.54	19	13.54	155	27.89	7.40	2.3	2.7	26	0	140	.14	15	.7	1.3	15	LSW
		22	1032	6.95	19	20.42	155	7.57	7.87	2.1	2.3	28	2	91	.10	5	.5	.9	24	UER
		22	1041	24.09	19	12.41	155	27.56	2.37		1.8	15	1	116	.15	5	.9	3.0	14	LSW
		22	1138	43.30	19	20.80	155	12.60	8.03	1.0	1.8	20	0	76	.10	3	.6	.8	18	UER
		22	1323	14.81	19	20.97	155	3.13	6.06	3.4	3.8	30	1	121	.12	2	.7	.9	27	MER
		22	1528	16.02	19	20.58	155	2.48	5.01	1.0	1.9	13	0	169	.08	1	.9	1.2	9	MER
		22	1732	51.15	19	23.73	155	2.55	8.32	2.0	2.1	26	1	118	.11	3	.5	.6	20	MER
		22	1757	46.83	19	19.78	155	12.37	7.17	.8	1.3	23	0	81	.10	5	.6	1.0	17	UER
		23	117	36.15	19	21.90	155	6.67	9.25	2.4	3.2	32	0	77	.10	6	.5	.5	28	UER
		23	3 3	10.71	19	21.12	155	3.33	7.25	2.3	2.3	31	1	112	.10	2	.6	.6	25	MER
		23	316	15.88	19	14.16	155	32.81	11.40	4.2	4.2	33	0	122	.09	8	.5	.6	33	LSW F
		23	613	4.54	19	20.83	155	14.96	6.84	.9	1.1	20	0	84	.12	3	.6	.9	15	UER
		23	754	40.55	19	20.82	155	2.27	4.61	1.9	2.1	20	0	170	.15	2	1.1	1.5	13	MER
		23	1229	32.14	19	20.47	155	12.39	6.96	1.4	1.6	28	1	71	.10	4	.5	.8	23	UER
		23	1446	22.91	19	20.07	155	7.71	7.92	2.2	2.2	31	0	94	.09	5	.5	.7	25	UER
		23	2325	39.74	19	23.53	155	28.53	8.15	2.5	2.4	37	1	37	.14	3	.4	.9	30	UKF
		24	148	8.43	19	21.12	155	13.30	9.02	2.6	3.0	33	1	57	.10	3	.4	.6	28	UER
		24	3 5	42.32	19	25.65	154	57.27	6.21	2.0	1.8	23	0	175	.13	3	.9	.7	23	LER
		24	4 7	51.44	19	10.62	155	37.42	7.36	2.6	2.2	26	1	215	.12	8	1.0	.8	23	HEA
		24	852	19.66	19	22.20	155	1.53	5.67	1.8	1.1	10	0	211	.08	5	1.2	1.0	0	MER
		24	1559	8.06	19	22.16	155	4.86	5.95	2.1	1.8	23	0	79	.14	5	.6	1.7	19	MER
		24	1644	56.11	19	19.49	155	12.25	9.05	1.7	2.0	24	0	89	.11	5	.6	.9	20	UER
		24	2347	44.40	19	19.62	155	11.15	9.18	2.2	2.3	26	1	95	.11	6	.4	.8	20	UER
		25	027	15.74	19	26.10	154	52.85	9.11	2.0	2.0	23	1	247	.11	5	1.5	.7	17	LER
		25	318	34.25	19	28.70	154	54.27	2.98	2.0	2.4	17	1	154	.10	2	2.0	1.7	10	LER
		25	558	44.88	19	19.76	155	17.51	34.63		1.7	22	1	86	.09	1	.9	1.7	21	DEP
		25	925	38.32	19	20.30	155	8.61	8.25	1.7	2.2	24	0	74	.07	6	.4	1.1	19	UER
		25	10 2	8.94	19	20.07	155	8.40	9.77	2.8	3.2	31	0	80	.09	5	.4	.5	29	UER
		25	1257	42.64	19	12.67	155	27.46	4.18		1.9	25	3	112	.12	6	.5	2.2	21	LSW
		25	1458	39.65	19	21.06	155	13.21	1.41	.4	2.0	7	0	235	.06	3	1.0	.8	5	UER B

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	NOV	25	1813	49.35	19	20.50	155	8.12	6.72	2.0	2.3	18	1	81	.09	6	.5	2.2	14	UER
		25	2035	29.08	19	25.50	155	25.38	8.22	2.5	2.8	26	0	51	.10	7	.4	1.1	22	UKF
		25	21 1	24.83	19	19.77	155	13.29	9.62	2.5	2.8	26	0	69	.09	5	.4	.6	26	UER
		25	21 4	55.52	19	25.22	155	26.97	10.84		1.9	27	0	58	.10	5	.4	.8	23	UKF
		25	23 4	23.34	19	21.65	155	.42	6.21	1.6	1.8	18	1	192	.12	5	.7	1.0	11	LER
		25	2314	3.57	19	20.13	155	13.27	9.75	2.0	2.1	24	0	66	.06	5	.4	.7	17	UER
		26	0 5	40.08	19	19.56	155	10.11	8.62	2.4	2.8	28	1	95	.09	6	.4	.8	27	UER
		26	2 2	17.78	19	7.64	155	4.52	35.21	1.7	1.9	25	0	230	.07	19	1.6	1.9	22	PPL
		26	345	43.97	19	21.70	155	6.54	7.80	2.0	2.1	25	1	81	.10	7	.5	1.3	18	UER
		26	12 1	47.91	19	23.04	155	6.23	.59	2.4	3.1	10	0	94	.10	4	.6	2.1	10	GLN
		26	1614	5.26	19	17.52	155	26.53	8.40	1.9	1.6	25	0	123	.14	8	.6	1.2	21	HEA
		27	1 9	39.56	19	22.40	155	5.82	1.36	2.1	2.2	21	0	70	.22	5	.6	2.5	19	MER
		27	451	54.68	19	20.62	155	11.61	5.96	2.1	2.2	35	2	73	.17	5	.5	1.0	30	UER
		27	1116	16.12	19	19.61	155	11.64	7.61	2.1	2.4	29	0	92	.10	6	.5	.8	24	UER
		27	1313	39.25	19	20.19	155	10.12	3.70	1.9	1.9	27	0	81	.14	7	.6	3.3	24	UER
		27	1618	52.50	19	20.41	155	11.62	8.26	2.0	1.8	27	1	77	.10	5	.4	.7	23	UER
		27	1619	50.14	19	20.44	155	11.69	10.36	3.3	3.6	35	1	76	.08	5	.4	.4	30	UER
		27	2131	23.48	19	20.68	155	7.78	1.94	1.9	2.0	30	1	84	.08	6	.4	1.8	21	UER
		27	2245	26.05	19	18.57	155	14.47	7.72	1.8	1.6	27	0	113	.11	3	.5	.6	24	POL
		27	2319	49.41	19	20.04	155	14.65	6.73	1.8	1.7	27	0	71	.13	5	.5	.8	17	UER
		28	129	30.11	19	22.51	155	1.37	6.54	2.1	2.1	24	1	161	.15	6	.8	1.1	21	MER
		28	131	36.75	19	18.74	155	13.19	10.13	3.6	3.9	37	1	84	.10	3	.5	.4	36	POL
		28	140	4.81	19	19.14	155	13.46	5.24	1.6	1.8	23	0	73	.15	4	.6	1.2	21	UER
		28	9 4	33.79	19	36.48	155	53.73	7.33	1.9	1.7	14	1	269	.14	14	3.9	.9	14	KON
		28	2059	29.30	19	23.20	155	5.52	1.97	1.9	2.5	16	0	91	.19	3	.7	1.6	15	MER
		28	2150	40.39	19	38.54	156	.79	10.68	3.3	3.4	34	2	224	.11	20	1.1	.8	33	KON F
		28	2242	59.64	19	22.43	155	26.65	11.13	3.5	3.6	35	1	62	.11	2	.4	.5	34	UKF F
		29	219	43.41	19	21.92	155	5.81	8.06	2.0	2.1	27	1	79	.12	6	.5	.8	20	MER
		29	1140	25.48	19	38.50	156	1.17	10.36	2.8	2.8	25	0	225	.12	20	1.4	.8	18	KON
		29	1555	58.85	19	17.61	155	15.58	9.29	2.8	2.9	34	0	144	.10	5	.5	.5	33	KOA
		29	1915	23.63	19	17.23	155	15.52	6.56	2.1	1.7	15	0	190	.12	4	1.3	2.2	15	KOA
		29	2138	46.94	19	19.65	155	10.88	6.17	1.7	1.7	25	2	94	.13	5	.5	1.1	23	UER
		29	2139	17.94	19	19.98	155	10.84	6.09	2.0	1.8	22	1	88	.13	4	.5	.9	20	UER
		29	2156	24.13	19	18.05	155	16.14	8.91	2.2	2.4	31	0	167	.08	4	.5	.5	27	KOA
		30	10 9	19.40	19	20.21	155	12.85	10.35	2.7	3.3	34	1	70	.09	4	.4	.3	29	UER
		30	1134	45.01	19	38.78	155	8.27	46.74	2.6	2.8	35	0	99	.12	13	1.1	3.0	31	HIL
		30	1440	18.25	19	31.71	155	19.04	9.28	2.1	2.2	32	2	51	.12	8	.4	.9	30	NER
		30	1522	39.42	19	20.99	155	16.84	29.47	3.2	3.5	37	0	69	.11	2	.7	1.1	30	DEP
		30	1616	52.07	19	21.33	155	5.92	9.72	3.3	3.6	35	1	90	.09	6	.5	.3	31	MER
		30	1646	10.08	19	21.15	155	5.64	7.33	2.4	2.6	33	2	96	.13	5	.5	.8	27	MER
		30	1657	27.24	19	20.24	155	5.12	7.69	2.6	2.5	29	1	125	.13	4	.7	.8	24	MER
		30	2138	30.40	19	20.96	155	6.74	8.77	2.7	3.0	31	0	92	.10	6	.5	.6	29	UER
		30	2139	46.85	19	21.06	155	6.49	7.01	3.0	3.2	33	1	93	.13	6	.5	.8	28	UER
DEC		1	019	9.76	19	12.58	155	27.36	34.56	1.8	1.5	30	2	118	.06	6	.8	1.0	29	LSW
		1	229	39.43	19	31.59	155	18.87	6.76		1.2	22	0	60	.13	8	.5	3.1	17	NER
		1	714	39.80	19	21.41	155	25.28	9.93	1.8	1.6	21	2	118	.08	4	.5	.8	20	HEA
		1	1031	23.36	19	20.57	155	11.57	6.57	1.9	1.8	28	1	74	.18	4	.6	1.2	23	UER
		1	12 7	6.74	19	21.04	155	16.86	25.82		1.8	24	0	68	.07	2	.7	1.3	21	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	DEC	1	1457	5.00	19	19.64	155	7.95	7.85	1.9	1.8	25	0	95	.08	4	.5	.8	23	UER
		2	637	56.99	19	21.56	154	59.75	5.70	2.2	1.8	22	0	203	.20	6	1.5	1.3	22	LER
		2	836	5.78	19	12.50	155	27.48	6.91	2.3	2.6	34	0	112	.16	6	.6	1.2	28	LSW
		2	849	10.52	19	25.69	155	24.82	9.12	2.3	2.5	29	0	55	.11	8	.5	1.2	21	UKF
		2	1112	39.26	19	21.58	155	8.08	8.42	2.4	2.9	31	0	70	.09	3	.4	.6	30	UER
		2	18	2	33.17	19	20.89	155	5.77	7.50	2.0	2.0	31	1	101	.11	5	.5	.7	27	MER
		2	1829	17.08	19	18.22	155	13.19	8.81	2.2	2.4	29	1	94	.09	2	.4	.5	25	POL
		2	1914	26.18	20	.96	155	34.65	11.98	2.5	2.6	25	2	178	.15	25	1.4	1.1	23	KOH
		2	20	5	6.55	19	45.49	155	18.60	40.32	2.3	1.6	36	4	114	.11	15	.7	.9	35	KKU
		2	22	5	5.93	19	23.07	155	3.00	8.20	2.0	2.0	28	1	115	.17	4	.8	.6	28	MER
		3	121	21.23	19	20.78	155	11.44	9.88	3.0	3.3	34	1	72	.09	4	.4	.4	32	UER
		3	417	57.36	19	23.56	155	26.56	8.71	2.0	1.7	30	1	71	.12	3	.4	.8	29	UKF
		3	445	24.00	19	21.02	155	7.20	6.83	2.1	2.4	31	0	87	.10	5	.5	.8	27	UER
		3	1027	5.28	19	19.75	155	11.95	6.77	2.0	2.0	30	0	86	.13	6	.5	.8	29	UER
		3	11	4	16.82	19	45.16	155	22.32	28.53	1.9	1.9	25	4	109	.10	16	.6	1.1	22	KKU
		3	1123	26.37	19	18.63	155	51.35	5.03	2.4	2.1	23	3	143	.32	5	1.1	2.2	18	KON
		3	21	7	12.16	19	19.95	155	11.59	6.49	2.1	2.2	32	0	85	.14	5	.5	.8	25	UER
		3	2331	10.71	19	20.11	155	12.25	8.45	2.2	2.6	30	0	77	.11	5	.5	.6	25	UER
		4	311	10.35	19	19.75	155	7.86	8.55	2.5	2.8	33	0	96	.10	4	.6	.5	30	UER
		4	339	31.24	19	21.11	155	3.31	6.13	2.1	2.1	27	0	113	.11	2	.6	.9	22	MER
		4	1256	36.96	19	20.66	155	7.61	5.10	2.4	2.4	29	0	87	.14	5	.6	2.1	26	UER
		4	1451	56.91	19	28.33	155	51.20	6.98		1.9	20	0	125	.15	7	.7	1.2	20	KON
		4	2152	24.61	19	20.04	155	12.87	9.39	2.1	2.4	32	0	71	.10	5	.5	.4	30	UER
		5	451	43.95	19	24.33	155	51.99	7.96		1.9	25	1	148	.19	11	.8	.9	23	KON
		5	853	23.97	19	19.73	155	11.42	9.15	2.3	2.7	32	0	91	.11	5	.5	.5	28	UER
		5	857	33.79	19	19.51	155	11.38	9.38	2.9	3.2	37	2	96	.12	5	.5	.4	27	UER
		5	10	8	54.76	19	19.51	155	11.41	9.44	2.3	2.9	33	0	96	.11	5	.5	.4	30	UER
		5	1136	39.82	19	19.90	155	11.63	9.74	3.8	4.0	37	1	86	.11	5	.5	.5	25	UER
		5	13	7	58.63	19	21.08	155	13.27	8.31	2.2	2.2	33	0	57	.12	3	.4	.6	29	UER
		5	1521	11.77	19	21.57	155	1.72	6.59	2.1	2.3	25	0	169	.12	4	.8	.8	21	MER
		5	1651	.10	19	19.93	155	11.15	7.32	1.7	1.8	27	0	88	.10	5	.5	.8	22	UER
		5	1742	23.58	19	20.01	155	50.89	1.55	1.8	1.4	31	4	139	.19	8	.5	.7	18	KON
		5	1745	41.21	19	20.03	155	11.25	9.12	2.3	2.0	29	0	85	.11	5	.5	.6	26	UER
		5	2018	21.29	19	24.19	155	29.80	7.40	2.0	2.1	31	0	51	.13	5	.4	1.4	24	UKF
		5	2026	18.98	19	20.19	155	8.39	7.68	1.9	2.1	29	0	78	.09	4	.5	.7	23	UER
		6	228	32.93	19	25.18	154	50.41	8.74	2.0	1.8	26	4	277	.16	9	.9	.8	20	LER
		6	351	8.61	19	22.73	155	24.57	9.96	2.4	2.5	36	1	40	.13	5	.5	.6	30	UKF
		6	451	14.11	19	22.93	155	24.66	8.10	1.8	1.8	30	0	57	.13	5	.5	1.1	25	UKF
		6	1311	28.00	19	20.17	155	11.23	7.95	2.3	2.4	29	0	82	.09	4	.5	.7	28	UER
		6	1451	39.59	19	22.27	155	4.35	8.58	2.3	2.8	28	0	89	.07	4	.5	.5	24	MER
		6	1633	43.52	19	17.37	155	22.02	5.07		1.4	23	0	124	.17	6	.6	3.0	21	SWR
		6	17	5	7.32	19	20.42	155	13.71	8.88	2.4	2.6	31	0	68	.10	4	.4	.5	28	UER
		6	2246	9.49	19	23.56	155	1.79	8.61	2.1	1.7	24	0	136	.14	5	.8	.5	23	MER
		6	2255	48.29	19	10.78	155	24.94	72.96		2.6	20	0	186	.34	6	9.1	13.8	18	LSW
		7	0	6	9.18	19	17.40	155	29.41	7.98	2.3	2.3	29	0	118	.13	10	.6	1.8	25	HEA
		7	115	51.55	19	20.93	155	6.25	7.45	2.0	1.8	27	0	98	.09	6	.5	.9	26	UER
		7	358	17.77	19	19.28	155	11.55	6.44	2.0	2.0	29	0	100	.11	5	.5	.9	25	UER
		7	1045	32.10	19	19.65	155	7.98	8.99	2.3	2.3	27	0	93	.09	4	.5	.7	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	DEC	7	1838	54.72	19	21.41	155	2.72	5.43	2.2	2.3	27	1	139	.13	3	.6	1.2	22	MER
		7	2210	5.44	19	17.94	155	30.42	8.33	2.4	2.3	27	0	70	.15	10	.5	1.7	22	HEA
		8	321	18.97	19	20.73	155	6.06	7.67	2.2	2.0	29	1	103	.13	6	.5	.9	23	UER
		8	724	.25	19	20.13	155	11.34	4.45	2.0	1.7	25	0	83	.12	4	.5	1.5	21	UER
		8	730	12.59	19	47.93	155	8.38	41.45	2.9	3.2	41	3	193	.11	10	.9	1.5	34	HIL
		8	910	3.01	19	19.22	155	11.94	9.79	3.2	3.4	35	0	98	.10	5	.5	.4	32	UER
		8	917	7.51	19	19.66	155	11.81	8.58	2.2	2.4	31	0	89	.10	6	.4	.5	30	UER
		8	10	0	25.21	19	23.85	155	24.80	8.11	1.6	1.7	22	0	75	.11	6	.6	1.3	17	UKF
		8	1023	1.14	19	19.97	155	11.90	7.41	2.3	2.3	31	0	82	.10	5	.5	.7	23	UER
		8	11	5	50.09	19	19.29	155	11.70	9.44	2.5	2.5	29	0	99	.10	5	.5	.5	24	UER
		9	153	58.99	19	22.41	155	4.42	10.22	2.0	1.9	27	0	87	.08	4	.6	.5	22	MER
		9	7	4	10.24	19	17.20	155	16.36	10.17	2.6	2.8	31	1	138	.09	4	.5	.4	28	KOA
		9	2219	50.14	19	29.93	155	20.37	3.85		1.9	19	1	161	.17	5	.9	2.4	16	NER
		9	2250	1.52	19	22.38	155	4.61	8.02	2.0	2.0	29	0	84	.11	4	.6	.6	26	MER
		10	052	46.71	19	11.19	155	33.59	7.41		1.7	28	5	99	.19	9	.6	1.0	24	LSW
		10	1228	48.78	19	19.39	155	9.83	7.58	2.4	2.5	29	1	98	.09	5	.5	.8	26	UER
		10	1325	2.30	19	20.38	155	6.73	5.42	2.2	2.3	25	0	104	.13	6	.6	2.1	18	UER
		10	1629	42.39	19	10.87	155	41.70	7.20	2.5	2.5	29	1	127	.21	11	.8	1.3	24	HEA
		10	1835	25.13	19	20.16	155	6.92	7.60	2.1	1.8	27	0	107	.10	6	.5	.9	24	UER
		11	713	19.85	19	22.02	155	4.28	9.44	2.9	3.2	33	1	89	.08	5	.6	.4	30	MER
		11	821	13.06	19	22.97	155	4.57	9.99	2.3	2.0	27	0	85	.09	3	.6	.5	23	MER
		11	928	52.77	19	22.71	155	4.46	10.35	2.2	2.0	24	0	86	.09	3	.6	.6	21	MER
		11	1159	.01	19	26.57	155	30.24	8.54	2.3	2.3	28	0	62	.11	9	.5	1.4	22	MOK
		11	2315	38.17	19	17.50	155	30.80	4.08	2.4	2.1	28	0	69	.16	11	.6	3.7	24	HEA
		12	0	4	11.60	19	22.05	155	7.15	5.50	2.0	1.5	21	1	72	.14	5	.6	1.3	20	UER
		12	116	55.14	19	6.33	155	27.27	46.63		2.2	17	0	189	.06	23	1.5	5.7	17	LSW
		12	253	23.98	19	24.71	154	57.18	7.37	2.2	1.7	21	1	189	.21	3	1.7	1.0	19	LER
		12	1844	31.65	19	21.75	155	4.60	8.72	3.9	4.2	37	1	81	.09	4	.6	.4	32	MER
		12	2139	39.12	19	23.23	155	3.44	7.29	1.9	2.0	23	0	104	.12	3	.6	.9	20	MER
		13	512	17.50	19	19.98	155	48.41	11.00	2.8	2.3	26	1	103	.16	10	.7	.7	20	KON
		13	8	5	42.92	19	25.31	155	25.02	7.33	2.5	2.0	32	1	48	.13	7	.4	1.3	26	UKF
		13	1248	25.65	19	20.41	155	12.55	8.22	1.9	1.9	30	1	70	.10	4	.5	.6	21	UER
		13	1657	46.41	19	19.86	155	7.37	6.92	2.2	2.5	23	0	104	.08	5	.5	1.2	22	UER
		13	19	7	37.47	19	16.88	155	12.47	8.32		1.5	23	0	183	.09	2	.8	.8	18	POL
		14	412	45.04	19	18.69	155	13.51	10.49	4.1	4.2	37	1	74	.10	3	.5	.4	31	POL
		14	416	35.26	19	19.06	155	14.01	3.87		.9	11	0	106	.10	4	.6	1.9	9	UER
		14	417	48.72	19	21.14	155	6.81	6.76	2.0	2.0	22	0	89	.12	6	.6	1.1	20	UER
		14	429	21.70	19	19.88	155	10.95	7.68	2.2	2.1	26	0	89	.10	4	.5	.6	20	UER
		14	16	2	15.50	19	18.53	155	13.34	10.28	2.9	3.2	30	0	83	.10	3	.5	.4	29	POL
		14	1720	16.05	19	19.16	155	13.02	6.87	1.1	1.6	24	0	82	.09	4	.6	1.1	23	UER
		14	2034	47.27	19	20.74	155	10.92	7.03	2.0	2.0	28	0	73	.09	3	.5	.8	22	UER
		15	129	22.42	19	30.36	155	17.63	11.18	2.6	3.1	35	1	57	.11	9	.4	.6	30	GLN
		15	214	58.15	19	26.39	155	23.81	8.91		1.6	23	1	70	.13	6	.5	1.2	22	UKF
		15	320	30.28	19	21.27	155	5.86	4.34	1.9	1.8	14	1	245	.12	7	1.4	6.0	11	MER
		15	6	2	10.12	19	34.33	155	41.67	5.67	1.4	1.2	15	1	129	.13	10	.7	3.7	15	MOK
		15	737	50.42	19	19.99	155	13.14	10.07	3.3	3.6	36	2	68	.09	5	.5	.4	30	UER
		15	915	48.07	19	22.92	155	3.74	7.92	2.3	2.4	26	0	100	.10	3	.5	.6	19	MER
		15	1050	40.59	19	19.81	155	8.27	8.39	2.3	2.3	27	0	85	.09	5	.5	.8	23	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	DEC	15	1550	57.97	19	24.18	155	25.66	10.02	2.0	2.6	33	0	59	.11	5	.4	.6	31	UKF
		15	2334	43.55	19	16.93	155	30.69	2.77	1.4	1.2	17	1	71	.16	12	.6	1.8	12	HEA
		16	537	14.36	19	26.13	155	24.87	9.84	2.8	2.8	31	0	33	.11	7	.4	.7	25	UKF
		16	552	19.72	19	19.75	155	8.02	6.62	1.2	1.8	23	0	91	.08	4	.5	1.2	19	UER
		16	1350	23.42	19	23.99	155	16.85	2.86	1.0	1.5	10	0	74	.40	1	1.4	1.0	10	SPC L
		16	15	0 48.98	19	20.86	155	12.96	8.58	2.4	2.5	29	0	62	.11	3	.4	.6	27	UER
		17	1531	28.62	19	24.65	155	26.23	8.20	1.7	1.5	18	0	120	.11	5	.6	1.4	16	UKF
		18	558	32.63	19	19.53	155	16.19	8.99	2.3	2.4	28	0	94	.11	2	.4	.6	23	KOA
		18	1027	17.14	19	19.16	155	12.98	7.79	2.0	1.8	29	0	83	.10	4	.5	.6	25	UER
		18	23	2 10.16	19	20.64	155	12.43	8.19	2.0	1.9	29	0	69	.11	4	.5	.6	27	UER
		19	426	38.82	19	20.16	155	7.35	9.14	2.6	2.9	31	0	99	.08	5	.6	.5	30	UER
		19	1019	9.48	19	23.91	155	16.78	16.72		1.1	28	2	68	.09	1	.5	.7	27	INT
		19	1129	29.20	19	21.94	155	4.65	8.02	2.2	2.4	27	0	81	.13	5	.6	.8	26	MER
		19	1426	46.57	19	30.25	155	42.41	2.31		1.0	17	2	101	.12	6	.7	.9	13	MOK
		19	1738	21.08	19	17.27	155	14.03	7.37	1.7	2.0	30	0	151	.11	1	.6	.6	27	POL
		19	1941	.65	19	19.80	155	13.27	6.05	1.6	1.4	26	0	69	.11	5	.5	1.0	23	UER
		20	1231	43.95	19	42.51	155	2.18	4.93	2.0	2.2	15	0	251	.21	23	2.5	4.7	15	HIL B
		20	1630	.06	19	26.35	155	30.11	9.40	2.2	2.3	33	1	56	.13	8	.4	.9	26	MOK
		20	1735	53.93	19	23.21	154	59.76	6.85	2.3	2.3	24	1	177	.16	4	1.0	.7	21	LER
		21	123	4.94	19	26.04	155	23.12	8.84	1.5	1.6	21	0	72	.12	7	.6	1.2	21	UKF
		21	127	5.96	19	21.13	155	5.73	4.34	1.9	1.6	25	0	96	.11	5	.6	2.5	19	MER
		21	3	7 37.58	19	21.55	155	2.19	5.56	2.1	1.8	23	0	156	.14	3	.7	1.2	20	MER
		21	650	44.75	19	42.92	156	.43	7.79	2.8	2.3	20	1	223	.10	27	1.1	.9	20	KON
		21	815	49.67	19	16.77	155	27.56	7.48	2.0	2.0	26	1	126	.13	10	.6	1.0	24	HEA
		21	10	3 28.63	19	13.55	155	34.97	10.01		1.8	15	0	224	.13	5	1.5	1.0	14	HEA
		21	1225	9.22	19	17.99	155	13.06	8.08	1.7	1.6	25	1	105	.08	2	.5	.8	24	POL
		21	1329	27.68	19	19.97	155	13.51	10.20	3.5	3.9	35	0	62	.11	5	.5	.4	35	UER
		21	1625	15.71	19	28.03	155	23.42	8.49	3.3	3.1	35	1	77	.15	3	.5	.8	35	UKF
		21	1848	9.33	19	19.63	155	9.20	6.50	1.8	1.6	24	0	86	.11	5	.5	1.0	24	UER
		21	23	7 56.57	19	25.06	155	16.84	8.15	1.7	1.8	14	1	144	.11	0	.8	.7	13	LPC L
		22	149	48.07	19	12.02	155	33.21	7.23	2.7	2.7	34	1	90	.21	9	.7	1.3	32	LSW
		22	436	49.97	19	20.43	155	12.51	7.16	1.6	1.5	21	0	70	.11	4	.6	.9	21	UER
		22	550	.09	19	20.43	155	8.00	6.22	1.4	1.4	20	1	83	.09	4	.5	1.0	16	UER
		22	828	31.67	19	19.71	155	12.72	9.27	2.6	3.1	29	0	78	.10	5	.4	.5	21	UER
		22	834	50.01	19	20.44	155	3.96	6.41	1.8	2.1	24	0	113	.09	2	.6	.9	20	MER
		22	1850	55.90	19	22.11	155	4.94	7.43	2.2	2.7	27	0	77	.11	5	.5	.8	27	MER
		22	21	1 7.37	19	21.10	155	7.14	7.75	1.9	1.8	28	0	86	.10	5	.5	.8	23	UER
		22	22	9 10.91	19	24.77	155	30.02	7.40	2.4	2.3	30	0	53	.13	6	.4	1.5	29	MOK
		23	240	16.05	19	12.09	155	32.85	6.55	2.4	2.6	33	1	89	.20	9	.7	1.3	30	LSW
		23	411	37.43	19	17.26	155	21.58	7.46	1.9	2.1	32	0	127	.16	5	.6	1.1	29	SWR
		23	443	40.27	19	11.79	155	32.42	6.49		2.2	28	0	92	.15	9	.6	1.3	28	LSW
		23	1026	38.99	19	26.36	155	49.42	8.27	2.8	2.4	29	1	104	.20	10	.7	.9	27	KON
		23	1323	4.52	19	21.98	155	4.81	7.33	2.2	2.3	27	0	78	.12	5	.5	.9	26	MER
		23	1340	42.55	19	23.62	155	15.45	2.85	1.5	1.4	12	0	93	.09	2	.5	.5	12	SPC
		23	1437	12.08	19	20.95	155	12.68	7.78	1.9	2.0	27	1	63	.12	3	.5	.8	23	UER
		23	1715	11.84	19	27.96	155	14.70	33.36	1.8	.9	14	1	167	.07	6	1.2	1.3	14	DEP
		23	18	2 49.50	19	20.02	155	11.49	6.40	1.8	1.8	25	1	148	.15	5	.7	1.1	24	UER
		24	012	48.44	19	19.88	155	12.25	7.30	1.6	1.5	28	1	81	.12	5	.5	.8	27	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	DEC	24	029	47.17	19	22.15	155	26.38	9.24	1.6	1.4	23	1	112	.12	2	.5	.9	23	UKF
		24	130	34.67	19	22.37	155	29.70	8.44	1.8	1.7	29	0	60	.10	4	.4	1.0	28	UKF
		24	228	22.58	19	21.00	155	12.67	7.84	1.9	2.1	29	0	62	.13	3	.5	.8	27	UER
		24	358	1.00	19	19.97	155	12.82	7.65	1.5	1.6	26	1	73	.13	5	.6	.7	25	UER
		24	441	7.00	19	20.92	155	6.96	7.45	1.4	1.4	26	0	91	.13	6	.6	.9	26	UER
		24	710	.85	19	19.49	155	7.48	3.21	1.9	1.8	29	0	108	.17	4	.6	1.6	27	UER
		24	858	34.78	19	19.07	155	13.14	7.57	1.2	1.5	27	0	80	.12	4	.5	.7	26	UER
		24	919	50.62	19	26.37	155	25.07	8.20	1.9	2.1	30	0	51	.15	7	.5	1.1	30	UKF
		24	1219	10.88	19	17.68	155	12.75	7.46	1.2	1.4	22	0	133	.08	2	.6	1.1	22	POL
		24	1631	16.33	19	21.82	155	27.51	47.93	1.9	1.6	26	2	94	.11	1	.9	1.3	26	HEA
		24	1716	58.07	19	17.02	155	23.66	5.00		1.5	24	0	119	.16	6	.6	3.6	23	SWR
		24	1745	35.25	19	24.28	155	37.50	.21	2.2	1.9	8	0	77	.17	6	.9	3.6	8	MOK *
		24	1938	27.47	19	18.00	155	13.02	9.77	2.1	2.3	29	0	142	.10	9	.6	.7	26	POL
		24	2253	6.27	19	18.62	155	13.97	6.61	1.4	1.7	30	0	73	.10	3	.5	.8	29	POL
		25	1252	9.60	19	20.09	155	11.62	7.99	1.9	2.1	30	0	82	.11	5	.5	.7	26	UER
		25	1320	52.75	19	20.13	155	11.32	8.15	2.0	2.4	28	0	83	.10	4	.5	.6	24	UER
		25	1324	40.26	19	30.89	155	5.77	46.30		1.8	34	3	81	.12	4	.9	2.0	31	GLN
		25	1628	50.32	19	21.19	155	4.62	8.98	3.2	3.4	34	0	92	.11	4	.6	.4	32	MER
		25	1712	45.00	19	19.92	155	7.09	7.73	1.8	2.0	11	0	108	.11	5	1.3	1.6	11	UER
		25	2138	54.44	19	23.52	155	24.13	10.52	2.5	2.8	16	0	90	.12	6	.6	.8	15	UKF
		25	2258	47.34	19	20.61	155	2.40	7.61	2.1	2.3	16	0	173	.11	2	1.1	.5	12	MER
		26	042	1.14	20	2.86	155	34.79	28.56	1.5	1.3	10	2	189	.07	23	1.2	1.3	9	KOH
		26	121	24.97	19	20.79	155	3.45	8.50	2.8	2.9	16	0	102	.11	2	1.1	.6	12	MER
		26	153	15.16	19	20.74	155	2.63	7.46	2.0	1.7	12	0	155	.11	2	1.2	.8	11	MER
		26	1834	.73	19	13.77	155	35.80	7.87	2.2	2.2	25	1	84	.20	3	.7	1.2	21	HEA
		27	040	55.83	19	20.13	155	12.94	9.93	4.3	4.6	35	0	70	.08	5	.5	.4	34	UER
		27	049	8.20	19	20.05	155	11.86	7.87	2.2	2.1	30	0	81	.12	5	.5	.6	26	UER
		27	2	9 9.16	19	21.09	155	10.68	7.81	1.7	1.8	26	0	68	.12	2	.5	.8	25	UER
		27	254	59.32	19	21.05	155	2.84	6.56	2.0	1.9	25	0	137	.13	2	.7	.7	18	MER
		27	330	36.59	19	13.92	155	37.30	7.92	2.3	1.9	32	3	89	.18	2	.6	.8	27	HEA
		27	6	9 39.91	19	26.30	154	53.37	6.74	2.0	2.0	27	1	236	.20	4	2.2	.8	23	LER
		27	1452	16.90	19	19.29	155	12.05	9.60	2.9	3.2	34	0	95	.12	5	.5	.4	28	UER
		27	1510	54.57	19	17.85	155	15.41	8.60	2.6	3.1	32	0	142	.10	6	.6	.7	32	KOA
		27	1619	29.49	19	21.54	155	13.05	7.75	1.6	2.0	26	0	54	.13	2	.5	.7	23	UER
		27	1855	40.26	19	20.74	155	8.25	6.96		1.6	24	0	76	.11	4	.5	1.0	24	UER
		28	036	48.15	19	19.89	155	10.77	6.50	1.5	1.7	27	0	89	.14	4	.6	.9	26	UER
		28	314	32.39	19	21.88	155	10.40	33.77	2.8	3.2	36	1	59	.09	1	.7	1.2	30	UER
		28	315	27.40	19	15.06	155	6.15	47.52	3.4	3.8	36	1	204	.08	5	.9	1.6	30	POL
		28	615	19.70	19	20.97	155	2.94	6.30	1.3	1.4	21	1	132	.17	2	.8	1.1	20	MER
		28	740	21.40	19	19.95	155	11.70	7.54	1.9	2.3	27	0	84	.13	5	.6	.8	26	UER
		28	756	19.40	19	19.90	155	11.66	7.44	2.1	2.5	33	0	86	.15	5	.5	.7	27	UER
		28	851	1.88	19	21.65	155	15.21	9.41	3.4	3.4	34	2	62	.16	2	.4	.5	28	KOA
		28	11	4 15.97	19	19.75	155	8.45	6.01	1.4	1.6	19	0	81	.13	5	.6	1.8	17	UER
		28	1731	31.42	19	27.03	155	14.77	32.44	2.0	1.9	31	3	70	.09	4	.7	1.1	29	DEP
		29	011	55.46	19	19.79	155	10.42	7.57	1.7	2.1	26	0	91	.10	4	.5	.9	24	UER
		29	017	56.40	19	19.86	155	10.36	7.32	1.7	2.0	26	0	90	.12	4	.6	1.1	22	UER
		29	738	49.44	19	19.88	155	8.05	8.30	1.6	2.1	24	0	88	.08	5	.6	.7	22	UER
		29	739	36.95	19	20.01	155	8.27	6.47	1.8	1.5	21	0	82	.11	5	.5	1.3	21	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	DEC	29	9 9	55.80	19	26.97	155	14.71	31.55	1.5	2.1	26	1	127	.07	4	.8	1.4	21	DEP	
		29	1043	49.63	19	22.85	155	3.19	7.73	1.8	1.9	19	1	114	.13	4	.6	1.4	14	MER	
		29	1333	55.37	19	28.37	154	53.05	5.01	1.3	1.4	17	2	258	.14	1	1.9	.6	9	LER	
		29	1451	17.97	19	49.03	156	17.25	6.36	3.4	3.9	28	0	322	.11	49	15.7	5.5	26	DIS	*
		29	1456	44.06	19	50.07	156	21.44	2.29	2.7	3.1	29	0	322	.11	57	11.2	11.4	22	DIS	*
		29	1523	44.19	19	20.95	155	10.85	8.34	1.2	1.4	18	0	71	.08	3	.5	1.1	11	UER	
		29	1652	9.35	19	7.35	155	24.21	44.18	1.5	1.7	19	0	184	.05	8	1.4	3.2	16	LSW	L
		29	2017	1.05	19	19.76	155	7.64	6.96	1.0	1.3	19	1	187	.08	6	.9	1.0	16	UER	
		29	2231	44.38	19	21.34	155	6.66	6.60	1.4	1.8	20	1	87	.10	6	.5	1.2	16	UER	
		29	2327	.78	19	25.56	155	24.46	9.69	2.3	2.7	30	0	46	.13	8	.4	.8	27	UKF	
		29	2356	14.35	19	29.07	154	51.07	5.49	1.5	1.3	15	1	268	.10	4	2.5	.9	6	LER	
		30	0 4	54.89	19	21.59	155	1.94	7.34	2.1	2.6	25	0	163	.09	4	.7	.6	17	MER	
		30	2 6	41.70	19	19.83	155	11.53	8.63	1.1	1.4	21	0	88	.09	5	.5	1.0	17	UER	
		30	439	56.69	19	28.10	154	53.42	4.93	1.2	1.1	17	3	228	.12	1	1.5	.7	8	LER	
		30	553	52.22	19	20.66	155	10.86	8.49	1.5	1.8	24	0	75	.09	3	.4	.7	19	UER	
		30	648	14.51	19	25.67	155	26.55	8.90	2.7	2.9	35	0	38	.14	6	.5	.8	32	UKF	
		30	744	17.46	19	19.49	155	11.71	7.30	1.1	.7	18	0	94	.07	6	.5	1.2	16	UER	
		30	946	17.33	19	26.30	154	51.04	8.14	1.7	1.7	23	1	273	.18	6	2.7	.7	16	LER	
		30	1840	48.14	19	22.85	155	4.12	10.23	1.6	1.6	22	0	94	.07	3	.5	.8	21	MER	
		31	248	39.41	19	31.92	155	41.90	9.48	3.0	2.9	32	0	62	.12	7	.5	.7	28	MOK	
		31	434	29.58	19	20.86	155	13.06	6.66	1.8	2.2	27	0	120	.21	3	.8	1.1	16	UER	
		31	1039	.30	19	27.44	154	54.33	4.52	2.1	1.9	20	0	211	.19	2	2.1	1.2	19	LER	
		31	1939	43.04	19	20.21	155	11.58	6.65	2.4	2.6	34	1	81	.19	5	.6	.9	27	UER	
		31	1945	12.55	19	30.03	155	29.06	2.68	1.6	1.6	21	0	96	.12	4	.5	1.6	14	NER	
		31	2232	7.61	19	20.47	155	13.02	8.42	1.6	1.8	28	0	64	.10	4	.4	.6	24	UER	

TABLE 6. HVO EARTHQUAKE SUMMARY LIST (M>3) PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	JAN	2	20 0	49.73	19	20.03	155	13.25	9.86	2.4	3.2	30	1	66	.08	5	.4	.4	29	UER
		4	842	27.33	19	19.43	155	10.83	9.93	3.7	4.1	35	1	100	.10	5	.4	.5	28	UER F
		4	10 0	23.66	19	20.45	155	13.70	9.20	2.7	3.4	34	2	57	.12	4	.4	.6	29	UER
		5	358	46.70	19	18.96	155	15.97	9.97	3.2	3.4	38	2	100	.10	3	.4	.4	33	KOA F
		5	1213	56.02	19	19.03	154	59.91	44.07	2.8	3.0	34	2	220	.10	6	1.1	1.9	29	DIS
		7	2030	35.92	19	59.60	155	20.50	9.71	2.9	3.2	33	2	274	.13	27	1.9	.8	28	KKU F
		10	2233	11.45	19	19.55	155	13.06	10.16	3.8	4.1	38	2	75	.10	5	.4	.4	30	UER F
		10	23 9	54.40	19	19.63	155	13.37	9.47	2.8	3.2	33	1	69	.10	5	.4	.4	28	UER
		12	1434	6.57	19	31.18	155	55.53	9.95	3.0	3.1	32	0	218	.22	4	1.5	.7	28	KON F
		13	1040	10.72	19	18.98	155	12.25	8.88	2.6	3.0	32	1	100	.11	4	.4	.6	28	POL
		14	015	18.89	19	11.00	155	19.84	51.68	2.4	3.1	37	5	178	.10	13	.8	1.0	26	HLP L
		16	1643	46.56	19	20.88	155	6.65	7.93	2.7	3.2	32	0	95	.12	6	.5	.7	29	UER
		19	1552	10.49	19	45.62	155	6.43	39.00	3.0	3.2	37	2	187	.10	5	.8	1.0	27	HIL
		21	12 2	26.21	19	21.37	155	2.91	7.27	2.7	3.1	34	2	132	.11	3	.5	.6	31	MER
		22	541	32.82	19	18.84	155	7.13	8.69	3.3	3.6	37	2	134	.12	3	.5	.4	33	POL
		22	2021	38.70	19	19.91	155	3.54	9.42	3.7	4.1	36	1	150	.11	1	.7	.4	34	MER F
		22	2028	27.13	19	20.65	155	3.87	9.33	3.6	4.0	38	3	101	.11	2	.5	.4	33	MER F
		23	056	10.31	19	20.17	155	3.49	8.84	2.3	3.0	32	2	122	.11	1	.6	.5	27	MER
		24	1518	17.04	19	20.47	155	6.41	8.77	3.2	3.4	39	3	107	.12	6	.4	.6	35	UER F
		25	319	43.44	19	18.79	155	23.57	5.96	2.4	3.1	35	1	104	.15	3	.5	1.0	31	SWR
		26	1938	21.21	19	26.65	155	48.08	6.32	2.7	3.1	30	1	91	.20	8	.6	1.3	27	KON
		28	1632	59.51	19	19.82	155	10.24	7.16	2.8	3.3	31	0	90	.10	4	.5	.7	28	UER
		29	818	56.79	19	21.51	155	.46	7.40	2.5	3.1	30	0	195	.11	5	.9	.6	28	LER
		30	038	2.57	19	22.00	156	22.19	6.26	3.2	2.9	41	5	244	.13	49	.9	1.3	36	DIS
	FEB	2	11 3	47.79	19	20.07	155	14.01	33.45	3.4	3.3	37	1	60	.10	5	.7	.9	30	DEP
		2	1621	21.66	19	19.68	155	7.89	9.27	3.0	3.1	32	3	95	.10	4	.4	.7	27	UER
		2	1932	45.99	19	26.48	155	18.14	15.45	3.5	3.5	37	1	58	.11	2	.4	.3	30	INT F
		5	138	40.41	19	19.93	155	.46	6.92	2.8	3.2	33	3	215	.13	4	.5	.6	26	DIS
		6	1241	46.94	19	20.25	155	7.99	8.98	2.7	3.1	31	0	86	.10	5	.5	.6	30	UER
		7	939	14.23	19	19.42	155	9.92	8.33	2.4	3.0	33	0	97	.09	5	.5	.6	29	UER
		7	1532	26.38	19	40.34	155	3.42	1.77	2.4	3.1	26	1	196	.17	19	1.1	1.5	25	HIL B
		8	1156	37.30	19	20.75	155	6.12	8.91	2.7	3.0	29	1	103	.10	6	.5	.6	20	UER
		12	5 6	14.47	19	11.91	155	36.55	8.86	3.1	2.8	34	1	92	.25	6	.8	1.1	23	HEA
		14	10 5	6.39	19	24.00	155	16.85	15.02	3.4	3.7	40	3	35	.11	2	.4	.2	33	INT F
		15	637	34.75	19	20.18	155	56.64	14.95	2.9	3.5	27	2	234	.20	11	2.4	1.0	26	KON
		18	1451	59.76	19	19.64	155	8.62	9.30	3.0	3.6	32	0	77	.10	4	.5	.4	31	UER
		19	9 1	51.79	19	20.74	155	13.49	9.97	2.7	3.2	35	1	57	.10	4	.4	.5	30	UER
		19	1149	47.68	19	.63	155	25.72	41.20	3.1	3.1	37	1	215	.06	17	1.0	2.0	35	LSW
		20	734	24.25	19	19.34	155	7.68	8.86	2.6	3.1	34	2	106	.10	4	.4	.6	31	UER
		21	156	55.90	19	21.93	155	5.69	8.15	3.3	3.4	37	3	79	.12	5	.4	.7	30	MER
		22	743	55.09	19	26.06	155	34.41	47.55	2.5	3.0	17	2	74	.14	4	2.0	1.5	14	MOK
		23	6 6	11.12	19	19.49	155	6.22	9.31	3.1	3.2	36	2	166	.11	5	.5	.4	32	UER
		24	129	39.97	19	19.17	155	10.40	9.61	2.8	3.1	38	2	106	.13	5	.4	.5	32	UER
		24	837	4.65	19	26.51	155	59.94	22.22	3.1	2.8	31	2	231	.09	10	1.1	1.6	18	KON
		24	2255	28.17	19	27.25	156	15.25	16.89	3.2	3.1	33	0	263	.16	35	3.5	98.1	29	DIS F*
		25	929	25.39	19	20.07	155	13.61	9.84	2.8	3.3	36	3	61	.10	5	.4	.5	22	UER
	MAR	2	051	3.04	19	19.88	155	13.35	9.72	3.7	4.0	30	3	67	.10	5	.4	.6	22	UER F
		3	2019	4.24	20	23.00	156	19.22	14.26	2.9	3.2	34	6	210	.14	43	1.2	1.8	31	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	MAR	5	1926	16.56	19	26.03	155	35.36	36.61	2.4	3.4	24	1	72	.14	3	1.0	2.4	16	MOK L
		6	15 3	34.53	19	22.78	155	5.48	.14	2.6	3.5	31	0	71	.22	4	.6	1.7	28	MER *
		6	15 6	43.39	19	22.95	155	5.44	1.48	2.5	3.4	29	0	71	.18	4	.5	1.3	27	MER
		7	1546	20.75	19	27.09	155	26.93	27.53	2.5	3.3	38	4	39	.10	8	.5	.9	33	UKF
		10	524	43.38	19	19.59	155	7.99	9.55	3.1	3.3	37	3	93	.10	4	.4	.5	30	UER
		10	2155	51.22	19	26.14	155	36.43	46.47	2.8	3.3	20	0	69	.15	2	1.4	3.3	20	MOK L
		12	23 8	18.57	19	27.79	155	29.29	10.78	2.9	3.2	38	2	54	.12	8	.4	.6	36	UKF
		13	1947	46.87	19	23.15	155	16.12	2.66	2.3	3.2	21	2	57	.11	1	.3	.5	18	SPC
		14	723	13.27	19	22.09	155	15.50	27.23	2.8	3.1	40	3	57	.11	1	.5	.8	26	DEP
		14	10 9	28.38	19	19.83	155	6.74	10.03	2.9	3.4	35	2	117	.09	5	.6	.5	29	UER
		17	229	1.71	19	26.77	155	24.68	8.55	3.2	3.5	35	2	31	.14	6	.4	.9	25	UKF
		17	246	14.09	19	20.14	155	13.08	9.75	3.0	3.2	37	2	68	.10	5	.4	.5	26	UER
		20	1913	25.59	19	21.99	155	25.21	11.40	3.3	3.6	40	2	58	.12	4	.4	.3	35	HEA F
		24	13 6	30.09	19	27.74	154	52.68	45.11	3.0	2.8	38	3	262	.10	3	.8	1.0	31	LER
		25	657	56.43	19	20.88	155	10.74	8.67	2.6	3.0	34	2	71	.10	3	.4	.6	28	UER
		26	1912	57.29	19	10.34	155	28.97	33.88	2.9	3.1	39	2	96	.09	2	.8	1.3	36	LSW
		27	419	52.71	19	20.88	155	8.00	9.10	2.4	3.1	35	1	78	.08	4	.4	.4	27	UER
		27	1131	8.66	19	21.12	155	25.80	10.81	3.1	3.2	34	1	76	.13	4	.4	.6	30	HEA
		27	2157	50.96	19	28.02	154	50.60	8.01	3.1	3.2	26	1	284	.14	5	1.4	.6	23	LER
		28	1542	46.11	18	49.13	155	12.05	16.34	3.5	3.2	34	3	292	.18	52	5.8	37.1	32	PPL *
		29	156	35.78	19	21.46	155	6.56	8.38	2.7	3.1	32	1	84	.10	6	.4	.5	28	UER
		29	2 1	23.27	19	17.67	155	12.93	10.89	2.7	3.0	31	0	147	.11	9	.7	.6	26	POL
		29	1747	23.14	19	19.73	155	7.28	9.21	2.6	3.0	30	0	109	.10	5	.6	.5	23	UER
		31	523	41.50	19	24.92	155	28.81	10.85	3.3	3.2	35	1	50	.13	5	.5	.6	33	UKF
	APR	2	1316	49.70	19	18.99	155	15.66	9.44	2.5	3.0	33	0	96	.11	4	.5	.5	30	KOA
		2	1828	32.98	19	19.90	155	12.01	8.80	3.3	3.4	36	1	83	.09	5	.4	.4	32	UER F
		3	237	46.80	19	18.75	155	15.64	9.79	2.5	3.1	35	1	101	.11	4	.4	.4	31	KOA
		4	8 0	22.26	19	9.44	155	36.04	5.25	2.8	3.2	28	1	111	.15	14	.6	1.5	24	HEA
		6	347	14.06	19	19.68	155	8.05	10.08	3.4	3.6	38	2	90	.09	4	.5	.4	31	UER F
		7	1643	43.29	19	52.38	155	7.68	39.27	4.0	4.3	35	0	235	.11	22	2.1	3.4	32	KKU F
		9	129	27.02	19	22.67	155	4.70	8.06	2.6	3.1	30	2	82	.10	4	.4	.6	26	MER
		10	244	39.71	19	19.10	155	12.30	8.60	2.5	3.0	34	0	95	.12	4	.4	.4	31	UER
		10	2123	57.83	19	29.16	155	52.84	6.55	2.9	3.1	28	2	97	.22	4	.8	.9	26	KON F
		12	935	28.10	19	21.26	155	7.14	9.25	3.3	3.6	34	1	84	.08	5	.5	.5	29	UER F
		12	2055	12.67	19	20.83	155	3.77	8.43	3.7	3.9	38	2	90	.09	2	.5	.4	34	MER F
		14	030	50.88	19	18.13	155	45.51	52.96	3.0	3.7	9	1	313	.12	27	5.7	3.2	8	KON L
		17	0 3	17.40	19	25.24	155	16.80	3.86	2.6	3.2	27	1	38	.14	1	.4	.6	25	SPC
		17	247	49.83	19	21.22	155	14.85	10.01	3.0	3.6	36	2	65	.09	4	.4	.4	32	UER
		17	321	12.23	19	20.17	155	13.81	9.00	2.5	3.1	34	1	72	.16	5	.5	.6	27	UER
		17	1840	54.66	19	21.14	155	1.44	7.39	3.3	3.9	36	1	186	.09	3	.6	.4	33	MER F
		18	448	55.04	19	20.63	155	3.86	6.96	3.1	3.4	33	1	101	.14	2	.6	.7	25	MER
		19	1636	25.05	19	12.18	155	31.25	37.46	2.7	3.0	38	2	83	.08	8	.7	1.2	31	LSW
		20	2349	3.53	19	19.53	155	11.67	9.50	3.0	3.2	30	1	94	.11	6	.5	.6	29	UER
		23	726	24.49	19	21.14	155	15.37	9.00	2.8	3.0	32	1	69	.10	3	.4	.5	28	KOA
		24	126	48.36	19	22.64	155	4.87	8.32	2.7	3.0	31	1	80	.07	4	.4	.5	27	MER
		24	23 2	1.06	19	21.90	155	4.04	7.11	2.6	3.1	29	1	95	.10	4	.4	.6	28	MER
		28	134	37.55	20	9.51	155	35.84	35.59	3.1	2.8	40	4	175	.09	19	.7	1.5	35	KOH
	MAY	3	729	6.40	19	17.49	155	29.96	7.88	3.3	3.5	36	1	75	.13	10	.5	.8	33	HEA F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	MAY	6	812	39.39	19	24.51	155	26.25	9.98	3.2	3.2	22	3	86	.13	4	.5	.8	19	UKF
		9	1846	41.16	19	20.17	155	12.02	8.34	2.7	3.1	31	2	78	.12	5	.4	.8	23	UER
		10	240	34.08	19	21.54	155	4.92	8.82	3.1	3.2	34	1	85	.12	5	.5	.5	30	MER
		10	1423	57.94	19	19.46	155	6.68	8.63	3.3	3.5	30	1	128	.09	5	.5	.6	29	UER
		12	516	10.32	19	20.26	155	3.44	8.12	2.8	3.0	35	2	110	.09	1	.5	.4	31	MER
		13	10 9	24.65	19	58.23	155	35.87	10.92	3.0	3.3	33	1	249	.11	26	1.5	.7	29	KOH F
		15	336	41.27	19	21.85	155	5.78	8.45	2.8	3.2	33	0	80	.13	6	.5	.7	30	MER
		15	2045	41.97	19	20.93	156	18.96	32.36	3.0	2.4	27	2	291	.11	45	3.0	1.6	25	DIS
		19	1059	48.91	19	18.62	155	26.50	10.19	2.9	3.1	36	1	91	.13	6	.4	.6	31	HEA
		21	1317	51.60	19	19.70	155	13.42	9.61	2.7	3.2	33	1	67	.10	5	.4	.4	29	UER
		22	21 9	26.70	19	18.58	155	13.46	10.25	3.6	3.9	34	0	78	.10	3	.5	.4	32	POL F
		22	2227	4.59	19	20.07	155	7.70	8.84	2.7	3.0	34	1	95	.09	5	.4	.5	31	UER
		24	359	15.39	19	20.92	155	2.10	7.48	3.3	3.8	37	2	174	.11	2	.6	.5	37	MER
		24	1652	52.98	19	21.06	155	12.79	36.49	2.9	3.2	34	1	60	.09	3	.7	1.0	30	DEP
		24	1939	47.83	19	21.17	155	12.80	37.99	3.0	3.1	34	0	60	.10	3	.7	1.6	30	DEP
		25	012	13.46	19	18.40	155	13.60	9.54	2.8	3.1	30	2	73	.12	3	.5	.5	26	POL
		25	8 0	30.97	19	26.25	155	24.62	8.10	3.0	2.9	19	2	77	.13	9	.5	1.4	16	UKF
		26	043	1.37	19	12.13	155	25.80	35.96	3.0	3.1	36	1	145	.08	6	.8	1.2	35	LSW
		26	1512	6.16	19	41.25	155	2.83	8.39	2.7	3.0	21	0	197	.15	20	1.1	1.8	19	HIL B
		27	341	3.11	19	38.56	156	1.43	9.81	3.0	2.4	22	0	226	.11	20	1.5	.9	20	KON
		31	1437	5.62	19	21.11	155	15.26	10.18	3.1	3.3	37	2	69	.09	3	.4	.4	33	KOA
		31	1916	55.47	19	19.57	155	18.86	6.42	2.6	3.2	34	1	55	.16	3	.5	.9	31	KOA
	JUN	2	15 2	2.11	19	40.01	155	9.80	14.44	3.4	3.9	37	1	90	.13	10	.5	.6	34	HIL F
		2	1525	19.50	19	41.89	156	2.91	7.89	2.9	3.0	23	0	283	.14	22	3.4	1.0	19	KON
		3	22 0	45.03	19	47.86	155	46.74	16.01	3.2	3.5	36	0	129	.11	14	1.1	1.6	35	KON F
		4	1213	22.89	19	22.21	155	2.84	9.03	2.7	3.0	34	3	130	.12	4	.4	.5	29	MER
		4	1235	59.20	19	20.89	155	6.01	8.61	2.7	3.0	33	1	100	.11	6	.4	.5	30	UER
		4	1248	16.22	19	20.23	155	6.24	6.25	2.1	3.1	31	2	115	.14	6	.5	1.4	25	UER
		4	1840	43.33	19	19.75	155	11.02	8.26	2.4	3.0	28	0	92	.09	5	.4	.6	28	UER
		10	1852	22.01	19	16.72	155	28.53	9.13	2.4	3.1	28	0	86	.13	11	.5	.9	25	HEA
		10	20 7	44.63	19	19.87	155	6.67	9.96	3.0	3.3	33	1	117	.09	5	.6	.4	29	UER
		12	240	.62	19	22.29	155	25.16	10.55	2.7	3.1	37	0	53	.12	4	.4	.5	35	UKF
		12	318	18.29	18	56.84	156	36.40	.05	3.1	2.6	41	8	306	.12	85	7.2	1.8	34	DIS *
		12	1157	12.12	19	24.02	155	15.72	3.28	3.3	3.8	35	1	44	.12	3	.3	.5	31	SPC F
		12	1649	34.98	18	54.32	155	27.64	15.40	3.6	4.1	36	0	249	.09	23	1.8	1.2	32	DIS F
		12	2238	37.04	19	25.09	155	16.77	2.21	2.4	3.1	31	2	39	.10	1	.4	.2	28	SPC F
		13	442	40.84	19	24.83	155	24.99	10.97	2.9	3.2	36	1	36	.14	6	.4	.5	32	UKF
		13	654	1.15	19	20.47	155	3.21	6.08	3.4	4.0	37	1	108	.10	1	.6	.5	32	MER F
		13	1941	11.48	19	20.57	155	3.49	8.69	2.8	3.2	33	1	93	.12	2	.7	.5	28	MER
		17	1734	23.67	19	20.56	155	1.01	8.92	3.2	3.5	36	2	204	.10	4	.6	.4	33	MER
		17	1752	27.10	19	21.13	155	1.22	8.28	2.7	3.2	28	0	191	.10	4	.9	.5	23	MER
		19	2336	53.72	20	39.29	155	47.03	6.95	3.5	3.5	38	6	218	.20	50	.9	1.4	34	DIS *
		21	020	44.12	19	19.45	155	13.35	10.23	3.6	4.0	38	3	71	.10	5	.4	.5	33	UER F
		21	1850	2.77	19	14.66	156	13.07	26.31	3.1	4.1	18	0	320	.11	37	17.5	7.3	17	DIS *
		21	1919	54.17	19	13.15	156	20.48	30.06	2.8	3.8	13	0	327	.08	50	24.7	7.7	13	DIS *
		22	013	48.74	19	19.95	155	6.83	8.56	2.7	3.1	32	0	113	.10	5	.6	.5	30	UER
		22	22 3	25.68	19	3.36	156	39.01	7.00	3.2	2.8	15	0	321	.13	85	11.1	99.0	15	DIS *
		23	147	58.56	19	19.16	155	15.46	10.51	4.4	4.5	38	2	91	.10	4	.5	.4	31	KOA F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1978	JUN	27	2231	5.96	19	24.78	155	25.16	11.04	2.9	3.0	38	0	32	.14	6	.4	.5	35	UKF
		29	1831	10.89	19	21.75	155	6.99	9.23	3.2	3.3	37	2	77	.08	5	.3	.5	34	UER
		30	1228	2.76	19	16.84	155	28.92	10.15	3.3	3.7	37	2	83	.12	11	.4	.5	32	HEA F
		30	1420	34.92	19	19.63	155	10.35	9.87	3.1	3.3	38	2	94	.10	5	.4	.5	33	UER
		30	2231	22.10	19	18.35	155	15.48	10.20	2.9	3.0	34	0	106	.11	4	.7	.5	30	KOA
	JUL	1	918	13.27	19	18.47	155	6.73	7.97	4.2	4.3	23	2	160	.11	3	.5	1.1	2	POL F
		3	1 6	40.27	19	20.66	155	6.70	9.11	2.8	3.0	33	1	99	.09	6	.5	.4	29	UER
		3	550	47.20	19	46.82	155	48.04	12.35	2.9	3.1	38	2	162	.12	11	.6	.6	35	KON
		3	21 5	16.33	19	21.72	155	4.86	9.07	3.4	3.6	37	0	80	.11	5	.6	.4	36	MER F
		3	2254	31.03	19	25.31	155	27.68	11.08	3.0	3.5	37	1	38	.11	5	.4	.5	32	UKF F
		5	430	34.96	19	19.61	155	6.64	7.43	2.8	3.4	37	1	125	.12	5	.5	.5	31	UER
		7	1131	29.20	19	12.09	156	7.13	26.40	3.1	3.9	12	0	322	.12	27	19.5	7.7	12	DIS *
		9	13 7	56.91	19	22.28	155	5.85	8.48	3.1	3.3	33	0	72	.10	5	.5	.5	30	MER F
		13	8 3	48.97	19	13.30	156	14.48	26.86	3.1	2.6	9	0	330	.13	39	43.0	13.8	9	DIS *
		14	256	37.19	19	21.18	155	15.28	9.92	3.2	3.3	37	2	68	.09	3	.4	.4	33	KOA F
		14	22 9	5.25	19	17.21	155	12.66	11.54	3.0	2.9	38	1	147	.11	8	.6	.4	30	POL
		16	829	41.78	19	21.05	155	1.02	7.84	3.4	3.7	34	0	196	.11	4	.9	.5	33	MER F
		18	4 3	55.24	19	20.61	155	10.70	9.29	2.7	3.1	34	1	76	.12	3	.4	.5	30	UER
		22	1258	55.42	19	21.02	155	7.44	8.10	2.7	3.0	31	2	84	.12	5	.5	.7	27	UER
		23	546	28.27	19	27.08	154	52.65	9.10	3.1	3.6	31	1	255	.11	4	1.6	.4	26	LER
		25	2354	37.38	19	13.66	155	6.36	51.45	3.0	3.3	37	0	208	.09	7	1.3	2.2	32	POL
		27	10 9	26.55	19	29.03	155	38.98	5.20	2.7	3.0	28	0	72	.15	5	.5	1.5	24	MOK F
	AUG	1	12 8	36.49	19	19.90	155	6.54	9.11	3.0	3.4	34	1	119	.10	5	.6	.4	28	UER
		4	1424	15.10	19	45.24	156	4.59	30.87	3.0	3.2	36	0	238	.12	26	1.4	2.0	30	KON F
		5	20 0	23.43	19	26.40	155	23.99	10.10	3.0	3.2	35	0	42	.13	6	.5	.7	34	UKF
		5	23 5	3.01	19	23.23	155	3.66	8.20	2.7	3.1	30	0	101	.11	3	.5	.6	24	MER
		8	115	40.71	19	22.03	155	4.88	8.80	2.7	3.3	34	1	78	.10	5	.5	.5	30	MER
		8	11 1	6.25	19	19.86	155	11.94	9.50	2.8	3.0	34	1	84	.11	5	.4	.5	29	UER
		8	2110	10.28	19	18.19	155	13.18	10.44	3.7	4.0	36	0	94	.09	2	.6	.5	33	POL F
		9	443	22.04	19	27.30	154	49.44	8.62	3.3	3.9	33	0	277	.14	8	3.0	.6	30	LER F
		11	1444	58.70	19	41.03	155	3.15	4.48	2.3	3.2	12	0	242	.14	20	2.2	33.4	8	HIL B*
		11	15 8	51.86	20	45.36	155	59.54	15.95	3.1	3.6	31	4	323	.14	73	15.4	44.3	22	DIS *
		12	052	50.53	19	20.05	155	6.84	9.88	3.3	3.9	36	2	110	.09	5	.5	.4	32	UER F
		12	251	23.14	19	46.49	156	.25	11.39	2.8	3.5	29	3	224	.11	20	1.0	.6	24	KON F
		12	14 6	10.07	19	18.62	155	13.53	9.31	2.6	3.1	32	2	84	.10	3	.4	.5	23	POL
		13	2245	29.27	19	20.86	155	7.33	8.47	2.5	3.1	32	1	88	.11	5	.5	.6	22	UER
		18	432	42.00	19	13.52	155	31.16	31.35	3.4	3.7	34	0	68	.06	9	.6	1.3	33	LSW
		18	2343	10.04	19	18.41	155	13.35	8.28	2.1	3.1	30	0	84	.14	3	.6	.8	30	POL
		19	212	29.11	19	55.90	155	21.54	10.52	2.9	3.1	34	2	189	.13	20	.9	.7	29	KKU
		19	2018	14.78	19	21.32	155	25.70	8.88	2.0	3.0	33	0	95	.13	4	.5	.8	32	HEA
		21	2114	24.87	19	25.47	155	24.51	10.97	3.0	3.0	37	1	33	.14	8	.4	.5	33	UKF
		22	1111	27.17	19	19.12	155	7.70	9.35	2.8	3.1	35	2	109	.10	3	.5	.4	30	UER
		23	1148	53.12	19	19.82	155	8.16	8.39	3.3	3.8	34	1	87	.11	5	.5	.6	32	UER
		23	1757	24.55	19	19.57	155	11.31	9.22	2.5	3.1	31	0	95	.12	5	.6	.5	30	UER
		23	21 8	54.04	19	23.06	155	16.78	3.69	2.4	3.1	30	1	47	.10	2	.3	.6	30	SPC
		27	2046	59.87	19	22.91	155	16.98	4.89	2.9	3.3	34	1	48	.13	2	.4	.7	31	KOA
		29	1144	8.82	19	19.05	155	11.78	9.95	3.1	3.5	34	0	104	.09	5	.5	.5	27	UER F
		30	1240	15.66	19	20.45	155	1.98	7.03	3.3	3.6	29	1	197	.10	2	.8	.5	28	MER F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	AUG	30	1627	4.14	19	21.46	155	2.72	7.60	2.7	3.1	32	0	139	.12	3	.7	.5	29	MER	
		31	13 7	20.97	18	58.73	155	29.29	38.51	4.3	4.6	36	0	223	.07	19	1.3	2.1	32	DIS	F
		31	1322	54.96	19	19.42	155	12.56	9.94	2.5	3.4	32	1	85	.09	5	.5	.4	29	UER	
		31	1414	53.51	18	59.56	155	28.67	37.25	3.2	3.6	37	2	217	.08	19	1.0	1.5	32	DIS	
	SEP	1	4 1	25.15	19	20.38	155	6.37	9.35	2.7	3.1	33	1	109	.08	6	.5	.5	30	UER	
		2	17 5	4.00	19	32.46	155	56.15	10.79	2.9	3.2	22	0	225	.13	6	1.3	.5	17	KON	
		3	426	10.51	19	18.84	155	12.21	9.60	2.7	3.4	38	1	104	.10	4	.4	.4	33	POL	F
		4	2014	44.10	19	19.31	155	8.49	8.57	3.1	3.3	36	1	82	.09	4	.5	.4	34	UER	
		5	618	18.19	19	19.84	155	8.24	9.56	3.2	3.6	37	1	84	.10	5	.5	.4	35	UER	
		5	1026	46.87	19	20.13	155	13.60	10.09	3.7	4.2	34	0	60	.09	5	.4	.4	30	UER	F
		5	1738	20.55	19	23.07	155	17.01	3.63	2.7	3.3	33	1	38	.10	2	.3	.6	29	SPC	F
		7	442	55.24	19	14.42	156	11.51	16.76	3.2	3.3	23	0	266	.11	40	3.3	84.0	21	DIS	*
		7	1137	46.03	19	21.76	155	4.05	6.79	3.2	3.7	33	0	94	.13	4	.5	.7	30	MER	
		7	1656	53.39	19	.21	156	18.22	26.73	2.9	3.3	22	0	291	.09	54	6.3	4.1	20	DIS	
		11	121	57.18	18	58.08	155	20.62	53.32	3.6	4.1	34	0	234	.07	25	1.6	2.6	32	PPL	
		11	2016	6.11	19	20.00	155	6.52	9.60	4.1	4.3	37	1	117	.10	6	.6	.4	33	UER	F
		13	1558	32.54	19	21.61	155	2.53	7.37	2.9	3.2	30	1	144	.09	3	.6	.5	25	MER	
		13	2238	7.14	19	24.86	155	29.72	10.00	2.9	3.0	34	2	54	.10	6	.4	.6	28	UKF	
		15	114	41.06	19	20.77	155	6.60	8.38	2.7	3.0	29	0	98	.09	6	.5	.6	29	UER	
		15	715	58.31	20	15.24	156	.24	16.49	3.0	3.0	31	1	307	.20	27	4.9	40.9	26	DIS	*
		15	723	55.65	19	25.33	155	16.50	2.06	2.8	3.6	32	1	37	.10	1	.3	.2	31	SPC	F
		16	630	.61	19	23.97	155	15.68	3.67	2.8	3.2	35	1	60	.11	3	.4	.5	33	SPC	F
		16	1747	1.85	19	20.12	155	11.68	9.16	2.8	3.1	34	0	81	.08	5	.4	.4	29	UER	
		16	2141	5.36	19	22.17	155	3.42	6.72	2.6	3.1	30	0	112	.10	4	.4	.6	29	MER	
		17	351	46.60	19	21.77	155	.24	8.96	2.6	3.1	33	0	192	.10	6	.8	.4	30	LER	
		18	2344	29.20	19	23.38	155	16.77	3.58	3.2	3.6	36	0	38	.10	2	.3	.5	33	SPC	F
		19	843	44.06	19	2.59	155	41.46	43.14	3.1	3.4	36	2	165	.08	7	1.1	2.0	34	HEA	
		19	1541	8.71	19	26.22	155	23.95	9.22	3.3	3.5	40	2	36	.12	7	.4	.7	37	UKF	F
		20	1028	56.03	19	18.91	155	11.56	8.66	2.9	3.4	31	0	110	.10	5	.5	.5	28	POL	F
		20	1320	26.99	19	30.67	155	52.63	9.63	3.1	3.3	30	0	129	.17	5	.7	.5	26	KON	
		21	215	12.65	19	53.24	155	7.58	42.98	3.1	3.2	37	2	240	.10	19	1.2	1.6	31	KKU	
		21	2027	55.59	19	19.37	155	11.32	9.90	2.7	3.1	35	0	99	.09	6	.5	.4	33	UER	
		22	127	.14	19	19.20	155	10.74	9.61	3.3	3.7	38	1	105	.12	6	.5	.4	32	UER	F
		22	20 5	44.04	19	25.95	155	27.87	11.22	2.9	3.0	36	0	34	.13	6	.4	.6	33	UKF	
		24	1249	9.91	19	22.96	155	16.98	2.81	2.4	3.0	28	0	48	.09	2	.3	.5	27	KOA	
		24	1530	53.02	19	23.36	155	25.04	10.66	2.4	3.0	35	0	58	.11	5	.4	.4	33	UKF	
		25	1330	13.54	19	19.51	155	7.89	8.86	3.1	3.3	36	1	98	.09	4	.5	.4	33	UER	
		25	20 2	33.99	18	58.31	155	20.90	17.32	3.2	3.5	37	1	232	.23	33	2.1	31.8	35	PPL	*
		25	2335	31.51	19	20.11	155	10.97	9.74	2.8	3.2	37	1	84	.10	4	.4	.4	34	UER	
		26	1912	7.79	19	26.87	155	22.75	9.18	2.9	3.4	36	1	41	.11	6	.4	.7	33	UKF	
		28	1538	20.19	19	22.99	155	17.03	3.31	2.9	3.4	33	1	48	.10	2	.3	.5	32	KOA	F
		30	1356	13.29	19	23.03	155	26.70	9.44	3.6	3.9	38	1	54	.13	2	.4	.7	38	UKF	F
	OCT	4	9 3	39.32	19	17.38	155	21.73	8.46	2.5	3.0	34	1	125	.13	6	.5	.7	30	SWR	
		7	548	45.46	19	22.93	155	17.10	2.92	2.5	3.4	35	0	37	.10	1	.3	.4	27	KOA	
		7	1811	7.54	19	12.67	155	21.06	47.87	2.3	3.2	28	2	164	.08	11	1.0	1.7	19	LSW	L
		9	217	27.74	19	23.19	155	17.01	2.87	2.5	3.1	35	1	36	.10	0	.3	.3	31	SPC	
		9	855	9.39	19	13.58	155	40.25	9.70	2.6	3.0	26	0	237	.23	6	2.2	1.1	22	HEA	
		10	1117	22.38	19	57.42	155	49.53	27.85	3.1	3.2	37	0	183	.08	20	1.3	3.0	35	KOH	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	OCT	11	734	58.48	19	13.11	155	34.47	3.52	3.2	3.3	35	1	81	.23	13	.7	3.2	29	HEA	*
		12	2227	36.90	19	20.56	155	13.13	9.27	2.6	3.1	34	0	63	.12	4	.5	.5	31	UER	
		13	1230	17.56	19	13.54	156	39.01	.10	3.2	3.2	13	0	317	.17	82	21.6	31.6	13	DIS	B*
		13	1240	19.30	19	15.26	156	39.21	.10	3.2	2.8	12	0	325	.20	81	34.8	31.6	11	DIS	B*
		13	1250	16.09	19	15.43	156	39.21	.10	3.2	3.2	13	0	325	.25	81	35.7	31.6	13	DIS	B*
		13	13 0	21.62	19	14.97	156	18.74	.10	3.0	3.1	15	0	276	.31	46	5.4	31.6	13	DIS	B*
		13	1310	18.84	19	15.44	156	20.29	.10	3.0	3.0	16	0	278	.39	49	6.3	31.6	15	DIS	B*
		13	1320	20.56	19	16.92	156	14.22	.10	2.9	3.0	17	0	267	.29	41	4.1	31.6	17	DIS	B*
		13	1330	22.13	19	18.72	156	12.91	.10	2.5	3.2	22	0	264	.43	36	5.1	31.6	21	DIS	B*
		15	535	48.65	19	22.93	155	4.32	8.61	3.6	4.0	36	1	89	.09	3	.5	.4	35	MER	F
		17	516	24.23	19	23.28	155	16.86	3.18	2.9	3.7	33	1	38	.11	3	.3	.7	30	SPC	
		17	2242	44.65	19	19.89	155	7.80	9.57	3.2	3.7	36	1	95	.11	5	.6	.4	34	UER	
		18	616	55.55	19	21.32	155	15.35	9.50	2.8	3.0	36	1	66	.09	2	.4	.4	32	KOA	
		20	23 9	53.77	19	26.37	155	23.99	8.80	3.3	3.4	36	1	44	.14	7	.4	.9	31	UKF	
		22	1513	1.48	19	12.47	155	19.93	46.84	2.9	3.2	40	3	169	.12	10	.8	1.3	38	HLP	
		24	1433	13.99	19	19.47	155	12.04	9.86	2.9	3.3	36	1	91	.10	5	.4	.4	34	UER	
		28	1237	34.70	21	34.97	157	44.49	1.22	4.1	4.5	38	6	242	.30	33	6.3	1.8	27	DIS	F*
		28	1644	13.37	19	12.08	155	20.81	48.40	3.2	3.7	35	0	168	.10	12	1.0	2.2	31	HLP	
		29	051	28.19	19	25.18	155	15.99	1.97	2.5	3.2	32	1	40	.10	2	.2	.3	28	SPC	F
		31	2312	1.42	19	20.23	155	6.39	9.67	2.8	3.2	34	0	113	.10	6	.6	.4	33	UER	
	NOV	1	457	57.83	19	19.33	155	11.55	10.00	2.9	3.5	36	0	99	.08	5	.5	.4	35	UER	
		3	346	53.85	19	27.69	155	34.81	37.31	2.7	3.3	24	1	34	.09	3	.7	1.7	18	MOK	L
		3	821	7.60	19	59.37	155	8.71	6.66	2.1	3.1	19	0	282	.21	23	6.2	1.6	14	KKU	
		5	1625	1.60	19	19.67	155	11.20	8.99	3.1	3.3	35	1	93	.11	5	.5	.6	31	UER	
		6	2048	16.66	19	19.50	155	8.84	7.93	2.6	3.0	12	0	207	.14	5	1.9	1.0	10	UER	
		7	1256	57.79	19	48.04	156	8.42	12.35	3.0	2.9	17	1	200	.09	34	1.7	.9	15	KON	
		8	633	57.79	19	20.04	155	8.43	8.75	2.8	3.0	22	1	199	.10	5	.9	.7	17	UER	
		8	2146	39.00	19	20.73	155	8.64	8.18	2.8	3.3	26	1	170	.11	3	.7	.6	23	UER	
		10	20 5	23.36	19	21.80	155	4.99	9.04	3.3	3.7	30	1	79	.11	5	.6	.6	27	MER	
		12	15 8	2.47	19	22.08	155	4.94	.00	3.2	3.7	23	1	150	.25	5	1.0	1.2	20	MER	*
		12	1526	5.15	19	22.39	155	6.20	1.18	2.7	3.1	18	1	131	.11	5	.6	1.0	14	UER	
		13	232	12.93	19	19.17	155	14.13	8.78	2.9	3.2	28	1	68	.10	4	.5	.6	26	UER	F
		15	337	17.74	19	25.43	155	24.31	9.86	3.2	3.4	34	1	39	.12	8	.4	.6	30	UKF	
		15	1053	18.98	19	8.40	155	36.33	6.33	2.9	3.1	25	0	118	.17	15	.7	1.3	21	HEA	
		15	1329	29.95	19	20.09	155	7.44	8.87	2.6	3.1	30	1	99	.09	5	.5	.6	27	UER	
		15	1647	46.75	19	24.24	155	24.74	11.34	3.3	3.4	37	1	31	.12	6	.4	.5	34	UKF	
		17	1124	40.40	19	40.67	155	2.40	10.16	2.9	3.2	23	0	197	.17	19	1.1	1.3	22	HIL	B
		19	835	20.17	19	20.04	155	5.14	9.99	2.6	3.4	19	1	132	.12	4	.9	.5	15	MER	
		22	526	36.46	19	22.40	155	4.05	9.53	2.6	3.5	34	1	96	.07	4	.5	.4	30	MER	
		22	820	42.87	19	12.68	155	27.98	5.24	3.1	3.4	31	0	101	.15	6	.6	1.6	28	LSW	
		22	1323	14.81	19	20.97	155	3.13	6.06	3.4	3.8	30	1	121	.12	2	.7	.9	27	MER	
		23	117	36.15	19	21.90	155	6.67	9.25	2.6	3.2	32	0	77	.10	6	.5	.5	28	UER	
		23	316	15.88	19	14.16	155	32.81	11.40	4.2	4.2	33	0	122	.09	8	.5	.6	33	LSW	F
		24	148	8.43	19	21.12	155	13.30	9.02	2.6	3.0	33	1	57	.10	3	.4	.6	28	UER	
		25	10 2	8.94	19	20.07	155	8.40	9.77	2.8	3.2	31	0	80	.09	5	.4	.5	29	UER	
		26	12 1	47.91	19	23.04	155	6.23	.59	2.4	3.1	10	0	94	.10	4	.6	2.1	10	GLN	
		27	1619	50.14	19	20.44	155	11.69	10.36	3.3	3.6	35	1	76	.08	5	.4	.4	30	UER	
		28	131	36.75	19	18.74	155	13.19	10.13	3.6	3.9	37	1	84	.10	3	.5	.4	36	POL	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1978	NOV	28	2150	40.39	19	38.54	156	.79	10.68	3.3	3.4	34	2	224	.11	20	1.1	.8	33	KON	F
		28	2242	59.64	19	22.43	155	26.65	11.13	3.5	3.6	35	1	62	.11	2	.4	.5	34	UKF	F
		30	10	9 19.40	19	20.21	155	12.85	10.35	2.7	3.3	34	1	70	.09	4	.4	.3	29	UER	
		30	1522	39.42	19	20.99	155	16.84	29.47	3.2	3.5	37	0	69	.11	2	.7	1.1	30	DEP	
		30	1616	52.07	19	21.33	155	5.92	9.72	3.3	3.6	35	1	90	.09	6	.5	.3	31	MER	
		30	2138	30.40	19	20.96	155	6.74	8.77	2.7	3.0	31	0	92	.10	6	.5	.6	29	UER	
		30	2139	46.85	19	21.06	155	6.49	7.01	3.0	3.2	33	1	93	.13	6	.5	.8	28	UER	
	DEC	3	121	21.23	19	20.78	155	11.44	9.88	3.0	3.3	34	1	72	.09	4	.4	.4	32	UER	
		5	857	33.79	19	19.51	155	11.38	9.38	2.9	3.2	37	2	96	.12	5	.5	.4	27	UER	
		5	1136	39.82	19	19.90	155	11.63	9.74	3.8	4.0	37	1	86	.11	5	.5	.5	25	UER	
		8	730	12.59	19	47.93	155	8.38	41.45	2.9	3.2	41	3	193	.11	10	.9	1.5	34	HIL	
		8	910	3.01	19	19.22	155	11.94	9.79	3.2	3.4	35	0	98	.10	5	.5	.4	32	UER	
		11	713	19.85	19	22.02	155	4.28	9.44	2.9	3.2	33	1	89	.08	5	.6	.4	30	MER	
		12	1844	31.65	19	21.75	155	4.60	8.72	3.9	4.2	37	1	81	.09	4	.6	.4	32	MER	
		14	412	45.04	19	18.69	155	13.51	10.49	4.1	4.2	37	1	74	.10	3	.5	.4	31	POL	
		14	16	2 15.50	19	18.53	155	13.34	10.28	2.9	3.2	30	0	83	.10	3	.5	.4	29	POL	
		15	129	22.42	19	30.36	155	17.63	11.18	2.6	3.1	35	1	57	.11	9	.4	.6	30	GLN	
		15	737	50.42	19	19.99	155	13.14	10.07	3.3	3.6	36	2	68	.09	5	.5	.4	30	UER	
		21	1329	27.68	19	19.97	155	13.51	10.20	3.5	3.9	35	0	62	.11	5	.5	.4	35	UER	
		21	1625	15.71	19	28.03	155	23.42	8.49	3.3	3.1	35	1	77	.15	3	.5	.8	35	UKF	
		22	828	31.67	19	19.71	155	12.72	9.27	2.6	3.1	29	0	78	.10	5	.4	.5	21	UER	
		25	1628	50.32	19	21.19	155	4.62	8.98	3.2	3.4	34	0	92	.11	4	.6	.4	32	MER	
		27	040	55.83	19	20.13	155	12.94	9.93	4.3	4.6	35	0	70	.08	5	.5	.4	34	UER	
		27	1452	16.90	19	19.29	155	12.05	9.60	2.9	3.2	34	0	95	.12	5	.5	.4	28	UER	
		27	1510	54.57	19	17.85	155	15.41	8.60	2.6	3.1	32	0	142	.10	6	.6	.7	32	KOA	
		28	314	32.39	19	21.88	155	10.40	33.77	2.8	3.2	36	1	59	.09	1	.7	1.2	30	UER	
		28	315	27.40	19	15.06	155	6.15	47.52	3.4	3.8	36	1	204	.08	5	.9	1.6	30	POL	
		28	851	1.88	19	21.65	155	15.21	9.41	3.4	3.4	34	2	62	.16	2	.4	.5	28	KOA	
		29	1451	17.97	19	49.03	156	17.25	6.36	3.4	3.9	28	0	322	.11	49	15.7	5.5	26	DIS	*
		29	1456	44.06	19	50.07	156	21.44	2.29	2.7	3.1	29	0	322	.11	57	11.2	11.4	22	DIS	*
		31	248	39.41	19	31.92	155	41.90	9.48	3.0	2.9	32	0	62	.12	7	.5	.7	28	MOK	

GPO 689-143

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Hawaiian Volcano Observatory
1979 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 79, Part 1
Seismic Data, January to December 1979
By Jennifer S. Nakata, Wilfred R. Tanigawa, and Fred W. Klein

Chronological Summary
By Daniel Dzurisin

Open-File Report 2007-1339
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
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U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 79, PART 1

SEISMIC DATA, JANUARY TO DECEMBER 1979

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California

1980

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 79, PART 1

SEISMIC DATA, JANUARY TO DECEMBER 1979

BY

JENNIFER S. NAKATA, WILFRED R. TANIGAWA, FRED W. KLEIN

CHRONOLOGICAL SUMMARY

BY

DANIEL DZURISIN

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summaries present data gathered during the year together with a chronological narrative intended to describe in geologic terms the volcanic activity associated with the seismic events and tilt data included. The summaries are issued in two parts. Seismic data appears in Part 1, and water tube tilt and other deformation data appears in Part 2. The seismic and chronological summaries are offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has recently shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries will be published separately.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS open file report ("Hawaiian Volcano Observatory Seismic Network History 1950-79," 1980). It is designed as a reference for users of seismograms and phase data, and so includes and goes a bit beyond the information in the station table in this summary.

CHRONOLOGICAL SUMMARY - 1979

by

Daniel Dzurisin

The decade which included the longest-lived rift zone eruption in recorded Hawaiian history (Mauna Ulu, 1969-1974), the first Mauna Loa eruption in 25 years (5-6 July 1975), and the largest Hawaiian earthquake in more than a century (29 November 1975, M = 7.2) ended this year on a relatively tranquil note. Pele's only appearance of the year came on November 16-17 during a small eruption in and near Pauahi crater along Kilauea's upper east rift zone. The eruption briefly closed a section of Chain of Craters Road, which had been reopened in 1979 following its destruction ten years earlier by flows from Mauna Ulu. By year's end, traffic was again flowing smoothly, but Kilauea summit tilt had surpassed its pre-November eruption level and reached the level attained just prior to the major east rift zone eruption of September 1977.

Mauna Loa continued its repose following the July 1975 eruption, and seismicity there remained at background levels throughout most of 1979. A week-long flurry of shallow nighttime earthquakes near or within Mokuaweoweo caused some concern in March, but these were soon recognized to be a near-surface, temperature-related phenomenon unrelated to volcanic activity. Borehole tiltmeters near the summit and along the northeast rift zone recorded a modest aseismic inflation during June-July, but tilting was negligible throughout the remainder of the year. Summit dry tilt and horizontal distance measurements in August were generally consistent with weak inflation south of the caldera since June 1978, but at a substantially lower rate than during the previous three years.

As Mauna Loa slumbered, Kilauea continued its struggle to recover from the effects of the November 1975 earthquake. During 1978, summit inflation had overcome roughly 70% of the deflation associated with the 1977 eruption, but the net summit tilt change during January-August 1979 was essentially zero. This period was punctuated by two shallow intrusions into the upper east rift zone, which in many respects were reminiscent of three east rift zone intrusions which followed the November 1975 earthquake and preceded the September 1977 eruption.

There was a marked increase in the frequency of felt earthquakes at Kilauea during March, and shallow summit quake counts increased to nearly 500 per day during April-May. This activity culminated in an east rift zone intrusion on May 29-30. The event was heralded by several felt earthquakes which roughly coincided with the onset of summit deflation at 0.3 microradians/hour. This modest rate was maintained for roughly 5 hours, after which subsidence slowed before levelling off early on May 30 after a net deflation of 2.7 microradians. A simultaneous swarm of shallow earthquakes which began near buried Aloi crater migrated slightly uprift at an average rate of 1.3 km/hr during the first 1.5 hours of intense activity, then moved downrift to Makaopuhi crater at roughly 0.6 km/hr. Nearly 2,000 earthquakes ranging upward in magnitude to M = 3.3 were recorded by the HVO seismic network during the first 15 hours of anomalous activity.

Attention was again focused on Kilauea's upper east rift zone during June-July, when shallow earthquakes became concentrated between Keanakakoi and Pauahi craters. A M = 4.0 earthquake along the middle east rift zone on July 15 was followed by a brief seismic flurry, but no discernible harmonic tremor or summit deflation. On August 12, a swarm of shallow earthquakes and rapid summit deflation totalling 1 microradian marked a second intrusion into the upper east rift zone. During the first few hours of activity, earthquakes migrated downrift from Keanakakoi to Kokoolau at a mean rate of 1.4 km/hr. No measureable ground deformation within the epicentral zone accompanied this relatively minor intrusive event.

The period September-November was characterized by resumed summit inflation at roughly 10 microradians/month and generally increasing seismicity at the summit and along the upper east rift zone. Hawaii's largest seismic event since November 1975 occurred on September 21, when a M = 5.4 quake struck the south flank of Kilauea roughly 7 km south of Kalalua. Minor damage was caused in Hilo and Puna, but no injuries were reported. The quake followed a substantial inflation of the east rift zone between Makaopuhi and Heiheiahulu since the September 1977 eruption, and was presumably caused in part by accumulated magma pressure. Dry tilt measurements along the rift zone in early September revealed as much as 125 microradians inflation since October 1977, but another survey after the M = 5.4 earthquake indicated a distinct reversal of this trend. Presumably, ground movements associated with the quake at least partially relieved accumulated stress caused by shallow magma storage within the rift zone.

An HVO press release in late October noted that high rates of ground deformation and seismic activity had significantly increased the likelihood of eruption at Kilauea. This forecast was borne out only three weeks later when magma returned to the surface of Kilauea after a 25-month absence. Alerted by local harmonic tremor and relatively rapid summit deflation, HVO was on the scene when intense fuming began in the forest east of Pauahi crater at 0805 hrs on November 16. Lava fountains from this eastern vent became audible from Pauahi overlook at roughly 0815, and lava welled up from a new fissure on the northwest wall of Pauahi at 0821. Vents east of the crater migrated a few hundred meters eastward before eruptive activity there ceased at roughly 0915, after closing a short section of Escape Road. Starting at 1130, three new vents opened progressively westward within Pauahi, followed by five more along a westward-migrating fissure which cut Chain of Craters Road at the Pauahi parking area. Apparently, downrift migration of the eruptive fissure stopped as magma gained access to the Koae fault system west of Pauahi. The western vents declined noticeably shortly before 1600, and by 1700 lava was reaching the surface only from vents within Pauahi. Lava production there remained roughly constant until 0100 November 17, when activity slowed before ceasing completely at 0630. After a net summit deflation of only 7 microradians, re-inflation began at 0400 November 17. Roughly 600,000 m^3 of differentiated basalt had been erupted in 22.5 hours, presumably from a storage area within the rift zone which was rapidly resupplied with magma from the summit reservoir. At year's end, summit tilt stood slightly above its pre-eruption level.

Pele's brief reappearance was definitely not the only noteworthy happening at HVO during 1979, as staff members took advantage of the lull in eruptive activity to pursue data analysis and field projects. Detailed geologic mapping and radiocarbon dating continued at Kilauea (Banks, Moore), Mauna Loa (Lockwood),

and Hualalai (Moore), and a stratigraphic/petrologic study of Kilauea caldera was initiated (Casadevall, Dzurisin). The gas geochemistry program at HVO was expanded with the addition of chemist Paul Greenland and technician Bruce Furukawa, and by the acquisition of a correlation spectrometer (COSPEC) for daily measurements of SO_2 flux at Kilauea (Casadevall). An electrical self-potential survey of Hualalai's rift zones revealed high-amplitude, short wavelength anomalies suggestive of shallow heat sources, and a program of induction resistivity monitoring was implemented in the Kilauea summit region (Jackson). The Kilauea/Mauna Loa gravity network was expanded in 1979; delivery of HVO's new LaCoste-Romberg gravity meter is expected in late 1980 (Dzurisin). A NASA-sponsored study of tephra erosion at Kilauea was completed and readied for publication (Dzurisin). The observatory's Data General Eclipse computer became fully operational, and assumed the task of routine seismic and deformation data processing (English, Klein, Koyanagi, A. Okamura). Sandia personnel drilled six new holes into Kilauea Iki lava lake, one of which successfully penetrated pre-1959 basement. Finally, HVO received additional international exposure when Dzurisin, Koyanagi, and Yamashita spent four weeks in Indonesia as part of a cooperative USGS/USAID geologic assistance program, and Casadevall conducted a geothermal energy assessment in Argentina with DOE support. This dizzying array of activities was coordinated in 1979 by HVO's new scientist-in-charge, Bob Decker, and by Chief of Operations, Reggie Okamura, who will both be on board for HVO's launch into the new decade.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In December 1979 the seismometer network consisted of 44 stations spread over an area with a diameter of 125 kilometers on the island of Hawaii (Figs. 1 and 2). Of these 44 stations, two are low-gain multicomponent stations (optical), six are two-component, four are three-component, and thirty-two are vertical only. The coverage is most complete on and around the main center of seismic and volcanic activity, Kilauea Volcano. Other stations in the network are part of a larger net located on other volcanoes of the island of Hawaii. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1979. Listed are station name, three letter code, coordinates in degrees and minutes, elevation in meters, and other data described below.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or VHF radio. These telemetering stations are now all of Type 1, the NCER standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from thirty-two stations are recorded on two Develocorders using 16mm microfilm. FM signals from the telemetering network are also recorded directly on one inch magnetic tape. Selected larger events are copied onto condensed FM library tapes which are currently archived in Menlo Park.

Develocorder records are scanned on a film viewer with 20x magnification. Individual events are digitized from FM magnetic tape and timed to .01 second using an Eclipse computer. The arrival times, amplitudes (where readable), and other key data are routinely processed by Eclipse computer, which also produced the tables and epicenter maps in this summary.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Kipapa station operated by the Pacific Tsunami Warning Center). The less sensitive short period records are used primarily for amplitude measurements for magnitude calculations to supplement readings from the high-gain stations. Optical seismographs listed in Table 1 are of four types. Types numbered three and four are electro-mechanical systems of high and low gain respectively. Hilo and Haleakala are each equipped with two low-gain Wood-Anderson torsion seismographs. Long period Press-Ewing seismographs record in three components in the Uwekahuna vault. The paper (optical) records as well as the 16mm develocorder microfilm are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard NCER system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL) to get the response for an individual station. Individual CAL factors for Type 1 seismographs are equal

to the peak-to-peak amplitude measured in mm on the 20x Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited. CAL factors range from about 1 to 8, averaging about 4. A detailed history of Cal factors and other data is given in F.W. Klein and R.Y. Koyanagi, Hawaiian Volcano Observatory Seismic Network History 1950-79, U.S. Geological Survey Open File Report 80-302, 1980.

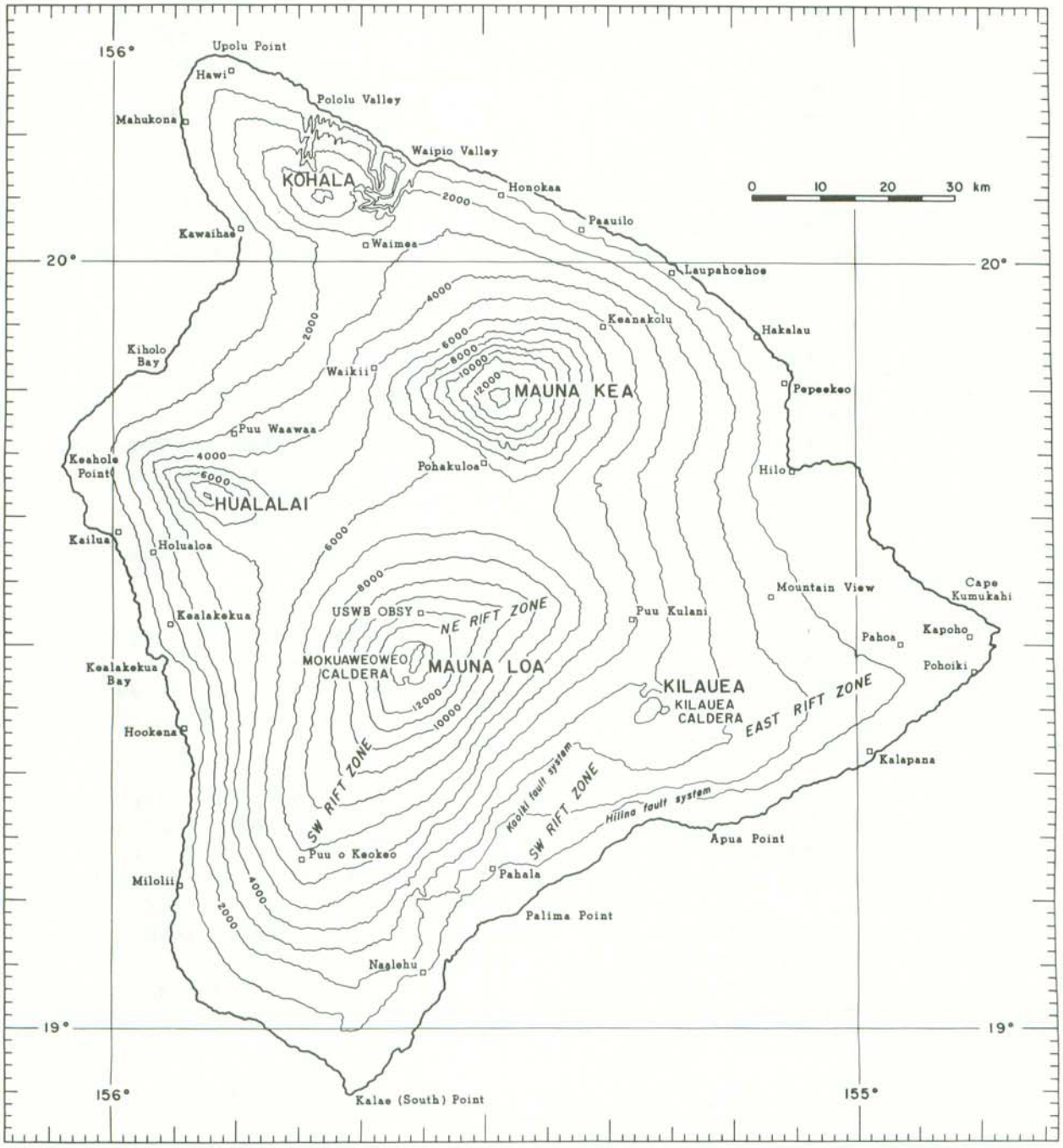

Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

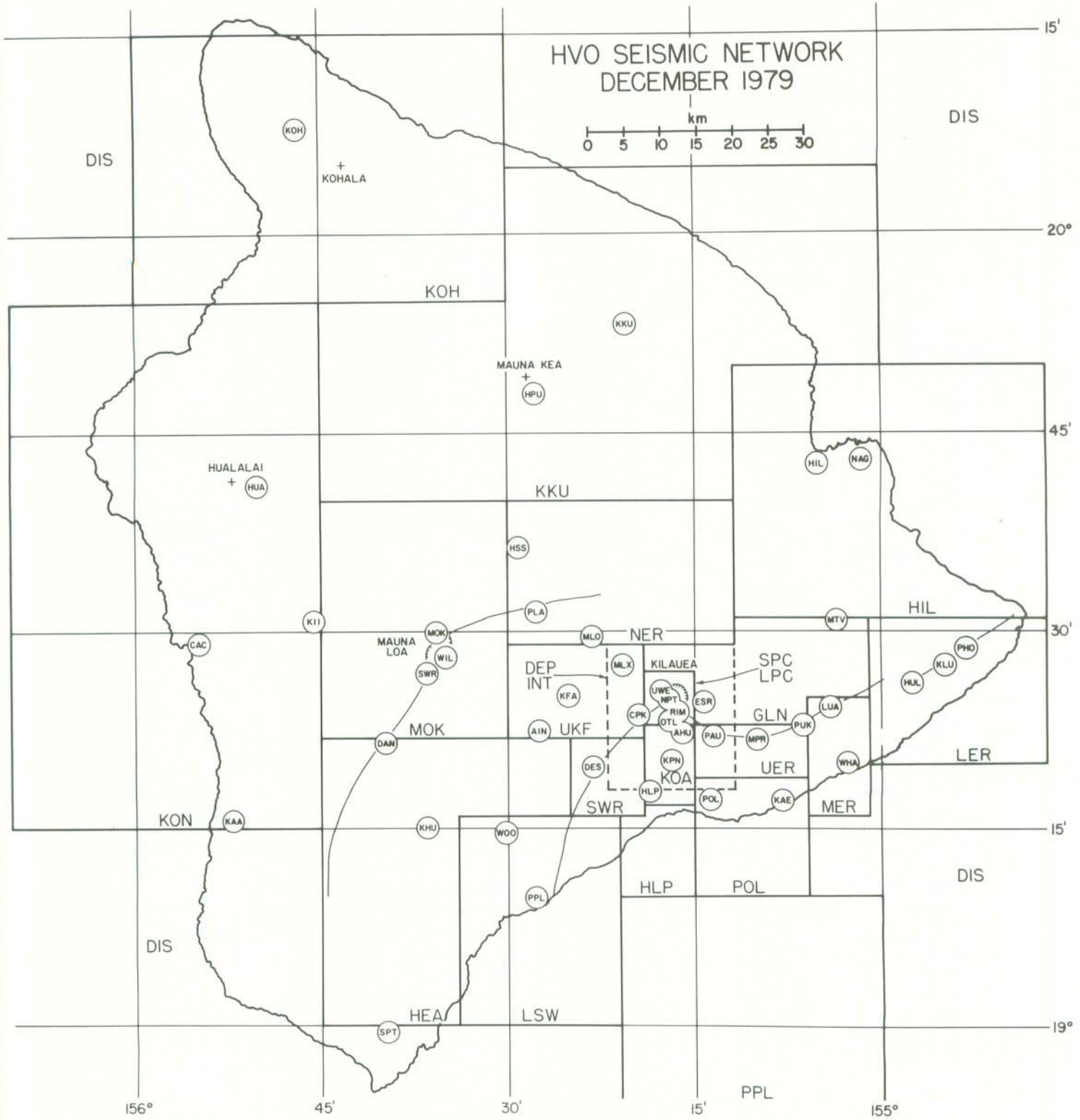

Figure 2. Map of the island of Hawaii showing seismic stations (three letter codes inside circles) and geographic regions (three letter codes inside heavy line boxes).

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1979.

Telemetered type 1 seismographs.

Station Name[1]	Code	LAT-N	LON-W	Elev	Delay 1	Delay 2
AHUA (3)	AHU	19 22.40	155 15.90	1070	-.10	-.13
AINAPO (3)	AIN	19 22.50	155 27.62	1524	.13	.17
CAPTAIN COOK	CAC	19 29.29	155 55.09	323	.00	-.16
CONE PEAK (2)	CPK	19 23.70	155 19.70	1030	-.26	-.07
DANDELION	DAN	19 21.42	155 40.04	3003	-.27	.03
DESERT	DES	19 20.20	155 23.30	815	-.29	-.13
ESCAPE ROAD	ESR	19 24.68	155 14.33	1177	-.17	-.19
HALE POHAKU	HPU	29 46.85	155 27.50	3396	.31	.17
HEIHEIAHULU	HUL	19 25.13	155 58.72	369	-.17	-.16
HILINA PALI	HLP	19 17.96	155 18.63	707	.02	.07
HUALALAI	HUA	19 41.25	155 50.32	2189	.67	.38
HUMUULA (3)	HSS	19 36.31	155 29.13	2445	.20	.35
KAAPUNA	KAA	19 15.98	155 52.28	524	-.12	-.01
KAENA	KAE	19 17.35	155 7.95	37	-.01	.06
KAHUKU	KHU	19 14.90	155 37.10	1939	.03	-.03
KALALUA	LUA	19 24.55	155 04.25	622	-.25	-.30
KALIU	KLU	19 27.48	154 55.26	271	-.17	-.30
KANEKII (3)	KII	19 30.56	155 45.90	1841	.15	.37
KAOIKI FAULTS	KFA	19 25.26	155 25.14	1579	.13	.17
KEANAKOLU	KKU	19 53.39	155 20.58	1863	.68	.24
KIPUKA NENE	KPN	19 20.10	155 17.40	924	-.11	-.08
KOHALA	KOH	20 7.69	155 46.77	1166	-.03	-.17
MAUNA LOA (2)	MLO	19 29.80	155 23.30	2010	.03	.08
MAUNA LOA X (2)	MLX	19 27.60	155 20.70	1474	.06	.15
MAKAOPUHI	MPR	19 22.07	155 9.85	881	-.17	-.20
MOKUAWEOWEO	MOK	19 29.28	155 35.98	4104	.15	.16
MOUNTAIN VIEW	MTV	19 30.25	155 3.75	409	-.02	.01
NATIONAL GUARD	NAG	19 42.12	155 1.72	18	.54	.30
NORTH PIT	NPT	19 24.90	155 17.00	1115	-.30	-.18
OUTLET (2)	OTL	19 23.40	155 16.80	1084	-.19	-.18
PAUAHI (2)	PAU	19 22.62	155 13.10	994	-.21	-.24
POLIOKEAWE PALI	POL	19 17.02	155 13.47	169	-.02	.03
PUU HOHUAULA	PHO	19 28.90	154 53.40	215	-.09	-.24
PUU KAMOAMOA	PUK	19 23.00	155 6.25	704	-.25	-.30
PUU PILI	PPL	19 9.50	155 27.87	35	-.15	-.15
PUU ULAULA	PLA	19 32.00	155 27.67	2992	-.03	.13
RIM (2)	RIM	19 23.90	155 16.60	1128	-.21	-.13
SOUTH POINT	SPT	18 58.91	155 39.92	244	-.17	-.22
SOUTHWEST RIFT	SWR	19 27.26	155 36.30	4048	.01	.04
WAHAULA	WHA	19 19.90	155 2.92	29	-.10	-.04
WILKES CAMP	WIL	19 28.15	155 35.02	4037	.22	.17
WOOD VALLEY	WOO	19 15.08	155 30.12	909	-.15	-.06

[1]Numbers in parentheses indicate the total number of seismometers operating if more than a vertical component.

Table 1. (continued)

Optical Seismographs

Station Name	Code	LAT-N	LON-W	Elev	Type	Cal
HALEAKALA Z	HAL	20 46.00	156 15.00	2090	3	0.71
HALEAKALA EW	HAE	20 46.00	156 15.00	2090	WA	1.0
HALEAKALA NS	HAN	20 46.00	156 15.00	2090	WA	1.0
HILO Z	HIL	19 43.20	155 5.30	20	3	1.0
HILO EW	HIE	19 43.20	155 5.30	20	WA	1.0
HILO NS	HIN	19 43.20	155 5.30	20	WA	1.0
KIPAPA	KIP	21 25.40	158 .90	76	3	0.56
UWEKAHUNA EW	UWH	19 25.40	155 17.60	1240	3	0.7
UWEKAHUNA Z	USZ	19 25.40	155 17.60	1240	4	1.0
UWEKAHUNA EW	USE	19 25.40	155 17.60	1240	4	1.0
UWEKAHUNA	PEZ	19 25.40	155 17.60	1240	PE	
UWEKAHUNA	PEE	19 25.40	155 17.60	1240	PE	
UWEKAHUNA	PEN	19 25.40	155 17.60	1240	PE	

Table 2. -- Seismic Instrumentation Types

Type 1. Consists of:

a) Geophone - Electrotech EV-17 or Mark Products L4C 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - Develco Model 6202 voltage controlled oscillator or a USGS/NCER Model J202, J302, or J402. 3 db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 3. Consists of:

Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. Consists of:

Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Type 2 instruments have been discontinued.

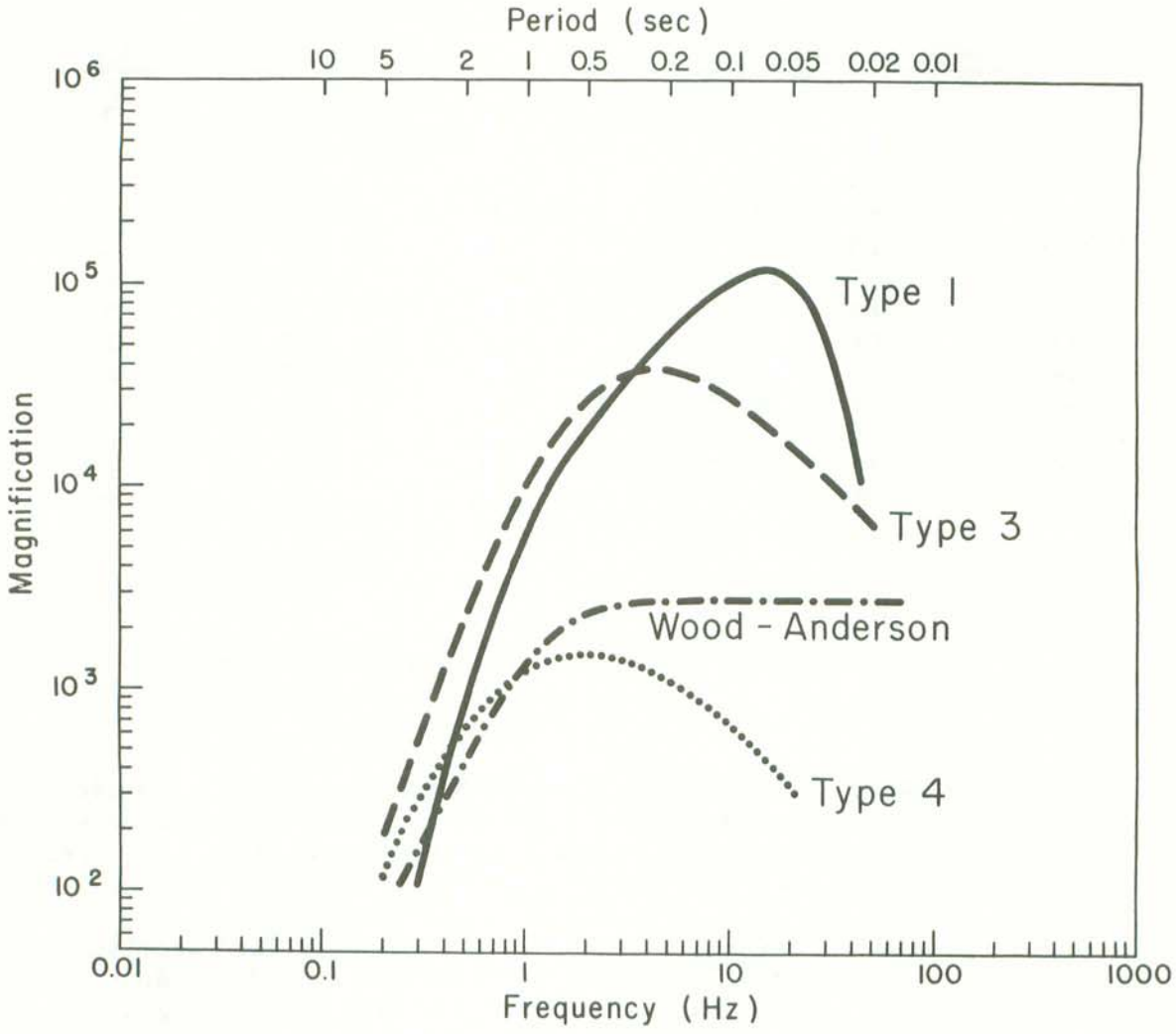

Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard NCER seismometer recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL), to get the response for an individual station.

SEISMIC DATA PROCESSING

Develocorder films are scanned for earthquakes, and coda durations are measured for magnitude determination. Events are digitized, timed, and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival time and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are in fact separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations and signal or coda duration on short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, KAA, OTL, PPL, KHU, PHO, or WIL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed nearly to the noise level. A plot of log (F-P time) versus local (amplitude) magnitude appears in Figure 4. The bilinear relation shown in the figure is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

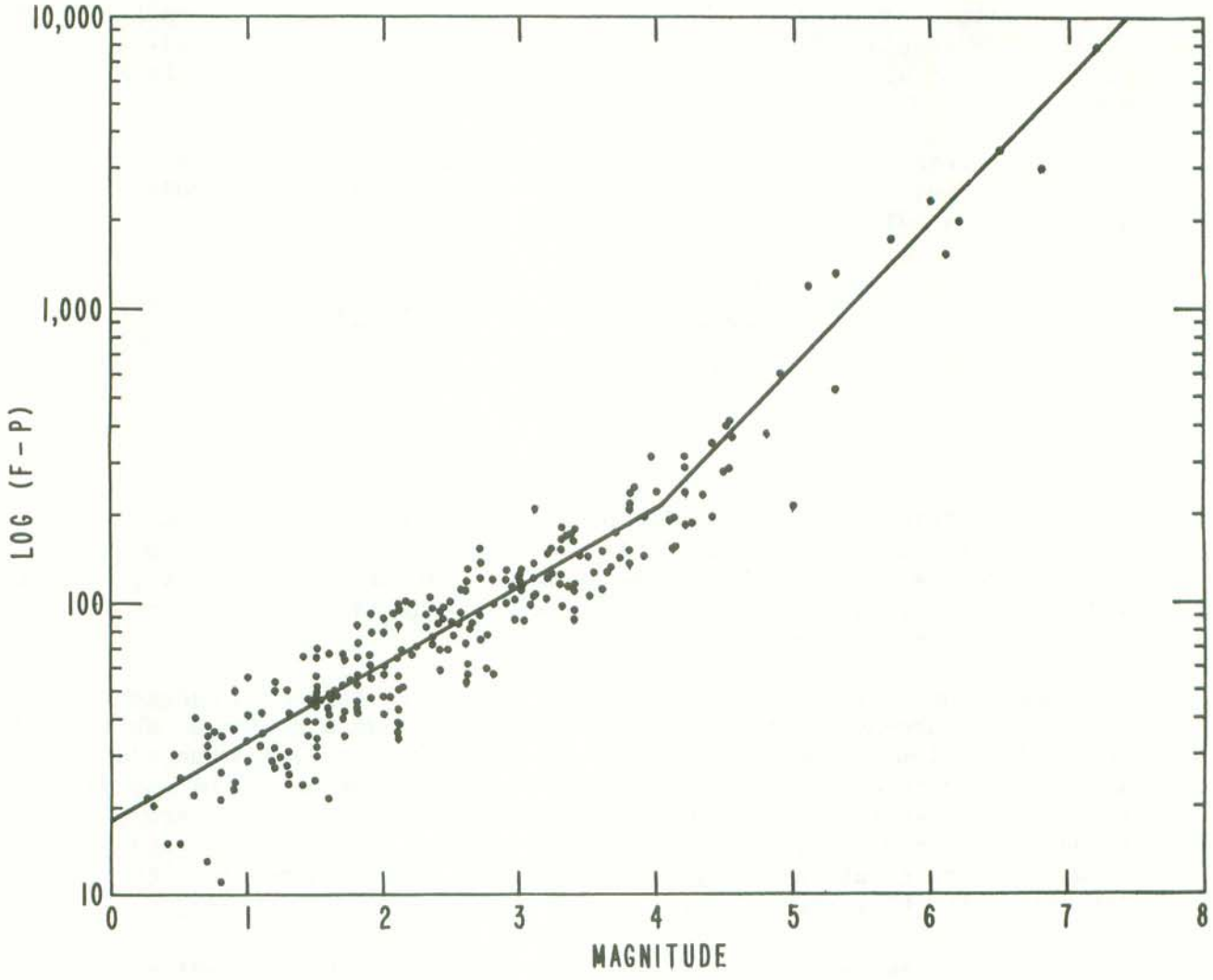

Figure 4. Relationship between signal duration (F-P time) and local magnitude for a large number of earthquakes which occurred during 1975 and 1976. Local magnitude is determined from amplitudes read on Wood-Anderson and other calibrated seismographs. The dual linear relationship between magnitude and log(F-P) appears to hold over a magnitude range of 7 units. The equations used in magnitude determination are:

duration <210 sec $M = -5.2 + 3.89 \log (F-P) + .013\ Z + .0037\ D$

duration >210 sec $M = -.905 + 2.026 \log (F-P) + .013\ Z + .0037\ D$

where Z and D are the depth and epicentral distance in km.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south flank of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters of all depths are given in Figures 5, 6, 7, 8 and 9. The epicenter maps are on different scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and in some cases on its depth. Figure 2 is a map of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figure 2. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea.

Earthquake categories are:

1) Kilauea summit, short period caldera: shallow earthquakes beneath the caldera.

2) Kilauea summit, long period caldera: earthquakes characterized by low frequency signatures, often originating 5-10 km below the caldera.

3) Kilauea summit 30 km: from about 30 km depth.

4) Kaoiki and southwest rift: southwest rift of Kilauea, western parts of the Koae faults and adjacent Kaoiki fault system.

5) Upper east rift zone of Kilauea including the eastern parts of the Koae faults.

6) Lower east rift zone of Kilauea.

7) Offshore PPL: earthquakes from offshore areas south of the Puu Pili station, including Loihi seamount.

8) Mauna Loa long period: low frequency events near Mauna Loa summit.

9) Mauna Loa short period: shallow earthquakes in the Mauna Loa caldera region.

Tremor is separated into four categories: shallow, intermediate and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs.

Table 3. KILAUEA SUMMIT KILAUEA FLANK MAUNA LOA TREMOR (MINUTES)

DATE 1979	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA DEEP
JAN 1	221	12	2	27	159	39				35		
2	225	9		26	153	27		1	1			
3	125	11		18	85	28				5		
4	200	21		29	118	40				13		
5	312	6	1	13	64	34		3		3		
6	246	1	3	27	61	28				2		
7	200	4		54	112	37		1				
8	210	8		32	139	30		1				
9	196	6		45	124	25				5		
10	243	1		57	209	36		1	1			
11	177	4	1	39	95	20			1			
12	85	10	2	18	78	22		1		3		
13	106	16		18	76	24		1		8		
14	72	26		8	90	25		1		3		
15	193	9		31	72	20			1			
16	196	1		45	90	27		1				
17	202	1		32	124	27			1			
18	143			33	101	30		3				
19	93		2	23	70	12		2	1			
20	149	2	1	47	86	14			1		5	
21	182		3	13	61	10	2				2	
22	261	10		22	94	4		1				
23	308	5		27	97	9				3		
24	402	26		57	137	20		1		15		
25	384	10		30	98	6			2	3	5	
26	383	10	3	26	102	18	1			10		
27	330	4	3	31	92	8	2			3		
28	354	32		36	142	16			1			
29	261	15		52	95	27		1	1	7		
30	150	152		39	71	4					2	
31	171	58		38	80	23						
FEB 1	220	23		13	84	6			1	3	20	
2	237	40		37	153	30				23	34	
3	222	25		29	114	19				5		
4	240	35		25	84	6				10		
5	944	55		31	800	23		1				
6	503	44		35	115	25			1	2		
7	349	91		52	118	46			1	31		
8	226	8		30	114	37						
9	201	1		43	96	10			1			2
10	191	34		36	78	25				2	46	
11	231	52		42	88	40		1		4		
12	162	45		29	86	23						
13	298	39	1	39	128	33			2			
14	410	76		47	82	33						

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1979	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
FEB15	420	62		55	130	19		1			
16	361	67		22	83	13			1	4	
17	404	42	2	45	100	17			2	9	
18	395	42		30	81	24				13	
19	312	26		8	70	10		1			
20	443	56		28	121	10		1			
21	444	22		30	111	25					
22	439	14		33	112	7		1	2	3	
23	274	10		40	109	7				5	
24	194	11		52	106	24					
25	292	9	3	60	108	23		1			
26	247	14		59	94	13			1		
27	260	69		40	78	26				8	
28	304	8		54	150	9					
MAR 1	293	11		54	204	13					
2	313	3		41	116	23			1		
3	281	12	2	35	117	20					
4	253	5	1	64	140	10					
5	224	10		52	133	31		1			
6	237	19		29	82	18			2		8
7	249	18	1	72	131	22					
8	138	9		34	87	12		11	1	6	
9	186	21	1	24	96	13					
10	214	30		49	91	34		3	18	11	
11	155	18		30	123	11			5		
12	196	24		39	139	35			1		
13	219	39	1	23	68	20			2	3	
14	136	24		33	94	22					
15	101	15		35	116	20					
16	141	30		33	122	11			1		
17	149	40		33	142	19			1		
18	139	24		48	89	18				4	
19	149	18		37	96	24					
20	168	17	1	34	90	27			3		
21	105	16		38	98	15					
22	126	53		27	115	25					
23	137	5		26	148	13			20		
24	146	5		37	190	10			183		
25	132	15		29	148	26			214	19	
26	134	2		34	244	17			185	4	
27	131	6		32	148	8		3	146		
28	141	4		31	148	20			185		
29	170	6	3	23	176	7			134		
30	150	6		20	219	14			93	2	
31	211	12	3	19	208	22			78		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1979	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
APR 1	210	7	3	22	240	17			169	29	
2	166	19		21	171	20		1	106		
3	235	12	2	32	192	6			18		27
4	231	6		25	207	26			87	7	
5	250	12		32	183	23			69	22	
6	263	12	1	20	191	11		4	70		3
7	231	23		9	255	7		3	19		
8	213	4		27	206	14			35	20	
9	214	10		37	146	34			27		
10	229	2		31	155	2			10		3
11	181	10		16	154	21			6		
12	219	5	1	10	151	19			8		
13	309	5	2	22	164				4		7
14	310	2	1	23	134	3				5	
15	317	9		20	177	12			11		
16	394	4		33	239	28			1		
17	234	10		37	180	5			6	6	
18	244	31		19	193	8			21	7	
19	271	51		16	265	17			6	3	
20	241	15		14	80	5	1	6	9	5	
21	265	5	1	20	108	16		2	1		
22	200	12	1	22	158	9		1	14	5	
23	280	5		24	200	19			1		
24	360	4	2	27	130	13			10		
25	444	16	1	13	239	14			14		
26	464	45		20	239	16			11		
27	406	14		22	273	34			7		
28	566	13		22	283	20			7		
29	473	24		26	361	15			8	4	
30	316	23		21	301	15			13	4	
MAY 1	199		3	24	224	3		1	5		6
2	225	35		16	273	17			3	17	
3	193	24		28	214	16			6	36	
4	169	19		17	132	2			8	3	
5	103	41		11	123	11			7	3	65
6	185	18		12	152	14			2	10	
7	304	10	1	19	175	17			2	33	
8	308	5		24	205	3		6	5		
9	365	10		31	215	12			3	4	
10	273	36		23	164	5		2	11	3	
11	486	14	5	35	277	10			6		
12	385	9		15	297	17			6		
13	305	24		25	158	9		1	6	20	
14	351	48		20	180	9			2		
15	321	42		12	216	2		6	4		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA TREMOR (MINUTES)				
		SHORT	LONG		KAO.	UP.	LOW.	OFF-			KILAUEA	MAUNA
	DATE	PER.	PER.	30	& SW	EAST	EAST	SHORE	LONG	SHORT	INT.	LOA
	1979	CALDERA		KM	RIFT	RIFT	RIFT	PPL	PER.	PER.	SHAL.	DEEP
	MAY16	380	10		17	238	5			10		
	17	311	1		23	214	12		14	2		5
	18	294	9	1	24	175	4			2		
	19	166	3	2	17	185	6		1	3	7	4
	20	182	12		26	290	8			5		
	21	158	19		15	220	2			3		
	22	198	90	1	25	203	14		1	3	13	2
	23	154	17		17	268	21			1		
	24	172	20		31	293	25		2	4		
	25	181	13		39	238	16		1	6	2	2
	26	198	44	1	21	263	50		1	7	10	
	27	169	7	1	24	354	64			5	5	
	28	183	15	1	46	357	50		1	3	4	
	29	149	2		8	2166	26			3	210	
	30	74	10		17	188	8		37	6		
	31	101			14	199	1			7	6	
	JUN 1	235	26	1	33	233	16			5		3
	2	169	12	1	18	234	6		2	2		
	3	190	32		34	202	8			4		
	4	192	6		22	216	7			1		
	5	388	37		15	198	14		2	8	7	
	6	207	31		26	229	15			1		
	7	247	17	2	9	188	25		1	7	2	
	8	189	12	2	29	271	31					
	9	169	4		23	206	17					
	10	131	25	2	17	162	16			3		
	11	184	13		33	183	14			3		
	12	270			27	125	23		3	5		
	13	215	11		29	204	25			5		
	14	243	2		7	167	10		1	4		
	15	214	8	1	28	159	4			3		
	16	293	27	2	26	195	23		1	6		9
	17	171	23		19	226	22			7		
	18	172	37		17	208	26			2		
	19	201	9		16	163	22			3		
	20	165	5	2	30	219	14			1		
	21	342	8		13	184	10			5		4
	22	209	3		27	206	4	1		2		
	23	160	18		33	152	3		2	2		
	24	164	14		29	217	33			6		
	25	224	41	1	33	234	24			2	4	
	26	340	13		21	175	12		1	14	16	
	27	191	87		16	176	20			1	4	
	28	310	42		39	208	19		2	10	2 6	
	29	302	7		45	156	13			17		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1979	SHORT PER. CALDERA	LONG PER. 30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
JUN30	255			33	118	6		7		6		
JUL 1	117	2	1	25	175	14		4				
2	102	9	1	27	145	14		1				
3	149	13	1	23	177	14		6		10		
4	286	3		27	232	18		5				
5	266	20		33	169	4		2	1			
6	209	33		25	175	20				10		
7	310	11		41	181	35		9		6		
8	206	12		43	214	13		3				
9	120	9		35	173	26		1			39	
10	298	2		22	182	8		7	1	4	6	
11	141	2	3	31	176	18						
12	259	17		30	178	9		18	5	3	14	
13	184	22		15	158	20			1	5		
14	178	5	1	16	185	9		1		2		
15	210	20		21	1099	29		4				
16	277	8		25	306	37		2		19		
17	305	14		18	175	12		1	2	1	3	
18	176	17		18	215	24						
19	203	26		29	221	28		3				
20	157	20		40	165	11		3				
21	171	10		28	177	17		2		5		
22	111	2		18	108	8		1				
23	128	8		11	110	8						
24	313	15		32	145	13		15	7	4		
25	329	7		48	176	24		4	1			
26	200	7		23	190	12		12	2			
27	298	21		27	193	7			2	3		
28	289			33	172	13		2		50	10	
29	179	3		32	138	6						
30	173	31		23	130	15		2				
31	178	5		21	155	4					9	
AUG 1	448	11		28	211	21		2		2		
2	560	22		29	148	2		3		30		
3	268	9		19	198	16		1	1			2
4	382	17		20	167	16		2		5	6	
5	244	18		27	132	12		3				
6	216	10	1	35	157	20						
7	259	104		29	193	9		1	5	67		
8	121	9		17	133	13		1				
9	205	31		33	135	7		1		13		
10	176	18		23	188	15		3				
11	268	21		19	179	14		6		4		
12	1101	7		23	679	18		1	1			
13	559	14		14	174	12		2	1			

	KILAUEA SUMMIT				KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1979	SHORT PER.	LONG PER. CALDERA	30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
AUG14		416	12		38	228	11			3		40	
15		362	18	1	24	272	15		1	1			
16		328	20		33	193	9			1	2		
17		296	3	1	25	263	31			5			
18		303	5		32	232	32			1			
19		197	14		20	216	17						
20		211	9		28	208	9						
21		189	17		24	173	25			2			
22		215	9	1	35	208	42					15	
23		119	7		33	154	20			1		28	4
24		209	25		14	158	17			2	12		
25		236	5	1	16	243	20			4			
26		137	6		28	171	12						
27		152	32		40	245	20						
28		175	12		66	216	15					18	
29		176	13	1	29	241	50						
30		168	15		32	229	40					5	
31		125	15		44	219	19						
SEP 1		130	7		45	306	37						
2		118	18		32	188	27			1	12		
3		204	18	2	31	196	87		1	2	4		
4		181	38	1	29	185	50			2			
5		135	33		32	174	63			2			
6		146	42		26	188	88						
7		206	8	1	23	118	35				5		
8		228	24	1	9	163	8		1	1	5		
9		265	7		28	166	39			2			
10		400	17	2	22	261	37			1			
11		262	8		38	248	28			2			
12		229	8		24	126	30			2			
13		340	23		35	214	22			2	8		
14		441	18	1	15	244	28			3		8	
15		317	6	3	22	205	57			1	6		
16		197	24	1	13	196	25			1			
17		264	24	2	19	198	41			1		8	
18		324	15	3	17	204	25			2		81	
19		227	14		34	203	22			3		19	
20		327	22		46	229	33			10	3		
21		311	29		28	1134	21			8			
22		211	288		48	658	26			5			
23		258	23	1	37	388	43		1	2			
24		221	18		21	296	11			4			
25		237	26		38	290	12			1			
26		130	14	2	22	333	18			2			
27		266	7		59	421	10			3			

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1979	SHORT PER. CALDERA	LONG PER. 30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
SEP 28	238	7		16	158	12			1		6
29	275	6		8	183	16			3		
30	415	8		46	256	44			1		
OCT 1	556	3		28	265	23			1		
2	276	6		20	213	16			2		
3	375	11		18	243	36			2		
4	845	3		19	242	40			1		
5	641	9		23	292	38			2		
6	605	15		33	293	37				3	29
7	442	20		24	250	24			3	8	
8	57	4		26	222	10					
9	415	9		19	213	13				6	
10	723	14		21	272	14					
11	572	7		27	258	12			3		
12	613	11		51	372	13			3		
13	490	12		73	268	18			3		
14	287	19		30	248	12			1		
15	242	7		30	237	19					
16	165	5		78	195	9				42	25
17	412	13		28	161	30			2	8	28
18	748	12		27	340	22			1		
19	352	10	1	11	187	10			1		
20	349	18	1	10	222	11					20
21	427	16		25	362	23					
22	225	24		34	342	27					
23	344	4		38	397	25			7	9	
24	310	15		22	316	24		1	2		
25	323	18		43	283	26			4	26	
26	259	8		32	263	36		1	1		29
27	219	5		36	237	38					
28	412	2		34	280	19					3
29	244	3		20	214	19			1		
30	387	9		23	261	20			4		
31	299	8		20	228	25					
NOV 1	330	1		28	294	19			3		5
2	311	9		25	271	19		3	1		
3	248	9		28	248	27			1	6	
4	188	5		28	219	13				2	
5	318	14		27	286	6					
6	358	3		25	340	29			1		
7	354	4		43	358	12		1	2		
8	332	4		30	374	18			2		
9	373	6	1	32	281	21			2		2
10	399	11	3	31	338	26				20	8
11	315	9		32	442	24		2	4	11	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1979	SHORT PER. CALDERA	LONG PER. 30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
NOV 12	399	29		33	521	10						
13	367	16		34	547	10						
14	66	50		25	611	12			2			
15	73	30		23	2438	14			2			
16	54	25		19	333	13			1	1440		
17	220	94		21	402				2			
18	43	16		16	203	16			1		7	
19	83	79		10	460	8			8			
20	40	66		19	481	28						
21	64	84		22	349	19		1	2	97		
22	67	22		22	369	17			4			
23	85	33	1	13	411	9		1	1	7		
24	103	20		32	351	18						
25	172	26		25	401	5			2	17		
26	145	9		37	339	2			7			
27	93	12		27	269	28			4			
28	110	27		34	251	30			3			
29	57	37		28	167	15			3			
30	109	51		20	262	3			5			
DEC 1	53	65		21	101	16			1			
2	49	12		10	164				2			
3	27	22		21	79	9			1			
4	44	63		22	141	11			1			
5	89	50		36	196	18		1	3			
6	94	78		33	174	22						
7	84	103	1	29	169	9					14	
8	165	36		20	160	27			2		3	
9	129	63		26	163	17			1	25		
10	145	43		34	149	35	1		4			
11	156	27		39	181	17						
12	248	23		23	227	14		2	2		6	
13	147	11		140	150	23				33		
14	248	20		67	248	6			4	4		
15	284	25		46	254	6						
16	224	22		41	184	15			1			
17	199	34		35	214	9			4			
18	219	18		29	248	15						
19	245	30		44	252	22						
20	156	20		32	204	19			3			
21	150	23		30	204	19			1			
22	187	73		26	286	25			1	14		
23	188	8		24	195	2			1			
24	160	34		20	194	23			1	33		
25	325	12		28	237	10			1			
26	304	22		35	314	19			2			

	KILAUEA SUMMIT		KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1979	SHORT PER. CALDERA	LONG PER. 30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
DEC27	213	18	33	225	26			4		
28	213	13	39	269	32		1	3		
29	147	5	24	180	10		1			36
30	103	7	38	187	15					
31	131	8	32	199	22			1		

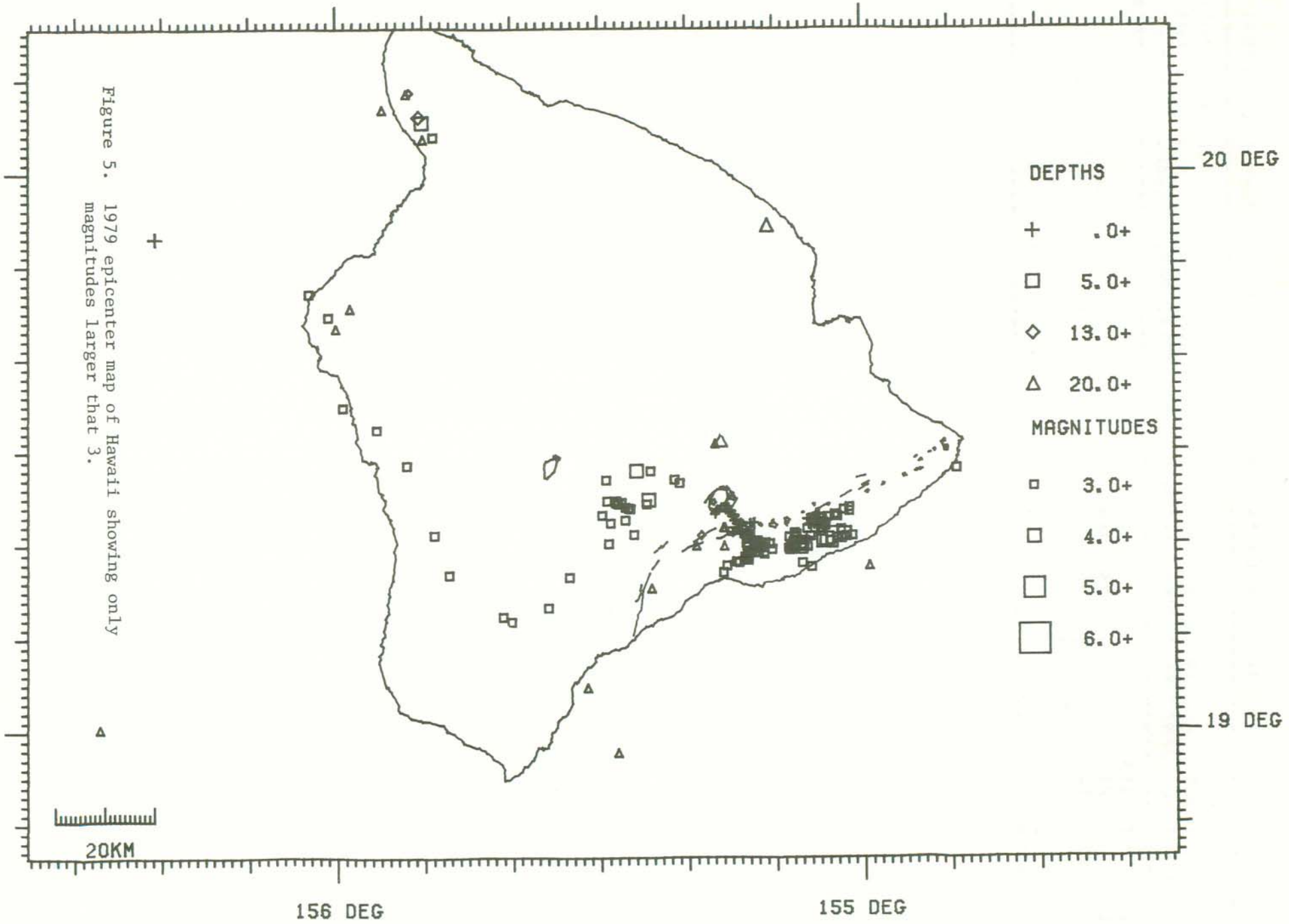

Figure 5. 1979 epicenter map of Hawaii showing only magnitudes larger that 3.

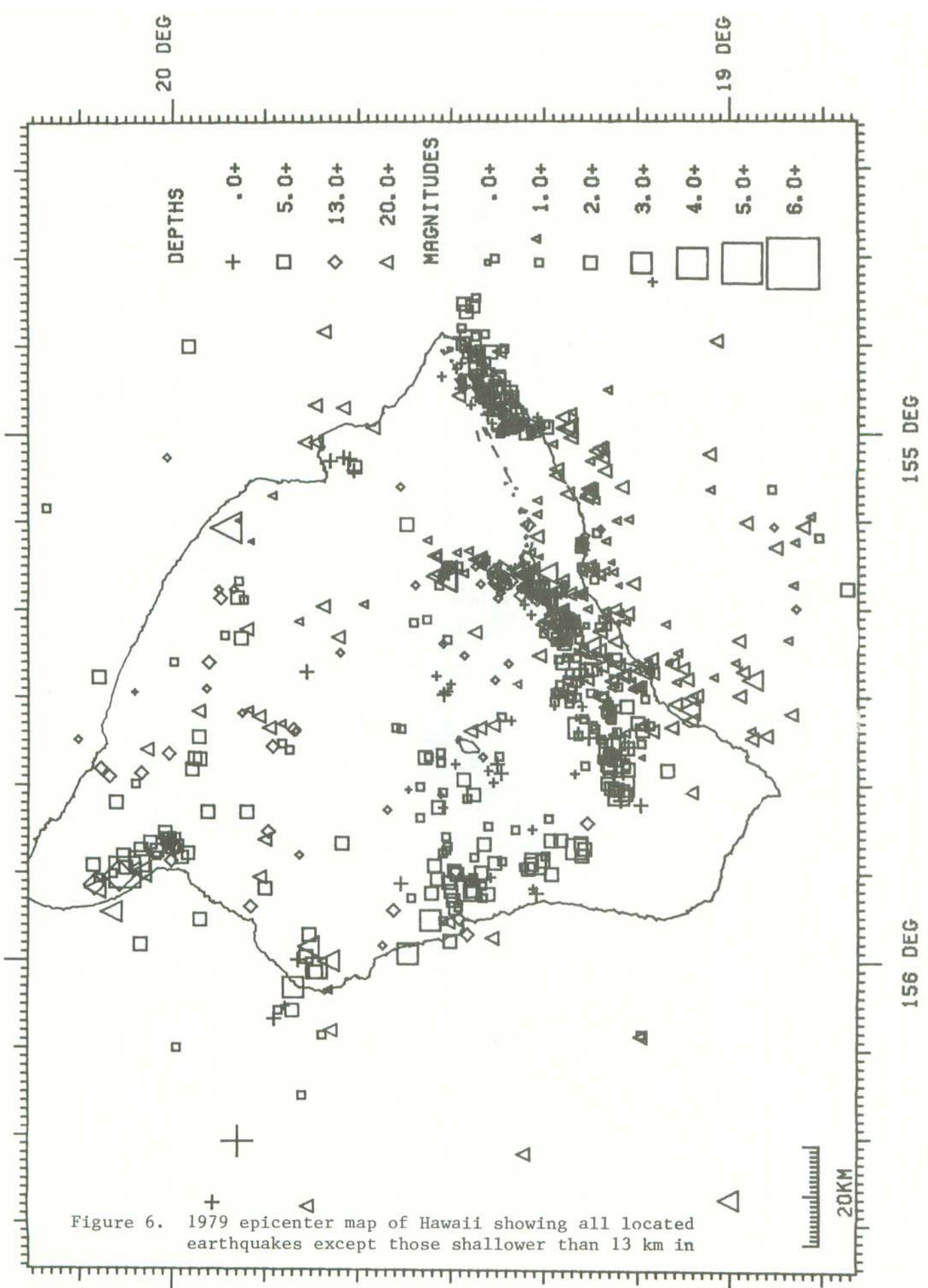

Figure 6. 1979 epicenter map of Hawaii showing all located earthquakes except those shallower than 13 km in the Kaoiki, upper east rift, middle east rift and Kilauea caldera areas.

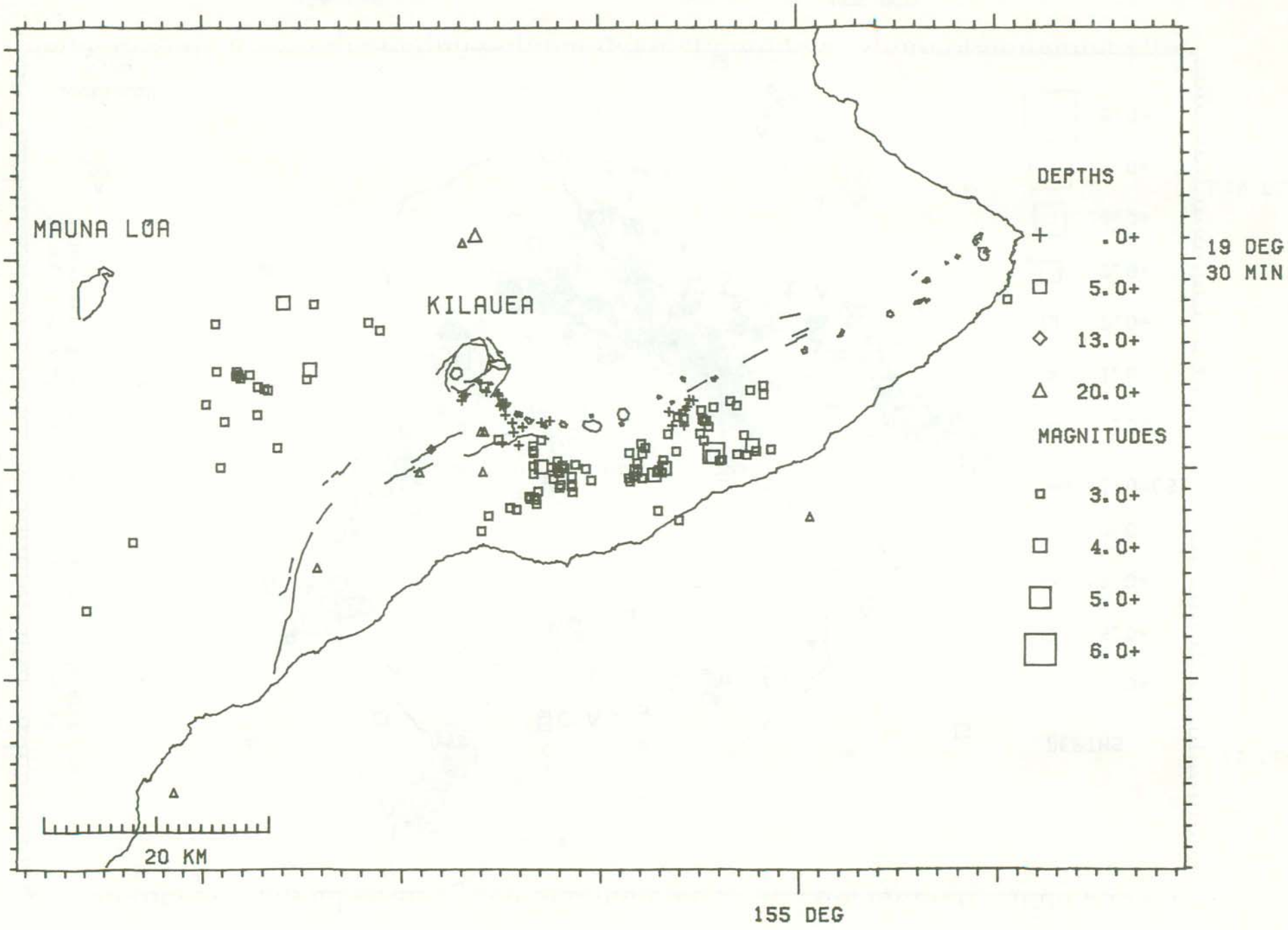

Figure 7. 1979 epicenter map of Kilauea-Mauna Loa showing magnitudes larger than 3.

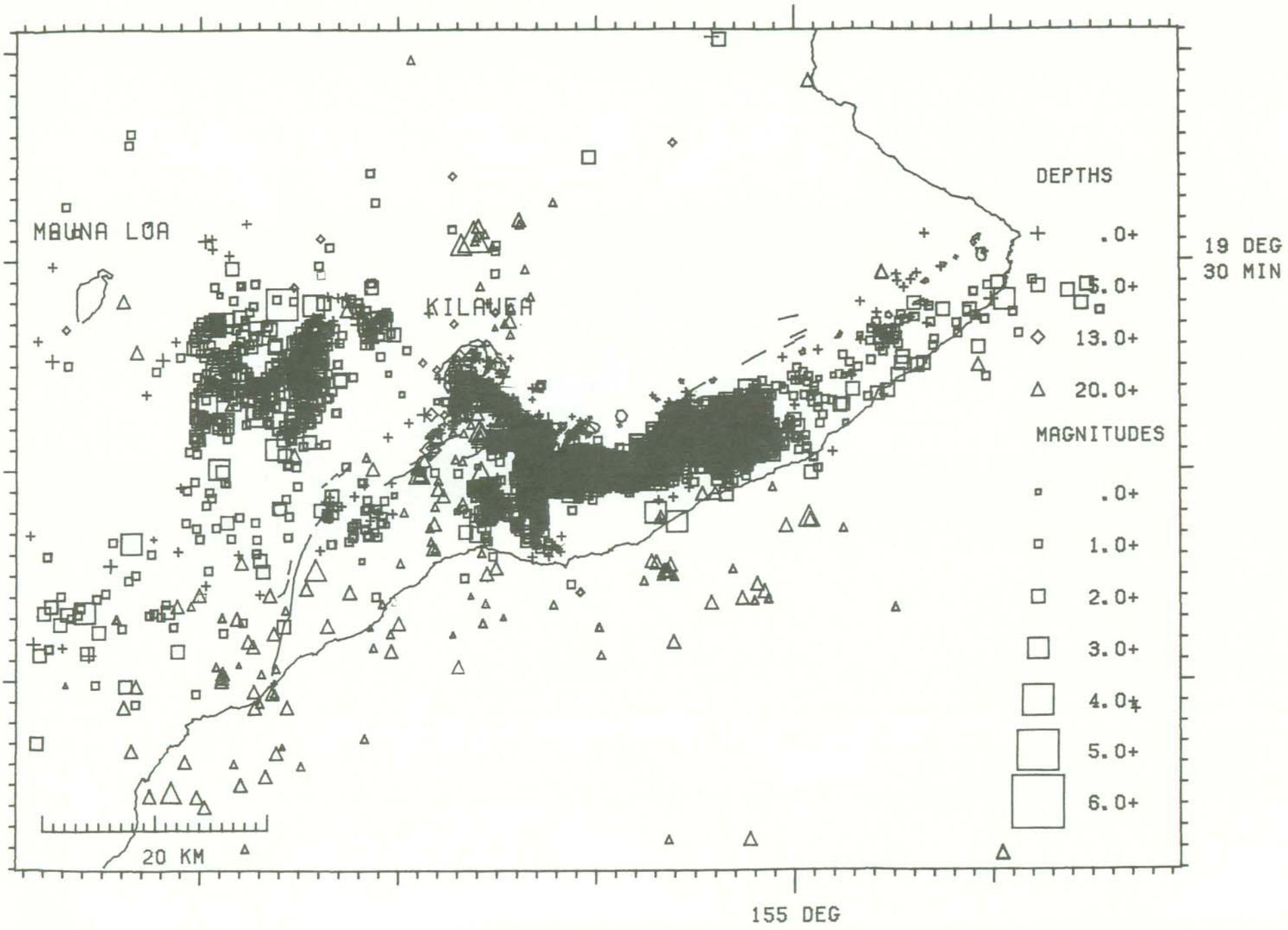

Figure 8. 1979 epicenter map of Kilauea-Mauna Loa showing all located earthquakes.

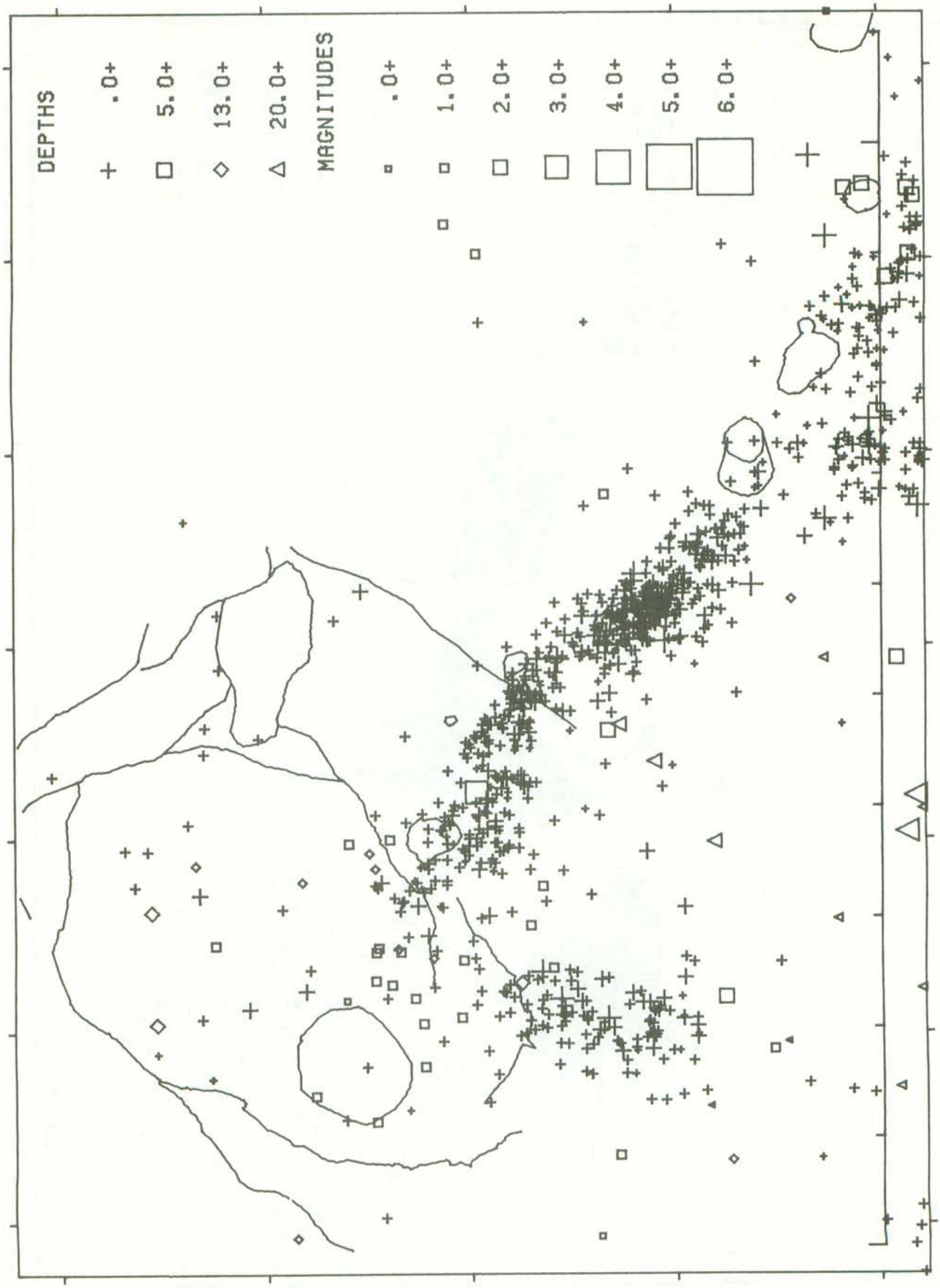

Figure 9. 1979 epicenter map of Kilauea Caldera.

Table 4. Coordinates of named regions.

Name	(----------Limits----------)								
	NORTH		SOUTH		EAST		WEST		DEPTHS
	D	M	D	M	D	M	D	M	km
SPC	19	27	19	23	155	15	155	19	0 - 5.5
LPC	19	27	19	23	155	15	155	19	5.5 - 11
INT	19	29	19	18	155	22	155	12	11 - 22
DEP	19	29	19	18	155	22	155	12	22 - 70
UER	19	23	19	19	155	6	155	15	
KOA	19	23	19	17	155	15	155	19	
SWR	19	22	19	16	155	19	155	25	
UKF	19	29	19	22	155	19	155	30	
MER	19	25	19	16	155	1	155	6	
LER	19	31	19	20	154	47	155	1	
POL	19	19	19	10	155	6	155	15	
LSW	19	16	19	0	155	21	155	34	
PPL	19	10	18	30	155	0	155	21	
HLP	19	17	19	10	155	15	155	21	
MOK	19	40	19	22	155	30	155	45	
GLN	19	31	19	23	155	1	155	19	
KON	19	55	19	15	155	45	156	10	
HEA	19	22	19	0	155	25	155	45	
KOH	20	15	19	55	155	30	156	0	
NER	19	40	19	29	155	12	155	30	
HIL	19	50	19	31	154	47	155	12	
KKU	20	5	19	40	155	0	155	45	
DIS	EVERYPLACE ELSE								

When coordinates imply an overlap, precedence is given as shown in Figure 2.

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = (\Sigma R_i^2/NR)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 2 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

* - the location program had a convergence problem, which usually means that the depth may be unreliable.

Table 5 lists all events located during 1979. Table 6 lists only events of magnitude 3.0 or larger.

Table 5 HVO EARTHQUAKE SUMMARY LIST PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JAN	1	3 6	15.75	19	16.05	155	28.07	4.15	1.8	1.9	36	2	92	.17	11	.5	2.6	23	HEA
		1	746	42.63	19	22.41	155	4.21	8.49	2.1	2.6	31	0	92	.08	4	.5	.5	27	MER
		1	1132	52.64	19	21.10	155	9.92	7.82		1.6	19	0	67	.08	2	.6	1.0	18	UER
		1	1156	3.77	19	20.02	155	13.49	4.29		.9	15	0	93	.12	5	.6	2.2	14	UER
		1	1159	38.71	19	25.64	155	24.24	9.07	1.7	2.0	25	1	56	.10	8	.4	1.2	24	UKF
		1	12 9	23.58	19	20.69	155	10.80	6.81		.9	11	0	83	.10	3	.7	1.5	11	UER
		1	1352	50.20	19	23.40	154	58.47	7.71	1.9	1.4	21	2	195	.18	3	1.3	1.2	18	LER
		1	1358	20.95	19	20.19	155	12.10	5.58	1.1	1.0	16	0	78	.10	5	.7	1.7	15	UER
		1	1515	9.71	19	20.18	155	7.74	6.91	1.4	1.7	24	0	92	.08	5	.5	1.0	23	UER
		1	1519	7.46	19	20.17	155	7.71	6.53	1.2	1.6	23	0	92	.11	5	.6	1.5	23	UER
		1	1615	16.90	19	24.68	154	59.59	7.18	1.8	1.5	22	1	153	.14	2	.9	1.0	22	LER
		1	1818	51.28	19	20.96	155	4.19	6.06	1.8	2.1	22	1	94	.11	3	.6	1.0	21	MER
		1	1821	36.01	19	21.18	155	4.19	6.68	2.3	3.0	34	1	87	.14	3	.5	.9	31	MER
		1	2031	25.20	20	57.37	156	3.60	11.73	3.5	4.2	37	3	278	.12	29	3.7	3.3	35	DIS
		1	2040	47.32	19	20.32	155	7.66	5.99	1.3	1.1	26	1	91	.10	5	.5	.8	24	UER
		1	21 2	34.60	19	19.70	155	13.15	6.79	1.1	1.4	25	0	72	.12	5	.6	1.1	21	UER
		1	2147	53.75	19	19.56	155	14.82	6.63	1.1	1.2	28	1	76	.12	5	.4	.7	20	UER
		2	213	37.85	19	18.59	155	13.42	9.09	2.1	2.3	32	0	79	.11	3	.5	.5	25	POL
		2	5 3	39.79	19	21.12	155	2.63	7.93	2.7	3.2	33	1	146	.09	2	.5	.4	28	MER
		2	939	23.20	19	24.17	155	27.00	9.69	2.3	2.4	33	1	46	.14	3	.4	.9	29	UKF
		2	1712	14.31	19	20.49	155	10.93	6.90	1.7	1.5	28	1	77	.10	3	.4	.9	27	UER
		2	1716	50.15	19	18.40	155	13.04	5.03	1.3	1.0	18	0	95	.08	3	.5	1.5	17	POL
		2	18 3	18.06	19	24.52	154	58.05	6.20		.4	19	1	182	.11	2	1.0	.7	18	LER
		2	1840	45.30	19	26.62	154	55.30	5.81		1.1	16	0	191	.11	2	1.4	1.6	14	LER
		2	2220	25.02	19	20.66	155	12.01	7.45	1.6	1.9	28	0	71	.13	4	.6	.8	25	UER
		2	2222	8.19	19	20.38	155	11.80	8.61	1.6	1.7	23	0	77	.09	5	.5	.8	23	UER
		2	2223	7.50	19	22.78	155	1.44	6.21	1.8	1.2	21	0	156	.16	6	.7	1.5	21	MER
		2	2224	51.30	19	21.19	155	6.74	7.13	1.6	1.6	27	1	88	.10	6	.5	.7	25	UER
		3	1 1	32.72	19	20.82	155	6.49	3.59	1.1	.8	20	0	97	.14	6	.6	2.9	20	UER
		3	115	13.22	19	22.58	155	1.90	7.75	1.9	1.6	28	1	150	.11	5	.7	.6	27	MER
		3	351	29.74	19	18.76	155	13.34	6.64	1.5	1.4	23	0	79	.11	3	.5	1.1	22	POL
		3	1040	5.41	19	20.26	155	7.83	5.24	1.8	1.2	21	0	89	.11	5	.6	1.5	18	UER
		3	1122	53.66	19	19.55	155	13.10	7.91	1.5	1.6	27	0	74	.11	5	.5	.6	20	UER
		3	1255	4.71	19	19.58	155	9.46	5.70	1.7	1.2	24	0	90	.11	5	.5	1.1	18	UER
		3	1256	46.74	19	19.50	155	9.35	6.47	1.8	1.2	27	1	90	.12	5	.6	1.1	19	UER
		3	15 8	45.20	19	23.18	155	4.13	6.39	1.6	1.0	13	1	91	.11	3	.7	1.4	7	MER
		3	1925	24.26	19	25.45	155	29.82	7.91	1.7	.9	24	1	59	.11	7	.5	1.5	12	UKF
		3	2323	4.56	19	20.73	155	9.57	6.64	1.5	1.1	26	0	70	.12	3	.5	.9	21	UER
		4	336	39.43	19	21.74	155	6.61	7.59	1.8	1.5	31	0	80	.12	6	.5	.8	27	UER
		4	525	53.03	19	18.85	155	14.93	7.63	1.8	1.1	14	1	118	.13	4	.6	1.1	13	POL
		4	1130	46.11	19	21.00	155	2.47	6.62	2.1	1.8	23	0	157	.12	2	.9	.9	21	MER
		4	1135	14.80	19	20.30	155	13.32	6.84		.8	15	0	63	.06	4	.6	1.2	14	UER
		4	1138	9.99	19	19.43	155	11.69	6.74	2.2	2.3	28	1	95	.10	5	.5	.8	26	UER
		4	1226	6.25	19	21.79	155	4.19	5.56	1.8	1.0	24	2	90	.16	4	.6	1.7	22	MER
		4	13 7	44.68	19	20.37	155	13.28	5.79	1.1	1.0	21	0	63	.12	4	.5	1.4	21	UER
		4	2026	49.19	19	20.36	155	13.46	5.46		.5	21	0	65	.13	4	.5	1.5	18	UER
		4	2315	20.04	19	19.85	155	10.09	6.78		.9	22	1	92	.09	4	.5	1.1	21	UER
		4	2338	16.84	19	20.50	155	13.13	7.65	1.4	1.3	27	2	64	.13	4	.5	.9	22	UER

HVO EARTHQUAKE SUMMARY LIST PAGE 2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JAN	5	515	5.63	19	23.97	155	15.63	2.55	1.0	.9	9	0	113	.06	3	.4	.5	9	SPC
		5	629	41.03	19	21.31	155	4.62	6.65	1.5	1.4	24	1	88	.10	4	.5	1.2	20	MER
		5	911	51.13	19	24.67	155	20.50	5.80	.7	1.1	13	1	97	.05	2	.5	1.3	9	UKF
		5	1618	24.84	19	19.59	155	13.11	8.03	1.5	2.1	21	0	74	.10	5	.6	1.0	19	UER
		5	1636	19.13	19	22.11	155	2.82	7.73	1.8	2.1	24	2	131	.15	4	.6	1.0	22	MER
		5	1712	8.21	19	14.58	155	29.69	3.51	1.3	1.4	19	0	79	.14	10	.6	23.4	8	LSW *
		5	1726	53.21	19	15.22	155	6.36	46.05	2.5	2.6	34	1	202	.09	5	.9	1.2	31	POL
		5	1738	59.39	19	20.61	155	12.72	8.03	1.7	1.7	21	0	67	.11	4	.6	1.0	18	UER
		5	2151	11.90	19	23.34	155	15.61	4.49	1.4	1.4	9	1	91	.13	2	.6	1.5	6	SPC
		5	2248	16.45	19	22.56	155	2.91	7.13	1.7	1.8	23	3	124	.09	4	.5	.8	14	MER
		5	2330	14.91	19	24.12	155	16.24	.78	1.1	1.3	12	1	114	.12	2	.3	.6	5	SPC
		5	2342	45.17	19	25.76	154	58.84	3.56	1.3	1.3	8	0	107	.07	1	.7	.6	6	LER
		6	032	4.34	19	26.23	154	53.00	5.89	1.3	1.4	16	2	260	.08	5	1.5	.7	13	LER
		6	144	56.51	19	18.46	155	14.10	6.45	1.2	1.4	13	0	105	.06	3	.7	1.4	11	POL
		6	526	36.91	19	26.86	155	29.10	10.45	2.1	2.4	29	0	54	.09	9	.4	.7	25	UKF
		6	534	14.27	19	27.03	154	53.17	5.86	1.2	1.1	15	2	250	.13	4	1.7	.8	11	LER
		6	640	28.09	19	22.92	155	2.99	8.12	1.2	1.3	19	0	118	.12	4	.7	1.1	14	MER
		6	646	5.78	19	20.54	155	3.25	6.01	1.1	1.4	18	1	107	.09	1	.7	1.3	13	MER
		6	1113	2.94	19	32.83	155	21.16	11.97	2.0	1.8	39	3	62	.11	7	.4	1.1	23	NER
		6	1413	6.00	19	20.23	155	13.26	6.00	1.0	1.3	23	0	65	.12	4	.5	1.3	18	UER
		6	15 1	21.36	19	23.73	155	28.73	9.30	1.1	1.3	23	2	112	.11	3	.4	1.1	12	UKF
		6	1655	41.56	19	23.01	154	58.84	8.82	1.2	1.1	21	1	192	.21	4	1.7	1.1	7	LER
		6	18 4	54.77	19	21.64	155	4.62	2.59	.8	1.7	9	0	136	.21	4	.7	1.6	6	MER
		6	1815	57.77	19	18.48	155	13.56	7.12	1.1	1.2	22	1	89	.10	3	.5	1.2	16	POL
		6	2211	39.74	19	25.22	155	24.19	9.85	2.8	2.9	40	2	43	.10	8	.3	.6	26	UKF
		6	2252	37.02	19	14.77	155	7.60	41.57	1.7	1.6	30	8	203	.07	5	.9	.9	19	POL
		7	121	36.32	19	22.86	155	6.39	.41	1.7	2.5	15	0	94	.07	5	.4	1.3	9	UER
		7	238	5.66	19	19.40	155	10.32	7.47	1.2	1.1	23	1	100	.06	5	.5	.9	15	UER
		7	635	.36	19	25.35	155	29.17	9.00	1.1	1.3	25	5	95	.08	6	.4	1.0	11	UKF
		7	650	50.71	19	26.96	155	29.61	7.99	1.3	1.4	26	5	86	.12	9	.4	1.2	13	UKF
		7	733	41.74	19	19.62	155	11.89	7.43	1.1	1.0	19	0	89	.05	6	.5	1.3	10	UER
		7	840	22.14	19	19.74	155	7.32	6.08	1.8	1.2	27	3	108	.09	5	.4	1.4	25	UER
		7	1024	8.19	19	23.35	154	58.15	7.48	2.0	1.5	18	2	195	.13	3	1.1	1.4	15	LER
		7	1331	16.21	19	20.44	155	2.84	4.72	1.7	1.2	14	0	146	.28	1	1.7	2.1	14	MER
		7	1345	7.20	19	19.90	155	9.92	6.90	1.5	1.4	17	0	87	.09	4	.6	1.2	17	UER
		7	1758	32.38	19	18.59	155	13.76	6.19	1.6	1.7	23	0	92	.09	3	.6	1.2	20	POL
		7	1830	.38	19	20.32	155	11.18	7.27	1.7	1.5	25	0	80	.11	4	.5	1.1	23	UER
		7	1846	31.24	19	20.19	155	8.36	7.48		.9	21	0	79	.09	4	.5	1.0	17	UER
		7	1914	5.91	19	21.13	155	13.30	10.21	2.8	3.2	34	1	57	.09	3	.4	.4	30	UER
		7	2044	49.69	19	17.77	155	15.18	7.63	1.7	1.3	19	0	160	.08	3	.8	1.0	19	KOA
		7	2045	24.72	19	19.54	155	11.62	6.35	1.7	1.0	22	0	93	.11	6	.6	1.3	21	UER
		7	21 6	32.15	19	26.40	155	24.83	6.76	1.5	1.5	17	0	67	.13	7	.6	2.1	16	UKF
		7	2139	23.84	19	22.98	155	2.29	7.82	2.0	.9	24	0	135	.13	5	.7	.7	22	MER
		7	2215	52.77	19	19.99	155	11.38	7.09	1.7	.7	17	0	85	.12	5	.6	1.4	16	UER
		7	2216	21.31	19	20.32	155	7.32	5.37	1.9	.8	19	1	97	.14	6	.5	2.3	17	UER
		7	2239	52.63	19	20.46	155	6.49	6.50	2.0	1.3	24	1	106	.12	6	.6	1.2	22	UER
		7	2316	36.30	19	21.84	155	6.31	7.29	1.9	.8	18	2	86	.10	6	.6	.9	16	UER
		8	427	32.62	19	20.72	155	12.85	7.67	1.6	1.3	25	1	63	.11	4	.5	.9	22	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JAN	8	443	59.79	19	15.65	155	6.97	44.41	2.7	2.6	31	1	199	.09	4	1.0	1.2	28	POL	
		8	540	23.85	19	22.86	155	5.95	2.15	2.1	2.5	15	1	82	.10	4	.4	.9	14	MER	
		8	610	32.97	19	21.02	155	6.31	5.87	1.9	1.5	24	1	95	.11	6	.5	1.7	22	UER	
		8	825	20.05	19	21.39	155	5.82	7.90	2.5	2.6	31	1	89	.10	6	.5	.8	30	MER	
		8	826	54.08	19	21.08	155	5.90	6.23	1.9	1.5	22	0	96	.12	6	.6	1.9	22	MER	
		8	1011	49.73	19	19.57	155	14.16	8.00	1.6	1.1	13	0	85	.07	5	.6	1.6	12	UER	
		8	1057	9.25	19	20.20	155	13.19	5.94		1.3	22	0	66	.12	5	.5	1.2	22	UER	
		8	14 4	14.94	19	26.23	155	52.43	7.75	2.7	2.1	17	1	142	.18	7	.8	1.5	17	KON	
		8	1432	9.54	19	28.50	154	46.23	9.52	2.9	2.9	28	1	292	.12	13	3.7	.7	26	DIS	
		8	1555	23.34	19	22.24	155	5.58	7.93	2.4	2.4	23	0	73	.10	5	.5	1.0	21	MER	
		8	1726	15.61	19	23.06	155	5.71	1.05	2.3	2.6	17	0	92	.11	4	.5	1.1	17	MER	*
		8	1816	6.35	19	20.27	155	13.78	7.57	1.6	.9	17	1	70	.08	5	.5	.8	16	UER	
		8	1937	14.44	19	20.02	155	11.97	6.36	1.6	1.0	17	0	81	.11	5	.6	1.5	17	UER	
		8	2125	17.63	19	23.11	155	26.87	10.97	2.4	2.6	31	1	54	.12	2	.4	.7	30	UKF	
		8	22 8	25.11	19	22.99	155	3.51	8.04	2.0	1.6	26	0	106	.09	3	.5	.8	26	MER	
		8	2244	30.47	19	20.87	155	13.41	7.04	1.5	1.3	24	0	59	.14	3	.6	1.0	24	UER	
		9	015	20.67	19	20.25	155	13.01	5.25	1.5	1.2	18	0	67	.12	4	.6	1.9	16	UER	
		9	140	50.10	19	18.94	155	13.83	8.14	2.0	1.7	27	0	90	.09	4	.4	.5	26	POL	
		9	213	56.41	19	22.45	155	17.05	22.65		.8	25	2	51	.11	2	.9	1.1	25	DEP	
		9	350	38.66	19	20.55	155	4.39	5.57	1.5	.8	19	1	113	.12	3	.7	1.6	18	MER	
		9	646	40.64	19	21.32	155	4.01	4.79	2.0	1.1	20	1	91	.10	3	.5	1.6	20	MER	
		9	1126	33.02	19	14.95	155	6.06	47.93		1.2	18	0	214	.08	6	1.6	3.1	18	POL	
		9	1720	30.10	19	21.89	155	6.33	5.46		.9	19	0	92	.11	6	.6	2.2	17	UER	
		9	1817	24.40	19	22.15	155	4.48	5.90	2.3	1.9	23	0	86	.12	4	.6	1.5	21	MER	
		9	1837	6.16	19	24.23	154	59.82	6.06		.9	17	0	189	.13	3	1.0	1.5	16	LER	
		9	1859	10.70	19	21.15	155	8.03	7.40		1.2	19	0	74	.10	4	.5	1.3	19	UER	
		9	2123	30.61	19	18.67	155	15.16	6.85	1.6	1.3	23	0	98	.11	4	.6	1.1	21	KOA	
		9	2243	3.23	19	15.33	155	6.47	46.15		1.1	24	0	234	.08	5	2.7	3.5	24	POL	
		9	23 0	44.73	19	23.09	155	5.37	1.42	2.7	3.1	23	0	78	.16	3	.5	1.1	23	MER	
		9	23 4	38.13	19	23.18	155	5.63	2.68	1.9	1.9	16	0	82	.11	3	.6	1.0	16	MER	
		9	2347	19.11	19	19.54	155	10.76	7.16	1.7	1.2	22	0	97	.08	5	.5	1.0	22	UER	
		10	235	24.13	19	18.35	155	15.57	8.64	2.0	1.8	27	0	138	.09	4	.4	.6	25	KOA	
		10	249	32.31	19	20.46	155	13.48	7.28		.6	17	0	64	.10	4	.5	1.2	17	UER	
		10	518	26.01	19	21.71	155	6.47	7.60	1.8	1.5	27	1	80	.12	6	.5	.9	25	UER	
		10	523	45.39	19	20.90	155	6.50	7.18	2.4	2.7	29	0	96	.11	6	.5	1.0	28	UER	
		10	617	38.95	19	20.61	155	11.15	8.40	1.1	1.3	20	0	79	.09	4	.5	.9	19	UER	
		10	636	38.64	19	20.07	155	7.25	6.85	1.3	.7	21	1	102	.09	5	.5	1.2	21	UER	
		10	944	24.17	19	26.48	154	55.56	6.02		.9	15	0	188	.10	2	1.3	1.5	15	LER	
		10	12 4	44.88	19	25.52	155	25.84	10.53	1.7	1.4	29	0	48	.12	6	.5	.8	26	UKF	
		10	1211	17.50	19	19.95	155	8.55	6.21	1.3	1.3	24	0	77	.09	5	.4	.9	24	UER	
		10	1235	55.18	19	23.09	155	6.33	.02	1.8	1.9	10	0	96	.10	6	.6	3.5	10	GLN	*
		10	1416	5.47	19	23.11	155	5.98	1.16	1.8	1.8	12	0	94	.08	4	.5	1.2	12	MER	
		10	1424	46.41	19	23.09	155	6.29	1.14	2.1	2.0	9	0	96	.04	4	.5	1.2	9	GLN	
		10	1752	13.03	19	17.28	155	18.38	32.57	1.4	1.2	24	0	136	.07	1	.9	1.6	24	KOA	
		10	1753	7.59	19	17.47	155	18.16	34.58	2.8	2.7	36	1	133	.10	1	.7	1.1	34	KOA	
		10	18 8	14.92	19	16.30	155	18.21	33.56	2.6	2.4	35	0	147	.08	3	.8	1.3	34	HLP	
		10	1810	27.54	19	16.31	155	18.09	33.41		1.6	25	0	147	.07	3	1.0	1.7	25	HLP	
		10	1822	49.66	19	20.44	155	2.42	6.61		.8	20	1	179	.14	1	.8	1.2	19	MER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JAN	10	1827	53.55	19	23.69	155	32.74	4.37		1.0	10	0	95	.07	9	.7	33.9	10	MOK	*
		10	1938	32.45	19	20.08	155	8.25	8.18	2.1	1.8	27	0	83	.07	5	.5	.8	27	UER	
		10	2136	.79	19	19.71	155	8.03	7.75	1.9	1.9	24	0	91	.06	4	.4	.7	23	UER	
		10	2158	4.66	19	26.79	155	21.38	7.09	1.8	1.7	22	1	108	.11	6	.5	1.3	21	UKF	
		11	0 3	31.65	19	20.27	155	7.90	6.83		.7	25	0	88	.12	5	.5	1.2	25	UER	
		11	024	1.66	19	11.84	155	6.11	45.30	2.6	2.7	35	0	213	.08	11	1.2	1.8	34	POL	
		11	224	45.59	19	22.11	155	5.68	2.53	3.0	3.4	27	0	75	.15	6	.5	2.6	27	MER	
		11	524	52.57	19	23.34	155	5.42	.86	3.8	4.0	18	0	79	.08	3	.4	.8	17	MER	
		11	559	44.73	19	22.37	155	.31	6.71	1.9	1.6	20	1	182	.10	6	.9	.6	20	LER	
		11	835	37.86	19	26.45	155	25.24	2.33	1.0	1.0	9	1	128	.08	7	.6	2.7	9	UKF	
		11	9 1	2.08	19	19.24	155	11.72	7.81	1.7	2.5	23	0	100	.09	5	.5	1.0	21	UER	
		11	9 5	17.05	19	18.11	155	12.99	8.15	.8	1.2	15	0	104	.08	2	.7	1.6	10	POL	
		11	936	26.74	19	18.02	155	13.69	7.92	1.6	1.9	19	0	96	.09	2	.6	1.0	17	POL	
		11	1028	56.92	19	23.07	155	5.69	.01	.4	.7	8	1	107	.09	4	.5	.7	6	MER	*
		11	1113	53.82	19	21.90	155	25.25	9.29	.9	.9	15	1	107	.06	4	.5	.8	12	HEA	
		11	12 1	39.79	19	20.12	155	7.54	7.80	1.1	1.8	18	0	97	.07	5	.6	.9	16	UER	
		11	1457	9.41	19	13.15	155	36.22	8.60	1.9		15	0	87	.17	4	.8	1.6	9	HEA	
		11	1510	38.96	19	21.67	155	7.10	7.66	1.4	1.3	19	0	77	.11	5	.6	1.5	19	UER	
		11	1828	30.48	19	28.77	155	29.27	12.40	1.8	1.4	17	1	86	.09	7	.6	1.8	13	UKF	
		11	1844	2.19	19	21.46	154	59.85	4.38	1.1	1.3	17	1	204	.18	6	1.3	2.9	10	LER	
		11	1914	13.73	19	19.20	155	12.43	8.16	1.5	1.3	14	0	92	.05	4	.6	1.6	12	UER	
		11	1919	5.49	19	24.67	155	14.87	4.31	1.8	1.9	12	1	119	.10	5	.6	1.5	6	GLN	
		11	2012	50.03	19	20.31	155	7.61	8.22	1.0	.9	14	1	92	.04	5	.6	.8	14	UER	
		11	2016	39.18	19	19.06	155	10.92	7.93	1.4	1.3	17	0	109	.08	6	.6	1.3	15	UER	
		11	2351	.39	19	19.48	155	46.32	10.74	2.6	2.3	28	2	81	.10	12	.5	.6	25	KON	
		12	058	11.11	19	19.29	155	8.61	8.58	1.5	1.1	13	0	82	.06	4	.7	1.7	11	UER	
		12	229	25.95	19	21.92	155	5.79	7.87	2.2	1.9	21	0	79	.11	6	.8	1.1	20	MER	
		12	245	42.63	19	18.37	155	15.23	6.38		1.2	15	0	136	.08	4	.7	1.4	15	KOA	
		12	3 9	5.85	19	19.70	155	11.71	8.92	2.1	2.1	25	0	89	.08	5	.5	.7	22	UER	
		12	4 8	14.64	19	21.09	155	7.88	7.47		.8	17	0	82	.08	4	.5	1.1	17	UER	
		12	959	34.58	19	19.28	155	11.77	6.33		.9	19	0	98	.10	5	.5	1.1	17	UER	
		12	1043	14.29	19	22.06	155	4.78	5.95		.8	19	0	79	.14	5	.6	1.9	18	MER	
		12	1052	12.48	19	20.43	155	11.55	7.71	1.7	1.3	23	0	77	.11	4	.6	1.0	22	UER	
		12	1555	55.64	19	20.72	155	12.57	7.72		.7	20	0	66	.12	4	.6	1.0	19	UER	
		12	1719	35.52	19	17.24	155	30.18	12.22	2.3	1.3	20	1	74	.07	11	.5	.9	19	HEA	
		12	1842	40.86	19	19.55	155	10.84	6.78	2.0	1.6	27	0	97	.09	5	.5	.7	27	UER	
		12	1957	34.68	19	12.19	155	17.23	38.31		.6	16	1	179	.10	15	1.4	1.7	16	HLP	
		12	2130	43.97	19	24.48	154	59.32	7.54	1.8	1.4	23	0	166	.16	2	1.0	1.0	20	LER	
		12	23 5	22.93	19	15.22	155	6.43	46.72	2.7	2.5	34	0	202	.07	5	1.0	1.9	32	POL	
		13	428	21.55	19	20.39	155	11.14	7.26	1.0	.5	23	0	79	.12	4	.6	1.1	21	UER	
		13	637	13.73	19	19.88	155	13.61	4.90	1.1	.8	21	0	81	.14	5	.8	2.2	18	UER	
		13	7 8	8.92	19	12.74	155	15.72	30.56		1.3	19	1	223	.08	14	1.2	1.9	17	HLP	
		13	755	26.99	19	20.06	155	7.98	8.60	2.8	3.1	33	0	88	.10	5	.5	.6	28	UER	
		13	8 4	1.84	19	20.52	155	13.21	8.62	2.0	2.1	25	0	62	.11	4	.5	.7	24	UER	
		13	10 9	40.80	19	25.84	155	28.29	6.88	1.1	.9	19	6	78	.10	6	.4	1.4	10	UKF	
		13	1023	33.40	18	57.79	155	33.83	41.26	1.9	1.4	22	5	248	.07	11	1.1	1.5	10	DIS	
		13	1055	37.13	19	20.09	155	12.34	5.34	1.2	.9	18	0	77	.11	5	.5	1.9	14	UER	
		13	1114	36.52	19	20.46	155	13.37	8.01	1.0	.8	17	1	62	.04	4	.4	1.1	13	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JAN	13	1610	15.96	19	21.61	155	.64	6.35	1.4	1.2	19	2	234	.08	5	.6	1.2	11	LER
		13	1710	24.63	19	23.08	155	3.99	8.05	1.5	1.2	14	0	95	.05	3	.5	1.3	9	MER
		13	1715	26.94	19	20.36	155	13.19	4.85	.9	.8	17	1	64	.12	4	.5	1.8	12	UER
		13	2213	30.18	19	9.90	155	26.22	15.50	1.0	.4	12	1	171	.25	3	2.9	1.1	7	LSW
		13	2216	30.31	19	20.41	155	10.70	8.56	1.5	1.4	27	2	79	.05	3	.4	.6	17	UER
		13	2223	16.06	19	20.15	155	7.77	6.58	1.1	1.1	17	4	92	.09	5	.4	1.1	4	UER
		14	327	50.65	19	19.89	155	13.51	5.20	1.5	1.3	24	2	70	.12	5	.4	1.3	18	UER
		14	752	49.95	19	25.50	155	28.70	7.98	2.1	2.1	30	4	59	.11	6	.3	1.1	18	UKF
		14	1039	7.73	19	20.68	155	8.33	6.08	2.1	1.5	10	0	95	.04	4	.5	1.4	10	UER
		14	1239	4.01	19	21.31	155	1.27	7.23	2.1	1.3	18	0	185	.11	4	.9	.6	17	MER
		14	1241	14.31	19	21.27	155	2.29	6.00	2.1	1.2	17	0	159	.14	3	1.1	1.6	16	MER
		14	1532	4.02	19	21.76	155	2.93	6.38	2.0	1.6	21	0	130	.10	3	.6	1.1	21	MER
		14	1535	42.46	19	21.76	155	2.68	7.02	2.4	2.2	22	1	138	.12	3	.7	.8	20	MER
		14	1618	46.53	19	20.77	155	3.80	6.26		1.3	14	0	93	.12	2	.9	1.5	12	MER
		14	18	1 45.92	19	21.14	155	3.63	4.53	2.1	1.7	19	0	100	.12	3	.9	2.0	19	MER
		14	2046	.08	19	22.52	155	4.74	8.82	2.8	2.6	31	1	81	.08	4	.5	.6	29	MER
		14	2112	36.55	19	22.32	155	4.57	9.42	3.1	3.3	33	0	84	.08	4	.5	.5	32	MER
		14	2249	9.73	19	19.47	155	8.55	5.77		.7	19	0	80	.12	4	.6	1.7	17	UER
		15	316	11.26	19	21.16	155	7.67	5.91		1.0	19	0	80	.11	4	.5	1.5	16	UER
		15	411	53.74	19	20.83	155	13.10	9.02	2.1	2.1	26	0	61	.09	3	.4	.5	24	UER
		15	523	46.96	19	19.34	155	11.35	7.97	2.1	2.1	26	0	100	.08	6	.5	.6	23	UER
		15	657	36.08	19	20.49	155	16.74	29.63	2.1	1.5	9	1	102	.03	1	2.6	1.9	9	DEP
		15	1741	44.86	19	23.19	155	15.09	3.21	1.4	1.1	7	0	110	.08	2	.5	.8	5	SPC
		15	1933	19.42	19	24.99	155	24.32	10.52	2.0	1.7	28	0	63	.10	7	.5	.9	25	UKF
		15	20	5 13.37	19	22.56	155	4.81	8.56	2.4	2.2	30	0	80	.07	4	.4	.5	29	MER
		16	154	38.81	19	22.56	155	24.37	9.37	2.1	1.8	25	0	82	.11	5	.5	.9	23	UKF
		16	927	48.34	19	22.48	155	5.13	7.50	2.3	2.4	29	0	75	.11	4	.5	.8	29	MER
		16	10	8 11.02	19	22.27	155	29.78	7.42	1.9	1.4	23	0	112	.11	4	.6	1.1	22	UKF
		16	11	8 33.15	19	27.04	155	29.83	9.64	2.4	2.0	22	0	72	.12	9	.5	1.5	21	UKF
		16	1150	5.43	19	21.44	155	5.93	6.76	2.3	2.4	25	1	88	.09	6	.5	1.3	24	MER
		16	1412	18.65	19	21.00	155	12.94	6.77	1.8	1.5	23	0	61	.12	3	.5	.8	23	UER
		16	1439	29.47	19	41.76	154	57.06	30.90	2.4	1.7	20	2	265	.13	24	1.8	2.9	19	HIL
		16	1745	59.38	19	20.13	155	11.29	7.18	1.3	.9	18	0	83	.10	4	.7	1.2	18	UER
		16	1813	32.67	19	21.22	155	3.62	4.55	2.0	1.4	21	0	106	.12	3	.8	1.9	21	MER
		16	1843	33.25	19	17.52	155	14.11	7.19	1.2	1.1	22	0	137	.09	1	.7	1.1	22	POL
		16	1947	13.78	20	22.36	154	59.98	.09	3.4	3.1	32	0	308	.14	65	12.1	6.7	32	DIS
		16	1955	16.90	19	19.66	155	14.99	4.83	1.3	.9	19	1	87	.15	4	.6	1.8	19	UER
		16	2022	51.18	19	20.87	155	6.99	6.39		1.2	25	0	91	.10	5	.5	1.3	25	UER
		16	2038	26.03	19	19.81	155	11.70	7.09	2.0	1.5	29	0	87	.12	5	.5	.8	27	UER
		17	236	45.58	19	18.10	155	14.14	10.79	2.9	3.1	36	0	135	.10	7	.6	.5	36	POL
		17	943	46.89	19	35.03	155	10.38	11.44	2.3	2.1	23	0	79	.10	15	.5	1.0	23	HIL
		17	1020	35.31	19	17.25	155	14.07	7.33	1.7	1.6	22	0	155	.10	1	.7	.9	21	POL
		17	15	0 15.10	19	18.20	155	21.07	6.55	2.0	1.5	19	0	118	.14	4	.6	1.6	19	SWR
		17	15	6 9.47	19	14.42	155	24.60	35.04	2.4	1.9	27	0	134	.08	11	.8	2.0	27	LSW
		17	16	8 46.56	19	21.64	155	6.38	4.91	1.9	1.4	23	0	83	.10	6	.5	2.4	21	UER
		17	1756	44.91	19	19.04	155	12.47	5.17	1.3	1.1	18	0	95	.09	4	.6	2.0	17	UER
		17	1759	54.25	19	20.27	155	7.63	7.52	1.9	1.6	26	0	93	.09	5	.5	.9	26	UER
		17	19	5 33.68	19	23.07	155	2.63	7.23	1.8	1.6	19	0	126	.12	4	.7	.8	17	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JAN	17	2126	42.44	19	19.32	155	12.97	6.99		1.1	20	0	80	.11	4	.6	1.3	19	UER
		18	220	46.39	19	19.75	155	14.18	5.60	1.5	1.0	24	0	83	.17	5	.6	1.5	24	UER
		18	223	4.38	19	21.05	155	52.35	.96	2.5	2.1	23	1	164	.15	9	.6	1.2	21	KON
		18	232	40.11	19	21.38	155	2.51	7.19	1.7	1.3	23	1	148	.14	3	.9	.8	23	MER
		18	251	16.05	19	19.22	155	11.38	5.10	1.7	1.0	23	0	103	.12	5	.5	1.2	23	UER
		18	10	1 52.89	19	25.74	155	24.30	11.16	2.1	2.2	25	1	60	.07	8	.4	1.1	18	UKF
		18	1855	57.08	19	19.74	155	11.56	8.07	2.1	2.0	30	1	90	.06	5	.4	.9	16	UER
		18	2225	46.30	19	20.10	155	13.37	5.54	1.1	1.0	20	1	65	.10	5	.5	1.3	14	UER
		18	2247	6.97	19	27.70	155	22.13	9.15	1.2	1.3	21	2	78	.08	3	.5	.9	11	UKF
		18	2255	37.10	19	25.63	154	55.56	6.01	1.6	1.3	19	2	213	.10	3	1.0	.9	9	LER
		19	4	3 40.76	19	22.23	155	4.94	8.00	1.2	1.0	12	0	125	.02	4	.4	1.1	7	MER
		19	1037	27.76	19	19.36	155	6.31	7.94		1.0	18	0	139	.09	5	.7	.7	16	UER
		19	1256	29.67	19	23.67	155	28.83	8.74	2.0	2.1	29	0	68	.08	3	.4	.8	27	UKF
		19	1419	15.41	19	20.12	155	12.38	9.97	3.0	3.2	36	1	76	.09	5	.4	.4	32	UER
		19	1537	32.46	19	19.49	155	11.39	6.61		.9	20	0	96	.12	5	.5	1.0	15	UER
		19	1734	24.63	19	19.93	155	12.96	6.18		.9	21	0	72	.11	5	.6	1.3	17	UER
		19	1737	10.24	19	22.25	155	4.28	7.57	1.1	.9	16	1	106	.09	4	.7	1.2	13	MER
		19	1828	48.69	19	19.37	155	11.51	6.03	1.2	.7	18	0	99	.11	6	.6	1.6	14	UER
		19	20	3 12.20	19	45.56	156	28.13	31.38		2.8	29	3	307	.11	65	1.9	2.8	24	DIS
		20	142	2.06	19	25.35	155	16.14	15.00	1.1	.9	25	2	93	.09	2	.7	.4	21	INT
		20	311	30.86	19	18.86	155	11.23	6.71	1.7	1.3	22	0	115	.11	5	.5	.9	16	POL
		20	557	13.61	19	20.18	155	16.01	6.55		.6	13	0	94	.12	2	.7	1.3	11	KOA
		20	629	49.33	19	22.31	155	2.66	7.96	1.0	.8	21	1	135	.13	4	.8	.6	13	MER
		20	653	38.66	19	26.64	155	30.34	8.84	1.3	.6	19	0	69	.11	9	.4	1.2	15	MOK
		20	7	0 1.06	19	21.85	155	5.01	6.15	1.2	.7	23	1	78	.12	5	.5	1.1	18	MER
		20	741	28.69	19	23.04	155	23.84	9.51	1.0	.8	19	0	69	.08	5	.5	.9	11	UKF
		20	10	2 14.40	19	12.49	155	33.97	10.53	1.3	1.1	13	1	127	.10	7	.5	1.1	3	LSW
		20	1111	51.84	19	23.11	155	28.55	46.22	1.7	1.1	22	4	84	.08	11	1.0	1.7	15	UKF
		20	1139	31.11	19	28.38	155	29.05	9.41	1.0	.5	11	3	151	.08	7	.5	1.8	3	UKF
		20	1253	26.72	19	24.27	155	16.23	3.09	1.2	1.4	9	1	125	.03	1	.5	.4	7	SPC
		20	1324	24.00	19	19.55	155	6.87	3.64	1.7	1.4	26	2	122	.07	5	.4	1.0	7	UER
		20	1329	4.54	19	20.10	155	9.04	5.81	1.2	.5	20	2	106	.10	4	.6	1.0	12	UER
		20	1459	11.22	19	19.88	155	11.89	5.54		.7	14	1	84	.07	5	.4	1.8	9	UER
		20	1746	17.85	19	19.17	155	8.51	7.74	1.8	1.8	28	1	83	.07	4	.4	.9	15	UER
		20	1844	58.87	19	21.49	155	6.59	5.29	.9	.8	10	1	84	.12	6	.7	3.0	7	UER
		20	1914	5.23	19	26.18	154	55.05	7.58	1.1	1.0	5	0	224	.01	2	3.6	2.9	5	LER
		20	1937	19.66	19	20.99	155	6.71	7.82	1.6	1.5	18	1	92	.06	6	.4	1.1	11	UER
		20	2320	18.52	19	48.05	156	5.10	4.04	1.8	1.8	13	0	242	.08	29	1.9	2.2	4	KON
		21	212	52.29	19	21.59	155	25.50	10.62	1.4	.7	15	4	172	.05	4	.5	.9	5	HEA
		21	318	29.74	19	24.27	155	26.11	9.23	.8	.8	11	2	131	.06	4	.7	1.8	7	UKF
		21	331	22.83	19	24.82	155	25.74	9.29	.7	.6	24	6	65	.11	5	.4	.9	8	UKF
		21	455	17.86	19	21.14	155	3.68	6.35	1.4	1.0	16	1	101	.11	3	.6	1.1	7	MER
		21	636	32.64	19	27.21	155	20.76	8.78	.7	.6	10	5	125	.04	1	.5	1.1	4	UKF
		21	642	23.25	19	27.06	155	20.83	7.87	.7	.5	12	5	106	.05	1	.5	1.1	8	UKF
		21	646	26.18	19	27.06	155	20.72	8.51	.7	.6	13	5	118	.04	1	.5	1.1	6	UKF
		21	7	5 38.01	19	21.19	155	7.51	8.40	1.6	1.9	31	2	81	.07	4	.3	.7	16	UER
		21	1129	48.57	19	24.19	155	16.62	16.52	1.7	1.9	24	0	45	.07	1	.5	.6	23	INT
		21	1630	56.39	19	19.98	155	8.60	7.37	1.2	1.1	15	0	76	.09	4	.7	1.5	14	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JAN	21	1746	17.46	19	20.57	155	2.74	8.12		2.1	18	0	150	.11	1	1.2	1.1	14	MER
		21	1931	55.29	19	11.26	155	38.17	9.06		2.4	16	0	221	.23	7	2.0	2.6	14	HEA
		21	2013	52.23	19	7.01	155	38.33	5.76		2.4	15	0	116	.20	15	.8	2.8	10	HEA
		21	2125	11.27	19	18.85	155	20.24	5.39	.7	.9	9	0	159	.05	3	1.1	2.3	5	SWR
		22	040	14.85	19	28.16	155	28.32	10.71		1.2	13	0	76	.07	7	.6	1.5	11	UKF
		22	225	2.32	19	22.30	155	4.54	7.66	1.8	1.8	16	0	85	.11	4	.6	1.1	16	MER
		22	520	37.46	19	23.27	155	2.37	7.38		1.2	13	1	129	.11	4	1.0	1.7	11	MER
		22	527	56.04	19	23.31	155	2.28	7.10		.9	13	1	130	.13	4	1.0	2.1	9	MER
		22	624	56.39	19	20.44	155	12.77	6.95		.9	16	1	67	.08	4	.6	1.2	16	UER
		22	724	3.27	19	20.75	155	9.73	7.30	1.4	1.0	18	0	71	.08	2	.6	1.2	16	UER
		22	728	8.07	19	22.44	155	29.01	8.84	1.1	1.2	19	0	114	.10	2	.5	1.9	16	UKF
		22	1229	40.35	19	21.92	155	6.45	6.86	1.4	1.1	21	0	77	.10	6	.7	1.4	20	UER
		22	1245	58.12	19	22.00	155	6.09	7.08	2.2	1.8	21	0	76	.08	6	.6	1.1	20	UER
		22	1339	31.17	19	21.32	155	4.57	5.73	2.4	2.3	23	0	87	.11	4	.6	1.4	23	MER
		22	2025	14.09	19	20.06	155	13.26	6.36	1.6	1.1	19	0	66	.11	5	.6	1.2	19	UER
		22	2152	21.60	19	21.66	155	6.99	6.49		.9	17	0	79	.12	5	.6	1.7	16	UER
		23	051	57.54	19	15.21	155	26.80	6.99	2.1	1.9	25	0	135	.14	11	.8	1.9	18	LSW
		23	449	41.30	19	20.79	155	4.38	4.54		.7	13	0	125	.09	3	1.0	2.3	13	MER
		23	713	37.57	19	20.67	155	10.97	7.45		.8	14	0	155	.07	3	.6	.9	13	UER
		23	745	34.69	19	18.66	155	13.17	6.68		.7	14	0	90	.06	3	.6	1.2	14	POL
		23	852	29.25	19	22.35	155	5.75	6.26	1.9	1.4	20	0	71	.08	5	.5	1.5	19	MER
		23	859	27.78	19	19.85	155	11.15	7.22		.9	20	0	89	.10	5	.6	1.2	18	UER
		23	21 1	57.94	19	19.72	155	11.39	7.32		.7	17	0	91	.09	5	.6	1.2	16	UER
		23	22 3	38.86	19	23.72	155	15.73	3.20	1.4	1.4	14	1	99	.10	2	.4	.6	11	SPC
		24	045	30.64	19	18.34	155	14.72	6.89	1.2	.8	17	0	128	.12	3	.8	1.3	16	POL
		24	140	29.85	19	18.06	155	13.13	8.24	1.7	1.5	25	0	100	.10	2	.5	.8	24	POL
		24	236	20.09	19	23.32	155	24.30	9.93	2.1	1.7	24	0	74	.09	6	.5	1.0	22	UKF
		24	745	40.82	19	19.53	155	8.24	7.24	1.2	1.0	18	0	87	.11	4	.6	1.2	17	UER
		24	843	45.03	19	20.39	155	12.48	8.33	2.1	2.2	38	6	71	.06	4	.3	.5	17	UER
		24	846	47.90	19	21.04	155	4.71	7.27	1.7	1.6	26	0	97	.07	4	.4	.9	14	MER
		24	1322	45.87	19	15.74	155	26.94	9.00	2.8	3.0	35	4	104	.12	11	.3	.9	20	LSW
		24	1444	8.39	19	20.34	155	13.23	8.42	2.1	2.3	31	3	64	.05	4	.4	.6	17	UER
		24	20 1	9.76	19	24.28	155	16.22	3.19	.8	.5	8	0	126	.04	1	.6	.6	8	SPC
		24	2056	41.20	19	21.65	155	6.67	8.15	2.0	2.0	31	2	80	.07	6	.4	.7	18	UER
		24	22 7	5.91	19	19.82	155	8.16	7.58	1.2	1.1	26	2	87	.05	5	.4	.9	15	UER
		24	2228	24.97	19	19.48	155	10.07	7.80	1.0	.7	17	0	108	.03	5	.6	1.5	13	UER
		24	2342	33.84	19	20.64	155	7.12	7.51	1.0	.6	19	0	94	.06	5	.4	1.1	12	UER
		25	020	45.09	19	8.84	155	33.28	11.72	2.1	1.3	22	5	210	.14	10	.8	.8	4	LSW
		25	317	51.74	19	20.37	155	13.42	8.15		.6	15	0	63	.04	4	.6	1.6	14	UER
		25	812	53.69	19	20.68	155	6.09	6.91	1.9	1.8	22	0	104	.09	6	.5	1.2	21	UER
		25	1029	43.74	19	20.52	155	10.50	9.06	1.3	.9	13	0	77	.04	3	.7	1.4	12	UER
		25	1244	15.47	19	18.00	155	13.15	7.72	1.0	1.2	18	0	100	.08	2	.6	1.2	14	POL
		25	17 6	44.84	19	30.55	155	55.59	42.50		2.2	18	1	251	.08	3	2.2	1.7	14	KON
		25	1752	59.86	19	20.04	155	11.15	8.28	2.4	2.2	26	0	85	.09	4	.4	.7	26	UER
		25	18 3	45.07	19	19.99	155	11.94	7.57		1.0	19	0	82	.07	5	.6	1.0	17	UER
		25	18 9	5.19	19	20.12	155	11.25	7.81	2.3	2.2	30	0	84	.13	4	.5	.8	30	UER
		25	1821	5.83	19	19.69	155	11.29	9.73	2.7	3.0	31	0	92	.10	5	.5	.5	30	UER
		25	2121	6.36	19	20.41	155	13.23	9.41	1.6	1.6	19	0	63	.08	4	.5	.7	19	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JAN	26	244	26.06	19	21.88	155	12.57	3.59	1.4	1.5	16	0	74	.08	2	.4	.6	16	UER
		26	427	32.40	19	20.32	155	8.40	7.72	1.2	.9	20	0	78	.09	4	.5	1.0	17	UER
		26	622	47.36	19	22.32	155	28.82	10.25	2.8	3.2	32	0	61	.10	2	.4	.7	31	UKF
		26	626	46.92	19	22.50	155	28.98	9.02	1.7	1.6	23	0	61	.10	2	.5	1.3	20	UKF
		26	628	37.06	19	21.95	155	28.88	8.23	1.6	1.6	22	0	116	.10	2	.5	1.0	20	HEA
		26	12 7	4.81	19	13.92	155	35.26	10.12	1.7	1.4	12	1	82	.12	4	.6	1.7	12	HEA
		26	2111	42.42	19	20.34	155	5.97	7.54		1.4	21	0	115	.11	5	.7	1.4	20	MER
		27	0 6	50.91	19	19.10	155	12.83	7.56	1.8	1.1	16	0	87	.08	4	.6	1.3	14	UER
		27	131	48.91	19	20.24	155	12.99	9.31	.9	1.4	14	0	67	.04	4	.6	1.2	13	UER
		27	210	57.81	19	23.94	155	28.69	10.17	1.6	2.0	23	0	51	.10	3	.5	1.3	21	UKF
		27	432	33.43	19	46.56	155	21.40	31.26	1.4	2.1	29	2	97	.10	13	.6	1.1	27	KKÚ
		27	734	12.41	19	21.22	155	3.92	6.26	1.8	1.7	20	0	93	.12	3	.8	1.7	18	MER
		27	850	20.48	19	19.44	155	10.99	7.33		1.8	22	0	99	.06	5	.5	1.1	21	UER
		27	1052	41.79	19	20.61	155	10.91	6.98	2.0	2.1	23	0	75	.09	3	.6	.8	22	UER
		27	1443	54.57	19	16.63	155	22.49	6.87	1.8	2.1	23	1	129	.11	7	.5	1.5	19	SWR
		27	1447	48.47	19	16.82	155	22.31	5.04		1.6	9	0	198	.04	7	1.0	3.4	9	SWR
		27	1520	12.14	19	19.70	155	8.04	7.09	2.3	2.5	27	0	91	.06	4	.4	.9	23	UER
		27	2039	28.12	19	53.03	155	16.81	8.38	1.A	1.9	8	1	211	.06	7	2.1	2.2	2	KKU
		27	2053	52.00	19	26.06	155	27.49	5.39		1.1	12	2	97	.10	7	.6	3.3	10	UKF
		27	2134	29.72	19	20.21	155	10.93	8.73	1.7	1.4	23	0	83	.05	4	.5	.9	19	UER
		27	23 4	19.48	19	20.35	155	25.50	9.84	.9	1.3	15	2	151	.09	4	.7	1.0	11	HEA
		27	23 9	19.48	19	20.27	155	25.57	9.92	1.1	1.4	21	4	152	.08	4	.6	.8	9	HEA
		27	2320	39.47	19	21.29	155	2.37	6.60	1.9	2.1	22	1	155	.11	3	.5	.8	13	MER
		27	2328	15.43	19	21.75	155	2.75	8.39	2.0	2.1	25	2	136	.06	3	.4	.7	14	MER
		28	341	13.34	19	21.74	155	3.83	6.68	1.0	1.2	17	1	101	.06	4	.6	1.2	10	MER
		28	347	25.73	19	19.76	155	12.90	5.81	1.6	1.6	22	3	74	.05	5	.3	1.1	12	UER
		28	526	55.79	19	21.51	155	3.43	8.21	2.4	2.9	32	1	111	.06	3	.4	.6	18	MER
		28	530	5.56	19	20.12	155	12.55	6.90	1.3	1.3	24	3	74	.06	5	.4	.8	13	UER
		28	6 1	34.76	19	18.34	155	22.87	4.05	.9	1.3	18	3	168	.06	4	.5	.7	9	SWR
		28	622	41.64	19	16.17	155	31.09	3.00	1.9	1.6	20	2	68	.18	11	.5	4.1	12	HEA
		28	1145	46.87	19	19.37	155	11.92	9.57	2.4	2.6	24	0	94	.09	5	.5	.8	19	UER
		28	1223	4.20	19	21.45	155	3.76	6.62	2.1	2.1	18	0	100	.08	3	.7	1.3	18	MER
		28	1435	.55	19	21.11	155	3.84	5.56	2.0	1.7	20	0	93	.12	3	.7	1.6	18	MER
		28	1520	36.27	19	20.31	155	11.40	4.05	1.3	.6	8	0	172	.03	4	1.1	2.5	7	UER
		28	1555	37.43	19	21.70	155	4.04	5.41	2.0	1.5	17	0	94	.09	4	.6	1.4	15	MER
		28	1747	37.32	19	21.73	155	3.76	5.92	2.0	1.7	15	0	107	.11	4	.7	1.2	14	MER
		28	18 6	45.35	19	21.24	155	12.30	1.61	1.5	1.1	10	1	125	.12	3	.4	.6	9	UER
		28	1922	53.48	19	22.64	155	30.13	9.47	3.0	2.8	33	0	57	.11	4	.4	.8	32	MOK
		28	1933	39.19	19	24.52	155	22.32	10.60	1.A	1.9	24	1	56	.08	5	.5	.7	19	UKF
		28	1942	19.33	19	20.41	155	11.75	7.59		.8	16	0	76	.11	5	.7	1.2	14	UER
		28	2041	11.38	19	22.09	155	13.36	3.14	1.3	.8	7	0	153	.02	1	.6	.4	7	UER
		29	142	3.73	19	21.01	155	6.49	4.94		1.1	15	0	167	.11	6	.8	3.0	14	UER
		29	2 2	41.65	19	22.17	155	4.58	7.20		1.2	21	0	84	.12	4	.6	.9	20	MER
		29	5 9	17.76	19	19.91	155	8.19	6.29		.7	18	0	137	.10	5	.6	1.4	18	UER
		29	517	20.54	19	19.81	155	8.03	6.20	1.9	1.9	21	0	90	.09	5	.5	1.1	20	UER
		29	716	9.30	19	21.12	155	8.84	7.08		1.6	18	0	72	.12	3	.7	1.4	14	UER
		29	728	48.32	19	19.88	155	6.56	4.66	1.2	.7	17	0	119	.10	5	.8	4.0	17	UER
		29	1220	30.09	19	20.11	155	11.21	7.09		.8	14	0	84	.11	4	.7	1.4	14	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JAN	29	1250	24.69	19	24.09	155	15.85	3.06	1.6	1.6	14	1	117	.07	3	.3	.5	12	SPC
		29	1340	45.54	19	22.49	155	3.75	7.74	1.4	1.0	13	0	158	.12	4	1.0	1.8	13	MER
		29	1342	35.70	19	23.87	155	17.22	1.03	1.7	1.7	9	1	99	.16	2	.4	.8	8	SPC
		29	1519	54.86	19	23.56	155	15.22	2.44	1.3	1.3	8	1	95	.08	2	.4	.7	7	SPC
		29	1715	2.34	19	17.85	155	15.38	7.08		.7	13	0	159	.06	4	.9	1.8	11	KOA
		29	1843	44.67	19	19.57	155	11.72	7.83	1.7	1.6	22	0	93	.07	6	.5	.9	21	UER
		29	1954	13.14	19	24.01	155	29.93	9.93	1.9	1.5	23	0	93	.11	5	.6	1.4	22	UKF
		29	2130	8.55	19	15.27	155	29.57	8.14	2.1	1.6	22	1	104	.18	11	.9	2.9	19	LSW
		29	22 4	24.49	19	20.11	155	13.08	4.52		.7	16	0	68	.11	5	.6	2.3	15	UER
		29	2225	33.45	19	21.85	155	4.82	7.40	2.0	1.5	22	0	77	.13	5	.6	.9	22	MER
		30	050	51.36	19	20.18	155	13.04	7.21		1.4	19	0	68	.12	5	.6	1.2	17	UER
		30	252	26.48	19	20.17	155	11.41	7.40		1.3	19	0	82	.11	4	.6	1.1	18	UER
		30	4 9	30.36	19	26.95	154	53.36	4.71	1.5	1.4	14	0	251	.10	4	2.1	1.1	13	LER
		30	633	21.15	19	22.80	155	2.01	8.30	2.2	2.0	25	0	144	.11	5	.7	.5	22	MER
		30	716	46.03	19	21.51	155	4.68	7.65	2.7	2.9	28	0	83	.10	4	.6	.6	27	MER
		30	912	41.47	19	23.46	155	2.66	7.50	1.2	1.0	14	1	119	.08	3	.5	.9	7	MER
		30	931	1.58	19	18.70	155	13.66	7.03	1.1	1.2	20	0	89	.05	3	.5	1.4	12	POL
		30	1046	25.83	19	9.73	155	33.80	8.28	1.9	2.3	18	2	117	.16	10	.8	1.6	10	LSW
		30	1133	50.81	19	21.23	155	24.05	9.79	.9	1.0	11	3	147	.05	2	.6	1.6	6	SWR
		30	1224	23.84	19	20.30	155	13.79	8.01	1.0	.9	18	3	70	.04	4	.5	1.3	12	UER
		30	1328	10.23	19	26.90	155	51.48	7.71	1.4	1.1	11	2	122	.06	8	.8	1.6	7	KON
		30	1717	50.89	19	26.94	155	30.11	9.48	1.0	1.3	18	4	91	.05	9	.5	1.1	13	MOK
		30	1816	7.11	19	25.59	155	24.66	8.93	1.1	1.3	16	2	114	.06	8	.5	1.6	11	UKF
		30	2257	6.33	19	20.77	155	7.43	8.09	1.4	1.3	23	1	88	.06	5	.5	.8	14	UER
		30	2312	35.72	19	19.46	155	7.85	5.71	1.6	1.4	28	3	99	.07	4	.4	1.0	18	UER
		30	2332	.45	19	20.10	155	8.85	7.53	1.3	.9	19	1	72	.05	4	.4	1.0	11	UER
		31	247	29.66	19	27.09	155	26.70	7.42	1.1	.8	18	4	62	.10	8	.4	1.3	12	UKF
		31	416	28.75	19	19.95	155	11.75	8.87	1.9	2.3	33	2	85	.07	5	.4	.7	27	UER
		31	525	8.86	19	22.38	155	.09	1.17	1.4	1.1	15	3	232	.10	7	.8	.7	10	LER
		31	9 0	51.70	19	21.70	155	18.45	2.78	1.2	.8	11	0	69	.08	3	.4	.9	9	KOA
		31	9 9	34.33	19	19.76	155	7.98	5.62		.8	18	0	91	.09	4	.6	1.8	16	UER
		31	1039	22.25	18	57.77	155	34.71	40.63		2.0	26	0	233	.07	9	2.4	3.4	23	DIS
		31	12 2	28.00	19	23.24	155	3.88	7.68		1.1	14	0	97	.10	3	.6	.8	12	MER
		31	14 3	55.55	19	20.20	155	11.78	8.91	2.1	2.0	24	0	79	.08	5	.5	.8	21	UER
		31	1453	13.24	19	19.72	155	11.04	6.53		1.0	20	0	92	.09	5	.6	1.0	19	UER
		31	15 0	39.75	19	46.22	156	15.38	12.87		1.7	13	0	317	.08	45	15.9	52.5	11	DIS *
		31	1557	14.86	19	19.92	155	9.17	6.62	1.2	.6	13	0	111	.10	4	.6	1.4	12	UER
		31	22 0	34.68	19	25.92	155	30.34	8.84	2.2	1.8	25	1	56	.11	8	.5	1.3	20	MOK
		31	2341	52.27	19	20.20	155	11.21	7.24		.9	15	0	82	.07	4	.6	1.1	14	UER
	FEB	1	10 1	26.63	19	20.15	155	11.65	9.39	2.3	2.4	23	0	81	.06	5	.5	.8	22	UER
		1	1043	15.07	19	20.76	155	11.83	7.64	1.4	1.6	16	0	71	.08	4	.6	1.1	14	UER
		1	1244	5.43	19	25.13	155	23.75	12.89	1.7	2.0	14	0	102	.06	8	.6	1.2	14	UKF
		1	1357	43.91	19	18.53	155	14.73	8.63	1.5	1.3	15	0	121	.06	4	.6	.9	11	POL
		1	1425	32.21	20	30.58	155	35.75	17.00	2.3	3.1	21	3	303	.11	47	4.4	98.9	17	DIS *
		1	1830	26.02	20	23.09	155	3.26	1.87	1.9	1.5	21	0	312	.14	63	13.4	18.6	19	DIS *
		1	1935	46.49	19	20.84	155	2.31	8.60	1.2	1.3	12	0	169	.06	2	1.1	1.4	10	MER
		1	20 5	48.26	19	20.20	155	8.11	7.38	1.5	2.4	17	0	84	.07	5	.6	1.4	17	UER
		2	435	57.89	19	17.70	155	15.83	8.12	1.5	1.8	18	0	157	.08	4	.6	1.2	18	KOA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	FEB	2	848	59.85	19	20.38	155	10.94	7.45		.7	17	0	80	.10	4	.5	1.1	12	UER
		2	1035	31.52	19	20.44	155	12.98	6.57		.5	18	0	65	.11	4	.6	1.3	17	UER
		2	1150	30.38	19	27.49	154	55.87	4.81	2.3	1.5	13	0	139	.13	1	1.3	1.8	12	LER
		2	12 6	59.67	19	20.61	155	10.58	7.97	1.8	1.5	20	0	86	.08	3	.5	1.0	19	UER
		2	12 8	1.49	19	21.52	155	6.71	6.63	2.2	1.6	21	0	82	.10	6	.6	1.5	19	UER
		2	1419	22.96	19	23.24	155	1.66	7.04		1.4	15	0	146	.11	5	.7	1.2	13	MER
		2	15 8	55.08	19	20.34	155	10.68	7.28	1.7	1.4	15	0	84	.09	4	.7	1.2	14	UER
		2	1523	37.86	19	27.27	155	28.61	7.80	2.2	1.8	19	1	65	.10	9	.5	1.7	15	UKF
		2	1631	36.00	18	53.86	155	23.43	28.09		1.4	17	0	258	.07	30	2.5	3.7	16	DIS
		2	2058	20.17	20	.75	155	2.66	16.70		1.1	12	1	275	.13	50	3.1	46.0	12	KKU *
		2	2213	14.51	19	20.48	155	10.36	6.81	1.7	1.5	28	1	78	.13	3	.5	.8	27	UER
		2	2323	52.63	19	22.29	155	17.66	3.15	1.0	.7	8	0	87	.06	3	.5	.9	7	KOA
		2	2324	58.96	19	22.59	155	3.48	5.81		1.5	13	0	109	.15	4	.8	2.0	11	MER
		3	249	4.28	19	20.40	155	12.08	9.24	3.5	3.6	34	0	74	.08	4	.4	.3	33	UER
		3	353	17.21	19	20.64	155	11.84	7.72		.9	14	0	72	.08	4	.5	1.0	13	UER
		3	5 7	7.95	19	29.05	154	54.18	2.82		1.0	14	0	130	.16	1	2.8	1.9	10	LER
		3	528	45.52	19	20.06	155	11.96	10.06	2.9	3.0	34	0	81	.11	5	.5	.4	31	UER
		3	740	58.01	19	20.20	155	11.30	6.76		.8	12	0	81	.09	4	.6	1.4	11	UER
		3	941	31.14	19	24.24	155	16.13	2.75	.7	1.1	10	1	125	.04	1	.4	.4	9	SPC
		3	12 7	19.31	19	24.14	155	16.09	3.21	.7	1.0	11	2	120	.04	1	.4	.4	9	SPC
		3	13 3	52.67	19	12.77	155	28.58	9.54	1.2	1.5	15	2	112	.13	6	.8	2.0	10	LSW
		3	2317	31.40	19	23.70	156	15.50	29.04	2.5	2.7	22	0	282	.09	37	3.4	2.0	18	DIS
		3	2345	53.37	19	20.69	155	8.06	8.36	1.2	1.1	25	2	79	.05	4	.4	1.0	16	UER
		4	014	30.79	19	20.17	155	11.85	8.22	1.5	1.5	23	0	79	.06	5	.4	1.0	17	UER
		4	041	13.00	19	19.46	155	10.51	7.46	1.4	1.1	13	0	98	.03	6	.7	2.5	10	UER
		4	145	13.79	19	13.97	155	26.33	9.89	1.4	1.8	25	3	135	.10	9	.4	.6	9	LSW
		4	837	8.64	19	19.57	155	7.85	9.00	3.5	3.9	29	0	204	.10	6	1.1	.6	28	UER
		4	841	40.42	19	19.35	155	7.69	5.93		.8	11	0	243	.08	6	2.0	2.1	11	UER
		4	849	.97	19	20.66	155	11.18	7.37		.6	12	0	206	.10	4	.9	1.1	10	UER
		4	853	19.30	19	23.64	155	7.18	2.84		.7	8	0	160	.04	5	.9	1.2	8	GLN
		4	911	3.00	19	.22	156	27.12	36.31	3.6	3.7	23	0	309	.10	68	13.2	3.3	21	DIS
		4	1343	25.69	19	18.78	155	11.01	5.46		.9	16	0	118	.11	5	.7	2.1	16	POL
		4	1540	39.85	19	18.89	155	13.70	5.34		.8	16	0	86	.10	3	.6	1.9	16	POL
		4	1544	30.93	19	19.84	155	7.10	7.22		.9	21	0	111	.10	5	.6	1.1	19	UER
		4	1826	41.93	19	20.23	155	6.31	7.49	2.3	1.7	23	0	114	.11	6	.7	1.2	22	UER
		4	2235	2.31	19	15.24	155	6.59	45.60	2.4	1.8	32	0	202	.09	5	1.3	2.1	30	POL
		5	3 4	47.97	19	19.26	155	10.69	5.20	1.7	1.0	16	0	104	.12	5	.7	2.2	15	UER
		5	429	20.41	19	21.59	155	4.10	6.79	2.0	1.6	17	0	91	.10	4	.7	.9	15	MER
		5	951	7.02	19	12.32	155	28.82	12.77		1.3	9	0	127	.12	5	2.2	4.5	8	LSW
		5	10 5	23.14	19	25.78	155	24.91	8.60		1.8	15	0	49	.10	8	.5	1.2	14	UKF
		5	1223	1.11	19	19.47	155	12.19	6.49	2.0	2.2	19	0	90	.11	5	.6	.8	16	UER
		5	1351	52.61	19	19.92	155	8.72	6.31		.7	12	0	122	.06	4	.8	1.1	12	UER
		5	1646	26.70	19	21.47	155	4.08	6.97	2.4	2.4	18	0	168	.08	6	.6	.9	17	MER
		5	2120	56.67	19	21.93	155	3.69	5.60		.9	14	0	210	.16	5	2.4	1.3	13	MER
		5	22 3	59.97	19	20.45	155	6.76	8.83	3.2	3.1	34	0	143	.10	6	.6	.5	33	UER
		5	22 7	19.51	19	24.53	154	57.15	2.95		1.2	15	0	221	.18	3	2.0	.9	13	LER
		5	2329	5.51	19	19.29	155	9.57	7.27		1.3	19	0	98	.09	5	.7	.9	17	UER
		6	4 1	31.00	19	20.74	155	12.18	8.78		.9	21	0	136	.09	4	.6	.7	17	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	FEB	6	647	52.55	19	25.85	154	50.76	8.98	2.6	2.5	25	0	286	.16	7	3.8	.7	22	LER
		6	713	5.52	19	19.51	155	8.61	7.60		1.2	23	0	106	.09	4	.6	.7	20	UER
		6	9 0	17.98	19	27.22	155	29.52	9.75	1.8	1.5	26	5	81	.08	9	.4	1.1	15	UKF
		6	11 4	44.84	19	18.26	155	15.12	8.12	.9	.8	10	0	138	.02	4	.9	2.1	9	KOA
		6	1341	2.25	19	26.74	155	23.68	9.52	1.5	1.3	18	5	103	.10	6	.5	1.1	9	UKF
		6	1651	18.16	19	22.76	155	6.46	.81	2.7	3.3	21	1	84	.07	5	.3	.8	11	UER
		6	21 2	46.91	19	13.92	155	2.68	41.68	2.4	1.6	36	3	229	.07	11	1.2	1.7	32	DIS
		6	2127	28.55	19	20.66	155	7.98	7.60		1.0	11	2	83	.04	4	.7	1.3	9	UER
		6	2144	38.35	19	19.68	155	11.28	8.34	1.6	1.3	24	1	92	.05	5	.5	.9	21	UER
		6	2221	3.25	19	14.61	155	1.92	42.99	2.7	2.5	37	0	218	.07	10	1.6	2.0	35	DIS
		6	2321	13.38	19	20.31	155	13.61	8.25	1.2	.9	19	3	67	.04	4	.5	1.2	15	UER
		7	032	27.19	19	20.19	155	9.55	8.34	1.8	1.6	31	1	78	.06	4	.4	.8	24	UER
		7	614	25.67	19	28.00	155	15.49	1.89	1.6	1.3	8	1	294	.18	7	2.8	1.7	7	GLN
		7	640	24.33	19	34.50	155	52.88	7.91		1.3	12	2	257	.08	10	2.0	.8	7	KON
		7	743	28.58	19	19.46	155	28.73	10.02	1.1	1.1	17	1	78	.09	6	.6	.9	15	HEA
		7	759	23.20	19	19.38	155	28.62	11.26	1.1	.8	14	1	142	.06	6	.6	.8	12	HEA
		7	1018	42.84	19	20.11	155	10.80	7.70		1.1	20	0	85	.12	4	.6	1.1	18	UER
		7	1147	8.65	19	20.59	155	12.84	7.02		.9	19	0	68	.11	4	.6	1.2	16	UER
		7	1558	15.37	19	20.52	155	3.85	5.50		.9	14	0	107	.16	2	1.0	2.1	14	MER
		7	2049	34.15	19	23.08	155	5.83	.28	1.9	1.6	8	0	93	.11	4	.6	2.1	7	MER
		7	2224	29.07	19	20.93	155	1.84	4.85		1.0	13	0	182	.10	3	1.2	1.9	13	MER
		7	2248	48.86	19	23.61	155	5.26	1.42		1.4	8	0	102	.10	2	.6	.9	8	MER
		7	2252	47.01	19	23.27	155	4.87	1.81	1.9	1.5	12	0	135	.13	3	.8	.9	11	MER
		8	217	35.69	19	19.37	155	7.07	9.40	2.8	3.1	33	1	121	.10	4	.6	.4	29	UER
		8	410	37.51	19	21.01	155	10.78	7.76		.8	19	0	77	.11	3	.7	1.2	19	UER
		8	618	39.02	19	19.71	155	8.35	7.43	1.9	1.8	24	0	84	.08	4	.5	.9	24	UER
		8	1210	52.81	19	25.21	155	25.02	8.85	1.7	1.4	23	0	62	.11	7	.5	1.3	21	UKF
		8	1559	24.91	19	21.64	155	4.69	5.85	2.3	2.5	28	0	80	.11	4	.5	1.4	27	MER
		8	21 1	.65	19	22.11	155	6.81	6.78	1.9	1.9	28	0	73	.11	5	.5	1.3	25	UER
		9	011	51.50	19	20.12	155	11.47	10.42	2.6	2.9	31	1	83	.09	5	.4	.6	28	UER
		9	232	5.02	19	21.43	155	2.90	6.35	1.9	2.2	26	1	132	.13	3	.7	1.0	23	MER
		9	4 5	49.63	19	20.79	155	11.45	7.25	1.6	1.6	27	0	75	.13	4	.6	.9	26	UER
		9	749	46.79	19	20.16	155	8.59	6.12		1.1	23	0	75	.12	4	.6	1.5	21	UER
		9	824	31.26	19	20.30	155	11.40	7.49		.8	21	0	79	.07	4	.5	1.0	20	UER
		9	1040	32.90	19	25.33	155	28.27	8.20	1.8	1.4	21	0	57	.09	5	.4	1.3	18	UKF
		9	1145	19.60	19	24.92	154	56.84	5.26	1.5	1.0	22	1	190	.12	3	.9	1.2	21	LER
		9	12 4	9.87	19	26.58	154	55.56	4.68	2.0	1.8	14	0	211	.09	2	1.8	1.6	13	LER
		9	1316	13.12	19	18.45	155	46.26	5.19	2.3	1.9	22	0	85	.13	11	.8	3.0	21	KON
		9	1843	6.52	19	23.12	155	26.60	6.45	1.7	1.9	26	1	54	.12	2	.5	1.2	20	UKF
		9	1847	58.26	19	19.79	155	7.54	5.85	1.4	1.0	23	0	102	.10	5	.5	1.6	15	UER
		9	2016	31.34	19	20.21	155	8.57	7.29	1.8	1.2	20	0	75	.07	4	.5	1.3	19	UER
		9	2059	44.48	19	24.04	155	24.38	12.00	1.1	1.1	26	3	69	.06	6	.4	.7	25	UKF
		9	2119	33.98	19	20.21	155	8.13	7.02		.8	23	0	83	.10	5	.5	1.2	22	UER
		9	2224	45.46	19	19.59	155	11.46	7.24		1.0	19	0	93	.09	5	.6	1.2	17	UER
		10	0 9	7.47	19	19.49	155	30.26	6.86	1.1	.9	12	0	184	.10	7	1.3	2.8	10	HEA
		10	017	35.28	19	20.85	155	30.16	8.10	1.3	1.0	13	0	141	.05	5	.9	1.4	10	HEA
		10	021	22.63	19	22.30	155	5.03	8.49	1.3	1.1	16	0	76	.07	4	.5	1.2	12	MER
		10	113	20.88	19	17.76	155	23.44	3.49		1.0	11	0	190	.08	5	.8	1.6	10	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	FEB	10	341	46.69	19	23.71	155	15.53	2.99	1.2	.8	8	0	98	.12	3	1.1	1.7	6	SPC
		10	346	9.44	19	15.73	155	21.85	8.38	1.2	.6	11	1	214	.04	7	.8	1.6	9	LSW
		10	911	7.47	19	20.06	155	13.24	8.58	2.0	1.9	10	0	87	.03	5	.8	1.5	10	UER
		10	947	32.45	19	23.23	155	1.99	8.75	1.6	1.4	19	0	138	.15	5	.9	1.2	18	MER
		10	1050	39.03	19	20.38	155	6.46	6.65	1.6	1.7	20	0	109	.10	6	.6	1.7	17	UER
		10	1720	.28	19	21.68	155	12.74	2.71	1.8	1.5	15	0	56	.09	2	.4	.6	14	UER
		10	20 5	50.10	19	12.33	155	40.45	5.87	1.8	1.8	27	3	186	.19	8	1.0	1.5	19	HEA
		10	2020	56.57	19	20.61	155	10.37	7.46	1.6	1.0	22	0	75	.12	3	.6	1.1	17	UER
		10	2121	48.69	19	20.63	155	13.15	7.80	1.5	1.1	18	0	62	.12	4	.6	1.0	17	UER
		10	2359	41.39	19	19.83	155	10.27	8.39	.9	.8	17	0	90	.07	4	.6	1.3	17	UER
		11	1 1	9.71	19	21.53	155	6.97	7.13	1.6	1.5	22	0	80	.10	5	.5	1.3	21	UER
		11	139	8.56	19	27.49	154	49.00	8.60	1.6	1.0	17	2	291	.21	8	2.2	1.0	9	LER
		11	958	58.71	19	26.66	154	55.04	5.92		.9	14	0	208	.12	2	2.2	1.7	14	LER
		11	12 8	48.72	19	20.22	155	3.68	6.92	1.4	1.1	12	0	122	.08	1	.9	1.4	12	MER
		11	1317	5.26	19	22.24	155	6.50	8.25	2.4	2.5	30	1	72	.09	6	.5	.9	28	UER
		11	1447	3.99	19	22.02	155	4.19	5.34	1.6	1.3	19	0	92	.16	4	.7	2.4	16	MER
		11	15 9	50.30	19	16.09	155	15.77	33.72	1.5	1.6	21	3	220	.09	4	1.6	1.1	21	HLP L
		11	19 7	21.64	19	15.38	155	15.05	42.31	2.4	2.4	8	0	260	.04	4	6.5	11.9	8	HLP L*
		11	20 7	44.29	19	19.98	155	9.53	5.43	1.1	.8	12	0	103	.12	4	.8	2.1	11	UER
		11	2141	16.90	19	20.06	155	8.16	6.57		1.1	17	0	96	.10	5	.6	1.5	16	UER
		12	218	25.44	19	23.62	154	55.53	.12		1.0	9	0	241	.12	6	1.5	3.6	9	LER *
		12	232	19.59	19	21.41	155	3.46	4.19		1.3	11	0	112	.15	3	1.1	2.1	11	MER
		12	4 2	32.90	19	18.63	155	13.17	6.61		1.5	21	0	86	.11	3	.6	1.2	20	POL
		12	449	55.36	19	20.61	155	7.47	6.11	1.5	1.4	28	0	90	.12	5	.6	1.4	26	UER
		12	15 5	13.11	19	27.05	154	55.91	5.33		1.4	12	0	170	.08	1	1.0	1.1	10	LER
		12	1533	49.97	19	21.73	155	5.81	5.07	1.9	1.6	23	0	82	.15	6	.6	2.8	22	MER
		12	1922	39.27	19	20.29	155	3.19	7.33	1.9	1.6	16	0	101	.12	1	1.0	1.3	14	MER
		12	1933	8.93	19	19.63	155	13.41	8.92	1.7	1.9	22	0	71	.06	5	.5	.9	19	UER
		12	1936	13.09	19	19.86	155	7.52	6.02		1.4	18	0	101	.06	5	.5	1.5	15	UER
		12	1938	55.69	19	19.86	155	10.41	7.70		1.6	19	0	89	.06	4	.5	1.1	19	UER
		12	1946	.34	19	21.99	155	5.01	7.25	2.0	1.8	20	0	75	.11	5	.6	1.2	20	MER
		12	1956	22.92	19	23.54	154	56.33	5.73	1.5	1.5	16	0	213	.15	5	1.5	1.2	15	LER
		12	2251	42.59	19	19.85	155	8.00	6.26	1.8	1.4	23	0	90	.11	5	.6	1.4	22	UER
		13	7 7	35.82	19	19.10	155	11.82	7.15		1.4	21	0	103	.09	5	.5	1.1	20	UER
		13	841	53.00	19	25.33	155	24.72	8.85	2.0	1.9	26	1	60	.11	7	.4	1.0	24	UKF
		13	917	31.69	19	14.13	155	26.47	36.51	2.4	2.1	29	0	117	.08	9	.9	2.0	28	LSW
		13	1046	14.03	19	21.73	155	30.22	7.49	2.5	2.5	29	0	61	.11	5	.4	1.0	25	HEA
		13	1050	38.89	19	26.21	155	30.31	7.93	1.3	.7	15	1	71	.12	8	.6	2.1	13	MOK
		13	1054	18.17	19	26.37	155	30.39	8.97	1.8	1.3	23	0	67	.11	9	.5	1.5	19	MOK
		13	1055	33.03	19	20.48	155	12.75	6.57	1.6	1.5	23	0	68	.13	4	.6	1.0	20	UER
		13	1628	31.37	19	25.96	155	25.23	5.91	1.6	1.8	22	0	66	.13	8	.5	2.4	17	UKF
		13	1652	51.05	19	20.60	155	4.25	8.58	3.9	4.3	36	0	109	.10	3	.6	.4	36	MER F
		13	1827	5.68	19	20.90	155	4.17	5.42	1.6	1.0	17	1	96	.13	3	.6	1.5	12	MER
		13	1934	29.41	19	9.43	155	26.21	29.05	1.7	1.0	25	0	174	.06	3	.9	2.2	25	LSW
		13	2010	37.09	19	27.78	154	53.27	5.87	1.5	1.0	15	1	237	.17	2	1.9	.7	14	LER
		13	2059	9.90	19	27.67	155	22.61	26.27	2.6	2.6	36	0	49	.12	4	.6	1.2	34	UKF
		13	2342	31.24	19	20.89	155	9.62	7.51	1.6	1.8	27	0	68	.10	2	.5	.8	23	UER
		13	2345	.10	19	20.29	155	8.19	7.22	1.7	1.2	27	0	81	.12	4	.5	.9	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	FEB	14	040	46.64	19	15.05	155	33.29	8.94	1.7	1.6	20	2	184	.15	7	1.0	1.2	18	LSW	
		14	135	30.79	19	22.13	155	3.38	7.55	1.6	1.4	26	0	114	.11	4	.6	.7	22	MER	
		14	323	54.96	19	20.42	155	11.38	7.13	1.5	1.4	27	0	78	.12	4	.5	.8	25	UER	
		14	449	9.57	19	25.00	154	53.86	9.38	2.5	2.8	17	2	239	.12	7	1.0	.8	12	LER	
		14	459	13.40	19	18.86	155	3.48	6.57	2.2	2.2	14	0	232	.10	13	2.6	2.0	10	MER	
		14	511	41.87	19	21.59	155	2.69	5.11	1.2	.8	12	1	218	.20	10	2.2	9.7	11	MER	
		14	648	16.49	19	23.25	155	14.88	3.44	1.1	.8	9	0	104	.04	2	.5	.7	7	GLN	
		14	653	24.19	19	28.04	155	23.76	11.98	2.4	2.3	18	1	83	.09	3	.8	1.4	15	UKF	
		14	821	39.09	19	21.18	155	3.66	6.32	1.1	.9	22	0	100	.14	3	.8	1.0	17	MER	
		14	1032	6.65	19	19.55	155	11.07	6.23		1.2	19	0	97	.08	5	.6	1.3	16	UER	
		14	13 0	31.53	20	19.03	154	53.77	17.72	2.3	2.6	20	0	317	.12	67	16.4	99.0	20	DIS	*
		14	1349	39.87	19	20.01	155	8.24	8.19	2.8	3.3	30	0	83	.10	5	.5	.7	25	UER	
		14	1533	22.01	19	24.54	154	57.52	5.34		.9	10	0	203	.19	2	2.5	2.0	10	LER	
		14	1811	43.01	19	24.64	154	57.16	5.53		.5	9	0	205	.15	3	1.3	1.4	8	LER	
		14	21 0	6.64	19	22.29	154	57.47	7.60		.7	7	0	216	.06	6	1.3	2.1	7	LER	
		14	2212	48.30	19	19.02	155	11.15	7.17		1.1	15	0	110	.07	5	.5	1.1	15	UER	
		14	2325	47.15	20	.60	155	36.49	17.04	2.5	2.3	23	1	168	.13	22	3.4	24.3	22	KOH	*
		15	045	58.59	19	48.41	155	33.13	20.21		1.8	13	0	298	.04	10	11.1	7.7	13	KKU	*
		15	1 7	45.50	19	24.47	155	17.47	12.01	1.8	1.6	9	1	104	.13	1	2.1	1.9	8	INT	L
		15	411	38.09	19	24.75	155	48.71	10.31	1.8	1.6	16	1	177	.12	12	.9	.7	16	KON	
		15	421	12.28	19	23.91	155	15.49	2.85	1.9		9	0	106	.06	3	.5	.6	9	SPC	
		15	421	23.08	19	26.19	154	55.81	6.13	1.5	1.1	13	0	189	.10	3	1.2	1.2	13	LER	
		15	551	36.80	19	20.95	155	6.41	5.83		1.0	16	0	96	.12	6	.6	2.1	16	UER	
		15	856	35.63	19	19.56	155	11.61	7.56	2.2	2.0	26	0	93	.10	6	.6	.9	25	UER	
		15	9 1	16.96	19	20.11	155	4.21	5.84		1.5	20	0	135	.10	2	.6	1.1	19	MER	
		15	1011	29.74	19	20.65	155	10.87	6.81		.8	21	0	75	.10	3	.5	.9	21	UER	
		15	1635	34.48	19	19.86	155	8.48	8.78	2.5	2.7	28	1	79	.08	5	.4	.6	27	UER	
		15	1746	13.74	19	20.96	155	5.87	7.56	2.5	2.8	30	1	99	.10	5	.5	.8	27	MER	
		15	2057	44.51	19	19.45	155	11.12	6.02		1.2	18	0	98	.09	5	.5	1.4	18	UER	
		15	2116	47.86	19	20.91	155	3.09	7.05	2.2	2.1	27	1	124	.09	2	.6	.6	24	MER	
		15	2117	48.54	19	20.79	155	3.00	6.53		1.4	18	0	128	.13	2	.9	1.6	18	MER	
		15	2227	35.02	19	21.48	155	1.93	5.38		1.6	20	0	165	.14	3	.8	1.0	19	MER	
		16	2 7	34.56	19	17.68	154	59.27	39.38	2.9	2.9	30	0	228	.08	8	2.1	2.3	26	DIS	
		16	440	29.26	19	23.33	155	15.44	11.42	2.1	2.5	10	1	168	.07	2	1.2	.9	9	INT	L
		16	447	22.94	19	23.73	155	2.10	9.77		1.0	19	0	126	.08	4	.8	.6	19	MER	
		16	454	44.38	19	23.78	155	1.98	8.46		1.1	17	0	128	.10	4	.8	1.0	17	MER	
		16	7 4	30.57	19	23.37	155	18.07	6.28	1.2	.8	8	0	113	.11	3	1.0	2.0	8	LPC	L
		16	730	5.70	19	20.09	155	8.70	7.03		1.0	14	0	74	.03	4	.6	1.3	12	UER	
		16	838	35.14	19	23.70	155	2.25	10.05	1.3	1.7	18	1	124	.08	4	.7	.8	17	MER	
		16	844	28.21	19	23.92	155	17.10	4.22	.9	1.9	8	0	117	.10	4	.7	1.5	3	SPC	L
		16	1125	40.22	19	20.28	155	12.93	9.16		1.3	14	0	68	.03	4	.7	1.3	14	UER	
		16	1346	38.73	19	20.13	155	8.71	7.46		1.6	17	0	73	.04	4	.6	1.1	15	UER	
		16	1746	30.48	19	20.79	155	5.79	6.72	2.1	2.1	24	1	103	.09	5	.5	1.4	21	MER	
		16	18 1	57.71	18	53.03	155	19.86	17.16	1.9	1.6	24	3	263	.12	37	1.4	52.8	23	PPL	*
		16	21 9	20.25	19	22.52	155	17.09	9.26	1.8	1.8	8	1	109	.10	2	1.3	1.7	3	KOA	L
		16	2151	24.44	19	24.24	155	16.96	6.62	1.1	1.9	9	0	82	.12	1	.8	1.6	1	LPC	L
		16	22 6	7.80	19	18.69	155	16.20	8.18	.7	1.0	11	0	131	.04	3	.7	1.6	10	KOA	
		16	2225	20.43	19	18.79	155	16.12	8.15	1.0	1.3	15	0	127	.06	3	.6	1.0	13	KOA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	FEB	17	031	30.69	19	19.51	155	10.57	8.16	1.2	1.0	15	0	97	.06	5	.6	1.5	14	UER	
		17	033	53.10	19	20.63	155	7.43	7.89	2.3		27	2	90	.10	5	.5	1.0	24	UER	
		17	331	44.81	19	23.65	155	16.25	7.77	1.3	1.9	10	1	89	.10	2	.8	1.3	3	LPC	L
		17	649	19.35	19	23.60	155	16.67	8.62	1.8	1.8	13	1	74	.08	2	.6	.8	8	LPC	L
		17	948	3.29	19	20.49	155	12.78	8.16	1.2	1.5	17	0	67	.08	4	.6	1.2	15	UER	
		17	1011	12.93	19	20.60	155	12.84	9.48	1.5	1.9	17	0	65	.04	4	.5	1.0	17	UER	
		17	1356	31.26	19	20.74	155	3.84	7.56	1.7	1.9	16	0	96	.11	2	.8	1.4	15	MER	
		17	1859	11.68	19	24.28	155	16.83	9.13	1.6	2.1	11	0	94	.14	1	1.0	1.9	3	LPC	L
		17	23 5	50.53	19	22.73	155	17.67	13.57	1.8	2.1	8	1	106	.10	3	1.6	1.8	0	INT	L
		18	024	34.97	19	24.54	155	24.81	11.76	1.2	1.4	11	0	72	.07	6	.8	2.3	11	UKF	
		18	039	39.22	19	18.09	155	13.12	6.84	1.1	1.4	17	0	100	.08	2	.6	1.3	16	POL	
		18	1 1	7.57	19	20.62	155	9.70	8.21	1.2	1.6	17	0	72	.07	3	.6	1.2	13	UER	
		18	320	20.03	19	21.31	155	7.88	8.29	1.3	1.4	17	0	76	.08	4	.6	1.4	17	UER	
		18	423	7.25	19	23.71	155	16.45	8.32	1.4	1.8	11	1	87	.10	2	.7	1.1	4	LPC	L
		18	443	52.93	19	27.24	155	29.13	9.63	1.9	1.9	17	0	95	.07	9	.5	1.4	16	UKF	
		18	445	44.07	19	26.97	155	29.27	10.58	3.2	3.5	37	1	46	.11	9	.4	.6	36	UKF	F
		18	5 1	29.64	19	21.75	155	12.56	2.94	1.4	1.6	13	0	99	.05	2	.4	.6	11	UER	
		18	522	.31	19	26.76	155	29.62	10.56	1.8	1.8	20	0	69	.10	9	.5	1.5	17	UKF	
		18	546	3.06	19	23.74	155	15.33	3.16	2.4	2.9	18	0	96	.05	3	.4	.5	16	SPC	
		18	548	51.67	19	27.23	155	29.05	9.44	1.5	1.6	16	0	79	.10	9	.6	1.9	15	UKF	
		18	552	53.96	19	27.27	155	29.21	10.00	2.1	2.4	22	1	72	.12	9	.5	1.4	20	UKF	
		18	630	32.16	19	27.10	155	29.19	9.76	2.2	2.4	23	1	71	.09	9	.5	1.3	20	UKF	
		18	913	57.81	19	19.54	155	11.47	6.30	.9	1.0	17	0	94	.09	5	.6	1.6	16	UER	
		18	1048	34.16	19	26.39	155	29.77	9.72	1.4	1.7	13	0	67	.10	8	.6	2.2	10	UKF	
		18	1158	49.21	19	19.88	155	7.68	6.78	2.1	2.1	21	1	97	.07	5	.5	1.4	19	UER	
		18	1217	19.94	19	22.36	155	25.43	10.40	.7	1.3	9	0	138	.04	4	.9	1.9	8	UKF	
		18	17 4	51.10	19	20.41	155	13.25	9.14	.9	.9	14	0	63	.05	4	.6	1.5	12	UER	
		18	19 6	1.47	19	20.96	155	1.24	7.04		1.6	13	0	196	.07	4	.7	1.3	10	MER	
		18	1950	55.62	19	30.63	155	47.03	8.70		1.9	16	0	84	.10	14	.6	2.1	13	KON	
		18	2210	13.27	19	20.49	155	13.42	7.81	1.3	1.6	21	0	62	.11	4	.6	1.1	21	UER	
		19	320	2.90	19	30.78	155	47.46	9.05	1.5	1.8	14	1	87	.13	3	.8	1.4	12	KON	
		19	448	23.80	19	21.55	154	59.98	7.55	1.1	1.5	17	2	200	.12	6	1.2	1.3	15	LER	
		19	5 8	30.69	19	19.83	155	5.46	6.53	1.1	1.3	19	0	137	.10	4	.8	1.9	18	MER	
		19	643	58.46	19	18.92	155	12.90	7.70		1.4	16	0	88	.09	4	.7	1.4	16	POL	
		19	654	21.26	19	23.85	155	16.18	2.65	1.2	1.1	11	1	100	.07	2	.3	.6	9	SPC	
		19	759	6.74	19	20.44	155	13.19	8.96	1.2	1.3	15	0	64	.05	4	.6	1.2	13	UER	
		19	1129	35.59	20	51.51	154	58.96	7.01	2.5	2.2	18	1	318	.14	114	17.7	23.7	12	DIS	*
		19	1523	3.34	19	22.77	155	3.07	8.38	2.0	1.2	20	0	117	.11	4	.7	.8	20	MER	
		19	1715	30.00	19	26.41	155	24.96	2.08	1.8	1.1	16	0	123	.17	7	.6	3.5	14	UKF	
		19	1911	22.31	19	21.03	155	12.54	7.88	1.6	1.1	23	0	63	.12	3	.5	.6	20	UER	
		19	1942	31.12	19	20.68	155	10.74	8.19	1.7	1.6	23	0	75	.09	3	.4	.7	22	UER	
		19	2243	23.62	19	20.16	155	8.01	7.60	2.2	2.0	25	0	86	.10	5	.5	.7	24	UER	
		20	022	27.24	19	23.34	155	15.04	3.00	2.1	2.0	7	0	110	.04	2	.5	.6	6	SPC	
		20	729	49.42	19	17.41	155	12.68	8.37	1.8	.9	17	0	154	.10	2	.9	.8	16	POL	
		20	9 7	36.73	19	18.96	155	15.21	7.24		.9	15	0	114	.06	4	.5	1.1	14	KOA	
		20	1016	6.87	19	18.11	155	12.78	9.67	2.7	2.9	24	1	140	.08	8	.6	.8	19	POL	
		20	1023	17.12	19	17.64	155	12.63	7.78	1.8	1.4	15	0	140	.11	2	.9	1.3	14	POL	
		20	1136	16.70	19	19.48	155	11.71	7.90		1.3	14	0	95	.08	5	.5	1.0	11	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	FEB	20	1144	47.27	19	31.72	155	50.74	6.14	2.6	1.9	8	0	197	.10	9	1.8	3.9	8	KON	
		20	1353	13.16	19	24.63	155	25.85	9.32	2.1	2.1	25	0	74	.12	5	.5	1.0	19	UKF	
		20	1744	21.59	19	16.26	155	12.47	8.59	1.9	1.9	17	0	244	.08	2	1.5	.8	15	POL	
		20	1846	53.10	19	20.29	155	11.24	8.12	1.7	2.0	17	0	80	.12	4	.7	1.2	15	UER	
		20	19 8	17.13	19	20.18	155	11.13	7.14		1.0	16	0	82	.08	4	.6	1.1	16	UER	
		20	1914	20.28	19	21.82	155	15.78	26.89	3.1	3.1	31	1	60	.09	1	.7	.9	26	DEP	
		20	2034	51.82	19	17.90	155	12.98	6.83	2.0	1.9	16	0	112	.14	2	1.1	1.5	14	POL	
		20	2143	33.09	19	21.32	155	15.62	27.36		.9	21	0	103	.12	2	1.1	1.7	20	DEP	
		20	2225	46.47	19	21.96	155	4.40	8.50	2.5	2.9	23	0	86	.09	5	.6	.7	22	MER	
		20	2322	48.69	19	19.39	155	11.24	5.42		.9	11	0	99	.05	6	.6	2.3	10	UER	
		21	0 9	45.10	19	18.31	155	15.65	7.86		1.0	15	0	167	.10	5	.7	.9	14	KOA	
		21	157	9.87	19	20.40	155	3.58	6.73		1.2	15	0	106	.08	1	.8	.8	15	MER	
		21	241	56.71	19	16.30	155	12.87	6.65		1.0	17	0	205	.11	2	1.0	1.3	15	POL	
		21	333	30.66	19	20.68	155	14.04	28.65		.7	16	0	68	.04	4	1.2	2.2	15	DEP	
		21	352	44.87	19	20.01	155	13.45	7.20		1.1	16	0	67	.11	5	.7	1.4	14	UER	
		21	4 3	.90	19	21.22	155	3.47	6.70		1.0	15	0	110	.08	3	.9	1.4	14	MER	
		21	743	35.01	19	20.76	155	12.65	8.11	1.6	1.0	13	0	75	.08	4	.6	1.1	12	UER	
		21	826	23.10	19	20.22	155	8.65	8.78	2.4	2.2	25	0	74	.09	4	.5	.7	24	UER	
		21	2235	43.73	19	20.15	155	13.06	8.63	1.9	2.0	26	0	67	.08	5	.4	.6	22	UER	
		22	422	16.67	19	25.65	155	24.79	9.44	1.7	1.2	21	1	57	.10	8	.4	1.1	18	UKF	
		22	635	9.57	19	58.07	155	38.29	11.08	2.8	2.8	33	1	251	.09	28	1.3	.6	25	KOH	
		22	1439	.60	19	51.74	155	53.90	14.11	2.9	2.8	27	1	264	.11	20	1.9	.9	23	KON	
		22	16 2	51.04	19	21.33	155	23.67	8.94	1.8	1.8	20	0	119	.15	7	.7	1.1	19	SWR	
		22	1715	6.29	19	22.41	155	5.71	8.82	3.2	3.4	29	0	70	.09	5	.5	.7	27	MER	
		22	1744	35.86	19	23.89	155	.56	7.79	1.9	1.5	25	2	156	.15	4	.8	.7	24	LER	
		22	1749	3.04	19	23.56	155	.08	8.70	2.0	1.6	22	0	168	.13	4	1.0	.5	20	LER	
		22	1811	26.65	19	44.09	156	8.45	7.00	2.2	1.4	17	2	327	.15	63	18.5	24.0	17	KON	*
		22	1824	59.50	19	20.89	155	6.23	7.43	1.8	1.6	26	0	98	.09	6	.5	.7	23	UER	
		22	20 1	29.33	19	19.92	155	8.39	8.16	2.2	2.5	29	0	80	.10	5	.5	.8	28	UER	
		22	21 5	16.19	19	19.18	155	15.37	8.78	2.0	2.1	30	0	110	.08	4	.5	.5	25	KOA	
		22	2127	55.17	19	16.97	155	38.67	1.41	2.0	1.4	14	0	165	.20	5	2.1	4.3	13	HEA	
		22	2225	12.66	19	24.06	155	.99	9.17	1.9	1.6	20	1	141	.11	4	.7	.6	16	LER	
		23	155	32.41	19	22.06	155	1.57	5.69	1.5	1.6	21	0	163	.15	5	.7	1.2	18	MER	
		23	226	50.72	19	19.59	155	11.10	8.69		1.6	23	0	96	.07	5	.4	.8	16	UER	
		23	252	21.39	19	23.92	155	15.95	3.17	2.5	3.0	29	0	37	.12	3	.3	.5	25	SPC	
		23	320	9.84	19	23.71	155	16.16	2.58	1.2	1.6	13	1	93	.11	3	.4	.6	11	SPC	
		23	334	25.97	19	23.96	155	15.95	2.99	1.6	2.1	17	1	82	.09	3	.4	.5	15	SPC	
		23	336	12.34	19	23.80	155	15.68	2.86	.9	.7	7	0	103	.10	3	.5	1.1	7	SPC	
		23	4 9	57.28	19	26.56	154	55.07	8.06	2.3	2.6	26	2	196	.13	2	1.0	.5	22	LER	
		23	5 2	49.15	19	22.66	154	58.60	7.09	2.0	1.9	21	1	199	.11	5	1.0	.7	18	LER	
		23	821	2.43	19	20.34	155	12.86	7.33		1.1	17	0	68	.13	4	.7	1.4	17	UER	
		23	1013	12.62	19	22.23	155	6.39	7.90	2.5	2.6	29	1	72	.10	6	.4	.9	25	UER	
		23	1123	3.22	19	20.16	155	11.09	6.97		1.3	19	0	83	.11	4	.6	.9	19	UER	
		23	1248	22.17	19	24.16	155	15.81	3.24	1.3	1.5	10	0	122	.03	3	.4	.5	10	SPC	
		23	13 5	46.96	19	26.74	154	56.14	5.21		1.1	17	1	175	.10	2	1.0	1.1	15	LER	
		23	1332	57.32	19	26.81	154	55.98	4.99		1.3	11	0	188	.12	2	2.0	1.9	10	LER	
		23	1559	29.63	19	19.71	155	12.36	5.39	1.6	1.3	17	0	83	.06	5	.4	1.4	17	UER	
		23	16 6	36.23	19	25.51	154	57.58	5.69		1.1	18	0	174	.14	2	.9	1.3	18	LER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	FEB	23	1941	9.68	19	20.75	155	8.74	6.37		1.0	24	0	69	.08	3	.5	1.1	23	UER	
		24	139	53.92	19	19.73	155	8.38	9.21	2.7	3.1	33	1	83	.08	4	.5	.4	30	UER	
		24	555	46.60	19	19.78	155	11.49	6.84	1.7	1.4	19	0	90	.09	5	.5	1.0	18	UER	
		24	1026	43.29	19	19.88	155	7.34	6.52		1.3	21	0	105	.10	5	.5	1.1	20	UER	
		24	1127	37.81	19	20.31	155	13.29	6.63		1.4	21	0	63	.13	4	.6	1.3	21	UER	
		24	1427	30.85	19	19.35	155	11.20	5.54		1.3	16	0	100	.10	6	.6	1.8	16	UER	
		24	1446	45.34	19	25.04	155	15.48	1.33	1.1	.9	7	1	187	.03	2	.9	.5	6	SPC	
		24	1647	25.37	19	20.78	155	6.38	7.03	2.2	2.4	28	0	100	.12	6	.5	.9	28	UER	
		24	2254	51.22	19	20.16	155	11.66	8.22	1.8	1.5	25	0	81	.08	5	.5	.7	25	UER	
		25	046	19.98	19	20.75	155	9.42	7.79	1.8	1.5	24	0	96	.08	3	.6	1.0	24	UER	
		25	535	2.19	19	52.66	155	31.96	13.43		1.8	18	1	223	.12	13	2.4	.7	15	KKU	
		25	722	6.33	19	20.50	155	11.98	7.64	1.6	1.4	22	0	73	.10	4	.5	1.0	21	UER	
		25	723	21.58	19	20.02	155	6.74	7.48	1.9	1.6	23	0	113	.09	5	.6	.8	23	UER	
		25	831	32.80	19	20.40	155	7.77	5.29	1.2	1.5	20	0	89	.11	5	.6	1.8	20	UER	
		25	9 4	32.22	19	19.80	155	7.48	5.32	1.4	1.1	19	0	103	.10	5	.6	2.0	19	UER	
		25	1035	59.31	19	19.93	155	7.68	8.35	2.4	2.6	26	0	96	.09	5	.5	.7	24	UER	
		25	1514	44.78	19	19.78	155	8.81	5.68		1.1	19	0	77	.09	5	.5	1.5	19	UER	
		25	1530	15.73	19	20.06	155	7.49	6.95		1.3	17	0	99	.08	5	.6	1.5	17	UER	
		25	1758	59.38	19	21.85	155	3.64	5.69		1.4	14	0	107	.13	4	.8	2.1	13	MER	
		25	1841	35.56	19	20.98	155	7.18	5.34	1.8	1.4	26	0	88	.12	5	.6	1.9	26	UER	
		25	2052	52.55	19	25.27	155	17.24	18.01		.8	14	0	119	.09	1	1.2	1.3	14	INT	
		25	2358	28.35	19	23.91	155	24.76	9.14	2.1	2.1	26	0	64	.13	6	.5	1.1	21	UKF	
		26	1 2	15.87	19	19.83	155	10.42	6.38		1.1	20	0	90	.11	4	.6	1.2	20	UER	
		26	257	14.45	19	26.17	154	56.22	5.25		1.3	16	0	182	.12	3	1.1	1.3	16	LER	
		26	429	43.80	19	20.85	155	1.97	6.54	2.1	1.8	24	0	180	.12	2	.9	.8	24	MER	
		26	914	32.09	19	19.73	155	10.31	7.56		1.5	18	0	92	.08	4	.6	1.3	17	UER	
		26	1232	.71	19	19.53	155	10.78	7.19		1.0	18	0	97	.09	5	.6	1.2	16	UER	
		26	1321	10.90	19	19.56	155	11.75	8.10	1.7	1.8	28	0	92	.09	6	.4	.7	27	UER	
		26	1738	45.99	19	21.97	155	4.88	6.37	1.4	1.4	23	0	77	.11	5	.6	1.3	22	MER	
		26	2034	6.61	19	20.44	155	12.40	7.07	1.0	1.1	18	0	71	.11	4	.6	1.2	16	UER	
		26	2228	38.82	19	20.43	155	7.32	6.84	2.0	1.5	22	0	95	.11	5	.6	1.2	20	UER	
		26	2253	12.66	19	20.34	155	7.07	6.07	1.9	1.4	22	0	100	.10	6	.5	1.5	20	UER	
		27	052	53.05	19	11.80	155	40.09	5.87	3.2	2.9	24	0	190	.20	8	1.2	1.5	22	HEA	
		27	129	47.56	19	21.65	155	6.36	7.57	2.0	1.7	25	0	82	.12	6	.5	1.0	25	UER	
		27	456	49.79	19	18.42	155	15.51	6.92	1.6	1.4	20	0	136	.09	4	.6	1.1	20	KOA	
		27	8 4	56.11	19	21.66	155	2.28	6.62	2.3	2.4	24	0	152	.09	3	.7	.8	20	MER	
		27	815	13.22	19	25.94	154	53.06	9.72		1.4	13	1	262	.12	6	3.3	1.0	7	LER	
		27	1156	2.89	19	26.16	155	22.98	7.51	1.8	1.7	16	0	55	.12	7	.6	1.7	15	UKF	
		27	1722	31.45	19	24.21	155	26.98	8.94	2.1	1.6	29	0	46	.12	3	.5	.8	27	UKF	
		27	1824	31.37	19	19.00	155	13.40	5.43	1.2	1.0	19	0	120	.13	4	.7	1.7	16	UER	
		27	1840	10.48	19	25.24	155	14.84	1.64	1.2	1.1	12	0	124	.07	1	.5	.3	6	GLN	
		27	2337	19.56	20	10.30	155	34.94	17.50	2.1	1.3	31	3	285	.14	45	1.3	59.1	27	KOH	*
		28	313	1.91	19	23.84	155	15.69	3.30	2.1	2.1	19	0	80	.06	3	.4	.5	16	SPC	
		28	516	58.47	19	19.26	155	13.11	6.33	1.5	1.6	29	0	78	.14	4	.5	1.0	26	UER	
		28	916	31.26	19	23.95	155	16.41	2.67	1.1	1.4	10	0	92	.08	2	.5	.6	9	SPC	
		28	10 4	46.67	19	20.58	155	10.86	8.26	2.0	2.2	23	0	76	.07	3	.5	.8	23	UER	
		28	1020	52.01	19	19.45	155	10.05	8.10	1.3	1.3	16	0	98	.05	5	.5	1.3	16	UER	
		28	1213	25.41	19	19.80	155	7.20	6.48	2.2	1.4	17	0	109	.09	5	.6	1.7	15	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	FEB	28	1322	19.45	19	19.47	155	20.36	.01		1.1	10	0	210	.28	5	2.0	2.7	9	SWR	*
		28	1529	21.13	19	19.49	155	10.35	8.29	1.8	1.6	22	0	98	.07	5	.5	1.0	21	UER	
		28	17 7	34.28	19	18.90	155	11.93	6.08	1.7	1.4	20	0	106	.08	4	.5	1.4	19	POL	
		28	1830	49.05	19	20.64	155	11.33	8.60	2.2	2.3	26	1	75	.09	4	.5	.7	24	UER	
		28	19 5	58.41	19	28.33	155	50.82	6.10		1.5	16	0	125	.12	8	.7	1.8	15	KON	
		28	2032	59.81	19	19.68	155	7.90	9.31	2.4	2.6	27	0	95	.08	4	.6	.6	26	UER	
	MAR	1	041	26.59	19	16.79	155	32.37	3.47		.8	17	0	113	.11	9	.7	18.9	16	HEA	*
		1	417	58.61	19	20.21	155	13.92	9.14	2.5	2.7	33	1	58	.10	5	.4	.5	29	UER	
		1	530	17.12	19	18.83	155	13.33	8.56		1.3	16	0	78	.07	3	.5	1.0	16	POL	
		1	623	39.99	19	21.79	155	18.26	3.22		1.0	11	0	74	.06	3	.4	.9	10	KOA	
		1	742	11.71	19	20.20	155	10.41	6.72	1.7	1.5	25	1	83	.11	4	.5	1.0	22	UER	
		1	941	17.01	19	21.49	155	4.72	6.38	2.1	1.8	21	0	84	.11	4	.7	1.9	19	MER	
		1	1036	8.26	19	19.77	155	7.11	7.25	2.0	1.8	22	0	112	.09	5	.6	1.3	20	UER	
		1	16 1	14.08	19	20.70	155	12.96	9.01	2.0	2.3	26	1	63	.08	4	.4	.7	20	UER	
		1	1710	37.36	19	21.81	155	18.02	3.13	1.4	1.4	13	0	72	.10	3	.4	.8	13	KOA	
		1	23 5	48.04	19	20.80	155	3.09	6.82	2.1	1.8	24	0	122	.08	2	.8	.7	22	MER	
		2	227	18.22	19	20.21	155	11.18	9.91	3.6	4.1	37	1	82	.08	4	.3	.4	33	UER	
		2	238	32.66	19	20.08	155	11.17	8.69	2.7	2.9	27	1	85	.10	4	.5	.6	21	UER	
		2	516	31.90	19	19.68	155	11.28	7.33	1.7	1.7	24	0	92	.10	5	.6	.8	22	UER	
		2	922	14.35	19	22.65	155	2.55	7.79	2.0	2.0	23	1	133	.14	5	.6	.9	16	MER	
		2	1221	23.17	19	23.61	155	24.63	10.43	2.1	2.0	28	0	75	.12	6	.5	.9	26	UKF	
		2	17 5	47.16	19	21.07	155	1.44	6.57	2.3	2.5	28	0	189	.12	3	.8	.6	22	MER	
		2	1740	.06	19	33.55	155	43.71	6.47	1.4	1.3	23	1	86	.14	7	.6	1.8	20	MOK	
		2	20 2	58.77	19	17.89	155	14.99	6.28	1.2	1.2	22	0	142	.11	3	.6	1.0	18	POL	
		2	2148	11.81	19	24.58	155	28.12	11.13	3.0	3.1	40	2	34	.12	4	.4	.5	37	UKF	
		3	159	10.72	19	19.94	155	10.99	9.52	2.6	2.8	35	0	87	.12	4	.5	.4	30	UER	
		3	537	18.82	19	36.16	155	33.56	10.94	1.8	1.6	12	0	231	.07	13	1.4	1.5	11	MOK	
		3	932	47.50	19	20.75	155	1.99	6.75	1.8	1.3	24	0	184	.12	2	.8	.8	19	MER	
		3	1358	22.64	19	21.75	155	12.64	2.81	1.4	1.7	18	0	56	.09	2	.4	.5	17	UER	
		3	2343	27.31	19	22.81	155	16.02	29.91	2.4	2.2	37	0	42	.09	1	.6	1.1	32	DEP	
		4	321	14.44	19	20.12	155	12.48	7.62	1.6	1.2	25	0	75	.11	5	.5	.8	24	UER	
		4	635	4.75	19	21.23	155	2.11	6.23	1.3	1.3	25	0	165	.13	3	.8	.8	19	MER	
		4	1152	3.69	19	20.28	155	13.40	9.08	1.6	1.8	19	0	63	.08	4	.6	1.0	17	UER	
		4	1628	2.98	19	22.55	155	4.82	8.73	1.9	1.6	23	0	81	.09	4	.6	.6	20	MER	
		4	18 6	41.54	19	19.35	155	9.66	7.29	1.1	1.3	18	0	97	.08	5	.6	1.4	16	UER	
		4	20 4	34.53	19	21.92	155	13.39	3.05	1.5	1.4	14	0	94	.09	1	.4	.6	14	UER	
		4	2117	43.85	19	23.32	155	5.64	1.30	1.7	1.9	14	0	94	.10	3	.5	1.0	12	MER	
		4	2145	36.11	19	20.70	155	12.75	7.78	1.1	1.1	19	0	72	.11	4	.6	1.1	17	UER	
		5	129	27.87	19	19.27	155	12.04	7.41	1.2	1.1	17	0	95	.08	5	.6	1.2	15	UER	
		5	227	27.17	19	23.28	155	45.09	10.51		1.5	15	0	86	.08	9	.7	1.1	14	KON	
		5	347	47.19	19	19.51	155	8.63	7.89	1.8	1.6	24	0	79	.09	4	.6	.8	21	UER	
		5	546	26.94	19	22.23	155	.24	7.77	1.5	1.6	25	0	185	.12	6	.9	.6	21	LER	
		5	7 8	33.49	19	26.19	155	25.27	10.77	2.6	2.6	31	1	51	.12	8	.4	.8	26	UKF	
		5	9 2	30.75	19	20.72	155	3.60	6.20	1.1	1.5	15	0	93	.12	2	.9	1.7	13	MER	
		5	913	6.17	19	22.74	155	5.57	.58	1.8	2.0	14	0	110	.14	4	.5	1.8	13	MER	
		5	930	36.99	19	26.18	155	25.16	8.91	1.7	2.0	21	0	51	.09	7	.5	1.4	16	UKF	
		5	1049	17.17	19	20.09	155	6.88	6.02	1.2	1.2	19	0	109	.09	5	.6	1.8	16	UER	
		5	1853	26.71	19	24.21	155	15.95	3.43	1.0	1.0	7	0	128	.03	2	.6	.7	6	SPC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	MAR	5	1859	50.44	19	20.14	155	7.50	7.17	1.2	1.8	26	0	97	.11	5	.5	1.1	23	UER	
		5	1954	20.18	19	22.87	155	3.75	7.46	1.8	1.6	26	0	101	.13	3	.6	.8	22	MER	
		5	20 2	.99	19	24.54	155	30.14	8.53	1.8	1.9	30	0	52	.11	6	.4	1.2	23	MOK	
		5	2041	58.58	19	20.88	155	6.10	9.44	3.3	3.5	36	2	100	.10	6	.5	.4	33	UER	
		5	2217	28.65	19	20.94	155	6.06	7.42	1.9	1.9	29	1	98	.10	6	.5	.8	26	UER	
		5	2250	40.87	19	25.02	155	26.00	6.94	2.3	2.1	31	0	56	.14	5	.4	1.4	28	UKF	
		5	2255	22.75	19	26.54	154	55.39	7.66	1.9	2.1	22	0	190	.14	2	1.3	.7	19	LER	
		5	2359	24.91	19	23.75	155	15.32	3.15	1.0	1.0	6	0	99	.03	2	.6	.9	6	SPC	
		6	0 8	1.03	19	19.15	155	13.30	7.15	1.9	2.1	25	0	76	.11	4	.5	.8	21	UER	
		6	259	50.14	19	19.97	155	6.99	9.80	3.7	4.0	37	1	110	.10	5	.5	.4	36	UER	F
		6	3 6	43.99	19	23.25	155	2.06	7.78	1.7	1.4	28	0	136	.13	5	.6	.6	26	MER	
		6	5 7	58.54	19	31.21	155	16.18	27.43	4.7	4.9	38	0	50	.09	11	.5	1.3	34	NER	
		6	522	47.64	19	31.72	155	15.94	26.66	2.9	2.9	29	1	52	.11	12	.6	1.5	14	NER	
		6	532	57.50	19	32.01	155	13.90	25.87	2.1	2.2	32	0	75	.07	14	.6	1.5	30	NER	
		6	545	41.31	19	28.32	155	13.33	25.55	1.5	1.5	30	2	73	.07	7	.7	1.1	29	DEP	
		6	550	8.31	19	31.79	155	13.89	25.70	1.4	1.3	26	1	114	.08	13	.7	1.7	24	NER	
		6	7 3	6.64	19	27.58	155	15.10	16.14	1.4	1.6	19	0	107	.14	6	.7	1.2	16	INT	
		6	1041	53.04	19	20.48	155	12.94	8.99	2.0	2.3	22	0	66	.07	4	.4	.7	18	UER	
		6	1254	43.52	19	23.59	155	1.68	8.42	2.8	3.2	28	1	137	.10	5	.6	.6	25	MER	
		6	1825	49.74	19	21.81	155	12.84	3.11		1.0	9	0	104	.02	2	.6	.7	9	UER	
		6	1827	55.44	19	21.81	155	12.82	3.38	2.4	2.4	24	0	54	.09	2	.4	.6	23	UER	
		6	1830	47.52	19	21.76	155	12.70	2.97		1.3	14	0	66	.05	2	.4	.5	13	UER	
		6	1957	20.28	19	20.89	155	2.06	7.81	2.8	3.3	29	1	176	.10	2	.8	.6	23	MER	
		7	336	24.27	19	26.34	155	24.74	9.98	1.5	1.8	16	0	78	.09	7	.7	1.8	15	UKF	
		7	5 8	7.91	19	19.97	155	7.45	9.16	2.6	3.2	29	1	101	.09	5	.6	.5	27	UER	
		7	630	49.26	19	20.14	155	3.34	6.75	1.7	1.6	20	1	119	.12	1	.8	1.4	14	MER	
		7	738	20.53	19	23.55	155	16.17	3.00	1.5	1.5	12	1	87	.10	2	.4	.6	9	SPC	
		7	1034	2.32	19	22.35	155	4.76	6.82	1.9	1.8	24	0	80	.13	4	.6	1.3	21	MER	
		7	13 4	22.10	19	57.30	155	34.65	11.04	2.4	2.3	20	0	243	.09	23	2.1	.8	15	KOH	
		7	1338	3.57	19	20.88	155	10.75	8.45	1.3	1.1	19	0	76	.09	3	.6	1.2	15	UER	
		7	1829	27.77	19	28.91	155	39.42	6.75	2.4	2.1	25	0	123	.09	6	.6	1.1	20	MOK	
		7	19 6	51.78	19	21.53	155	2.73	6.30	1.9	1.9	26	0	138	.12	3	.7	.8	22	MER	
		7	2033	25.29	19	24.83	155	16.23	15.53	1.7	1.2	25	0	73	.07	1	.6	.5	22	INT	
		7	2254	33.82	19	15.12	155	15.51	30.61	2.2	2.0	31	0	173	.07	5	.8	1.3	21	HLP	
		7	2351	21.37	19	24.35	155	16.59	10.22	1.4	1.3	5	0	120	.02	1	2.3	3.8	4	LPC	
		8	326	.31	19	19.46	155	8.85	8.59	2.4	2.8	31	1	83	.10	4	.5	.7	24	UER	
		8	332	46.11	19	25.72	155	33.25	29.27	2.3	2.6	11	0	116	.23	5	2.0	4.1	10	MOK	L
		8	851	46.45	19	20.10	155	8.70	8.08	2.6	2.9	28	1	74	.09	4	.4	.7	19	UER	
		8	1054	52.93	18	53.58	155	31.98	40.37	2.7	2.8	30	0	260	.06	17	2.2	2.5	27	DIS	
		8	1411	36.68	19	23.02	155	5.52	1.23	2.7	3.3	23	0	70	.18	4	.5	1.4	23	MER	
		8	1442	37.15	19	24.54	155	14.72	2.81	2.7	3.1	20	0	44	.15	1	.4	.8	19	GLN	F
		8	1730	32.06	19	21.74	155	5.98	7.69	1.8	1.5	23	0	82	.08	6	.4	.9	21	MER	
		8	1756	13.75	19	22.97	155	6.03	.80	2.4	2.9	20	0	88	.18	4	.6	1.6	17	UER	
		9	120	47.54	19	30.72	155	15.24	24.34	1.4	.9	15	1	175	.06	11	1.1	2.1	14	GLN	
		9	920	32.68	19	22.85	155	6.29	1.98	2.4	2.6	18	0	68	.08	5	.5	1.2	16	UER	
		9	923	41.11	19	22.82	155	6.34	1.11		1.3	11	0	94	.09	5	.6	1.5	8	UER	
		9	1236	28.72	19	23.55	155	16.92	4.00		1.8	9	0	68	.09	3	.6	1.0	1	SPC	L
		9	1454	37.74	19	20.23	155	6.80	7.18		1.3	16	0	107	.09	6	.6	1.7	15	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAR	9	1528	26.02	19	20.42	155	13.07	7.38	1.8	1.8	19	0	65	.12	4	.6	1.2	17	UER
		9	2018	23.75	19	23.92	155	15.80	3.46	2.4	2.8	20	1	105	.05	3	.4	.5	14	SPC F
		9	21 0	5.05	19	21.79	155	15.85	28.02	2.0	1.6	27	0	61	.07	1	.8	1.2	26	DEP
		10	0 2	8.93	19	22.76	155	16.82	8.54	2.1	2.5	11	1	80	.09	2	.6	1.0	2	KOA L
		10	316	56.15	19	20.65	155	3.51	5.79	2.1	2.2	23	0	94	.11	2	.6	1.1	17	MER F
		10	355	14.65	19	20.05	155	6.68	9.57	4.5	4.4	37	0	113	.10	5	.6	.4	36	UER F
		10	454	49.29	19	12.30	155	41.07	7.19	3.3	3.5	29	0	115	.20	9	1.0	1.3	26	HEA F
		10	626	17.51	19	20.73	155	10.40	8.63	1.7	2.1	23	0	74	.08	3	.5	.8	23	UER
		10	712	12.86	19	21.28	155	2.60	5.19		1.5	15	0	146	.12	3	.7	1.8	12	MER
		10	715	32.28	19	20.29	155	7.78	7.82	1.8	2.1	24	0	90	.08	5	.5	.9	22	UER
		10	949	33.31	19	18.03	155	7.03	10.13	3.1	3.3	31	0	184	.11	8	.9	.5	31	POL
		10	1012	55.86	19	20.00	155	6.59	7.41	1.6	1.6	18	1	116	.09	5	.5	1.5	13	UER
		10	11 1	9.45	19	20.21	155	7.53	7.99	.9	1.1	13	0	96	.07	5	.7	2.0	11	UER
		10	1256	32.43	19	13.76	155	4.23	50.39	2.5	2.4	28	1	227	.09	9	1.7	2.0	26	DIS
		10	1522	26.64	20	.04	155	26.07	12.22	1.4	2.0	17	3	210	.15	16	1.3	.6	11	KKU
		10	2056	50.90	19	18.63	155	6.88	2.76	1.0	1.1	15	0	149	.08	3	.8	1.1	14	POL
		10	2133	26.19	19	35.74	155	6.13	15.00	1.9	1.9	20	1	180	.08	11	.9	.8	19	HIL
		10	2313	21.71	19	22.59	155	2.06	8.09	1.8	2.2	22	0	146	.10	9	.6	1.0	21	MER
		11	014	56.50	19	17.59	155	5.97	10.89	3.4	3.9	30	0	199	.11	7	1.0	.5	29	MER
		11	4 2	21.33	19	19.79	155	7.38	5.19	1.0	1.4	18	0	105	.11	5	.6	2.2	14	UER
		11	744	9.32	19	19.56	155	11.26	7.70	1.5	1.7	22	0	95	.11	5	.6	1.1	18	UER
		11	1728	5.17	19	30.84	155	16.84	24.25	3.4	3.2	36	0	59	.09	10	.6	1.2	26	GLN F
		11	1747	2.35	19	20.39	155	7.02	7.61	1.7	1.4	26	1	101	.09	6	.5	1.2	22	UER
		11	1758	30.82	19	21.25	155	1.78	2.48	2.3	2.6	23	0	175	.10	3	.7	.9	19	MER
		11	18 4	44.41	19	20.24	155	8.05	8.27	2.6	3.2	30	0	85	.07	5	.5	.7	28	UER
		11	1820	.22	19	21.14	155	10.72	8.45		.9	22	0	85	.08	2	.5	.8	16	UER
		11	2114	1.10	18	58.77	155	27.11	36.14	2.8	2.6	33	1	225	.07	20	1.3	2.0	27	DIS
		11	22 7	58.61	19	50.79	155	50.56	38.26		2.3	28	0	179	.08	32	1.0	3.1	23	KON
		11	2326	21.07	19	25.42	155	.66	3.50	1.7	1.3	17	0	103	.11	3	.6	1.2	16	LER
		12	236	55.62	19	20.09	155	11.67	8.43	2.3	2.1	28	0	82	.09	5	.4	.7	25	UER
		12	249	57.99	19	20.36	155	12.76	7.80	1.6	1.6	20	0	69	.11	4	.6	1.1	18	UER
		12	1040	13.23	19	19.82	155	10.25	8.04	2.3		26	1	90	.09	4	.5	.6	23	UER
		12	1152	36.44	19	20.02	155	10.53	6.53	1.7	1.4	20	0	86	.10	4	.6	1.0	18	UER
		12	1241	45.98	19	21.55	155	25.34	11.61	1.9	1.8	20	0	116	.08	4	.6	1.2	17	HEA
		12	1512	58.37	19	19.88	155	11.11	7.52		1.0	18	0	88	.09	5	.5	.9	14	UER
		12	1640	33.04	19	21.57	155	2.50	6.46		1.3	15	0	146	.10	3	.8	1.5	15	MER
		12	2117	16.44	19	24.55	154	54.82	7.35	2.1	1.9	20	1	255	.14	6	2.2	.9	17	LER
		12	23 3	13.73	19	19.65	155	10.68	9.60	2.5	2.7	29	1	95	.08	5	.5	.6	26	UER
		12	23 7	53.37	19	19.52	155	13.97	7.16	2.0	1.8	23	1	82	.09	5	.5	.7	21	UER
		13	341	34.39	19	4.47	155	40.74	26.33	2.6	1.8	26	1	145	.09	10	1.2	2.3	25	HEA
		13	434	53.66	19	20.04	155	6.45	7.89	1.9	1.6	23	1	116	.07	6	.6	.7	21	UER
		13	8 1	58.59	19	20.22	155	12.82	7.85	1.8	2.1	20	1	70	.08	4	.6	1.1	17	UER
		13	821	39.42	19	20.08	155	12.09	9.21	2.8	3.3	31	0	79	.10	5	.4	.6	28	UER
		13	957	8.81	19	21.10	155	26.16	11.28	3.5	3.7	38	1	75	.12	4	.4	.5	36	HEA F
		13	1259	17.12	19	21.45	155	1.88	7.30	1.9	1.6	15	0	169	.13	3	1.0	1.0	13	MER
		13	1435	34.54	19	19.97	155	10.03	6.47	1.7	1.6	18	0	94	.07	4	.6	1.3	14	UER
		13	1539	9.66	19	27.17	154	54.49	5.35	1.4	1.8	14	0	213	.13	2	2.0	1.5	11	LER
		13	17 9	15.50	19	20.22	155	7.39	7.50	1.6	1.9	20	0	97	.05	5	.5	1.2	19	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAR	13	1715	50.54	19	19.96	155	11.92	8.03	.9	1.4	14	0	83	.07	5	.7	1.6	13	UER
		13	19 2	16.31	19	23.53	155	23.57	9.51	1.6	1.8	14	0	80	.09	6	.6	1.3	14	UKF
		13	2157	1.74	19	19.14	155	17.99	35.39	1.9	2.1	29	0	92	.08	2	.9	1.7	29	DEP
		13	2159	57.15	19	23.62	154	59.52	5.64	1.9	1.8	16	0	175	.16	3	.9	1.7	15	LER
		14	448	35.63	19	18.79	155	15.02	7.37	1.3	1.6	22	0	117	.10	4	.6	.8	22	KOA
		14	6 8	8.19	19	20.39	155	10.50	8.54	2.2	2.7	30	0	79	.09	3	.4	.5	26	UER
		14	613	45.07	19	20.22	155	10.70	7.02	1.4	1.6	27	0	83	.09	4	.5	.8	25	UER
		14	1011	35.13	19	19.93	155	13.61	9.29	1.9	1.9	22	0	71	.08	5	.6	1.0	18	UER
		14	1040	3.99	19	20.81	155	25.72	10.84	2.1	2.4	16	0	169	.08	4	.8	1.4	10	HEA
		14	11 9	47.66	19	19.89	155	9.58	6.38	1.8	1.6	19	0	85	.07	4	.5	1.2	17	UER
		14	1114	25.18	19	20.18	155	7.53	8.12	2.3	2.3	23	0	96	.09	5	.5	.9	20	UER
		14	1135	10.97	19	22.33	155	4.82	7.42	1.8	1.3	17	0	79	.11	4	.6	1.2	13	MER
		14	17 6	2.19	19	22.72	155	5.36	1.12	2.0	1.9	16	0	77	.17	4	.5	1.5	16	MER
		14	22 6	34.48	19	20.44	155	9.40	7.01	1.8	1.6	25	0	73	.10	3	.5	.8	22	UER
		15	738	54.95	19	18.64	155	21.58	7.14	2.0	1.8	22	0	153	.15	4	.8	1.4	19	SWR
		15	855	1.06	19	22.12	155	6.30	1.43	3.4	3.7	27	0	75	.18	6	.6	2.6	25	UER
		15	858	26.00	19	22.88	155	6.07	1.52	1.9	2.1	19	0	82	.10	4	.5	1.2	18	UER
		15	947	47.89	19	22.84	155	5.68	3.50	2.0	2.1	11	1	100	.22	4	1.1	3.0	10	MER *
		15	1010	14.66	19	22.67	155	5.91	.11	3.4	4.0	21	0	76	.11	5	.4	1.3	20	MER
		15	11 3	45.42	19	19.64	155	10.96	6.74	1.2	1.3	19	0	95	.10	5	.6	1.4	17	UER
		15	12 8	38.77	19	22.70	155	6.66	.12	1.8	1.6	9	0	93	.10	5	.6	2.0	9	UER
		15	1211	5.98	19	22.38	155	6.27	.00	1.8	1.8	13	0	92	.26	5	.8	3.1	13	UER *
		15	1242	51.85	19	13.63	155	31.14	30.86	2.6	2.1	30	0	67	.06	10	.7	1.5	26	LSW
		15	1344	43.96	19	18.68	155	13.44	7.45	1.5	1.0	17	0	81	.09	3	.6	1.2	16	POL
		15	15 2	28.41	19	20.51	155	13.08	5.29		1.0	16	0	63	.11	4	.6	1.5	11	UER
		15	1619	2.76	19	29.33	154	54.88	1.40	1.5	1.1	13	1	133	.10	3	1.5	2.3	12	LER
		15	1959	55.86	19	19.29	155	15.90	8.92	2.4	2.4	31	0	110	.09	3	.4	.4	27	KOA
		16	11 2	20.00	19	49.73	155	33.59	22.23	2.8	2.5	33	2	191	.08	12	.8	1.9	29	KKU
		16	1635	42.17	19	21.07	155	10.85	8.34		1.1	21	0	83	.11	3	.5	.9	19	UER
		16	1741	48.18	19	22.67	155	2.18	7.81	2.6	2.9	26	0	142	.10	5	.6	.5	25	MER
		16	1933	22.19	19	17.65	155	12.94	8.15	1.8	1.1	24	0	126	.09	1	.6	.7	19	POL
		16	22 0	37.36	19	19.67	155	12.22	5.58	1.6	1.2	19	0	85	.12	5	.5	1.5	17	UER
		17	145	6.66	19	20.62	155	12.54	9.52	2.3	2.6	29	0	68	.09	4	.4	.5	28	UER
		17	537	7.91	19	20.39	155	8.78	6.97	1.8	1.4	28	0	71	.11	4	.5	1.0	27	UER
		17	643	30.83	19	21.16	155	5.79	5.55	1.8	1.4	23	0	95	.10	6	.6	1.9	20	MER
		17	647	56.37	19	21.43	155	5.83	5.90	1.8	1.5	23	0	89	.10	6	.5	1.7	23	MER
		17	1046	57.75	19	19.93	155	11.86	5.92	2.1	2.1	25	1	83	.10	5	.5	1.0	21	UER
		17	1513	19.55	19	21.39	155	3.90	6.72	2.5	2.7	27	0	95	.09	3	.5	.8	22	MER
		17	1930	57.31	19	21.32	155	4.06	6.57	1.8	1.1	15	0	90	.09	3	.7	1.7	15	MER
		17	2222	3.77	19	21.26	155	4.03	5.59	1.9	1.4	20	1	90	.13	3	.7	1.8	19	MER
		17	2235	13.58	19	21.12	155	3.97	7.76	2.5	2.8	31	1	88	.10	3	.6	.5	29	MER
		17	2236	44.91	19	22.82	155	2.71	8.39	2.0	2.1	26	0	127	.11	4	.7	.6	24	MER
		17	23 9	57.89	19	18.60	155	13.82	8.26	1.7	1.3	21	1	96	.08	3	.6	.8	16	POL
		18	023	50.26	19	21.34	155	3.92	5.41	1.9	1.1	16	0	94	.12	3	.7	1.9	15	MER
		18	043	19.31	19	21.49	155	3.74	4.55	1.6	1.4	16	0	101	.16	3	.7	2.3	15	MER
		18	637	22.21	19	20.60	155	8.69	7.55		1.5	26	0	70	.09	3	.5	.8	25	UER
		18	932	21.15	19	23.81	154	59.05	7.24	2.0	1.6	19	0	178	.12	3	1.0	.6	19	LER
		18	1019	57.28	19	19.07	155	11.17	7.93	2.0	1.8	27	1	108	.10	6	.5	.8	24	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAR	18	1139	10.03	19	20.43	155	6.81	7.79	2.0	1.8	28	0	102	.08	6	.5	.9	25	UER
		18	1354	58.55	19	19.50	155	11.44	7.25	2.0	1.9	28	2	95	.08	6	.4	.7	22	UER
		18	1658	12.45	19	21.43	155	3.34	7.71	2.0	1.5	23	0	115	.14	3	.8	.7	23	MER
		19	129	23.31	19	21.00	155	3.33	6.72	2.0	1.4	24	1	112	.11	2	.7	.7	21	MER
		19	722	35.04	19	20.31	155	12.88	8.71	1.8	1.6	23	0	68	.09	4	.5	.6	18	UER
		19	10 2	11.79	19	21.02	155	10.76	7.76	1.5	1.3	24	0	69	.09	3	.4	.7	19	UER
		19	1056	20.66	19	19.75	155	11.30	6.86	1.7	1.6	24	0	90	.09	5	.5	.8	24	UER
		19	12 1	11.17	19	20.29	155	7.25	7.51	1.9	1.6	23	0	98	.10	6	.6	.8	21	UER
		19	12 2	.84	19	20.71	155	3.46	5.65	1.3	.8	14	0	103	.11	2	.8	1.4	14	MER
		19	1412	12.06	19	20.04	155	4.10	5.79		1.1	14	0	138	.10	2	1.1	1.1	12	MER
		19	1523	14.32	19	19.14	155	11.76	9.42	2.4	2.3	29	1	102	.09	5	.5	.5	27	UER
		19	1619	27.07	19	22.61	155	4.69	9.93	2.0	1.9	29	2	82	.08	4	.4	.6	24	MER
		19	2140	22.99	19	20.71	155	8.18	7.57		.9	20	0	77	.08	4	.5	.8	20	UER
		19	22 2	45.03	19	10.39	155	28.84	34.20	2.4	1.9	29	1	90	.06	2	.8	1.8	28	LSW
		20	136	57.44	19	18.83	155	13.47	8.10	1.7	1.8	27	0	82	.10	3	.5	.7	24	POL
		20	740	57.49	19	22.67	155	4.41	7.36		1.4	20	0	88	.12	4	.6	1.1	20	MER
		20	13 3	9.91	19	21.06	155	7.66	8.94	3.3	3.8	31	1	81	.09	4	.4	.5	25	UER F
		20	1348	36.44	19	24.48	155	26.20	10.88	2.8	2.9	30	0	40	.11	4	.4	.8	28	UKF
		20	1526	58.56	19	19.69	155	9.99	7.42		1.4	18	0	92	.09	4	.6	1.2	17	UER
		20	16 8	35.18	19	40.60	155	3.82	10.00	2.6	3.1	15	0	212	.17	30	1.5	2.1	14	HIL B
		20	1645	28.39	19	19.12	155	16.31	7.93	2.0	1.9	18	0	116	.06	3	.6	1.0	17	KOA
		20	1811	17.02	19	26.66	155	23.73	10.05	1.9	1.6	21	0	78	.08	6	.5	1.1	16	UKF
		20	2319	52.00	19	21.81	155	12.83	3.04	1.2	1.1	12	0	103	.05	2	.4	.6	9	UER
		21	128	22.61	19	19.86	155	7.11	7.78	2.2	2.2	25	0	109	.10	5	.6	1.2	24	UER
		21	246	18.46	19	19.21	155	5.38	4.03	1.4	1.3	23	0	161	.16	4	1.1	2.8	19	MER
		21	738	20.57	19	24.87	155	28.85	10.46	1.6	1.4	24	1	55	.10	5	.5	1.2	23	UKF
		21	836	50.09	19	21.94	155	6.87	7.78	1.9	1.7	24	0	75	.09	5	.5	.9	22	UER
		21	839	36.66	19	20.84	155	6.25	6.07	1.6	1.1	23	0	99	.10	6	.6	1.7	19	UER
		21	11 8	2.74	19	19.89	155	11.18	7.16	2.0	1.8	25	0	89	.11	5	.5	.9	23	UER
		21	1347	53.67	19	22.34	155	4.50	10.96	2.5	2.4	32	1	86	.09	4	.6	.4	28	MER
		21	1542	14.07	19	19.92	155	8.27	8.37	2.1	2.2	27	0	84	.07	5	.5	.7	27	UER
		21	2046	59.79	20	5.99	155	50.44	16.22	4.5	4.5	37	1	144	.11	46	.7	17.6	32	KOH F*
		21	2058	14.91	20	8.13	155	50.70	10.72		1.8	15	0	307	.09	50	10.4	3.5	14	KOH
		21	21 7	10.84	19	59.77	155	47.20	9.94		1.8	19	0	169	.12	15	1.3	1.9	19	KOH
		21	2137	15.79	19	59.71	155	47.04	9.83		2.0	27	0	167	.11	15	1.1	1.5	27	KOH
		21	2151	34.42	20	.59	155	46.29	11.29		2.1	26	1	162	.10	13	.7	.9	25	KOH
		21	2218	43.67	20	.53	155	46.62	11.76		1.9	22	1	164	.10	13	.9	1.0	20	KOH
		21	2220	37.43	20	1.02	155	45.48	11.89	2.1	2.1	21	1	169	.08	13	1.2	1.4	19	KOH
		21	2250	30.24	19	10.31	155	28.81	33.58		1.5	26	0	92	.06	2	.8	2.1	26	LSW
		22	122	51.18	19	12.28	155	20.41	46.72		1.8	26	0	169	.09	15	1.1	2.7	24	HLP
		22	232	39.12	19	21.87	155	6.62	5.62	1.3	1.1	24	0	77	.10	6	.5	1.5	21	UER
		22	3 2	55.28	19	23.61	155	2.11	7.20	1.6	1.4	15	0	128	.11	4	.6	.9	15	MER
		22	526	43.72	19	21.37	155	11.23	7.62	2.1	2.1	32	0	64	.14	3	.5	.8	27	UER
		22	748	2.67	19	43.80	154	48.47	35.09	2.1	2.0	24	1	274	.12	23	3.8	3.2	21	HIL
		22	953	2.42	19	22.60	155	3.11	8.63	2.2	2.1	25	1	118	.09	4	.7	.5	20	MER
		22	1018	57.68	19	20.55	155	4.11	5.75	2.3	2.2	19	0	110	.09	2	.6	1.0	19	MER
		22	1226	29.05	19	21.03	155	10.49	7.67		1.3	20	0	88	.08	2	.5	1.0	17	UER
		22	1555	22.66	19	20.28	155	13.41	5.66	1.8	1.7	17	1	64	.12	4	.6	1.7	14	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAR	22	1659	48.45	19	24.27	155	27.19	10.99	2.1	1.8	22	0	50	.11	3	.5	1.4	18	UKF
		22	2311	53.93	19	59.79	155	46.00	8.59		1.9	18	0	176	.05	15	1.1	1.3	18	KOH
		23	058	43.17	19	21.70	155	4.09	7.92	1.6	1.8	18	0	92	.11	4	.7	.9	17	MER
		23	317	45.72	19	20.09	155	11.04	7.50	1.8	1.6	27	1	84	.10	4	.4	.7	26	UER
		23	549	42.57	19	25.40	155	14.35	1.99	1.0	.8	6	0	218	.01	1	1.0	.5	6	GLN
		23	629	9.49	19	21.68	155	18.07	30.06	2.5	2.7	36	0	31	.09	3	.6	1.1	32	DEP
		23	7 6	.87	19	20.42	155	12.74	9.42	2.4	2.8	32	1	68	.09	4	.4	.5	28	UER
		23	11 5	50.49	19	21.87	155	4.38	7.57	2.0	1.6	24	1	87	.11	4	.6	.8	19	MER
		23	1528	47.66	19	19.36	155	11.35	6.81	1.8	1.4	21	1	99	.10	6	.5	1.3	19	UER
		23	1952	42.99	19	22.53	155	4.36	8.41	2.4	2.6	30	1	88	.11	3	.6	.5	24	MER
		23	2136	30.93	19	20.73	155	7.50	9.08	2.7	3.1	31	1	88	.07	5	.5	.5	29	UER
		23	2258	13.94	19	21.92	155	10.40	13.07	2.5	2.8	32	1	58	.06	1	.5	.3	30	UER
		24	1 6	40.12	19	21.26	155	3.35	7.46	1.9	1.9	25	0	113	.13	3	.7	.6	20	MER
		24	118	19.12	19	21.48	155	4.24	7.05	1.9	1.2	23	1	86	.09	4	.5	.5	16	MER
		24	1021	9.66	19	21.12	155	6.58	6.97	2.1	1.3	25	1	91	.12	4	.5	1.0	21	UER
		24	1058	49.63	19	21.05	155	7.09	7.87	2.3	2.6	29	1	87	.09	4	.5	.9	24	UER
		24	13 6	29.37	19	22.25	155	27.68	8.30	1.8	1.7	27	0	65	.13	1	.5	.9	21	UKF
		24	15 8	20.55	19	30.94	155	16.19	25.51	2.0	1.2	30	2	159	.07	11	.8	1.1	28	GLN
		24	1616	24.18	19	18.95	155	15.48	6.34	1.7	1.2	23	0	118	.12	4	.5	1.1	22	KOA
		24	1650	46.73	19	20.08	155	6.29	9.00	2.4	2.7	29	1	119	.09	5	.6	.5	25	UER
		24	1825	1.33	19	20.29	155	8.47	7.28	1.4	1.1	28	0	76	.11	4	.5	1.0	25	UER
		24	2030	39.26	19	20.95	155	10.00	7.83		1.2	24	0	69	.09	2	.5	.9	19	UER
		24	2239	58.45	19	20.42	155	12.76	8.29	1.8	2.1	28	0	68	.12	4	.5	.7	26	UER
		25	335	16.01	19	20.01	155	10.25	5.89	1.3	1.1	25	0	86	.10	4	.5	1.0	18	UER
		25	439	14.47	19	10.32	155	28.75	32.65		1.4	25	1	158	.06	17	.9	2.0	22	LSW
		25	650	17.87	19	21.25	155	7.88	9.99	3.1	3.6	35	1	77	.08	4	.5	.3	32	UER
		25	1018	52.05	19	23.15	155	3.10	7.52	2.0	1.7	24	0	113	.13	3	.6	.8	23	MER
		25	1021	30.10	19	22.83	155	3.10	7.66	1.9	1.7	22	0	117	.13	4	.5	.9	22	MER
		25	1453	8.26	19	20.10	155	7.99	6.96		1.3	24	0	87	.09	5	.5	1.1	24	UER
		25	1748	51.31	19	2.38	155	6.37	42.56		1.6	26	0	264	.07	28	3.6	2.1	25	PPL
		25	1933	48.48	19	20.66	155	2.47	7.58	2.3	2.6	25	0	165	.11	2	.7	.8	23	MER
		25	21 8	59.11	19	20.71	155	11.53	6.83		1.2	23	0	73	.09	4	.5	.8	21	UER
		26	617	37.90	19	19.96	155	6.97	7.01	1.6	1.5	20	0	110	.08	5	.6	1.2	16	UER
		26	711	8.78	19	20.84	155	2.46	5.90	2.0	1.6	26	0	160	.13	2	.6	1.1	25	MER
		26	928	47.77	19	18.15	155	12.95	6.07		1.3	18	0	105	.05	2	.6	1.3	14	POL
		26	1058	20.20	19	23.88	155	16.02	2.91	1.8	2.0	16	1	78	.09	3	.4	.5	13	SPC
		26	1341	25.47	19	20.80	155	8.48	7.09	3.2	3.9	28	1	72	.11	3	.5	.9	26	UER F
		26	1349	19.34	19	20.54	155	8.36	4.14	2.1	1.6	19	0	110	.15	4	.7	1.6	15	UER
		26	14 8	46.16	19	20.50	155	8.57	4.45		.9	8	0	128	.04	4	.6	1.6	7	UER
		26	14 9	8.33	19	20.38	155	8.54	6.52		1.0	6	0	130	.05	4	.8	2.0	6	UER
		26	2212	44.87	19	18.86	155	13.48	5.07	1.3	1.2	19	0	81	.11	3	.6	1.8	18	POL
		27	214	39.82	19	21.70	154	59.51	5.15	1.9	1.6	17	0	204	.13	7	1.2	3.0	12	LER
		27	330	7.15	19	20.02	155	28.88	8.45	2.1	2.0	22	1	73	.10	5	.5	1.3	18	HEA
		27	829	2.92	19	22.27	155	5.22	9.03	2.1	1.7	18	1	116	.09	2	.7	1.0	17	MER
		27	1537	36.59	19	21.55	155	15.31	9.31	2.0	1.8	19	0	76	.08	2	.5	.8	16	KOA
		27	1610	45.15	19	22.01	155	1.60	9.25	2.0	1.6	19	0	165	.08	5	.8	1.2	18	MER
		27	1718	31.56	19	19.11	155	11.59	7.25	1.8	1.6	19	0	104	.11	5	.5	.9	14	UER
		27	19 0	2.04	19	28.14	155	33.92	22.93	2.4	2.8	10	0	103	.09	15	.8	2.8	9	MOK L

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	MAR	27	20 2	19.64	19	21.20	155	2.46	6.24	1.6	1.3	16	0	153	.12	3	.8	1.5	15	MER	
		27	20 5	2.96	19	21.06	155	2.43	7.36	1.8	1.4	19	0	163	.13	2	1.0	1.0	17	MER	
		27	20 5	47.40	19	21.06	155	2.62	6.89	1.6	.9	13	0	153	.09	2	.9	1.5	12	MER	
		27	2130	9.80	20	5.42	155	50.08	12.31	4.9	4.6	36	0	285	.09	45	3.2	5.9	32	KOH	F
		27	2134	44.92	20	3.82	155	48.83	10.34	3.1	3.4	30	1	281	.10	49	3.5	1.4	25	KOH	
		27	2136	23.96	19	59.22	155	48.31	7.68	2.6	2.3	27	1	176	.09	16	.8	.9	20	KOH	
		27	2257	58.66	19	19.57	155	6.87	7.81	2.0	2.1	25	1	121	.09	5	.6	1.1	20	UER	
		28	3 4	3.10	19	21.60	155	4.85	8.90	2.3	2.4	25	1	83	.09	4	.7	.5	22	MER	
		28	429	33.21	19	59.75	156	9.97	11.40		1.8	20	1	316	.15	62	11.6	17.7	16	DIS	*
		28	448	54.33	19	22.10	155	4.80	8.62	2.3	2.3	22	1	79	.07	3	.5	.6	20	MER	
		28	553	26.00	19	20.64	155	6.11	7.86	2.2	1.8	25	0	105	.10	4	.6	.7	23	UER	
		28	554	50.56	19	21.38	155	4.71	9.13	3.0	3.0	32	1	87	.08	4	.6	.4	23	MER	
		28	922	37.55	19	34.10	155	17.26	13.11		1.0	9	1	251	.06	13	2.0	2.8	8	NER	
		28	1320	2.15	19	19.56	155	7.78	7.90	1.8	1.8	24	0	100	.10	4	.7	.8	17	UER	
		28	1455	53.52	19	18.82	155	17.74	35.67	2.5	2.3	31	0	112	.08	2	.7	1.4	23	DEP	
		28	1553	56.89	19	10.18	155	28.90	34.00	2.7	2.6	30	0	100	.06	2	.8	1.8	22	LSW	
		28	17 8	7.82	19	21.68	155	6.51	6.39	1.9	1.6	23	1	81	.12	3	.6	1.2	21	UER	
		28	1739	26.54	19	20.77	155	1.66	7.95	2.1	1.8	16	0	193	.09	3	.9	.8	14	MER	
		28	1832	50.11	19	20.35	155	9.87	7.85		1.3	20	0	96	.09	3	.6	1.0	18	UER	
		28	2247	49.56	19	20.52	155	12.96	7.85	1.5	1.4	14	0	65	.10	4	.7	1.2	12	UER	
		28	23 3	31.21	19	12.08	155	41.70	4.02	2.4	1.6	16	0	191	.31	10	2.0	46.9	12	HEA	*
		29	027	28.47	19	21.03	155	6.93	8.60	2.5	2.6	28	1	89	.07	4	.4	.6	24	UER	
		29	056	2.32	20	8.61	155	51.49	13.14	3.1	3.1	34	1	294	.12	51	3.6	6.3	28	KOH	
		29	335	5.25	19	26.85	155	15.17	26.02		.5	16	1	126	.08	4	.9	1.9	13	DEP	
		29	616	17.86	20	1.93	155	48.14	8.91	1.8	1.5	22	0	283	.10	46	5.0	1.7	18	KOH	
		29	1117	11.69	19	24.36	155	26.39	10.21	2.5	2.5	35	1	42	.13	4	.4	.7	28	UKF	
		29	1215	55.10	20	.71	155	46.40	11.43	1.9	1.6	28	0	167	.10	13	.8	.9	27	KOH	
		29	1224	36.26	19	21.66	155	6.89	7.42	1.8	1.6	26	0	80	.13	3	.5	1.0	21	UER	
		29	1324	46.69	18	47.67	155	17.68	12.93	2.7	3.0	25	0	276	.06	44	3.5	23.7	21	PPL	*
		29	1858	8.00	19	11.24	155	9.82	44.31		1.6	30	1	206	.08	12	1.2	2.0	30	POL	
		29	23 6	44.78	20	48.35	158	41.18	.07	5.5	5.7	37	1	285	.18	98	13.2	2.3	34	DIS	*
		30	054	11.22	19	29.01	154	48.07	12.72	1.6	1.2	21	2	283	.10	13	2.2	.6	16	LER	
		30	235	5.09	19	20.59	155	10.63	7.62	2.1	2.1	26	1	76	.13	3	.5	.8	23	UER	
		30	314	13.36	19	9.84	156	8.27	12.37	1.5	1.3	24	0	280	.11	43	4.4	3.5	21	DIS	
		30	1154	8.81	19	20.01	155	6.72	6.98		1.1	19	1	113	.12	5	.7	1.5	18	UER	
		30	1238	55.95	20	1.89	155	47.56	10.31	2.6	2.6	20	0	306	.08	57	8.5	29.6	13	KOH	F*
		30	1256	21.12	20	3.63	155	49.97	21.79	3.1	3.3	33	1	208	.10	9	3.1	4.6	23	KOH	
		30	1912	29.87	20	.21	155	47.14	9.01		2.4	24	0	168	.11	14	1.1	1.6	22	KOH	
		31	020	46.22	19	19.52	155	10.27	8.24		1.1	17	0	97	.04	5	.6	1.2	14	UER	
		31	638	31.68	19	22.35	155	1.50	8.97	2.7	2.8	27	0	161	.09	5	.8	.4	25	MER	
		31	1018	12.32	19	21.84	155	12.79	2.69	1.4	1.1	11	0	64	.06	2	.5	.6	7	UER	
		31	1239	25.95	19	26.76	155	36.86	16.95	2.3	1.4	20	0	83	.04	1	.6	.9	19	MOK	
		31	1257	43.53	19	22.43	155	14.76	13.35	1.5	1.1	21	0	73	.09	2	.7	.4	16	INT	
		31	1821	19.72	19	21.44	155	4.77	6.77		1.2	20	0	123	.11	4	.6	1.1	18	MER	
		31	1912	17.72	19	23.64	155	2.05	9.24	1.9	1.6	27	0	129	.13	4	.7	.6	25	MER	
		31	2337	56.38	19	24.74	155	26.35	8.98	1.8	1.8	28	0	51	.09	5	.4	.9	25	UKF	
	APR	1	236	34.06	19	20.47	155	3.59	6.67	1.4	1.0	20	0	102	.12	2	.7	1.0	17	MER	
		1	3 7	58.84	19	23.21	155	3.39	8.50	1.9	1.3	25	1	106	.10	3	.6	.6	21	MER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	APR	1	310	22.06	19	21.84	155	6.55	8.59	1.8	1.1	21	0	78	.11	2	.6	.8	19	UER	
		1	326	42.90	19	21.86	155	6.95	7.92	2.0	1.6	27	0	75	.11	2	.5	.7	19	UER	
		1	7 2	41.97	19	18.03	155	15.69	8.67	2.4	2.2	30	0	119	.10	4	.6	.6	25	KOA	
		1	1422	16.62	19	20.98	155	6.23	7.38	2.7	2.6	28	0	97	.11	4	.5	.8	27	UER	
		1	1536	18.49	19	20.86	155	6.19	6.74	1.9	1.3	24	1	99	.11	4	.6	.9	23	UER	
		1	1948	44.15	19	26.57	155	24.85	6.78	2.3	2.4	25	0	54	.13	7	.4	1.7	24	UKF	
		1	2033	28.52	19	24.88	154	59.94	7.10	1.9	1.0	16	0	132	.11	2	.8	1.1	15	LER	
		2	3 3	53.09	19	8.75	155	25.60	36.26	2.4	2.0	10	0	180	.07	4	2.2	2.9	8	LSW	L
		2	312	17.21	19	20.72	155	2.70	6.93	2.4	2.6	28	1	150	.11	2	.7	.6	26	MER	
		2	352	39.97	19	20.08	155	10.57	8.32	1.7	1.3	20	0	85	.11	4	.6	1.0	19	UER	
		2	5 2	24.24	19	20.54	155	10.55	7.44	1.7	.9	20	1	84	.13	3	.6	1.3	18	UER	
		2	530	23.77	19	20.22	155	8.72	7.64	1.8	1.3	24	0	72	.09	4	.5	.8	24	UER	
		2	741	7.41	19	32.32	155	52.35	6.64	2.6	1.6	14	0	151	.12	7	.8	1.1	13	KON	
		2	1628	30.87	19	19.86	155	8.17	7.84	1.8	1.9	27	0	86	.09	5	.5	.8	18	UER	
		2	1633	6.12	19	20.25	155	3.70	6.91	2.3	2.3	25	1	120	.12	1	.7	.8	20	MER	
		2	1744	.88	19	20.53	155	6.65	8.72	2.4	2.4	30	1	103	.10	5	.5	.6	27	UER	
		2	1830	59.92	19	14.14	155	30.08	32.96	2.8	2.8	36	1	74	.06	9	.6	1.3	31	LSW	
		2	1850	20.77	19	21.07	155	2.31	7.71	2.3	2.3	27	1	162	.11	2	.8	.5	23	MER	
		2	1923	24.55	19	22.13	154	59.91	6.17	2.6	3.0	31	0	191	.11	6	.9	.6	30	LER	F
		2	1927	5.55	19	20.93	155	9.96	8.38	1.5	1.3	24	0	69	.06	2	.4	.6	21	UER	
		2	1950	31.89	19	22.08	155	2.72	8.86	2.0	1.8	23	0	134	.13	4	.9	.5	21	MER	
		2	2350	42.60	19	18.70	155	12.94	8.62	1.6	1.2	21	0	132	.10	7	.6	.8	17	POL	
		3	4 8	11.29	19	21.08	155	6.12	7.84	2.4	2.4	32	1	94	.10	4	.5	.6	30	UER	
		3	1327	57.48	19	24.10	155	24.03	8.73	2.6	2.6	36	0	35	.12	7	.4	.8	32	UKF	
		3	1853	.36	19	20.45	155	3.87	7.17	1.6	1.2	24	0	111	.12	2	.6	.9	15	MER	
		4	047	46.70	19	24.15	155	29.51	8.05	2.2	1.9	30	1	49	.10	5	.4	1.1	26	UKF	
		4	710	52.88	19	18.90	155	13.42	7.94	1.5	1.8	28	1	78	.12	3	.5	.6	18	POL	
		4	816	45.57	19	25.63	155	24.36	9.68	2.1	2.0	25	0	56	.11	8	.4	.9	24	UKF	
		4	1057	50.58	19	20.42	155	9.67	8.36		1.6	24	1	75	.07	3	.5	1.0	16	UER	
		4	1115	4.52	19	21.97	155	4.69	7.00	2.1	1.7	14	0	81	.08	3	.6	1.0	12	MER	
		4	1144	43.97	19	20.40	155	8.84	7.63		2.1	22	0	70	.07	4	.5	1.1	18	UER	
		4	1628	25.69	20	5.27	155	49.49	11.57		2.1	21	2	284	.10	45	1.6	1.3	15	KOH	
		4	1653	7.07	19	19.23	155	12.03	5.51		1.2	17	0	97	.08	5	.5	1.9	13	UER	
		4	1813	2.95	19	17.49	155	20.86	6.19		1.7	19	2	127	.08	4	.5	1.4	14	SWR	
		4	1916	14.35	19	19.59	155	8.80	7.63		1.7	19	0	80	.07	4	.5	.9	16	UER	
		4	1958	49.08	19	21.55	155	15.15	7.86		1.6	20	1	63	.12	2	.6	.8	15	KOA	
		4	2014	58.71	19	20.94	155	1.33	6.87	3.3	3.6	32	0	194	.09	3	.7	.5	28	MER	
		4	22 9	27.61	19	6.13	155	30.77	36.32		2.4	32	3	175	.07	8	.7	1.7	27	LSW	
		5	1 4	29.24	19	20.69	155	2.57	7.51		2.3	19	1	160	.07	2	.5	.9	12	MER	
		5	455	22.18	19	20.57	155	17.15	30.74		1.0	17	1	98	.04	1	1.1	2.6	16	DEP	
		5	527	59.44	19	20.73	155	11.42	8.82	2.3	1.9	28	4	73	.09	4	.5	.7	24	UER	
		5	651	11.85	19	22.39	155	4.27	7.08	2.0	1.5	17	1	91	.12	4	.6	1.2	14	MER	
		5	840	56.04	19	21.43	155	5.36	7.00		1.1	18	0	89	.10	3	.6	.9	17	MER	
		5	1854	58.19	19	19.64	155	10.32	7.55	2.0	2.1	24	0	94	.09	5	.5	.8	23	UER	
		6	4 1	1.15	20	.76	155	46.22	10.87	2.4	1.9	23	1	161	.08	13	.7	.9	22	KOH	
		6	852	58.90	19	21.85	155	4.96	7.09	1.2	1.3	14	0	78	.12	3	.7	1.5	14	MER	
		6	1023	34.23	19	20.16	155	3.44	7.44	1.6	1.3	15	0	121	.10	1	1.1	1.4	15	MER	
		6	1630	24.18	19	24.30	155	26.45	10.17	1.2	1.3	13	0	69	.08	4	.6	1.7	11	UKF	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	APR	6	1653	9.96	19	28.46	155	41.55	11.08	1.7	1.3	13	0	136	.11	9	.7	1.4	12	MOK
		6	17 8	31.07	19	24.67	155	25.91	9.76	2.5	2.7	31	0	50	.13	5	.5	1.0	28	UKF
		6	2139	16.99	19	17.65	155	15.32	8.77	1.0	1.3	13	0	168	.05	3	1.0	.8	11	KOA
		7	241	8.52	19	25.30	155	15.42	1.81	1.2	1.5	8	1	178	.09	2	.8	.6	7	SPC F
		7	452	51.00	19	21.72	155	3.91	6.81	2.3	2.7	28	1	98	.12	4	.5	.8	27	MER
		7	5 2	33.27	19	21.43	155	3.73	7.59	1.8	2.0	26	0	101	.11	3	.5	.7	26	MER
		7	652	51.46	19	23.80	155	28.52	9.49	2.0	2.1	23	0	50	.11	3	.5	1.3	23	UKF
		7	656	2.10	19	23.79	155	28.59	9.33		1.6	15	0	107	.07	3	.6	1.4	12	UKF
		7	836	16.05	19	19.86	155	7.13	7.24	.9	1.0	15	0	109	.07	5	.5	1.0	12	UER
		7	837	49.08	19	23.91	155	17.37	.11	.9	1.5	9	1	80	.10	2	.4	.7	8	SPC
		7	911	23.73	19	22.23	155	4.68	8.05	1.8	1.7	16	0	82	.10	3	.6	1.0	13	MER
		7	956	4.83	19	20.60	155	12.92	6.54	2.7	2.4	11	0	67	.06	4	.6	1.7	8	UER
		7	1133	24.14	19	19.47	155	11.21	7.14	1.9	1.8	19	0	98	.10	5	.6	1.3	17	UER
		7	1446	9.44	19	18.40	155	15.52	8.59	1.2	1.1	11	0	138	.05	4	.7	1.7	8	KOA
		7	1459	17.25	19	23.94	155	28.85	9.50	2.5	2.7	30	0	81	.11	3	.5	.9	26	UKF
		7	1517	27.18	19	19.45	155	7.93	7.03	1.0	1.1	15	0	97	.06	4	.6	1.4	13	UER
		7	1640	.72	19	21.82	155	12.60	2.80		1.2	8	0	113	.03	2	.6	.7	6	UER
		7	1947	2.11	19	21.14	155	4.18	8.29	1.3	1.4	13	0	88	.10	3	.7	1.3	13	MER
		7	1952	49.52	19	21.26	155	4.23	7.90	1.8	1.8	19	1	86	.09	3	.5	1.0	16	MER
		7	2123	6.61	19	44.64	155	.95	39.85	2.0	2.1	29	2	219	.12	5	1.4	2.4	27	HIL
		8	1223	2.15	19	22.78	155	6.61	1.62		1.6	9	0	110	.08	1	.6	.3	8	UER
		8	1357	33.01	20	.77	155	46.76	11.06		1.9	20	1	166	.09	13	.8	.9	19	KOH
		8	1459	11.95	19	22.91	155	5.61	1.30	2.2	2.5	16	0	87	.17	1	.5	.4	14	MER
		8	18 8	57.88	19	26.34	155	27.23	9.78	3.1	2.7	34	2	47	.11	7	.4	.8	29	UKF
		9	158	14.10	19	22.19	155	4.97	8.12	2.3	1.7	29	0	76	.10	3	.5	.6	25	MER
		9	217	52.53	19	20.73	155	10.60	7.78	2.1	2.1	29	2	74	.11	3	.4	.7	23	UER
		9	254	56.21	19	25.35	155	31.96	2.57	2.3	1.8	26	0	72	.18	7	.5	4.0	22	MOK
		9	11 7	53.20	19	19.99	155	13.37	9.63		1.0	14	0	120	.04	5	.6	1.1	13	UER
		9	1234	25.19	19	17.44	155	20.67	7.45		.7	13	0	168	.06	4	.8	1.4	11	SWR
		10	9 1	9.75	19	23.82	155	25.34	10.43	1.7	1.4	18	0	81	.07	5	.5	1.4	16	UKF
		10	1347	12.88	19	25.83	155	24.03	9.40	1.4	1.4	15	0	83	.06	7	.6	1.6	14	UKF
		10	14 5	27.67	19	28.88	155	27.97	8.28	1.9	1.4	18	3	82	.08	6	.5	1.3	17	UKF
		10	2148	59.90	19	20.25	155	13.25	5.57	1.0	1.1	22	0	64	.11	4	.5	1.2	19	UER
		10	2251	13.30	19	24.36	155	23.93	9.85	.9	1.0	17	0	79	.06	7	.5	1.4	13	UKF
		11	7 6	22.71	19	19.04	155	13.42	7.08	2.0	2.1	23	0	76	.14	4	.6	1.1	19	UER
		11	730	17.39	20	.30	155	45.92	8.97	1.5	1.6	13	0	161	.08	14	1.5	1.5	12	KOH
		11	1011	45.13	19	20.46	155	5.96	8.32	2.2	2.1	27	0	112	.10	5	.5	.7	24	MER
		11	1519	12.89	19	20.59	155	5.98	7.68	2.1	1.6	23	0	107	.08	5	.5	.9	20	MER
		11	2239	28.05	19	19.75	155	11.09	9.25	2.9	2.8	35	1	92	.11	5	.4	.5	32	UER
		12	231	35.46	19	20.00	155	5.97	8.58	2.1	1.7	29	0	125	.10	5	.6	.5	25	MER
		12	615	42.51	19	22.45	155	2.34	8.18	2.3	2.1	28	0	141	.11	5	.7	.5	28	MER
		12	839	46.44	19	20.15	155	13.29	9.44	3.0	3.1	33	1	64	.08	5	.4	.6	28	UER
		12	1355	25.97	19	22.47	155	4.66	7.50	1.6	1.0	18	0	137	.11	4	.7	1.6	11	MER
		12	1457	40.85	19	23.46	155	29.71	8.66	1.9	1.8	26	2	65	.08	4	.4	1.1	21	UKF
		12	1519	18.48	19	18.49	155	13.05	6.91	1.9	1.8	25	0	92	.10	3	.5	1.0	20	POL
		12	1543	25.44	19	21.46	155	1.74	5.76	1.6	1.2	14	0	172	.12	4	1.0	1.8	9	MER
		12	2318	13.50	19	19.90	155	11.58	8.61	1.5	1.0	16	0	90	.05	5	.6	1.4	14	UER
		13	012	42.51	19	17.38	155	.47	37.23	2.2	1.9	31	3	236	.06	6	1.1	1.1	27	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	APR	13	039	29.95	19	20.38	155	13.15	9.23	2.0	1.9	23	1	64	.08	4	.5	.7	19	UER
		13	422	4.79	19	20.50	155	13.19	6.11	1.2	1.0	14	1	63	.08	4	.5	1.5	11	UER
		13	641	.67	19	31.86	155	27.66	4.12	1.7	1.5	13	2	116	.07	0	.6	.6	6	NER
		13	819	2.86	19	15.34	155	3.17	40.97	1.5	1.1	17	2	258	.06	15	2.8	1.9	17	DIS
		13	1442	19.73	19	21.01	155	5.94	8.43	2.7	2.9	31	0	97	.08	4	.5	.5	28	MER
		13	1710	24.75	19	23.70	155	15.49	3.06	1.3	1.3	13	1	97	.06	3	.4	.5	12	SPC
		14	151	59.51	19	23.51	155	15.44	2.42	.9	1.0	13	1	88	.08	2	.4	.4	9	SPC
		14	330	36.46	19	23.90	155	15.73	2.51	.9	.8	12	2	109	.25	3	.6	.8	8	SPC
		14	331	12.71	19	23.97	155	15.76	5.37	3.4	3.8	36	0	44	.13	3	.4	.7	33	SPC F
		14	5 4	42.46	19	19.27	155	11.13	7.70	1.7	1.4	28	0	103	.07	6	.4	.6	26	UER
		14	526	49.29	19	23.42	155	15.03	2.77	1.4	1.2	13	1	78	.10	2	.4	.5	9	SPC
		14	528	22.12	19	9.46	155	26.35	29.47	2.4	1.9	30	1	173	.05	3	.7	1.5	28	LSW
		14	549	55.00	19	22.71	155	24.24	10.23	2.1	2.1	33	0	35	.11	5	.4	.6	26	UKF
		14	1137	48.51	19	23.68	155	15.26	3.07	1.7	1.4	13	0	92	.04	2	.3	.4	10	SPC
		14	1441	9.30	19	20.47	155	11.50	8.31	1.7	1.5	25	0	77	.10	4	.5	.8	23	UER
		14	1524	.29	19	20.94	155	13.31	9.54	2.8	3.0	33	1	58	.09	3	.4	.5	29	UER
		14	1624	50.37	19	21.09	155	4.54	8.46	2.5	2.6	29	1	94	.08	4	.6	.4	25	MER
		14	1919	48.12	19	23.04	155	14.91	2.92	1.8	1.4	13	0	64	.21	2	.6	.7	9	GLN
		14	2152	8.72	19	23.72	155	15.43	3.02	1.1	1.2	12	0	97	.07	3	.4	.5	8	SPC
		14	22 4	.03	19	28.85	155	15.88	25.48	2.0	1.5	29	0	55	.08	8	.6	1.6	28	DEP
		15	115	18.55	19	23.70	155	15.28	3.41	2.6	3.0	30	1	68	.09	2	.3	.5	20	SPC
		15	4 1	1.38	19	56.20	155	26.08	14.68	2.4	1.6	28	3	182	.13	37	.9	3.7	26	KKU
		15	1228	21.47	19	19.71	155	9.25	5.57		.8	19	0	85	.10	4	.6	1.5	17	UER
		15	1354	27.28	19	51.69	155	12.30	29.80		.8	14	0	252	.07	15	5.7	9.4	10	KKU
		15	1411	24.22	19	20.27	155	7.26	6.86	1.7	1.2	17	0	99	.11	5	.6	1.0	17	UER
		15	1722	8.46	19	30.00	155	53.15	6.30		2.0	21	0	120	.19	4	.8	.9	19	KON
		15	1744	34.16	19	21.02	154	59.86	5.37		1.1	13	0	213	.20	6	2.0	3.3	11	LER
		16	018	56.21	19	21.87	155	12.85	3.05		1.2	11	0	87	.03	1	.5	.5	11	UER
		16	342	13.07	19	23.28	155	1.76	8.21		1.0	19	0	142	.15	5	1.1	.8	16	MER
		16	630	4.02	19	21.78	155	4.46	7.39	1.6	1.1	15	0	86	.13	4	.7	1.4	14	MER
		16	9 5	58.05	19	19.65	155	11.20	8.24		.9	18	0	94	.09	5	.7	1.2	18	UER
		16	1046	53.18	19	22.16	155	.40	7.69	2.1	1.1	21	0	185	.13	6	1.1	.7	21	LER
		16	1346	30.96	19	21.05	155	12.87	8.19	1.6	1.4	21	1	73	.10	3	.5	.9	19	UER
		16	19 9	17.40	19	22.31	155	4.39	7.34	2.0	1.5	20	0	92	.09	4	.6	.5	18	MER
		16	2029	53.87	19	15.34	155	24.17	47.44	3.6	3.8	33	0	129	.09	9	.9	2.2	31	LSW F
		16	2050	10.34	19	21.57	155	1.70	7.10	1.6	1.2	26	0	170	.11	4	.8	.5	22	MER
		16	21 1	15.26	19	20.35	155	8.79	6.41		.8	17	0	120	.08	4	.6	1.3	17	UER
		16	2247	46.04	19	22.52	155	1.97	8.15	2.1	1.6	25	0	149	.12	5	.8	.5	23	MER
		16	2254	.69	19	19.83	155	11.61	8.94	2.7	2.6	30	1	87	.11	5	.5	.6	28	UER
		17	047	3.28	19	19.48	155	11.69	7.94	1.6	1.4	22	0	94	.10	6	.6	.9	20	UER
		17	343	50.90	19	21.18	155	4.61	6.58	1.3	.8	23	0	92	.13	4	.6	1.1	21	MER
		17	617	26.72	19	22.79	155	2.70	7.49	1.9	1.3	23	1	127	.13	4	.6	.6	21	MER
		17	7 1	8.03	19	28.03	154	56.71	4.85	2.0	1.6	22	0	102	.16	3	.9	1.7	20	LER
		17	8 2	3.68	19	18.69	155	13.33	6.46	1.7	1.4	25	1	81	.08	3	.5	.8	23	POL
		17	1135	34.85	19	27.78	155	50.59	6.39	1.9	1.7	22	1	117	.16	8	.7	1.1	18	KON
		17	1141	54.04	19	21.07	155	10.30	7.82	1.6	1.5	25	0	68	.10	2	.5	.8	23	UER
		17	1250	32.22	19	20.51	155	12.93	7.12	1.7	1.4	22	0	66	.14	4	.6	.9	17	UER
		17	1714	50.97	19	19.72	155	10.48	7.90	1.9	2.1	27	1	93	.11	4	.5	.9	23	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	APR	17	2047	47.70	19	19.64	155	10.40	8.34	1.9	1.9	26	1	94	.10	5	.6	.7	21	UER
		17	2246	4.87	19	19.55	155	11.02	7.15	1.9	1.3	27	0	96	.12	5	.5	.7	26	UER
		17	23 5	51.94	19	18.73	155	14.60	7.40	1.4	1.2	24	0	112	.13	4	.6	.9	21	POL
		18	055	59.54	19	10.13	155	28.98	33.11	1.8	1.6	26	1	103	.05	2	.8	2.0	23	LSW
		18	338	27.83	19	19.56	155	8.96	7.69	1.6	1.8	27	0	84	.09	4	.5	.7	19	UER
		18	427	15.62	19	25.83	155	27.80	8.84	1.9	1.2	27	1	42	.11	6	.4	.9	16	UKF
		18	446	14.39	19	21.19	155	2.31	7.51	2.2	2.2	30	0	159	.11	3	.8	.5	26	MER
		18	1049	36.87	19	19.19	155	8.85	6.16		1.0	19	0	116	.08	4	.6	1.5	18	UER
		18	1916	53.21	19	20.29	155	12.58	7.40	1.9	1.1	20	0	72	.12	4	.6	.9	17	UER
		18	21 3	15.35	19	23.47	155	2.26	9.14	1.9	1.4	21	0	133	.10	4	.7	.6	21	MER
		18	2357	3.03	19	18.69	155	13.59	8.93	1.9	1.7	23	0	87	.09	3	.6	.6	19	POL
		19	937	10.32	19	19.58	155	9.61	7.13	1.8	1.3	24	0	92	.08	5	.4	.8	22	UER
		19	2125	24.92	19	22.68	155	3.45	8.65	2.0	.9	22	0	109	.11	4	.7	.8	22	MER
		19	2345	22.13	19	21.69	155	6.34	7.39	1.9	1.0	19	0	82	.08	2	.6	1.1	17	UER
		20	026	22.27	19	20.32	155	11.46	8.81	2.7	2.8	29	1	79	.14	4	.5	.7	25	UER
		20	1 7	6.04	19	20.51	155	6.51	9.18	2.6	2.6	29	1	105	.10	5	.6	.5	26	UER
		20	357	13.39	19	24.08	155	.67	6.08		.9	19	0	148	.17	4	.8	1.0	15	LER
		20	445	10.68	19	19.10	155	14.12	8.12	2.1	1.8	25	0	93	.09	4	.5	.6	18	UER
		20	1348	58.87	19	15.91	155	47.35	9.97	2.7	2.4	23	1	115	.08	9	.5	.7	19	KON
		20	1519	30.77	19	19.09	155	30.65	7.88	1.3	1.5	20	0	67	.11	8	.5	2.0	20	HEA
		20	1554	37.98	19	21.49	155	1.77	8.25	1.2	1.3	16	0	170	.09	4	.9	1.1	10	MER
		20	1749	21.82	19	27.24	155	27.73	9.64	1.2	1.4	15	0	67	.11	9	.6	1.7	13	UKF
		20	2033	11.47	19	18.98	155	13.39	9.45	1.9	2.1	22	0	77	.08	4	.5	.9	15	POL
		21	0 3	33.34	19	20.31	155	2.47	7.37	2.0	2.3	21	0	185	.11	1	1.0	.8	16	MER
		21	032	4.22	19	19.68	155	9.96	6.76	1.6	2.1	24	0	92	.12	4	.5	.9	21	UER
		21	149	41.91	19	23.88	155	27.42	8.60	1.0	1.3	18	0	64	.10	3	.5	1.2	15	UKF
		21	213	5.58	19	20.60	155	5.77	7.24	1.2	1.3	20	1	109	.09	5	.6	.9	13	MER
		21	756	31.67	19	21.44	155	12.74	2.31		1.2	10	0	112	.08	2	.5	.8	8	UER
		21	814	4.55	19	23.11	155	2.79	8.52	1.9	2.0	19	2	125	.13	6	.8	1.1	16	MER
		21	1214	52.33	19	20.12	155	29.04	8.23	3.0	3.2	26	0	71	.11	5	.4	1.0	26	HEA
		21	1552	46.23	19	20.79	155	7.92	8.52	2.0	2.4	22	0	81	.07	4	.5	1.0	20	UER
		21	1857	6.78	19	18.69	155	13.25	10.85	3.0	3.4	31	1	133	.08	7	.6	.4	28	POL
		21	19 8	34.77	19	18.56	155	13.31	6.62	1.2	1.3	17	0	83	.12	3	.6	1.4	15	POL
		22	0 6	38.09	19	23.41	155	1.92	3.98	1.7	1.8	14	0	139	.15	7	1.0	7.7	11	MER
		22	2 2	36.12	19	23.20	155	15.14	3.31	1.4	1.4	9	0	75	.06	2	.5	.6	9	SPC
		22	247	2.63	19	20.78	155	7.10	7.61	2.1	2.4	23	2	92	.13	5	.5	1.2	19	UER
		22	355	59.04	19	18.07	155	13.19	6.34	1.1	1.1	15	0	96	.09	2	.7	1.5	14	POL
		22	356	35.10	19	18.18	155	13.48	7.57	2.0	2.1	19	0	80	.11	2	.6	.9	14	POL
		22	523	15.90	19	20.23	155	12.06	7.84	1.4	1.2	13	0	78	.10	5	.8	1.6	13	UER
		22	622	27.10	19	10.73	155	29.17	32.94	1.8	1.4	21	2	87	.05	3	.8	1.2	17	LSW
		22	658	.85	19	18.68	155	13.15	4.51	1.0	1.0	13	0	85	.11	3	.6	1.9	12	POL
		22	1451	57.01	19	21.55	155	1.42	5.85	2.1	1.6	16	0	177	.14	4	.9	2.0	14	MER
		22	1755	.57	19	19.92	155	11.12	8.24	1.4	1.1	17	0	88	.11	5	.6	1.0	13	UER
		22	2048	45.88	20	4.31	155	49.72	21.34	2.2	2.4	23	0	210	.11	8	4.1	5.9	22	KOH
		23	0 0	35.81	19	20.95	155	10.41	8.17	2.1	1.7	19	0	122	.09	2	.6	1.0	18	UER
		23	128	33.12	19	22.86	155	5.11	6.34	1.9	1.3	12	0	204	.08	7	1.0	2.5	10	MER
		23	258	4.17	20	6.62	155	50.26	6.05	1.9	1.8	19	0	312	.09	67	11.8	59.1	18	KOH
		23	551	43.61	19	20.04	155	6.55	7.68	1.7	1.6	19	0	115	.09	6	.6	1.4	16	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	APR	23	6 4	50.04	19	18.22	155	13.47	7.61		1.3	15	0	83	.06	2	.6	1.2	15	POL
		23	17 3	49.00	19	20.00	155	7.25	6.59	2.0	1.4	24	1	104	.10	5	.5	1.4	22	UER
		23	2049	53.37	19	19.48	155	11.12	9.55	2.4	2.5	22	1	98	.08	5	.4	.6	19	UER
		23	2235	9.43	19	19.89	155	11.20	8.18	1.7	1.4	19	1	88	.08	5	.5	.8	17	UER
		24	041	54.05	19	20.88	155	11.00	8.49	2.4	2.3	23	0	72	.10	3	.5	.6	23	UER
		24	112	38.11	20	6.79	155	54.62	31.05	3.1	3.1	33	1	262	.10	14	2.5	2.8	29	KOH
		24	244	46.87	19	18.59	155	15.55	7.21	2.0	1.7	22	1	105	.10	4	.5	.9	21	KOA
		24	314	9.11	19	27.06	155	17.20	13.60	2.1	1.8	26	1	94	.07	3	.6	.5	22	INT
		24	614	3.30	19	23.18	155	26.18	10.56	1.8	1.6	19	0	107	.09	3	.6	1.3	17	UKF
		24	1121	31.98	19	22.09	155	13.41	3.15	1.3	1.3	12	0	60	.02	1	.5	.6	10	UER
		24	1428	30.40	19	22.19	155	4.88	8.54		1.1	15	0	127	.08	3	.6	1.2	12	MER
		24	1555	32.47	19	21.43	155	24.46	10.30	2.1	2.2	23	1	84	.09	3	.5	1.1	19	SWR
		24	1650	9.87	19	21.01	155	2.06	7.72	2.1	1.8	19	1	173	.11	3	.7	1.1	11	MER
		24	17 5	13.80	19	26.97	155	29.43	6.58	1.8	1.4	19	2	114	.12	9	.5	2.4	11	UKF
		24	1947	16.67	19	18.75	155	6.14	3.93	1.5	1.5	19	2	214	.20	4	1.8	2.6	9	POL
		24	2024	14.76	19	52.17	155	22.37	34.27	2.0	2.2	14	1	188	.06	4	1.5	2.1	9	KKU
		24	2028	36.36	19	18.60	155	13.19	5.70	1.0	1.0	17	0	86	.08	3	.5	1.6	13	POL
		25	051	47.25	19	17.98	155	20.30	4.84	1.1	1.9	11	0	155	.07	3	.8	1.5	10	SWR
		25	548	58.78	19	20.10	155	48.18	8.93	1.9	1.8	17	0	248	.12	14	2.6	1.1	10	KON
		25	9 5	23.10	19	23.94	155	15.62	2.81	.9	.7	5	0	112	.03	3	.5	1.1	5	SPC
		25	949	3.89	19	23.93	155	15.38	3.40	1.3	.9	7	0	110	.05	2	.6	.9	6	SPC
		25	1034	29.73	19	20.61	155	7.32	6.05		1.0	16	0	92	.13	5	.7	1.6	15	UER
		25	1120	12.89	19	23.05	155	14.81	3.29	1.1	.9	6	0	112	.04	2	.6	.9	4	GLN
		25	1135	53.86	19	23.29	155	15.03	3.07		.2	5	0	107	.01	2	.6	1.1	5	SPC
		25	1520	33.36	19	20.98	155	6.09	7.71	1.9	1.6	28	0	97	.10	4	.5	.7	26	UER
		25	1624	36.11	19	20.79	155	6.13	8.01	2.6	2.6	29	0	101	.07	4	.4	.6	26	UER
		25	18 0	8.75	19	20.77	155	3.51	6.85	2.0	1.6	19	0	102	.09	2	.9	.8	19	MER
		25	1813	13.08	19	23.91	155	15.56	3.19	1.0	.9	6	0	109	.02	3	.6	.9	6	SPC
		25	2046	32.42	19	21.08	155	3.50	5.32	1.9	1.3	23	0	105	.15	2	.6	1.3	21	MER
		26	136	47.99	19	20.73	155	10.51	8.15	1.7	1.3	21	0	84	.12	3	.5	.9	19	UER
		26	216	33.31	19	23.92	155	15.38	3.17	.9	.5	5	0	109	.03	2	.6	1.2	5	SPC
		26	658	37.83	19	23.58	155	15.20	3.24	1.8	1.6	16	1	87	.09	3	.4	.5	13	SPC
		26	719	4.95	19	19.44	155	13.99	7.11	2.1	1.8	30	1	65	.11	5	.5	.7	25	UER
		26	741	34.47	19	21.62	155	49.10	11.56	2.7	2.4	22	0	149	.11	12	.7	.5	19	KON
		26	743	.44	19	17.56	155	14.12	6.26		1.0	19	0	135	.08	2	.6	1.1	16	POL
		26	827	21.63	19	24.09	155	16.03	3.18	.8	.8	5	0	118	.01	2	.7	.9	5	SPC
		26	916	54.69	19	17.45	155	14.13	6.99		1.1	20	0	141	.07	1	.5	.7	19	POL
		26	932	18.47	19	20.92	155	2.86	6.74	2.0	1.3	19	0	137	.11	2	.8	1.1	19	MER
		26	1059	16.98	19	21.76	155	6.18	7.29	1.3	.9	19	0	80	.11	2	.6	1.1	18	UER
		26	11 2	50.15	19	19.66	155	11.94	9.16	2.4	2.6	32	2	88	.09	6	.4	.6	29	UER
		26	1330	47.50	19	19.21	155	9.66	6.73		1.3	20	0	100	.10	5	.6	1.2	19	UER
		26	1350	10.42	19	20.12	155	7.93	7.47	1.7	1.1	23	0	89	.10	5	.5	.9	23	UER
		26	1552	25.95	19	23.82	155	15.76	2.84	.9	.8	8	0	104	.08	3	.5	.7	6	SPC
		26	21 9	59.94	19	20.85	155	5.56	7.99	1.9	1.8	29	0	104	.10	4	.6	.6	27	MER
		26	2114	45.57	20	19.50	155	32.39	1.70	2.9	3.3	29	0	277	.14	33	3.6	3.0	29	DIS
		26	2129	12.60	19	23.77	155	15.67	2.85	1.2	1.1	12	0	101	.07	3	.4	.5	11	SPC
*		26	2253	.73	19	25.46	155	25.18	8.52	1.8	1.3	24	0	54	.12	7	.5	1.1	23	UKF
		27	2 0	16.07	19	20.34	155	6.63	7.30	1.7	1.4	24	0	107	.09	5	.5	.9	23	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	APR	27	454	25.11	19	25.97	155	26.23	9.50	2.8	2.6	35	0	38	.13	7	.4	.8	34	UKF	
		27	1414	29.03	19	27.40	154	54.68	5.83	1.9	1.5	17	0	202	.14	1	1.8	1.5	17	LER	
		27	1426	55.26	18	57.73	155	28.07	36.70	3.4	3.6	36	1	231	.05	21	1.0	1.7	33	DIS	
		27	17 1	40.26	19	20.81	155	9.70	7.93	2.2	1.7	28	0	70	.08	2	.4	.6	25	UER	
		28	218	18.67	19	20.00	155	11.31	8.34	1.8	1.4	26	0	86	.10	5	.5	.8	25	UER	
		28	615	52.85	19	18.33	155	15.34	10.16	2.7	2.6	29	0	136	.11	4	.7	.5	28	KOA	
		28	1217	15.19	19	14.92	155	16.65	7.51	1.8	1.4	20	0	198	.10	7	.9	1.0	18	HLP	
		28	1618	38.72	19	22.45	155	4.87	11.27	2.0	1.3	24	0	79	.07	3	.6	.6	23	MER	
		28	1843	19.98	19	22.20	155	4.18	8.02	1.6	1.3	26	0	92	.10	4	.5	.7	24	MER	
		28	2145	40.92	19	18.49	155	15.39	9.30	2.2	1.6	26	0	133	.11	4	.6	.7	25	KOA	
		28	2228	51.63	19	26.95	155	27.71	10.01	2.1	1.6	33	1	52	.11	8	.4	.8	28	UKF	
		29	157	54.27	19	23.44	155	16.92	2.56	1.3	.8	11	0	63	.06	3	.4	.6	11	SPC	
		29	227	46.06	19	23.68	155	15.71	3.04	1.6	1.5	15	1	79	.10	2	.4	.5	14	SPC	
		29	249	36.10	19	23.83	155	15.65	3.28	1.6	1.6	15	1	104	.06	3	.4	.5	14	SPC	
		29	4 4	57.56	19	20.75	155	2.36	7.76	2.0	1.5	18	1	176	.12	2	1.0	.8	17	MER	
		29	819	44.46	19	20.49	155	9.36	8.61	2.0	1.8	30	2	72	.08	3	.4	.6	22	UER	
		29	1042	11.68	19	22.92	155	26.66	10.41	2.6	2.3	35	1	55	.09	2	.3	.6	22	UKF	
		29	1047	44.69	19	21.46	155	4.39	7.55	1.6	1.2	13	0	83	.06	4	.5	1.2	9	MER	
		29	11 5	58.26	19	19.69	155	6.81	8.54	1.4	1.1	19	0	119	.06	5	.6	1.4	16	UER	
		29	14 6	22.37	19	23.56	155	16.83	2.95	.8	.8	8	0	70	.03	0	.5	.6	6	SPC	
		29	16 8	18.19	19	18.81	155	13.61	7.10	1.3	1.1	12	0	85	.05	3	.7	1.7	12	POL	
		29	18 7	9.99	19	20.49	155	11.71	8.36	1.4	1.0	13	1	83	.06	4	.7	.9	10	UER	
		29	2129	57.77	19	24.20	154	53.51	5.24	1.3	1.1	4	0	280	.02	7	7.8	12.1	4	LER	*
		29	2317	49.75	19	18.41	155	29.69	12.20	1.9	1.6	29	3	73	.09	6	.5	.6	20	HEA	
		30	014	40.44	19	10.05	155	28.91	34.22	2.3	2.1	34	3	106	.06	2	.7	1.4	29	LSW	
		30	111	23.35	19	23.03	155	14.97	3.54	1.5	1.3	10	0	82	.06	2	.5	.7	10	GLN	
		30	339	13.28	19	20.00	155	13.34	6.35	1.2	1.0	16	0	66	.09	5	.5	1.4	15	UER	
		30	5 8	58.67	19	23.72	155	19.84	11.39	1.1	.8	15	0	77	.07	0	.6	1.3	15	INT	
		30	535	36.74	19	20.08	155	11.92	8.65	1.5	1.0	17	1	80	.05	5	.5	1.3	10	UER	
		30	850	39.96	19	23.55	155	15.34	3.29	2.1	2.2	20	1	45	.07	2	.3	.4	17	SPC	
		30	1751	5.33	19	22.98	155	14.79	3.28	1.6	1.8	11	0	75	.05	2	.4	.5	9	UER	
		30	18 8	.95	19	22.72	155	14.89	2.93	1.5	1.3	11	0	73	.11	2	.5	.6	11	UER	
		30	2111	23.27	19	20.72	155	12.94	8.94	2.0	1.5	7	0	154	.02	4	1.0	2.9	5	UER	
		30	2144	15.66	19	19.64	155	11.65	8.42	2.2	1.9	30	0	91	.09	5	.5	.6	30	UER	
		30	22 3	32.53	18	42.45	155	11.13	7.00	3.0	2.5	34	0	292	.13	64	5.4	85.1	34	PPL	*
		30	2329	53.79	19	20.24	155	7.43	7.77	1.4	1.3	25	1	96	.10	5	.5	.9	23	UER	
	MAY	1	025	2.66	19	21.80	155	3.12	6.05	1.9	1.3	19	0	122	.13	4	.7	1.2	18	MER	
		1	834	24.94	19	25.62	155	25.04	4.25	1.3	1.0	16	1	74	.09	7	.4	6.4	10	UKF	
		1	10 3	1.07	19	23.54	155	27.79	7.87	1.5	1.1	22	0	48	.15	2	.6	1.5	17	UKF	
		1	1134	55.73	19	20.18	155	12.56	7.73	1.5	1.2	21	0	74	.10	5	.5	1.0	18	UER	
		1	1541	53.28	19	20.84	155	12.91	7.11	1.5	1.4	23	0	62	.14	3	.6	.9	20	UER	
		1	1656	4.08	19	20.89	155	1.52	7.10		1.2	20	1	192	.11	3	.8	.9	15	MER	
		1	1715	38.16	19	7.22	155	21.70	32.16	1.6	1.5	29	3	195	.07	21	1.1	1.4	26	LSW	
		1	1912	39.06	19	25.00	154	50.78	38.63	2.6	1.7	30	3	276	.08	9	1.7	1.3	27	LER	
		1	2129	43.89	19	19.56	155	11.53	6.36	1.1	1.0	22	0	93	.12	6	.5	.9	15	UER	
		1	2233	35.27	19	32.82	155	12.19	26.57	1.3	.8	25	3	147	.08	15	.7	1.4	17	NER	
		1	2334	41.71	19	19.91	155	3.69	5.27	1.2	1.2	23	2	149	.14	1	.6	1.1	15	MER	
		2	055	17.01	19	20.32	155	13.21	6.75	1.1	1.2	19	0	65	.12	4	.6	.9	16	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	MAY	2	731	19.56	19	31.33	155	15.61	24.44	1.2	1.0	22	4	181	.07	12	.9	1.5	19	NER	
		2	1420	41.56	19	23.17	155	14.94	3.23	2.1	2.3	20	0	47	.08	2	.4	.5	20	GLN	
		2	19 8	8.09	19	23.14	155	1.98	8.57	2.2	1.9	28	1	139	.12	5	.6	.7	26	MER	
		2	21 8	47.95	19	24.71	155	29.21	10.56	3.2	3.2	39	1	32	.10	5	.4	.5	32	UKF	
		2	2149	13.41	19	20.10	155	3.95	7.95	2.0	2.1	30	0	135	.10	2	.7	.5	26	MER	
		2	2150	40.30	19	16.72	155	13.52	9.34	2.0	2.1	29	0	159	.10	9	.7	.6	27	POL	
		2	2213	19.84	19	16.66	155	13.15	9.78	1.8	1.4	23	0	162	.09	9	.9	.7	21	POL	
		2	2223	46.48	19	21.77	155	3.32	8.65	1.6	1.3	25	0	116	.10	4	.6	.6	25	MER	
		3	0 0	32.01	19	17.23	155	13.55	9.81	2.0	1.9	28	0	153	.11	9	.6	.8	23	POL	
		3	0 3	44.36	19	16.95	155	13.38	11.17	2.4	2.6	31	0	157	.11	0	.7	.5	28	POL	
		3	045	44.72	19	17.13	155	13.45	10.29	2.3	2.3	25	0	154	.08	9	.6	.5	23	POL	
		3	230	40.35	19	17.02	155	13.13	10.82	1.7	1.7	27	0	156	.10	9	.7	.8	24	POL	
		3	1119	36.57	19	43.22	156	7.93	35.45	2.9	2.5	27	0	248	.13	31	2.1	2.4	25	KON	
		3	13 7	44.32	19	19.61	155	10.72	6.65	1.7	1.2	22	0	96	.09	5	.6	1.1	19	UER	
		3	1413	42.97	19	18.98	155	16.15	7.18	1.6	1.2	21	0	120	.09	3	.5	.9	19	KOA	
		3	1549	22.72	19	14.08	155	37.09	8.50	2.3	1.5	16	0	201	.20	2	1.0	1.5	16	HEA	
		3	1824	36.66	19	24.70	155	29.23	9.47	2.3	2.5	33	0	32	.11	5	.4	.8	31	UKF	
		3	1914	6.05	19	19.62	155	11.25	7.30		1.3	22	0	93	.09	5	.6	.9	20	UER	
		3	2028	21.15	19	19.79	155	9.86	7.86		1.2	24	0	95	.09	4	.6	.7	22	UER	
		3	2256	25.95	19	26.01	155	27.44	10.99	2.1	2.1	30	1	46	.11	7	.4	.7	26	UKF	
		4	829	54.45	19	52.77	155	23.37	12.31	2.6	2.5	32	1	172	.11	32	.7	.8	29	KKU	
		4	9 4	18.12	19	20.34	155	3.45	6.20	2.2	2.1	20	1	105	.11	1	.6	1.1	9	MER	
		4	1549	14.28	19	25.09	155	16.88	1.78	2.2	2.8	29	1	45	.10	0	.3	.3	24	SPC	F
		4	2034	7.21	19	20.73	155	12.67	8.39	1.9	1.8	28	0	65	.10	4	.4	.7	21	UER	
		5	149	25.34	18	59.23	155	23.54	34.04	2.5	2.0	34	0	226	.04	21	1.1	2.0	33	DIS	
		5	255	35.73	19	19.25	155	11.75	8.22	2.6	2.9	28	0	100	.08	5	.4	.7	18	UER	
		5	258	29.30	19	23.69	155	26.95	9.75	1.6	1.2	24	1	72	.12	3	.5	1.0	21	UKF	
		5	529	59.21	19	24.07	155	26.86	9.71	1.3	1.1	23	1	54	.09	3	.4	.9	22	UKF	
		5	928	50.51	19	25.39	155	15.93	2.12	1.5	1.6	11	1	124	.09	2	.5	.4	7	SPC	
		5	1851	7.32	19	13.30	155	35.88	8.16	3.1	2.9	30	0	85	.24	4	.8	1.3	24	HEA	
		5	20 5	8.21	19	27.74	155	48.29	8.68	1.9	1.4	21	3	144	.13	7	.6	.6	15	KON	
		5	2122	47.41	19	4.66	155	31.46	56.86	3.0		26	0	175	.19	11	2.0	4.6	11	LSW	T
		5	23 9	24.54	19	8.95	155	26.98	42.10	1.5		22	0	173	.03	2	1.0	2.7	22	LSW	T
		6	336	7.56	19	21.08	155	13.04	8.50	1.6	1.6	27	0	59	.12	3	.4	.6	21	UER	
		6	429	55.88	19	19.76	155	11.14	8.28	1.9	1.9	30	0	91	.11	5	.4	.6	25	UER	
		6	6 5	7.00	19	37.12	155	42.85	13.36	.9	2.0	9	0	212	.10	13	1.2	2.2	9	MOK	
		6	857	43.62	19	26.47	155	24.81	5.38		1.4	17	1	66	.08	2	.5	1.0	10	UKF	
		6	1216	13.03	19	21.53	155	4.30	6.20		1.1	15	1	86	.16	4	.6	1.3	5	MER	
		6	2132	42.14	19	23.71	155	25.95	8.21	1.7	1.6	19	0	61	.08	3	.5	1.0	14	UKF	
		7	136	31.28	19	20.98	155	30.54	9.59	1.9	1.8	20	0	81	.09	6	.5	1.2	16	HEA	
		7	217	6.40	19	22.61	155	29.98	9.66	2.3	2.2	30	1	69	.09	4	.4	.9	18	UKF	
		7	841	7.10	19	21.03	154	59.42	7.62	1.7	1.4	11	0	232	.08	8	2.4	1.9	9	LER	
		7	927	36.65	19	20.33	155	6.25	7.79	2.1	1.9	25	1	112	.11	5	.6	.9	23	UER	
		7	11 9	50.55	19	22.11	155	4.72	7.64	2.1	2.2	19	1	132	.08	5	.6	1.0	16	MER	
		7	12 2	49.61	19	22.10	155	5.46	7.75	2.2	2.1	27	2	75	.10	2	.5	.7	22	MER	
		7	1313	9.95	19	22.27	155	4.27	8.78	1.8	1.3	18	0	90	.08	4	.6	.8	18	MER	
		7	1520	10.58	19	20.48	155	11.67	7.49	1.6	1.3	16	0	144	.11	4	.7	1.2	16	UER	
		7	17 7	16.49	19	23.88	155	15.91	2.56	2.3	2.3	23	1	46	.12	3	.4	.5	21	SPC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAY	7	2239	30.51	19	23.12	155	14.69	3.35	1.4	1.2	8	0	113	.18	3	.7	1.0	7	GLN
		8	317	31.89	19	19.55	155	10.02	7.33	1.6	1.2	25	0	95	.11	5	.6	.9	23	UER
		8	552	23.59	19	23.80	154	55.34	10.14	2.4	2.7	27	1	223	.13	6	1.5	.5	24	LER
		8	1015	14.80	19	19.37	155	9.78	8.90	1.6	1.3	18	0	98	.04	5	.5	1.3	13	UER
		8	1126	3.53	19	19.80	155	8.62	7.63	1.5	1.1	19	1	125	.06	5	.4	1.1	13	UER
		8	2017	20.00	19	20.33	155	10.98	9.03	2.7	2.5	30	1	80	.07	4	.4	.7	23	UER
		8	2149	23.67	19	23.73	155	15.18	3.21	1.5	1.3	7	0	95	.02	2	.6	.8	6	SPC
		9	040	36.72	19	24.02	155	15.58	3.04	1.3	1.2	7	0	117	.01	3	.5	1.1	5	SPC
		9	435	11.63	19	18.06	155	21.03	3.27		1.3	8	0	218	.04	4	1.3	.9	7	SWR
		9	442	36.77	19	20.46	155	11.99	8.80		1.3	12	0	74	.03	4	.7	1.6	8	UER
		9	627	55.87	19	9.77	155	33.26	32.66	2.5	1.8	26	1	119	.06	9	.7	1.8	20	LSW
		9	636	48.97	19	24.01	155	15.51	3.18		1.2	10	0	112	.03	2	.4	.6	8	SPC
		9	941	7.45	19	28.37	155	23.58	4.38	1.8	1.5	15	0	59	.10	3	.5	1.3	14	UKF
		9	1138	17.18	19	20.60	155	12.11	8.20	1.9	1.8	29	1	71	.10	4	.4	.6	23	UER
		9	1648	35.13	19	19.84	155	11.09	6.68		.9	21	0	89	.10	5	.6	1.0	18	UER
		9	1726	58.42	19	19.58	155	11.69	6.77		1.1	21	0	92	.09	6	.5	1.1	20	UER
		9	1734	4.26	19	21.56	155	1.78	6.45	1.6	1.2	18	0	168	.12	4	.7	1.4	17	MER
		9	1814	55.42	19	29.44	155	53.94	5.50		1.4	16	0	153	.22	2	1.4	1.3	14	KON
		9	1921	9.91	19	24.54	155	.19	6.96	1.5	1.4	26	1	143	.13	3	.7	.7	25	LER
		9	2338	35.20	19	19.78	155	9.74	7.83	1.6	1.3	22	0	87	.09	4	.5	1.0	20	UER
		10	2 6	51.19	19	21.06	155	2.65	7.04	2.1	1.7	27	0	147	.12	2	.8	.5	26	MER
		10	340	55.77	19	19.68	155	6.94	7.84	1.1	.9	23	0	117	.10	5	.6	.8	22	UER
		10	429	39.32	19	20.70	155	6.14	6.60	1.3	1.1	22	0	104	.12	4	.6	1.2	20	UER
		10	518	40.10	19	20.49	155	7.69	8.20	2.2	2.3	28	0	88	.12	5	.5	.7	26	UER
		10	531	15.13	19	21.41	155	1.64	6.95	1.6	1.4	22	1	174	.14	4	1.0	.7	22	MER
		10	1037	45.76	19	26.28	155	24.47	10.96	3.0	2.6	33	0	36	.13	7	.4	.7	32	UKF
		10	1256	27.27	19	21.72	155	2.98	6.41	1.9	1.2	21	0	127	.11	3	.6	.9	18	MER
		10	1435	53.64	19	1.98	155	27.68	40.58		1.9	29	0	206	.07	14	1.1	2.2	25	LSW
		10	1513	55.89	19	20.03	155	6.56	8.90	2.0	1.6	26	1	116	.11	6	.7	.6	24	UER
		10	1842	7.82	19	32.07	155	49.25	9.29	2.6	2.2	23	1	110	.12	7	.5	.6	21	KON
		10	2233	39.42	19	19.83	155	7.69	9.61	2.7	2.6	32	0	98	.11	5	.6	.4	32	UER
		10	2330	59.03	19	17.82	155	12.87	7.84	1.2	1.1	21	0	121	.12	2	.8	1.1	16	POL
		11	148	35.44	19	20.73	155	12.43	7.49		1.1	18	0	134	.14	4	.7	.8	16	UER
		11	3 1	.99	19	31.11	155	23.93	14.46	1.9	1.6	20	0	47	.12	3	.5	.5	16	NER
		11	326	28.34	19	20.73	155	9.83	9.10	1.4	1.3	20	0	71	.10	2	.6	.7	20	UER
		11	357	34.59	19	19.86	155	8.74	7.95		1.3	22	0	75	.09	5	.5	.9	20	UER
		11	829	59.25	19	17.10	155	16.61	9.61	2.8	2.8	37	2	140	.12	4	.6	.5	30	KOA
		11	942	46.75	19	19.03	155	12.75	7.92	1.7	1.3	22	0	89	.08	4	.5	.9	15	UER
		11	1027	41.52	19	19.45	155	11.28	7.63		1.0	21	0	98	.11	5	.6	1.3	20	UER
		11	1228	8.43	19	20.43	155	6.04	7.56	1.9	1.2	24	0	112	.08	5	.5	.9	20	UER
		11	1254	24.03	19	23.66	155	15.21	3.09	1.1	.7	6	0	96	.03	2	.5	1.0	6	SPC
		11	1345	26.94	19	20.14	155	3.87	9.31	2.8	3.1	35	1	132	.12	2	.8	.5	30	MER
		11	1359	37.33	19	20.41	155	3.91	9.26	3.3	3.7	35	0	114	.11	2	.8	.4	33	MER F
		11	14 6	31.64	19	20.41	155	3.61	6.94		1.0	15	0	107	.12	2	.9	1.3	13	MER
		11	1410	10.66	19	23.68	155	16.73	2.75	1.6	1.8	13	1	77	.06	2	.5	.4	9	SPC
		11	1455	50.61	19	20.44	155	3.81	8.97	2.9	3.1	32	1	110	.10	2	.7	.4	28	MER
		11	1536	22.31	19	21.04	155	3.70	6.54		1.0	16	0	142	.14	2	.9	1.4	13	MER
		11	2121	45.53	19	23.85	155	15.74	3.36	2.5	2.8	29	0	43	.10	3	.4	.5	28	SPC F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAY	11	2220	11.11	19	23.71	155	15.39	2.81	.9	.6	6	0	101	.03	3	.5	.9	6	SPC
		11	2345	34.93	19	20.43	155	6.51	7.50	1.9	1.4	25	0	106	.09	5	.5	.8	21	UER
		11	2351	49.98	19	19.50	155	7.52	6.94	1.4	1.1	16	0	107	.08	4	.5	1.3	14	UER
		12	040	40.13	19	49.38	155	7.10	30.13	1.8	1.1	18	0	217	.09	16	2.2	4.4	18	HIL
		12	1 1	42.13	19	23.38	155	15.29	2.80	2.1	2.2	18	1	48	.11	2	.4	.5	15	SPC
		12	140	38.90	19	25.31	155	15.56	1.71	1.3	1.4	10	0	153	.05	2	.6	.5	8	SPC
		12	142	26.81	19	26.05	155	15.67	1.72	1.0	1.1	7	0	240	.02	3	1.1	.5	7	SPC
		12	154	53.91	19	20.27	155	10.75	6.83	1.4	1.5	16	0	187	.10	4	1.1	1.3	15	UER
		12	424	8.35	19	24.01	155	16.00	2.98	1.1	1.2	10	0	113	.06	2	.4	.5	8	SPC
		12	617	37.10	19	19.91	155	3.17	3.67		1.1	11	0	226	.14	8	3.7	11.5	8	MER
		12	842	29.46	19	21.00	155	4.43	7.08	1.9	1.4	22	0	96	.10	3	.5	.9	18	MER
		12	1150	25.76	19	18.26	155	15.36	6.46		1.3	17	0	137	.10	4	.6	1.1	16	KOA
		12	1226	17.33	19	23.26	155	3.36	8.82	3.1	3.2	24	0	106	.10	3	.6	.5	19	MER
		12	1617	2.47	19	19.33	155	11.01	9.28	2.9	2.9	35	0	102	.09	5	.5	.4	32	UER
		12	1857	39.16	19	29.91	155	49.83	8.39	2.9	2.3	20	0	146	.17	7	1.0	.6	17	KON
		12	1951	40.69	19	20.97	155	3.30	7.40		1.0	19	0	112	.09	2	.6	1.0	16	MER
		12	2143	8.34	19	20.00	155	11.90	8.34		1.3	22	0	82	.08	5	.4	.6	21	UER
		12	2255	30.89	19	19.38	155	13.16	7.73	1.6	1.5	26	0	75	.12	4	.5	.6	24	UER
		12	2328	10.80	19	19.76	155	8.72	8.65	2.0	1.9	24	0	76	.09	5	.5	.7	20	UER
		12	2341	1.07	19	18.70	155	10.97	6.77	2.2	1.1	23	1	120	.10	5	.5	.9	20	POL
		12	2344	24.37	19	28.07	155	22.42	5.61	2.0	1.6	20	1	79	.12	4	.5	1.6	19	UKF
		13	023	55.94	19	21.81	155	12.79	2.97	1.8	1.6	13	0	89	.05	2	.4	.5	11	UER
		13	1 5	.83	19	45.77	155	59.60	6.34		2.2	19	1	222	.12	18	1.1	.9	16	KON
		13	227	5.34	19	20.40	155	3.73	7.39	2.2	1.3	19	0	111	.08	2	.5	.8	17	MER
		13	853	7.99	19	22.72	155	1.72	8.56		1.6	22	0	152	.10	6	.7	.6	17	MER
		13	1138	39.85	19	23.05	155	3.04	9.61	3.0	3.2	25	1	120	.05	4	.5	.4	23	MER
		13	1538	22.81	19	21.30	155	4.15	6.11	2.4	2.4	13	0	217	.10	10	1.2	1.4	6	MER
		13	1634	46.28	19	18.27	155	21.59	7.72	1.7	1.6	16	0	116	.13	5	.7	1.5	15	SWR
		13	1733	15.67	19	22.42	155	28.96	8.91	1.9	1.6	22	0	61	.11	2	.5	.9	21	UKF
		13	2034	34.79	19	22.52	155	4.55	7.98	1.6	1.4	22	0	85	.08	3	.4	.6	18	MER
		13	2049	8.88	19	23.83	155	30.12	7.89	1.9	1.3	19	0	60	.11	5	.5	1.3	17	MOK
		14	623	42.82	19	24.22	154	59.38	7.95	1.9	1.5	24	0	169	.13	2	.8	.7	18	LER
		14	831	24.48	19	18.38	155	15.65	7.56	1.6	1.6	28	0	139	.12	4	.6	.9	20	KOA
		14	851	33.37	19	24.31	155	1.69	9.99	2.0	1.8	26	1	122	.09	5	.7	.6	23	MER
		14	9 2	1.16	19	23.94	155	15.57	2.79	1.2	1.1	9	1	110	.03	3	.4	.5	6	SPC
		14	9 6	20.88	19	25.54	155	17.11	.92	.7	.7	9	1	161	.08	1	.7	.3	8	SPC
		14	1046	14.86	19	23.00	155	14.85	3.07	1.2	1.0	11	3	114	.05	2	.4	.5	10	GLN
		14	1057	31.42	19	16.80	155	47.21	9.45	3.5	2.9	33	0	103	.11	9	.5	.6	27	KON
		14	11 1	36.45	19	23.13	155	14.79	3.50	1.2	1.0	9	0	109	.04	2	.4	.6	6	GLN
		14	1127	53.29	19	29.44	155	15.12	7.15	1.8	1.1	30	0	56	.13	9	.4	1.4	24	GLN
		14	12 0	2.54	19	20.74	155	8.72	6.59	1.4	1.1	25	0	70	.10	3	.5	.8	19	UER
		14	14 3	30.07	19	19.44	155	10.95	8.08	1.8	1.8	22	1	99	.07	5	.5	1.1	15	UER
		14	1719	15.10	19	19.02	155	15.89	7.08		1.3	15	0	118	.07	3	.6	1.3	9	KOA
		14	1838	45.11	19	2.42	155	2.28	51.07	3.0	2.9	37	2	248	.07	29	1.6	1.9	32	PPL
		15	219	16.64	19	21.86	155	.06	2.07	1.8	1.8	12	0	194	.11	6	.8	2.9	10	LER
		15	317	1.77	19	25.32	155	16.93	1.52	1.4	1.6	11	1	157	.07	1	.5	.2	3	SPC
		15	329	15.97	19	22.76	155	18.72	.82	1.9	2.3	8	2	115	.06	2	.3	.4	1	KOA
		15	440	7.64	19	21.38	155	2.37	5.35	1.3	1.2	13	1	200	.12	3	.9	1.5	8	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAY	15	557	45.47	19	26.77	155	24.55	9.19	2.0	1.6	21	0	81	.09	6	.5	1.2	17	UKF
		15	717	33.42	19	23.66	155	16.88	2.93	1.8	1.3	14	1	71	.04	1	.3	.3	10	SPC
		15	1126	35.77	19	23.02	155	15.06	2.58	1.7	1.2	14	1	66	.10	2	.4	.5	12	SPC
		15	1635	26.65	19	20.66	155	5.89	8.67	2.2	1.9	28	0	107	.08	4	.6	.6	28	MER
		15	1725	4.02	19	25.49	155	31.01	8.64	1.9	1.4	24	0	76	.09	8	.4	1.1	20	MOK
		15	1733	2.45	19	20.07	155	12.48	4.95	1.9	1.4	28	1	75	.19	5	.6	1.6	25	UER
		15	1818	18.49	19	42.14	155	24.96	16.25	1.6	1.3	17	0	115	.35	10	1.9	2.9	15	KKU
		15	1836	42.44	19	25.33	155	16.29	1.53	2.4	2.5	23	1	75	.17	1	.4	.4	22	SPC F
		15	1854	50.65	19	20.47	155	13.03	6.41	1.6	1.2	21	0	64	.14	4	.6	1.1	21	UER
		15	2015	32.18	19	20.51	155	3.29	5.73	1.4	1.1	24	0	103	.12	1	.9	.8	22	MER
		15	2053	9.95	19	23.34	155	14.98	3.48	1.1	1.2	8	0	87	.04	2	.5	.8	8	GLN
		15	2136	28.03	19	4.48	155	30.14	39.51	2.6	2.0	14	0	188	.11	10	1.6	4.0	14	LSW L
		15	2211	8.86	19	23.08	155	16.87	3.17	.9	1.2	5	0	167	.04	2	.7	1.0	3	SPC L
		15	2239	44.29	19	20.56	155	3.45	7.60	1.8	1.6	25	0	95	.11	2	.8	.5	21	MER
		15	2247	11.81	19	20.37	155	2.82	7.62		1.0	15	0	149	.13	1	1.1	1.3	15	MER
		16	046	20.41	19	18.75	155	29.42	10.96	1.5	1.1	19	0	111	.14	8	1.0	1.4	18	HEA
		16	130	50.27	19	24.50	155	16.08	13.31	1.3	1.3	6	0	136	.04	2	3.0	5.3	6	INT L
		16	330	57.21	19	20.49	155	9.00	6.69		1.0	22	0	69	.09	3	.5	1.1	22	UER
		16	4 8	55.59	19	21.50	155	1.80	5.36	2.0	1.6	22	0	169	.20	4	1.0	1.4	21	MER
		16	551	50.69	19	20.68	155	9.54	6.99	1.7	1.1	22	0	71	.10	3	.6	1.2	21	UER
		16	740	42.97	19	25.69	155	16.06	1.51	1.0	1.0	7	1	179	.03	2	.6	.4	6	SPC
		16	1317	57.87	19	20.62	155	13.14	7.91	1.7	1.6	21	0	62	.10	4	.5	.7	20	UER
		16	1320	48.41	19	24.06	155	16.15	2.90	1.8	1.9	16	1	105	.06	2	.3	.4	13	SPC
		16	1721	58.92	19	23.86	155	15.68	2.81	1.0	.9	10	1	106	.05	3	.3	.5	7	SPC
		16	1750	1.59	19	21.92	155	4.34	8.41	1.6	1.4	22	0	88	.09	4	.5	.7	19	MER
		16	18 5	54.42	19	23.75	155	15.29	3.47	2.2	2.6	31	1	39	.11	2	.3	.5	28	SPC
		16	1948	30.44	19	26.64	154	55.62	5.12	1.2	1.3	16	0	199	.12	2	1.1	1.1	13	LER
		16	2034	15.10	19	21.15	154	59.43	5.18	2.0	1.9	16	0	214	.05	7	1.3	1.5	15	LER
		16	2142	53.20	19	23.94	155	15.97	3.20	1.2	1.1	8	0	106	.05	3	.5	.7	7	SPC
		16	2158	28.59	19	21.11	155	7.90	8.28	1.3	1.2	23	0	77	.10	4	.5	.7	20	UER
		16	2316	56.06	19	20.31	155	12.88	8.79	1.5	1.4	19	0	68	.09	4	.5	.7	18	UER
		16	2324	25.50	19	21.55	155	4.98	6.66	1.6	1.1	24	0	84	.13	4	.6	.8	22	MER
		17	1 2	24.17	19	21.60	154	59.65	4.52		1.2	18	0	204	.12	7	1.2	2.4	17	LER
		17	225	54.31	19	23.93	155	15.45	3.15	1.0	.9	7	0	110	.03	2	.5	.8	7	SPC
		17	232	40.53	19	26.47	154	48.74	7.69	2.2	1.6	16	0	291	.16	9	6.4	1.1	13	LER
		17	530	52.27	19	27.90	155	24.29	10.01	3.4	3.3	35	1	35	.10	4	.4	.6	31	UKF F
		17	820	24.84	19	20.42	155	14.91	6.66	2.0	1.2	15	2	192	.10	4	.8	.8	10	UER
		17	11 9	26.10	19	20.23	155	7.69	8.27	1.9	1.4	21	1	93	.05	5	.5	1.1	15	UER
		17	1134	35.86	19	25.70	155	24.29	7.84	1.6	1.1	17	1	83	.07	8	.4	1.5	9	UKF
		17	1311	37.50	19	20.18	155	7.50	7.05	2.1	1.4	23	1	96	.06	5	.4	.9	11	UER
		17	1721	44.88	19	20.79	155	10.99	9.52	1.7	1.0	16	0	78	.04	3	.6	1.1	11	UER
		17	2249	58.29	19	22.75	155	4.20	9.52	2.4	2.4	27	1	92	.08	3	.5	.7	16	MER
		18	020	12.34	19	27.80	154	53.43	4.95	2.2	1.6	13	0	241	.10	2	2.3	1.2	8	LER
		18	2 6	38.23	19	23.36	154	59.00	7.59	2.3	1.9	24	1	185	.08	3	.6	.7	12	LER
		18	346	16.50	19	25.47	155	23.78	9.23	2.0	1.8	18	0	84	.08	8	.5	1.1	12	UKF
		18	618	15.34	19	20.69	155	11.75	9.12	1.9	1.4	13	0	72	.03	4	.5	.7	10	UER
		18	7 3	23.36	19	21.05	155	6.14	7.17	2.1	1.9	27	2	95	.09	4	.4	.9	19	UER
		18	724	37.60	19	23.80	155	15.27	3.11	1.5	1.2	8	0	101	.01	2	.4	.7	7	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAY	18	956	57.19	19	21.76	155	4.80	8.20	2.0	1.9	23	1	79	.10	3	.5	1.0	19	MER
		18	10 9	47.27	19	20.00	155	7.78	8.23	1.9	1.9	23	1	93	.09	5	.5	1.0	21	UER
		18	14 6	30.26	19	24.47	155	16.16	18.38	1.5	1.6	23	0	108	.08	2	.7	1.0	22	INT
		18	1931	21.00	19	19.99	155	9.87	7.31	.9	1.3	14	0	96	.08	4	.6	1.5	8	UER
		18	2210	46.04	19	23.04	155	24.68	9.29	1.1	1.5	16	0	82	.05	5	.5	1.4	12	UKF
		19	327	42.29	19	20.23	155	12.69	8.38	1.1	1.2	18	0	71	.09	5	.6	.9	15	UER
		19	350	46.64	19	28.87	155	28.00	7.72	.3	.4	7	0	88	.07	6	.8	3.2	4	UKF
		19	410	18.81	19	20.68	155	2.68	6.75	1.3	1.8	20	0	152	.12	2	.8	1.0	18	MER
		19	550	19.69	19	22.61	155	3.32	8.72	2.0	2.4	26	1	113	.08	4	.6	.6	24	MER
		19	6 8	53.54	19	23.96	155	24.33	9.77	2.1	2.4	23	0	73	.09	6	.5	.9	23	UKF
		19	944	15.47	19	20.41	155	3.33	8.03	2.1	2.0	25	0	96	.09	1	.8	.6	20	MER
		19	14 8	23.25	19	21.72	155	12.88	2.86		1.1	14	0	57	.08	2	.4	.6	12	UER
		19	1421	21.86	19	21.66	155	12.90	2.72	.9	1.4	13	0	55	.05	2	.4	.6	12	UER
		19	1552	58.98	19	19.62	155	8.09	7.54	2.2	1.7	25	0	90	.10	4	.5	1.0	24	UER
		19	1714	.23	19	23.70	155	2.32	9.22	1.8	1.4	18	0	122	.10	4	.6	.8	15	MER
		19	1756	40.50	19	20.52	155	3.50	7.18	1.1	1.3	19	0	96	.11	2	.8	1.2	11	MER
		19	1759	30.12	19	42.31	155	23.17	24.09	2.2	1.9	32	3	78	.10	11	.6	1.6	27	KKU
		19	18 4	18.51	19	24.74	155	25.38	7.96	1.7	1.6	21	0	68	.11	6	.5	1.5	18	UKF
		20	151	34.94	19	24.87	155	24.65	8.24	1.3	1.8	24	0	46	.10	7	.4	1.2	18	UKF
		20	3 6	5.31	19	20.56	155	4.24	6.93	1.8	2.3	24	0	111	.11	3	.6	.9	20	MER
		20	457	15.01	19	21.90	155	13.11	2.94		1.1	10	0	97	.10	1	.6	.7	6	UER
		20	559	13.45	19	20.02	155	9.93	7.45		1.6	17	0	96	.09	4	.6	1.1	15	UER
		20	627	16.27	19	13.41	155	25.71	38.77	1.2	2.2	12	0	145	.12	8	1.2	2.4	6	LSW T
		20	931	20.56	19	19.02	155	11.92	6.14		1.6	22	0	104	.09	5	.5	.8	16	UER
		20	1214	14.38	19	21.71	155	12.82	2.47	1.4	1.2	9	0	106	.07	2	.6	.6	9	UER
		20	1336	49.76	19	18.96	155	11.42	6.56	1.7	1.2	17	0	110	.05	5	.5	1.1	15	POL
		20	17 8	28.70	19	25.17	154	57.31	5.19		1.3	14	0	212	.14	2	1.3	1.1	11	LER
		20	1842	48.97	19	20.65	155	10.18	7.81	1.7	1.6	18	0	74	.08	3	.6	1.1	15	UER
		21	120	13.35	19	20.98	155	11.42	8.61	2.4	2.5	30	0	69	.11	3	.4	.6	27	UER
		21	125	52.93	19	20.93	155	11.36	8.34	1.6	1.4	13	0	87	.06	3	.7	1.1	9	UER
		21	151	3.47	19	27.60	154	51.25	7.47	2.5	2.3	26	1	270	.13	5	1.2	.7	20	LER
		21	353	4.42	19	22.97	155	26.87	8.27	1.7	1.5	20	0	102	.06	2	.5	1.1	19	UKF
		21	4 3	14.79	19	22.71	155	4.25	8.88	2.3	2.3	27	0	91	.07	3	.6	.5	19	MER
		21	4 5	20.52	19	22.85	155	4.31	8.68	1.9	1.5	28	0	90	.10	3	.5	.5	20	MER
		21	430	54.12	19	22.06	155	4.10	7.75	1.3	1.3	16	0	94	.10	4	.6	.8	14	MER
		21	714	39.59	19	21.01	155	3.16	3.98		1.0	14	0	120	.20	2	1.1	1.7	13	MER
		21	717	31.15	19	19.09	155	13.54	6.09	1.6	1.2	17	0	80	.09	4	.5	1.3	13	UER
		21	857	9.68	19	20.31	155	8.72	6.36	1.4	1.5	16	0	197	.04	4	.9	1.8	8	UER
		21	929	37.60	19	19.89	154	59.25	8.19	2.5	2.4	20	1	222	.13	6	1.3	.6	9	DIS
		21	1349	4.11	19	57.13	155	37.17	10.95	2.8	2.8	22	0	245	.06	25	2.0	.8	19	KOH
		21	1638	21.80	19	23.02	155	3.07	8.66	2.2	1.9	21	0	115	.08	4	.5	.7	12	MER
		21	2142	26.24	19	19.83	155	12.00	9.23	3.2	3.2	35	1	85	.08	6	.3	.5	21	UER
		22	018	.99	19	20.74	155	15.35	7.66	1.6	1.6	15	0	75	.07	3	.6	1.0	11	KOA
		22	158	40.34	19	19.82	155	3.51	6.38	2.1	1.8	19	1	161	.08	1	.5	.9	13	MER
		22	222	15.17	19	27.26	155	24.32	3.54	2.2	2.1	21	1	61	.10	5	.4	1.2	14	UKF
		22	1153	8.69	19	20.38	155	3.30	7.08	2.1	1.9	26	2	96	.12	1	.7	.7	22	MER
		22	1545	2.12	19	57.14	155	55.44	12.42	2.6	2.3	17	1	218	.11	25	1.9	1.0	14	KOH
		22	1648	51.96	19	22.11	155	3.39	8.86	2.5	2.8	32	1	114	.09	4	.6	.4	28	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	MAY	22	1745	45.97	19	20.33	155	13.06	6.08	1.6	1.4	26	0	66	.12	4	.5	.8	26	UER	
		22	2254	8.19	19	26.79	155	23.53	1.41	1.4	1.4	20	2	73	.12	6	.4	1.3	14	UKF	
		23	223	17.04	19	24.61	155	16.84	9.55	1.1	.8	11	0	91	.05	1	.7	1.3	11	LPC	L
		23	227	19.99	19	24.47	155	16.74	10.60	1.9	1.8	11	0	93	.06	1	.7	1.2	10	LPC	L
		23	3 9	44.27	19	23.88	155	26.82	8.98	3.3	3.5	35	0	47	.13	9	.4	.9	31	UKF	
		23	449	15.08	19	24.39	155	16.76	9.83	1.1	1.3	10	0	88	.05	1	.7	1.3	6	LPC	L
		23	643	38.45	19	21.58	155	13.58	30.29	1.3	.7	27	3	50	.06	2	.9	.9	24	DEP	
		23	735	48.12	19	24.05	155	16.93	10.38	1.4	1.4	9	0	67	.06	2	.8	1.3	9	LPC	L
		23	835	47.26	19	20.89	155	9.23	37.98		1.3	17	0	278	.07	2	4.7	6.3	11	UER	*
		23	956	32.86	19	20.38	155	12.97	8.29	1.6	1.3	19	0	66	.06	4	.5	1.1	13	UER	
		23	1158	50.62	19	18.07	155	13.14	6.44	1.7	1.8	21	0	99	.06	2	.4	1.2	13	POL	
		23	1612	27.01	19	21.47	155	2.83	6.52	1.8	1.8	26	0	134	.11	3	.5	.6	17	MER	
		23	1628	56.85	19	23.99	155	24.31	10.27	1.7	1.4	14	0	81	.06	6	.6	1.6	13	UKF	
		23	1651	14.06	19	57.66	155	37.08	11.35	3.2	2.7	26	1	247	.06	26	1.2	.6	16	KOH	
		23	20 5	21.49	19	21.85	155	12.68	3.11	1.9	2.1	15	0	104	.03	2	.4	.4	12	UER	
		23	2011	32.00	19	25.43	155	28.14	13.94	1.9	1.5	11	0	193	.04	6	3.1	5.1	8	UKF	
		23	2037	39.56	19	21.70	155	6.54	8.00	1.9	1.8	26	1	81	.09	2	.5	.9	21	UER	
		23	2327	40.88	19	20.73	155	3.23	5.80	2.0	1.6	24	1	117	.13	2	.6	.8	13	MER	
		24	0 8	17.79	19	20.21	155	12.07	8.47	1.7	1.3	23	1	77	.07	5	.5	.9	15	UER	
		24	2 4	9.31	19	50.75	155	32.33	27.06	2.3	1.8	9	0	319	.07	36	30.4	10.2	3	KKU	*
		24	236	48.72	19	19.62	155	8.46	7.79	1.4	1.3	23	0	82	.05	4	.5	1.0	15	UER	
		24	319	37.67	19	21.53	155	1.79	5.08	1.3	1.0	14	0	169	.11	4	1.0	2.1	9	MER	
		24	430	22.14	19	15.54	155	44.40	13.72	2.4	2.1	11	0	187	.08	13	1.8	1.0	8	HEA	
		24	439	50.97	19	19.84	155	13.40	7.36	1.3	1.1	21	0	68	.06	5	.5	1.1	11	UER	
		24	444	53.38	19	12.82	155	25.76	8.72	2.1	2.1	17	0	160	.10	7	.6	.8	6	LSW	
		24	516	19.82	19	21.57	155	12.61	2.79	.6	.9	10	0	112	.02	2	.4	.6	5	UER	
		24	637	13.14	19	22.02	155	3.66	7.99	1.3	1.4	15	1	106	.09	4	.6	1.0	5	MER	
		24	856	58.54	19	21.23	155	3.47	8.42	2.4	2.4	28	1	107	.09	3	.6	.4	22	MER	
		24	929	35.12	19	21.58	155	3.71	8.11	2.0	2.0	23	0	103	.08	3	.6	.6	19	MER	
		24	958	2.60	19	21.58	155	3.76	8.07		1.3	16	0	102	.08	3	.6	.7	14	MER	
		24	1038	36.36	19	23.23	155	1.51	8.69		1.4	13	0	149	.06	5	.7	.7	12	MER	
		24	1136	2.81	19	23.24	155	30.34	8.10		1.3	15	0	103	.10	5	.6	1.5	13	MOK	
		24	12 6	19.74	19	27.11	154	54.80	5.99		1.5	13	0	205	.10	1	1.7	1.5	11	LER	
		24	1423	46.49	19	20.27	155	11.31	8.10		1.3	21	0	81	.08	4	.5	.9	19	UER	
		24	1443	46.84	19	20.07	155	8.35	6.60		1.4	20	0	81	.05	5	.5	1.0	19	UER	
		24	1621	23.86	19	20.40	155	9.03	6.50	1.8	1.7	24	0	71	.10	3	.5	.9	20	UER	
		24	1626	6.09	19	23.05	155	14.98	3.41	3.2	3.5	36	1	49	.09	2	.3	.5	32	GLN	F
		24	1633	46.82	19	23.25	155	14.99	3.12	1.1	1.0	9	0	105	.05	2	.4	.5	8	GLN	
		24	2144	59.92	19	20.02	155	11.69	8.52	1.6	1.6	25	0	83	.07	5	.4	.7	22	UER	
		24	2151	58.99	19	22.05	155	25.18	9.62	1.7	1.4	24	0	103	.08	4	.5	.9	20	UKF	
		24	2247	42.96	19	49.33	155	35.77	14.87	2.3	2.4	17	0	103	.09	15	.6	.9	10	KKU	
		25	059	9.96	19	20.20	155	12.76	10.03	2.3	2.5	26	0	70	.08	5	.4	.7	22	UER	
		25	147	21.29	19	19.94	155	7.54	9.41	2.3	2.3	29	0	99	.12	5	.6	.5	26	UER	
		25	759	16.77	19	24.81	155	16.79	4.64	2.2		8	1	101	.15	2	.8	1.1	7	SPC	
		25	843	27.23	19	53.51	155	17.82	15.73	2.0	1.4	23	2	188	.10	5	.8	.8	20	KKU	
		25	1356	36.46	19	16.26	155	23.94	3.10	1.8	1.6	14	1	179	.12	7	.8	2.5	13	SWR	
		26	052	7.23	19	18.43	155	23.30	3.70	1.3	1.2	15	0	183	.10	3	.7	1.1	10	SWR	
		26	114	20.01	19	22.85	155	27.10	8.48	2.0	1.8	26	0	58	.12	1	.5	1.0	25	UKF	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	MAY	26	159	6.37	19	20.09	155	6.37	6.93	1.9	1.3	27	0	116	.11	5	.5	.9	23	UER	
		26	3 2	10.59	19	23.91	155	27.14	6.17	1.7	1.2	20	2	63	.13	3	.5	1.2	16	UKF	
		26	459	50.27	19	25.36	155	25.04	9.98	2.0	2.1	27	0	59	.10	7	.4	1.1	24	UKF	
		26	636	30.35	19	19.54	155	11.08	8.13	1.7	1.5	28	0	96	.11	5	.5	.7	25	UER	
		26	913	17.49	19	23.87	155	23.35	8.69	1.9	1.7	27	0	58	.10	7	.4	1.0	24	UKF	
		26	940	26.26	19	19.40	155	11.34	5.20	1.3	1.3	26	0	99	.13	6	.5	1.3	26	UER	
		26	1435	46.44	19	26.30	155	24.27	1.70	2.0	1.9	19	1	49	.14	7	.4	1.9	14	UKF	
		26	2340	23.80	19	31.10	155	42.67	4.90	1.5	1.1	20	1	77	.14	6	.6	2.2	17	MOK	
		27	549	32.94	19	20.29	155	11.33	7.36	1.8	1.9	26	0	80	.12	4	.5	.8	22	UER	
		27	832	54.36	19	53.03	155	10.04	29.46	1.2	.8	17	2	276	.09	25	1.9	3.6	14	KKU	
		27	1412	5.62	20	3.63	155	47.51	10.45	2.7	2.4	27	3	285	.08	42	1.6	.8	18	KOH	
		27	1518	55.19	19	25.58	155	16.07	1.29	.9	1.1	9	0	176	.08	2	1.0	.4	3	SPC	
		27	1711	8.18	19	26.74	155	24.30	6.65	2.4	2.4	21	0	62	.07	6	.4	1.6	14	UKF	
		27	1949	37.28	19	19.19	155	11.46	8.59	1.3	1.1	18	0	104	.05	5	.5	.9	12	UER	
		28	1 4	2.19	19	23.94	155	2.14	8.33	2.0	1.7	13	0	122	.10	4	.6	1.0	9	MER	
		28	547	22.72	19	21.24	155	15.16	8.24	1.5	1.6	20	0	66	.06	3	.4	.9	12	KOA	
		28	644	58.32	18	50.07	154	21.42	7.01	3.1	1.6	21	0	337	.52	91	99.0	99.0	14	DIS	*
		28	656	22.84	19	22.00	155	4.24	6.88	2.3	2.0	18	2	90	.11	5	.5	1.0	15	MER	
		28	8 3	49.49	19	26.89	155	24.37	9.24	2.5	2.7	19	0	81	.08	6	.6	1.1	17	UKF	
		28	1359	37.20	19	23.32	155	6.37	1.28		1.7	8	0	115	.03	1	.5	.3	6	GLN	
		28	1436	30.90	19	20.72	155	3.98	6.38	2.1	1.3	18	1	100	.07	2	.6	1.2	15	MER	
		28	1850	33.82	19	22.39	155	4.77	9.05	3.0	3.0	36	1	81	.09	3	.5	.5	30	MER	
		28	2316	50.83	19	22.94	155	24.20	9.31	1.6	1.5	25	2	62	.10	5	.4	.9	18	UKF	
		29	251	59.48	19	19.04	155	13.23	7.02	1.6	1.3	22	0	79	.08	4	.5	1.2	18	UER	
		29	744	6.10	19	25.76	155	29.26	10.12	1.9	1.3	16	1	66	.08	7	.6	1.5	13	UKF	
		29	1157	4.76	19	13.06	155	14.72	42.94	1.2	.5	19	2	235	.08	8	2.1	1.7	15	POL	L
		29	1324	43.49	19	23.89	155	29.24	8.48		1.2	21	0	119	.10	4	.6	1.1	20	UKF	
		29	1621	22.00	19	20.90	155	14.76	7.35	.9	.2	12	0	87	.13	3	.7	1.6	11	UER	
		29	17 2	57.29	19	20.00	155	11.85	4.88	1.1	.1	13	0	83	.09	5	.6	2.3	12	UER	
		29	1710	53.81	19	21.47	155	11.07	5.66		.7	13	0	81	.14	2	.7	1.5	11	UER	
		29	1715	20.77	19	21.86	155	12.51	2.96	2.0	1.3	22	0	55	.09	2	.4	.5	18	UER	
		29	1716	26.72	19	21.96	155	13.10	6.89	2.4	2.3	29	0	51	.12	1	.4	.7	19	UER	
		29	1719	46.54	19	21.83	155	12.68	8.55	2.6	2.8	27	0	54	.09	2	.4	.7	22	UER	
		29	1722	3.79	19	21.64	155	12.41	3.18	2.4	1.9	23	0	58	.10	5	.4	1.3	22	UER	
		29	1724	38.52	19	21.63	155	12.27	2.19	1.5	1.0	16	0	75	.14	2	.4	.7	12	UER	
		29	1725	28.85	19	21.71	155	12.74	2.46	2.3	2.3	23	0	56	.09	5	.4	1.1	17	UER	
		29	1728	55.95	19	21.59	155	12.65	2.69	2.0	1.7	20	1	57	.11	5	.4	1.0	15	UER	
		29	1729	59.10	19	21.56	155	12.74	3.80	2.3	2.1	24	1	74	.09	2	.4	.8	16	UER	
		29	1731	7.39	19	21.41	155	12.59	2.20	2.2	1.3	24	0	59	.17	2	.4	.7	16	UER	
		29	1731	55.53	19	21.51	155	12.33	1.74	1.6	.8	13	0	74	.14	2	.6	1.1	10	UER	
		29	1733	54.35	19	21.66	155	12.65	2.87	1.9	1.8	25	0	56	.09	2	.4	.6	23	UER	
		29	1736	21.58	19	21.25	155	12.68	3.86	1.8	1.2	15	0	66	.10	3	.4	.9	13	UER	
		29	1737	59.42	19	21.73	155	12.55	6.20	2.5	2.4	29	0	56	.11	2	.4	.9	24	UER	
		29	1740	59.80	19	21.60	155	12.40	2.34	1.7	1.6	21	0	58	.15	2	.4	.7	17	UER	
		29	1743	55.40	19	21.86	155	12.64	6.79	3.0	2.9	32	1	55	.11	2	.4	.8	25	UER	
		29	1744	54.97	19	22.33	155	12.47	4.74	3.1	3.3	16	0	89	.15	6	.6	2.2	12	UER	
		29	1748	7.55	19	22.25	155	12.89	.22	3.1	3.1	20	1	117	.15	5	.6	.9	12	UER	
		29	1749	54.11	19	22.16	155	12.64	8.31	2.9	2.9	24	0	59	.13	1	.5	.7	19	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	MAY	29	1751	55.50	19	21.88	155	12.74	4.62	1.8	1.4	17	0	73	.11	2	.6	1.0	12	UER	
		29	1752	17.05	19	21.42	155	12.92	6.72	3.2	2.8	20	0	99	.11	2	.6	.7	11	UER	
		29	18 0	35.46	19	21.85	155	12.98	6.07	2.8	2.4	27	0	53	.09	*1	.4	.7	19	UER	
		29	18 3	34.24	19	21.83	155	12.96	1.92	1.8	1.3	21	0	53	.17	2	.4	.6	13	UER	
		29	18 5	10.84	19	21.84	155	12.86	2.66	1.4	1.1	16	0	59	.07	2	.3	.5	15	UER	
		29	18 6	19.71	19	22.07	155	12.62	5.26	2.8	2.7	29	0	53	.11	1	.4	1.0	21	UER	
		29	18 9	23.34	19	21.69	155	13.14	2.40	1.2	1.2	15	0	53	.09	2	.3	.6	12	UER	
		29	18 9	46.78	19	21.58	155	12.83	3.21	2.0	1.3	20	1	56	.20	2	.6	.9	14	UER	
		29	1810	26.24	19	21.52	155	13.07	2.65	2.0	1.6	16	0	55	.09	2	.3	.6	12	UER	
		29	1810	47.98	19	21.61	155	12.89	5.33	2.5	1.8	17	1	97	.22	2	1.0	1.3	11	UER	
		29	1812	22.02	19	21.96	155	12.48	3.71	1.4	1.3	15	0	76	.16	2	.6	.9	11	UER	
		29	1814	15.29	19	21.72	155	13.22	1.76	1.2	.8	14	0	65	.11	2	.4	.7	8	UER	
		29	1815	31.18	19	21.58	155	12.96	2.50	2.2	2.0	20	0	55	.12	2	.3	.5	15	UER	
		29	1818	6.59	19	22.00	155	13.33	3.38	1.7	1.4	25	0	50	.10	5	.4	1.1	22	UER	
		29	1819	28.28	19	21.69	155	13.10	2.51	1.4	.7	14	0	70	.11	2	.5	.6	11	UER	
		29	1819	57.03	19	21.59	155	12.93	2.14	1.3	1.0	20	0	55	.18	2	.5	.9	15	UER	
		29	1821	14.13	19	21.55	155	12.95	2.51	1.5	1.3	17	0	56	.13	2	.4	.7	14	UER	
		29	1821	47.74	19	22.76	155	12.93	3.91	1.4	.8	7	0	83	.09	0	.7	.8	6	UER	
		29	1823	22.00	19	21.79	155	13.00	2.68	1.9	1.3	20	0	54	.10	2	.3	.5	14	UER	
		29	1825	18.06	19	21.72	155	12.93	2.22		1.0	9	0	87	.07	2	.5	.7	7	UER	
		29	1828	35.34	19	21.43	155	12.25	2.39	1.8	1.2	16	0	61	.18	3	.5	.9	9	UER	
		29	1830	42.96	19	21.85	155	13.01	2.78	1.2	.9	12	0	75	.08	1	.5	.6	11	UER	
		29	1833	27.49	19	21.88	155	13.02	3.01	1.7	1.5	24	1	52	.13	1	.4	.7	17	UER	
		29	1834	34.61	19	21.64	155	13.02	2.67	1.2	1.0	12	0	64	.10	2	.4	.8	8	UER	
		29	1835	20.23	19	21.61	155	13.03	2.30	1.4	1.0	10	0	79	.05	2	.5	.7	9	UER	
		29	1837	19.13	19	21.89	155	13.22	3.24	2.0	2.1	25	0	51	.10	1	.4	.6	16	UER	
		29	1839	58.18	19	22.24	155	11.73	6.99		.3	5	0	140	.17	3	9.1	22.3	5	UER	*
		29	1846	51.15	19	21.84	155	12.86	2.52			7	0	102	.02	2	.5	.6	6	UER	
		29	1848	22.67	19	21.46	155	12.82	1.62		1.1	10	0	80	.03	2	.4	.8	9	UER	
		29	1849	28.96	19	21.91	155	13.26	2.95	1.4	1.2	15	0	59	.08	1	.4	.5	13	UER	
		29	1859	45.97	19	22.01	155	11.84	3.08		.5	7	0	111	.07	2	.6	.7	5	UER	
		29	1912	23.45	19	21.85	155	11.40	3.03	.2		10	0	112	.07	3	.5	.6	9	UER	
		29	1918	24.95	19	21.31	155	12.17	1.12	.3		9	0	101	.04	3	.4	1.0	5	UER	
		29	1918	44.42	19	20.13	155	6.35	8.29	2.0	1.5	31	1	116	.09	5	.5	.6	25	UER	
		29	1923	4.96	19	21.87	155	11.45	2.82			8	0	120	.02	3	.6	.6	4	UER	
		29	1924	44.76	19	21.54	155	11.53	2.91		.6	11	0	105	.05	3	.4	.7	9	UER	
		29	1936	46.97	19	21.91	155	12.17	2.61		.2	9	0	109	.05	2	.6	.5	6	UER	
		29	20 3	40.96	19	21.79	155	12.09	2.45			5	0	170	.01	2	.9	.6	4	UER	
		29	2027	3.53	19	21.82	155	11.34	2.73			7	0	123	.08	3	.6	.6	3	UER	
		29	2028	16.41	19	21.94	155	11.97	2.64			6	0	165	.06	2	1.2	.6	4	UER	
		29	2030	8.63	19	22.66	155	11.29	2.39			7	0	139	.08	3	.8	.6	5	UER	
		29	2030	45.56	19	21.68	155	12.22	2.82	.1		6	0	115	.02	2	.6	.9	5	UER	
		29	2040	52.31	19	21.82	155	11.36	3.40			7	0	123	.03	3	.8	.6	3	UER	
		29	2047	52.77	19	21.77	155	11.32	3.25	1.2	1.1	18	0	66	.10	3	.5	.7	14	UER	
		29	2052	53.42	19	21.91	155	11.27	3.30			8	0	123	.07	3	.7	.8	5	UER	
		29	2054	5.79	19	21.46	155	11.55	2.68			9	0	104	.06	3	.5	.7	8	UER	
		29	2056	24.69	19	21.51	155	11.54	3.23			7	0	130	.04	3	.6	.8	5	UER	
		29	2057	52.26	19	21.84	155	11.43	3.59	1.2	1.0	17	0	62	.09	3	.5	.7	14	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	MAY	29	21 6	56.32	19	21.43	155	12.85	1.93	1.2	1.1	13	0	57	.07	2	.3	.7	10	UER	
		29	21 8	46.57	19	20.91	155	11.37	3.29			6	0	197	.04	3	1.3	.9	4	UER	
		29	2119	41.02	19	22.04	155	11.00	2.95	.6	.2	9	0	117	.02	2	.7	.5	8	UER	
		29	2123	3.67	19	22.06	155	10.86	2.98		.5	11	0	90	.10	2	.7	.6	7	UER	
		29	2129	18.11	19	21.94	155	10.98	2.91			7	0	125	.02	2	.6	.6	4	UER	
		29	22 0	31.69	19	22.21	155	10.96	2.79		.1	6	0	154	.03	2	1.3	.6	5	UER	
		29	22 3	1.71	19	21.96	155	10.90	2.66	.1		7	0	123	.09	2	.9	.6	3	UER	
		29	22 9	48.73	19	21.82	155	10.53	2.61	.1		11	0	138	.08	1	.8	.5	5	UER	
		29	2214	18.73	19	22.39	155	10.56	3.18			6	0	135	.08	1	1.6	.6	4	UER	
		29	2218	17.27	19	22.16	155	10.92	2.77		.4	10	1	111	.09	2	.7	.5	4	UER	
		29	2219	.09	19	22.01	155	10.82	3.09			11	0	89	.09	2	.5	.5	7	UER	
		29	2227	29.05	19	22.24	155	10.84	2.86			5	0	151	.02	2	1.3	.7	4	UER	
		29	2240	2.96	19	22.16	155	10.91	3.05			10	0	120	.02	2	.6	.4	7	UER	
		29	2246	42.91	19	22.12	155	11.03	2.87	.1		7	0	147	.04	2	1.0	.6	4	UER	
		29	2247	59.67	19	22.24	155	10.83	3.04		.3	11	0	92	.04	2	.5	.5	6	UER	
		29	2251	16.11	19	21.98	155	10.85	2.85		.7	10	0	122	.14	2	.8	.6	5	UER	
		29	2315	2.55	19	21.90	155	11.05	2.94			6	0	173	.01	2	1.2	.6	3	UER	
		29	2316	8.36	19	21.00	155	4.51	6.86	.8	.8	17	0	96	.11	3	.6	1.2	14	MER	
		29	2325	36.48	19	19.74	155	5.33	8.05			13	0	142	.12	4	1.1	2.0	8	MER	
		29	2339	3.78	19	21.79	155	10.56	3.30	1.9	.8	10	0	137	.11	1	.8	.7	8	UER	
		29	2340	27.55	19	22.46	155	10.86	2.77			7	0	137	.09	2	1.1	.7	4	UER	
		29	2342	20.79	19	21.95	155	12.78	2.20			9	0	101	.06	1	.5	.5	6	UER	
		30	034	9.76	19	22.06	155	10.68	3.38			9	0	118	.06	1	.8	.6	4	UER	
		30	040	5.77	19	22.18	155	4.81	8.99			12	1	79	.06	3	.6	1.0	8	MER	
		30	2 8	39.28	19	21.81	155	4.44	7.83	1.8	1.6	27	0	85	.12	4	.6	.6	22	MER	
		30	3 8	51.13	19	21.43	155	12.71	1.59		1.1	9	0	59	.04	2	.4	.7	8	UER	
		30	436	40.55	19	21.95	155	13.26	2.88	1.4	1.0	9	0	95	.02	1	.4	.5	7	UER	
		30	442	.58	19	28.05	155	22.65	7.45	1.5	1.6	20	1	67	.12	3	.5	1.2	16	UKF	
		30	628	43.74	19	19.31	155	13.37	8.68	1.5	1.6	26	0	73	.09	4	.5	.5	20	UER	
		30	654	37.04	19	17.94	155	13.17	5.44	.9	1.0	15	0	101	.10	2	.7	1.6	12	POL	
		30	721	31.56	19	19.58	155	10.92	6.66	1.5	1.4	26	0	96	.10	5	.5	.7	20	UER	
		30	1011	6.48	19	20.99	155	13.02	7.30	1.5	1.4	26	0	59	.11	3	.5	.8	26	UER	
		30	1327	48.81	19	20.42	155	6.79	7.53	1.8	1.3	24	1	103	.07	5	.6	1.0	20	UER	
		30	1921	51.17	19	25.23	155	15.12	1.79	1.3	1.2	11	0	149	.05	2	.6	.5	11	SPC	
		30	1946	25.74	19	16.90	155	11.79	1.56	1.6	1.1	20	0	163	.09	3	.7	.5	14	POL	
		30	2127	2.82	19	20.22	155	3.87	6.60		1.2	8	0	126	.06	2	.7	1.6	7	MER	
		31	358	8.03	19	22.82	155	4.67	8.95	2.9	2.6	33	1	85	.14	3	.6	.5	27	MER	
		31	743	14.62	19	30.52	155	15.12	7.06	1.5	1.3	25	1	103	.11	10	.5	1.3	13	GLN	
		31	2340	6.06	19	18.01	155	12.93	7.62		1.1	22	0	111	.09	2	.6	.9	20	POL	
	JUN	1	016	11.64	19	20.36	155	13.78	9.83	3.0	2.7	37	2	56	.10	4	.4	.4	32	UER	
		1	054	58.24	19	22.20	155	4.96	9.20	3.0	2.8	34	1	77	.11	3	.5	.4	29	MER	
		1	2 0	4.42	19	12.76	155	37.14	8.13	2.3	1.7	19	0	118	.19	4	.7	1.0	17	HEA	
		1	230	20.28	19	19.89	155	7.54	9.10	2.3	1.8	30	0	100	.09	5	.6	.4	24	UER	
		1	526	40.27	19	25.53	155	48.97	6.94	2.3	1.7	27	1	105	.25	11	.8	1.5	24	KON	
		1	539	37.50	19	18.84	155	13.71	8.03	1.6	1.3	22	0	88	.08	3	.5	.7	19	POL	
		1	956	10.58	19	22.38	155	4.83	8.85	2.3	2.1	28	0	80	.09	3	.5	.7	23	MER	
		1	1041	3.33	19	29.64	155	13.63	29.58	1.6	1.3	23	1	165	.05	9	1.3	2.9	21	GLN	
		1	1328	8.85	19	47.11	155	33.81	15.01	2.5	1.8	16	1	173	.07	11	.7	.5	11	KKU	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JUN	1	1724	14.86	19	18.31	155	13.28	6.07	1.7	1.1	17	0	88	.05	2	.5	1.3	16	POL
		1	1726	7.17	19	20.49	155	3.53	8.51	2.3	2.2	31	0	99	.08	2	.7	.6	25	MER
		1	1728	18.48	19	20.29	155	3.62	7.94	2.2	2.3	32	1	116	.08	1	.7	.6	21	MER
		1	1853	40.75	19	19.51	155	11.90	6.59	1.7	1.4	24	1	91	.08	5	.5	.9	17	UER
		1	22 4	3.57	19	25.59	155	23.75	11.22	2.0	1.5	24	1	49	.09	7	.5	1.1	21	UKF
		2	0 0	26.58	19	37.62	155	58.31	19.83		1.6	13	2	259	.13	16	1.9	1.7	10	KON
		2	256	41.35	19	23.92	155	24.21	9.63	2.3	1.9	26	0	46	.11	7	.4	1.0	22	UKF
		2	322	31.06	19	9.86	155	35.34	7.69	2.4	1.1	12	0	110	.18	10	.8	2.1	9	HEA
		2	651	21.81	19	23.51	155	25.34	12.85	1.8	1.3	27	1	60	.09	4	.5	.6	23	UKF
		2	1044	12.46	19	19.33	155	10.35	7.92		1.1	17	0	102	.08	5	.6	1.1	13	UER
		2	1328	32.07	19	20.69	155	3.53	7.21	1.8	1.6	17	0	96	.12	2	.7	1.3	12	MER
		2	1340	34.00	19	22.41	155	26.63	9.76	2.1	1.8	18	0	109	.11	2	.5	1.2	17	UKF
		2	1756	16.07	19	15.95	155	15.25	7.52	1.1	1.1	12	0	243	.06	4	1.5	1.3	10	HLP
		2	1932	22.05	19	20.75	155	12.69	7.47	1.4	1.4	17	0	74	.08	4	.6	1.1	13	UER
		2	2120	8.34	19	22.00	155	25.12	9.35	2.4	2.3	31	0	57	.14	4	.5	.8	27	UKF
		2	22 3	44.11	19	17.77	155	13.01	7.34	2.0	1.9	22	0	116	.10	2	.6	1.1	21	POL
		2	2330	34.62	19	19.95	155	6.84	7.28	1.6	1.6	20	0	113	.09	5	.6	1.3	17	UER
		3	240	36.67	19	20.07	155	9.29	8.19	1.0	1.2	20	0	78	.09	4	.6	1.2	16	UER
		3	635	52.72	19	23.22	155	24.70	12.05	1.5	1.9	18	0	100	.07	5	.5	.6	15	UKF
		3	1010	35.83	19	31.17	155	47.82	9.09		1.4	16	0	178	.12	4	1.1	.6	14	KON
		3	1320	28.62	19	24.16	155	25.23	10.20	1.7	1.6	18	0	77	.06	5	.5	1.3	17	UKF
		3	1350	31.69	19	46.89	155	34.01	15.07	1.8	1.8	18	1	91	.11	11	.7	.8	17	KKU
		3	1353	6.03	19	47.60	155	36.14	11.28	2.1	1.8	13	0	125	.15	15	.8	1.1	10	KKU
		3	16 8	24.19	19	16.82	155	28.45	7.43		1.4	14	0	93	.15	11	.7	2.7	13	HEA
		3	1757	30.63	19	20.60	155	10.70	8.22	1.7	1.5	22	0	81	.09	3	.5	1.0	20	UER
		3	2319	13.07	19	44.79	156	1.33	7.79	2.8	2.4	28	1	227	.13	20	1.4	.8	27	KON F
		3	2329	22.49	19	20.68	155	13.42	9.52	2.5	2.9	35	1	59	.10	4	.3	.5	21	UER
		3	2338	18.76	19	20.46	155	13.11	8.97	2.1	2.3	28	0	64	.09	4	.4	.6	22	UER
		4	147	55.64	19	20.23	155	7.11	8.90	2.5	2.7	31	1	102	.09	5	.5	.6	28	UER
		4	7 8	13.06	19	23.02	155	3.61	9.07	2.6	2.9	31	0	103	.10	3	.6	.4	27	MER
		4	710	41.70	19	22.99	155	3.70	8.75	2.1	2.0	25	1	101	.10	3	.6	.5	21	MER
		4	1423	3.40	19	22.51	155	28.55	9.14	1.0	1.3	19	0	62	.09	2	.5	1.1	17	UKF
		4	20 5	10.88	19	25.46	155	25.32	5.54	1.6	1.6	18	1	125	.09	7	.5	2.5	15	UKF
		5	019	23.56	19	19.51	155	3.14	6.45	1.4	1.2	10	0	237	.07	1	1.5	1.2	10	MER
		5	310	7.44	19	20.65	155	6.40	6.97	1.2	1.2	17	0	103	.07	6	.5	1.0	11	UER
		5	429	44.32	19	21.31	155	6.67	8.65	2.5	2.6	33	3	87	.06	6	.4	.5	24	UER
		5	452	30.85	19	20.96	155	2.71	5.48	2.1	1.9	18	1	145	.12	2	.9	1.2	11	MER
		5	521	42.29	19	19.26	155	10.76	4.79	1.3	1.1	15	0	109	.10	5	.5	1.6	14	UER
		5	548	25.07	19	19.93	155	8.60	6.99		1.4	13	1	106	.08	5	.7	1.2	11	UER
		5	10 0	26.66	19	23.81	155	15.88	3.09	2.0	1.6	20	1	71	.09	1	.3	.3	16	SPC
		5	1216	36.49	19	22.32	155	4.53	8.62	3.1	2.8	37	0	86	.09	3	.5	.5	31	MER
		5	1259	4.25	19	19.27	155	11.85	7.72	1.9	1.3	25	0	98	.08	5	.5	1.0	18	UER
		5	15 5	25.15	19	15.93	155	13.26	2.28	1.8	1.3	20	0	209	.10	2	1.1	.4	15	POL
		5	15 5	52.80	19	21.34	155	15.07	7.78	1.7	1.4	21	1	65	.09	2	.4	.8	16	KOA
		5	1551	2.13	19	23.13	155	23.97	9.41	1.6	1.2	18	1	52	.08	6	.5	1.5	13	UKF
		5	2148	6.10	19	19.21	155	11.41	6.75	1.4	1.1	18	0	103	.07	5	.5	1.6	14	UER
		5	2229	31.30	20	.47	155	47.04	8.05		1.6	9	0	175	.05	13	1.6	1.8	4	KOH
		5	2325	21.87	19	25.62	155	24.42	9.38	1.2	1.3	17	1	77	.10	8	.6	1.5	11	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JUN	6	235	34.81	19	20.38	155	13.04	8.31	1.8	1.2	23	0	65	.07	4	.5	1.0	19	UER
		6	236	58.37	19	20.66	155	12.73	9.29	1.8	1.4	22	0	65	.08	4	.5	.8	19	UER
		6	617	44.21	19	21.77	155	1.36	6.89	1.3	1.1	20	0	189	.12	7	1.1	1.6	14	MER
		6	659	18.45	19	21.31	155	2.11	5.04	1.5	1.1	25	0	163	.12	3	.7	1.1	10	MER
		6	729	12.51	20	4.34	155	29.54	16.39		.9	11	2	285	.19	52	8.2	63.4	6	KKU *
		6	944	9.65	19	23.91	154	57.11	7.87	2.0	2.1	19	0	201	.16	4	1.5	.6	16	LER
		6	1347	31.04	19	23.61	155	2.93	7.84	1.3	1.5	13	0	112	.12	3	.8	1.3	12	MER
		6	1510	13.47	19	23.04	155	3.80	8.28	1.3	1.4	19	0	99	.10	3	.6	.7	18	MER
		6	1847	7.83	19	26.36	155	24.47	7.44	2.1	1.9	24	1	49	.10	7	.4	1.4	21	UKF
		7	233	45.36	19	21.92	155	6.04	7.80	2.0	2.0	30	2	78	.11	2	.4	.7	23	UER
		7	5 2	54.34	19	23.14	155	4.04	8.31	2.8	3.1	29	0	94	.09	3	.5	.5	28	MER
		7	629	26.14	19	25.59	155	29.08	9.37	1.8	1.4	23	0	60	.12	6	.5	1.4	18	UKF
		7	1037	7.03	19	25.54	155	16.96	18.62	2.8	2.9	35	1	37	.12	1	.5	.9	27	INT
		7	1136	31.21	19	24.00	154	59.04	8.88	2.1	1.5	24	0	176	.14	2	1.0	.6	22	LER
		7	1221	.75	19	16.56	155	12.46	5.24	1.8	1.4	20	0	187	.08	8	.7	2.4	20	POL
		7	1225	51.88	19	18.96	155	8.36	6.88	1.3	1.2	21	0	87	.09	3	.6	1.3	21	POL
		7	1522	48.42	19	20.61	155	7.43	7.44	1.9	1.5	26	1	90	.08	5	.4	.7	24	UER
		7	1622	28.64	19	19.38	155	11.14	5.83		1.1	24	0	101	.13	5	.6	1.2	21	UER
		7	1648	12.57	19	22.02	155	.43	6.91	1.6	1.1	17	0	188	.12	6	1.1	.9	16	LER
		7	1758	40.12	19	15.97	155	12.43	4.38	1.9	1.4	20	0	197	.14	8	1.0	5.2	20	POL
		7	18 2	58.87	19	19.91	155	16.98	8.37	1.8	1.2	28	3	96	.15	1	.6	.9	24	KOA
		7	1838	16.10	19	19.37	155	13.01	7.59		1.1	19	0	79	.09	4	.5	.8	19	UER
		7	2017	20.61	19	19.56	155	3.49	5.43	1.0	1.0	13	0	188	.15	1	1.3	1.6	13	MER
		8	246	30.49	19	19.00	155	10.58	7.31	1.4	1.1	23	0	112	.17	6	.7	1.1	21	UER
		8	3 9	21.22	19	16.63	155	34.46	8.61		1.2	24	1	109	.12	6	.5	.9	21	HEA
		8	730	46.62	19	21.99	155	4.57	8.52	2.3	2.1	29	1	83	.12	4	.6	.5	25	MER
		8	1921	7.03	19	20.10	155	13.15	9.44	1.5	1.5	19	0	67	.07	5	.5	.7	13	UER
		8	2022	55.34	19	23.15	155	3.21	7.73	2.0	1.8	26	1	110	.11	3	.6	.6	24	MER
		8	2031	6.54	19	22.96	155	2.92	8.33	2.2	2.1	23	1	120	.10	4	.6	.6	21	MER
		8	2116	20.56	19	14.81	155	33.66	8.05	2.0	1.6	23	0	118	.15	6	.6	1.1	19	LSW
		8	2224	13.35	19	21.31	155	2.69	7.55	1.8	1.6	25	0	141	.11	3	.6	.7	20	MER
		8	2241	43.86	19	23.66	155	15.26	2.60	1.1	1.1	8	0	92	.06	3	.4	.6	8	SPC
		9	0 2	17.88	19	49.82	155	45.37	13.92	2.8	3.1	33	0	147	.09	18	.6	.8	30	KON
		9	051	11.06	19	11.84	155	38.51	4.27	2.4	2.3	26	0	102	.19	18	.7	2.3	22	HEA
		9	157	38.80	19	19.31	155	13.85	6.59	1.5	1.6	23	0	84	.11	4	.5	.9	22	UER
		9	355	9.34	19	24.38	155	16.31	2.98	1.3	1.3	8	1	130	.07	3	.5	.7	7	SPC
		9	454	18.45	19	27.39	155	28.01	9.20	2.2	1.9	32	0	46	.12	9	.4	.9	22	UKF
		9	9 7	53.30	19	24.70	155	28.23	10.87	3.1	3.3	38	1	32	.10	4	.4	.5	35	UKF
		9	1426	28.54	19	23.01	155	2.73	8.85	1.9	1.8	20	1	124	.12	4	.8	.7	18	MER
		9	15 5	37.50	19	21.94	155	6.05	6.64		1.4	21	0	78	.11	2	.6	1.0	17	UER
		9	1533	23.19	19	24.05	155	26.20	13.25	2.1	1.8	18	1	77	.27	4	1.1	1.2	14	UKF
		10	033	32.22	19	21.87	155	4.35	7.55	2.3	2.4	26	0	87	.09	4	.5	.7	24	MER
		10	2 1	59.98	19	23.48	155	24.19	8.92	2.1	2.0	30	1	47	.11	6	.4	.9	27	UKF
		10	4 5	53.99	19	25.11	154	54.68	8.17	2.3	2.1	19	0	240	.13	5	2.0	.7	18	LER
		10	13 2	2.83	19	19.79	155	11.79	9.04	1.7	1.6	23	0	87	.06	5	.5	1.0	19	UER
		10	1717	57.93	19	20.12	155	13.34	6.77	1.6	1.3	20	1	65	.11	5	.5	1.3	15	UER
		10	2327	11.85	19	22.18	155	5.87	8.58	2.4	2.6	25	1	74	.07	2	.4	.6	17	MER
		11	340	36.18	19	22.18	155	14.24	1.46		1.4	12	0	80	.03	2	.3	.5	9	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JUN	11	6 6	2.72	19	21.16	155	2.03	6.63	2.2	2.0	15	0	169	.10	3	.7	1.2	10	MER	
		11	955	36.19	19	16.66	155	18.34	32.20	1.7	1.3	26	1	144	.08	3	.9	1.7	23	HLP	
		11	1110	58.78	19	22.19	155	1.34	.82	2.1	1.3	14	2	167	.11	5	.4	.7	7	MER	
		11	1536	19.73	19	19.71	155	10.97	7.41	1.6	1.6	18	0	93	.05	5	.5	1.1	13	UER	
		11	2146	29.91	19	26.15	155	24.84	10.92	2.3	1.9	25	2	54	.09	7	.5	.9	20	UKF	
		11	22 2	46.59	19	19.13	155	16.17	8.48	2.1	2.3	25	2	115	.06	3	.4	.9	16	KOA	
		12	036	51.07	19	20.71	155	3.05	7.71	2.9	3.2	32	2	125	.08	2	.6	.7	28	MER	
		12	129	.15	19	26.21	155	23.56	10.57	1.8	1.4	16	2	60	.09	6	.6	1.4	8	UKF	
		12	3 7	44.30	19	19.02	155	29.56	6.98	1.3	1.5	15	0	73	.15	7	.6	1.7	12	HEA	
		12	542	26.97	19	31.02	155	29.77	4.05	2.3	2.6	24	2	126	.09	4	.4	1.2	15	NER	
		12	6 6	1.44	19	20.44	155	13.26	8.95	1.6	1.8	16	0	63	.04	4	.6	1.2	12	UER	
		12	620	22.60	19	19.58	155	10.21	8.60	1.6	1.9	18	1	95	.07	5	.6	1.4	13	UER	
		12	10 2	10.85	19	19.69	155	7.92	8.67	2.8	2.4	33	1	94	.09	4	.5	.5	27	UER	
		12	1157	1.95	19	24.24	155	24.90	10.03		1.3	23	2	77	.09	6	.5	1.0	19	UKF	
		12	1443	34.09	19	22.09	155	29.74	6.89		1.4	22	0	144	.11	4	.7	1.2	19	UKF	
		12	1448	4.95	19	16.88	155	21.10	7.97		1.3	15	0	175	.10	5	.9	1.7	14	SWR	
		12	1655	48.83	19	24.35	155	24.70	12.22	3.1	3.0	38	2	40	.10	6	.4	.3	26	UKF	
		12	17 5	5.58	19	24.18	155	24.88	10.62		1.1	17	0	78	.05	6	.6	1.4	14	UKF	
		12	2025	5.42	19	22.34	155	5.08	8.45	1.9	1.3	26	0	75	.11	2	.6	.6	24	MER	
		13	051	58.99	19	26.25	155	44.74	11.47		1.6	20	0	131	.11	8	.7	.4	15	MOK	
		13	953	11.37	19	20.52	155	11.64	8.47	1.7	1.3	20	1	75	.07	4	.5	1.0	11	UER	
		13	1047	39.72	19	19.13	155	11.39	6.83	1.7	1.1	16	1	105	.05	5	.5	1.4	9	UER	
		13	1553	7.28	19	6.07	155	28.27	27.15	1.4	1.1	18	3	186	.07	6	1.0	1.8	9	LSW	
		13	1730	51.41	19	20.47	155	7.80	1.51	1.8	1.1	21	2	142	.12	5	.7	1.0	13	UER	
		13	2115	20.27	19	25.08	155	25.39	9.83	1.9	1.4	23	1	69	.09	6	.5	1.4	17	UKF	
		13	2121	24.41	19	22.15	155	4.57	8.23	2.0	1.5	22	2	84	.09	3	.4	.8	11	MER	
		13	2126	18.63	19	23.09	155	14.79	3.05	1.1	1.1	9	0	114	.03	2	.5	.7	7	GLN	
		13	2130	43.13	19	23.07	155	14.77	3.56	1.6	1.4	10	0	111	.04	2	.4	.7	8	GLN	
		13	2257	16.88	19	20.38	155	3.28	7.17	2.2	2.2	26	2	102	.10	1	.8	1.0	14	MER	
		13	2355	2.69	19	31.08	155	29.42	4.52	.9	1.2	9	2	122	.05	4	.6	1.4	6	NER	
		14	3 1	3.20	19	21.93	155	4.32	8.19	2.0	1.8	19	1	94	.08	4	.5	1.0	9	MER	
		14	525	31.12	19	20.32	155	12.71	8.36	1.6	1.1	17	0	70	.06	4	.6	1.0	13	UER	
		14	622	10.23	19	17.65	155	21.44	2.92	1.0	1.0	17	2	123	.13	5	.6	.9	13	SWR	
		14	817	30.73	19	21.37	155	1.13	5.16	2.1	1.2	26	0	186	.13	4	.8	1.2	23	MER	
		14	1439	36.17	19	19.59	155	11.07	8.27	2.0	1.8	27	0	95	.11	5	.5	.6	27	UER	
		14	1646	27.86	19	19.77	155	10.34	5.13	1.7	1.3	21	2	91	.06	4	.5	1.6	20	UER	
		14	1725	11.12	19	19.22	155	10.03	6.93		1.2	23	0	103	.14	5	.6	1.3	22	UER	
		14	1844	14.43	19	17.08	155	21.23	7.09	2.0	1.9	29	0	135	.12	5	.6	.9	26	SWR	
		14	1934	34.04	19	21.19	155	2.25	7.60	1.6	1.1	15	0	167	.14	3	1.3	1.2	14	MER	
		15	635	24.23	19	27.81	155	14.33	34.48	2.0	1.7	30	0	61	.11	6	.7	1.8	20	DEP	L
		15	654	46.75	19	45.84	155	.95	35.17	2.3	1.9	30	1	224	.10	7	1.6	2.0	23	HIL	
		15	817	31.69	19	20.32	155	6.94	7.47	2.0	2.1	26	0	103	.09	5	.5	.9	22	UER	
		15	932	29.03	19	20.10	155	8.61	7.28	1.3	1.1	16	0	76	.06	4	.6	1.4	14	UER	
		15	1423	44.30	19	23.30	155	14.76	.03	.5	1.8	10	0	68	.16	3	.3	.7	7	GLN	*
		15	2212	11.97	19	21.91	155	6.96	7.16	1.4	1.5	26	0	75	.12	2	.5	.9	22	UER	
		15	2347	33.29	19	19.53	155	11.00	4.21	2.0	2.1	12	1	96	.14	5	.6	2.7	8	UER	
		16	229	13.11	19	22.87	155	4.17	10.70	1.6	1.2	20	1	92	.07	3	.6	1.0	14	MER	
		16	230	54.01	19	28.79	155	25.27	13.59	1.6	1.8	26	1	49	.13	4	.5	.7	20	UKF	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JUN	16	555	41.77	19	22.72	155	4.19	10.93	1.6	1.2	19	0	92	.07	3	.6	1.1	16	MER	
		16	628	45.27	19	23.88	155	15.67	3.48	1.8	1.9	16	1	107	.07	3	.4	.6	14	SPC	
		16	711	59.45	19	20.12	155	11.66	7.16	1.1	1.1	24	0	81	.09	5	.5	.9	22	UER	
		16	1054	38.53	19	19.93	155	6.95	7.81	2.5	2.2	32	1	111	.09	5	.5	.6	25	UER	
		16	1713	10.95	19	20.50	155	12.43	8.05	1.4	1.3	26	0	70	.11	4	.4	.6	23	UER	
		16	1746	22.25	19	23.64	155	1.61	8.42	2.1	1.2	17	0	138	.15	5	.9	1.2	16	MER	
		16	1835	4.94	19	22.22	155	5.40	7.57	1.9	1.1	28	0	73	.11	2	.5	.7	24	MER	
		16	2018	8.86	19	21.41	155	51.82	3.87	1.5	1.3	16	1	154	.10	10	.7	3.2	14	KON	
		17	140	11.04	19	55.16	155	17.72	14.97	1.6	1.6	33	4	195	.17	37	1.1	4.5	32	KKU	
		17	3 9	28.05	19	23.79	155	15.30	3.36	2.5	2.8	32	1	38	.11	2	.3	.5	26	SPC	F
		17	420	52.25	19	19.65	155	12.13	9.70	2.9	2.9	36	1	86	.09	5	.4	.4	35	UER	
		17	8 9	58.70	19	21.80	155	6.12	7.37	1.4	1.2	18	0	80	.11	2	.5	1.0	14	UER	
		17	920	19.09	19	29.70	155	28.40	12.64	2.3	1.8	11	1	109	.10	4	1.4	2.5	8	NER	
		17	929	21.82	19	18.22	155	14.43	7.73		1.4	15	0	125	.10	3	.9	1.3	13	POL	
		17	1228	58.83	19	16.46	155	12.13	3.56		1.2	7	0	207	.08	8	2.6	14.5	5	POL	*
		17	1353	52.65	19	20.02	155	11.54	6.47		1.6	18	0	84	.12	5	.7	1.4	14	UER	
		17	14 0	49.37	19	21.05	155	7.78	8.35		1.1	15	0	82	.07	4	.6	1.2	12	UER	
		17	1518	32.80	19	20.94	155	10.43	7.29	1.7	2.1	25	0	84	.10	2	.4	.7	20	UER	
		17	18 7	4.85	18	58.44	155	10.11	41.75	2.7	2.1	20	0	250	.07	35	2.3	3.7	18	PPL	
		17	2115	43.19	19	21.58	155	7.44	7.89	1.8	1.6	23	0	76	.09	3	.5	.9	18	UER	
		17	2122	56.98	19	19.56	155	10.65	7.08	1.7	1.7	24	0	97	.10	5	.5	.8	17	UER	
		18	027	3.59	19	21.65	155	1.96	6.26		1.1	16	0	161	.12	4	1.0	1.1	11	MER	
		18	047	22.27	19	22.26	154	58.76	7.91	2.0	1.6	24	1	203	.12	5	1.1	.6	19	LER	
		18	323	46.29	19	21.99	155	7.22	7.76	1.9	1.8	28	1	72	.10	3	.4	.8	19	UER	
		18	747	42.66	19	19.71	155	11.51	5.99	1.7	1.8	22	0	91	.10	5	.5	1.0	15	UER	
		18	856	53.75	19	23.50	155	14.99	2.78	1.0	1.0	8	0	186	.02	3	.6	.7	6	GLN	
		18	1022	38.51	19	22.10	155	13.47	3.15	1.4	1.4	9	0	152	.02	1	.5	.5	7	UER	
		18	1144	39.67	19	23.26	155	2.50	6.41	1.3	1.2	12	2	126	.09	4	.6	1.4	8	MER	
		18	1358	48.71	19	22.42	155	3.78	10.21	2.6	2.6	26	0	102	.09	4	.7	.6	22	MER	
		18	2057	37.67	19	19.10	155	10.02	7.80	2.2	2.4	24	0	107	.07	5	.4	.8	15	UER	
		18	2213	18.71	19	18.18	155	13.03	4.88	.8	1.1	8	0	163	.05	2	1.5	2.5	7	POL	
		19	340	17.22	19	48.77	156	5.62	6.43		1.9	9	0	311	.13	30	17.4	6.4	1	KON	*
		19	347	3.92	19	19.58	155	10.08	9.54	2.1	2.6	28	1	95	.09	5	.5	.9	18	UER	
		19	358	34.78	19	19.60	155	12.21	5.69	1.6	1.4	17	1	86	.09	5	.5	1.6	8	UER	
		19	628	44.25	19	18.60	155	20.73	6.09	1.6	1.2	10	1	194	.03	4	.8	1.6	5	SWR	
		19	629	57.45	19	20.09	155	8.95	4.03	1.1	1.0	4	0	120	.01	4	1.5	2.5	2	UER	
		19	955	23.13	19	25.19	155	25.76	10.13	1.7	1.2	18	0	65	.10	6	.6	1.1	17	UKF	
		19	1111	55.11	19	23.10	155	24.80	8.58	1.7	1.4	20	0	82	.08	5	.5	1.1	18	UKF	
		19	1240	37.45	19	20.14	155	7.42	6.39		1.3	21	0	99	.11	5	.6	1.4	20	UER	
		19	1517	38.34	19	20.03	155	10.70	9.98	3.2	3.5	36	1	87	.12	4	.4	.4	28	UER	F
		19	1524	10.29	19	21.82	155	1.62	2.19		1.1	14	1	168	.19	4	1.1	2.9	11	MER	
		19	1632	36.98	19	20.55	155	13.21	7.67	1.6	1.4	22	0	62	.14	4	.7	1.0	18	UER	
		19	1919	32.60	19	20.68	155	5.91	7.28	1.9	1.1	26	0	106	.11	4	.5	.9	22	MER	
		19	1933	30.81	19	20.76	155	6.00	7.06	1.6	1.1	23	1	103	.12	4	.6	.9	20	UER	
		19	2047	26.45	19	24.41	155	24.19	10.07		1.1	10	0	95	.06	7	.8	2.2	9	UKF	
		19	2112	34.70	19	20.54	155	2.44	4.94	2.0	1.2	21	3	173	.10	1	.5	1.0	19	MER	
		20	356	11.56	19	21.40	155	4.04	6.94		1.1	21	1	91	.15	3	.6	1.0	19	MER	
		20	6 8	26.40	19	20.70	155	12.75	7.69	1.8	1.4	25	0	65	.11	4	.5	.7	21	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JUN	20	644	44.55	19	23.14	155	15.28	3.10	1.6	1.2	12	0	98	.07	2	.5	.6	9	SPC
		20	12 6	57.23	19	22.33	155	13.25	2.54	1.3	1.0	6	0	136	.14	1	.7	.6	6	UER
		20	1330	2.04	19	29.33	154	53.90	2.97	1.9	1.6	16	1	162	.16	1	2.2	1.5	13	LER
		20	1549	13.08	19	16.72	155	13.49	7.89		1.3	15	0	183	.09	1	.8	1.1	15	POL
		20	16 1	59.15	19	22.22	155	4.57	9.01	2.0	1.7	24	0	84	.09	3	.6	.5	19	MER
		20	1849	57.72	19	24.78	155	28.81	9.61	2.1	1.8	28	0	49	.10	5	.4	.9	20	UKF
		20	23 4	52.92	19	17.58	155	15.37	8.24	1.9	1.8	27	0	157	.11	4	.5	.7	21	KOA
		21	615	20.50	19	17.24	154	57.58	47.51	1.7	1.7	27	0	228	.08	15	1.8	2.8	22	DIS
		21	622	31.61	19	19.58	155	8.56	9.54	2.9	3.2	29	0	79	.10	4	.6	.4	22	UER
		21	813	56.75	19	20.96	155	5.80	6.77	1.3	1.2	22	0	99	.11	4	.6	1.2	20	MER
		21	822	34.32	19	9.42	155	30.21	11.48		1.3	21	1	135	.13	4	.6	1.0	16	LSW
		21	926	7.19	19	19.86	155	9.93	8.03		1.3	23	1	87	.08	4	.5	1.0	22	UER
		21	1212	3.02	19	17.41	155	22.29	5.51	1.9	1.8	26	0	122	.18	6	.6	1.5	24	SWR
		21	16 0	24.72	19	23.95	155	16.02	3.28	1.5	2.1	15	0	105	.06	2	.4	.5	13	SPC
		21	1658	10.97	19	23.90	155	15.41	3.27	1.2	1.1	6	0	108	.05	2	.6	1.0	5	SPC
		21	1713	26.55	19	22.93	155	14.21	1.55	1.1	1.7	7	0	115	.09	2	.5	.6	7	UER
		21	1923	6.21	19	22.75	155	3.02	7.45	1.4	1.3	20	0	119	.11	4	.6	.6	19	MER
		21	1936	20.63	19	20.01	155	8.86	7.71		1.1	26	1	74	.09	4	.5	.9	21	UER
		21	1945	38.74	19	14.19	155	34.82	8.72		1.2	20	2	116	.11	4	.6	.9	20	HEA
		21	2147	23.52	19	19.44	155	10.67	9.82	2.7	2.8	35	1	99	.11	5	.5	.4	32	UER
		21	2153	18.63	19	19.53	155	10.46	6.49	.8	.9	18	0	102	.13	5	.6	1.3	18	UER
		21	2347	40.41	19	20.70	155	1.33	4.71	1.2	1.4	24	1	201	.16	3	1.0	1.1	23	MER
		22	014	24.22	19	19.87	155	11.29	7.12	1.6	1.3	28	1	88	.11	5	.5	.7	26	UER
		22	029	31.95	19	25.19	155	18.77	14.83	1.8	1.4	28	0	40	.11	3	.5	.4	25	INT
		22	249	53.60	18	43.58	155	13.22	8.71	2.9	2.3	33	1	280	.18	55	5.3	28.1	31	PPL *
		22	410	3.71	19	27.16	155	27.74	5.36	.9	1.0	15	0	66	.10	9	.5	3.4	12	UKF
		22	416	2.23	19	26.43	154	56.73	5.06	.7	1.0	15	5	184	.12	3	.9	1.5	15	LER
		22	529	27.77	19	21.01	155	7.17	8.18	2.0	1.7	29	0	87	.10	4	.5	.6	27	UER
		22	534	27.15	19	19.40	155	11.02	6.71		1.0	26	0	100	.09	5	.5	.7	25	UER
		22	743	21.11	19	21.84	155	6.55	7.06	1.6	1.1	28	1	78	.14	2	.5	.9	26	UER
		22	854	1.91	19	19.89	155	12.16	6.71	1.2	1.3	17	0	82	.11	5	.6	1.4	16	UER
		22	1630	10.11	19	19.55	155	10.72	7.75	1.0	1.6	16	0	97	.09	5	.6	1.3	16	UER
		22	2030	39.45	19	13.67	155	31.74	8.50	2.2	1.7	18	0	130	.21	10	.9	1.9	16	LSW
		23	334	13.84	19	19.96	155	10.75	8.16	1.9	2.0	25	0	88	.08	4	.5	.8	25	UER
		23	5 2	24.46	19	18.74	155	13.08	7.41	1.1	1.1	18	0	86	.08	3	.5	1.1	14	POL
		23	834	3.79	19	23.15	155	14.92	3.59	2.6	2.9	25	0	65	.08	2	.4	.4	24	GLN
		23	936	45.74	19	20.47	155	4.22	7.60	1.8	1.8	27	1	115	.08	2	.5	1.0	16	MER
		23	1343	11.65	19	26.50	155	24.35	8.03	1.9	1.8	19	0	82	.09	6	.5	1.3	16	UKF
		23	2353	12.73	19	20.14	155	7.52	7.12	1.4	1.3	20	0	97	.06	5	.5	1.3	15	UER
		24	032	38.13	19	22.02	155	7.16	9.13	2.7	2.9	37	3	73	.07	2	.3	.5	26	UER
		24	044	1.88	19	30.68	155	23.49	6.84	.9	1.4	17	2	85	.10	2	.6	1.0	10	NER
		24	155	58.06	19	26.20	155	23.84	8.45	1.3	1.1	12	0	105	.07	6	.6	1.3	10	UKF
		24	344	39.74	19	19.29	155	25.09	9.56	1.3	1.3	12	0	161	.06	4	.9	1.2	7	HEA
		24	446	14.72	19	20.93	155	7.18	7.82	1.2	1.3	19	0	88	.09	4	.5	1.0	11	UER
		24	651	50.61	19	20.04	155	12.20	5.60	1.3	.9	20	0	79	.10	5	.5	1.6	13	UER
		24	8 9	38.11	19	21.69	155	6.37	7.11		1.3	24	0	82	.12	2	.6	1.0	20	UER
		24	846	57.81	19	19.49	155	13.67	6.85		1.7	24	0	123	.12	6	.6	.9	15	UER
		24	1429	55.91	19	20.16	155	12.69	8.35	1.6	1.7	22	0	72	.08	5	.5	.9	16	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JUN	24	1647	15.39	19	20.19	155	9.50	7.84		1.2	23	0	78	.10	4	.5	.8	20	UER
		24	1742	31.11	19	23.70	155	26.67	8.55	1.8	1.4	18	0	80	.10	3	.5	1.2	15	UKF
		24	1755	25.37	19	20.61	155	12.83	8.36	1.9	1.8	25	0	65	.09	4	.4	.6	24	UER
		24	2214	40.91	19	24.78	155	24.89	8.84	1.6	1.2	18	0	73	.10	6	.5	1.4	13	UKF
		25	026	50.46	19	20.58	155	12.04	8.09	1.6	1.7	26	1	72	.10	4	.4	.7	21	UER
		25	225	27.79	19	22.05	155	13.43	3.75		1.0	10	0	92	.07	1	.5	.7	10	UER
		25	258	20.09	19	19.11	155	8.37	7.08		1.3	21	0	132	.09	3	.8	1.3	19	UER
		25	6 5	15.02	19	21.87	155	4.96	8.22	2.0	1.6	25	0	78	.10	3	.6	.5	19	MER
		25	638	12.65	19	18.30	155	18.15	32.66		1.8	24	0	122	.07	4	1.0	1.9	21	DEP
		25	728	19.91	19	19.62	155	6.70	8.99	2.2	2.3	28	0	123	.10	5	.6	.5	22	UER
		25	1615	57.01	19	48.39	155	35.40	11.84	1.7	1.8	10	0	187	.09	25	1.0	2.6	8	KKU
		25	17 8	4.71	19	19.49	155	13.04	7.77		1.4	19	0	146	.11	6	.7	.7	16	UER
		25	1754	58.86	19	30.31	155	28.55	4.69		1.5	12	0	93	.09	4	.5	1.8	12	NER
		25	1811	5.18	19	26.07	155	26.21	8.56	2.6	2.4	31	1	42	.11	7	.4	1.0	27	UKF
		25	1835	50.26	19	21.81	155	1.92	8.88	2.8	3.1	27	0	159	.09	4	.8	.4	27	MER
		25	1854	56.74	19	23.23	155	2.65	7.39		1.4	16	0	122	.12	4	.8	.9	14	MER
		25	2013	59.36	19	30.60	155	29.40	3.67	1.9	1.5	11	0	104	.07	4	.6	1.6	11	NER
		25	2336	2.31	19	19.57	155	18.01	40.39		1.4	28	0	80	.07	2	1.1	1.9	26	DEP
		26	133	50.28	19	19.40	155	11.08	8.36	2.0	2.2	29	1	100	.11	5	.5	.7	25	UER
		26	141	29.72	19	24.35	155	24.96	10.50	2.1	1.7	24	0	73	.10	6	.5	1.0	23	UKF
		26	331	47.60	19	26.63	155	29.82	9.08	2.2	2.0	26	1	58	.11	9	.4	1.1	23	UKF
		26	421	35.11	19	21.92	155	49.56	9.70	2.5	1.8	17	0	121	.16	12	.8	1.1	15	KON
		26	440	32.51	19	24.04	155	16.63	6.82	1.5	1.4	10	0	95	.05	2	.7	1.3	8	LPC
		26	1317	35.47	19	20.07	155	10.44	4.95	1.3		17	1	124	.10	4	.7	2.2	12	UER
		26	1317	50.23	19	21.50	155	5.09	7.58	2.0	1.3	15	1	87	.10	5	.6	1.5	9	MER
		26	1519	41.52	19	20.64	155	6.26	8.41	1.9	1.6	25	1	104	.08	4	.4	1.0	13	UER
		26	16 5	16.71	19	20.72	155	2.95	6.41	1.4	1.1	15	0	137	.08	2	1.0	1.3	9	MER
		26	17 1	3.20	19	20.28	155	2.76	7.57	1.1	1.3	10	1	167	.08	1	1.3	1.6	6	MER
		26	2147	59.77	19	28.54	155	52.01	10.11	3.4	3.3	32	3	103	.14	6	.5	.5	25	KON
		26	2233	53.27	19	21.83	155	7.13	8.92	2.6	2.9	36	4	75	.08	3	.3	.6	27	UER
		26	2252	24.30	19	20.89	155	2.05	6.37	1.3	1.3	11	1	185	.11	2	1.2	1.9	4	MER
		26	2255	8.38	19	19.39	155	8.59	7.83	1.2	1.1	14	0	125	.05	4	1.3	2.4	8	UER
		27	049	21.44	19	19.18	155	9.76	7.60	1.3	1.1	18	1	103	.05	5	.6	1.5	14	UER
		27	420	58.99	19	24.40	155	16.01	10.64	1.5	1.3	11	1	132	.09	1	1.2	1.0	1	LPC
		27	422	26.05	19	24.23	155	17.18	8.33	1.6		14	0	67	.05	1	.7	1.2	5	LPC
		27	522	46.81	19	20.68	155	2.06	4.68	1.3	1.2	7	0	193	.06	2	1.5	1.7	5	MER
		27	8 2	23.41	19	21.98	155	13.29	3.20	1.5	1.4	11	0	144	.06	1	.5	.5	10	UER
		27	951	19.56	19	58.36	154	50.10	11.87	2.4	2.3	10	0	293	.07	36	10.9	3.1	9	DIS
		27	1338	39.83	19	32.66	155	36.87	8.67	2.3	1.2	13	0	118	.15	6	.7	1.6	11	MOK
		27	1537	34.64	19	26.57	155	24.80	3.26	1.8	1.2	14	0	79	.11	7	.5	3.3	11	UKF
		27	2040	53.51	19	21.07	155	14.87	1.67	1.3	1.1	10	0	181	.04	3	.4	.6	7	UER
		27	21 8	5.71	19	26.12	155	24.44	8.61	2.1	1.9	31	1	51	.12	7	.4	1.0	28	UKF
		27	2331	30.20	19	23.30	155	15.04	3.03	1.1	1.0	8	0	103	.06	2	.5	.7	6	SPC
		28	146	28.13	19	23.87	155	15.68	2.87	1.4	1.4	13	1	107	.04	3	.3	.4	8	SPC
		28	3 6	54.02	19	19.39	155	12.44	5.98	2.0	1.9	26	1	88	.14	5	.5	1.0	23	UER
		28	318	32.99	19	19.79	155	8.72	5.26		1.2	24	0	122	.09	5	.5	1.2	21	UER
		28	442	50.79	19	21.04	155	2.28	7.07	1.8	1.2	21	0	163	.11	2	.7	.8	18	MER
		28	648	4.10	19	20.00	155	12.09	8.32	1.7	1.5	22	0	80	.10	5	.5	.7	21	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JUN	28	9 6	34.61	19	22.33	155	28.69	7.81	1.9	1.5	19	0	115	.11	2	.5	1.0	18	UKF	
		28	943	45.62	19	20.72	155	13.00	6.63	1.6	1.8	26	0	62	.11	4	.5	.9	20	UER	
		28	1114	15.77	19	22.47	155	2.28	6.21	1.5	1.3	23	0	142	.14	5	.7	.8	22	MER	
		28	1314	42.43	19	19.35	155	10.85	4.82	1.1	1.3	18	1	101	.08	5	.5	1.3	17	UER	
		28	1332	45.53	19	26.10	155	24.31	7.87	2.1	1.7	25	1	46	.12	7	.4	1.3	18	UKF	
		28	1721	21.01	19	17.90	155	12.99	9.36	2.5	2.6	29	0	144	.09	9	.6	.7	29	POL	
		28	1826	34.88	19	24.12	155	16.11	2.94	1.1	1.1	5	0	118	.01	2	.6	1.1	5	SPC	
		28	23 4	4.00	19	23.88	155	15.31	3.26	1.1	1.1	5	0	106	.02	2	.5	1.0	3	SPC	
		28	2331	42.35	19	19.73	155	8.74	6.19	1.6	1.3	22	2	77	.09	5	.5	1.3	18	UER	
		28	2344	23.40	19	20.79	155	10.97	7.48	1.1	1.2	24	1	77	.14	3	.6	1.0	24	UER	
		29	514	29.16	19	27.59	155	27.52	8.57	1.5	1.4	11	0	86	.07	8	.6	2.2	11	UKF	
		29	549	46.68	19	20.20	155	11.83	7.75		1.3	22	2	79	.11	5	.6	1.1	21	UER	
		29	631	8.74	19	23.56	155	26.35	9.27	2.1	2.2	31	0	48	.12	3	.4	.7	27	UKF	
		29	647	57.83	19	20.05	155	13.04	5.15	1.1	1.4	19	0	69	.14	5	.6	2.1	17	UER	
		29	855	38.61	19	20.26	155	8.41	6.36		1.3	17	0	78	.09	4	.6	1.3	15	UER	
		29	932	58.50	19	14.15	155	26.98	4.53		1.4	16	0	112	.20	9	.8	23.8	16	LSW	*
		29	13 9	1.24	19	20.51	155	13.56	6.86	1.5	1.3	22	0	65	.12	4	.6	1.0	20	UER	
		29	1330	53.02	19	20.68	155	12.93	6.94	1.6	1.4	19	0	68	.13	4	.6	1.1	16	UER	
		29	1412	41.00	19	20.74	155	12.61	7.60	1.6	1.3	22	0	66	.12	4	.6	.9	20	UER	
		29	1449	9.50	19	20.08	155	13.73	4.40		1.2	16	0	71	.13	5	.5	2.0	14	UER	
		29	1644	13.19	19	23.29	155	17.05	2.41	1.4	1.4	14	1	69	.10	3	.4	.5	12	SPC	
		29	1722	50.87	19	22.03	155	13.67	3.18		1.3	14	0	88	.08	2	.4	.6	10	UER	
		29	1830	18.05	19	27.57	154	51.36	7.10	1.6	1.2	18	3	277	.20	4	2.4	1.2	17	LER	
		29	2143	47.58	19	19.87	155	8.04	8.06	1.4	1.5	27	2	89	.10	5	.5	.8	27	UER	
		29	23 2	23.82	19	21.79	155	13.31	1.68	1.3	1.3	12	0	65	.12	2	.5	.6	12	UER	
		30	0 8	8.33	19	24.61	155	28.62	7.87		1.5	23	1	65	.13	4	.5	1.5	22	UKF	
		30	254	.27	19	17.41	155	13.08	7.09	1.8	1.4	26	0	134	.12	1	.6	.8	26	POL	
		30	344	51.60	19	28.97	155	21.41	6.10	1.3	1.2	21	1	102	.11	4	.6	1.5	17	UKF	
		30	345	10.12	19	24.42	154	50.39	8.38	1.4	1.2	11	2	288	.17	10	2.8	1.5	10	LER	
		30	435	47.24	19	17.50	155	22.16	7.15		1.4	17	0	130	.14	5	.7	1.8	15	SWR	
		30	1048	42.44	19	19.37	155	11.08	6.48	1.2	1.1	19	1	100	.07	5	.5	1.3	9	UER	
		30	1148	15.01	19	21.68	155	2.55	6.16	1.4	1.0	17	1	143	.11	3	.6	1.1	6	MER	
		30	1359	24.71	19	21.86	155	6.01	8.76	1.7	1.5	23	1	80	.06	2	.4	.8	13	UER	
		30	1854	41.68	19	22.05	155	4.60	7.90	2.0	1.5	22	1	82	.10	3	.6	.9	10	MER	
		30	2242	27.95	19	20.73	155	3.18	7.61	1.2	1.4	17	1	116	.08	2	.7	1.0	5	MER	
		30	2344	39.54	19	24.15	155	25.58	10.35	1.2	1.5	26	0	55	.08	5	.5	.8	12	UKF	
	JUL	1	140	23.37	19	22.72	155	3.92	8.65	2.0	1.7	22	1	98	.08	3	.4	.8	11	MER	
		1	5 4	42.80	19	22.84	155	27.33	10.42	2.4	2.3	30	1	59	.11	1	.4	.9	23	UKF	
		1	525	27.42	19	28.21	155	22.42	5.10	2.1	1.5	20	1	97	.11	3	.5	1.0	12	UKF	
		1	746	27.54	19	24.07	155	26.62	6.28	.8	1.2	13	0	139	.09	3	.7	2.1	9	UKF	
		1	1242	26.83	19	26.75	155	30.01	9.12	1.9	1.4	18	1	78	.13	9	.5	1.7	16	MOK	
		1	16 0	43.03	19	20.24	155	11.76	6.98	1.6	1.3	15	0	79	.12	5	.6	.9	9	UER	
		1	1646	52.68	19	19.69	155	12.09	8.38	2.1	2.1	29	0	87	.09	5	.4	.7	24	UER	
		1	1753	17.04	19	19.51	155	7.33	7.12		1.3	19	0	112	.07	4	.6	1.0	14	UER	
		1	1757	54.45	19	19.51	155	7.85	9.39	2.4	2.9	30	1	99	.11	4	.5	.6	27	UER	
		1	18 5	14.79	19	22.56	155	4.72	8.47	2.2	2.2	27	1	82	.10	3	.5	.5	22	MER	
		1	2018	17.74	19	31.55	155	17.29	11.22	1.9	2.0	27	2	52	.09	11	.4	1.1	21	NER	
		1	2224	31.28	19	21.99	155	13.27	3.13	1.7	1.5	16	0	51	.06	1	.3	.4	14	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JUL	1	2231	21.30	18	17.99	155	17.52	18.57	2.3	2.9	24	0	315	.13	97	13.9	20.9	22	DIS	*
		2	520	16.83	19	22.39	155	24.65	9.79	2.7	2.9	32	2	45	.13	5	.5	.7	21	UKF	
		2	847	44.91	19	22.31	155	25.52	6.82	2.0	1.6	17	1	77	.13	4	.6	1.3	15	UKF	
		2	1424	28.18	19	22.98	155	14.97	2.78	1.8	1.6	10	1	114	.14	2	.5	.8	4	UER	
		2	15 9	38.51	19	20.28	155	11.69	8.12	1.7	1.2	23	0	79	.12	5	.6	1.1	19	UER	
		2	1842	44.83	19	23.83	155	26.68	10.74	3.3	3.6	40	2	47	.11	3	.4	.5	30	UKF	F
		2	21 6	3.36	19	22.23	155	5.81	7.53	1.8	1.5	24	0	73	.09	2	.4	.7	20	MER	
		3	447	12.41	19	20.41	155	7.53	8.47	1.4	1.3	24	0	92	.11	5	.7	.8	18	UER	
		3	8 9	11.08	19	24.74	155	24.73	10.30	1.7	1.3	12	0	92	.12	9	.7	2.6	8	UKF	
		3	1234	10.94	19	23.84	155	15.43	2.97	1.3	1.1	5	0	113	.02	3	.6	1.0	5	SPC	
		3	1248	39.67	19	20.95	155	11.33	8.37	2.3	2.4	28	1	70	.10	3	.4	.7	20	UER	
		3	1558	50.99	19	15.52	155	6.29	45.96	2.4	2.0	30	0	201	.09	5	1.1	2.1	21	POL	
		3	1614	40.60	19	24.66	155	25.63	7.52	1.7	1.3	20	0	69	.12	5	.5	1.5	19	UKF	
		4	145	31.48	19	20.69	155	12.72	7.25		1.3	22	0	65	.10	4	.5	.8	16	UER	
		4	221	36.79	19	23.01	155	14.72	3.45	1.1	1.2	9	0	113	.05	2	.4	.6	6	GLN	
		4	536	32.92	19	24.01	155	15.98	2.87	1.1	.9	11	1	114	.06	2	.4	.5	7	SPC	
		4	7 3	38.20	19	23.86	155	16.07	2.89	1.1	1.0	9	1	103	.08	3	.4	.7	7	SPC	
		4	9 2	52.30	19	23.87	155	23.80	8.55	1.4	1.1	21	0	75	.09	7	.5	1.2	19	UKF	
		4	954	25.62	19	19.75	155	12.04	6.02	1.3	1.4	23	0	86	.12	6	.5	1.0	20	UER	
		4	1026	4.36	19	21.08	155	2.28	8.30	2.1	2.1	26	0	163	.10	2	.8	.5	24	MER	
		4	1439	28.85	19	23.25	155	1.95	6.63	1.4	1.2	23	0	138	.14	5	.6	.8	22	MER	
		4	1727	15.89	19	20.77	155	7.86	9.42	3.4	3.7	35	0	82	.10	4	.5	.4	35	UER	F
		4	1740	26.47	19	17.56	155	28.65	6.75	2.3	2.2	33	0	82	.12	9	.4	1.4	30	HEA	
		4	1915	3.90	19	19.34	155	11.58	7.92	2.0	2.1	28	0	98	.11	5	.5	.7	26	UER	
		4	2123	45.21	19	21.35	155	6.30	7.41	1.4	1.1	21	0	88	.12	3	.6	1.2	19	UER	
		4	2133	7.27	19	21.16	155	7.85	8.72	1.4	1.2	26	0	78	.08	4	.5	.6	20	UER	
		4	2256	3.07	19	19.64	155	10.19	6.83	1.5	1.4	29	0	93	.14	5	.6	.9	29	UER	
		4	2346	3.26	19	23.14	155	3.96	6.53	1.4	1.1	21	0	95	.13	3	.6	1.0	17	MER	
		5	233	46.11	19	28.09	154	49.45	11.61	3.1	3.5	34	1	277	.13	10	2.4	.5	30	LER	
		5	453	26.51	19	21.33	155	2.64	8.81	2.4	2.5	29	0	144	.10	3	.7	.4	26	MER	
		5	720	27.44	19	23.65	155	15.26	3.34	1.1	1.3	8	0	92	.06	3	.5	.8	8	SPC	
		5	722	12.33	19	18.54	155	23.75	3.93	.8	1.0	17	1	156	.12	3	.6	1.3	16	SWR	
		5	946	33.49	19	21.59	155	2.30	9.06	2.2	2.5	30	0	152	.07	3	.6	.7	15	MER	
		5	1134	33.09	19	46.68	155	59.91	2.97	2.8	2.9	12	0	225	.10	20	1.5	3.3	4	KON	
		5	1452	2.04	19	20.22	155	12.88	9.15	2.4	2.5	35	0	69	.07	4	.4	.5	25	UER	
		5	1556	56.00	19	23.13	155	17.01	2.81	.8	1.4	8	0	95	.04	1	.5	.4	6	SPC	
		5	1754	20.01	19	18.80	155	13.59	7.99		1.4	19	0	86	.07	3	.6	1.5	14	POL	
		5	19 2	17.06	19	25.43	154	40.13	5.58	2.0	1.4	11	0	313	.11	24	13.8	5.6	6	DIS	
		5	2028	41.62	19	28.29	155	23.09	3.79	1.7	1.4	17	3	112	.10	3	.5	.8	9	UKF	
		5	2045	5.71	19	23.24	155	26.78	6.79	1.3	1.3	21	1	70	.09	2	.4	1.1	14	UKF	
		5	21 9	24.35	19	19.62	155	11.23	5.75	1.4	1.5	16	1	99	.05	5	.5	2.0	10	UER	
		5	2111	50.49	19	20.31	155	13.13	7.37	1.6	1.6	23	1	65	.08	4	.5	1.0	15	UER	
		6	1 5	40.14	19	24.58	155	25.81	10.12	1.4	1.6	18	2	66	.08	5	.5	1.0	12	UKF	
		6	556	45.14	19	22.81	155	2.13	11.84	2.1	2.1	14	1	141	.08	5	.7	1.5	7	MER	
		6	6 0	11.47	19	19.95	155	6.72	8.18	1.7	1.7	23	0	115	.06	5	.5	1.0	17	UER	
		6	6 4	11.44	19	18.24	155	13.28	6.51	1.3	1.4	21	0	90	.07	2	.5	1.2	12	POL	
		6	629	41.46	19	19.39	155	8.84	5.91	1.3	1.3	16	0	118	.06	4	.6	1.9	12	UER	
		6	810	10.76	19	24.37	155	28.98	9.43	2.4	2.1	30	0	49	.09	4	.4	.8	28	UKF	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JUL	6	2037	34,77	19	21,62	155	6,30	6,82	1,5	1,2	29	0	83	,10	3	,5	,8	27	UER
		6	2214	42,25	19	20,42	155	13,18	6,93	1,5	1,2	28	0	64	,14	4	,5	,9	23	UER
		7	615	54,62	19	23,82	155	15,79	2,57	,9	,9	11	1	104	,07	3	,3	,5	9	SPC
		7	633	,98	19	25,12	155	23,12	8,46	1,5	1,3	27	0	51	,11	9	,4	1,3	25	UKF
		7	752	34,00	19	20,81	155	3,59	7,50	2,2	2,0	30	1	96	,10	2	,7	,5	28	MER
		7	917	4,24	19	21,31	155	30,25	10,21	1,2	1,2	19	0	78	,04	5	,7	1,2	7	HEA
		7	1010	8,88	19	31,61	155	42,58	7,56	2,7	1,9	29	2	80	,14	6	,5	1,3	18	MOK
		7	1015	2,60	19	20,85	155	9,25	6,73	1,7	1,3	21	1	93	,06	3	,5	,8	14	UER
		7	1828	42,93	19	25,05	155	36,76	10,16	1,3	1,3	16	1	67	,10	8	,4	1,5	9	MOK
		7	23	5 32,62	19	27,26	155	20,89	8,76	1,3	1,4	16	2	92	,05	1	,5	1,0	12	UKF
		8	053	5,17	19	11,42	155	31,14	8,19	2,3	2,0	24	2	162	,11	7	,5	,9	9	LSW
		8	412	20,13	19	27,86	155	52,07	5,58	2,6	1,7	19	2	128	,09	6	,5	1,1	11	KON
		8	546	34,42	19	23,74	155	15,71	2,89	2,9	3,1	27	1	51	,11	2	,3	,3	21	SPC
		8	6	7 20,94	19	27,23	155	20,98	8,18	1,7	1,1	15	2	75	,07	1	,6	1,2	11	UKF
		8	9	7 40,00	19	24,12	155	16,03	3,26		1,9	13	0	111	,05	2	,4	,4	11	SPC
		8	914	39,08	19	23,71	155	15,71	2,75	1,3	1,3	8	1	105	,10	2	,5	,7	7	SPC
		8	1117	39,04	19	22,70	155	15,25	2,82	1,5	1,2	7	1	131	,11	1	,5	,6	6	KOA
		8	1610	14,22	19	18,68	155	15,20	7,93		1,3	16	0	123	,09	4	,7	,9	12	KOA
		8	2018	14,14	19	20,23	155	11,07	9,53	1,7	1,5	23	0	82	,12	4	,6	,7	19	UER F
		8	2139	58,13	19	24,86	155	18,08	15,68	2,0	1,5	27	1	45	,11	1	,5	,5	18	INT
		9	3	8 27,18	19	16,20	155	48,04	9,29	2,5	1,6	21	1	159	,09	7	,8	,6	17	KON
		9	359	38,30	19	19,12	155	11,67	7,03		1,5	20	0	104	,09	5	,6	1,1	18	UER
		9	5	3 30,13	19	21,49	155	4,58	8,14		1,0	23	0	83	,09	4	,5	,7	21	MER
		9	517	26,18	19	19,09	155	11,45	9,73	2,0	1,8	26	0	106	,08	5	,6	,6	22	UER
		9	1359	1,82	19	20,14	155	11,69	9,41	2,7	3,1	38	2	81	,10	5	,4	,5	31	UER
		9	15	4 3,57	19	20,34	155	13,04	6,89	1,3	1,7	17	0	80	,06	4	,5	1,3	10	UER
		9	1710	1,52	19	19,90	155	10,91	10,73	2,2	2,6	26	1	89	,10	4	,5	1,0	19	UER
		9	1738	48,34	19	23,67	155	2,69	7,81	1,6	1,3	23	2	116	,14	3	,6	,7	23	MER
		10	411	26,72	19	18,35	155	13,24	6,70	1,2	1,1	15	1	88	,06	2	,6	1,5	12	POL
		10	711	17,07	19	18,08	155	13,20	5,87	1,7	1,7	19	0	96	,06	2	,5	1,2	13	POL
		10	728	10,98	19	18,60	155	13,41	7,01	1,7	1,6	20	1	81	,07	3	,5	1,2	11	POL
		10	845	30,53	19	22,39	155	2,24	6,04		1,3	15	1	146	,13	5	,8	1,8	14	MER
		10	9	9 31,47	19	12,65	155	23,59	42,05		2,1	14	0	235	,09	14	2,5	4,9	14	LSW
		10	917	44,92	19	19,56	155	8,95	7,28	1,8	1,2	14	0	115	,09	4	,7	1,6	13	UER
		10	1024	10,61	19	22,05	155	4,00	7,99		1,6	21	0	96	,11	4	,6	,9	18	MER
		10	1037	21,23	19	19,04	155	13,38	9,14	2,2	2,2	25	0	128	,08	7	,5	,7	22	UER
		10	11	9 12,28	19	22,80	155	4,18	9,77	1,1	1,0	8	0	92	,02	3	,7	1,6	7	MER
		10	1118	5,96	19	17,82	155	13,13	6,57	1,0	1,3	18	0	107	,07	2	,7	1,2	17	POL
		10	12	8 48,03	19	19,66	155	12,20	4,53		1,5	22	1	86	,13	5	,6	2,4	16	UER
		10	1346	39,99	19	19,50	155	11,41	6,65		1,4	17	0	135	,09	5	,7	1,4	14	UER
		10	14	5 52,78	19	24,70	155	23,58	8,36	1,5	1,5	20	0	64	,12	8	,6	1,6	16	UKF
		10	1553	36,94	19	22,75	155	1,84	7,33	2,1	1,5	19	0	149	,11	5	,6	1,2	18	MER
		10	2211	57,11	19	21,72	155	11,31	7,98	1,8	2,1	29	0	60	,14	3	,5	,9	23	UER
		10	2229	4,75	19	20,07	155	11,18	7,13	1,8	1,6	26	1	85	,13	4	,5	,8	22	UER
		10	2248	19,60	19	20,47	155	6,54	7,78	2,1	2,0	27	1	105	,10	5	,6	1,0	20	UER
		11	259	54,60	19	21,13	155	16,08	1,22	1,2	1,5	10	0	70	,05	2	,4	,5	10	KOA
		11	326	29,42	19	19,68	155	6,64	6,91	1,4	1,7	15	0	123	,11	5	,8	1,8	12	UER
		11	329	40,43	19	19,54	155	8,57	7,48	1,8	1,5	21	0	80	,10	4	,6	1,3	20	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JUL	11	342	15,37	19	19,68	155	2,52	8,46		1,2	14	0	230	,08	1	1,4	1,1	10	MER
		11	5	6 28,31	19	26,20	155	31,25	4,49	,9	1,2	23	0	64	,11	8	,4	8,0	19	MOK *
		11	653	38,65	19	20,25	155	3,69	7,26	2,4	2,4	26	1	121	,13	1	,7	,6	21	MER
		11	7	3 50,59	19	19,92	155	11,85	6,99	1,7	1,5	26	0	84	,11	5	,5	,8	25	UER
		11	745	43,75	19	19,66	155	10,49	7,62		1,6	25	0	94	,13	5	,6	,8	23	UER
		12	041	22,12	19	21,76	155	14,11	10,43	1,5	1,3	20	0	57	,08	2	,5	,6	16	UER
		12	1	1 48,41	19	24,88	155	25,88	8,07	1,6	1,4	17	0	63	,12	5	,6	1,7	13	UKF
		12	235	58,87	20	6,26	155	42,04	6,38	2,6	2,8	28	0	194	,29	9	1,7	1,2	22	KOH
		12	430	33,64	19	21,00	155	15,24	6,50	1,4	1,5	18	0	70	,14	3	,6	1,0	16	KOA
		12	631	19,80	19	20,44	155	11,51	6,40		1,1	16	0	77	,10	5	,6	1,5	12	UER
		12	632	11,85	19	20,40	155	11,98	9,88		1,2	13	0	85	,04	5	,6	1,4	10	UER
		12	650	34,05	19	21,46	155	3,01	7,63	2,0	1,9	25	0	127	,10	3	,7	,5	16	MER
		12	732	59,57	19	25,88	155	24,48	10,96	2,1	2,1	24	1	54	,09	8	,5	1,0	17	UKF
		12	748	15,54	19	21,61	155	3,77	6,69	1,9	1,6	19	0	102	,11	3	,5	1,1	18	MER
		12	1033	39,13	19	21,80	155	4,06	6,64	2,1	2,1	24	1	94	,12	4	,6	,8	22	MER
		12	1416	43,10	19	20,03	155	6,56	6,95	1,1	1,4	16	0	116	,10	6	,7	1,1	15	UER
		12	1517	50,56	19	20,33	155	11,39	8,92	2,4	2,7	28	1	79	,09	4	,4	,6	24	UER
		12	1527	18,95	19	40,66	155	4,20	3,51	2,0		10	0	235	,24	19	3,0	66,6	9	HIL B*
		12	1838	44,63	19	21,70	155	5,04	7,24	1,8	1,7	24	0	82	,10	3	,5	,9	23	MER
		12	19	9 11,73	19	13,24	155	37,97	8,27	2,1	2,2	21	1	201	,23	3	1,3	1,2	18	HEA
		12	2151	29,71	19	24,12	155	12,82	5,73	1,7	1,7	16	0	90	,08	3	,5	1,0	15	GLN
		12	2214	3,49	19	22,12	155	4,08	6,71	1,6	1,5	21	0	94	,12	4	,6	,9	20	MER
		12	2226	13,55	19	24,97	155	29,26	7,73	1,1	1,6	17	0	70	,06	5	,5	1,4	16	UKF
		13	3	3 58,03	19	20,54	155	12,89	6,73	1,2	1,6	18	0	67	,12	4	,6	1,1	14	UER
		13	4	8 59,91	19	46,50	155	48,04	13,62	1,8	2,1	14	0	161	,10	11	1,2	,8	14	KON
		13	439	25,91	19	9,81	155	36,85	68,51			12	0	270	,11	16	12,3	19,0	11	HEA L*
		13	513	5,17	19	18,36	155	16,78	33,99	2,1	2,0	27	0	117	,11	3	,8	1,7	21	DEP
		13	731	1,34	19	20,16	155	11,65	6,73	2,0	2,3	25	1	81	,11	5	,5	,9	23	UER
		13	949	28,14	19	20,62	155	13,19	8,95	2,0	1,9	20	0	61	,08	4	,6	1,0	18	UER
		13	1257	59,47	19	20,19	155	11,25	8,78	2,5	2,6	22	0	82	,13	4	,5	,9	19	UER
		13	1440	51,39	19	22,01	155	4,53	8,03	2,5	2,6	24	1	84	,09	4	,5	,8	22	MER
		13	17	8 19,30	19	20,47	155	10,82	7,37	1,9	1,6	19	1	77	,11	3	,5	1,2	11	UER
		13	1840	35,44	19	13,98	155	29,90	8,83	2,1	1,6	20	0	133	,16	13	,8	1,5	15	LSW
		13	20	3 27,66	19	20,69	155	11,61	8,68	1,7	1,9	25	0	73	,08	4	,4	,7	22	UER
		13	2117	13,66	19	20,02	155	10,76	6,80	1,1	1,4	25	0	86	,08	4	,5	,8	23	UER
		14	1	3 15,20	19	23,26	155	5,59	1,50	1,9	2,4	13	0	93	,11	1	,6	,4	10	MER
		14	255	37,09	19	19,48	155	8,76	7,62	1,5	1,8	23	0	157	,08	5	,7	,6	23	UER
		14	515	34,31	19	43,36	156	,04	33,87	3,0	3,2	38	2	223	,12	17	1,2	1,5	31	KON
		14	821	16,43	19	23,21	155	5,32	1,59	1,4	1,8	16	0	89	,14	2	,6	,5	16	MER
		14	1223	59,96	19	20,30	155	11,44	8,59	1,7	1,4	25	1	80	,07	4	,5	1,0	13	UER
		14	1726	40,09	19	16,64	155	33,96	4,56	1,7	1,7	27	1	110	,17	6	,5	2,8	26	HEA
		14	1742	30,86	19	19,46	155	11,19	9,13	2,4	2,8	33	1	98	,09	5	,5	,8	22	UER
		14	1955	24,01	19	22,28	155	24,98	9,87	1,3	1,2	22	1	73	,07	5	,5	,9	14	UKF
		14	22	1 46,26	19	23,09	155	2,63	7,70	1,4	1,3	22	0	125	,14	4	,6	,9	10	MER
		14	2245	6,66	19	23,52	155	29,66	8,37	2,2	2,1	34	0	55	,11	4	,4	,9	24	UKF
		15	323	30,44	19	18,35	155	15,72	8,05	2,1	1,9	27	0	142	,09	4	,5	,9	17	KOA
		15	353	36,83	19	24,77	155	24,52	9,64	2,0	1,8	26	1	44	,09	1	,4	,8	15	UKF
		15	722	23,87	19	23,08	155	14,75	3,53	2,6	2,9	28	0	68	,05	2	,2	,3	19	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JUL	15	10 6	58.35	19	21.73	155	25.62	11.42	1.9	1.9	28	2	89	.08	4	.4	.8	23	HEA	
		15	12 5	59.09	19	24.36	155	16.57	15.20	1.8	1.3	32	2	88	.09	1	.5	.4	22	INT	
		15	13 4	51.44	19	19.45	155	11.89	7.14	1.6	1.3	23	1	93	.08	5	.5	.9	15	UER	
		15	1337	18.34	19	24.23	155	26.90	9.99	1.8	1.3	20	1	60	.07	3	.5	.9	11	UKF	
		15	1642	7.27	19	22.86	155	5.65	1.47	3.6	4.0	34	0	68	.11	1	.3	.2	27	MER	
		15	1936	6.42	19	22.11	155	4.85	9.33	2.4	2.3	32	2	78	.06	3	.4	.6	21	MER	
		15	1937	16.00	19	22.19	155	4.74	9.30	2.4	2.4	33	1	81	.06	3	.4	.5	23	MER	
		15	1939	28.97	19	22.34	155	5.10	9.13	2.2	1.9	26	0	74	.05	2	.4	.8	16	MER	
		15	1941	8.06	19	22.32	155	5.12	7.79	2.0	1.6	29	1	74	.10	2	.4	.7	13	MER	
		15	1948	18.67	19	22.23	155	4.87	9.41	2.9	2.9	32	0	78	.07	3	.5	.6	30	MER	
		15	2011	.76	19	22.28	155	5.09	8.89	1.4	1.3	23	0	75	.07	2	.5	1.0	14	MER	
		15	22 3	40.51	19	29.37	155	55.21	13.47	3.0	2.6	19	1	245	.09	25	1.5	.7	7	KON	
		16	0 5	10.82	19	23.82	155	15.01	3.43	1.7	1.8	14	0	89	.05	2	.4	.5	11	SPC	
		16	247	57.76	19	23.28	155	5.31	1.87	2.1	2.3	14	0	91	.08	2	.5	.3	10	MER	
		16	248	49.72	19	23.31	155	5.24	1.97	3.1	3.7	28	0	74	.12	2	.5	.3	18	MER	
		16	340	18.27	19	22.96	155	6.29	1.45	1.0	1.4	12	0	95	.06	0	.5	.2	6	UER	
		16	413	15.73	19	24.00	155	1.73	8.92	3.5	3.9	36	0	128	.09	5	.5	.5	32	MER	
		16	450	35.08	19	23.43	155	6.58	1.14		.8	5	0	176	.08	1	1.6	.4	3	GLN	
		16	534	15.57	19	30.32	155	57.80	6.90	2.7	1.6	11	0	311	.11	21	16.1	5.3	4	KON	*
		16	1016	25.99	19	23.10	155	5.89	1.70	1.8	1.7	9	0	116	.06	1	.9	.3	9	MER	
		16	1017	2.64	20	2.61	155	46.61	9.50	2.7	2.2	12	0	169	.16	9	1.9	2.1	10	KOH	
		16	1057	45.95	19	20.57	155	11.50	8.15	1.7	1.1	13	0	116	.06	4	.6	1.1	9	UER	
		16	1239	10.26	19	24.57	155	28.04	10.00	1.9	1.9	23	0	53	.10	4	.4	1.1	20	UKF	
		16	14 8	51.62	19	19.34	155	11.12	8.44	2.2	2.3	24	0	101	.09	6	.4	.7	22	UER	
		16	1429	49.36	19	19.31	155	10.70	7.08		1.3	19	0	102	.08	5	.5	1.0	17	UER	
		16	1653	44.69	19	23.75	155	15.24	3.23	1.1	1.1	6	0	98	.03	2	.5	1.0	5	SPC	
		16	1826	59.93	19	26.22	154	57.83	3.90	2.2	2.0	14	0	156	.10	3	.9	.8	12	LER	
		16	19 8	20.24	19	19.07	155	12.97	5.23		1.2	22	0	84	.10	4	.5	1.2	18	UER	
		16	2053	21.07	19	19.30	155	9.29	7.01		1.3	18	0	94	.10	4	.6	1.4	15	UER	
		16	2149	16.06	19	10.23	155	33.00	6.67	2.4	2.1	24	0	113	.16	9	.7	1.3	20	LSW	
		16	22 1	12.77	19	20.02	155	11.92	9.55	2.4	2.6	29	0	82	.08	5	.4	.5	23	UER	
		17	524	58.50	19	23.96	155	16.16	2.96	2.4	2.5	18	1	69	.09	2	.4	.5	16	SPC	
		17	719	9.13	19	19.69	155	11.60	10.02	2.1	2.3	25	0	90	.09	5	.6	.5	24	UER	
		17	8 2	.11	19	23.58	155	15.09	3.54	1.4	1.6	9	0	86	.04	2	.5	.7	9	SPC	
		17	16 0	22.55	19	20.00	155	11.03	7.18	1.7	1.5	18	0	123	.10	4	.8	1.3	16	UER	
		17	19 8	28.80	19	24.24	155	15.87	3.36	1.6	1.5	10	1	116	.07	2	.4	.5	4	SPC	
		17	1911	20.09	19	24.01	155	16.00	2.63	.8	1.3	7	0	113	.06	2	.5	.7	5	SPC	
		17	2252	38.13	19	20.16	155	11.63	6.88		1.3	17	0	81	.11	5	.7	1.1	16	UER	
		17	2350	36.74	19	23.51	155	15.34	2.59	1.6	1.8	15	0	87	.06	2	.3	.4	12	SPC	
		18	0 1	50.19	19	23.32	155	15.25	3.41	2.7	3.2	23	0	102	.12	3	.4	.7	18	SPC	
		18	0 6	38.53	19	25.69	155	25.35	9.31	.9	1.6	22	1	54	.09	7	.5	1.1	18	UKF	
		18	333	8.22	19	25.10	155	.54	6.12		1.3	12	0	115	.13	3	.8	1.9	10	LER	
		18	1053	1.56	19	19.71	155	11.15	8.11	1.3	1.4	23	2	93	.06	5	.4	1.0	11	UER	
		18	1547	32.28	19	24.18	155	16.11	3.27	1.1	1.3	10	0	122	.02	1	.6	.4	9	SPC	
		18	1621	7.72	19	21.29	155	4.71	8.72	2.0	2.1	25	1	89	.08	4	.5	.8	14	MER	
		18	17 4	31.77	19	23.48	155	4.94	1.81		1.7	8	0	99	.06	2	.6	.4	8	MER	
		18	2238	41.70	19	26.30	154	54.89	6.70	1.3	1.4	12	0	224	.09	2	2.7	1.1	7	LER	
		18	23 5	57.08	19	23.82	154	57.59	5.20	1.6	1.8	19	2	196	.19	3	1.1	1.4	11	LER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JUL	19	016	39.18	19	18.51	155	23.42	3.98	2.1	2.4	26	1	107	.08	3	.4	.8	19	SWR	
		19	3 1	29.80	19	19.90	155	13.22	6.73	1.5	1.6	25	1	68	.09	5	.4	.8	18	UER	
		19	310	22.32	19	20.44	155	12.05	9.41	2.7	2.9	31	0	74	.07	4	.4	.5	26	UER	
		19	356	41.44	19	19.37	155	12.12	6.18	2.7	1.2	13	0	92	.03	5	.5	1.7	10	UER	
		19	441	56.51	19	23.46	155	5.02	1.95	1.9	2.2	12	0	91	.08	2	.6	.4	7	MER	
		19	552	5.66	19	20.47	155	12.91	9.21	1.5	1.5	19	1	66	.04	4	.5	.9	14	UER	
		19	8 6	37.84	19	20.61	155	12.03	8.64	1.7	1.7	23	1	71	.10	4	.5	.9	19	UER	
		19	828	10.83	19	18.68	155	23.59	5.26	1.8	2.0	17	0	105	.10	3	.6	1.5	14	SWR	
		19	842	25.54	19	22.19	155	13.34	3.09	1.3	1.4	12	0	54	.07	1	.4	.5	9	UER	
		19	858	6.17	19	18.28	155	23.59	3.87		1.4	12	0	159	.07	4	.7	1.3	12	SWR	
		19	1136	6.05	19	18.27	155	12.96	10.90	2.1	2.1	22	0	139	.10	8	.7	1.0	18	POL	
		19	1136	59.18	19	16.23	155	24.71	38.08	2.7	2.9	33	1	119	.11	8	.8	1.5	20	SWR	
		19	1411	19.76	19	19.56	155	11.54	6.62		1.4	18	0	93	.08	6	.5	1.1	16	UER	
		19	1520	26.89	19	20.12	155	13.09	8.82	2.1	2.2	26	0	68	.10	5	.4	.7	17	UER	
		19	1741	48.83	19	20.11	155	13.10	7.52	1.6	1.7	24	0	68	.10	5	.5	.8	20	UER	
		19	1748	59.54	19	20.46	155	13.03	6.91		1.4	17	0	64	.12	4	.6	1.4	11	UER	
		19	20 6	.87	19	26.33	155	27.02	9.44	1.9	1.9	21	0	59	.11	7	.5	1.5	18	UKF	
		19	2034	13.00	19	21.04	155	25.46	8.97	2.2	2.4	31	1	77	.12	4	.4	.8	24	HEA	
		19	22 4	37.87	19	17.22	155	21.66	7.72		1.3	13	0	171	.10	6	.8	1.3	10	SWR	
		19	2235	29.92	19	23.73	155	24.24	10.13	1.9	1.8	24	1	70	.11	6	.5	.8	20	UKF	
		20	033	13.92	19	20.09	155	7.62	7.43		1.3	20	0	95	.07	5	.5	1.1	20	UER	
		20	052	55.28	19	20.40	155	17.44	8.12	2.1	2.1	28	1	82	.12	1	.5	.7	21	KOA	
		20	229	23.99	20	13.66	155	8.51	7.74	1.8	1.8	10	0	314	.07	43	17.8	4.1	9	DIS	*
		20	1020	52.28	19	24.56	155	28.47	9.45		1.3	18	0	54	.11	4	.5	1.0	16	UKF	
		20	1110	42.21	19	26.06	155	28.44	9.12	1.9	1.7	23	1	62	.13	7	.4	1.3	17	UKF	
		20	1221	30.89	19	19.60	155	11.99	7.83	1.7	1.4	25	0	89	.09	5	.5	1.0	20	UER	
		20	1244	15.81	19	20.25	155	12.92	5.33	1.6	1.1	17	0	69	.11	4	.6	1.8	14	UER	
		20	1646	34.00	19	21.35	155	15.28	9.43	2.5	2.6	29	0	66	.09	2	.5	.6	26	KOA	
		20	2042	36.10	19	20.44	155	6.08	7.63		1.3	17	0	111	.08	5	.7	1.3	15	UER	
		20	2312	17.10	19	20.63	155	10.57	7.98	1.9	1.9	27	1	75	.09	3	.4	.6	23	UER	
		20	2322	30.25	19	24.56	155	27.60	10.83	3.6	3.9	39	1	45	.12	4	.4	.5	29	UKF	F
		20	2344	46.79	19	27.30	155	29.51	9.74	1.9	1.3	19	1	73	.10	9	.5	1.4	11	UKF	
		21	010	14.61	19	20.65	155	7.41	8.18	1.4	1.3	16	0	90	.10	5	.7	1.5	14	UER	
		21	336	18.77	19	20.18	155	10.58	6.53	1.7	1.2	20	0	83	.10	4	.6	1.0	20	UER	
		21	437	42.92	19	19.32	155	10.27	7.69		1.2	18	0	102	.07	5	.5	1.1	18	UER	
		21	5 6	55.04	19	14.32	155	21.97	9.15		1.7	16	0	159	.08	9	.9	1.6	13	LSW	
		21	546	24.61	19	23.33	155	16.72	3.28	1.6	1.8	13	1	68	.06	2	.3	.6	12	SPC	
		21	615	49.49	19	13.51	155	21.87	7.62		1.2	12	0	209	.07	10	1.3	1.9	11	LSW	
		21	954	24.55	19	20.60	155	7.12	4.85	2.0	2.1	22	2	95	.14	5	.5	1.7	11	UER	
		21	1048	48.17	19	21.53	155	18.68	3.20	1.2	1.1	12	1	75	.06	3	.4	.9	9	KOA	
		21	1221	23.44	19	20.78	155	6.96	6.92	1.7	1.4	23	2	94	.11	4	.5	1.2	14	UER	
		21	1310	45.60	19	21.47	155	.95	3.96	2.0	1.5	23	1	188	.15	5	1.2	2.0	8	LER	
		21	1551	48.78	19	20.83	155	2.29	7.71	1.6	1.3	15	1	168	.10	2	1.1	1.3	9	MER	
		21	1554	1.96	19	20.08	155	8.44	7.74	1.4	1.4	24	2	79	.08	4	.5	1.1	13	UER	
		21	1719	58.15	19	20.78	155	6.19	8.30	2.6	2.7	32	2	101	.08	4	.4	.8	19	UER	
		21	1817	14.40	19	23.51	155	16.90	2.87	1.3	1.4	14	1	49	.07	0	.4	.3	8	SPC	
		21	2010	48.13	19	26.12	155	23.19	8.95	1.8	1.8	26	2	46	.08	4	.4	.8	20	UKF	
		21	2138	41.05	19	24.59	155	24.65	9.51	2.1	1.9	28	1	60	.09	2	.4	.8	20	UKF	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JUL	21	22 8	27.45	19	18.65	155	13.55	7.60	1.2	1.3	16	0	86	.06	3	.6	1.5	12	POL
		22	156	10.45	19	16.20	155	15.20	6.41	1.2	1.1	18	1	221	.07	3	1.0	1.0	8	HLP
		22	4 0	47.00	19	23.83	155	28.65	9.74	1.4	1.6	28	2	68	.07	3	.4	.9	16	UKF
		22	844	31.97	19	18.76	155	15.56	8.03	2.3	2.4	23	0	125	.10	4	.5	.9	21	KOA
		22	1351	44.87	19	28.01	155	29.06	6.81	1.9	1.4	12	0	78	.11	8	.6	2.1	9	UKF
		22	1554	4.53	19	20.52	155	6.10	7.91	2.0	1.7	20	1	108	.09	5	.5	.9	17	UER
		22	1849	56.24	19	23.95	155	27.09	6.05	1.7	1.4	11	0	67	.13	3	.6	1.8	9	UKF
		22	19 8	52.51	19	19.72	155	20.98	6.93	1.6	1.4	16	0	86	.17	4	.8	1.6	12	SWR
		22	1940	10.19	19	18.74	155	13.23	7.55	1.7	1.0	20	0	83	.10	3	.6	1.0	15	POL
		22	1940	43.23	19	26.63	155	23.94	4.74	1.5	1.2	8	0	106	.06	6	.7	3.8	5	UKF
		22	2051	8.71	19	22.51	154	58.72	5.73	1.3	1.3	11	0	199	.14	5	1.3	2.2	8	LER
		23	021	26.59	19	24.05	155	28.39	10.14	2.2	1.6	21	0	68	.13	3	.5	1.0	17	UKF
		23	1 9	19.91	19	23.88	155	25.65	4.66	1.8	1.5	16	0	86	.08	4	.5	2.4	15	UKF
		23	231	43.13	19	19.58	155	8.19	8.29	2.1	2.4	31	2	88	.09	4	.4	.6	26	UER
		23	246	8.79	19	20.01	155	8.35	9.08	2.6	2.9	33	1	81	.08	5	.5	.4	27	UER
		23	1419	31.88	19	25.57	155	24.63	5.85	1.6	1.1	12	1	99	.08	1	.5	1.4	10	UKF
		23	1429	17.10	19	19.79	155	11.24	6.93	1.7	1.1	22	0	90	.07	5	.5	1.2	16	UER
		24	128	14.83	19	18.73	155	15.67	7.67	1.6	1.6	25	2	126	.06	4	.5	.9	16	KOA
		24	3 1	4.00	19	21.45	155	5.87	8.21	.9	1.1	23	1	88	.08	3	.5	1.1	17	MER
		24	331	21.19	19	21.48	155	3.79	8.74	1.2	1.2	15	0	100	.06	3	.6	1.2	11	MER
		24	629	11.33	19	19.96	155	8.98	7.96	1.4	1.8	27	1	77	.07	4	.5	.9	20	UER
		24	936	7.61	19	23.86	155	15.96	2.24	.9	1.0	9	1	115	.11	3	.4	.6	6	SPC
		24	1335	31.22	19	21.40	155	3.62	7.94	2.3	2.5	26	0	104	.07	3	.6	.5	24	MER
		24	1721	25.05	19	21.47	155	6.71	7.88	2.8	2.8	33	1	84	.10	3	.4	.6	27	UER
		24	18 2	29.29	19	20.03	155	12.75	6.67	1.2	1.4	16	0	73	.08	5	.6	1.3	13	UER
		24	18 7	38.33	19	19.68	155	8.30	9.84	3.5	3.7	34	0	85	.10	4	.6	.5	28	UER F
		24	1813	45.34	19	20.07	155	8.16	7.42	1.9	1.5	25	1	85	.09	5	.4	.8	21	UER
		24	1814	22.99	19	20.40	155	13.03	9.04	2.4	2.4	33	0	65	.10	4	.4	.5	27	UER F
		24	1854	23.15	19	20.70	155	3.73	6.62	2.1	1.8	23	0	95	.12	2	.6	.8	21	MER
		24	1858	15.12	19	29.02	154	52.03	4.36	2.4	1.0	11	0	273	.10	2	4.7	1.0	9	LER
		24	1859	26.89	19	20.25	155	7.39	6.53		1.3	16	0	97	.10	5	.6	1.3	16	UER
		24	22 6	42.68	19	26.42	155	25.09	6.44	1.1	1.5	9	0	117	.06	7	.7	2.8	7	UKF
		25	323	33.33	19	23.46	155	16.84	2.90	2.1	2.3	25	1	66	.09	3	.3	.5	20	SPC
		25	420	28.09	19	20.27	155	7.78	5.69	1.3	1.5	25	0	90	.12	5	.6	1.2	25	UER
		25	449	31.73	19	24.03	155	16.07	2.97	1.3	1.3	15	1	106	.06	2	.3	.4	11	SPC
		25	5 8	3.84	19	20.55	155	2.92	6.02	1.9	1.5	21	1	136	.14	1	.8	1.2	16	MER
		25	6 1	14.66	19	20.29	155	11.91	5.74	1.1	1.3	22	0	77	.14	5	.6	1.2	19	UER
		25	8 0	14.21	19	20.66	155	6.51	6.31	1.0	1.4	20	0	101	.11	4	.6	1.4	18	UER
		25	11 4	48.53	19	14.47	155	15.52	1.96	1.8	1.2	17	1	220	.09	6	.9	1.2	9	HLP
		25	1227	.78	19	25.15	155	26.18	5.15	1.7	1.2	15	1	139	.09	2	.6	1.2	13	UKF
		25	1324	17.93	19	24.69	155	26.06	8.05	1.7	1.1	21	0	53	.10	2	.5	1.3	16	UKF
		25	1353	47.11	19	23.71	155	16.94	2.92	1.4	1.2	11	1	83	.07	1	.4	.4	9	SPC
		25	2051	9.73	19	22.82	154	59.15	6.58	1.3	1.2	21	2	190	.12	4	.9	1.1	12	LER
		26	0 6	8.16	19	19.71	155	11.09	8.91	2.0	1.8	30	1	93	.09	5	.4	.8	25	UER
		26	127	25.25	19	24.23	155	30.53	10.09	2.3	1.4	30	1	72	.08	6	.4	1.0	21	MOK
		26	229	48.33	19	24.05	155	15.71	3.37	1.0	1.3	11	0	119	.02	2	.5	.5	9	SPC
		26	330	1.87	19	33.57	155	40.21	8.02		1.4	15	5	182	.08	11	.9	2.1	5	MOK
		26	611	9.34	19	27.89	155	27.53	9.60	2.0	1.6	27	1	64	.08	6	.4	1.0	17	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	JUL	26	928	10.41	19	23.77	155	15.52	3.04	1.6	1.8	16	0	101	.07	3	.4	.5	16	SPC
		26	950	41.65	19	45.52	155	58.42	20.30	3.6	4.1	38	1	217	.12	16	1.1	2.1	32	KON F
		26	1033	36.86	19	22.21	155	4.64	6.66		1.4	17	0	125	.13	3	.7	1.0	17	MER
		26	1214	38.01	19	27.13	155	33.58	35.47	2.6	2.9	20	1	67	.17	3	1.1	2.6	16	MOK L
		26	1318	24.13	19	24.85	155	38.66	.25	2.2	2.5	16	1	109	.38	6	1.2	3.0	15	MOK *
		26	1345	58.31	19	18.22	154	58.10	43.87		2.1	24	0	237	.08	13	2.9	3.6	24	DIS
		26	1714	48.97	19	21.24	155	2.57	8.02	2.0	1.4	27	0	148	.11	3	.8	.5	25	MER
		26	1716	54.63	19	21.07	155	5.81	7.09		1.4	25	0	96	.09	4	.5	1.1	24	MER
		26	20 3	.59	19	24.34	155	26.00	7.98		1.5	20	0	61	.11	4	.5	1.5	18	UKF
		26	2050	20.48	19	22.20	155	4.90	7.54	1.3	1.3	21	0	77	.13	3	.6	.8	20	MER
		26	2246	59.51	19	23.13	155	16.94	2.32		1.1	8	0	74	.05	2	.3	.6	8	SPC
		26	2344	26.88	19	22.38	155	4.84	8.37	2.0	1.6	27	1	79	.10	3	.5	.6	25	MER
		26	2348	7.89	19	22.51	155	4.57	8.27	1.9	1.5	22	1	85	.11	3	.5	.8	17	MER
		27	132	24.50	19	19.72	155	7.93	7.50	1.4	1.5	25	0	94	.11	4	.6	1.1	23	UER
		27	158	57.60	19	21.64	155	3.37	6.68	1.9	1.5	28	2	114	.13	3	.6	.7	24	MER
		27	321	57.22	19	22.55	155	4.64	8.65	2.3	2.3	30	1	83	.10	3	.5	.5	28	MER
		27	6 3	45.13	19	20.50	155	6.60	7.22		1.4	24	0	104	.10	5	.5	.8	22	UER
		27	629	7.91	19	21.04	155	3.35	5.32	1.6	1.6	20	1	111	.12	2	.6	1.0	19	MER
		27	710	48.09	19	19.96	155	8.14	7.04		1.2	24	0	86	.09	5	.5	1.1	24	UER
		27	856	33.62	19	19.65	155	8.22	9.27	3.5	4.0	32	0	87	.09	4	.6	.4	27	UER F
		27	910	47.94	19	19.75	155	7.57	6.06		1.3	18	0	102	.09	5	.6	1.5	18	UER
		27	17 8	33.37	19	19.77	155	11.03	6.64		1.4	24	0	92	.12	5	.6	1.1	23	UER
		27	1725	9.18	19	26.80	155	13.86	34.32	1.7	1.6	28	0	68	.08	4	.8	1.7	27	DEP
		27	1726	57.73	19	21.71	155	2.50	6.74	1.8	1.7	26	0	143	.12	3	.7	.7	25	MER
		27	1816	43.15	19	25.49	155	23.66	10.70	2.7	2.3	32	1	46	.13	8	.5	.6	26	UKF
		27	1921	25.46	19	22.29	155	5.09	6.69	1.3	1.4	20	0	121	.12	2	.7	.8	19	MER
		27	23 2	32.84	19	25.76	155	30.25	11.32	2.0	1.6	24	1	69	.10	8	.5	.9	22	MOK
		28	036	22.28	19	35.68	155	51.26	.03	2.3	2.4	18	2	159	.34	10	1.2	1.5	17	KON *
		28	231	49.47	19	22.41	155	4.71	8.02	2.0	1.8	26	1	82	.13	3	.6	.7	21	MER
		28	3 1	10.23	19	24.60	155	16.03	8.30	1.4	1.8	4	0	158	.00	2	3.9	13.2	4	LPC *
		28	326	.53	19	22.37	155	4.90	8.37	2.2	1.9	30	1	79	.10	3	.5	.5	27	MER
		28	348	57.12	19	22.55	155	4.49	7.88	2.0	2.0	28	1	86	.11	3	.5	.6	26	MER
		28	428	6.81	19	20.91	155	10.57	7.12	1.4	1.4	21	0	83	.14	2	.7	1.3	20	UER
		28	429	47.13	19	20.26	155	8.34	5.76	1.4	1.4	26	0	79	.11	4	.6	1.1	23	UER
		28	741	46.51	19	19.73	155	8.31	6.81	1.8	1.8	25	0	85	.09	4	.5	1.1	25	UER
		28	916	38.54	19	33.07	155	36.94	10.53	2.7	2.6	33	0	92	.12	7	.5	.5	29	MOK
		28	1014	7.17	19	21.09	155	5.87	7.37	2.4	2.5	32	1	95	.13	4	.5	.7	26	MER
		28	1027	20.73	19	21.79	155	4.79	7.97	1.6	1.3	25	0	79	.12	3	.5	.8	24	MER
		28	1225	25.17	19	25.87	155	24.40	5.92	.8	1.1	9	0	112	.12	8	.9	4.5	9	UKF
		28	1510	56.65	19	23.19	155	2.22	6.81	1.3	1.0	21	0	133	.13	4	.7	.9	20	MER
		28	1822	27.23	19	21.19	155	1.85	6.40	2.0	1.8	22	0	174	.12	3	.7	1.1	21	MER
		28	20 0	23.57	19	20.11	155	7.21	8.43	2.0	2.0	29	0	103	.08	5	.5	.6	26	UER
		29	055	24.55	19	13.10	155	40.32	5.28	2.2	2.1	30	1	203	.19	7	.9	1.2	26	HEA
		29	221	43.97	19	27.82	155	41.15	8.93	2.3	1.8	27	0	66	.13	9	.5	.8	20	MOK
		29	232	13.61	19	11.56	155	34.15	52.41	1.4	1.1	19	0	96	.09	8	1.6	4.2	0	HEA T
		29	335	39.81	19	23.76	155	17.02	2.58	1.6	1.7	17	1	61	.09	2	.3	.5	12	SPC
		29	639	45.69	19	19.66	155	10.65	7.93	2.0	2.0	31	1	94	.11	5	.4	.7	28	UER
		29	646	6.55	19	21.50	155	6.47	7.15	2.0	1.8	24	0	84	.11	3	.5	.8	23	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JUL	29	839	24.67	19	25.00	155	25.28	9.13	2.8	3.0	34	0	64	.12	6	.5	1.0	28	UKF	
		29	1019	54.66	19	15.40	155	15.21	7.57		1.2	17	0	221	.07	4	1.2	1.4	12	HLP	
		29	1152	19.79	19	24.46	155	16.26	.72	1.3	1.5	6	1	172	.07	2	.9	.5	5	SPC	
		29	1617	34.61	19	17.13	155	21.72	6.69	1.8	1.6	17	0	172	.13	6	.9	1.3	15	SWR	
		29	1641	2.59	19	20.08	155	10.24	7.49	1.7	1.4	23	0	84	.08	4	.6	1.0	20	UER	
		29	2021	52.96	19	14.23	155	1.59	42.99	2.0	2.0	28	0	224	.05	11	1.7	2.3	24	DIS	
		29	22 2	40.90	19	22.57	155	2.04	7.28		1.6	23	0	146	.13	5	.6	.8	21	MER	
		29	2224	9.16	19	25.63	155	24.96	9.14	1.7	1.5	17	0	75	.07	7	.5	1.6	16	UKF	
		30	115	43.02	19	16.75	155	27.18	9.34	2.0	1.9	22	0	105	.14	9	.5	.9	18	HEA	
		30	133	28.01	19	25.56	155	28.82	9.17	1.9	1.7	24	0	51	.08	6	.4	1.1	22	UKF	
		30	623	23.79	19	19.67	155	9.60	7.62		1.5	21	0	89	.09	4	.5	1.1	20	UER	
		30	1556	.45	19	19.59	155	11.47	9.79	2.4	2.6	35	2	94	.08	5	.4	.6	26	UER	
		30	1629	40.01	19	22.86	155	3.36	8.56	2.0	2.0	21	1	110	.12	4	.6	.7	17	MER	
		30	1723	9.39	19	24.01	155	16.04	3.33	1.4	1.6	10	0	112	.06	1	.4	.4	9	SPC	
		30	2140	21.43	19	20.92	155	7.50	7.84	1.1	1.1	22	0	84	.07	4	.5	1.0	13	UER	
		31	330	51.28	19	27.98	155	25.89	11.65	4.3	4.2	42	1	40	.11	5	.4	.4	40	UKF	
		31	350	.38	19	28.21	155	26.16	8.92	2.1	1.2	21	1	78	.09	6	.4	1.0	15	UKF	
		31	456	44.55	19	19.97	155	11.04	7.55	2.3	2.4	33	1	87	.12	4	.5	.9	24	UER	
		31	745	32.40	19	25.74	155	24.84	7.53	1.6	1.3	21	1	53	.08	1	.5	1.1	14	UKF	
		31	16 5	15.13	19	20.25	155	12.66	7.27	1.6	1.5	20	0	71	.11	4	.6	.7	18	UER	
		31	1759	26.33	19	22.96	155	24.78	9.93	1.8	1.6	21	1	84	.09	5	.5	1.2	18	UKF	
		31	1958	43.43	19	21.86	155	4.88	7.04		1.3	19	0	77	.12	3	.6	.9	19	MER	
		31	2237	36.45	19	20.54	155	13.02	10.07	2.9	3.0	34	0	64	.09	4	.4	.4	28	UER	F
	AUG	1	038	42.06	19	23.05	155	1.88	7.69	2.1	1.9	17	0	143	.12	5	1.1	1.0	9	MER	
		1	1 3	51.00	19	17.34	155	12.88	7.47	1.8	1.5	19	1	152	.08	1	.8	1.0	17	POL	
		1	211	39.98	19	20.51	155	3.86	7.62	2.4	2.6	24	0	107	.10	2	.6	.6	17	MER	
		1	226	53.05	19	23.63	155	16.98	2.71	1.6	1.8	9	1	79	.05	3	.3	.6	6	SPC	
		1	3 1	2.45	19	22.06	155	4.49	9.39	2.9	3.1	33	1	85	.10	4	.5	.4	29	MER	
		1	355	58.47	19	19.99	155	11.34	8.31	2.0	2.2	30	1	86	.11	5	.4	.7	17	UER	
		1	5 1	3.27	19	19.83	155	11.12	6.89		1.2	17	0	90	.12	5	.6	1.0	16	UER	
		1	614	11.79	19	23.33	155	16.93	3.43	3.0	3.5	30	1	36	.11	3	.3	.5	25	SPC	F
		1	630	57.35	19	25.97	155	50.50	1.26		1.4	12	1	118	.10	10	.5	1.6	10	KON	
		1	12 2	10.51	19	24.24	155	26.41	8.68	1.7	1.5	29	1	49	.10	3	.4	.8	21	UKF	
		1	1413	40.04	19	23.14	155	16.07	1.16	2.2	2.3	16	1	67	.12	1	.4	.3	5	SPC	
		1	1417	36.62	19	24.11	155	15.91	3.29	1.0	1.0	8	1	119	.02	1	.4	.5	7	SPC	
		1	1434	47.99	19	24.03	155	15.56	3.34	1.7	1.8	18	1	114	.03	2	.3	.3	14	SPC	
		1	2023	7.33	19	20.30	155	12.71	8.93	1.6	1.6	26	0	70	.07	4	.5	.9	16	UER	
		1	2150	22.58	19	20.47	155	11.29	7.68	1.9	1.8	31	1	77	.08	4	.4	.7	17	UER	
		2	053	58.94	19	24.22	155	16.13	3.31	1.2	1.0	13	0	125	.03	1	.5	.3	10	SPC	
		2	054	59.99	19	22.25	155	26.54	10.46	2.0	1.7	24	0	63	.09	2	.4	.8	18	UKF	
		2	124	16.29	19	25.99	154	54.87	6.53	1.9	1.4	21	0	218	.11	3	1.6	.9	14	LER	
		2	556	53.00	19	20.35	155	2.61	7.66	2.5	2.4	29	2	172	.09	1	.6	.7	11	MER	
		2	614	20.22	19	19.68	155	8.87	7.31	1.8	1.6	28	3	99	.07	5	.4	.8	16	UER	
		2	823	46.76	19	19.32	155	11.06	6.05	1.7	2.1	27	1	102	.07	6	.4	.9	18	UER	
		2	843	3.30	19	21.00	155	11.72	30.15	2.9	1.3	28	2	87	.05	4	.9	1.7	21	UER	
		2	944	15.64	19	23.78	155	15.49	3.09	1.5	1.5	13	0	102	.06	2	.3	.4	8	SPC	
		2	958	49.60	19	20.49	155	12.87	9.30	2.7	3.2	37	1	66	.10	4	.3	.5	26	UER	
		2	11 9	56.39	19	23.83	155	15.36	3.14		1.2	9	0	104	.03	2	.4	.6	8	SPC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	AUG	2	1448	40.86	19	10.78	155	28.04	32.90			13	0	163	.06	2	3.0	5.1	10	LSW	T
		2	1452	20.92	19	11.67	155	27.33	30.68	2.4		20	0	122	.12	4	1.9	3.4	18	LSW	T
		2	15 5	24.99	19	12.29	155	26.29	55.08	2.6		13	1	141	.11	6	2.1	3.9	10	LSW	T
		2	2057	59.56	19	20.10	155	21.35	32.40	2.2	2.0	36	1	82	.09	3	.7	1.3	28	DEP	
		2	2215	47.46	19	19.65	155	6.86	8.43	1.8	1.5	25	1	151	.07	5	.6	1.0	17	UER	
		2	2231	24.51	19	20.99	155	3.38	6.97	1.8	1.5	25	1	112	.12	2	.6	1.0	12	MER	
		2	2248	42.95	19	23.78	155	15.28	3.29	1.4	1.4	11	0	100	.04	2	.4	.6	9	SPC	
		2	2320	40.58	19	19.97	155	10.98	7.70	1.8	1.4	24	1	87	.08	4	.4	1.0	15	UER	
		3	029	28.65	19	21.54	155	30.26	7.94	1.8	1.5	23	2	78	.11	5	.5	1.2	13	HEA	
		3	145	35.28	19	25.25	155	16.55	9.09	1.3	1.5	7	0	209	.02	3	1.7	2.8	4	LPC	L
		3	147	39.85	19	20.09	155	13.12	4.91	1.5	2.0	18	0	68	.10	5	.5	1.7	11	UER	
		3	3 4	24.21	19	19.41	155	11.66	6.50	1.7	1.5	25	0	96	.08	5	.5	.9	18	UER	
		3	330	6.31	19	19.57	155	12.30	10.30	3.3	3.7	42	1	86	.11	5	.4	.4	37	UER	
		3	446	3.34	19	18.67	155	25.71	9.23	1.9	1.8	30	1	132	.10	5	.5	.8	15	HEA	
		3	536	47.80	19	20.21	155	13.20	6.94	1.6	1.3	21	0	66	.08	4	.5	1.0	17	UER	
		3	626	57.29	19	24.21	155	16.27	2.72	1.1	1.3	11	0	106	.04	1	.3	.3	9	SPC	
		3	937	23.09	19	21.48	155	14.48	.95	2.6	2.6	18	1	85	.21	3	.4	.7	14	UER	
		3	1014	34.60	19	23.87	155	15.77	3.21	1.7	1.6	16	1	107	.09	3	.4	.5	13	SPC	
		3	1132	58.83	19	28.43	155	57.02	16.49	2.6	2.4	34	0	213	.19	25	1.9	34.0	32	KON	*
		3	1720	56.97	19	23.81	155	16.76	2.88	1.8	1.7	14	1	80	.09	2	.3	.5	12	SPC	
		3	1818	14.53	19	24.18	155	27.01	9.42	1.8	1.3	28	0	46	.10	3	.4	.9	24	UKF	
		3	2232	41.05	19	23.83	155	16.80	2.48	1.6	1.4	14	1	79	.10	2	.3	.5	12	SPC	
		3	2325	25.29	19	21.02	155	6.14	8.79	2.8	2.7	34	1	97	.09	4	.5	.4	32	UER	
		4	021	50.21	19	23.65	155	16.84	2.67	1.2	1.0	13	1	67	.07	2	.3	.5	10	SPC	
		4	548	48.50	19	20.57	155	13.37	6.78	1.6	1.4	27	0	61	.12	4	.5	.7	25	UER	
		4	1159	24.20	19	19.86	155	13.44	6.61	1.6	1.0	20	0	108	.10	5	.5	1.1	15	UER	
		4	1237	36.58	19	19.72	155	8.15	7.73	1.8	1.3	27	1	88	.08	4	.5	1.0	20	UER	
		4	17 2	57.74	19	25.58	155	24.40	8.05	2.6	2.3	35	1	38	.11	1	.4	.8	25	UKF	
		4	1730	36.30	19	23.26	155	14.88	2.91	1.1	.9	10	0	108	.02	2	.4	.7	7	GLN	
		4	1758	13.02	19	16.96	155	21.57	5.41	1.7	1.3	18	0	200	.10	6	1.0	2.2	12	SWR	
		4	1912	22.74	19	23.28	155	3.35	9.10	2.6	2.4	33	0	106	.08	3	.5	.5	18	MER	
		4	2024	52.16	19	23.80	155	15.28	3.01	1.3	1.6	12	0	97	.04	2	.4	.5	8	SPC	
		4	21 0	29.12	19	21.69	155	6.90	7.84	1.6	1.2	21	1	79	.08	3	.6	1.2	17	UER	
		4	2255	45.00	19	19.81	155	3.95	6.14	1.4	1.4	15	0	154	.05	2	.8	.9	6	MER	
		5	016	9.94	19	23.96	155	15.56	3.00	1.2	1.0	9	0	113	.01	2	.4	.6	8	SPC	
		5	541	4.35	19	24.31	155	16.51	1.79		1.0	9	0	155	.07	1	.6	.3	8	SPC	
		5	10 9	57.11	19	20.54	155	13.02	7.32	1.6	1.3	19	0	64	.11	4	.5	1.0	18	UER	
		5	1658	55.81	19	21.23	155	24.81	9.46	1.7	1.6	16	0	146	.09	3	.6	1.0	14	SWR	
		5	17 3	34.81	19	16.56	155	33.54	9.83	3.5	3.4	29	0	57	.12	7	.5	.8	25	HEA	F
		5	19 5	44.34	19	22.91	155	16.64	3.76	1.4	1.6	10	0	60	.05	2	.5	.8	10	KOA	
		5	1926	41.64	19	22.39	155	14.04	3.13	1.3	1.2	10	0	82	.07	2	.4	.6	8	UER	
		6	826	57.74	19	29.72	155	54.06	10.19	2.0	2.1	28	4	124	.12	2	.8	.4	12	KON	
		6	913	40.13	19	19.66	155	11.13	8.56	1.8	1.7	29	1	93	.08	5	.5	.9	22	UER	
		6	12 3	57.59	19	22.61	155	30.20	8.92	2.3	1.9	31	2	67	.09	5	.4	1.1	21	MOK	
		6	2152	50.99	19	23.72	155	15.25	3.14	1.9	2.1	22	1	93	.08	2	.3	.3	18	SPC	
		6	2211	58.03	19	23.74	155	15.21	2.93	1.3	1.4	12	0	96	.05	2	.3	.5	8	SPC	
		6	23 3	19.86	19	21.39	155	4.47	8.37	2.3	2.4	33	1	85	.08	4	.4	.7	20	MER	
		6	2322	38.12	19	23.92	155	15.87	2.97	1.6	1.8	18	1	108	.07	1	.4	.3	13	SPC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	AUG	7	049	44.92	19	23.49	155	15.01	3.45	1.1	.9	11	0	97	.04	3	.4	.6	8	SPC
		7	543	16.91	19	23.38	155	14.85	3.30	1.8	1.8	18	0	72	.04	3	.3	.4	12	GLN
		7	731	18.03	19	20.37	155	13.42	6.50	1.5	1.4	19	0	64	.08	4	.5	.9	13	UER
		7	1026	33.83	19	27.68	155	21.65	9.27	1.9	1.6	18	1	123	.07	5	.6	1.2	13	UKF
		7	1038	53.95	19	20.52	155	12.96	7.58	1.5	1.3	20	0	65	.11	4	.6	1.1	19	UER
		7	1041	54.15	19	23.25	155	14.79	3.14	1.8	2.1	17	1	67	.09	3	.4	.5	13	GLN
		7	1054	7.14	19	23.21	155	14.71	3.36	1.9	1.8	14	0	68	.06	3	.4	.5	11	GLN
		7	1515	12.12	19	19.79	155	6.97	7.77	2.0	1.7	26	1	114	.09	5	.6	.7	22	UER
		7	1626	43.97	19	20.16	155	13.72	9.49	2.6	2.5	34	2	58	.10	5	.4	.5	27	UER
		7	1733	7.40	19	23.96	155	26.53	11.05	2.1	2.0	27	0	76	.07	3	.5	.7	20	UKF
		7	1738	53.65	19	26.24	155	28.01	6.55	1.6	1.2	19	1	62	.09	7	.5	2.0	18	UKF
		7	2113	49.28	19	20.91	155	3.31	5.23	1.3	1.3	18	0	115	.13	2	.9	1.7	17	MER
		7	2130	44.88	19	23.23	155	14.97	1.90	1.4	1.3	13	0	71	.09	2	.4	.5	12	GLN
		7	2330	31.69	19	20.37	155	12.49	7.95	1.9	2.3	27	0	71	.10	4	.4	.7	21	UER
		8	351	14.26	19	17.25	155	21.74	6.26	1.5	1.6	23	0	133	.12	6	.6	1.0	21	SWR
		8	539	23.54	19	19.73	155	9.99	8.75	2.3	2.6	30	0	90	.10	4	.5	.6	26	UER
		8	726	43.53	19	22.15	155	2.90	7.78		1.1	20	0	129	.13	4	.9	.7	20	MER
		8	918	59.54	19	22.73	155	4.52	9.03	2.1	1.5	24	0	86	.10	3	.6	.7	22	MER
		8	1010	5.93	19	20.30	155	6.43	8.21		1.1	16	0	111	.07	5	.6	1.2	14	UER
		8	1426	12.15	19	20.69	155	8.12	7.68	1.4	1.2	17	0	79	.05	4	.6	1.1	17	UER
		8	1612	48.50	19	22.49	155	4.32	7.13	1.6	1.3	21	0	90	.12	4	.5	.8	20	MER
		8	1621	10.81	19	25.99	155	28.20	9.15	1.9	1.5	21	0	61	.09	7	.4	1.3	16	UKF
		8	2246	32.18	19	23.20	155	2.70	8.71	2.1	1.9	27	0	123	.12	4	.7	.6	21	MER
		9	634	50.74	19	21.01	155	10.81	8.19	2.0	1.7	24	1	78	.10	3	.5	.9	19	UER
		9	853	59.82	19	19.59	155	8.54	7.83	1.9	2.0	31	1	107	.07	4	.4	.8	19	UER
		9	9 2	40.11	19	19.61	155	8.04	8.19	1.9	1.6	30	2	91	.06	4	.5	.9	20	UER
		9	1156	41.48	19	20.13	155	7.52	7.68	2.1	1.7	29	1	97	.10	5	.4	1.0	19	UER
		9	1552	5.17	19	24.85	155	25.70	9.68	1.7	1.6	24	1	51	.09	1	.5	1.0	14	UKF
		9	1556	38.73	19	22.44	155	4.08	9.37	2.2	2.0	28	0	94	.07	4	.4	.6	15	MER
		9	1643	32.32	19	22.22	155	4.53	8.37	2.1	1.9	30	0	84	.10	3	.5	.9	21	MER
		9	2157	47.76	19	23.02	155	2.53	8.62	2.1	2.0	29	1	129	.10	4	.5	.6	13	MER
		9	2338	15.61	19	19.82	155	18.94	26.85	2.1	2.2	6	0	198	.07	3	6.2	9.3	1	DEP
		10	018	36.53	19	23.33	155	14.99	3.32	1.6	2.0	17	0	74	.05	2	.3	.4	13	GLN
		10	437	21.08	19	17.53	155	30.74	9.40	1.6	1.6	21	0	81	.08	5	.4	1.1	10	HEA
		10	5 8	41.30	19	24.20	155	16.26	3.24		1.2	11	0	119	.03	1	.5	.3	8	SPC
		10	1030	31.42	19	22.23	155	25.03	10.36	2.5	2.6	41	0	52	.12	5	.4	.6	28	UKF
		10	12 0	4.01	19	11.62	155	37.02	4.82	2.3	1.6	17	1	94	.13	14	.5	6.5	6	HEA *
		10	1345	2.08	19	21.71	155	6.18	8.32	1.7	1.7	27	1	82	.10	2	.5	1.0	11	UER
		10	1551	20.22	19	22.08	155	5.78	7.63	1.9	1.8	20	0	76	.08	2	.5	.9	12	MER
		10	1757	53.10	19	18.37	155	13.17	10.27	3.0	3.2	38	0	137	.12	8	.6	.5	32	POL
		10	1856	25.55	19	23.55	155	23.53	10.31	2.0	1.8	35	2	42	.09	4	.4	.6	19	UKF
		10	1944	13.81	19	23.73	155	16.86	2.60	1.3	1.5	18	1	61	.05	1	.3	.3	9	SPC
		10	2025	3.57	19	24.47	155	16.59	9.45		1.0	10	0	126	.08	1	1.0	1.6	9	LPC L
		10	2236	32.13	19	23.88	155	15.94	2.97	2.1	2.4	22	1	46	.08	1	.3	.2	18	SPC
		10	23 9	23.86	19	23.96	155	15.88	3.01	2.1	2.6	21	1	74	.08	1	.3	.2	16	SPC
		10	2355	19.80	19	21.71	155	6.03	8.56	2.0	1.8	24	3	82	.09	2	.5	1.0	14	UER
		11	358	26.57	19	22.05	155	3.52	8.31	1.6	1.3	21	0	110	.09	4	.5	.9	13	MER
		11	431	27.27	19	18.08	155	13.28	8.72	2.9	2.8	39	0	92	.11	2	.4	.5	28	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	AUG	11	433	8.69	19	17.80	155	28.05	10.58	2.1	1.8	28	0	85	.11	6	.4	.8	18	HEA
		11	519	17.24	19	18.25	155	13.30	6.51	1.4	1.3	18	0	87	.06	2	.6	1.3	14	POL
		11	622	50.27	19	22.31	155	29.08	10.01	2.3	2.1	32	0	61	.08	3	.4	.7	27	UKF
		11	749	59.63	19	18.20	155	13.14	6.35	1.4	1.2	22	1	96	.08	2	.5	1.3	14	POL
		11	10 3	10.20	19	23.13	155	14.74	3.34	2.6	2.9	28	0	48	.06	2	.3	.4	24	GLN F
		11	1359	13.79	19	19.82	155	6.21	8.94	2.2	2.1	28	0	126	.09	6	.7	.5	24	UER
		11	1535	27.60	19	30.82	155	45.94	7.92	2.5	1.3	15	1	167	.12	1	.8	1.4	14	KON
		11	1612	13.38	19	28.87	154	49.82	9.25	2.3	2.0	20	0	321	.15	6	3.6	.8	18	LER
		11	1933	18.77	19	18.31	155	15.33	7.85	1.7	1.6	23	0	109	.09	4	.6	.7	20	KOA
		11	2017	55.84	19	23.98	155	16.62	2.64	1.3	1.3	11	1	93	.06	2	.5	.5	9	SPC
		11	2257	20.30	19	19.43	155	15.32	6.32	1.4	1.2	24	0	88	.12	4	.5	.9	22	KOA
		12	2 9	8.40	19	24.09	155	27.45	9.32	2.0	1.8	29	0	50	.09	3	.4	.7	20	UKF
		12	245	47.96	19	16.48	155	13.11	7.49	1.7	1.4	23	0	165	.10	1	.8	.9	22	POL
		12	255	15.97	19	24.27	155	29.62	7.67	1.9	1.4	28	0	52	.11	5	.4	1.1	25	UKF
		12	6 2	15.42	19	23.58	155	15.33	3.02	1.8	1.8	20	1	50	.11	2	.4	.5	17	SPC
		12	845	59.02	19	23.72	155	15.79	2.67	1.9	1.8	19	1	99	.13	2	.4	.5	13	SPC
		12	915	48.51	19	24.25	155	16.15	3.10		.8	9	1	127	.02	1	.7	.4	6	SPC
		12	927	21.45	19	23.87	155	16.02	2.80	1.7	1.6	16	1	102	.09	1	.3	.3	11	SPC
		12	931	13.93	19	24.12	155	16.22	3.24	1.8	1.1	12	1	105	.06	1	.4	.4	9	SPC
		12	932	27.95	19	23.97	155	16.04	2.72	1.6	1.1	13	1	105	.07	1	.3	.3	8	SPC
		12	935	4.10	19	24.03	155	16.12	2.89	1.3	.4	13	1	104	.07	1	.4	.4	7	SPC
		12	936	13.06	19	23.89	155	16.17	2.66		.5	9	0	102	.10	2	.5	.6	0	SPC
		12	936	57.52	19	23.81	155	16.04	3.10	1.3	.9	12	1	99	.06	1	.5	.3	8	SPC
		12	939	53.89	19	24.13	155	15.93	3.62	1.3	.6	9	1	120	.04	1	.6	.7	7	SPC
		12	940	25.48	19	24.08	155	15.83	3.03	.9	.5	7	0	120	.03	1	.5	1.1	6	SPC
		12	943	18.91	19	23.76	155	15.97	2.99		1.3	15	0	99	.10	3	.4	.5	0	SPC
		12	946	19.57	19	23.97	155	16.00	2.96	1.5	1.2	15	1	106	.06	1	.3	.2	11	SPC
		12	946	53.59	19	24.15	155	16.35	3.25	.9	.7	9	0	101	.05	1	.7	.5	7	SPC
		12	952	20.40	19	24.32	155	15.47	.00		1.9	14	0	114	.59	2	1.6	2.8	0	SPC *
		12	958	27.51	19	23.75	155	15.67	3.21	2.7	2.5	23	0	43	.10	2	.4	.5	19	SPC
		12	10 7	4.92	19	23.89	155	15.81	3.03	1.9	2.0	23	1	74	.09	1	.3	.2	18	SPC
		12	10 7	49.28	19	23.92	155	15.79	3.05	2.3	2.0	21	1	75	.07	1	.3	.3	16	SPC
		12	10 8	55.07	19	24.21	155	16.02	3.30	1.5	2.0	15	1	112	.06	1	.4	.4	11	SPC
		12	1011	36.38	19	24.09	155	15.88	3.10	2.1	2.0	24	1	86	.06	1	.3	.3	19	SPC
		12	1013	48.34	19	24.30	155	16.27	1.46	1.6	.8	13	2	111	.04	1	.3	.3	7	SPC
		12	1015	7.96	19	23.97	155	15.81	3.09	1.6	2.0	19	1	110	.07	1	.4	.3	15	SPC
		12	1017	18.37	19	24.14	155	15.96	3.01	1.4	1.4	13	1	112	.04	1	.3	.3	11	SPC
		12	1018	43.41	19	24.10	155	15.93	3.05	2.0	1.6	7	0	120	.03	1	.5	1.1	5	SPC
		12	1021	13.47	19	23.78	155	15.46	3.16	2.3	2.1	20	1	76	.06	2	.4	.3	19	SPC
		12	1024	12.56	19	23.93	155	15.86	3.10	1.7	1.1	14	1	108	.05	1	.4	.3	9	SPC
		12	1027	31.46	19	23.82	155	15.69	3.37	2.2	2.0	22	1	104	.07	2	.3	.3	20	SPC
		12	1030	6.58	19	23.68	155	15.30	3.03	2.5	2.3	21	0	51	.10	2	.4	.5	18	SPC
		12	1034	4.83	19	23.91	155	15.65	3.40	2.2	1.9	20	1	76	.07	2	.4	.4	14	SPC
		12	1038	7.50	19	23.85	155	15.52	3.12	1.6	1.3	18	1	76	.06	2	.3	.3	14	SPC
		12	1039	45.29	19	23.72	155	15.10	3.34	2.2	1.9	19	0	90	.07	2	.3	.3	17	SPC
		12	1041	54.67	19	23.84	155	15.43	3.06	1.7	1.6	15	0	103	.04	2	.3	.3	11	SPC
		12	1049	49.81	19	23.76	155	15.40	3.14	2.5	2.4	26	1	41	.07	2	.3	.4	24	SPC
		12	1051	51.20	19	24.00	155	15.53	3.16	1.8	1.7	19	1	79	.08	2	.3	.3	16	SPC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	WS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	AUG	12	1057	17.68	19	23.71	155	15.40	2.93	1.8	1.2	14	1	96	.07	2	.3	.4	10	SPC	
		12	1059	38.00	19	23.91	155	15.51	2.87	1.3	.9	8	0	109	.01	2	.4	.6	8	SPC	
		12	1059	55.17	19	23.31	155	14.86	3.60	2.7	2.6	20	0	70	.08	3	.3	.5	15	GLN	
		12	11	2 48.11	19	24.15	155	15.96	2.73	1.8	1.8	17	0	112	.09	1	.4	.2	12	SPC	
		12	11	5 1.80	19	23.20	155	14.89	3.11	1.4	.8	7	0	110	.03	2	.5	1.0	7	GLN	
		12	1110	28.58	19	24.35	155	16.38	1.69	1.4	.9	9	1	126	.04	1	.4	.5	7	SPC	
		12	1116	3.83	19	24.08	155	15.83	3.42	1.3	.9	10	0	118	.05	1	.5	.5	9	SPC	
		12	1121	23.45	19	23.79	155	15.24	2.97	1.6	1.0	8	0	98	.06	2	.4	.8	7	SPC	
		12	1122	51.96	19	23.38	155	15.07	3.07	2.0	1.6	15	0	77	.05	2	.4	.4	14	SPC	
		12	1124	19.92	19	24.18	155	16.22	3.14	1.6	.9	7	0	119	.02	1	.7	1.0	7	SPC	
		12	1125	2.63	19	23.93	155	15.47	2.92	1.4	1.0	9	0	111	.03	2	.4	.5	8	SPC	
		12	1127	26.99	19	23.46	155	14.96	3.24	1.5	1.1	8	0	100	.02	3	.5	.9	7	GLN	
		12	1131	43.59	19	23.98	155	15.47	3.15	1.3	1.1	10	0	111	.02	2	.4	.6	9	SPC	
		12	1133	43.22	19	23.55	155	15.06	3.37	1.3	1.3	10	0	96	.03	2	.5	.6	10	SPC	
		12	1135	10.85	19	23.93	155	15.38	3.12	1.8	1.5	16	0	106	.07	2	.3	.3	12	SPC	
		12	1136	48.51	19	24.79	155	16.68	1.72	1.6	1.3	10	1	146	.04	2	.4	.2	8	SPC	
		12	1147	58.46	19	23.23	155	14.78	3.64	2.3	2.3	17	0	66	.04	3	.4	.5	15	GLN	
		12	1153	44.87	19	24.34	155	16.33	1.31	1.6	1.2	10	1	128	.05	1	.3	.3	7	SPC	
		12	12	7 52.86	19	23.97	155	15.89	3.01	1.0	.7	7	0	112	.03	1	.5	.9	6	SPC	
		12	12	9 1.69	19	23.28	155	14.92	2.97	1.1	.6	9	2	107	.03	2	.4	.8	8	GLN	
		12	12	9 52.84	19	24.21	155	16.16	2.97	1.4	1.3	8	0	123	.02	1	.5	.7	7	SPC	
		12	1241	59.59	19	23.13	155	16.65	3.00	2.4	2.6	27	1	40	.09	1	.3	.3	24	SPC	
		12	1258	54.42	19	24.04	155	15.84	3.24	1.3	1.0	10	0	117	.06	1	.5	.5	8	SPC	
		12	1531	23.85	19	24.47	155	15.88	1.36	1.5	1.6	10	0	123	.03	2	.3	.5	8	SPC	
		12	1540	31.72	19	23.33	155	15.00	3.25	2.5	2.5	22	0	74	.10	2	.3	.4	20	SPC	
		12	16	0 30.58	19	23.30	155	14.95	3.27	1.9	1.8	15	0	103	.06	2	.3	.4	12	GLN	
		12	1654	45.51	19	23.23	155	16.86	3.07	1.7	1.7	15	1	58	.06	0	.4	.3	12	SPC	
		12	1758	17.22	19	18.53	155	28.57	7.90		1.5	24	1	109	.14	7	.5	1.2	19	HEA	
		12	20	8 14.74	19	23.71	155	15.24	3.30	1.4	1.1	10	0	96	.03	2	.5	.6	9	SPC	
		12	2032	1.32	19	19.87	155	7.13	8.26	3.0	3.3	34	0	109	.09	5	.5	.7	28	UER	
		12	2143	42.06	19	23.75	155	15.41	1.53	1.2	1.1	8	0	100	.02	2	.3	.6	7	SPC	
		12	2218	.41	19	23.76	155	15.46	1.61	1.2	1.3	8	0	100	.03	2	.3	.6	7	SPC	
		13	4	7 56.10	19	22.72	155	14.16	1.81	1.2	1.3	8	0	131	.03	2	.5	.4	7	UER	
		13	6	3 40.61	19	17.80	155	15.59	9.71	3.4	3.4	36	0	142	.11	5	.6	.6	35	KOA	
		13	641	34.32	19	16.64	155	15.49	7.72		1.1	12	0	242	.03	6	1.5	1.5	6	HLP	
		13	722	40.28	19	16.92	155	15.64	8.03	1.7	1.2	12	0	245	.04	6	1.2	1.6	9	HLP	
		13	724	30.95	19	23.12	155	14.98	3.12	1.2	.9	11	1	109	.06	2	.4	.6	8	GLN	
		13	855	16.05	19	23.37	155	15.88	3.93	1.7	1.2	10	1	86	.13	2	.5	1.0	9	SPC	
		13	14	4 24.24	19	22.02	155	25.71	8.81		1.2	17	0	109	.07	3	.5	1.1	14	UKF	
		13	1530	20.27	19	20.87	155	2.73	7.30	2.4	2.2	27	0	145	.08	2	.7	.5	26	MER	
		13	1744	10.77	19	23.13	155	14.79	3.31	1.9	1.6	15	0	65	.06	2	.4	.5	15	GLN	
		13	1745	3.19	19	22.81	155	14.69	2.88	2.2	2.1	18	2	69	.11	2	.4	.5	15	UER	
		13	1755	43.31	19	24.21	155	16.50	2.29	2.0	2.5	23	1	71	.09	2	.3	.3	20	SPC	F
		13	1815	43.03	19	21.82	155	13.23	2.67	1.4	1.0	11	0	98	.04	2	.4	.5	11	UER	
		13	1914	11.87	19	20.64	155	10.60	7.98	1.7	1.1	22	0	82	.09	3	.5	.9	19	UER	
		13	2135	9.58	19	21.66	155	4.18	7.02	1.6	1.2	20	0	90	.12	4	.6	.9	18	MER	
		13	22	8 23.50	19	23.40	155	28.37	10.58		1.4	9	0	175	.06	11	1.1	4.4	9	UKF	
		13	2245	38.85	19	22.83	155	17.39	25.09		.8	12	0	75	.08	3	1.4	3.3	12	DEP	*

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	AUG	14	115	18.83	19	26.28	154	55.33	2.50	1.2	.8	9	0	216	.13	6	2.3	1.8	8	LER	
		14	251	42.19	20	48.87	156	17.42	24.48	4.5	4.9	44	4	328	.12	7	1.6	.8	43	DIS	F
		14	310	21.44	19	29.76	155	49.78	16.57	2.6		16	0	178	.13	9	12.6	23.3	12	KON	*
		14	424	7.87	19	21.95	155	2.63	4.71	1.3	1.2	7	0	216	.23	7	4.7	9.5	7	MER	
		14	427	46.69	19	23.31	155	15.35	2.74	1.3	1.3	9	0	103	.07	2	.4	.6	5	SPC	
		14	9	3 33.62	19	18.72	155	13.74	7.11	1.7	1.5	21	1	90	.09	3	.5	1.1	12	POL	
		14	914	32.73	19	23.14	155	14.78	3.01	1.4	1.6	10	0	76	.06	2	.5	.8	7	GLN	
		14	1134	20.21	19	19.23	155	10.32	7.57	1.6	1.5	22	1	104	.07	5	.5	1.2	17	UER	
		14	1138	31.91	19	23.24	155	14.89	3.21	1.1	1.2	7	0	108	.01	2	.5	1.1	7	GLN	
		14	1313	2.19	19	23.79	155	15.18	3.03	1.3	1.5	9	0	99	.02	2	.4	.8	7	SPC	
		14	1345	.27	19	15.65	155	27.93	31.73	2.4		8	0	273	.08	13	4.8	8.9	0	LSW	T
		14	15	7 46.78	19	17.90	155	23.28	5.43	1.8	1.7	25	0	152	.09	4	.6	1.3	20	SWR	
		14	1633	36.46	19	23.63	155	15.29	3.07	1.8	2.0	14	0	91	.06	2	.4	.4	12	SPC	
		14	1644	12.92	19	20.81	155	10.19	7.54	1.5	1.3	24	2	89	.07	2	.5	.7	12	UER	
		14	1723	59.74	19	21.98	155	2.24	7.92	1.5	1.4	26	1	148	.13	4	.7	.7	10	MER	
		14	1941	.80	19	21.82	155	5.02	7.79	1.2	1.3	21	1	78	.10	3	.5	1.0	10	MER	
		14	1947	6.47	19	21.58	155	6.76	7.85	2.8	2.9	40	1	81	.10	3	.4	.6	27	UER	
		14	2343	24.71	19	18.25	155	14.72	8.21	2.1	1.5	16	0	131	.06	3	.6	.9	13	POL	
		14	2349	31.10	19	20.76	155	12.58	6.43	1.9	2.2	5	0	312	.05	4	58.6	47.2	4	UER	*
		14	2358	17.00	19	22.85	155	14.28	1.24	1.4	2.0	10	0	127	.07	2	.4	.6	6	UER	
		15	0	0 8.12	19	24.35	155	25.00	10.59	3.0	2.7	33	1	49	.11	2	.4	.6	30	UKF	
		15	016	24.18	19	20.56	155	8.52	5.27	1.7	1.6	14	1	136	.05	4	.7	1.4	11	UER	
		15	029	7.37	19	20.67	155	12.84	5.67	1.3	1.4	5	0	307	.05	4	36.3	26.4	3	UER	*
		15	322	56.80	19	20.93	155	13.41	7.40	1.8	1.4	23	0	61	.11	3	.5	.9	17	UER	
		15	346	7.53	19	23.61	155	15.14	3.19	1.6	2.0	16	0	86	.05	2	.3	.4	11	SPC	
		15	410	36.08	19	23.39	155	14.95	3.25	2.3	2.7	25	1	46	.08	3	.3	.4	22	GLN	
		15	554	45.49	19	20.19	155	3.96	6.92	2.0	1.6	26	3	129	.11	2	.5	.9	8	MER	
		15	1038	58.14	19	23.25	155	14.92	3.47	1.2	1.2	7	0	104	.02	2	.5	.8	7	GLN	
		15	11	3 19.35	19	22.65	155	2.39	6.62	2.0	1.3	17	0	171	.17	5	.8	.9	15	MER	
		15	11	8 59.57	19	20.27	155	12.97	9.55		.8	11	0	68	.04	4	.8	1.6	10	UER	
		15	1124	.62	19	23.02	155	14.68	3.11	1.8	2.0	16	0	64	.08	2	.4	.5	14	GLN	
		15	12	6 40.59	19	23.03	155	14.83	3.65	1.4	1.3	11	0	65	.09	2	.4	.7	10	GLN	
		15	1239	56.27	19	18.73	155	14.96	7.19		1.0	21	0	118	.10	4	.5	1.0	16	POL	
		15	1812	51.30	19	16.78	155	15.65	8.29		1.2	9	0	212	.03	4	1.3	1.3	6	HLP	
		15	1916	34.66	19	23.10	155	14.76	3.07	1.6	1.1	14	0	63	.08	2	.4	.5	14	GLN	
		15	1916	59.16	19	20.41	155	10.90	7.62	1.8	1.7	26	0	79	.11	4	.4	.8	23	UER	
		15	1918	11.36	19	23.25	155	14.88	3.11	1.2	1.2	7	0	108	.03	2	.5	.6	7	GLN	
		15	1934	12.05	19	23.15	155	14.88	3.33	1.9	2.1	15	0	67	.06	2	.4	.5	12	GLN	
		15	2221	51.48	19	23.04	155	14.85	2.95	1.6	1.5	17	0	64	.08	2	.4	.5	15	GLN	
		15	2315	14.93	19	22.96	155	14.73	3.46	2.2	2.5	23	0	49	.09	2	.4	.5	20	UER	
		16	021	2.29	19	20.25	155	8.31	7.28	1.8	1.1	22	0	80	.09	4	.5	1.0	20	UER	
		16	038	40.70	19	22.99	155	14.84	1.84	1.4	1.2	12	1	85	.23	2	.5	.7	11	UER	
		16	2	0 9.84	19	25.23	154	56.24	7.11	1.6	1.1	23	0	209	.13	4	1.5	.7	19	LER	
		16	215	56.71	19	23.12	155	14.89	2.94	2.0	1.8	17	1	67	.08	2	.4	.5	15	GLN	
		16	256	58.99	19	23.10	155	14.77	3.26	2.4	2.7	32	1	48	.10	2	.3	.5	30	GLN	
		16	330	4.74	19	23.10	155	14.82	2.08	1.1	.9	6	0	114	.11	2	.5	1.0	5	GLN	
		16	437	54.18	19	23.26	155	14.88	2.96	1.1	.9	7	0	104	.02	2	.5	.7	7	GLN	
		16	441	15.67	19	19.97	155	9.45	7.34	1.8	1.2	24	0	82	.08	4	.4	.8	19	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	AUG	16	458	30.95	19	19.83	155	9.62	7.92		.9	23	0	86	.08	4	.5	.8	20	UER	
		16	5 0	27.47	19	19.87	155	9.66	7.43		1.0	19	0	85	.06	4	.5	.9	16	UER	
		16	826	31.44	19	20.37	155	10.56	8.46	1.9	1.7	26	1	83	.08	3	.4	.8	15	UER	
		16	1048	17.44	19	23.73	155	15.16	3.37	1.1	1.6	10	0	92	.06	2	.4	.6	9	SPC	
		16	1234	1.57	19	19.25	155	13.80	7.43	1.3	1.2	19	1	84	.06	4	.5	1.1	8	UER	
		16	13 4	19.38	19	22.66	155	27.22	10.76	3.9	4.0	43	1	60	.14	1	.4	.5	41	UKF	
		16	1323	22.97	19	19.58	155	3.96	6.51	2.2	2.4	30	3	170	.08	2	.6	.7	16	MER	
		16	1327	12.17	19	34.26	155	21.50	6.99	1.9	1.3	5	0	3461.34		19	98.9	98.8	0	NER	L*
		16	1444	41.00	19	27.46	155	20.83	8.31	1.9	1.5	20	1	69	.09	0	.6	.9	16	UKF	
		16	1458	39.20	19	27.22	155	21.25	6.30	.7	1.1	9	0	90	.04	1	.7	1.1	6	UKF	
		16	15 9	41.57	19	22.82	155	27.19	7.57	1.4	1.3	20	1	75	.12	1	.5	1.1	12	UKF	
		16	1629	31.21	19	21.62	155	18.49	1.75	1.1	1.1	10	0	71	.05	3	.4	1.0	8	KOA	
		16	17 8	.65	19	22.00	155	30.11	8.63	1.8	1.4	24	1	73	.10	4	.5	1.2	19	HEA	
		16	17 9	13.07	19	21.57	155	30.38	9.41	1.3	1.5	23	1	78	.10	5	.7	.8	13	HEA	
		16	1724	18.36	19	21.90	155	17.29	29.56	1.8	1.7	32	3	44	.09	3	.7	1.3	19	DEP	
		16	2015	12.43	19	25.56	155	16.38	16.87	2.2	2.1	6	0	234	.10	2	6.8	17.5	0	INT	L*
		16	2122	39.78	19	25.31	155	24.27	8.74	1.6	1.6	26	1	45	.11	2	.4	1.0	19	UKF	
		16	2324	20.00	19	24.17	155	16.58	2.77	1.3	1.2	8	0	104	.04	2	.4	.4	4	SPC	
		17	920	12.10	19	23.69	155	15.16	2.75	1.3	1.0	8	0	93	.05	2	.4	.6	5	SPC	
		17	16 4	48.65	19	54.97	155	18.73	13.10	2.7	2.0	36	3	242	.12	32	1.4	.8	33	KKU	
		17	1635	11.47	19	22.85	155	14.85	3.28	2.1	2.5	23	1	50	.12	2	.4	.5	18	UER	
		17	1846	38.14	19	19.86	155	12.77	6.22	1.6	1.3	25	0	75	.12	5	.6	.9	22	UER	
		17	2121	5.09	19	17.96	155	12.92	7.57		.9	24	2	113	.12	2	.6	.9	13	POL	
		17	2157	2.99	19	19.48	155	13.29	6.58	2.0	2.1	31	0	72	.15	5	.5	.9	25	UER	
		17	2242	31.60	19	19.30	155	11.80	6.46	1.5	1.1	25	0	97	.10	5	.5	.9	16	UER	
		18	148	17.92	19	26.38	154	54.92	5.44	1.5	1.3	18	2	201	.14	2	1.1	1.1	10	LER	
		18	856	24.01	19	22.89	155	17.01	2.68	.9	.9	11	1	74	.04	2	.3	.6	7	KOA	
		18	1055	36.95	19	28.17	155	52.09	8.99	2.6	2.0	31	5	111	.17	6	.6	.6	14	KON	
		18	1247	30.13	19	24.97	155	25.22	9.54	1.7	1.1	20	0	65	.09	1	.5	.9	14	UKF	
		18	1510	5.11	19	21.64	155	3.21	10.00	1.9	1.4	13	0	267	.03	6	3.6	1.2	9	MER	
		18	1722	58.48	19	28.92	155	27.25	9.26	1.4	1.0	21	2	76	.08	6	.5	1.2	13	UKF	
		18	1834	3.63	19	20.86	155	5.97	8.70	2.6	2.7	37	0	101	.07	4	.4	.6	22	MER	
		18	1934	38.81	19	21.07	155	7.19	7.45	1.2	.9	23	0	86	.09	4	.5	.9	9	UER	
		18	2018	18.96	19	15.91	155	37.83	5.16	2.0	1.3	21	0	188	.14	2	1.6	1.6	8	HEA	
		19	4 6	19.38	19	21.56	155	28.70	9.86	1.9	1.3	31	1	66	.11	3	.4	.9	21	HEA	
		19	614	47.96	19	16.06	155	27.23	9.25		1.2	19	1	101	.12	5	.6	1.1	14	HEA	
		19	922	11.81	19	22.56	155	14.06	3.41		.9	8	0	127	.02	2	.5	.6	8	UER	
		19	10 7	56.64	19	19.25	155	9.40	8.82		1.3	18	0	96	.07	4	.6	1.3	16	UER	
		19	1020	34.39	19	21.29	155	14.96	8.70	1.4	1.4	19	0	66	.08	3	.5	.9	17	UER	
		19	1042	42.40	20	3.02	155	36.09	34.25	2.2	1.8	34	2	187	.11	21	1.3	2.4	31	KOH	
		19	1112	51.32	19	23.62	155	16.91	2.93		1.1	6	0	128	.03	2	.6	.8	5	SPC	
		19	13 1	50.05	19	20.80	155	3.37	5.85	1.6	1.2	20	0	107	.12	2	.6	1.0	20	MER	
		19	1327	29.47	19	20.56	155	3.25	7.32	2.3	2.1	27	1	107	.09	1	.6	.6	24	MER	
		19	1334	17.66	19	20.69	155	3.26	6.15	1.7	1.1	17	0	111	.12	2	.7	1.1	17	MER	
		19	1637	37.63	19	23.81	155	16.90	3.04	1.6	1.9	15	1	75	.06	2	.3	.5	13	SPC	
		19	1653	15.55	19	17.98	155	21.31	7.03	1.6	1.5	18	1	170	.13	5	.8	1.1	18	SWR	
		19	1846	34.73	19	19.71	155	12.19	8.14	1.6	1.5	24	0	85	.11	5	.6	1.0	24	UER	
		19	1916	37.01	19	19.94	155	9.26	8.10		1.3	18	0	80	.03	0	.5	.7	18	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	AUG	19	2317	4.22	19	21.13	155	6.66	7.78	1.9	1.5	25	1	90	.10	4	.5	1.0	23	UER	
		20	033	49.63	19	20.24	155	9.61	7.58		1.2	22	0	78	.07	3	.5	.9	22	UER	
		20	330	31.49	19	4.45	155	32.63	27.69	2.5	1.8	28	1	175	.07	13	.8	1.5	28	LSW	
		20	832	36.75	19	23.86	155	16.92	3.33	1.8	1.6	15	1	74	.07	2	.4	.6	12	SPC	
		20	1412	50.40	19	26.17	155	21.71	.02	1.8	1.6	15	1	62	.09	7	.4	.7	14	UKF	*
		20	1723	11.75	19	22.10	155	3.67	6.25	1.9	1.2	10	0	108	.13	4	.8	1.7	10	MER	
		20	1855	16.08	19	21.60	155	3.72	6.73		1.4	17	0	151	.09	3	.7	1.1	15	MER	
		20	1957	.75	19	23.94	155	15.45	3.37	1.6	1.6	15	1	106	.05	2	.3	.5	13	SPC	
		20	21 2	29.26	19	23.66	155	15.19	2.89	1.3	1.0	7	1	95	.04	2	.4	.8	6	SPC	
		20	2137	1.77	19	13.82	155	2.09	41.81		1.4	24	1	233	.05	11	1.5	1.8	24	DIS	
		20	2253	18.23	19	20.54	155	12.75	7.36		1.2	20	0	66	.12	4	.6	.9	19	UER	
		21	416	3.53	19	22.27	155	4.52	8.73	1.9	1.6	21	0	85	.11	3	.7	.9	20	MER	
		21	433	50.05	19	22.00	155	2.37	8.43	2.1	1.6	29	1	145	.09	4	.6	.4	27	MER	
		21	451	37.57	19	24.38	154	58.83	5.60		.1	9	0	210	.17	1	1.6	1.5	0	LER	
		21	545	34.84	19	20.01	155	11.40	9.55	2.1	1.8	24	0	85	.08	5	.4	.8	22	UER	
		21	610	11.36	19	20.69	155	13.05	7.34		1.2	24	0	63	.12	4	.5	.9	21	UER	
		21	1614	51.92	19	20.14	155	12.73	9.01	1.7	1.3	14	0	185	.05	5	1.0	1.7	13	UER	
		21	1745	28.81	19	20.25	155	22.67	9.44	1.7	1.3	24	3	114	.09	1	.5	1.0	13	SWR	
		21	2259	40.60	19	19.75	155	11.23	8.96	2.2	2.2	32	1	91	.10	5	.4	.7	24	UER	
		21	2342	57.57	19	18.60	155	13.89	8.71	1.7	1.5	14	0	205	.03	7	1.1	1.6	12	POL	
		22	0 7	47.26	19	23.81	155	15.24	2.98	1.0	1.1	8	0	101	.02	2	.5	.7	6	SPC	
		22	138	55.12	19	23.52	155	16.83	2.89	1.4	1.3	17	1	48	.07	0	.4	.3	8	SPC	
		22	438	24.82	19	26.95	155	23.84	4.33	1.6	1.3	19	2	67	.11	4	.4	1.1	8	UKF	
		22	513	16.43	19	23.16	155	14.86	3.21	1.5	1.4	12	0	108	.05	2	.4	.5	10	GLN	
		22	521	28.37	19	23.59	155	16.74	2.73	1.1	1.1	11	1	55	.05	1	.4	.3	6	SPC	
		22	745	36.36	19	19.62	155	10.21	9.25	1.9	1.7	15	0	211	.04	5	1.3	1.5	14	UER	
		22	13 4	25.96	19	19.38	155	10.80	8.81	2.2	1.7	34	1	100	.09	5	.4	.8	23	UER	
		22	1325	58.97	19	20.05	155	11.43	7.90	1.9	1.4	13	1	196	.05	5	.9	1.4	9	UER	
		22	16 2	50.36	19	23.45	155	14.79	3.14	1.1	1.3	9	0	100	.05	2	.5	.7	8	GLN	
		22	1628	46.56	20	3.77	155	58.35	9.77	2.8	2.2	18	1	269	.09	21	2.2	.9	6	KOH	
		22	1657	24.58	19	20.27	155	8.55	8.40	1.8	1.5	17	2	214	.05	4	.9	1.1	11	UER	
		22	1720	49.98	19	20.04	155	11.23	9.28	1.5	1.0	12	0	220	.03	4	1.3	1.6	10	UER	
		22	1830	8.49	19	22.19	155	2.25	8.67	2.1	1.9	33	0	145	.08	4	.6	.4	17	MER	
		23	415	6.45	19	21.14	155	4.72	9.01	2.0	1.6	28	2	94	.07	4	.5	.8	13	MER	
		23	5 6	53.30	19	20.78	155	6.04	8.82	2.5	2.5	35	1	102	.07	4	.4	.7	20	UER	
		23	814	28.39	19	19.94	155	7.53	6.38	2.2	1.3	12	1	202	.06	6	1.2	1.7	9	UER	
		23	859	21.01	19	20.57	155	7.19	8.06	1.9	1.6	35	4	94	.10	5	.4	.8	18	UER	
		23	1136	59.22	19	20.21	155	7.20	7.31	2.0	1.8	31	3	101	.11	5	.4	.8	13	UER	
		23	1328	19.01	19	41.75	155	2.69	4.50	2.3	1.9	25	0	247	.22	21	2.1	5.7	10	HIL	B
		23	1456	49.55	19	20.20	155	19.06	30.34	2.4	2.8	40	1	49	.09	3	.6	1.2	36	DEP	
		23	21 0	12.56	19	23.16	155	14.91	3.70	1.4	1.2	11	0	108	.05	2	.4	.7	8	GLN	
		23	2238	8.48	19	20.48	155	3.88	6.85	1.8	1.4	29	3	110	.11	2	.5	.7	12	MER	
		24	121	19.50	19	23.70	155	1.45	6.69	1.8	1.3	18	0	140	.10	5	.5	1.1	7	MER	
		24	212	33.04	19	20.02	155	11.71	8.67	1.7	1.6	16	0	194	.06	5	1.0	1.4	14	UER	
		24	618	23.93	19	24.59	155	27.57	11.49	2.1	1.4	12	0	251	.06	4	4.4	5.1	10	UKF	
		24	824	32.51	19	20.71	155	6.67	7.66	1.7	1.1	24	3	98	.10	6	.5	1.0	12	UER	
		24	1822	20.34	19	19.11	155	16.19	8.19	1.9	1.8	35	2	116	.06	3	.4	.6	18	KOA	
		24	1924	36.80	19	19.94	155	11.34	9.27	1.9	1.3	17	0	198	.06	5	1.1	1.4	12	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	AUG	24	2240	46.53	19	23.42	155	14.74	3.72	1.6	1.5	15	0	76	.07	2	.4	.5	14	GLN
		25	140	36.89	19	21.17	155	4.53	6.99	2.3	2.3	32	1	92	.09	4	.4	.9	19	MER
		25	159	35.93	19	25.58	155	28.84	9.50	1.6	1.1	26	2	78	.09	6	.5	1.0	16	UKF
		25	3 0	52.46	19	19.80	155	10.60	8.41	2.0	2.1	31	2	91	.08	4	.4	.7	24	UER
		25	630	48.55	19	24.45	155	24.93	9.60	1.6	1.1	24	1	92	.08	2	.5	.8	10	UKF
		25	920	37.32	19	20.01	155	11.80	9.86	2.5	2.5	30	1	82	.07	5	.4	.6	22	UER
		25	1058	47.52	19	21.56	155	15.24	9.29	2.1	1.9	26	0	63	.08	2	.5	.7	20	KOA
		25	1127	25.65	19	23.54	155	16.95	2.92	1.6	1.4	14	1	60	.05	0	.3	.2	9	SPC
		25	14 1	19.67	19	23.10	154	57.78	8.35	2.6	2.5	34	1	205	.10	4	.8	.5	18	LER F
		25	1410	12.29	19	21.18	155	4.84	8.29	1.8	1.2	25	0	93	.07	4	.4	.6	12	MER
		25	21 8	14.65	19	20.80	155	13.32	9.66	3.3	3.1	41	1	58	.10	3	.3	.4	33	UER F
		25	2133	20.29	19	27.09	155	24.26	7.23	1.8	1.3	30	2	45	.11	4	.4	.9	18	UKF
		25	2317	53.17	19	21.97	155	5.02	8.15	1.7	1.3	28	2	75	.10	3	.5	.8	19	MER
		25	2324	33.07	19	21.94	155	5.02	7.46	1.6	1.0	27	1	77	.13	3	.5	1.0	18	MER
		26	037	3.09	19	18.76	155	13.42	8.58	1.9	1.6	15	1	204	.03	7	1.0	1.4	14	POL
		26	626	4.85	19	31.14	155	40.84	9.78	1.6	1.1	24	2	79	.09	9	.5	1.2	16	MOK
		26	832	12.66	19	19.11	155	15.39	8.02	1.6	1.4	19	0	112	.12	4	.6	.9	19	KOA
		26	839	55.20	19	13.24	155	32.43	8.89	2.0	1.9	16	0	201	.13	9	1.1	1.0	16	L8W
		26	949	9.19	19	21.06	155	11.25	8.39	2.0	1.6	32	1	69	.13	3	.5	.8	28	UER
		26	1119	44.50	19	19.97	155	8.05	8.68	2.0	1.6	26	1	88	.08	5	.5	.9	23	UER
		26	1222	47.18	19	22.29	155	4.20	8.22	1.9	1.4	23	1	92	.12	4	.5	.7	22	MER
		26	1414	36.80	19	28.11	155	25.33	7.61	2.2	1.5	21	1	54	.09	5	.4	1.1	19	UKF
		26	1432	19.57	19	22.04	155	13.91	1.55	1.6	1.9	12	0	86	.06	2	.3	.5	11	UER
		26	2232	47.33	19	26.92	155	26.63	8.73	2.2	1.7	29	0	60	.11	8	.4	1.1	25	UKF
		26	2321	37.64	19	20.64	155	6.58	7.71	1.9	1.5	24	0	144	.09	4	.6	.7	22	UER
		27	133	1.44	19	36.46	155	54.34	14.53	2.4	2.1	17	0	212	.08	11	1.6	.6	14	KON
		27	4 1	18.80	19	20.80	155	13.12	8.94	2.0	1.8	30	1	60	.10	3	.4	.5	29	UER
		27	1147	26.20	19	20.22	155	13.07	7.61	1.4	1.1	20	0	67	.09	4	.6	1.2	15	UER
		27	1442	23.05	19	19.59	155	12.38	4.52	2.2	2.0	24	2	143	.09	5	.4	1.7	18	UER
		27	1617	8.68	19	19.30	155	11.82	8.94	1.5	1.0	12	1	226	.05	6	1.1	2.7	8	UER
		27	1650	35.02	19	21.25	155	3.55	5.33	1.3	1.1	14	0	107	.08	3	.8	1.6	7	MER
		27	2117	14.23	19	23.50	155	23.67	9.98	2.1	1.8	31	2	43	.10	4	.4	.6	19	UKF
		27	22 5	24.29	19	21.64	155	13.16	2.73	1.4	1.3	12	0	153	.08	2	.6	.7	11	UER
		28	051	9.91	19	26.98	154	51.95	6.95	1.8	1.5	20	1	275	.13	4	4.1	.9	9	LER
		28	521	59.08	19	18.56	155	13.21	11.20	3.5	3.7	34	1	130	.08	8	.5	.4	31	INT
		28	547	24.79	19	18.98	155	13.08	10.88	3.4	3.7	35	0	128	.10	7	.5	.5	30	POL
		28	553	10.25	19	18.11	155	13.50	8.15	2.3	2.0	28	0	85	.09	2	.5	.7	20	POL
		28	559	15.53	19	18.28	155	12.99	9.06	1.9	1.7	14	0	214	.04	8	1.3	1.6	13	POL
		28	619	49.91	18	51.47	155	9.45	54.78		1.4	22	0	301	.09	46	10.3	7.7	8	PPL
		28	633	.79	19	18.40	155	13.03	9.63	1.6	1.4	14	0	212	.06	8	1.3	1.9	12	POL
		28	654	14.06	19	18.54	155	13.25	8.38	1.5	1.4	13	0	209	.02	8	1.2	1.9	12	POL
		28	655	13.20	19	18.58	155	13.17	10.98	3.8	3.7	39	0	130	.08	8	.6	.4	34	POL F
		28	658	10.99	19	18.50	155	13.19	7.72	1.3	.9	10	0	224	.02	8	1.4	3.1	8	POL
		28	7 4	6.31	19	3.95	155	29.79	45.09	2.1		11	1	194	.07	20	1.2	1.8	4	LSW T
		28	12 6	38.55	19	6.55	155	26.20	43.32	2.4		13	0	192	.04	6	3.5	6.5	12	LSW T
		28	12 7	35.66	19	6.85	155	25.91	42.48			10	0	196	.09	6	2.6	6.9	10	LSW T
		28	12 8	18.20	19	5.43	155	26.74	48.79	2.3		9	0	200	.04	8	3.2	6.2	9	LSW T
		28	1210	16.53	19	5.92	155	24.93	45.28	1.8		13	0	211	.04	8	2.7	5.8	10	LSW T

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	AUG	28	1214	40.66	19	25.01	155	25.61	10.41	1.7	1.1	21	0	65	.09	6	.5	1.2	20	UKF
		28	1639	50.31	19	21.77	155	13.41	2.68	1.4	1.3	12	0	96	.09	2	.4	.6	12	UER
		28	1710	4.36	19	26.40	155	26.87	10.24	2.8	2.5	32	1	45	.12	7	.4	.7	28	UKF
		28	2032	52.30	19	21.74	155	6.91	8.90	1.9	1.8	22	0	78	.09	3	.5	.6	21	UER
		28	2037	31.03	19	52.13	155	43.17	12.83	2.7	2.8	19	1	234	.09	24	2.0	.8	18	KKU F
		28	2230	48.08	19	18.63	155	15.50	8.00	1.6	1.3	21	0	129	.09	4	.6	.9	19	KOA
		28	2330	24.25	19	23.20	155	14.77	3.39	1.6	1.4	10	0	105	.06	2	.4	.6	8	GLN
		29	021	41.43	19	23.18	155	14.81	3.14	1.2	1.1	8	0	107	.03	2	.4	.6	8	GLN
		29	3 6	36.11	19	23.28	155	14.72	3.28	1.5	1.5	12	0	102	.06	3	.4	.5	12	GLN
		29	710	21.49	19	23.10	155	14.89	3.42	1.5	1.1	11	0	84	.05	2	.4	.6	8	GLN
		29	1153	29.90	19	44.00	155	19.73	27.20	2.7	2.1	33	2	97	.10	15	.7	1.8	31	KKU
		29	16 0	58.50	19	24.57	155	27.82	9.27	2.2	1.7	33	2	46	.11	4	.4	.9	31	UKF
		29	1628	43.70	19	20.75	155	8.49	7.59	1.2	1.1	24	1	72	.09	3	.5	1.0	20	UER
		29	1659	32.71	19	23.44	155	15.85	1.09	.8	.8	9	0	85	.41	2	.9	1.3	7	SPC
		29	17 9	13.04	19	23.06	155	14.75	2.98	1.1	.8	8	0	116	.03	2	.5	.6	5	GLN
		29	1739	44.56	19	23.10	155	14.76	3.22	1.8	1.8	13	0	67	.04	2	.4	.5	12	GLN
		29	1842	1.51	19	22.13	155	25.68	10.31	2.7	2.5	33	1	81	.12	3	.4	.6	28	UKF
		29	1848	23.53	19	31.16	155	16.11	25.28	1.9	1.1	34	4	118	.08	11	.6	.8	30	NER
		29	2038	22.79	19	22.90	155	14.77	3.06	1.4	1.3	16	2	68	.06	2	.3	.4	15	UER
		30	1137	44.37	19	19.40	155	11.40	8.97	2.1	1.8	17	0	206	.07	6	1.1	1.0	13	UER
		30	1917	47.50	19	21.87	155	6.63	8.48	2.3	2.3	33	2	77	.06	2	.4	.6	20	UER
		30	20 9	37.05	19	17.56	155	20.94	5.10	1.7	1.3	20	1	126	.08	4	.6	1.6	17	SWR
		30	2253	1.47	19	21.11	155	13.17	9.20	2.3	2.2	37	3	57	.08	3	.4	.5	24	UER
		31	138	48.82	19	20.50	155	13.18	9.34	1.5	.9	13	0	181	.03	4	.9	1.7	12	UER
		31	225	16.55	19	21.79	155	13.68	1.59	1.3	1.6	12	0	146	.05	2	.4	.5	9	UER
		31	410	55.02	19	24.30	155	25.29	11.58	2.8	2.6	41	2	47	.12	2	.3	.4	24	UKF
		31	613	17.41	19	16.80	155	30.07	10.60	2.2	1.6	25	1	75	.10	3	.4	1.0	15	HEA
		31	758	.81	19	20.40	155	2.70	6.89	2.0	1.3	24	1	160	.11	1	.7	.9	10	MER
		31	1224	44.27	19	28.77	154	45.30	10.89	2.7	2.3	29	0	291	.10	14	5.3	.7	18	DIS
		31	1233	54.11	19	18.80	155	10.43	5.02	1.4	1.1	7	1	255	.03	6	3.5	16.5	4	POL *
		31	1314	5.88	19	20.24	155	2.55	7.83	2.6	2.6	33	3	185	.09	1	.6	.5	17	MER
		31	1547	43.81	19	24.92	155	24.55	9.50	1.9	1.4	25	0	38	.09	1	.4	.8	18	UKF
		31	1729	.51	19	19.71	155	8.42	8.15	1.7	1.6	12	1	221	.06	5	1.3	2.0	2	UER
		31	1752	29.06	19	22.10	155	13.36	3.13	.9	1.1	10	1	153	.05	1	.5	.4	5	UER
		31	1828	.21	19	27.57	155	20.66	8.04	1.7	1.1	17	2	144	.09	0	.6	1.1	15	UKF
		31	2216	58.49	19	27.38	155	20.56	7.79	1.9	1.4	18	2	132	.08	7	.6	1.7	11	UKF
		31	2218	.26	19	27.23	155	20.85	7.31	1.6	1.1	18	2	97	.08	1	.6	1.1	14	UKF
SEP		1	5 5	1.14	19	23.76	155	15.21	3.30	1.5	1.6	9	0	97	.03	2	.4	.8	8	SPC
		1	652	29.05	19	19.45	155	5.14	8.82	1.7	1.4	13	1	258	.05	10	2.0	1.6	9	MER
		1	912	29.25	19	20.06	155	11.82	7.23	2.4	2.5	34	2	82	.10	5	.5	.7	27	UER
		1	1137	35.95	19	21.15	155	5.58	8.34	1.5	1.4	12	0	246	.03	8	2.3	2.0	9	MER
		1	1216	33.48	19	21.74	155	4.92	9.54	3.8	4.0	43	1	80	.11	3	.5	.4	42	MER F
		1	1325	23.60	19	20.64	155	3.67	9.99	1.8	1.5	14	1	260	.03	11	2.0	1.6	8	MER
		1	1348	21.84	19	25.66	155	25.57	10.19	1.7	1.6	14	0	215	.07	1	2.0	3.0	10	UKF
		1	1414	27.83	19	19.69	155	13.27	8.61	1.4	1.3	12	0	199	.04	5	1.0	2.2	10	UER
		1	1715	16.73	19	24.33	155	22.99	9.13	2.2	2.1	34	2	37	.10	4	.4	.8	24	UKF
		1	1820	8.88	19	20.58	155	6.93	8.10	1.3	1.3	10	0	265	.04	6	3.2	1.4	6	UER
		1	2153	9.94	19	23.53	155	27.53	11.18	2.6	2.4	34	1	53	.09	2	.4	.6	25	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	1	22 1	54.89	19	23.42	155	27.61	10.66	2.2	2.2	34	1	53	.10	2	.4	.7	25	UKF
		1	2339	40.66	19	18.68	155	15.38	8.18	2.4	2.4	32	1	124	.09	4	.4	.7	21	KOA
		2	446	13.14	19	20.20	155	7.20	7.77	2.2	1.9	30	2	101	.08	5	.4	.7	12	UER
		2	1123	29.33	19	20.34	155	10.55	8.84	1.9	1.5	13	1	233	.04	3	1.1	1.9	10	UER
		2	1411	5.52	19	17.09	155	13.94	6.95	1.8	1.8	30	3	144	.09	1	.5	.8	14	POL
		2	1444	15.07	19	19.39	155	10.19	8.81	2.3	2.4	31	1	99	.09	5	.4	.6	23	UER
		2	1450	36.04	19	25.35	154	54.63	6.23	2.7	2.9	26	0	219	.11	7	1.2	1.0	12	LER
		2	1453	9.95	19	19.53	155	9.67	9.18	1.8	1.3	13	1	233	.03	5	1.4	1.5	10	UER
		2	1931	55.83	19	20.20	155	12.75	9.18	1.5	1.3	12	1	194	.02	5	1.0	2.1	11	UER
		3	127	12.58	19	19.50	155	10.43	9.46	2.9	3.1	39	1	98	.08	5	.4	.5	33	UER
		3	152	47.37	19	17.87	155	14.10	8.29	1.4	1.3	12	0	217	.02	7	1.3	2.1	8	POL
		3	157	13.84	19	26.87	155	29.54	8.49	1.8	1.1	23	1	70	.07	8	.4	1.3	12	UKF
		3	254	25.91	19	21.68	155	6.13	8.77	1.4	1.1	17	0	82	.05	2	.5	1.2	13	UER
		3	346	13.65	19	20.43	155	3.72	8.37	2.0	1.9	26	2	109	.11	2	.6	.8	13	MER
		3	918	28.67	19	20.15	155	3.89	4.82	2.0	1.7	23	1	130	.12	2	.6	1.4	17	MER
		3	1343	38.91	19	19.37	155	11.52	4.77	1.4	1.0	22	0	99	.13	6	.6	2.5	18	UER
		3	2340	40.35	19	23.59	155	15.16	2.97	1.0	.8	7	0	95	.02	3	.5	.7	6	SPC
		4	130	9.18	19	44.61	156	.87	9.06	3.2	3.3	36	1	225	.13	30	1.3	.8	29	KON F
		4	454	53.04	19	22.51	155	3.94	8.66	2.2	2.0	29	1	97	.09	4	.5	.5	25	MER
		4	622	12.89	18	37.78	155	7.51	16.35	1.9	1.3	29	3	291	.13	69	4.5	29.4	28	PPL *
		4	644	7.81	19	20.67	155	2.47	7.73	2.7	2.8	30	0	165	.13	2	.8	.5	28	MER
		4	7 8	25.35	19	19.90	155	12.34	6.38	1.3	1.0	26	0	80	.10	5	.5	.8	23	UER
		4	729	32.11	19	20.17	155	13.03	6.50	1.5	1.1	27	2	68	.10	5	.5	.7	24	UER
		4	14 1	27.08	19	20.88	155	10.85	8.97	2.1	2.1	30	1	71	.08	3	.4	.7	20	UER
		5	154	4.71	19	20.66	155	21.70	33.35	2.2	1.7	33	2	76	.10	3	.7	1.3	29	DEP
		5	6 1	58.49	19	20.78	155	2.71	7.23	2.4	2.2	31	2	148	.10	2	.7	.6	19	MER
		5	939	20.46	19	24.07	155	28.79	9.57	1.4	1.2	23	1	63	.08	4	.4	1.0	19	UKF
		5	1014	36.20	19	14.21	155	10.90	13.49	1.6	1.3	10	0	272	.14	15	4.4	5.3	7	POL
		5	1125	50.26	19	19.66	155	10.86	3.72	1.5	1.2	8	0	237	.05	5	1.9	3.0	6	UER
		5	1128	55.45	19	13.62	155	12.24	35.25	1.9	1.6	9	0	275	.10	14	7.2	28.1	6	POL *
		5	14 7	42.28	19	19.35	155	11.77	9.27	2.7	2.9	30	0	97	.08	5	.4	.6	26	UER
		5	1631	13.01	19	26.90	155	24.71	5.33	1.9	1.5	30	2	55	.12	3	.4	1.1	19	UKF
		5	1715	50.84	19	22.79	155	27.05	9.19	1.8	1.4	27	1	76	.11	1	.5	.9	19	UKF
		5	1835	19.81	19	19.54	155	11.80	8.46	2.2	2.4	32	1	92	.09	6	.5	.7	25	UER
		5	2233	7.50	19	19.03	155	13.44	8.96	2.4	2.5	40	1	75	.08	4	.4	.5	28	UER
		5	2316	56.16	19	27.19	155	23.32	3.65	1.5	1.4	14	2	136	.10	5	.5	1.3	8	UKF
		6	224	48.00	19	19.87	155	6.87	9.55	3.4	3.5	37	1	114	.09	5	.5	.4	30	UER F
		6	247	7.66	19	26.25	155	24.40	5.66	1.3	1.1	19	0	46	.08	2	.4	1.0	8	UKF
		6	6 7	2.47	19	24.49	155	24.93	8.60	1.6	1.3	24	1	57	.11	1	.5	.9	20	UKF
		6	959	28.37	19	17.32	155	13.07	10.25	2.4	2.4	28	1	175	.11	9	.8	.6	24	POL
		6	1136	45.01	19	19.82	155	12.89	9.67	2.0	2.0	24	0	75	.07	5	.5	.8	22	UER
		6	1215	26.96	19	19.54	155	8.77	6.94		1.4	22	0	81	.10	4	.5	1.0	21	UER
		6	1319	34.24	19	20.44	155	11.91	8.57	1.7	1.4	20	0	75	.09	5	.6	.8	19	UER
		6	1610	38.51	19	20.00	155	6.90	8.30	2.0	1.9	26	0	110	.08	5	.5	.8	24	UER
		6	1956	26.22	19	19.46	155	7.87	9.42	2.2	2.3	29	0	99	.08	4	.6	.5	26	UER
		6	21 2	7.07	19	17.31	155	22.43	6.97	1.8	1.6	19	0	123	.13	6	.7	1.1	16	SWR
		6	2132	55.15	19	21.75	155	4.07	8.23	2.4	2.6	24	1	93	.10	4	.5	.7	19	MER
		6	2256	3.41	19	20.29	155	11.91	8.30	2.3	2.5	29	0	77	.09	5	.4	.6	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	7	210	40.94	19	19.13	155	11.72	8.83	1.9	1.8	24	0	103	.12	5	.5	.9	18	UER
		7	357	16.73	19	22.93	155	3.37	8.89	2.1	2.2	28	1	109	.08	3	.6	.4	25	MER
		7	447	2.38	19	18.75	155	13.60	9.28	2.2	2.4	31	0	86	.11	3	.5	.7	27	POL
		7	710	20.12	19	25.26	155	37.63	3.74	2.5	2.3	11	0	120	.10	4	.7	1.8	9	MOK
		7	8 9	31.15	19	20.08	155	4.05	6.97	2.1	1.8	21	1	136	.10	2	.6	1.1	16	MER
		7	10 3	5.62	19	20.93	155	2.46	6.47	1.7	1.2	23	0	159	.10	2	.6	.9	13	MER
		7	1045	56.69	19	20.53	155	4.23	5.62	1.7	1.2	25	2	112	.11	3	.5	1.1	16	MER
		7	12 5	44.57	19	22.92	155	24.66	8.90	2.2	2.2	27	1	82	.06	4	.4	.7	21	UKF
		7	1244	20.94	19	12.74	155	20.05	45.90	2.0	2.0	23	2	180	.09	10	.9	1.8	5	HLP
		7	1654	25.27	19	23.65	154	55.91	7.51	2.1	1.9	17	1	217	.25	11	1.8	2.4	5	LER
		7	1730	45.09	19	19.17	155	12.04	7.87	1.6	1.0	12	0	225	.04	7	1.3	2.1	9	UER
		7	1851	52.67	19	21.82	155	4.85	8.38	1.7	1.9	30	2	78	.10	3	.4	.7	14	MER
		7	1856	59.58	19	22.04	155	5.06	8.26	2.3	2.4	32	1	75	.07	5	.4	.6	14	MER
		8	031	31.68	19	20.77	155	6.30	8.10	2.3	2.2	32	1	100	.08	4	.4	.7	19	UER
		8	036	29.05	19	19.47	155	9.78	8.09	2.1	2.1	37	2	95	.08	5	.3	.7	23	UER
		8	252	38.31	19	21.74	155	4.28	10.51	1.6	1.3	16	0	88	.06	4	.9	1.7	9	MER
		8	429	42.19	19	22.13	155	2.75	8.10	1.5	1.1	20	0	134	.10	4	.8	1.0	12	MER
		8	439	46.29	19	26.00	154	55.31	3.46	1.7	1.2	20	0	212	.06	6	.9	2.1	5	LER
		8	918	49.78	18	56.27	155	34.37	41.47	2.6	1.8	29	4	248	.08	11	1.2	1.7	23	DIS
		8	1138	59.20	19	26.31	155	25.28	10.34	1.9	1.3	29	1	65	.08	2	.4	.7	20	UKF
		8	1143	50.01	19	20.63	155	1.60	7.21	2.0	1.0	18	1	200	.09	3	1.0	1.0	8	MER
		8	1334	42.18	19	18.75	155	13.52	10.48	3.4	3.7	41	1	73	.11	3	.4	.4	34	POL F
		8	1432	14.03	19	26.41	155	24.52	3.53	1.5	1.2	18	1	84	.10	2	.4	.8	15	UKF
		8	1530	16.69	19	26.42	155	24.48	3.63	2.0	1.5	18	1	53	.08	2	.4	.7	15	UKF
		8	1951	13.37	19	20.12	155	6.55	8.18	2.0	1.7	30	0	113	.07	5	.5	.9	22	UER
		8	2034	37.25	19	21.62	155	20.60	3.28	1.3	1.1	14	0	82	.06	4	.4	1.0	13	SWR
		9	1042	33.15	19	24.24	155	29.72	9.78	2.3	2.5	41	2	42	.09	5	.3	.7	26	UKF
		9	1119	52.98	19	44.68	154	56.76	38.11	2.6	2.0	32	1	231	.09	10	1.2	1.8	21	HIL
		9	1657	43.14	19	19.35	155	12.52	7.72	1.3	1.4	17	1	88	.04	5	.5	1.3	12	UER
		9	2231	49.16	19	20.32	155	3.63	5.96	1.3	1.3	18	1	114	.13	1	.9	1.4	11	MER
		9	2242	52.10	19	20.37	155	13.73	9.72	1.6	1.7	25	0	68	.08	4	.6	1.0	17	UER
		10	1 9	48.65	19	19.89	155	12.58	9.13	1.6	1.3	11	0	203	.03	5	1.2	2.2	11	UER
		10	2 0	7.39	19	25.09	155	25.89	8.24	1.6	1.2	22	1	51	.10	1	.5	1.0	13	UKF
		10	4 7	13.98	19	20.05	155	10.18	8.32	2.0	2.3	31	2	91	.08	4	.4	.7	20	UER
		10	513	51.04	19	19.38	155	15.60	8.10	2.3	2.6	32	1	91	.08	3	.4	.7	24	KOA
		10	6 0	18.91	19	18.73	155	13.51	8.01	2.1	2.2	35	2	79	.09	3	.4	.7	20	POL
		10	643	4.81	19	18.92	155	12.71	8.23	1.5	1.1	11	0	221	.04	7	1.3	2.7	10	POL
		10	1029	35.08	19	18.45	155	13.30	8.15	1.6	1.5	21	0	85	.06	3	.6	1.2	16	POL
		10	14 1	35.84	19	23.02	155	14.77	3.32	2.0	2.1	18	0	67	.05	2	.3	.4	15	GLN
		10	1447	23.30	19	23.68	155	15.24	2.98	1.0	.9	10	0	94	.05	2	.4	.5	9	SPC
		10	1526	17.72	19	20.90	155	1.30	8.61	2.1	2.3	32	2	196	.08	3	.4	.6	15	MER
		10	1857	40.62	19	21.03	155	7.32	8.79	1.9	1.3	17	2	216	.04	4	1.2	1.0	11	UER
		10	2032	33.57	19	23.09	155	16.89	2.83	.9	.9	10	0	66	.04	1	.4	.3	9	SPC
		10	2315	15.00	19	22.91	155	4.00	10.18	1.8	1.2	29	2	95	.08	3	.5	.7	21	MER
		10	2327	54.74	19	20.87	155	13.92	11.05	1.6	1.2	13	0	164	.04	4	1.1	1.5	11	INT
		10	2356	11.27	19	22.02	155	3.27	7.58	1.8	1.4	21	1	117	.09	4	.5	1.0	10	MER
		11	150	52.87	19	15.58	155	19.91	32.19	1.9	1.5	35	1	153	.09	5	.7	1.5	28	HLP
		11	424	53.31	19	22.28	155	5.66	8.59	2.1	2.1	31	1	72	.06	2	.4	.6	21	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	SEP	11	7 3	56.00	19	21.81	155	3.37	7.15	2.2	2.2	24	1	114	.10	4	.5	.8	17	MER	
		11	741	1.08	19	19.32	155	11.27	6.45	1.7	1.5	26	2	101	.08	6	.5	.9	17	UER	
		11	935	30.33	19	20.36	155	48.64	11.92	2.5	1.8	23	1	155	.10	10	.6	.4	12	KON	
		11	1228	22.98	19	21.32	155	3.76	6.65	1.3	1.2	18	0	99	.08	3	.6	1.0	11	MER	
		11	1323	53.58	19	21.64	155	3.38	8.31	1.4	1.4	17	0	114	.09	3	1.3	2.1	11	MER	
		11	1327	58.79	19	21.62	155	3.32	7.55	1.3	1.0	20	0	116	.08	3	.5	.8	12	MER	
		11	1328	20.36	19	21.57	155	3.25	8.59	2.1	2.3	25	1	119	.05	3	.5	.9	17	MER	
		11	1455	25.20	19	23.17	155	14.89	3.41	2.9	3.1	30	1	48	.09	2	.3	.4	25	GLN	
		11	1554	56.05	19	20.14	155	10.96	4.57	1.1	1.1	10	1	242	.08	4	1.6	4.1	5	UER	
		11	1822	27.30	19	20.01	155	6.87	6.60		1.5	9	0	243	.03	6	4.0	2.1	4	UER	
		11	1830	20.41	19	23.75	155	15.29	3.06	1.7	2.0	15	1	96	.04	2	.3	.4	12	SPC	
		11	2247	59.08	19	20.12	155	11.91	9.34	1.9	1.9	31	2	80	.06	5	.4	.6	22	UER	
		11	2327	28.22	19	23.33	155	14.84	3.41	1.1	1.2	11	0	101	.06	3	.4	.6	9	GLN	
		11	2347	39.62	19	20.23	155	12.92	9.04	1.4	1.2	18	0	69	.04	4	.6	1.3	14	UER	
		12	353	2.85	19	22.75	155	14.36	3.83	1.0	1.2	9	0	129	.05	2	.6	.7	7	UER	
		12	438	32.93	19	19.15	155	10.24	5.93	1.4	1.4	12	1	255	.05	5	1.3	3.9	10	UER	
		12	5 5	41.80	19	20.14	155	7.39	9.03	1.6	1.6	11	0	309	.04	6	7.1	4.8	10	UER	
		12	934	51.21	19	23.08	155	24.65	9.25	1.7	1.5	20	0	81	.06	5	.5	1.1	19	UKF	
		12	1147	51.73	19	20.07	155	9.22	7.60	1.8	1.4	27	1	77	.09	4	.5	.8	27	UER	
		12	1211	28.78	19	20.56	155	8.12	6.89	1.5	1.3	19	0	91	.08	4	.6	1.1	16	UER	
		12	1212	43.28	19	19.86	155	13.45	9.60	2.3	2.6	27	1	68	.09	5	.5	.7	26	UER	
		12	1658	22.79	19	54.53	155	23.01	12.42	1.8	1.6	10	0	267	.16	5	10.8	3.1	9	KKU	
		12	2027	23.29	19	19.91	155	12.91	7.02	1.5	1.7	24	0	73	.11	5	.5	.9	24	UER	
		12	2213	4.24	19	12.99	155	36.61	8.19	2.1	1.6	25	3	202	.22	4	1.1	1.2	20	HEA	
		13	151	26.06	19	18.88	155	15.41	7.47	1.5	1.4	20	0	120	.09	4	.5	.9	18	KOA	
		13	522	13.30	19	21.17	155	3.54	6.44	1.9	1.5	22	1	104	.13	3	.7	1.0	17	MER	
		13	1039	45.41	19	20.22	155	3.95	7.29	1.7	1.7	20	0	144	.09	2	.7	.8	11	MER	
		13	1249	35.13	19	19.05	155	13.81	8.68	1.6	1.5	26	1	87	.07	4	.5	.8	15	UER	
		13	1333	1.89	19	18.18	155	23.65	3.77	1.7	1.6	12	1	174	.06	4	.7	.9	5	SWR	
		13	1346	46.31	19	21.29	155	4.56	7.73	1.9	1.6	20	1	89	.10	4	.5	.9	12	MER	
		13	1510	32.21	19	23.57	154	59.13	3.99		1.5	12	0	183	.07	9	1.0	16.2	7	LER	*
		13	1614	40.78	19	23.10	155	14.84	3.20	1.8	1.9	16	0	109	.05	2	.3	.4	11	GLN	
		13	1855	16.07	19	19.12	155	11.29	9.13	1.4	1.1	12	0	237	.05	6	1.7	2.7	9	UER	
		13	2017	59.62	19	20.32	155	4.46	6.41		1.4	12	0	144	.07	3	.7	1.3	8	MER	
		13	2030	34.14	19	20.83	155	2.80	7.39	1.5	1.5	17	0	143	.09	2	1.0	.8	10	MER	
		13	2142	36.00	19	23.51	154	59.23	6.25	1.7	1.4	17	0	180	.10	9	.7	1.1	7	LER	
		14	014	45.82	19	25.23	155	23.75	10.41	1.6	1.3	26	1	46	.09	2	.5	1.0	17	UKF	
		14	432	17.38	19	23.56	155	16.83	3.00	3.0	3.5	37	0	35	.09	0	.2	.2	31	SPC	F
		14	548	55.82	19	24.02	155	29.22	9.26	1.9	1.6	32	2	64	.08	4	.4	.9	18	UKF	
		14	735	18.71	19	20.09	155	11.76	10.40	3.2	3.3	38	1	81	.09	5	.4	.5	29	UER	F
		14	1044	3.48	19	23.34	155	15.15	2.99	1.7	2.0	16	1	78	.15	2	.4	.6	12	SPC	
		14	1353	19.04	19	13.47	155	36.10	7.51	2.3	1.6	22	1	86	.23	3	.8	1.5	18	HEA	
		14	1532	48.01	19	21.10	155	48.96	10.96	3.8	3.8	43	1	113	.12	11	.6	.4	37	KON	
		14	1758	49.29	19	26.64	155	46.91	9.20	2.6	2.3	26	0	232	.12	8	1.4	.9	18	KON	
		14	1832	.62	19	22.97	155	14.82	3.22	1.9	2.2	18	0	49	.08	2	.4	.5	16	UER	
		14	1948	17.70	19	22.98	155	14.80	3.20	1.1	.8	6	0	114	.05	2	.5	.7	5	UER	
		15	439	28.41	19	19.36	155	11.92	5.79	1.3	1.2	24	0	94	.12	5	.5	1.0	15	UER	
		15	6 8	48.37	19	19.93	155	13.11	4.91		.7	19	1	70	.12	5	.5	1.9	16	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	SEP	15	852	51.22	19	23.18	155	14.80	3.27		1.7	14	0	106	.04	2	.3	.5	11	GLN	
		15	1013	6.54	19	35.61	155	33.69	7.75	2.2	1.1	22	3	118	.11	8	.5	1.3	14	MOK	
		15	1423	22.72	19	20.70	155	7.28	7.83	1.9	1.4	20	0	138	.06	5	.6	1.0	15	UER	
		15	1545	16.00	19	25.06	154	53.58	6.98	2.2	1.8	16	1	252	.12	5	2.2	1.1	5	LER	
		15	1626	54.83	19	24.12	155	29.65	7.54	1.9	1.3	31	0	50	.12	5	.4	1.2	23	UKF	
		15	2045	29.41	19	19.87	155	11.28	9.43	1.6	1.4	16	0	199	.05	5	1.1	1.4	12	UER	
		15	2143	4.16	19	19.60	155	12.10	8.57	1.5	1.1	15	1	198	.06	6	1.0	1.5	11	UER	
		15	2255	56.51	19	20.29	155	12.86	9.16	1.6	1.1	13	0	181	.02	4	1.0	1.6	12	UER	
		16	951	36.66	19	23.81	155	2.38	9.24	3.2	3.6	42	1	119	.10	4	.5	.4	32	MER	F
		16	12 2	57.66	19	17.97	155	13.26	5.71	1.5	1.2	20	1	96	.07	2	.6	1.3	12	POL	
		16	13 8	26.53	19	22.29	155	4.06	7.16	1.3	1.3	12	0	149	.11	4	.7	1.2	7	MER	
		16	1823	17.17	19	23.38	155	17.03	2.82	1.1	1.3	11	1	62	.07	0	.6	.4	6	SPC	
		16	1921	1.40	19	19.57	155	8.74	7.30	1.3	1.2	14	0	221	.02	5	1.4	1.9	9	UER	
		16	1946	20.97	19	20.41	155	13.15	6.89	1.6	1.6	25	1	64	.10	4	.5	1.0	16	UER	
		16	2048	26.40	18	55.62	155	6.28	10.98	2.0	1.5	38	5	263	.15	40	1.3	1.0	28	PPL	
		16	2111	54.12	19	20.07	155	3.97	6.48	1.5	1.5	13	0	154	.06	2	1.0	1.4	6	MER	
		16	2116	23.47	19	23.34	155	14.96	3.20	1.8	1.9	20	1	74	.07	2	.3	.4	14	GLN	
		17	313	16.67	19	19.59	155	12.40	5.95	1.5	1.4	24	2	84	.09	5	.4	1.4	19	UER	
		17	436	25.18	19	22.29	155	24.39	10.57	1.3	1.4	19	2	69	.08	4	.6	1.2	13	UKF	
		17	715	43.92	19	20.33	155	12.61	7.77	2.2	2.6	38	1	70	.12	4	.5	.7	29	UER	
		17	1519	33.01	19	20.71	155	2.86	8.26	1.4	1.3	16	0	140	.05	1	.9	.9	11	MER	
		17	1945	34.73	19	26.97	155	29.57	8.51	1.7	1.3	28	1	71	.08	8	.4	1.1	15	UKF	
		17	20 5	15.72	19	20.31	155	11.81	6.03	1.7	1.3	25	1	77	.06	5	.4	.8	12	UER	
		17	2045	8.70	19	13.30	155	31.70	8.60	2.7	2.5	37	1	130	.13*	4	.5	.7	24	LSW	F
		17	2211	52.18	20	4.29	155	39.95	12.46	2.2	1.2	21	2	286	.07	39	1.8	.7	12	KOH	
		17	2245	59.42	19	26.77	155	29.14	10.06	2.1	1.5	31	0	68	.09	8	.4	.8	22	UKF	
		18	2 6	33.80	19	20.05	155	8.85	8.32	1.8	2.1	32	3	74	.05	4	.4	.7	21	UER	
		18	314	12.82	19	24.19	155	24.30	10.41	1.7	1.4	22	1	47	.08	2	.5	.7	18	UKF	
		18	342	23.93	19	19.13	155	11.81	8.37	1.4	1.0	16	1	207	.04	6	.9	1.5	10	UER	
		18	829	22.91	19	20.42	155	13.00	6.49	1.5	1.7	32	2	66	.12	4	.5	.8	28	UER	
		18	846	17.59	19	20.09	155	8.96	7.90	1.8	1.9	34	2	75	.06	4	.4	.7	29	UER	
		18	1141	7.78	19	19.41	155	11.00	8.21	1.7	1.6	26	1	100	.08	5	.5	1.0	24	UER	
		18	1519	13.75	19	22.24	155	4.00	11.17	1.5	1.2	27	2	97	.05	4	.6	1.0	24	MER	
		18	1523	38.36	19	38.60	154	59.33	44.59	2.2	1.9	30	5	182	.11	8	.9	1.5	21	HIL	
		18	19 6	11.83	19	22.37	155	5.02	9.00	2.8	2.8	40	2	76	.07	2	.3	.5	36	MER	
		18	2053	24.26	19	21.94	155	4.68	8.56	1.5	1.2	21	0	80	.07	3	.4	.9	21	MER	
		18	2146	.62	19	9.48	155	27.28	35.57	2.4		21	0	209	.09	1	1.9	4.1	21	LSW	
		18	2151	4.75	19	8.71	155	27.24	39.11	2.5		24	1	260	.06	2	1.7	2.7	22	LSW	
		18	22 3	46.77	19	13.99	155	21.18	6.34	1.6	1.4	25	0	168	.06	9	.6	2.1	24	LSW	
		18	23 8	1.36	19	6.60	155	33.52	54.49	2.7		25	0	154	.12	11	1.4	3.7	25	LSW	
		18	2319	47.24	19	8.70	155	33.92	54.99	2.7		19	1	212	.13	11	1.4	2.4	8	LSW	
		19	424	15.80	19	19.56	155	7.86	9.10	1.8	1.8	29	2	98	.07	4	.5	.8	21	UER	
		19	6 8	49.82	19	25.09	155	24.80	10.36	1.7	1.4	22	0	44	.08	1	.5	.9	18	UKF	
		19	651	21.47	19	19.43	155	10.57	8.80	2.3	2.7	28	2	99	.08	5	.4	.9	21	UER	
		19	726	57.07	19	17.92	155	15.48	8.64	1.7	1.6	24	0	153	.06	4	.6	.7	17	KOA	
		19	834	47.24	19	20.14	155	7.85	8.04	1.6	1.5	25	3	91	.05	5	.5	.8	15	UER	
		19	1055	7.21	19	23.02	155	2.84	9.06	1.5	1.5	15	0	121	.07	4	.7	1.0	9	MER	
		19	13 8	11.59	19	20.51	155	9.84	7.04	1.7	1.3	21	1	75	.08	3	.5	1.0	13	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	19	1310	47.12	19	17.81	155	25.51	8.64	1.9	1.8	19	0	107	.09	6	.5	.8	14	HEA
		19	1616	43.82	19	22.04	155	13.49	3.12	1.4	1.6	16	0	64	.04	1	.4	.5	12	UER
		19	1751	8.76	19	20.61	155	13.50	9.23	1.6	1.6	21	0	63	.06	4	.5	.9	15	UER
		19	1939	2.00	19	25.07	155	25.08	9.12	1.7	1.6	26	0	48	.09	0	.4	.9	19	UKF
		19	2128	50.25	19	20.04	155	8.10	8.70	1.7	1.5	24	0	86	.06	5	.5	1.1	18	UER
		19	2130	57.39	19	20.14	155	8.24	8.76	1.8	2.0	28	0	82	.05	5	.5	.9	23	UER
		20	048	35.27	19	18.49	155	14.97	6.91	1.0	1.1	19	0	127	.08	4	.6	1.2	18	POL
		20	1 3	8.86	19	23.32	155	24.93	10.31	2.6	2.5	41	1	58	.10	4	.4	.5	27	UKF
		20	230	19.47	19	21.62	155	6.70	6.70	1.0	1.2	26	3	81	.12	3	.5	.9	15	UER
		20	253	43.87	19	19.01	155	13.51	8.15	1.4	1.5	24	1	78	.07	4	.5	.9	18	UER
		20	516	36.45	19	19.79	155	6.59	6.76	1.4	1.4	24	2	121	.10	5	.6	1.2	20	UER
		20	722	24.24	19	19.74	155	11.48	6.72	1.4	1.3	22	1	90	.09	5	.5	1.3	13	UER
		20	752	55.70	19	25.29	155	24.48	9.08	2.0	2.1	32	0	41	.10	1	.4	.9	29	UKF
		20	818	6.46	19	30.28	155	52.12	9.42	2.9	2.3	25	1	117	.13	6	.6	.5	12	KON
		20	856	57.75	19	31.21	154	53.54	2.01		1.2	9	0	212	.13	4	3.4	4.7	5	HIL
		20	918	32.85	19	23.57	155	15.07	3.36	2.9	3.2	31	1	45	.10	2	.3	.4	27	SPC F
		20	10 4	55.22	19	11.88	155	27.63	42.32	2.6		33	6	118	.08	4	.7	1.2	14	LSW
		20	1011	.66	19	27.53	155	21.95	3.01	1.7	1.8	16	2	114	.10	2	.5	.6	12	UKF
		20	1217	14.95	19	23.80	155	15.33	2.87	.9	1.2	11	0	100	.03	2	.3	.5	8	SPC
		20	1646	13.70	19	22.41	155	30.16	8.59	2.4	1.9	37	4	58	.10	4	.3	1.0	21	MOK
		20	1647	26.16	19	21.25	155	14.97	10.21	1.5	1.3	14	0	147	.06	3	1.0	1.5	9	UER
		20	1735	55.19	19	18.35	155	23.37	3.61	1.2	1.6	19	0	168	.04	3	.5	.7	10	SWR
		20	21 3	12.64	19	27.15	155	21.90	8.21	1.7	1.4	23	2	73	.12	2	.5	1.0	11	UKF
		20	21 9	5.62	19	26.80	155	23.29	6.32	1.8	1.9	29	2	48	.09	4	.4	.9	14	UKF
		20	2121	21.12	19	20.89	155	13.17	7.63	1.6	1.6	25	0	60	.12	3	.5	.8	20	UER
		20	2344	12.20	19	25.71	155	39.73	1.95	1.2	1.8	14	0	219	.09	7	1.3	2.1	7	MOK
		21	129	24.09	19	20.23	155	11.85	10.06	3.4	3.6	41	0	79	.09	5	.5	.4	36	UER F
		21	2 0	4.98	19	21.45	155	10.03	7.59	1.4	1.1	14	2	199	.06	1	1.3	.9	6	UER
		21	255	37.02	19	20.56	155	10.20	7.48	1.5	1.2	15	1	197	.05	3	1.0	1.4	8	UER
		21	415	15.23	19	20.58	155	11.66	8.45	2.0	2.1	30	1	74	.05	4	.4	.5	17	UER
		21	7 8	.66	19	20.89	154	58.14	1.69		1.4	19	0	229	.11	8	1.5	3.5	11	LER
		21	833	27.91	19	21.73	155	6.28	8.75	1.9	2.0	31	0	81	.07	2	.4	.8	23	UER
		21	9 6	48.75	19	20.23	155	4.06	5.72	1.0	1.3	11	0	127	.05	2	.7	1.4	10	MER
		21	1258	59.02	19	20.13	155	13.15	7.38	1.6	1.2	21	1	67	.09	5	.5	1.0	16	UER
		21	16 7	37.40	19	11.50	155	40.98	6.32	2.4	2.8	21	2	118	.15	9	.6	2.1	11	HEA
		21	1716	23.67	19	21.98	155	5.07	8.78	2.3	2.5	31	1	76	.06	3	.4	.6	21	MER
		21	19 2	28.40	19	23.97	155	16.86	2.92	1.3	1.5	11	0	80	.04	1	.4	.3	8	SPC
		21	19 4	51.38	19	22.38	155	4.14	7.75	1.3	1.4	17	0	149	.12	4	.8	.9	13	MER
		21	2111	53.16	19	20.11	155	12.07	6.50	1.6	1.3	23	1	79	.09	5	.5	1.0	13	UER
		21	2115	36.98	19	23.89	155	16.11	3.06	1.8	1.9	17	1	104	.07	1	.3	.3	12	SPC
		21	2119	17.37	19	20.99	155	3.24	7.72	1.3	1.8	9	0	162	.04	2	1.0	1.4	7	MER
		21	2159	37.62	19	20.81	155	4.24	9.19	5.5	5.4	43	0	101	.11	3	.6	.4	39	MER F
		21	22 5	28.28	19	20.97	155	2.32	8.34	2.6		31	1	163	.11	2	.7	.6	25	MER
		21	22 9	44.04	19	21.46	155	6.14	7.55	1.7	1.9	23	3	86	.10	3	.5	1.2	18	UER
		21	2211	41.71	19	21.33	155	2.18	6.09	1.8	1.8	21	0	160	.12	3	.6	1.0	15	MER
		21	2215	55.07	19	21.30	155	2.15	5.46	1.8	1.4	20	0	163	.08	3	.7	1.2	14	MER
		21	2216	23.12	19	20.60	155	2.92	7.88	2.0	1.8	12	0	135	.05	1	.9	1.1	10	MER
		21	2217	38.43	19	21.01	155	2.88	7.79	1.4	1.3	15	0	136	.08	2	1.0	1.1	11	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	21	2218	26.71	19	20.89	155	2.23	7.58	1.9	2.0	24	0	169	.10	2	.6	.8	19	MER
		21	2221	29.93	19	22.39	155	5.20	8.56	2.8	2.5	41	2	74	.07	2	.4	.4	27	MER
		21	2222	33.59	19	20.78	155	2.24	8.57	1.8	.9	9	0	174	.03	2	1.3	1.6	9	MER
		21	2224	4.51	19	21.01	155	2.47	6.62	1.3	.9	12	0	209	.11	2	1.4	1.5	8	MER
		21	2231	25.18	19	21.22	155	2.64	8.50	2.4	2.1	24	1	145	.11	2	.7	.8	17	MER
		21	2232	32.98	19	20.45	155	2.77	8.21	2.4	2.7	27	1	151	.09	1	.7	.6	21	MER
		21	2236	29.51	19	21.89	155	5.60	7.31	1.2	1.0	14	2	103	.09	2	.6	1.1	8	MER
		21	2236	53.78	19	20.41	155	2.90	8.33	1.8	1.6	19	0	139	.08	1	.9	.9	14	MER
		21	2239	3.75	19	21.16	155	5.46	7.27	1.4	1.3	21	0	99	.11	4	.5	1.0	19	MER
		21	2239	29.30	19	20.56	155	4.69	8.78	1.2	1.2	11	0	157	.06	3	1.0	1.8	7	MER
		21	2243	39.46	19	21.59	155	2.22	6.20	1.6	1.6	16	0	155	.10	3	.7	1.1	12	MER
		21	2246	2.00	19	22.00	155	2.79	6.59	1.4	.7	15	0	182	.13	4	1.0	1.1	15	MER
		21	2246	19.19	19	21.25	155	3.06	8.39	1.6	1.3	9	0	126	.03	2	.9	1.4	6	MER
		21	2246	51.24	19	21.01	155	2.05	8.09	1.7	1.1	14	0	174	.07	3	1.0	1.1	10	MER
		21	2255	29.12	19	20.87	155	1.25	7.58	2.3	1.4	20	0	198	.11	3	.9	1.0	16	MER
		21	2255	50.75	19	20.82	155	2.78	7.56	2.8	2.9	20	1	143	.09	2	.5	1.0	10	MER
		21	2257	32.89	19	20.16	155	2.76	8.70	1.5	1.0	10	0	214	.05	1	1.8	1.5	9	MER
		21	2258	24.63	19	19.18	155	3.40	9.95	2.1	1.3	6	0	261	.04	2	3.2	3.5	6	MER
		21	23 0	27.99	19	21.37	155	6.69	6.93	1.4	1.4	12	0	124	.08	3	.9	1.4	10	UER
		21	23 7	54.06	19	20.39	155	3.23	8.02	1.6	1.3	14	0	146	.07	1	1.5	1.3	11	MER
		21	23 9	16.95	19	20.40	155	4.07	6.48	1.7	1.6	22	0	136	.11	2	.7	.8	19	MER
		21	2312	44.26	19	20.75	155	2.62	7.45	1.3	1.0	9	0	198	.11	2	2.0	2.0	9	MER
		21	2316	47.72	19	21.29	155	1.87	6.57	1.6	1.2	13	0	217	.08	3	1.2	1.1	10	MER
		21	2317	10.60	19	20.71	155	2.30	7.90	2.5	2.4	30	1	173	.12	2	.7	.7	22	MER
		21	2320	19.25	19	21.61	155	2.02	7.67	1.5	1.1	13	0	208	.08	4	1.2	1.2	11	MER
		21	2324	25.36	19	21.04	155	5.99	7.03	1.6	1.6	22	0	96	.10	4	.5	1.0	22	MER
		21	2326	24.56	19	20.65	155	3.35	6.55	2.1	2.0	26	1	103	.12	2	.6	1.0	18	MER
		21	2329	2.44	19	21.12	155	1.83	6.73		.2	14	0	178	.10	3	.9	1.2	9	MER
		21	2329	12.34	19	21.18	155	2.27	9.21	4.3	4.3	43	1	160	.11	3	.7	.4	39	MER F
		21	2334	5.32	19	23.00	155	6.03	6.32	1.6	1.0	14	0	201	.09	0	3.1	2.2	7	UER
		21	2334	14.75	19	21.03	155	2.03	7.28	2.6	2.3	27	2	173	.13	3	.6	1.0	16	MER
		21	2335	24.97	19	21.30	155	2.57	8.17	1.4	1.1	15	0	147	.10	3	1.1	1.1	11	MER
		21	2336	17.34	19	20.71	155	2.57	8.34	3.2	3.6	38	1	158	.09	2	.6	.4	30	MER F
		21	2346	42.06	19	20.34	155	4.83	7.17	1.4	1.3	12	0	145	.09	3	.7	1.3	12	MER
		21	2351	34.46	19	20.44	155	2.69	7.73		1.1	11	0	202	.09	1	1.6	1.3	10	MER
		21	2353	35.23	19	19.91	155	3.95	7.27	1.5	1.4	13	0	164	.10	2	.8	1.1	10	MER
		21	2356	36.51	19	21.87	155	1.93	5.21	1.5	1.3	8	0	206	.06	4	.9	2.2	6	MER
		22	0 0	28.27	19	21.00	155	1.24	8.58	2.6	2.6	38	0	194	.09	4	.8	.5	29	MER
		22	0 2	29.40	19	21.42	155	2.59	7.50	2.2	2.0	18	1	145	.07	3	.6	.9	15	MER
		22	0 3	35.07	19	20.56	155	10.60	8.02	1.7	1.5	23	1	83	.09	3	.6	1.1	20	UER
		22	0 5	10.55	19	20.94	155	2.51	7.79	2.4	2.5	25	1	155	.10	2	.6	.8	16	MER
		22	0 7	50.74	19	21.60	155	5.75	5.41	1.1	1.1	15	1	85	.11	3	.5	1.3	10	MER
		22	011	1.90	19	21.08	155	1.29	8.85	1.7	1.6	20	0	193	.07	4	.8	.9	12	MER
		22	012	57.52	19	20.81	155	1.34	8.03	1.8	1.7	25	0	198	.10	3	.9	.9	17	MER
		22	021	59.54	19	21.59	155	2.17	6.81	1.7	1.5	22	1	157	.15	3	.8	1.4	19	MER
		22	022	34.36	19	21.29	155	2.65	6.74	2.1	2.2	26	0	144	.12	3	.6	.7	21	MER
		22	029	55.83	19	22.08	155	1.84	2.05		.9	7	0	206	.08	4	.9	1.8	5	MER
		22	039	55.54	19	21.60	155	1.38	5.45	1.3	1.4	22	0	177	.13	4	.6	1.1	19	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	22	054	30.47	19	22.12	155	2.48	7.79	1.9	1.7	25	1	141	.08	4	.5	.6	16	MER
		22	056	51.09	19	22.38	155	4.87	5.47	1.6	1.6	16	0	79	.12	3	.6	1.1	14	MER
		22	059	10.58	19	20.73	155	2.18	7.23	1.2	.8	16	0	179	.11	2	1.2	1.3	11	MER
		22	059	34.47	19	21.38	155	2.04	6.07	1.3	1.0	11	0	165	.09	3	1.0	1.5	8	MER
		22	112	45.68	19	20.45	155	3.18	7.62	2.0	1.6	27	0	109	.11	1	.7	.7	27	MER
		22	119	3.45	19	21.98	155	2.99	8.91	1.2	1.1	10	0	183	.02	4	1.1	1.6	9	MER
		22	123	24.36	19	21.28	155	1.64	6.81	2.0	1.9	34	3	178	.12	3	.5	.7	18	MER
		22	126	29.58	19	21.52	155	6.64	8.25	2.5	2.5	42	3	83	.08	3	.3	.5	29	UER
		22	128	36.06	19	19.99	155	3.84	7.61	1.1	1.1	13	0	159	.07	2	1.2	1.6	10	MER
		22	151	2.41	19	20.54	155	4.42	8.47	2.8	3.1	40	2	114	.10	3	.4	.5	29	MER
		22	214	22.86	19	21.05	155	2.75	7.70		1.1	12	0	142	.12	2	1.2	1.5	9	MER
		22	227	46.21	19	19.97	155	2.63	7.43	1.1	1.1	11	0	216	.08	1	1.3	1.2	7	MER
		22	231	46.41	19	23.63	155	1.65	7.92	1.3	1.3	13	0	199	.12	5	1.4	1.1	9	MER
		22	236	56.74	19	20.51	155	3.40	7.45	1.6	1.6	26	0	95	.11	1	.6	.9	18	MER
		22	347	33.98	19	22.60	155	4.86	8.13	2.0	1.8	25	0	79	.09	3	.5	.8	18	MER
		22	4 4	10.87	19	22.00	155	3.58	8.32	2.0	1.9	30	1	108	.08	4	.5	.5	20	MER
		22	421	23.57	19	20.76	155	6.71	8.78	1.9	1.6	25	1	97	.07	4	.5	1.0	18	UER
		22	429	46.90	19	22.60	155	1.47	8.78	2.1	1.7	25	0	158	.09	6	.7	.9	19	MER
		22	438	20.84	19	20.54	155	2.79	8.38	2.4	2.8	29	0	148	.11	1	.8	.8	23	MER
		22	513	26.09	19	21.70	155	.94	4.61	2.0	1.1	20	0	183	.11	5	.8	2.6	11	LER
		22	513	54.25	19	21.30	155	.82	6.14	2.0	1.8	22	1	194	.12	5	.6	1.4	13	LER
		22	6 0	.32	19	20.51	155	2.99	8.27	2.0	1.8	29	0	128	.11	1	.8	.9	23	MER
		22	639	56.22	19	18.86	155	13.29	6.96	2.0	1.8	30	2	80	.08	3	.4	.7	19	POL
		22	652	18.88	19	21.52	155	2.39	9.13	1.8	1.8	20	0	189	.08	7	1.1	1.0	15	MER
		22	7 7	10.83	19	21.39	155	1.05	2.93	2.1	1.8	15	0	188	.06	4	.8	1.1	8	MER
		22	759	6.10	19	23.25	155	25.31	9.06	1.1	.9	21	0	63	.10	4	.5	1.0	13	UKF
		22	8 3	55.35	19	22.22	155	2.22	5.91	1.3	1.0	21	0	146	.13	4	.7	1.3	18	MER
		22	8 7	58.69	19	13.02	155	28.90	38.91	1.6	.9	22	1	90	.06	7	.9	2.4	19	LSW
		22	819	54.64	19	20.69	155	2.70	5.68	1.2	.9	20	0	151	.12	2	.7	1.4	14	MER
		22	827	8.92	19	20.33	155	3.39	8.31	2.4	2.8	36	1	102	.10	1	.5	.7	30	MER
		22	836	1.27	19	19.79	155	6.99	7.18	2.0	2.2	31	1	113	.08	5	.4	.9	26	UER
		22	857	58.54	19	22.00	155	.30	.96	1.6	1.5	22	0	206	.16	6	.9	1.7	21	LER
		22	915	2.62	19	21.67	155	6.67	8.13	.9	.9	15	0	80	.05	3	.4	1.1	15	UER
		22	922	13.22	19	25.22	155	24.13	8.70	1.6	1.5	33	2	44	.10	2	.4	.9	30	UKF
		22	925	11.45	19	25.10	155	23.11	6.40	1.3	1.3	22	2	50	.11	4	.4	1.2	19	UKF
		22	932	9.96	19	21.56	155	1.22	5.95	2.0	2.1	29	1	180	.12	4	.6	1.2	27	MER
		22	934	34.79	19	21.78	155	1.26	5.22	1.9	2.1	26	1	175	.10	5	.6	1.6	25	MER
		22	937	18.10	19	23.04	155	14.76	2.68	1.1	1.0	9	0	112	.03	2	.4	.7	9	GLN
		22	10 9	46.31	19	22.00	155	2.66	5.79	1.0	1.1	14	1	139	.11	4	.7	1.5	13	MER
		22	1015	33.71	19	18.48	155	13.28	7.61	1.3	1.3	19	1	85	.05	3	.5	1.2	18	POL
		22	1033	55.76	19	20.88	155	3.17	7.84	2.1	2.5	31	2	119	.09	2	.5	.7	25	MER
		22	1040	48.78	19	21.57	155	3.56	6.38		1.1	18	1	108	.14	3	.7	1.3	17	MER
		22	1052	55.73	19	20.42	155	4.22	6.05	1.6	1.5	27	0	118	.13	2	.6	1.1	26	MER
		22	11 9	29.93	19	20.57	155	4.85	7.15	.9	1.3	13	0	114	.11	4	.8	1.6	13	MER
		22	1114	23.55	19	20.95	155	3.04	6.41	1.8	1.0	13	0	130	.10	2	.9	1.3	11	MER
		22	1128	49.39	19	20.36	155	11.75	7.91	1.7	1.3	23	1	77	.06	5	.4	.9	21	UER
		22	1130	52.63	19	21.38	155	2.66	6.04	1.4	1.4	16	0	147	.11	3	.8	1.3	16	MER
		22	1156	31.25	19	20.90	155	4.96	7.49	1.3	1.6	16	0	102	.08	4	.5	1.0	16	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	22	1230	24.48	19	20.96	155	6.62	8.09	1.6	1.5	20	0	94	.07	4	.5	1.2	20	UER
		22	1242	46.04	19	25.86	155	30.19	10.07	2.2	2.4	33	1	39	.07	8	.3	.8	29	MOK
		22	1243	52.68	19	17.63	155	6.84	3.29	1.6	1.5	15	0	237	.11	2	1.8	.5	15	POL
		22	1256	15.51	19	19.86	155	2.98	5.40	1.2	1.1	16	0	205	.12	0	1.0	1.2	16	MER
		22	13 1	3.12	19	20.70	155	4.30	6.49	.9	.9	16	0	105	.13	3	.7	1.3	16	MER
		22	13 3	22.35	19	19.48	155	5.59	5.75	.9	.6	10	0	148	.08	5	.9	2.6	10	MER
		22	1332	18.70	19	24.30	155	17.41	.00	.8	1.2	9	0	84	.13	1	.3	.6	9	SPC *
		22	1333	39.64	19	24.42	155	17.97	2.68	1.3	1.2	8	3	286	.13	2	1.9	.9	4	SPC L
		22	1342	16.77	19	26.94	155	23.45	4.11	1.3	1.7	18	2	98	.11	4	.4	1.2	15	UKF
		22	1357	19.48	19	24.51	155	17.18	1.26	1.3	1.7	11	3	107	.08	1	.5	.3	7	SPC *
		22	14 0	41.82	19	12.97	155	28.18	34.85		2.5	29	2	98	.04	6	.7	1.4	27	LSW
		22	14 6	58.12	19	24.52	155	16.64	1.66	1.7	1.7	10	0	126	.07	1	.4	.3	9	SPC L
		22	1421	9.28	19	23.74	155	16.30	1.70	1.8	1.7	9	1	99	.05	1	.4	.4	6	SPC L
		22	1421	37.37	19	18.78	155	13.55	6.75	1.1	1.0	18	0	84	.05	3	.5	1.3	17	POL
		22	1431	42.08	19	23.76	155	16.05	1.22	1.8	1.7	10	3	98	.05	1	.2	.4	8	SPC L
		22	1435	16.20	19	24.18	155	16.77	2.29	1.8	1.8	10	3	151	.07	1	.5	.4	7	SPC L
		22	1438	33.51	19	23.76	155	15.95	.88	1.9	1.7	10	2	99	.08	1	.2	.5	7	SPC L
		22	1448	18.87	19	24.61	155	17.46	2.70	1.6	1.8	10	3	238	.06	1	1.0	.3	8	SPC L
		22	1453	39.67	19	23.69	155	16.09	1.14	1.8	1.8	11	2	94	.13	1	.3	.5	5	SPC L
		22	1457	30.57	19	23.81	155	16.04	.85	1.7	1.7	10	3	103	.04	1	.2	.4	6	SPC L
		22	1459	43.83	19	21.54	155	2.15	7.34	1.6	1.9	26	1	157	.13	3	.9	1.1	23	MER
		22	15 2	7.46	19	18.16	155	15.46	7.12	1.4	1.1	19	0	147	.06	4	.6	1.3	19	KOA
		22	15 2	45.28	19	23.90	155	16.13	.69	1.8	1.9	10	3	104	.11	1	.2	.5	8	SPC
		22	15 5	12.63	19	23.83	155	15.87	.00	1.8	1.6	6	1	123	.13	1	.3	1.1	5	SPC L*
		22	15 8	53.14	19	26.47	155	21.68	4.48	2.3	1.8	6	0	338	.13	9	86.8	53.0	6	UKF L*
		22	1513	19.42	19	24.47	155	16.25	.56	1.6	1.8	10	0	136	.14	1	.3	.5	5	SPC L
		22	1522	29.50	19	23.96	155	16.68	1.88	1.8	1.7	11	0	89	.12	0	.5	.3	5	SPC L
		22	1525	49.69	19	23.63	155	16.33	1.53	1.6	1.2	8	1	153	.11	1	.3	.3	3	SPC
		22	1527	38.40	19	23.95	155	16.13	.78	1.6	1.8	12	1	106	.11	1	.2	.3	7	SPC L
		22	1529	47.75	19	24.04	155	16.06	1.04	1.6	1.7	11	1	113	.13	1	.3	.4	7	SPC L
		22	1532	24.68	19	23.84	155	16.07	.94	1.6	1.7	12	1	105	.13	1	.2	.3	5	SPC L
		22	1536	29.13	19	23.88	155	16.13	1.68		1.8	8	1	106	.09	1	.5	.5	3	SPC L
		22	1542	39.19	19	24.14	155	16.36	2.06	1.4	.8	8	1	112	.03	1	.4	.5	5	SPC L
		22	1547	23.82	19	23.59	155	15.91	.83	1.6	1.6	7	1	94	.10	1	.3	.7	5	SPC L
		22	1550	30.09	19	25.76	155	19.64	5.37	1.8	1.7	7	0	329	.07	5	31.7	9.6	5	UKF L*
		22	1552	15.14	19	24.32	155	15.92	.02	1.3	1.2	9	1	129	.10	1	.2	.7	3	SPC L
		22	1554	49.87	19	23.99	155	16.53	1.60	1.3	1.3	10	1	96	.04	0	.5	.3	6	SPC L
		22	1555	31.99	19	23.80	155	16.38	1.20	1.2	1.4	6	1	100	.07	0	.6	.3	2	SPC L
		22	16 1	17.29	19	24.13	155	15.89	.58	1.1	1.0	7	1	232	.03	1	.6	.5	5	SPC L
		22	1610	35.51	19	23.63	155	16.81	2.91	1.1	1.1	11	0	45	.07	1	.5	.3	6	SPC
		22	1622	26.55	19	20.66	155	2.97	7.18	1.2	.7	13	0	175	.09	1	1.3	1.3	10	MER
		22	1713	41.11	19	21.49	155	.38	2.55	1.4	.8	16	0	199	.13	5	1.1	1.7	10	LER
		22	1721	37.54	19	22.25	155	1.40	2.20	1.1	1.3	12	0	165	.10	5	.8	1.3	6	MER
		22	1747	52.19	19	21.27	155	.58	8.44	1.9	1.9	27	0	198	.10	5	1.0	.6	22	LER
		22	1816	37.75	19	20.59	155	3.00	7.14	1.8	1.8	31	0	127	.12	1	.7	.7	24	MER
		22	1924	31.57	19	19.82	155	7.99	7.58	1.7	1.6	25	1	91	.08	5	.5	.9	22	UER
		22	1930	22.98	19	20.03	155	9.12	8.09	1.6	1.6	27	1	77	.06	4	.4	.7	20	UER
		22	20 1	49.55	19	21.84	155	2.40	5.22		1.3	11	0	146	.11	4	.8	2.0	9	MER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	22	2027	28.00	19	21.57	155	6.20	7.40	1.3	1.3	27	1	84	.10	3	.5	.9	22	UER
		22	2031	27.03	19	20.64	155	2.75	7.52	2.1	2.2	30	0	148	.10	1	.6	.7	21	MER
		22	2048	37.29	19	23.08	155	.07	2.26	1.4	1.2	16	0	176	.09	8	.9	2.4	7	LER
		22	2050	40.33	19	19.70	155	8.85	5.78	1.3	1.1	18	0	79	.08	5	.5	1.3	12	UER
		22	2058	22.45	19	22.46	155	5.23	8.17	1.6	1.8	28	2	73	.09	2	.5	.8	16	MER
		22	2115	37.42	19	19.55	155	10.52	9.05	1.4	1.1	15	0	118	.04	5	1.0	2.1	12	UER
		22	22 3	8.23	18	59.55	155	26.04	44.41	2.3	1.5	23	1	234	.07	19	1.1	1.9	17	DIS
		22	2211	15.23	19	23.05	155	17.36	3.43	1.0	1.1	9	0	106	.06	1	.7	.4	4	SPC
		22	2212	21.58	19	20.39	155	4.42	5.87		.6	11	0	162	.13	3	1.3	2.6	9	MER
		22	2219	16.89	19	24.59	155	28.40	9.37	1.4	1.3	22	1	60	.08	4	.5	1.1	13	UKF
		22	2243	17.71	19	21.23	155	1.50	7.17	1.3	1.2	17	0	183	.09	4	1.0	.8	9	MER
		22	2252	11.59	19	28.44	154	51.04	6.74	1.5	1.2	16	1	282	.11	4	1.6	.6	4	LER
		22	2259	43.07	19	20.70	155	6.97	7.34	1.0	1.1	19	0	163	.10	4	.5	1.2	11	UER
		22	2342	21.14	19	27.10	154	50.48	8.92	1.7	1.4	19	4	290	.13	6	1.6	.5	10	LER
		22	2359	5.25	19	20.97	155	5.81	9.38	1.1	1.3	19	0	99	.04	4	.6	1.2	12	MER
		23	020	59.90	19	20.48	155	6.35	8.36	1.4	1.7	27	1	107	.08	5	.5	.7	15	UER
		23	029	4.17	19	19.82	155	6.86	8.40	2.1	2.3	33	1	115	.08	5	.5	.8	19	UER
		23	128	19.88	19	23.02	155	4.23	8.75	3.3	3.8	40	1	91	.10	3	.5	.5	33	MER
		23	136	39.12	19	23.01	155	4.09	8.36	1.6	1.8	23	2	93	.08	3	.5	.9	12	MER
		23	138	54.42	19	22.93	155	4.10	7.58	1.1	1.3	11	0	158	.08	3	.6	1.2	6	MER
		23	215	44.90	19	21.81	155	1.78	7.75	1.5	1.3	16	0	164	.09	4	.9	.9	8	MER
		23	255	54.26	19	21.77	155	18.36	3.18	.8	1.1	11	0	71	.06	4	.4	1.0	11	KOA
		23	338	44.91	19	22.46	155	2.02	4.91	1.1	.9	14	0	150	.17	5	.9	2.8	14	MER
		23	4 2	12.18	19	20.84	155	2.86	8.15	1.6	1.5	17	0	143	.10	2	.8	1.2	16	MER
		23	5 4	24.61	19	21.06	155	15.02	9.74	1.2	.9	16	0	81	.05	3	.7	1.4	16	KOA
		23	537	36.98	19	21.58	155	3.53	5.16	.8	.9	19	1	109	.18	3	.6	1.6	17	MER
		23	547	41.87	19	20.91	155	2.72	5.29	1.4	1.4	23	1	145	.14	2	.8	1.3	21	MER
		23	925	25.79	19	21.86	155	15.97	36.44	3.3	3.0	36	0	60	.09	1	.7	1.3	36	DEP
		23	1146	27.85	19	21.22	155	.75	7.45	2.8	2.9	27	0	196	.10	5	.9	.6	26	LER
		23	1235	57.41	19	21.33	155	1.79	6.42	2.1	1.4	24	0	172	.17	3	.9	.7	20	MER
		23	13 4	25.02	19	20.63	155	1.88	6.77		1.6	16	0	192	.11	2	1.2	1.3	16	MER
		23	1446	53.79	19	21.56	155	5.92	8.08		1.4	20	0	85	.11	3	.6	.8	19	MER
		23	1727	19.93	19	26.02	155	29.53	7.79	1.9	1.2	27	0	54	.15	7	.5	1.5	24	UKF
		23	2026	44.65	19	21.61	155	5.92	7.29	2.2	2.5	27	0	84	.10	3	.5	.7	25	MER
		23	2123	28.43	19	21.46	155	5.73	7.48	1.9	1.8	24	0	88	.12	3	.5	.8	21	MER
		24	052	3.97	19	24.98	155	28.18	10.18	1.9	1.6	27	0	55	.11	5	.5	1.0	22	UKF
		24	220	44.65	19	19.19	155	11.55	8.48	2.0	2.3	29	0	102	.10	5	.5	.7	26	UER
		24	7 1	32.03	19	20.69	155	4.39	6.74		1.5	24	0	107	.12	3	.6	.8	24	MER
		24	1031	46.13	19	21.11	155	6.61	6.13		1.1	15	0	90	.13	4	.6	1.9	14	UER
		24	1251	6.07	19	21.32	155	5.26	7.69		1.2	15	0	91	.12	4	.7	1.5	14	MER
		24	1324	17.98	19	23.79	155	15.21	3.17		1.6	9	0	94	.05	2	.5	.5	9	SPC
		24	1555	12.57	19	18.07	155	11.32	8.05		1.5	17	0	141	.10	4	.6	1.1	16	POL
		24	1750	23.13	19	22.35	155	4.68	9.37	3.6	3.6	35	0	82	.09	3	.6	.4	34	MER F
		24	1933	53.17	19	21.28	155	2.79	6.19		1.2	18	0	138	.14	3	1.0	1.0	15	MER
		24	2116	24.23	19	21.59	155	5.24	7.51	1.0	1.0	20	0	85	.10	3	.5	.8	20	MER
		24	22 7	50.29	19	19.24	155	11.08	6.79		1.2	20	0	104	.08	6	.5	.9	18	UER
		24	2221	43.27	19	19.61	155	3.40	8.38		1.1	10	0	230	.07	1	1.9	1.9	9	MER
		24	23 7	3.48	19	20.50	155	6.55	7.85		1.7	26	0	105	.10	5	.5	1.0	25	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	25	1 1	29.97	19	20.74	155	4.85	7.41		1.4	19	0	107	.09	4	.6	1.1	19	MER
		25	2 8	6.98	19	22.94	155	4.06	8.15		2.2	22	0	94	.09	3	.5	.8	19	MER
		25	220	36.78	19	21.60	155	1.89	6.38		1.2	17	0	165	.14	4	1.0	1.2	17	MER
		25	240	8.63	19	20.22	155	12.60	7.09		1.0	19	0	72	.11	5	.6	1.0	18	UER
		25	327	49.62	19	21.53	155	3.24	5.73	1.6	1.3	20	0	118	.11	3	.6	1.1	20	MER
		25	550	45.10	19	19.80	155	3.82	8.28	2.0	2.2	24	0	157	.09	2	.9	.6	23	MER
		25	858	7.11	19	41.93	155	46.68	8.68		2.0	23	2	166	.17	6	.8	.9	20	KON
		25	937	45.54	19	20.61	155	2.35	6.52		1.4	17	0	176	.10	2	1.0	1.1	16	MER
		25	1236	29.75	19	21.05	155	7.00	5.34		1.2	16	0	88	.10	4	.5	1.3	14	UER
		25	1240	51.24	19	22.63	155	24.87	11.45	2.1	2.0	24	1	90	.10	5	.5	.8	22	UKF
		25	1626	5.49	19	23.35	155	16.95	3.19	1.6	1.8	17	1	62	.06	3	.3	.5	16	SPC
		25	1656	20.40	19	21.81	155	4.87	7.72		1.2	18	0	125	.11	3	.7	.8	17	MER
		25	1820	34.95	19	20.59	154	59.11	7.38		1.2	18	0	228	.12	7	1.5	.9	17	LER
		25	1924	52.17	19	20.06	154	58.89	8.51		1.5	19	0	238	.09	7	1.7	.6	18	LER
		25	1942	29.34	19	21.60	155	6.23	8.21		1.5	26	0	84	.08	3	.4	.6	24	UER
		25	2017	4.54	19	22.18	155	1.07	7.83		1.3	17	0	172	.10	5	1.1	.8	17	MER
		25	2031	33.79	19	21.33	155	5.65	7.23		1.2	20	0	91	.10	3	.5	.8	20	MER
		25	2058	5.99	19	23.48	155	16.69	3.36	2.1	1.8	19	1	71	.07	2	.3	.5	18	SPC
		25	2137	35.49	19	19.97	155	6.28	9.62	2.7	2.9	30	1	121	.08	6	.6	.4	27	UER
		25	2156	32.57	19	19.54	155	9.08	7.60		1.3	19	0	85	.09	5	.5	1.0	18	UER
		25	2311	24.01	19	21.55	155	2.72	7.38		1.9	22	0	139	.09	3	.7	.6	21	MER
		25	2323	29.55	19	31.34	155	36.37	9.07		1.5	16	0	105	.13	4	.6	.9	16	MOK
		26	033	11.21	19	20.78	155	2.25	7.50		1.3	14	0	173	.09	2	1.0	1.2	13	MER
		26	2 3	1.07	19	21.65	155	6.04	8.31	1.9	2.1	28	0	83	.09	3	.5	.5	26	UER
		26	219	43.99	19	20.60	155	2.11	6.23		1.7	23	1	185	.11	2	.8	.7	21	MER
		26	249	15.34	19	20.48	155	4.42	7.52		1.0	19	0	116	.10	3	.6	.8	18	MER
		26	621	22.85	19	21.68	155	2.70	9.30	3.0	3.1	34	0	138	.11	3	.7	.4	33	MER F
		26	632	14.60	19	20.25	155	6.33	6.67		1.2	23	0	114	.09	5	.5	1.2	23	UER
		26	651	32.46	19	21.81	155	25.64	9.26	1.7	1.9	24	0	113	.11	4	.5	.9	21	HEA
		26	1120	41.22	19	21.65	155	1.31	7.96	2.4	2.1	25	0	177	.12	4	.9	.6	20	MER
		26	1344	35.16	19	17.73	155	23.58	3.00	2.0	1.9	18	1	113	.10	5	.6	1.2	14	SWR
		26	1423	18.02	19	18.85	155	4.73	39.66	2.4	1.9	30	0	183	.06	4	1.4	2.0	26	MER
		26	15 1	32.43	19	32.46	155	55.43	10.90	3.2	3.4	25	0	199	.13	6	1.0	.5	22	KON F
		26	1628	31.97	19	20.83	155	5.73	7.19		1.3	21	0	103	.13	4	.6	.9	16	MER
		26	1715	27.22	19	20.81	155	4.75	7.56	2.1	1.9	27	0	105	.12	4	.6	.6	23	MER
		26	22 6	24.73	20	8.71	155	49.22	11.77	2.9	2.2	32	3	291	.11	51	3.4	5.2	28	KOH
		26	2336	43.77	19	21.15	155	5.49	7.30	1.9	1.4	17	0	96	.11	4	.5	.7	15	MER
		27	117	2.03	19	19.66	155	11.62	7.22	1.7	1.3	23	0	91	.11	5	.5	.8	19	UER
		27	243	26.79	19	19.90	155	8.32	7.81		1.3	21	0	83	.09	5	.5	.8	16	UER
		27	3 0	26.34	19	20.63	155	6.19	8.91	2.2	2.4	30	0	105	.09	4	.6	.4	28	UER
		27	352	53.76	19	21.44	155	3.24	6.95	1.4	1.0	22	0	118	.12	3	.7	.7	18	MER
		27	535	45.49	19	19.76	155	7.23	10.05	4.3	4.6	39	1	110	.11	5	.6	.4	38	UER F
		27	538	31.20	19	20.33	155	8.09	8.92	3.2	3.7	19	0	146	.15	4	1.0	1.3	9	UER F
		27	540	41.97	19	19.66	155	6.24	7.02		1.4	12	0	131	.06	5	.6	1.5	9	UER
		27	543	3.66	19	19.50	155	7.09	7.56	1.7	1.3	18	0	118	.07	4	.6	1.2	13	UER
		27	548	4.84	19	21.76	155	6.35	8.23	2.2	2.3	26	0	80	.08	2	.5	.7	21	UER
		27	6 2	4.62	19	19.59	155	6.87	8.55	2.5	2.4	30	0	121	.08	5	.6	.5	28	UER
		27	6 7	19.98	19	19.99	155	7.76	9.36	2.3	2.3	29	0	94	.09	5	.5	.7	23	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	27	610	18.60	19	21.18	155	1.77	6.99	2.5	2.3	23	0	177	.10	3	.7	.7	18	MER
		27	633	15.04	19	19.79	155	7.97	8.91	2.4	2.3	31	0	91	.08	5	.4	.7	27	UER
		27	734	9.95	19	21.86	155	5.62	8.18	2.3	2.1	27	1	80	.10	2	.5	.5	23	MER
		27	847	1.91	19	20.84	155	7.23	7.37		1.3	26	0	90	.12	4	.5	.9	23	UER
		27	848	59.65	19	19.47	155	7.10	7.92	1.9	1.7	23	0	119	.07	4	.6	.7	20	UER
		27	9 8	.34	19	19.33	155	11.75	4.77		1.1	18	0	98	.10	5	.5	2.2	16	UER
		27	1035	18.44	19	19.51	155	7.46	6.76	1.4	1.2	23	0	109	.11	4	.5	1.2	22	UER
		27	1038	.29	19	20.89	155	5.84	8.82	2.4	2.4	25	0	101	.09	4	.5	.6	21	MER
		27	1127	44.16	19	19.95	155	11.92	8.18	2.0	2.2	27	0	83	.08	5	.4	.6	26	UER
		27	1232	43.06	19	19.10	155	11.39	6.33		1.6	23	0	106	.10	5	.5	.9	21	UER
		27	1317	55.82	19	19.03	155	11.40	5.21		1.0	20	0	108	.10	5	.6	1.8	18	UER
		27	1352	26.45	19	20.62	155	6.90	6.41		1.1	20	0	98	.11	5	.5	1.1	18	UER
		27	1520	56.00	19	20.84	155	6.79	6.02		1.2	20	0	94	.11	4	.6	1.4	19	UER
		27	1527	34.34	19	18.76	155	23.39	5.00	2.2	2.1	27	1	105	.14	3	.5	1.2	26	SWR
		27	1550	40.38	19	19.53	155	7.36	5.67		1.0	18	0	111	.08	4	.5	1.6	15	UER
		27	1745	47.99	19	22.42	155	5.05	7.72	1.9	1.8	27	0	76	.10	2	.5	.6	25	MER
		27	1955	33.20	19	21.25	155	1.82	8.55	2.9	2.8	33	0	173	.09	3	.7	.4	28	MER
		27	2113	30.24	19	17.74	155	23.56	5.26	.9	1.4	17	0	126	.10	5	.5	1.8	13	SWR
		27	2158	30.92	19	17.83	155	23.65	7.07	1.9	1.9	22	1	164	.13	5	.8	1.2	21	SWR
		27	2212	.15	19	21.18	155	13.33	7.26	1.1	.9	22	0	59	.12	3	.5	.8	20	UER
		27	2249	51.69	19	29.62	154	52.69	4.01		1.4	18	0	258	.16	2	3.1	1.1	13	LER
		28	0 3	18.48	19	23.09	155	17.00	2.88	1.4	1.5	12	1	67	.09	2	.4	.6	11	SPC
		28	112	23.53	19	21.40	155	1.50	6.01		1.1	17	0	178	.09	4	.8	.7	14	MER
		28	253	.19	19	20.46	155	6.35	7.16		1.1	24	0	108	.10	5	.5	.8	22	UER
		28	326	13.54	19	21.46	155	5.89	9.11	2.6	2.9	34	0	88	.09	3	.5	.4	28	MER F
		28	345	43.59	19	20.30	155	12.58	6.87		1.1	24	0	72	.12	4	.5	.8	23	UER
		28	353	50.57	19	21.51	155	30.11	7.70	2.3	2.1	35	0	61	.12	5	.4	.8	32	HEA
		28	4 1	45.67	19	20.94	155	6.69	7.26		1.2	24	0	93	.09	4	.5	.8	22	UER
		28	450	25.06	19	20.25	155	9.49	6.83		1.2	24	0	105	.10	3	.5	1.0	21	UER
		28	733	55.77	19	19.69	155	7.93	8.68	1.9	2.2	27	0	94	.09	4	.6	.6	25	UER
		28	1123	32.89	19	20.06	155	6.49	7.65	2.2	1.9	32	1	116	.09	5	.4	.8	22	UER
		28	1423	32.82	19	20.05	155	11.63	9.01	2.0	1.3	28	0	83	.09	5	.5	.9	21	UER
		28	2056	48.37	19	20.61	155	4.79	6.88	1.6	1.1	20	0	148	.10	4	.6	.9	13	MER
		29	112	3.01	19	27.00	155	28.95	11.71	1.8	1.2	29	0	70	.07	7	.4	.8	20	UKF
		29	123	39.55	19	19.56	155	10.38	9.01	1.6	1.0	24	1	97	.07	5	.6	1.0	18	UER
		29	624	26.16	19	23.72	155	16.71	2.65	1.1	1.1	14	1	52	.07	0	.4	.3	8	SPC
		29	643	29.38	19	19.48	155	9.84	8.35	1.9	1.9	31	0	95	.09	5	.5	.8	27	UER
		29	7 4	17.88	19	23.79	155	16.82	2.93	1.1	1.0	16	1	69	.07	0	.4	.2	8	SPC
		29	9 8	56.32	19	22.04	155	5.45	7.68	1.7	1.1	18	1	107	.08	2	.6	.8	13	MER
		29	1035	16.44	19	24.51	155	25.24	9.64	1.6	1.1	31	1	51	.11	1	.4	.9	23	UKF
		29	1050	40.08	19	18.45	155	13.57	9.88	2.9	2.7	40	1	86	.11	3	.5	.4	35	POL
		29	14 2	26.31	19	21.72	155	6.52	8.08	3.2	3.0	43	2	80	.10	2	.4	.5	35	UER F
		29	1837	51.16	19	20.53	155	4.51	8.20	2.1	2.1	33	0	114	.08	3	.5	.5	29	MER
		29	2054	.09	19	20.69	155	11.45	8.65	1.9	2.0	34	0	73	.10	4	.4	.7	27	UER
		29	2149	59.10	19	27.84	154	45.59	10.04	2.5	2.3	26	0	294	.11	14	5.9	1.0	23	DIS
		29	2157	25.64	19	27.49	154	44.66	9.06	2.1	1.7	21	1	301	.09	16	2.5	.6	11	DIS
		29	22 3	27.03	19	21.68	155	2.01	7.84	2.6	2.6	34	1	159	.08	4	.6	.4	25	MER
		29	2315	7.68	19	20.28	155	9.37	8.96	2.2	1.3	15	0	208	.04	3	1.2	1.3	15	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	SEP	30	110	19.87	19	20.42	155	11.62	8.70	1.6	.8	11	0	205	.06	4	1.2	1.4	9	UER
		30	219	46.28	19	24.40	155	26.59	5.93	2.8	2.9	42	1	57	.15	3	.3	.9	27	UKF
		30	635	57.77	19	21.09	155	14.70	9.06		.9	16	0	152	.05	3	.8	1.1	13	UER
		30	1021	4.33	19	19.69	155	11.43	7.22		1.2	17	0	91	.07	5	.6	1.2	17	UER
		30	1410	24.29	19	19.55	155	14.02	8.07	2.2	1.9	25	0	65	.09	5	.5	.7	24	UER
		30	1513	44.69	19	19.85	155	6.23	7.60	1.4	1.2	16	0	126	.09	6	.7	1.5	16	UER
		30	1845	33.25	19	21.23	155	2.45	7.82	2.1	1.7	18	0	152	.06	3	.7	.7	17	MER
		30	20 8	44.05	19	20.29	155	11.92	8.71	1.6	1.6	23	0	77	.08	5	.4	.7	23	UER
		30	2218	54.32	19	22.95	155	16.61	3.62	1.1	1.0	10	1	71	.13	2	.6	.9	8	KOA
	OCT	1	221	22.72	19	21.37	155	2.81	7.34	1.9	1.5	23	0	136	.11	3	.6	.7	22	MER
		1	5 9	7.06	19	21.21	155	2.74	7.37	2.1	2.0	28	0	141	.10	2	.6	.5	26	MER
		1	720	30.63	19	25.61	155	29.64	9.54	2.2	1.6	24	0	66	.09	7	.4	1.0	24	UKF
		1	757	15.89	19	23.10	155	15.60	29.07	2.4	1.8	32	3	45	.08	1	.7	1.1	31	DEP
		1	812	3.28	19	21.51	155	3.10	7.19		1.2	18	0	126	.11	3	.8	1.1	17	MER
		1	830	35.45	19	20.65	155	3.91	8.55	2.2	2.0	11	0	123	.11	2	1.6	1.2	11	MER
		1	844	16.57	19	19.82	155	6.17	7.19	2.0	1.6	18	0	127	.09	6	.6	1.5	18	UER
		1	852	14.02	19	19.19	155	9.73	6.96		1.3	18	0	102	.09	5	.5	1.4	18	UER
		1	1010	17.88	19	23.55	155	16.91	3.21	2.6	3.0	26	1	44	.09	3	.3	.5	25	SPC F
		1	1415	35.54	19	21.39	155	1.04	6.63		1.3	19	0	188	.08	4	.6	.7	19	MER
		1	1423	53.18	19	19.55	155	8.67	6.62		1.4	15	0	99	.10	4	.7	1.4	14	UER
		1	1427	2.41	19	22.12	155	5.74	7.50	1.9	1.6	23	1	99	.10	2	.5	.7	21	MER
		1	1511	44.80	19	18.19	155	13.43	8.03		1.0	13	0	86	.10	2	.7	.9	13	POL
		1	1653	27.82	19	23.91	155	16.40	3.46	2.0	2.3	15	1	98	.07	3	.3	.7	14	SPC F
		1	2122	24.30	19	13.40	154	55.04	38.68	1.7	1.6	27	1	247	.07	18	2.0	1.4	25	DIS
		1	2158	42.37	19	22.92	155	14.68	3.50	2.0	1.9	15	0	67	.08	3	.4	.7	13	UER
		1	2159	11.71	19	22.94	155	14.47	4.83	2.6	2.9	14	1	58	.09	3	.4	2.0	13	UER F
		1	22 2	11.42	19	23.18	155	14.82	3.36	1.8	1.8	14	1	66	.09	3	.4	.7	13	GLN
		2	148	42.67	19	19.24	155	11.62	8.89	2.3	2.3	31	1	101	.12	5	.4	.7	28	UER
		2	152	51.95	19	19.36	155	11.38	9.80	2.2	1.9	28	0	100	.11	6	.4	.7	26	UER
		2	226	58.75	19	20.77	155	12.65	8.51	1.6	1.5	20	1	65	.07	4	.5	.7	17	UER
		2	456	46.00	19	27.22	154	54.06	5.88	1.2	1.1	10	0	226	.08	2	1.9	1.3	10	LER
		2	510	18.81	19	22.18	155	4.92	7.69		1.1	19	0	77	.09	3	.5	.8	19	MER
		2	546	27.81	19	23.10	155	17.03	2.83	1.6	1.8	9	0	90	.03	3	.4	.8	9	SPC
		2	610	17.62	19	29.38	154	55.68	47.91	2.4	2.1	30	1	126	.09	4	1.3	2.3	29	LER
		2	840	39.00	19	21.64	155	6.40	7.91		1.2	23	0	82	.11	3	.5	.8	23	UER
		2	951	28.82	19	24.49	155	25.33	10.05	2.3	2.1	25	0	54	.11	5	.4	.8	22	UKF
		2	1416	20.04	19	11.50	155	37.74	8.28	2.4	1.3	12	1	120	.11	6	.9	3.8	11	HEA
		2	1445	27.77	19	41.09	155	2.89	.70	2.4	2.6	17	0	97	.33	3	1.7	5.6	17	HIL B*
		2	2026	46.72	19	23.26	155	17.10	2.63	2.3	2.8	20	1	47	.08	3	.3	.5	19	SPC F
		2	2043	33.63	19	20.56	155	12.83	9.67	2.1	2.3	25	0	66	.09	4	.4	.6	24	UER
		2	2357	52.76	19	21.17	155	7.68	8.02		1.0	21	0	79	.10	4	.8	.7	21	UER
		3	059	22.22	19	23.54	155	16.90	3.14		1.4	9	0	67	.05	3	.5	.7	9	SPC
		3	117	6.70	19	21.15	155	7.89	8.41		1.1	18	0	77	.05	4	.5	.9	17	UER
		3	153	39.86	19	19.38	155	12.28	9.28		1.0	14	0	90	.06	5	.6	1.5	14	UER
		3	239	55.70	19	21.03	155	5.83	9.44	2.7	2.5	26	0	97	.10	4	.6	.5	26	MER
		3	459	35.14	19	23.06	155	2.41	6.75	1.3	1.1	19	0	131	.12	4	.6	1.1	17	MER
		3	1124	56.23	19	19.61	155	11.90	6.46	1.7	1.3	25	0	89	.07	6	.4	.9	16	UER
		3	1229	4.73	19	20.22	155	8.15	8.78	2.5	2.6	42	1	83	.07	5	.3	.5	27	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	OCT	3	1533	15.88	19	23.44	155	16.84	3.07	1.6	1.8	21	1	66	.10	0	.3	.3	17	SPC	
		3	16 9	19.72	19	20.31	155	5.39	7.22	2.0	1.7	31	2	121	.09	4	.4	.8	17	MER	
		3	1727	51.59	19	20.33	155	4.75	5.29	1.2	1.1	15	0	146	.11	3	.7	1.6	9	MER	
		3	1743	46.42	19	20.90	155	6.86	7.14	1.1	1.3	25	1	93	.11	4	.5	1.1	15	UER	
		3	1818	57.18	19	20.11	155	4.12	8.04	2.3	2.3	35	1	134	.09	2	.5	.5	26	MER	
		3	1819	25.15	19	20.88	155	11.51	9.91	1.8	1.0	13	0	70	.03	4	.5	1.1	10	UER	
		3	2033	12.19	19	23.20	155	17.22	3.09	1.0	.9	11	0	62	.08	1	.4	.3	9	SPC	
		3	2040	12.00	19	23.06	155	16.83	2.98	2.3	2.7	30	0	41	.11	1	.3	.3	20	SPC	
		3	2043	31.30	19	23.19	155	17.10	2.35	.9	.7	10	0	63	.04	0	.4	.3	6	SPC	
		3	2147	36.13	19	20.83	155	8.15	7.90	1.8	1.3	18	0	133	.06	4	.5	1.1	14	UER	
		3	2247	52.70	19	28.05	154	50.18	.01	2.4	2.3	21	2	273	.23	6	1.2	.5	13	LER	*
		3	2355	42.05	19	22.26	155	5.80	8.14	1.4	1.3	17	0	137	.10	2	.7	.9	14	MER	
		4	216	50.08	19	22.59	155	29.94	9.10	1.3	1.2	21	1	69	.08	10	.5	1.8	16	UKF	
		4	728	16.27	19	19.69	155	11.35	8.04	1.7	1.4	22	0	91	.08	5	.5	1.1	16	UER	
		4	750	5.68	19	19.84	155	12.03	5.13	1.3	1.0	19	0	84	.11	5	.5	1.9	16	UER	
		4	837	35.91	19	23.81	155	15.37	3.00	1.0	1.3	11	1	99	.06	2	.4	.5	9	SPC	
		4	845	14.60	19	24.44	155	16.23	1.61	2.1	2.4	15	1	133	.07	2	.3	.4	13	SPC	
		4	912	35.79	19	23.13	155	14.82	3.10	1.2	1.2	6	0	112	.03	2	.4	.7	5	GLN	
		4	954	50.60	19	23.00	155	14.64	2.92	1.5	1.5	10	0	91	.10	2	.5	.6	9	UER	
		4	1059	26.72	19	23.03	155	14.75	2.75	1.8	2.0	15	1	64	.13	2	.4	.5	11	GLN	
		4	11 2	10.87	19	23.29	155	14.87	3.75	1.1	.9	7	0	103	.03	2	.6	.8	7	GLN	
		4	1824	1.21	19	23.68	155	15.26	2.95	1.0	1.2	6	0	97	.04	2	.5	.9	5	SPC	
		4	1829	7.44	19	23.01	155	14.74	3.33	1.5	1.9	15	0	65	.09	2	.4	.5	14	GLN	
		4	1859	38.58	19	20.20	155	8.56	8.62	1.9	2.0	27	0	75	.07	4	.4	.7	25	UER	
		4	1957	37.98	19	16.83	155	21.60	9.01	2.2	1.3	19	0	196	.08	6	.8	.6	18	SWR	
		4	1957	53.46	19	22.86	155	14.99	3.82	1.5	1.8	9	0	117	.13	2	.6	.9	8	UER	
		4	21 6	39.78	19	20.51	155	6.11	7.99	2.4	2.4	29	1	108	.10	5	.5	.8	26	UER	
		4	2234	24.64	19	24.01	155	16.09	.00	1.4	1.9	8	2	117	.15	2	.4	.9	7	SPC	L*
		5	015	4.84	19	21.22	155	2.42	6.24	1.6	1.4	23	0	154	.11	3	.7	.8	19	MER	
		5	1 1	49.35	19	23.48	155	16.78	2.52	1.9	2.2	22	2	52	.13	3	.3	.4	20	SPC	
		5	127	12.39	19	22.68	155	2.05	7.23	1.3	1.4	22	1	144	.12	5	.8	.6	19	MER	
		5	231	4.90	19	20.25	155	7.53	7.36	1.4	1.3	18	0	95	.09	5	.5	1.0	18	UER	
		5	246	28.54	19	19.60	155	9.87	6.90	1.9	1.8	26	0	92	.13	5	.5	1.1	26	UER	
		5	332	45.92	20	7.84	155	38.20	14.60	2.4	1.7	30	3	282	.11	41	2.6	5.0	26	KOH	
		5	344	50.03	19	23.14	155	14.86	3.19		1.4	9	0	84	.04	2	.5	.6	7	GLN	
		5	643	23.99	19	19.16	155	31.01	4.02	1.6	1.4	25	0	65	.19	9	.5	5.6	23	HEA	
		5	724	49.75	19	21.17	155	1.29	7.47	2.0	2.2	27	1	189	.11	4	.8	.5	25	MER	
		5	742	46.81	19	23.23	155	14.77	3.22		1.1	9	0	88	.04	3	.4	.6	8	GLN	
		5	17 8	37.57	19	20.52	155	11.36	8.58	1.7	1.7	26	0	76	.09	4	.4	.7	26	UER	
		5	2337	3.03	19	19.16	155	8.48	7.79	1.9	2.1	25	0	83	.08	3	.5	1.0	24	UER	
		6	046	12.24	19	20.15	155	12.90	10.38	3.9	4.1	38	1	70	.10	5	.5	.3	34	UER	F
		6	133	4.97	19	34.87	155	40.57	1.96	.7	.8	18	3	100	.21	12	.8	1.9	10	MOK	
		6	739	18.27	19	23.92	155	27.99	9.58	1.8	1.7	28	0	46	.10	3	.4	.8	23	UKF	
		6	925	6.95	19	25.84	155	23.80	8.77	2.1	1.8	36	3	43	.09	3	.3	.7	19	UKF	
		6	1052	22.83	19	4.95	155	27.97	46.56	2.6		18	3	189	.11	8	1.3	1.9	8	LSW	T
		6	1159	.06	19	13.09	155	32.64	7.45	2.0	1.8	24	1	217	.13	6	.7	.9	9	LSW	
		6	1346	57.82	19	21.64	155	2.81	8.27	2.1	2.0	31	1	135	.11	3	.5	.5	14	MER	
		6	1427	51.13	19	23.47	155	14.76	3.53	1.1	1.0	11	0	99	.06	2	.4	.6	7	GLN	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	OCT	6	1439	32.58	19	23.23	155	14.90	3.03	1.4	1.7	9	0	104	.03	2	.4	.5	7	GLN	
		6	1512	55.32	19	23.10	155	14.81	3.09	2.0	2.4	21	0	64	.11	2	.4	.4	17	GLN	
		6	1514	56.09	19	21.92	155	15.06	9.39	2.6	2.9	39	2	59	.09	2	.3	.4	31	KOA	
		6	1531	45.65	19	24.53	155	26.02	9.81	1.4	1.2	28	0	50	.09	2	.4	.7	24	UKF	
		6	1554	21.86	19	23.57	155	17.17	2.69	1.1	1.3	17	1	61	.12	1	.3	.3	12	SPC	
		6	16 8	21.41	19	23.07	155	14.78	3.45	1.1	1.0	10	0	111	.05	2	.5	.6	8	GLN	
		6	1857	18.65	19	23.63	155	2.95	8.47		1.3	21	0	110	.11	3	.6	.7	21	MER	
		6	22 0	33.72	19	26.41	155	27.90	9.92	2.5	2.1	41	3	50	.12	5	.3	.7	29	UKF	
		6	2256	12.54	19	20.74	155	6.94	7.86	1.9	1.3	17	0	206	.08	4	1.1	.7	10	UER	
		6	23 8	49.67	19	23.75	155	27.91	9.36	1.6	1.2	27	2	65	.11	2	.4	1.0	16	UKF	
		7	2 2	54.08	19	20.60	155	12.39	9.17	1.6	1.5	29	0	69	.08	4	.4	.8	19	UER	
		7	316	7.27	19	26.42	154	51.88	7.51	1.9	1.2	25	3	282	.08	5	1.1	.4	10	LER	
		7	424	47.33	19	22.87	155	14.60	3.33	1.3	1.1	16	0	69	.05	2	.3	.4	11	UER	
		7	527	1.79	19	23.39	155	14.90	3.00	1.4	1.4	12	0	99	.05	3	.4	.4	9	GLN	
		7	536	42.51	19	22.11	155	1.23	8.70	2.1	2.2	31	4	170	.12	5	.5	.7	16	MER	
		7	834	18.39	19	21.04	155	10.83	8.19	1.9	1.8	15	0	183	.12	3	1.0	1.3	15	UER	
		7	854	33.91	19	23.34	155	15.12	2.93	1.0	1.4	15	2	102	.07	2	.3	.4	13	SPC	
		7	924	49.65	19	28.25	155	22.72	4.63	1.6	1.4	19	2	121	.10	3	.5	1.1	17	UKF	
		7	1833	57.89	19	26.30	155	25.03	6.55	1.8	1.2	19	1	63	.08	2	.5	1.1	18	UKF	
		7	2241	30.79	19	13.51	155	37.66	8.39	2.4	2.3	32	2	199	.18	3	.7	.7	28	HEA	
		8	322	21.73	19	19.25	155	11.23	8.15	2.0	2.1	24	0	103	.07	6	.4	.8	21	UER	
		8	621	29.21	19	24.02	155	25.09	9.09	2.4	2.3	25	0	45	.09	2	.5	.9	23	UKF	
		8	641	37.40	19	20.68	155	5.94	7.49	2.7	3.2	34	3	137	.12	4	.6	.9	29	MER	
		8	749	28.43	19	21.97	155	17.99	2.89	1.2	1.2	13	1	88	.09	3	.4	.7	11	KOA	
		8	827	10.54	19	23.95	155	16.79	3.16		1.7	9	0	84	.06	2	.5	.6	8	SPC	
		8	1138	26.93	19	22.12	155	2.18	7.00	1.7	1.6	19	0	148	.11	4	.8	.5	19	MER	
		8	1321	43.49	19	20.57	155	5.84	6.71		1.2	16	0	109	.09	5	.6	1.5	14	MER	
		8	1357	36.73	19	20.33	155	9.60	8.14		1.4	19	0	76	.11	3	.7	1.2	17	UER	
		8	1424	56.85	19	26.20	154	55.31	8.25	1.6	1.2	15	0	228	.13	2	1.6	.9	13	LER	
		8	1553	54.32	19	21.50	155	5.59	7.28	1.6	1.5	17	0	87	.10	3	.5	.8	17	MER	
		8	1640	19.80	19	19.20	155	11.35	10.14	3.7	3.7	29	0	104	.09	5	.5	.4	29	UER	F
		8	1652	38.68	19	19.54	155	10.92	7.92		1.3	13	0	97	.06	5	.6	1.1	13	UER	
		8	2122	2.10	19	19.41	155	10.81	7.58		1.3	18	0	100	.07	5	.5	.9	17	UER	
		8	2221	34.71	19	13.46	155	39.78	9.23	2.2	1.9	15	0	233	.22	5	2.3	1.4	15	HEA	
		8	2335	40.80	19	18.53	155	10.30	7.75		1.1	15	0	127	.11	5	1.0	1.4	14	POL	
		8	2345	42.71	19	21.17	155	5.68	7.03	1.3	1.2	16	0	152	.11	4	.7	.9	16	MER	
		9	425	9.32	20	27.14	155	15.37	.77	2.9	3.1	32	2	304	.16	63	2.7	.7	31	DIS	
		9	434	52.39	19	21.50	155	15.28	9.03	2.1	2.1	20	0	95	.10	4	.5	.8	20	KOA	
		9	729	3.47	19	20.02	155	12.79	5.79		1.3	12	0	80	.10	5	.6	1.5	12	UER	
		9	858	20.81	19	21.00	154	37.90	28.32		1.5	12	0	309	.39	31	41.1	9.9	8	DIS	*
		9	1140	23.26	19	22.16	155	5.87	8.57		1.0	15	0	74	.07	2	.5	1.1	15	MER	
		9	1143	52.12	19	22.33	155	5.72	8.45	2.5	2.4	28	0	72	.07	2	.5	.5	26	MER	
		9	1254	54.59	19	20.69	155	5.65	7.67	2.0	2.1	26	1	108	.09	4	.5	.7	23	MER	
		9	1544	44.11	19	23.38	155	14.85	3.66	1.8	1.9	12	0	80	.05	3	.4	.6	12	GLN	
		9	1850	25.77	19	20.19	155	3.99	6.86		.6	17	0	128	.09	2	.8	.7	16	MER	
		9	2341	55.36	19	23.19	155	14.79	3.84	2.9	3.1	32	0	47	.10	2	.3	.5	30	GLN	
		9	2357	53.22	19	23.79	155	15.14	3.25	1.6	1.6	10	0	97	.04	2	.5	.6	10	SPC	
		10	241	40.53	19	19.57	155	10.87	7.71	1.7	1.4	24	0	96	.06	5	.5	.8	23	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	OCT	10	331	41.33	19	23.91	155	15.41	3.38	1.4	1.5	12	0	107	.05	2	.4	.6	11	SPC	
		10	339	40.17	19	19.24	155	7.36	6.84		1.3	21	0	117	.10	4	.6	1.2	21	UER	
		10	350	27.10	19	19.98	155	13.04	7.63		1.0	21	0	70	.09	5	.5	.8	19	UER	
		10	1011	45.32	19	19.96	155	13.42	7.88		1.4	22	0	68	.11	5	.6	.9	18	UER	
		10	1054	22.40	19	23.20	155	14.81	3.84		1.3	9	0	86	.04	2	.5	.8	7	GLN	
		10	1059	28.19	19	19.76	155	11.24	8.15	2.6	3.0	30	1	91	.10	5	.4	.6	21	UER	
		10	1544	32.86	19	23.25	155	14.82	3.28	1.8	1.8	16	0	68	.08	3	.4	.6	10	GLN	
		10	1716	58.97	19	23.37	155	14.91	3.46	1.6	1.6	13	0	73	.07	3	.4	.8	10	GLN	
		10	1722	1.30	18	53.31	155	17.18	27.35	1.9	1.3	26	1	264	.07	35	2.2	3.0	20	PPL	
		10	1854	28.05	19	23.52	155	16.68	2.58	1.7	1.9	14	0	73	.07	3	.4	.7	14	SPC	
		10	1916	4.54	19	23.23	155	14.68	3.83	1.6	1.9	9	0	91	.04	3	.6	1.1	8	GLN	
		10	1937	20.89	19	22.91	155	14.79	3.29	1.5	1.6	13	0	67	.08	3	.4	.7	10	UER	
		10	1957	36.50	19	21.30	155	15.03	.03	2.4	2.6	13	0	96	.31	4	1.0	2.0	4	KOA	*
		10	2015	27.37	19	23.13	155	25.99	9.48	2.2	2.1	32	0	51	.12	3	.4	.8	25	UKF	
		10	21	2 47.42	19	28.20	155	51.17	8.55	1.4	1.4	18	1	152	.16	7	.9	.9	15	KON	
		10	22	7 45.61	19	19.70	155	11.10	9.07	2.1	2.2	26	0	92	.10	5	.5	.7	22	UER	
		10	2221	45.16	19	19.31	155	10.09	7.79	1.3	1.8	27	0	101	.12	5	.5	.9	21	UER	
		11	0	3 14.20	19	23.12	155	14.70	3.51		1.1	10	0	69	.05	3	.5	.8	6	GLN	
		11	157	9.57	19	23.34	155	14.22	5.07		1.1	8	0	110	.03	2	1.1	1.9	6	GLN	
		11	2	0 20.73	19	23.22	155	14.97	3.20	1.4	1.2	9	0	70	.05	3	.5	.8	8	GLN	
		11	341	29.16	19	26.45	155	27.28	7.83	2.0	1.3	31	1	61	.10	7	.4	1.2	22	UKF	
		11	4	8 29.45	19	24.12	155	15.99	3.19		.9	8	0	120	.04	2	.6	.7	6	SPC	
		11	532	37.42	19	27.28	154	50.97	9.75	2.0	1.9	23	1	271	.20	5	2.6	.7	17	LER	
		11	1240	22.34	19	1.63	154	49.58	30.66	1.9	3.1	14	0	319	.18	46	22.2	6.8	14	DIS	*
		11	13	4 17.78	19	23.41	155	17.22	2.64	1.6	1.8	14	0	57	.08	3	.4	.6	14	SPC	
		11	13	7 37.96	19	23.43	155	16.94	2.78	1.3	1.5	9	0	114	.05	3	.4	.6	8	SPC	
		11	13	8 15.42	19	23.44	155	17.09	2.97	1.6	1.7	9	0	69	.03	3	.4	.6	8	SPC	
		11	1416	13.22	19	20.59	155	5.82	7.77		1.0	16	0	109	.06	5	.6	1.2	16	MER	
		11	1623	26.47	19	23.24	155	14.72	3.88	1.6	1.7	14	0	104	.06	3	.5	.5	14	GLN	
		11	1651	59.69	19	23.20	155	15.15	3.28	2.5	2.8	24	0	49	.09	2	.3	.5	23	SPC	F
		11	2033	37.27	19	22.16	155	1.19	2.91		1.3	13	0	171	.11	5	.6	1.5	13	MER	
		11	2044	58.70	19	23.81	155	24.20	9.03	1.6	1.5	24	0	68	.09	6	.5	1.0	24	UKF	
		11	2055	29.25	19	20.18	155	6.03	9.04	2.3	2.2	27	0	118	.08	5	.5	.5	26	UER	
		11	2122	17.99	19	20.62	155	3.41	7.01		1.2	21	0	99	.09	2	.7	.7	20	MER	
		11	2138	13.63	19	23.36	155	14.74	3.69	1.7	1.8	13	0	70	.05	3	.4	.5	13	GLN	
		12	014	5.76	19	18.96	155	16.12	8.15	1.9	1.4	21	0	121	.07	3	.5	.7	20	KOA	
		12	021	.30	19	23.19	155	14.82	3.50	1.6	1.8	16	0	67	.04	2	.4	.5	16	GLN	
		12	057	27.04	19	27.17	154	54.29	4.78	1.2	1.2	15	0	216	.12	2	1.9	.8	15	LER	
		12	314	48.84	19	23.07	155	14.86	3.28	1.9	2.1	19	0	48	.08	2	.3	.4	18	GLN	
		12	4	6 3.91	19	52.49	155	18.93	8.81	1.8	1.6	16	0	181	.10	3	1.1	.6	16	KKU	
		12	422	5.46	19	21.76	155	13.09	2.91		1.0	10	0	101	.03	2	.4	.5	10	UER	
		12	510	13.59	19	50.20	155	46.26	24.99	2.6	2.0	19	1	155	.06	18	.6	2.1	18	KON	
		12	614	15.14	19	26.43	155	21.66	1.83	2.0	1.8	19	0	47	.10	7	.4	3.0	19	UKF	
		12	642	23.13	19	22.89	155	14.27	2.44	1.5	1.6	16	0	69	.21	2	.5	.5	16	UER	
		12	747	9.97	19	23.54	155	30.38	8.46	2.1	1.4	27	0	85	.09	5	.4	.9	27	MOK	
		12	849	53.70	19	22.00	155	13.47	2.85		.9	8	0	143	.03	1	.9	.4	5	UER	
		12	1110	38.95	19	23.09	155	14.84	2.61		1.0	6	0	153	.02	2	1.6	.5	5	GLN	
		12	1110	54.10	19	23.44	155	14.28	4.05	1.2	1.4	5	0	185	.09	3	1.4	1.8	3	GLN	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	OCT	12	1113	7.21	19	23.12	155	14.86	3.09	1.1	.9	6	0	154	.03	2	.6	.6	6	GLN	
		12	1113	39.80	19	23.17	155	14.91	3.21	1.4	1.6	7	0	155	.05	2	.6	.6	5	GLN	
		12	1124	28.12	19	24.14	155	17.05	3.58	1.2	1.1	5	0	169	.00	1	1.0	1.1	5	SPC	
		12	12	3 28.40	19	20.39	155	7.28	6.33		1.1	17	1	96	.11	5	.6	1.1	15	UER	
		12	1215	44.29	19	23.08	155	14.70	3.17	1.5	1.5	12	0	130	.06	2	.4	.4	10	GLN	
		12	1216	14.64	19	23.97	155	15.48	3.22	1.5	1.8	9	0	117	.05	3	.5	.7	8	SPC	
		12	13	8 42.93	19	23.08	155	14.78	3.09	1.1	1.2	6	0	154	.02	2	.5	.6	6	GLN	
		12	1339	38.45	19	23.27	155	14.85	3.37	1.5	1.4	7	0	133	.04	2	.6	.7	7	GLN	
		12	14	9 29.58	19	20.21	155	7.86	8.48	2.0	2.3	25	1	89	.09	5	.5	.6	22	UER	
		12	1555	24.80	19	26.74	155	21.41	3.68	2.7	2.7	31	0	49	.16	7	.4	3.3	25	UKF	
		12	1559	25.76	19	23.04	155	14.76	3.60	3.0	3.4	30	0	48	.08	2	.3	.5	25	GLN	F
		12	16	6 51.09	19	23.06	155	14.74	3.64	2.8	3.2	30	0	48	.11	2	.4	.5	28	GLN	F
		12	1616	32.47	19	23.30	155	14.85	3.28	1.1	1.4	7	0	106	.05	3	.5	.8	7	GLN	
		12	1626	40.49	19	26.08	155	21.43	.81	2.1	2.2	22	0	48	.15	8	.5	3.8	20	UKF	
		12	1640	11.47	19	23.26	155	14.98	3.26	1.5	1.5	12	0	72	.05	2	.4	.5	10	GLN	
		12	1753	29.02	19	23.20	155	14.94	3.14	1.8	1.6	12	0	69	.06	2	.4	.5	11	GLN	
		12	18	7 11.63	19	19.86	155	12.33	9.41	2.5	2.7	31	0	80	.08	5	.4	.5	26	UER	
		12	1812	25.97	19	23.11	155	16.88	3.13	1.0	1.3	9	0	77	.03	2	.5	.6	7	SPC	
		12	1818	32.44	19	23.15	155	14.73	3.36	1.6	1.8	14	0	64	.04	3	.3	.4	14	GLN	
		12	19	3 10.94	19	28.61	154	54.59	2.60	1.9	1.6	18	0	135	.14	2	1.2	.8	16	LER	
		12	19	8 40.25	19	21.37	155	4.41	7.67	1.9	1.3	22	0	84	.10	4	.5	.7	18	MER	
		12	20	3 6.80	19	26.10	155	21.49	.00	2.0	1.8	22	1	40	.13	8	.4	.8	19	UKF	*
		12	2056	43.17	19	17.51	155	14.14	8.61	1.9	1.9	27	0	113	.11	1	.7	.5	23	POL	
		13	052	48.39	19	21.74	155	5.92	7.36	1.6	1.2	23	0	82	.11	2	.5	.8	19	MER	
		13	1	6 7.52	19	26.24	155	21.45	.02	1.9	1.7	20	1	40	.11	7	.3	.7	12	UKF	*
		13	116	26.04	19	26.68	155	20.97	8.45	3.8	3.9	36	0	41	.11	7	.4	.8	35	UKF	F
		13	151	48.24	19	26.49	155	21.60	1.43	2.1	2.0	24	0	40	.11	7	.4	2.8	22	UKF	
		13	224	53.75	19	26.24	155	21.53	.02	2.1	2.1	24	1	41	.14	7	.4	.8	22	UKF	*
		13	258	51.02	19	27.05	155	21.55	6.56	3.1	3.1	34	0	41	.14	6	.4	1.2	33	UKF	F
		13	351	41.69	19	22.97	155	14.82	3.17	1.5	1.6	13	0	65	.07	2	.4	.5	13	UER	
		13	652	39.07	19	20.88	155	2.62	7.46	2.0	1.5	28	0	152	.09	2	.7	.4	22	MER	
		13	833	44.48	19	19.99	155	11.94	8.14	2.0	1.6	27	1	82	.07	5	.4	.7	22	UER	
		13	1126	16.06	19	26.99	155	22.12	4.31	2.6	2.9	35	0	41	.17	6	.4	2.4	25	UKF	
		13	1149	14.96	19	17.32	155	14.07	7.39		1.1	19	0	164	.10	1	.9	.9	16	POL	
		13	12	2 58.10	19	20.96	155	5.87	8.34	2.0	2.1	29	0	99	.12	4	.5	.7	27	MER	
		13	12	4 57.84	19	23.30	155	16.98	2.80	2.0	2.2	21	0	46	.09	3	.4	.6	20	SPC	
		13	12	5 57.36	19	23.43	155	16.93	3.10	1.5	1.8	11	0	65	.05	3	.4	.6	10	SPC	
		13	1233	31.71	19	17.88	155	14.17	10.47	2.2	2.2	20	0	168	.09	7	.9	.7	16	POL	
		13	1246	42.99	19	17.34	155	13.97	8.09	1.6	1.4	26	0	118	.10	1	.6	.7	23	POL	
		13	1248	33.01	19	17.39	155	14.15	7.94	1.7	1.7	22	0	146	.10	1	.7	.6	18	POL	
		13	1350	21.56	19	17.45	155	14.15	7.76	1.7	1.6	24	0	142	.11	1	.7	.9	22	POL	
		13	14	0 50.68	19	17.43	155	14.05	9.06	2.2	1.9	29	0	114	.14	1	.7	.6	27	POL	
		13	1431	51.13	19	20.75	155	25.27	28.99	2.5	2.4	35	0	80	.10	4	.7	1.2	33	HEA	
		13	1442	47.40	19	18.12	155	12.99	10.29	2.8	2.9	32	0	140	.10	8	.6	.5	27	POL	
		13	1444	17.54	19	17.55	155	12.92	7.52	2.1	1.8	25	0	133	.11	1	.6	.9	21	POL	
		13	1446	34.27	19	17.42	155	12.99	6.22		1.0	20	0	140	.09	1	.6	1.1	16	POL	
		13	1447	9.97	19	16.97	155	12.67	7.93		1.0	15	0	192	.11	1	1.3	1.3	14	POL	
		13	1451	48.22	19	17.84	155	12.77	9.34	2.1	1.7	23	0	167	.10	8	.7	.6	14	POL	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	OCT	13	1647	36.27	19	26.51	155	21.65	.02	1.7	1.6	11	0	102	.17	7	.7	3.8	10	UKF	*
		13	1720	27.44	19	22.95	155	14.71	3.41	1.5	1.5	13	0	66	.04	2	.3	.4	12	UER	
		13	2135	26.34	19	26.38	155	20.99	5.21	1.2	1.1	7	0	148	.03	8	.8	9.2	4	UKF	
		13	2210	53.05	19	20.91	155	6.34	6.95	1.9	1.2	21	0	97	.12	4	.5	1.0	21	UER	
		14	016	31.53	19	23.37	155	15.00	3.24	1.4	1.3	10	0	88	.04	2	.4	.5	10	SPC	
		14	148	44.07	19	27.09	155	21.65	1.15	1.5	1.3	8	0	145	.01	6	.6	2.5	7	UKF	
		14	157	1.59	19	23.57	155	14.93	3.41	1.1	1.2	9	0	82	.04	2	.4	.6	9	GLN	
		14	251	37.60	19	27.17	155	20.97	3.15	1.5	1.6	10	0	138	.08	6	.8	2.6	9	UKF	
		14	258	22.81	19	20.68	155	8.05	8.05	1.4	1.3	19	1	80	.06	4	.4	.7	15	UER	
		14	340	34.40	19	23.19	155	17.08	2.74	1.0	1.1	10	0	61	.03	3	.4	.6	8	SPC	
		14	6 5	10.27	19	18.47	155	13.67	8.60	2.2	2.0	29	0	89	.10	3	.6	.5	26	POL	
		14	737	16.92	19	54.38	155	10.73	40.57	4.0	4.3	38	1	213	.10	17	1.0	1.7	37	KKU	F
		14	947	50.17	19	22.13	155	1.53	7.73	2.0	1.8	25	1	163	.10	5	.6	.7	22	MER	
		14	10 1	48.69	19	20.40	155	12.81	6.93		1.1	22	0	68	.12	4	.5	1.0	21	UER	
		14	1150	5.47	19	23.24	155	14.91	3.33	1.9	2.1	21	0	47	.09	2	.3	.5	16	GLN	
		14	1215	40.56	19	22.69	155	14.34	3.36	1.2	1.3	10	0	73	.05	2	.4	.6	10	UER	
		14	1738	24.51	19	23.24	155	17.15	2.95	1.8	2.0	19	0	60	.07	3	.3	.5	16	SPC	
		14	1915	11.11	19	26.46	155	21.37	1.42	1.5	1.6	12	0	61	.16	7	.7	4.4	12	UKF	*
		14	1925	1.47	19	19.99	155	9.32	7.16		1.4	21	0	79	.09	4	.5	1.1	20	UER	
		14	2046	9.24	19	21.58	155	5.39	7.17	2.1	1.3	18	0	106	.10	3	.6	.8	17	MER	
		14	2143	58.24	19	18.91	155	11.74	7.71		1.6	19	0	108	.12	5	.6	1.0	19	POL	
		14	2235	7.85	19	26.59	155	21.26	2.31	1.6	1.6	10	0	111	.16	7	.8	3.5	10	UKF	*
		14	2254	34.62	19	26.63	155	21.25	.07	1.4	1.4	9	0	112	.07	7	.6	3.3	7	UKF	
		14	2320	21.80	19	19.11	155	9.54	7.62	1.4	1.3	20	0	102	.08	4	.6	.8	20	UER	
		14	2340	18.75	19	21.97	155	25.52	8.22		1.3	14	0	109	.07	4	.5	1.2	13	HEA	
		15	015	53.37	19	26.49	155	20.28	6.58	2.1	2.1	20	0	94	.11	6	.5	1.7	18	UKF	
		15	032	56.34	19	26.54	155	20.45	5.98	1.5	1.3	9	0	146	.05	7	.7	4.2	9	UKF	
		15	044	12.27	19	55.75	156	27.75	3.31	3.1	2.4	24	0	291	.10	75	4.8	23.7	24	DIS	*
		15	057	56.92	19	23.27	155	15.41	30.90	2.5	2.9	35	0	57	.09	2	.6	1.2	34	DEP	
		15	117	7.89	19	21.25	155	2.03	7.40	1.3	1.2	17	0	168	.11	3	1.0	1.3	16	MER	
		15	141	44.42	19	20.08	155	6.36	7.17	1.4	1.4	20	0	117	.08	5	.5	1.1	20	UER	
		15	2 6	7.71	19	27.05	155	21.20	3.14	2.0	2.0	15	0	95	.10	6	.5	2.6	15	UKF	
		15	219	59.05	19	20.15	155	12.66	9.41		1.2	21	0	72	.05	5	.5	.7	21	UER	
		15	532	17.37	19	24.28	155	23.72	8.88	1.5	1.4	19	0	67	.12	8	.5	1.2	19	UKF	
		15	635	27.92	19	17.98	155	13.04	8.80	1.9	1.8	22	0	106	.08	2	.5	.8	20	POL	
		15	744	8.73	19	20.11	155	6.16	8.37	2.4	2.3	31	1	119	.09	5	.5	.7	30	UER	
		15	943	15.76	19	27.55	154	52.61	8.03	2.3	2.1	20	0	261	.12	3	2.1	.5	18	LER	
		15	1014	40.43	19	22.85	155	17.31	2.84	1.3	1.2	9	0	77	.03	3	.4	.6	9	KOA	
		15	1032	51.49	19	19.59	155	12.86	6.75	1.6	1.3	13	0	78	.06	5	.6	1.2	11	UER	
		15	1146	46.62	19	20.68	155	11.14	9.15	2.1	2.3	24	0	74	.07	3	.5	.6	23	UER	
		15	1239	56.89	19	20.18	155	10.35	7.51		1.2	17	0	83	.09	4	.6	1.1	16	UER	
		15	1355	4.46	19	20.86	155	11.41	6.83		1.2	15	0	111	.03	4	.6	1.1	13	UER	
		15	1530	25.35	19	20.42	155	12.68	6.64	1.4	1.5	18	0	69	.08	4	.5	.7	17	UER	
		15	1536	30.99	19	27.08	155	21.36	1.49		1.3	7	0	150	.03	6	.8	3.7	6	UKF	
		15	1715	53.88	19	19.74	155	43.81	9.42		1.5	14	1	223	.12	7	1.7	1.0	12	HEA	
		15	2112	12.78	19	20.01	155	13.46	5.36	1.4	1.3	20	1	67	.10	5	.4	1.1	18	UER	
		15	2357	55.92	19	20.04	155	9.30	7.69		1.4	17	0	79	.06	4	.4	.8	15	UER	
		16	144	42.36	19	19.74	155	10.96	8.24	1.9	1.8	24	0	92	.09	5	.4	.7	23	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	OCT	16	248	27.71	19	19.59	155	8.55	6.77	1.6	1.8	30	1	80	.09	4	.4	.8	28	UER	
		16	3 4	1.48	19	20.94	155	12.64	7.45	1.4	1.6	25	0	64	.11	3	.5	.7	24	UER	
		16	449	2.48	19	20.29	155	13.24	8.78	2.0	1.9	26	0	64	.09	4	.4	.7	23	UER	
		16	452	7.58	19	20.36	155	13.32	9.68	1.9	2.1	25	0	63	.08	4	.5	.7	24	UER	
		16	920	29.24	19	22.27	155	15.07	32.94		1.8	28	0	56	.08	1	.8	1.4	27	DEP	
		16	953	29.62	19	26.79	155	28.56	9.80		1.5	17	0	68	.08	8	.6	1.7	16	UKF	
		16	1437	30.92	19	21.43	155	1.36	6.52		1.3	19	0	180	.10	4	.8	.7	19	MER	
		16	16 3	5.35	19	22.12	155	25.43	8.78	2.0	2.1	19	0	104	.06	4	.6	1.1	19	UKF	
		16	1712	39.02	19	19.39	155	13.16	7.63	2.0	1.7	24	0	75	.13	4	.5	.7	21	UER	
		16	1759	1.63	19	12.91	155	34.30	32.60		1.6	14	0	82	.12	6	1.0	2.6	14	HEA	
		16	1954	37.81	19	19.44	155	8.45	9.12	3.1	3.2	30	1	83	.07	4	.5	.5	29	UER	F
		16	20 7	52.30	19	21.09	155	5.55	9.01	2.4	2.4	27	0	97	.08	4	.5	.4	27	MER	
		16	2035	42.08	19	22.76	155	23.17	6.71		1.4	17	0	84	.14	5	.9	2.6	17	UKF	
		16	2131	49.46	19	19.28	155	11.91	10.16	2.9	3.1	34	1	97	.10	5	.5	.4	31	UER	
		16	23 5	19.89	19	27.27	155	22.11	.04	2.3	2.5	21	1	46	.18	5	.5	1.0	19	UKF	*
		16	2332	35.49	19	19.74	155	10.19	7.90	1.9	1.6	21	0	91	.06	4	.5	.7	20	UER	
		17	026	17.85	19	20.79	155	1.82	6.49	1.7	1.6	12	0	189	.11	3	1.0	1.4	12	MER	
		17	737	8.17	19	19.67	155	10.06	9.27	2.7	2.9	33	0	92	.10	4	.5	.5	31	UER	
		17	743	19.30	19	19.87	155	13.24	5.10		.9	15	0	69	.11	5	.5	2.0	15	UER	
		17	1245	37.74	19	19.22	155	11.08	6.96		1.4	24	0	104	.11	6	.5	1.1	21	UER	
		17	1847	53.45	19	23.14	155	17.03	2.90		1.1	9	0	68	.04	2	.4	.6	6	SPC	
		17	19 6	.25	19	17.79	155	20.82	7.97		1.4	15	0	128	.08	4	.6	1.1	14	SWR	
		17	2225	23.39	19	20.69	155	6.66	9.05	2.7	2.8	35	1	99	.09	4	.5	.4	33	UER	
		18	1 9	47.28	19	26.73	155	26.49	9.67	2.6	2.4	35	0	46	.11	8	.4	.6	32	UKF	
		18	853	31.69	19	19.87	155	8.36	8.11	1.7	1.9	27	0	82	.11	5	.6	.8	24	UER	
		18	1017	26.86	19	23.36	155	14.93	3.60	1.2	1.5	10	1	100	.04	2	.4	.7	9	GLN	
		18	12 4	52.99	19	21.09	155	7.11	6.55	1.9	2.0	26	1	87	.11	4	.5	.9	24	UER	
		18	1219	36.13	19	22.18	155	25.52	8.90	1.7	1.3	20	0	105	.10	4	.5	1.0	16	UKF	
		18	1414	59.67	19	27.47	155	18.49	2.06	1.3	1.1	5	0	313	.06	5	27.8	24.1	5	GLN	*
		18	1728	4.73	19	19.83	155	13.19	6.49	1.6	1.7	24	0	70	.12	5	.5	.8	23	UER	
		18	1833	2.11	19	20.49	155	11.74	9.13	2.0	2.1	29	1	75	.10	5	.4	.6	26	UER	
		18	1922	.27	19	18.90	155	13.71	8.48	2.3	2.4	30	1	87	.13	4	.5	.7	25	POL	
		18	2014	32.38	19	47.12	156	3.07	8.80	3.1	3.4	24	1	235	.14	25	1.3	.8	24	KON	
		18	2122	26.50	19	21.37	155	5.55	7.32	2.2	2.3	32	1	90	.10	3	.5	.7	27	MER	
		18	2319	16.76	19	20.15	155	13.55	7.31	1.8	1.8	23	0	68	.14	5	.5	.8	19	UER	
		19	036	11.28	19	23.21	155	15.03	3.16	1.5	1.9	13	0	73	.09	2	.4	.5	11	SPC	
		19	132	54.64	19	23.06	155	14.82	3.72	2.8	3.0	27	0	49	.10	2	.4	.6	26	GLN	
		19	141	4.81	19	23.35	155	14.89	3.02	1.6	1.7	12	0	72	.05	3	.4	.5	10	GLN	
		19	2 8	12.91	19	22.97	155	14.96	2.79	1.8	2.3	17	0	65	.09	2	.4	.5	12	UER	
		19	531	.80	19	21.72	155	6.86	7.21	1.8	1.6	19	0	79	.11	3	.5	1.3	16	UER	
		19	1025	59.19	19	23.41	155	16.29	3.65	1.4	1.3	8	1	86	.05	2	.4	.7	3	SPC	
		19	12 3	36.55	19	23.56	155	16.97	2.49	1.7	1.6	14	1	61	.04	3	.3	.4	9	SPC	
		19	1635	49.01	19	23.69	155	16.99	3.05	1.8	1.7	13	1	62	.07	2	.3	.5	9	SPC	
		19	1720	51.29	19	23.45	155	14.85	3.59	2.5	2.5	24	0	45	.09	2	.4	.5	23	GLN	
		19	18 6	16.80	19	12.51	155	31.37	8.25		1.3	25	2	80	.13	8	.4	1.0	18	LSW	
		19	2026	7.32	19	20.70	155	13.27	8.65	1.6	1.0	18	0	60	.09	4	.6	.9	16	UER	
		19	2038	33.81	19	20.02	155	5.76	7.42	2.4	2.2	25	0	126	.11	5	.6	1.1	25	MER	
		20	0 6	.30	19	19.58	155	11.04	9.35	2.8	2.8	30	1	95	.13	5	.5	.7	28	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	OCT	20	319	45.46	19	19.40	155	9.98	6.80	1.4	.9	20	0	99	.10	5	.6	1.3	16	UER
		20	1318	22.16	19	9.95	156	8.55	26.41	2.7	1.9	16	2	281	.11	43	2.3	3.7	13	DIS
		20	1359	11.97	19	24.40	155	28.02	11.08	3.3	3.4	35	0	35	.12	4	.4	.5	34	UKF
		20	14 1	52.33	19	24.09	155	28.32	9.62	2.1	1.8	25	0	47	.12	3	.5	1.1	25	UKF
		20	14 7	18.49	19	19.78	155	12.35	7.80	1.2	1.3	19	0	81	.09	5	.6	1.1	17	UER
		20	1957	2.00	19	19.14	155	11.97	10.27	3.5	3.4	35	0	99	.08	5	.4	.4	33	UER F
		20	2059	29.26	19	19.42	155	11.59	7.08	1.3	.9	19	0	97	.07	6	.5	1.0	13	UER
		21	115	32.94	19	24.30	155	25.04	9.89	2.3	2.1	27	0	74	.12	6	.5	1.0	24	UKF
		21	225	7.45	19	23.12	155	14.69	3.08	1.2	1.6	11	0	62	.04	3	.4	.5	7	GLN
		21	3 2	41.68	19	23.37	155	16.99	3.25	2.1	2.3	21	1	61	.07	3	.3	.5	19	SPC
		21	355	59.14	19	22.95	155	14.63	3.69	2.4	2.3	22	0	49	.09	2	.4	.5	20	UER
		21	357	28.67	19	22.87	155	14.75	3.03	1.8	1.5	14	0	69	.10	2	.4	.5	13	UER
		21	4 4	19.27	19	23.13	155	14.77	3.23	1.2	1.0	9	0	92	.04	2	.5	.6	8	GLN
		21	4 7	20.91	19	20.86	155	2.11	6.94	2.1	1.8	25	0	175	.11	2	.7	.7	22	MER
		21	12 7	2.70	19	26.72	155	21.73	1.56	1.6	1.1	9	0	133	.06	6	.6	2.8	8	UKF
		21	1315	39.65	19	19.36	155	11.58	9.84	2.4	2.2	29	1	98	.10	5	.5	.7	27	UER
		21	14 9	27.48	19	23.27	155	17.06	2.99	1.7	1.9	13	0	59	.05	3	.4	.5	13	SPC
		21	15 8	49.63	19	23.60	155	15.01	3.34	1.6	1.7	15	0	50	.07	2	.4	.5	15	SPC
		21	17 3	36.59	19	23.17	155	16.79	3.30	1.3	1.4	9	0	73	.05	2	.4	.6	9	SPC
		21	1738	56.62	19	20.63	155	5.56	8.45	2.3	1.7	30	1	110	.09	5	.4	.7	26	MER
		21	2035	28.31	19	23.30	155	14.80	3.40	1.5	1.5	11	0	103	.03	3	.4	.5	10	GLN
		21	21 4	30.81	19	23.19	155	17.04	3.36	1.8	1.8	17	0	61	.05	3	.3	.6	17	SPC
		21	22 5	4.57	19	17.20	155	15.86	8.87	1.9	1.7	25	0	170	.09	4	.7	.6	25	KOA
		21	2240	44.16	19	20.01	155	11.66	9.49	2.0	1.7	26	0	83	.10	5	.4	.7	25	UER
		22	021	51.32	19	23.21	155	16.80	3.85	2.6	3.2	27	0	45	.10	2	.4	.6	26	SPC
		22	148	1.88	19	20.73	155	12.97	9.77	2.1	1.9	32	1	63	.09	4	.4	.6	29	UER
		22	447	18.96	19	23.19	155	15.03	3.07	1.6	1.9	16	0	59	.06	2	.3	.4	15	SPC
		22	619	53.91	19	20.70	155	10.17	9.53	1.6	1.8	26	0	74	.11	3	.6	.5	23	UER
		22	740	45.41	19	22.96	155	17.33	2.37	1.3	1.3	8	0	76	.05	3	.4	.7	7	KOA
		22	9 6	34.85	19	20.60	155	6.41	8.69		1.5	23	0	104	.10	4	.6	.8	20	UER
		22	10 4	14.18	19	20.01	155	4.83	6.48	2.1	1.7	19	1	179	.10	6	.7	1.3	17	MER
		22	1256	5.86	19	19.68	155	12.16	8.44	2.3	1.9	25	0	85	.12	5	.5	.8	22	UER
		22	1359	4.41	19	23.62	155	14.89	3.81	1.8	1.9	19	0	47	.09	2	.4	.6	19	GLN
		22	1459	6.08	19	17.82	155	14.99	9.89		1.2	18	0	145	.10	3	.9	.7	18	POL
		22	1652	11.58	19	20.04	155	10.94	8.63	1.9	1.7	27	1	122	.10	4	.6	.8	25	UER
		22	1853	44.12	19	19.69	155	10.46	8.80		1.5	25	0	93	.12	5	.6	.7	25	UER
		22	1945	36.84	19	23.56	155	17.06	3.14	1.3	1.0	12	0	59	.05	3	.4	.6	12	SPC
		22	21 8	12.85	19	23.58	155	14.78	3.75	1.6	1.4	15	0	63	.07	2	.4	.5	13	GLN
		22	2344	42.18	19	21.34	155	6.79	4.78	2.6	2.3	17	0	85	.10	6	.6	1.6	13	UER
		22	2355	16.74	19	22.89	155	16.97	3.33	1.8	2.5	28	0	39	.09	2	.3	.5	27	KOA
		22	2359	26.99	19	23.44	155	14.83	3.48	1.4	1.1	12	0	72	.06	2	.4	.5	12	GLN
		23	0 5	50.76	18	50.61	155	11.85	11.96		1.1	26	2	269	.16	49	3.6	6.4	26	PPL
		23	0 9	37.83	19	19.39	155	7.83	9.97	2.3	2.4	30	0	101	.11	4	.7	.4	29	UER
		23	1 3	52.29	19	13.82	155	1.40	43.87		1.3	31	2	222	.05	12	1.1	1.3	29	DIS
		23	1 9	32.12	19	23.53	155	14.87	3.21	1.4	1.3	13	0	75	.07	2	.4	.5	12	GLN
		23	251	30.83	19	23.40	155	17.07	2.79	1.1	1.1	11	0	59	.05	3	.4	.6	11	SPC
		23	348	55.15	19	20.75	155	6.66	7.85		1.3	24	0	97	.10	4	.5	.8	23	UER
		23	919	47.52	19	19.36	155	12.95	7.97	1.7	1.6	24	0	79	.13	4	.6	.8	22	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	OCT	23	923	15.73	19	22.76	155	14.40	3.54	1.2	1.3	12	0	72	.07	2	.4	.5	11	UER
		23	939	8.53	19	18.95	155	13.39	7.45	1.7	1.4	25	0	77	.10	4	.5	.8	23	POL
		23	1151	34.52	19	19.42	155	12.00	4.17		.9	15	0	93	.11	5	.5	2.1	15	UER
		24	040	43.52	19	25.99	155	24.07	7.64		.9	10	0	88	.09	7	.7	2.1	7	UKF
		24	2 0	42.29	19	23.13	155	14.73	3.25	2.0	2.0	22	0	48	.09	2	.3	.5	21	GLN
		24	514	6.57	19	11.50	155	21.32	45.68		1.2	18	0	170	.09	13	1.1	3.4	17	LSW T
		24	515	13.80	19	11.35	155	20.42	45.40	2.5		20	0	174	.09	13	1.2	3.6	20	HLP T
		24	516	34.52	19	12.48	155	21.49	45.45			15	0	175	.05	12	2.1	2.7	15	LSW T
		24	652	57.31	19	21.10	155	2.94	7.14	1.8	1.5	26	1	132	.11	2	.7	.7	23	MER
		24	1110	51.96	19	23.00	155	14.66	3.29	1.2	1.5	10	0	91	.10	2	.5	.7	8	UER
		24	1139	50.46	19	23.44	155	17.02	2.71	1.3	1.6	14	2	61	.06	3	.3	.5	11	SPC
		24	1220	52.67	19	23.10	155	17.02	2.66	1.3	1.2	12	1	64	.04	2	.3	.5	7	SPC
		24	1256	14.46	19	20.24	155	9.52	8.27	1.9	1.9	27	0	78	.10	3	.5	.7	20	UER
		24	1529	43.35	19	20.79	155	11.14	8.86	2.6	2.9	33	2	73	.11	3	.4	.6	28	UER
		24	1831	47.99	19	23.11	155	16.96	2.87	1.3	1.5	15	1	63	.08	2	.4	.5	7	SPC
		24	2233	5.44	19	21.66	155	18.37	3.00	1.2	1.1	8	0	77	.06	3	.8	1.6	7	KOA
		25	2 6	29.60	19	26.68	155	28.26	6.61	2.0	1.6	28	2	50	.10	8	.4	1.5	22	UKF
		25	213	47.46	19	23.35	155	17.00	2.58	.8	1.0	9	1	75	.07	3	.4	.6	5	SPC
		25	545	10.01	19	22.28	155	.35	8.42	2.0	1.4	25	2	182	.11	6	.8	.5	20	LER
		25	7 4	17.02	19	20.12	155	8.53	7.41	1.9	1.8	31	1	76	.11	4	.5	.9	23	UER
		25	735	42.65	19	26.12	154	56.76	4.94	2.2	1.4	24	2	176	.13	4	.8	1.1	18	LER
		25	1817	57.70	19	25.40	155	20.98	9.67	1.9	1.3	12	0	115	.09	6	.7	2.5	11	UKF
		25	2018	42.94	19	24.33	155	16.33	2.79	1.5	1.5	9	1	126	.08	3	.4	.5	6	SPC
		25	21 8	23.29	19	23.96	155	15.11	3.92	2.0	1.8	16	0	98	.10	2	.4	.6	15	SPC
		25	2140	47.98	19	12.47	155	9.92	46.43	2.1	1.4	27	1	218	.07	10	1.5	2.1	26	POL
		25	2152	40.37	19	23.06	155	17.15	2.56	1.0	1.2	12	1	66	.06	3	.3	.6	10	SPC
		25	2359	25.39	19	21.09	155	2.73	8.52	1.9	1.5	15	0	143	.07	2	1.2	.7	11	MER
		26	044	31.12	19	13.60	155	20.90	40.90		1.3	21	0	167	.12	9	1.8	3.2	18	HLP
		26	114	4.73	19	23.67	155	14.95	3.00	1.1	.9	12	1	82	.07	2	.4	.5	9	GLN
		26	133	15.01	19	23.12	155	17.01	2.94	1.2	1.4	13	1	58	.06	2	.4	.5	11	SPC
		26	239	6.17	19	19.94	155	9.72	8.09		.9	20	0	99	.09	4	.6	.9	19	UER
		26	244	51.48	19	24.77	155	25.13	7.68	2.0	1.1	26	1	68	.11	6	.4	1.3	22	UKF
		26	535	21.40	19	22.13	155	17.31	3.16	1.2	1.2	11	1	101	.09	3	.4	.8	10	KOA
		26	540	54.80	19	24.61	155	26.35	7.27	1.7	1.4	22	0	50	.10	5	.4	1.4	22	UKF
		26	545	22.99	19	20.27	155	6.77	7.90	2.0	1.3	23	0	107	.11	5	.6	.9	22	UER
		26	8 1	35.25	19	23.01	155	17.10	2.89	1.6	1.6	15	1	63	.06	2	.3	.6	12	SPC
		26	851	35.88	19	22.98	155	17.10	2.34	.9	1.0	9	1	75	.08	2	.4	.7	6	KOA
		26	931	15.09	19	22.97	155	16.82	2.48	.9	1.0	8	0	68	.07	2	.4	.6	6	KOA
		26	1351	15.66	19	22.47	155	4.40	7.68	1.7	1.2	19	0	88	.13	3	.6	1.1	15	MER
		26	1953	51.77	19	19.97	155	11.28	8.37		1.2	25	0	87	.09	5	.5	.8	22	UER
		26	2227	30.87	19	18.70	155	23.54	4.06	1.4	1.7	19	0	120	.10	3	.5	1.1	14	SWR
		26	2328	24.75	19	21.26	155	1.96	8.30	2.5	2.8	28	1	169	.08	3	.7	.6	26	MER
		27	555	14.06	19	19.88	155	11.11	7.29	1.9	1.1	24	0	89	.08	5	.5	1.0	22	UER
		27	825	43.27	19	17.93	155	15.66	7.40	2.3	1.6	26	0	149	.11	4	.5	.8	20	KOA
		27	1315	38.81	19	21.95	155	5.77	6.81	2.2	2.2	26	0	78	.12	2	.5	1.0	22	MER
		27	14 0	2.28	19	20.50	155	10.34	8.27	2.1	2.2	21	0	88	.13	3	.7	1.0	19	UER
		27	1458	17.17	19	26.93	155	50.00	10.69	2.7	2.6	27	0	105	.18	10	.7	.6	25	KON
		27	1914	36.82	19	19.67	155	11.96	8.13	2.4	2.5	31	0	88	.10	6	.5	.7	27	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	OCT	28	011	30.20	19	19.40	155	15.10	6.96	1.9	1.8	27	1	101	.12	4	.5	.8	24	KOA	
		28	318	42.01	19	19.83	155	11.94	9.43	2.9	2.9	38	2	85	.13	6	.4	.4	32	UER	
		28	434	50.87	19	24.36	155	22.98	8.98	2.3	2.3	32	1	51	.10	8	.4	.7	28	UKF	
		28	836	49.35	19	19.92	155	15.85	37.10	3.1	3.2	34	0	87	.09	3	.7	1.5	31	DEP	
		28	1018	18.92	19	18.29	155	14.56	8.07	1.9	1.3	21	1	121	.10	3	.6	.8	18	POL	
		28	1254	6.03	19	21.11	155	6.80	7.70	2.1	1.9	27	2	89	.08	4	.4	.8	24	UER	
		28	1327	54.75	19	23.11	155	17.02	3.27	2.1	2.3	28	2	47	.11	2	.3	.5	25	SPC	
		28	1336	7.77	19	23.44	155	17.21	2.76	1.3	1.9	17	1	57	.08	3	.3	.5	14	SPC	
		28	1429	47.23	19	17.49	155	12.85	10.76	2.0	2.0	27	0	150	.09	9	.7	.6	26	POL	
		28	1637	20.25	19	22.38	155	.09	6.76	2.1	2.0	23	0	185	.13	6	.8	.5	20	LER	
		28	1853	33.20	19	24.92	155	26.38	10.44	2.4	2.1	30	0	59	.17	10	.6	.8	27	UKF	
		28	20	8	45.85	19	16.00	155	32.53	8.58		1.3	24	0	117	.15	8	.7	1.1	19	HEA
		28	2023	30.58	19	18.76	155	22.29	4.59	1.6	1.9	19	1	178	.09	3	.7	1.2	17	SWR	
		28	2215	49.71	20	6.94	155	39.07	13.62	2.5	1.8	24	1	284	.17	41	4.8	10.7	23	KOH	*
		29	339	14.15	19	23.75	155	16.75	17.79	2.3	2.3	33	1	43	.10	2	.5	.8	31	INT	
		29	8	0	43.93	19	24.20	155	28.81	9.33	1.9	1.7	24	1	75	.11	4	.5	1.2	20	UKF
		29	1319	24.19	19	19.94	155	3.76	7.82	2.0	1.8	23	0	146	.10	1	.8	.7	23	MER	
		29	1345	52.77	19	23.41	155	16.90	2.68	1.1	1.3	7	0	128	.05	3	.5	.6	6	SPC	
		29	1357	44.59	19	31.31	155	37.49	8.25		1.6	9	0	163	.02	5	.7	1.0	8	MOK	
		29	1415	42.99	19	29.74	155	24.08	7.24	2.1	1.7	21	0	95	.13	1	.6	1.1	19	NER	
		29	1625	22.29	19	21.78	155	.77	2.79		.8	12	0	184	.13	5	.8	1.7	11	LER	
		29	1643	32.27	19	26.10	155	21.63	12.04	2.3	2.3	30	1	47	.09	7	.3	.4	27	INT	
		29	1816	40.67	19	26.90	155	21.52	6.96	2.3	1.8	23	1	49	.11	6	.4	1.2	20	UKF	
		29	1817	22.08	19	19.60	155	8.64	7.61	2.1	2.0	24	0	78	.10	4	.5	.7	24	UER	
		29	1852	45.80	19	24.05	155	2.01	7.36		1.1	17	0	123	.07	4	.6	.6	16	MER	
		29	2126	15.17	19	20.08	155	11.50	7.82	1.7	1.3	20	0	91	.08	5	.5	.7	20	UER	
		29	2354	53.75	19	19.83	155	9.95	7.30		1.2	15	0	140	.09	4	.7	1.1	14	UER	
		30	138	23.05	19	19.20	155	12.55	7.95	2.1	2.0	34	0	89	.13	4	.4	.6	30	UER	
		30	141	59.22	19	23.17	155	14.95	3.25	1.8	1.7	14	0	69	.05	2	.3	.5	14	GLN	
		30	229	9.13	19	23.09	155	14.90	3.27	1.1	1.0	9	0	83	.06	2	.5	.7	7	GLN	
		30	410	59.54	19	23.08	155	3.79	8.11	2.6	2.6	32	1	99	.11	3	.5	.5	27	MER	
		30	715	17.42	19	19.65	155	10.82	7.45		1.3	21	0	94	.10	5	.5	1.1	20	UER	
		30	956	45.37	19	21.50	155	25.82	10.26		2.4	28	0	93	.10	4	.5	.8	25	HEA	
		30	15	1	18.18	19	21.35	155	2.52	7.56		1.4	22	0	148	.14	3	.9	.7	21	MER
		30	1521	32.55	19	21.83	155	18.11	3.68	1.6	1.3	14	0	64	.14	3	.5	1.3	14	KOA	
		30	16	9	3.04	19	22.15	155	5.78	6.97	2.1	2.0	29	2	75	.11	2	.4	.9	23	MER
		30	1935	11.68	19	53.07	156	20.68	.02	4.2	4.3	39	1	281	.13	57	2.3	.9	37	DIS	F*
		30	22	8	4.27	19	20.25	155	11.16	9.54	2.6	2.5	33	1	81	.10	4	.5	.5	31	UER
		30	2315	38.72	19	21.28	155	4.68	7.84	2.0	1.4	24	0	90	.12	4	.6	.7	23	MER
		31	020	43.88	19	26.80	155	27.30	10.85	2.4	2.1	35	1	46	.13	8	.4	.6	34	UKF
		31	253	1.79	19	22.04	155	2.21	7.63	2.3	2.3	28	1	148	.14	4	.7	.5	22	MER
		31	523	30.09	19	58.43	155	47.87	10.44	3.0	2.7	39	2	172	.16	17	.8	1.1	35	KOH
		31	526	11.79	19	21.56	155	2.42	7.30	1.9	1.4	25	0	148	.11	3	.7	.5	23	MER
		31	829	45.10	19	20.50	155	6.65	9.07	1.8	1.6	25	0	103	.09	5	.6	1.0	24	UER
		31	12	6	43.20	19	45.68	155	27.18	2.93	2.3	2.4	7	0	139	.07	2	1.3	1.2	7	KKU B
		31	1229	15.12	19	19.84	155	8.03	8.51	1.9	2.0	27	0	89	.08	5	.6	.6	27	UER	
		31	1248	53.57	19	20.19	155	12.20	6.41	1.6	1.5	19	0	76	.09	5	.6	1.3	18	UER	
		31	1347	56.38	19	15.44	155	34.66	4.26	2.5	1.9	17	0	173	.17	4	1.3	2.8	17	HEA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	OCT	31	1549	34.96	20	.30	155	48.68	14.09	2.5	1.9	29	2	299	.08	35	2.5	2.5	27	KOH	
		31	1648	15.71	19	24.98	155	24.18	9.55	2.3	1.8	29	1	43	.09	8	.4	.9	24	UKF	
		31	1657	50.71	19	17.74	154	59.38	39.29	3.0	3.0	36	0	218	.09	7	1.7	1.9	33	DIS	
		31	17	3	34.28	19	20.88	155	5.82	7.19	1.9	1.6	20	0	101	.09	4	.5	.8	19	MER
		31	1720	21.08	18	55.37	155	10.61	14.00		1.1	27	2	258	.20	40	2.7	10.2	27	PPL	
		31	1734	26.75	19	20.15	155	11.00	7.00	1.7	1.2	19	0	83	.08	4	.5	1.1	17	UER	
		31	2025	16.60	19	26.35	155	24.00	7.36	2.1	1.8	37	2	36	.12	7	.3	1.0	33	UKF	
		31	21	1	49.63	19	22.29	155	28.80	8.72	1.9	1.4	26	0	62	.15	2	.5	1.0	23	UKF
	NOV	1	023	6.25	19	19.10	155	13.20	5.73	1.6	1.7	24	0	78	.12	4	.5	1.2	22	UER	
		1	135	6.99	19	20.74	155	5.97	8.56	2.7	2.9	33	1	104	.11	4	.6	.5	31	MER	
		1	427	53.09	19	20.61	155	4.14	8.38	2.4	2.7	31	1	107	.09	2	.6	.4	27	MER	
		1	533	28.34	19	22.96	155	16.92	2.17	.9	.9	9	1	73	.10	2	.4	.7	6	KOA	
		1	9	5	54.26	19	19.57	155	10.98	7.86	2.0	1.9	29	1	96	.09	5	.4	.6	26	UER
		1	921	45.26	19	20.32	155	12.52	8.82	2.4	2.3	32	1	72	.11	4	.4	.7	27	UER	
		1	1241	31.41	19	21.11	155	14.54	7.12	1.2	1.1	22	0	66	.12	3	.5	.8	20	UER	
		1	1411	38.69	19	23.13	155	16.95	3.04	1.4	1.5	13	1	62	.05	2	.3	.5	7	SPC	
		1	1423	22.60	19	19.89	155	11.63	6.60	1.9	1.3	22	0	86	.10	5	.5	1.1	18	UER	
		1	1750	21.45	19	17.89	155	14.86	6.93	1.7	1.4	20	0	140	.11	3	.7	.8	18	POL	
		1	1752	21.57	19	21.71	155	2.00	7.79	2.1	2.2	27	1	185	.12	7	.9	.6	24	MER	
		1	18	0	9.41	19	23.11	155	17.09	.61	2.1	2.5	26	2	48	.11	2	.3	.6	23	SPC
		1	22	3	32.28	19	27.82	155	27.39	9.07	2.1	1.7	20	1	48	.10	8	.4	.8	17	UKF
		2	437	41.89	19	23.45	155	16.92	3.15	1.3	1.5	15	1	69	.09	3	.4	.6	10	SPC	
		2	457	16.95	19	22.88	155	14.71	1.67	1.5	1.8	13	1	69	.06	2	.3	.4	9	UER	
		2	9	5	57.01	19	20.50	155	4.20	8.23	2.4	2.2	29	1	114	.09	2	.6	.5	26	MER
		2	911	19.55	19	13.56	155	30.49	34.37		1.6	28	0	71	.05	9	.7	1.9	27	LSW	
		2	1014	43.35	19	19.24	155	13.09	6.21	1.9	1.3	22	1	79	.11	4	.5	1.2	21	UER	
		2	1249	7.90	19	21.14	155	2.55	6.14	1.9	1.5	21	1	150	.13	2	.6	.9	18	MER	
		2	15	0	5.36	19	20.45	155	6.47	7.19	2.1	1.7	25	0	106	.09	5	.5	.7	25	UER
		2	1519	28.17	19	20.16	155	7.88	6.66	1.9	1.8	26	1	90	.12	5	.6	1.2	25	UER	
		2	1728	46.93	19	20.54	155	11.25	7.40	1.9	1.7	28	0	76	.14	4	.6	.8	28	UER	
		2	1747	19.27	19	25.21	155	26.23	10.13	1.6	1.3	20	0	57	.09	6	.5	1.4	19	UKF	
		2	1758	8.10	19	26.51	154	55.93	4.82	1.5	1.2	14	0	197	.16	2	1.8	1.7	13	LER	
		2	2110	11.87	19	20.61	155	12.88	7.08	1.8	1.5	29	1	65	.12	4	.5	.7	28	UER	
		3	0	9	43.92	19	19.12	155	13.64	6.01	1.7	1.5	26	0	82	.14	4	.6	1.1	24	UER
		3	134	40.65	19	20.16	155	25.17	9.01	1.8	1.4	23	0	137	.10	3	.5	.9	22	HEA	
		3	226	11.22	20	36.29	155	56.66	8.13	2.8	2.8	17	3	196	.10	37	1.6	1.8	15	DIS	
		3	3	7	7.60	19	14.20	155	22.50	33.22		2.1	12	0	213	.15	11	2.4	4.7	12	LSW
		3	422	18.43	19	23.74	155	15.39	3.16	1.3	1.3	9	0	96	.07	3	.5	.7	9	SPC	
		3	436	20.22	19	18.44	155	13.76	8.01	1.6	1.6	26	1	93	.12	3	.5	.7	25	POL	
		3	551	43.80	19	22.93	155	14.68	3.39	1.7	1.7	17	1	57	.08	2	.4	.5	16	UER	
		3	610	42.17	19	23.21	155	14.79	3.69	1.2	1.1	8	0	105	.03	2	.5	.7	8	GLN	
		3	625	16.75	19	23.35	155	14.78	2.66	1.4	1.3	10	0	100	.24	3	.7	.9	9	GLN	
		3	658	3.13	19	17.08	155	15.92	10.73	3.3	3.3	35	1	141	.11	4	.6	.5	33	KOA	
		3	755	6.12	19	17.62	155	16.11	8.15	2.1	2.0	27	0	160	.10	4	.6	.8	26	KOA	
		3	10	8	31.88	19	22.96	155	16.93	3.53	2.5	3.0	31	1	48	.09	2	.3	.5	30	KOA
		3	1046	22.45	19	22.91	155	17.15	2.68	1.3	1.0	12	1	72	.09	2	.3	.6	10	KOA	
		3	11	9	7.31	19	23.23	155	14.69	1.28	1.5	1.3	10	0	73	.10	3	.3	.5	10	GLN
		3	1210		.51	19	23.05	155	14.60	3.85	2.3	2.6	26	0	48	.08	3	.4	.6	26	GLN

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	NOV	3	1310	24.88	19	17.97	155	15.88	7.54	2.2	2.1	25	0	150	.09	5	.5	.7	24	KOA
		3	1412	17.57	19	19.37	155	11.44	6.99	2.3	2.1	32	2	99	.13	6	.5	.8	30	UER
		3	1517	24.60	19	20.26	155	12.48	7.72		1.2	19	0	72	.12	5	.6	1.1	19	UER
		3	1650	51.93	19	22.02	155	17.32	3.23	1.6	1.2	11	1	102	.13	3	.5	1.0	9	KOA
		3	1748	21.77	19	26.91	155	21.70	7.27	1.7	.9	11	1	92	.12	6	.7	1.8	10	UKF
		3	18 9	51.64	20	3.51	155	38.74	13.10	3.0	2.4	29	1	181	.10	16	1.2	.9	25	KOH F
		3	2030	8.68	19	20.64	155	6.78	7.19	1.9	1.4	24	0	98	.10	4	.5	.9	23	UER
		3	2045	21.20	19	22.95	155	16.72	3.01	2.4	2.7	28	1	47	.10	2	.3	.5	27	KOA
		3	22 9	30.52	19	17.35	155	12.82	7.82		1.2	17	0	154	.10	1	.9	.9	17	POL
		3	2239	59.71	19	20.21	155	8.37	6.73	1.9	1.4	22	1	79	.11	4	.5	1.0	20	UER
		3	2254	53.29	19	19.17	155	1.22	37.60	2.3	1.6	30	1	213	.08	3	.8	1.1	29	MER
		4	1 4	31.97	19	23.82	155	28.56	9.74	2.2	1.8	28	0	49	.11	3	.4	.8	26	UKF
		4	118	.49	19	20.65	155	9.78	7.67		1.2	22	0	72	.08	3	.5	.9	22	UER
		4	210	33.30	19	19.66	155	11.36	10.15	3.0	3.2	35	0	93	.08	5	.4	.3	33	UER
		4	1312	21.03	19	21.57	155	6.14	7.50	2.1	1.6	27	2	85	.10	3	.4	.8	23	UER
		4	1328	39.82	19	22.30	155	19.51	4.09	1.3	1.0	8	1	221	.16	6	1.9	4.0	5	UKF
		4	1410	10.97	19	25.28	155	28.16	10.18	2.0	1.3	24	1	48	.08	5	.4	.8	21	UKF
		4	1821	52.52	19	19.27	155	11.86	8.08	2.4	2.6	27	1	98	.08	5	.4	.6	24	UER
		4	1958	30.55	19	19.93	155	18.84	5.11	1.8	1.9	14	0	100	.23	3	1.2	2.5	13	KOA
		4	2013	23.05	19	20.56	155	9.63	8.32	1.9	1.4	25	1	73	.13	3	.5	1.0	23	UER
		4	2147	28.56	19	20.17	155	11.53	6.81	1.8	1.3	21	0	82	.12	5	.5	1.0	19	UER
		4	2220	19.35	19	21.33	155	14.82	9.75	2.6	2.8	32	1	64	.08	3	.4	.5	29	UER
		4	2236	22.50	19	20.96	155	6.53	8.04	2.7	2.7	30	0	94	.13	4	.5	.8	29	UER
		5	340	20.29	19	19.33	155	11.16	6.50	1.9	1.3	23	0	101	.11	6	.6	1.0	23	UER
		5	5 5	28.40	19	20.46	155	7.08	7.96	2.5	2.6	31	0	98	.11	5	.5	.7	29	UER
		5	543	9.20	19	17.77	155	12.81	7.80	1.7	1.3	19	0	125	.12	2	.9	1.0	16	POL
		5	16 5	48.16	19	21.47	155	.88	4.95	2.5	3.2	30	1	189	.11	5	.7	1.1	25	LER
		5	17 2	37.79	19	20.01	155	10.38	8.12	1.7	1.6	23	0	86	.07	4	.5	.7	23	UER
		5	1744	36.23	19	19.27	155	15.35	7.78	1.9	1.5	25	0	107	.09	4	.5	.7	21	KOA
		5	1912	20.99	19	21.56	155	5.32	7.70	1.9	1.5	28	0	85	.10	3	.4	.8	27	MER
		5	22 5	5.45	19	20.25	155	11.35	8.57	2.1	1.8	27	0	80	.11	4	.4	.7	25	UER
		6	234	56.29	19	16.38	155	12.46	6.07	1.6	1.3	21	0	209	.11	2	.9	1.2	21	POL
		6	310	38.37	19	19.39	155	13.22	9.14	1.7	1.6	29	0	74	.10	4	.5	.4	22	UER
		6	411	26.84	19	19.19	155	16.23	9.60	2.2	2.0	29	1	113	.09	3	.5	.6	21	KOA
		6	459	43.12	19	57.24	155	31.76	44.60	2.9	2.6	35	1	163	.07	21	.7	1.9	34	KOH
		6	1329	30.56	19	26.80	155	21.65	8.98	2.0	1.2	18	1	76	.13	6	.6	1.0	16	UKF
		6	1832	31.19	19	20.92	155	2.61	5.23	2.1	1.2	22	0	151	.13	2	.7	1.3	19	MER
		6	2051	28.19	19	20.68	155	7.15	7.70	2.0	1.2	26	0	93	.12	5	.5	.9	26	UER
		7	244	40.03	19	19.31	155	21.77	3.93	1.6	1.1	11	0	187	.07	3	.9	1.3	11	SWR
		7	314	38.82	19	18.10	155	23.94	8.64	2.2	2.5	32	1	108	.14	4	.4	.7	31	SWR
		7	1459	49.29	19	20.26	155	11.46	7.51	1.8	1.1	22	1	80	.12	4	.5	1.1	18	UER
		7	1533	23.27	19	21.73	155	18.31	2.55	1.6	1.5	20	1	56	.08	3	.3	.8	18	KOA
		7	1717	13.54	19	21.53	155	5.25	7.49	1.9	1.4	27	0	86	.10	3	.5	.7	25	MER
		7	19 0	13.22	19	23.52	155	17.06	2.51	1.2	1.4	12	1	59	.07	3	.4	.5	11	SPC
		7	20 3	13.99	19	22.51	155	29.78	7.56	1.9	.9	27	0	90	.13	4	.5	1.1	24	UKF
		7	2110	44.31	19	19.71	155	8.65	7.05	1.8	1.1	28	0	77	.11	5	.5	.8	25	UER
		8	113	39.43	19	20.48	155	18.72	31.60	2.6	2.2	38	2	53	.10	2	.6	1.1	34	DEP
		8	232	10.79	19	20.57	155	9.05	6.84	1.6	1.1	26	0	68	.12	3	.5	1.0	26	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	NOV	8	635	.54	19	21.48	155	6.08	8.12	2.4	2.5	32	0	87	.10	3	.5	.7	29	UER
		8	920	55.98	19	20.05	155	8.63	8.23	1.8	1.5	26	0	75	.10	4	.5	.8	25	UER
		8	1359	40.53	19	21.51	155	5.85	7.62	2.4	2.2	29	0	86	.11	3	.5	.7	26	MER
		8	1734	44.72	19	21.25	155	6.90	7.56	2.4	2.0	33	1	86	.12	3	.4	.6	29	UER
		8	1812	34.78	19	17.90	155	16.55	7.57	1.9	1.1	24	0	156	.10	4	.6	.8	24	KOA
		8	22 6	58.65	19	21.75	155	12.72	2.34	1.9	1.6	16	0	65	.15	2	.5	.7	15	UER
		8	2237	44.39	19	18.96	155	15.20	9.19	2.2	1.6	25	0	115	.08	4	.5	.6	24	KOA
		9	0 7	3.52	19	18.85	155	4.14	41.36	2.4	1.7	33	0	195	.08	7	1.2	1.9	31	MER
		9	559	33.28	19	26.94	155	29.22	9.87	2.6	2.3	38	1	47	.13	9	.4	.7	35	UKF
		9	630	44.60	19	21.79	155	17.91	3.18	1.4	1.2	16	1	62	.08	3	.4	.8	14	KOA
		9	1317	36.17	19	20.44	155	13.01	8.18	2.2	1.9	27	0	66	.13	4	.5	.7	27	UER
		9	17 3	.16	19	23.12	155	17.36	2.42	1.2	1.6	11	1	64	.04	3	.3	.6	6	SPC
		9	1858	1.38	19	24.57	155	24.70	10.26	2.4	2.0	31	0	59	.12	6	.5	.7	27	UKF
		9	19 6	38.75	19	20.11	155	13.06	9.11	2.0	2.4	29	0	69	.08	5	.4	.5	27	UER
		9	2016	56.68	19	23.65	155	24.92	8.49	1.3	1.2	21	0	78	.11	5	.5	1.1	20	UKF
		9	2022	48.35	19	20.29	155	8.59	7.08	1.8	1.8	25	1	75	.08	4	.4	.7	23	UER
		10	311	7.99	19	22.48	155	16.64	3.56	1.6	1.4	9	0	101	.14	1	.6	.9	7	KOA
		10	347	47.65	19	31.37	155	41.17	.30		.8	18	1	107	.20	8	.8	1.5	13	MOK *
		10	359	57.39	19	16.80	155	25.63	7.00	1.9	1.7	26	1	109	.12	8	.4	.9	20	HEA
		10	6 5	20.64	20	16.17	156	23.71	12.28	2.3	2.0	30	4	222	.21	57	1.7	3.7	21	DIS
		10	648	18.33	19	19.48	155	8.98	7.65	1.9	2.2	28	0	85	.12	4	.5	1.0	27	UER
		10	8 9	23.20	19	21.09	155	1.24	6.84	2.0	1.4	22	1	191	.10	4	.7	.7	18	MER
		10	1053	42.81	19	21.78	155	16.78	31.01	2.1	1.8	35	1	54	.09	2	.6	1.1	33	DEP
		10	1332	12.64	19	20.54	155	12.84	9.01	2.0	2.1	23	0	66	.10	4	.5	.8	21	UER
		10	1347	50.19	19	20.15	155	7.38	9.11	2.3	2.3	29	2	99	.09	5	.5	.5	24	UER
		10	1643	56.43	19	11.77	155	40.58	3.18	2.5	2.6	25	1	191	.24	8	1.5	3.4	21	HEA
		10	18 8	16.11	19	22.89	155	16.93	2.78	1.2	1.8	12	1	73	.09	2	.4	.6	9	KOA
		10	21 6	30.93	19	20.90	155	12.67	7.93	1.9	1.6	27	0	63	.13	3	.5	.7	24	UER
		10	2131	24.71	19	20.42	155	6.39	7.20	2.0	1.2	24	0	108	.09	5	.5	.9	21	UER
		11	025	33.60	19	21.46	155	15.05	10.84	3.5	3.4	34	0	64	.09	2	.5	.4	32	KOA F
		11	3 5	51.23	19	23.37	155	14.99	2.93	1.1	1.2	14	1	75	.12	2	.4	.6	11	GLN
		11	313	28.64	19	23.10	155	16.90	2.48	1.0	1.2	9	1	74	.06	2	.4	.6	6	SPC
		11	626	26.32	19	20.12	155	11.34	7.60		1.2	21	0	84	.11	4	.6	1.1	19	UER
		11	1143	55.85	19	23.08	155	16.89	3.17	2.1	2.1	26	2	47	.08	2	.3	.5	22	SPC
		11	1230	29.23	19	24.45	155	16.57	10.10	2.2	1.4	15	1	106	.08	1	.7	1.0	14	LPC
		11	1319	28.32	19	20.41	155	12.76	9.51	2.4	2.7	25	1	69	.09	4	.4	.6	24	UER
		11	1524	30.17	19	22.84	155	14.42	3.22	1.9	1.9	18	1	51	.10	2	.4	.5	15	UER
		11	1525	48.33	19	23.54	155	16.87	3.00	2.1	2.4	19	2	45	.08	3	.3	.5	15	SPC
		11	1527	32.71	19	22.78	155	14.57	3.31	1.8	2.0	18	0	70	.10	2	.4	.5	15	UER
		11	2112	17.40	19	20.46	155	12.83	6.88	1.6	1.3	23	0	123	.12	4	.6	.9	22	UER
		11	2116	7.93	19	19.86	155	7.97	8.04	1.9	1.6	27	0	90	.10	5	.6	.7	26	UER
		12	217	27.69	19	20.51	155	9.06	6.36		1.1	24	0	70	.13	3	.6	1.0	19	UER
		12	244	5.10	19	20.38	155	8.52	8.42	2.0	1.6	25	1	74	.09	4	.5	.7	22	UER
		12	4 9	41.03	19	20.15	155	10.53	7.66	2.2	2.1	30	1	83	.17	4	.5	.8	27	UER
		12	624	7.27	19	21.57	155	5.56	7.06	2.0	1.3	24	0	86	.14	3	.5	.8	20	MER
		12	1020	58.11	19	20.41	155	9.39	7.66	1.9	1.6	27	0	73	.09	3	.5	.8	27	UER
		12	1322	32.33	19	23.51	155	16.74	2.72	1.3	1.2	12	0	70	.09	3	.4	.5	12	SPC
		12	1523	42.34	19	28.02	155	22.07	8.53	2.2	1.4	22	1	97	.12	4	.6	1.3	19	UKF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	NOV	12	1529	54.31	19	27.75	155	22.01	5.42	1.9	1.0	21	0	78	.09	4	.5	1.8	20	UKF	
		12	2135	1.75	19	23.65	155	16.72	3.08	2.0	1.8	21	0	72	.08	2	.4	.5	21	SPC	
		12	2246	30.46	19	18.80	155	15.31	10.32	2.2	1.7	26	0	121	.10	4	.6	.6	26	KOA	
		13	128	33.22	19	23.54	155	1.24	9.51	2.3	1.6	30	0	148	.06	5	.7	.4	30	MER	
		13	242	1.70	19	22.34	155	17.27	2.46	1.5	1.0	13	1	92	.09	2	.4	.8	12	KOA	
		13	520	37.42	19	19.40	155	21.87	5.00	1.8	1.4	19	0	139	.10	3	.7	1.4	19	SWR	
		13	9 8	31.86	19	22.95	155	16.36	.01	2.2	2.5	19	1	65	.27	1	.4	.8	18	KOA	*
		13	917	7.95	19	23.27	155	17.65	5.20		1.1	5	0	205	.12	3	1.9	3.6	5	SPC	
		13	919	9.59	19	23.03	155	16.90	3.11		1.3	11	0	74	.06	2	.4	.6	11	SPC	
		13	10 4	24.09	19	21.85	155	13.09	3.49	2.1	2.1	25	0	53	.10	1	.4	.6	24	UER	
		13	1012	20.67	19	22.00	155	13.30	3.73	1.4	1.0	13	0	92	.05	5	.4	1.2	13	UER	
		13	1013	50.48	19	20.68	155	7.28	8.72	2.3	2.3	28	0	91	.07	5	.5	.5	26	UER	
		13	1541	17.10	19	20.16	155	12.67	7.13	1.6	1.1	22	0	72	.10	5	.5	1.0	19	UER	
		13	16 2	52.58	19	24.92	155	16.37	2.53	1.3	1.1	6	0	149	.13	1	1.0	.7	5	SPC	L
		13	1653	56.03	19	26.73	155	20.93	4.41	1.8	1.1	17	0	77	.11	7	.5	6.4	17	UKF	
		13	1749	31.66	19	22.73	155	14.33	3.44	1.6	1.1	15	0	72	.06	2	.4	.5	14	UER	
		13	1759	18.22	19	23.24	155	17.22	2.29	1.4	1.4	12	1	69	.09	3	.4	.6	11	SPC	
		13	18 6	39.25	19	22.89	155	17.03	2.88	2.0	2.1	26	1	49	.08	2	.3	.5	25	KOA	
		13	2138	57.13	19	20.70	155	18.40	4.08	1.4	1.0	15	0	80	.08	2	.4	.9	14	KOA	
		14	744	4.52	19	19.95	155	11.60	8.19	1.9	1.4	28	2	86	.10	5	.4	.6	26	UER	
		14	1156	37.11	19	20.27	155	13.06	6.81		1.0	23	1	126	.12	4	.6	.9	22	UER	
		14	1445	38.67	19	19.25	155	13.01	7.03		1.1	19	0	80	.10	4	.6	1.2	19	UER	
		14	1828	20.62	19	20.42	155	12.98	7.21	1.6	1.3	21	1	66	.13	4	.6	1.1	17	UER	
		14	2118	36.59	19	19.90	155	13.28	5.71		1.1	19	0	68	.11	5	.5	1.5	19	UER	
		14	22 2	12.50	19	20.16	155	11.32	7.15	1.9	1.1	22	0	82	.10	4	.5	1.0	21	UER	
		15	0 6	33.73	19	23.31	155	14.93	3.55	1.2	1.0	7	0	103	.02	2	.7	.6	6	GLN	
		15	013	10.75	19	23.36	155	16.73	3.95	2.4	2.6	21	0	101	.07	2	.4	.7	20	SPC	
		15	019	22.83	19	19.49	155	7.94	8.23	2.1	1.6	27	0	97	.09	4	.5	.7	27	UER	
		15	1 3	20.01	19	23.23	155	15.01	2.99		1.1	6	0	158	.05	2	.8	.5	6	SPC	
		15	1 5	39.14	19	22.30	155	14.33	2.71	1.6	1.1	13	1	118	.13	2	.4	.4	12	UER	
		15	134	5.47	19	23.27	155	14.84	3.57	1.6	1.5	14	0	69	.08	2	.4	.5	14	GLN	
		15	136	48.60	19	21.83	155	6.32	7.32		1.1	23	0	80	.10	2	.5	.8	22	UER	
		15	140	29.33	19	22.83	155	14.69	3.07	1.1	1.2	12	0	69	.08	2	.5	.4	11	UER	
		15	158	7.55	19	23.13	155	14.79	3.33	1.9	1.7	15	1	64	.06	2	.3	.5	14	GLN	
		15	159	36.16	19	23.15	155	14.82	3.47	1.1	.9	7	0	143	.04	2	.7	.6	7	GLN	
		15	212	51.61	19	23.27	155	15.00	2.78	1.0	1.0	4	0	159	.01	2	.7	1.0	4	GLN	
		15	233	17.07	19	29.34	155	23.96	6.67	2.1	.9	12	0	57	.13	1	.8	1.3	12	NER	
		15	413	.88	19	23.19	155	14.63	3.60	3.4	3.7	33	0	47	.11	3	.4	.5	32	GLN	F
		15	415	5.66	19	23.36	155	14.98	2.88	1.8	1.1	11	1	75	.07	2	.4	.5	10	GLN	
		15	424	2.58	19	23.00	155	14.70	3.03	1.2	.9	11	0	114	.07	2	.6	.4	11	UER	
		15	512	20.02	19	23.53	155	14.95	3.80	2.5	2.8	29	1	45	.09	2	.4	.6	26	GLN	
		15	610	3.28	19	18.99	155	15.84	6.54	1.6	1.2	22	0	119	.11	3	.5	.8	22	KOA	
		15	637	34.55	19	22.33	155	5.61	7.51	2.2	1.7	25	1	72	.10	2	.4	.7	22	MER	
		15	745	18.72	19	13.77	155	20.22	41.38	1.5	1.4	14	0	203	.08	13	1.9	3.8	14	HLP	
		15	10 6	35.46	19	22.30	155	1.60	3.81	2.1	1.2	17	1	159	.10	5	.5	1.6	7	MER	
		15	1044	15.89	19	20.52	155	11.60	7.36	2.1	.8	17	0	134	.06	4	.6	.8	8	UER	
		15	1045	21.25	19	18.56	155	10.95	2.01		.9	10	1	220	.11	7	1.2	1.7	7	POL	
		15	1550	42.34	19	20.13	155	13.55	8.97	1.4	1.0	9	0	179	.03	5	1.0	1.6	4	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	NOV	15	20 5	1.43	19	22.37	155	2.04	3.41	1.9	1.4	20	1	148	.16	5	.5	1.3	10	MER	
		15	2019	5.13	19	13.68	155	15.64	41.74		1.1	15	2	232	.07	12	1.2	1.3	7	HLP	
		15	2027	1.99	19	23.62	155	15.07	3.12	1.0	.8	7	0	95	.02	2	.5	.8	4	SPC	
		15	2048	26.94	19	20.07	155	11.86	9.37	2.7	2.6	36	1	81	.09	5	.4	.6	27	UER	
		15	2111	45.82	19	22.73	155	13.96	1.66	1.2	1.5	6	0	133	.07	2	.6	.4	4	UER	
		15	2119	7.21	19	22.09	155	13.62	2.98	1.4	.8	13	0	139	.06	1	.5	.3	6	UER	
		15	2122	27.51	19	21.96	155	13.48	2.85	1.0	.8	8	0	156	.04	1	.6	.5	6	UER	
		15	2123	53.10	19	21.99	155	13.38	2.89	1.2	.2	6	0	143	.03	1	.7	.5	4	UER	
		15	2125	45.25	19	21.77	155	13.22	2.83	1.2	.9	12	0	150	.08	2	.8	.5	11	UER	
		15	2130	7.26	19	23.43	155	13.33	2.78	1.1	.4	8	0	88	.07	2	.5	.4	5	GLN	
		15	2132	3.96	19	21.89	155	13.08	2.56	1.9	1.9	22	1	52	.08	1	.4	.3	15	UER	
		15	2137	6.02	19	21.65	155	13.37	3.08	1.4	.7	7	0	166	.07	2	.6	.4	4	UER	
		15	2139	41.06	19	22.11	155	13.50	2.72	1.3	.8	12	0	140	.07	1	.6	.3	6	UER	
		15	2140	6.08	19	22.02	155	13.26	2.97	1.0	.4	8	0	156	.05	1	.6	.4	5	UER	
		15	2143	27.19	19	22.22	155	13.35	2.90	1.3	.8	8	0	150	.08	1	1.3	.5	6	UER	
		15	2153	17.08	19	21.79	155	13.10	2.74	1.4	.5	8	0	164	.08	2	.9	.5	7	UER	
		15	2155	30.81	19	21.98	155	13.14	2.76	1.4	.8	12	0	145	.04	1	.7	.3	6	UER	
		15	22 1	48.98	19	22.26	155	13.32	2.58		.8	5	0	148	.04	1	.7	.5	5	UER	
		15	22 2	59.94	19	23.95	155	13.33	2.12	1.2	.9	6	0	149	.06	2	.6	.6	3	GLN	
		15	22 5	56.70	19	21.92	155	13.06	2.89	1.4	1.0	13	0	101	.05	1	.5	.4	10	UER	
		15	22 6	32.88	19	22.61	155	13.02	2.22	1.3	1.0	11	0	129	.11	0	.6	.4	5	UER	
		15	22 7	49.22	19	21.89	155	13.03	2.61	1.2	.9	9	0	148	.07	1	.6	.5	5	UER	
		15	2210	35.22	19	22.14	155	13.19	2.37	1.2	.5	6	0	152	.05	1	.7	.5	4	UER	
		15	2217	11.12	19	21.58	155	12.59	2.77	1.5	1.1	14	0	159	.09	2	.8	.4	7	UER	
		15	2219	9.47	19	22.25	155	13.68	2.93	1.6	.9	11	0	135	.05	1	.5	.5	10	UER	
		15	2221	31.91	19	21.74	155	13.94	.49	1.6		13	0	90	.19	7	.7	4.2	7	UER	*
		15	2222	44.58	19	21.61	155	13.65	1.56	1.6	1.3	15	0	105	.04	2	.5	.5	12	UER	
		15	2236	18.51	19	21.17	155	14.09	1.65	1.8		13	0	111	.03	6	.4	1.6	7	UER	
		15	2237	8.32	19	22.17	155	13.24	3.45	2.9		17	0	92	.09	1	.4	.4	10	UER	
		15	2239	2.00	19	22.14	155	13.93	2.03	1.4	1.3	10	0	136	.08	2	.5	.5	8	UER	
		15	2241	32.57	19	22.04	155	13.98	1.42	2.7	3.2	19	0	85	.09	2	.3	.5	18	UER	
		15	2249	5.34	19	22.25	155	13.20	3.22	1.3	.9	13	0	138	.06	1	.6	.4	6	UER	
		15	2249	55.21	19	21.73	155	13.29	1.19	1.5	1.6	13	0	150	.04	2	.5	.5	9	UER	
		15	2252	32.92	19	22.95	155	14.49	3.31	2.0	1.6	13	0	115	.09	3	.4	.5	9	UER	
		15	2257	39.16	19	22.60	155	13.95	3.19	1.8	1.6	15	0	87	.07	2	.4	.5	12	UER	
		15	2258	42.28	19	21.75	155	13.65	1.49	1.8	2.2	17	0	55	.08	2	.4	.5	14	UER	
		15	23 0	30.86	19	21.67	155	13.82	1.41	.8	1.0	9	0	147	.02	4	.5	.9	7	UER	*
		15	23 7	15.53	19	21.96	155	14.05	1.49	1.4	.9	12	0	140	.04	2	.4	.5	8	UER	
		15	23 9	49.71	19	22.43	155	13.99	3.33	1.1	1.1	6	0	140	.01	2	.4	.6	5	UER	
		15	2310	33.71	19	23.01	155	15.62	1.26	.4	1.1	5	0	168	.02	1	.7	.3	3	SPC	
		15	2312	1.72	19	21.72	155	13.55	1.61	1.6	1.5	10	0	148	.07	2	.5	.5	8	UER	
		15	2312	44.65	19	23.22	155	14.09	.76	1.4	1.3	9	0	98	.18	2	.5	1.0	7	GLN	
		15	2317	11.07	19	22.36	155	13.96	2.85		.9	5	0	142	.01	2	.6	.6	4	UER	
		15	2318	40.13	19	20.66	155	5.77	8.06	1.9	1.8	15	0	163	.09	4	.9	1.3	15	MER	
		15	2321	25.14	19	22.14	155	13.95	1.62	1.3	1.2	8	0	136	.04	2	.6	.4	8	UER	
		15	2325	.38	19	22.46	155	14.23	1.23	1.2	1.3	6	0	151	.03	2	.7	.5	4	UER	
		15	2326	21.80	19	23.13	155	14.69	3.06	1.1	.6	6	0	113	.05	3	.6	.9	4	GLN	
		15	2329	14.60	19	21.93	155	13.84	1.55	1.7	1.3	10	0	142	.04	2	.5	.5	8	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	NOV	15	2332	22.54	19	22.20	155	13.98	.89	2.3	2.9	18	0	82	.06	2	.3	.4	13	UER
		15	2336	28.60	19	22.15	155	12.70	2.70		.8	7	0	155	.05	1	.8	.5	4	UER
		15	2336	50.70	19	22.03	155	13.94	2.92	1.4	1.0	7	0	151	.06	2	.8	.7	5	UER
		15	2339	24.04	19	21.61	155	13.77	1.34	1.6	1.7	11	0	93	.03	2	.4	.6	9	UER
		15	2342	11.89	19	23.15	155	14.90	3.29	1.1	.7	7	0	108	.04	2	.5	.8	7	GLN
		15	2342	40.91	19	22.58	155	14.18	2.89		.1	5	0	144	.02	2	.6	1.0	4	UER
		15	2347	11.73	19	22.34	155	13.87	2.83		.1	5	0	143	.02	2	.7	.9	4	UER
		15	2350	5.47	19	22.31	155	13.67	3.47		.4	7	1	145	.03	1	.7	.7	4	UER
		15	2352	35.77	19	22.11	155	13.11	3.44	1.4	.9	10	0	141	.02	1	.6	.4	6	UER
		15	2354	29.53	19	21.18	155	14.01	1.50	3.4	3.8	25	0	62	.09	3	.2	.6	18	UER
		15	2358	19.58	19	22.89	155	14.53	3.62	2.6	2.5	22	0	65	.08	3	.4	.5	21	UER
		16	0 4	46.15	19	22.27	155	13.30	3.30	1.8	1.8	16	0	89	.06	1	.4	.5	14	UER
		16	0 8	36.52	19	21.77	155	14.05	1.73	1.8	1.6	11	0	88	.02	2	.3	.6	11	UER
		16	010	14.73	19	21.80	155	14.03	1.59	1.3	.5	9	0	143	.02	2	.4	.6	9	UER
		16	017	59.21	19	21.88	155	13.79	1.38			8	0	143	.08	2	.7	.7	2	UER
		16	021	54.75	19	22.99	155	14.37	1.61	1.4	1.3	9	0	119	.07	2	.4	.4	6	UER
		16	023	12.34	19	21.86	155	14.01	1.76	1.9	1.1	8	0	142	.05	2	.5	1.0	7	UER
		16	023	54.93	19	21.74	155	14.04	1.60	2.3	2.3	19	0	57	.07	2	.3	.5	17	UER
		16	025	12.23	19	22.01	155	13.97	1.71	1.3	1.1	10	0	139	.04	2	.4	.5	10	UER
		16	025	32.23	19	21.79	155	13.96	1.64	1.9	1.6	11	0	144	.08	2	.4	.6	11	UER
		16	026	56.77	19	22.20	155	14.09	1.67	1.6	1.6	11	0	135	.04	2	.3	.4	8	UER
		16	037	8.34	19	22.12	155	14.08	1.70		1.1	11	1	136	.05	2	.4	.5	7	UER
		16	044	2.62	19	22.70	155	14.57	1.47	1.8	2.1	15	0	71	.06	2	.3	.4	12	UER
		16	045	47.17	19	21.78	155	14.05	1.69	1.9	2.2	12	0	88	.03	2	.4	.6	10	UER
		16	047	58.86	19	21.48	155	14.22	1.59		.5	8	1	148	.03	3	.5	.7	4	UER
		16	049	27.24	19	22.39	155	13.96	3.17	2.2	2.0	17	0	80	.04	2	.3	.4	16	UER
		16	052	13.23	19	21.99	155	14.06	1.73		.5	9	0	138	.02	2	.4	.5	6	UER
		16	052	24.06	19	21.64	155	14.13	1.69	1.3	1.5	10	1	146	.04	3	.6	.7	1	UER
		16	053	15.59	19	21.76	155	14.25	1.49	1.6	1.6	11	1	143	.04	3	.4	.5	9	UER
		16	053	52.85	19	22.09	155	13.15	3.16		1.0	11	0	142	.03	1	.5	.3	5	UER
		16	1 1	17.77	19	21.68	155	14.07	1.69	1.7	1.7	12	0	104	.04	2	.3	.6	11	UER
		16	1 4	27.35	19	21.82	155	13.96	1.74	1.4	1.8	10	0	143	.03	2	.4	.5	8	UER
		16	1 8	16.84	19	22.82	155	14.28	1.02		1.2	8	0	128	.11	2	.4	.6	4	UER
		16	1 8	51.18	19	21.86	155	14.10	1.44	1.9	2.0	12	0	85	.04	2	.3	.6	12	UER
		16	113	60.00	19	22.10	155	12.98	3.25		1.0	7	0	155	.03	1	.7	.5	5	UER
		16	126	39.34	19	22.60	155	14.11	3.14	1.3	1.7	6	1	135	.04	2	.5	.7	4	UER
		16	129	3.48	19	22.12	155	13.97	1.52	2.1	2.5	14	0	84	.06	2	.3	.5	13	UER
		16	130	33.24	19	21.84	155	14.24	1.41	1.8	2.2	12	0	141	.03	3	.4	.6	11	UER
		16	132	4.03	19	22.05	155	13.92	1.43	1.6	1.8	10	0	139	.03	2	.4	.5	10	UER
		16	136	11.10	19	22.01	155	13.00	2.70		.7	6	0	157	.07	1	.8	.5	4	UER
		16	140	35.43	19	21.34	155	14.37	.97	2.1	1.8	14	0	108	.08	3	.4	.7	3	UER
		16	144	16.75	19	21.98	155	13.98	1.64		1.2	9	0	140	.03	2	.4	.5	7	UER
		16	147	30.64	19	21.76	155	14.23	1.71	2.6	3.1	22	0	57	.10	3	.3	.5	22	UER
		16	153	3.82	19	22.21	155	14.09	1.58	1.2	1.6	10	1	134	.04	2	.4	.5	8	UER
		16	2 1	47.96	19	22.19	155	13.94	1.71		1.6	9	0	136	.04	2	.4	.4	7	UER
		16	2 4	58.69	19	22.10	155	12.99	2.74		.3	6	1	155	.01	1	1.0	.4	3	UER
		16	2 5	33.65	19	22.27	155	13.86	3.27	1.8	2.1	10	1	134	.05	2	.5	.5	7	UER
		16	2 6	49.38	19	21.99	155	14.20	1.53	1.8	2.4	13	0	82	.07	2	.3	.6	13	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	NOV	16	213	37.37	19	22.97	155	14.61	2.81		.8	7	0	120	.04	3	.4	.7	4	UER
		16	216	43.82	19	22.71	155	14.68	1.70		1.4	10	0	121	.06	2	.4	.4	7	UER
		16	217	9.08	19	21.80	155	14.28	1.28	2.7	3.5	20	0	57	.09	3	.3	.5	15	UER
		16	218	55.84	19	22.00	155	13.56	1.39		1.9	10	0	141	.03	1	.4	.5	8	UER
		16	221	50.26	19	22.11	155	13.05	3.08		.9	10	0	142	.11	1	.8	.5	7	UER
		16	226	36.34	19	22.81	155	14.57	1.49	1.9	2.4	14	0	120	.05	2	.3	.4	13	UER
		16	233	2.46	19	22.08	155	13.25	3.09		.4	8	1	141	.03	1	.7	.4	6	UER
		16	233	44.98	19	22.81	155	14.81	1.77		1.7	11	0	118	.07	2	.4	.4	9	UER
		16	234	49.86	19	23.96	155	12.98	6.23		1.0	5	0	245	.04	3	20.0	20.4	5	GLN *
		16	238	38.76	19	21.89	155	14.19	1.51	.6	1.2	11	1	140	.05	2	.4	.5	7	UER
		16	245	15.53	19	22.67	155	14.38	1.05	.8	1.0	9	0	129	.08	2	.6	.5	4	UER
		16	253	13.43	19	22.49	155	13.81	3.66	1.2	.8	9	1	130	.03	1	.5	.5	5	UER
		16	256	51.65	19	20.23	155	4.06	6.83		1.2	14	0	127	.11	2	.9	1.3	8	MER
		16	258	57.28	19	22.12	155	14.09	1.44	.8	1.2	10	0	136	.05	2	.4	.5	8	UER
		16	3 9	21.04	19	21.98	155	13.28	2.81	1.1	.8	12	1	144	.08	1	.6	.4	7	UER
		16	310	14.29	19	21.09	155	14.22	1.11	1.3	1.0	10	1	158	.05	3	.4	.9	6	UER
		16	319	17.54	19	22.09	155	14.17	1.24	.8	1.3	12	0	136	.07	2	.3	.5	9	UER
		16	322	17.23	19	22.17	155	14.47	1.82	.5	1.0	10	1	133	.06	3	.5	.4	2	UER
		16	323	19.84	19	21.79	155	13.99	2.14	2.1	2.5	21	0	56	.14	2	.3	.6	14	UER
		16	325	16.69	19	21.59	155	14.42	1.83	.8	.8	7	1	211	.03	3	.9	.5	2	UER
		16	328	19.05	19	22.16	155	13.91	2.84	1.1	1.0	13	1	136	.07	2	.4	.4	9	UER
		16	329	46.07	19	22.82	155	14.33	.51	1.7	2.1	12	0	71	.06	2	.3	.5	3	UER
		16	333	20.47	19	22.03	155	13.25	3.01		1.0	15	1	99	.05	1	.5	.3	9	UER
		16	340	30.98	19	21.38	155	14.32	1.84	2.2	2.1	21	1	61	.06	3	.3	.5	14	UER
		16	352	26.08	19	22.90	155	15.10	1.36	.6	1.3	7	0	119	.06	2	.4	.4	2	KOA
		16	356	15.41	19	22.85	155	14.92	1.29	1.4	1.8	13	1	80	.10	2	.4	.4	9	UER
		16	412	3.10	19	22.62	155	14.69	1.40	2.8	3.2	26	0	71	.10	2	.3	.4	20	UER
		16	415	16.10	19	22.77	155	14.82	1.42	1.6	1.5	17	3	82	.10	2	.3	.4	9	UER
		16	416	59.76	19	23.09	155	14.69	1.62		.4	7	0	114	.07	2	.4	.6	5	GLN
		16	418	21.66	19	21.23	155	14.32	1.85	1.3	.7	9	1	154	.04	3	.4	.8	4	UER
		16	434	2.92	19	20.39	155	13.79	.24	1.9	1.8	9	0	178	.10	4	.5	1.9	2	UER
		16	437	25.31	19	22.60	155	14.19	3.14	1.2	.5	7	1	134	.03	2	.5	.7	4	UER
		16	448	35.23	19	21.73	155	14.02	.73	1.4	1.7	9	0	145	.04	2	.4	.9	7	UER
		16	453	24.94	19	20.20	155	13.03	8.46		.2	10	1	128	.02	5	.7	1.6	8	UER
		16	456	50.55	19	21.70	155	14.37	1.63		.5	8	0	143	.02	3	.4	.6	6	UER
		16	5 1	58.41	19	22.66	155	14.49	1.21		.5	5	0	137	.02	2	.4	.5	2	UER
		16	5 4	33.77	19	22.19	155	13.38	3.24		.5	7	1	150	.03	1	.6	.4	5	UER
		16	5 4	46.57	19	21.58	155	14.18	2.21		.5	6	1	147	.02	3	.6	.9	4	UER
		16	5 5	42.13	19	22.23	155	14.37	1.68		.7	6	0	185	.04	2	1.0	.5	4	UER
		16	5 7	46.31	19	22.18	155	13.16	2.79		.7	6	1	151	.03	1	.8	.3	4	UER
		16	519	13.41	19	21.75	155	13.78	1.61		.8	10	0	146	.03	2	.5	.6	8	UER
		16	519	42.92	19	22.08	155	13.94	1.79		.9	8	1	138	.09	2	.4	.5	2	UER
		16	525	14.02	19	22.20	155	13.99	1.82		.8	9	1	135	.03	2	.4	.4	7	UER
		16	534	44.12	19	21.74	155	14.25	1.29		1.0	9	1	143	.07	3	.4	.7	7	UER
		16	537	29.49	19	23.09	155	14.23	2.73	1.2	1.2	10	1	107	.06	2	.5	.7	6	GLN
		16	541	59.56	19	21.97	155	13.90	1.52		.7	9	1	141	.05	2	.5	.5	6	UER
		16	542	25.32	19	22.85	155	14.54	2.42		.7	8	1	125	.09	3	.4	.9	6	UER
		16	559	53.73	19	22.11	155	13.83	1.72		.5	9	1	132	.06	2	.4	.5	4	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	NOV	16	6 1	41.49	19	21.96	155	13.99	1.70	1.3	1.1	11	1	140	.03	2	.4	.5	10	UER	
		16	612	46.64	19	21.97	155	14.01	1.51		1.2	8	0	140	.03	2	.4	.6	8	UER	
		16	621	9.28	19	22.04	155	13.83	.69	2.9	3.4	20	0	58	.06	2	.2	.4	17	UER	
		16	653	3.11	19	21.63	155	13.98	1.62	2.2	2.3	14	1	148	.07	2	.4	.6	11	UER	
		16	656	48.13	19	22.64	155	14.56	1.37		.7	8	0	130	.02	2	.4	.5	4	UER	
		16	720	4.18	19	21.80	155	14.06	1.75		.5	9	1	143	.05	2	.4	.6	7	UER	
		16	727	23.86	19	21.63	155	14.01	1.61	2.2	2.2	12	0	104	.09	2	.4	.7	11	UER	
		16	729	3.33	19	21.98	155	13.65	1.33		1.1	8	0	142	.04	2	.5	.6	7	UER	
		16	730	34.49	19	22.12	155	13.26	3.24		.4	6	1	152	.02	1	.6	.4	5	UER	
		16	740	24.13	19	21.76	155	14.59	5.07	1.9	1.9	8	0	140	.10	3	.8	2.3	6	UER	
		16	743	46.87	19	21.47	155	14.02	1.19		1.0	7	0	151	.02	4	.4	1.3	6	UER	
		16	746	53.98	19	23.37	155	15.19	1.66		.7	4	0	182	.00	2	.6	.9	3	SPC	
		16	756	54.27	19	21.51	155	13.91	.02		.5	6	0	151	.10	6	.6	4.1	5	UER	*
		16	759	7.86	19	21.59	155	14.20	1.14		1.0	11	0	147	.04	3	.3	.9	7	UER	
		16	8 0	42.21	19	26.67	154	55.38	5.56		1.1	15	0	238	.11	2	2.6	1.9	12	LER	
		16	8 5	37.28	19	21.50	155	14.43	2.45		.6	6	0	147	.03	6	.5	2.2	4	UER	
		16	827	36.25	19	23.78	155	15.54	1.43		.9	5	0	104	.06	3	.4	.8	5	SPC	
		16	833	19.45	19	21.74	155	14.31	1.90	1.2		16	0	58	.06	3	.3	.6	14	UER	
		16	849	41.78	19	21.57	155	14.54	2.08	2.1	2.4	22	0	61	.09	6	.3	1.1	21	UER	
		16	852	46.24	19	18.38	155	14.92	6.86		.9	13	0	150	.13	4	.8	1.5	11	POL	
		16	853	.19	19	21.57	155	14.25	2.03	1.6	1.2	9	0	84	.05	3	.4	1.1	7	UER	
		16	854	27.70	19	21.45	155	14.51	1.84	1.6	1.3	14	0	75	.05	3	.3	.7	14	UER	
		16	912	5.38	19	22.19	155	14.05	1.58	1.8		15	0	82	.06	3	.3	.7	14	UER	
		16	912	41.79	19	22.57	155	14.30	3.23	2.3	2.4	10	0	84	.03	4	.5	1.7	8	UER	
		16	931	40.57	19	21.19	155	14.08	.74	1.3	1.1	9	0	94	.03	4	.4	1.3	9	UER	
		16	935	16.35	19	22.03	155	14.05	1.26	1.3	1.8	9	0	87	.04	3	.4	1.1	8	UER	
		16	936	18.74	19	22.07	155	14.04	1.30	1.8	2.4	16	0	83	.06	3	.3	.7	16	UER	
		16	949	24.43	19	22.73	155	14.44	3.26	1.3	1.3	11	0	72	.05	3	.5	.8	10	UER	
		16	10 2	6.29	19	21.67	155	13.98	1.49	1.6	1.6	15	0	78	.05	4	.3	.8	15	UER	
		16	10 4	37.26	19	21.86	155	14.20	1.59		.7	9	0	84	.03	3	.4	.9	9	UER	
		16	10 4	53.90	19	21.66	155	14.08	1.99	1.7	2.1	13	0	76	.06	3	.3	1.1	12	UER	
		16	10 6	3.90	19	22.15	155	14.18	1.37		1.1	8	0	94	.01	3	.4	.9	8	UER	
		16	1015	47.87	19	22.68	155	14.51	1.44	1.1	1.1	10	0	93	.04	3	.3	.6	10	UER	
		16	1024	26.10	19	22.26	155	14.35	1.87	3.1	3.6	26	1	54	.11	3	.3	.6	24	UER	
		16	1034	36.83	19	21.46	155	13.72	2.24		1.0	6	0	153	.28	4	1.5	3.4	6	UER	
		16	1044	27.81	19	22.13	155	13.70	.79	1.3	1.0	9	0	103	.04	4	.4	1.1	8	UER	
		16	1052	41.02	19	21.96	155	13.82	.86		1.2	8	0	93	.02	4	.5	1.1	8	UER	
		16	11 8	58.19	19	22.83	155	14.90	1.18	1.4	1.5	13	1	117	.10	2	.3	.4	11	UER	
		16	1112	21.20	19	22.06	155	14.25	1.03	1.2	1.4	11	0	82	.03	3	.3	.8	11	UER	
		16	1115	8.67	19	21.96	155	13.80	.21	2.1	2.7	13	1	88	.15	4	.4	.8	11	UER	
		16	1123	57.70	19	22.36	155	14.44	1.43	1.9	2.6	18	0	77	.08	3	.3	.5	17	UER	
		16	1131	10.51	19	21.80	155	13.73	.00	1.3	1.1	10	0	95	.26	4	.8	2.3	8	UER	*
		16	12 4	5.20	19	21.62	155	13.94	3.40	2.8	3.0	23	1	57	.18	6	.5	1.8	22	UER	
		16	1250	15.42	19	21.57	155	14.26	1.85	2.2	1.9	18	1	59	.09	3	.3	1.0	17	UER	
		16	1324	52.83	19	21.98	155	13.98	.01	1.6	2.1	13	0	140	.27	3	.7	1.8	13	UER	*
		16	1325	43.68	19	23.79	155	15.69	1.04		.9	6	0	103	.03	3	.3	.5	6	SPC	
		16	1350	25.48	19	22.00	155	13.76	.01	2.3	2.9	12	0	87	.19	4	.5	1.6	12	UER	*
		16	1412	24.13	19	18.11	155	21.74	6.90		1.3	11	0	117	.11	5	.8	1.4	11	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	NOV	16	1422	25.12	19	21.73	155	14.55	2.18		1.2	13	0	76	.07	3	.4	.6	12	UER	
		16	1551	19.93	19	22.18	155	15.41	2.06		.9	8	0	125	.07	1	.5	.3	8	KOA	
		16	16 8	56.47	19	21.91	155	13.11	.55		.9	7	0	255	.06	5	2.1	3.4	7	UER	
		16	1620	53.66	19	22.16	155	14.03	1.65	1.2	.8	8	0	97	.04	3	.4	1.0	8	UER	
		16	1629	48.51	19	22.89	155	14.96	.95	1.0	1.2	12	0	117	.19	2	.7	.5	12	UER	
		16	1923	43.30	19	21.28	155	13.67	.01	2.0	1.8	19	1	58	.22	4	.5	1.1	18	UER	*
		16	1942	30.42	19	23.06	155	15.73	1.51	1.2	1.2	9	0	137	.14	1	.6	.4	8	SPC	
		16	2013	56.95	19	21.82	155	14.20	1.49		1.5	12	0	83	.04	3	.3	.9	12	UER	
		16	21 4	43.01	19	22.14	155	14.35	1.40		1.2	8	0	91	.03	3	.4	.9	8	UER	
		16	2133	13.05	19	23.13	154	57.64	7.39	2.3	1.8	21	1	204	.10	4	1.0	.6	18	LER	
		16	2151	19.44	19	22.03	155	13.31	3.46		.8	4	0	155	.00	5	.9	3.6	3	UER	
		16	2151	56.76	19	19.78	155	11.81	8.13	2.0	2.3	25	0	87	.12	5	.5	.9	25	UER	
		16	2216	5.70	19	47.26	156	5.70	5.61	2.9	2.3	20	1	309	.14	29	2.9	1.2	20	KON	
		17	138	32.70	19	21.36	155	14.89	1.44	1.5	1.7	14	0	65	.12	3	.4	.8	14	UER	
		17	442	5.77	19	21.42	155	14.20	.01	1.3	1.1	12	0	89	.12	3	.4	.9	12	UER	*
		17	611	59.55	19	20.92	155	13.29	9.60	3.3	3.5	34	1	58	.08	3	.3	.4	31	UER	F
		17	647	40.21	19	22.44	155	29.87	9.51	2.8	2.5	33	1	59	.10	4	.4	.9	31	UKF	
		17	756	34.31	19	23.85	155	15.41	1.20		.9	6	0	105	.06	2	.4	.6	6	SPC	
		17	1125	11.82	19	23.06	155	14.50	3.43	1.6	1.4	11	0	75	.04	3	.4	.6	11	UER	
		17	1130	22.98	19	22.27	155	13.60	.01	1.9	1.4	17	1	90	.92	4	1.7	2.5	14	UER	*
		17	1456	44.74	19	27.42	155	21.24	8.61	2.0	1.5	19	1	96	.11	6	.6	1.0	18	UKF	
		17	2254	49.71	19	22.65	155	14.39	3.44	1.3	1.2	13	0	77	.06	2	.4	.6	12	UER	
		18	3 4	48.74	19	17.53	155	27.25	8.18	2.0	1.7	28	0	93	.13	9	.5	1.1	27	HEA	
		18	337	24.11	19	20.95	155	6.54	7.71	1.9	1.2	23	0	95	.12	4	.6	.9	23	UER	
		18	518	16.62	19	21.88	155	1.61	4.46	2.1	1.4	23	0	167	.14	4	.7	1.6	19	MER	
		18	520	43.61	19	22.92	155	14.31	3.43	1.8	1.6	18	1	68	.11	2	.4	.6	17	UER	
		18	545	49.93	19	22.88	155	14.48	3.08	1.7	1.3	16	0	69	.10	3	.4	.5	15	UER	
		18	611	21.73	19	22.79	155	14.40	2.77	1.6	1.2	18	1	72	.13	2	.4	.4	16	UER	
		18	1017	35.46	19	21.17	155	14.80	1.60		1.8	13	0	84	.05	3	.3	.7	13	UER	
		18	1312	18.12	19	23.10	155	14.86	3.33	1.5	1.0	10	0	110	.04	2	.4	.6	8	GLN	
		18	1459	49.02	19	10.58	155	26.19	29.17	2.2	1.3	15	0	168	.14	4	2.9	5.5	8	LSW	
		18	1618	11.91	19	23.13	155	14.63	3.60	1.5	1.6	11	0	108	.04	3	.4	.6	9	GLN	
		18	2153	41.34	19	14.04	155	16.38	38.91		.5	15	0	262	.04	8	4.5	6.0	7	HLP	
		18	2332	42.83	19	23.23	155	14.76	3.42	1.7	1.4	14	0	105	.09	3	.4	.5	9	GLN	
		18	2342	28.69	19	22.99	155	14.89	3.11	1.6	1.3	10	0	114	.06	2	.5	.6	8	UER	
		18	2343	49.12	19	23.13	155	14.91	2.67	1.1	.7	7	0	109	.03	2	.4	.6	5	GLN	
		18	2356	50.29	19	23.17	155	14.90	3.16	1.8	1.5	14	1	108	.07	2	.4	.4	10	GLN	
		19	015	18.15	19	20.99	155	14.69	1.42	1.7	1.7	12	0	87	.05	3	.3	.7	7	UER	
		19	017	30.24	19	20.94	155	15.25	1.22	.5	.9	7	0	178	.08	3	.5	.7	2	KOA	
		19	019	52.92	19	20.95	155	14.70	1.00	1.4	1.2	8	0	156	.07	3	.6	1.0	2	UER	
		19	020	47.88	19	21.01	155	14.60	1.66	2.2	2.2	18	0	68	.06	3	.3	.6	12	UER	
		19	056	10.79	19	19.96	155	13.04	7.16	1.6	1.7	28	0	70	.11	5	.5	.9	20	UER	
		19	217	1.31	19	16.10	155	11.87	3.95	1.6	1.2	12	0	247	.08	12	2.3	55.4	3	POL	*
		19	326	46.04	19	22.02	155	14.26	1.05	1.6	2.0	21	0	82	.06	2	.2	.4	14	UER	
		19	557	58.98	19	27.09	155	14.43	33.01	2.5	2.3	40	2	50	.09	5	.6	1.1	32	DEP	
		19	648	37.22	19	22.59	155	13.54	4.28	2.1	1.7	6	0	103	.10	9	.7	18.4	4	UER	*
		19	930	41.82	19	23.20	155	14.77	3.30	1.6	4.0	13	0	66	.07	3	.4	.7	13	GLN	
		19	931	53.46	19	23.74	155	5.56	3.77	2.0	1.0	9	1	326	.54	13	46.7	87.3	7	MER	*

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	NOV	19	1245	12.80	19	22.78	155	14.45	3.48	2.8	2.9	24	0	50	.07	2	.4	.5	23	UER	
		19	1443	10.48	19	19.56	155	11.18	9.35	2.1	1.9	26	0	96	.10	5	.5	.9	26	UER	
		19	1658	13.86	19	19.88	155	8.07	9.48	3.2	3.7	30	0	88	.09	5	.6	.5	29	UER	
		19	2327	33.26	19	22.69	155	1.55	8.71	2.3	1.9	28	1	155	.08	6	.7	.4	26	MER	
		19	2330	58.81	19	23.15	155	14.97	3.20	2.4	2.8	23	1	68	.07	2	.3	.4	21	GLN	
		20	127	9.45	19	23.01	155	14.44	3.53	1.2	1.4	13	0	112	.07	3	.5	.6	13	GLN	
		20	2 5	17.71	19	21.24	155	7.44	8.26	2.5	2.6	32	0	81	.11	4	.5	.6	31	UER	
		20	330	57.68	19	24.41	155	16.83	1.34	1.0	1.3	6	0	100	.04	1	.5	.5	4	SPC	
		20	346	58.02	19	23.05	155	14.62	3.35	1.7	1.3	12	0	111	.05	3	.4	.4	12	GLN	
		20	741	40.95	19	21.52	155	45.10	3.30	2.4	1.3	18	0	180	.12	9	.9	5.2	15	KON	*
		20	937	30.74	19	23.24	155	14.95	3.41	1.8	1.6	18	0	71	.08	2	.3	.4	11	GLN	
		20	1035	4.40	19	23.13	155	14.76	3.18	1.7	1.4	15	0	109	.08	2	.4	.4	9	GLN	
		20	1035	25.60	19	23.13	155	14.72	3.26	1.7	1.5	13	1	108	.04	2	.4	.5	7	GLN	
		20	1144	16.74	19	22.49	155	13.96	3.41	1.6	1.4	9	1	153	.06	2	.8	.8	6	UER	
		20	1238	33.82	19	20.77	155	13.26	6.86	1.5	1.1	18	1	78	.11	3	.6	1.2	14	UER	
		20	1357	57.93	19	23.27	155	15.10	3.09	2.1	1.9	16	0	74	.08	2	.4	.4	12	SPC	
		20	1437	25.75	19	23.43	155	24.02	9.58	1.6	1.4	21	1	69	.06	4	.4	.8	14	UKF	
		20	1532	40.71	19	20.29	155	8.62	8.59	1.6	1.1	14	0	123	.05	4	.6	1.4	8	UER	
		20	17 0	39.74	19	19.61	155	10.93	7.51	1.5	1.2	12	0	130	.03	5	.6	1.6	8	UER	
		20	1917	39.45	19	23.08	155	14.73	3.18	1.5	1.3	11	0	115	.06	2	.4	.5	6	GLN	
		20	1950	46.24	19	28.93	154	54.93	3.04	2.0	.9	10	0	116	.06	3	1.3	1.3	5	LER	
		20	2019	31.68	19	22.05	155	13.96	1.38	1.3	1.3	11	0	139	.05	2	.4	.4	7	UER	
		20	2129	38.05	19	23.10	155	14.70	3.18	3.2	3.6	35	0	47	.09	2	.3	.4	22	GLN	F
		20	2148	3.09	19	23.14	155	14.75	3.44	2.4	2.8	27	1	48	.08	2	.3	.4	22	GLN	
		21	3 0	18.36	19	26.10	155	23.10	4.14	1.0	1.1	16	1	74	.10	4	.4	1.0	9	UKF	
		21	318	27.17	19	22.83	155	14.52	3.25	1.3	1.2	11	0	121	.03	3	.4	.5	4	UER	
		21	319	54.00	19	19.88	155	10.42	8.96	1.9	1.7	17	1	120	.05	4	.6	1.2	13	UER	
		21	533	29.68	19	20.69	155	12.94	9.32	1.9	1.2	14	0	119	.04	4	.7	1.4	12	UER	
		21	558	48.82	19	23.17	155	14.84	3.40	1.5	1.3	11	0	107	.06	2	.4	.5	8	GLN	
		21	6 8	57.17	19	21.41	155	6.70	8.33	1.6	1.2	9	0	161	.04	3	.8	1.8	8	UER	
		21	9 7	27.57	19	16.27	155	46.60	10.30	3.1	2.7	33	1	108	.13	10	.5	.6	17	KON	
		21	943	39.22	19	22.67	155	14.43	3.22	1.5	1.3	14	0	123	.04	2	.3	.4	10	UER	
		21	943	39.23	19	22.70	155	14.43	3.31	1.5	1.3	15	0	122	.05	2	.4	.4	10	UER	
		21	954	43.84	19	25.45	155	28.99	8.79	1.7	1.2	24	2	64	.07	6	.4	1.1	14	UKF	
		21	13 2	41.05	19	23.66	155	15.04	2.94	1.6	1.5	14	0	92	.04	2	.3	.4	9	SPC	
		21	14 6	40.24	19	23.08	155	14.84	3.09	1.4	1.1	12	0	110	.04	2	.3	.5	9	GLN	
		21	21 0	13.79	19	39.62	155	19.44	44.94	2.3	1.4	32	3	79	.07	18	.8	1.3	20	NER	
		22	050	11.28	19	22.87	155	14.43	3.15	1.6	1.5	15	0	118	.11	2	.4	.5	9	UER	
		22	159	54.57	19	27.90	154	54.10	5.35	2.3	2.0	31	1	195	.11	2	1.0	.8	19	LER	
		22	258	57.92	19	20.51	155	6.57	7.93	2.2	1.8	32	1	104	.09	5	.5	.9	23	UER	
		22	550	36.92	19	22.01	155	6.32	7.92	1.7	1.4	16	0	111	.08	2	.5	.9	9	UER	
		22	638	14.15	19	23.33	155	14.93	3.31	2.2	2.4	22	0	72	.07	2	.3	.3	18	GLN	
		22	1133	41.43	19	21.99	155	5.66	7.28	2.1	1.8	30	3	78	.10	2	.4	.8	17	MER	
		22	1328	25.55	19	23.09	155	14.81	3.29	2.6	2.8	32	1	48	.07	2	.3	.3	21	GLN	
		22	1437	28.90	19	23.41	155	15.05	3.26	1.0	1.0	10	0	99	.04	2	.4	.6	8	SPC	
		22	1742	30.75	19	18.64	155	13.45	9.18	3.1	3.0	43	0	78	.10	3	.4	.4	34	POL	
		22	1949	52.92	19	23.77	155	15.24	3.28	1.4	1.2	14	0	98	.04	2	.4	.4	9	SPC	
		22	2111	7.91	19	22.76	155	14.49	3.13	1.8	1.4	16	0	121	.06	3	.3	.4	11	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	NOV	22	2131	53.36	19	19.18	155	8.69	8.90	1.9	1.4	16	0	122	.05	4	.8	1.5	15	UER	
		22	2147	37.47	19	23.13	155	14.57	3.10	1.4	1.1	10	0	108	.07	3	.4	.6	7	GLN	
		23	257	54.21	19	29.74	155	37.62	3.59	1.8	1.0	22	2	75	.11	5	.4	1.2	10	MOK	
		23	5 6	26.29	19	23.61	155	15.06	3.28	1.4	1.4	11	0	94	.04	2	.4	.5	10	SPC	
		23	5 9	4.48	19	23.03	155	14.79	3.44	1.6	1.5	12	0	112	.04	2	.4	.5	10	GLN	
		23	541	15.75	19	22.06	155	14.22	1.44	1.6	2.3	18	0	81	.06	2	.3	.5	16	UER	
		23	641	34.03	19	23.24	155	14.83	3.53	3.4	3.4	37	0	47	.09	2	.3	.4	25	GLN	F
		23	7 5	27.08	19	23.79	155	15.26	2.93	1.3	1.3	10	0	100	.04	2	.4	.5	7	SPC	
		23	1045	37.97	19	21.33	155	14.86	.84	3.5	3.9	38	1	65	.11	3	.2	.5	31	UER	F
		23	1229	5.88	19	22.88	155	14.43	3.70	2.6	2.4	32	1	66	.09	2	.4	.5	28	UER	
		23	1250	14.24	19	23.07	155	14.60	3.58	1.6	1.4	15	0	110	.05	3	.4	.5	9	GLN	
		23	1716	26.97	19	18.74	155	15.13	8.38	2.0	1.5	18	0	157	.04	5	.8	1.2	15	KOA	
		23	1840	28.70	19	10.65	155	17.03	48.27	2.5	2.3	43	3	187	.12	13	.9	1.4	23	HLP	L
		23	1842	48.81	19	18.01	155	19.79	34.04		1.9	18	0	163	.13	2	2.1	5.5	6	DEP	L
		23	1848	27.67	19	26.79	155	23.68	9.20	3.0	2.6	43	2	46	.13	4	.4	.6	38	UKF	
		24	414	34.88	19	23.67	155	15.13	3.24	1.8	1.9	19	0	88	.05	2	.3	.3	17	SPC	
		24	919	48.39	19	23.01	155	14.57	3.84	1.9	1.5	16	0	113	.06	3	.4	.5	13	GLN	
		24	957	31.97	19	20.45	155	12.84	9.62	1.9	1.7	16	0	123	.05	4	.7	1.5	15	UER	
		24	18 9	5.49	19	21.72	155	14.27	1.58	1.6	1.7	15	0	143	.04	3	.3	.5	12	UER	
		24	2048	13.50	19	19.87	155	8.43	8.29	1.9	1.9	21	1	151	.05	5	.5	.7	16	UER	
		24	2051	30.62	19	22.79	155	14.40	3.40	1.8	1.1	16	0	121	.05	2	.3	.4	11	UER	
		24	2131	6.84	19	24.00	155	27.16	12.73	3.5	3.8	46	2	48	.10	3	.3	.3	43	UKF	F
		24	2147	15.09	19	24.02	155	27.13	11.74	2.1	1.5	36	2	61	.09	3	.4	.6	23	UKF	
		24	2237	.34	19	18.86	155	12.93	5.90	1.9	1.8	31	1	89	.10	4	.4	.9	20	POL	
		25	050	1.94	19	18.95	155	11.31	9.35	3.4	3.5	44	2	111	.12	5	.4	.5	32	POL	F
		25	523	29.74	19	23.02	155	14.45	3.72	1.9	1.6	22	0	64	.08	3	.3	.5	14	GLN	
		25	618	36.09	19	21.63	155	14.30	1.62	1.7	1.8	11	0	86	.05	3	.3	.7	10	UER	
		25	12 8	58.93	19	22.98	155	14.69	3.26	1.2	.9	15	0	114	.04	2	.3	.4	10	UER	
		25	1327	31.61	19	17.94	155	21.11	4.68	1.7	1.5	20	1	121	.09	4	.5	1.9	19	SWR	
		25	1531	47.10	19	23.13	155	14.97	3.14	2.1	1.9	23	1	60	.09	2	.3	.4	21	GLN	
		25	16 3	27.64	19	23.84	155	15.40	3.04	1.0	1.0	9	0	105	.05	2	.5	.6	7	SPC	
		25	1620	10.77	19	19.47	155	12.19	6.88	2.0	2.0	33	1	90	.10	5	.5	.8	25	UER	
		25	1636	38.59	19	18.13	155	15.44	8.30	1.7	1.2	17	0	208	.04	5	.9	1.3	15	KOA	
		25	1751	25.03	19	19.89	155	19.03	31.62	3.1	3.0	46	3	51	.10	3	.6	.9	43	DEP	
		25	1814	1.88	19	23.37	155	14.91	3.16	1.8	1.7	20	1	73	.06	3	.3	.3	13	GLN	
		25	1911	46.79	19	12.46	155	40.47	6.22	2.4	1.9	30	3	185	.24	7	1.1	1.8	16	HEA	
		25	22 9	8.21	19	25.09	155	25.13	8.31	1.4	1.0	22	2	66	.09	0	.5	1.0	16	UKF	
		26	055	41.06	19	22.75	155	14.43	3.47	1.6	1.5	18	1	121	.05	2	.3	.4	11	UER	
		26	127	11.58	19	22.92	155	14.50	3.34	1.6	1.7	16	0	117	.07	3	.4	.4	14	UER	
		26	257	40.48	19	22.50	155	29.71	9.75	1.4	1.2	19	3	70	.08	4	.4	1.0	15	UKF	
		26	9 2	29.35	19	17.64	155	13.06	6.90	2.0	1.4	31	1	119	.11	1	.5	1.0	23	POL	
		26	1213	4.09	19	20.14	155	11.72	7.80	2.7	2.2	43	2	80	.13	5	.4	.6	37	UER	
		26	1239	30.46	19	17.80	155	12.95	5.49	2.1	1.5	34	3	118	.10	2	.4	1.0	23	POL	
		26	1344	59.46	19	22.88	155	14.47	3.43	1.8	1.3	18	0	118	.05	3	.3	.4	11	UER	
		26	1449	19.45	19	23.32	155	14.83	3.20	1.6	1.1	12	0	106	.04	3	.4	.5	10	GLN	
		26	1520	42.27	19	23.33	155	14.84	3.45	1.2	.8	11	0	101	.03	3	.4	.5	8	GLN	
		26	1639	5.50	19	23.02	155	14.50	3.45	1.3	.9	14	0	112	.07	3	.4	.5	8	GLN	
		26	1759	8.56	19	23.25	155	14.86	3.52	2.0	1.9	22	1	68	.06	2	.3	.4	16	GLN	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	NOV	26	1922	18.56	19	26.88	155	21.35	4.76	1.9	1.4	18	1	77	.12	6	.6	3.8	16	UKF
		26	2142	16.50	19	14.59	155	11.35	8.82	1.9	.8	13	0	264	.07	14	2.6	4.6	9	POL
		26	2235	1.48	19	13.05	155	32.04	6.45	2.0	1.0	24	3	77	.14	5	.4	1.1	10	LSW
		27	937	2.57	19	20.26	155	12.52	9.30	2.2	2.3	22	0	73	.09	5	.6	.9	22	UER
		27	939	48.41	19	19.19	155	12.09	9.41	1.9	1.7	18	1	144	.05	7	.7	1.3	16	UER
		27	1026	2.36	19	20.72	155	6.47	7.85	1.8	1.3	15	0	138	.06	4	.6	1.1	10	UER
		27	1046	3.97	19	23.04	155	14.83	3.08	1.1	1.0	11	0	112	.05	2	.4	.6	10	GLN
		27	1440	45.95	19	16.22	155	12.01	.31	1.8	1.2	14	0	213	.04	7	1.2	5.2	12	POL
		27	1445	34.14	19	24.25	155	.05	6.01	1.7	1.3	15	0	159	.07	7	.6	1.8	8	LER
		27	1740	14.58	20	8.02	155	27.85	8.59	2.8	1.8	23	4	295	.13	30	1.8	1.0	8	DIS
		27	2020	46.51	19	19.67	155	11.59	9.21	1.7	1.3	18	0	132	.04	5	.7	1.3	16	UER
		27	2330	17.91	19	18.02	155	17.07	7.01		.8	13	0	175	.06	3	.7	1.0	7	KOA
		27	2330	33.54	19	18.15	155	16.80	6.89	1.9	1.5	16	0	170	.07	3	.8	1.3	16	KOA
		28	1 4	49.65	19	19.56	155	11.15	8.53	1.9	1.9	34	3	95	.09	5	.4	.8	24	UER
		28	245	38.28	19	22.33	155	1.33	2.43	1.4	1.1	17	0	165	.14	5	.6	1.3	6	MER
		28	348	21.61	19	20.17	155	3.84	8.55	2.8	2.7	39	2	129	.12	2	.5	.5	28	MER
		28	449	32.46	19	20.04	155	12.16	9.19	1.6	1.3	19	0	128	.05	5	.7	1.2	17	UER
		28	5 9	32.50	19	22.65	155	14.30	3.26	1.2	1.0	14	1	124	.06	2	.4	.5	10	UER
		28	913	37.80	19	21.10	155	5.89	8.32	2.1	1.9	27	0	96	.11	4	.5	.8	25	MER
		28	10 4	44.63	19	22.78	155	14.72	3.93	2.9	2.8	30	1	50	.10	2	.4	.7	25	UER
		28	12 8	13.27	19	18.11	155	23.10	4.21	1.7	1.6	18	1	150	.08	4	.6	1.3	14	SWR
		28	14 0	46.11	19	20.30	155	12.26	7.47	1.6	1.7	26	0	75	.09	5	.4	.7	17	UER
		28	1556	31.44	19	18.51	155	13.03	9.82	2.2	2.5	35	1	135	.10	8	.6	.7	23	POL
		28	1853	16.88	19	20.51	155	12.59	8.53	1.6	1.6	28	0	71	.08	4	.5	.7	18	UER
		28	22 3	30.26	19	22.84	155	4.83	8.42	3.1	3.1	40	2	80	.09	3	.4	.4	34	MER
		29	415	35.60	19	18.92	155	13.72	9.47	2.7	2.7	42	3	85	.09	4	.4	.5	33	POL
		29	612	45.59	19	19.41	155	13.78	7.13	1.9	1.8	26	1	81	.09	4	.5	.9	17	UER
		29	744	22.44	19	19.39	155	50.16	9.71	2.9	2.1	29	4	168	.11	7	.5	.5	11	KON
		29	8 7	8.56	19	20.94	155	5.07	9.43		1.1	9	0	211	.03	4	2.6	1.7	9	MER
		29	10 4	27.13	19	21.76	155	6.18	10.67	1.8	1.5	13	0	168	.06	2	1.0	1.4	12	UER
		29	1150	59.64	19	21.65	155	1.93	7.51	1.2	1.2	13	0	162	.08	4	.9	1.2	9	MER
		29	1427	2.65	19	20.69	155	13.53	9.07	2.5	2.6	37	1	56	.11	4	.4	.6	29	UER
		29	1542	36.46	19	31.03	155	55.53	12.11	1.9	1.5	15	0	272	.13	3	3.5	.5	6	KON
		29	16 4	14.62	19	26.21	155	38.39	2.75	2.2	1.5	10	0	197	.10	4	1.1	1.2	9	MOK
		29	1645	19.49	19	20.24	155	11.11	8.74	1.8	1.3	16	0	119	.04	4	.8	1.4	15	UER
		29	23 7	38.06	19	20.80	155	5.36	6.91	1.6	1.5	17	1	133	.09	4	.7	1.2	12	MER
		30	055	47.92	19	34.84	155	59.21	10.83	3.1	3.2	33	4	252	.15	13	1.4	.5	24	KON
		30	425	32.85	19	26.49	155	14.44	32.93	1.7	1.2	27	2	100	.08	3		.8	16	DEP
		30	434	9.72	19	43.40	156	3.31	37.82		1.8	27	2	233	.12	23	1.1	2.1	19	KON
		30	434	57.30	19	19.79	155	11.30	9.91	2.8	2.9	37	1	90	.08	5	.4	.6	27	UER
		30	1015	41.80	19	23.67	155	15.07	3.49	3.0	3.0	28	1	78	.11	2	.4	.5	27	SPC F
		30	1141	3.82	19	30.47	155	51.11	9.24	2.8	2.3	28	0	111	.24	7	.8	.8	25	KON
		30	1321	57.58	19	20.80	155	6.11	8.05	2.2	1.6	30	2	101	.11	4	.4	.8	28	UER
		30	1926	26.68	19	19.89	155	8.03	8.42	1.9	1.5	28	0	89	.08	5	.6	.6	27	UER
		30	2333	33.37	19	23.69	155	15.13	2.59	1.3	1.2	23	1	48	.27	2	.6	.7	20	SPC
	DEC	1	1612	30.90	19	22.37	155	49.34	9.01	2.3	1.5	25	2	118	.12	13	.5	.8	18	KON
		1	1853	56.52	19	23.96	155	27.31	11.26	1.9	1.4	33	3	58	.09	3	.4	.6	25	UKF
		1	2015	21.86	19	18.96	155	11.32	8.57	2.0	1.6	26	1	111	.07	5	.5	.7	17	POL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	DEC	2	245	9.65	19	20.84	155	10.03	8.64	1.7	1.4	30	2	71	.08	2	.4	.6	12	UER
		2	435	2.10	19	23.98	155	27.51	11.18	1.9	1.6	33	4	56	.10	3	.4	.8	26	UKF
		2	452	7.48	19	17.89	155	14.20	5.95	1.3	1.1	25	0	98	.07	2	.5	1.0	15	POL
		3	625	47.32	19	19.64	155	12.04	6.18	1.6	1.0	17	1	88	.10	5	.6	1.2	13	UER
		3	759	31.83	19	21.20	155	7.07	6.89	2.0	1.9	25	0	85	.10	4	.5	.8	23	UER
		3	1122	34.23	19	25.64	155	30.09	7.94	2.0	1.8	27	1	54	.11	7	.4	1.2	23	MOK
		3	1732	12.77	19	29.59	155	50.19	10.72	2.6	1.6	14	4	319	.15	23	1.7	.7	7	KON
		3	1741	39.56	19	20.77	155	1.72	6.56	2.1	1.7	23	1	201	.14	3	1.0	.9	11	MER
		3	22 4	58.54	19	21.10	155	12.22	9.24	1.6	1.3	18	0	111	.05	3	.8	1.2	13	UER
		4	0 4	16.71	19	25.57	155	24.92	7.66	2.0	1.8	31	2	43	.12	1	.4	.8	21	UKF
		4	1 1	12.95	19	45.43	155	57.12	10.10	2.5	2.2	22	1	210	.08	14	.8	.5	9	KON
		4	9 2	13.67	19	20.00	155	9.01	6.29	1.8	1.3	22	1	76	.09	4	.5	1.3	13	UER
		4	10 3	8.73	19	19.70	155	11.30	8.17	2.0	1.7	35	2	92	.08	5	.4	.7	28	UER
		5	214	1.29	19	20.40	155	11.14	8.46	1.7	1.3	24	0	79	.09	4	.5	.9	22	UER
		5	347	1.71	19	26.76	155	52.88	9.02	1.7	1.6	22	2	145	.10	6	.6	.6	12	KON
		5	8 3	48.95	19	20.74	155	10.39	8.76	2.1	1.7	28	0	74	.10	3	.5	.6	24	UER
		5	11 1	54.90	19	50.18	155	51.87	11.35	2.7	1.8	28	5	186	.16	17	1.1	.7	9	KON
		5	12 5	4.83	19	19.81	155	13.28	10.10	3.4	3.3	40	1	69	.10	5	.4	.4	38	UER
		5	1524	21.10	19	18.89	155	11.39	8.42	1.7	1.2	16	0	148	.03	6	.8	1.7	14	POL
		5	1532	27.24	19	24.52	155	28.23	11.32	3.8	4.0	45	1	32	.12	4	.4	.4	43	UKF F
		5	1539	.81	19	25.64	155	28.27	9.34	1.8	1.1	34	2	49	.10	6	.4	.8	24	UKF
		5	1553	42.06	19	24.95	155	28.56	8.95	1.9	1.4	32	2	60	.10	5	.4	.9	23	UKF
		5	1712	40.16	19	24.68	155	29.78	7.45	1.9	1.3	32	2	54	.13	6	.4	1.1	19	UKF
		5	2147	1.90	19	18.72	155	15.16	8.58	2.7	2.4	38	0	97	.10	4	.5	.6	31	KOA
		6	224	40.52	19	20.26	155	8.25	7.25	2.3	2.1	38	3	81	.09	4	.4	.7	24	UER
		6	733	17.95	18	59.12	155	29.90	33.30	2.4	1.6	31	4	229	.07	18	1.0	1.6	24	DIS
		6	1226	45.62	19	20.64	155	12.78	7.33	1.7	1.6	27	1	66	.10	4	.5	.8	21	UER
		6	1726	34.90	19	25.35	155	25.96	3.80	1.8	1.6	26	2	56	.12	1	.4	.6	21	UKF
		6	2055	11.42	19	26.49	155	22.95	6.60	1.4	1.4	22	2	58	.11	4	.4	1.1	17	UKF
		7	0 6	2.69	19	21.74	155	26.00	9.76	1.8	1.2	20	0	91	.10	3	.5	1.2	19	HEA
		7	023	24.53	19	25.41	155	25.13	7.25	1.6	1.3	28	3	50	.09	0	.3	.8	18	UKF
		7	549	52.26	19	19.04	155	13.88	7.75	1.8	1.7	26	0	89	.09	4	.5	.9	16	UER
		7	853	45.41	19	25.47	155	29.46	7.48	1.8	1.5	29	1	63	.12	6	.4	1.3	19	UKF
		7	1155	5.12	19	16.88	155	22.38	6.50	1.8	1.7	30	1	128	.12	6	.4	1.4	17	SWR
		7	1249	9.02	19	19.70	155	8.64	7.42	1.8	1.6	26	1	77	.08	5	.4	.9	15	UER
		7	1319	5.94	19	25.61	155	25.19	4.68	1.6	1.4	17	0	123	.08	1	.4	.8	14	UKF
		7	16 6	57.13	19	20.41	155	8.76	7.52	1.4	1.3	22	0	71	.07	4	.5	.8	15	UER
		7	1938	55.88	20	28.97	155	39.42	37.09		2.2	23	3	212	.10	41	1.1	1.6	17	DIS
		7	2138	5.68	19	22.20	155	16.42	26.92	2.0	1.5	35	2	53	.07	1	.7	1.1	30	DEP
		7	2147	20.43	19	19.41	155	10.51	7.20	1.7	1.3	21	0	100	.09	5	.5	1.1	17	UER
		8	4 9	46.32	19	21.61	155	2.75	8.60	2.4	2.4	32	0	137	.09	3	.7	.5	25	MER
		8	451	25.49	19	19.87	155	8.35	8.06	1.8	1.3	19	0	151	.07	5	.7	1.0	12	UER
		8	640	18.86	19	17.75	155	6.86	42.92	2.4	2.1	40	3	180	.10	2	.8	1.5	32	POL
		8	852	47.98	19	19.28	155	11.70	8.59	2.6	2.8	33	1	99	.11	5	.5	.7	28	UER
		8	918	50.11	19	21.92	155	28.78	10.55	1.9	1.9	31	2	67	.09	2	.4	.8	21	HEA
		8	1951	34.70	19	20.61	155	13.13	8.15	1.6	1.8	34	1	63	.11	4	.5	.6	21	UER
		8	2023	21.92	18	53.08	155	12.37	47.84		1.4	29	3	270	.10	41	1.5	2.2	19	PPL
		9	612	37.64	19	21.02	155	6.37	7.11	2.2	1.6	28	1	95	.12	4	.5	1.0	21	UER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	OUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	DEC	9	919	31.77	19	13.16	155	36.86	9.35	2.2	1.9	30	2	201	.22	3	.9	.8	19	HEA	
		9	19 9	28.75	19	24.76	155	17.34	8.05	1.3	1.3	15	0	85	.11	1	.8	1.1	11	LPC	
		9	2344	3.71	19	21.48	155	4.72	8.27	2.4	2.4	36	1	85	.11	4	.4	.7	24	MER	
		10	259	45.63	19	24.76	155	32.35	7.39	2.0	1.6	18	1	50	.07	8	.5	1.8	14	MOK	
		10	921	14.54	19	24.62	155	24.76	7.70	1.5	1.2	24	2	46	.12	1	.4	.9	19	UKF	
		10	1657	37.25	19	27.30	155	24.00	3.46	1.9	1.6	24	3	66	.12	4	.3	.8	17	UKF	
		10	23 7	51.30	19	24.44	155	24.89	10.91	2.1	2.2	28	2	88	.09	2	.5	.8	19	UKF	
		11	5 0	14.62	19	20.42	155	7.23	8.14	1.3	1.3	22	0	96	.08	5	.6	1.2	19	UER	
		11	638	29.34	18	52.23	155	10.63	42.27	2.8	2.6	33	0	262	.08	44	2.0	2.9	23	PPL	
		11	1058	45.24	19	12.30	155	35.24	7.73	2.6	2.0	29	3	88	.20	6	.6	1.1	18	HEA	
		11	1442	54.63	19	27.39	155	20.76	8.17	1.8	1.2	18	1	103	.10	0	.6	1.2	14	UKF	
		11	1517	.36	19	27.42	155	20.93	7.39	1.4	1.4	18	3	92	.11	1	.5	1.2	12	UKF	
		11	1726	48.33	19	21.36	155	2.58	7.74	1.6	1.2	14	0	146	.07	3	.8	.8	10	MER	
		11	1847	35.70	19	20.31	155	8.83	8.84	1.6	1.3	16	0	119	.04	4	.7	1.3	15	UER	
		11	2117	59.39	19	19.34	155	13.62	7.70	1.9	1.8	31	1	66	.10	4	.5	.8	24	UER	
		11	2125	18.14	19	26.88	155	21.16	6.84	1.9	2.0	24	1	46	.10	2	.4	.8	15	UKF	
		12	2 7	42.69	19	22.04	155	2.43	8.47	2.1	1.6	29	1	142	.08	4	.5	.6	21	MER	
		12	436	.97	19	14.95	155	6.83	42.71	1.9	1.7	21	0	201	.06	5	1.6	2.9	18	POL	
		12	8 6	17.59	19	24.13	155	27.29	9.78	1.8	1.3	23	1	56	.08	3	.4	.8	19	UKF	
		12	1048	27.23	19	24.16	155	24.50	9.79	2.1	1.3	32	0	48	.11	2	.4	.6	28	UKF	
		12	1244	32.19	19	19.64	155	11.05	8.35	2.6	2.7	37	1	94	.09	5	.4	.6	29	UER	
		12	1359	18.03	19	23.31	155	15.11	2.76	1.4	.9	13	1	103	.06	2	.4	.5	9	SPC	
		12	1438	42.48	19	22.30	155	29.97	8.14	2.0	1.6	31	0	71	.10	4	.4	.9	23	UKF	
		12	1643	13.15	19	20.33	155	10.83	9.25	2.0	1.6	31	0	81	.07	4	.5	.8	23	UER	
		12	1740	45.06	19	19.81	155	12.60	8.71	1.6	1.1	15	0	134	.08	6	.7	1.5	11	UER	
		12	1745	47.61	19	19.34	155	11.33	8.65	1.6	1.2	17	0	138	.04	6	.7	1.5	13	UER	
		12	1824	56.24	19	19.32	155	11.72	9.06	1.7	1.2	17	0	141	.06	6	.8	1.7	13	UER	
		13	2 4	23.24	19	22.20	155	2.78	5.80	1.8	1.3	19	1	131	.13	4	.6	1.0	12	MER	
		13	436	30.55	19	15.66	155	7.32	41.85	2.4	1.8	39	2	198	.09	3	1.1	1.5	27	POL	
		13	555	52.06	19	23.18	155	14.81	3.38	2.5	2.6	27	1	47	.07	2	.3	.4	23	GLN	
		13	844	5.80	19	20.80	155	2.61	6.48	2.0	1.5	25	0	155	.13	2	.7	1.0	17	MER	
		13	1712	12.32	19	17.93	155	13.19	6.72	1.7	1.2	14	0	188	.07	8	1.0	2.2	13	POL	
		13	1744	3.08	19	24.82	155	24.50	11.44	4.0	4.1	43	0	38	.13	1	.4	.4	43	UKF	F
		13	2051	21.21	19	10.33	155	26.97	32.62	1.8		16	0	159	.07	2	2.8	5.1	11	LSW	
		13	2240	1.71	19	21.10	155	7.55	8.47	1.9	1.3	22	2	129	.07	4	.5	.6	14	UER	
		13	2322	58.42	19	21.71	155	15.15	9.19	2.0	1.6	23	0	92	.08	2	.5	.8	21	KOA	
		14	147	39.07	19	12.78	155	27.91	8.74	2.1	1.8	26	0	144	.10	6	.5	1.0	15	LSW	
		14	358	29.90	19	24.28	155	24.82	10.02	1.9	1.6	27	0	49	.09	2	.5	.9	19	UKF	
		14	556	44.58	19	25.84	154	55.82	5.50	1.8	1.3	26	3	193	.13	3	.9	1.4	10	LER	
		14	627	37.51	19	20.07	155	7.34	7.37	1.7	1.2	14	1	189	.04	5	1.0	1.6	11	UER	
		14	638	41.17	19	27.35	155	20.99	7.35	1.9	1.8	23	1	65	.10	1	.5	1.0	19	UKF	
		14	9 6	57.18	19	21.42	155	8.05	8.94	2.1	2.1	32	1	71	.08	3	.4	.8	21	UER	
		14	1032	41.36	19	19.89	155	10.50	8.58	1.7	1.0	16	0	120	.03	4	.7	1.3	15	UER	
		14	1251	24.18	19	56.43	155	29.10	14.07	2.1	1.1	19	4	237	.09	16	1.4	.6	15	KKU	
		14	20 9	59.34	19	20.42	155	11.34	6.68		1.2	15	0	78	.11	4	.6	1.7	13	UER	
		15	212	45.89	19	26.62	154	55.93	5.74	1.9	1.1	24	4	195	.12	2	.8	1.1	10	LER	
		15	241	49.75	19	19.75	155	6.80	8.00	2.0	1.3	20	1	160	.06	6	.6	.9	18	UER	
		15	848	19.30	19	22.69	155	18.42	13.94	2.3	2.1	43	3	32	.10	3	.4	.3	33	INT	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	OUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	DEC	15	1025	28.98	19	18.93	155	12.23	8.56	1.8	1.1	20	1	151	.05	7	.6	1.4	15	POL	
		15	1459	13.83	19	21.79	155	6.55	8.48	1.8	1.5	24	1	79	.09	2	.5	1.1	16	UER	
		15	1745	13.13	19	21.02	155	18.46	14.46	3.6	3.4	42	0	51	.11	3	.5	.3	39	INT	
		15	21 2	38.61	19	21.07	155	18.25	12.16	1.6	1.3	32	4	55	.07	2	.4	.4	20	INT	
		16	156	4.52	19	25.75	155	57.43	23.29	2.6	1.7	32	5	220	.11	8	.6	1.0	11	KON	
		16	214	50.34	19	27.01	155	14.72	32.41	2.1	1.5	38	5	83	.09	4	.7	.9	30	DEP	
		16	521	5.24	19	21.12	155	18.47	13.40	2.0	1.7	38	1	49	.11	3	.5	.4	25	INT	
		16	628	10.97	19	18.26	155	12.90	9.65	2.0	1.2	20	2	168	.07	8	.8	1.5	16	POL	
		16	1231	27.73	19	18.07	155	13.04	7.71	2.0	1.7	30	1	104	.08	2	.5	.7	22	POL	
		16	1811	3.85	19	11.35	155	35.83	5.81	3.0	2.8	39	3	95	.21	12	.6	1.9	28	HEA	
		16	1922	55.52	19	19.49	155	12.03	7.36	2.4	2.7	37	0	91	.12	5	.4	.7	33	UER	
		16	2344	22.32	19	23.73	155	17.01	2.63	1.6		19	1	69	.12	2	.3	.5	9	SPC	
		16	2344	25.43	19	23.65	155	16.69	3.52	3.2	3.8	29	0	88	.10	3	.4	1.0	26	SPC	F
		17	152	27.19	19	22.25	155	.52	3.54	1.3	1.3	12	0	180	.10	6	.7	2.6	9	LER	
		17	944	19.19	19	20.67	155	13.05	9.46	2.1	2.3	34	0	63	.07	4	.4	.5	22	UER	
		17	956	21.11	19	20.55	155	13.00	9.11	1.4	1.3	15	0	122	.05	4	.6	1.6	11	UER	
		17	1014	31.86	19	22.28	155	5.72	6.68	1.7	1.3	13	0	119	.10	2	.7	1.0	10	MER	
		17	13 0	31.15	19	23.23	155	14.77	.01	1.6	1.9	7	0	84	.26	3	.5	1.5	7	GLN	*
		17	1929	13.19	19	22.26	155	5.67	7.74	1.9	1.8	22	0	72	.10	2	.4	.9	16	MER	
		17	23 3	16.93	19	18.36	155	13.61	8.84	1.7	1.4	15	1	117	.06	2	.7	1.2	11	POL	
		18	147	9.89	19	21.18	155	5.85	8.53	1.2	1.4	15	0	127	.04	3	.6	1.0	11	MER	
		18	234	46.81	19	23.01	155	1.61	8.41	2.0	1.6	27	1	149	.13	5	.6	.8	21	MER	
		18	743	34.72	19	22.08	155	6.58	7.56	2.0	1.8	18	0	74	.09	2	.5	.9	16	UER	
		18	951	47.40	19	23.71	155	15.45	3.19	2.1	2.1	24	1	96	.10	2	.3	.3	20	SPC	F
		18	10 3	32.76	19	18.96	155	15.80	9.26	2.6	2.7	37	2	120	.09	4	.5	.6	24	KOA	
		18	1117	34.80	19	23.75	155	15.72	2.83	1.4	1.6	16	1	100	.09	2	.4	.2	13	SPC	
		18	1236	15.91	19	43.18	155	3.12	.05	1.7	2.5	22	0	237	.26	4	3.1	2.2	15	HIL	B*
		18	1436	22.65	19	20.48	155	13.04	9.14	1.9	1.5	26	0	64	.07	4	.4	.7	21	UER	
		18	1648	25.06	19	17.29	155	29.24	7.06	2.1	1.5	34	1	80	.19	4	.5	1.3	25	HEA	
		18	1810	1.43	19	23.47	155	14.94	3.50	1.4	1.3	14	1	98	.07	3	.3	.5	12	GLN	
		18	19 4	47.10	19	25.03	155	25.42	7.75	1.7	1.5	27	1	50	.10	1	.4	.9	22	UKF	
		18	1912	49.46	19	21.63	155	2.08	8.98	2.5	2.7	37	1	158	.08	4	.6	.4	27	MER	
		18	2122	51.90	19	22.86	155	14.56	3.26	2.4	2.6	31	0	50	.12	3	.3	.4	19	UER	
		19	152	58.24	19	21.31	155	2.63	8.17	2.8	2.9	37	1	144	.11	3	.6	.6	29	MER	
		19	4 2	59.70	19	20.94	155	7.66	45.53	2.1	1.6	35	3	194	.08	4	1.0	1.4	28	UER	
		19	4 6	29.94	19	22.01	155	3.30	7.14	2.0	1.4	28	0	116	.15	4	.5	.9	20	MER	
		19	755	13.82	19	51.86	155	31.58	22.44	2.1	1.6	35	9	123	.08	19	.7	1.8	24	KKU	
		19	857	38.81	19	21.11	155	10.67	8.31	2.1	1.8	34	2	68	.08	2	.3	.5	28	UER	
		19	1355	4.99	19	23.23	155	14.82	3.19	1.9	2.3	19	0	67	.06	2	.3	.4	17	GLN	
		19	15 7	51.13	19	21.78	155	2.19	8.29	2.0	1.5	25	1	152	.12	4	.8	.8	19	MER	
		19	1723	21.17	19	16.51	155	23.43	6.91	1.8	1.6	21	2	172	.11	7	.6	1.9	19	SWR	
		19	1825	42.94	19	23.94	155	15.41	3.37	1.6	1.8	19	0	105	.07	2	.3	.3	14	SPC	
		19	1947	50.51	19	20.67	155	13.23	8.08	1.8	1.6	24	1	61	.12	4	.5	.9	18	UER	
		19	2325	6.60	19	23.22	155	14.90	3.21	1.5	1.6	16	0	69	.05	2	.3	.4	14	GLN	
		20	033	59.94	19	23.04	155	14.71	2.84	1.6	1.6	17	0	63	.07	2	.3	.4	14	GLN	
		20	228	13.35	19	19.97	155	6.68	8.25	2.0	1.6	27	0	115	.10	5	.6	1.0	26	UER	
		20	343	4.66	19	23.80	155	15.25	3.22	1.6	1.4	15	0	97	.06	2	.4	.4	13	SPC	
		20	345	30.04	19	20.31	155	11.64	9.51	2.2	1.8	31	0	78	.07	5	.4	.8	23	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	DEC	20	14 2	6.71	19	26.62	155	23.90	7.89	1.9	1.4	25	1	62	.12	3	.4	.9	18	UKF	
		20	1554	3.21	19	19.99	155	13.42	7.25	1.5	1.3	25	0	67	.11	5	.5	1.0	19	UER	
		20	1632	49.96	19	19.67	155	13.07	9.15	2.1	2.0	32	1	73	.08	5	.4	.7	21	UER	
		20	2113	1.20	19	24.26	155	16.35	1.62	1.9	2.2	15	1	106	.07	1	.3	.3	10	SPC	
		20	2337	33.90	19	20.13	155	8.18	8.64	1.6	1.4	21	0	83	.06	5	.6	1.3	17	UER	
		21	019	56.69	19	23.70	155	15.29	2.58	1.3	1.3	12	0	95	.08	2	.4	.5	10	SPC	
		21	027	1.57	19	20.84	155	13.45	9.61	2.1	1.8	30	0	59	.10	3	.5	.6	26	UER	
		21	257	33.18	19	25.64	155	16.25	1.36	1.3	1.8	14	0	125	.10	2	.4	.5	10	SPC	
		21	740	45.12	19	22.88	155	14.50	3.67	2.1	2.2	23	0	70	.06	3	.3	.4	18	UER	
		21	819	2.81	19	23.15	155	2.44	7.36	1.8	1.6	23	1	129	.10	4	.6	.9	13	MER	
		21	916	8.48	19	22.96	155	14.67	3.38	1.7	1.6	18	0	67	.05	2	.4	.4	14	UER	
		21	1052	53.95	19	19.49	155	11.99	7.62	1.9	1.7	20	0	91	.06	5	.4	1.0	15	UER	
		21	2113	1.80	20	5.49	155	48.14	10.23	2.5	2.2	27	4	284	.09	45	1.5	.9	18	KOH	
		21	23 3	20.15	19	53.14	155	18.69	10.19	2.2	2.1	26	1	259	.11	19	1.6	.6	20	KKU	
		22	510	22.88	19	18.67	155	13.68	6.29	1.5	1.6	23	0	90	.10	3	.6	1.3	20	POL	
		22	12 6	4.74	19	24.91	155	25.32	6.34	1.8	1.5	30	3	49	.11	1	.4	.9	25	UKF	
		22	1339	28.08	19	22.51	155	25.33	9.12	2.2	2.0	36	1	73	.12	4	.4	.8	30	UKF	
		22	1637	59.35	19	26.63	155	23.67	6.09	1.7	1.6	22	1	46	.11	4	.4	1.0	19	UKF	
		22	1640	30.20	19	24.15	155	29.43	7.97	1.9	1.6	30	3	51	.10	4	.4	1.1	23	UKF	
		22	21 8	1.39	19	18.90	155	13.68	8.77	1.6	1.6	18	0	154	.05	7	.8	1.4	17	POL	
		23	039	55.45	19	22.80	155	14.54	3.49	1.8	1.8	22	1	70	.07	3	.3	.4	19	UER	
		23	1 4	.25	19	27.28	155	24.16	5.93	1.7	1.6	22	3	79	.13	4	.4	1.1	15	UKF	
		23	1 6	2.09	19	23.21	155	14.67	3.35	3.6	3.9	40	1	47	.10	3	.3	.4	37	GLN	F
		23	1 7	55.20	19	23.46	155	15.06	3.00	1.9	1.5	14	0	79	.05	2	.3	.4	12	SPC	
		23	129	56.76	19	20.50	155	13.00	9.20	1.8	1.3	20	1	122	.07	4	.7	1.2	16	UER	
		23	131	12.78	19	23.45	155	15.04	3.13	2.0	2.3	26	1	69	.06	2	.3	.3	22	SPC	F
		23	152	24.24	19	21.96	155	6.81	8.47	2.2	2.2	28	1	75	.11	2	.4	.8	20	UER	
		23	334	30.22	19	21.54	155	6.53	7.56	2.0	1.8	31	1	83	.09	3	.4	.9	24	UER	
		23	345	31.61	19	23.71	155	15.26	3.10	1.6	1.6	18	2	94	.07	2	.3	.4	13	SPC	
		23	5 9	32.86	19	49.13	156	6.58	4.48	2.0	2.1	22	4	296	.11	32	1.2	.9	7	KON	
		23	511	40.04	19	22.33	156	21.99	38.50	2.4	2.4	20	4	319	.09	49	1.7	2.1	13	DIS	
		23	526	54.26	19	19.47	155	10.24	7.86	1.7	1.4	29	1	98	.09	5	.4	.8	20	UER	
		23	554	3.14	19	19.91	155	12.05	10.06	2.9	3.1	39	0	82	.09	5	.3	.4	28	UER	
		23	626	12.17	19	24.55	154	57.84	5.90	2.0	1.8	22	0	200	.14	2	.8	.9	18	LER	
		23	635	.50	19	19.91	155	11.73	6.56	1.5	1.5	28	1	85	.08	5	.4	.8	18	UER	
		23	718	57.18	19	24.15	155	25.38	9.84	2.0	1.6	34	2	37	.11	2	.4	.7	24	UKF	
		23	1451	56.89	19	24.58	155	24.44	10.31	2.3	1.6	36	0	45	.10	2	.4	.6	25	UKF	
		23	1516	1.21	19	24.17	155	15.67	3.39	1.4	1.1	12	1	123	.07	2	.4	.5	10	SPC	
		23	1516	57.95	19	23.92	155	15.50	2.91	1.6	1.2	14	1	107	.06	2	.3	.3	9	SPC	
		23	1626	25.61	19	19.99	155	8.05	8.65	2.7	2.3	35	0	88	.09	5	.5	.6	31	UER	
		23	21 8	26.64	19	26.81	155	23.70	8.23	2.1	1.5	33	0	46	.11	4	.4	.8	26	UKF	
		24	144	8.17	19	22.53	155	6.02	8.32	3.1	3.1	40	0	69	.10	1	.4	.6	31	UER	
		24	8 6	48.75	19	22.12	155	1.40	7.69	2.1	1.8	21	1	167	.11	5	.9	.6	14	MER	
		24	1023	50.41	19	19.01	155	15.38	7.59	1.1	1.2	23	1	115	.08	4	.5	.8	15	KOA	
		24	1125	16.16	19	18.78	155	13.24	8.13	1.7	1.9	34	0	82	.09	3	.4	.7	23	POL	
		24	1339	39.25	20	8.48	155	51.83	34.35	3.1	3.0	38	5	274	.10	9	1.1	1.5	26	KOH	
		24	1640	5.05	19	21.57	155	6.60	9.13	1.9	2.1	27	0	82	.09	6	.5	.7	24	UER	
		24	20 1	36.68	19	19.17	155	15.44	8.17	1.6	1.7	29	1	111	.09	4	.5	.7	23	KOA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	DEC	24	2013	5.18	19	20.21	155	11.93	8.67	1.7	1.8	28	0	78	.08	5	.5	.8	23	UER	
		24	22 9	11.20	19	23.16	155	16.85	2.99	2.7	2.8	32	2	40	.10	0	.3	.3	25	SPC	F
		24	2338	49.68	19	19.99	155	11.43	9.54	1.7	1.4	17	0	126	.04	5	.8	1.3	15	UER	
		25	136	24.64	19	20.38	155	6.05	8.01	1.9	1.7	27	0	113	.10	5	.5	.9	18	UER	
		25	555	54.88	20	27.87	156	48.34	33.13	3.2	3.5	28	3	328	.11	133	2.1	3.7	16	DIS	
		25	814	24.04	19	22.87	155	14.59	3.48		1.7	14	0	69	.07	2	.4	.5	14	UER	
		25	814	42.08	19	22.74	155	14.54	3.44		2.3	19	0	50	.08	2	.4	.5	17	UER	
		25	938	3.43	19	22.58	155	14.11	3.26	1.9	2.2	20	0	76	.07	2	.3	.4	19	UER	
		25	12 0	16.59	19	21.54	155	1.80	8.38	2.1	1.5	23	0	167	.10	4	.8	.7	18	MER	
		25	1236	48.48	19	19.77	155	8.06	8.12	1.9	1.6	30	1	89	.07	4	.5	.7	23	UER	
		25	1611	52.07	19	20.18	155	13.31	8.73	1.9	2.2	32	0	64	.09	5	.4	.7	22	UER	
		25	1615	41.16	19	22.31	155	25.26	10.28	2.0	1.9	28	0	99	.08	4	.5	.8	22	UKF	
		25	1753	58.63	19	23.10	155	28.24	9.53	1.9	1.7	25	1	46	.08	2	.4	.8	14	UKF	
		26	121	10.39	19	20.30	155	6.73	7.75	2.0	1.7	29	0	106	.08	5	.4	.8	19	UER	
		26	142	39.55	19	9.85	155	42.25	2.66	2.5	1.8	20	4	136	.23	13	.7	1.8	12	HEA	
		26	3 1	6.75	19	26.19	155	24.26	8.46	2.0	1.9	29	2	46	.12	2	.4	1.0	21	UKF	
		26	634	31.45	19	26.14	155	23.93	9.49	1.9	1.7	24	2	86	.09	3	.5	.8	16	UKF	
		26	641	54.17	19	23.58	155	15.14	3.21	2.3	2.6	21	1	85	.09	3	.4	.4	19	SPC	
		26	1115	43.98	19	21.21	155	2.08	5.16	1.9	2.5	29	1	167	.14	3	.5	1.0	18	MER	
		26	1435	52.95	19	21.91	155	26.23	10.23	1.9	1.7	26	2	67	.09	3	.5	1.0	18	HEA	
		26	1535	17.77	19	23.59	155	15.22	2.80	1.4	1.7	19	2	87	.09	3	.3	.4	13	SPC	
		26	17 7	43.43	19	21.71	155	6.60	8.83	2.0	2.2	25	0	80	.09	2	.4	.9	22	UER	
		26	1733	6.16	19	23.38	155	14.92	2.66	1.3	1.3	10	0	103	.05	3	.4	.6	9	GLN	
		26	1849	22.48	19	23.87	155	15.37	3.24	1.6	2.0	18	0	101	.07	2	.4	.3	15	SPC	
		26	1853	4.10	19	26.06	155	24.99	7.15	1.6	1.3	22	2	50	.08	2	.4	.9	15	UKF	
		26	2017	19.64	19	20.74	155	4.50	7.81	2.1	2.1	33	1	105	.10	3	.4	.6	21	MER	
		26	2044	5.39	19	24.02	155	15.50	2.76	1.3	1.4	13	1	113	.05	2	.3	.3	11	SPC	
		26	2357	26.03	19	23.08	155	3.02	8.45	2.3	2.1	29	0	115	.09	3	.5	.5	20	MER	
		27	0 0	33.80	19	19.94	155	8.74	8.93	1.1	1.1	10	0	122	.03	5	1.0	3.2	6	UER	
		27	158	15.56	19	23.84	155	16.79	2.87	1.4	1.8	19	1	80	.07	0	.4	.2	13	SPC	
		27	4 5	27.05	19	22.90	155	14.49	3.31	1.6	.9	15	1	117	.07	3	.4	.4	12	UER	
		27	1011	10.77	19	19.57	155	13.04	5.63	1.6	1.5	23	0	75	.12	5	.5	1.4	23	UER	
		27	1319	1.19	19	23.09	155	3.14	8.59	2.0	1.4	19	0	112	.10	3	.7	.6	17	MER	
		27	1539	7.35	19	21.25	155	2.85	6.62	2.0	1.6	22	1	136	.11	2	.6	.8	19	MER	
		28	151	42.42	19	23.09	155	14.87	3.24	1.8	1.6	15	1	65	.06	2	.4	.5	12	GLN	
		28	412	39.41	19	26.99	155	24.58	8.19	2.1	1.7	27	0	47	.14	6	.5	1.3	24	UKF	
		28	8 7	16.84	18	55.12	155	12.98	46.66	2.6	2.1	11	0	264	.08	41	4.1	5.3	11	PPL	
		28	1125	49.94	19	18.20	155	14.46	10.42	3.1	3.0	39	0	135	.10	6	.5	.5	33	POL	F
		28	1144	56.48	19	20.12	155	11.34	7.57	1.9	1.2	14	1	123	.04	4	.6	1.5	9	UER	
		28	1810	47.59	19	25.96	155	23.64	7.17	2.0	1.6	26	0	45	.09	3	.4	.9	21	UKF	
		28	20 0	59.09	19	28.72	155	21.46	5.70	2.4	2.1	32	2	53	.14	3	.4	1.0	26	UKF	
		29	026	27.54	19	18.22	155	26.09	9.12	2.2	2.3	42	3	96	.13	6	.4	.7	29	HEA	
		29	412	39.02	19	18.78	155	15.57	7.46	1.6	1.1	27	0	124	.09	4	.4	.9	18	KOA	
		29	8 5	39.76	19	19.05	155	9.88	8.34	1.6	1.3	15	0	130	.05	5	.7	1.5	15	UER	
		29	11 5	46.60	19	11.24	155	35.74	2.96	2.3	1.7	22	1	95	.14	12	.7	3.0	13	HEA	
		29	1730	17.82	19	22.03	155	6.45	8.51	2.4	2.4	37	1	75	.07	2	.3	.5	24	UER	
		29	1848	50.70	19	19.68	155	11.80	7.49	1.7	1.6	31	0	89	.08	6	.4	.7	23	UER	
		29	1943	14.69	19	22.83	155	14.51	2.60	1.2	1.5	15	0	71	.08	3	.3	.4	8	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	ND FM	REMK	
1979	DEC	30	324	32.24	19	19.90	155	18.23	12.53	1.7	1.2	17	1	69	.07	2	.7	1.2	11	INT	
		30	422	6.70	19	22.80	155	6.17	6.66		1.3	7	0	223	.08	0	4.1	3.0	7	UER	
		30	648	5.21	19	21.13	155	9.88	3.72		1.1	5	0	322	.22	6	41.9	15.8	4	UER	*
		30	1355	55.24	19	19.91	155	8.19	8.78	2.7	2.8	32	0	86	.07	5	.4	.6	25	UER	
		30	1557	24.46	19	25.03	155	24.24	8.57	1.6	1.3	23	0	48	.10	2	.4	1.1	13	UKF	
		30	16 4	9.97	19	56.33	155	43.14	10.42	3.0	2.6	21	2	151	.08	22	.7	.7	10	KOH	
		30	1640	43.69	19	20.63	155	12.85	9.58	1.9	1.8	25	0	65	.07	4	.5	.8	17	UER	
		30	1656	7.50	19	20.02	155	13.32	9.54	1.6	1.5	20	0	66	.07	5	.6	1.2	18	UER	
		30	1859	57.94	19	23.17	155	29.77	10.31	3.2	3.3	43	1	56	.10	4	.4	.6	37	UKF	
		30	2231	59.00	19	19.77	155	11.82	8.06	1.7	1.3	14	0	132	.03	5	.7	1.8	11	UER	
		31	1 7	38.59	19	21.80	155	18.34	2.98	1.4	1.2	18	1	68	.07	4	.3	.7	11	KOA	
		31	331	2.85	19	28.72	154	50.39	7.15	1.8	1.4	19	2	325	.12	5	1.6	.7	9	LER	
		31	445	23.22	19	24.21	155	24.83	8.21	1.6	1.2	20	0	50	.10	2	.5	1.1	16	UKF	
		31	510	14.71	19	20.28	155	13.17	8.82	1.6	1.1	13	0	126	.03	4	.7	1.6	12	UER	
		31	6 0	24.35	19	20.58	155	10.73	8.97	1.7	1.3	16	0	111	.03	3	.7	1.3	15	UER	
		31	8 5	21.00	19	22.42	155	25.50	9.87	2.4	2.3	38	0	54	.11	4	.5	.7	32	UKF	
		31	8 6	43.35	19	23.83	155	24.36	10.39	2.0	1.7	29	0	48	.08	3	.4	.6	22	UKF	
		31	9 7	48.66	19	20.81	155	7.33	7.91	1.5	1.4	18	0	88	.06	4	.6	1.1	14	UER	
		31	1523	28.39	19	30.75	155	15.15	10.21	2.0	1.7	24	1	104	.08	11	.4	1.6	14	GLN	
		31	18 6	3.93	19	25.08	155	25.46	10.72	1.9	1.9	32	1	50	.10	1	.4	.7	25	UKF	

Table 6 HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	JAN	1	1821	36.01	19	21.18	155	4.19	6.68	2.3	3.0	34	1	87	.14	3	.5	.9	31	MER	
		1	2031	25.20	20	57.37	156	3.60	11.73	3.5	4.2	37	3	278	.12	29	3.7	3.3	35	DIS	
		2	5	3 39.79	19	21.12	155	2.63	7.93	2.7	3.2	33	1	146	.09	2	.5	.4	28	MER	
		7	1914	5.91	19	21.13	155	13.30	10.21	2.8	3.2	34	1	57	.09	3	.4	.4	30	UER	
		9	23	0 44.73	19	23.09	155	5.37	1.42	2.7	3.1	23	0	78	.16	3	.5	1.1	23	MER	
		11	224	45.59	19	22.11	155	5.68	2.53	3.0	3.4	27	0	75	.15	6	.5	2.6	27	MER	
		11	524	52.57	19	23.34	155	5.42	.86	3.8	4.0	18	0	79	.08	3	.4	.8	17	MER	
		13	755	26.99	19	20.06	155	7.98	8.60	2.8	3.1	33	0	88	.10	5	.5	.6	28	UER	
		14	2112	36.55	19	22.32	155	4.57	9.42	3.1	3.3	33	0	84	.08	4	.5	.5	32	MER	
		16	1947	13.78	20	22.36	154	59.98	.09	3.4	3.1	32	0	308	.14	65	12.1	6.7	32	DIS	*
		17	236	45.58	19	18.10	155	14.14	10.79	2.9	3.1	36	0	135	.10	7	.6	.5	36	POL	
		19	1419	15.41	19	20.12	155	12.38	9.97	3.0	3.2	36	1	76	.09	5	.4	.4	32	UER	
		24	1322	45.87	19	15.74	155	26.94	9.00	2.8	3.0	35	4	104	.12	11	.3	.9	20	LSW	
		25	1821	5.83	19	19.69	155	11.29	9.73	2.7	3.0	31	0	92	.10	5	.5	.5	30	UER	
		26	622	47.36	19	22.32	155	28.82	10.25	2.8	3.2	32	0	61	.10	2	.4	.7	31	UKF	
		28	1922	53.48	19	22.64	155	30.13	9.47	3.0	2.8	33	0	57	.11	4	.4	.8	32	MOK	
	FEB	1	1425	32.21	20	30.58	155	35.75	17.00	2.3	3.1	21	3	303	.11	47	4.4	98.9	17	DIS	*
		3	249	4.28	19	20.40	155	12.08	9.24	3.5	3.6	34	0	74	.08	4	.4	.3	33	UER	
		3	528	45.52	19	20.06	155	11.96	10.06	2.9	3.0	34	0	81	.11	5	.5	.4	31	UER	
		4	837	8.64	19	19.57	155	7.85	9.00	3.5	3.9	29	0	204	.10	6	1.1	.6	28	UER	
		4	911	3.00	19	.22	156	27.12	36.31	3.6	3.7	23	0	309	.10	68	13.2	3.3	21	DIS	
		5	22	3 59.97	19	20.45	155	6.76	8.83	3.2	3.1	34	0	143	.10	6	.6	.5	33	UER	
		6	1651	18.16	19	22.76	155	6.46	.81	2.7	3.3	21	1	84	.07	5	.3	.8	11	UER	
		8	217	35.69	19	19.37	155	7.07	9.40	2.8	3.1	33	1	121	.10	4	.6	.4	29	UER	
		13	1652	51.05	19	20.60	155	4.25	8.58	3.9	4.3	36	0	109	.10	3	.6	.4	36	MER	F
		14	1349	39.87	19	20.01	155	8.24	8.19	2.8	3.3	30	0	83	.10	5	.5	.7	25	UER	
		18	445	44.07	19	26.97	155	29.27	10.58	3.2	3.5	37	1	46	.11	9	.4	.6	36	UKF	F
		20	1914	20.28	19	21.82	155	15.78	26.89	3.1	3.1	31	1	60	.09	1	.7	.9	26	DEP	
		22	1715	6.29	19	22.41	155	5.71	8.82	3.2	3.4	29	0	70	.09	5	.5	.7	27	MER	
		23	252	21.39	19	23.92	155	15.95	3.17	2.5	3.0	29	0	37	.12	3	.3	.5	25	SPC	
		24	139	53.92	19	19.73	155	8.38	9.21	2.7	3.1	33	1	83	.08	4	.5	.4	30	UER	
		27	052	53.05	19	11.80	155	40.09	5.87	3.2	2.9	24	0	190	.20	8	1.2	1.5	22	HEA	
	MAR	2	227	18.22	19	20.21	155	11.18	9.91	3.6	4.1	37	1	82	.08	4	.3	.4	33	UER	
		2	2148	11.81	19	24.58	155	28.12	11.13	3.0	3.1	40	2	34	.12	4	.4	.5	37	UKF	
		5	2041	58.58	19	20.88	155	6.10	9.44	3.3	3.5	36	2	100	.10	6	.5	.4	33	UER	
		6	259	50.14	19	19.97	155	6.99	9.80	3.7	4.0	37	1	110	.10	5	.5	.4	36	UER	F
		6	5	7 58.54	19	31.21	155	16.18	27.43	4.7	4.9	38	0	50	.09	11	.5	1.3	34	NER	
		6	1254	43.52	19	23.59	155	1.68	8.42	2.8	3.2	28	1	137	.10	5	.6	.6	25	MER	
		6	1957	20.28	19	20.89	155	2.06	7.81	2.8	3.3	29	1	176	.10	2	.8	.6	23	MER	
		7	5	8 7.91	19	19.97	155	7.45	9.16	2.6	3.2	29	1	101	.09	5	.6	.5	27	UER	
		8	1411	36.68	19	23.02	155	5.52	1.23	2.7	3.3	23	0	70	.18	4	.5	1.4	23	MER	
		8	1442	37.15	19	24.54	155	14.72	2.81	2.7	3.1	20	0	44	.15	1	.4	.8	19	GLN	F
		10	355	14.65	19	20.05	155	6.68	9.57	4.5	4.4	37	0	113	.10	5	.6	.4	36	UER	F
		10	454	49.29	19	12.30	155	41.07	7.19	3.3	3.5	29	0	115	.20	9	1.0	1.3	26	HEA	F
		10	949	33.31	19	18.03	155	7.03	10.13	3.1	3.3	31	0	184	.11	8	.9	.5	31	POL	
		11	014	56.50	19	17.59	155	5.97	10.89	3.4	3.9	30	0	199	.11	7	1.0	.5	29	MER	
		11	1728	5.17	19	30.84	155	16.84	24.25	3.4	3.2	36	0	59	.09	10	.6	1.2	26	GLN	F
		11	18	4 44.41	19	20.24	155	8.05	8.27	2.6	3.2	30	0	85	.07	5	.5	.7	28	UER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAR	13	821	39.42	19	20.08	155	12.09	9.21	2.8	3.3	31	0	79	.10	5	.4	.6	28	UER
		13	957	8.81	19	21.10	155	26.16	11.28	3.5	3.7	38	1	75	.12	4	.4	.5	36	HEA F
		15	855	1.06	19	22.12	155	6.30	1.43	3.4	3.7	27	0	75	.18	6	.6	2.6	25	UER
		15	1010	14.66	19	22.67	155	5.91	.11	3.4	0.0	21	0	76	.11	5	.4	1.3	20	MER
		20	13 3	9.91	19	21.06	155	7.66	8.94	3.3	3.8	31	1	81	.09	4	.4	.5	25	UER F
		20	16 8	35.18	19	40.60	155	3.82	10.00	2.6	3.1	15	0	212	.17	30	1.5	2.1	14	HIL B
		21	2046	59.79	20	5.99	155	50.44	16.22	4.5	4.5	37	1	144	.11	46	.7	17.6	32	KOH F*
		23	2136	30.93	19	20.73	155	7.50	9.08	2.7	3.1	31	1	88	.07	5	.5	.5	29	UER
		25	650	17.87	19	21.25	155	7.88	9.99	3.1	3.6	35	1	77	.08	4	.5	.3	32	UER
		26	1341	25.47	19	20.80	155	8.48	7.09	3.2	3.9	28	1	72	.11	3	.5	.9	26	UER F
		27	2130	9.80	20	5.42	155	50.08	12.31	4.9	4.6	36	0	285	.09	45	3.2	5.9	32	KOH F
		27	2134	44.92	20	3.82	155	48.83	10.34	3.1	3.4	30	1	281	.10	49	3.5	1.4	25	KOH
		28	554	50.56	19	21.38	155	4.71	9.13	3.0	3.0	32	1	87	.08	4	.6	.4	23	MER
		29	056	2.32	20	8.61	155	51.49	13.14	3.1	3.1	34	1	294	.12	51	3.6	6.3	28	KOH
		29	1324	46.69	18	47.67	155	17.68	12.93	2.7	3.0	25	0	276	.06	44	3.5	23.7	21	PPL *
		29	23 6	44.78	20	48.35	158	41.18	.07	5.5	5.7	37	1	285	.18	98	13.2	2.3	34	DIS *
		30	1256	21.12	20	3.63	155	49.97	21.79	3.1	3.3	33	1	208	.10	9	3.1	4.6	23	KOH
	APR	2	1923	24.55	19	22.13	154	59.91	6.17	2.6	3.0	31	0	191	.11	6	.9	.6	30	LER F
		4	2014	58.71	19	20.94	155	1.33	6.87	3.3	3.6	32	0	194	.09	3	.7	.5	28	MER
		8	18 8	57.88	19	26.34	155	27.23	9.78	3.1	2.7	34	2	47	.11	7	.4	.8	29	UKF
		12	839	46.44	19	20.15	155	13.29	9.44	3.0	3.1	33	1	64	.08	5	.4	.6	28	UER
		14	331	12.71	19	23.97	155	15.76	5.37	3.4	3.8	36	0	44	.13	3	.4	.7	33	SPC F
		14	1524	.29	19	20.94	155	13.31	9.54	2.8	3.0	33	1	58	.09	3	.4	.5	29	UER
		15	115	18.55	19	23.70	155	15.28	3.41	2.6	3.0	30	1	68	.09	2	.3	.5	20	SPC
		16	2029	53.87	19	15.34	155	24.17	47.44	3.6	3.8	33	0	129	.09	9	.9	2.2	31	LSW F
		21	1214	52.33	19	20.12	155	29.04	8.23	3.0	3.2	26	0	71	.11	5	.4	1.0	26	HEA
		21	1857	6.78	19	18.69	155	13.25	10.85	3.0	3.4	31	1	133	.08	7	.6	.4	28	POL
		24	112	38.11	20	6.79	155	54.62	31.05	3.1	3.1	33	1	262	.10	14	2.5	2.8	29	KOH
		26	2114	45.57	20	19.50	155	32.39	1.70	2.9	3.3	29	0	277	.14	33	3.6	3.0	29	DIS
		27	1426	55.26	18	57.73	155	28.07	36.70	3.4	3.6	36	1	231	.05	21	1.0	1.7	33	DIS
		30	22 3	32.53	18	42.45	155	11.13	7.00	3.0	2.5	34	0	292	.13	64	5.4	85.1	34	PPL *
	MAY	2	21 8	47.95	19	24.71	155	29.21	10.56	3.2	3.2	39	1	32	.10	5	.4	.5	32	UKF
		5	1851	7.32	19	13.30	155	35.88	8.16	3.1	2.9	30	0	85	.24	4	.8	1.3	24	HEA
		5	2122	47.41	19	4.66	155	31.46	56.66	3.0		26	0	175	.19	11	2.0	4.6	11	LSW T
		10	1037	45.76	19	26.28	155	24.47	10.96	3.0	2.6	33	0	36	.13	7	.4	.7	32	UKF
		11	1345	26.94	19	20.14	155	3.87	9.31	2.8	3.1	35	1	132	.12	2	.8	.5	30	MER
		11	1359	37.33	19	20.41	155	3.91	9.26	3.3	3.7	35	0	114	.11	2	.8	.4	33	MER F
		11	1455	50.61	19	20.44	155	3.81	8.97	2.9	3.1	32	1	110	.10	2	.7	.4	28	MER
		12	1226	17.33	19	23.26	155	3.36	8.82	3.1	3.2	24	0	106	.10	3	.6	.5	19	MER
		13	1138	39.85	19	23.05	155	3.04	9.61	3.0	3.2	25	1	120	.05	4	.5	.4	23	MER
		14	1057	31.42	19	16.80	155	47.21	9.45	3.5	2.9	33	0	103	.11	9	.5	.6	27	KON
		14	1838	45.11	19	2.42	155	2.28	51.07	3.0	2.9	37	2	248	.07	29	1.6	1.9	32	PPL
		17	530	52.27	19	27.90	155	24.29	10.01	3.4	3.3	35	1	35	.10	4	.4	.6	31	UKF F
		21	2142	26.24	19	19.83	155	12.00	9.23	3.2	3.2	35	1	85	.08	6	.3	.5	21	UER
		23	3 9	44.27	19	23.88	155	26.82	8.98	3.3	3.5	35	0	47	.13	9	.4	.9	31	UKF
		23	1651	14.06	19	57.66	155	37.08	11.35	3.2	2.7	26	1	247	.06	26	1.2	.6	16	KOH
		24	1626	6.09	19	23.05	155	14.98	3.41	3.2	3.5	36	1	49	.09	2	.3	.5	32	GLN F
		28	644	58.32	18	50.07	154	21.42	7.01	3.1	1.6	21	0	337	.52	91	99.0	99.0	14	DIS *

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	MAY	28	1850	33.82	19	22.39	155	4.77	9.05	3.0	3.0	36	1	81	.09	3	.5	.5	30	MER
		29	1743	55.40	19	21.86	155	12.64	6.79	3.0	2.9	32	1	55	.11	2	.4	.8	25	UER
		29	1744	54.97	19	22.33	155	12.47	4.74	3.1	3.3	16	0	89	.15	6	.6	2.2	12	UER
		29	1748	7.55	19	22.25	155	12.89	.22	3.1	3.1	20	1	117	.15	5	.6	.9	12	UER
		29	1752	17.05	19	21.42	155	12.92	6.72	3.2	2.8	20	0	99	.11	2	.6	.7	11	UER
	JUN	1	016	11.64	19	20.36	155	13.78	9.83	3.0	2.7	37	2	56	.10	4	.4	.4	32	UER
		1	054	58.24	19	22.20	155	4.96	9.20	3.0	2.8	34	1	77	.11	3	.5	.4	29	MER
		5	1216	36.49	19	22.32	155	4.53	8.82	3.1	2.8	37	0	86	.09	3	.5	.5	31	MER
		7	5 2	54.34	19	23.14	155	4.04	8.31	2.8	3.1	29	0	94	.09	3	.5	.5	28	MER
		9	0 2	17.88	19	49.82	155	45.37	13.92	2.8	3.1	33	0	147	.09	18	.6	.8	30	KON
		9	9 7	53.30	19	24.70	155	28.23	10.87	3.1	3.3	38	1	32	.10	4	.4	.5	35	UKF
		12	036	51.07	19	20.71	155	3.05	7.71	2.9	3.2	32	2	125	.08	2	.6	.7	28	MER
		12	1655	48.83	19	24.35	155	24.70	12.22	3.1	3.0	38	2	40	.10	6	.4	.3	26	UKF
		19	1517	38.34	19	20.03	155	10.70	9.98	3.2	3.5	36	1	87	.12	4	.4	.4	28	UER F
		21	622	31.61	19	19.58	155	8.56	9.54	2.9	3.2	29	0	79	.10	4	.6	.4	22	UER
		25	1835	50.26	19	21.81	155	1.92	8.88	2.8	3.1	27	0	159	.09	4	.8	.4	27	MER
		26	2147	59.77	19	28.54	155	52.01	10.11	3.4	3.3	32	3	103	.14	6	.5	.5	25	KON
	JUL	2	1842	44.83	19	23.83	155	26.68	10.74	3.3	3.6	40	2	47	.11	3	.4	.5	30	UKF F
		4	1727	15.89	19	20.77	155	7.86	9.42	3.4	3.7	35	0	82	.10	4	.5	.4	35	UER F
		5	233	46.11	19	28.09	154	49.45	11.61	3.1	3.5	34	1	277	.13	10	2.4	.5	30	LER
		8	546	34.42	19	23.74	155	15.71	2.89	2.9	3.1	27	1	51	.11	2	.3	.3	21	SPC
		9	1359	1.82	19	20.14	155	11.69	9.41	2.7	3.1	38	2	81	.10	5	.4	.5	31	UER
		14	515	34.31	19	43.36	156	.04	33.87	3.0	3.2	38	2	223	.12	17	1.2	1.5	31	KON
		15	1642	7.27	19	22.86	155	5.65	1.47	3.6	4.0	34	0	68	.11	1	.3	.2	27	MER
		15	22 3	40.51	19	29.37	155	55.21	13.47	3.0	2.6	19	1	245	.09	25	1.5	.7	7	KON
		16	248	49.72	19	23.31	155	5.24	1.97	3.1	3.7	28	0	74	.12	2	.5	.3	18	MER
		16	413	15.73	19	24.00	155	1.73	8.92	3.5	3.9	36	0	128	.09	5	.5	.5	32	MER
		18	0 1	50.19	19	23.32	155	15.25	3.41	2.7	3.2	23	0	102	.12	3	.4	.7	18	SPC
		20	2322	30.25	19	24.56	155	27.60	10.83	3.6	3.9	39	1	45	.12	4	.4	.5	29	UKF F
		24	18 7	38.33	19	19.68	155	8.30	9.84	3.5	3.7	34	0	85	.10	4	.6	.5	28	UER F
		26	950	41.65	19	45.52	155	58.42	20.30	3.6	4.1	38	1	217	.12	16	1.1	2.1	32	KON F
		27	856	33.62	19	19.65	155	8.22	9.27	3.5	4.0	32	0	87	.09	4	.6	.4	27	UER F
		29	839	24.67	19	25.00	155	25.28	9.13	2.8	3.0	34	0	64	.12	6	.5	1.0	28	UKF
		31	330	51.28	19	27.98	155	25.89	11.65	4.3	4.2	42	1	40	.11	5	.4	.4	40	UKF
		31	2237	36.45	19	20.54	155	13.02	10.07	2.9	3.0	34	0	64	.09	4	.4	.4	28	UER F
	AUG	1	3 1	2.45	19	22.06	155	4.49	9.39	2.9	3.1	33	1	85	.10	4	.5	.4	29	MER
		1	614	11.79	19	23.33	155	16.93	3.43	3.0	3.5	30	1	36	.11	3	.3	.5	25	SPC F
		2	958	49.60	19	20.49	155	12.87	9.30	2.7	3.2	37	1	66	.10	4	.3	.5	26	UER
		3	330	6.31	19	19.57	155	12.30	10.30	3.3	3.7	42	1	86	.11	5	.4	.4	37	UER
		5	17 3	34.81	19	16.56	155	33.54	9.83	3.5	3.4	29	0	57	.12	7	.5	.8	25	HEA F
		10	1757	53.10	19	18.37	155	13.17	10.27	3.0	3.2	38	0	137	.12	8	.6	.5	32	POL
		12	2032	1.32	19	19.87	155	7.13	8.26	3.0	3.3	34	0	109	.09	5	.5	.7	28	UER
		13	6 3	40.61	19	17.80	155	15.59	9.71	3.4	3.4	36	0	142	.11	5	.6	.6	35	KOA
		14	251	42.19	20	48.87	156	17.42	24.48	4.5	4.9	44	4	328	.12	7	1.6	.8	43	DIS F
		15	0 0	8.12	19	24.35	155	25.00	10.59	3.0	2.7	33	1	49	.11	2	.4	.6	30	UKF
		16	13 4	19.38	19	22.66	155	27.22	10.76	3.9	4.0	43	1	60	.14	1	.4	.5	41	UKF
		25	21 8	14.65	19	20.80	155	13.32	9.66	3.3	3.1	41	1	58	.10	3	.3	.4	33	UER F
		28	521	59.08	19	18.56	155	13.21	11.20	3.5	3.7	34	1	130	.08	8	.5	.4	31	INT

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1979	AUG	28	547	24.79	19	18.98	155	13.08	10.88	3.4	3.7	35	0	128	.10	7	.5	.5	30	POL	
		28	655	13.20	19	18.58	155	13.17	10.98	3.8	3.7	39	0	130	.08	8	.6	.4	34	POL	F
	SEP	1	1216	33.48	19	21.74	155	4.92	9.54	3.8	4.0	43	1	80	.11	3	.5	.4	42	MER	F
		3	127	12.58	19	19.50	155	10.43	9.46	2.9	3.1	39	1	98	.08	5	.4	.5	33	UER	
		4	130	9.18	19	44.61	156	.87	9.06	3.2	3.3	36	1	225	.13	30	1.3	.8	29	KON	F
		6	224	48.00	19	19.87	155	6.87	9.55	3.4	3.5	37	1	114	.09	5	.5	.4	30	UER	F
		8	1334	42.18	19	18.75	155	13.52	10.48	3.4	3.7	41	1	73	.11	3	.4	.4	34	POL	F
		11	1455	25.20	19	23.17	155	14.89	3.41	2.9	3.1	30	1	48	.09	2	.3	.4	25	GLN	
		14	432	17.38	19	23.56	155	16.83	3.00	3.0	3.5	37	0	35	.09	0	.2	.2	31	SPC	F
		14	735	18.71	19	20.09	155	11.76	10.40	3.2	3.3	38	1	81	.09	5	.4	.5	29	UER	F
		14	1532	48.01	19	21.10	155	48.96	10.96	3.8	3.8	43	1	113	.12	11	.6	.4	37	KON	
		16	951	36.66	19	23.81	155	2.38	9.24	3.2	3.6	42	1	119	.10	4	.5	.4	32	MER	F
		20	918	32.85	19	23.57	155	15.07	3.36	2.9	3.2	31	1	45	.10	2	.3	.4	27	SPC	F
		21	129	24.09	19	20.23	155	11.85	10.06	3.4	3.6	41	0	79	.09	5	.5	.4	36	UER	F
		21	2159	37.62	19	20.81	155	4.24	9.19	5.5	5.4	43	0	101	.11	3	.6	.4	39	MER	F
		21	2329	12.34	19	21.18	155	2.27	9.21	4.3	4.3	43	1	160	.11	3	.7	.4	39	MER	F
		21	2336	17.34	19	20.71	155	2.57	8.34	3.2	3.6	38	1	158	.09	2	.6	.4	30	MER	F
		22	151	2.41	19	20.54	155	4.42	8.47	2.8	3.1	40	2	114	.10	3	.4	.5	29	MER	
		23	128	19.88	19	23.02	155	4.23	8.75	3.3	3.8	40	1	91	.10	3	.5	.5	33	MER	
		23	925	25.79	19	21.86	155	15.97	36.44	3.3	3.0	36	0	60	.09	1	.7	1.3	36	DEP	
		24	1750	23.13	19	22.35	155	4.68	9.37	3.6	3.6	35	0	82	.09	3	.6	.4	34	MER	F
		26	621	22.85	19	21.68	155	2.70	9.30	3.0	3.1	34	0	138	.11	3	.7	.4	33	MER	F
		26	15 1	32.43	19	32.46	155	55.43	10.90	3.2	3.4	25	0	199	.13	6	1.0	.5	22	KON	F
		27	535	45.49	19	19.76	155	7.23	10.05	4.3	4.6	39	1	110	.11	5	.6	.4	38	UER	F
		27	538	31.20	19	20.33	155	8.09	8.92	3.2	3.7	19	0	146	.15	4	1.0	1.3	9	UER	F
		29	14 2	26.31	19	21.72	155	6.52	8.08	3.2	3.0	43	2	80	.10	2	.4	.5	35	UER	F
	OCT	1	1010	17.88	19	23.55	155	16.91	3.21	2.6	3.0	26	1	44	.09	3	.3	.5	25	SPC	F
		6	046	12.24	19	20.15	155	12.90	10.38	3.9	4.1	38	1	70	.10	5	.5	.3	34	UER	F
		8	641	37.40	19	20.68	155	5.94	7.49	2.7	3.2	34	3	137	.12	4	.6	.9	29	MER	
		8	1640	19.80	19	19.20	155	11.35	10.14	3.7	3.7	29	0	104	.09	5	.5	.4	29	UER	F
		9	425	9.32	20	27.14	155	15.37	.77	2.9	3.1	32	2	304	.16	63	2.7	.7	31	DIS	
		9	2341	55.36	19	23.19	155	14.79	3.84	2.9	3.1	32	0	47	.10	2	.3	.5	30	GLN	
		10	1059	28.19	19	19.76	155	11.24	8.15	2.6	3.0	30	1	91	.10	5	.4	.6	21	UER	
		11	1240	22.34	19	1.63	154	49.58	30.66	1.9	3.1	14	0	319	.18	46	22.2	6.8	14	DIS	*
		12	1559	25.76	19	23.04	155	14.76	3.60	3.0	3.4	30	0	48	.08	2	.3	.5	25	GLN	F
		12	16 6	51.09	19	23.06	155	14.74	3.64	2.8	3.2	30	0	48	.11	2	.4	.5	28	GLN	F
		13	116	26.04	19	26.68	155	20.97	8.45	3.8	3.9	36	0	41	.11	7	.4	.8	35	UKF	F
		13	258	51.02	19	27.05	155	21.55	6.56	3.1	3.1	34	0	41	.14	6	.4	1.2	33	UKF	F
		14	737	16.92	19	54.38	155	10.73	40.57	4.0	4.3	38	1	213	.10	17	1.0	1.7	37	KKU	F
		15	044	12.27	19	55.75	156	27.75	3.31	3.1	2.4	24	0	291	.10	75	4.8	23.7	24	DIS	*
		16	1954	37.81	19	19.44	155	8.45	9.12	3.1	3.2	30	1	83	.07	4	.5	.5	29	UER	F
		16	2131	49.46	19	19.28	155	11.91	10.16	2.9	3.1	34	1	97	.10	5	.5	.4	31	UER	
		18	2014	32.38	19	47.12	156	3.07	8.80	3.1	3.4	24	1	235	.14	25	1.3	.8	24	KON	
		19	132	54.64	19	23.06	155	14.82	3.72	2.8	3.0	27	0	49	.10	2	.4	.6	26	GLN	
		20	1359	11.97	19	24.40	155	28.02	11.08	3.3	3.4	35	0	35	.12	4	.4	.5	34	UKF	
		20	1957	2.00	19	19.14	155	11.97	10.27	3.5	3.4	35	0	99	.08	5	.4	.4	33	UER	F
		22	021	51.32	19	23.21	155	16.80	3.85	2.6	3.2	27	0	45	.10	2	.4	.6	26	SPC	
		28	836	49.35	19	19.92	155	15.85	37.10	3.1	3.2	34	0	87	.09	3	.7	1.5	31	DEP	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1979	OCT	30	1935	11.68	19	53.07	156	20.68	.02	4.2	4.3	39	1	281	.13	57	2.3	.9	37	DIS F*
		31	523	30.09	19	58.43	155	47.87	10.44	3.0	2.7	39	2	172	.16	17	.8	1.1	35	KOH
		31	1657	50.71	19	17.74	154	59.38	39.29	3.0	3.0	36	0	218	.09	7	1.7	1.9	33	DIS
	NOV	3	658	3.13	19	17.08	155	15.92	10.73	3.3	3.3	35	1	141	.11	4	.6	.5	33	KOA
		3	10 8	31.88	19	22.96	155	16.93	3.53	2.5	3.0	31	1	48	.09	2	.3	.5	30	KOA
		3	18 9	51.64	20	3.51	155	38.74	13.10	3.0	2.4	29	1	181	.10	16	1.2	.9	25	KOH F
		4	210	33.30	19	19.66	155	11.36	10.15	3.0	3.2	35	0	93	.08	5	.4	.3	33	UER
		5	16 5	48.16	19	21.47	155	.88	4.95	2.5	3.2	30	1	189	.11	5	.7	1.1	25	LER
		11	025	33.60	19	21.46	155	15.05	10.84	3.5	3.4	34	0	64	.09	2	.5	.4	32	KOA F
		15	413	.88	19	23.19	155	14.63	3.60	3.4	3.7	33	0	47	.11	3	.4	.5	32	GLN F
		15	2241	32.57	19	22.04	155	13.98	1.42	2.7	3.2	19	0	85	.09	2	.3	.5	18	UER
		15	2354	29.53	19	21.18	155	14.01	1.50	3.4	3.8	25	0	62	.09	3	.2	.6	18	UER
		16	147	30.64	19	21.76	155	14.23	1.71	2.6	3.1	22	0	57	.10	3	.3	.5	22	UER
		16	217	9.08	19	21.80	155	14.28	1.28	2.7	3.5	20	0	57	.09	3	.3	.5	15	UER
		16	412	3.10	19	22.62	155	14.69	1.40	2.8	3.2	26	0	71	.10	2	.3	.4	20	UER
		16	621	9.28	19	22.04	155	13.83	.69	2.9	3.4	20	0	58	.06	2	.2	.4	17	UER
		16	1024	26.10	19	22.26	155	14.35	1.87	3.1	3.6	26	1	54	.11	3	.3	.6	24	UER
		16	12 4	5.20	19	21.62	155	13.94	3.40	2.8	3.0	23	1	57	.18	6	.5	1.8	22	UER
		17	611	59.55	19	20.92	155	13.29	9.60	3.3	3.5	34	1	58	.08	3	.3	.4	31	UER F
		19	930	41.82	19	23.20	155	14.77	3.30	1.6	4.0	13	0	66	.07	3	.4	.7	13	GLN
		19	1658	13.86	19	19.88	155	8.07	9.48	3.2	3.7	30	0	88	.09	5	.6	.5	29	UER
		20	2129	38.05	19	23.10	155	14.70	3.18	3.2	3.6	35	0	47	.09	2	.3	.4	22	GLN F
		21	9 7	27.57	19	16.27	155	46.60	10.30	3.1	2.7	33	1	108	.13	10	.5	.6	17	KON
		22	1742	30.75	19	18.64	155	13.45	9.18	3.1	3.0	43	0	78	.10	3	.4	.4	34	POL
		23	641	34.03	19	23.24	155	14.83	3.53	3.4	3.4	37	0	47	.09	2	.3	.4	25	GLN F
		23	1045	37.97	19	21.33	155	14.86	.84	3.5	3.9	38	1	65	.11	3	.2	.5	31	UER F
		23	1848	27.67	19	26.79	155	23.68	9.20	3.0	2.6	43	2	46	.13	4	.4	.6	38	UKF
		24	2131	6.84	19	24.00	155	27.16	12.73	3.5	3.8	46	2	48	.10	3	.3	.3	43	UKF F
		25	050	1.94	19	18.95	155	11.31	9.35	3.4	3.5	44	2	111	.12	5	.4	.5	32	POL F
		25	1751	25.03	19	19.89	155	19.03	31.62	3.1	3.0	46	3	51	.10	3	.6	.9	43	DEP
		28	22 3	30.26	19	22.84	155	4.83	8.42	3.1	3.1	40	2	80	.09	3	.4	.4	34	MER
		30	055	47.92	19	34.84	155	59.21	10.83	3.1	3.2	33	4	252	.15	13	1.4	.5	24	KON
		30	1015	41.80	19	23.67	155	15.07	3.49	3.0	3.0	28	1	78	.11	2	.4	.5	27	SPC F
	DEC	5	12 5	4.83	19	19.81	155	13.28	10.10	3.4	3.3	40	1	69	.10	5	.4	.4	38	UER
		5	1532	27.24	19	24.52	155	28.23	11.32	3.8	4.0	45	1	32	.12	4	.4	.4	43	UKF F
		13	1744	3.08	19	24.82	155	24.50	11.44	4.0	4.1	43	0	38	.13	1	.4	.4	43	UKF F
		15	1745	13.13	19	21.02	155	18.46	14.46	3.6	3.4	42	0	51	.11	3	.5	.3	39	INT
		16	1811	3.85	19	11.35	155	35.83	5.81	3.0	2.8	39	3	95	.21	12	.6	1.9	28	HEA
		16	2344	25.43	19	23.65	155	16.69	3.52	3.2	3.8	29	0	88	.10	3	.4	1.0	26	SPC F
		23	1 6	2.09	19	23.21	155	14.67	3.35	3.6	3.9	40	1	47	.10	3	.3	.4	37	GLN F
		23	554	3.14	19	19.91	155	12.05	10.06	2.9	3.1	39	0	82	.09	5	.3	.4	28	UER
		24	144	8.17	19	22.53	155	6.02	8.32	3.1	3.1	40	0	69	.10	1	.4	.6	31	UER
		24	1339	39.25	20	8.48	155	51.83	34.35	3.1	3.0	38	5	274	.10	9	1.1	1.5	26	KOH
		25	555	54.88	20	27.87	156	48.34	33.13	3.2	3.5	28	3	328	.11	133	2.1	3.7	16	DIS
		28	1125	49.94	19	18.20	155	14.46	10.42	3.1	3.0	39	0	135	.10	6	.5	.5	33	POL F
		30	16 4	9.97	19	56.33	155	43.14	10.42	3.0	2.6	21	2	151	.08	22	.7	.7	10	KOH
		30	1859	57.94	19	23.17	155	29.77	10.31	3.2	3.3	43	1	56	.10	4	.4	.6	37	UKF

GPO 689-143

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Hawaiian Volcano Observatory
1980 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 80, Part 1
Seismic Data, January to December 1980
By Wilfred R. Tanigawa, Jennifer S. Nakata, and Fred W. Klein

Chronological Summary
By Robert W. Decker

Open-File Report 2007-1340
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
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U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY
SUMMARY 80, PART 1
SEISMIC DATA, JANUARY TO DECEMBER 1980

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature

Menlo Park, California
1981

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 80, PART 1

SEISMIC DATA, JANUARY TO DECEMBER 1980

BY

WILFRED R. TANIGAWA, JENNIFER S. NAKATA, FRED W. KLEIN

CHRONOLOGICAL SUMMARY

BY

ROBERT W. DECKER

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summaries present data gathered during the year together with a chronological narrative intended to describe in geologic terms the volcanic activity associated with the seismic events included. The summaries are issued in two parts. Seismic data appears in Part 1, and deformation data appears in Part 2. The seismic summaries are offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has recently shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries will be published separately.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS open file report ("Hawaiian Volcano Observatory Seismic Network History 1950-79," U.S.G.S. open file report 80-302, 1980). It is designed as a reference for users of seismograms and phase data, and so includes and goes a bit beyond the information in the station table in this summary.

CHRONOLOGICAL SUMMARY - 1980

by

Robert W. Decker

Yearly summary: 1980 was the year Mount St. Helens did and Hawaiian volcanoes didn't. There have been no eruptions in Hawaii since the small outbreak at Pauahi Crater on the upper east rift zone of Kilauea Volcano in November 1979. Mauna Loa Volcano continued in repose with a pattern of slow inflation and few earthquakes, but Kilauea had five significant intrusive events during 1980 (March 2, March 10-12, August 27-28, October 22, and November 2). These intrusive events were characterized by shallow earthquake swarms, volcanic tremor, rapid deflation of the summit area with simultaneous ground deformation in the earthquake swarm area, and sometimes volcanic gas emissions. They are interpreted to be intrusions of magma into shallow dikes beneath the rift zone. Magma moving into these new fractures is apparently resupplied from the summit reservoir. Rough estimates of the extent and volume of these inferred dikes can be made from the observed data. Seismicity provides the key information to estimate the length, height, depth to top and propagation rates of the dike. Subsidence of the summit area provides an estimate of the total volume and rate of supply of magma involved in the intrusions. Gas emissions of CO_2 and SO_2 occurred at the surface over the inferred intrusions on three occasions. In two of these cases, the seismic data also indicated a shallow depth (0.5 km) to the top of the intrusion. The following table indicates the approximate nature of the five inferred intrusions during 1980:

Date	Location	Length	Height	Minimum Depth	Volume	Propagation Rate m/hr	Gases	EM Anomalies
Mar. 2	Hiiaka	2 km	2 km	1 km	0.6 X $10^6 m^3$		no	no
Mar. 10-12	Mauna Ulu	5 km	3 km	0.5 km	5.3 X $10^6 m^3$	200-500	yes	no
Aug. 27-28	Puhimau	4 km	3 km	0.5 km	2.3 X $10^6 m^3$	1000	yes	yes
Oct. 22	Mauna Ulu	2 km	2 km	2 km	0.6 X $10^6 m^3$		yes	yes
Nov. 2	Kokoolau	2 km	2 km	1 km	2.0 X $10^6 m^3$	700	no	no

The occurrence of these five intrusions without eruptions further confirms the major changes in structure and eruption mechanics of Kilauea Volcano caused by the magnitude 7.2 earthquake in November 1975. From 1959 until the major earthquake, Kilauea had 24 eruptions and 12 intrusions without eruptions; since November 1975, Kilauea has had 10 intrusions without eruptions and only two eruptions. The major seaward displacement of the southeast flank of Kilauea during that M 7.2 earthquake apparently reduced the accumulated stresses across the east rift zone, making it easier for small dike intrusions to dilate the rift zone.

Besides these relatively rapid magma fracturing events, longer periods of slow deflation of the summit and slow inflation and dilation of the middle east rift zone from Makaopuhi to the Pahoa-Kaimu highway have continued to occur during 1980. The volume of magma involved in this slow leakage into the rift is difficult to estimate. Deformation measurements are not easy in the fern forests of the middle east rift, and an assumption must be made on the rate of magma supply into the summit reservoir beneath Kilauea. Using 100 X $10^6 m^3$ per year for that assumption, some 250 X $10^6 m^3$ of magma could have moved (without magma fracturing) into the middle east rift over a zone 25 km long since October

1977. An alternative estimate based on the cumulative amounts of slow summit deflation since October 1977 indicates 140 X $10^6 m^3$ of magma may be involved. A blade-shaped body of magma 25 km long and 3 km high would have to dilate 2 to 3 meters to accommodate these estimates of additional magma. This amount of displacement seems high but not impossible. Refining these estimates of slow magma movement into the middle east rift of Kilauea, and determining how both slow and rapid (magma fracture) intrusion can take place along different segments of the rift is one of the research challenges of the years ahead.

An experiment in quantitative forecasting of eruptions of Kilauea on a probabilistic basis was started by Fred Klein in September 1980. It uses summit earthquake counts, tilt amplitude and rates, and the biweekly tidal cycle to estimate the eruption probability of Kilauea for the next day, week or month. It will take several years to evaluate this dynamic approach as compared to the average probability of eruptions from historic data.

Gas emissions from Halemaumau Crater provided most of the volcanic gases lost from Kilauea during 1980. CO_2 emission averaged about 3 X 10^6 kg per day and SO_2 emission about 0.17 X 10^6 kg per day.

Twelve earthquakes of magnitude 4 or greater occurred beneath or near the Island of Hawaii in 1980. The largest was M 4.6 at a depth of 27 km beneath the south flank of Mauna Loa on January 19 at 15:28:49 Hawaii Standard Time.

The observatory staff of 27 people consisted of 10 scientists and 17 support personnel. This group monitored 48 seismic stations, 525 horizontal distance lines, 275 km of level lines, 123 tilt stations, 3 tide gages, 120 gravity stations, 12 self-potential lines, 3 electro-magnetic induction loop stations, and 12 gas-sampling sites. Some of these monitors are continuous; others are occupied at various intervals. Fifteen members of the staff were involved with studies of the Mount St. Helens eruptions. Individual efforts on the St. Helens' projects varied from 1 week to 6 months, and total participation amounted to 36 person-months. Other temporary research assignments involved staff investigations in Argentina, Indonesia, South Korea, and the Azores. Geologic mapping was continued on Hawaii by three USGS geologists closely associated with the observatory. HVO cooperated with 58 guest investigators on 32 research projects with durations ranging from 2 days to 2 months. HVO members presented 9 papers at scientific meetings and published or contributed to 13 papers and 8 open-file reports. HVO also issued weekly, monthly, and yearly reports.

Hawaii Volcanoes National Park estimated their 1980 visitors in excess of 2 million. About 70% of these visitors (1,400,000) stop at HVO to view Kilauea Caldera and to peer into the observatory windows. A very small percentage of these visitors (1,200 in 1980, including the Dalai Lama) sought and gained entrance to the inner workings of the observatory. Most are truly curious about how volcanoes work, and we wish that we could satisfy even greater numbers. It's been a busy year in many ways and I thank everyone at HVO for their full measure, especially Reg Okamura who so ably took charge while I was often away at Mount St. Helens.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In December 1980 the seismometer network consisted of 46 stations; two are low-gain multicomponent stations (optical), eight are three-component, and 36 are vertical only. During 1980, three new stations were installed on Kilauea's lower east rift to supplement the Pahoa station. In addition, the horizontal seismometers were redeployed, and the two-component stations (vertical plus one horizontal) were eliminated. The coverage is most complete on and around Kilauea Volcano. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1980. A few stations were only operated for part of the year. Listed are station name, three and four letter codes, coordinates in degrees and minutes, elevation in meters, and other data described below. In addition to seismometers listed in table 1, a horizontal seismometer of type 3 or H1 and a long-period, three-component set of Press-Ewing seismometers are operated in the Uwekahuna vault, all recorded on photographic paper.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or radio. These telemetering stations are now all of Type 1, the NCER standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from 36 stations are recorded on two Develocorders using 16mm microfilm. FM signals from the telemetering network are also recorded directly on one-inch magnetic tape. Selected larger events are copied onto condensed FM library tapes which are currently archived in Menlo Park and archived in digital form at HVO as part of the routine location processing. The type of recording used for each station (in addition to magnetic tape for the telemetered stations) is coded in table 1 as follows: D - Develocorder film, S - smoked paper drum, P - photographic paper, H - Helicorder paper.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Kipapa station operated by the Pacific Tsunami Warning Center). The less sensitive optical records are used primarily for amplitude measurements for magnitude calculations to supplement readings from the high-gain stations. The paper (optical) records as well as the 16mm Develocorder microfilm are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard NCER system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL, table 1) to get the response for an individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20x Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited. CAL factors range from about 1 to 8, averaging about 4. A detailed history of Cal factors and other data is given in F.W. Klein and R.Y. Koyanagi, Hawaiian Volcano Observatory Seismic Network History 1950-79, U.S. Geological Survey Open File Report 80-302, 1980.

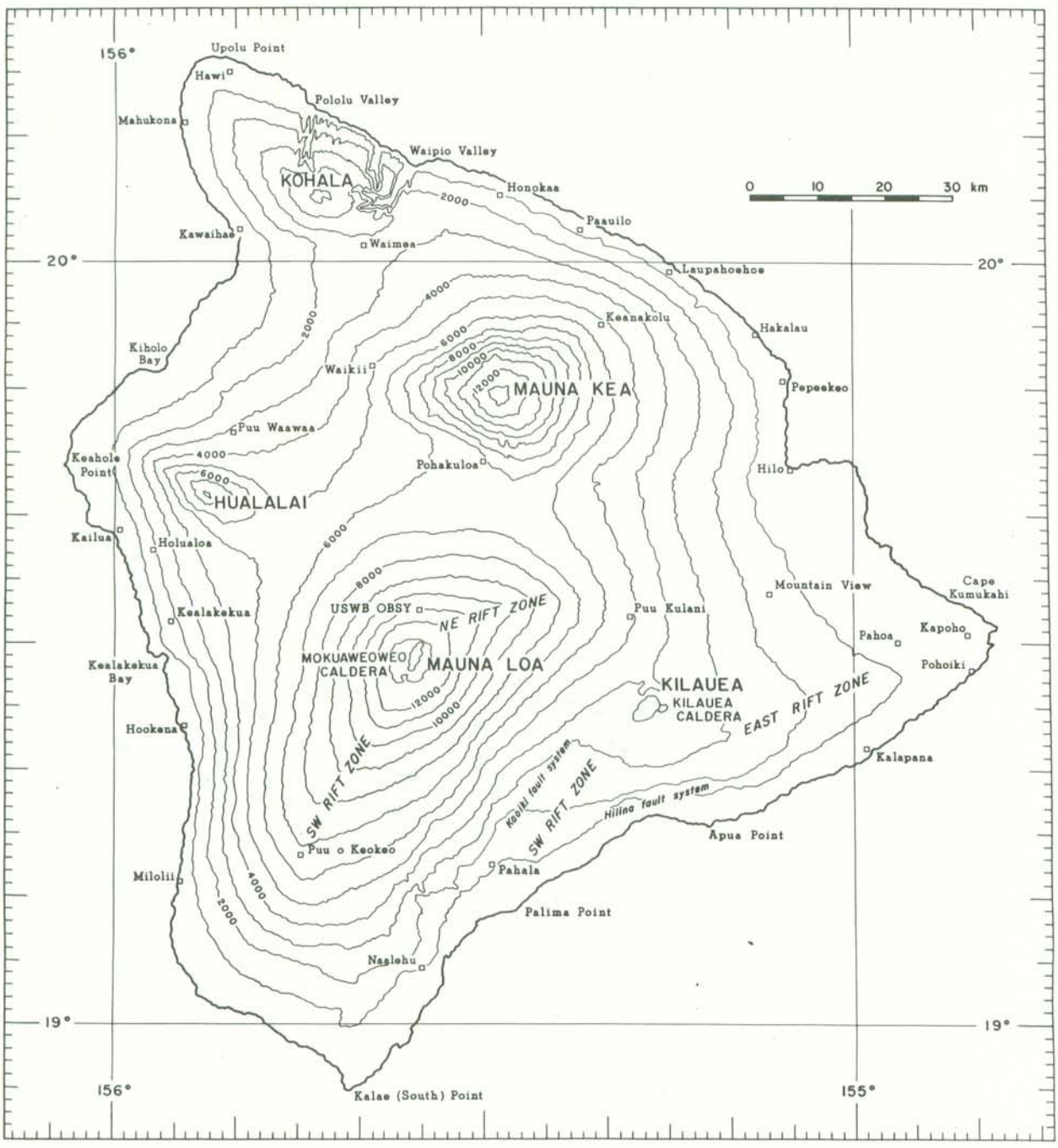


Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

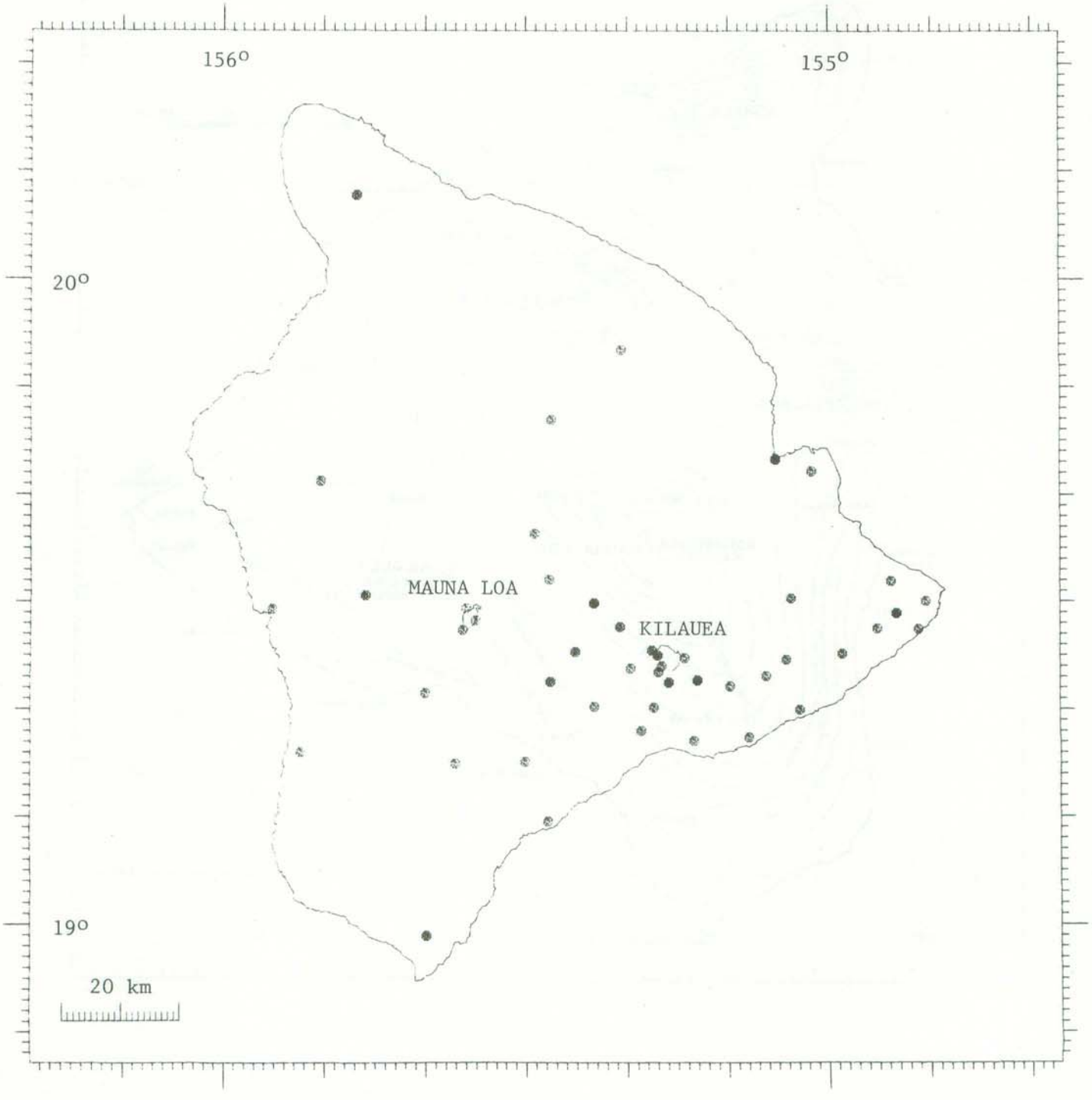


Figure 2. Map of the island of Hawaii showing seismic stations operational during 1980.

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1980.

STATION NAME	CODE		--LAT--- D	M	---LON--- D	M	ELEV (M)	DELAY 1	DELAY 2	CAL	SEIS TYPE	OPTIC RECORD
AHUA	AHU	Z	19	22.40	155	15.90	1070	-.10	-.13	2.7	E4	SD
AHUA	AHUE	E	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AHUA	AHUN	N	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AINAPO	AIN	Z	19	22.50	155	27.62	1524	.13	.17	3.3	E	D
AINAPO	AINE	E	19	22.50	155	27.62	1524	.13	.17	.0	L	
AINAPO	AINN	N	19	22.50	155	27.62	1524	.13	.17	.0	L	
CAPTAIN COOK	CAC	Z	19	29.29	155	55.09	323	.00	-.16	3.6	L4	D
CONE PEAK	CPK	Z	19	23.70	155	19.70	1038	-.26	-.07	6.0	L4	D
DANDELION	DAN	Z	19	21.42	155	40.04	3003	-.27	.03	6.0	L	D
DESERT	DES	Z	19	20.20	155	23.30	815	-.29	-.13	3.5	E	SD
ESCAPE ROAD	ESR	Z	19	24.68	155	14.33	1177	-.17	-.19	2.1	L	D
HAWAIIAN BEACHES	HAB	Z	19	31.89	154	53.89	92	-.09	-.24	.0	L4	
HALEAKALA, MAUI	HAE	E	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HALEAKALA, MAUI	HAL	Z	20	46.00	156	15.00	2090	.00	.00	.7	H1	P
HALEAKALA, MAUI	HAN	N	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HILO	HIE	E	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILO	HIL	Z	19	43.20	155	5.30	20	.54	.30	1.0	H1	P
HILO	HIN	N	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILINA PALI	HLP	Z	19	17.96	155	18.63	707	.02	.07	2.4	E	D
HALE POHAKU	HPU	Z	19	46.85	155	27.50	3396	.31	.17	3.7	E	D
HUMUULA SHEEP ST	HSS	Z	19	36.31	155	29.13	2445	.20	.35	2.7	L4	D
HUALALAI	HUA	Z	19	41.25	155	50.32	2189	.67	.38	3.0	E	D
HEIHEIAHULU	HUL	Z	19	25.13	154	58.72	369	-.17	-.16	2.2	E	DS
KAAPUNA	KAA	Z	19	15.98	155	52.28	524	-.12	-.01	4.2	E	D
KAENA POINT	KAE	Z	19	17.35	155	7.95	37	-.01	.06	1.3	E	D
KAOIKI FAULTS	KFA	Z	19	25.26	155	25.14	1579	.13	.17	.0	E	H
KAOIKI FAULTS	KFB	Z	19	25.26	155	25.14	1579	.13	.17	.0	TE	$
KAHUKU	KHU	Z	19	14.90	155	37.10	1939	.03	-.03	4.0	E	D
KANEKII	KII	Z	19	30.56	155	45.90	1841	.15	.37	4.1	E	D
KANEKII	KIIE	E	19	30.56	155	45.90	1841	.15	.37	.0	L	
KANEKII	KIIN	N	19	30.56	155	45.90	1841	.15	.37	.0	L	
KIPAPA, OAHU	KIP	Z	21	25.40	158	.90	76	.00	.00	.6	H1	P
KEANAKOLU	KKU	Z	19	53.39	155	20.58	1863	.68	.24	1.1	L	D
PUU KALIU	KLU	Z	19	27.48	154	55.26	271	-.17	-.30	.0	L	D
KOHALA	KOH	Z	20	7.69	155	46.77	1166	-.03	-.17	2.2	L	D
KOHALA	KOHE	E	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KOHALA	KOHN	N	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KIPUKA NENE	KPN	Z	19	20.10	155	17.40	924	-.11	-.08	4.3	E	D
KAPOHO	KPO	Z	19	30.02	154	50.51	134	-.09	-.24	.0	L4	
KALALUA	LUA	Z	19	24.55	155	4.25	622	-.25	-.30	3.9	L	DH
MAUNA LOA	MLE	E	19	29.80	155	23.30	2010	.03	.08	.0	S5	
MAUNA LOA	MLN	N	19	29.80	155	23.30	2010	.03	.08	.0	S5	
MAUNA LOA	MLO	Z	19	29.80	155	23.30	2010	.03	.08	5.8	L4	SD
MAUNA LOA	MLOH	S	19	29.80	155	23.30	2010	.03	.08	.0	E	
MAUNA LOA	MLON	N	19	29.80	155	23.30	2010	.03	.08	1.5	L4	
MAUNA LOA	MLV	Z	19	29.80	155	23.30	2010	.03	.08	.0	S5	
MAUNA LOA X	MLX	Z	19	27.60	155	20.70	1475	.06	.15	2.1	E	
MAUNA LOA X	MLXH	E	19	27.60	155	20.70	1475	.06	.15	.0	E	
MOKUAWEOWEO	MOK	Z	19	29.28	155	35.98	4104	.15	.16	4.0	L4	DH
MAKAOPUHI	MPR	Z	19	22.07	155	9.85	881	-.17	-.20	1.4	L	D
MOUNTAIN VIEW	MTV	Z	19	30.25	155	3.75	409	-.02	.01	4.8	E	D
NATIONAL GUARD	NAG	Z	19	42.12	155	1.72	18	.54	.30	4.5	E	D
NORTH PIT	NPT	Z	19	24.90	155	17.00	1115	-.30	-.18	4.5	E4	SD
OUTLET	OTL	Z	19	23.38	155	16.94	1038	-.19	-.18	4.9	L4	
PAUAHI	PAU	Z	19	22.62	155	13.10	994	-.21	-.24	2.8	E	SD
PAUAHI	PAUE	E	19	22.62	155	13.10	994	-.21	-.24	.0	L4	
PAUAHI	PAUN	N	19	22.62	155	13.10	994	-.21	-.24	.0	L4	
PUU HONUAULA	PHO	Z	19	28.90	154	53.40	215	-.09	-.24	3.2	E	D
PUU HONUAULA	PHOE	E	19	28.90	154	53.40	215	-.09	-.24	.0	L4	

Table 1 (continued)

PUU HONUAULA	PHON	N	19 28.90	154 53.40	215	-.09	-.24	.0	L4	
PUU ULAULA	PLA	Z	19 32.00	155 27.67	2992	-.03	.13	5.4	L	D
POHOIKI	POI	Z	19 27.42	154 51.22	16	-.09	-.24	.0	L4	
POLIOKEAWE PALI	POL	Z	19 17.02	155 13.47	169	-.02	.03	3.5	E	D
PUU PILI	PPL	Z	19 9.50	155 27.87	35	-.15	-.15	1.7	E	D
PUU KAMOAMOA	PUK	Z	19 23.00	155 6.25	704	-.25	-.30	.0	L	D
RIM	RIM	Z	19 23.90	155 16.60	1128	-.21	-.13	.0	L4	
SOUTH POINT	SPT	Z	18 58.91	155 39.92	244	-.17	-.22	2.7	E	D
SOUTH POINT	SPTE	E	18 58.91	155 39.92	244	-.17	-.22	.0	L4	
SOUTH POINT	SPTN	N	18 58.91	155 39.92	244	-.17	-.22	.0	L4	
SOUTHWEST RIFT	SWR	Z	19 27.26	155 36.30	4048	.01	.04	6.4	L	D
UWEKAHUNA	USE	E	19 25.40	155 17.60	1240	-.21	.00	1.0	S	P
UWEKAHUNA	USZ	Z	19 25.40	155 17.60	1240	-.21	.00	1.0	S	P
WAHAULA	WHA	Z	19 19.90	155 2.92	29	-.10	-.04	1.6	E	D
WILKES CAMP	WIL	Z	19 28.15	155 35.02	4037	.22	.17	2.6	L	D
WOOD VALLEY	WOO	Z	19 15.08	155 30.12	909	-.15	-.06	4.6	E	D

Table 2. Seismic Instrumentation Types

The codes in parentheses refer to the seismometer types litsted in Table 1.

Type 1. (Codes E, L, and 4) Consists of:

a) Geophone - Electrotech EV-17 (E) or Mark Products L4C (L) 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - USGS/NCER Model J302 or J402 (4) voltage controlled oscillator. Three db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 3. (Code H1) Consists of:
Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. (Code S) Consists of:
Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Type 2 instruments have been discontinued.

Code (W) is a Wood-Anderson torsion seismograph.

Codes (TE) and (S5) are experimental seismometers.

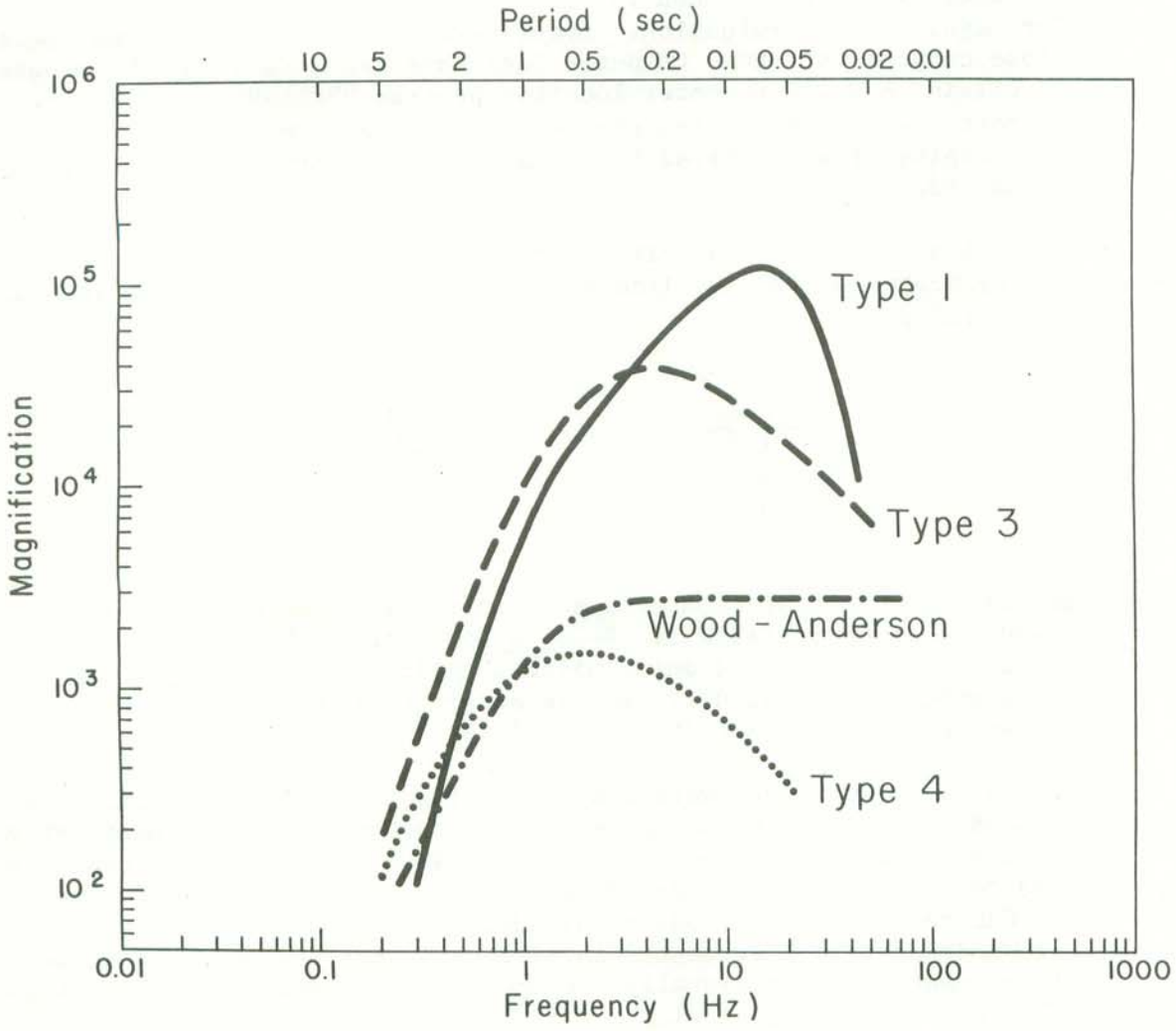


Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard NCER seismometer recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL), to get the response for an individual station.

SEISMIC DATA PROCESSING

Develocorder films are scanned for earthquakes, and coda durations are measured for magnitude determination. Events are digitized, timed, and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, F.W., Hypocenter location program HYPOINVERSE, U.S.G.S. Open file report 78-694, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival time and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are in fact separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations and signal or coda duration on short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, KAA, OTL, PPL, KHU, PHO, or WIL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed nearly to the noise level. A bilinear relation is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

The equations used in magnitude determination are:

$$\text{duration } <210 \text{ sec} \quad M = -5.2 + 3.89 \log (F-P) + .013\, \not{Z} + .0037\, D$$
$$\text{duration } >210 \text{ sec} \quad M = -.905 + 2.026 \log (F-P) + .013\, \not{Z} + .0037\, D$$

where $\not{Z}$ and D are the depth and epicentral distance in km.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south half of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters are given in Figures 8-13. The epicenter maps are on different scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and depth. Figures 4-7 are maps of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figures 4-7. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea.

Earthquake categories are:

1) Kilauea summit, short period caldera: shallow earthquakes beneath the caldera.
2) Kilauea summit, long period caldera: earthquakes characterized by low frequency signatures, often originating 5-10 km below the caldera.
3) Kilauea summit 30 km: from about 30 km depth.
4) Kaoiki and southwest rift: southwest rift of Kilauea, western parts of the Koae faults and adjacent Kaoiki fault system.
5) Upper east rift zone of Kilauea including the eastern parts of the Koae faults.
6) Lower east rift zone of Kilauea.
7) Offshore PPL: earthquakes from offshore areas south of the Puu Pili station, including Loihi seamount.
8) Mauna Loa long period: low frequency events near Mauna Loa summit.
9) Mauna Loa short period: shallow earthquakes in the Mauna Loa caldera region.

Tremor is separated into four categories: shallow, intermediate and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs.

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1980	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA
JAN 1	121	21		33	200	18		5	4			
2	137	8		31	182	12			1			
3	108	4		18	167	22			1			
4	123	31		30	147	16			3	7		
5	158	18	1	34	203	29			2			
6	191	2		31	211	17			1			
7	193	2	1	38	272	24						
8	35	2		4	106	24						
9	48	6		10	91	6						
10	136	1	1	23	85	8						
11	339	1		11	166	7			9	2		
12	383	2		20	221	13			9			
13	296	4		38	211	24						
14	394	3	3	24	205	32		3	4		9	
15	295	7	1	32	164	7						
16	214	14		25	571	9			4			
17	107	7		29	236	13						
18	171	6		31	158	114		1	1		2	
19	288	20		22	185	68			2			
20	358	32		37	192	29						
21	579	34		32	303	22			1	2		
22	636	39		28	475	16			2			
23	211	33		30	335	28		1	3	4		
24	263	21		14	327	13		2	20		3	
25	231	32		33	264	25			4			
26	116	19		33	145	36		3	2			
27	157	16		46	195	37			6			
28	223	15		50	326	10		4	9	5		
29	222	13		37	209	3			10	7		
30	116	8		37	175	20						
31	281	33		39	228	7			3			
FEB 1	334	18		34	232	9			9			
2	365	4		27	242	12			3			
3	373	25		26	219	9			3	4		
4	359	13		55	219	12			25			
5	229	42	1	31	182	29			7		32	
6	194	13	1	24	179	15			4			
7	212	7		31	201	20			7			
8	514	8		34	215	12			16	10		
9	274	8	1	35	234	21			7		69	
10	289	7		19	212	15			2			
11	344	33		34	292	10		1	7			4
12	384	30		47	28	11			5			
13	252	10		19	185	20			3			
14	219	10		23	180	22			4			

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1980	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA
FEB 15	138	2	1	26	119	48			1			
16	122	1		10	135	26			4			
17	184	1		32	163	16			4			
18	286	23		20	273	17					9	
19	224	18		40	291			1	3			
20	207	14		35	193	20		2	7		4	
21	197	7		28	179	19		1	3			
22	219	10		42	165	11					30	
23	200	3	1	19	142	23			1			
24	181	4		26	179	12			5		22	
25	177	4		19	200	19			5			
26	188	8		29	170	8			5		15	
27	145	2		36	155	12		2	6		7	
28	109	2		22	169	28		1	1		40	
29	64	2	3	32	122	12						
MAR 1	69	4		24	209	28			1			
2	52	10		20	1634	10			1	84		
3	70	1		17	115	10		5	1		(2) 30	
4	34	1		19	124	25		2	3			
5	39	2	2	34	103	22		1	10		5	
6	84	4		28	122	11		1	6			
7	34	3		14	84	22		2				
8	45		1	18	80	14			3			
9	56	1		26	85	20			3		6	
10	66	12		18	1253	25		1		612	4	
11	60	18		18	1532	30			1	1440		
12	30	27		18	233	33			2	1440		
13	34	16		19	159	33			3			
14	34	5		19	136	21				4		
15	33	5		29	117	23			3			
16	34	2		16	82	7						
17	104			23	89	5			1			
18	175	1	1	8	70	12			5			
19	77	3		16	82	36		2	5			
20	50	3		11	75	16		1	5		48	
21	61	3		16	92	14			8			
22	68	6		23	110	20			1			
23	72	3		16	71	13		2	1		5	
24	54	3		10	88	18						
25	54	2		17	79	14			11			
26	112	2		23	99	13		1	2			
27	49	12	1	8	103	16			10			
28	79	1	1	19	74	30		1	3		28	
29	51	1		17	66	15			4			
30	69	6		28	69	16			5			

	KILAUEA SUMMIT			KILAUEA FLANK			MAUNA LOA		TREMOR (MINUTES)		
DATE 1980	SHORT PER. CALDERA	LONG PER. 30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
MAR31	88	1	1	20	108	15			71			
APR 1	80	21		27	84	15			15	2	3	
2	75	19		24	96	22			7			
3	57	37	1	21	72	21			16		8	4
4	75	12		27	84	18			14		1	3
5	80	4		36	76	27		1	8	2		
6	128	3	1	26	109	30		1	7			
7	84	15		29	74	13		1	13			
8	165	2		37	119	6		1	5		16	
9	184	2		27	111				19		3	
10	75	17		33	164				7	3		
11	43	6		20	153	22		1	5			
12	31	1		19	75	31		2	5		4	
13	35	7		32	82	35			4		9	8
14	51	2		20	106	23			2	29		22
15	33	6		24	106	28		3	11		25	
16	44	7		23	91	46			6		52	
17	38	4		31	81	9		6	6			
18	40	1		22	42	24		1	7			
19	44	1		10	81	15		2	9			
20	37	4	1	31	96	11			5			
21	62	3		24	79	12			29			
22	88	12		28	121	12		1	16			
23	140	7		31	132			2	18			
24	106	13	2	35	107	10		4	7			
25	87	26		31	101	21		3	5			
26	127	34		27	90	19		2	15			
27	132	29	3	36	104	15		3	3			
28	125	29	1	36	119	15		1	3		7	
29	142	4		35	106	13		1	2		16	
30	111	21		52	123	10		4	3	1	31	
MAY 1	65	20		29	177	12			3			
2	34	7		30	122	9			3			
3	25	4	2	13	159	15		2	1			
4	30	10		31	378	19		1	1			
5	52	8		41	197	17			2			
6	32	12		26	160	12		2	1		14	2
7	55	3		27	139	10			4		8	
8	81	6		31	142	20					25	
9	74	2		30	161	12		1	1			3
10	123	11		21	133	15			5			
11	166	7	1	37	112	19						2
12	156	13	5	33	137	14						
13	121	15	1	30	120	8		1			5	
14	209	17		29	117	16			2			

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1980	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
MAY15	77	7		31	114	11			1			
16	114	6		20	145	16		4	2	4		
17	72	2		20	142	41			1	9		
18	23	4	1	26	179	77			1			
19	31	4		28	402	52			2		35	
20	68	2		26	174	52		2	3			
21	57	14		20	147	28		4	1			
22	98	11	1	30	122	28		1	1			
23	133	6		13	99	21		10	5		10	
24	162	7	2	20	119	49		5	4			
25	216	4		22	106	17		3	4			
26	220	32		34	132	30		4	2			2
27	267	30		36	117	71		2	6			
28	169	19		35	257	19		6	3			
29	54	14	2	33	178	30		5				4
30	41	25		36	192	20		6		12		
31	46	7		26	250	53		5	1		10	3
JUN 1	47	5		42	285	59		2	2			2
2	47	12	1	27	250	50		5	2		2	
3	48	23		52	283	124		5		3	14	
4	62	14		11	121	25			1			
5	123	19		22	138	34		4				
6	77	10	1	13	109	24		2	7			
7	113	3	1	23	125	13						
8	173	28	1	36	143	53		6			7	
9	134	24		22	164	64		3				
10	41	5		23	117	47			2			
11	60	4		29	152	48		1				
12	78	17	1	29	131	67		1	2			
13	92	7		24	133	36			5			
14	205	13		31	145	2			2	3	13	
15	228	34	1	35	171	44		1	3			
16	200	31	1	37	135	223			4	2		
17	152	30		31	159	101		2	7		11	2
18	72	16	1	36	197	81		2	2		3	
19	42	25	1	45	180	145		2	1			
20	61	32	1	31	146	55		4	3	30		
21	57	42		41	162	59		1	7			
22	64	10		24	187	63			17		7	
23	57	16		29	42	814		5	4		10	
24	63	53		26	813	33		6	8			
25	95	27	1	34	171	60			23			
26	104	28		39	129	61		3	9			
27	85	5	1	18	85	33		4	1			
28	125	11		13	111	44		3	3			

	KILAUEA SUMMIT				KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1980	SHORT PER. CALDERA	LONG PER.	30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
JUN29	256	27			23	125	44		1	1	3	
30	225	17			36	93	31		2	3		4
JUL 1	183	8			26	116	222					
2	305	8			30	124	26			8		
3	303	8			21	166	27			2		2
4	229	25			31	147	29		1	1	2	
5	188	11			21	150	41		1	5		
6	183	3			24	169	55			7		
7	200	1			27	167	58			6		
8	117	1			21	143	38			2		
9	87	2	2		25	188	28		1	2		
10	58	5			42	184	33		3	3		
11	45	4	1		32	230	60			5		9
12	46	2			31	176	108			8		
13	62	148	1		25	155	65		1	1	40	5
14	49	6			41	135	61			3		
15	50	7			28	128	54		1	7		
16	52	6			24	166	59			2		
17	54	5			41	190	71			4		40
18	50	4			23	92	234			3		
19	86	8			20	84	42					
20	186	10	2		19	151	55		1	6		
21	185	6			15	117	39					15
22	171	10			16	124	180		1	3		
23	198	54	1		18	123	41			12		
24	333	36			28	88	41			5		
25	342	13			31	118	34			2		
26	142	2	1		13	139	165		2	4		
27	141	2			17	152	126			2		
28	111	10	1		21	163	83			4		
29	200	5			20	334	105			1		8
30	193	2			27	167	47			2		
31	218	4			23	259	63		3	3		
AUG 1	135	13			32	132	62		1	2		
2	190	16			23	128	24		1	3		9
3	106	3			28	186	18		4	1		
4	82	19			24	159	56			5		9
5	50	7			28	266	48			2		
6	33	8			17	495	73			1		
7	141	3	2		19	282	70					9
8	25	3			25	142	39	1	2			10
9	32		1		18	101	38		2			
10	51	1	1		12	174	43		3	4		
11	63	1			22	337	46		1	1		
12	65		1		28	312	56		2	1		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1980	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA
AUG 13	78	7		95	208	38			1	35		
14	99	6	2	52	189	37			2		11	
15	133			27	149	39			2	8		
16	145	12		58	179	26			5		10	
17	177	9	2	45	204	29		1	1		6	
18	136	2		32	128	29			2			
19	119	2		35	135	17		2	4			
20	134	3	1	28	144	61		1	4			
21	147		6	28	122	25		2				
22	191	1	1	28	136	12		1	3			
23	179			27	118	14		3	3			
24	290	1		26	138	28		3	1		4	
25	226	3	1	17	154	19		1	3		2	
26	89	3		32	197	36		15	2			
27	139	16	1	27	2241	64			2	240		
28	123	23	3	24	281	37		5				
29	42	9		11	96	14		3				
30	57	10	2	14	89	28		1	5			
31	89	5		14	97	22		9	7		70	
SEP 1	235	5	1	32	163	123		2	1		39	
2	286	13	1	26	148	82		4	1			
3	197	6		27	128	50			1			
4	249	6		21	158	109			2			
5	222	20		23	149	415		2			1	
6	156	9	2	34	98	83			2			6
7	171	2		47	125	132						
8	139	16		27	147	80			1			
9	513	8	2	26	155	149			1			
10	720	5		36	166	114			3		13	
11	494	4		37	163	67			1			
12	202	7		33	289	112						
13	157	1		42	390	90					4	
14	101	1		37	194	435						
15	87			36	176	130		1	1			
16	103	4	1	17	153	66		1	4			
17	55	6		16	126	59		3	1			
18	111	7		28	322	289			3	3		
19	72	2		16	89	52			3			
20	43	8	4	26	113	65		2				
21	90	11		17	112	227			2			
22	180	33		25	106	340			4	4		
23	201	1	1	28	152	99			2			
24	166	7		26	142	88						
25	102	1		24	184	156		2				
26	68	11	1	31	158	261		2	4			

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1980	SHORT PER. CALDERA	LONG PER. 30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
SEP27	60	6	2	42	195	306			4		
28	60	2	1	30	163	283		3	2		
29	70	10		26	155	147			4		
30	78	3		31	152	119			9		
OCT 1	110	3		24	202	93		1	3		5
2	89	8		24	144	328			1		
3	99	4	2	24	166	96			2		
4	80		1	33	177	93					
5	104		1	16	184	67			1		
6	92	4		19	196	153					
7	74	3		25	155	272			2		
8	66	2		21	139	115			3		
9	90	12		32	144	54		1	3		
10	35	8		18	98	62		9	11		
11	47	4	2	8	90	39		19	3		
12	66	8		20	130	222		3	5		
13	90	2		27	130	174			7		
14	130	2		34	146	50			8		50
15	180	16	1	38	153	135			4		27
16	267	4		37	134	47		1	2		25
17	299	7		36	113	39		1	4		
18	516	14		29	145	91		4	1		
19	251	4		44	311	91			7		
20	71	23		24	284	113			9		
21	75	2		33	1354	201		2	6		
22	65	7		21	1029	467		5	4	62	
23	51			24	239	91			14		
24	87	23		25	136	30		1	6	5	
25	151	1202		36	110	30			13	51	
26	256	1353		33	146	33			7		3
27	307	502		33	140	31				6	
28	219	890	1	25	127	44			1		3
29	225	330		24	107	10		1			
30	415	79	2	37	132	25			4		71
31	240	18		15	115			1	3		71
NOV 1	195	19		16	92	22	3	1	7		
2	137	30		31	1383	37			4		9
3	104	9		26	244	35			4	12	35
4	76	21	1	21	114	16			3	5	
5	202	62	1	30	212	26		1	3		23
6	158	28	1	24	182	32			3		32
7	171	23	1	28	150	28		1	4		
8	181	36		32	116	17		7	17		4
9	72	4		37	76	11			14		
10	250	18		39	140	3		1	2		10

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1980	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
NOV 11	392	36		42	138	14			7		
12	430	75		24	132	7			2	44	5
13	629	49		28	154	20			1	5	
14	187	24	1	18	189	11		4	1		
15	55	20	1	14	102	14		1	5		
16	42	34		21	184	6		1	12		
17	51	3		18	187	43			7		7
18	60	4	2	15	134	42		2	3		
19	71	29	1	21	166	18		2	4		
20	61	52	1	15	304	59		1	9		
21	54	10		35	381	63		3	6		
22	68	6		26	254	25		2	1		
23	100	16		22	217	12			10		
24	97	5		32	192	20		3	3		
25	111	10		12	190	16		1	4		
26	121	8		29	181	22		4	8		
27	142	17		30	167	8		1	2	29	
28	126	3		21	140	21		2	8		2
29	121	20		24	135	23		1	10		
30	131	35		27	166	9		1	5		
DEC 1	316	20		28	148	6		3	2	3	
2	618	30		25	155	8		3	5		
3	546	19		24	158	8			2		
4	523	19		14	133	3			5		
5	257	15		9	102	11		1	1		
6	252	15		14	92	5		1	1		
7	379	14		26	166	12			2		
8	163	7		37	154	11		2	10		
9	150	23	2	24	135	8		5	7		
10	142	25		39	145	15	2	4	3		7
11	229	19		32	167	10			6		
12	144	8		29	157	19		5	10		
13	108	8		22	127	9			11		
14	156	3		21	160	6			2		
15	176	16		25	142	22					
16	118	8		26	120	13					
17	117	5		21	123	4				19	
18	201	12		15	172	3					
19	99	6		22	102	5					
20	139	11	1	15	114	13	1				
21	198	4		18	177	4			1		31
22	178	20		19	145	8					
23	162	15		32	137	3			1		
24	212	3		37	142	9			4		15
25	306	9		25	125	1		1		14	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1980	SHORT PER. CALDERA	LONG PER. 30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
DEC26	193	8		30	153	18			1		
27	214	22	1	19	134	14		1			9
28	237	49		22	164	8			1		
29	145	16		20	130	8					
30	159	5		19	141	12			2		
31	190	1		16	137	7			1		

Table 4. Coordinates of named earthquake regions.

--All earthquakes are in one of the following groups.
--Identified by a numerical class or 3-letter code:

--Shallow:
1 SNC - Shallow north caldera (0-5 km)
2 SSC - Shallow south caldera (0-5 km)
3 SEC - Shallow east caldera (0-5 km)
4 SER - Shallow east rift (0-5 km)
5 SME - Shallow middle east rift (0-5 km)
6 KOA - Koae fault zone (0-5 km)
7 SSF - Shallow south flank (0-5 km)
8 SLF - Shallow lower east rift (0-5 km)

--Intermediate depth:
9 SF1 - Kilauea south flank (5-13 km) (west end)
10 SF2 - Kilauea south flank (5-13 km)
11 SF3 - Kilauea south flank (5-13 km)
12 SF4 - Kilauea south flank (5-13 km)
13 SF5 - Kilauea south flank (5-13 km) (east end)
14 LER - Lower east rift (5-99 km)
15 MLO - Mauna Loa (0-13 km)
16 LSW - Lower SW rifts of Kilauea & Mauna Loa (0-13 km)
17 GLN - Glenwood (0-13 km)
18 SWR - SW rift (0-13 km)
19 INT - Intermediate caldera (5-13 km)
20 KAO - Kaoiki (0-13 km)

--Deep:
21 DEP - Deep Kilauea (>13 km) (below regions 1-13, 17-19)
22 DLS - Deep lower SW rift (>13 km) (below region 14)
23 DML - Deep Mauna Loa (>13 km) (below regions 15, 20)

--Outer regions, all depths:
24 LOI - Loihi (all depths)
25 KON - South Kona (all depths)
26 HUA - Hualalai (all depths)
27 KOH - Kohala (all depths)
28 KEA - Mauna Kea (all depths)
29 HIL - Hilo (all depths)
30 DIS - Distant, everywhere else

Table 4 (continued)

--The latitude and longitude limits of the regions are given below.
--When the coordinates imply an overlap, precedence is given as in the maps.

No.	Code	N.Lat.	S.Lat.	W.Lon.	E.Lon.
1	SNC	19 28	19 24.5	155 19	155 14
2	SSC	19 24.5	19 22	155 19	155 16.5
3	SEC	19 24.5	19 22	155 16.5	155 14
4	SER	19 26	19 20.5	155 14	155 07.2
5	SME	19 26	-----	155 07.2	155 00
6	KOA	19 22	19 20.5	155 17	155 14
7	SSF	-----	19 10	155 17	155 00
8	SLE	19 32	19 16	155 00	154 40
9	SF1	19 22	19 10	155 17	155 14.5
10	SF2	19 26	19 10	155 14.5	155 12.3
11	SF3	19 26	19 10	155 12.3	155 09.1
12	SF4	19 26	19 10	155 09.1	155 05.3
13	SF5	19 26	19 10	155 05.3	155 00
14	LER	19 32	19 16	155 00	154 40
15	MLO	19 43	19 19	155 35	155 19
16	LSW	19 19	18 40	155 43	155 25
17	GLN	19 43	19 26	155 19	155 00
18	SWR	19 22	19 10	155 25	155 17
19	INT	19 28	19 22	155 19	155 14
20	KAO	19 30	19 19	155 32	155 19
21	DEP	19 43	19 10	155 25	155 00
22	DLS	19 19	18 40	155 43	155 25
23	DML	19 43	19 19	155 35	155 19
24	LOI	19 10	18 40	155 25	155 00
25	KON	19 39	19 00	156 20	155 43
26	HUA	19 55	19 39	156 20	155 43
27	KOH	20 25	19 55	156 20	155 34
28	KEA	20 25	19 43	155 43	154 40
29	HIL	19 47	19 32	155 09	154 40

Figure 4. Earthquake classification, shallow 0-5 km deep Kilauea and east flank Mauna Loa.

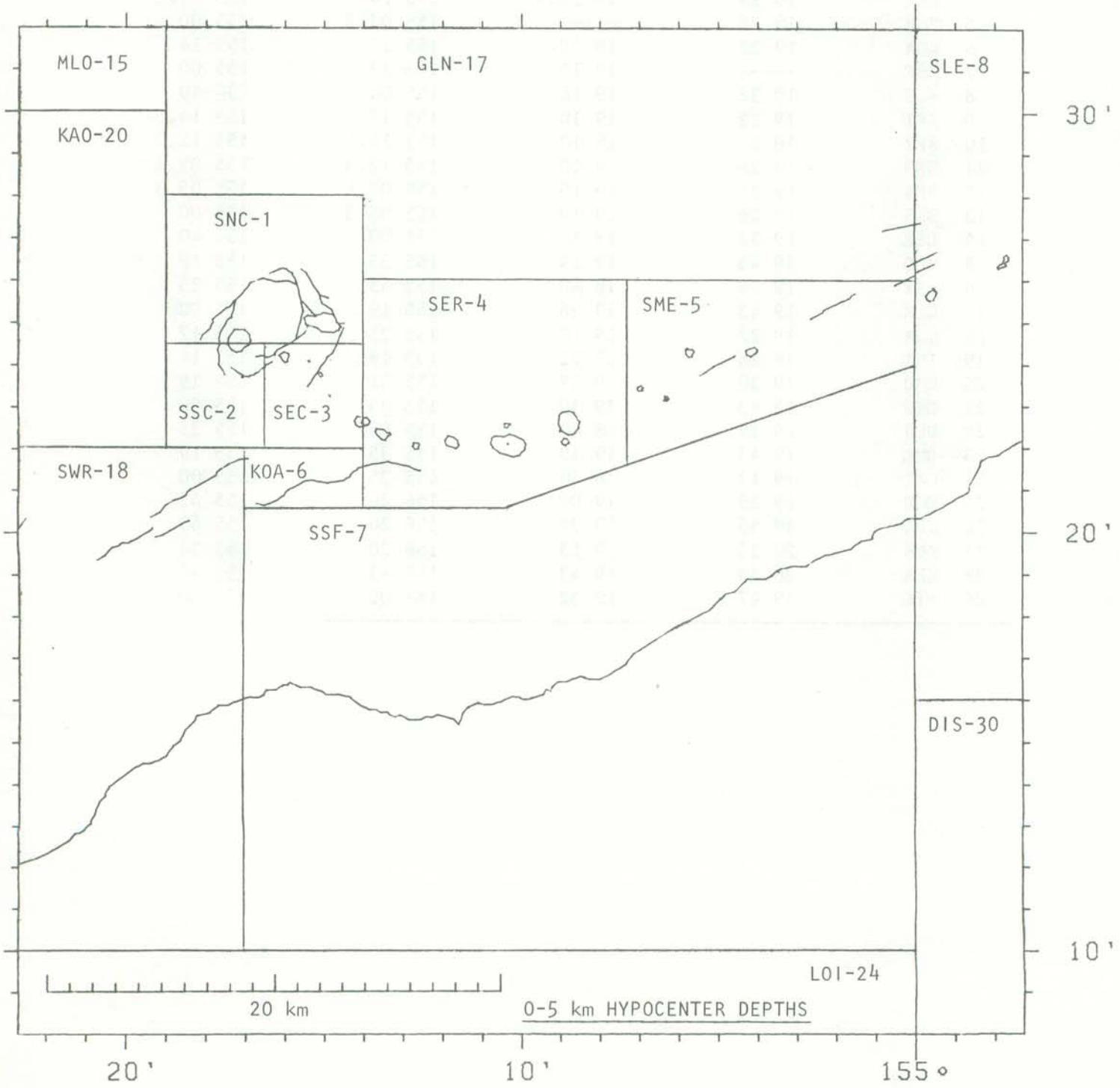


Figure 5. Earthquake classification, intermediate 5-13 km Kilauea and east flank Mauna Loa.

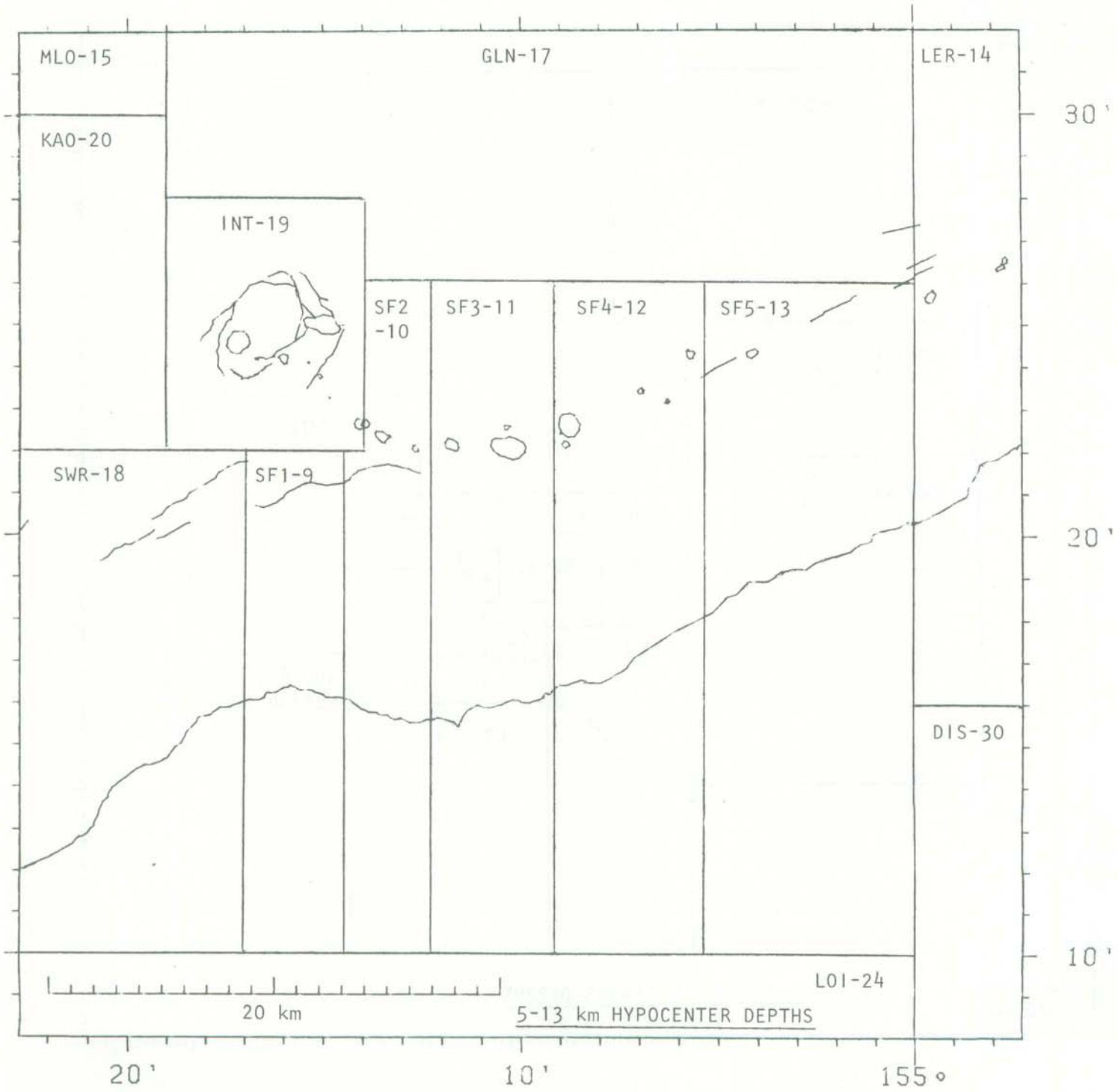


Figure 6. Earthquake classification, crustal 0-13 km deep island of Hawaii.

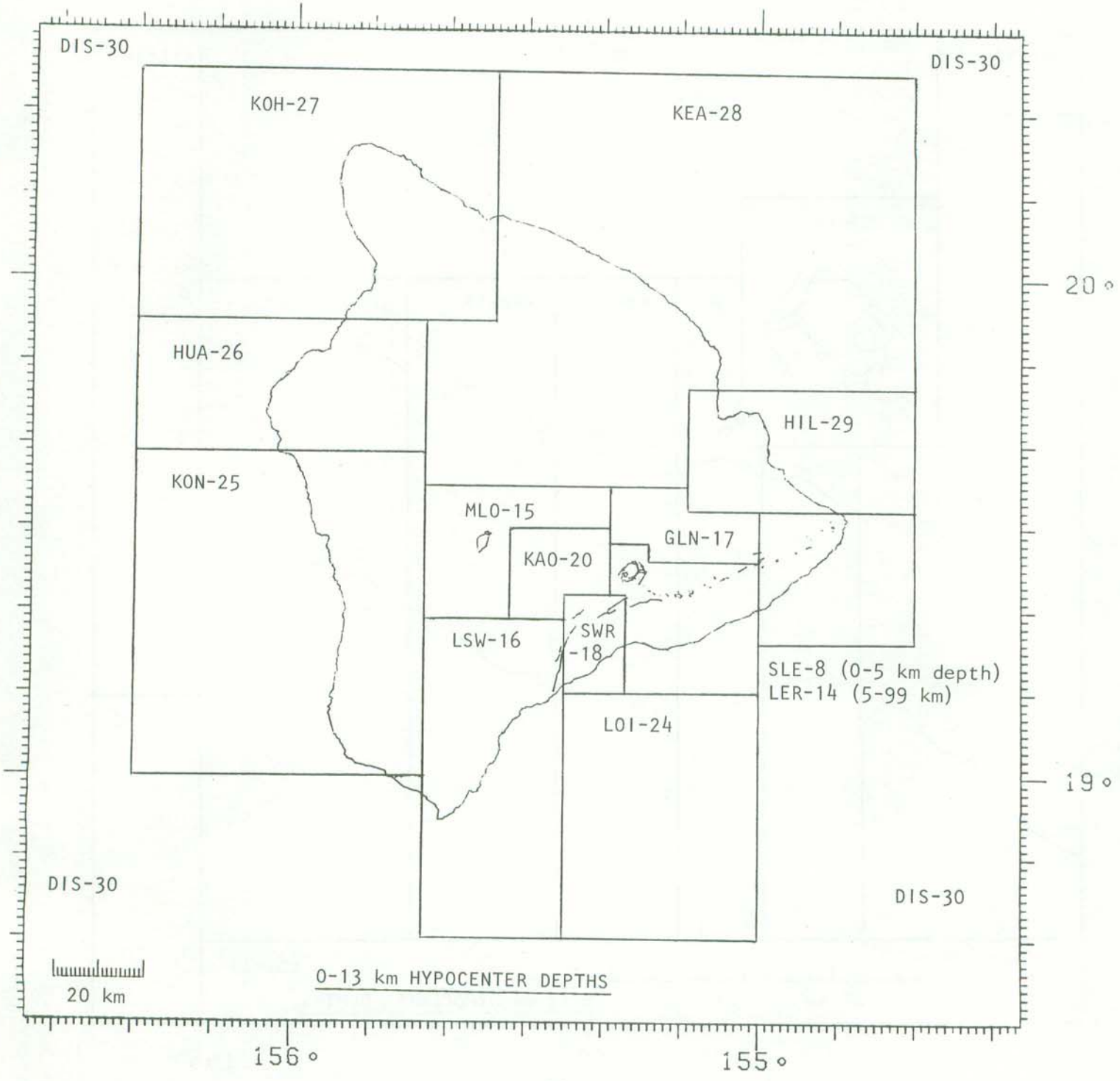
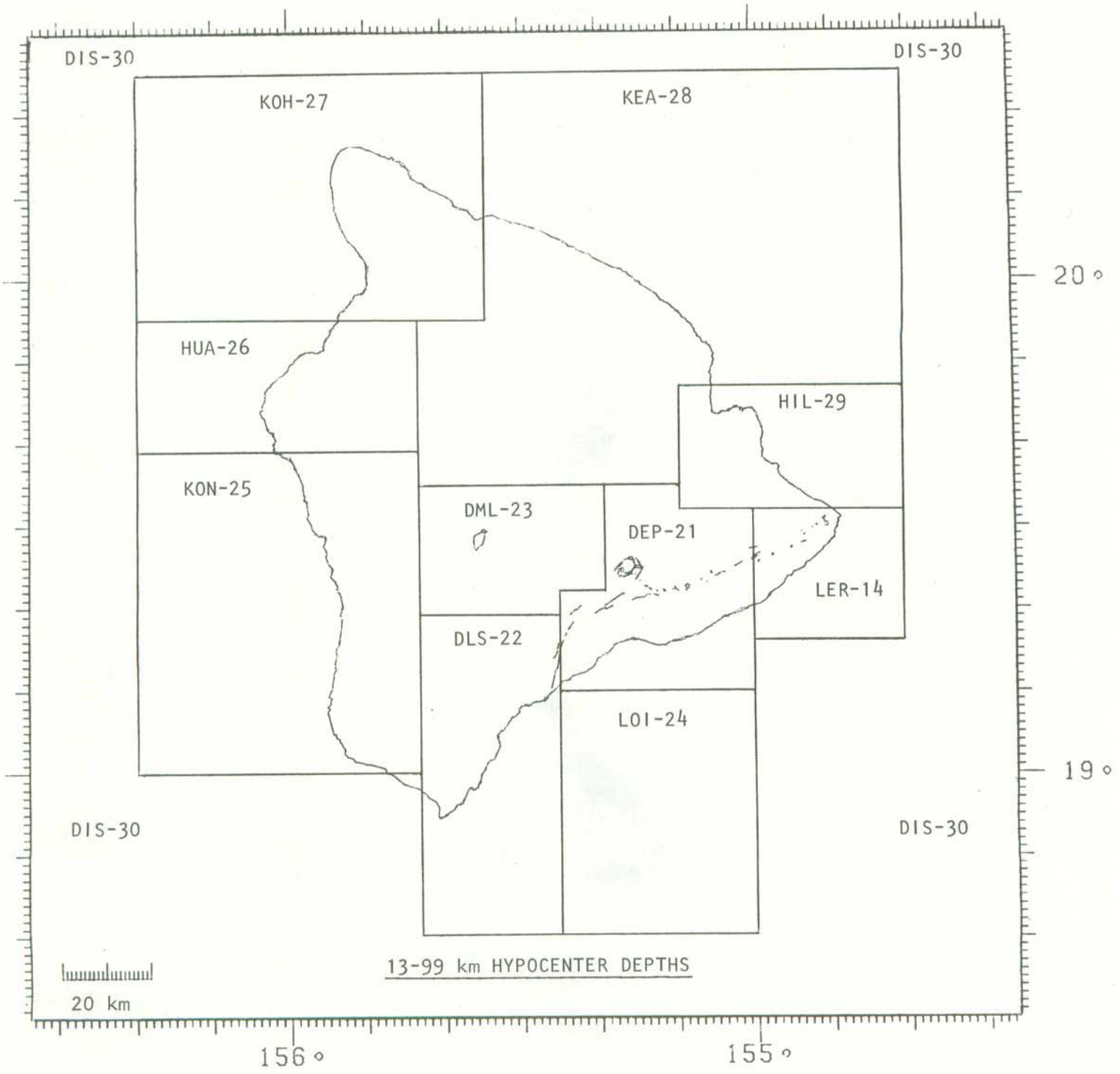
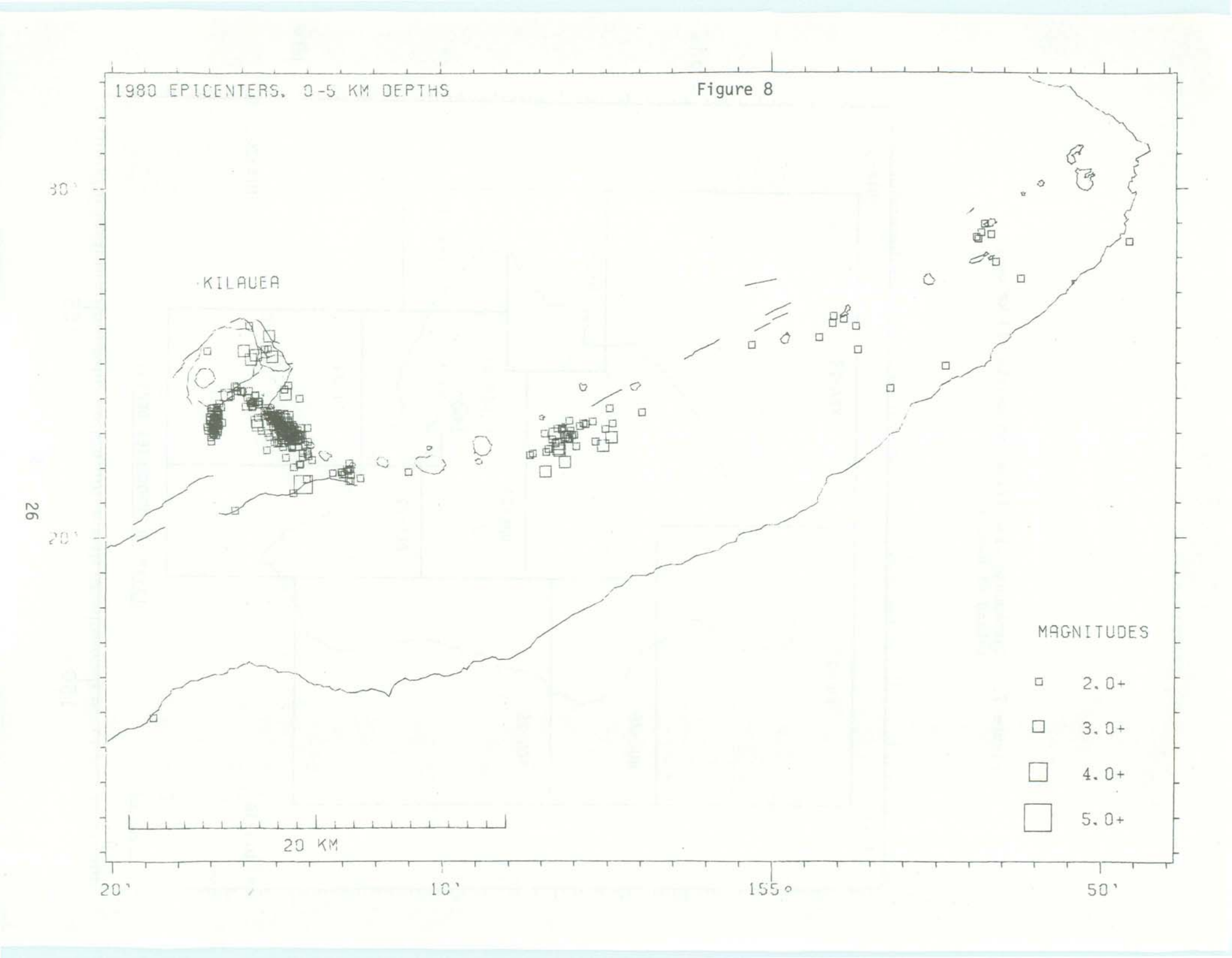
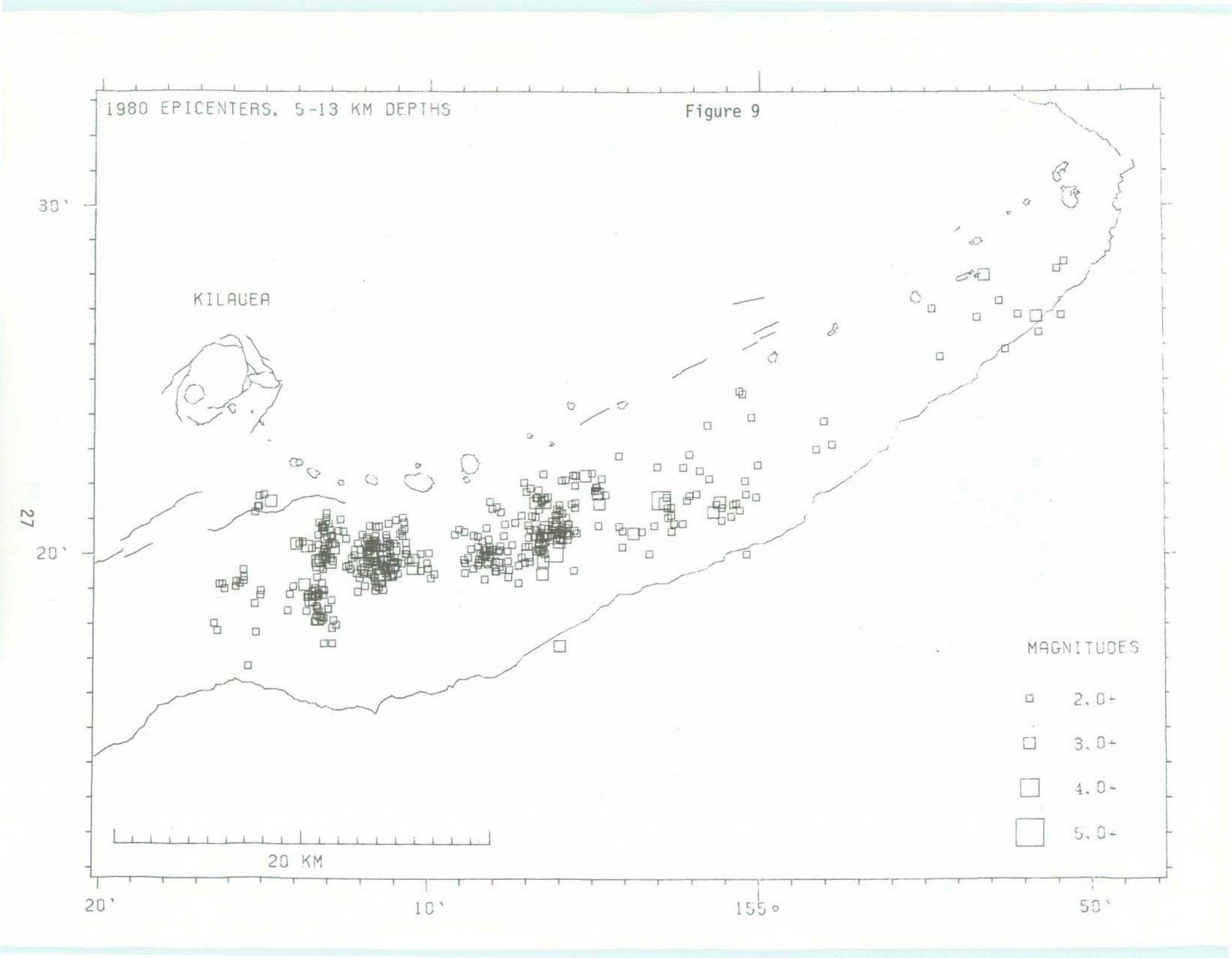


Figure 7. Earthquake classification mantle >13 km deep island of Hawaii.




1980 EPICENTERS, 0-5 KM DEPTHS
Figure 8
KILAUEA
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20 KM
20'
10'
155°
50'


1980 EPICENTERS, 5-13 KM DEPTHS
Figure 9
KILAUEA
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20 KM
30'
20'
20'
10'
155°
50'

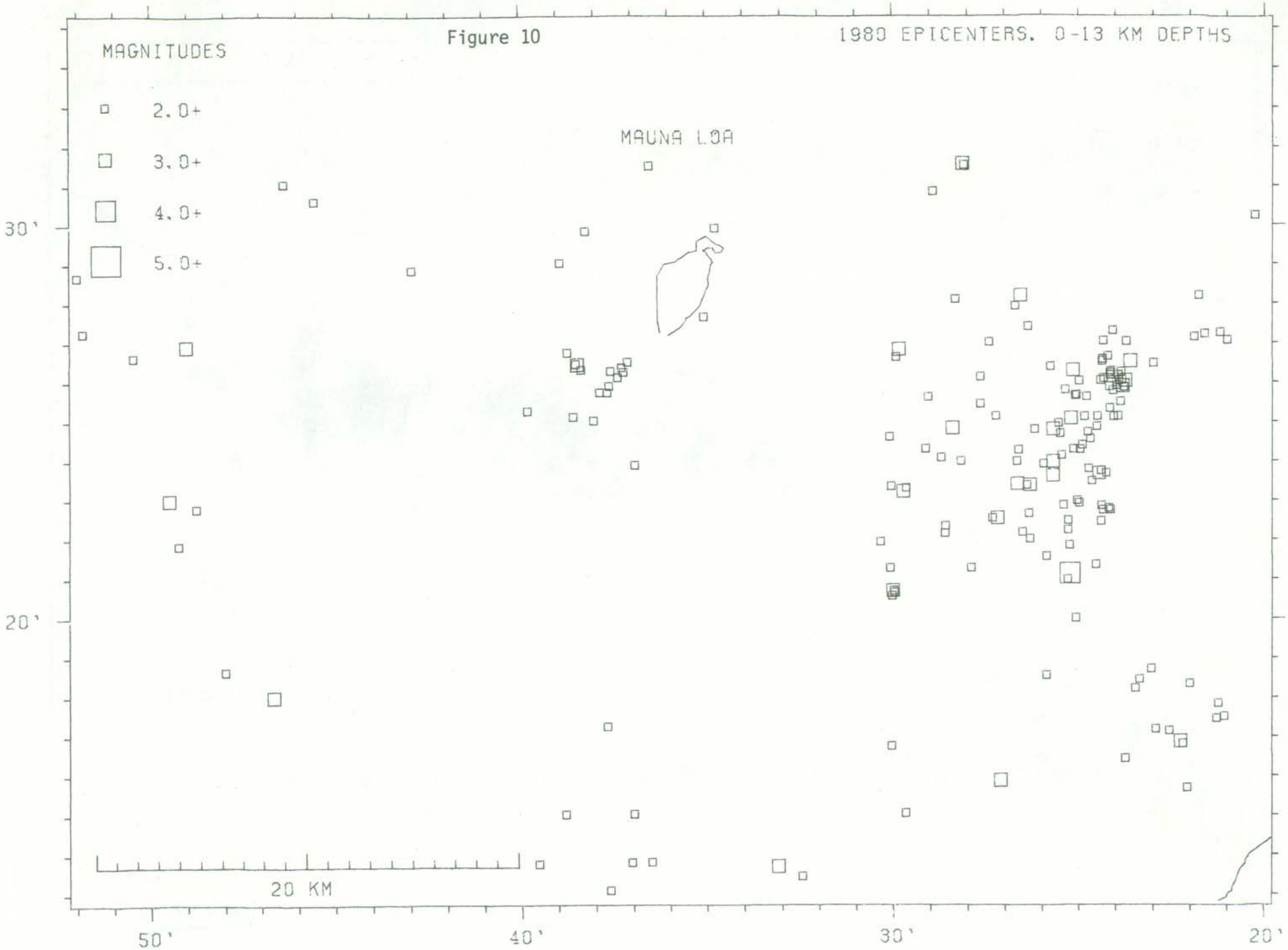
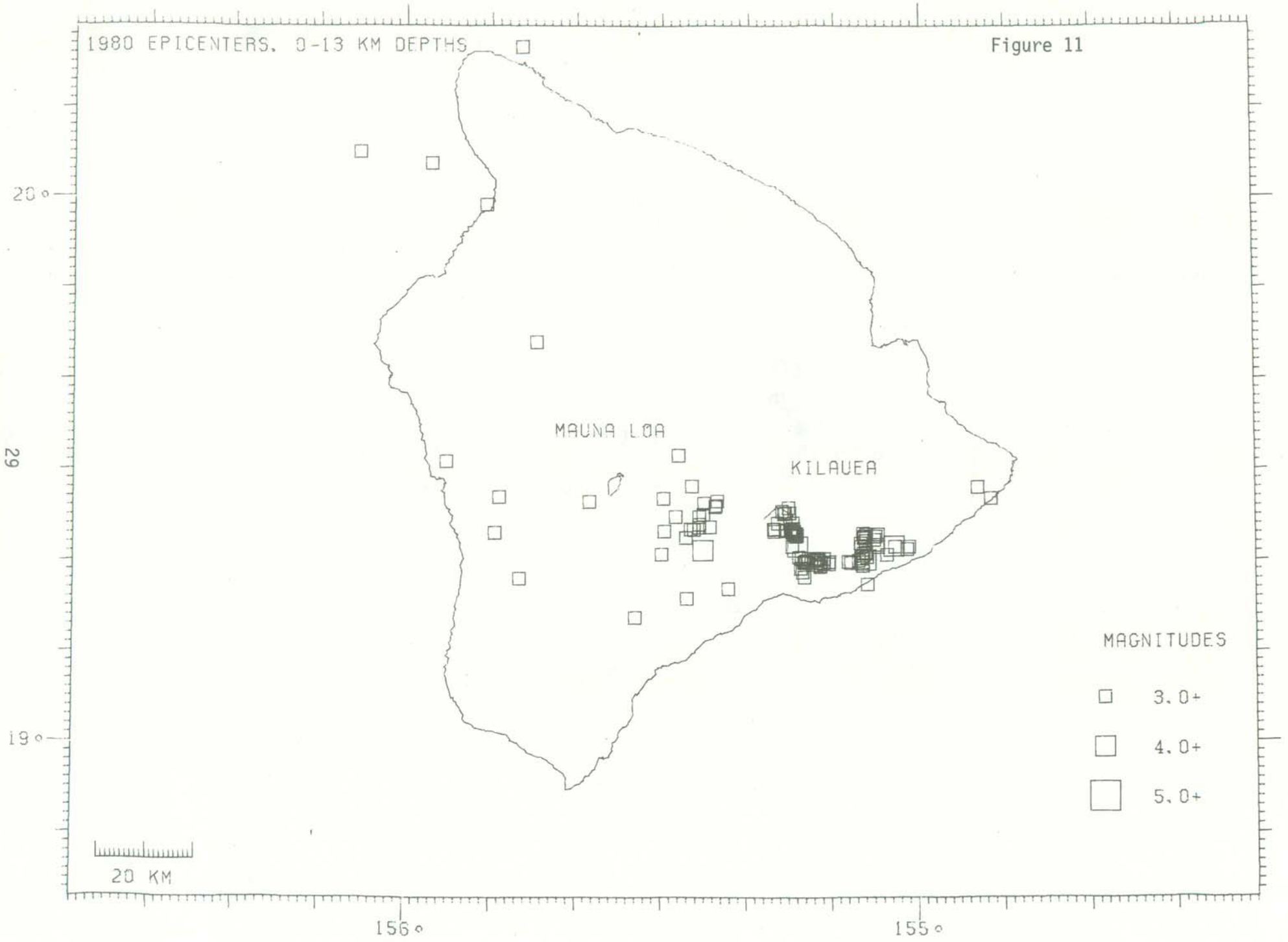
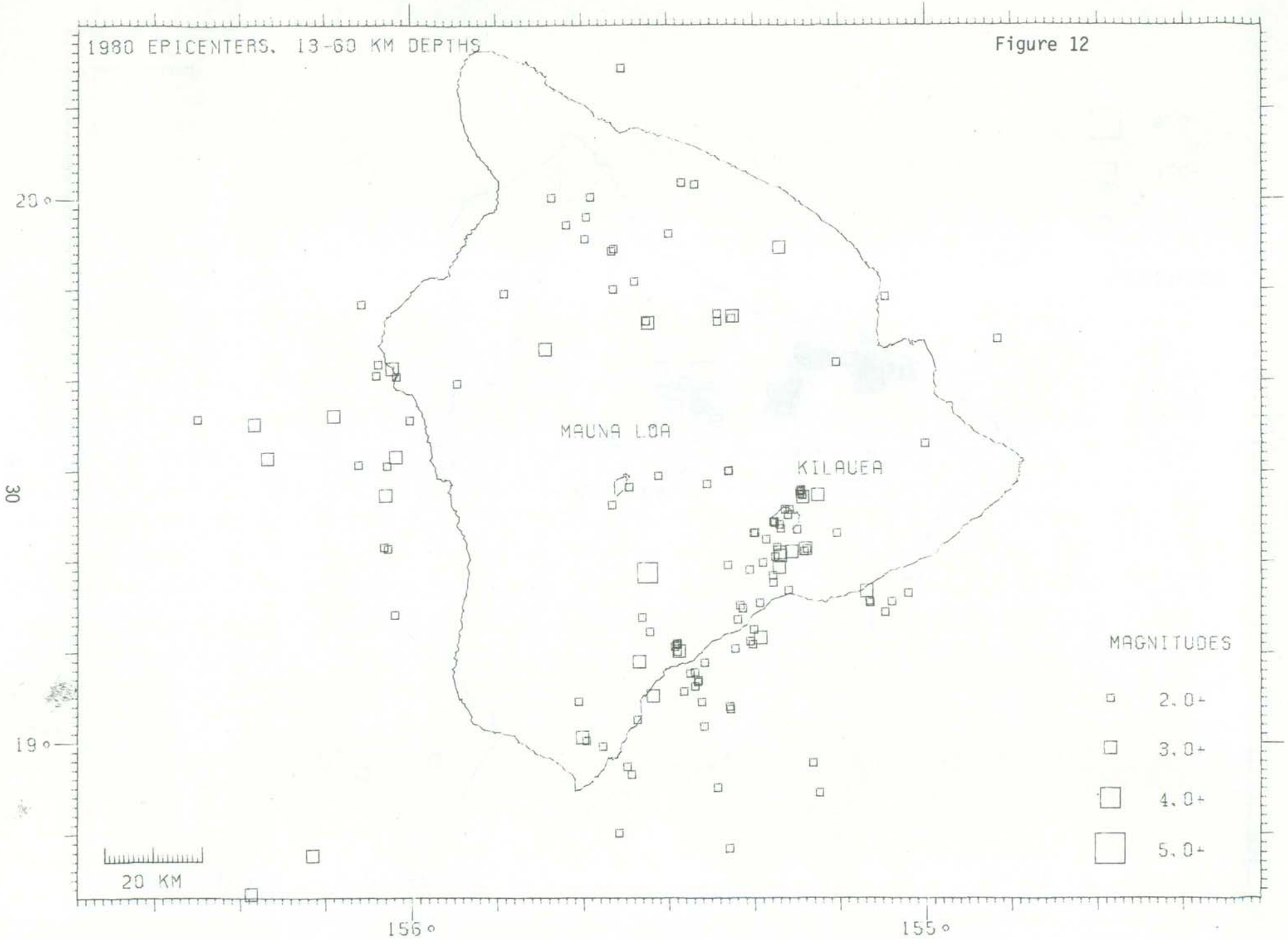


Figure 10
1980 EPICENTERS. 0-13 KM DEPTHS
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
MAUNA LOA
30'
20'
20 KM
50'
40'
30'
20'


1980 EPICENTERS, 0-13 KM DEPTHS
Figure 11
MAUNA LOA
KILAUEA
MAGNITUDES
3.0+
4.0+
5.0+
20 KM
20°
19°
156°
155°
29


1980 EPICENTERS, 13-60 KM DEPTHS
Figure 12
MAUNA LOA
KILAUEA
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20 KM
20°
19°
156°
155°
30

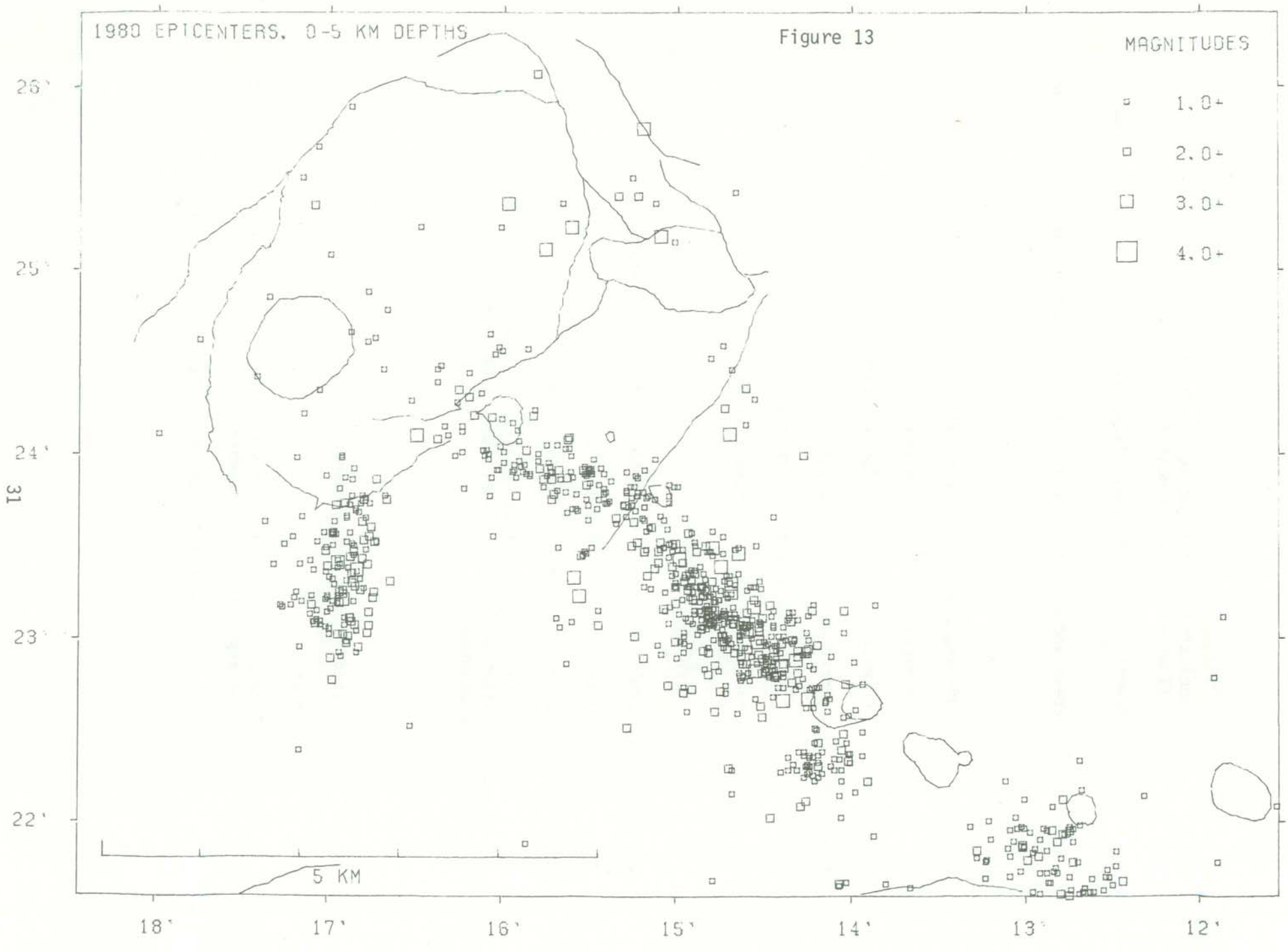

1980 EPICENTERS, 0-5 KM DEPTHS
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
5 KM
26'
25'
24'
23'
22'
18'
17'
16'
15'
14'
13'
12'

Figure 13

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = (\Sigma R_i^2/NR)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 2 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

* - the location program had a convergence problem, which usually means that the depth may be unreliable.

Table 5 lists all events located during 1979. Table 6 lists only events of magnitude 3.0 or larger.

Table 5. HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	1	150	55.33	19	22.82	155	14.49	3.51	1.8	2.2	19	0	71	.06	3	.3	.4	16	SEC
		1	357	49.18	19	26.00	155	24.40	9.81	2.0	1.9	34	0	46	.11	2	.4	.8	26	KAO
		1	5	7 3.13	19	20.29	155	6.62	9.84	3.4	3.2	37	0	108	.11	5	.6	.5	33	SF4 F
		1	613	41.18	19	23.73	155	1.59	8.64	2.1	1.9	29	0	137	.11	5	.6	.5	19	SF5
		1	759	14.99	19	19.70	155	12.08	9.04	1.8	1.2	17	0	134	.04	6	.7	1.3	14	SF3
		1	10	9 31.13	19	19.57	155	5.61	7.64	2.1	2.1	34	0	144	.08	5	.5	.7	21	SF4
		1	1037	21.75	19	21.15	155	13.09	8.78	1.9	1.9	33	1	57	.10	3	.5	.7	21	SF2
		1	1451	39.71	19	20.03	155	13.68	5.93	1.5	1.2	19	0	71	.11	5	.6	1.3	17	SF2
		1	1551	23.19	19	32.43	155	28.03	4.87	1.9	1.5	7	0	119	.02	1	.7	.8	5	MLO
		1	1659	49.64	19	19.75	155	12.14	8.20	1.4	1.3	15	0	133	.04	6	.7	1.7	11	SF3
		1	1955	2.24	19	25.62	155	29.05	9.53	2.2	2.1	38	1	52	.10	6	.3	.7	29	KAO
		1	2214	29.50	19	18.80	155	15.30	8.26	1.4	1.4	20	1	121	.05	4	.5	.9	16	SF1
		1	23	4 49.08	19	19.84	155	10.56	9.89	2.6	2.9	35	0	90	.07	4	.4	.7	27	SF3
		1	2356	39.52	19	21.58	155	5.87	8.09	1.3	1.5	20	0	94	.08	3	.5	1.0	17	SF4
		2	540	59.06	19	26.12	155	24.03	8.25	1.9	1.6	22	1	51	.12	7	.4	1.5	19	KAO
		2	614	27.59	19	20.61	155	5.61	8.12	1.9	1.8	26	0	110	.11	5	.7	.6	24	SF4
		2	752	24.06	19	24.35	155	17.06	1.68	1.1	1.3	9	1	77	.04	1	.3	.5	5	SSC
		2	916	.08	19	19.34	155	11.65	8.44	2.0	2.3	26	0	98	.09	5	.5	.7	25	SF3
		2	1343	16.31	19	23.07	155	16.77	2.92	2.1	2.7	24	1	45	.10	1	.3	.3	22	SSC
		2	1617	55.73	19	19.95	155	11.17	7.95	2.2	2.5	37	1	87	.11	5	.4	.6	32	SF3
		2	1720	25.87	19	24.20	155	17.58	16.01	2.0	1.6	35	4	37	.08	2	.6	.4	29	DEP
		2	1746	16.03	19	27.24	155	28.48	8.90	1.9	1.7	29	1	52	.10	7	.4	1.1	21	KAO
		2	18	0 45.82	19	22.96	155	14.93	3.23	1.4	1.3	13	0	114	.06	2	.4	.5	10	SEC
		2	1918	22.21	19	23.15	155	14.82	3.22	2.0	2.2	21	1	66	.06	2	.3	.4	14	SEC
		2	1920	57.77	19	23.39	155	14.87	2.95	1.1	1.1	8	0	103	.03	3	.5	.9	8	SEC
		2	2136	37.20	19	23.26	155	16.92	2.87	2.7	3.1	32	1	40	.08	0	.2	.2	28	SSC F
		2	2327	24.25	19	31.50	155	36.51	9.74	2.8	1.7	30	1	108	.16	4	.6	.8	18	MLO
		2	2354	54.91	19	13.12	155	28.07	7.91	2.1	1.6	20	3	102	.14	5	.5	1.3	10	LSW
		3	1	6 16.75	19	23.43	155	14.99	3.22	3.4	3.8	39	1	46	.10	3	.3	.4	31	SEC F
		3	158	11.17	19	23.37	155	14.90	3.14	1.4	1.4	12	2	91	.07	3	.4	.5	9	SEC
		3	331	16.16	19	23.05	155	14.74	3.14	1.5	1.8	15	1	77	.05	2	.3	.4	11	SEC
		3	345	37.41	19	20.48	155	6.94	9.01	1.9	1.6	13	0	237	.04	5	2.8	1.3	11	SF4
		3	634	2.07	19	20.88	155	6.15	8.80	1.3	1.5	15	0	181	.04	4	.8	1.4	13	SF4
		3	912	29.16	19	18.28	155	15.14	7.76	1.9	2.0	30	0	133	.07	4	.4	.7	29	SF1
		3	914	17.09	19	22.85	155	14.45	3.57		1.7	19	1	70	.05	2	.3	.4	17	SEC
		3	1212	13.32	19	20.68	155	2.65	8.26	2.4	2.8	34	0	154	.10	2	.6	.7	32	SF5
		3	1422	34.38	19	56.43	156	23.91	7.00	2.2	2.1	26	0	288	.11	68	4.3	99.0	25	DIS *
		3	1610	45.80	19	20.42	155	12.10	8.79	1.6	1.2	22	0	74	.05	4	.5	1.0	20	SF3
		3	1936	36.04	19	17.82	155	13.11	7.88	1.5	1.3	27	1	109	.08	2	.5	.6	24	SF2
		3	20	0 51.53	19	19.87	155	8.13	6.50	1.8	1.5	24	1	87	.08	5	.5	1.1	20	SF4
		4	049	4.58	19	19.44	155	11.22	5.19	1.7	1.6	23	1	98	.06	5	.4	1.0	21	SF3
		4	322	22.65	19	18.70	155	15.23	7.16	1.5	1.6	25	2	124	.12	4	.5	1.1	21	SF1
		4	717	3.00	19	20.09	155	7.62	7.29	1.8	1.7	28	0	95	.09	5	.5	1.0	26	SF4
		4	842	19.03	19	21.07	155	2.76	8.19	2.4	2.5	35	0	141	.10	2	.6	.5	23	SF5
		4	1159	22.50	19	22.60	155	14.94	4.39	1.2	1.0	10	0	158	.05	2	.7	1.1	6	SEC
		4	1221	6.60	19	18.90	155	15.30	7.61	1.6	1.3	24	1	118	.08	4	.5	1.0	20	SF1
		4	16	4 34.96	19	22.95	155	14.82	3.39	1.5	1.6	15	0	66	.05	2	.3	.5	11	SEC
		4	1933	16.34	18	59.57	155	37.76	45.37	2.8	2.6	37	3	196	.09	4	.9	1.6	29	DLS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	4	20	0 11.48	19	17.63	155	14.84	7.94	1.7	1.4	20	2	162	.11	3	.7	.8	16	SF1
		4	20	4 49.80	19	18.21	155	15.42	6.76	1.6	1.8	29	0	139	.08	4	.4	.7	20	SF1
		4	2252	57.51	19	20.56	155	10.88	8.33	1.7	1.8	32	1	76	.09	3	.4	.7	26	SF3
		4	23	8 18.73	19	20.26	155	10.76	9.20	1.7	1.3	12	0	132	.04	4	.7	1.5	10	SF3
		5	1	1 35.96	19	22.36	155	13.94	2.96	1.3	1.1	11	0	142	.04	2	.4	.5	8	SER
		5	215	5.94	19	20.71	155	12.97	8.86	1.9	2.0	32	0	63	.10	4	.4	.7	28	SF2
		5	242	38.54	19	27.25	155	51.86	6.52	2.4	2.0	24	3	227	.10	12	1.0	.8	13	KON
		5	4	5 20.21	19	19.89	155	8.92	6.23	1.8	1.8	30	1	77	.11	4	.5	1.1	23	SF4
		5	6	8 7.20	19	18.92	155	21.45	2.69	1.6	1.1	14	1	136	.08	4	.5	.7	10	SWR
		5	651	34.48	19	20.21	155	12.05	7.71	1.6	1.2	11	0	125	.03	5	.7	2.0	11	SF3
		5	716	30.06	19	23.91	155	16.03	3.11	.9	1.1	10	0	106	.06	1	.4	.4	7	SFC
		5	917	14.75	19	.20	155	39.70	43.15		2.1	17	3	134	.05	2	1.0	1.8	10	DLS
		5	1058	5.60	19	27.44	154	54.65	4.75		1.2	20	0	201	.13	1	1.1	.7	14	SLE
		5	1439	18.34	19	20.77	155	8.26	7.57	2.1	2.4	29	0	76	.08	4	.5	.9	18	SF4
		5	18	4 4.12	19	28.10	155	28.32	9.07	2.3	2.1	31	1	54	.09	7	.4	1.1	21	KAO
		5	1815	27.77	19	20.14	155	13.35	7.58	1.6	1.3	22	1	65	.10	5	.5	1.2	17	SF2
		6	444	22.37	19	22.77	155	14.58	3.37	1.7	1.6	17	1	72	.08	2	.3	.5	10	SEC
		6	620	48.11	19	23.47	155	28.61	9.22		1.4	19	0	70	.06	3	.5	1.1	17	KAO
		6	643	27.18	19	22.89	155	2.13	6.36	2.1	2.1	18	1	140	.10	5	.6	1.0	10	SF5
		6	857	49.58	19	21.53	155	6.37	6.26		1.5	21	1	84	.10	3	.5	.9	14	SF4
		6	959	8.13	19	27.88	154	53.27	1.58	2.3	2.4	26	0	236	.22	2	1.9	.6	10	SLE
		6	1037	49.80	19	18.70	155	13.72	7.96	1.7	1.6	28	0	90	.09	3	.5	.9	19	SF2
		6	1214	57.75	19	10.82	155	41.32	2.85	2.4	1.6	18	0	219	.10	11	1.3	5.5	13	LSW
		6	1218	4.84	19	20.20	155	6.37	8.96	1.9	1.4	13	0	184	.03	5	.9	1.6	9	SF4
		6	1241	28.87	19	20.11	155	8.49	7.49	1.8	1.6	27	1	77	.07	4	.4	.9	13	SF4
		6	15	2 25.93	19	18.24	155	20.51	6.26	1.9	1.7	24	2	119	.10	3	.5	1.1	16	SWR
		6	1939	56.98	19	20.33	155	13.27	5.17	1.5	1.4	24	0	64	.12	4	.5	1.3	20	SF2
		6	2148	59.11	19	21.66	155	12.50	2.88	1.4	1.8	16	2	109	.03	2	.4	.5	10	SER
		7	340	37.13	19	19.21	155	16.14	7.02	1.9	1.9	26	0	113	.08	3	.4	.7	20	SF1
		7	514	28.06	19	19.13	155	11.86	7.20	1.7	1.3	15	0	145	.03	6	.7	2.0	12	SF3
		7	6	1 33.12	19	19.54	155	11.94	8.08	1.6	1.3	15	0	137	.03	6	.7	1.8	11	SF3
		7	6	2 52.46	19	19.59	155	9.90	8.57	1.6	1.4	16	0	119	.03	5	.7	1.4	13	SF3
		7	750	3.69	19	19.79	155	9.77	7.43	1.8	1.9	28	1	88	.08	4	.5	.9	21	SF3
		7	1011	36.52	19	27.32	154	52.59	7.55	1.8	1.5	27	3	259	.15	3	1.1	.9	15	LER
		7	1131	43.60	19	20.56	155	13.00	8.54	1.9	2.0	30	0	65	.10	4	.5	.8	23	SF2
		7	1711	42.09	19	20.33	155	12.81	9.19	1.6	1.5	17	0	77	.03	4	.6	1.2	13	SF2
		7	1956	15.07	19	22.33	155	17.07	30.23	2.1	1.7	33	4	41	.07	2	.8	1.1	23	DEP
		7	2045	16.57	19	20.27	155	11.51	9.20	1.7	1.4	14	0	191	.03	4	1.1	1.3	13	SF3
		7	2146	24.53	19	18.86	155	12.89	7.11	1.7	1.3	20	0	90	.06	4	.5	1.4	17	SF2
		7	2210	48.78	19	18.60	155	15.26	9.08	2.3	2.6	31	1	124	.10	4	.5	.7	26	SF1
		8	027	32.06	19	22.95	155	14.73	2.96	1.2	1.2	14	0	66	.07	2	.3	.4	11	SEC
		8	3	8 31.11	19	20.54	155	11.63	8.39	2.1	2.1	34	2	75	.10	4	.5	.6	28	SF3 F
		8	528	17.99	19	23.39	155	17.01	2.73	2.4	2.8	25	1	41	.09	0	.3	.3	22	SSC F
		8	14	1 33.89	19	23.48	155	15.00	3.33	1.8	1.6	13	0	79	.06	3	.4	.5	10	SEC
		8	1527	45.22	19	25.88	155	23.35	8.51	1.9	1.6	21	1	55	.11	3	.5	1.0	17	KAO
		8	1554	34.95	19	25.90	155	21.02	11.41	2.1	1.3	6	1	333	.13	6	6.0	1.7	3	KAO
		9	152	.03	19	23.28	155	14.93	3.34		1.7	14	0	72	.06	2	.4	.4	10	SEC
		9	152	42.70	19	23.20	155	14.90	3.02	1.2	1.2	8	0	110	.02	2	.5	.8	7	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	9	1049	7.22	19	19.39	155	10.34	8.54	1.8	1.4	15	1	113	.04	5	.7	1.3	13	SF3
		9	1240	13.38	19	20.25	155	11.66	8.59	2.9	3.1	31	0	79	.10	5	.4	.7	26	SF3
		9	1250	40.77	19	23.20	155	14.78	3.40	1.9	1.8	9	0	116	.02	2	.6	.6	7	SEC
		9	1311	47.14	19	23.13	155	14.73	3.26	2.3	2.0	14	0	65	.06	2	.4	.5	12	SEC
		9	14	5 55.44	19	23.12	155	14.75	3.38	1.8	1.6	11	0	88	.03	2	.4	.6	10	SEC
		9	1458	12.42	19	23.26	155	14.83	3.32	1.8	2.2	15	0	68	.05	2	.4	.4	11	SEC
		9	15	0 14.95	19	23.12	155	14.74	3.06	1.8	2.0	15	1	71	.06	2	.3	.5	10	SEC
		9	1625	3.91	19	22.86	155	14.62	3.30	2.0	2.1	17	0	124	.07	2	.4	.3	11	SEC
		9	18	3 16.87	19	21.85	155	4.90	8.46	2.1	1.9	24	1	77	.10	5	.5	.8	18	SF5
		9	1816	52.99	19	30.62	155	45.54	8.48	2.6	1.9	18	2	169	.12	1	1.4	1.4	11	KON
		9	19	7 27.96	19	24.83	155	28.40	10.47	2.9	3.2	33	1	55	.10	5	.4	.6	28	KAO
		9	2029	39.52	19	23.23	155	14.81	3.17	1.5	1.6	11	1	109	.06	2	.5	.7	8	SEC
		9	2116	20.27	19	18.26	155	15.13	8.37	1.3	1.4	11	1	233	.02	5	1.4	1.6	9	SF1
		9	2126	33.56	19	23.90	155	15.61	2.76	1.2	1.5	13	1	108	.05	2	.3	.4	8	SEC
		9	2341	47.44	19	19.92	155	7.88	7.78	1.9	1.5	11	0	236	.06	5	2.2	1.5	9	SF4
		10	129	49.60	19	19.78	155	12.01	9.15	1.7	1.3	9	0	233	.03	6	1.5	2.0	9	SF3
		10	444	38.93	19	23.72	155	15.30	2.96	1.9	2.1	15	2	96	.07	2	.3	.4	9	SEC
		10	524	57.78	19	18.59	155	11.59	6.68	1.7	1.3	11	0	253	.07	7	1.9	1.8	8	SF3
		10	649	4.25	19	24.29	155	16.53	1.71	1.3	1.3	8	0	115	.05	1	.3	.3	7	SSC
		10	948	3.95	19	20.17	155	7.61	6.66		1.2	17	0	94	.09	5	.5	1.5	17	SF4
		10	1014	7.38	19	20.27	155	12.24	9.46	1.7	1.7	20	1	75	.04	5	.5	.9	17	SF3
		10	1129	57.36	19	23.75	154	59.45	5.67		1.8	14	0	175	.12	3	.8	1.6	11	LER
		10	1241	47.80	19	23.15	155	15.07	2.21	1.6	1.1	10	2	111	.11	2	.4	.7	7	SEC
		10	1411	33.10	19	24.31	155	16.20	1.41	2.1	2.5	12	2	128	.08	1	.3	.3	9	SEC
		10	1540	19.96	19	23.20	155	14.87	3.10	1.6	1.6	9	0	110	.04	2	.5	.8	8	SEC
		10	1928	2.12	19	20.11	155	11.79	8.61	2.0	2.2	16	1	228	.05	5	1.3	1.0	12	SF3
		10	2227	57.39	19	21.14	155	6.18	6.61	2.2	2.5	21	0	93	.08	6	.5	1.7	16	SF4
		11	024	44.56	19	18.92	155	15.78	5.83	1.6	1.2	11	0	236	.08	4	1.7	1.6	10	SF1
		11	115	29.46	19	25.48	155	25.46	4.93	1.8	1.6	11	0	128	.09	1	.6	1.1	10	KAO
		11	611	15.85	19	19.56	155	7.89	8.26	1.9	1.4	9	0	254	.02	6	2.8	1.8	8	SF4
		11	1314	38.61	19	20.55	155	7.73	8.61	2.5	2.5	31	1	87	.10	5	.5	.7	25	SF4
		11	1945	53.50	19	20.13	155	8.32	7.89	1.8	1.4	28	1	80	.08	4	.5	1.0	18	SF4
		12	1025	28.85	19	20.05	155	13.11	7.27	1.8	1.3	24	0	69	.12	6	.5	1.1	22	SF2
		12	1325	3.33	19	19.50	155	12.13	7.73	1.7	1.1	12	0	218	.03	6	1.1	1.9	10	SF3
		12	1836	25.73	19	21.62	155	1.42	7.81	2.1	1.6	15	0	175	.10	4	.9	1.4	15	SF5
		12	1933	4.61	19	23.24	155	14.69	3.34	1.2	1.0	10	1	112	.05	3	.4	.7	8	SEC
		12	2118	8.36	19	23.09	155	17.09	2.57	1.2	1.1	12	1	65	.06	1	.4	.2	8	SSC
		13	054	29.29	19	19.08	155	9.65	8.15	1.8	1.4	12	0	237	.07	6	2.2	2.5	8	SF3
		13	220	40.82	19	21.96	155	1.93	7.67	1.7	1.2	13	0	156	.11	4	.7	1.4	11	SF5
		13	258	13.81	19	20.25	155	12.83	8.79	1.6	1.4	13	0	191	.03	6	1.0	1.5	13	SF2
		13	4	8 .19	19	24.53	155	24.25	8.87	1.8	1.7	23	0	44	.09	2	.5	1.1	21	KAO
		13	434	25.03	19	20.09	155	11.74	8.89	1.7	1.3	13	1	211	.04	5	1.1	1.2	10	SF3
		13	832	2.58	19	25.68	155	23.73	8.93	1.6	1.4	13	0	75	.09	8	.5	1.6	9	KAO
		13	1212	13.96	19	25.23	155	16.02	1.20	1.6	2.2	11	0	149	.07	2	.3	.4	8	SNC
		13	1456	32.15	19	19.60	155	11.38	9.28	2.0	2.0	12	0	204	.03	9	1.2	2.5	9	SF3
		13	1618	37.37	19	18.27	155	13.14	9.40	1.7	1.5	14	0	214	.04	8	1.3	1.6	13	SF2
		13	1633	46.46	19	18.01	155	13.09	7.44		1.2	13	0	234	.08	9	1.3	1.9	12	SF2
		13	1657	38.64	19	15.86	155	21.87	6.69		1.2	11	0	210	.08	7	1.1	2.6	10	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	13	1711	19.69	19	21.89	155	12.82	4.08		2.2	17	0	71	.07	5	.4	1.5	11	SER
		13	1751	50.32	19	20.24	155	9.68	8.27		1.4	11	0	206	.03	3	1.3	1.7	9	SF3
		13	1814	45.57	19	18.33	155	13.17	9.34	1.7	1.7	14	0	214	.04	8	1.3	1.5	12	SF2
		13	1825	26.01	19	18.30	155	13.12	8.51		1.1	11	0	228	.03	8	1.3	2.4	8	SF2
		13	1938	34.69	19	22.32	155	1.07	6.46		1.3	7	0	218	.15	6	1.4	2.3	4	SF5
		13	23	0 12.94	19	20.06	155	9.51	8.51		1.2	11	0	210	.03	4	1.1	1.3	8	SF3
		14	424	58.49	19	22.76	155	14.34	3.44	1.8	2.2	11	0	79	.03	3	.4	.7	10	SEC
		14	437	4.38	19	19.53	155	11.81	4.58	1.6	1.3	10	2	221	.05	6	2.4	11.4	6	SSF
		14	7	6 36.72	19	22.90	155	14.48	2.93	1.5	1.6	10	1	125	.05	3	.5	.7	6	SEC
		14	12	7 20.55	19	26.64	155	26.55	8.44	2.0	1.7	24	2	59	.08	4	.4	.9	20	KAO
		14	1616	24.97	19	27.78	154	54.61	4.74	2.3	1.6	25	1	180	.12	1	.9	.9	13	SLE
		14	17	7 .79	19	23.87	155	16.07	3.09	1.3	1.6	17	0	101	.07	1	.3	.3	13	SEC
		14	22	4 52.35	19	23.75	155	16.80	2.42	1.8	2.4	19	1	60	.10	0	.4	.2	15	SSC
		15	058	46.75	19	23.01	155	14.96	3.28	1.1	1.6	10	0	114	.06	2	.4	.6	9	SEC
		15	2	1 22.80	19	25.72	155	23.40	9.75	1.6	1.3	20	1	52	.07	3	.5	1.1	15	KAO
		15	258	9.99	19	26.04	155	24.40	8.18	2.1	2.0	31	0	46	.11	2	.4	.9	27	KAO
		15	5	4 56.49	19	19.65	155	11.01	7.19	1.8	2.2	28	1	94	.08	5	.5	.9	25	SF3
		15	10	0 15.66	19	23.19	155	16.95	2.83	1.3	1.8	8	0	116	.02	0	.5	.5	7	SSC
		15	1016	30.44	19	23.80	155	23.31	7.80	1.5	1.3	13	1	58	.09	4	.5	1.8	11	KAO
		15	1213	11.23	19	18.98	155	13.16	8.31	2.9	3.0	29	1	81	.09	4	.4	.7	21	SF2
		15	1245	31.99	19	24.52	155	28.98	9.69		1.3	9	1	173	.02	4	.8	.9	5	KAO
		15	1341	2.75	19	41.29	156	2.21	35.32	3.8	3.7	32	0	306	.08	35	7.7	2.4	32	HUA
		15	1441	25.97	19	26.64	155	18.50	6.03	1.2	1.1	5	0	321	.11	4	39.4	19.3	5	INT *
		15	1543	29.68	19	23.02	155	14.73	3.43	1.6	1.6	10	0	116	.03	2	.5	.6	9	SEC
		15	1750	17.86	19	24.15	155	16.34	3.43	1.1	1.3	9	0	113	.07	1	.6	.4	6	SEC
		15	23	3 58.02	19	19.65	155	8.48	6.57	1.8	1.6	16	2	204	.07	5	1.1	1.6	9	SF4
		16	042	16.44	19	19.53	155	8.53	8.11	1.8	1.7	13	0	223	.04	5	1.5	1.7	8	SF4
		16	133	36.31	19	21.53	155	.56	7.45	2.1	1.8	23	0	193	.12	5	.9	1.1	17	SF5
		16	141	4.33	19	23.20	155	14.79	3.14	1.6	1.8	12	0	86	.03	2	.4	.4	8	SEC
		16	144	44.10	19	1.75	155	25.91	46.56	2.6	2.4	32	2	211	.11	15	1.3	2.5	24	DLS
		16	518	7.25	19	18.66	155	13.00	8.27	2.0	1.6	15	2	209	.05	8	.8	1.5	10	SF2
		16	733	35.58	19	22.59	155	.06	7.73	2.4	2.4	25	0	184	.13	5	.9	.6	17	SF5
		16	11	9 28.57	19	19.56	155	7.82	8.33	1.9	1.3	10	0	243	.04	6	2.1	1.8	8	SF4
		16	1136	18.91	19	20.61	155	7.25	5.64	1.6	1.3	20	0	93	.12	5	.5	1.7	14	SF4
		16	1313	59.06	19	19.60	155	13.16	7.25	1.6	1.8	27	0	73	.12	5	.5	1.2	19	SF2
		16	1535	54.20	19	23.48	155	15.10	2.78	1.4	2.0	12	0	107	.07	2	.4	.4	11	SEC
		16	16	5 30.06	19	22.34	155	5.76	6.82	1.9	1.9	29	2	71	.09	5	.4	.9	16	SF4
		16	1726	8.92	19	22.97	155	14.40	3.46	1.9	2.4	19	0	78	.06	2	.4	.5	16	SEC
		16	1730	57.07	19	23.65	155	15.20	2.60	1.4	1.1	11	1	92	.07	2	.4	.6	8	SEC
		16	1835	21.56	19	23.24	155	14.72	2.99	1.9	1.9	18	1	68	.21	3	.5	.7	14	SEC
		16	1858	31.48	19	23.17	155	14.68	3.14	1.2	1.1	8	0	113	.02	3	.5	.9	7	SEC
		16	19	3 39.82	19	23.30	155	14.69	3.42	3.1	3.2	33	1	46	.09	3	.3	.4	24	SEC
		16	19	8 28.64	19	23.00	155	14.70	3.04	1.1	1.1	11	1	113	.03	2	.4	.6	7	SEC
		16	20	3 9.30	19	24.36	155	14.61	3.78	2.1	2.4	23	1	96	.06	1	.4	.4	18	SEC
		16	2041	48.68	19	24.19	155	25.03	9.91	1.8	1.8	22	0	51	.08	2	.5	1.1	20	KAO
		16	2159	56.07	19	23.25	155	14.69	3.62	3.4	3.6	34	0	47	.08	3	.3	.5	27	SEC
		16	22	4 1.24	19	22.98	155	14.74	2.80	2.0	2.1	19	1	67	.11	2	.4	.5	13	SEC
		16	2218	3.99	19	23.07	155	14.62	2.84	2.1	2.4	19	1	60	.06	3	.3	.4	14	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	16	23 3	36.69	19	23.89	155	15.53	3.24	1.6	2.1	13	0	107	.05	2	.4	.4	10	SEC
		16	23 7	30.12	19	19.18	155	15.33	8.24	1.6	1.9	21	0	131	.07	4	.7	1.2	16	SF1
		17	134	2.80	19	20.20	155	11.82	9.32	1.8	2.2	29	0	80	.08	5	.5	.9	18	SF3
		17	2 6	41.78	19	24.16	155	14.61	3.52	1.5	1.7	16	0	97	.06	1	.5	.4	11	SEC
		17	3 9	44.65	19	19.49	155	10.06	9.38	1.8	1.6	14	0	213	.05	5	1.4	1.7	13	SF3
		17	4 6	11.24	19	22.43	155	14.03	3.20	1.3	1.3	14	0	130	.06	2	.5	.5	8	SEC
		17	535	17.70	19	24.25	155	14.73	4.05	2.3	2.7	23	2	99	.08	1	.3	.4	15	SEC F
		17	623	39.85	19	24.11	155	14.70	4.22	3.1	3.3	37	1	79	.11	1	.4	.5	30	SEC F
		17	635	39.68	19	26.07	155	15.81	1.92	2.5	2.9	21	1	160	.08	3	.4	.5	14	SNC F
		17	858	51.53	19	25.11	155	15.76	2.07		3.1	18	0	47	.13	2	.4	.8	17	SNC
		17	1221	47.51	19	22.28	155	5.27	8.15	3.3	3.7	37	2	72	.10	5	.4	.6	32	SF5
		17	1714	50.66	19	24.30	155	14.56	3.54	1.1	1.0	10	0	98	.08	1	.8	.5	9	SEC
		17	1933	42.23	19	19.77	155	12.97	9.89	3.6	3.6	37	0	74	.09	5	.4	.4	35	SF2
		17	1936	9.04	19	20.02	155	12.81	8.82	2.0	1.9	25	0	72	.08	5	.6	.9	21	SF2
		17	22 8	47.82	19	21.81	155	3.49	6.44	1.4	1.4	24	0	111	.18	4	.8	1.6	18	SF5
		18	055	16.03	19	19.61	155	8.64	8.24	2.6	3.0	30	0	78	.07	4	.5	.9	24	SF4
		18	2 9	46.01	19	25.42	155	14.67	1.44	1.0	1.6	10	1	185	.06	2	.8	.3	4	SNC
		18	249	41.71	19	19.96	155	11.16	10.05	1.7	1.8	17	0	221	.07	5	1.1	1.1	16	SF3
		18	251	30.42	19	23.79	155	15.29	3.21	1.7	2.2	18	1	96	.08	2	.3	.4	12	SEC
		18	352	35.37	19	23.71	155	15.19	2.69	1.3	1.1	9	0	93	.03	2	.4	.6	9	SEC
		18	657	27.39	19	24.50	155	24.79	9.11	1.6	1.2	20	0	51	.08	2	.5	1.2	16	KAO
		18	749	57.28	19	19.03	155	11.72	8.76	1.7	1.4	14	0	210	.06	7	1.2	1.8	11	SF3
		18	1419	57.13	19	23.74	155	24.40	10.82	2.4	2.6	31	2	66	.10	3	.5	.7	26	KAO
		18	2131	53.09	19	23.99	155	16.28	3.13	1.4	1.6	12	0	98	.06	1	.4	.3	10	SEC
		19	146	49.01	19	19.93	155	11.64	9.39	1.7	1.3	14	0	216	.10	5	1.2	1.3	12	SF3
		19	231	38.04	19	23.80	155	15.69	3.02	1.1	1.3	11	1	103	.07	2	.4	.5	9	SEC
		19	7 4	39.37	19	20.33	155	6.66	7.84	1.9	2.2	30	0	107	.07	6	.5	.9	20	SF4
		19	822	3.11	19	26.71	155	15.09	.08	1.5	1.4	10	1	231	.05	4	.6	.9	8	SNC
		19	843	29.58	19	25.40	155	15.23	1.77	2.4	3.0	23	1	75	.08	2	.4	.3	20	SNC
		19	922	52.46	19	20.50	155	12.75	7.70	1.6	1.8	27	0	68	.10	4	.5	.9	20	SF2
		19	1528	48.56	19	18.72	155	32.46	26.88	4.6	4.4	39	1	59	.07	11	.6	1.2	38	DLS
		19	1737	16.56	19	20.88	155	5.79	5.86	2.4	2.6	28	0	102	.08	5	.5	1.4	19	SF4
		19	1759	8.09	19	25.36	155	15.13	1.48	1.4	1.7	7	1	235	.03	2	1.5	.5	3	SNC
		19	2028	9.63	19	25.23	155	15.61	1.91	2.8	3.5	20	1	122	.09	2	.4	.3	16	SNC
		19	22 0	9.09	19	18.48	155	10.82	5.80	1.8	1.7	12	0	238	.11	7	1.8	2.6	8	SF3
		20	043	45.65	19	19.70	155	8.92	7.13	1.8	1.9	26	1	81	.07	5	.4	.9	15	SF4
		20	256	2.09	19	26.83	154	51.64	9.42	3.1	3.2	30	3	269	.11	6	1.4	.5	16	LER
		20	419	51.89	19	18.51	155	14.76	7.15		1.2	20	0	121	.05	4	.5	1.2	16	SF1
		20	5 9	42.35	19	23.50	155	15.02	3.16	1.1	1.3	10	0	97	.03	3	.4	.7	8	SEC
		20	519	40.79	19	17.88	155	15.32	9.10	1.7	2.1	22	0	147	.06	4	.6	1.0	15	SF1
		20	7 5	23.78	19	24.59	155	14.74	3.81	1.0	1.2	11	0	163	.06	1	1.0	.5	8	SNC
		20	831	3.39	19	24.46	155	14.69	3.75	1.0	1.3	11	0	127	.04	1	.7	.6	10	SEC
		20	1018	6.62	19	17.58	155	12.98	6.92	1.7	1.9	30	2	128	.10	1	.5	.9	20	SF2
		20	1020	7.13	19	17.18	155	12.54	7.08	1.8	1.9	28	3	175	.09	2	.6	.9	19	SF2
		20	1219	26.68	19	20.23	155	4.15	6.73	2.0	2.1	28	1	127	.11	2	.6	1.0	22	SF5
		20	1321	54.73	19	17.46	155	12.91	6.29	2.0	2.2	28	4	141	.09	1	.5	.8	16	SF2
		20	1723	23.26	19	21.64	155	4.84	6.60	2.0	1.6	23	1	82	.08	5	.4	.9	15	SF5
		20	1752	15.30	19	20.91	155	17.07	32.73	3.1	3.5	37	0	64	.10	2	.7	1.2	36	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	20	2130	17.79	19	20.27	155	10.62	8.82	1.8	1.9	20	3	200	.05	4	.7	.8	14	SF3
		20	2343	15.53	19	20.64	155	6.10	8.77	2.4	3.1	35	1	106	.08	6	.4	.6	28	SF4
		20	2348	58.94	19	18.97	155	12.88	9.00	1.7	1.4	17	0	205	.05	7	1.1	1.4	14	SF2
		21	336	55.28	19	22.79	155	14.47	3.24	1.8	1.9	16	2	121	.06	2	.3	.4	12	SEC
		21	423	44.01	19	30.92	155	50.58	7.57	1.6	1.3	13	2	248	.13	8	1.4	1.2	7	KON
		21	454	33.97	19	25.18	155	15.10	1.77	2.8	3.3	29	1	46	.10	2	.2	.3	21	SNC
		21	5 8	33.63	19	25.15	155	15.02	1.65	1.2	1.6	14	1	129	.05	2	.5	.3	10	SNC
		21	6 4	50.25	19	19.00	155	11.85	9.17	1.7	1.7	15	1	227	.05	7	1.2	1.5	11	SF3
		21	753	18.85	19	20.60	155	13.18	8.93	1.9	2.0	28	0	62	.10	4	.5	.7	21	SF2
		21	1053	11.03	19	23.90	155	15.29	3.43	1.0	1.3	10	0	104	.04	2	.4	.7	9	SEC
		21	1115	38.52	19	19.59	155	13.20	9.31	2.7	2.9	28	0	72	.09	5	.4	.6	22	SF2
		21	1427	11.90	19	24.56	155	23.12	9.41		1.3	14	0	98	.05	4	.7	1.4	11	KAO
		21	19 5	59.54	19	20.25	155	13.20	9.23	1.6	1.6	19	0	65	.06	4	.5	1.2	18	SF2
		21	2338	39.40	19	25.77	155	15.20	1.53	2.9	3.4	20	1	137	.09	3	.5	.5	17	SNC
		22	337	18.03	19	25.50	155	15.26	1.55	1.1	1.1	8	0	242	.02	2	1.2	.7	5	SNC
		22	348	32.23	19	23.37	155	14.92	3.29	1.8	1.8	15	0	73	.05	3	.4	.4	14	SEC
		22	741	19.93	19	20.80	155	6.35	8.73		1.3	10	0	240	.04	7	2.2	1.3	9	SF4
		22	742	18.69	19	19.76	155	9.75	7.38		1.4	12	0	211	.02	4	1.1	1.5	11	SF3
		22	752	4.61	19	19.85	155	13.28	9.79	3.5	3.6	19	0	123	.05	5	.6	1.1	18	SF2
		22	953	48.58	19	22.96	155	14.44	3.34	1.3	1.3	12	1	115	.05	2	.4	.5	9	SEC
		22	10 3	53.64	19	23.03	155	14.60	3.62	1.3	1.2	10	0	112	.03	3	.4	.6	9	SEC
		22	1235	21.73	19	22.94	155	14.59	3.51	2.1	2.4	24	1	49	.08	3	.4	.4	17	SEC
		22	1258	40.46	19	23.75	155	15.45	2.98	1.8	1.7	15	0	98	.07	2	.3	.4	11	SEC
		22	1454	15.78	19	25.36	155	15.66	1.47	1.6	2.1	16	2	124	.08	3	.4	.3	10	SNC
		22	1610	29.70	19	23.93	155	15.73	3.29	1.5	1.6	17	1	109	.05	2	.3	.3	12	SEC
		22	17 2	39.41	19	23.52	155	15.23	2.42	2.4	2.5	25	1	81	.11	2	.3	.3	18	SEC
		22	17 3	49.70	19	23.41	155	14.97	3.29	2.3		18	0	75	.06	3	.3	.4	14	SEC
		22	1734	4.16	19	20.02	155	11.64	9.74	2.0	2.1	18	0	196	.07	5	1.0	1.2	16	SF3
		22	1825	19.09	19	23.91	155	15.50	3.32	2.1	2.4	20	0	101	.07	2	.3	.3	18	SEC
		22	1854	5.68	19	20.01	155	11.65	9.48	1.7	1.5	18	0	197	.06	5	1.0	1.2	14	SF3
		22	2035	23.36	19	15.12	155	21.74	41.13	2.4	2.6	23	2	190	.11	8	1.4	1.7	6	DEP L
		22	2155	50.81	19	19.70	155	12.25	8.50	1.7	1.3	13	1	212	.04	6	1.1	1.5	11	SF3
		23	353	24.20	19	24.61	155	16.78	1.41	1.1	1.4	11	0	123	.06	1	.3	.2	9	SNC
		23	530	59.37	19	20.48	155	8.81	8.22	1.8	1.4	17	2	209	.08	3	1.3	1.0	8	SF4
		23	553	22.35	19	17.87	155	13.06	9.00	1.8	1.6	15	1	221	.05	9	1.2	1.4	12	SF2
		23	611	53.22	19	20.41	155	7.21	6.98	2.0	1.8	17	2	225	.09	6	1.2	1.3	11	SF4
		23	615	3.17	19	23.27	155	15.15	3.31	1.6	1.8	13	0	104	.06	2	.4	.5	12	SEC
		23	638	38.24	19	20.77	155	16.76	.94	.4	1.0	9	0	151	.05	2	.6	.4	5	KOA
		23	716	41.35	19	17.85	155	13.90	8.42	1.7	1.5	16	1	219	.03	7	1.0	1.4	10	SF2
		23	746	24.22	19	20.62	155	7.57	8.29	1.3	1.3	21	1	88	.07	5	.6	1.4	17	SF4
		23	830	11.26	19	21.57	155	2.20	5.84	2.4	2.1	28	2	162	.11	3	.5	.9	16	SF5
		23	1637	24.58	19	26.82	155	29.83	10.26	3.3	2.8	39	2	57	.10	9	.4	.6	31	KAO
		23	1658	27.34	19	23.08	155	14.68	3.43	2.2	2.3	25	1	85	.09	3	.4	.4	20	SEC
		23	1732	26.11	19	22.83	155	14.44	3.57	1.6	1.8	15	1	120	.07	2	.4	.5	11	SEC
		23	2136	51.36	19	23.25	155	16.74	2.98	2.4	2.8	29	1	39	.08	0	.2	.2	22	SSC
		23	2155	23.85	19	22.98	155	14.54	3.57	2.9	3.1	30	0	49	.08	3	.3	.4	22	SEC
		23	2313	2.69	19	21.84	155	12.48	2.74	1.5	1.5	14	0	153	.08	2	.7	.4	6	SER
		24	139	42.06	19	23.76	155	15.26	2.96	1.0	1.3	8	1	98	.03	2	.4	.8	7	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	24	221	50.36	19	21.28	155	.60	8.48	2.1	2.1	28	0	201	.10	5	1.0	.5	16	SF5
		24	658	29.40	19	19.14	155	13.23	6.73	1.5	1.2	26	1	77	.08	4	.5	1.1	15	SF2
		24	8 1	19.87	19	23.34	155	15.03	3.18	1.1	1.1	8	0	102	.04	2	.5	.8	8	SEC
		24	815	49.92	19	20.08	155	7.56	7.36	1.9	1.2	19	0	96	.06	5	.5	1.1	18	SF4
		24	826	30.02	19	21.49	155	.72	8.71	2.5	2.9	32	0	193	.08	5	.8	.5	23	SF5
		24	856	33.62	19	23.23	155	14.85	2.91	2.0	2.4	20	1	68	.08	2	.4	.4	14	SEC
		24	1114	40.47	19	19.57	155	11.89	9.56	3.6	3.9	35	0	91	.09	5	.4	.5	29	SF3
		24	1127	21.44	19	19.47	155	11.71	7.02	1.7	2.2	27	1	95	.09	5	.5	.8	21	SF3
		24	1127	52.82	19	23.15	155	14.73	2.77	1.1	1.2	8	0	112	.03	3	.5	.8	8	SEC
		24	1248	15.42	19	20.07	155	6.89	7.87	1.9	1.9	17	0	205	.07	6	1.4	1.2	14	SF4
		24	1320	55.05	19	21.66	155	.62	7.52	2.1	1.3	14	0	192	.07	5	1.1	1.4	10	SF5
		24	1434	23.21	19	22.81	155	14.64	2.87	1.1	1.5	15	2	119	.07	2	.3	.4	8	SEC
		24	1851	47.50	19	18.44	155	13.04	10.18	2.5	3.0	33	0	136	.09	8	.5	.6	26	SF2
		24	1932	18.62	19	18.29	155	13.25	6.99	1.7	1.7	14	0	227	.07	8	1.3	2.0	11	SF2
		24	1941	31.38	19	19.17	155	13.59	8.69	1.7	2.1	20	1	192	.07	6	.9	1.1	15	SF2
		24	2316	46.10	19	19.93	155	11.95	7.36	1.4	1.2	13	0	211	.03	5	1.0	2.1	8	SF3
		25	518	22.33	19	19.89	155	11.76	10.29	1.7	1.7	18	0	198	.07	5	1.0	1.3	15	SF3
		25	614	21.07	19	19.46	155	12.05	8.56		1.6	14	1	219	.03	6	1.1	1.8	12	SF3
		25	1440	51.46	19	23.34	155	14.70	3.70	1.1	1.1	9	0	100	.03	3	.4	.9	7	SEC
		25	1847	45.95	19	23.00	155	14.57	3.11	1.5	1.7	12	0	114	.05	3	.4	.5	10	SEC
		25	2024	50.07	19	10.95	155	28.26	33.30	2.0	1.6	32	3	157	.06	8	.7	1.5	24	DLS
		25	2057	8.45	19	23.04	154	58.29	5.01	2.2	1.9	23	2	203	.18	4	1.0	1.8	13	LER
		25	2259	16.74	19	19.58	155	7.56	8.00	2.2	2.5	28	0	105	.05	4	.5	.8	15	SF4
		26	021	22.18	19	13.10	155	37.63	7.54	2.3	1.8	19	0	201	.20	4	1.4	1.1	11	LSW
		26	043	9.71	19	18.71	155	12.78	8.87	1.3	1.1	13	0	224	.03	7	1.1	1.5	10	SF2
		26	131	34.86	19	19.91	155	11.05	7.97	2.6	2.7	32	0	88	.09	5	.5	.7	23	SF3
		26	137	54.98	19	19.75	155	11.17	8.36	1.7	1.6	15	1	223	.05	5	1.1	1.1	10	SF3
		26	145	54.02	19	19.62	155	10.96	7.54	1.7	1.7	13	1	226	.04	5	1.3	1.3	9	SF3
		26	246	34.46	19	19.27	155	10.98	.15	.6	1.5	6	0	104	.03	6	.4	1.9	3	SSF
		26	646	46.58	19	20.08	155	25.13	10.88	2.1	1.6	17	0	116	.08	3	.8	1.3	10	KAO
		26	849	4.63	19	24.99	155	24.37	8.76	1.8	1.6	27	0	44	.11	1	.5	1.0	20	KAO
		26	1343	1.65	18	57.35	155	34.88	41.17	2.7	2.1	36	2	238	.07	9	1.0	1.8	32	DLS
		26	1537	47.76	19	21.16	155	6.12	7.19	2.4	2.7	35	1	93	.10	6	.5	.9	31	SF4
		26	18 8	14.68	19	23.52	155	14.90	3.25	1.7	1.8	21	1	76	.07	2	.3	.3	13	SEC
		26	22 0	50.40	19	20.12	155	8.25	8.44	1.9	1.9	29	1	82	.06	5	.4	.8	21	SF4
		26	23 8	11.97	19	19.68	155	6.32	8.14	1.5	1.0	15	0	241	.06	8	2.1	1.8	12	SF4
		26	2330	9.25	19	15.55	155	3.99	37.12	2.4	1.9	19	0	222	.07	16	2.4	3.8	19	DEP
		27	149	22.92	19	28.88	154	54.63	2.11	1.8	1.3	10	0	230	.08	3	2.5	1.0	7	SLE
		27	237	18.31	19	18.92	155	15.39	7.87	1.4	1.4	15	1	195	.05	4	.8	1.3	13	SF1
		27	240	26.40	19	19.18	155	11.17	10.73	1.8	1.8	14	0	238	.05	6	1.9	2.4	13	SF3
		27	527	10.65	19	19.48	155	8.85	8.49	1.6	1.1	14	1	237	.04	5	1.0	1.3	9	SF4
		27	1130	39.33	19	19.53	155	10.39	8.31	1.5	1.4	15	0	210	.04	5	1.2	1.8	9	SF3
		27	1155	26.08	19	25.11	155	38.59	2.23	2.7	2.6	15	1	189	.07	6	.9	1.1	9	MLO
		27	1322	54.24	19	20.50	155	13.27	6.65	1.5	1.5	20	0	61	.09	4	.5	1.2	17	SF2
		27	1328	11.50	19	23.11	155	16.91	3.01	1.5	2.1	14	0	69	.08	1	.4	.3	12	SSC
		27	1718	8.66	19	22.93	155	14.43	3.74	1.7	2.1	17	0	116	.05	2	.4	.5	13	SEC
		27	1729	18.31	19	22.86	155	14.49	3.29	1.2	1.3	11	0	126	.05	3	.4	.5	9	SEC
		27	1953	51.06	19	19.46	155	11.98	7.92	1.8	2.3	35	1	91	.09	5	.4	.8	21	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	27	2137	43.59	19	19.89	155	7.93	7.94	1.7	1.7	17	2	240	.07	5	1.1	1.1	13	SF4
		28	0 4	13.98	19	23.38	155	15.13	3.08		2.1	14	0	101	.05	2	.3	.4	12	SEC
		28	054	13.15	19	22.95	155	14.61	3.03	1.1	1.1	8	1	121	.03	2	.5	1.0	6	SEC
		28	056	13.68	19	21.30	155	4.58	9.63		1.1	8	0	126	.06	4	1.5	2.6	4	SF5
		28	057	33.63	19	23.51	155	15.05	3.13	1.1	1.5	11	0	97	.07	3	.5	.5	9	SEC
		28	1 2	53.28	19	17.58	155	15.27	8.63	1.1	1.3	12	1	230	.04	6	1.1	1.4	10	SF1
		28	135	23.97	19	16.90	155	28.75	8.84	1.5	1.8	25	1	122	.11	4	.5	.9	11	LSW
		28	137	34.38	19	22.49	155	3.50	7.67	1.4	1.4	20	0	109	.11	4	.7	1.3	9	SF5
		28	221	3.30	19	23.44	155	15.05	3.34	1.6	2.0	16	2	99	.05	2	.3	.5	11	SEC
		28	439	55.09	18	48.35	155	22.99	30.55	2.3	1.8	30	1	278	.07	36	2.0	3.4	25	LOI
		28	441	12.18	19	23.84	155	15.50	3.06	1.3	1.8	14	0	105	.06	2	.3	.3	11	SEC
		28	444	17.86	19	26.75	155	23.10	8.10	1.5	1.6	22	4	72	.09	5	.4	1.0	13	KAO
		28	647	4.07	19	20.20	155	11.65	8.24	1.3	1.2	16	2	194	.05	5	.7	1.0	9	SF3
		28	651	32.28	19	19.78	155	11.90	5.62	1.5	1.5	11	2	234	.07	6	1.2	2.2	8	SF3
		28	926	32.85	19	23.20	155	24.72	12.22	1.7	1.5	24	1	58	.08	4	.5	1.2	19	KAO
		28	1216	47.10	19	27.14	155	21.89	1.92	2.1		27	3	83	.13	2	.3	.5	21	KAO
		28	1217	8.37	19	27.22	155	21.61	1.97	2.6		30	1	49	.12	2	.3	.4	20	KAO
		28	1354	37.76	19	23.28	155	25.07	10.61	1.7	1.3	17	1	78	.07	4	.6	1.0	13	KAO
		28	16 0	49.04	19	20.18	155	13.54	9.50	2.5	2.6	29	0	66	.08	5	.4	.5	25	SF2
		28	1747	46.46	19	20.06	155	11.05	7.03	1.7	1.6	16	1	199	.08	4	1.1	1.4	14	SF3
		28	1914	2.16	19	23.17	155	14.56	3.34	3.1		31	0	50	.09	3	.3	.4	25	SEC F
		28	1927	4.66	19	23.64	155	15.19	2.98	1.4	1.4	13	0	92	.05	2	.4	.4	11	SEC
		28	1951	34.36	19	23.26	155	14.75	3.36	1.1	1.0	15	1	103	.04	3	.3	.5	12	SEC
		28	2011	53.95	19	23.08	155	14.91	3.21	1.6	1.5	14	0	110	.07	2	.4	.5	13	SEC
		28	2038	30.46	19	23.25	155	14.91	3.08	1.8	1.8	26	1	82	.10	2	.3	.4	21	SEC
		29	234	34.65	19	23.32	155	14.92	3.40	2.1	2.0	15	1	82	.05	2	.3	.5	12	SEC
		29	337	56.91	19	23.28	155	14.89	3.12	1.1	1.0	12	0	103	.05	2	.4	.5	11	SEC
		29	724	58.05	19	23.13	155	14.80	3.29	1.2	1.3	13	0	108	.05	2	.4	.5	11	SEC
		29	917	24.30	19	23.11	155	16.88	2.95	2.1	2.2	24	1	40	.07	1	.3	.3	21	SSC
		29	1330	33.24	19	27.57	155	21.44	2.64	1.6		16	2	124	.09	1	.6	.4	11	KAO
		29	1331	11.99	19	27.47	155	21.49	2.53	1.6	1.4	15	1	115	.12	1	.6	.5	13	KAO
		29	1631	7.39	19	20.89	155	13.03	8.83	2.0	2.0	31	0	61	.10	3	.5	.7	25	SF2
		29	1724	47.10	19	19.29	155	7.22	3.84	1.6	1.5	26	2	119	.10	4	.6	1.4	18	SSF
		29	2043	18.88	19	21.18	155	6.93	6.92	1.6	1.3	33	2	87	.09	5	.4	1.0	23	SF4
		29	2114	54.20	19	21.02	155	15.67	28.41	3.6	3.1	39	0	71	.09	3	.6	1.0	39	DEP F
		30	1 3	57.81	19	22.41	154	58.10	5.76	2.2	1.7	25	0	208	.15	5	.9	1.0	12	LER
		30	551	35.23	19	20.14	155	6.36	7.96	1.6	1.3	15	2	313	.07	7	1.5	1.2	11	SF4
		30	1113	46.86	19	23.34	155	30.04	7.94	2.0	2.2	30	1	55	.11	5	.4	1.1	22	KAO
		30	1125	1.04	19	27.04	155	22.13	1.73	1.3	1.4	12	0	88	.09	3	.4	.8	8	KAO
		30	15 2	47.27	19	22.08	155	12.85	3.15	1.4	1.3	16	1	144	.05	1	.6	.3	11	SER
		31	411	13.32	19	19.60	155	7.77	7.86	2.2	2.4	32	0	100	.07	4	.5	.7	23	SF4
		31	541	54.91	19	24.02	155	16.12	3.22	1.3	1.9	10	0	111	.05	1	.5	.4	10	SEC
		31	7 1	42.64	19	20.15	155	6.54	8.08	1.9	2.3	25	1	113	.07	6	.5	.9	21	SF4
		31	739	28.04	19	23.02	155	26.05	9.79	1.8	1.7	20	0	69	.09	3	.5	1.1	16	KAO
		31	832	31.18	19	23.28	155	14.86	3.08	1.2	1.2	14	0	103	.05	2	.4	.5	14	SEC
		31	1225	28.37	19	23.10	155	17.07	2.37	1.1	1.4	14	1	64	.06	1	.3	.3	10	SSC
		31	1241	10.11	19	25.82	155	24.64	6.35	1.6	1.2	17	0	76	.10	1	.5	1.2	14	KAO
		31	1658	7.79	19	17.94	155	16.33	6.11	1.4	1.5	23	0	154	.09	4	.5	.9	14	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	FEB	1	554	34.06	19	19.90	155	5.73	8.59	1.5	1.5	17	0	246	.07	6	2.3	1.3	13	SF4
		1	820	30.03	19	26.39	155	29.72	8.89	1.6	1.3	20	0	78	.10	8	.5	1.5	16	KAO
		1	9 4	55.57	19	23.18	155	14.83	3.27	1.2		17	1	107	.07	2	.3	.4	14	SEC
		1	9 5	51.84	19	23.25	155	15.07	2.56	1.0		9	0	108	.07	2	.5	.6	9	SEC
		1	9 6	53.98	19	23.05	155	14.86	3.09	1.9	2.1	19	1	64	.06	2	.3	.4	18	SEC
		1	1024	45.32	19	20.97	155	15.06	8.36	1.6	1.3	18	1	152	.06	3	.7	1.0	16	SF1
		1	14 5	26.48	19	23.39	155	15.03	3.05	2.6	3.1	32	0	46	.09	2	.3	.4	27	SEC
		1	1558	32.34	19	23.60	155	15.16	2.51	1.1	1.3	11	1	95	.09	3	.4	.5	8	SEC
		1	1623	54.62	19	22.49	155	13.94	3.09	1.1	1.1	12	0	139	.04	2	.4	.4	9	SER
		1	1818	58.61	19	19.22	155	11.48	9.11	1.6	1.1	12	0	227	.03	6	1.2	1.3	12	SF3
		2	057	50.46	19	23.31	155	14.80	3.54	2.1	2.3	19	0	68	.07	3	.3	.4	16	SEC
		2	1 0	24.68	19	23.21	155	14.76	3.52	1.2		15	0	105	.04	3	.3	.5	11	SEC
		2	1 0	51.69	19	23.72	155	16.88	2.64	1.6	2.1	18	1	61	.08	1	.3	.2	15	SSC
		2	317	41.83	19	22.98	155	14.98	3.12	1.2	1.2	13	1	114	.06	2	.4	.5	11	SEC
		2	522	59.58	19	17.96	155	23.20	3.54	.8	1.3	13	1	152	.04	4	.6	1.0	10	SWR
		2	525	45.20	19	27.63	154	55.85	4.16	1.6	1.4	23	0	123	.13	1	1.0	1.2	14	SLE
		2	745	27.62	19	22.98	155	14.73	3.14	2.4		28	1	49	.08	2	.3	.4	20	SEC
		2	746	40.25	19	23.23	155	14.86	3.21	1.1	1.7	10	0	106	.03	2	.4	.6	8	SEC
		2	931	44.49	19	23.14	155	14.80	3.26	3.0		30	1	47	.07	2	.3	.3	22	SEC
		2	932	48.26	19	23.21	155	14.91	3.12	2.3	3.6	23	0	69	.07	2	.3	.3	17	SEC
		2	1010	21.04	19	23.09	155	14.81	3.23	1.8	2.3	19	0	62	.06	2	.3	.4	15	SEC
		2	1019	17.03	19	47.26	155	24.30	23.81	2.6	2.5	37	3	74	.09	13	.5	1.5	23	KEA
		2	1026	4.35	19	23.80	155	15.29	3.52	1.6	1.9	15	1	99	.07	2	.4	.4	11	SEC
		2	1322	43.15	19	22.99	155	14.72	3.10	1.6	2.0	16	0	65	.07	2	.3	.4	13	SEC
		2	1341	35.50	19	23.23	155	14.82	3.19	1.1	1.3	12	0	105	.04	2	.4	.5	10	SEC
		2	1540	22.04	19	19.85	155	11.46	9.95	2.0	2.3	19	0	198	.06	5	.9	1.2	18	SF3
		2	1843	30.03	19	19.92	155	12.69	9.07	1.6	1.2	18	1	188	.06	5	1.0	1.1	15	SF2
		2	2127	55.47	19	20.56	155	7.93	9.30	1.3	1.3	17	0	197	.05	4	1.2	1.0	13	SF4
		3	037	18.91	19	24.03	155	15.62	3.08	1.6	2.2	17	1	113	.08	2	.3	.3	13	SEC
		3	042	54.94	19	22.89	155	14.51	3.53	2.5	2.8	25	0	54	.08	3	.4	.6	20	SEC
		3	146	33.07	19	20.12	155	8.97	8.31	1.8	1.9	17	0	197	.02	4	1.1	.9	11	SF4
		3	157	13.43	19	25.97	155	23.90	8.72	2.0	1.8	25	1	53	.09	3	.4	1.0	20	KAO
		3	215	38.16	19	25.67	155	17.07	1.58	1.3	1.8	12	0	129	.09	1	.4	.4	6	SNC
		3	220	13.13	19	19.61	155	7.71	8.92	1.5	1.2	17	0	228	.05	6	1.5	1.2	12	SF4
		3	5 1	26.84	19	23.34	155	14.95	3.21	2.4	2.8	20	1	71	.05	2	.3	.4	15	SEC
		3	754	34.02	19	22.14	155	12.32	3.66		1.1	10	0	101	.08	2	.5	.7	9	SER
		3	1110	49.82	19	23.16	155	14.79	2.37	1.2	1.6	8	0	111	.04	2	.4	.7	6	SEC
		3	13 0	56.60	19	19.84	155	6.56	8.17	1.8	1.5	19	0	121	.07	5	.7	1.5	19	SF4
		3	1336	14.43	19	19.74	155	10.26	9.01	1.8	1.5	14	1	209	.05	4	1.1	1.3	11	SF3
		3	1429	15.37	19	23.51	155	17.26	2.90	1.3	1.6	15	1	53	.10	1	.4	.4	12	SSC
		3	1555	23.80	19	26.33	155	23.88	9.26	1.6	1.5	15	1	59	.07	6	.6	1.8	11	KAO
		3	17 7	13.00	19	18.98	155	11.63	7.55	2.5	2.9	34	3	107	.12	5	.4	.5	26	SF3
		3	1727	26.63	19	17.51	155	23.34	2.96	1.2	1.5	18	1	158	.08	5	.5	1.3	16	SWR
		3	2321	.95	19	41.11	155	47.35	11.17		2.1	13	0	192	.10	5	2.1	1.2	11	HUA
		4	016	51.54	19	21.26	155	13.46	9.06	1.8	2.1	22	1	57	.08	3	.5	.8	21	SF2
		4	145	21.81	19	21.28	155	25.72	10.51	1.6	1.7	23	2	98	.10	4	.5	1.2	18	KAO
		4	2 3	15.05	19	23.01	155	14.64	3.24	1.2	1.4	13	2	139	.06	2	.6	.5	9	SEC
		4	341	47.20	19	23.23	155	17.10	2.71	1.2	1.7	13	1	64	.06	0	.4	.4	12	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	FEB	4	959	19.24	19	21.45	155	1.54	7.43	1.8	1.6	16	1	177	.10	4	.7	1.3	13	SF5
		4	1410	44.68	19	10.05	155	28.99	33.64	2.9	2.5	42	3	107	.07	2	.7	1.3	36	DLS
		4	1440	48.01	19	22.22	155	13.91	3.00	2.0	2.5	24	1	52	.05	2	.3	.4	17	SER
		4	1630	55.60	19	23.66	155	15.29	2.94	1.3	1.4	12	0	94	.06	2	.3	.4	10	SEC
		4	2013	6.69	19	19.51	155	11.06	8.47	1.7	1.5	15	1	206	.06	5	1.1	1.2	14	SF3
		4	2242	47.14	19	20.08	155	8.48	8.46	1.4	1.2	18	0	167	.07	4	1.0	1.2	16	SF4
		4	23 4	12.41	19	19.82	155	11.91	9.55	1.7	1.0	7	0	218	.02	8	1.7	2.5	7	SF3
		5	050	12.77	19	27.33	154	53.94	6.90	2.0	1.8	22	0	212	.11	2	1.4	.8	14	LER
		5	253	26.68	19	18.80	155	13.67	8.44	2.2	2.7	32	1	88	.10	3	.5	.7	27	SF2
		5	747	53.32	19	18.33	155	22.02	4.37	2.1	2.6	32	1	123	.12	4	.5	1.4	25	SWR
		5	852	19.74	19	19.71	155	10.37	8.72	1.8	1.6	14	0	170	.04	4	.9	1.4	12	SF3
		5	1248	9.84	19	21.36	155	14.07	28.93	3.8	3.2	40	0	56	.10	3	.7	1.1	40	DEP F
		5	1350	42.14	19	23.91	155	15.19	2.95	1.1	1.0	11	0	106	.06	2	.4	.5	7	SEC
		5	1410	30.37	19	20.85	155	4.87	8.49	2.6	2.5	33	1	103	.09	4	.5	.5	19	SF5
		5	1450	49.16	19	25.89	155	16.88	.91	1.3	1.4	11	0	134	.15	2	.5	.9	10	SNC F
		5	1451	3.41	19	25.35	155	17.09	1.20	1.8	2.6	16	1	120	.10	1	.4	.2	12	SNC F
		6	852	35.78	19	23.75	155	16.67	2.90	2.4	2.4	23	1	40	.09	0	.3	.2	21	SSC
		6	11 1	16.56	19	20.02	155	10.73	9.12	2.1	2.4	33	0	86	.09	4	.5	.7	26	SF3
		6	1454	8.87	19	21.70	155	12.52	3.01	1.8	1.6	14	0	157	.05	2	.6	.5	13	SER
		6	1927	8.74	19	20.22	155	11.52	8.93	2.9	2.3	33	0	80	.10	5	.4	.6	27	SF3
		6	1943	1.80	19	23.93	155	2.03	8.18	1.5	1.5	17	0	133	.11	4	.6	1.2	10	SF5
		6	2032	30.07	19	23.91	155	15.50	3.01	1.3	1.3	10	0	106	.01	3	.4	.5	9	SEC
		6	2036	30.36	19	21.60	155	1.22	8.66	1.7	1.6	14	0	179	.07	4	.7	1.1	10	SF5
		7	631	52.23	19	23.57	155	16.88	2.72	1.6	1.4	14	1	48	.10	0	.4	.3	12	SSC
		7	8 0	52.76	19	19.54	155	7.98	9.79	2.6	2.6	15	0	94	.09	4	.7	.8	12	SF4
		7	1550	10.26	19	19.91	155	10.02	8.16	1.8	1.6	23	0	93	.09	4	.6	.8	22	SF3
		7	1950	58.42	19	19.79	155	11.79	9.46	2.3	2.3	25	0	121	.10	5	.7	.5	23	SF3
		7	2045	23.25	19	21.60	155	6.50	8.02	1.9	1.6	19	0	82	.08	3	.5	1.1	17	SF4
		7	2110	22.00	19	23.08	155	14.63	3.20	1.2	1.3	11	0	62	.04	3	.4	.5	11	SEC
		7	2152	16.89	19	28.50	155	25.53	27.14	2.6	2.4	33	0	48	.09	5	.6	1.2	31	DML
		7	2335	2.77	19	20.31	155	10.64	8.93	1.7	1.7	20	0	81	.09	4	.6	1.0	19	SF3
		8	437	53.68	19	18.83	155	15.16	7.67	1.6	1.5	22	0	118	.09	4	.5	.9	19	SF1
		8	1225	32.33	19	23.18	155	17.28	2.79	1.4	1.6	14	1	92	.11	1	.4	.3	12	SSC
		8	1358	54.03	19	19.45	155	10.20	9.35	1.8		15	0	213	.06	5	1.3	1.5	12	SF3
		8	1359	23.07	19	20.72	155	6.77	7.95	2.2	2.4	31	0	97	.07	4	.4	.6	24	SF4
		8	16 2	45.21	19	26.39	155	25.76	8.50	2.2	2.2	39	2	56	.11	2	.4	.8	28	KAO
		8	1657	34.11	19	21.30	155	1.89	4.89	1.5	1.0	13	0	170	.11	3	1.1	1.8	8	SSF
		8	1659	58.18	19	24.62	155	17.75	1.96	1.0	1.1	7	1	280	.05	1	1.5	.4	5	SNC
		8	2231	39.46	19	20.16	155	12.66	8.71	1.7	1.3	17	1	185	.07	5	.9	1.0	14	SF2
		9	011	2.90	19	20.81	155	2.05	6.22	1.8	1.7	14	0	179	.10	2	.7	1.3	10	SF5
		9	027	8.91	19	20.59	155	17.22	1.81	1.3	1.6	10	0	73	.04	1	.5	.3	5	SWR
		9	654	23.09	19	23.08	155	18.46	2.43	1.2	.9	9	1	185	.08	3	.8	.9	5	SSC
		9	7 7	7.17	19	23.38	155	16.89	.24	1.0	1.6	9	1	88	.09	0	.3	.2	5	SSC
		9	810	47.77	19	20.99	155	1.16	8.03	2.4	2.7	32	0	196	.12	4	.9	.6	24	SF5
		9	1010	44.12	19	23.77	155	16.08	3.07	1.8	1.8	17	1	97	.10	1	.3	.3	11	SEC
		9	14 0	1.17	19	21.76	155	1.92	8.22	1.8	1.3	14	0	161	.09	4	.9	1.1	12	SF5
		9	16 1	32.76	19	21.49	155	17.39	34.60	2.3	2.2	40	2	41	.08	3	.7	1.1	35	DEP
		9	17 2	7.70	19	22.68	155	1.65	6.56	1.6	1.3	16	0	153	.09	6	.6	1.1	8	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	FEB	9	2050	37.43	19	19.00	155	11.39	7.74	2.3	2.4	37	1	109	.10	5	.4	.5	27	SF3
		9	23 1	31.13	19	18.79	155	16.14	7.81	1.5	1.2	16	1	190	.05	3	.7	1.2	13	SF1
		9	2320	55.87	19	20.76	155	10.72	8.94	1.7	1.2	18	2	189	.05	3	.9	.8	15	SF3
		10	151	31.04	19	20.11	155	11.57	9.35	1.7	1.3	16	0	193	.06	5	1.1	1.2	13	SF3
		10	240	33.79	19	19.09	155	11.92	6.03	1.7	1.3	17	0	200	.08	7	.9	2.0	11	SF3
		10	459	52.06	19	23.56	155	16.98	2.77	1.2	1.0	9	0	102	.05	0	.6	.4	5	SSC
		10	5 8	16.58	19	8.93	155	26.64	40.62		1.7	13	0	277	.04	22	9.4	3.7	9	DLS T
		10	13 7	43.93	19	40.52	156	4.07	36.31	3.1	2.8	41	2	235	.11	26	1.0	1.8	34	HUA
		10	1630	39.52	19	19.44	155	10.59	9.77	1.9	1.3	14	0	230	.05	5	1.4	1.1	14	SF3
		11	136	40.09	19	18.71	155	23.06	5.06	2.2	2.3	31	0	107	.12	3	.4	1.2	24	SWR
		11	424	43.07	19	22.12	155	1.48	7.38	1.4	1.2	15	0	165	.12	5	.9	1.4	13	SF5
		11	1035	33.18	19	20.31	155	13.92	9.52	2.8	2.9	33	0	57	.09	5	.4	.5	29	SF2
		11	1430	55.17	19	22.38	155	30.35	10.00	2.0	1.3	18	0	58	.05	5	.5	1.4	13	KAO
		11	1630	5.00	19	25.45	155	23.34	10.85	2.1	1.6	19	1	49	.06	3	.5	1.1	15	KAO
		11	21 4	43.68	19	23.73	155	16.91	3.09	2.0	2.2	15	2	68	.10	1	.5	.3	12	SSC
		12	159	48.44	19	19.21	155	7.27	6.72	2.5	2.5	27	0	120	.09	4	.5	1.0	22	SF4
		12	2 2	18.12	19	20.43	155	13.66	8.99	1.6	1.5	14	0	174	.06	5	.9	1.4	11	SF2
		12	5 1	25.42	19	23.02	155	14.64	2.79	1.6	1.6	13	1	115	.07	3	.4	.5	10	SEC
		12	538	31.71	19	22.93	155	14.85	2.86	1.9	2.3	14	0	100	.08	2	.5	.6	13	SEC
		12	540	10.26	19	23.05	155	14.83	3.06	1.5	1.5	13	1	115	.07	2	.5	.5	10	SEC
		12	545	46.72	19	23.10	155	14.76	3.01	1.2	1.1	11	0	114	.13	2	.7	.8	7	SEC
		12	555	22.10	19	18.21	155	23.48	6.63	2.8	3.1	28	0	109	.13	9	.5	1.1	25	SWR
		12	623	12.58	19	23.28	155	14.55	4.12	2.0	1.7	11	1	145	.06	3	.7	.8	9	SEC
		12	627	51.68	19	23.66	155	14.45	2.73	1.5	1.4	9	0	153	.08	3	.9	1.1	7	SEC
		12	1122	39.32	19	28.84	155	42.95	7.28	2.4	1.7	25	3	89	.10	6	.5	1.2	18	MLO
		12	1222	41.36	19	23.34	155	15.17	3.45	1.9	2.3	17	0	77	.06	2	.4	.4	16	SEC
		12	1520	49.64	19	23.99	155	16.11	3.08	1.8	1.9	16	0	103	.06	1	.3	.2	13	SEC
		12	19 0	8.37	19	23.21	155	16.92	3.04	3.2		35	0	37	.11	0	.2	.2	27	SSC F
		12	19 2	13.13	19	23.09	155	16.87	2.77	2.6	2.7	34	2	40	.11	1	.3	.2	26	SSC F
		12	1953	5.19	19	23.10	155	14.93	3.53	1.9	2.1	21	1	67	.08	2	.3	.4	17	SEC
		12	2026	51.92	19	23.19	155	15.01	3.42	2.1	2.1	16	0	107	.08	2	.4	.4	15	SEC
		13	022	58.65	19	23.41	155	.92	5.75	1.7	1.1	15	1	157	.07	6	.6	1.4	7	SF5
		13	245	42.79	19	37.67	155	14.13	14.06	2.1	1.7	36	3	90	.10	22	.5	.5	25	KEA
		13	731	53.56	19	21.56	156	3.22	40.62	2.4	2.0	32	2	269	.07	20	1.9	1.0	24	KON
		13	1018	17.39	19	25.08	155	17.00	1.45	1.0	1.0	9	0	150	.08	0	1.0	.3	7	SNC
		13	1257	15.83	19	23.15	155	14.90	3.67	1.4	1.3	10	0	108	.04	2	.4	.7	7	SEC
		13	1345	25.38	19	40.87	155	2.66	.03	2.8	2.5	23	0	205	.26	20	2.0	5.3	11	HIL B*
		13	2027	2.70	19	20.38	155	9.64	8.29	1.8	1.3	18	1	161	.05	3	.9	1.2	16	SF3
		14	149	56.90	19	23.53	155	16.80	3.10	2.3	2.6	25	1	36	.10	0	.3	.3	18	SSC
		14	354	52.22	19	20.31	155	13.33	8.88	1.6	1.2	16	0	178	.06	4	.9	1.3	13	SF2
		14	758	32.61	19	22.68	156	.40	24.11	2.0	1.4	25	1	257	.08	15	2.2	2.0	22	KON
		14	1050	14.28	19	23.55	155	17.21	2.78	1.3	1.2	14	1	67	.09	1	.4	.3	10	SSC
		14	1256	39.31	19	24.10	155	16.50	2.34	2.9	3.2	29	0	44	.11	0	.3	.2	28	SEC F
		14	1318	39.40	19	20.89	155	11.24	8.62	2.4	2.2	34	3	71	.09	3	.4	.6	24	SF3
		14	1344	32.48	19	22.02	155	30.43	8.92	2.0	1.2	19	1	103	.12	5	.6	1.5	16	KAO
		14	14 9	.82	19	23.93	155	15.53	2.95	1.8	1.9	17	1	108	.09	2	.3	.3	13	SEC F
		14	1726	35.08	19	23.18	154	57.82	6.27	2.2	1.8	25	0	201	.13	4	.8	1.2	15	LER
		14	1736	54.30	19	18.72	155	15.51	7.67	1.5	1.0	17	2	125	.05	4	.5	1.3	13	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	FEB	14	1959	34.67	19	22.86	155	14.49	3.56	1.6	1.8	18	0	75	.07	3	.3	.5	15	SEC
		14	2130	4.75	19	21.72	155	15.00	9.36	2.9	3.0	34	0	64	.10	2	.4	.4	26	SF1
		14	2156	29.31	19	20.46	155	8.14	7.27	1.8	1.9	29	1	80	.09	4	.4	.9	19	SF4
		14	2328	23.43	19	24.33	155	16.13	3.58	1.2	1.4	12	1	129	.06	1	.5	.4	9	SEC
		15	134	.33	19	21.83	155	6.17	7.44	1.9	1.8	31	2	79	.10	2	.5	.9	25	SF4
		15	3 9	22.34	19	20.28	155	12.81	8.49	1.6	1.7	18	0	182	.05	4	.8	1.1	14	SF2
		15	459	52.05	19	24.13	155	17.69	15.92	2.1	1.5	33	2	36	.09	2	.5	.4	24	DEP
		15	732	53.00	19	10.83	155	37.63	10.81	2.7	2.0	21	0	215	.16	8	1.3	1.1	13	LSW
		15	1259	25.90	19	19.68	155	11.09	8.47	3.1	3.1	32	1	93	.10	5	.4	.6	27	SF3 F
		15	1534	48.21	19	23.47	155	14.89	3.60	2.4	2.4	23	0	45	.09	2	.4	.5	21	SEC
		15	1928	46.69	19	19.46	155	21.16	31.05	2.2	1.7	32	0	92	.09	4	.7	1.4	29	DEP
		15	20 6	38.12	19	20.36	155	13.00	9.32	1.6	1.3	16	0	179	.06	4	.9	1.2	16	SF2
		15	22 6	20.68	19	20.43	155	12.01	10.05	1.9	1.4	18	1	185	.08	4	1.0	1.1	16	SF3
		16	022	58.16	19	21.26	155	30.08	10.31	2.4	2.3	24	0	63	.08	5	.4	1.1	17	KAO
		16	745	7.99	19	20.42	155	12.05	10.05	1.8	1.9	12	0	185	.05	4	1.0	1.5	12	SF3
		16	937	5.81	19	21.31	155	2.05	8.12	2.1	1.4	23	1	164	.09	3	.6	.8	14	SF5
		16	10 3	35.84	19	19.92	155	10.55	7.47	1.7	1.6	28	0	88	.10	4	.5	1.0	22	SF3
		16	1058	23.62	19	20.02	155	10.26	7.67	2.6	2.8	36	0	86	.12	4	.5	.8	28	SF3
		16	2034	12.62	19	20.12	155	6.76	8.14	2.4	2.8	39	0	110	.07	5	.4	.6	26	SF4
		16	2322	30.52	19	19.81	155	12.90	9.39	2.1	2.1	19	0	187	.06	5	.9	.9	15	SF2
		17	349	7.17	19	21.37	155	2.96	6.78	2.0	1.8	30	0	129	.11	3	.6	.6	19	SF5
		17	719	24.87	19	24.41	155	1.30	7.47	1.8	1.4	17	0	138	.11	5	.6	1.3	11	SF5
		17	10 3	34.25	19	23.81	155	16.94	3.07	1.5	1.4	13	1	77	.06	1	.4	.3	10	SSC
		17	1410	15.25	19	24.71	155	25.72	12.35	1.8	1.4	22	0	49	.08	1	.5	1.2	18	KAO
		17	1454	8.66	19	19.81	155	11.09	9.84	1.8	1.7	17	0	202	.05	5	1.1	1.4	15	SF3
		17	1616	13.66	19	46.99	155	22.55	25.34	3.8	3.4	44	3	87	.10	9	.6	1.5	41	KEA F
		17	1625	36.86	19	47.00	155	22.21	24.56	1.6	1.6	23	2	115	.11	12	.7	2.6	18	KEA
		17	1630	55.14	19	46.76	155	22.68	24.50	2.9	2.5	41	2	87	.10	8	.6	1.6	33	KEA
		17	1818	28.17	19	19.40	155	8.87	7.45	1.8	2.0	31	1	85	.08	4	.5	1.0	24	SF4
		17	2345	29.62	19	27.92	155	26.71	9.35	2.3	1.7	18	0	74	.07	6	.5	1.4	16	KAO
		18	013	17.73	19	28.18	155	26.56	10.79	3.5	3.1	37	1	64	.11	6	.4	.6	34	KAO
		18	258	30.35	19	20.18	155	6.69	8.63	2.6	2.9	36	1	109	.08	5	.4	.6	30	SF4
		18	643	13.55	20	16.63	155	46.57	.03	3.3	2.7	38	1	307	.12	63	4.7	1.4	33	KOH *
		18	1322	10.29	19	24.94	155	29.76	7.68	1.9	1.9	36	1	46	.12	6	.4	1.0	29	KAO
		18	1521	54.51	19	23.47	155	15.03	3.20	1.1	1.3	11	0	98	.03	3	.4	.5	9	SEC
		18	17 9	20.05	19	24.66	155	16.88	1.55	.9	1.1	10	0	114	.06	1	.4	.2	8	SNC
		18	1759	57.43	19	22.98	155	14.53	3.47	1.2	1.2	11	0	114	.02	3	.4	.6	7	SEC
		18	1813	38.61	19	22.73	155	14.39	3.27	1.6	1.9	18	0	73	.06	2	.3	.4	12	SEC
		18	1847	1.41	19	19.65	155	11.65	8.38	1.7	1.5	15	0	200	.02	5	.9	1.3	11	SF3
		18	2214	21.75	19	24.05	155	15.75	3.13	1.3	1.4	15	1	115	.04	2	.3	.4	8	SEC
		18	2215	49.70	19	23.87	155	15.63	3.22	2.2	2.3	27	1	85	.07	2	.3	.3	21	SEC F
		18	2315	54.08	19	20.03	155	11.58	6.79	1.7	1.6	17	0	172	.11	5	.8	1.6	14	SF3
		18	2322	25.33	19	22.24	155	14.19	1.55	1.2	1.4	13	0	80	.08	2	.3	.5	13	SEC
		19	248	2.49	19	22.22	155	25.29	9.59	2.1	2.1	34	1	75	.12	4	.4	.7	24	KAO
		19	352	45.13	19	19.88	155	13.26	9.11	1.6	1.3	15	0	186	.05	5	1.0	1.4	13	SF2
		19	855	22.66	19	23.28	155	14.86	3.39	2.5	2.6	27	1	70	.08	2	.3	.4	21	SEC
		19	918	42.91	19	23.39	155	14.75	3.63	3.1	3.0	30	0	63	.09	3	.3	.4	25	SEC F
		19	920	49.95	19	23.28	155	14.94	3.30	1.5	2.0	21	0	72	.07	2	.3	.4	18	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	FEB	19	1040	19.03	19	23.02	155	14.73	3.38		1.7	20	0	61	.09	2	.3	.4	15	SEC
		19	1041	52.26	19	23.01	155	14.74	3.08		2.7	22	0	61	.07	2	.3	.4	16	SEC
		19	1125	30.89	19	28.02	155	20.50	7.19	1.8	1.3	19	2	171	.09	1	.6	1.1	13	KAO
		19	1724	18.07	19	21.33	155	6.62	7.90	1.7	1.3	17	2	86	.08	3	.5	1.1	12	SF4
		19	2356	49.04	19	19.91	155	8.21	8.45	2.0	1.6	18	1	85	.06	5	.5	1.0	14	SF4
		20	444	53.93	19	19.73	155	8.04	8.32	1.9	1.4	17	1	91	.06	4	.6	1.2	14	SF4
		20	535	10.67	19	22.58	155	14.02	3.14	1.6	1.9	20	0	77	.08	2	.3	.4	16	SEC
		20	12 4	13.35	19	20.63	155	5.53	8.62	2.5	2.2	19	0	204	.04	5	1.5	1.1	15	SF4
		20	12 5	28.56	19	20.51	155	5.21	8.78	2.0	1.3	15	0	206	.08	5	1.7	1.3	13	SF5
		20	14 6	7.17	19	22.87	155	14.63	3.05	1.8	1.2	17	0	69	.05	2	.3	.4	12	SEC
		20	1642	39.16	19	23.06	155	14.53	3.71	2.9	3.0	38	0	48	.11	3	.3	.4	30	SEC F
		20	1828	18.29	19	20.69	155	12.97	8.31	1.6	1.3	29	0	63	.11	4	.5	.9	22	SF2
		21	151	3.23	19	20.19	155	10.60	8.49	1.7	1.0	19	1	199	.06	4	.9	.8	14	SF3
		21	417	47.06	19	25.14	155	23.94	9.97	2.6	2.6	38	0	43	.10	2	.4	.6	29	KAO
		21	711	19.00	19	19.58	155	10.60	9.25	1.9	1.9	27	0	96	.08	5	.5	1.0	21	SF3
		21	728	29.22	19	23.79	155	24.73	9.83	2.4	2.4	36	0	36	.09	3	.4	.6	26	KAO
		21	856	12.38	19	25.89	155	37.63	2.07	2.9	2.3	27	0	93	.12	3	.4	.9	21	MLO
		21	1738	11.00	19	19.23	155	11.58	8.11	1.8	1.8	32	0	101	.09	5	.5	.7	23	SF3
		21	2319	28.41	19	22.53	155	2.02	6.72	2.1	1.1	22	0	176	.12	5	.7	1.0	14	SF5
		21	2320	59.48	19	19.07	155	11.52	6.80	2.9	2.8	32	0	106	.10	5	.5	.7	26	SF3
		21	2347	26.06	19	20.31	155	11.27	8.02	2.1	1.7	31	0	146	.11	4	.7	.8	23	SF3
		22	319	57.98	19	24.43	155	24.91	8.43	1.6	1.1	29	0	49	.11	2	.5	.9	23	KAO
		22	1213	24.59	19	20.68	155	12.74	8.25	2.4	2.2	34	0	65	.11	4	.4	.6	28	SF2
		22	1245	19.13	19	23.32	155	2.13	6.89	1.7	1.1	15	1	136	.09	4	.5	1.0	11	SF5
		22	1443	50.59	19	18.43	155	15.99	6.49	1.6	1.4	29	0	112	.10	4	.5	.8	22	SF1
		22	1630	32.92	19	17.03	155	11.80	1.48	2.1	1.8	33	1	160	.10	3	.5	.6	26	SSF
		22	1721	22.01	19	20.16	155	7.34	8.16	2.0	1.3	21	0	99	.07	5	.6	1.3	18	SF4
		22	1953	44.71	19	22.91	155	14.53	3.74	1.9	2.1	22	1	68	.08	3	.4	.5	17	SEC
		22	2255	28.08	19	19.84	155	11.87	6.43	2.1	1.9	26	0	86	.09	5	.5	1.2	17	SF3
		23	028	56.13	19	18.46	155	23.46	4.43	1.8	1.8	30	1	107	.13	3	.5	1.4	23	SWR
		23	949	14.74	19	19.83	155	19.09	31.38	2.5	2.4	41	1	53	.09	3	.7	1.1	37	DEP
		23	13 9	38.36	19	19.35	155	8.67	8.19	1.9	1.3	18	1	82	.04	4	.6	1.3	15	SF4
		23	1421	45.48	19	24.05	155	27.76	5.87	1.9	1.5	22	1	54	.07	3	.4	1.2	19	KAO
		23	1451	29.90	19	22.15	155	5.99	8.14	2.4	2.6	30	1	75	.08	2	.4	.6	23	SF4
		23	1651	52.34	19	20.31	155	10.55	9.34	1.7	1.2	17	0	84	.06	3	.6	1.2	17	SF3
		23	1943	11.60	19	25.90	154	52.57	5.92	2.4	1.7	17	1	260	.11	6	2.4	1.2	10	LER
		24	143	53.52	19	19.73	155	11.52	8.44	1.7	1.3	16	0	90	.03	5	.6	1.3	13	SF3
		24	230	8.56	19	22.28	155	5.57	8.00	2.2	2.3	35	3	139	.09	2	.5	.4	25	SF4
		24	440	33.95	19	24.08	155	26.03	9.61	1.8	1.6	23	1	47	.08	3	.5	1.1	19	KAO
		24	618	46.74	19	25.50	155	17.16	1.15	1.3	1.4	15	0	126	.10	1	.5	.2	12	SNC
		24	1027	9.40	19	30.24	155	20.24	9.72	2.1		12	1	247	.24	10	2.4	3.5	11	MLO
		24	1544	39.04	19	2.53	155	33.69	64.51	2.9		27	0	250	.11	17	3.2	3.8	9	DLS T
		24	1648	10.64	20	3.71	155	56.99	10.30	3.7	3.5	37	2	289	.10	43	1.8	1.2	30	KOH F
		25	540	.47	19	18.99	155	15.34	7.66	1.5	1.0	24	2	115	.05	4	.5	.9	14	SF1
		25	622	40.55	19	20.45	155	13.09	9.02	1.5	1.2	16	0	177	.06	4	.9	1.2	16	SF2
		25	1357	59.15	19	19.58	155	10.98	7.07	1.7	1.4	30	1	96	.11	5	.5	1.0	23	SF3
		26	030	6.95	19	20.08	155	12.17	10.01	3.6	3.5	37	0	134	.09	5	.6	.4	33	SF3 F
		26	850	9.26	19	22.81	155	14.59	3.40	1.1	1.4	17	0	70	.06	2	.3	.5	14	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	FEB	26	1324	36.20	19	20.20	155	13.38	8.93	1.8	1.2	18	0	155	.07	5	.7	1.1	14	SF2
		26	1422	43.62	19	22.97	155	14.69	3.16	1.7	1.1	17	0	66	.06	2	.3	.4	12	SEC
		26	1616	55.14	19	23.40	155	17.32	2.80	1.3	1.0	14	0	56	.09	1	.4	.3	12	SSC
		26	2216	57.03	19	17.97	155	23.26	3.38	1.7	1.6	25	2	113	.09	4	.4	.8	14	SWR
		27	051	14.10	19	12.90	155	35.18	7.94	2.4	1.5	28	2	120	.21	5	1.2	.9	19	LSW
		27	544	45.22	19	23.25	155	17.19	2.74	1.6	1.3	12	0	59	.06	1	.4	.3	11	SSC
		27	14 8	52.52	19	18.95	155	15.34	7.37	1.6	1.1	33	3	95	.10	4	.4	.7	22	SF1
		27	1743	50.14	19	28.16	155	34.57	36.52	2.9	2.9	24	0	92	.12	3	.9	2.6	9	DML L
		28	923	12.71	19	26.42	155	27.37	8.80	1.8	1.7	28	0	54	.09	4	.5	1.0	21	KAO
		28	1025	52.51	19	23.87	155	15.23	3.30	1.8	1.9	18	0	98	.07	2	.3	.3	16	SEC
		28	17 5	14.96	19	20.81	155	11.53	8.43	2.9	2.8	36	1	71	.08	4	.4	.5	28	SF3
		28	2149	31.83	19	26.17	155	24.15	8.34	2.4	2.1	36	1	50	.11	2	.4	.8	28	KAO
		28	2247	25.38	19	20.64	155	13.32	7.26	1.9	1.8	31	1	61	.11	4	.5	.7	26	SF2
		28	2342	5.46	19	19.09	155	7.65	7.68	1.9	1.9	19	0	220	.10	7	1.4	.9	14	SF4
		29	328	10.25	19	21.84	155	25.25	10.55	2.6	2.5	39	2	61	.11	4	.4	.7	27	KAO
		29	1133	1.42	19	19.50	155	12.28	8.08		1.1	18	1	200	.05	6	.9	1.2	14	SF3
		29	1138	14.90	19	19.97	155	9.64	7.65	1.6	1.4	20	1	83	.03	4	.5	1.1	16	SF3
		29	1247	11.90	19	12.49	155	20.15	43.86	2.6	2.4	42	3	168	.09	11	.8	1.3	34	DEP
	MAR	1	031	45.05	19	20.35	155	7.18	7.41	1.9	1.7	24	1	98	.12	5	.5	.9	19	SF4
		1	048	41.37	19	20.22	155	6.76	8.65	1.9	2.0	26	0	108	.07	5	.6	1.0	20	SF4
		1	058	29.58	19	26.77	155	16.11	26.92	2.0	1.5	34	3	69	.09	4	.6	1.0	26	DEP
		1	2 2	27.13	19	24.04	155	27.08	11.00	1.8	1.2	24	1	59	.07	3	.5	1.1	22	KAO
		1	6 7	25.91	19	20.44	155	7.38	6.64	1.9	1.9	27	1	94	.09	5	.5	1.0	19	SF4
		1	819	29.93	19	20.86	155	10.68	6.66	2.0	1.8	23	0	81	.10	3	.5	.8	21	SF3
		1	1220	49.35	19	20.60	155	7.08	7.55		1.5	25	0	96	.10	5	.5	1.0	23	SF4
		1	1327	.02	19	20.49	155	6.15	8.42	2.0	2.1	25	0	109	.07	5	.4	.8	17	SF4
		1	1718	7.23	19	20.04	155	11.30	8.28	2.5	2.5	32	0	85	.08	5	.5	.8	26	SF3
		1	1746	4.77	19	19.09	155	11.15	8.43	1.8	1.6	24	0	108	.05	6	.5	1.1	16	SF3
		1	1938	28.20	19	46.78	156	41.42	16.27	4.2	4.5	31	0	298	.12	87	5.9	99.0	23	DIS
		1	2115	59.60	19	19.86	155	7.10	8.68	1.9	1.3	17	0	110	.07	5	.6	1.5	16	SF4
		1	2358	29.05	19	19.64	155	10.88	9.41	1.8	1.5	14	0	206	.03	5	1.3	1.4	11	SF3
		2	524	57.18	19	21.93	155	30.33	9.46	3.0	2.7	40	1	60	.08	5	.3	.8	30	KAO
		2	751	47.13	19	22.28	155	14.06	1.36	1.5	1.3	14	0	80	.10	2	.4	.4	13	SEC
		2	753	7.05	19	22.22	155	14.06	2.73	1.6	1.3	13	0	81	.08	2	.4	.5	11	SEC
		2	755	11.14	19	22.51	155	14.21	3.54	1.6	1.6	12	0	76	.10	2	.4	.7	9	SEC
		2	755	50.20	19	22.32	155	14.01	2.81	1.3	.9	7	0	133	.04	2	.7	.4	3	SEC
		2	756	20.76	19	22.30	155	14.12	2.48	1.8	1.7	14	0	96	.08	2	.5	1.1	12	SEC
		2	759	22.06	19	22.77	155	14.61	3.19			4	0	130	.00	2	.8	1.2	3	SEC
		2	8 4	46.47	19	22.37	155	14.21	2.78	.8	.2	8	0	140	.09	2	.5	.9	5	SEC
		2	8 6	6.84	19	22.45	155	14.08	2.91	.7	.2	8	1	155	.03	2	.5	.7	5	SEC
		2	8 6	45.78	19	22.44	155	14.22	2.42	.5		8	0	138	.05	2	.5	.7	7	SEC
		2	8 7	32.29	19	22.32	155	13.93	3.10	.9		9	0	133	.05	2	.5	.6	8	SER
		2	810	56.42	19	22.28	155	14.10	3.05	1.4	.8	16	0	132	.06	2	.3	.5	12	SEC
		2	815	54.76	19	22.93	155	14.00	3.48	1.0	.2	12	0	113	.08	2	.6	.5	8	SEC
		2	817	27.15	19	22.37	155	13.97	3.40	1.1	.5	14	1	131	.03	2	.4	.5	9	SER
		2	818	51.97	19	22.29	155	14.21	2.94		.8	14	0	131	.06	2	.4	.5	14	SEC
		2	821	12.14	19	22.39	155	14.16	3.02	.9	.3	9	0	147	.03	2	.6	.8	8	SEC
		2	822	28.23	19	23.07	155	14.73	2.28		.3	9	1	115	.04	2	.4	.8	8	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	MAR	2	823	8.98	19	23.10	155	14.77	2.54		.4	10	0	114	.04	2	.4	.7	9	SEC
		2	835	19.46	19	23.16	155	14.77	2.29		.2	8	1	127	.03	2	.4	1.2	7	SEC
		2	836	31.62	19	22.43	155	14.13	3.21		.2	9	1	145	.03	2	.5	.8	8	SEC
		2	837	5.58	19	22.83	155	14.43	3.43		.8	14	0	120	.05	2	.4	.5	13	SEC
		2	841	16.70	19	22.44	155	14.09	3.30	1.1	.1	10	1	129	.03	2	.4	.6	8	SEC
		2	842	40.84	19	22.37	155	14.16	3.16	.9	.2	8	1	158	.06	2	.6	.9	6	SEC
		2	843	18.13	19	22.36	155	14.24	3.17		1.4	17	1	130	.06	2	.4	.4	16	SEC
		2	843	59.57	19	22.37	155	14.14	3.39		.8	15	2	130	.04	2	.3	.5	12	SEC
		2	844	37.44	19	22.34	155	14.07	3.59	1.2		10	1	152	.04	2	.6	.7	9	SEC
		2	845	1.71	19	22.38	155	14.17	3.36		1.2	17	1	130	.05	2	.4	.4	16	SEC
		2	847	26.14	19	22.25	155	14.22	3.15	1.1	.9	15	0	133	.06	2	.6	.4	12	SEC
		2	848	19.13	19	22.35	155	14.27	2.92	1.1	.4	14	0	131	.06	2	.3	.4	12	SEC
		2	849	8.11	19	22.46	155	14.06	3.51		.6	4	0	154	.00	2	.9	1.5	4	SEC
		2	849	41.05	19	22.28	155	13.86	3.14	1.3	.5	10	0	134	.03	2	.6	.7	8	SER
		2	851	36.14	19	20.84	155	15.33	.66	1.7	1.1	8	0	175	.12	3	.7	1.9	6	KOA
		2	852	28.34	19	22.25	155	14.37	2.83	1.3	.5	14	0	132	.07	3	.5	.7	9	SEC
		2	852	47.96	19	22.80	155	14.47	3.16	1.7	1.4	14	0	121	.05	2	.4	.4	14	SEC
		2	857	49.54	19	22.35	155	14.22	3.01	1.3	.8	13	0	130	.05	2	.5	.6	10	SEC
		2	859	35.36	19	22.14	155	14.07	1.59	1.2	.9	10	0	135	.03	2	.4	.4	7	SEC
		2	9	2 58.42	19	21.15	155	14.25	2.11		.2	9	0	156	.12	4	.5	1.2	4	KOA
		2	9	4 56.27	19	22.47	155	14.29	2.48	1.2	.8	6	0	141	.02	2	.6	1.0	5	SEC
		2	9	5 53.22	19	22.36	155	13.91	3.08		.3	10	0	155	.04	2	.7	.9	7	SER
		2	9	8 57.83	19	22.11	155	14.26	1.27	2.4	3.0	20	1	54	.12	3	.4	.7	12	SEC
		2	913	53.80	19	22.74	155	14.30	3.02	1.5	1.0	12	0	122	.10	3	.6	1.0	5	SEC
		2	914	18.13	19	22.28	155	14.31	2.75	1.2	.9	11	0	131	.07	2	.5	.8	8	SEC
		2	916	26.29	19	22.37	155	14.02	3.24	1.2	.9	10	0	131	.03	2	.7	.9	6	SEC
		2	918	5.55	19	22.30	155	14.24	3.28	1.3	.7	13	0	141	.04	2	.4	.5	9	SEC
		2	920	17.87	19	22.24	155	14.27	3.16	1.8	1.6	15	0	132	.06	2	.4	.5	15	SEC
		2	925	33.98	19	22.32	155	14.19	3.00	1.8	1.3	13	0	131	.02	2	.4	.4	10	SEC
		2	927	50.13	19	22.27	155	14.24	2.92	1.8	1.9	18	0	79	.06	2	.3	.4	17	SEC
		2	931	25.71	19	22.28	155	14.36	3.28	1.6	1.2	15	0	132	.05	2	.5	.4	15	SEC
		2	934	39.25	19	22.26	155	14.25	3.01	1.2	1.4	12	0	153	.05	2	.6	.9	8	SEC
		2	936	.09	19	22.33	155	14.02	2.96	2.2	2.1	19	2	132	.12	2	.4	.4	17	SEC
		2	937	47.16	19	22.37	155	14.01	3.28	1.3	.9	14	2	131	.04	2	.4	.5	11	SEC
		2	939	4.45	19	22.25	155	14.05	3.11	1.2	.5	11	1	134	.05	2	.4	.6	10	SEC
		2	939	36.40	19	22.30	155	14.25	3.66	1.3	1.2	15	2	131	.04	2	.4	.5	11	SEC
		2	941	8.71	19	22.48	155	14.05	3.40	2.4	2.3	18	1	128	.05	2	.3	.4	15	SEC
		2	942	42.50	19	22.22	155	14.21	4.25	1.4	.7	13	2	133	.07	2	.5	.8	11	SEC
		2	943	35.87	19	22.35	155	14.24	3.71	1.2	.9	10	2	140	.06	2	.6	.8	8	SEC
		2	945	51.66	19	22.36	155	14.19	2.98	1.9	1.6	17	1	130	.04	2	.3	.4	14	SEC
		2	948	8.26	19	22.36	155	14.27	3.69	1.3	1.0	14	1	130	.05	2	.4	.6	12	SEC
		2	949	55.47	19	23.11	155	14.66	3.61	1.6	1.5	19	2	109	.06	3	.3	.3	17	SEC
		2	952	57.87	19	22.43	155	14.19	2.87	2.2	2.4	14	1	129	.05	2	.4	.4	13	SEC
		2	955	48.15	19	22.35	155	14.25	1.62		.7	12	1	140	.05	2	.4	.3	9	SEC
		2	10	0 5.70	19	22.35	155	14.36	2.96	1.3	.7	11	0	130	.03	2	.4	.6	10	SEC
		2	10	0 43.94	19	22.50	155	14.20	3.02	1.3		7	1	149	.05	2	.7	.9	5	SEC
		2	10	1 17.84	19	23.13	155	14.70	3.47	1.5	1.1	16	0	108	.06	3	.3	.4	12	SEC
		2	10	3 56.47	19	22.30	155	14.28	2.59	1.1	.5	11	1	131	.05	2	.4	.5	8	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	MAR	2	10	4 14.45	19	22.02	155	14.06	1.77	1.3	.8	12	1	150	.02	2	.4	.4	10	KOA
		2	10	4 43.47	19	22.37	155	14.43	3.24	1.2	.7	13	1	129	.07	2	.4	.5	10	SEC
		2	10	5 15.83	19	22.49	155	14.42	3.04	1.2	.2	12	1	127	.08	2	.4	.5	6	SEC
		2	10	5 24.23	19	22.24	155	14.38	2.93	1.2	.7	12	1	132	.03	2	.4	.5	11	SEC
		2	1010	35.82	19	22.30	155	14.19	2.85	2.4	2.4	22	1	53	.06	2	.3	.4	18	SEC
		2	1011	42.35	19	22.27	155	14.40	3.19	1.2	.9	13	0	141	.05	2	.5	.4	12	SEC
		2	1013	33.64	19	22.60	155	14.78	1.16	2.4	3.0	28	1	52	.10	2	.3	.3	20	SEC
		2	1022	19.44	19	22.08	155	14.29	1.28	2.4	3.1	21	2	81	.07	2	.2	.4	13	SEC
		2	1024	1.23	19	22.68	155	14.52	1.49	1.2	.8	15	1	122	.07	2	.3	.4	10	SEC
		2	1026	38.96	19	22.31	155	14.25	2.72	1.6	1.3	17	1	131	.05	2	.4	.3	14	SEC
		2	1032	40.04	19	22.32	155	14.37	2.80	1.2	.7	13	1	147	.05	2	.5	.5	11	SEC
		2	1039	39.34	19	22.33	155	14.12	2.77	1.2	.4	13	1	80	.06	2	.3	.5	8	SEC
		2	1040	39.74	19	19.29	155	13.30	8.69	1.7	1.0	18	0	124	.07	4	.6	1.3	16	SF2
		2	1042	34.10	19	22.33	155	14.34	3.30	1.1	.1	13	2	95	.04	2	.4	.6	9	SEC
		2	1043	25.87	19	22.34	155	14.13	2.90	1.1	.2	13	1	80	.03	2	.3	.4	5	SEC
		2	1044	44.40	19	22.44	155	14.09	3.11	1.8	1.6	17	1	78	.04	2	.3	.4	13	SEC
		2	1048	4.01	19	22.26	155	14.17	2.80	1.5	1.0	16	1	80	.04	2	.3	.5	14	SEC
		2	1049	19.46	19	22.29	155	13.80	2.66	1.0	.1	10	2	163	.06	1	.5	.6	7	SER
		2	1051	42.92	19	19.85	155	12.58	6.71	1.6	.4	7	0	283	.07	5	4.9	5.7	7	SF2
		2	1053	12.21	19	22.52	155	14.16	2.98	1.1	.3	10	2	139	.05	2	.5	.7	8	SEC
		2	1055	32.87	19	22.39	155	14.16	3.01	1.2	.4	10	1	130	.05	2	.4	.6	8	SEC
		2	1059	54.70	19	22.34	155	14.10	2.89	1.5	.8	15	1	79	.05	2	.4	.5	12	SEC
		2	11	2 5.29	19	22.55	155	13.99	3.08	1.1	.1	8	1	148	.01	2	.5	.8	5	SEC
		2	11	4 4.92	19	22.39	155	14.27	3.66	1.3	.5	10	2	79	.04	2	.4	.6	8	SEC
		2	11	5 17.67	19	22.25	155	13.95	3.29	1.3	.5	9	1	161	.07	2	.6	.8	8	SER
		2	11	6 33.19	19	22.31	155	14.33	3.01	1.8	1.5	15	1	78	.04	2	.3	.5	14	SEC
		2	11	9 3.08	19	22.38	155	14.30	3.00	2.0	1.7	16	1	77	.04	2	.3	.4	15	SEC F
		2	1114	4.63	19	22.33	155	13.86	3.33	.8		9	2	143	.05	2	.6	.7	7	SER
		2	1119	44.85	19	22.12	155	14.20	3.53	1.2	.5	10	2	108	.04	2	.4	.7	7	SEC
		2	1120	25.20	19	22.69	155	14.14	1.72	1.1	1.0	12	2	98	.09	2	.4	.5	10	SEC
		2	1124	43.19	19	22.21	155	14.29	3.79	1.3	.5	14	2	79	.06	2	.4	.6	9	SEC
		2	1130	28.73	19	22.38	155	14.27	1.63	1.3	1.0	13	0	79	.05	2	.3	.5	13	SEC
		2	1130	53.91	19	22.78	155	15.21	1.79	1.1	.3	14	1	71	.06	1	.3	.4	10	SEC
		2	1131	59.03	19	22.30	155	14.26	3.52	1.1		11	1	97	.04	2	.5	.6	7	SEC
		2	1132	50.51	19	22.33	155	14.27	3.65	1.1	.3	8	1	102	.01	2	.5	.6	6	SEC
		2	1134	5.93	19	23.34	155	14.88	3.37	1.1	.7	15	1	73	.03	3	.3	.4	10	SEC
		2	1146	28.35	19	22.21	155	14.39	3.09	1.2	.8	12	0	78	.05	2	.4	.5	7	SEC
		2	1210	43.66	19	22.81	155	14.54	1.50	1.2	.8	12	0	91	.04	3	.3	.4	9	SEC
		2	1225	59.81	19	22.02	155	14.46	1.38	2.1	2.6	17	1	80	.04	3	.2	.4	16	KOA
		2	1240	34.77	19	22.13	155	13.84	1.35	.6	.7	10	1	84	.03	2	.3	.4	7	SER
		2	13	2 20.91	19	22.59	155	14.65	1.51	1.1	1.6	8	1	165	.03	2	.3	.6	7	SEC
		2	1312	43.85	19	22.26	155	14.23	3.57	1.0	.2	10	2	80	.03	2	.4	.5	8	SEC
		2	1336	41.79	19	22.01	155	14.04	1.62	.8	.9	10	1	139	.04	2	.4	.5	9	KOA
		2	1340	52.52	19	22.49	155	14.30	3.72	1.2	.3	8	2	136	.02	2	.5	.7	6	SEC
		2	14	5 31.67	19	22.68	155	14.35	3.54	1.1	.5	7	2	162	.07	2	.8	1.5	4	SEC
		2	14	6 56.39	19	22.89	155	14.43	1.42	1.2	1.2	12	1	117	.05	2	.3	.4	11	SEC
		2	14	7 6.73	19	22.66	155	14.39	.91	3.1	3.5	20	0	74	.09	2	.2	.4	18	SEC
		2	1412	6.41	19	20.87	155	1.05	7.47	2.1	1.8	26	0	201	.13	4	.9	.9	25	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	2	1425	30.82	19	20.53	155	9.78	8.84	1.8	.6	16	1	172	.04	3	.8	1.3	14	SF3	
		2	1438	35.80	19	22.40	155	14.21	3.82		.1	8	2	139	.03	2	.6	.8	6	SEC	
		2	1530	35.72	19	22.16	155	13.98	1.57	1.4	1.8	14	0	83	.03	2	.3	.4	13	SER	
		2	1533	51.52	19	22.73	155	14.96	1.11	1.8	2.0	17	2	76	.09	2	.3	.4	15	SEC	
		2	1535	41.28	19	22.90	155	14.57	.01	1.1	1.0	10	2	93	.13	3	.3	.7	7	SEC	*
		2	1626	13.88	19	21.62	155	12.92	2.74	.8	.3	10	2	106	.06	2	.5	.6	8	SER	
		2	1627	7.45	19	22.43	155	14.21	3.56	1.3		9	1	82	.03	2	.4	.6	7	SEC	
		2	1646	40.26	19	22.77	155	14.63	1.72	1.2	1.1	13	1	87	.05	2	.3	.4	11	SEC	
		2	1710	.00	19	23.22	155	14.71	2.91	1.2	1.3	13	2	105	.05	3	.4	.5	10	SEC	
		2	1711	39.87	19	19.35	155	12.15	7.92	1.3	.2	10	1	154	.04	5	.8	2.0	9	SF3	
		2	1715	46.42	19	20.10	155	9.56	8.47	1.4	.3	11	0	183	.02	4	.9	1.6	9	SF3	
		2	1854	21.87	19	21.65	155	14.07	1.57	1.6	1.7	17	1	88	.04	3	.3	.5	16	KOA	
		2	1856	33.36	19	21.67	155	14.03	1.41	1.9	1.8	21	0	57	.05	2	.2	.5	16	KOA	
		2	1857	15.77	19	21.66	155	14.07	1.57	2.1	2.1	20	1	58	.04	3	.2	.5	16	KOA	
		2	19	1	16.42	19	21.20	155	5.97	7.23	2.1	2.0	30	2	93	.09	3	.5	.9	21	SF4
		2	1930	7.63	19	21.80	155	14.18	1.40	.5	.5	10	0	142	.04	2	.4	.6	7	KOA	
		2	2055	30.03	19	23.11	155	14.70	2.97	.9	.1	8	1	114	.03	3	.5	.8	7	SEC	
		2	2219	39.39	19	21.29	155	2.20	8.34	1.4	1.0	18	1	161	.09	3	.8	.8	13	SF5	
		2	2323	12.77	19	22.29	155	14.72	1.72	.5	.8	10	0	117	.11	2	.4	.6	6	SEC	
		2	2327	12.34	19	19.53	155	9.97	8.63	1.5	.2	16	2	186	.05	5	.8	1.2	11	SF3	
		2	2331	.28	19	21.34	155	14.49	1.61	1.3	.8	16	2	87	.04	3	.3	.5	6	KOA	
		2	2339	2.35	19	19.91	155	9.44	8.28	1.3	.2	10	0	144	.03	4	1.0	1.7	5	SF3	
		3	347	49.60	19	19.84	155	11.55	8.16	1.7	1.4	24	0	87	.09	5	.6	1.0	19	SF3	
		3	4	6	22.33	19	23.16	155	14.84	3.19	1.9	2.0	19	0	66	.05	2	.3	.3	14	SEC
		3	5	7	38.53	19	20.79	155	6.26	8.47		.7	14	0	100	.07	4	.6	1.6	10	SF4
		3	547	46.90	19	20.52	155	4.50	7.59	2.0	1.7	25	0	114	.10	3	.5	.8	19	SF5	
		3	550	10.65	19	19.82	155	11.38	4.22	1.2	.6	16	1	160	.13	5	.7	2.2	6	SSF	
		3	551	3.61	19	22.15	155	14.68	.56	1.2	1.1	15	0	76	.05	2	.3	.5	10	SEC	
		3	6	8	15.06	19	25.28	155	24.39	8.45	1.6	1.1	24	2	47	.09	1	.5	1.0	19	KAD
		3	625	9.62	19	23.41	155	14.75	1.18	.6	.4	9	1	102	.03	2	.3	.7	4	SEC	
		3	727	45.37	19	20.60	155	6.05	8.88		.4	13	0	165	.04	4	.9	1.3	9	SF4	
		3	2244	55.68	19	20.32	155	11.74	7.88	2.2	1.9	38	1	78	.09	5	.4	.6	24	SF3	
		3	2247	47.80	19	20.40	155	11.69	8.15	2.1	2.0	36	2	77	.09	4	.4	.6	27	SF3	
		4	1	9	10.83	19	20.35	155	11.69	9.23	1.8	1.6	20	1	115	.07	5	.7	1.0	19	SF3
		4	348	33.13	19	26.86	154	50.89	8.66	2.8	2.6	33	2	285	.13	6	1.8	.6	22	LER	
		4	457	21.28	19	22.89	155	15.19	1.39	2.6	2.8	24	0	65	.08	2	.3	.3	19	SEC	
		4	5	6	14.07	20	.21	155	39.01	14.82	2.7	2.1	27	3	155	.08	19	1.1	1.6	19	KOH
		4	611	56.56	19	23.01	155	15.24	1.38	2.7	2.6	15	1	73	.08	2	.3	.3	12	SEC	F
		4	945	27.17	19	22.51	155	15.28	1.82	2.0	2.6	15	1	56	.10	1	.3	.3	13	SEC	
		5	021	6.96	18	47.70	156	11.51	32.07	3.1	3.3	9	0	311	.08	59	13.4	5.0	8	DIS	
		5	15	0	25.83	19	16.81	155	15.45	11.06	2.8	2.8	31	1	154	.09	6	.7	.5	29	SF1
		5	1554	40.27	19	23.22	155	16.82	2.31	.8	.9	7	0	128	.06	2	.5	.6	6	SSC	
		5	2142	17.26	19	28.14	155	18.34	13.59	1.8	1.4	30	4	72	.11	6	.4	.4	29	DEP	
		6	038	19.29	19	20.31	155	11.64	8.61	1.7	1.7	19	0	78	.06	5	.5	.8	17	SF3	
		6	151	50.50	19	25.17	156	9.41	27.49		1.9	21	1	289	.10	26	4.7	2.1	16	KON	
		6	716	14.43	19	21.75	155	1.92	8.60	2.6	2.8	30	0	161	.08	4	.8	.4	26	SF5	F
		6	1914	30.02	19	20.43	155	13.18	8.87	2.1	2.2	32	0	64	.10	4	.5	.7	26	SF2	
		6	21	1	37.68	19	19.68	155	11.09	7.01	1.7	1.1	17	2	168	.07	5	.6	1.2	14	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	7	059	.69	19	26.03	155	23.91	8.78	2.4	2.0	26	1	61	.10	3	.5	.8	22	KAD	
		7	119	33.17	19	19.03	155	12.07	8.35	1.7	1.0	16	0	160	.06	4	.8	1.4	14	SF3	
		7	420	14.04	19	19.54	155	11.52	8.43	2.6	2.6	35	1	95	.08	6	.4	.6	28	SF3	
		7	1947	42.48	19	19.81	155	11.36	9.54	3.2	3.5	38	0	89	.08	5	.4	.5	27	SF3	F
		8	10	1	24.97	19	24.08	155	28.70	10.52	2.8	2.8	33	1	56	.10	4	.4	.6	30	KAD	
		8	1524	28.95	19	20.35	155	8.16	7.82	1.8	1.6	23	1	81	.09	6	.5	1.2	19	SF4	
		8	1558	22.15	19	46.44	155	32.54	14.61	2.6	2.1	33	3	90	.12	9	.5	.5	24	KEA	
		8	1646	5.82	19	20.58	155	6.48	8.67	2.9	3.4	41	2	103	.09	5	.4	.5	31	SF4	F
		8	1829	27.25	19	18.90	155	13.22	7.97	1.7	1.5	18	0	129	.06	4	.6	1.3	18	SF2	
		8	1945	36.39	19	20.32	155	6.49	8.76	1.7	1.6	20	0	148	.06	5	1.0	1.3	17	SF4	
		9	342	21.26	19	17.35	155	18.49	32.95	1.9	1.5	27	2	135	.08	1	.8	1.5	25	DEP	
		9	4	3	51.94	19	24.92	155	25.39	11.41	2.0	1.9	36	3	38	.11	1	.4	.5	28	KAD	
		9	1217	5.19	19	21.37	155	15.18	9.71	2.9	2.8	40	3	65	.10	2	.4	.4	32	SF4	
		9	1225	53.52	19	21.68	155	15.15	9.21	2.2	1.9	33	2	61	.09	2	.4	.6	25	SF1	
		9	1526	53.39	19	12.35	155	33.28	8.14	2.6	2.1	26	0	231	.13	8	1.2	.7	19	LSW	
		9	1627	20.71	19	19.70	155	13.34	9.47	3.1	3.0	39	0	69	.10	5	.4	.4	34	SF2	
		9	1852	2.69	19	14.50	155	31.86	6.51	2.2	1.5	29	1	193	.13	3	.5	.9	21	LSW	
		10	748	41.61	19	20.31	155	13.37	8.77	1.6	1.1	19	0	114	.07	4	.6	1.3	17	SF2	
		10	10	0	16.93	19	19.26	155	11.97	8.09	1.5	1.1	18	2	158	.06	5	.6	1.1	15	SF3
		10	10	2	19.93	19	19.32	155	11.96	8.18	1.7	1.5	18	1	157	.04	5	.6	1.1	17	SF3
		10	1121	38.92	19	18.49	155	15.44	8.40	1.2	.8	17	3	134	.05	4	.6	1.3	15	SF1	
		10	1241	57.05	19	21.32	155	5.84	8.59	1.4	1.2	17	1	123	.06	3	.6	1.1	15	SF4	
		10	1532	33.34	19	20.43	155	13.28	8.02	1.3	.8	15	1	120	.06	4	.6	1.2	13	SF2	
		10	1647	44.62	19	26.69	154	52.23	6.79	1.9	1.4	15	0	272	.10	5	2.5	.9	14	LER	
		10	17	3	36.29	19	27.53	155	20.97	8.66	1.8	1.3	20	3	92	.10	1	.5	.9	15	KAD	
		10	1753	3.60	19	19.79	155	9.49	8.14	1.4	.9	15	2	188	.05	4	.9	1.3	13	SF3	
		10	1821	51.56	19	23.37	155	7.33	3.27	1.3	1.0	12	0	104	.06	2	.5	.6	11	SER	
		10	19	7	50.30	19	19.22	155	11.76	5.66	.9	.5	10	0	185	.02	5	1.2	3.7	9	SF3
		10	2049	43.16	19	19.00	155	13.21	7.93	2.1	2.2	36	2	79	.11	4	.4	.7	32	SF2	
		10	2155	33.87	19	21.80	155	12.15	2.85	.8	.7	10	1	169	.06	2	1.1	.5	9	SER	
		10	2156	42.36	19	21.78	155	11.90	3.17	2.1	1.4	18	2	117	.06	3	.4	.5	16	SER	
		10	22	0	46.47	19	22.14	155	12.56	2.77	1.3	.6	9	1	184	.07	1	1.0	.4	8	SER
		10	22	1	6.09	19	21.60	155	12.34	2.62	1.4	.4	13	2	116	.06	2	.4	.5	10	SER
		10	22	2	21.71	19	22.22	155	12.43	2.76	1.2	.7	10	1	153	.08	1	.7	.4	9	SER
		10	22	4	28.21	19	21.50	155	12.61	2.58	1.5	.9	13	0	114	.04	2	.3	.6	13	SER
		10	22	6	57.17	19	21.68	155	12.44	.49	2.2	2.0	17	1	111	.06	5	.4	1.0	15	SER
		10	22	8	8.91	19	21.63	155	12.55	2.89	1.7	.9	16	1	111	.03	2	.3	.5	15	SER
		10	22	9	25.42	19	21.64	155	12.66	2.85	1.9	.7	17	1	110	.08	2	.3	.5	16	SER
		10	2210	46.94	19	21.61	155	12.69	2.17	1.9	.9	15	1	110	.06	2	.3	.6	13	SER	
		10	2211	46.16	19	21.52	155	12.65	2.29	2.1	1.1	18	1	112	.05	2	.3	.5	17	SER	
		10	2212	13.90	19	21.74	155	12.53	1.62	2.3	1.4	17	1	109	.10	5	.5	1.1	16	SER	
		10	2215	13.00	19	21.67	155	12.86	2.46	1.7	.5	19	3	105	.10	2	.4	.4	14	SER	
		10	2217	41.55	19	21.72	155	12.92	2.99	1.9	.8	18	0	104	.05	2	.3	.5	17	SER	
		10	2219	37.34	19	21.84	155	12.88	2.44	1.9	.9	18	1	102	.12	2	.4	.5	15	SER	
		10	2226	25.47	19	21.72	155	12.88	2.32	2.0	1.3	17	0	104	.06	2	.4	.6	15	SER	
		10	2227	31.28	19	21.78	155	12.73	2.36	2.4	1.6	17	1	105	.05	2	.3	.4	13	SER	
		10	2228	3.17	19	21.73	155	12.84	2.80	2.0	1.4	17	1	105	.07	2	.4	.6	16	SER	
		10	2230	9.32	19	21.44	155	12.67	1.89	1.4	.4	9	1	178	.09	2	.7	.8	8	SER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	10	2231	47.94	19	21.63	155	12.74	2.15	1.4		16	1	108	.07	2	.3	.5	14	SER	
		10	2232	5.31	19	21.61	155	12.80	1.66	2.4	1.7	18	1	108	.09	2	.3	.5	17	SER	
		10	2233	3.82	19	21.60	155	12.75	1.87	2.6	2.1	18	1	109	.08	2	.3	.5	17	SER	
		10	2234	44.93	19	22.33	155	12.69	2.63	1.2		8	1	149	.09	1	.9	.5	7	SER	
		10	2235	21.75	19	21.70	155	12.75	2.26	1.9	.9	15	0	107	.03	2	.3	.4	15	SER	
		10	2236	49.96	19	21.86	155	13.02	2.28	2.6	2.1	19	1	99	.08	1	.4	.4	17	SER	
		10	2237	54.38	19	21.60	155	12.80	2.73	1.4	.4	17	1	108	.05	2	.3	.5	16	SER	
		10	2238	40.11	19	21.75	155	12.95	2.69		.2	12	2	103	.05	2	.5	.5	10	SER	
		10	2239	48.28	19	21.78	155	12.70	3.62	1.2		11	1	106	.09	2	.6	1.0	10	SER	
		10	2242	1.74	19	21.61	155	12.92	1.74	1.5	.7	17	1	106	.09	2	.3	.6	15	SER	
		10	2242	48.42	19	20.40	155	12.54	.83			5	1	247	.52	6	16.8	9.1	4	SSF	*
		10	2243	21.12	19	21.83	155	12.78	4.11	1.4	.3	13	1	103	.07	2	.4	1.1	11	SER	
		10	2244	55.45	19	21.67	155	13.04	2.73	1.4	.6	15	0	103	.03	2	.3	.5	15	SER	
		10	2245	28.65	19	21.75	155	12.88	3.01	1.4	.6	15	1	104	.06	2	.4	.5	14	SER	
		10	2248	37.14	19	21.83	155	12.96	2.64	1.4	.7	18	2	101	.07	2	.4	.4	11	SER	
		10	2249	25.11	19	21.67	155	12.87	2.61	1.0		8	1	169	.03	2	.7	.5	7	SER	
		10	2251	41.42	19	21.62	155	12.63	2.77	1.0		10	2	110	.05	2	.5	.7	8	SER	
		10	2254	13.74	19	21.79	155	13.22	2.45	1.5	.8	17	0	98	.09	2	.4	.5	17	SER	
		10	23	2 3.97	19	21.57	155	13.03	2.62			11	2	106	.06	2	.4	.6	9	SER	
		10	2343	50.95	19	20.09	155	9.40	7.99		.3	17	0	79	.09	4	.7	1.4	16	SF3	
		11	039	16.80	19	21.49	155	12.68	2.55	.9		11	1	113	.05	2	.4	.6	10	SER	
		11	147	16.86	19	21.09	155	12.81	1.79	1.1	.3	8	0	119	.06	3	.4	1.1	8	SER	
		11	224	7.16	19	22.12	155	11.42	2.81	2.1	1.8	17	1	109	.06	3	.5	.5	16	SER	
		11	226	52.87	19	21.56	155	12.68	2.74	1.5	1.1	12	1	111	.04	2	.4	.6	11	SER	
		11	229	.69	19	22.17	155	11.34	2.66	1.8	1.5	12	1	108	.09	3	.5	.5	10	SER	
		11	234	36.84	19	21.94	155	11.30	2.40	1.5	1.1	14	0	118	.12	3	.7	.5	13	SER	
		11	236	51.91	19	22.08	155	11.42	2.44	1.5	.8	11	0	111	.09	3	.6	.4	7	SER	
		11	237	20.41	19	22.62	155	4.80	16.07	1.5	.5	5	0	333	.08	3	9.1	7.5	4	DEP	
		11	242	50.23	19	22.08	155	11.25	2.56	1.5	1.0	10	0	113	.09	2	.8	.6	9	SER	
		11	259	30.68	19	22.03	155	11.34	2.76	1.8	1.7	19	1	98	.08	3	.4	.4	13	SER	
		11	3	5 17.14	19	21.88	155	11.32	2.65	.8	.1	12	1	121	.11	3	.9	.5	8	SER	
		11	317	11.04	19	22.25	155	11.34	3.21	1.5	1.1	14	0	104	.08	3	.7	.5	11	SER	
		11	319	55.61	19	22.07	155	11.15	2.81	1.8	1.6	17	0	99	.08	2	.6	.5	11	SER	
		11	320	44.80	19	22.83	155	11.26	1.63		.3	12	1	125	.09	3	.9	.8	4	SER	
		11	322	7.15	19	21.75	155	11.53	3.11	1.5	1.0	10	0	124	.06	3	.6	.5	9	SER	
		11	322	54.05	19	22.38	155	11.03	2.65	1.5	1.1	11	0	98	.11	2	.7	.5	7	SER	
		11	338	55.91	19	20.86	155	11.83	2.05		1.0	5	0	235	.02	4	2.4	2.3	4	SER	
		11	346	23.97	19	22.32	155	11.25	2.68	1.5	.4	11	1	95	.06	3	.6	.4	5	SER	
		11	356	33.18	19	22.05	155	11.76	2.71	.6		11	0	109	.08	3	.4	.4	8	SER	
		11	4	1 44.59	19	22.47	155	12.36	3.17	.7		11	1	92	.10	1	.6	.3	3	SER	
		11	4	2 30.72	19	22.04	155	11.29	3.59	.8	.1	16	1	114	.07	3	.6	.5	8	SER	
		11	4	4 44.84	19	22.21	155	11.20	3.91	1.8	.9	19	1	107	.07	2	.6	.7	16	SER	
		11	4	5 57.08	19	20.67	155	12.05	2.45	.5	.2	10	0	198	.07	4	.8	.7	3	SER	
		11	4	6 18.71	19	20.59	155	10.62	9.55	1.7	1.0	21	1	123	.05	3	.7	1.1	15	SF3	
		11	429	12.15	19	21.79	155	12.16	2.19	.8	.2	13	1	113	.11	2	.4	.5	7	SER	
		11	445	12.74	19	22.00	155	11.61	2.90	.8	.5	11	0	113	.06	3	.4	.4	8	SER	
		11	528	23.50	19	21.80	155	11.67	2.37	.6	.3	8	0	119	.06	3	.5	.7	5	SER	
		11	528	23.53	19	21.75	155	11.56	2.42	.6	.3	11	0	122	.11	3	.5	.7	5	SER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	MAR	11	534	55.93	19	22.19	155	11.41	2.86	1.0	.6	13	1	96	.07	3	.6	.4	7	SER
		11	546	19.39	19	21.89	155	11.31	2.61	1.5	.8	15	1	121	.05	3	.5	.4	9	SER
		11	548	58.16	19	18.61	155	13.36	7.95	1.1	.7	15	0	129	.04	3	.6	1.2	12	SF2
		11	6	3 23.85	19	21.58	155	6.27	7.27	1.9	1.3	30	2	84	.12	3	.5	.7	21	SF4
		11	7	4 .50	19	21.89	155	11.48	3.68	.7		8	0	170	.05	3	1.3	.7	4	SER
		11	7	4 16.35	19	21.54	155	12.61	2.63	1.0	.1	12	0	113	.06	2	.3	.5	8	SER
		11	7	8 17.96	19	22.08	155	11.56	2.14	1.5	.6	17	1	110	.06	3	.4	.3	8	SER
		11	714	42.47	19	21.91	155	11.44	3.22	1.5	.4	9	1	169	.04	3	1.0	.6	7	SER
		11	8	0 33.41	19	22.06	155	12.30	1.90		.3	7	0	125	.09	2	.8	.6	7	SER
		11	8	4 48.41	19	23.34	155	12.52	8.13		.7	8	0	101	.07	2	.9	1.9	7	SF2
		11	811	32.00	19	21.87	155	12.32	2.04		.5	8	0	108	.10	2	.6	.8	8	SER
		11	826	9.42	19	21.64	155	12.85	2.61	.8		12	1	107	.06	2	.4	.6	6	SER
		11	831	19.53	19	22.65	155	14.15	1.49	1.5	1.5	16	1	75	.07	2	.3	.4	12	SEC
		11	833	58.27	19	22.07	155	11.36	3.06	1.0	.6	13	0	112	.06	3	.6	.5	9	SER
		11	834	35.84	19	21.69	155	12.92	2.59	.9	.4	11	0	105	.03	2	.5	.6	9	SER
		11	855	9.90	19	21.65	155	11.76	1.86			9	1	123	.08	3	1.1	.5	3	SER
		11	859	51.06	19	21.73	155	11.30	1.68		.1	10	1	128	.04	3	.5	.4	4	SER
		11	9	3 56.53	19	21.77	155	13.11	3.13	.7		7	1	164	.02	2	.7	.6	5	SER
		11	9	6 15.79	19	21.80	155	12.37	2.46	.8	.1	9	0	115	.07	2	.5	.6	7	SER
		11	9	6 59.62	19	21.52	155	12.72	2.44	1.0	.8	12	1	111	.03	2	.3	.5	6	SER
		11	918	20.66	19	21.70	155	12.54	3.20	2.0	1.7	19	1	72	.03	2	.3	.5	15	SER
		11	930	59.61	19	21.52	155	12.73	1.24	.7		9	1	111	.05	2	.6	.8	4	SER
		11	947	34.55	19	20.35	155	13.29	3.64	.8	.6	8	1	178	.09	4	1.0	1.9	0	SSF
		11	1013	35.08	19	20.28	155	12.57	2.03	.6		5	0	214	.03	4	.8	1.4	3	SSF
		11	1029	50.34	19	21.70	155	12.21	1.97	.7	.4	10	2	115	.05	2	.4	.5	4	SER
		11	1032	43.12	19	21.82	155	12.97	3.08	.7	.1	7	1	101	.02	2	.5	.6	4	SER
		11	1034	37.95	19	21.68	155	12.96	2.67	.8		9	0	104	.03	2	.4	.6	6	SER
		11	1043	7.04	19	20.15	155	12.89	8.06	1.1	.2	14	2	134	.05	5	.6	1.5	10	SF2
		11	1052	42.80	19	21.97	155	11.90	3.60	.8	.2	8	1	110	.05	4	1.0	2.0	3	SER
		11	11	0 6.64	19	21.74	155	12.37	1.97	.7		8	2	114	.04	2	.4	.5	5	SER
		11	11	7 8.48	19	21.76	155	12.24	1.98	.6		8	1	112	.05	2	.6	.3	3	SER
		11	1117	5.09	19	21.77	155	12.94	2.75	.9	.6	15	1	102	.05	2	.5	.4	6	SER
		11	1122	27.80	19	21.68	155	13.03	2.83	1.0	.7	16	1	103	.07	2	.4	.5	13	SER
		11	1130	45.34	19	21.64	155	11.62	3.00	.7	.7	9	0	126	.04	3	.7	.5	3	SER
		11	1139	54.25	19	21.71	155	12.52	2.23	.5		8	2	169	.05	2	.7	.4	4	SER
		11	1140	24.09	19	22.72	155	13.75	.27			6	0	133	.03	1	.4	.9	4	SER
		11	12	1 46.74	19	21.94	155	12.30	2.12	.5		8	0	151	.07	2	.7	.4	5	SER
		11	12	2 2.22	19	18.25	155	11.87	7.64	1.2	.3	11	1	184	.05	4	.8	1.5	5	SF3
		11	12	5 7.48	19	21.66	155	12.44	2.93	.7	.4	11	0	112	.10	2	.5	.5	6	SER
		11	12	8 44.48	19	21.86	155	12.94	2.91	.6		6	1	162	.03	1	.7	.5	5	SER
		11	1237	18.21	19	22.08	155	11.60	6.27	1.1	.3	9	0	123	.07	3	.8	2.6	5	SF3
		11	1239	42.27	19	23.04	155	11.13	1.47			6	1	174	.07	3	2.8	2.3	2	SER
		11	1242	5.67	19	20.80	155	11.61	3.45			5	0	153	.00	4	.9	1.5	2	SER
		11	1242	14.24	19	22.37	155	11.36	1.61			7	1	152	.05	3	.8	.5	4	SER
		11	1244	43.72	19	20.36	155	11.48	2.01		.7	5	0	266	.01	4	7.1	4.3	3	SSF
		11	1245	16.68	19	21.65	155	12.25	2.23	.6	.5	5	1	174	.01	2	.8	.5	4	SER
		11	1245	44.43	19	18.46	155	10.75	9.38		.4	9	0	240	.09	7	2.2	2.9	6	SF3
		11	1246	34.44	19	22.10	155	10.94	3.11		.6	11	0	114	.03	2	1.1	.4	4	SER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	11	1255	18.51	19	23.16	155	11.84	1.58			7	1	177	.04	2	.6	.4	3	SER	
		11	1256	26.60	19	23.95	155	10.95	.01			9	0	124	.23	4	.9	2.8	5	SER	*
		11	1258	2.62	19	22.79	155	13.00	3.53		.6	8	0	111	.04	0	1.5	.5	4	SER	
		11	13 2	46.97	19	21.85	155	13.03	2.91		.6	10	0	148	.03	1	.7	.5	7	SER	
		11	1313	45.57	19	19.64	155	6.39	8.40		1.6	17	0	188	.04	6	.8	1.5	10	SF4	
		11	1320	32.75	19	21.53	155	12.58	2.73			8	1	113	.04	2	.7	.4	3	SER	
		11	1328	38.65	19	21.66	155	12.38	2.32	.7		6	1	113	.02	2	.9	.4	3	SER	
		11	1333	9.06	19	24.23	155	10.22	9.08		.3	5	0	206	.03	4	3.6	4.3	2	SF3	
		11	1333	49.39	19	21.81	155	12.79	3.12		.9	8	0	165	.02	2	.8	.4	4	SER	
		11	1336	45.19	19	22.38	155	8.61	22.45		.4	5	1	181	.03	2	8.2	2.1	1	DEP	
		11	1339	6.14	19	20.40	155	12.90	1.48		.6	10	0	122	.05	4	.5	1.2	3	SSF	
		11	1342	24.51	19	21.35	155	12.33	1.54		.4	8	1	121	.06	3	.4	.8	6	SER	
		11	1347	46.66	19	19.27	155	12.93	.00	1.0		8	0	134	.17	4	.6	2.7	5	SSF	*
		11	1357	54.24	19	22.78	155	11.92	1.70		1.2	8	0	159	.06	2	1.1	.4	2	SER	
		11	1359	12.35	19	21.76	155	12.48	1.46		1.5	8	0	113	.03	2	.6	.6	4	SER	
		11	14 0	47.65	19	21.94	155	12.16	2.24		.2	5	0	164	.03	2	1.3	.5	2	SER	
		11	14 4	45.71	19	20.58	155	12.70	2.07			4	0	148	.00	4	1.0	1.3	3	SER	
		11	14 6	.67	19	21.85	155	12.34	2.63		.1	6	1	196	.02	2	1.6	.4	1	SER	
		11	14 6	28.42	19	22.08	155	11.67	2.82			7	2	185	.02	3	2.3	.7	2	SER	
		11	1415	14.35	19	21.61	155	12.66	2.76			8	2	172	.06	2	.9	.5	4	SER	
		11	1421	32.72	19	21.62	155	12.61	2.91		1.3	14	2	110	.03	2	.4	.5	10	SER	
		11	1426	49.25	19	20.27	155	13.03	1.38			5	2	286	.04	4	1.2	1.0	3	SSF	
		11	1429	45.06	19	21.73	155	13.01	2.82			7	2	166	.04	2	.9	.4	2	SER	
		11	1431	12.66	19	21.99	155	13.66	2.00			8	3	155	.08	2	.4	.4	0	SER	
		11	1434	2.16	19	21.95	155	12.26	2.08			7	2	163	.05	2	1.0	.5	3	SER	
		11	1441	46.21	19	22.22	155	11.63	2.63		.2	6	1	154	.02	3	1.9	.7	3	SER	
		11	1456	12.81	19	21.75	155	12.37	2.15		.5	12	1	156	.04	2	.5	.3	5	SER	
		11	1523	2.38	19	18.71	155	13.42	7.57	1.2		13	0	126	.04	3	.7	1.6	9	SF2	
		11	1524	2.10	19	20.64	155	15.99	.00		.5	7	1	195	.11	3	.6	.8	0	KOA	*
		11	1531	17.58	19	21.96	155	12.30	1.85			6	2	163	.03	2	.6	.4	2	SER	
		11	1536	43.03	19	24.67	155	12.07	.01			6	1	230	.06	4	.3	.8	0	SER	*
		11	1547	57.18	19	22.71	155	14.28	2.72			9	2	127	.11	2	.8	.4	2	SEC	
		11	1554	22.52	19	21.58	155	12.52	1.07		.7	7	2	174	.01	2	.5	.7	5	SER	
		11	1622	36.53	19	23.24	155	14.79	2.49		1.0	10	1	88	.09	3	.5	.7	3	SEC	*
		11	1623	4.28	19	21.33	155	13.40	2.35		.3	5	1	218	.00	2	1.2	.8	1	SER	
		11	1624	7.29	19	21.95	155	12.12	1.96			6	2	163	.04	2	1.4	.5	3	SER	
		11	1625	28.43	19	21.62	155	12.42	2.11		.4	11	1	160	.06	2	.6	.5	6	SER	
		11	1628	33.38	19	22.85	155	14.24	.98	1.5	1.5	14	1	81	.12	2	.4	.4	9	SEC	
		11	1633	30.54	19	22.55	155	14.13	1.46	.7	1.1	9	0	136	.05	2	.4	.4	6	SEC	
		11	1636	7.53	19	21.72	155	12.39	2.26	1.0	.5	9	0	112	.04	2	.4	.6	7	SER	
		11	1654	47.99	19	22.11	155	12.37	2.44	.6	.2	8	1	126	.09	2	.8	.6	4	SER	
		11	17 5	28.81	19	22.76	155	13.33	4.29	.8	.2	7	2	127	.02	1	.8	.6	3	SER	
		11	1713	26.58	19	21.73	155	12.17	2.37			10	1	115	.02	2	.5	.5	6	SER	
		11	1725	13.92	19	22.03	155	11.66	2.43		.2	10	0	113	.06	3	.9	.5	4	SER	
		11	1741	18.74	19	21.52	155	14.59	7.80			6	0	160	.05	3	2.7	1.4	2	SF1	
		11	1742	27.60	19	22.98	155	11.32	2.29	.9	.7	9	1	121	.09	3	1.5	1.1	5	SER	
		11	1759	45.63	19	21.66	155	12.37	2.08		.5	9	1	113	.04	2	.5	.4	3	SER	
		11	1813	8.94	19	21.51	155	12.39	1.76	.9	.8	14	0	117	.08	2	.4	.6	9	SER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	11	1822	.01	19	22.00	155	10.92	4.36		.7	15	1	120	.09	2	.6	.7	7	SER	
		11	1832	53.34	19	22.12	155	13.27	2.96	.7	.2	12	1	152	.07	1	.5	.3	4	SER	
		11	1838	25.92	19	21.70	155	12.38	2.25	.7		10	1	112	.06	2	.5	.5	5	SER	
		11	1840	13.68	19	21.33	155	12.36	2.07	.5		8	1	122	.04	3	.5	.7	3	SER	
		11	1840	49.06	19	22.38	155	11.58	3.11			6	1	147	.04	3	1.8	1.2	4	SER	
		11	1841	42.58	19	21.45	155	12.66	2.36	.8	.2	14	2	113	.05	2	.4	.5	4	SER	
		11	1851	20.25	19	22.78	155	13.59	3.00	.9	.7	14	1	71	.11	1	.4	.3	8	SER	
		11	1855	54.44	19	20.32	155	13.48	.51			6	0	117	.05	4	.5	1.8	3	SSF	
		11	1858	33.18	19	21.64	155	13.66	1.46	1.3	1.7	13	1	94	.04	2	.3	.6	12	SER	
		11	19 5	35.39	19	22.17	155	12.11	2.05			6	1	156	.02	2	.9	.4	2	SER	
		11	19 8	42.58	19	21.80	155	12.18	1.88	.7	.2	8	2	112	.04	2	.4	.5	5	SER	
		11	19 9	19.87	19	21.31	155	13.01	.42			7	2	179	.10	2	.4	.8	3	SER	
		11	1926	52.04	19	21.53	155	12.48	2.18	.6		7	1	115	.07	2	.6	.7	4	SER	
		11	1945	5.37	19	15.33	155	11.29	5.28		.9	6	0	299	.16	13	10.6	39.5	0	SF3	*
		11	20 5	33.96	19	22.69	155	10.64	2.03		.4	7	1	175	.07	4	3.2	1.2	1	SER	
		11	2010	53.95	19	21.67	155	12.20	2.95			8	1	173	.02	2	1.4	.5	3	SER	
		11	2012	11.90	19	23.21	155	12.41	2.09			7	1	142	.06	2	.7	.5	2	SER	
		11	2017	39.61	19	19.37	155	11.49	7.59		.9	16	1	167	.05	6	.6	1.1	9	SF3	
		11	2026	29.77	19	21.62	155	12.10	3.35		.4	9	1	118	.07	3	.5	.9	6	SER	
		11	2028	30.81	19	19.68	155	12.38	6.73		.7	10	1	214	.05	6	.9	1.8	4	SF2	
		11	2029	28.90	19	22.72	155	14.91	1.46	2.2	2.5	18	2	69	.06	2	.3	.2	3	SEC	
		11	2033	19.35	19	22.28	155	14.68	1.58		1.0	9	1	129	.02	2	.5	.4	3	SEC	
		11	2039	4.48	19	22.92	155	14.96	1.32		1.0	7	2	121	.03	2	.7	.5	3	SEC	
		11	2043	17.50	19	21.66	155	13.80	1.41		1.8	14	1	93	.05	2	.3	.6	8	SER	
		11	2044	45.30	19	21.59	155	13.76	1.15	1.6	.9	9	0	150	.03	2	.5	.8	5	SER	
		11	2045	50.60	19	23.44	155	3.84	5.18		.6	10	0	249	.08	2	4.3	1.1	4	SF5	
		11	2053	15.13	19	22.11	155	13.90	2.65			7	2	183	.13	2	1.0	.8	0	SER	
		11	2053	24.10	19	23.37	155	13.28	3.69			7	2	148	.03	1	1.0	.5	1	SER	
		11	2057	45.36	19	21.19	155	11.81	3.43		.4	6	1	257	.03	3	4.0	1.0	3	SER	
		11	2117	59.68	19	21.88	155	13.04	2.89		.6	9	1	148	.03	1	.7	.3	5	SER	
		11	2122	55.09	19	21.69	155	13.23	2.77	1.7	1.7	15	0	72	.07	2	.7	.5	8	SER	
		11	2123	54.72	19	23.11	155	11.87	.53	1.9	1.9	18	2	174	.13	2	.5	.7	11	SER	
		11	2125	52.01	19	21.86	155	13.01	2.96		1.2	16	0	100	.06	1	.5	.3	9	SER	
		11	2126	14.39	19	22.03	155	13.15	5.37	1.9	1.7	18	1	51	.09	1	.5	1.3	11	SF2	
		11	2127	15.99	19	21.85	155	13.10	3.29	1.9	1.7	18	0	96	.07	5	.5	1.0	9	SER	
		11	2127	59.00	19	22.00	155	13.21	3.07	1.8	1.8	19	0	50	.07	1	.5	.3	9	SER	
		11	2129	1.91	19	22.12	155	13.01	3.44	1.4	1.3	13	1	94	.12	1	.5	1.1	5	SER	
		11	2130	11.41	19	21.91	155	13.13	3.02			6	1	160	.03	1	1.2	.5	2	SER	
		11	2132	20.79	19	21.79	155	13.11	2.99	.8		6	1	163	.02	2	.9	.5	4	SER	
		11	2132	45.84	19	21.80	155	13.11	3.05		.2	8	0	163	.02	2	.6	.6	5	SER	
		11	2132	58.20	19	21.90	155	13.12	2.85		.2	10	0	146	.05	1	.6	.4	5	SER	
		11	2133	13.44	19	22.30	155	12.95	3.10		.5	9	1	138	.07	1	.7	.4	5	SER	
		11	2133	26.87	19	21.79	155	12.99	2.60	2.3	2.3	22	1	54	.09	2	.3	.4	18	SER	
		11	2134	24.83	19	22.39	155	12.57	2.65		.1	6	1	147	.03	1	1.3	.4	3	SER	
		11	2134	49.08	19	21.93	155	13.11	2.57	.6	.1	13	2	159	.08	1	.5	.3	6	SER	
		11	2135	14.42	19	23.42	155	12.00	.32		.1	7	1	183	.04	2	.4	.9	1	SER	
		11	2135	46.78	19	22.39	155	13.09	3.23			7	1	145	.10	0	1.0	.5	2	SER	
		11	2136	5.85	19	22.13	155	13.08	2.62	.8		13	1	94	.09	1	.5	.3	8	SER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	11	2136	16.94	19	22.88	155	13.52	1.29	.5	.2	9	1	111	.14	1	.6	.2	6	SER	
		11	2137	25.17	19	21.95	155	13.09	2.65	1.4	1.1	16	1	98	.11	1	.4	.4	10	SER	
		11	2138	22.66	19	22.64	155	12.77	2.77	.9	.6	10	2	139	.11	1	1.1	.4	4	SER	
		11	2138	57.43	19	21.70	155	13.09	2.51	1.7	1.8	15	1	78	.08	2	.4	.5	13	SER	
		11	2139	56.90	19	22.02	155	13.06	4.97	1.7	1.9	17	1	96	.09	1	.6	.9	13	SER	
		11	2140	35.25	19	21.83	155	13.06	2.46	1.0	.7	14	1	100	.10	1	.5	.5	9	SER	
		11	2141	2.75	19	21.62	155	12.96	2.17	1.2	1.0	16	1	105	.09	2	.5	.7	8	SER	
		11	2141	54.59	19	21.73	155	13.03	2.51	1.4	1.6	17	2	102	.09	2	.4	.4	14	SER	
		11	2143	22.10	19	30.95	155	6.41	3.66	1.5		6	0	331	.11	18	32.9	77.5	4	GLN	*
		11	2143	41.96	19	21.35	155	13.00	2.65	.6		8	1	110	.06	2	.8	.9	5	SER	
		11	2143	59.82	19	21.95	155	12.88	2.82	.9	1.4	14	1	100	.08	1	.4	.4	9	SER	
		11	2144	35.39	19	22.24	155	12.83	7.92	1.3		13	1	94	.17	1	1.3	1.8	5	SF2	
		11	2144	40.31	19	21.95	155	12.85	2.98	2.3	2.2	29	3	53	.07	1	.3	.4	18	SER	
		11	2146	33.58	19	22.07	155	13.06	2.50	1.0	.8	15	1	95	.10	1	.5	.3	9	SER	
		11	2147	46.71	19	21.96	155	13.01	2.45	1.1	1.2	8	1	97	.10	1	.6	.4	6	SER	
		11	2148	14.53	19	21.72	155	12.82	2.99	2.1	1.7	19	1	105	.06	2	.3	.5	17	SER	
		11	2149	24.21	19	22.48	155	13.75	1.48		.9	10	1	141	.11	1	.4	.3	8	SER	
		11	2149	59.69	19	21.81	155	12.99	2.49	.8		10	1	101	.05	2	.4	.4	6	SER	
		11	2150	5.09	19	21.96	155	12.90	2.88	2.0	1.9	18	1	85	.07	1	.4	.3	10	SER	
		11	2150	51.15	19	21.90	155	12.92	1.57		1.3	17	2	101	.07	1	.4	.3	10	SER	
		11	2151	32.62	19	21.52	155	12.57	2.61	.7		12	2	113	.05	2	.3	.5	6	SER	
		11	2151	47.42	19	20.11	155	13.93	.88		.3	6	0	208	.01	5	1.1	2.3	3	SSF	
		11	2152	36.85	19	21.85	155	12.82	2.75	.9		10	1	103	.02	2	.5	.4	5	SER	
		11	2152	55.62	19	21.83	155	13.01	.01	.9	.2	8	1	149	.12	1	.6	1.1	6	SER	*
		11	2152	56.11	19	21.87	155	12.97	2.69			7	2	162	.02	1	.6	.5	5	SER	
		11	2154	6.94	19	22.01	155	12.77	2.84	.6		7	1	159	.03	1	.8	.5	4	SER	
		11	2154	49.35	19	21.87	155	13.02	2.77	2.1	2.2	23	2	52	.07	1	.3	.4	18	SER	
		11	2159	44.46	19	21.56	155	13.17	2.57	.8	.8	16	2	104	.06	2	.4	.5	8	SER	
		11	22	5 36.80	19	22.06	155	10.40	4.79	1.1	.5	7	0	178	.11	5	1.8	3.1	7	SER	
		11	22	7 12.72	19	21.48	155	12.96	2.18	.9	.4	15	2	109	.10	2	.4	.6	8	SER	
		11	2211	.55	19	21.75	155	13.39	2.62	.8	.6	16	2	97	.09	2	.4	.5	11	SER	
		11	2218	54.38	19	21.59	155	12.60	2.75			10	1	112	.05	2	.5	.5	4	SER	
		11	2233	59.51	19	21.63	155	13.82	1.42	.6	.5	13	1	92	.06	2	.3	.6	10	SER	
		11	2235	32.63	19	22.61	155	15.10	1.86		.5	5	0	202	.02	1	1.4	.4	2	SEC	
		11	2238	3.92	19	22.79	155	9.85	10.55			7	0	151	.03	1	.8	2.3	4	SF3	
		11	2259	48.96	19	21.90	155	12.36	2.42	.8	.5	13	2	106	.05	2	.5	.4	6	SER	
		11	2355	12.00	19	18.84	155	15.34	8.15		1.2	15	2	120	.04	4	.6	1.2	11	SF1	
		12	0	4 34.74	19	21.88	155	12.36	2.41	.6	.2	6	1	165	.01	2	1.4	.8	5	SER	
		12	016	54.46	19	22.70	155	14.96	1.23	2.1	2.5	18	1	95	.06	2	.3	.3	13	SEC	
		12	036	34.03	19	21.53	155	12.60	2.55	.7	.4	11	2	113	.06	2	.4	.5	6	SER	
		12	042	42.30	19	22.55	155	12.05	2.07	.7	.9	6	2	188	.03	2	3.6	.7	4	SER	
		12	046	33.81	19	21.66	155	12.19	1.99	.6	.3	9	2	116	.04	2	.6	.7	6	SER	
		12	130	.33	19	17.46	155	12.54	6.14	1.5	1.0	16	1	197	.08	2	1.1	1.4	10	SF2	
		12	141	22.34	19	22.29	155	14.70	1.42	1.7	2.3	17	1	75	.06	2	.2	.4	12	SEC	
		12	2	4 45.34	19	21.73	155	12.53	2.84			7	2	169	.01	2	.7	.5	4	SER	
		12	212	27.87	19	19.96	155	11.20	9.38		.8	14	1	162	.04	5	.7	1.4	9	SF3	
		12	241	25.13	19	21.83	155	12.40	2.31	.9	.9	16	1	108	.06	2	.4	.4	12	SER	
		12	257	52.71	19	21.51	155	14.18	1.92	3.9	4.5	35	0	57	.13	3	.2	.5	33	KOA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	12	3 1	.93	19	21.31	155	14.24	2.09	1.3	.4	13	2	91	.07	3	.3	.8	9	KOA	
		12	3 1	24.26	19	21.20	155	15.28	1.98		1.0	13	2	77	.05	2	.3	.6	9	KOA	
		12	3 5	30.76	19	21.92	155	13.87	1.66	1.0		12	2	88	.08	2	.4	.5	8	SER	
		12	3 9	43.74	19	22.18	155	13.98	1.58	.6		9	1	147	.12	2	.4	.5	5	SER	
		12	312	6.70	19	21.74	155	13.93	1.69		.7	8	0	145	.02	2	.7	.7	5	SER	
		12	313	35.56	19	22.30	155	12.04	2.14		.4	7	1	140	.02	2	.9	.4	3	SER	
		12	314	32.45	19	21.26	155	14.47	1.98	2.3	2.1	24	0	63	.06	3	.2	.5	19	KOA	
		12	315	51.58	19	21.24	155	15.52	1.99		.6	11	2	163	.19	2	.7	1.0	4	KOA	
		12	316	10.88	19	21.02	155	14.97	.35			8	2	201	.05	3	.3	.8	1	KOA	
		12	346	25.45	19	21.72	155	13.76	1.61		.4	12	2	147	.07	2	.4	.6	1	SER	
		12	354	.35	19	17.24	155	12.45	6.60		.7	16	1	213	.08	2	1.2	1.2	4	SF2	
		12	4 3	3.18	19	20.77	155	16.06	1.09	1.7	1.8	11	2	90	.07	3	.4	.7	1	KOA	
		12	448	21.66	19	18.63	155	15.16	8.79		1.1	16	1	125	.05	4	.8	1.4	10	SF1	
		12	510	2.11	19	21.65	155	13.69	1.15	.8	1.0	16	0	94	.06	2	.3	.5	13	SER	
		12	519	20.87	19	22.11	155	11.14	2.88		1.2	9	1	160	.06	2	1.7	.5	4	SER	
		12	646	17.91	19	21.38	155	12.43	1.78		.2	7	1	166	.02	3	1.6	2.0	1	SER	
		12	731	14.28	19	19.97	155	11.71	8.83		.8	13	1	151	.03	5	.7	1.7	7	SF3	
		12	758	20.76	19	21.34	155	15.96	1.27		.8	9	1	87	.08	2	.3	.5	0	KOA	
		12	8 1	59.96	19	20.68	155	15.84	1.32	1.3	1.7	10	0	95	.10	3	.4	.7	9	KOA	
		12	828	10.32	19	21.20	155	11.86	2.06		.4	6	1	129	.05	3	.5	.9	5	SER	
		12	9 8	55.72	19	20.53	155	6.14	6.84	1.2	.8	11	0	143	.07	5	.9	2.0	11	SF4	
		12	918	16.29	19	21.62	155	12.67	2.92	1.9	1.8	17	1	89	.07	2	.3	.6	14	SER	
		12	12 0	13.06	19	19.58	155	15.61	8.14	2.4	2.6	31	1	88	.12	3	.5	.8	28	SF1	
		12	1538	2.22	19	18.37	155	12.75	10.00	1.2	.3	16	1	171	.06	3	1.0	1.8	13	SF2	
		12	16 8	55.46	19	20.14	155	8.17	8.63	1.9	2.2	31	0	83	.06	5	.4	.6	25	SF4	
		12	1628	35.87	19	19.56	155	10.63	8.36	1.6	.6	15	1	209	.06	5	1.1	1.5	9	SF3	
		12	18 9	13.33	19	26.40	155	24.27	8.09	2.1	1.8	33	2	51	.12	3	.4	.9	29	KAO	
		12	1942	24.86	19	16.32	155	12.10	7.80		1.3	14	1	245	.07	11	1.2	2.7	11	SF3	
		12	1947	33.69	19	18.56	155	15.78	6.02	1.0	.7	15	1	134	.10	4	.6	1.5	13	SF1	
		12	2151	54.23	19	20.33	155	9.24	8.28	1.4	1.1	17	0	74	.05	3	.6	1.2	17	SF3	
		12	23 5	10.04	19	20.77	155	16.26	1.48	1.9	2.4	23	4	75	.07	2	.2	.4	19	KOA	
		13	043	7.80	19	21.70	155	12.72	3.07	1.0	.7	11	1	107	.04	2	.6	.5	9	SER	
		13	611	37.66	19	18.89	155	13.23	7.92	1.5	1.7	26	1	80	.12	3	.6	.9	23	SF2	
		13	734	13.32	19	18.02	155	13.00	9.36	1.8	1.8	30	2	142	.10	9	.6	.8	22	SF2	
		13	9 9	29.01	19	21.00	155	16.87	1.69	1.2	1.3	16	3	75	.04	2	.3	.4	12	KOA	
		13	911	43.48	19	18.79	155	13.52	9.83	2.8	2.5	38	0	73	.10	3	.5	.4	37	SF2	
		13	1012	19.14	19	20.52	155	11.93	9.56	1.7	1.3	23	2	109	.07	4	.6	.9	19	SF3	
		13	1134	40.22	19	20.48	155	5.82	8.90	2.0	1.3	20	0	144	.08	5	.9	1.3	19	SF4	
		13	1316	45.65	19	21.69	155	12.62	2.91	1.4	1.0	13	0	109	.05	2	.4	.6	12	SER	
		13	1558	35.71	19	20.49	155	13.33	9.03	1.6	1.1	18	1	114	.06	4	.6	1.1	16	SF2	
		13	16 8	49.01	19	20.64	155	6.31	8.17	1.9	1.6	20	1	140	.07	4	.7	1.1	19	SF4	
		13	2221	19.68	19	19.61	155	7.83	8.38	1.9	1.6	21	2	159	.06	6	.8	1.2	19	SF4	
		13	2348	43.04	19	15.77	155	12.43	6.15	1.4	1.1	15	1	250	.07	12	1.3	3.6	11	SF2	
		14	3 6	1.76	19	18.60	155	13.55	8.72	1.4	1.1	16	1	119	.06	3	.6	1.2	10	SF2	
		14	416	23.98	19	20.77	155	16.12	1.47	.4	.8	11	1	164	.05	3	.7	.4	7	KOA	
		14	639	23.11	19	20.52	155	9.84	8.26	1.8	1.7	21	2	130	.06	7	.6	1.1	17	SF3	
		14	930	35.26	19	18.45	155	13.83	8.13		1.1	18	0	109	.05	3	.6	1.3	14	SF2	
		14	1017	29.33	19	18.96	155	15.60	8.11	1.6	1.6	28	1	118	.05	4	.4	.8	16	SF1	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	14	22 4	8.22	19	20.90	155	6.22	8.26	3.0	3.1	37	2	98	.09	4	.4	.6	24	SF4	
		15	113	41.23	19	20.41	155	17.24	1.84	1.3	1.4	12	0	75	.06	1	.4	.2	5	SWR	
		15	542	9.93	19	26.05	155	23.83	11.59	3.2	2.7	35	0	49	.09	3	.4	.7	25	KAO	
		15	1316	58.86	19	28.53	154	52.51	1.25	2.4	1.2	9	0	309	.09	5	11.8	13.2	1	SLE	*
		16	215	36.44	19	18.00	155	21.11	3.06	1.6	1.1	16	1	155	.06	4	.7	.5	8	SWR	
		16	537	54.48	19	20.14	155	12.96	9.03	1.6	1.3	21	1	124	.04	5	.5	1.1	13	SF2	
		16	1017	30.48	19	19.02	155	16.20	7.89	1.9	2.1	33	2	119	.05	3	.3	.6	14	SF1	
		16	1032	32.37	19	19.89	155	12.96	7.71	2.1	2.5	34	1	72	.08	5	.4	.8	19	SF2	
		16	12 5	56.64	19	18.32	155	27.11	8.97	1.9	1.6	20	0	127	.07	8	.4	.9	9	LSW	
		16	1446	31.87	19	29.14	155	42.63	9.23		1.2	16	1	236	.10	12	2.0	1.4	3	MLO	
		16	1454	30.95	19	20.76	155	6.40	7.67	2.2	2.6	29	1	137	.08	4	.5	.8	10	SF4	
		17	155	44.46	19	33.73	155	54.32	14.28		1.7	7	0	196	.11	8	2.4	1.6	2	KON	
		17	256	59.92	19	20.39	155	9.31	7.18		1.6	26	0	97	.09	3	.6	.7	10	SF3	
		17	825	30.51	19	16.06	155	11.79	4.69		1.3	12	0	271	.04	12	2.4	13.5	5	SSF	*
		17	942	54.21	19	25.84	155	24.10	8.90	1.9	1.7	27	2	48	.10	2	.4	.9	24	KAO	
		17	1141	29.91	19	21.05	155	14.20	33.11	2.3	2.1	38	4	58	.08	4	.6	.9	32	DEP	
		17	1156	26.43	19	21.07	155	5.85	8.89	2.3	2.5	30	2	97	.08	4	.5	.9	26	SF4	
		17	1431	36.43	19	18.06	155	15.56	7.91	1.5	1.3	21	2	152	.05	4	.6	1.1	16	SF1	
		17	2337	56.37	19	21.93	155	2.81	8.19	1.9	1.8	15	0	132	.08	4	.7	1.2	14	SF5	
		18	219	27.61	19	19.47	155	12.14	7.77	1.8	1.3	17	2	153	.04	5	.6	1.1	14	SF3	
		18	324	.74	19	19.56	155	6.06	5.55	1.5	1.3	15	1	168	.10	6	1.0	2.3	9	SF4	*
		18	1015	25.72	19	22.07	155	16.34	30.64	2.1	1.4	28	3	58	.06	1	.6	1.2	21	DEP	
		18	1029	3.07	19	26.66	155	22.82	4.79	1.9	1.7	19	0	80	.10	4	.4	1.4	17	KAO	
		18	2042	28.53	19	20.17	155	8.64	9.28	1.7	1.3	20	2	144	.06	4	.8	1.1	15	SF4	
		19	612	25.68	19	17.99	155	12.79	9.93	2.6	2.7	33	1	143	.09	9	.5	.5	28	SF2	
		19	1317	10.87	19	22.66	155	2.58	7.20	1.9	1.3	18	2	169	.13	5	.9	1.2	14	SF5	
		19	1552	41.10	19	19.49	155	15.22	8.44	1.3	1.1	20	2	100	.04	4	.5	1.0	17	SF1	
		19	1649	40.73	19	26.17	155	23.93	6.61	2.2	2.4	32	2	49	.13	3	.4	1.0	29	KAO	
		20	158	35.76	19	17.72	155	14.91	8.03	1.4	1.1	16	0	159	.03	3	.7	1.2	13	SF1	
		20	212	11.43	19	23.74	155	24.58	9.43	1.6	.9	25	2	74	.06	3	.4	.8	21	KAO	
		20	240	52.51	19	19.59	155	12.07	8.50	1.5	1.1	20	2	150	.06	5	.6	1.0	13	SF3	
		20	1930	55.10	19	19.19	155	11.44	9.53	2.6	2.9	35	0	103	.08	5	.4	.4	31	SF3	
		21	746	39.84	19	31.56	156	1.83	13.45	3.3	2.8	25	0	232	.12	13	1.9	.5	17	KON	F
		21	1256	20.21	19	46.26	155	32.32	15.00	3.7	3.5	40	2	89	.10	9	.5	.6	36	KEA	F
		21	1417	45.67	19	19.10	155	11.94	8.15	2.8	2.9	33	1	101	.11	5	.5	.7	31	SF3	F
		21	1442	18.17	19	25.88	155	24.17	9.54	2.0	2.1	30	3	48	.10	2	.4	.9	26	KAO	
		21	1552	45.22	19	25.78	155	24.07	8.89	2.8	2.8	38	3	42	.12	2	.4	.7	33	KAO	
		22	1 9	53.53	19	26.52	155	23.61	10.70	3.3	3.1	42	2	46	.10	4	.3	.5	36	KAO	F
		22	444	.14	19	21.67	155	6.50	8.59	1.7	1.4	18	0	118	.07	3	.7	1.3	16	SF4	
		22	852	34.68	19	20.59	155	12.95	9.71	1.6	1.4	21	2	119	.07	4	.6	1.0	17	SF2	
		22	1339	3.89	19	30.65	155	16.16	8.90	1.9	1.2	30	1	59	.11	10	.4	1.2	21	GLN	
		22	1552	57.18	19	24.59	155	24.88	10.15	1.7	1.2	20	0	48	.09	1	.5	1.2	19	KAO	
		22	20 2	21.43	19	20.33	155	11.21	8.14	2.4	2.3	37	3	79	.09	4	.4	.5	30	SF3	
		22	2120	12.49	19	20.41	155	11.47	8.87	1.7	1.6	24	3	117	.06	4	.6	.9	17	SF3	
		23	511	31.07	19	17.55	155	12.80	7.54	1.8	1.1	18	1	139	.09	2	.7	1.0	16	SF2	
		23	1353	27.97	19	10.80	155	29.12	34.55	2.8	2.2	37	4	84	.06	3	.7	1.2	32	DLS	
		23	1951	34.46	19	48.35	156	5.77	36.79	2.5	1.7	28	0	294	.10	40	5.2	3.1	26	HUA	
		24	454	36.47	19	25.35	155	23.84	9.00	1.6	1.2	23	1	47	.09	2	.5	1.0	18	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAR	24	1014	16.30	19	22.52	155	27.34	10.31	2.6	2.1	34	1	63	.10	1	.4	.7	28	KAO	
		24	1526	29.68	19	20.37	155	6.48	8.05	2.3	2.3	35	2	108	.09	6	.5	.8	26	SF4	
		24	1549	8.34	19	19.07	155	10.83	8.04	1.8	1.4	18	1	183	.06	6	.7	1.3	16	SF3	
		24	18 1	9.11	19	18.50	155	15.22	8.12	1.7	1.3	19	2	130	.04	4	.6	1.2	14	SF1	
		24	1842	50.59	19	59.36	155	50.61	3.09	2.9	2.8	27	1	273	.10	47	1.9	1.4	19	KOH	
		24	1920	15.04	19	26.89	154	52.18	7.75	2.4	1.8	21	0	274	.14	4	2.5	.7	13	LER	
		25	235	33.76	20	1.45	155	49.60	5.15	2.8	2.1	22	0	193	.09	13	1.0	1.1	21	KOH	
		25	1916	31.75	19	59.15	155	50.61	4.84	4.0	3.5	35	3	193	.09	17	.7	.8	28	KOH	F
		26	1029	6.04	19	19.56	155	10.10	7.70	2.0	1.2	18	2	185	.08	5	.8	1.3	15	SF3	
		26	1056	40.08	19	41.95	155	10.39	29.43	3.4	2.5	37	1	168	.10	25	.7	2.2	35	KEA	
		26	1435	41.81	19	19.97	155	10.76	8.07	1.8	1.4	18	2	168	.05	4	.7	1.0	15	SF3	
		26	15 5	10.03	19	24.48	155	16.36	2.46	1.4	1.3	14	2	134	.07	1	.4	.3	11	SEC	
		26	1841	25.22	19	21.37	155	7.95	9.03	2.2	2.4	28	1	74	.06	4	.4	.6	25	SF4	
		26	1950	13.81	19	18.30	155	15.10	8.42	1.7	1.5	26	1	136	.08	4	.5	.8	22	SF1	
		26	2121	27.85	19	18.68	155	12.82	7.31	1.8	1.7	24	1	95	.09	3	.5	.9	20	SF2	
		27	054	16.28	19	21.30	155	6.10	7.89	1.9	1.3	19	1	90	.09	6	.5	1.1	18	SF4	
		27	433	52.72	19	26.84	155	30.03	7.50	1.9	1.2	19	0	94	.15	9	.7	2.3	17	KAO	
		27	729	58.18	19	20.16	155	13.09	8.40	1.5	1.2	16	2	129	.04	5	.6	1.5	13	SF2	
		27	830	27.74	19	19.92	155	8.15	7.70	1.8	1.6	25	1	116	.09	5	.5	.8	20	SF4	
		27	1249	36.45	19	21.07	155	2.17	7.36	2.3	1.5	24	1	168	.16	3	1.0	.8	20	SF5	
		27	1521	9.78	19	20.47	155	12.96	8.82	1.6	1.3	18	2	125	.06	4	.6	1.2	15	SF2	
		27	1736	8.93	19	19.78	155	10.32	9.00	1.8	1.4	17	0	178	.04	4	.8	1.2	15	SF3	
		27	2324	2.61	19	19.31	155	17.15	34.48	3.3	2.9	36	0	103	.10	2	.7	1.3	35	DEP	
		28	351	47.99	19	19.12	155	11.44	8.93	1.8	1.3	19	1	172	.06	5	.7	1.2	17	SF3	
		28	715	35.15	19	19.56	155	12.05	9.46	2.9	2.6	37	0	89	.11	5	.4	.4	31	SF3	
		28	720	12.84	19	19.44	155	12.34	6.61	1.7	1.1	19	1	118	.07	5	.6	1.3	18	SF2	
		28	832	3.02	19	23.99	155	28.18	9.31	3.1	2.8	37	1	31	.12	3	.4	.7	32	KAO	
		28	1932	30.12	19	18.72	155	16.07	8.48	1.5	1.1	19	1	129	.04	4	.5	1.1	14	SF1	
		28	2012	54.67	19	21.72	155	6.18	7.31	1.7	1.7	29	1	82	.11	6	.5	1.0	25	SF4	
		28	21 9	23.59	19	26.86	155	23.33	4.19	1.3	1.1	14	0	73	.07	4	.4	1.2	12	KAO	
		29	5 5	34.98	19	20.53	155	12.54	8.44	1.9	1.7	28	2	68	.11	4	.5	.7	24	SF2	
		30	1022	19.02	19	20.64	155	9.51	8.07	1.8	1.7	30	2	71	.07	3	.4	.8	25	SF3	
		30	1733	39.93	19	19.93	155	11.55	9.67	1.8	1.4	18	0	156	.06	5	.7	1.3	16	SF3	
		31	030	39.97	19	23.02	155	14.88	2.88	1.8	1.4	16	2	64	.13	2	.4	.5	12	SEC	
		31	338	45.21	19	17.12	155	22.57	7.02	2.3	2.4	35	0	124	.16	6	.5	1.1	33	SWR	
		31	4 0	24.96	19	24.13	155	25.46	10.52	2.3	1.7	33	2	43	.10	2	.4	.6	25	KAO	
		31	850	18.22	19	24.65	155	24.87	8.37	2.1	1.8	28	1	47	.12	1	.5	.9	23	KAO	
		31	854	38.63	19	24.59	155	24.78	8.26	1.5	1.6	23	0	46	.10	1	.5	.9	17	KAO	
		31	11 9	20.45	19	19.31	155	8.30	8.16	2.2	1.8	24	1	87	.08	4	.5	.7	20	SF4	
		31	1623	33.16	19	29.84	155	38.24	3.77	2.3	1.8	12	0	261	.09	4	2.6	1.1	10	MLO	
		31	1647	38.09	19	19.61	155	12.44	5.26	1.6	1.2	24	3	83	.11	5	.5	1.5	16	SF2	
		31	1659	45.80	19	17.61	155	12.70	7.95	1.9	1.4	25	2	139	.10	2	.6	1.0	16	SF2	
		31	2339	52.02	19	21.26	155	27.92	9.42	2.0	2.3	31	1	69	.11	2	.4	1.0	25	KAO	
		31	2346	13.08	19	23.04	155	16.84	2.83	1.3	1.8	16	0	68	.07	1	.3	.2	13	SSC	
	APR	1	429	24.15	19	26.13	155	37.98	3.38	2.2	1.1	12	0	188	.09	4	.8	1.0	9	MLO	
		1	535	14.53	19	21.10	155	.61	5.24	2.1	1.2	20	3	202	.13	5	.8	2.0	14	SF5	
		1	11 1	34.12	19	24.85	155	26.02	9.59	2.0	1.3	22	1	50	.11	2	.4	.9	19	KAO	
		1	1850	8.78	19	19.43	155	9.20	5.00	1.9	1.4	24	2	108	.09	4	.5	1.5	19	SSF	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	APR	2	155	39.33	19	20.06	155	8.44	8.54	2.8	2.6	34	1	79	.09	4	.4	.6	27	SF4	
		2	3 6	43.72	19	20.21	155	6.46	7.41	1.9	1.2	25	1	113	.10	6	.5	1.0	19	SF4	
		2	321	40.43	19	19.88	155	12.48	6.96	1.6	1.7	25	1	78	.12	5	.5	1.1	21	SF2	
		2	536	50.05	19	19.82	155	12.45	7.21	1.6	1.5	26	1	79	.12	5	.5	.9	20	SF2	
		3	151	6.91	19	19.82	155	7.96	8.77	2.6	2.2	31	1	93	.09	5	.5	.6	25	SF4	
		3	741	10.57	19	18.79	155	13.53	10.58	2.6	2.6	28	2	84	.09	3	.5	.7	25	SF2	
		3	825	45.97	19	18.03	155	16.53	8.87	2.8	2.4	39	3	124	.12	4	.4	.5	35	SF1	
		3	1127	2.68	19	25.91	155	23.96	10.03	2.5	1.7	37	3	43	.11	2	.4	.7	29	KAO	
		3	1946	16.93	19	26.92	154	50.71	9.54	2.4	1.4	26	4	280	.12	6	1.6	.5	17	LER	
		3	2050	50.29	19	23.57	155	26.05	9.59	2.0	1.4	37	2	45	.10	3	.4	.7	26	KAO	
		4	043	1.92	19	44.49	154	51.63	39.46	2.8	2.1	34	0	273	.10	18	3.3	3.6	31	HIL	
		4	535	8.17	19	21.19	155	12.00	40.11	2.1	1.5	33	2	69	.08	3	.9	1.6	30	DEP	
		4	1216	46.12	19	25.80	155	25.36	6.68	2.3	1.9	31	2	51	.13	1	.4	1.0	26	KAO	
		4	1417	11.54	19	23.62	155	.36	8.50	1.9	1.2	24	1	207	.12	4	.9	.6	14	SF5	
		4	2110	4.39	19	27.64	155	35.05	10.52	2.7	2.3	11	0	61	.08	1	.6	1.1	3	MLO	
		5	448	46.07	19	18.13	155	12.87	9.70	2.7	2.6	34	1	140	.07	8	.5	.5	26	SF2	
		5	1445	51.76	19	25.34	155	32.03	10.71	2.0	1.4	14	0	73	.11	8	.7	2.0	4	MLO	L
		6	929	3.52	19	19.15	155	12.09	7.13	1.9	1.6	31	1	98	.10	5	.4	.7	24	SF3	
		6	1040	35.68	19	20.59	155	6.00	6.15	2.2	1.9	32	3	107	.09	6	.4	1.0	22	SF4	
		6	20 8	29.45	19	20.38	155	12.97	6.53	1.6	1.4	29	1	66	.12	4	.4	.8	24	SF2	
		7	012	9.40	19	19.67	155	11.29	8.66	2.2	2.2	29	1	92	.09	5	.5	.8	25	SF3	
		7	017	41.64	19	22.52	155	27.20	10.05	3.4	3.3	38	2	62	.12	1	.4	.6	36	KAO	
		7	332	53.53	19	20.30	155	13.21	7.58	1.6	1.3	30	1	65	.12	4	.5	.7	26	SF2	
		7	1338	34.45	19	18.02	155	15.29	7.60	1.5	1.1	22	1	151	.06	4	.5	.9	15	SF1	
		7	18 6	17.89	19	26.79	155	29.64	9.18	2.5	1.4	31	2	55	.10	8	.4	.8	22	KAO	
		7	2218	47.49	19	19.94	155	13.12	9.23	2.3	1.9	33	0	70	.08	5	.4	.6	29	SF2	
		8	812	56.41	19	23.52	155	8.01	8.97	1.9	1.3	8	0	152	.07	4	1.2	1.7	6	SF4	
		8	1924	8.94	19	11.48	155	39.14	7.49	2.9	2.6	33	2	107	.18	17	.5	1.3	20	LSW	
		9	417	8.02	19	17.24	155	37.70	6.02	2.4	1.8	17	0	246	.11	9	1.6	1.4	13	LSW	
		9	555	39.41	19	22.84	155	24.38	10.88	2.6	2.2	35	2	41	.09	5	.4	.5	31	KAO	
		9	557	34.25	19	22.73	155	24.35	10.62	2.7	2.8	38	3	40	.11	5	.4	.6	32	KAO	
		9	629	10.54	19	23.37	155	25.89	7.52	1.6	1.2	27	3	65	.11	3	.4	1.0	20	KAO	
		9	1216	24.15	19	24.78	155	24.49	4.20	2.1	1.8	30	1	44	.12	1	.4	.9	27	KAO	
		10	640	22.21	19	32.12	155	41.40	9.59	1.7	1.1	19	1	228	.10	11	1.1	1.5	12	MLO	
		10	23 1	16.41	19	18.83	155	11.94	7.75	1.6	1.0	15	1	168	.06	4	.6	1.0	11	SF3	
		11	030	30.64	20	5.00	156	47.11	52.88		2.6	5	2	314	.01	105	4.8	9.8	2	DIS	
		11	121	4.60	19	22.99	155	14.79	3.25	1.8	1.5	21	2	65	.07	2	.3	.4	13	SEC	
		11	321	29.93	19	20.62	155	12.86	8.50	2.0	1.3	29	1	64	.09	4	.5	.8	23	SF2	
		11	1012	46.86	19	24.56	155	.51	1.09	1.8	1.2	17	2	190	.12	7	.9	1.0	12	SME	
		11	1325	51.76	19	21.28	155	6.75	7.05	2.0	1.4	20	2	127	.09	6	.6	1.4	15	SF4	
		11	1459	35.56	19	18.98	155	13.64	7.35	2.1	1.6	32	1	69	.10	4	.4	.8	22	SF2	
		11	16 3	21.68	19	19.59	155	7.39	7.22	2.0	1.7	28	3	109	.10	4	.5	1.0	21	SF4	
		11	1832	51.71	19	21.87	155	.84	5.61	1.6	1.2	18	1	182	.10	5	.6	1.6	9	SF5	
		12	7 1	53.75	19	19.11	155	15.40	7.15	1.9	1.4	28	2	112	.10	4	.5	.8	24	SF1	
		12	940	9.56	19	23.21	155	29.72	9.60	3.2	3.1	42	4	56	.09	4	.3	.6	35	KAO	
		12	1927	38.03	19	23.06	155	2.31	7.27	2.3	1.5	26	1	133	.13	4	.5	.9	18	SF5	
		12	1935	26.61	19	28.28	155	26.03	9.59	1.8	1.3	23	3	78	.09	6	.4	.9	16	KAO	
		12	1954	6.42	19	19.73	155	11.88	7.89	2.0	1.2	18	2	153	.04	6	.6	1.1	14	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	APR	13	1353	47.01	19	29.91	155	34.75	8.42	2.3	1.7	13	0	99	.09	3	.7	1.0	7	MLO	L
		13	1845	2.66	19	50.79	155	32.19	23.85	2.0	1.4	25	1	195	.08	11	1.0	2.1	23	KEA	
		14	1546	13.64	19	17.49	155	21.08	8.59	2.2	1.8	32	3	126	.09	4	.4	.6	20	SWR	
		14	16 0	25.21	19	20.48	155	11.30	7.59	2.4	2.0	33	3	77	.10	4	.4	.6	25	SF3	
		14	1625	5.37	19	19.81	155	10.95	8.63	2.1	1.7	29	3	90	.09	5	.4	.6	19	SF3	
		15	140	29.34	19	27.25	155	21.19	9.33	2.4	1.7	29	3	52	.10	1	.4	.7	21	KAO	
		15	515	22.91	19	15.46	155	6.48	46.22	2.6	2.2	38	0	201	.09	4	1.1	1.9	38	DEP	
		15	1929	26.60	19	19.97	155	11.50	8.93	2.0	1.4	26	1	85	.09	5	.5	.7	22	SF3	
		16	216	21.01	19	19.98	155	8.41	7.76	1.8	1.2	21	2	149	.09	5	.8	1.2	16	SF4	
		16	2030	44.86	19	21.76	155	4.89	8.83	3.0	3.1	38	1	79	.10	5	.5	.5	35	SF5	
		16	2213	.90	19	10.12	155	28.82	33.65	3.4	3.0	39	2	101	.07	2	.7	1.3	35	DLS	
		16	2230	29.68	19	20.28	155	11.63	8.71	2.1	2.1	34	0	79	.11	5	.4	.6	30	SF3	
		17	354	28.80	19	27.07	155	27.93	8.37	1.8	1.1	22	1	74	.09	6	.4	1.2	18	KAO	
		17	12 7	7.19	19	21.35	155	2.78	5.51	2.4	1.7	21	2	137	.12	3	.5	1.0	12	SF5	
		17	1414	45.45	19	27.27	156	3.00	42.75	3.2	2.8	36	1	238	.09	14	1.3	1.9	35	KON	
		17	1616	45.50	19	27.05	155	14.39	33.06	3.2	2.8	43	3	39	.10	4	.6	1.1	40	DEP	
		17	1620	4.41	19	27.25	155	14.40	32.63	3.0	2.6	44	4	40	.10	5	.6	1.0	40	DEP	
		17	1622	5.41	19	22.35	155	18.70	31.63	3.1	2.8	45	4	36	.10	3	.6	.9	40	DEP	
		18	132	2.81	19	24.79	155	23.71	9.47	1.9	1.3	26	3	58	.09	3	.4	.9	23	KAO	
		18	753	38.27	19	25.44	155	29.82	11.26	2.4	1.2	29	3	64	.06	7	.4	.8	24	KAO	
		18	9 6	50.94	19	25.67	155	.81	3.45	1.9	1.9	20	1	95	.09	4	.4	.9	11	SME	
		18	2155	15.79	19	17.49	155	12.87	7.32	1.6	1.1	19	2	183	.05	1	.6	.9	15	SF2	
		18	2220	54.55	19	26.29	155	25.15	6.13	2.9	3.1	40	2	37	.12	2	.4	.9	32	KAO	F
		18	2244	48.88	19	19.57	155	10.98	7.49	1.6	1.1	17	2	172	.05	5	.7	1.3	12	SF3	
		19	059	41.98	19	31.40	155	40.92	9.07	1.9	1.7	22	1	224	.09	11	1.0	.9	16	MLO	
		19	423	2.32	19	19.80	155	11.07	8.91	2.7	2.8	37	1	91	.10	5	.4	.6	34	SF3	
		19	13 7	45.15	19	28.40	154	50.79	10.34	2.5	2.2	28	3	276	.13	5	1.4	.5	19	LER	
		19	1359	23.47	19	19.41	155	11.12	8.63	1.5	1.0	19	1	172	.08	5	.7	1.0	15	SF3	
		19	1444	56.33	19	20.03	155	7.99	8.77	1.6	1.1	21	2	149	.05	5	.8	1.2	17	SF4	
		19	1622	2.42	19	26.25	155	23.86	9.02	2.4	2.0	39	4	37	.11	3	.4	.7	30	KAO	
		19	1642	59.76	19	20.35	155	11.08	8.11	1.7	1.1	21	3	159	.05	4	.6	.8	15	SF3	
		19	1749	23.57	19	20.99	155	11.02	7.63	2.3	2.1	34	3	75	.13	3	.4	.6	28	SF3	
		20	022	25.21	19	25.12	155	24.84	9.75	2.1	1.9	34	5	44	.12	1	.4	.6	27	KAO	
		20	1710	12.56	19	25.79	155	24.48	8.73	2.1	1.4	28	3	51	.10	2	.4	.8	23	KAO	
		20	2031	45.75	19	25.65	155	25.10	6.80	2.2	2.0	36	1	36	.13	1	.4	.9	29	KAO	
		20	2056	47.64	19	19.73	155	8.75	7.56	1.8	1.2	22	2	181	.09	5	.9	1.2	18	SF4	
		21	530	34.41	19	19.77	155	11.67	7.44	2.5	2.6	38	4	88	.12	5	.4	.7	30	SF3	
		21	12 1	20.70	19	20.20	155	8.64	7.25	1.5	1.3	16	0	193	.08	4	.9	1.4	14	SF4	
		21	1736	55.60	19	20.86	155	13.24	7.84	2.0	1.9	38	3	59	.15	3	.5	.6	31	SF2	
		21	2025	13.98	19	21.51	155	6.53	7.07	1.9	1.5	31	2	83	.09	6	.4	1.0	22	SF4	
		21	2129	12.30	19	19.83	155	6.07	7.14	1.5	1.1	21	2	161	.09	6	.6	1.4	9	SF4	
		21	2227	56.50	19	59.46	155	48.43	7.26	2.3	1.7	25	2	178	.09	16	.8	1.0	23	KOH	
		22	533	27.54	19	26.74	155	38.74	3.43	2.4	2.3	17	0	209	.09	4	.9	1.0	15	MLO	
		22	710	15.36	18	50.11	155	35.88	17.90	2.1	1.9	24	2	293	.08	18	2.0	3.1	21	DLS	
		22	14 3	48.38	19	19.69	155	9.95	8.08	1.7	1.2	18	2	185	.07	4	.7	1.0	13	SF3	
		22	1515	35.72	19	20.76	155	13.19	9.35	2.5	2.6	35	1	60	.10	3	.4	.6	32	SF2	
		22	1532	55.80	19	26.72	155	23.27	9.16	1.8	1.4	25	3	70	.10	4	.5	.9	20	KAO	
		22	17 9	34.71	19	19.43	155	12.24	8.37	1.7	1.3	19	1	151	.07	5	.7	1.2	16	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	APR	23	2 3	23.53	19	19.37	155	12.41	7.18	1.7	1.2	17	1	141	.07	5	.6	1.3	13	SF2
		23	3 3	18.17	19	19.45	155	10.39	10.38	1.8	1.5	23	0	99	.08	5	.6	1.2	20	SF3
		23	518	28.98	19	20.90	155	7.46	8.41	1.9	1.4	21	0	134	.06	4	.7	1.1	20	SF4
		23	1846	38.51	19	21.66	155	.11	7.09	2.5	2.4	30	1	196	.14	6	.9	.7	22	SF5
		23	2030	57.01	19	17.85	155	13.01	6.89	1.7	1.3	22	1	148	.10	2	.6	1.1	18	SF2
		24	416	5.57	19	22.94	154	58.47	4.80	2.2	1.5	21	1	197	.12	10	.9	3.4	15	SLE
		24	449	18.95	19	20.04	155	7.58	8.79	1.9	1.5	21	1	151	.06	5	.8	1.2	20	SF4
		24	624	36.79	19	19.55	155	10.06	6.58	1.8	1.6	35	2	95	.10	5	.5	.8	26	SF3
		24	1045	16.73	19	25.83	155	24.63	8.18	2.1	1.5	32	2	52	.12	1	.4	.9	29	KAO
		24	1252	35.20	19	19.62	155	11.55	8.34	2.1	1.5	34	2	92	.09	5	.4	.7	28	SF3
		24	1927	23.57	19	20.75	155	12.97	9.15	1.9	1.4	32	2	63	.09	3	.4	.6	25	SF2
		25	023	50.38	19	19.23	155	15.84	9.28	2.7	2.1	33	3	111	.11	3	.5	.6	28	SF1
		25	821	21.08	19	20.19	155	12.77	9.10	2.1	1.6	25	1	71	.12	5	.5	.9	23	SF2
		25	1547	37.65	19	19.79	155	12.65	8.02	2.0	1.2	27	1	78	.09	5	.5	.8	21	SF2
		25	2027	40.57	19	19.62	155	11.03	5.99	2.4	2.0	29	3	95	.12	5	.4	.7	17	SF3
		26	531	59.00	19	21.30	155	.66	9.08	2.2	1.3	32	2	197	.07	5	.7	.5	19	SF5
		26	642	48.40	19	18.91	155	11.89	7.81	1.7	1.1	23	2	158	.06	4	.6	1.0	17	SF3
		27	2328	33.33	19	15.41	155	19.44	32.53	2.5	1.8	37	2	151	.10	5	.8	1.2	34	DEP
		27	2336	52.27	19	21.33	155	5.82	7.22	2.1	1.6	25	3	93	.09	3	.4	1.0	16	SF4
		28	228	13.35	19	26.17	155	29.97	36.85	2.1	1.6	10	1	95	.05	8	1.5	3.3	4	DML L
		28	23 8	16.29	19	20.43	155	10.99	9.05	1.9	1.2	25	3	151	.09	4	.5	.8	18	SF3
		28	2335	38.01	19	20.29	155	6.40	8.57	2.1	1.3	21	2	149	.08	5	.7	1.2	19	SF4
		29	149	55.52	20	14.25	155	35.35	26.57	2.9	2.0	30	1	266	.08	23	2.2	2.9	28	KOH
		29	1436	22.45	19	31.34	155	51.60	9.28	2.3	1.6	19	1	129	.18	7	1.2	.8	13	KON
		29	20 7	14.00	19	20.32	155	11.06	9.18	2.6	2.6	40	3	80	.10	4	.4	.5	30	SF3
		29	2231	40.49	19	25.11	155	22.79	9.32	1.6	1.5	25	1	42	.10	4	.4	.8	21	KAO
		30	029	22.76	19	21.12	155	2.44	7.05	1.6	1.2	15	0	155	.10	2	.6	1.2	12	SF5
		30	044	1.78	19	21.30	155	1.77	8.92	1.7	1.4	24	3	173	.08	3	.6	.9	18	SF5
		30	046	23.64	19	25.07	155	25.20	10.75	3.3	3.4	42	3	31	.12	0	.4	.5	38	KAO
		30	050	39.30	19	25.07	155	25.36	8.80	1.6	1.6	27	2	54	.10	1	.4	.8	19	KAO
		30	539	40.26	19	25.23	155	25.41	9.52	1.6	1.1	26	3	55	.08	1	.5	.9	18	KAO
		30	550	27.48	19	17.95	155	23.42	3.72	1.6	1.7	21	1	112	.11	4	.5	1.2	15	SWR
		30	928	52.49	19	20.02	155	6.22	8.50	2.0	1.1	22	1	156	.08	6	.6	1.1	18	SF4
		30	1622	14.02	19	17.41	155	6.02	10.80	3.4	3.5	40	2	201	.12	7	.8	.5	36	SF4
	MAY	1	125	58.75	19	24.18	155	17.70	16.73	2.5	1.5	41	2	35	.09	2	.4	.3	37	DEP
		1	435	59.51	19	20.54	155	12.83	9.00	1.6	1.3	28	2	66	.08	4	.5	.7	20	SF2
		1	1513	49.83	19	11.69	155	36.45	8.25	2.3	1.2	33	2	92	.18	6	.5	.9	18	LSW
		1	1654	37.73	19	18.53	155	15.18	6.86	1.6	1.0	27	2	129	.10	4	.5	1.1	19	SF1
		1	1831	56.90	19	25.15	155	25.46	10.34	1.8	1.3	31	2	47	.11	1	.4	.8	26	KAO
		1	2128	53.25	19	20.58	155	5.83	8.23	2.2	1.5	31	0	109	.09	5	.5	.7	28	SF4
		2	2044	14.59	19	25.69	154	54.55	8.21	2.4	2.9	26	2	234	.12	4	1.6	.6	21	LER
		2	22 9	30.60	19	20.54	155	12.03	7.54	1.7	1.9	27	2	73	.08	4	.5	.7	23	SF3
		3	426	21.02	19	22.11	155	5.25	7.17	1.7	1.3	23	1	75	.12	2	.5	.7	19	SF5
		3	1141	.32	19	19.48	155	11.06	7.99	1.6	1.2	29	2	98	.07	5	.5	.7	22	SF3
		3	16 5	18.54	19	19.44	155	9.83	7.84	2.0	2.0	39	4	96	.09	5	.4	.7	28	SF3
		3	1850	34.85	19	17.45	155	12.98	7.94	2.0	1.9	33	1	137	.12	1	.6	.8	24	SF2
		4	122	31.63	19	16.77	155	16.07	30.36	2.3	2.3	43	4	147	.08	5	.7	1.0	33	DEP
		4	421	24.06	19	22.92	155	6.23	1.76	1.3	1.6	15	0	63	.06	0	.5	.2	12	SME

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	MAY	4	442	10.41	19	22.86	155	6.13	1.96	1.2	1.6	15	0	88	.10	0	.5	.2	9	SME
		4	6 0	4.12	19	21.43	155	6.06	8.10	2.3	2.7	39	1	87	.11	3	.4	.7	31	SF4
		4	624	1.75	19	21.20	155	6.02	6.52	1.3	1.1	24	1	93	.12	3	.6	1.0	14	SF4
		4	721	13.00	19	22.45	155	1.56	7.14	1.5	1.3	21	0	159	.13	5	.7	1.3	16	SF5
		4	853	10.59	19	19.12	155	13.28	7.89	1.9	1.9	34	1	76	.11	4	.5	.7	28	SF2
		4	1555	59.50	19	21.89	155	4.98	7.92	2.0	1.6	32	2	77	.10	3	.4	.7	22	SF5
		4	1558	53.57	19	19.96	155	8.22	8.22	1.9	1.3	21	2	169	.06	5	.9	1.1	17	SF4
		4	18 5	17.75	19	21.25	155	5.89	8.92	1.9	1.2	15	1	125	.07	3	.7	1.1	12	SF4
		4	19 5	50.56	19	18.93	155	10.72	6.90	1.8	1.3	26	1	113	.09	6	.5	1.0	17	SF3
		4	2137	23.45	19	22.81	155	6.07	1.83	1.8	1.3	13	0	65	.04	1	.4	.2	9	SME
		4	23 7	37.65	19	13.71	155	33.11	11.24	3.9	4.0	37	0	123	.13	6	.6	.6	35	LSW F
		5	124	56.57	19	22.57	155	7.06	1.84	1.8	2.1	12	0	103	.08	2	.4	.3	10	SME
		5	344	21.95	19	19.30	155	10.18	6.59	1.8	1.3	23	3	175	.09	5	.6	1.1	19	SF3
		5	421	33.52	19	18.46	155	13.36	8.18	2.4	2.4	34	2	82	.11	3	.5	.6	27	SF2
		5	848	9.54	19	19.69	155	11.61	7.99	2.5	2.3	41	4	90	.09	5	.4	.5	32	SF3
		5	14 7	14.36	19	20.97	154	58.57	6.62	2.0	1.8	23	1	217	.18	8	1.4	2.0	14	LER
		5	1627	9.55	19	19.98	155	8.28	8.48	2.9	2.9	41	2	83	.09	5	.4	.5	35	SF4
		5	1812	55.70	19	22.71	155	6.57	1.62	1.8	1.9	13	0	93	.07	1	.5	.3	11	SME
		5	2054	43.02	19	20.80	155	6.18	8.63	3.1	3.0	44	3	100	.10	4	.4	.5	34	SF4 F
		6	137	55.94	19	20.24	155	11.76	9.40	1.7	1.2	19	1	146	.08	5	.7	1.1	16	SF3
		6	4 8	36.77	19	23.97	155	25.69	10.84	3.6	3.6	45	2	41	.14	3	.4	.5	42	KAO F
		6	411	6.34	19	24.10	155	25.59	9.31	2.2	1.5	39	4	39	.11	2	.4	.7	28	KAO
		6	6 0	53.50	19	18.85	155	11.22	6.81	1.9	1.5	30	3	115	.10	5	.5	.9	24	SF3
		6	6 5	9.58	19	19.64	155	11.87	6.05	1.7	1.2	22	2	147	.07	6	.5	1.2	14	SF3
		6	728	3.25	19	22.35	155	25.15	9.53	2.1	1.8	28	0	71	.10	4	.4	.7	22	KAO
		6	1151	2.72	19	20.97	155	2.07	6.84	2.1	1.4	31	2	174	.13	2	.7	.7	25	SF5
		6	12 6	50.84	19	35.77	156	25.04	38.12	2.9	2.2	34	1	237	.13	54	3.4	2.2	31	DIS
		6	1752	56.03	19	21.84	155	49.27	12.28	2.8	2.0	30	1	118	.10	12	.6	.4	24	KON
		6	1837	47.07	19	20.66	155	3.55	8.10	2.1	1.9	32	0	93	.09	2	.6	.6	25	SF5
		6	2017	49.80	19	19.62	155	9.88	7.73	1.9		32	3	92	.06	5	.4	.7	27	SF3
		6	2018	16.72	19	19.53	155	9.69	6.48	1.8	1.1	23	2	93	.11	5	.5	1.2	18	SF3
		7	045	17.24	19	19.30	155	13.83	7.55	2.2	1.7	35	1	63	.12	4	.5	.8	32	SF2
		7	1950	5.64	19	21.06	155	10.81	7.54	2.5	2.3	40	4	68	.13	3	.4	.6	33	SF3
		7	23 4	30.43	19	43.64	155	44.84	12.97	2.4	1.8	22	2	111	.10	11	.6	.6	12	HUA
		7	2342	33.40	19	44.05	155	44.74	12.43	3.4	3.5	40	0	114	.10	11	.5	.5	37	HUA F
		8	344	31.68	19	20.43	155	12.94	8.91	1.5	1.2	21	2	96	.07	4	.6	.9	18	SF2
		8	4 3	7.19	19	19.01	155	11.53	8.58	1.6	1.2	22	2	172	.07	5	.7	1.1	19	SF3
		8	521	27.78	19	19.68	155	6.59	8.03	1.8	1.3	23	2	162	.08	6	.7	1.2	19	SF4
		8	1258	43.78	19	19.81	155	11.36	8.06	1.6	1.3	20	2	160	.06	5	.7	1.1	16	SF3
		9	524	3.34	19	20.51	155	6.73	8.76	1.9	1.2	20	0	143	.04	5	.8	1.2	18	SF4
		9	536	16.44	19	21.54	155	6.23	8.03	1.5	1.2	20	0	85	.10	3	.6	1.1	19	SF4
		9	543	30.31	19	21.55	155	25.88	10.50	2.7	2.7	45	4	71	.12	4	.4	.5	38	KAO
		9	1140	13.61	19	20.36	155	8.62	7.83	1.6	1.2	20	1	140	.07	4	.7	1.3	18	SF4
		9	1145	43.91	19	21.86	155	30.17	8.97	2.3	1.6	33	0	60	.10	5	.4	1.1	27	KAO
		9	1733	28.72	19	20.32	155	11.81	9.29	2.6	2.8	38	0	77	.11	5	.5	.6	34	SF3
		10	122	3.37	19	19.71	155	11.38	8.28	2.1	2.2	35	3	91	.10	5	.5	.8	29	SF3
		10	239	29.40	19	3.73	155	22.88	35.80	2.3	1.8	36	1	209	.06	14	.9	1.9	35	LOI
		10	1034	29.35	19	20.52	155	8.52	8.41	2.2	2.4	41	4	74	.09	4	.4	.6	32	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	MAY	11	1556	56.87	19	20.00	155	12.04	9.47	1.9	1.4	23	2	141	.06	5	.6	.9	19	SF3
		11	1727	46.84	19	24.29	155	17.83	15.77	2.3	1.8	36	2	41	.09	2	.6	.4	33	DEP
		11	2115	28.48	19	20.01	155	7.91	8.68	1.9	1.3	26	4	150	.09	5	.7	1.0	22	SF4
		12	652	31.45	19	20.23	155	13.69	9.99	3.4	3.3	41	2	59	.09	5	.4	.3	38	SF2
		12	1440	27.14	19	19.46	155	6.55	9.43	3.3	3.2	41	1	131	.11	5	.6	.4	37	SF4 F
		12	1443	44.64	19	19.83	155	6.54	9.02	3.4	3.2	40	1	121	.09	5	.6	.4	37	SF4 F
		12	1444	56.47	19	20.11	155	6.63	7.81	2.8	2.2	38	1	112	.10	5	.5	.5	33	SF4
		12	1454	47.84	19	20.45	155	8.19	7.38	2.2	1.9	35	3	79	.09	4	.4	.8	26	SF4
		12	1612	41.37	19	27.23	155	14.73	32.67	1.9	1.4	38	2	70	.09	5	.7	1.2	33	DEP
		12	1718	48.51	19	27.73	155	14.57	33.13	3.1	2.8	45	2	41	.10	6	.5	1.1	42	DEP
		12	1844	53.13	19	35.61	156	.20	41.81	2.9	2.3	33	1	222	.08	15	1.2	1.9	29	KON
		12	1939	25.30	19	23.14	155	16.77	2.95	2.5	2.5	26	1	40	.09	1	.3	.3	25	SSC
		12	2057	4.85	19	20.04	155	6.49	8.43	2.4	2.3	36	2	116	.09	6	.5	.6	27	SF4
		12	2328	8.88	19	21.56	154	59.83	5.14	1.8	1.4	27	2	202	.14	6	.8	2.0	18	LER
		13	556	12.82	19	18.68	155	15.35	9.41	2.1	1.4	29	2	101	.08	4	.5	.7	21	SF1
		13	736	45.02	19	29.74	155	53.57	8.60	2.6	1.5	26	4	123	.16	3	.7	.7	17	KON
		13	1319	12.63	19	3.99	155	22.92	35.70	2.6	2.2	42	3	204	.08	13	.9	1.3	37	LOI
		13	1936	2.48	19	20.19	155	11.28	7.63	1.8	1.2	28	2	82	.10	6	.5	1.0	24	SF3
		13	2224	20.09	19	31.14	155	28.47	4.24	2.0	1.4	25	1	98	.11	2	.4	1.1	22	MLO
		13	2245	40.35	19	23.58	155	15.18	2.65	1.4	1.4	15	2	88	.14	3	.4	.5	11	SEC
		14	051	15.76	19	20.35	155	7.74	7.39	1.8	1.2	31	3	89	.11	6	.5	1.1	24	SF4
		14	958	39.72	19	17.75	155	15.06	8.48	2.1	1.6	28	1	143	.08	6	.6	.7	21	SF1
		14	1448	44.25	19	18.02	155	23.52	4.12	1.7	1.6	9	1	136	.05	4	.6	1.4	7	SWR
		15	217	6.19	19	24.03	155	25.73	7.42	1.8	1.3	28	1	57	.09	3	.4	.9	26	KAO
		15	339	15.44	19	18.91	155	13.34	7.12	2.5	2.4	40	5	78	.11	3	.4	.6	25	SF2
		15	1031	10.09	19	19.76	155	4.03	7.60	1.5	1.1	22	0	157	.12	2	1.0	1.0	21	SF5
		15	1850	37.77	19	27.80	155	21.23	8.18	2.1	1.8	31	3	61	.10	1	.4	.7	27	KAO
		15	2342	47.28	19	19.16	155	15.84	7.84	1.9	1.5	25	2	113	.08	3	.5	.8	21	SF1
		16	212	11.64	19	20.01	155	8.32	8.62	1.9	1.8	36	3	81	.09	5	.4	.6	32	SF4
		16	454	9.29	19	24.72	155	23.79	9.99	1.9	1.3	29	3	41	.11	3	.5	.9	24	KAO
		16	513	32.37	19	26.18	155	36.61	39.14	2.5	2.4	11	2	224	.13	2	1.4	2.0	4	DML L
		16	7 3	15.52	19	23.08	155	14.81	3.16	1.2	1.2	12	1	89	.04	2	.4	.6	9	SEC
		16	949	12.62	19	20.57	155	12.02	8.74	2.1	1.9	29	2	73	.09	4	.4	.7	26	SF3
		16	1336	6.03	19	20.20	155	6.49	8.16	2.1	1.8	31	1	112	.06	5	.5	.8	21	SF4
		16	1618	29.38	19	23.96	155	15.80	3.18	1.5	1.9	20	3	110	.07	1	.3	.3	12	SEC
		16	1755	32.93	19	23.13	155	14.90	3.28	1.8	1.7	21	2	67	.07	2	.3	.4	15	SEC
		16	1811	2.83	19	23.07	155	14.79	3.09	1.1		12	1	111	.17	2	.6	.7	10	SEC
		16	1921	22.32	19	23.63	155	15.25	3.22	2.7	3.1	32	1	49	.11	2	.3	.4	29	SEC
		17	310	7.72	19	23.90	155	15.95	3.22	1.3	1.2	16	2	105	.06	1	.3	.3	12	SEC
		17	13 6	.97	19	23.90	155	15.72	2.58	1.3	1.1	16	3	108	.21	2	.5	.6	9	SEC
		17	1311	13.50	19	23.94	155	15.88	3.09	1.3	1.0	16	3	108	.05	1	.3	.3	11	SEC
		17	1312	49.91	19	23.96	155	15.91	3.12	1.3	1.0	13	2	108	.08	1	.3	.3	11	SEC
		17	1314	42.81	19	24.19	155	16.01	2.35	1.1	1.3	13	1	114	.07	1	.4	.3	12	SEC
		17	1542	47.12	19	10.82	155	42.03	7.05	2.5	1.8	24	1	129	.24	12	.8	2.0	20	LSW
		17	2341	31.88	19	20.22	155	13.43	7.86	1.6	1.3	28	2	65	.12	5	.5	.8	24	SF2
		18	049	26.74	19	21.37	155	2.52	8.12	2.1	1.7	34	3	148	.12	3	.6	.5	23	SF5
		18	054	56.96	19	21.65	155	2.81	8.58	2.6	2.4	37	2	135	.10	3	.5	.5	31	SF5
		18	1 6	28.99	19	20.45	155	12.56	7.85	1.6	1.5	30	4	69	.10	4	.5	.7	21	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	MAY	18	344	38.06	19	23.30	155	29.64	9.72	2.8	2.8	36	0	56	.08	4	.3	.7	33	KAO
		18	712	5.15	19	20.51	155	6.62	7.71	2.2	2.0	32	0	103	.08	6	.4	.7	26	SF4
		18	855	40.85	19	20.98	155	25.03	10.98	2.0	1.4	27	2	97	.11	3	.5	.8	20	KAO
		18	12 4	47.45	19	19.34	155	11.73	8.63	1.8	1.2	18	1	162	.06	5	.7	1.0	15	SF3
		18	1438	45.57	19	19.42	155	12.39	7.36	1.6	1.1	17	0	145	.04	5	.6	1.3	13	SF2
		18	1514	55.49	19	26.57	155	24.35	8.15	2.9	2.9	37	1	52	.12	3	.4	.8	29	KAO
		19	023	13.34	19	21.22	155	17.30	31.51	2.1	1.4	28	3	46	.08	2	.8	1.1	20	DEP
		19	314	26.32	19	23.16	155	14.83	3.23	1.5	1.5	16	0	107	.06	2	.4	.5	15	SEC
		19	342	33.30	19	22.69	155	2.18	7.06	2.0	1.3	21	2	142	.09	5	.6	.8	9	SF5
		19	635	57.65	19	20.57	155	10.80	9.26	1.8	1.5	21	3	156	.05	3	.6	1.0	17	SF3
		19	1425	31.17	19	27.05	154	54.81	6.85	2.3	2.2	25	0	197	.12	1	1.2	.5	9	LER
		19	1515	12.17	19	22.53	155	6.47	1.32	2.7	3.4	29	0	68	.10	1	.3	.4	22	SME
		19	16 8	52.34	19	22.32	155	6.31	1.80	1.1	1.9	9	0	225	.07	1	3.7	.6	6	SME
		19	1628	57.80	19	23.77	154	59.09	6.51	2.1	1.7	23	1	208	.12	3	1.2	.7	15	LER
		19	1726	9.85	19	20.00	155	8.36	8.16	1.9	2.1	33	3	81	.06	5	.4	.7	25	SF4
		19	1755	31.65	19	21.85	155	6.72	7.15	1.8	1.7	30	4	77	.12	2	.5	.9	24	SF4
		19	18 0	23.16	19	20.45	155	12.51	8.60	2.1	2.0	33	2	70	.11	4	.4	.6	28	SF2
		19	18 4	32.41	19	23.12	155	6.30	1.46		1.2	8	0	108	.05	0	.9	.2	5	SME
		19	19 6	16.67	19	22.93	155	5.99	1.50	2.1	2.1	13	0	154	.08	1	.8	.2	11	SME
		19	1935	56.80	19	23.26	155	6.20	.22		1.8	5	0	137	.07	1	1.3	.7	4	SME
		19	2110	3.82	19	23.02	155	6.17	1.60	1.8	2.1	10	0	148	.06	0	.8	.3	8	SME
		19	22 0	33.91	19	22.96	155	6.08	1.46	1.1	2.0	10	0	151	.06	0	.8	.3	8	SME
		19	2244	6.07	19	21.43	155	6.43	7.94	2.3	1.9	35	2	86	.08	3	.4	.6	27	SF4
		20	013	16.60	19	19.59	155	10.86	9.07	1.7	1.1	14	1	173	.05	5	.8	1.3	10	SF3
		20	052	3.98	19	22.40	155	5.33	.23	1.7	1.8	11	0	141	.23	2	1.1	1.4	7	SME
		20	141	27.65	20	1.58	155	26.82	46.57	2.6	2.2	43	4	200	.10	19	.9	1.8	37	KEA
		20	447	26.45	19	23.32	155	6.39	.97	.8	1.1	9	0	105	.04	1	.7	.3	5	SME
		20	452	36.36	19	23.12	155	6.49	1.38	1.8	2.3	8	0	97	.09	0	.8	.3	6	SME
		20	550	59.46	19	22.14	155	28.61	10.43	2.6	2.8	37	1	63	.09	2	.4	.6	31	KAO
		20	556	13.35	19	22.55	155	6.75	2.07	1.0	1.8	9	0	144	.03	1	.6	.3	4	SME
		20	6 1	17.15	19	22.44	155	6.84	1.73	2.1	2.9	15	0	122	.08	1	.6	.5	14	SME
		20	1249	12.39	19	20.05	155	13.65	8.07	1.6	1.1	18	1	113	.06	5	.6	1.2	15	SF2
		20	2146	36.02	19	18.81	155	15.50	7.86	1.9	1.7	34	5	123	.09	4	.4	.8	22	SF1
		20	2333	34.89	19	21.65	155	6.21	9.46	1.6	1.3	20	1	176	.07	3	.8	1.0	15	SF4
		21	037	13.18	19	21.13	155	7.19	8.20	2.1	2.3	31	3	128	.08	4	.5	.7	17	SF4
		21	1 7	54.46	19	20.57	155	9.22	7.64	2.5	3.0	37	4	94	.10	3	.4	.8	26	SF3
		21	18 9	48.75	19	18.25	155	13.10	7.59	1.7	2.0	32	3	96	.09	2	.5	.9	24	SF2
		21	1951	26.07	19	50.27	155	36.55	23.49	1.9	1.8	26	1	106	.07	28	.6	2.8	21	KEA
		21	2031	45.11	19	20.16	155	8.07	8.53	2.4	2.7	41	3	117	.09	5	.4	.6	31	SF4
		22	014	14.62	19	23.47	155	23.70	8.89	1.6	1.4	14	2	67	.08	4	.5	1.6	11	KAO
		22	6 8	14.51	19	29.19	155	43.57	5.36	1.6	1.3	24	2	89	.14	5	.6	2.2	18	KON
		22	1034	40.42	19	20.68	155	13.08	7.85	1.6	1.4	27	2	65	.09	4	.5	.9	22	SF2
		22	1130	38.58	19	20.14	155	6.38	7.50	2.0	1.8	31	3	116	.10	5	.5	.9	20	SF4
		22	1251	39.04	19	19.87	155	10.57	7.74	1.8	1.8	26	2	89	.08	4	.4	.9	19	SF3
		22	1423	33.68	19	21.44	155	.82	5.98	2.1	2.3	24	2	196	.13	8	1.0	1.2	17	SF5
		22	1828	39.03	19	20.57	155	17.00	33.32	3.8	4.1	41	0	75	.10	1	.7	1.1	40	DEP F
		22	1923	50.11	19	26.92	155	29.65	8.87	1.5	1.5	22	2	71	.11	8	.5	1.3	15	KAO
		22	2222	32.13	19	19.95	155	12.53	8.60	1.5	1.2	20	2	135	.06	5	.6	1.0	16	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAY	23	046	17.18	19	20.45	155	7.54	8.35	1.3	1.2	17	1	202	.08	5	1.0	1.3	12	SF4	
		23	4 0	25.19	19	20.92	155	7.39	7.69	2.2	2.4	37	3	86	.11	4	.5	.8	29	SF4	
		23	434	45.61	19	20.04	155	10.01	6.54	2.1	2.5	36	2	84	.11	4	.5	.8	30	SF3	
		23	1055	12.81	19	19.83	154	56.70	10.88	1.7	1.3	17	1	239	.12	14	2.1	.8	10	LER	
		24	018	29.17	19	18.57	155	11.67	7.68	1.6	1.1	19	3	179	.07	4	.7	1.2	14	SF3	
		24	142	27.94	19	19.87	155	10.42	9.35	1.8	1.0	18	1	175	.05	4	.7	1.1	17	SF3	
		24	212	21.54	19	20.30	155	12.63	8.96	1.5	1.2	22	3	129	.05	4	.6	.9	16	SF2	
		24	8 7	56.28	19	27.49	155	21.08	5.16	1.2	1.4	20	0	113	.11	1	.5	1.0	15	KAO	
		24	1121	19.24	19	19.03	155	20.63	31.71	2.3	2.3	42	3	98	.09	4	.6	.9	36	DEP	
		24	1244	48.97	19	21.09	155	.97	3.42	2.0	1.8	21	0	199	.13	8	1.1	7.1	17	SSF	*
		24	1827	50.82	19	26.09	155	28.02	8.61	1.6	1.2	24	2	61	.09	5	.4	1.1	21	KAO	
		25	327	54.94	19	21.13	155	2.67	8.35	2.1	2.0	27	2	185	.08	7	.7	1.0	24	SF5	
		25	10 4	8.55	19	22.89	155	2.38	7.17	1.6	1.2	22	1	167	.13	5	.7	1.2	19	SF5	
		25	1547	48.91	19	18.42	155	13.81	8.00	1.5	1.3	20	1	109	.07	3	.6	1.3	18	SF2	
		25	2259	25.29	19	21.66	155	6.42	7.93	2.1	2.1	36	4	135	.08	3	.4	.6	27	SF4	
		25	2333	53.80	19	23.60	155	16.76	2.99	1.9	2.1	28	2	36	.09	1	.3	.2	24	SSC	
		26	028	20.43	19	20.26	155	9.66	8.64	1.6	1.6	26	2	102	.08	3	.6	1.0	17	SF3	
		26	240	24.28	19	19.81	155	11.39	7.19	1.7	1.6	31	3	89	.08	5	.5	.8	25	SF3	
		26	651	13.16	19	21.91	155	2.42	8.42	2.0	1.9	32	3	179	.11	6	.8	.7	17	SF5	
		26	830	23.68	19	19.79	155	12.77	7.46	1.9	1.9	34	4	76	.09	5	.4	.6	24	SF2	
		26	932	23.28	19	20.16	155	8.72	8.53	2.3	2.5	39	4	103	.09	4	.5	.6	25	SF4	
		26	1042	23.92	19	22.53	155	3.09	8.37	2.1	2.3	34	2	165	.09	4	.6	.4	25	SF5	
		26	1339	3.85	19	19.62	155	11.16	7.28	2.4	2.6	37	3	95	.11	5	.5	.7	31	SF3	
		26	1937	46.35	19	23.73	155	15.40	3.02	1.4	1.6	19	2	97	.08	2	.3	.4	15	SEC	
		26	1941	3.06	19	23.95	155	16.00	3.19	1.3	1.4	18	2	105	.07	1	.3	.3	12	SEC	
		26	2141	37.06	19	23.57	155	16.98	3.03	2.2	2.3	26	2	47	.08	0	.3	.2	19	SSC	
		26	22 2	44.65	19	23.78	155	15.71	3.03	2.0	2.5	26	3	82	.09	2	.3	.3	21	SEC	F
		26	2312	21.94	19	22.78	155	1.30	4.07	2.0	1.7	25	1	194	.19	6	1.1	2.5	17	SSF	
		27	925	20.35	19	27.29	155	24.08	6.50	2.4	2.4	35	2	44	.12	4	.4	1.0	28	KAO	
		27	932	55.06	19	25.31	155	25.68	6.79	2.1	1.8	32	1	51	.12	1	.4	1.0	28	KAO	
		27	13 0	12.04	19	19.49	155	8.80	6.74	1.6	1.5	28	3	102	.11	4	.6	1.1	23	SF4	
		27	1555	18.27	19	22.89	155	2.03	8.22	1.5	1.3	22	1	172	.12	5	1.0	1.2	18	SF5	
		27	2143	8.00	19	19.03	155	13.05	8.75	1.5	1.1	21	1	133	.07	4	.6	1.0	17	SF2	
		27	2225	51.10	19	19.15	155	16.37	8.00	2.2	2.1	41	4	101	.09	3	.4	.6	23	SF1	
		27	2245	5.45	19	26.44	155	24.21	4.13	2.0	1.8	30	2	45	.11	3	.3	.9	21	KAO	
		27	2325	11.10	19	20.85	155	9.99	7.08	1.6	1.3	22	2	157	.08	2	.7	.9	15	SF3	
		28	549	48.63	19	23.65	155	16.79	2.80	1.6	1.5	23	3	44	.08	1	.3	.2	17	SSC	
		28	616	13.23	19	23.28	155	15.01	3.20	1.1	1.1	14	2	80	.05	2	.3	.4	10	SEC	
		28	8 4	50.94	19	19.13	155	13.76	10.13	3.2	3.4	38	0	128	.09	7	.5	.6	34	SF2	F
		28	859	58.58	19	24.27	155	26.63	10.14	2.7	2.8	43	3	43	.11	3	.4	.6	35	KAO	
		28	1031	40.31	19	18.66	155	15.22	6.54	1.5	1.1	27	1	122	.11	4	.5	1.1	21	SF1	
		28	1040	42.67	19	23.44	155	16.88	3.07	1.9	2.4	22	1	36	.09	0	.3	.3	21	SSC	
		28	1338	52.00	19	22.86	155	14.54	3.30	1.2	1.3	15	2	74	.16	3	.5	.4	11	SEC	
		28	14 2	41.45	19	22.98	155	14.50	2.95	1.4	1.3	15	1	75	.06	3	.3	.4	12	SEC	
		28	1829	37.70	19	26.30	155	29.71	9.11	1.9	1.5	25	1	66	.09	8	.4	1.1	20	KAO	
		28	2155	12.25	19	19.85	155	12.32	9.24	1.6	1.6	20	1	112	.08	5	.6	.9	18	SF2	
		29	324	2.44	19	22.15	155	11.14	2.51	1.5	1.3	12	1	110	.06	2	.6	.5	9	SER	
		29	658	21.53	19	20.31	155	13.24	6.57	1.4	1.1	18	1	117	.09	4	.6	1.2	14	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	MAY	29	721	54.81	19	19.88	155	8.10	7.84	1.9	1.9	33	2	87	.08	5	.5	.9	29	SF4	
		29	838	32.06	19	22.74	155	14.72	3.51	1.3	1.4	18	3	83	.08	2	.3	.4	12	SEC	
		29	1129	58.02	19	23.95	155	.25	8.72	2.3	2.2	33	0	160	.11	3	.7	.6	28	SF5	
		29	1133	54.04	19	26.32	155	23.48	8.25	1.9	1.5	31	3	47	.12	4	.4	.8	19	KAO	
		29	1632	33.09	19	23.06	155	14.86	3.16	1.4	1.4	17	2	64	.07	2	.3	.4	12	SEC	
		29	1752	10.50	19	21.92	155	11.24	3.04	1.5	1.0	14	1	121	.05	2	.5	.4	11	SER	
		29	2144	26.42	19	17.88	155	15.31	9.10	1.3	1.2	21	2	157	.07	4	.6	1.0	17	SF1	
		29	2231	44.44	19	21.28	155	6.56	7.22	1.4	1.2	20	2	126	.10	3	.7	1.1	13	SF4	
		29	2246	58.41	19	19.30	155	12.07	7.29	1.6	1.0	21	2	156	.05	5	.6	1.0	13	SF3	
		29	2322	17.78	19	20.80	155	13.14	8.96	1.6	1.6	31	2	60	.09	3	.5	.7	25	SF2	
		30	432	49.03	19	19.56	155	23.13	32.63	2.3	1.9	40	4	94	.10	1	.7	1.1	35	DEP	
		30	653	26.83	19	26.47	155	23.00	7.38	2.4	2.4	35	4	48	.13	4	.4	.8	29	KAO	
		30	11 4	.90	19	18.42	155	47.40	.55	1.9	1.9	27	4	239	.14	23	1.6	.7	24	KON	
		30	1142	7.65	19	26.45	155	38.52	2.93	2.7	2.7	23	0	204	.09	4	.8	1.0	21	MLO	
		30	13 3	16.26	19	22.94	155	8.42	3.10	.9	1.1	11	0	131	.05	3	.9	.6	10	SER	
		30	1851	4.49	19	21.87	155	11.23	12.36	1.8	1.7	30	5	86	.08	2	.5	.7	25	SF3	
		30	2310	37.27	19	26.28	155	24.78	6.48	1.8	1.5	26	3	65	.09	2	.4	1.0	18	KAO	
		30	2346	54.17	19	24.21	155	24.05	10.22	2.0	1.8	33	3	44	.08	3	.4	.7	25	KAO	
		31	041	43.14	19	20.27	155	12.91	8.78	1.4	1.1	19	2	124	.06	4	.6	1.1	13	SF2	
		31	134	21.23	19	19.18	155	13.23	8.08	2.1	2.0	33	2	76	.08	4	.4	.8	22	SF2	
		31	231	22.69	19	23.17	155	7.25	3.58	1.2	1.4	16	0	101	.06	2	.8	.6	10	SER	
		31	6 7	31.43	19	28.30	155	23.16	7.46	2.1	1.8	29	3	78	.12	3	.5	.9	22	KAO	
		31	911	15.77	19	20.56	155	11.32	8.60	2.2	2.6	33	2	75	.10	4	.5	.7	26	SF3	
		31	950	24.37	19	20.48	155	12.37	8.40	1.6	1.1	17	1	131	.05	4	.6	1.1	11	SF2	
		31	1322	22.15	19	19.37	155	11.61	7.19	1.6	1.1	17	2	163	.08	5	.6	1.2	9	SF3	
		31	1358	54.85	19	20.97	155	25.30	11.32	2.1	2.5	30	2	77	.11	4	.5	.8	25	KAO	
		31	1713	13.36	19	27.11	155	21.36	6.67	1.9	1.6	23	3	85	.10	2	.4	.9	14	KAO	
		31	1745	18.16	19	20.82	155	11.80	7.46	2.2		40	4	70	.12	4	.4	.6	30	SF3	
		31	2126	30.13	19	20.57	155	5.77	8.63	2.2	2.7	32	1	110	.08	5	.5	.7	27	SF4	
		31	2128	20.78	19	20.89	155	5.78	8.52	2.5	2.8	37	2	102	.08	4	.4	.7	28	SF4	
		31	2149	58.33	19	22.16	155	26.53	10.80	2.2	2.2	34	1	64	.09	2	.4	.8	21	KAO	
		31	2222	36.22	19	19.41	155	9.08	8.43	1.8	1.8	30	3	89	.07	4	.5	.9	22	SF4	
JUN		1	239	50.42	19	18.32	155	14.38	7.36	1.5	1.4	20	0	116	.11	3	.7	1.1	17	SF2	
		1	9 4	13.76	19	19.70	155	11.17	9.00	2.0	1.6	28	0	93	.09	5	.5	1.0	24	SF3	
		1	1511	6.58	19	23.68	155	24.26	9.83	2.1	2.0	37	2	32	.12	3	.4	.6	26	KAO	
		1	1628	46.87	19	25.81	155	25.42	6.44	1.5	1.5	24	2	57	.09	1	.4	1.0	20	KAO	
		1	2346	38.71	19	29.05	154	48.86	1.36	1.9	1.6	11	0	321	.20	8	10.8	17.6	6	SLE	*
		2	033	.81	19	20.74	155	1.86	9.00	1.6	1.4	15	1	190	.06	2	.9	.9	11	SF5	
		2	424	58.96	19	20.09	155	13.03	9.28	1.5	1.4	23	3	97	.06	5	.6	.9	16	SF2	
		2	11 7	30.61	19	20.23	155	6.50	7.02	1.6	1.2	18	1	150	.09	5	.8	1.4	15	SF4	
		2	1729	52.75	19	23.27	154	57.33	5.98	1.6	1.3	29	2	205	.13	4	.8	1.0	17	LER	
		2	1855	13.97	19	23.21	155	5.35	1.71	1.0	1.9	11	0	98	.08	2	.7	.4	9	SME	
		2	2129	39.41	19	21.10	155	5.53	7.53	1.9	1.8	30	2	97	.12	4	.6	1.0	25	SF4	
		2	2238	34.56	19	19.02	155	13.08	6.35	1.5	1.1	26	1	83	.11	4	.5	1.2	21	SF2	
		2	2316	33.84	19	21.21	155	15.16	9.34	1.5	1.1	25	3	68	.08	3	.5	.7	16	SF1	
		2	2352	.02	19	21.01	155	6.15	6.79	2.5	2.8	33	2	97	.13	4	.6	1.0	26	SF4	
		3	026	41.51	19	.59	155	40.14	31.31	3.2	3.2	38	3	152	.07	3	1.1	1.7	33	DLS	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	JUN	3	335	17.81	19	22.35	155	5.07	7.92	2.4	2.1	35	2	75	.10	2	.4	.7	23	SF5	
		3	1113	55.73	19	20.85	155	3.02	5.90	1.7	1.7	22	2	128	.13	2	.6	1.1	15	SF5	
		3	1257	2.62	19	20.16	155	11.62	8.49	1.9		32	2	81	.10	5	.5	.8	25	SF3	
		3	1339	5.64	19	19.98	155	7.40	6.94	1.8	1.6	27	2	102	.10	5	.5	1.2	21	SF4	
		3	14 1	2.48	19	19.75	155	7.83	6.84	1.7	1.4	27	2	96	.08	4	.5	1.1	19	SF4	
		3	1614	18.93	19	22.82	155	6.19	.01	2.4	3.1	26	1	68	.17	5	.5	1.2	20	SME	*
		3	17 6	33.21	19	18.80	155	13.35	7.48	1.9	2.5	31	1	79	.11	3	.5	.9	24	SF2	
		3	1718	35.58	19	12.09	155	17.00	43.08	1.6		25	3	181	.07	11	1.2	1.3	15	DEP	T
		4	510	45.32	19	26.73	154	50.08	5.06	1.9	2.0	12	1	282	.14	15	3.1	2.1	8	LER	
		4	540	50.17	19	26.14	155	25.12	7.01	1.3	1.1	19	2	55	.09	2	.4	1.0	13	KAO	
		4	1619	58.39	19	19.93	155	8.81	7.45	2.7	2.9	41	4	75	.09	4	.4	.7	30	SF4	
		5	659	31.39	19	20.77	155	8.35	6.07	1.8	1.9	25	2	74	.05	4	.4	1.0	18	SF4	
		5	853	3.19	19	20.66	155	8.43	4.95	1.4	1.3	18	2	84	.06	4	.5	1.3	14	SSF	
		5	1048	35.79	19	21.70	155	.78	6.27	1.6	1.3	19	0	188	.12	5	.8	1.5	13	SF5	
		5	1724	18.00	19	20.95	155	8.00	8.74	1.3	1.2	22	3	131	.06	4	.8	1.1	16	SF4	
		5	23 0	36.34	19	25.28	155	25.12	8.33	1.6	1.2	25	1	49	.08	0	.5	1.0	20	KAO	
		6	2 0	54.68	19	20.14	155	7.35	6.84	1.8	1.2	23	3	149	.09	6	.6	1.2	18	SF4	
		6	4 8	4.72	19	20.54	155	8.15	8.20	1.8	1.6	34	3	79	.07	4	.4	.8	21	SF4	
		6	1234	.25	19	25.91	154	56.04	6.66	1.9	1.8	22	1	189	.13	3	1.5	1.3	14	LER	
		6	1846	7.81	19	21.50	155	6.17	8.43	1.5	1.5	21	1	87	.08	3	.6	1.3	20	SF4	
		6	2046	48.63	19	44.07	155	25.70	15.07	1.5	2.0	12	0	178	.08	19	1.9	1.2	7	KEA	
		6	2225	28.35	19	19.84	155	10.45	9.29	1.6	1.1	18	0	175	.07	4	.8	1.3	18	SF3	
		7	020	6.81	19	19.84	155	10.63	8.76	2.1	2.2	29	2	90	.08	4	.5	.8	21	SF3	
		7	146	29.89	19	12.00	155	35.01	7.79	2.6	3.0	33	2	90	.21	7	.6	1.3	23	LSW	
		7	3 6	6.33	19	32.33	155	52.16	23.99	2.1	1.8	21	2	149	.11	8	1.6	2.6	18	KON	
		7	624	58.81	19	22.89	155	15.00	2.88	1.2	1.2	15	3	70	.11	2	.3	.5	11	SEC	
		7	1312	36.09	19	19.59	155	12.34	7.99	1.7	1.5	26	2	85	.07	5	.5	.9	19	SF2	
		7	1350	29.07	19	21.18	155	13.10	8.53	2.5	2.8	40	5	57	.11	3	.4	.5	30	SF2	
		7	15 0	24.54	19	20.94	155	13.11	8.56	2.1	2.1	35	5	59	.09	3	.4	.6	29	SF2	
		7	1616	24.20	19	20.72	155	11.00	8.30	2.0	1.9	30	3	74	.08	3	.4	.6	21	SF3	
		7	1625	42.39	19	20.53	155	10.81	9.37	2.7	2.9	39	4	77	.10	3	.4	.5	33	SF3	
		7	1629	46.03	19	19.98	155	10.83	9.31	1.8	1.1	18	0	166	.06	4	1.0	1.2	14	SF3	
		7	1932	24.78	19	26.45	155	22.83	7.42	1.8	2.0	28	2	51	.11	4	.4	.9	23	KAO	
		7	2256	45.66	19	18.82	155	13.42	6.88	2.2	2.6	35	5	77	.13	3	.5	.8	24	SF2	
		8	5 2	48.57	19	18.57	155	1.25	35.49	2.1	1.8	26	2	274	.06	12	1.7	1.5	23	DEP	
		8	936	6.24	19	21.52	155	14.99	9.11	1.5	1.1	26	3	102	.09	2	.5	.6	19	SF1	
		8	1312	46.35	19	22.17	155	5.87	7.81	2.2	2.3	34	1	74	.08	2	.4	.7	28	SF4	
		8	17 6	21.85	19	19.75	155	11.30	9.67	1.6	1.4	21	0	129	.06	5	.7	1.1	18	SF3	
		8	1852	5.30	19	19.32	155	11.90	7.76	1.6	1.0	17	2	158	.04	5	.6	1.2	11	SF3	
		8	1959	25.55	19	19.91	155	11.57	8.93	1.8	1.9	32	3	86	.10	5	.6	.8	28	SF3	
		8	2041	7.67	19	20.62	155	7.31	8.46	1.6	1.3	22	1	140	.07	5	.7	1.1	19	SF4	
		8	2043	11.58	19	20.76	155	6.37	8.24	1.4	1.2	20	0	137	.08	4	.7	1.2	19	SF4	
		9	0 1	16.71	19	26.03	155	23.75	11.28	3.2	3.2	41	2	55	.10	3	.4	.5	35	KAO	
		9	043	23.30	19	25.89	155	23.82	11.68	3.5	3.7	43	2	53	.11	3	.4	.5	41	KAO	F
		9	220	39.95	19	21.43	155	16.52	31.66	2.0	1.6	35	3	64	.07	2	.8	1.2	31	DEP	
		9	231	46.90	19	19.80	155	12.43	8.57	1.5	1.1	19	2	139	.06	5	.6	1.1	14	SF2	
		9	3 4	49.56	19	24.95	155	23.73	9.06	1.5	1.3	25	2	43	.10	3	.5	1.0	19	KAO	
		9	3 7	2.80	19	26.06	155	24.09	10.35	1.6	1.2	23	2	53	.10	2	.6	1.1	19	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	JUN	9	437	14.28	19	22.69	155	24.72	12.53	1.3	1.1	24	3	63	.08	5	.5	1.0	19	KAO	
		9	1045	48.71	19	20.37	155	5.52	8.38	1.3	1.2	19	2	169	.09	5	.8	1.1	17	SF4	
		9	13 4	15.67	19	31.42	156	16.72	34.38	3.1	3.1	27	3	264	.11	38	1.5	2.1	21	KON	
		9	1350	59.25	19	20.54	155	12.92	7.33	1.9	2.1	33	2	65	.12	4	.5	.7	28	SF2	
		9	1355	52.80	19	21.74	155	.43	8.67	2.5	2.4	32	0	193	.08	6	.9	.5	27	SF5	
		9	1528	7.74	19	19.85	155	12.71	8.68	1.5	1.2	17	1	133	.08	5	.8	1.4	15	SF2	
		9	1732	54.07	19	17.75	155	12.97	6.61	1.8	1.6	30	2	120	.10	2	.5	.9	18	SF2	
		10	133	41.89	19	21.48	155	.64	7.45	1.5	1.2	23	2	193	.12	5	.9	1.2	18	SF5	
		10	320	38.43	19	57.17	155	12.08	9.08	2.0	1.7	19	1	288	.07	33	4.1	1.1	16	KEA	
		10	533	53.74	19	24.30	155	23.94	9.84	1.6	1.1	25	2	42	.09	3	.5	1.0	22	KAO	
		10	1524	13.65	19	27.52	155	27.81	9.17	1.7	1.1	21	2	69	.09	6	.5	1.4	17	KAO	
		10	1622	47.62	19	21.83	155	.39	6.20	1.9	1.8	25	0	192	.14	6	.9	1.3	20	SF5	
		10	1625	12.62	19	23.28	155	14.86	.79	2.2	2.7	17	1	69	.08	2	.2	.4	12	SEC	
		10	1756	44.72	19	23.10	155	14.86	3.16	1.6	1.8	20	2	65	.08	2	.3	.3	18	SEC	
		10	1825	6.41	19	20.12	155	11.25	7.90	1.9	1.6	28	0	84	.12	4	.6	1.1	26	SF3	
		10	2021	19.34	19	23.79	155	28.73	8.82	1.7	1.6	28	1	48	.08	3	.4	.8	22	KAO	
		10	2049	25.10	19	20.91	155	6.25	7.43	1.2	1.1	18	1	98	.09	4	.5	1.1	12	SF4	
		10	2144	39.79	19	30.85	155	28.91	3.71	2.0	2.0	24	2	101	.09	3	.4	1.0	17	MLO	
		11	016	22.35	19	28.62	155	53.19	7.27	2.6	2.5	23	2	140	.11	4	.7	.8	15	KON	
		11	042	39.67	19	28.01	155	3.04	12.28	1.8	1.8	25	2	100	.06	4	.6	.9	22	GLN	
		11	229	56.16	19	19.59	155	12.36	9.02	2.5	2.7	37	3	85	.09	5	.4	.5	31	SF2	
		11	336	14.40	19	19.46	155	12.18	7.51	2.1	2.2	32	2	90	.11	5	.5	.8	28	SF3	
		11	421	12.35	19	22.78	155	24.19	10.31	2.2	2.7	38	2	51	.10	5	.4	.5	25	KAO	
		11	1049	41.50	19	20.84	155	3.17	8.67	2.3	2.4	33	0	118	.09	2	.7	.6	27	SF5	
		11	1437	59.08	19	20.31	155	12.85	7.63	2.0	2.1	31	2	68	.11	4	.5	.7	22	SF2	
		11	1536	15.91	19	21.70	155	28.19	10.26	1.8	1.5	19	0	84	.09	2	.6	1.3	18	KAO	
		11	1632	16.98	19	19.79	155	12.20	6.46	1.8	1.6	25	1	83	.11	5	.5	1.2	20	SF3	
		12	013	19.01	19	24.45	155	.54	7.58	1.9	1.7	24	1	139	.18	3	.8	1.3	19	SF5	
		12	048	47.38	19	20.19	155	13.83	8.09	1.6	1.5	26	2	71	.09	5	.5	.9	20	SF2	
		12	411	43.87	19	24.78	155	25.77	9.26	1.5	1.3	24	1	51	.08	1	.5	.9	20	KAO	
		12	519	59.41	19	24.23	154	57.01	1.60	1.7	1.5	14	1	198	.11	3	1.0	1.1	10	SLE	
		12	1152	40.84	19	19.90	155	12.33	7.44	2.0	2.2	33	2	80	.11	5	.5	.8	27	SF2	
		12	1416	16.68	19	25.44	155	27.66	8.80	2.4	2.1	36	1	46	.10	4	.4	.8	27	KAO	
		12	18 1	27.82	19	13.40	155	26.84	6.83	1.2	1.1	21	1	148	.12	7	.7	1.4	12	LSW	
		12	18 2	5.84	19	23.05	155	17.00	2.55	1.1	1.0	11	2	97	.05	1	.4	.4	9	SSC	
		13	046	56.25	19	20.73	155	5.99	9.25	1.9	1.7	24	0	104	.06	4	.6	1.0	22	SF4	
		13	213	6.25	19	18.75	155	12.13	6.87	1.9	1.6	20	0	165	.08	4	.6	1.3	17	SF3	
		13	440	39.79	19	17.22	155	21.12	5.74	1.0	1.3	20	1	129	.07	5	.6	1.7	16	SWR	
		14	525	.53	19	20.71	155	6.78	7.40	2.0	1.6	28	0	97	.09	4	.5	1.0	20	SF4	
		14	644	42.34	19	24.63	155	16.74	2.03	1.1	.9	12	1	130	.08	1	.4	.3	9	SNC	
		14	1234	2.83	19	19.40	155	11.49	8.54	3.0	3.0	43	4	98	.10	6	.4	.5	31	SF3	
		14	1354	24.38	19	20.65	155	6.74	7.83	1.7	1.2	22	2	99	.09	4	.5	1.1	17	SF4	
		14	1625	.09	19	19.19	155	11.27	9.12	1.8	1.1	21	1	140	.05	6	.6	1.0	15	SF3	
		14	2351	21.39	19	23.00	155	2.33	7.77	1.9	1.2	15	0	133	.10	4	.6	1.2	11	SF5	
		15	026	45.27	19	20.44	155	13.34	9.05	1.6	1.2	21	1	89	.07	4	.6	1.0	17	SF2	
		15	753	32.70	19	23.85	155	49.54	11.57	1.9	1.3	24	1	118	.12	14	.6	.6	20	KON	
		15	9 4	33.75	19	21.47	155	1.44	6.90	1.8	1.4	22	0	179	.14	4	.8	1.0	16	SF5	
		15	18 3	9.91	19	19.64	155	12.19	5.02	1.6	1.2	15	1	142	.08	5	.6	2.4	14	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	JUN	15	2046	14.43	19	41.76	156	3.87	31.00	2.9	2.5	33	2	235	.11	24	1.2	1.8	27	HUA	
		15	2218	18.76	19	23.62	155	15.35	2.86	1.3	1.5	18	2	91	.08	2	.3	.4	12	SEC	
		16	144	53.04	19	25.69	155	28.14	8.50	1.8	1.3	25	3	92	.08	5	.4	1.0	20	KAO	
		16	146	34.09	19	21.54	155	6.60	8.65	2.4	2.3	37	2	83	.08	3	.4	.8	29	SF4	
		16	5	3.44	19	19.38	155	11.63	6.01	1.7	1.6	26	1	97	.10	5	.5	1.3	21	SF3	
		16	529	37.39	19	23.86	155	15.72	3.11	2.3	2.8	30	1	71	.07	2	.3	.3	25	SEC	F
		16	1539	45.29	19	20.78	155	13.46	8.88	1.6	1.3	27	2	62	.08	3	.5	.7	19	SF2	
		16	1725	34.17	19	25.06	155	16.13	15.17	2.2	1.9	36	3	113	.08	2	.5	.4	29	DEP	
		16	1853	4.39	19	24.13	155	15.92	3.31	1.3	1.2	20	3	111	.07	1	.3	.3	13	SEC	
		16	21	6 12.10	19	20.24	155	8.62	8.37	1.7	1.0	21	3	142	.08	4	.7	1.2	18	SF4	
		16	2217	47.16	19	23.48	155	15.18	2.94	1.6	1.6	25	4	83	.09	2	.3	.3	16	SEC	
		16	2336	21.72	19	26.90	154	56.03	5.88	2.0	1.9	27	1	174	.13	2	.9	1.2	15	LER	
		17	1	3 47.00	19	29.79	155	14.06	23.99	2.1	1.6	30	2	152	.08	10	.8	1.2	23	DEP	
		17	128	47.75	19	21.49	155	6.72	8.31	1.4	1.3	17	1	150	.07	3	.8	1.2	14	SF4	
		17	938	45.83	19	16.43	155	12.12	1.38	1.6	1.2	18	3	243	.06	3	.8	.4	12	SSF	
		17	1057	16.90	19	11.21	155	20.56	46.09	2.0		25	1	195	.21	13	2.2	4.5	10	DEP	T
		17	1233	37.03	19	25.16	155	23.07	7.62	1.5	1.2	19	2	44	.10	4	.4	1.2	12	KAO	
		17	1324	58.10	19	21.69	155	30.26	9.49	1.4	1.3	19	1	91	.06	5	.6	1.0	15	KAO	
		17	1339	8.59	19	23.11	155	14.66	3.08	1.4		13	1	109	.06	3	.4	.5	10	SEC	
		17	1339	37.43	19	22.94	155	14.71	3.10	2.5	3.0	25	1	49	.08	2	.3	.4	24	SEC	
		17	14	9 42.53	19	18.97	155	15.08	9.04	2.2	2.2	32	3	113	.09	5	.5	.7	26	SF1	
		17	1514	51.78	19	23.77	155	16.87	2.74	.9	1.2	13	1	68	.05	1	.3	.3	8	SSC	
		17	18	4 21.57	19	26.77	155	22.76	8.13	1.8	1.6	26	3	76	.09	4	.5	1.0	20	KAO	
		17	2037	11.36	19	35.16	156	18.30	37.89	2.9	3.4	38	0	267	.12	42	2.5	1.6	31	KON	
		17	2046	41.04	19	25.33	155	24.16	8.72	2.0	2.0	33	2	44	.11	2	.4	.9	29	KAO	
		17	2229	17.35	19	23.76	155	16.79	2.92	1.4	1.4	22	2	59	.07	0	.3	.2	16	SSC	
		17	2240	52.36	19	23.06	155	14.85	3.25	1.2	1.6	12	2	111	.05	2	.4	.5	9	SEC	
		17	23	9 42.51	19	25.73	155	37.68	1.95	2.5	2.2	21	0	94	.11	4	.5	1.0	18	MLO	
		18	419	8.15	19	55.22	155	17.71	10.88	2.3	2.7	22	1	266	.08	40	3.1	1.0	13	KEA	
		18	448	33.64	19	23.11	155	14.77	3.43	1.7	1.9	21	1	64	.05	2	.3	.3	15	SEC	
		18	755	45.35	19	25.01	155	38.05	.02	2.6	2.9	25	0	77	.18	5	.5	1.6	15	MLO	*
		18	952	21.21	19	19.61	155	12.39	8.23	2.0	1.6	27	2	84	.05	5	.4	.8	18	SF2	
		18	1052	57.90	19	20.60	155	12.49	8.68	1.4	1.1	18	1	128	.06	4	.6	1.1	12	SF2	
		18	1239	34.18	19	22.00	155	13.14	2.97	.9	1.0	15	2	96	.05	1	.4	.4	10	SER	
		18	1243	28.00	19	19.85	155	12.08	6.07	1.6	1.4	27	2	83	.11	5	.5	1.3	19	SF3	
		18	1653	35.66	19	23.07	155	14.81	3.12	1.1	1.1	12	2	111	.03	2	.4	.6	7	SEC	
		18	1659	35.95	19	22.28	155	9.34	3.41	1.2	1.1	14	0	168	.05	1	1.3	.5	12	SER	
		18	1752	20.20	18	58.65	155	21.24	21.32	2.1	1.5	26	1	247	.07	23	1.8	3.4	23	LOI	
		18	22	0 17.46	19	19.54	155	10.25	8.55	2.0	2.0	30	2	96	.09	5	.5	1.0	24	SF3	
		19	016	47.67	19	55.60	155	39.71	17.29	2.0	2.1	14	0	271	.11	32	4.4	35.0	9	KOH	*
		19	018	1.93	19	58.01	155	39.52	16.66	2.3	2.1	15	0	252	.09	34	2.3	99.0	10	KOH	*
		19	2	7 .21	19	23.15	155	14.87	3.26	1.1	1.2	14	1	66	.05	2	.4	.5	13	SEC	
		19	251	41.00	19	25.42	155	25.11	7.76	1.5	1.2	23	1	49	.09	0	.4	1.0	20	KAO	
		19	3	7 28.26	19	20.85	155	6.99	8.20	2.5	2.5	36	2	92	.10	4	.5	.8	29	SF4	
		19	4	9 36.45	19	19.85	155	10.50	9.14	1.8	1.8	30	1	89	.10	4	.5	.9	24	SF3	
		19	613	50.33	19	13.81	155	37.05	8.35	2.8	2.7	34	2	197	.20	2	.8	.7	25	LSW	
		19	848	25.50	19	18.97	155	13.44	8.81	2.6	2.8	40	3	76	.10	4	.4	.6	34	SF2	
		19	9	5 9.85	19	20.36	155	12.92	6.62	1.8	2.0	26	2	67	.11	4	.5	1.0	18	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	JUN	19	910	9.80	19	23.50	155	23.92	10.66		1.3	17	1	73	.07	4	.5	1.4	13	KAO	
		19	1156	43.66	19	22.08	155	11.40	3.51	1.5	1.5	18	1	149	.07	3	.8	.6	14	SER	
		19	1211	55.97	19	23.64	155	23.94	9.81	1.6	1.5	23	1	66	.06	4	.5	.9	20	KAO	
		19	1810	49.88	19	13.77	155	39.54	8.89	2.8	3.0	31	0	257	.18	5	1.8	.9	23	LSW	
		19	1954	54.05	19	33.02	155	.16	42.42	2.8	2.8	42	1	132	.09	8	1.0	1.9	38	HIL	
		19	2125	38.98	19	28.68	155	52.02	9.80	2.3	2.2	26	1	128	.16	5	.8	.5	19	KON	
		19	23	5 22.54	19	26.22	155	24.30	7.83	2.0	1.9	34	2	46	.11	2	.4	.9	26	KAO	
		19	2312	12.28	19	20.98	155	2.01	6.03	1.6	1.4	19	0	175	.13	3	.8	1.2	10	SF5	
		20	154	54.29	19	17.75	155	15.57	7.06	1.1	1.1	21	2	166	.07	4	.6	1.1	14	SF1	
		20	156	.64	19	19.52	155	10.58	9.47	1.7	1.3	21	2	179	.05	5	.7	1.1	16	SF3	
		20	318	20.34	19	23.39	155	5.76	1.53	1.8	2.0	16	0	95	.08	1	.5	.3	10	SME	
		20	530	37.71	19	23.24	155	5.65	1.53	2.3	3.0	21	0	80	.11	1	.4	.3	14	SME	
		20	610	34.73	19	19.35	155	10.15	8.88	1.5	1.1	18	1	188	.04	5	.7	1.3	16	SF3	
		20	613	49.44	19	23.40	155	5.49	1.33	1.3	2.0	12	0	94	.10	2	.5	.4	7	SME	
		20	623	27.52	19	20.32	155	12.15	7.85	2.4	2.3	41	3	75	.11	5	.4	.6	29	SF3	
		20	626	55.82	19	25.37	154	57.41	2.94	2.4	2.6	27	1	178	.21	2	1.1	.8	20	SLE	
		20	1228	17.71	19	24.30	155	17.73	15.62	2.6	2.1	34	2	47	.08	2	.6	.4	30	DEP	
		20	1414	6.08	19	18.90	155	15.45	7.83	1.3	1.3	18	2	119	.05	4	.5	1.1	15	SF1	
		20	18	4 57.65	19	21.70	155	6.13	8.67	1.3	1.1	19	2	117	.08	2	.7	1.2	15	SF4	
		20	2355	36.78	19	17.16	155	22.94	6.82	2.4	2.8	34	2	122	.14	6	.4	1.1	22	SWR	
		21	010	58.00	19	21.95	155	4.93	.04	.7	1.6	7	0	259	.12	3	5.5	8.2	3	SSF	*
		21	527	6.72	19	19.65	155	8.53	8.93	1.4	1.3	18	0	154	.05	5	.8	1.3	17	SF4	
		21	1147	57.01	19	19.63	155	11.28	7.50	1.5	1.4	30	3	94	.09	5	.5	.9	25	SF3	
		21	1619	48.87	19	19.54	155	7.95	7.51	2.2	2.4	36	3	96	.09	4	.4	.9	22	SF4	
		21	1928	6.25	19	18.45	155	15.08	7.67	1.1	1.2	22	2	130	.06	4	.6	1.0	18	SF1	
		21	2022	27.82	19	19.64	155	7.39	8.53	1.5	1.3	24	3	160	.07	6	.7	1.2	15	SF4	
		21	2043	50.50	19	25.67	155	25.06	7.56	2.5	2.7	37	1	49	.13	1	.4	.9	26	KAO	
		21	2358	38.72	19	20.08	155	8.74	8.63	1.6	1.6	20	2	145	.05	4	.8	1.1	15	SF4	
		22	034	.71	19	20.17	155	6.24	7.31	2.1	1.5	23	2	152	.12	5	.7	1.2	18	SF4	
		22	624	13.54	19	19.78	155	10.09	7.39	1.4	1.1	16	2	181	.06	4	.7	1.4	12	SF3	
		22	1256	.58	19	10.91	155	28.77	33.25	2.1	1.4	31	2	89	.05	3	.8	1.7	25	DLS	
		22	1756	27.80	19	25.52	155	24.13	10.50	1.8	1.1	24	1	47	.08	2	.5	1.1	22	KAO	
		22	20	8 37.78	19	18.45	155	13.03	10.20	2.7	2.7	38	2	136	.10	8	.5	.6	30	SF2	
		23	1428	26.47	19	20.14	155	12.07	8.19	1.7	1.3	15	1	141	.05	5	.6	1.1	12	SF3	
		23	1943	24.35	19	22.60	155	5.92	1.19	2.7	3.1	26	1	116	.13	1	.4	.2	12	SME	
		23	1954	55.91	19	21.50	155	5.81	8.64	1.8	1.7	20	1	119	.09	3	.6	1.1	15	SF4	
		23	2013	39.95	19	23.09	155	6.06	1.56	1.6	2.1	13	0	94	.07	0	.8	.2	9	SME	
		23	2018	35.70	19	20.16	155	11.87	8.55	1.6	1.1	19	1	145	.06	5	.7	1.0	14	SF3	
		23	2327	32.23	19	22.82	155	6.16	1.56	1.1	1.5	9	0	210	.06	0	2.9	.2	5	SME	
		24	154	28.03	18	56.48	155	34.39	43.59	2.7	2.6	35	0	244	.07	11	2.0	2.6	30	DLS	
		24	259	3.51	19	18.71	155	11.32	7.29	1.5	1.3	22	2	150	.06	5	.6	1.1	13	SF3	
		24	324	8.27	19	22.97	155	6.88	1.60	1.8	2.5	17	0	98	.09	1	.6	.4	12	SME	
		24	635	1.57	19	18.89	155	15.89	8.20	1.8	1.9	26	2	123	.05	4	.5	.8	20	SF1	
		24	732	18.25	19	22.94	155	6.20	1.62	2.1	1.9	19	0	96	.06	0	.4	.2	14	SME	
		24	8	5 24.59	19	22.88	155	6.21	1.37	3.4	4.1	32	1	97	.12	0	.5	.3	25	SME	
		24	915	17.55	19	22.48	155	6.43	1.14	3.0	3.9	25	0	122	.13	1	.5	.3	18	SME	
		24	949	1.13	19	18.87	155	13.32	7.36	2.4	2.4	39	3	102	.09	3	.4	.5	30	SF2	
		24	1129	7.77	19	23.76	155	2.94	6.98	1.9	1.6	27	1	108	.16	3	.5	.9	21	SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JUN	24	1630	12.11	19	26.62	155	29.91	9.02	2.2	1.9	35	0	69	.12	9	.4	1.1	32	KAO
		25	148	44.44	19	43.38	155	44.34	16.36	3.3	3.5	44	3	105	.09	11	.5	1.6	37	HUA F
		25	348	16.95	19	19.90	155	10.53	7.73	1.6	1.3	25	0	88	.11	4	.6	1.1	21	SF3
		25	755	50.79	19	20.29	155	12.91	9.15	2.7	2.8	42	1	68	.11	4	.5	.5	36	SF2
		25	12	6 9.12	19	19.87	155	6.75	7.21	1.8	1.2	26	1	116	.10	5	.6	1.3	22	SF4
		25	15	1 7.66	19	18.12	155	15.45	7.23	1.9	1.1	29	3	149	.09	4	.5	.8	23	SF1
		25	15	2 23.17	19	25.73	155	37.89	1.32	2.2	1.8	21	0	97	.13	4	.6	1.3	18	MLO
		25	17	3 41.23	19	25.68	155	29.15	7.94	1.9	1.3	25	1	60	.06	7	.5	1.5	20	KAO
		25	1752	34.24	19	21.60	155	4.96	8.20	1.5	1.2	24	1	83	.12	3	.5	1.0	17	SF5
		26	12	3 10.02	19	19.76	155	10.06	6.99	2.4		29	1	90	.10	4	.5	1.0	24	SF3
		26	12	4 20.55	19	19.68	155	10.08	8.16	1.9	1.8	27	3	92	.08	4	.5	.9	21	SF3
		26	1451	49.19	19	20.61	155	10.64	7.26	1.7	1.6	30	3	75	.09	3	.5	.8	24	SF3
		26	17	9 15.05	19	20.18	155	11.91	7.17	2.5	2.9	39	5	78	.10	5	.4	.5	28	SF3
		26	2058	11.41	19	21.16	155	2.54	5.69	1.4	1.0	19	0	150	.17	2	1.0	1.7	17	SF5
		27	1	3 58.60	19	19.16	155	26.49	8.91	1.0	1.3	11	1	138	.07	6	.7	1.5	8	KAO
		27	139	19.26	19	19.07	155	22.00	3.67	.8	1.0	14	0	135	.07	3	.6	.8	11	SWR
		27	1011	32.13	19	23.34	155	2.67	7.39	1.5	1.1	19	1	121	.12	4	.6	1.2	14	SF5
		27	1232	5.80	19	23.56	155	1.79	8.25	1.8	1.4	21	0	136	.12	5	.7	1.2	19	SF5
		27	1347	32.73	19	23.15	155	23.62	11.84	1.5	1.3	21	1	88	.06	5	.6	1.1	18	KAO
		27	1610	25.08	19	33.21	155	58.46	22.25	1.8	1.5	19	0	242	.11	9	2.4	2.4	15	KON
		27	1949	30.59	19	20.30	155	3.39	7.76	1.6	1.6	26	0	105	.10	1	.8	.8	20	SF5
		27	2253	1.36	19	25.97	155	59.46	28.52	2.1	1.7	22	0	285	.08	22	4.5	3.4	20	KON
		28	014	33.66	19	15.98	155	18.32	26.61	1.9	1.6	26	1	185	.06	4	1.0	1.6	21	DEP
		28	923	49.85	19	20.10	155	8.75	7.65	1.6	1.6	28	3	73	.06	4	.5	.9	21	SF4
		28	1145	52.40	19	19.25	155	15.60	7.99	2.7	2.8	42	4	92	.10	4	.4	.6	30	SF1
		28	1252	32.43	19	19.71	155	8.51	8.53	2.0	2.1	33	2	80	.08	4	.4	.8	22	SF4
		28	1856	4.25	19	38.97	155	8.17	14.81	2.0	1.4	27	3	230	.09	18	1.0	.8	17	HIL B
		28	2055	13.22	19	26.90	155	28.93	8.67	1.4	1.1	19	1	87	.09	7	.5	1.4	18	KAO
		28	2149	49.07	19	20.67	155	11.49	8.38	1.7	1.7	29	2	74	.09	4	.5	.7	22	SF3
		29	053	10.06	19	20.80	155	8.15	7.77	1.3	1.3	24	2	77	.08	4	.5	.9	16	SF4
		29	145	44.25	19	18.11	155	13.22	6.22	1.6	1.8	26	3	94	.11	2	.5	1.1	19	SF2
		29	839	21.82	19	19.27	155	12.15	6.18		1.2	19	0	94	.10	5	.5	1.3	14	SF3
		29	21	7 38.13	19	19.65	155	12.50	7.09	2.2	2.2	36	3	82	.10	5	.4	.7	29	SF2
		30	317	16.73	19	19.83	155	11.74	7.81	1.4	1.3	20	2	87	.06	5	.4	.9	13	SF3
		30	538	22.28	19	18.54	155	25.88	8.55	2.0	2.2	29	1	95	.11	6	.4	1.0	19	LSW
		30	626	27.79	19	18.18	155	21.05	2.52	1.6	1.5	16	2	152	.08	4	.6	.6	10	SWR
		30	741	16.23	19	19.65	155	6.90	8.11	2.0	1.8	29	3	119	.08	5	.5	1.0	21	SF4
		30	825	19.32	19	28.42	154	47.79	8.26	2.0	1.6	17	1	288	.18	10	4.0	1.1	9	LER
		30	921	.84	19	18.97	155	15.25	7.24	1.3	1.2	26	2	115	.07	4	.5	.9	19	SF1
		30	1022	46.69	19	23.31	155	26.17	11.68	1.7	1.7	25	2	67	.09	3	.5	1.0	23	KAO
		30	1426	44.69	19	23.17	155	27.69	10.71	1.8	1.8	30	1	49	.10	1	.4	.8	23	KAO
		30	1927	46.71	19	23.47	155	17.02	2.80	1.8	2.4	22	1	42	.08	0	.3	.2	21	SSC
		30	2035	28.21	19	20.03	155	11.94	9.32	1.9	1.7	32	4	81	.07	5	.4	.8	22	SF3
		30	21	5 3.39	19	23.50	155	16.98	2.81	1.3	1.5	17	1	46	.05	0	.3	.2	12	SSC
	JUL	1	024	3.29	19	24.32	155	36.73	9.57	2.2	1.6	25	2	45	.07	6	.4	.9	18	MLO
		1	517	25.99	19	19.78	155	50.77	6.81	2.1	1.7	22	1	160	.12	7	.6	1.5	14	KON
		1	952	41.84	19	20.56	155	6.52	8.92	2.7	2.4	35	1	103	.09	5	.4	.6	26	SF4
		1	14	2 39.93	19	23.66	155	16.90	2.82	1.6	1.3	19	2	54	.07	1	.2	.2	14	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JUL	1	1525	53.44	19	20.27	155	8.72	6.73	1.8	1.1	34	2	73	.09	4	.4	.9	24	SF4
		1	1747	46.33	19	27.70	154	52.07	1.08	2.4	1.5	21	1	265	.22	3	1.7	.9	15	SLE
		1	1958	51.73	19	19.72	155	11.86	8.51	2.2	1.8	36	3	88	.10	6	.5	.7	28	SF3
		1	2322	22.48	19	18.96	155	26.01	7.97	1.9	1.7	28	2	92	.15	5	.6	1.0	25	LSW
		2	618	12.48	19	23.31	155	16.90	3.12	1.4	1.2	19	1	56	.05	0	.3	.3	15	SSC
		2	824	37.22	19	20.52	155	9.33	7.97	1.8	1.2	23	0	72	.08	3	.6	1.0	21	SF3
		2	854	58.06	19	23.86	155	16.73	2.84	1.9	2.1	22	2	83	.10	0	.4	.2	17	SSC
		2	1417	48.04	19	19.88	155	13.40	7.12	1.6	1.3	23	1	67	.10	5	.5	1.1	18	SF2
		2	1820	40.91	19	24.29	155	25.14	10.80	2.8	2.6	41	1	37	.10	2	.3	.4	37	KAO
		2	1856	13.33	19	20.33	155	24.87	9.85	1.8	1.4	30	1	84	.11	3	.5	.7	23	SWR
		2	2343	34.01	19	23.64	155	15.51	2.92	1.4	1.3	22	3	94	.08	2	.3	.3	14	SEC
		3	215	57.91	19	24.14	155	26.83	10.94	2.0	1.8	32	0	45	.08	3	.5	.7	24	KAO
		3	3	0 38.14	19	19.70	155	7.27	8.49	2.2	1.9	35	2	110	.07	5	.4	.8	25	SF4
		3	317	34.90	19	20.57	155	6.49	7.92	2.1	1.4	32	0	104	.09	5	.5	.9	26	SF4
		3	419	20.17	19	23.31	155	14.96	3.34	2.3	2.2	25	1	72	.08	2	.3	.4	23	SEC
		3	924	43.87	19	23.18	155	17.10	2.69	2.1	2.0	22	1	48	.22	0	.4	.5	21	SSC
		3	12	5 16.30	19	22.05	155	5.19	7.11	2.0	1.3	24	0	75	.12	3	.5	1.0	21	SF5
		3	1430	19.94	19	21.61	155	7.05	7.03	1.9	1.2	22	3	79	.10	3	.5	1.1	16	SF4
		3	17	1 25.22	19	19.88	155	6.43	8.41	2.0	1.3	20	0	121	.06	5	.7	1.3	18	SF4
		3	1823	16.62	19	23.83	155	15.45	3.09	1.8	1.9	20	2	102	.06	2	.3	.3	16	SEC
		3	22	5 33.71	19	23.13	155	14.99	2.74	1.9	1.6	22	2	68	.09	2	.3	.4	16	SEC
		3	2221	23.46	19	20.07	155	8.36	6.98	1.8	1.2	22	2	81	.07	5	.5	1.2	19	SF4
		3	2331	7.05	19	23.87	155	15.60	3.28	1.8	1.8	20	2	106	.07	2	.3	.3	15	SEC
		4	4	6 53.84	19	20.38	155	12.84	6.95	1.5	1.4	17	0	67	.09	4	.5	1.2	16	SF2
		4	4	9 19.15	19	23.74	154	58.02	6.76	1.8	1.3	22	1	191	.13	3	1.1	1.1	16	LER
		4	439	45.78	19	24.62	155	.53	6.80	2.3	2.1	34	2	133	.10	3	.4	.7	22	SF5
		4	653	23.75	19	26.08	155	27.12	7.71	2.1	1.4	27	3	59	.09	4	.4	1.0	21	KAO
		4	9	5 25.10	19	27.82	155	14.61	32.34	2.7	2.7	44	5	46	.10	6	.6	1.0	36	DEP
		4	928	12.56	19	23.43	155	16.81	3.07	2.6	2.9	30	2	39	.09	0	.2	.2	24	SSC
		4	11	4 25.11	19	20.11	155	12.25	7.59	1.5	1.3	24	2	77	.08	5	.5	1.0	17	SF3
		4	1116	48.60	19	19.80	155	6.77	8.07	1.6	1.2	22	0	117	.08	5	.6	1.4	15	SF4
		4	1346	5.80	19	19.82	155	7.60	8.34	2.4	2.3	36	2	100	.08	5	.4	.8	25	SF4
		4	16	6 3.59	19	23.22	155	17.20	2.56	1.2	1.4	18	2	61	.08	1	.3	.3	14	SSC
		4	1936	.66	20	53.05	157	47.47	9.70	3.7		16	6	206	.15	64	1.6	2.0	14	DIS
		4	2038	45.02	19	24.59	155	22.82	10.16	1.8	1.4	27	3	39	.06	4	.5	.9	24	KAD
		4	21	0 29.14	19	18.28	155	13.23	8.63	1.5	1.1	21	1	90	.07	2	.6	1.1	16	SF2
		5	254	18.42	19	26.58	155	23.05	8.04	1.9	1.8	33	4	48	.11	4	.4	.8	22	KAO
		5	1233	9.15	19	19.85	155	9.18	7.94	1.6	1.0	19	2	81	.06	4	.5	1.2	13	SF3
		5	15	7 42.31	19	23.71	155	15.19	1.64	1.4	1.5	14	2	95	.13	2	.3	.4	8	SEC
		5	1840	13.55	19	18.61	155	15.51	7.29	1.6	1.3	22	3	129	.08	4	.5	1.0	16	SF1
		5	20	1 26.44	19	19.36	155	11.33	6.93	1.5	1.4	25	2	99	.09	6	.5	1.3	15	SF3
		5	2040	51.01	19	13.84	155	33.13	37.75	2.3	2.0	37	2	74	.07	6	.8	1.4	31	DLS
		5	2328	44.24	19	22.06	155	5.69	9.44	1.9	1.6	24	2	76	.05	2	.6	.9	13	SF4
		6	015	4.96	19	19.36	155	11.15	7.97	2.1	2.0	27	1	101	.10	6	.6	1.1	23	SF3
		6	1	4 24.37	19	20.14	155	8.33	8.84	2.9	2.9	38	2	80	.08	4	.5	.6	34	SF4 F
		6	2	5 29.27	19	18.18	155	30.23	9.26	2.0	1.6	33	1	71	.12	6	.4	1.1	25	LSW
		6	215	40.14	19	19.74	155	11.75	7.53	1.9	1.7	31	1	88	.09	5	.5	.9	24	SF3
		6	224	41.50	19	19.99	155	11.22	7.94	1.5	1.4	30	2	86	.07	5	.5	.8	23	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JUL	6	246	18.51	19	21.36	155	2.67	8.28	2.3	2.3	38	4	141	.11	3	.6	.6	28	SF5
		6	652	2.88	19	19.19	155	11.52	8.04	1.9	1.4	25	1	103	.07	5	.5	1.1	17	SF3
		6	7 7	49.23	19	23.86	155	15.67	3.07	1.3	1.5	20	2	106	.07	2	.3	.3	12	SEC
		6	1138	7.76	19	19.87	155	8.48	8.55	2.7	2.8	38	2	79	.08	5	.4	.6	28	SF4
		6	1358	43.73	19	18.89	155	13.64	8.03	1.5	1.2	20	1	86	.06	3	.5	1.1	16	SF2
		6	1648	2.58	19	22.83	155	14.49	3.63	1.5	1.3	22	3	70	.05	3	.3	.4	15	SEC
		6	20 7	33.35	19	24.66	155	1.22	6.81	2.0	1.6	33	3	121	.09	4	.4	.8	19	SF5
		6	2253	54.43	19	24.08	155	16.38	.68	2.1	2.4	5	1	155	.01	3	1.6	2.3	3	SEC
		7	025	58.42	19	28.68	154	52.85	3.04		1.6	17	2	259	.19	1	2.6	.5	14	SLE
		7	143	53.29	19	20.26	155	6.32	6.57	1.9	1.7	22	0	113	.08	5	.5	1.1	19	SF4
		7	349	4.70	19	22.83	155	14.84	3.11	1.8	1.6	14	0	68	.09	2	.4	.5	12	SEC
		7	4 4	17.34	19	23.11	155	14.83	3.13	1.6	1.5	13	1	65	.06	2	.4	.5	11	SEC
		7	410	22.61	19	23.22	155	14.93	3.23	1.2	1.1	8	0	131	.07	2	.8	.6	7	SEC
		7	738	7.34	19	23.92	155	15.51	3.23	1.2	1.0	9	0	110	.06	3	.5	.6	8	SEC
		7	939	44.03	19	19.48	155	8.90	7.93	2.1	1.9	35	2	84	.09	4	.5	.8	27	SF4
		7	1459	35.91	19	23.82	155	15.27	3.15	1.3	1.4	18	2	99	.07	2	.3	.3	13	SEC
		7	2249	9.12	19	21.38	155	15.16	9.01	2.6	2.2	41	4	65	.09	2	.4	.4	29	SF1
		8	0 4	5.70	19	20.22	155	7.34	8.87	1.6	1.3	21	1	159	.06	5	.6	1.1	18	SF4
		8	151	4.86	19	20.23	155	12.85	7.75	1.5	1.2	29	2	70	.09	4	.5	.7	21	SF2
		8	316	43.93	19	19.35	155	9.89	6.78	1.7	1.3	26	1	99	.11	5	.6	1.2	20	SF3
		8	352	6.14	19	21.22	155	7.82	8.41	2.9	3.0	39	3	77	.09	4	.4	.6	33	SF4
		8	455	33.10	19	23.30	155	15.01	3.13	1.8	1.8	23	3	74	.07	2	.2	.3	17	SEC
		8	1036	7.40	19	59.62	155	23.94	11.61	2.0	1.4	13	3	198	.11	13	1.5	.4	5	KEA
		8	1111	37.93	19	23.33	155	14.96	3.03	1.8	1.9	17	0	74	.05	2	.3	.3	15	SEC
		8	1148	20.84	19	21.06	155	13.11	9.12	1.5	1.4	27	2	66	.10	3	.5	.8	22	SF2
		8	18 3	39.83	19	59.45	155	24.72	10.28	1.7	1.5	11	2	196	.12	13	1.2	.8	8	KEA
		8	1834	60.00	19	59.73	155	24.31	9.56	2.6	1.6	13	1	198	.15	13	1.2	.8	11	KEA
		8	1934	44.47	19	19.37	155	11.09	8.50	2.8	2.7	40	5	100	.10	5	.4	.7	31	SF3
		8	2222	30.12	19	22.99	155	14.71	3.15	1.4	1.2	18	3	69	.05	2	.3	.3	12	SEC
		8	2314	55.66	19	24.10	155	16.32	2.83	1.3	1.3	17	2	100	.11	1	.4	.3	13	SEC
		9	647	4.81	19	20.58	155	12.94	8.77	1.5	1.3	28	2	64	.08	4	.5	.8	21	SF2
		9	1042	13.06	19	22.82	155	14.55	3.43	3.0		33	1	50	.09	3	.3	.4	27	SEC
		9	1042	51.12	19	22.92	155	14.82	3.08	2.5	2.5	17	1	62	.09	2	.4	.4	13	SEC
		9	1058	59.41	19	22.92	155	14.67	3.07	2.4	2.4	26	2	63	.10	2	.3	.4	20	SEC F
		9	19 8	30.41	19	22.27	155	9.31	3.78	2.0	1.3	27	0	86	.07	1	.5	.6	23	SER
		9	2029	52.36	19	18.57	155	15.59	6.68	1.9	1.3	35	3	106	.10	4	.5	.8	25	SF1
		9	22 4	51.61	19	20.21	155	12.45	8.35	1.5	1.3	28	1	74	.09	5	.5	.8	21	SF2
		10	1 5	8.45	19	17.72	154	58.36	40.55	2.3	1.6	34	1	232	.06	9	1.6	2.1	30	LER
		10	625	32.71	19	27.38	155	14.68	33.00	2.8	2.6	44	2	41	.11	5	.6	1.1	40	DEP
		10	733	26.81	19	39.63	155	54.59	27.19	2.8	2.2	29	2	191	.12	8	.8	1.7	23	HUA
		10	1414	53.22	19	20.74	155	12.94	7.74	1.6	1.2	26	2	68	.09	4	.5	.8	19	SF2
		10	1426	43.12	19	27.58	155	14.74	32.69	2.6	2.4	44	1	40	.11	5	.6	1.2	38	DEP
		10	1844	5.17	19	19.99	155	7.90	7.41	1.6	1.0	26	1	92	.11	5	.4	1.0	16	SF4
		10	2141	18.78	19	20.41	155	11.67	8.80	2.2	2.0	37	3	76	.07	4	.4	.6	26	SF3
		11	252	43.87	19	21.93	155	9.32	3.61	1.7	1.3	16	0	149	.04	1	.9	.5	14	SER
		11	7 2	34.34	19	23.32	155	7.43	3.01	1.7	1.7	19	0	104	.07	2	.5	.4	13	SER
		11	834	56.51	19	20.55	155	10.85	8.27	1.8	1.2	29	4	77	.08	3	.4	.8	21	SF3
		11	1037	56.37	19	23.26	155	14.94	3.21	2.0	2.0	19	2	71	.07	2	.3	.4	17	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JUL	11	1554	24.74	19	13.58	155	22.03	38.75	2.3		24	1	229	.12	10	1.8	2.7	12	DEP T
		11	1822	57.48	19	24.98	155	25.19	9.31	1.7	1.3	30	2	38	.10	1	.4	.8	24	KAO
		12	535	48.15	19	55.19	155	22.74	10.38	2.4	2.3	23	1	241	.09	5	1.4	.4	16	KEA
		12	9 6	36.87	19	24.20	155	21.49	7.65	2.1	1.7	26	1	47	.09	7	.4	1.1	22	KAO
		12	933	52.83	19	20.81	155	6.00	8.53	2.3	2.0	29	0	102	.08	4	.5	.9	25	SF4
		12	1230	13.58	19	26.30	155	24.46	3.37	1.6	1.2	21	2	114	.08	2	.3	.6	15	KAO
		12	1558	33.98	19	21.31	155	6.14	8.18	2.3	2.1	34	2	90	.08	3	.4	.7	24	SF4
		12	1724	30.34	19	20.65	155	12.88	8.61	1.8	1.4	28	1	64	.09	4	.5	.7	22	SF2
		13	116	16.04	19	25.40	155	15.34	1.88	1.9	2.1	23	3	153	.08	2	.3	.3	13	SNC F
		13	123	38.98	19	19.08	155	3.79	2.54	1.9	1.2	24	1	214	.13	8	1.0	3.3	18	SSF *
		13	632	36.71	19	22.32	155	28.60	10.40	2.5	2.4	34	1	62	.08	2	.4	.6	28	KAO
		13	7 5	16.03	19	20.20	155	13.43	6.22	1.5	1.1	25	3	65	.11	5	.5	1.1	19	SF2
		13	1531	1.78	20	1.60	155	23.09	11.29	2.4	1.9	15	2	208	.08	16	1.4	.6	5	KEA
		13	2225	7.77	19	20.61	155	6.15	8.08	2.6	2.4	39	3	106	.12	4	.4	.7	32	SF4
		13	2249	12.59	19	21.03	155	6.16	6.83	1.6	1.2	27	1	95	.12	4	.6	1.1	24	SF4
		14	1419	29.02	19	14.82	155	18.77	1.81	2.4	2.4	30	1	163	.08	6	.5	1.1	24	SWR
		14	1511	13.36	19	26.19	155	23.37	6.66	1.5	1.3	22	3	76	.08	4	.4	1.1	12	KAO
		14	1838	55.19	19	26.37	154	51.57	8.88	2.9	2.9	32	3	273	.12	6	1.5	.5	24	LER F
		15	1145	4.80	19	26.12	155	27.66	8.60	2.6	2.1	39	2	48	.11	5	.4	.7	29	KAO
		15	1226	39.39	19	20.80	155	6.59	7.12	2.1	1.6	31	2	97	.09	4	.5	.9	24	SF4
		15	1249	37.17	19	11.07	155	19.12	45.20	1.9	1.5	19	1	193	.03	13	1.2	1.7	11	DEP L
		15	15 0	50.49	19	24.40	155	24.90	10.10	2.3	1.8	31	3	36	.10	2	.4	.6	25	KAO
		15	1623	4.14	19	23.48	155	24.65	10.09	2.7	2.5	42	3	39	.10	3	.4	.5	30	KAO
		15	2131	21.37	19	29.78	155	23.25	13.32	2.3	1.6	26	2	91	.08	0	.5	.9	21	DML
		15	2135	31.01	19	29.98	155	23.02	13.76	2.5	1.8	29	4	93	.10	1	.5	.6	21	DML
		16	1350	54.04	19	59.67	155	10.89	35.43	2.2	1.7	21	0	293	.10	36	7.6	7.4	18	KEA
		16	14 9	14.65	19	19.42	155	11.08	8.80	2.8	3.0	33	3	99	.08	5	.4	.7	26	SF3
		16	1533	36.39	19	29.94	155	23.11	13.89	2.6	2.1	27	3	92	.10	0	.5	.6	20	DML
		16	16 5	.52	19	30.07	155	23.19	14.58	2.0	1.2	21	2	100	.11	1	.6	.5	17	DML
		16	1854	17.27	19	21.33	155	5.88	8.85	1.9	1.2	19	0	91	.07	3	.6	1.4	17	SF4
		16	19 3	51.00	19	57.27	155	22.42	8.85	2.7	2.6	19	1	248	.07	40	1.4	.8	14	KEA F
		16	1939	11.21	19	26.55	155	29.59	6.38	1.9	.9	15	2	105	.13	8	.6	2.2	11	KAO
		16	2232	9.93	19	33.96	155	39.53	3.53	2.3	1.2	13	1	273	.16	13	3.4	8.1	10	MLO *
		17	825	36.91	19	18.95	155	13.51	8.88	2.3	2.1	25	1	81	.09	4	.5	.7	22	SF2
		17	2239	33.75	19	21.52	155	4.94	6.69	2.0	1.3	27	1	85	.13	4	.5	.9	19	SF5
		18	056	47.28	19	23.85	155	5.65	1.89	1.7	2.2	5	0	135	.01	2	1.6	.7	4	SME
		18	126	30.05	19	22.86	155	4.87	1.81	3.3	3.9	27	1	167	.15	2	1.0	.5	22	SME
		18	9 4	48.34	19	15.02	155	38.82	7.40	2.3	2.1	26	0	182	.14	3	.8	.6	17	LSW
		18	941	58.48	19	20.13	155	10.70	8.55	2.0	2.0	33	2	84	.07	4	.4	.8	23	SF3
		18	1031	10.57	19	31.54	155	28.12	3.80	3.2	3.3	39	1	68	.11	1	.4	.7	35	MLO
		18	11 9	57.63	19	20.59	155	12.75	7.75	1.6	1.3	24	1	66	.10	4	.5	.9	18	SF2
		18	1227	54.03	19	20.34	155	10.71	8.87	2.1	2.4	31	2	81	.09	4	.4	.8	24	SF3
		18	1930	48.92	19	19.79	155	11.61	8.95	2.7	3.0	38	2	88	.08	5	.4	.6	32	SF3
		18	2243	18.22	19	19.58	155	11.33	8.60	2.4	2.8	37	2	95	.08	5	.3	.5	28	SF3
		19	119	31.40	19	28.19	155	21.77	5.09	2.0	2.1	22	3	86	.12	8	.4	4.6	19	KAO
		19	551	19.61	19	10.87	155	20.27	46.33	1.9	2.1	27	1	191	.07	14	1.1	1.6	11	DEP L
		19	637	5.79	19	24.07	155	15.91	3.04	1.4	1.8	16	1	110	.04	1	.4	.3	13	SEC
		19	652	56.59	19	22.84	155	4.26	7.62	2.3	2.0	30	3	90	.10	3	.4	.7	15	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JUL	19	9 8	9.82	19	19.68	155	10.20	7.95	1.7	1.3	26	1	93	.08	4	.5	.9	18	SF3
		19	956	31.19	19	20.46	155	6.63	8.47	2.1	2.0	25	2	175	.08	5	.6	1.0	19	SF4
		19	1223	3.72	19	25.46	155	24.99	8.67	1.6	1.3	25	2	56	.10	0	.4	.9	21	KAO
		19	13 4	39.98	19	19.39	155	8.56	7.60	1.7	1.6	26	2	80	.07	4	.5	1.1	21	SF4
		20	043	50.28	19	23.98	155	26.67	10.30	2.3	2.3	38	3	46	.12	3	.4	.7	27	KAO
		20	051	16.39	19	23.79	155	26.82	9.04	1.6	1.3	23	1	64	.09	3	.5	.8	20	KAO
		20	231	47.47	19	23.74	155	26.83	9.40	1.7	1.6	28	1	48	.10	3	.4	.9	22	KAO
		20	257	31.60	19	25.41	155	24.98	8.54	1.6	1.3	25	2	56	.10	0	.5	1.0	23	KAO
		20	721	30.28	19	20.88	155	7.70	8.39	2.1	2.3	33	3	82	.08	4	.4	.7	24	SF4
		20	855	34.92	19	20.06	155	11.76	9.82	3.0	3.2	42	1	82	.08	5	.4	.3	38	SF3
		20	1724	5.55	19	19.99	155	13.36	7.58	1.5	1.1	22	1	66	.09	5	.5	1.0	19	SF2
		21	0 7	5.26	19	10.71	155	35.85	8.21	2.2	1.3	20	2	126	.12	8	.5	.8	15	LSW
		21	9 6	43.85	19	21.14	155	6.66	6.81	1.8	1.4	25	3	89	.11	4	.5	.9	15	SF4
		21	1141	3.71	19	24.83	154	58.79	5.73	2.0	1.4	16	0	199	.14	1	1.1	1.2	13	LER
		22	018	52.23	19	20.79	155	11.63	8.19	2.4	2.2	31	3	139	.11	4	.5	.8	25	SF3
		22	421	21.50	19	18.51	155	13.38	8.59	2.0	2.1	34	4	81	.11	3	.4	.6	21	SF2
		22	1442	4.01	19	21.64	155	6.50	7.40	2.5	2.5	40	3	81	.09	3	.4	.6	28	SF4
		23	249	29.42	19	20.14	155	8.17	8.04	1.9	1.2	30	1	83	.09	5	.5	.9	22	SF4
		23	1321	7.08	19	20.03	155	3.32	8.56	2.8	2.7	40	3	132	.09	1	.7	.4	31	SF5
		23	16 7	12.31	19	19.69	155	11.46	6.87	1.6	1.3	26	1	91	.09	5	.5	.9	24	SF3
		23	1611	25.09	19	19.94	155	11.68	6.81	1.6	1.3	30	2	85	.10	5	.5	.8	23	SF3
		24	031	3.24	19	23.52	155	16.90	2.86	1.6	1.4	18	3	45	.08	0	.3	.2	13	SSC
		24	655	45.16	19	23.89	155	36.94	3.72	2.4	1.9	22	1	67	.14	6	.5	2.8	15	MLO
		24	7 8	3.54	19	23.72	155	16.96	2.61	2.1	2.1	21	2	63	.09	1	.3	.2	15	SSC
		24	831	52.93	19	19.79	155	11.07	7.26	1.7	1.4	19	0	91	.11	5	.5	.9	16	SF3
		24	1812	17.93	19	20.70	155	10.88	7.36	1.7	1.2	28	2	74	.10	3	.5	.7	21	SF3
		24	1836	58.87	19	21.52	155	8.16	8.27	2.4	2.3	33	2	69	.09	3	.4	.5	25	SF4
		24	1938	3.33	19	27.00	155	29.16	10.10	1.9	1.3	29	3	70	.09	8	.4	.8	20	KAO
		24	2039	41.68	19	23.46	155	36.43	2.52	2.1	1.6	22	2	65	.14	7	.4	1.4	11	MLO
		25	147	22.89	19	20.26	155	11.19	7.68	2.5	2.4	41	4	81	.11	4	.3	.6	28	SF3
		25	518	28.73	19	20.62	155	9.78	7.56	2.1	1.2	26	3	73	.07	3	.5	.9	15	SF3
		25	1059	48.99	19	21.71	155	7.04	8.01	1.9	1.3	24	2	78	.08	3	.5	.7	15	SF4
		25	1253	8.28	19	20.58	155	6.93	8.21	1.9	1.1	24	0	98	.08	5	.6	1.0	19	SF4
		25	1824	8.19	19	20.21	155	12.90	8.22	1.6	1.1	25	1	69	.09	4	.5	.8	23	SF2
		25	1934	31.86	19	23.21	155	14.97	3.12	1.1	.9	15	2	106	.07	2	.4	.4	11	SEC
		26	041	50.80	19	22.78	155	14.43	3.24	1.2	1.3	14	2	76	.04	2	.4	.3	11	SEC
		26	159	4.01	19	22.26	155	25.12	9.63	1.6	1.3	28	2	53	.11	4	.5	.7	20	KAO
		26	754	38.15	19	15.03	155	36.99	8.56	2.6	2.6	36	1	68	.21	0	.6	.7	28	LSW
		26	1716	34.96	19	28.96	154	53.61	2.59	2.1	1.9	18	0	140	.14	0	1.6	.5	12	SLE
		27	249	38.87	19	17.46	155	13.16	6.71	2.1	2.0	32	3	123	.10	1	.5	.8	23	SF2
		27	911	58.48	19	27.48	155	22.24	7.29	1.9	1.6	23	2	88	.11	7	.4	1.3	17	KAO
		27	1135	44.00	18	43.42	156	18.73	35.42	3.7	3.9	46	4	312	.08	74	1.5	1.6	42	DIS
		27	1628	24.09	19	20.68	155	4.13	8.26	2.1	2.1	33	1	104	.10	3	.6	.6	26	SF5
		27	1740	24.74	19	18.66	155	48.01	11.09	2.9	2.3	33	2	91	.11	9	.5	.5	27	KON
		27	2127	6.39	19	26.47	155	23.77	6.07	1.8	1.6	25	2	73	.11	3	.4	1.0	17	KAO
		28	2 2	8.62	19	20.67	155	13.18	9.05	2.6	2.7	44	3	62	.09	4	.3	.5	30	SF2
		28	252	58.67	19	20.46	155	12.89	8.01	1.5	1.5	27	2	66	.09	4	.5	.7	23	SF2
		28	618	7.15	19	20.69	155	30.00	11.15	3.4	3.3	42	0	65	.09	5	.4	.5	39	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JUL	28	622	33.15	19	20.69	155	29.98	10.39	2.9	2.8	40	2	65	.10	5	.4	.7	35	KAO
		28	1020	26.53	19	27.92	155	23.89	3.85	1.5	1.1	16	2	79	.09	4	.3	.9	11	KAO
		28	1158	2.24	19	20.92	155	10.76	9.15	2.2	2.1	34	3	166	.12	3	.7	.5	25	SF3
		28	1538	15.40	19	20.48	155	17.64	35.30	2.3	2.3	45	2	54	.10	1	.6	1.0	40	DEP
		28	1830	11.61	19	19.23	155	8.90	7.68	1.7	1.9	30	3	90	.08	4	.5	.8	20	SF4
		28	2023	59.83	19	19.79	155	12.40	7.15	1.6	1.3	28	1	80	.09	5	.5	.9	21	SF2
		29	0 8	13.30	19	20.06	155	13.16	9.60	2.4	2.4	33	5	198	.09	5	.7	.5	24	SF2
		29	015	27.46	19	20.91	155	13.31	8.56	2.7	2.6	34	4	187	.12	3	.7	.5	23	SF2
		29	019	49.01	19	21.00	155	12.67	7.80	2.0	2.2	34	4	161	.11	3	.6	.5	20	SF2
		29	3 7	25.30	19	18.18	155	13.17	8.79	2.0	2.1	40	4	95	.10	2	.4	.5	23	SF2
		29	331	42.67	19	23.39	155	29.58	7.67	1.9	1.3	31	1	67	.11	4	.4	1.0	22	KAO
		29	4 7	51.92	19	23.57	155	16.98	2.94	1.3	1.4	20	2	47	.07	0	.3	.2	13	SSC
		29	451	7.94	19	23.32	155	16.82	3.03	1.7	2.1	22	3	46	.09	0	.3	.2	19	SSC
		29	912	21.18	19	20.18	155	6.58	7.89	2.1	1.6	30	3	111	.08	5	.5	1.0	22	SF4
		29	1229	45.13	19	23.68	155	26.07	10.44	1.9	1.3	28	2	63	.09	3	.5	.9	23	KAO
		29	1520	39.04	19	20.56	155	13.35	8.51	2.0	2.0	36	2	61	.11	4	.5	.6	26	SF2
		29	1858	23.70	19	19.76	155	11.99	9.56	1.5	1.1	23	2	85	.07	6	.6	.9	17	SF3
		29	2251	36.63	19	20.61	155	8.18	8.53	1.9	1.9	33	2	79	.06	4	.4	.6	24	SF4
		30	020	44.24	19	21.14	155	4.41	9.56	1.8	1.6	14	0	192	.04	5	1.2	.9	11	SF5
		30	428	38.21	19	20.50	155	12.79	9.19	1.5	1.7	30	1	67	.07	4	.5	.8	21	SF2
		30	724	14.21	19	23.93	155	14.21	10.14	1.4		7	1	148	.08	1	2.3	2.9	4	INT
		30	724	37.26	19	23.74	155	15.35	.00	.8	1.0	5	1	157	.08	2	.3	1.3	3	SEC *
		30	724	53.95	19	24.24	155	15.82	3.97	1.2	1.0	8	2	131	.04	2	.6	2.0	5	SEC
		30	725	22.61	19	24.08	155	15.62	2.22	.9	.5	7	1	127	.04	2	.4	.9	4	SEC
		30	725	34.87	19	23.70	155	15.58	3.25	1.3	1.2	13	2	98	.08	2	.5	.5	7	SEC
		30	725	50.91	19	23.75	155	15.57	2.55	1.0	.8	10	2	100	.12	2	.4	.7	4	SEC
		30	726	12.38	19	23.83	155	15.23	2.81	1.0	.5	12	2	102	.06	2	.4	.5	9	SEC
		30	726	23.20	19	23.87	155	15.36	2.75	1.0	.2	10	2	106	.02	2	.3	.6	5	SEC
		30	726	43.91	19	23.37	155	14.97	3.57	.9	.6	9	2	111	.08	2	.6	.7	0	SEC
		30	727	5.05	19	23.86	155	14.80	1.44	.8		7	1	186	.10	2	.7	.7	4	SEC
		30	727	53.82	19	23.63	155	15.11	.69	.5	.2	9	1	95	.13	2	.3	.9	3	SEC
		30	728	19.78	19	23.69	155	15.08	3.41	.9	.2	9	2	92	.04	2	.4	.6	5	SEC
		30	728	50.55	19	23.89	155	15.49	3.22	.9		9	1	108	.07	2	.5	.7	6	SEC
		30	729	16.51	19	24.12	155	15.56	3.46	.8		12	2	124	.09	2	.5	.6	7	SEC
		30	729	51.29	19	23.98	155	15.50	3.56	.7		6	1	136	.01	2	.7	2.9	5	SEC
		30	730	3.76	19	23.79	155	15.23	2.96	1.6	1.7	19	3	98	.07	2	.3	.4	9	SEC
		30	730	19.70	19	23.71	155	15.52	3.83	1.0	.8	8	2	98	.04	2	.5	1.7	7	SEC
		30	731	30.88	19	23.81	155	15.16	3.23	.9	.2	9	2	128	.02	2	.5	.6	7	SEC
		30	732	19.31	19	23.99	155	15.34	2.41	.6		9	1	113	.04	2	.4	.9	7	SEC
		30	732	31.51	19	23.70	155	15.22	2.94	.8	.2	10	2	94	.03	2	.4	.6	8	SEC
		30	733	47.44	19	23.77	155	15.22	2.93	.7	.2	10	2	99	.03	2	.4	.6	8	SEC
		30	734	6.91	19	23.89	155	15.30	2.75	.9	.2	10	2	106	.03	2	.4	.6	8	SEC
		30	735	32.35	19	23.80	155	15.31	2.50	.4		10	2	101	.04	2	.4	.5	7	SEC
		30	736	13.49	19	23.82	155	15.32	2.20	.3		9	1	102	.04	2	.4	.6	6	SEC
		30	736	33.21	19	23.83	155	15.32	2.24	.5	.2	9	1	104	.09	2	.4	.6	5	SEC
		30	737	3.66	19	23.91	155	15.24	2.69	.8	.5	10	2	107	.02	2	.4	.6	8	SEC
		30	738	23.47	19	23.92	155	15.19	2.31	.5		8	2	157	.05	2	.5	1.0	5	SEC
		30	741	14.98	19	23.95	155	15.62	1.68	.5		8	1	131	.02	2	.3	.7	5	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JUL	30	742	11.48	19	23.33	155	15.83	2.01	.1		8	0	81	.08	2	.4	.5	3	SEC
		30	744	26.85	19	23.77	155	15.17	2.83	1.0	1.0	10	2	97	.03	2	.4	.6	8	SEC
		30	745	25.47	19	23.69	155	15.24	2.90	1.1	1.2	12	2	94	.05	2	.4	.5	7	SEC
		30	748	16.15	19	23.86	155	15.77	3.21	2.4	2.6	33	3	72	.09	1	.3	.3	23	SEC
		30	750	43.24	19	23.60	155	15.15	3.30	2.0	2.3	24	3	86	.09	2	.4	.4	20	SEC
		30	757	6.08	19	24.10	155	15.95	3.14	.8	.3	9	1	120	.03	1	.4	.6	7	SEC
		30	758	18.73	19	23.77	155	15.20	2.97	.6	.1	8	1	98	.02	2	.5	1.1	5	SEC
		30	8	2 42.63	19	23.92	155	15.79	2.85	1.8	2.4	23	3	108	.11	1	.4	.4	17	SEC
		30	8	9 9.94	19	23.72	155	15.31	2.96	1.0	1.1	11	2	97	.04	2	.4	.5	8	SEC
		30	813	49.43	19	23.80	155	15.30	2.92	1.0	.7	10	2	101	.02	2	.4	.6	8	SEC
		30	844	1.37	19	23.76	155	15.18	3.14	1.3	1.4	14	2	97	.05	2	.3	.4	9	SEC
		30	1020	43.86	19	20.10	155	7.89	9.01	2.8	2.9	41	2	90	.10	5	.4	.5	29	SF4
		30	11	1 20.86	19	10.84	155	29.01	33.79	2.9	2.5	44	4	81	.07	3	.7	1.2	39	DLS
		30	15	2 34.10	19	26.27	155	24.13	10.18	2.7	2.5	40	2	35	.11	3	.4	.6	31	KAO
		31	144	7.58	19	10.99	155	29.04	33.99	2.4	2.1	39	4	79	.06	3	.7	1.2	32	DLS
		31	6	5 28.56	19	20.01	155	10.68	7.49	2.4	2.4	41	5	87	.11	4	.4	.6	32	SF3
		31	629	5.87	19	22.68	155	3.94	8.11	1.5	1.2	19	1	98	.11	4	1.1	.6	10	SF5
		31	8	3 10.52	19	22.08	155	7.12	8.44	2.3	2.1	36	3	72	.10	2	.4	.6	27	SF4
		31	932	8.59	19	23.28	155	16.85	2.93	2.5	2.4	29	4	39	.08	0	.2	.2	21	SSC
		31	1053	4.77	19	23.11	155	14.82	3.21	2.5	2.7	26	3	109	.07	2	.3	.4	20	SEC
		31	11	2 12.68	19	23.06	155	10.40	33.70	2.4	2.3	36	1	62	.10	2	.6	1.3	33	DEP
		31	1320	10.17	19	22.92	155	14.64	3.24	1.6	2.0	19	3	68	.06	2	.4	.4	14	SEC
		31	1351	19.48	19	22.95	155	17.17	2.43	1.8	2.1	22	2	42	.07	1	.3	.3	19	SSC
		31	2015	56.68	19	20.00	155	4.22	7.78	1.7	1.5	24	1	141	.09	2	.5	.9	12	SF5
		31	2124	25.87	19	23.41	155	15.11	3.26	1.9	2.4	25	3	79	.08	2	.3	.3	18	SEC
		31	2236	9.73	19	23.28	155	15.19	2.87	1.7	1.9	22	3	76	.07	2	.3	.3	17	SEC
	AUG	1	141	57.02	19	22.85	155	14.78	3.05	2.1	1.9	23	1	68	.10	2	.4	.5	18	SEC
		1	142	15.56	19	23.08	155	14.62	4.96	3.4	3.7	24	1	82	.11	7	.5	1.5	19	SEC F
		1	536	5.60	19	20.27	155	12.71	8.16	1.6	1.1	25	2	71	.07	4	.4	.7	19	SF2
		1	1044	59.96	19	19.36	155	11.61	7.12	1.7	1.4	28	1	97	.09	5	.5	1.0	23	SF3
		1	1341	35.50	19	23.14	155	14.86	3.22	2.5	2.7	30	1	48	.08	2	.3	.4	23	SEC
		1	15	6 33.71	19	17.44	155	21.29	4.02	2.6	3.1	35	1	126	.14	6	.5	1.7	28	SWR
		1	1535	13.78	19	22.19	155	4.78	7.45	2.2	1.9	34	2	80	.14	3	.5	.7	25	SF5
		1	1647	26.83	19	24.00	155	16.09	2.98	1.3	1.5	16	3	110	.09	1	.3	.3	12	SEC
		1	2218	41.37	19	20.47	155	12.77	8.04	1.8	1.7	33	2	67	.11	4	.5	.8	25	SF2
		1	2259	35.47	19	23.07	155	17.05	2.65	1.7	1.5	18	1	66	.06	1	.3	.3	17	SSC
		2	117	10.70	19	20.52	155	6.48	8.90	2.6	2.3	31	2	186	.08	5	.8	.6	25	SF4
		2	151	3.40	19	17.93	155	12.82	6.96	1.4	1.0	17	2	165	.08	2	.6	1.2	10	SF2
		2	13	3 25.26	19	22.33	155	6.02	7.14	2.0	1.5	33	4	72	.10	1	.4	.7	25	SF4
		2	15	0 58.32	19	19.43	155	11.73	8.14	1.6	1.6	28	1	95	.09	5	.5	1.0	22	SF3
		2	1710	43.53	19	19.32	155	9.70	8.34	1.8	1.5	27	2	98	.06	5	.5	1.0	20	SF3
		2	1849	24.46	19	23.47	155	15.19	3.29	2.8	3.0	28	1	52	.08	2	.3	.4	21	SEC F
		2	1915	49.26	19	23.52	155	15.10	3.32	2.1	2.2	23	2	82	.08	3	.3	.4	19	SEC
		2	2044	51.21	19	19.74	155	10.84	9.86	2.8	3.0	42	3	92	.09	5	.4	.5	35	SF3
		2	2211	12.87	19	26.51	155	28.51	7.75	2.1	1.5	28	1	65	.10	6	.4	1.3	23	KAO
		2	2242	12.27	19	21.11	155	5.75	7.95	1.4	1.3	21	2	96	.10	4	.6	1.1	14	SF4
		2	2351	50.38	19	22.79	155	14.39	3.37	1.3	1.3	12	2	121	.03	2	.4	.5	7	SEC
		3	157	11.23	19	23.17	155	15.04	2.87	1.6	1.5	20	3	70	.08	2	.3	.4	15	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	AUG	3	230	56.51	19	22.79	155	14.63	3.32	2.1	2.3	27	4	70	.08	2	.3	.4	21	SEC
		3	3	4 36.56	19	22.62	155	3.78	8.96	2.0	1.6	26	1	105	.10	4	.5	.7	18	SF5
		3	543	3.26	19	25.47	155	25.48	7.47	2.1	1.5	26	0	51	.11	1	.5	1.1	22	KAO
		3	13	9 .03	19	19.77	155	8.22	8.07	1.9	1.3	23	1	86	.07	5	.6	1.1	20	SF4
		3	2158	58.79	19	23.21	155	17.02	2.86	1.0	1.3	15	1	69	.05	0	.3	.3	10	SSC
		3	2345	50.16	19	18.24	155	13.35	9.01	2.2	2.0	39	4	123	.12	2	.5	.5	27	SF2
		4	126	46.46	19	18.58	155	13.81	7.54	1.5	1.2	25	1	109	.07	3	.5	1.0	18	SF2 F
		4	6	8 27.89	19	20.85	155	11.34	7.82	1.7	1.5	30	2	71	.10	3	.5	.7	23	SF3
		4	759	11.33	19	20.07	155	13.70	6.57	1.5	1.1	25	2	71	.10	5	.5	1.0	17	SF2
		4	1422	5.78	19	19.56	155	11.02	8.81	1.6	1.0	22	1	96	.05	5	.5	1.0	18	SF3
		4	1515	3.40	19	19.75	155	11.03	8.40	1.7	1.6	30	1	92	.09	5	.5	.9	25	SF3
		4	1550	5.55	19	10.77	155	34.69	7.60	2.1	1.4	23	1	102	.23	9	1.0	1.1	14	LSW
		4	1632	3.42	19	22.44	155	29.10	10.41	1.9	1.4	26	0	61	.06	3	.4	1.0	20	KAO
		4	1829	51.30	19	10.66	155	29.01	34.10	2.1	1.7	37	3	86	.06	3	.7	1.3	33	DLS
		4	1944	9.52	19	20.16	155	11.22	7.98	1.9	1.7	32	1	83	.11	4	.5	.9	27	SF3
		4	21	7 40.65	19	12.45	155	29.05	39.26	2.1	1.7	33	2	86	.06	5	.7	1.5	29	DLS
		5	745	41.92	20	2.87	155	43.46	9.66	2.9	3.0	40	3	145	.10	11	.6	.6	27	KOH F
		5	858	11.05	19	19.60	155	10.50	9.94	3.3	3.3	42	2	95	.08	5	.4	.3	40	SF3
		5	1038	28.37	19	20.01	155	11.34	8.57	1.5	1.5	29	1	85	.09	5	.5	.8	19	SF3
		5	1438	28.53	19	19.00	155	13.15	8.51	1.7	1.5	26	1	81	.08	4	.6	.9	22	SF2
		5	17	4 51.49	19	22.69	155	6.55	2.22	2.1	2.0	20	0	66	.06	1	.4	.3	17	SME
		5	1812	28.23	19	22.67	155	6.44	1.96	2.9	3.1	33	0	67	.10	1	.4	.3	26	SME
		5	1815	26.16	19	22.86	155	6.25	1.92	2.5	2.7	32	0	64	.10	0	.4	.3	24	SME
		5	1817	41.43	19	22.87	155	6.10	1.77	1.8	2.0	23	0	65	.07	0	.4	.2	18	SME
		5	2249	37.35	19	26.38	155	24.29	9.99	1.7	1.3	26	3	55	.10	3	.4	.9	20	KAO
		5	23	6 46.48	19	20.00	155	8.27	8.33	2.4	2.4	42	3	83	.08	5	.4	.7	29	SF4
		6	238	17.87	19	23.19	155	5.78	1.79	1.7	1.4	10	0	94	.05	1	.5	.3	8	SME
		6	858	.54	19	20.79	155	10.13	7.37	1.6	1.4	29	2	71	.07	2	.4	.7	20	SF3
		6	1115	3.25	19	20.85	155	6.33	7.80	1.8	1.7	21	1	98	.08	4	.6	1.2	15	SF4
		6	1322	42.99	19	41.63	155	2.27	1.12	2.2	2.1	24	0	101	.52	1	2.5	2.5	13	HIL B*
		6	14	2 17.76	19	22.80	155	6.65	1.89	1.4	1.7	12	0	95	.06	1	.5	.2	6	SME
		6	16	3 57.07	19	20.47	155	7.52	6.45	1.8	1.8	27	2	91	.10	5	.5	1.0	18	SF4
		6	1944	7.26	19	23.09	155	6.37	.63	2.4	3.1	28	0	61	.08	0	.4	.2	20	SME
		6	23	8 3.42	19	18.46	155	14.83	7.11	1.8	1.5	25	1	126	.07	4	.5	.9	20	SF1
		6	2346	54.89	19	20.26	155	7.83	8.10	2.1	2.4	31	2	179	.08	6	.5	.6	24	SF4
		7	232	54.50	19	19.77	155	10.96	8.79	2.1	2.1	37	3	91	.11	5	.4	.4	27	SF3
		7	3	0 13.62	19	20.29	155	7.48	8.31	2.0	2.2	29	2	95	.08	5	.4	.8	23	SF4
		7	526	28.48	19	22.80	155	6.13	2.18	2.0	2.8	25	0	65	.17	0	.5	1.1	17	SME
		7	856	52.38	19	15.31	155	29.73	7.91	1.6	1.5	31	1	79	.17	1	.5	.9	19	LSW
		7	10	3 11.86	19	19.91	155	10.43	6.66	1.6	1.0	32	2	88	.10	4	.4	.8	22	SF3
		7	1440	2.15	19	20.35	155	7.40	7.17	1.6	1.2	25	1	95	.08	5	.5	.8	20	SF4
		7	1936	57.76	19	24.02	155	15.91	3.15	1.0	.9	13	2	110	.04	1	.3	.3	9	SEC
		7	1942	56.82	19	24.01	155	15.96	2.97	.9	.9	15	2	108	.04	1	.3	.3	8	SEC
		7	2128	3.33	19	18.37	155	17.91	34.02	2.6	2.6	46	3	120	.10	1	.6	1.0	41	DEP
		8	210	19.74	19	23.28	155	5.61	1.95	1.1	1.5	11	0	103	.08	1	.6	.3	5	SME
		8	228	55.53	19	20.61	155	8.68	5.80	1.3	1.3	16	1	71	.05	3	.6	1.3	12	SF4
		8	432	38.72	19	20.66	155	8.54	5.65	1.8	1.6	14	0	72	.05	3	.6	1.5	13	SF4
		8	753	44.57	19	24.69	155	25.50	9.73	2.3	2.1	39	3	38	.12	1	.4	.7	33	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	AUG	8	1552	31.61	19	20.67	155	12.90	7.44	1.6	1.9	33	2	64	.12	4	.5	.7	29	SF2
		8	18 8	42.28	19	27.00	155	27.42	9.82	2.9	2.9	44	3	52	.11	5	.4	.6	36	KAO
		9	312	30.95	19	50.83	155	33.92	24.93	2.1	2.2	24	1	113	.08	13	.6	1.8	18	KEA
		9	611	4.17	19	19.65	155	10.30	7.52	1.5	1.0	22	1	93	.09	5	.6	1.2	19	SF3
		9	1026	3.59	19	19.60	155	12.80	7.11	1.9	2.0	31	2	78	.09	5	.4	.7	21	SF2
		9	1150	18.27	19	15.66	155	22.09	8.06	2.0	2.6	26	1	202	.10	7	.7	1.3	19	SWR
		9	1210	50.09	19	19.41	155	10.95	6.34	1.6	1.3	25	3	101	.10	5	.5	1.1	14	SF3
		9	2037	6.54	19	20.87	155	26.06	9.78	1.5	1.1	24	2	99	.10	4	.5	.9	19	KAO
		9	2329	1.41	19	19.69	155	6.84	8.56	1.9	1.6	21	2	221	.06	6	1.1	.9	14	SF4
		10	250	31.67	19	23.58	155	29.92	9.60	1.8	1.9	27	1	64	.07	5	.4	1.1	23	KAO
		10	616	6.35	19	22.80	155	6.66	1.67	2.2	3.0	17	0	95	.06	1	.4	.2	9	SME
		10	757	23.56	19	17.63	155	17.88	42.14	2.3	2.4	37	0	131	.09	5	.8	1.8	30	DEP
		10	10 0	11.21	19	23.61	155	29.66	9.35	1.9	1.2	21	1	75	.07	4	.5	1.2	17	KAO
		10	22 5	25.35	19	22.42	155	1.82	8.04	2.1	1.9	30	2	153	.13	5	.6	.9	21	SF5
		11	042	58.42	19	17.83	155	14.88	6.29	1.4	1.3	18	2	153	.06	3	.7	1.3	12	SF1
		11	143	58.59	19	21.19	155	6.84	7.54	2.0	1.9	30	1	87	.09	4	.4	.7	27	SF4
		11	220	26.72	19	21.90	155	6.29	5.93	2.0	1.9	34	2	78	.10	6	.4	1.5	18	SF4
		11	517	50.35	19	19.41	155	6.37	6.63	1.1	1.2	17	2	136	.09	5	.6	1.4	9	SF4
		11	615	29.46	19	22.85	155	6.82	1.85	.8	1.7	9	0	127	.03	1	.5	.3	5	SME
		11	7 5	52.88	19	19.89	155	12.40	8.52	1.8	1.9	28	1	79	.07	5	.5	.7	23	SF2
		11	1028	8.47	19	24.28	155	27.68	6.27	2.0	1.6	22	1	62	.10	3	.4	1.2	20	KAO
		11	1125	51.11	19	20.70	155	5.60	8.36	2.2	1.8	25	2	107	.09	4	.5	1.1	22	SF4
		11	19 7	.07	19	20.85	155	6.22	7.10	2.1	1.7	27	2	100	.10	4	.5	1.0	21	SF4
		11	2042	33.11	19	20.07	155	6.22	10.20	4.2	4.3	42	1	120	.09	5	.6	.4	40	SF4 F
		11	2046	33.01	19	20.52	155	6.86	7.02	1.8	1.3	28	0	100	.09	5	.5	.9	21	SF4
		11	2121	51.41	19	20.30	155	6.70	8.16	1.4	1.3	25	1	107	.07	5	.5	1.2	17	SF4
		11	2246	59.80	19	21.08	155	6.78	9.37	2.1	2.0	33	3	90	.09	4	.4	.8	21	SF4
		12	138	48.07	19	23.19	155	5.82	1.48	2.2	2.9	22	0	93	.09	1	.4	.2	11	SME
		12	353	47.84	19	23.34	155	6.14	1.43	2.1	2.7	20	0	98	.06	1	.4	.2	13	SME
		12	7 8	36.26	19	20.71	155	7.01	7.62	2.0	1.6	29	2	94	.07	4	.4	.9	18	SF4
		12	723	44.58	19	20.37	155	6.07	9.72	3.2	3.1	43	2	113	.09	5	.4	.3	37	SF4 F
		12	741	36.80	19	20.42	155	5.96	9.72	2.9	3.0	41	3	112	.08	5	.4	.4	31	SF4 F
		12	831	38.29	19	19.95	155	7.24	7.51	1.9	1.6	25	0	105	.09	5	.5	.9	18	SF4
		12	11 1	55.95	19	19.84	155	10.48	10.25	3.5	3.6	41	1	90	.08	4	.4	.3	39	SF3 F
		12	1334	29.98	19	23.27	155	5.71	1.51	2.4	2.9	24	0	82	.10	1	.4	.3	15	SME
		12	14 6	5.34	19	21.35	155	5.59	7.98	2.9	2.6	39	4	91	.10	3	.4	.6	33	SF4
		12	14 8	50.29	19	21.50	155	5.58	7.03	2.2	2.4	38	5	87	.09	3	.4	.7	27	SF4
		13	514	18.29	19	30.25	155	56.03	27.36	2.1	1.6	31	4	208	.10	2	.9	1.1	27	KON
		13	556	22.51	19	17.78	155	15.21	7.56	2.4	2.1	36	0	122	.10	3	.5	.7	31	SF1
		13	642	7.59	19	20.03	155	8.87	8.54	1.7	1.3	30	3	74	.07	4	.5	.8	23	SF4
		13	1234	58.84	19	22.97	155	6.57	1.48	2.9	3.5	26	1	85	.10	1	.5	.3	20	SME
		13	1537	50.63	19	19.97	155	6.31	8.22	2.0	1.5	27	1	121	.06	6	.5	1.0	21	SF4
		13	2127	16.70	19	21.12	155	25.24	10.71	4.1	4.0	46	2	77	.13	4	.4	.5	43	KAO F
		14	1029	10.91	19	27.98	155	28.54	9.10	2.1	1.2	22	2	95	.08	8	.5	1.3	14	KAO
		14	1130	22.85	19	26.37	155	29.49	9.13	1.8	1.5	36	2	54	.11	8	.4	.9	25	KAO
		14	1242	51.38	19	18.56	155	13.47	6.94	1.8	1.6	31	1	76	.10	3	.5	.9	20	SF2
		14	1639	53.17	19	20.61	155	12.73	8.73	1.8	1.9	35	2	66	.10	4	.4	.7	24	SF2
		14	1912	56.32	19	21.03	155	5.66	7.29	2.0	1.4	28	3	98	.11	4	.5	.8	18	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REM
1980	AUG	15	225	15.92	19	20.57	155	6.27	8.03	2.7	2.6	35	4	106	.08	5	.4	.6	25	SF4
		15	3 4	59.12	19	20.72	155	6.29	7.32	2.2	2.2	34	2	102	.10	4	.5	.7	24	SF4
		15	347	28.53	19	20.43	155	12.88	9.21	1.5	1.5	26	2	123	.07	4	.5	.7	18	SF2
		15	427	11.42	19	21.28	155	6.18	7.66	1.5	1.5	24	2	210	.09	3	1.0	.7	15	SF4
		15	436	8.32	19	20.11	155	6.20	8.88	1.5	1.5	26	2	158	.07	5	.6	.9	17	SF4
		15	7 3	7.31	19	24.49	155	16.54	15.85	1.7	1.4	38	4	62	.10	1	.5	.3	29	DEP
		15	1258	17.09	19	26.35	155	23.92	3.88	1.8	1.5	23	2	49	.08	3	.3	.8	14	KAO
		15	2043	51.65	19	19.59	155	11.46	8.37	1.7	1.7	31	1	93	.09	5	.5	.8	22	SF3
		16	010	25.34	19	20.49	155	11.89	8.17	2.6	2.8	41	3	135	.14	4	.4	.5	30	SF3
		16	856	17.26	19	22.91	155	24.99	10.20	2.4	2.3	45	4	43	.10	4	.3	.4	31	KAO
		16	1254	56.94	19	21.63	155	6.76	7.05	2.0	2.0	34	2	80	.10	3	.4	.7	22	SF4
		16	1422	1.76	19	20.33	155	7.44	6.70	2.0	1.7	29	3	95	.10	5	.5	1.0	15	SF4
		16	2043	1.72	19	18.38	155	13.31	9.05	2.4	2.6	42	4	86	.11	3	.4	.5	28	SF2
		17	043	25.87	19	20.71	155	10.75	6.71	1.7	1.7	26	3	154	.09	3	.5	.8	16	SF3
		17	11 1	41.60	19	21.92	155	2.80	8.20	1.9	1.3	29	2	133	.10	4	.5	.5	19	SF5
		17	16 8	41.35	19	18.17	155	13.16	8.31	2.1	1.8	36	3	95	.09	2	.5	.6	24	SF2
		17	1732	48.59	19	15.86	155	27.12	10.53	3.6	3.8	44	4	103	.13	5	.4	.4	37	LSW F
		17	2128	35.13	19	19.99	155	12.00	8.06	1.9	1.4	33	2	81	.08	5	.4	.6	19	SF3
		17	2231	41.89	19	20.08	155	13.08	8.68	2.3	2.3	43	3	68	.10	5	.4	.5	34	SF2
		17	23 5	30.79	19	19.63	155	6.91	7.74	1.7	1.3	29	2	119	.10	5	.5	.9	24	SF4
		18	1 6	29.81	19	19.77	155	8.48	8.06	2.0	2.2	36	3	181	.09	5	.6	.8	22	SF4
		18	120	29.06	19	19.73	155	9.70	7.48	1.7	1.5	23	2	187	.07	4	.7	1.0	15	SF3
		18	121	58.67	19	19.62	155	9.67	7.76	1.8		24	3	174	.06	5	.7	1.0	17	SF3
		18	2 2	16.28	19	25.10	155	22.79	11.62	2.0	1.5	37	6	38	.09	4	.4	.6	26	KAO
		18	338	8.18	19	18.84	155	15.10	7.42	2.5	2.5	35	3	94	.13	4	.4	.6	25	SF1
		18	5 0	27.61	19	18.75	155	13.25	8.19	1.5	1.1	28	3	82	.08	3	.5	.8	18	SF2
		18	631	52.67	19	24.33	155	26.19	8.48	1.7	1.5	30	3	49	.09	3	.4	.8	23	KAO
		18	651	.36	19	19.79	155	8.25	8.59	1.5	1.1	21	1	85	.06	5	.6	1.2	17	SF4
		18	13 6	26.86	19	20.73	155	8.38	5.70	1.7	1.6	22	3	74	.06	4	.4	1.1	16	SF4
		18	18 1	1.34	19	22.41	155	24.72	8.08	1.7	1.3	25	1	67	.08	5	.4	.7	20	KAO
		18	2058	44.14	19	20.39	155	13.27	7.76	1.5	1.4	29	2	63	.11	4	.5	.8	22	SF2
		18	2325	17.13	19	49.96	155	36.37	15.10	2.8	2.8	34	4	105	.10	17	.4	.6	20	KEA
		19	1950	12.81	19	21.69	155	1.89	7.16	2.0	1.5	28	3	163	.14	4	.7	.6	15	SF5
		19	2249	28.20	19	20.69	155	12.99	8.10	2.0	2.0	38	4	62	.10	4	.4	.6	27	SF2
		19	2316	56.75	19	19.83	155	8.98	7.91	1.6	1.4	29	2	79	.08	4	.5	.9	19	SF4
		20	538	.37	19	22.58	155	24.16	10.48	1.8	1.7	35	2	53	.07	5	.4	.5	28	KAO
		20	6 6	25.94	19	36.09	156	9.01	24.60	3.6	4.2	39	4	213	.13	27	1.3	2.1	34	KON F
		20	11 4	58.45	19	20.03	155	11.20	10.15	2.7	2.7	42	2	85	.10	4	.3	.4	31	SF3
		20	1153	33.82	19	56.17	155	29.90	35.86	2.5	1.9	38	5	161	.08	17	.7	1.5	30	KEA
		20	2315	28.36	19	15.62	155	6.58	46.27	3.0	2.7	44	1	200	.09	4	1.0	1.7	42	DEP
		21	0 1	5.88	19	29.51	154	54.85	.01	1.9	1.8	7	1	149	.13	3	.5	1.2	4	SLE *
		21	317	33.63	19	17.97	155	23.18	8.98	1.1	1.2	22	1	125	.11	4	.6	1.0	16	SWR
		21	341	26.48	19	19.52	155	21.76	2.83	1.5	1.7	20	2	124	.10	3	.5	.7	15	SWR
		21	731	5.65	19	19.30	155	11.53	7.48	1.7	1.6	31	3	100	.09	5	.5	.8	21	SF3
		21	916	55.85	19	24.24	155	23.22	10.34	2.0	1.6	37	2	36	.10	4	.4	.5	27	KAO
		21	1210	48.17	19	25.66	155	16.49	15.10	2.3	2.1	38	1	47	.10	2	.6	.3	32	DEP
		21	1444	41.51	19	21.06	155	13.12	8.45	1.6	1.6	33	3	58	.08	3	.4	.5	21	SF2
		21	1713	22.40	19	25.41	154	51.67	6.91	1.8	1.5	26	4	279	.12	7	1.3	.8	15	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	AUG	22	0 2	16.83	19	23.45	155	25.17	12.64	1.6	1.1	26	2	97	.08	3	.5	.7	20	KAO
		22	752	56.66	19	20.24	155	6.97	9.73	2.9	2.8	44	3	104	.10	5	.4	.5	33	SF4
		22	1141	46.04	19	20.70	155	5.95	8.29	2.2	1.8	32	2	105	.09	4	.4	.8	19	SF4
		22	1833	51.27	19	20.28	155	11.68	8.92	2.7	2.8	43	3	79	.09	5	.3	.5	29	SF3 F
		22	19 8	56.02	19	19.29	155	9.05	7.14	1.6	1.2	25	2	111	.09	4	.6	1.1	20	SF4
		22	20 8	47.53	19	21.41	155	6.51	8.25	2.0	1.8	33	3	86	.08	6	.4	.8	20	SF4
		22	2034	43.70	19	23.38	155	16.95	3.28	1.2	1.1	15	2	80	.08	0	.4	.5	7	SSC
		23	210	12.49	19	20.52	155	12.96	9.59	2.7	2.7	46	3	65	.10	4	.4	.5	34	SF2
		23	231	17.33	19	25.02	155	25.48	9.12	1.6	1.3	30	2	50	.09	1	.4	.7	23	KAO
		23	349	38.15	19	20.66	155	12.59	7.99	2.1	2.2	41	4	66	.10	4	.4	.5	23	SF2
		23	639	15.18	19	29.25	155	42.14	8.65	1.3	1.3	25	1	70	.13	7	.5	1.1	18	MLO
		23	8 5	53.93	19	26.67	155	24.18	3.48	1.5	1.2	18	3	111	.08	3	.3	.7	12	KAO
		23	1328	57.25	19	23.35	155	16.87	3.01	2.5	3.0	35	4	53	.09	0	.2	.2	25	SSC
		23	1633	8.84	19	20.22	155	6.95	7.34	1.5	1.2	23	1	105	.09	5	.5	1.0	16	SF4
		23	1736	53.67	19	19.99	155	6.00	8.61	1.9	1.2	27	2	125	.05	5	.4	.9	17	SF4
		23	2013	6.49	19	22.28	155	4.93	9.53	1.8	1.3	24	1	77	.08	3	.4	.8	13	SF5
		23	2124	20.97	19	20.40	155	10.59	7.93	1.8	1.5	25	2	79	.08	3	.4	.7	15	SF3
		24	448	4.83	19	32.69	155	37.34	9.65	2.3	1.3	29	0	87	.13	7	.5	.8	18	MLO
		24	452	32.15	19	18.56	155	20.05	8.21	1.4	1.2	32	4	111	.09	3	.4	.6	20	SWR
		24	5 1	30.93	19	20.28	155	13.02	8.96	2.1	2.0	40	2	67	.10	4	.4	.5	30	SF2
		24	548	43.73	19	26.40	155	25.04	5.29	1.6	1.6	31	2	51	.11	2	.3	1.0	24	KAO
		24	1114	35.68	19	19.10	155	11.60	7.95	2.8	2.7	44	4	105	.11	5	.4	.5	34	SF3
		24	1251	31.21	19	19.24	155	11.65	8.00	2.2	2.0	40	4	100	.07	5	.4	.6	26	SF3
		24	1311	10.42	19	19.34	155	12.47	5.98	1.5	1.3	29	2	88	.10	5	.4	1.2	16	SF2
		24	2020	14.23	19	20.19	155	11.41	7.58	2.2	1.8	37	3	81	.09	4	.4	.5	25	SF3
		25	1 5	56.33	19	25.87	155	23.78	8.82	2.3	1.8	31	3	42	.13	3	.4	.9	25	KAO
		25	1342	7.66	19	19.45	155	8.58	7.87	1.7	1.2	29	2	80	.07	4	.5	.8	19	SF4
		25	1643	5.60	19	27.39	155	26.37	10.44	2.2	2.1	34	3	53	.08	5	.4	.7	25	KAO
		25	19 4	46.25	19	21.75	155	2.26	6.51	1.6	1.3	26	1	152	.12	4	.6	.8	14	SF5
		25	2219	50.25	19	20.64	155	29.97	10.14	2.7	2.4	42	2	66	.09	5	.4	.7	32	KAO
		26	633	47.91	19	26.27	155	27.27	6.55	1.6	1.0	23	2	66	.09	4	.4	1.1	17	KAO
		26	1040	49.55	19	17.83	155	21.24	4.51	1.7	2.3	34	2	121	.12	5	.4	1.7	27	SWR
		26	1238	26.46	19	19.97	155	11.73	9.42	3.0	3.1	46	4	84	.09	5	.4	.4	35	SF3
		26	1321	39.04	19	20.89	155	2.33	6.00	2.3	2.3	29	3	165	.10	2	.5	.7	19	SF5
		26	2136	2.03	19	19.94	155	12.27	7.32	1.5	1.3	27	1	80	.11	5	.5	1.0	19	SF3
		27	144	45.63	19	21.27	155	6.06	8.20	2.3	2.1	37	4	91	.10	3	.4	.7	31	SF4
		27	158	53.97	19	54.60	155	17.04	38.12	3.0	3.0	44	2	194	.10	7	.7	1.5	37	KEA F
		27	3 2	26.45	19	22.60	155	8.41	3.32	1.6	1.7	23	1	167	.07	3	.9	.6	18	SER
		27	622	24.60	19	55.42	155	21.40	12.95	1.9	1.3	13	2	187	.09	4	1.7	.6	11	KEA
		27	1016	56.48	19	19.46	155	9.32	6.82	1.6	1.7	22	3	105	.07	5	.5	1.2	17	SF3
		27	1413	11.62	19	20.78	155	13.24	8.40	2.0	2.4	33	3	60	.11	3	.4	.7	28	SF2
		27	1430	45.69	19	23.90	155	15.21	3.11	.9		10	2	105	.03	2	.4	.5	5	SEC
		27	1431	10.94	19	23.88	155	15.24	3.19	1.3	.9	10	2	105	.04	2	.4	.6	7	SEC
		27	1432	29.19	19	23.78	155	15.21	2.75	.9	.4	10	2	99	.04	2	.4	.6	8	SEC
		27	1434	29.09	19	23.82	155	15.25	3.00	1.3	1.2	15	2	101	.04	2	.3	.3	10	SEC
		27	1435	49.37	19	23.95	155	15.22	3.20	1.1	.8	10	2	109	.03	2	.4	.6	8	SEC
		27	1438	15.54	19	23.76	155	15.21	2.85	.8	.3	10	2	97	.02	2	.4	.6	8	SEC
		27	1439	3.73	19	23.96	155	15.25	2.81	1.0	.3	10	2	110	.04	2	.4	.5	7	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	AUG	27	1439	25.03	19	23.77	155	15.22	2.86	1.0	.3	10	2	98	.03	2	.4	.6	8	SEC
		27	1439	40.33	19	23.94	155	15.28	2.54	.8	.2	10	2	109	.04	2	.3	.6	7	SEC
		27	1442	15.93	19	23.98	155	15.30	2.74	.7	.1	10	2	112	.05	2	.5	.5	6	SEC
		27	1442	27.69	19	23.82	155	15.21	2.80	.9	.2	10	2	101	.04	2	.5	.5	6	SEC
		27	1443	1.75	19	23.87	155	15.27	3.13	1.1	.8	10	2	104	.03	2	.4	.6	8	SEC
		27	1444	18.42	19	23.98	155	15.26	2.86	1.1	.7	10	2	111	.04	2	.4	.6	8	SEC
		27	1448	17.72	19	23.67	155	15.19	2.62	1.3	.4	9	2	93	.05	2	.4	.7	6	SEC
		27	1449	31.89	19	23.81	155	15.21	2.87	1.0	.5	10	2	101	.02	2	.4	.6	8	SEC
		27	1449	56.30	19	23.79	155	15.20	2.94	1.2	.9	9	1	99	.02	2	.4	.6	8	SEC
		27	1451	50.29	19	23.80	155	15.24	2.85	1.1	.4	10	2	100	.03	2	.4	.7	8	SEC
		27	1452	7.85	19	23.85	155	15.21	3.09			10	2	103	.03	2	.4	.7	7	SEC
		27	1453	.55	19	23.82	155	15.20	3.00	1.1	.7	9	1	101	.02	2	.4	.7	7	SEC
		27	1453	23.27	19	23.72	155	15.26	2.75	1.3	1.2	13	2	97	.05	2	.3	.4	8	SEC
		27	1453	51.87	19	23.88	155	15.15	2.49		.1	9	1	103	.04	2	.4	.6	8	SEC
		27	1454	24.11	19	23.79	155	15.17	2.89	1.0	.3	10	2	99	.02	2	.4	.7	6	SEC
		27	1455	35.90	19	23.86	155	15.23	2.81	.9	.4	9	1	104	.03	2	.4	.6	8	SEC
		27	1458	57.22	19	23.71	155	15.28	2.72	1.3	1.1	11	1	96	.09	2	.4	.5	9	SEC
		27	1459	53.59	19	23.77	155	15.23	2.45	1.0	1.3	10	1	99	.06	2	.4	.6	7	SEC
		27	15 0	27.40	19	23.51	155	15.01	3.07	2.1	2.2	9	1	98	.02	3	.4	.7	8	SEC
		27	15 1	47.60	19	23.72	155	15.12	2.80	1.0	.4	10	2	94	.03	2	.3	.6	7	SEC
		27	15 2	30.86	19	23.83	155	14.97	2.84		.2	18	4	123	.04	2	.3	.5	12	SEC
		27	15 7	35.93	19	23.57	155	14.92	2.02	1.5	.8	11	2	97	.09	2	.4	.5	7	SEC
		27	15 9	30.73	19	23.77	155	15.05	2.52	1.5	1.0	13	1	92	.04	2	.4	.5	10	SEC
		27	15 9	60.00	19	23.59	155	15.06	3.15	1.9	1.7	12	0	96	.05	2	.4	.5	12	SEC
		27	1512	5.57	19	23.82	155	15.00	2.88	1.3	.8	10	1	96	.02	2	.4	.6	7	SEC
		27	1512	39.70	19	23.73	155	15.05	2.81	1.3	1.0	12	2	93	.03	2	.3	.6	8	SEC
		27	1513	46.84	19	23.76	155	15.11	2.65	1.1	.8	11	2	96	.04	2	.3	.6	8	SEC
		27	1515	36.63	19	23.72	155	14.96	2.93		.2	10	2	92	.05	2	.4	.8	7	SEC
		27	1515	50.28	19	23.73	155	15.16	1.55		.2	10	2	94	.20	2	.5	.9	8	SEC
		27	1517	52.28	19	23.83	155	15.05	2.85	1.3	1.0	13	2	98	.06	2	.3	.6	9	SEC
		27	1518	12.80	19	23.16	155	15.08	2.56	2.1	2.4	19	0	70	.10	2	.4	.4	17	SEC
		27	1519	35.34	19	23.48	155	14.94	2.48		.2	10	2	99	.01	2	.4	.6	8	SEC
		27	1520	22.32	19	23.07	155	15.45	.79	2.1	2.3	11	3	112	.06	1	.2	.3	2	SEC
		27	1521	23.61	19	23.35	155	14.93	3.34	2.4	2.6	25	1	55	.07	2	.3	.4	24	SEC
		27	1524	59.50	19	23.64	155	15.08	2.90	1.5	1.4	8	1	94	.02	2	.4	.7	0	SEC
		27	1525	58.73	19	23.49	155	14.80	3.52	3.1	3.0	34	1	46	.09	2	.3	.4	28	SEC
		27	1527	39.66	19	23.47	155	15.11	2.76	2.1	2.4	21	0	81	.08	2	.4	.4	18	SEC
		27	1528	12.78	19	23.26	155	14.60	.01	1.8	1.7	11	1	106	.09	3	.2	.4	8	SEC *
		27	1529	25.68	19	23.82	155	15.02	2.81	1.5	.8	10	2	96	.05	2	.4	.6	8	SEC
		27	1529	42.51	19	23.57	155	14.94	3.15	2.3	2.4	24	2	47	.09	2	.3	.3	17	SEC
		27	1530	19.45	19	23.83	155	15.52	2.80	2.0	2.3	23	3	85	.08	2	.3	.3	15	SEC
		27	1531	46.56	19	23.51	155	15.03	2.98	2.2	2.4	26	2	45	.10	3	.3	.4	18	SEC
		27	1533	26.41	19	23.66	155	15.10	2.56	1.6	1.0	15	1	93	.08	2	.4	.4	11	SEC
		27	1533	49.43	19	23.49	155	15.08	2.44	1.7	1.4	16	1	98	.10	3	.4	.4	13	SEC
		27	1534	40.33	19	23.11	155	14.70	2.67	1.8	1.2	14	0	62	.08	2	.3	.5	14	SEC
		27	1535	35.66	19	23.50	155	14.84	3.30	2.7	3.0	36	0	45	.09	2	.3	.4	30	SEC
		27	1539	7.49	19	23.73	155	15.13	2.61	1.3	.5	10	2	94	.02	2	.3	.6	4	SEC
		27	1541	12.42	19	23.35	155	14.85	3.04	1.9	.8	11	2	104	.05	3	.4	.5	5	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	AUG	27	1542	4.81	19	23.07	155	14.58	2.93	1.0		8	2	116	.03	3	.5	.7	4	SEC
		27	1544	8.48	19	23.75	155	15.13	2.65	1.1		10	2	95	.03	2	.4	.6	8	SEC
		27	1545	27.58	19	23.31	155	14.62	2.35	1.0	.2	10	2	105	.04	3	.4	.7	6	SEC
		27	1546	3.66	19	23.32	155	14.84	3.19	1.8	1.2	22	2	70	.07	3	.3	.4	15	SEC
		27	1547	17.52	19	23.21	155	14.76	2.90	1.1		10	2	109	.03	3	.4	.7	8	SEC
		27	1548	14.18	19	23.47	155	14.83	2.96	1.1		10	2	99	.02	2	.4	.6	7	SEC
		27	1548	31.65	19	23.47	155	14.82	2.97	1.1		10	2	99	.03	2	.4	.6	8	SEC
		27	1548	57.88	19	23.75	155	15.13	2.90	1.1		10	2	95	.03	2	.4	.6	7	SEC
		27	1550	30.99	19	22.80	155	14.82	3.04	2.1	2.3	25	1	63	.09	2	.3	.4	19	SEC
		27	1552	8.17	19	23.58	155	14.80	3.42	1.4	.8	21	2	74	.08	2	.3	.4	15	SEC
		27	1555	52.24	19	23.39	155	14.92	2.74	1.4	.4	20	2	74	.08	3	.3	.4	13	SEC
		27	16	0 53.13	19	23.13	155	14.73	3.19	1.7	.8	23	2	62	.07	2	.4	.3	15	SEC
		27	16	4 26.42	19	23.99	155	15.96	2.86	1.4	.5	23	3	108	.09	1	.3	.3	13	SEC
		27	16	6 2.16	19	23.49	155	14.65	3.33	1.5	.6	21	2	68	.10	2	.3	.3	15	SEC
		27	16	9 36.41	19	23.13	155	14.67	2.98	1.2		11	2	130	.02	3	.4	.5	8	SEC
		27	1612	1.35	19	23.46	155	14.74	3.67	1.5	.7	20	2	71	.06	2	.4	.4	16	SEC
		27	1613	30.45	19	23.35	155	14.48	1.53	1.6	.3	14	3	102	.07	2	.3	.4	9	SEC
		27	1614	22.54	19	22.97	155	14.96	1.13	1.6	1.1	15	1	65	.12	2	.3	.4	9	SEC
		27	1617	6.32	19	23.99	155	14.28	3.30	2.1	2.2	23	2	44	.16	1	.4	.6	14	SEC
		27	1623	1.13	19	23.45	155	14.62	1.68	1.3	.4	12	2	100	.06	2	.3	.5	10	SEC
		27	1626	54.93	19	23.46	155	14.65	3.15	3.0	3.1	40	0	45	.09	2	.3	.4	33	SEC
		27	1629	31.65	19	23.49	155	15.08	1.60	1.5	1.0	16	2	98	.05	3	.3	.4	12	SEC
		27	1630	15.91	19	23.33	155	14.60	1.83	1.4	.5	14	2	104	.07	3	.4	.4	12	SEC
		27	1632	56.98	19	23.89	155	15.52	2.98	1.6	1.0	18	2	108	.07	2	.3	.3	11	SEC
		27	1633	9.05	19	23.09	155	15.60	2.35	1.9	.9	14	1	73	.07	1	.3	.4	4	SEC
		27	1634	1.24	19	23.10	155	14.81	.51	3.6	4.1	43	1	48	.11	2	.2	.3	33	SEC F
		27	1645	45.76	19	23.78	155	15.42	1.57	1.6	.9	18	2	100	.07	2	.3	.3	14	SEC
		27	1646	24.08	19	23.45	155	15.54	1.95	1.5	.6	17	2	89	.06	2	.2	.3	10	SEC
		27	1648	28.28	19	23.93	155	15.90	3.10	1.6	.9	21	2	107	.06	1	.4	.3	19	SEC
		27	1652	11.59	19	22.83	155	14.22	1.98	1.3		9	2	127	.07	2	.6	.4	5	SEC
		27	1655	58.69	19	23.11	155	14.36	1.36	1.6	.8	17	2	60	.08	2	.3	.4	12	SEC
		27	17	3 36.75	19	25.03	155	15.67	2.45	1.0	.8	14	1	126	.10	2	.5	.4	5	SNC
		27	17	3 50.36	19	21.32	155	13.93	28.35	2.8	2.5	30	1	90	.08	4	.8	1.2	26	DEP
		27	17	5 36.73	19	23.50	155	14.55	.56	1.5	.7	12	2	114	.21	3	.5	1.0	9	SEC
		27	1710	17.29	19	23.79	155	15.41	1.84	1.8	1.8	19	3	100	.06	2	.2	.3	12	SEC
		27	1714	1.21	19	23.49	155	15.68	1.73	1.4		14	3	88	.06	2	.2	.2	8	SEC
		27	1720	11.98	19	23.33	155	14.58	3.60	1.1	.2	12	2	106	.03	3	.5	.6	7	SEC
		27	1722	6.92	19	24.56	155	16.01	1.78	1.5	.5	16	2	118	.10	2	.3	.4	10	SNC
		27	1725	16.33	19	22.96	155	14.20	1.37	2.1	2.3	19	3	66	.08	2	.3	.3	13	SEC
		27	1726	16.18	19	24.39	155	16.38	1.54	1.7	1.1	16	2	111	.08	1	.3	.2	13	SEC
		27	1728	56.17	19	24.54	155	16.05	1.54	2.0	1.2	21	3	118	.08	2	.3	.3	13	SEC
		27	1729	25.39	19	23.81	155	15.42	1.30	1.5	.8	13	2	102	.07	2	.3	.4	11	SEC
		27	1732	19.44	19	23.35	155	15.01	1.22	1.6	1.2	19	3	102	.07	2	.2	.4	13	SEC
		27	1734	9.45	19	23.46	155	15.52	1.94	1.4		11	2	89	.03	2	.3	.5	6	SEC
		27	1735	28.39	19	23.12	155	14.25	1.56	1.8	1.4	19	3	58	.09	2	.3	.4	14	SEC
		27	1735	57.59	19	23.47	155	14.81	2.93	1.5	.7	14	2	100	.05	2	.4	.4	9	SEC
		27	1740	19.09	19	23.42	155	14.58	3.51	1.4	.3	14	2	109	.05	2	.4	.5	6	SEC
		27	1748	25.45	19	23.73	155	15.41	1.20	1.6	.8	14	3	97	.07	2	.2	.4	9	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	AUG	27	1750	2.85	19	23.68	155	15.63	1.52	2.0	1.4	14	2	97	.07	2	.2	.3	7	SEC
		27	1750	50.03	19	23.87	155	15.45	3.02	1.3	.4	13	2	106	.05	2	.4	.4	6	SEC
		27	1753	53.07	19	24.57	155	15.86	4.25	1.8	1.3	7	1	157	.10	2	.9	3.2	4	SNC
		27	1754	33.59	19	23.50	155	15.26	1.69	2.3	2.4	22	2	93	.11	2	.3	.4	16	SEC
		27	1756	51.83	19	23.69	155	15.57	1.50	1.9	1.8	21	3	96	.06	2	.2	.3	14	SEC
		27	1757	51.48	19	23.89	155	15.42	1.72	1.2		11	2	107	.06	2	.3	.5	8	SEC
		27	1758	33.94	19	23.31	155	14.73	3.14	1.1		11	2	106	.06	3	.5	.6	7	SEC
		27	1758	50.98	19	23.47	155	15.53	2.16	1.3		10	2	88	.05	2	.3	.5	8	SEC
		27	18	1 39.01	19	23.83	155	15.37	1.44	.9		11	2	104	.04	2	.3	.5	9	SEC
		27	18	3 15.93	19	23.74	155	15.39	1.81	1.8	.9	18	2	97	.08	2	.3	.4	13	SEC
		27	18	5 26.00	19	23.34	155	14.72	2.95	1.1		12	2	104	.05	3	.4	.5	7	SEC
		27	1812	48.42	19	23.70	155	15.46	1.50	1.6	.5	18	2	97	.05	2	.3	.3	11	SEC
		27	1813	12.31	19	23.91	155	15.94	2.85	1.9	.8	21	3	106	.06	1	.3	.3	13	SEC
		27	1816	1.23	19	23.30	155	14.70	3.17	1.3		11	2	106	.03	3	.4	.7	7	SEC
		27	1816	38.93	19	23.15	155	15.45	1.16	1.4	.9	20	3	73	.09	2	.2	.3	12	SEC
		27	1819	7.44	19	23.65	155	15.35	1.47	2.4	2.6	23	3	93	.09	2	.2	.3	16	SEC
		27	1826	58.09	19	23.12	155	15.69	2.05	1.3	.3	16	2	73	.06	1	.2	.3	10	SEC
		27	1835	35.67	19	23.29	155	14.67	3.31	1.3		11	2	106	.03	3	.4	.6	8	SEC
		27	1836	32.73	19	23.48	155	14.97	1.90	1.0		11	2	100	.15	3	.4	.7	8	SEC
		27	1838	17.44	19	24.21	155	15.88	3.11	1.1	.8	14	2	119	.06	1	.4	.3	9	SEC
		27	1844	29.84	19	23.97	155	15.13	1.83	1.6	1.2	12	1	102	.07	2	.4	.5	5	SEC
		27	1845	2.26	19	23.49	155	15.49	1.88	1.4	.7	12	3	90	.07	2	.3	.4	8	SEC
		27	1848	53.83	19	23.11	155	15.69	2.22	1.1		12	2	95	.06	1	.3	.4	9	SEC
		27	1849	20.50	19	23.45	155	15.55	1.63	2.2	2.4	20	2	86	.07	2	.3	.3	17	SEC
		27	1855	59.50	19	23.35	155	14.90	1.25	1.9	2.4	22	3	72	.07	3	.3	.3	14	SEC
		27	19	5 30.13	19	23.72	155	15.50	1.62	1.2	.4	10	1	99	.05	2	.3	.5	7	SEC
		27	1915	30.55	19	23.50	155	14.90	2.95	1.0		11	2	98	.05	2	.4	.6	8	SEC
		27	1920	55.80	19	23.55	155	14.74	3.11	1.1	1.0	12	2	97	.06	2	.4	.5	8	SEC
		27	1924	18.44	19	24.02	155	16.10	3.11	1.4	1.5	19	2	104	.08	1	.3	.3	13	SEC
		27	1930	13.27	19	23.93	155	15.43	3.08	.9	.9	10	2	110	.04	2	.4	.5	7	SEC
		27	1932	39.69	19	23.06	155	15.67	2.48	1.5	1.4	21	3	72	.07	1	.2	.3	12	SEC
		27	1932	59.09	19	27.06	155	21.00	5.37	2.3	2.4	26	2	50	.11	1	.4	.9	17	KAO
		27	1934	26.53	19	23.08	155	15.81	2.20	.8	.5	10	2	87	.03	1	.3	.4	7	SEC
		27	1935	51.79	19	24.44	155	16.20	1.54	1.5	1.4	13	3	135	.05	1	.3	.3	9	SEC
		27	1936	34.69	19	24.46	155	16.38	1.51	1.5	1.4	14	2	114	.10	1	.3	.3	8	SEC
		27	1941	33.78	19	24.12	155	15.57	3.06	.9	.1	10	2	124	.05	2	.4	.5	7	SEC
		27	1946	10.15	19	23.79	155	15.53	1.54	.5	.1	10	2	103	.07	2	.3	.5	6	SEC
		27	1949	20.56	19	23.45	155	14.88	2.13	.9		11	2	100	.06	2	.3	.6	5	SEC
		27	1952	38.12	19	23.94	155	14.80	1.97	.7	.9	9	1	96	.11	2	.6	.6	6	SEC
		27	1957	1.18	19	23.93	155	15.52	2.74	1.0	.5	10	2	111	.02	2	.4	.6	7	SEC
		27	20	0 51.44	19	19.13	155	13.06	8.23	1.5	.6	20	1	133	.06	4	.6	1.0	17	SF2
		27	20	1 32.55	19	24.02	155	15.91	3.00	.9	.8	11	3	114	.06	1	.4	.5	7	SEC
		27	20	8 32.95	19	24.05	155	15.72	3.25	1.0	.7	11	2	118	.03	2	.4	.5	6	SEC
		27	20	9 25.67	19	24.52	155	14.81	2.87	1.0	1.1	8	1	150	.11	1	1.2	.7	4	SEC
		27	2010	53.07	19	23.33	155	14.38	3.24	1.1	.5	11	2	104	.05	3	.4	.6	7	SEC
		27	2013	31.71	19	23.52	155	14.95	2.68	.9		10	2	98	.05	2	.5	.6	5	SEC
		27	2032	31.78	19	24.48	155	16.21	1.55		.2	11	2	143	.04	1	.3	.3	8	SEC
		27	2047	5.57	19	23.35	155	14.66	3.61	.9		9	2	104	.08	3	.6	.8	6	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	AUG	27	2048	40.26	19	23.52	155	14.52	3.21	1.1	.5	10	2	114	.03	2	.4	.8	7	SEC	
		27	2048	45.16	19	23.33	155	15.59	1.49	3.1	3.6	30	1	38	.12	2	.2	.3	23	SEC	
		27	2057	15.02	19	23.48	155	14.67	4.00	1.1		10	2	104	.04	2	.6	1.0	5	SEC	
		27	21 2	36.30	19	22.89	155	14.34	1.69	.6	.5	10	2	125	.06	2	.5	.5	5	SEC	
		27	2111	2.24	19	20.25	155	13.49	7.31	1.2	.6	16	2	117	.06	4	.6	1.3	11	SF2	
		27	2120	47.85	19	23.90	155	15.23	1.44	.9	1.0	12	1	106	.03	2	.3	.4	10	SEC	
		27	2124	14.76	19	23.89	155	15.49	2.96	1.3	1.0	13	3	106	.07	2	.4	.5	6	SEC	
		27	2124	48.37	19	23.94	155	15.58	2.93	.9	.6	10	2	112	.05	2	.4	.6	5	SEC	
		27	2125	21.66	19	23.80	155	15.50	2.79	1.0	.1	10	2	103	.04	2	.4	.5	4	SEC	
		27	2127	40.83	19	22.86	155	15.63	2.26	1.7	1.5	20	3	66	.06	1	.2	.2	11	SEC	
		27	2129	44.58	19	25.14	155	14.44	3.76	1.2	.7	8	1	247	.04	1	1.7	.7	5	SNC	
		27	2138	32.72	19	23.06	155	15.75	1.86	.7	.5	10	2	92	.02	1	.3	.4	6	SEC	
		27	2138	47.84	19	23.35	155	14.65	3.47	1.3	.9	11	2	103	.05	3	.5	.7	8	SEC	
		27	2144	9.84	19	23.92	155	15.43	1.63	.8	1.2	12	2	109	.07	2	.3	.5	10	SEC	
		27	2153	16.45	19	18.30	155	15.04	7.06	1.8	1.2	19	0	135	.07	4	.6	1.2	14	SF1	
		27	2155	28.81	19	23.46	155	14.88	3.06	.8	.5	9	2	107	.03	2	.4	.7	6	SEC	
		27	22 8	39.63	19	23.68	155	15.10	2.88	.9		10	2	92	.02	2	.4	.6	8	SEC	
		27	2235	54.28	19	25.23	155	16.48	1.80	.9	1.3	10	0	147	.08	1	.4	.4	8	SNC	
		27	2247	35.10	19	23.79	155	15.19	3.01	1.0	.9	11	2	98	.03	2	.4	.5	8	SEC	
		27	2248	38.04	19	23.89	155	15.85	3.96	1.1	1.2	9	1	149	.08	1	.6	.5	5	SEC	
		27	2259	28.35	19	24.28	155	16.27	1.32	1.4	1.7	16	2	110	.10	1	.3	.3	10	SEC	
		27	23 0	23.27	19	23.46	155	14.85	2.88	.8		10	2	100	.03	2	.4	.6	7	SEC	
		27	23 4	53.87	19	23.45	155	14.80	3.52	1.1	1.4	13	2	97	.06	2	.4	.5	8	SEC	
		27	23 5	50.93	19	23.17	155	14.32	1.48			10	2	109	.07	2	.3	.5	5	SEC	
		27	23 6	18.34	19	23.41	155	15.78	1.43	1.0	.7	7	1	164	.03	2	.5	.3	6	SEC	
		27	2345	47.67	19	24.51	155	26.39	10.13	2.0	1.5	27	1	50	.11	3	.4	1.0	23	KAO	
		27	2358	49.03	19	24.02	155	15.79	3.27	.8	.6	9	2	158	.03	1	.5	.6	5	SEC	
		28	0 0	59.74	19	23.55	155	16.06	.00	1.4	1.8	13	2	97	.15	1	.4	.5	8	SEC	*
		28	0 5	18.54	19	24.08	155	15.95	3.20	.8	.7	9	1	118	.04	1	.4	.5	7	SEC	
		28	0 6	56.79	19	23.66	155	14.83	3.44	1.2	.6	9	2	106	.05	2	.5	.6	7	SEC	
		28	026	44.42	19	24.19	155	15.93	3.26	1.0	.6	10	2	126	.03	1	.4	.5	8	SEC	
		28	027	53.70	19	24.00	155	15.91	2.97	.8	.5	10	2	113	.04	1	.4	.5	7	SEC	
		28	031	9.03	19	23.89	155	15.87	2.96	1.5	1.4	21	3	106	.06	1	.3	.2	16	SEC	
		28	031	29.87	19	24.15	155	15.95	2.80	1.1	.8	8	1	167	.04	1	.4	.5	5	SEC	
		28	032	20.68	19	23.91	155	16.04	2.80	1.6	1.3	21	3	103	.08	1	.3	.3	14	SEC	
		28	035	15.11	19	23.79	155	15.64	.12	1.7	1.9	14	3	102	.12	2	.2	.3	7	SEC	
		28	038	29.65	19	24.07	155	16.12	2.91	.8	.2	9	1	115	.04	1	.4	.5	7	SEC	
		28	039	13.11	19	23.99	155	16.12	3.02	.9	.1	9	1	109	.04	1	.4	.5	7	SEC	
		28	045	30.63	19	23.65	155	14.96	3.13	1.0		9	2	110	.03	2	.5	.6	7	SEC	
		28	059	4.02	19	24.00	155	15.72	3.30	1.3	.5	15	2	155	.05	2	.5	.4	8	SEC	
		28	059	44.46	19	24.14	155	16.12	3.10	1.2	.5	11	1	159	.07	1	.6	.4	7	SEC	
		28	1 3	26.72	19	24.14	155	15.96	3.24	.8	.5	9	1	122	.03	1	.5	.6	5	SEC	
		28	1 3	59.54	19	24.12	155	16.24	3.07	1.3	.8	11	2	114	.08	1	.6	.4	6	SEC	
		28	1 4	14.11	19	24.02	155	15.87	3.04	2.6	3.3	33	1	43	.10	1	.3	.3	25	SEC	F
		28	1 7	34.98	19	23.90	155	15.73	2.80	1.5	.8	20	3	108	.06	2	.3	.3	12	SEC	
		28	1 9	49.31	19	23.95	155	15.74	3.23	1.3	1.4	18	2	111	.06	2	.4	.4	14	SEC	
		28	118	50.11	19	23.90	155	15.89	3.35	1.5	1.6	17	2	107	.05	1	.4	.3	11	SEC	
		28	146	3.20	19	24.04	155	16.02	3.09	1.3	.9	13	2	108	.05	1	.3	.3	9	SEC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	AUG	28	149	40.62	19	23.77	155	15.53	1.51	.8	1.0	11	2	101	.06	2	.3	.5	6	SEC	
		28	3 4	2.56	19	17.50	155	12.64	3.59	1.4	1.1	18	1	192	.10	2	1.1	.8	11	SSF	
		28	331	14.19	19	24.35	155	16.33	3.06	.7	.9	9	1	129	.05	1	.4	.5	7	SEC	
		28	429	58.65	19	24.02	155	15.86	3.25	1.0	.9	12	2	111	.04	1	.4	.5	8	SEC	
		28	826	25.55	19	18.51	155	13.45	6.27	1.8	1.5	24	0	80	.14	3	.7	1.3	20	SF2	
		28	842	31.10	19	23.27	155	14.78	3.33	1.1	1.3	12	2	104	.04	3	.4	.4	9	SEC	
		28	949	54.69	19	24.05	155	15.69	3.24	1.4	1.7	20	3	114	.06	2	.3	.3	11	SEC	
		28	1013	33.26	19	22.00	155	5.59	9.26	2.2	2.2	35	3	77	.09	2	.4	.7	22	SF4	
		28	1118	53.47	19	21.06	155	16.46	1.47	1.5	2.0	15	2	134	.09	2	.4	.3	9	KOA	
		28	14 6	57.07	19	23.23	155	15.56	1.04	3.5	3.9	38	2	40	.13	2	.2	.3	31	SEC	F
		28	1540	37.35	19	16.41	155	12.54	6.87	1.8	1.7	28	2	168	.10	2	.7	.9	20	SF2	
		28	16 9	20.18	19	23.75	155	15.72	2.92	2.4	2.6	34	2	37	.10	2	.3	.3	26	SEC	
		28	1643	.82	19	23.75	155	15.52	1.46	1.1	1.3	13	2	100	.07	2	.3	.4	10	SEC	
		28	1740	14.49	19	19.90	155	13.49	6.46	1.6	1.4	27	1	70	.11	5	.5	1.0	20	SF2	
		28	1754	17.80	19	20.56	155	17.63	35.36	2.0	1.6	40	2	47	.08	1	.7	1.1	32	DEP	
		28	2030	17.29	19	16.95	155	13.43	7.86	1.4	1.2	19	1	234	.06	0	.7	1.0	14	SF2	
		29	025	12.17	19	20.07	155	13.27	8.66	1.6	1.8	23	1	118	.09	5	.5	.8	19	SF2	
		29	246	1.58	19	23.96	155	15.54	2.84	.9	.9	10	2	113	.02	2	.4	.6	8	SEC	
		29	247	5.38	19	31.51	155	28.09	3.29	2.2	2.4	28	1	95	.14	1	.4	.6	20	MLO	
		29	249	54.33	19	31.66	155	27.88	3.57	1.7	1.4	17	1	93	.11	1	.4	.5	10	MLO	
		29	355	23.99	19	23.75	155	1.33	8.51	1.7	1.4	22	0	142	.12	5	.8	.8	17	SF5	
		29	547	11.37	19	19.45	155	12.06	8.12	1.8	1.6	30	1	91	.08	5	.5	.8	22	SF3	
		29	841	5.28	19	23.85	155	15.38	1.71		1.8	11	0	101	.09	2	.3	.4	11	SEC	
		29	9 7	47.89	19	21.88	155	15.86	1.65	1.1	1.3	16	1	80	.04	1	.3	.3	12	KOA	
		29	1337	33.97	19	21.11	155	15.25	8.65	2.0	1.7	27	2	69	.10	3	.5	.8	21	SF1	
		29	1341	40.10	19	21.22	155	15.27	9.14	2.9	2.9	39	4	68	.09	2	.4	.5	28	SF1	
		29	1419	45.61	19	19.63	155	11.33	7.76	1.9	2.2	34	1	93	.10	5	.5	.9	24	SF3	
		29	1437	48.44	19	23.92	155	15.44	3.04	1.3	1.4	13	1	105	.05	2	.3	.4	8	SEC	
		29	1555	30.95	19	20.18	155	13.29	9.07	1.5	1.4	18	1	64	.06	5	.6	1.2	14	SF2	
		29	2225	36.14	19	16.84	155	28.80	8.89	1.4	1.6	23	1	100	.12	4	.4	1.0	16	LSW	
		30	136	8.70	19	20.80	155	5.94	7.39	1.5	1.6	26	0	103	.11	4	.5	1.1	19	SF4	
		30	429	25.75	19	20.74	155	10.75	8.33	2.3	2.8	38	3	73	.08	3	.3	.4	30	SF3	
		30	1154	18.11	19	25.31	155	25.60	11.40	1.5	1.3	25	2	59	.07	1	.5	.9	22	KAO	
		30	1217	32.34	19	19.79	155	11.18	9.08	1.9	1.6	27	1	91	.11	5	.6	.9	25	SF3	
		30	1317	44.82	19	23.85	154	58.06	6.41	1.9	2.1	22	2	214	.12	3	1.0	.8	18	LER	
		30	1527	47.68	19	23.91	155	15.54	1.51	1.8	2.6	11	2	110	.03	2	.3	.4	7	SEC	F
		30	2148	31.84	19	20.35	155	13.02	7.70	1.7	1.7	26	2	66	.08	4	.4	.9	20	SF2	
		30	2330	39.56	19	25.62	155	15.93	14.97	2.0	2.2	34	4	95	.09	2	.5	.4	27	DEP	
		31	9 2	41.51	19	54.21	155	36.56	14.36	2.6	3.0	26	3	128	.07	21	.5	.6	18	KEA	
		31	916	2.94	19	16.24	155	14.87	6.36	1.6	1.7	25	2	207	.09	3	.7	1.0	20	SF1	
		31	10 3	21.13	19	52.33	155	35.89	12.35	2.2	2.1	17	2	214	.09	18	1.2	.7	14	KEA	
		31	13 4	10.34	19	26.20	155	23.96	8.11	1.7	1.6	26	2	55	.12	3	.4	.9	23	KAO	
		31	1816	53.76	19	20.80	155	6.46	9.12	3.7	4.0	43	2	99	.11	4	.5	.4	35	SF4	F
		31	1818	23.84	19	20.55	155	6.66	6.38	2.1		27	2	101	.11	5	.5	1.1	19	SF4	
		31	1819	4.01	19	20.74	155	6.05	8.18	2.8	2.7	35	3	104	.08	4	.4	.6	29	SF4	
		31	1924	29.48	19	20.01	155	11.23	7.29	1.9	1.8	29	0	86	.09	5	.5	1.0	21	SF3	
		31	20 8	30.28	19	26.41	155	24.06	5.96	1.6	1.8	24	1	44	.11	3	.4	1.0	16	KAO	
		31	2012	58.04	19	26.64	155	24.22	6.75	2.7	3.2	37	1	45	.13	3	.4	1.0	26	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	SEP	1	141	12.29	19	8.20	155	25.96	40.39	2.1	1.7	25	0	250	.09	4	2.7	4.3	17	DLS T
		1	328	24.86	19	20.77	155	6.31	7.14	1.1	1.3	25	1	101	.12	4	.6	1.1	17	SF4
		1	9 5	5.88	19	8.82	155	25.84	39.15	2.0	2.3	23	0	228	.04	4	2.7	4.4	13	DLS L
		1	9 6	13.96	19	6.87	155	26.56	43.40	2.4	2.4	30	0	179	.07	5	1.1	2.6	23	DLS L
		1	9 7	19.89	19	7.78	155	27.00	42.71	2.7	2.3	26	1	174	.09	4	.9	2.0	16	DLS L
		1	1727	58.40	19	20.78	155	5.86	8.45	2.3	2.8	40	1	104	.10	4	.4	.6	33	SF4
		1	1859	44.73	19	23.91	155	15.68	3.12	2.0	2.1	26	3	109	.06	2	.3	.3	19	SEC
		1	19 0	26.44	19	24.00	155	15.80	2.82	1.2	1.3	11	1	111	.05	1	.4	.4	7	SEC
		1	2141	4.36	19	19.85	155	7.96	7.13	1.8	2.0	28	2	92	.08	5	.5	1.0	21	SF4
		1	23 8	.05	19	20.89	155	6.16	8.61	2.3	2.4	39	2	99	.09	4	.4	.6	25	SF4
		2	523	5.75	19	19.81	155	13.37	9.31	2.8	3.3	41	2	68	.09	5	.4	.4	36	SF2
		2	921	45.10	19	20.64	155	6.66	7.06	2.1	2.1	36	2	100	.10	4	.4	.8	24	SF4
		2	1036	38.99	19	20.57	155	17.48	34.04	2.1	1.8	37	3	38	.07	1	.7	1.1	31	DEP
		2	1138	49.62	19	19.77	155	8.97	7.41	1.6	1.5	28	2	80	.06	5	.5	1.0	19	SF4
		2	1539	58.11	19	19.88	155	12.25	7.47	1.6	1.5	30	1	81	.10	5	.5	.9	22	SF3
		2	1734	50.05	19	16.42	155	23.75	5.05	2.0	2.2	31	0	124	.15	7	.5	1.5	25	SWR
		3	2 3	37.52	19	29.76	155	39.24	6.81	2.1	1.6	23	2	74	.11	6	.5	1.1	16	MLO
		3	5 7	36.91	19	20.43	155	8.68	3.12		1.3	15	0	72	.12	4	.5	.9	14	SSF
		3	639	38.01	19	23.18	155	17.22	2.50	1.6	2.1	18	1	62	.08	3	.3	.5	15	SSC
		3	732	18.30	19	26.61	155	29.11	8.80	1.9	1.4	26	1	59	.09	7	.4	1.1	18	KAO
		3	851	40.32	19	24.09	155	15.62	1.58	2.4	2.9	30	3	44	.11	2	.2	.3	24	SEC
		3	943	27.09	19	29.43	155	25.77	9.93	1.9	1.3	32	3	70	.10	4	.4	.6	19	KAO
		3	959	1.65	19	25.56	155	24.13	10.40	1.6	1.2	31	3	66	.08	2	.4	.6	22	KAO
		3	1043	6.28	19	21.51	155	1.21	8.03	3.2	3.1	41	3	182	.09	4	.6	.4	32	SFS F
		3	1153	43.16	19	25.66	155	26.14	10.91	1.8	1.2	24	2	54	.06	2	.5	1.0	19	KAO
		3	1258	1.69	19	23.97	155	15.48	3.03	1.0	1.3	13	2	112	.04	2	.4	.4	11	SEC
		3	1259	48.56	19	24.21	155	16.17	1.54	2.1	2.3	19	3	122	.11	1	.2	.3	10	SEC
		3	1332	3.31	19	24.15	155	16.24	1.32	1.6	1.9	16	3	116	.11	1	.2	.2	10	SEC
		3	1352	27.55	19	20.92	155	1.98	5.01	1.3	1.5	18	1	178	.13	3	1.2	1.7	11	SF5
		3	1433	11.76	19	58.36	155	20.19	11.94	2.6	1.7	12	0	254	.05	9	2.3	.6	9	KEA
		3	1552	59.33	19	21.75	155	6.65	7.37	1.3	1.3	25	2	79	.11	2	.5	1.0	19	SF4
		4	2 9	36.15	19	20.12	155	12.75	7.83	1.6	1.4	23	1	72	.06	5	.5	.8	17	SF2
		4	456	4.36	19	19.89	155	11.44	6.32	1.5	1.5	25	2	87	.09	5	.5	1.0	20	SF3
		4	1019	50.48	19	20.08	155	8.21	7.50	1.8	1.5	31	3	84	.09	5	.5	.9	24	SF4
		4	1438	45.44	19	21.96	155	4.94	8.33	2.1	1.9	27	2	76	.10	3	.5	.8	17	SF5
		4	1545	46.97	19	19.85	155	10.42	7.48	1.7	1.3	23	0	89	.08	4	.6	1.2	20	SF3
		4	1924	7.23	19	23.70	155	15.60	3.26	1.8	1.9	23	2	98	.10	2	.3	.4	17	SEC
		4	1928	33.79	19	20.46	155	6.04	8.52	2.6	2.9	36	0	111	.08	5	.5	.6	27	SF4
		4	1940	50.91	19	23.40	155	17.17	2.62	1.6	1.5	18	1	54	.08	0	.3	.3	15	SSC
		4	2113	30.61	19	19.05	155	25.88	8.13	1.3	1.3	21	1	127	.12	5	.5	.8	17	KAO
		5	1 7	17.40	19	27.39	154	51.85	1.69		1.2	14	1	283	.21	4	1.7	1.2	9	SLE
		5	215	37.87	19	23.42	155	16.95	2.99	1.3	1.8	17	1	45	.07	0	.4	.3	11	SSC
		5	640	23.75	19	20.26	155	13.15	6.96	1.4	1.1	26	2	66	.10	4	.5	.9	17	SF2
		5	7 5	43.61	19	18.46	155	12.93	7.82	1.7	1.6	22	2	146	.08	3	.6	.9	15	SF2
		5	853	53.42	19	20.30	155	12.72	7.84	1.8	1.3	27	1	70	.11	4	.5	.8	24	SF2
		5	1527	24.23	19	20.92	155	2.50	6.05	1.9	1.6	29	2	156	.14	2	.6	.8	13	SF5
		5	1545	37.78	19	20.69	155	11.49	8.35	1.9	1.6	36	4	72	.10	4	.4	.6	26	SF3
		5	17 5	48.42	19	20.64	155	11.53	7.37	2.0	1.7	32	3	73	.11	4	.5	.7	25	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	SEP	5	1828	41.03	19	28.60	154	53.69	1.74	1.8	1.3	22	1	185	.22	1	1.7	.5	18	SLE
		6	157	9.32	19	26.59	155	24.66	7.56	1.6	1.3	26	3	52	.11	3	.4	.9	15	KAO
		6	340	42.28	19	26.58	154	54.34	3.11	1.8	1.4	23	2	211	.23	2	1.7	.9	17	SLE
		6	821	20.46	19	19.08	155	15.86	8.70	2.1	2.3	41	4	117	.11	3	.5	.6	25	SF1
		6	15 7	55.66	19	26.16	154	53.96	2.23	2.0	1.3	25	2	224	.15	3	1.0	.6	11	SLE
		7	156	12.12	19	19.06	155	15.33	7.74	1.9	1.5	31	2	113	.08	4	.5	.6	20	SF1
		7	621	36.32	19	26.91	155	49.03	9.25	3.0	3.1	36	2	97	.15	9	.5	.6	30	KON
		7	1118	16.29	19	20.28	155	11.68	9.85	2.8	3.0	42	1	79	.08	5	.4	.4	36	SF3
		7	1250	54.41	19	22.92	155	26.86	10.83	2.1	1.3	29	2	74	.10	2	.4	.9	20	KAO
		7	1733	54.42	19	22.46	155	25.29	9.53	2.1	2.2	41	3	72	.12	4	.4	.6	29	KAO
		8	2 7	50.95	19	22.74	155	24.14	11.13	2.2	1.9	35	3	76	.08	5	.4	.5	28	KAO
		8	2 8	39.76	19	23.09	155	23.91	9.54	1.8	1.3	29	2	44	.08	5	.4	.7	23	KAO
		8	1227	6.31	19	19.58	155	11.45	6.97	1.7	1.4	29	3	94	.10	5	.6	.8	14	SF3
		8	1235	8.26	19	22.28	155	.05	6.82	1.9	1.3	23	1	187	.16	6	1.1	.9	11	SF5
		8	1342	51.57	19	20.47	155	12.97	7.50	1.6	1.1	28	1	65	.09	4	.5	.8	20	SF2
		8	2031	.47	19	17.23	155	13.74	7.02	1.4	1.3	22	2	154	.08	1	.6	.9	15	SF2
		8	2135	24.03	19	25.22	155	22.69	10.52	2.1	1.8	40	4	38	.11	4	.4	.5	28	KAO
		9	040	52.76	19	18.93	155	15.40	8.35	1.6	1.9	29	3	118	.07	4	.4	.7	19	SF1
		9	618	55.39	19	19.50	155	11.45	6.65	1.7	1.2	22	1	164	.06	6	.5	1.0	13	SF3
		9	817	29.50	19	20.63	155	11.89	8.13	1.8	1.9	30	1	133	.11	4	.6	.9	25	SF3
		9	940	9.83	19	21.20	155	7.95	8.27	1.7	1.8	28	1	76	.08	4	.5	.9	22	SF4
		9	11 8	26.11	19	19.49	155	12.24	8.72	1.8	1.3	20	1	89	.05	5	.5	.9	19	SF3
		9	1215	15.09	19	20.72	155	9.09	7.67	2.4	2.0	37	3	67	.10	3	.4	.7	33	SF4
		9	1454	45.57	19	20.44	155	11.88	8.51	2.8	3.1	38	1	75	.11	5	.4	.7	36	SF3
		9	16 2	9.32	19	18.65	155	15.80	6.77	1.2	1.0	18	2	130	.08	4	.6	1.1	16	SF1
		9	1746	10.11	19	19.90	155	12.01	7.25	1.7	1.3	16	1	83	.05	5	.5	1.3	14	SF3
		9	1929	18.88	19	18.76	155	21.54	2.56		1.1	15	1	199	.06	4	.8	.6	14	SWR
		10	537	4.72	19	23.63	155	17.37	3.18	1.4	1.1	13	2	91	.08	1	.4	.5	10	SSC
		10	914	32.83	19	21.91	155	6.93	7.97	2.1	1.9	32	3	76	.10	2	.4	.7	26	SF4
		10	1221	43.49	19	16.71	155	6.91	44.57	3.5	3.4	47	3	192	.11	2	.9	1.4	44	DEP
		10	1257	26.99	19	23.09	155	17.05	2.59	1.0	1.3	10	1	97	.03	1	.4	.3	9	SSC
		10	1324	26.98	19	23.07	155	16.91	2.86	1.5	1.8	23	3	64	.07	1	.2	.2	17	SSC
		10	1336	23.32	19	23.15	155	17.07	2.47	1.4	1.2	18	2	62	.09	1	.3	.3	13	SSC
		10	1458	39.76	19	23.42	155	17.11	2.88	1.3	1.3	16	2	54	.09	0	.3	.3	9	SSC
		10	15 1	22.42	19	23.52	155	16.74	2.83	2.2	2.5	32	2	37	.10	0	.2	.2	23	SSC
		10	15 2	25.00	19	23.68	155	16.83	2.61	1.2	1.3	11	2	71	.05	1	.4	.4	8	SSC
		10	15 9	22.75	19	23.63	155	16.97	3.19	1.3	1.5	14	2	54	.06	0	.3	.3	11	SSC
		10	1545	11.29	19	24.65	155	16.08	1.37	.9	1.6	9	1	161	.11	2	.4	.4	7	SNC
		10	1710	21.98	19	19.53	155	8.46	7.80	1.8	1.5	19	2	205	.06	5	.9	1.2	11	SF4
		10	1954	9.21	19	19.33	155	12.09	7.01	2.1	1.9	31	4	154	.09	5	.5	.8	21	SF3
		10	2043	21.80	19	19.10	155	21.85	3.14	1.1	1.3	18	2	192	.09	3	.7	.7	13	SWR
		10	2330	40.32	19	19.47	155	15.15	7.24	1.5	1.1	16	0	100	.07	4	.5	1.3	13	SF1
		11	033	52.08	19	23.57	155	17.03	2.91	1.6	1.7	21	2	50	.09	0	.3	.3	11	SSC
		11	049	39.05	19	23.78	155	15.58	3.29	1.6	1.3	17	3	101	.07	2	.3	.4	11	SEC
		11	051	45.72	19	21.97	155	13.32	3.16	1.4	1.3	16	2	94	.04	1	.4	.4	13	SER
		11	354	8.67	19	23.45	155	16.86	3.14	1.6	1.8	20	3	50	.06	0	.3	.3	11	SSC
		11	650	37.77	19	21.78	155	13.23	3.02	1.4	1.0	15	2	99	.07	2	.5	.5	9	SER
		11	710	55.66	19	22.19	155	27.50	9.05	1.8	1.3	28	2	66	.09	1	.4	.8	21	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	SEP	11	11 9	19.41	19	23.29	155	16.97	2.95	1.4	1.5	20	4	57	.07	0	.3	.3	15	SSC	
		11	23 6	23.39	19	59.59	155	29.59	11.14	2.5	2.1	29	4	189	.11	20	1.1	.6	11	KEA	
		11	2328	24.33	19	24.61	155	16.66	1.68	.8	1.0	12	1	135	.08	1	.4	.3	10	SNC	
		12	412	43.12	19	23.56	155	16.96	2.82	1.4	1.3	19	2	45	.07	0	.3	.3	11	SSC	
		12	422	8.57	19	19.96	155	10.17	7.52	1.5	1.6	28	2	91	.08	4	.5	.8	20	SF3	
		12	711	11.58	19	19.70	155	11.10	9.47	3.2	3.3	36	1	155	.08	5	.5	.4	32	SF3	
		12	744	13.44	19	21.63	155	1.95	8.38	2.1	1.7	28	2	210	.12	7	1.0	.7	22	SF5	
		12	1238	30.22	19	20.49	155	5.84	7.96	1.4	1.1	23	0	112	.09	5	.7	1.2	17	SF4	
		12	1931	31.33	19	23.01	155	14.42	3.11	1.2	1.3	15	2	112	.05	2	.4	.4	12	SEC	
		12	1959	56.09	19	23.37	155	26.32	9.72	3.1	3.0	45	1	49	.13	3	.4	.6	39	KAO	
		12	20 6	24.34	19	19.01	155	13.88	8.10	1.7	1.7	36	3	63	.09	4	.4	.7	22	SF2	
		12	2130	45.44	19	22.77	155	16.98	2.97	2.2	2.4	29	1	41	.09	1	.3	.3	22	SSC	
		12	2352	34.94	19	19.62	155	12.37	6.80	1.4	1.2	23	1	143	.10	5	.6	1.1	14	SF2	
		13	442	14.23	19	19.78	155	7.08	7.64	2.3	2.3	38	1	112	.09	5	.4	.8	25	SF4	
		13	754	26.71	19	23.25	155	17.00	2.93	.9	1.0	9	0	75	.05	3	.4	.7	9	SSC	
		13	819	50.26	19	24.78	155	16.67	1.64	1.6	1.8	22	3	116	.08	1	.3	.2	14	SNC	
		13	9 4	11.82	19	19.28	155	11.49	9.92	3.2	3.3	41	2	156	.10	5	.6	.4	35	SF3	F
		13	946	21.76	19	22.90	155	16.93	2.69	1.6	1.5	21	1	73	.08	1	.3	.3	16	SSC	
		13	1116	1.08	19	23.14	155	17.01	2.70	1.8	1.8	25	4	47	.08	0	.3	.2	15	SSC	
		13	16 3	29.81	19	21.55	155	1.14	5.96	2.1	1.7	23	2	183	.15	4	.8	1.4	14	SF5	
		13	16 7	39.42	19	23.07	155	16.85	2.96	2.3	2.2	27	4	64	.08	1	.2	.2	21	SSC	
		13	1754	20.22	19	23.19	155	16.94	2.79	2.2	2.7	32	3	40	.09	0	.2	.2	23	SSC	
		13	1844	20.53	19	23.23	155	17.01	2.75	1.6	1.5	22	3	59	.06	0	.3	.3	16	SSC	
		13	1927	40.04	19	25.07	155	25.65	9.27	1.7	1.6	33	1	39	.12	1	.4	.9	21	KAO	
		14	157	50.80	19	18.72	155	15.30	8.62	2.0	1.7	36	2	122	.10	5	.4	.5	23	SF1	
		14	235	47.47	19	25.12	155	24.93	7.90	1.6	1.2	24	2	45	.10	0	.4	1.0	18	KAO	
		14	814	45.56	19	23.23	155	16.95	2.75	1.5	1.5	25	3	47	.08	0	.3	.2	16	SSC	
		14	12 4	6.56	19	23.36	155	16.84	3.14	1.4	1.6	20	2	53	.07	0	.3	.3	11	SSC	
		14	2026	12.44	20	9.95	155	45.68	1.66	2.5	1.9	20	0	296	.09	53	11.2	8.9	13	KOH	*
		14	2031	55.24	19	18.95	155	13.64	8.41	1.9	1.9	33	2	83	.09	4	.5	.7	19	SF2	
		15	4 8	8.49	19	23.02	155	16.95	3.00	1.9	2.2	25	4	47	.07	1	.2	.3	14	SSC	
		15	5 9	22.95	19	26.16	155	24.07	6.70	1.5	1.1	17	2	102	.12	3	.5	1.2	13	KAO	
		15	627	29.33	19	20.42	155	12.69	8.33	1.8	1.7	30	2	127	.12	4	.5	.7	21	SF2	
		15	9 7	1.41	19	18.62	155	15.26	8.35	1.6	1.2	26	3	127	.06	4	.5	.8	16	SF1	
		15	948	30.49	19	28.59	154	53.86	2.53	2.3	2.0	10	1	172	.08	1	1.5	.6	5	SLE	
		15	1021	21.13	19	27.87	154	52.53	2.54	1.9	1.6	10	2	276	.07	2	1.0	.3	7	SLE	
		15	1232	53.19	19	18.23	155	15.58	7.74	1.9	1.8	32	3	141	.10	4	.5	.7	17	SF1	
		15	14 6	19.98	19	20.16	155	12.62	7.60	1.6	1.1	25	3	73	.08	5	.5	.9	18	SF2	
		15	1429	46.46	19	19.63	155	12.44	7.40	1.9	1.8	35	3	83	.09	5	.4	.7	18	SF2	
		15	1511	6.59	19	21.51	155	6.65	6.94	2.0	1.2	28	3	83	.11	3	.4	.9	17	SF4	
		15	1713	1.47	19	22.89	155	16.99	2.62	2.0	2.0	27	2	48	.07	1	.2	.3	16	SSC	
		16	853	53.26	19	19.33	155	9.94	8.86	2.6	3.0	43	2	99	.10	5	.4	.4	34	SF3	
		17	422	43.12	19	22.70	155	27.00	10.71	2.1	1.7	36	3	59	.12	1	.4	.7	26	KAO	
		17	620	47.62	19	49.17	155	4.71	43.90	2.3	1.9	33	2	221	.12	14	1.0	2.2	26	KEA	
		17	719	55.96	19	23.27	155	16.80	2.91	1.3	1.4	14	3	75	.08	1	.3	.4	8	SSC	
		17	845	25.30	19	13.83	155	36.51	7.71	2.3	1.9	29	1	198	.20	2	1.0	.8	21	LSW	
		17	1428	54.49	19	20.81	155	12.96	9.09	1.6	1.6	20	1	68	.08	3	.5	.9	16	SF2	
		17	1518	47.87	19	24.54	155	25.19	9.61	2.0	1.9	31	2	50	.11	6	.4	.8	22	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	SEP	18	052	53.88	19	51.21	155	41.15	12.72	2.8	2.8	33	4	132	.11	25	.5	.7	22	KEA	
		18	1 9	41.18	19	22.92	155	16.94	2.20	1.2	1.3	15	3	92	.07	5	.3	.6	6	SSC	
		18	130	5.72	19	19.58	155	12.73	6.84	1.4	1.3	17	1	80	.09	5	.5	1.1	12	SF2	
		18	3 0	14.17	19	21.10	155	.87	6.77	2.1	2.1	28	3	197	.14	4	.7	.8	18	SF5	
		18	313	34.88	19	21.13	155	.91	6.18	2.1	1.7	23	2	196	.14	4	.9	.9	15	SF5	
		18	1021	16.79	19	22.92	155	16.84	2.53	1.4	1.2	13	2	94	.07	5	.3	.8	5	SSC	
		18	1126	17.93	19	23.51	155	16.87	4.58	1.5	1.3	16	2	86	.09	3	.4	1.0	6	SSC	
		18	1138	28.77	19	28.54	154	53.81	2.88	2.3	2.1	12	1	180	.08	1	1.4	.5	8	SLE	
		18	1835	38.84	18	54.48	155	12.46	51.84	2.4	2.0	29	2	290	.07	39	2.0	2.6	23	LOI	
		18	1957	53.28	19	23.18	155	6.25	1.36	1.6	1.8	12	0	96	.06	0	.5	.2	10	SME	
		18	2115	1.12	19	18.48	155	15.04	7.36	1.7	1.3	29	2	101	.09	4	.5	.8	17	SF1	
		19	038	24.65	19	23.02	155	17.00	2.68	1.4	1.6	18	2	68	.06	1	.3	.3	10	SSC	
		19	323	48.58	19	23.06	155	17.02	3.21	1.0	1.1	14	2	98	.07	1	.4	.4	9	SSC	
		19	645	7.05	19	23.85	154	58.20	5.64	1.7	1.5	23	2	204	.16	3	1.0	.9	12	LER	
		19	1727	56.89	19	21.84	155	6.42	8.02	1.9	1.9	33	3	78	.11	2	.4	.8	20	SF4	
		19	1919	7.12	19	19.73	155	7.12	7.72	1.7	1.7	26	2	112	.07	5	.5	1.0	19	SF4	
		19	2257	11.27	19	20.61	155	3.80	8.63	3.4	3.5	37	0	195	.12	6	.9	.6	33	SF5	F
		19	23 0	10.00	19	20.81	155	4.24	7.70	2.4	2.9	31	0	196	.12	5	1.1	.8	26	SF5	
		20	625	37.17	19	22.97	155	16.90	2.79	2.1	2.4	31	3	39	.09	1	.2	.2	16	SSC	
		20	720	54.69	19	26.25	154	56.27	6.07	1.6	1.2	20	1	199	.07	3	.9	1.2	8	LER	
		20	1021	39.13	19	20.13	155	3.46	8.44	1.8	2.0	25	0	124	.08	1	.8	.7	13	SF5	
		20	1424	52.34	19	24.16	155	.49	6.84	1.5	1.6	27	2	149	.13	4	.6	1.2	14	SF5	
		20	1525	29.07	19	19.51	155	10.90	8.85	1.9	2.0	32	0	98	.11	5	.4	.7	23	SF3	
		20	1823	7.95	19	23.07	155	20.13	32.26	2.3	2.4	43	1	45	.10	1	.6	1.0	35	DML	
		20	2221	14.40	19	20.44	155	5.81	7.37	2.0	2.2	34	1	114	.10	5	.4	.8	22	SF4	
		21	055	39.99	19	20.55	155	8.65	8.39	2.5	3.1	41	4	170	.10	4	.5	.4	26	SF4	
		21	451	6.69	19	23.12	155	20.00	31.54	2.3	2.6	42	2	44	.10	1	.6	1.0	39	DML	
		21	816	40.59	19	19.87	155	11.38	7.40	1.9	1.5	22	2	158	.10	5	.6	1.1	15	SF3	
		21	1139	44.27	19	23.10	155	27.96	9.28	1.6	1.3	25	2	46	.11	1	.4	.9	21	KAO	
		21	1323	21.76	19	28.45	154	49.23	1.48	2.5	2.2	15	0	319	.23	7	11.8	15.3	10	SLE	*
		21	1436	34.23	19	19.42	155	12.01	8.37	1.7	2.0	33	2	92	.10	5	.5	.8	25	SF3	
		22	159	43.14	19	17.50	155	12.97	6.28	1.7	1.3	25	2	135	.10	1	.5	1.0	16	SF2	
		22	16 4	13.48	19	23.37	155	16.84	2.88	2.6	3.6	35	0	37	.08	0	.2	.2	25	SSC	F
		22	2022	18.91	19	24.92	154	54.77	1.81	2.4	1.9	22	2	221	.14	5	1.0	1.0	16	SLE	
		22	2026	9.89	19	23.95	155	25.59	9.81	1.8	1.6	26	4	57	.09	3	.4	.8	21	KAO	
		23	730	41.23	19	20.39	155	11.61	7.91	1.7	1.4	25	3	146	.10	4	.6	.8	14	SF3	
		23	753	14.24	19	20.90	155	1.05	7.61	1.7	1.5	26	2	210	.11	9	1.2	.9	16	SF5	
		23	1426	48.79	19	20.10	155	4.16	5.98	1.5	1.2	26	0	135	.13	2	.7	.9	17	SF5	
		23	1430	55.79	19	11.58	155	19.34	14.74	3.1	3.2	45	3	176	.10	12	.7	.4	38	DEP	
		23	1549	51.61	19	20.55	155	6.82	7.64	1.4	1.2	19	0	100	.08	5	.5	1.3	15	SF4	
		23	1927	25.05	19	20.23	155	8.51	8.70	2.0	2.1	34	3	174	.10	4	.5	.6	22	SF4	
		23	2226	36.38	19	20.37	155	11.48	8.72	1.6	1.2	24	2	78	.07	4	.5	.9	13	SF3	
		24	0 8	35.07	19	19.08	155	15.36	6.82	1.4	1.1	25	2	113	.10	4	.5	.9	18	SF1	
		24	830	44.27	19	25.12	155	25.73	6.49	2.0	1.6	27	2	51	.11	1	.4	1.0	24	KAO	
		24	1037	36.13	19	20.02	155	.40	8.06	2.2	2.2	26	0	214	.10	4	1.2	.6	17	SF5	
		24	1211	50.22	19	27.40	154	52.50	.79	2.4	2.3	13	2	263	.10	3	.7	.4	6	SLE	
		24	1347	30.55	19	18.93	155	13.98	7.84	1.9	1.7	27	2	93	.09	4	.5	.8	19	SF2	
		24	1923	42.34	19	31.56	155	28.80	6.47	1.9	1.5	27	2	105	.09	2	.4	1.0	18	MLO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	SEP	24	2245	34.94	19	47.77	156	2.27	10.94	2.2	2.0	15	4	233	.09	24	1.2	.7	8	HUA	
		25	253	12.03	19	22.57	155	14.51	3.14	1.9	2.1	29	3	73	.10	2	.3	.4	20	SEC	
		25	256	19.72	19	25.86	155	24.49	8.54	1.9	1.6	28	2	47	.11	2	.4	1.0	24	KAO	
		25	310	9.06	19	22.68	155	14.45	2.86	1.5	1.8	21	4	72	.05	2	.3	.3	12	SEC	
		25	1534	13.79	19	23.31	155	1.01	7.99	1.8	1.4	27	1	157	.11	5	.6	.7	14	SF5	
		25	1830	45.71	19	19.51	155	11.50	6.44	1.7	1.5	28	2	95	.09	6	.5	1.0	21	SF3	
		25	1950	4.31	19	20.30	155	12.88	7.62	1.5	1.3	26	2	68	.09	4	.5	.8	15	SF2	
		25	2326	47.53	19	25.86	155	54.21	12.06	2.0	1.6	22	1	194	.14	7	.9	.4	7	KON	
		26	1032	24.85	19	20.77	155	6.61	7.63	2.3	2.1	38	4	98	.09	4	.4	.6	25	SF4	
		26	1923	.64	19	19.94	155	8.30	8.57	2.6	2.7	40	1	82	.08	5	.4	.6	28	SF4	
		26	1952	43.96	19	17.95	155	2.18	8.64	1.6	1.4	22	0	227	.13	4	1.6	1.2	16	SF5	
		26	2023	43.03	19	19.88	155	8.41	8.19	2.3	2.1	37	2	81	.07	5	.4	.6	25	SF4	
		26	2218	46.96	19	19.82	155	30.44	7.05	1.5	1.2	28	0	67	.13	7	.4	1.4	19	KAO	
		27	415	39.41	19	37.30	155	21.89	13.25	1.9	1.3	24	2	71	.08	13	.4	.8	15	KEA	
		27	635	37.60	19	44.15	155	18.88	9.32		1.9	6	0	310	.09	27	18.5	22.8	2	KEA	*
		27	646	54.17	19	20.27	155	10.80	7.47	1.7	1.5	29	3	81	.09	4	.5	.8	18	SF3	
		27	8 8	14.41	20	.11	155	43.56	30.82	2.8	2.0	25	2	139	.07	15	1.2	2.4	18	KOH	
		27	1255	11.44	19	23.45	155	15.04	31.97	2.3	1.8	40	2	46	.09	2	.6	1.0	30	DEP	
		27	13 4	36.47	19	25.50	155	.61	3.55	2.4	2.5	36	0	100	.15	3	.5	1.1	27	SME	
		27	1940	2.25	19	21.34	155	24.54	10.67	2.1	2.3	36	1	62	.12	3	.5	.6	22	SWR	
		27	2251	12.66	19	24.27	154	56.43	.74	2.2	1.9	18	2	204	.22	6	1.6	1.0	13	SLE	
		28	234	19.91	19	23.79	155	23.80	10.35	1.6	1.3	22	2	58	.07	4	.5	1.1	18	KAO	
		28	522	48.64	19	26.40	154	57.81	3.14	1.3	1.0	10	1	149	.05	3	.8	.6	7	SLE	
		28	623	8.56	19	26.04	154	57.47	3.33	2.2	2.2	26	1	166	.11	3	.6	.6	17	SLE	
		28	12 0	27.06	19	27.04	155	23.86	7.31	1.5	1.4	20	2	68	.12	4	.5	1.0	14	KAO	
		28	1228	25.57	19	23.80	154	58.89	6.48	1.3	1.0	21	2	180	.13	2	.7	1.2	16	LER	
		28	15 4	39.43	19	28.36	154	53.62	1.97	.6	1.4	17	1	208	.17	1	1.5	.3	9	SLE	
		28	1630	33.47	19	20.36	155	12.13	7.89	1.6	1.2	26	1	74	.09	5	.5	.9	21	SF3	
		29	8 4	46.75	19	20.54	155	12.57	6.88	1.4	1.0	23	1	68	.09	4	.5	1.0	14	SF2	
		29	848	.97	19	28.13	154	52.20	1.90	1.4	1.2	13	1	263	.17	3	1.8	1.3	8	SLE	
		29	1040	13.91	19	26.25	155	37.24	2.97	2.5	2.1	20	0	89	.13	3	.5	.8	18	MLO	
		29	1125	43.16	19	16.45	155	13.39	7.33	1.9	1.5	35	3	165	.10	1	.5	.9	21	SF2	
		29	1127	4.10	19	16.85	155	13.28	6.18	1.8	1.3	24	1	158	.09	0	.6	.9	19	SF2	
		29	1128	18.57	19	17.08	155	13.32	5.44	1.7	1.3	24	1	156	.08	0	.5	1.0	18	SF2	
		29	1152	42.48	19	26.22	155	24.16	9.49	2.3	1.9	38	4	45	.12	2	.4	.7	26	KAO	
		29	1436	39.04	19	16.81	155	13.33	6.90	1.9	2.0	34	1	159	.11	0	.6	1.0	27	SF2	
		30	843	17.41	19	24.60	155	22.89	9.13	2.0	1.7	37	2	37	.10	4	.4	.6	33	KAO	
		30	1517	53.58	19	17.14	155	13.26	4.49	1.7	1.3	24	0	155	.08	0	.4	.7	16	SSF	
		30	1546	44.88	19	18.38	155	13.69	8.04	2.1	2.1	39	4	92	.11	3	.4	.7	26	SF2	
		30	16 5	4.71	19	21.73	155	5.29	6.56	1.1	1.2	26	2	81	.12	3	.6	1.0	18	SF4	
		30	1649	23.54	19	23.53	154	57.87	2.18	1.8	1.5	14	0	195	.11	3	1.1	1.2	6	SLE	
		30	1932	46.71	19	57.13	155	41.86	16.56	2.3	1.7	25	1	130	.09	21	2.4	17.3	22	KOH	*
		30	2220	7.27	19	26.11	155	37.39	2.90	2.6	3.0	36	2	83	.14	3	.4	.8	27	MLO	
	OCT	1	215	11.47	19	19.12	155	15.34	7.44	1.4	1.4	28	2	111	.07	4	.5	.8	19	SF1	
		1	949	56.58	19	20.55	155	11.46	8.10	1.8	1.3	28	1	76	.09	4	.5	.8	21	SF3	
		1	1222	25.59	19	23.05	155	6.09	1.34	2.3	2.8	21	0	80	.11	0	.4	.2	15	SME	
		1	1621	55.15	19	20.16	155	12.19	6.19	1.9	1.6	36	3	77	.10	5	.4	.8	23	SF3	
		1	2256	.65	19	19.35	155	13.37	8.77	2.0	2.1	36	2	72	.10	4	.4	.6	23	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	OCT	1	2312	58.51	19	26.34	155	25.49	8.11	1.9	1.4	26	3	54	.09	2	.4	.9	20	KAO	
		2	018	9.01	19	19.88	155	9.33	6.41	1.7	1.5	31	3	82	.10	4	.5	1.0	14	SF3	
		2	030	47.26	19	19.95	155	9.33	8.03	1.7	1.4	21	2	81	.07	4	.5	1.1	15	SF3	
		2	045	53.26	19	24.94	155	.86	7.44	1.6	1.3	23	2	118	.09	4	.4	1.0	12	SF5	
		2	054	23.91	19	21.84	155	4.74	8.40	1.9	1.5	25	3	155	.11	3	.6	1.0	19	SF5	
		2	1 6	17.27	19	21.59	155	15.26	8.46	1.9	1.9	38	4	63	.10	2	.4	.5	27	SF1	
		2	128	7.94	19	24.32	155	1.02	7.84	2.1	1.8	27	1	134	.13	4	.5	.8	20	SF5	
		2	251	22.90	19	25.29	155	25.08	9.79	1.9	1.7	32	3	49	.10	0	.4	.8	24	KAO	
		2	3 1	29.14	19	20.20	155	7.80	7.68	2.0	1.7	32	2	91	.09	5	.4	.9	25	SF4	
		2	1011	59.49	19	27.66	154	53.09	2.13	1.6	1.5	11	1	200	.07	2	.7	.4	7	SLE	
		2	1912	47.22	19	10.39	155	22.33	47.23	2.6	2.0	41	2	174	.07	10	.9	1.3	35	DEP	
		3	131	52.11	19	20.45	155	9.05	7.92	1.8	1.4	26	1	70	.06	3	.4	.7	21	SF4	
		3	759	38.16	19	20.39	155	11.29	8.42	2.4	2.3	38	3	79	.12	4	.5	.7	32	SF3	
		3	1435	12.40	19	19.64	155	8.97	7.53	1.8	1.4	23	2	82	.08	5	.5	.9	20	SF4	
		3	1552	38.10	19	24.44	155	37.39	.04	2.2	1.5	10	1	165	.13	6	.7	1.7	8	MLO	*
		3	1556	41.06	19	28.46	154	53.17	2.67	1.7	1.4	11	1	170	.05	1	.8	.3	7	SLE	
		3	1853	51.68	19	49.51	155	49.08	13.35	2.7	2.3	29	3	170	.13	15	.9	.7	19	HUA	
		3	20 5	26.12	19	27.12	154	53.38	7.90	2.1	1.7	25	2	189	.13	3	1.0	.5	18	LER	
		3	21 3	59.81	19	20.24	155	12.85	7.24	1.8	1.8	33	2	70	.10	4	.4	.8	24	SF2	
		4	1 1	13.13	19	23.51	155	2.52	9.95	1.4	1.3	19	1	122	.08	4	.5	1.0	14	SF5	
		4	331	27.25	19	16.74	155	30.05	7.01	2.5	2.3	39	2	75	.18	3	.4	1.2	31	LSW	
		4	334	.68	19	16.42	155	21.74	8.01	1.8	1.4	23	1	135	.08	6	.5	1.1	20	SWR	
		4	1752	16.77	19	19.45	155	11.74	7.43	2.1	2.1	41	4	94	.10	5	.4	.7	28	SF3	
		4	2255	16.59	19	21.50	155	6.78	8.32	3.2	3.2	43	3	83	.09	3	.4	.4	33	SF4	F
		5	057	26.50	19	21.64	155	6.82	7.57	2.0	1.5	26	3	80	.10	3	.5	1.0	21	SF4	
		5	1724	57.63	19	22.03	155	25.64	10.73	1.9	1.5	28	1	91	.10	4	.5	1.1	21	KAO	
		5	2330	26.91	19	24.47	155	6.25	.01		1.9	10	0	115	.09	3	2.2	4.0	3	SME	*
		6	328	37.02	19	20.36	155	12.90	7.24	1.5	1.2	27	1	67	.10	4	.5	.9	21	SF2	
		6	1947	54.36	19	18.44	155	23.37	3.77	2.1	2.1	30	2	108	.11	3	.4	1.0	19	SWR	
		6	1954	49.46	19	18.49	155	23.31	3.48	1.7	1.6	27	2	108	.10	3	.4	.7	15	SWR	
		6	2027	53.18	19	21.45	155	1.32	5.31	2.1	2.0	30	2	176	.15	4	.6	1.2	18	SF5	
		6	2126	51.25	19	20.28	155	13.35	8.89	2.4	2.4	43	4	63	.10	4	.4	.5	31	SF2	
		6	2244	48.86	19	19.74	155	8.22	8.52	2.3	2.3	38	2	87	.09	4	.4	.6	27	SF4	
		7	2 1	20.68	19	23.26	155	4.84	1.25	2.1	2.8	17	0	79	.13	3	.5	.3	11	SME	
		7	337	28.36	19	22.78	155	29.92	8.98	1.9	1.5	33	2	57	.11	4	.4	.9	25	KAO	
		7	12 3	.36	19	18.27	155	13.37	8.31	1.7	1.3	24	1	84	.09	2	.5	.9	17	SF2	
		7	1855	47.04	19	28.50	154	53.61	2.43	2.0	1.5	24	1	164	.19	1	.8	.3	16	SLE	
		7	19 7	3.92	19	20.89	155	2.59	7.41	2.5	2.4	38	2	148	.10	2	.6	.5	24	SF5	
		8	049	54.11	19	28.66	154	53.41	2.42	2.6	2.6	27	1	163	.12	0	.6	.3	17	SLE	
		8	648	19.45	19	19.66	155	12.42	7.83	1.7	1.4	26	1	83	.07	5	.4	.7	21	SF2	
		8	729	59.10	19	28.02	155	21.52	7.16	2.1	1.4	26	3	98	.12	2	.5	1.0	19	KAO	
		8	10 7	9.96	19	26.80	154	53.43	6.47	2.4	2.0	29	1	193	.12	3	.9	.7	22	LER	
		8	1033	17.35	19	20.37	155	12.98	7.24	1.9	1.5	35	5	66	.12	4	.4	.7	22	SF2	
		8	1638	20.21	19	23.32	155	5.43	1.14	2.0	2.6	16	0	93	.11	2	.6	.3	7	SME	
		8	1814	46.21	19	23.26	155	2.64	7.88	2.1	1.6	30	0	122	.15	4	.5	.6	21	SF5	
		8	2054	33.91	19	23.24	155	5.83	1.68	.8	1.8	9	0	104	.08	1	.5	.3	7	SME	
		9	0 4	38.41	19	19.15	155	16.27	8.70	2.3	2.1	39	4	115	.09	3	.4	.5	24	SF1	
		9	11 5	55.65	19	23.00	155	49.51	12.62	3.3	3.1	36	1	120	.13	14	.6	.4	30	KON	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	OCT	9	22 6	39.81	19	23.91	155	25.95	10.51	2.4	1.9	40	2	43	.11	3	.4	.7	30	KAO
		9	2359	11.25	19	21.59	155	6.51	8.45	2.8	2.7	42	4	82	.10	3	.4	.7	32	SF4
		10	0 2	14.59	19	21.52	155	6.76	7.03	1.8	1.2	33	3	83	.11	3	.4	.8	25	SF4
		10	226	10.54	19	21.23	155	1.41	7.18	3.1	3.1	45	4	179	.10	4	.5	.4	33	SF5
		10	611	41.66	19	26.24	154	57.84	3.29	2.6	2.6	30	1	155	.11	3	.4	.6	21	SLE
		10	1317	36.37	19	35.60	155	41.85	7.63	1.7	1.4	14	0	140	.13	12	.9	3.9	11	KEA
		10	1330	28.67	19	29.12	155	38.84	5.55	1.3	1.6	19	1	92	.13	5	.5	2.0	13	MLO
		10	16 4	8.94	19	29.08	155	38.83	6.18	1.1	1.3	16	2	92	.18	5	.6	1.8	12	MLO
		10	1850	52.15	19	17.82	155	16.42	8.84	2.1	2.3	40	3	128	.11	4	.4	.4	27	SF1
		11	834	55.58	19	29.02	155	38.92	7.23	2.3	2.1	24	2	92	.14	5	.5	1.1	15	MLO
		11	925	17.11	19	30.29	155	23.83	13.63	2.1	1.8	24	2	64	.09	1	.4	.8	15	DML
		11	951	37.46	19	28.98	155	38.33	7.19	1.5	1.6	17	2	91	.15	4	.6	1.1	10	MLO
		11	953	24.63	19	28.90	155	15.58	31.37	1.8	1.6	34	1	113	.07	8	.7	1.3	25	DEP
		11	1114	10.15	19	28.55	155	37.63	9.28	.9	1.2	11	1	89	.07	3	.7	1.0	6	MLO
		11	1120	8.35	19	20.11	155	7.61	7.56	2.2	2.1	26	2	95	.07	5	.4	.7	18	SF4
		11	1720	33.15	19	19.69	155	8.03	8.16	1.8	1.8	29	3	91	.07	4	.4	.9	18	SF4
		12	133	48.87	19	28.93	155	38.63	6.62	1.2	1.6	17	2	91	.15	5	.6	1.4	12	MLO
		12	6 6	34.47	19	19.39	155	12.11	7.65		1.4	26	1	92	.10	5	.5	1.0	19	SF3
		12	624	.35	19	17.62	155	12.75	7.91	1.8	1.4	22	2	137	.07	2	.5	.9	16	SF2
		12	726	53.69	19	23.99	155	17.12	16.31	2.1	1.9	37	2	57	.09	1	.4	.4	31	DEP
		12	851	27.44	19	26.32	154	55.27	6.11	1.7	1.7	20	2	200	.07	2	.6	.7	14	LER
		12	856	44.91	19	29.77	155	39.00	7.55	1.1	1.4	12	1	191	.12	5	1.1	1.6	8	MLO
		12	1257	29.60	19	18.48	155	14.60	6.98	1.4	1.3	24	1	120	.09	3	.5	1.1	18	SF1
		12	1352	3.42	19	54.46	155	36.32	14.38	2.3	2.4	19	3	130	.11	21	.7	.8	11	KEA
		12	1614	37.00	19	20.22	155	6.86	6.54	1.4	1.3	24	0	106	.11	5	.6	1.3	20	SF4
		12	1743	24.81	19	24.15	155	29.86	9.83	1.8	1.5	26	0	51	.06	5	.4	1.2	21	KAO
		12	1754	59.29	19	18.71	155	11.11	7.69	1.6	1.3	24	1	120	.09	5	.5	1.1	13	SF3
		12	2231	6.69	19	24.12	154	58.71	6.38	1.5	1.2	19	1	192	.11	2	.7	.9	12	LER
		12	23 1	51.99	19	22.72	154	59.77	7.17	1.3	.9	14	2	177	.09	5	.7	1.2	9	LER
		12	2350	59.89	19	28.72	154	53.71	2.62	2.6	3.1	13	0	159	.08	1	.5	.2	7	SLE
		13	021	32.88	19	25.13	155	24.49	9.79	2.6	2.8	38	2	42	.11	1	.4	.6	27	KAO
		13	342	54.66	19	20.09	155	12.10	7.25	1.6	1.8	31	1	79	.10	5	.5	.7	25	SF3
		13	1045	41.38	19	40.40	156	1.74	13.44	2.9	2.7	20	1	237	.12	20	2.8	.5	14	HUA
		13	1333	12.20	19	24.56	155	24.69	10.83	2.5	2.3	41	3	39	.10	2	.4	.6	28	KAO
		14	238	39.92	19	19.85	155	7.96	7.09	1.6	1.3	25	2	90	.08	5	.4	1.0	19	SF4
		14	459	39.28	19	30.09	155	39.13	7.50	1.4	1.3	15	1	99	.13	6	.6	1.5	10	MLO
		14	1433	34.38	19	26.11	155	25.33	4.88	1.8	1.4	24	2	129	.11	2	.4	1.1	19	KAO
		14	1614	2.40	19	26.05	155	25.46	5.64	1.8	1.4	24	1	74	.12	2	.4	1.1	18	KAO
		14	1810	40.42	19	21.35	155	1.16	7.27	2.6	2.4	33	2	173	.10	4	.6	.5	24	SF5
		14	1836	2.95	19	19.56	155	11.34	7.31	2.0	1.9	39	2	95	.11	5	.5	.8	31	SF3
		14	2034	29.48	19	20.31	155	14.01	9.51	3.4	3.4	47	1	59	.11	5	.4	.3	40	SF2 F
		15	020	39.08	19	18.06	155	23.30	4.32	1.7	1.4	22	2	150	.10	4	.5	1.4	13	SWR
		15	256	30.42	19	19.74	155	7.92	7.04	1.8	1.4	29	2	94	.08	4	.5	1.0	20	SF4
		15	537	25.63	19	5.68	155	28.28	41.79	2.4		21	1	184	.09	7	1.4	1.9	5	DLS T
		15	1418	32.38	19	14.80	155	21.44	35.13	2.1	2.0	36	1	150	.08	8	.7	1.4	32	DEP
		15	15 4	36.41	19	19.29	155	8.85	7.88	1.8	1.6	27	2	87	.06	4	.5	.9	18	SF4
		15	1527	42.68	19	19.64	155	11.58	6.61	1.7	1.5	26	2	92	.07	5	.4	.8	17	SF3
		15	18 1	.83	19	18.37	155	26.36	9.43	1.5	1.3	23	1	132	.11	6	.5	.8	15	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	OCT	16	0 6	20.05	19	21.87	155	10.99	3.44	2.2	2.3	26	1	59	.09	2	.5	.6	20	SER
		16	11 4	8.37	19	6.20	155	26.98	42.61	2.3		22	1	191	.10	6	1.2	1.9	6	DLS T
		16	11 4	21.14	18	55.00	155	24.37	57.01	2.6		24	0	241	.11	28	2.0	4.6	9	LOI T
		16	11 5	36.69	19	7.67	155	27.53	44.68	2.3		24	1	247	.09	3	1.5	2.5	13	DLS T
		16	1411	49.71	19	19.48	155	11.26	7.49	1.5	1.4	31	1	97	.10	5	.5	.8	23	SF3
		16	1427	4.59	19	4.99	155	28.34	42.27	2.0		20	1	193	.08	8	1.4	2.4	11	DLS T
		16	1434	23.97	19	6.71	155	26.65	40.02	2.3		24	1	180	.08	6	1.0	1.9	10	DLS T
		16	1436	18.88	19	7.26	155	25.22	38.14	1.9		17	1	257	.11	6	1.7	2.3	7	DLS T
		16	1815	24.72	19	19.77	155	8.90	9.27	2.9	3.0	41	1	79	.10	5	.5	.4	37	SF4
		16	23 8	15.02	19	22.97	155	25.04	10.27	2.3	2.2	41	3	44	.10	4	.4	.6	30	KAO
		17	715	38.37	19	20.38	155	11.77	8.56	2.2	2.1	29	3	76	.11	5	.5	.7	23	SF3
		17	814	58.93	19	18.37	155	23.35	4.57	1.7	1.3	20	1	145	.10	3	.7	1.4	13	SWR
		17	2115	37.84	19	16.86	155	22.27	8.50	3.0	3.4	47	2	128	.14	6	.5	.5	43	SWR
		17	2138	18.08	19	16.84	155	22.08	7.17	1.8	1.5	32	1	129	.13	6	.5	1.2	20	SWR
		17	2138	56.60	19	16.79	155	22.21	8.40	2.1	2.1	36	0	129	.12	7	.5	1.0	23	SWR
		17	2231	20.77	19	14.14	156	2.00	40.85	2.4	1.8	32	1	257	.08	17	1.3	1.7	27	KON
		18	3 8	38.75	19	20.26	155	8.59	7.02	1.8	1.4	27	3	89	.08	4	.5	.9	16	SF4
		18	651	59.12	19	20.66	155	8.93	8.48	2.6	2.6	39	1	67	.08	3	.3	.5	28	SF4
		18	752	11.41	19	52.41	156	24.59	1.24		1.6	33	2	286	.11	63	1.8	.8	28	DIS
		18	840	30.52	19	28.02	154	53.94	2.37	1.9	1.8	22	1	124	.19	2	.6	.5	16	SLE
		18	1733	33.86	19	4.55	155	40.60	26.27	2.6	1.9	35	1	144	.08	11	1.2	2.1	32	DLS
		18	2029	47.92	19	19.73	155	11.62	7.65	1.7	1.7	31	1	89	.06	5	.4	.7	20	SF3
		18	2118	17.93	19	23.52	155	17.07	2.94	1.4	1.7	21	2	47	.08	0	.3	.2	15	SSC
		19	817	.49	19	24.46	155	16.69	1.75	1.3	1.3	15	4	125	.09	1	.3	.2	7	SSC
		19	932	18.19	19	21.04	155	6.51	7.18	2.0	1.4	31	3	93	.12	4	.4	.8	17	SF4
		19	20 1	10.83	19	18.58	155	13.76	7.43	1.7	1.3	28	2	94	.09	3	.6	.9	18	SF2
		19	2219	15.65	19	26.64	155	24.47	8.54	1.7	1.5	27	4	58	.11	3	.4	.9	22	KAO
		20	129	58.48	19	23.77	155	16.81	2.50	1.9	2.0	25	3	65	.10	0	.3	.2	15	SSC
		20	751	18.00	19	13.46	155	32.47	7.32	2.6	2.3	40	4	74	.18	5	.5	.9	22	LSW
		20	758	34.68	19	20.64	155	10.85	8.46	1.7	1.5	26	3	75	.06	3	.5	.8	13	SF3
		20	759	2.45	19	20.60	155	10.78	6.69	1.7	1.4	21	2	76	.08	3	.5	1.0	17	SF3
		20	1234	2.25	19	19.09	155	14.10	8.23	2.4	2.5	40	2	93	.11	4	.4	.5	32	SF2
		20	1736	8.09	19	19.58	155	11.75	7.12	1.7	1.4	28	1	92	.08	6	.5	1.0	23	SF3
		20	2035	48.30	19	15.05	155	29.67	7.17	2.8	2.9	39	0	128	.15	1	.5	.7	22	LSW F
		20	2257	14.58	19	19.49	155	10.27	8.93	1.6	1.2	15	0	97	.04	5	.6	1.4	15	SF3
		21	625	28.59	19	26.10	155	24.00	10.09	2.0	1.5	25	2	54	.10	3	.5	1.0	22	KAO
		21	642	44.76	19	20.81	155	13.24	9.04	2.5	2.5	39	3	60	.11	3	.4	.5	30	SF2
		21	1416	31.54	19	26.33	154	58.15	2.85	2.3	2.6	10	1	137	.11	2	.9	.7	7	SLE
		21	19 1	37.92	19	22.53	155	6.76	1.83	1.8	2.2	11	0	104	.08	1	.5	.3	8	SME
		21	2032	27.09	19	22.30	155	7.59	2.10	1.6	2.2	12	0	107	.07	3	.4	.6	9	SER
		21	2038	25.07	19	22.62	155	5.12	3.87	3.4	4.0	37	1	75	.13	6	.4	3.4	26	SME
		21	2116	44.40	19	22.74	155	5.35	1.24	2.6	2.9	22	0	72	.20	2	.4	.5	16	SME
		21	2148	19.63	19	21.88	155	6.85	.50	3.7	4.2	46	2	75	.23	2	.4	.6	31	SME F
		21	22 5	42.17	19	22.15	155	6.26	.57	3.0	3.6	34	3	74	.22	2	.4	.5	25	SME *
		21	2340	39.58	19	23.12	155	6.34	1.45	2.3	2.6	20	1	90	.07	0	.4	.2	18	SME
		22	225	10.33	19	22.94	155	6.06	1.61	1.0	1.4	13	0	87	.06	0	.5	.2	13	SME
		22	258	35.68	19	23.86	155	5.24	2.13	1.2	1.4	11	0	96	.05	2	.6	.4	10	SME
		22	329	4.33	19	23.22	155	5.94	1.52	1.4	2.1	11	0	102	.07	1	.6	.3	11	SME

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	OCT	22	413	24.73	19	22.40	155	7.24	3.10	1.7	2.4	14	0	93	.09	2	.5	1.1	10	SER	
		22	644	41.48	19	22.20	155	6.19	7.28	2.0	1.5	26	0	74	.13	2	.5	1.0	20	SF4	
		22	944	39.02	19	25.72	154	58.58	3.82	2.9	2.8	25	1	117	.11	1	.4	.5	13	SLE	
		22	1016	55.55	19	26.01	154	53.21	5.17	3.5	3.7	36	0	122	.16	4	.5	.9	24	LER	F
		22	1021	17.99	19	28.39	154	54.21	2.39	1.8	1.5	14	1	116	.11	2	.4	.3	12	SLE	
		22	1139	3.75	19	25.67	154	57.85	3.57	2.1	1.8	26	1	146	.19	2	.7	.5	21	SLE	
		22	1157	2.59	19	23.76	155	1.16	7.07	1.5	1.1	21	1	145	.12	5	.5	1.2	17	SF5	
		22	12 9	30.00	19	22.35	155	7.32	1.88	1.7	2.4	14	1	102	.10	4	.5	.8	11	SER	
		22	1424	8.65	19	19.56	155	12.44	6.77	1.7	1.8	27	2	84	.09	5	.4	.9	24	SF2	
		22	1542	17.03	19	23.10	155	5.05	.99	2.4	3.1	31	0	77	.14	2	.3	.3	10	SME	
		22	1551	59.71	19	26.12	154	58.17	3.35	2.7	2.6	27	1	130	.09	2	.5	.5	24	SLE	
		22	1632	27.20	19	20.63	155	7.75	8.03	2.0	1.8	30	2	86	.07	5	.4	.8	25	SF4	
		22	1650	35.23	19	20.29	155	6.54	8.13	2.6	2.5	36	2	109	.09	5	.4	.7	30	SF4	
		22	1718	6.03	19	23.34	155	5.98	1.72	1.0	1.6	6	0	111	.01	1	.6	.3	5	SME	
		22	1841	45.66	19	21.95	155	13.14	3.12		.6	10	2	158	.07	1	.8	.4	8	SER	
		22	1842	45.83	19	22.04	155	13.26	2.65	1.1	.2	10	2	155	.12	1	.8	.4	8	SER	
		22	1846	13.27	19	21.97	155	13.03	2.80	1.7	.9	15	2	145	.09	1	.6	.4	13	SER	
		22	1848	28.86	19	21.85	155	12.95	2.85	1.4	1.7	15	2	101	.10	1	.4	.4	13	SER	
		22	1849	3.18	19	22.16	155	12.99	2.76	1.4	.5	14	2	140	.10	1	.6	.4	12	SER	
		22	1855	11.00	19	21.94	155	12.98	2.30	1.8	2.0	19	2	53	.12	1	.4	.4	17	SER	
		22	1857	11.74	19	21.80	155	12.80	2.41	2.2	1.6	23	3	62	.09	2	.3	.3	18	SER	
		22	1858	25.54	19	21.84	155	13.28	3.50	2.1	2.0	16	2	103	.10	5	.5	1.4	14	SER	
		22	19 0	26.59	19	22.65	155	12.89	2.74	1.3	.5	10	2	134	.08	0	.7	.4	7	SER	
		22	19 3	37.60	19	22.22	155	13.12	2.69	1.6	1.1	12	2	181	.07	1	.7	.4	5	SER	
		22	19 4	50.96	19	22.01	155	12.79	2.49	1.4	.5	10	1	159	.07	5	.8	1.1	7	SER	
		22	19 8	.83	19	21.75	155	12.83	2.79	1.4	1.0	14	1	153	.06	2	.6	.4	9	SER	
		22	19 9	27.07	19	21.41	155	12.72	2.07	1.3	1.0	8	1	178	.05	2	.6	.7	4	SER	
		22	1910	59.43	19	22.17	155	12.68	2.15	1.4	.8	13	1	142	.11	1	.7	.4	7	SER	
		22	1911	23.74	19	22.21	155	12.84	1.86	1.2	.8	12	2	140	.08	1	.4	.7	5	SER	
		22	1912	8.58	19	23.37	155	12.74	.01	.9	.8	10	1	163	.18	2	.4	.9	7	SER	*
		22	1914	15.53	19	21.96	155	12.73	2.84	2.1	1.0	19	1	101	.06	1	.4	.4	15	SER	
		22	1915	4.41	19	21.97	155	12.75	2.25	1.4	.9	14	2	147	.07	1	.6	.3	10	SER	
		22	1917	6.22	19	21.93	155	12.76	2.69	2.1	1.3	20	1	68	.07	1	.5	.3	13	SER	
		22	1922	1.01	19	21.98	155	12.69	2.49	2.1	1.2	19	2	101	.04	1	.4	.3	13	SER	
		22	1932	41.73	19	21.93	155	12.78	2.84	2.1	1.2	18	2	101	.09	1	.5	.3	12	SER	
		22	1935	7.35	19	21.93	155	12.79	2.60	2.7	1.6	31	2	53	.07	1	.3	.4	22	SER	
		22	1945	27.17	19	21.89	155	12.73	2.54	2.3	1.4	29	2	54	.07	2	.3	.4	16	SER	
		22	1948	7.63	19	21.80	155	13.28	2.27	2.0	.7	17	1	98	.06	2	.4	.4	13	SER	
		22	1951	54.72	19	21.89	155	13.07	2.97	2.0	1.6	24	1	52	.05	1	.3	.4	16	SER	
		22	1953	5.28	19	21.81	155	12.93	2.58	2.1	1.9	27	2	53	.10	2	.3	.4	18	SER	
		22	1957	59.44	19	21.90	155	13.20	3.25	1.4	1.1	16	1	96	.20	1	.7	1.4	10	SER	
		22	20 7	32.85	19	21.81	155	13.09	2.96	1.7	.8	20	1	53	.04	2	.3	.5	15	SER	
		22	20 8	13.44	19	21.95	155	12.75	2.50	2.1	1.9	25	0	53	.06	1	.3	.4	21	SER	
		22	2017	2.23	19	21.96	155	13.05	3.13	1.0		13	2	145	.04	1	.7	.4	8	SER	
		22	2017	31.74	19	21.64	155	12.66	2.22	1.4	.8	13	2	157	.03	2	.6	.5	7	SER	
		22	2033	21.17	19	24.11	155	6.84	.11		1.1	10	0	116	.08	2	2.6	5.1	5	SME	*
		22	2045	5.14	19	21.79	155	13.07	2.65	.8	.5	11	2	149	.03	2	.6	.5	7	SER	
		22	2047	34.32	19	21.89	155	12.66	2.13	1.0	.7	14	2	103	.07	2	.5	.4	7	SER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1980	OCT	22	2048	28.47	19	22.12	155	12.79	3.14	2.3	2.5	33	1	52	.07	1	.3	.4	26	SER	
		22	21 4	.54	19	22.52	155	1.73	5.42	1.3	1.2	12	0	217	.09	5	1.0	1.8	9	SF5	
		22	21 4	42.75	19	23.58	155	3.95	1.91	1.7	2.3	10	0	93	.11	2	.5	.7	8	SME	
		22	2114	36.14	19	24.20	155	16.11	3.17	.7	.7	8	1	124	.02	1	.4	.6	6	SEC	
		22	2135	26.97	19	21.88	155	13.00	2.95	.7	.5	13	2	148	.05	1	.6	.3	8	SER	
		22	2136	52.79	19	21.67	155	12.83	2.76	.5	.7	14	2	106	.07	2	.5	.4	10	SER	
		23	158	27.74	19	18.76	155	16.00	6.79	1.2	1.1	22	0	131	.10	4	.6	.9	19	SF1	
		23	516	2.64	19	22.33	155	29.80	8.53	1.9	1.4	29	1	71	.09	4	.4	.7	20	KAO	
		23	841	24.01	19	18.68	155	15.39	7.87	1.5	1.3	23	3	127	.09	4	.6	1.0	19	SF1	
		23	1032	54.87	19	26.27	155	37.59	3.52	2.8	3.0	27	2	185	.16	3	.6	.8	16	MLO	
		23	12 8	19.24	19	25.15	155	25.28	9.06	1.7	1.3	27	1	49	.09	0	.4	.8	19	KAO	
		23	1229	15.03	19	20.30	155	11.28	8.78	2.6	2.8	40	3	80	.12	4	.4	.6	31	SF3	
		23	1346	20.59	19	20.00	155	11.22	7.21	1.8	1.1	23	1	86	.09	5	.5	1.1	15	SF3	
		23	1715	51.61	19	23.06	155	14.39	1.27	1.1	1.3	11	2	115	.04	2	.4	.5	5	SEC	
		23	1812	47.17	19	20.39	155	9.71	8.12	1.9	1.4	25	2	76	.08	3	.5	1.0	17	SF3	
		23	19 1	17.05	19	23.70	155	4.93	1.91	2.0	2.6	16	0	92	.08	2	.4	.3	9	SME	
		23	1913	13.81	19	25.04	155	27.01	9.28	1.8	1.1	23	2	53	.10	3	.5	1.0	18	KAO	
		23	2239	4.86	19	20.54	155	5.72	7.29	1.5	1.4	19	0	111	.10	5	.6	1.0	15	SF4	
		24	137	21.04	19	22.50	155	30.23	8.93	1.9	1.5	30	2	58	.09	5	.4	.9	24	KAO	
		24	422	36.15	19	26.36	155	37.29	2.88	2.3	2.1	21	1	112	.13	2	.5	.7	12	MLO	
		24	749	45.16	19	23.28	155	14.56	2.71	1.1	1.1	11	2	106	.04	3	.3	.5	5	SEC	
		24	1120	49.68	19	18.70	155	12.94	6.82	2.1		35	5	92	.10	3	.4	.8	29	SF2	
		24	1121	17.03	19	18.84	155	13.19	7.14	2.8	2.8	42	5	82	.11	3	.4	.7	33	SF2	
		24	16 1	39.09	19	28.20	154	51.01	6.64	2.2	1.9	24	2	181	.10	2	.9	.5	20	LER	
		24	1642	48.58	19	25.30	155	24.59	8.03	1.8	1.4	30	3	46	.09	1	.4	.8	27	KAO	
		24	2121	16.64	19	20.64	155	8.09	8.41	1.9	1.8	31	3	79	.08	4	.4	.8	25	SF4	
		25	0 2	49.19	19	16.46	155	2.09	41.70	2.4	1.8	33	3	222	.09	7	1.1	2.1	28	DEP	
		25	021	41.83	19	23.63	155	24.58	9.36	1.8	1.7	29	2	74	.10	3	.4	.9	25	KAO	
		25	1055	33.27	19	23.31	155	5.57	1.73	1.2	1.4	9	0	102	.11	1	.6	.4	9	SME	
		25	1110	4.41	19	19.57	155	10.18	7.20	1.8	1.7	28	2	95	.10	5	.5	.9	25	SF3	
		25	1330	.25	19	24.79	155	26.19	9.34	2.7		40	2	52	.12	2	.4	.7	29	KAO	
		25	1330	29.17	19	20.18	155	12.88	8.56	3.0	3.0	40	1	69	.13	5	.4	.6	31	SF2	
		25	1937	48.44	19	20.99	155	8.01	7.75	1.6	1.2	29	1	77	.07	4	.5	.8	14	SF4	
		25	22 2	27.78	19	20.09	155	8.15	9.18	2.6	2.9	39	4	85	.09	5	.4	.5	28	SF4	
		25	2252	9.13	19	27.06	155	29.26	7.62	1.9	1.6	25	0	59	.11	8	.4	1.4	20	KAO	
		26	0 6	21.09	19	19.80	155	12.69	9.12	1.8	1.6	31	2	77	.07	5	.4	.7	22	SF2	
		26	150	42.00	19	26.43	155	38.48	2.94	3.3	3.4	32	1	189	.07	4	.6	.8	27	MLO	
		26	533	44.50	19	19.46	155	10.95	8.94	2.2	1.9	29	1	99	.08	5	.5	.8	26	SF3	
		26	738	33.50	19	20.14	155	8.62	7.11	1.5	1.1	20	2	75	.08	4	.5	1.0	16	SF4	
		26	1550	5.11	19	19.89	155	10.23	7.89	1.9	1.7	36	3	88	.09	4	.5	.7	22	SF3	
		26	1733	37.61	19	20.73	155	6.93	8.87	2.7	2.8	40	1	95	.10	4	.4	.6	29	SF4	
		26	1913	34.67	19	20.67	155	10.83	8.80	2.5	2.5	40	1	75	.11	3	.4	.6	30	SF3	
		26	1914	44.31	19	20.26	155	10.76	6.55	1.5	1.2	23	2	82	.11	4	.5	.9	14	SF3	
		26	1956	3.26	19	21.70	155	2.13	7.66	2.3	2.4	35	2	143	.10	4	.4	.5	24	SF5	
		27	241	2.99	19	23.18	155	14.22	1.21	1.1	1.4	14	2	110	.08	2	.3	.4	7	SEC	
		27	436	18.25	19	24.88	155	28.47	9.95	1.9	1.2	24	1	63	.08	5	.5	.9	17	KAO	
		27	6 7	28.68	19	23.63	155	16.81	2.82	2.4	2.7	33	2	41	.11	1	.3	.2	28	SSC	
		27	8 8	18.12	19	19.39	155	11.52	8.07	1.9	1.9	34	3	97	.07	6	.4	.6	25	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	OCT	27	928	47.12	19	18.38	155	15.08	7.13	2.0	1.7	25	0	130	.08	4	.5	1.0	17	SF1
		27	2021	52.77	19	22.13	155	.45	8.51	2.1	2.0	31	1	178	.11	6	.7	.6	19	SF5
		28	47	56.43	19	23.67	155	24.45	10.94	3.1	2.9	42	3	40	.11	3	.4	.5	30	KAO
		28	1150	31.12	19	21.46	155	15.29	8.95	2.0	1.8	35	4	65	.09	2	.4	.5	23	SF1
		28	13 8	47.02	19	29.62	154	50.43	5.86	2.0	1.5	22	2	210	.15	1	1.1	.6	11	LER
		28	15 3	20.04	19	19.71	155	12.33	8.62	1.9	1.6	27	1	83	.08	5	.5	1.0	18	SF2
		28	2038	27.81	19	19.12	155	13.15	6.50	1.5	1.3	29	2	79	.11	4	.5	1.1	18	SF2
		28	2054	43.71	19	26.13	154	55.13	5.97	1.8	1.3	21	2	160	.09	3	.7	.9	11	LER
		28	2310	31.00	19	23.88	155	15.75	3.05	1.8	2.0	24	3	107	.05	2	.3	.3	13	SEC
		30	120	42.98	19	19.60	155	12.12	6.94	1.6	1.1	26	1	88	.10	5	.5	1.0	20	SF3
		30	430	20.69	19	19.86	155	13.16	8.20	1.9	2.1	37	3	70	.11	5	.5	.7	25	SF2
		30	814	58.40	19	22.06	155	23.26	12.23		1.4	10	0	157	.07	3	1.3	2.9	10	KAO T
		30	822	41.27	19	4.45	155	26.17	46.62	2.6		21	0	193	.12	10	1.5	3.9	15	DLS T
		30	835	31.54	19	25.84	155	28.06	8.16	1.9	1.5	18	1	114	.12	5	.6	1.3	13	KAO
		30	855	11.76	19	25.80	155	24.04	8.81	1.9	1.4	22	2	63	.11	2	.4	.9	13	KAO
		30	1029	14.03	19	27.29	155	12.59	27.42	3.6	3.9	43	2	39	.11	6	.5	1.1	41	DEP F
		30	1232	44.28	19	23.94	155	15.94	3.05	1.8	1.9	21	3	107	.08	1	.3	.3	13	SEC
		30	23 9	41.07	19	8.71	155	28.26	41.00	1.9		17	1	248	.07	2	1.6	2.3	10	DLS T
		31	055	35.62	19	23.26	155	16.82	2.63	1.8	2.3	17	2	68	.09	0	.4	.2	10	SSC
		31	1 1	17.23	19	23.55	155	16.77	2.69	1.9	2.2	17	1	51	.12	0	.5	.3	12	SSC
		31	1139	58.05	19	19.92	155	13.15	9.66	3.2	3.5	39	1	69	.10	5	.4	.4	27	SF2
		31	1434	1.09	19	21.82	155	2.35	4.95	1.9	1.5	13	0	148	.10	4	.7	1.7	7	SSF
		31	1438	54.68	19	25.17	155	24.56	7.13	1.6	1.3	17	2	66	.09	1	.5	1.1	14	KAO
		31	2338	45.93	19	19.36	155	9.59	7.37	1.7	1.8	24	2	96	.07	5	.4	1.0	13	SF3
		31	2356	24.93	19	22.67	155	14.55	3.88	1.2	1.9	12	1	128	.05	2	.6	.5	8	SEC
	NOV	1	7 9	30.24	19	12.25	155	32.22	38.75	2.5		25	0	86	.09	6	.8	2.3	9	DLS T
		1	845	.99	19	23.17	155	17.27	2.29	.5	1.6	11	1	90	.09	1	.5	.3	10	SSC
		1	1217	47.81	19	21.43	155	5.90	8.18	1.6	1.3	19	1	88	.08	3	.5	.9	14	SF4
		1	1459	47.97	19	26.09	155	23.80	5.41	1.9	1.9	19	1	61	.11	3	.5	1.3	17	KAO
		1	15 3	8.24	19	23.83	155	15.92	3.21	1.0	1.3	10	2	103	.04	1	.5	.5	7	SEC
		1	1555	31.80	19	27.28	154	52.75	8.42	2.1	2.3	24	2	246	.09	3	1.6	.4	14	LER
		1	1611	39.24	19	15.49	155	31.07	11.55	1.6	1.5	20	0	99	.11	2	.8	.6	13	LSW
		1	1643	18.18	19	20.58	155	6.67	8.86	2.1	2.1	27	1	101	.09	5	.5	1.0	17	SF4
		1	17 5	32.07	19	15.61	155	30.54	10.83	1.7	1.4	18	1	107	.14	1	.7	.7	13	LSW
		1	18 5	3.43	19	20.74	155	13.13	8.39	2.0	2.3	30	3	61	.10	6	.4	.7	22	SF2
		1	2235	19.26	19	24.24	155	25.04	9.43	1.6	1.4	22	2	73	.09	2	.4	.9	14	KAO
		1	2316	5.84	19	22.78	155	14.72	3.65	2.1	2.4	23	2	70	.10	2	.4	.5	15	SEC
		1	2328	42.04	19	23.77	155	16.68	2.91	1.8	2.1	19	2	47	.09	0	.4	.2	12	SSC
		2	033	21.14	19	22.79	155	14.62	3.70	1.3	1.7	13	1	102	.05	2	.4	.4	8	SEC
		2	444	37.53	19	19.54	155	12.21	5.21	1.3	1.0	16	2	88	.11	5	.5	2.1	11	SF3
		2	840	15.95	19	23.10	155	16.97	3.11	1.0	.7	10	1	96	.06	1	.4	.5	7	SSC
		2	840	48.13	19	23.33	155	17.00	2.61	1.2	1.4	11	1	83	.07	0	.3	.4	10	SSC
		2	919	26.26	19	25.33	155	23.95	10.97	2.1	1.6	35	4	43	.10	2	.4	.7	28	KAO
		2	1253	28.58	19	17.83	155	21.74	7.65	1.6	1.5	23	1	120	.08	5	.4	1.0	18	SWR
		2	1322	16.44	19	16.07	155	15.09	4.92	1.4	1.5	22	0	188	.11	3	.8	1.5	22	SSF
		2	1326	50.85	19	16.46	155	15.09	4.45	1.6	1.4	23	0	159	.09	3	.6	1.2	21	SSF
		2	1412	41.70	19	22.99	155	14.58	2.91	.9	.2	10	1	119	.04	3	.4	.5	8	SEC
		2	1413	29.23	19	21.48	155	14.38	9.21	1.3	1.1	10	1	181	.07	3	.9	1.1	8	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	2	1415	35.66	19	23.05	155	14.73	2.91	1.0	.8	10	1	111	.03	2	.4	.5	9	SEC
		2	1415	58.02	19	22.98	155	14.57	3.57	1.0	.8	9	1	120	.06	3	.5	.7	7	SEC
		2	1419	12.67	19	22.89	155	14.49	2.67	1.1	1.0	9	1	118	.08	3	.5	.7	6	SEC
		2	1420	56.85	19	23.08	155	14.39	3.93	1.9	1.7	17	1	61	.10	2	.4	.5	13	SEC
		2	1422	2.03	19	23.15	155	14.58	1.76	1.1	.8	9	1	112	.09	3	.4	.7	5	SEC
		2	1422	22.38	19	23.07	155	14.61	1.40	.9	1.7	8	1	134	.06	3	.4	.8	7	SEC
		2	1422	47.78	19	22.96	155	14.49	2.64	1.2	1.7	13	1	114	.09	3	.4	.5	7	SEC
		2	1422	58.71	19	22.95	155	14.46	3.60	2.6	2.9	30	3	49	.09	3	.3	.4	20	SEC
		2	1423	53.58	19	22.90	155	14.63	2.87	1.7	2.9	13	1	117	.06	2	.3	.4	10	SEC
		2	1424	21.73	19	22.99	155	14.34	2.75	2.0	2.4	13	1	65	.06	2	.4	.4	10	SEC
		2	1427	24.20	19	22.65	155	14.52	2.48	1.7	2.4	15	1	72	.09	2	.4	.4	11	SEC
		2	1428	26.46	19	23.00	155	14.39	3.33	1.7	1.9	16	1	73	.07	2	.4	.5	13	SEC
		2	1429	39.81	19	22.93	155	14.40	3.26	2.3	2.6	25	3	72	.09	2	.4	.4	18	SEC
		2	1430	58.39	19	23.06	155	14.62	2.26	1.1	1.7	9	1	136	.04	3	.4	.6	7	SEC
		2	1432	9.57	19	23.04	155	14.31	2.57	1.8	2.1	19	2	63	.08	2	.3	.4	14	SEC
		2	1432	58.31	19	23.03	155	14.36	3.41	1.9	1.7	17	1	63	.08	2	.4	.5	13	SEC
		2	1433	34.80	19	23.04	155	14.44	2.47	.9		11	1	116	.05	3	.4	.6	9	SEC
		2	1435	23.39	19	24.12	155	15.38	.11	1.3	.6	10	0	115	.10	2	.4	.6	3	SEC
		2	1436	23.34	19	23.12	155	14.38	2.64	1.1	.2	15	2	106	.10	2	.4	.4	10	SEC
		2	1436	38.51	19	23.13	155	14.41	3.19	1.9	1.5	18	1	59	.09	3	.4	.5	13	SEC
		2	1437	8.50	19	23.09	155	14.53	2.57	1.2		11	1	109	.08	3	.4	.6	6	SEC
		2	1437	53.00	19	23.11	155	14.95	2.56	1.2	1.0	9	1	113	.04	2	.4	.6	8	SEC
		2	1439	47.28	19	22.91	155	15.09	2.80	1.8	1.7	12	1	76	.09	2	.3	.5	8	SEC
		2	1443	4.13	19	23.15	155	14.45	2.66	1.8	1.8	13	2	106	.08	3	.4	.5	9	SEC
		2	1443	27.66	19	23.14	155	14.49	2.85	2.0	2.0	17	2	80	.08	3	.4	.4	12	SEC
		2	1444	23.94	19	23.07	155	14.80	1.88	1.2	.8	9	1	111	.05	2	.3	.6	4	SEC
		2	1445	47.92	19	23.02	155	14.16	2.68	1.8	1.0	14	1	156	.18	2	.8	.6	9	SEC
		2	1446	42.10	19	23.41	155	14.29	2.89	2.0	1.5	20	0	78	.10	3	.4	.5	16	SEC
		2	1447	34.34	19	22.97	155	14.72	1.89	2.0	1.5	21	2	70	.12	2	.3	.4	10	SEC
		2	1448	40.17	19	23.07	155	14.68	2.67	1.6	1.0	14	2	91	.07	2	.3	.4	8	SEC
		2	1449	2.27	19	22.96	155	14.43	2.64	1.6	1.0	16	1	67	.08	2	.3	.4	10	SEC
		2	1449	43.93	19	23.27	155	14.52	2.19	1.6	1.0	13	0	62	.10	3	.4	.5	11	SEC
		2	1451	2.06	19	23.03	155	14.52	2.59	1.1	.8	12	1	96	.07	3	.4	.5	8	SEC
		2	1451	38.05	19	23.04	155	14.60	2.51	2.4	3.4	16	2	63	.06	3	.3	.3	13	SEC
		2	1453	8.44	19	23.14	155	14.60	2.62	2.2	2.2	18	0	71	.07	3	.3	.4	15	SEC
		2	1454	40.11	19	23.78	155	14.10	3.09	1.1	.8	8	0	126	.07	2	.7	.5	5	SEC
		2	1454	56.87	19	22.96	155	15.11	2.77	1.8	1.2	16	2	142	.10	2	.5	.4	13	SEC
		2	1455	27.76	19	23.28	155	14.58	2.39	1.7	1.7	13	1	102	.06	3	.3	.5	10	SEC
		2	1455	49.01	19	23.15	155	14.83	2.06	1.4	1.7	13	0	86	.08	2	.3	.5	6	SEC
		2	1456	24.30	19	22.99	155	14.64	2.50	1.5	1.7	12	1	91	.07	2	.3	.5	8	SEC
		2	1457	15.36	19	22.98	155	15.01	2.43	2.0		11	1	114	.10	2	.4	.5	6	SEC
		2	1458	8.75	19	23.10	155	14.57	2.71	1.7	1.8	12	0	95	.09	3	.4	.5	8	SEC
		2	1458	37.42	19	23.07	155	14.60	2.03	2.2	2.2	22	1	62	.08	3	.3	.4	17	SEC
		2	15 0	44.52	19	23.08	155	14.73	2.26	1.6	1.7	14	1	62	.08	2	.3	.4	8	SEC
		2	15 1	18.88	19	22.93	155	14.25	2.62	2.4	2.5	26	1	48	.09	2	.3	.3	16	SEC
		2	15 2	29.91	19	23.13	155	14.75	2.42	1.1	.5	10	1	109	.05	2	.4	.6	6	SEC
		2	15 3	30.38	19	22.83	155	14.61	2.62	2.2	2.5	27	2	65	.10	2	.3	.4	12	SEC
		2	15 4	49.87	19	22.67	155	14.25	2.75	2.7	3.1	23	2	74	.07	2	.3	.3	20	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	2	15 6	41.06	19	23.31	155	14.53	2.58	2.0	1.7	16	2	74	.09	3	.3	.4	12	SEC
		2	15 7	5.12	19	23.21	155	14.56	2.29	2.0	2.3	14	1	61	.09	3	.3	.4	10	SEC
		2	15 9	7.69	19	23.01	155	14.55	2.71	2.4	2.7	24	2	57	.09	3	.3	.3	18	SEC
		2	1510	.81	19	23.06	155	14.77	4.03	1.8		12	1	91	.11	2	.6	.8	9	SEC
		2	1510	39.83	19	23.08	155	14.52	2.58	1.2	1.2	11	1	110	.04	3	.4	.5	10	SEC
		2	1511	41.70	19	21.68	155	14.79	4.41	1.7	1.6	9	1	153	.03	2	.6	.9	7	KOA
		2	1512	43.16	19	22.70	155	14.72	3.62	1.8		13	2	136	.05	2	.5	.4	11	SEC
		2	1513	13.89	19	22.74	155	15.05	3.38	2.1	2.3	16	1	72	.07	2	.3	.4	14	SEC
		2	1515	37.71	19	22.73	155	14.20	3.01	1.4	1.0	15	1	123	.10	2	.4	.4	12	SEC
		2	1516	31.05	19	22.85	155	14.30	3.17	1.9	1.9	21	2	50	.06	2	.3	.4	19	SEC
		2	1517	23.07	19	23.10	155	14.31	2.45	1.5	1.3	14	1	60	.09	2	.3	.4	13	SEC
		2	1518	58.77	19	22.73	155	14.30	3.65	1.8	1.8	20	1	73	.07	2	.3	.5	18	SEC
		2	1521	7.62	19	22.97	155	14.25	2.88			13	1	113	.07	2	.4	.5	11	SEC
		2	1522	1.05	19	22.60	155	14.14	3.30	1.2		15	1	126	.07	2	.5	.4	13	SEC
		2	1522	32.70	19	22.73	155	14.23	2.75	1.8	1.2	17	1	73	.09	2	.3	.4	13	SEC
		2	1524	14.52	19	23.01	155	14.46	2.39	1.5	1.2	13	1	98	.07	3	.3	.5	10	SEC
		2	1524	55.60	19	22.97	155	14.43	2.85	2.4	2.8	21	1	66	.09	2	.3	.4	19	SEC
		2	1526	12.20	19	22.91	155	14.31	2.96	2.8	3.1	21	1	51	.08	2	.3	.3	19	SEC
		2	1527	42.68	19	22.65	155	14.13	2.94	1.7	.9	19	1	75	.09	2	.3	.4	15	SEC
		2	1528	49.79	19	23.06	155	14.45	2.43	1.8	1.1	14	1	98	.07	3	.3	.4	12	SEC
		2	1530	28.18	19	22.90	155	14.12	2.88	1.2		14	1	116	.10	2	.4	.5	12	SEC
		2	1530	54.64	19	23.09	155	14.52	2.23	1.1	.2	10	1	109	.05	3	.4	.6	9	SEC
		2	1531	25.13	19	22.63	155	14.09	3.12	1.5	.3	15	1	75	.09	2	.3	.5	14	SEC
		2	1531	42.64	19	22.76	155	14.19	2.91	1.8	1.6	21	2	74	.08	2	.3	.5	17	SEC
		2	1533	31.77	19	22.91	155	14.25	2.28	1.7	1.1	15	2	68	.05	2	.3	.4	13	SEC
		2	1534	9.54	19	23.07	155	14.49	2.53	2.1	2.3	20	2	62	.08	3	.3	.4	15	SEC
		2	1535	23.76	19	22.69	155	14.00	3.26	1.2	.2	13	1	102	.07	2	.4	.5	12	SEC
		2	1535	55.88	19	22.75	155	14.04	2.79	2.4	2.4	11	1	132	.11	2	.5	.6	10	SEC
		2	1536	55.21	19	22.71	155	14.14	3.02		.2	15	1	123	.08	2	.4	.4	14	SEC
		2	1538	48.20	19	22.50	155	14.04	2.32	2.6	2.6	30	3	50	.17	2	.4	.4	15	SEC
		2	1540	16.74	19	22.71	155	14.35	2.72	2.1	.8	21	3	67	.10	2	.3	.5	13	SEC
		2	1540	58.92	19	20.95	155	14.97	4.56	1.7	.6	9	1	173	.08	3	.8	1.3	8	KOA
		2	1541	15.83	19	22.93	155	14.30	2.74	2.2	2.4	23	2	55	.09	2	.3	.4	15	SEC
		2	1542	32.08	19	22.79	155	14.28	2.52	2.0	1.2	21	1	67	.14	2	.4	.5	17	SEC
		2	1544	3.97	19	23.19	155	14.54	2.24	1.6	.6	14	1	96	.08	3	.3	.4	12	SEC
		2	1544	41.39	19	22.75	155	13.94	3.18	1.8	.4	18	1	75	.08	2	.3	.4	12	SER
		2	1545	12.81	19	23.11	155	14.70	1.96	1.0		11	1	109	.06	2	.3	.5	7	SEC
		2	1545	53.38	19	23.09	155	14.71	2.13	1.0		12	1	109	.05	2	.3	.5	8	SEC
		2	1547	13.09	19	23.03	155	14.26	2.56	1.3		10	1	116	.07	2	.5	.6	8	SEC
		2	1547	42.57	19	22.66	155	14.15	3.46	1.7	1.0	15	1	75	.04	2	.3	.4	11	SEC
		2	1548	5.61	19	23.12	155	14.46	2.28	1.5	1.1	13	1	108	.08	3	.4	.5	10	SEC
		2	1548	18.66	19	23.14	155	14.06	.92	2.6	2.9	27	2	46	.11	2	.3	.3	14	SEC
		2	1549	34.22	19	22.99	155	14.38	3.02	1.3		10	1	119	.07	2	.4	.6	7	SEC
		2	1550	11.67	19	23.04	155	14.62	2.58	1.1		10	1	116	.08	3	.5	.6	7	SEC
		2	1550	30.18	19	23.28	155	15.01	2.05	1.9	2.2	15	1	73	.13	2	.4	.5	9	SEC
		2	1553	3.69	19	22.99	155	14.23	2.93	2.4	2.4	21	1	58	.08	2	.3	.4	16	SEC
		2	1553	50.63	19	22.62	155	14.22	.68	2.0	1.4	13	1	80	.13	2	.4	.6	7	SEC
		2	1554	41.80	19	22.72	155	14.24	3.28	1.6	.8	12	1	101	.11	3	.6	1.0	9	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	2	1557	19.17	19	23.07	155	14.45	2.20	1.9	1.6	17	2	62	.08	3	.3	.4	11	SEC
		2	1559	17.63	19	22.83	155	14.39	2.22	1.9	2.1	21	2	71	.08	2	.3	.4	17	SEC
		2	16 0	45.76	19	23.09	155	14.52	2.56	1.5	.2	10	1	114	.06	3	.5	.6	9	SEC
		2	16 1	57.37	19	23.17	155	14.21	1.44	2.3	2.6	27	1	56	.09	2	.3	.3	20	SEC
		2	16 3	17.93	19	23.03	155	14.05	2.60	1.6	.5	15	1	88	.08	2	.3	.4	11	SEC
		2	16 4	42.21	19	22.79	155	14.52	2.58	2.3	2.4	22	1	71	.08	3	.3	.4	16	SEC
		2	16 5	20.44	19	22.64	155	13.95	3.51	1.3	.2	9	1	165	.09	2	.7	.6	6	SER
		2	16 6	41.50	19	22.87	155	13.99	3.49	1.3		9	1	124	.07	2	.5	.6	6	SEC
		2	16 7	34.21	19	23.09	155	14.36	2.73	2.4	2.7	28	1	86	.09	2	.2	.2	19	SEC
		2	1612	2.05	19	22.61	155	13.98	3.14	1.3		11	1	135	.08	2	.4	.5	9	SEC
		2	1614	.77	19	22.26	155	14.33	2.96	1.3	.1	10	1	142	.12	2	.7	.5	8	SEC
		2	1616	.36	19	22.99	155	14.25	2.51	1.1		10	1	118	.06	2	.5	.6	9	SEC
		2	1619	59.47	19	22.91	155	14.32	2.48	1.1	.7	12	1	116	.09	2	.4	.5	10	SEC
		2	1621	21.18	19	22.94	155	14.22	2.86	1.7	1.5	21	1	67	.09	2	.3	.4	14	SEC
		2	1621	41.54	19	22.91	155	14.31	2.54	2.2	2.4	21	1	51	.07	2	.3	.3	18	SEC
		2	1626	27.20	19	22.97	155	14.34	2.18	1.8	1.3	16	0	66	.09	2	.3	.4	14	SEC
		2	1628	20.36	19	22.83	155	13.99	3.54			10	1	127	.10	2	.6	.8	5	SEC
		2	1631	5.13	19	22.99	155	14.33	2.63	1.2		11	1	119	.06	2	.4	.5	9	SEC
		2	1636	23.92	19	22.47	155	13.89	2.98	1.1	.5	12	1	89	.09	1	.5	.4	5	SER
		2	1638	46.92	19	22.91	155	14.11	2.44	1.2	.3	10	1	122	.07	2	.5	.6	8	SEC
		2	1639	17.82	19	23.10	155	14.37	2.70	1.0		10	1	113	.07	2	.5	.7	7	SEC
		2	1639	31.94	19	23.18	155	13.87	1.88	1.3	.7	12	1	96	.09	2	.5	.5	6	SER
		2	1641	24.10	19	23.14	155	14.14	2.49	1.1	.5	11	1	111	.06	2	.4	.5	8	SEC
		2	1641	35.90	19	23.13	155	14.01	2.33	1.3	.6	10	1	115	.12	2	.5	.7	7	SEC
		2	1641	50.98	19	22.85	155	14.27	3.29	1.1	.7	7	1	127	.07	2	.5	.7	5	SEC
		2	1642	34.45	19	22.93	155	14.75	3.01	.8		8	1	121	.03	2	.5	.8	5	SEC
		2	1643	29.21	19	22.97	155	14.67	2.39	.8	.3	9	1	120	.05	2	.4	.6	7	SEC
		2	1643	59.43	19	22.78	155	14.45	2.26	2.0	2.6	22	2	71	.13	2	.3	.4	18	SEC
		2	1644	33.82	19	22.85	155	14.38	.02	3.2	3.8	33	3	49	.16	2	.3	.3	19	SEC
		2	1647	59.27	19	24.04	155	16.37	1.98	.6	.2	6	1	194	.07	1	.7	.4	2	SEC
		2	1648	22.29	19	22.80	155	14.40	2.72	.5		7	1	129	.06	2	.5	.8	4	SEC
		2	1649	44.70	19	22.50	155	14.11	1.90	.9	1.0	7	1	137	.09	2	.4	.6	5	SEC
		2	1652	14.39	19	23.03	155	14.96	3.10	1.0		9	1	116	.06	2	.5	.7	8	SEC
		2	1656	13.19	19	22.91	155	14.28	3.07	1.1		10	1	123	.08	2	.5	.7	7	SEC
		2	1657	35.97	19	22.94	155	14.62	2.18	.5		9	1	121	.06	2	.4	.6	6	SEC
		2	1657	46.76	19	22.57	155	14.05	2.98	1.2	1.3	15	1	92	.09	2	.4	.5	11	SEC
		2	1658	5.28	19	22.98	155	14.21	1.74	1.1	.2	8	1	142	.08	2	.4	.6	5	SEC
		2	1658	51.61	19	23.01	155	14.39	1.24	1.6	2.0	18	2	64	.07	2	.3	.4	14	SEC
		2	1659	21.19	19	22.93	155	13.74	3.22	.9	.5	7	1	140	.07	1	.6	.7	6	SER
		2	17 4	17.72	19	22.84	155	14.13	3.10	.7	.1	8	1	127	.05	2	.4	.6	5	SEC
		2	17 8	9.79	19	23.34	155	14.72	1.60	.5	.4	9	1	105	.08	3	.4	.6	8	SEC
		2	1716	13.52	19	23.06	155	14.89	2.98	.8		10	1	115	.02	2	.4	.6	8	SEC
		2	1717	15.15	19	22.93	155	14.69	2.34	.5		7	1	122	.00	2	.4	.8	6	SEC
		2	1720	28.99	19	22.91	155	14.55	3.36	.8	.2	8	1	123	.06	3	.6	.8	5	SEC
		2	1726	22.63	19	23.14	155	14.37	1.27	.8	.8	9	1	111	.07	2	.3	.5	5	SEC
		2	1730	29.81	19	23.07	155	14.18	2.90	.8	.2	10	1	113	.07	2	.5	.6	6	SEC
		2	1735	43.07	19	22.97	155	14.76	3.37	.7	.2	8	1	120	.06	2	.6	.8	6	SEC
		2	1740	13.88	19	22.73	155	14.42	3.80	1.3	1.1	14	1	85	.07	2	.4	.6	7	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	2	1748	40.51	19	22.62	155	14.26	1.60	1.2	1.8	13	1	75	.10	2	.4	.5	10	SEC
		2	1757	12.37	19	23.10	155	14.87	2.65	.5		8	1	114	.03	2	.4	.7	6	SEC
		2	1758	45.51	19	22.70	155	14.19	1.67	.5	.2	9	1	132	.06	2	.4	.5	7	SEC
		2	18	2 12.58	19	22.99	155	14.45	2.53	.9	.1	10	1	120	.07	3	.4	.6	7	SEC
		2	20	9 19.24	19	23.02	155	14.75	3.46	1.1	.9	9	1	117	.03	2	.5	.7	8	SEC
		2	2053	52.06	19	24.15	155	26.87	9.60	2.1	1.8	28	1	63	.11	3	.4	1.0	22	KAO
		2	2058	.09	19	23.08	155	15.05	3.20	1.1	.9	13	1	111	.07	2	.4	.5	8	SEC
		2	2114	5.50	19	22.95	155	14.66	2.69	1.1	1.4	14	1	91	.11	2	.4	.5	8	SEC
		2	2216	54.06	19	21.03	155	13.09	9.37	2.1	2.1	21	0	58	.07	3	.5	.9	21	SF2
		3	053	27.76	19	22.27	155	3.11	8.61	1.9	1.8	31	1	121	.11	4	.5	.7	22	SF5
		3	127	3.99	19	23.72	155	15.51	1.80	.9	1.2	10	1	99	.03	2	.3	.5	8	SEC
		3	132	11.65	19	24.03	155	15.64	3.53	1.0	1.4	12	1	116	.08	2	.4	.4	10	SEC
		3	21	8 38.96	19	20.44	155	13.08	9.59	2.1	2.0	36	2	64	.09	4	.4	.5	27	SF2
		3	2145	31.47	19	19.62	155	15.56	6.55	1.7	1.4	26	1	87	.10	3	.5	1.0	17	SF1
		3	2212	42.83	19	21.01	155	7.25	7.34	1.4	1.1	23	2	87	.08	4	.5	1.1	13	SF4
		4	2	5 30.33	19	20.09	155	8.08	8.48	2.3	2.5	31	0	85	.09	5	.5	1.0	26	SF4
		4	622	32.44	19	23.62	155	25.69	11.11	3.5	3.4	43	1	59	.12	3	.4	.4	40	KAO F
		4	756	32.30	19	18.36	155	13.23	8.59	2.6	2.7	38	3	89	.12	3	.5	.7	27	SF2
		4	832	11.18	19	18.26	155	13.27	7.13	1.8	2.1	22	1	89	.08	2	.5	1.2	14	SF2
		4	915	9.07	19	25.10	155	29.17	9.34	1.7	1.6	23	1	102	.08	6	.5	1.1	18	KAO
		4	10	1 45.42	19	23.01	155	25.49	10.55	1.7	1.8	27	0	91	.10	4	.5	.7	25	KAO
		4	1159	50.31	19	20.07	155	10.44	8.20	1.9	1.8	23	0	85	.08	4	.5	1.2	17	SF3
		4	20	6 6.26	19	23.88	155	15.52	2.92	.9	1.1	12	2	107	.05	2	.3	.4	10	SEC
		4	2159	13.98	19	18.08	155	13.02	7.75	1.3	1.3	19	1	104	.06	2	.6	1.0	15	SF2
		4	23	9 22.19	19	22.67	155	27.53	4.93	1.7	1.8	17	1	101	.09	0	.5	.8	13	KAO
		5	717	.08	19	13.14	155	27.88	8.46	1.7	1.9	23	1	142	.10	5	.5	1.1	12	LSW
		5	745	47.72	19	13.11	155	28.02	9.10	1.6	1.7	20	0	145	.07	5	.5	.8	11	LSW
		5	748	25.71	19	20.73	155	2.50	7.44	1.9	1.8	17	0	158	.09	2	.9	.8	10	SF5
		5	8	0 34.24	19	20.94	155	2.90	7.62	1.3	1.4	14	0	136	.07	2	.7	1.1	11	SF5
		5	1526	3.52	19	21.36	155	3.30	7.68	1.9	1.7	24	0	104	.09	3	.6	1.0	19	SF5
		5	1616	54.11	19	22.85	155	25.42	11.83	2.1	2.1	38	2	68	.08	4	.4	.4	30	KAO
		5	1915	40.88	19	19.30	155	11.57	7.58	2.0	1.9	29	1	100	.07	5	.4	.7	20	SF3
		5	2041	42.58	19	18.66	155	13.58	9.87	3.7	3.9	41	0	72	.10	3	.5	.4	38	SF2 F
		5	2045	26.31	19	18.88	155	13.51	8.68	2.1	1.9	37	3	82	.10	3	.4	.6	24	SF2
		5	2256	32.88	19	18.67	155	13.47	7.90	1.9	1.7	26	2	79	.09	3	.5	.9	16	SF2
		6	0	6 48.64	19	19.23	155	13.68	7.72	2.0	1.8	29	2	82	.07	4	.5	.8	24	SF2
		6	019	58.26	19	46.41	155	24.36	28.51	2.5	1.8	24	2	108	.07	6	.6	1.3	17	KEA
		6	126	34.45	19	19.01	155	13.44	7.41	2.5	2.3	39	5	74	.11	4	.4	.7	26	SF2
		6	152	6.43	19	18.61	155	13.46	8.06	1.5	1.1	22	2	84	.06	3	.5	.9	13	SF2
		6	2	8 53.44	19	20.40	155	10.55	7.76	1.9	1.7	21	2	79	.07	3	.5	1.0	16	SF3
		6	316	23.00	19	24.04	155	15.93	3.03	.8	1.0	9	0	110	.05	1	.4	.5	8	SEC
		6	427	43.72	19	23.25	155	16.94	2.78	2.2	2.6	24	3	47	.08	0	.2	.2	18	SSC
		6	611	55.69	19	20.13	155	11.62	8.37	2.2	2.6	34	4	82	.10	5	.4	.6	24	SF3
		6	653	16.65	19	26.79	155	24.88	9.05	2.1	1.4	27	3	61	.12	3	.5	1.0	21	KAO
		6	1053	41.64	19	21.74	155	1.01	7.28	1.7	1.5	20	2	176	.10	5	.7	1.1	12	SF5
		6	1439	12.14	19	20.23	155	12.89	8.98	1.8	1.5	23	2	69	.06	4	.5	.9	15	SF2
		6	1534	57.93	19	19.17	155	15.70	8.31	2.3	2.3	37	3	112	.11	3	.5	.6	24	SF1
		6	1828	26.69	19	21.12	155	7.31	8.11	1.9	1.5	20	1	84	.07	4	.5	1.2	13	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	6	1834	9.07	19	21.25	155	8.09	6.76	1.4	1.3	20	2	76	.08	5	.5	1.3	15	SF4
		7	737	41.08	19	20.59	155	11.00	8.85	1.7	1.3	18	2	76	.04	5	.6	1.1	13	SF3
		7	1441	53.34	19	22.56	155	26.41	8.93	2.5	2.3	36	4	58	.11	2	.4	.7	27	KAO
		7	1617	22.72	19	19.42	155	8.54	7.40	1.7	1.3	22	3	80	.07	4	.5	1.2	17	SF4
		8	339	16.04	19	25.13	155	25.30	9.34	2.0	1.4	25	2	62	.08	0	.4	.9	18	KAO
		8	342	45.42	19	26.68	155	23.79	8.91	1.8	1.5	25	3	51	.11	4	.5	.9	18	KAO
		8	632	34.88	19	19.58	155	11.70	8.99	2.7	2.8	44	4	92	.11	6	.4	.5	29	SF3
		8	854	51.85	19	19.13	155	15.24	8.48	2.0	1.6	25	0	110	.11	4	.5	.6	17	SF1
		8	1049	49.70	19	18.25	155	13.30	8.27	2.2	2.1	39	4	87	.11	2	.4	.4	22	SF2
		8	1057	55.34	19	18.04	155	13.07	7.94	1.7	1.3	22	3	103	.09	2	.6	1.0	17	SF2
		8	1111	28.16	19	20.57	155	6.38	7.45	1.8	1.4	19	1	104	.09	5	.6	1.4	18	SF4
		8	1159	47.17	19	20.19	155	7.34	8.22	2.1	1.4	23	3	99	.09	5	.6	1.2	15	SF4
		8	1319	8.63	19	23.49	155	17.02	2.92	1.3	1.3	15	3	69	.07	0	.3	.3	9	SSC
		8	1921	3.51	19	20.43	155	9.02	7.95	1.8	1.4	23	3	71	.05	3	.5	1.0	14	SF4
		8	21	3 9.37	19	23.94	155	27.12	11.09	1.8	1.2	25	3	92	.08	3	.5	.9	20	KAO
		9	925	1.96	19	18.69	155	15.38	7.06	1.3	1.0	22	2	124	.07	4	.5	1.1	18	SF1
		9	1119	55.06	19	21.88	155	6.54	9.20	1.0	.8	14	0	81	.05	2	.7	1.5	12	SF4
		9	1757	28.65	19	25.60	155	24.81	10.43	3.1	2.8	40	1	34	.13	1	.4	.6	33	KAO
		9	2041	24.92	19	18.87	155	13.65	9.53	2.6	2.6	45	3	86	.11	3	.5	.5	34	SF2
		9	2119	45.68	19	24.45	155	29.87	9.61	2.1	1.1	28	3	79	.08	5	.4	.9	18	KAO
		9	2124	26.73	19	24.57	155	29.73	9.03	2.0	1.2	26	2	78	.07	5	.4	.9	20	KAO
		9	2231	56.95	19	18.73	155	13.40	5.61	1.8	1.1	23	1	80	.11	3	.5	1.5	14	SF2
		10	323	7.79	19	24.92	155	36.65	1.78	2.2	1.5	6	0	156	.08	4	.8	1.9	5	MLO
		10	5	9 37.89	19	19.37	155	11.74	8.48	1.9	1.2	21	1	96	.07	5	.5	1.0	17	SF3
		10	612	16.91	19	22.58	155	27.77	8.87	1.8	.9	22	2	95	.09	0	.4	.8	16	KAO
		10	1149	6.62	19	22.47	155	24.39	9.75	2.4	2.2	41	3	40	.12	5	.4	.5	28	KAO
		10	1656	2.58	19	20.27	155	12.72	7.26	1.9	1.4	29	3	71	.10	4	.5	.8	18	SF2
		10	2326	8.16	19	22.63	155	27.27	9.35	2.0	1.6	29	2	78	.12	1	.5	.8	23	KAO
		11	0	7 2.83	19	20.19	155	9.58	8.60	1.8	1.4	21	2	79	.05	4	.6	1.0	17	SF3
		11	2	2 20.56	19	26.79	155	45.07	2.98	1.6	1.3	24	1	77	.09	7	.4	2.8	14	KON
		11	955	48.89	19	24.88	155	16.78	1.65	1.1	1.5	10	2	148	.05	0	.4	.3	8	SNC
		11	1322	56.25	19	23.45	155	17.48	8.87	1.6	1.4	10	0	87	.09	2	.8	1.4	7	INT L
		11	16	5 22.54	19	23.32	155	26.41	9.06	3.0	2.7	44	2	50	.13	3	.4	.6	36	KAO
		11	1629	23.22	19	24.00	155	16.00	2.32	1.2	1.3	16	1	112	.11	1	.3	.3	9	SEC
		11	1633	39.29	19	23.90	155	15.51	2.77	1.0	1.0	14	3	107	.03	2	.3	.4	9	SEC
		11	1850	54.21	19	19.79	155	12.79	9.05		1.3	22	1	76	.07	5	.5	.9	16	SF2
		11	1935	13.06	19	24.61	155	.62	8.14	2.4	2.4	37	1	131	.15	3	.6	.6	31	SF5
		11	1943	56.95	19	23.92	155	16.88	2.73	1.2	.7	17	2	68	.07	1	.3	.3	11	SSC
		11	2150	3.44	19	23.70	155	16.85	2.69	1.4	1.4	20	2	55	.09	1	.3	.3	15	SSC
		11	2229	26.15	19	23.86	155	16.87	2.91	1.3	1.3	14	2	77	.05	0	.3	.3	11	SSC
		11	23	0 53.56	19	26.57	155	23.17	8.09	2.2	1.6	29	2	45	.11	4	.4	.8	19	KAO
		12	055	.83	19	24.58	155	16.03	1.61	1.4	1.3	12	2	123	.04	2	.3	.4	7	SNC
		12	439	40.16	19	31.66	155	27.83	4.24	1.9	1.1	15	0	93	.09	1	.5	.7	12	MLO
		12	1138	2.64	21	28.17	158	15.77	13.74	4.0	4.2	34	1	326	.26	26	4.6	1.6	21	DIS
		12	1740	23.82	19	26.69	155	23.74	3.96	1.7	1.6	24	1	65	.13	4	.4	1.1	18	KAO
		12	1839	49.65	19	22.62	155	16.32	4.37	1.8	1.6	13	1	84	.20	1	1.5	1.3	5	SEC T
		12	1845	40.34	19	25.17	155	14.90	5.95	1.3	1.0	10	2	148	.05	1	.8	1.3	4	INT T
		12	1921	8.62	19	21.42	155	2.66	7.73	2.1	1.1	26	3	137	.13	3	.6	1.2	20	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	12	2142	34.19	19	24.16	155	23.57	9.80	1.9	1.6	25	2	44	.07	3	.4	.9	20	KAO
		12	22 0	1.92	19	24.03	155	26.65	9.95	1.8	1.5	26	3	79	.12	3	.5	1.0	18	KAO
		12	2327	4.75	19	24.29	155	17.15	9.36	1.8	1.8	16	2	83	.11	1	.7	.9	8	INT L
		12	2355	37.06	19	19.90	155	13.54	5.91	1.6	1.4	26	4	71	.11	5	.4	1.1	17	SF2
		13	234	53.08	19	23.37	155	17.09	2.62	1.4	1.4	21	4	56	.11	0	.3	.2	12	SSC
		13	316	46.57	19	24.89	155	25.46	10.71	1.8	1.3	27	4	63	.09	1	.4	.9	22	KAO
		13	830	38.04	19	25.55	155	17.02	19.50	1.4	1.4	26	0	75	.09	3	.6	1.0	24	DEP
		13	918	24.50	19	23.48	155	16.87	3.17	2.2	2.5	20	2	36	.09	0	.3	.2	16	SSC
		13	921	19.52	19	28.21	154	52.46	5.97	1.7	1.4	25	1	107	.13	2	.7	.9	17	LER
		13	11 7	24.15	19	21.82	155	6.78	7.86	1.6	1.6	24	1	77	.08	2	.4	.9	18	SF4
		13	1227	56.37	19	22.78	155	24.57	7.14	1.3	1.3	17	2	61	.09	5	.5	1.2	13	KAO
		13	1254	36.73	19	23.34	155	17.01	2.61	.8	1.0	11	1	92	.04	0	.3	.3	8	SSC
		13	13 4	22.79	19	33.05	155	36.77	6.49	1.1	1.4	14	1	122	.13	7	.8	2.4	10	MLO
		13	1341	24.99	19	31.06	155	46.36	9.17	2.5	2.0	27	2	82	.10	1	.5	.7	20	KON
		13	1524	21.04	19	20.78	155	7.74	6.33	1.8	1.5	21	2	84	.09	4	.6	1.1	15	SF4
		13	1825	28.87	19	21.63	155	25.28	8.45	1.7	1.1	21	3	89	.10	4	.5	1.0	14	KAO
		13	1843	33.56	19	23.08	155	14.82	3.12	1.8	1.6	23	3	64	.09	2	.3	.3	15	SEC
		13	1848	51.41	19	20.23	155	8.15	7.95	2.4	2.6	36	3	83	.07	5	.4	.7	23	SF4
		13	1923	49.04	19	23.32	155	16.98	2.76	1.2	1.4	20	4	56	.07	0	.3	.2	12	SSC
		13	2028	47.95	19	27.23	154	52.80	6.96	2.1	1.5	27	3	150	.11	3	.6	.7	19	LER
		13	2123	59.67	19	19.96	155	9.55	8.68	1.8	1.6	23	3	83	.05	4	.5	1.0	16	SF3
		13	2249	29.18	19	23.29	155	16.89	2.83	2.1	2.5	29	3	39	.10	0	.2	.2	21	SSC
		13	2337	55.43	19	21.74	155	1.61	4.04	1.9	1.1	23	1	164	.09	4	.6	1.5	11	SSF
		13	2341	21.81	19	23.38	155	17.23	2.31	.8	1.0	10	2	95	.05	1	.3	.4	6	SSC
		14	451	26.99	19	21.90	155	12.25	1.76	.5	1.3	7	1	193	.08	2	1.1	.5	3	SER
		14	734	.47	19	20.10	155	13.17	9.60	2.6	2.9	43	3	67	.09	5	.3	.4	31	SF2
		14	1214	18.15	19	19.42	155	12.31	7.97	1.7	1.3	25	3	89	.08	5	.5	.9	17	SF2
		14	1551	51.92	18	57.69	155	13.27	39.18	2.5	1.6	24	0	279	.09	34	3.8	3.0	22	LOI
		14	16 4	20.72	19	23.40	155	16.94	2.77	1.8	1.9	26	3	40	.09	0	.3	.2	18	SSC
		14	1715	15.79	19	24.57	155	30.08	8.25	2.4	1.8	38	3	52	.08	6	.3	.8	31	KAO
		14	18 5	49.36	19	20.69	155	11.38	7.49	1.9	1.6	31	2	74	.08	4	.4	.7	24	SF3
		14	1822	24.91	19	23.40	155	26.66	8.71	3.5	3.7	44	1	51	.15	2	.4	.6	40	KAO F
		14	2114	42.70	19	30.70	156	6.13	27.69	2.4	2.4	27	1	284	.10	20	3.7	2.3	20	KON
		14	2140	27.83	19	23.16	155	27.36	7.29	1.6	1.1	23	2	152	.11	1	.8	.9	15	KAO
		16	033	8.82	19	19.91	155	12.32	8.67	2.1	2.1	26	1	80	.08	5	.4	.8	23	SF2
		16	041	48.73	19	18.82	155	14.19	6.92	2.0	2.2	26	1	77	.11	4	.5	.9	22	SF2
		16	127	7.06	19	19.96	155	8.01	7.A2	1.8	1.2	19	0	88	.07	5	.5	.8	18	SF4
		16	134	58.21	19	25.64	155	25.42	9.81	1.8	1.4	17	0	56	.08	7	.5	1.1	12	KAO
		16	2 1	31.80	19	20.74	155	8.03	9.00	2.0	2.0	26	0	79	.07	4	.4	.5	24	SF4
		16	1428	5.47	19	25.60	155	49.49	8.58	2.2	1.6	19	2	109	.16	11	.5	1.4	11	KON
		16	1516	44.16	19	20.62	155	5.82	8.12	2.1	2.2	28	0	108	.10	5	.4	.7	27	SF4
		16	16 6	21.48	19	17.54	155	21.79	7.83	.8	1.1	15	0	179	.07	6	1.3	.7	12	SWR
		16	1859	54.00	19	19.03	155	8.45	7.17	1.3	1.3	21	0	84	.07	3	.6	.9	20	SF4
		16	1946	38.43	19	20.17	155	11.02	9.63	3.6	3.8	35	1	83	.08	4	.3	.5	30	SF3 F
		17	025	25.97	19	24.21	155	23.84	10.00	2.1	1.9	29	1	62	.08	7	.4	.6	25	KAO
		17	047	36.54	19	18.11	155	13.34	10.13	3.8	4.0	36	1	89	.10	2	.6	.4	33	SF2
		17	056	27.30	19	18.00	155	13.08	6.56	1.3	1.2	10	0	104	.11	2	1.0	3.3	8	SF2
		17	058	10.46	19	18.12	155	13.23	9.50	2.6	2.9	30	0	94	.10	2	.5	.7	24	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	17	1 2	49.53	19	18.47	155	13.35	8.03	1.6	1.4	22	1	83	.08	3	.5	1.0	18	SF2
		17	2 5	5.06	19	19.36	155	11.24	8.23	2.3	2.5	30	1	101	.08	6	.4	.7	22	SF3
		17	936	50.07	19	21.41	155	27.92	9.84	1.9	1.1	14	0	129	.04	2	.4	1.0	13	KAO
		17	1119	2.08	19	18.70	155	12.16	8.61	2.8	2.6	28	2	109	.12	4	.5	.8	26	SF3
		17	1625	22.59	19	18.60	155	13.19	8.81	1.9	1.7	22	0	86	.10	3	.5	.9	21	SF2
		17	18 1	27.94	19	20.62	155	6.87	7.95	2.1	1.7	21	0	98	.07	5	.5	.9	19	SF4
		17	1951	52.34	19	20.16	155	12.88	9.04	1.6	1.5	17	0	128	.08	5	.6	1.0	17	SF2
		17	2122	33.59	19	19.51	155	12.51	8.55		1.2	11	0	84	.07	5	.7	1.0	9	SF2
		18	1 4	20.55	19	21.63	155	6.73	9.61	2.7	2.6	28	0	81	.07	3	.4	.5	23	SF4
		18	910	33.98	19	21.15	155	5.81	8.14	2.4	1.8	20	0	95	.08	6	.5	1.4	20	SF4
		18	1122	19.29	19	26.98	155	27.12	11.10	2.2	1.6	23	0	57	.08	8	.5	.9	22	KAO
		18	1310	47.19	19	20.17	155	10.40	8.33		1.1	19	0	86	.05	4	.5	1.0	19	SF3
		19	744	33.00	19	21.90	155	7.07	8.88	1.3	1.2	20	1	75	.05	3	.6	1.1	17	SF4
		19	1212	9.31	19	18.92	155	12.98	7.14	1.4	1.4	22	1	86	.07	4	.5	1.1	15	SF2
		19	1330	22.20	19	18.92	155	13.13	8.30	1.3	1.3	21	1	83	.07	4	.6	1.1	16	SF2
		19	15 3	10.84	19	17.35	155	15.66	6.16	1.7	1.3	22	2	185	.09	4	.6	1.1	13	SF1
		19	19 4	14.45	19	23.27	155	2.06	8.31	2.0	1.5	25	1	127	.12	5	.6	1.0	19	SF5
		19	2327	27.72	19	21.20	155	8.18	8.86	1.8	1.4	24	4	72	.05	3	.5	.9	16	SF4
		19	2330	29.76	19	19.28	155	12.26	7.16	1.7	1.2	16	0	92	.07	5	.5	1.5	14	SF3
		19	2338	21.58	19	19.71	155	12.34	7.08	1.5	1.3	20	3	83	.07	5	.5	1.1	13	SF2
		20	054	3.83	19	20.36	155	13.84	8.94	2.7	3.1	46	3	56	.11	4	.3	.3	33	SF2
		20	5 7	1.31	19	21.85	155	5.04	8.95	1.0	1.1	19	1	78	.07	3	.6	1.0	12	SF5
		20	535	10.03	19	19.65	155	7.30	7.44	1.8	1.9	27	2	110	.08	4	.5	1.0	17	SF4
		20	556	23.00	19	20.51	155	29.22	7.87	1.9	1.5	22	1	91	.10	5	.5	1.1	19	KAO
		20	918	13.56	19	20.26	155	12.14	5.25	1.4	1.1	17	1	76	.11	5	.6	1.8	14	SF3
		20	955	57.13	19	13.95	155	20.28	.03	1.9	1.7	18	0	210	.12	8	1.1	3.5	14	SWR *
		20	1225	32.01	20	5.25	155	56.06	10.40	2.9	2.0	8	2	267	.04	17	1.9	.7	4	KOH
		20	1227	49.24	20	1.93	155	50.78	5.61	2.7	2.3	11	0	215	.08	13	1.5	1.0	6	KOH
		20	1656	27.03	19	22.71	155	8.35	3.21	1.7	1.4	14	0	103	.07	3	.7	.5	10	SER
		20	1728	12.07	19	21.88	155	9.62	1.15	1.6	1.7	10	1	164	.08	6	1.0	1.6	4	SER
		20	21 4	44.11	19	19.02	155	15.93	7.86	1.6	1.2	18	2	118	.07	3	.5	1.1	13	SF1
		21	134	50.64	19	29.42	155	31.21	27.07	2.2	2.6	15	0	106	.09	7	1.5	3.9	4	DML
		21	2 8	50.50	19	20.35	155	11.95	8.76	1.7	1.4	22	2	76	.07	5	.5	.9	17	SF3
		21	227	12.26	19	19.66	155	11.32	7.48	2.0	1.9	27	1	93	.09	5	.5	.9	21	SF3
		21	3 9	28.35	19	22.81	155	6.52	2.19	2.0	1.8	19	0	94	.06	1	.5	.3	13	SME
		21	311	21.65	19	22.88	155	6.58	1.98	.9	1.1	11	0	126	.06	1	.6	.3	4	SME
		21	6 5	44.67	19	22.92	155	6.05	1.98	1.6	2.2	16	0	85	.06	0	.4	.3	9	SME
		21	1145	20.37	19	20.87	155	6.83	8.40	2.0	1.3	23	2	93	.07	4	.5	1.0	16	SF4
		21	1223	25.02	19	19.84	155	13.45	7.82	1.6	1.1	20	2	69	.09	5	.5	1.1	15	SF2
		21	1256	43.81	19	19.67	155	12.03	9.29	2.5	2.6	40	1	87	.11	6	.4	.4	34	SF3
		21	1259	33.38	19	18.61	155	13.56	8.28	1.7	1.0	20	1	87	.04	3	.6	1.0	15	SF2
		21	1524	58.42	19	27.78	155	27.75	8.22	2.2	1.4	25	1	71	.11	7	.5	1.1	22	KAO
		21	1921	57.84	19	21.97	155	29.69	9.67	2.1	1.5	26	1	86	.08	4	.4	1.0	22	KAO
		21	1939	24.75	19	22.07	155	29.76	10.18	2.0	1.2	26	1	86	.07	4	.4	.9	17	KAO
		21	1950	6.30	19	22.06	155	29.88	9.90	2.4	1.6	20	1	87	.08	4	.5	1.0	12	KAO
		21	2345	25.96	19	19.99	155	7.60	7.75	1.4	1.3	19	2	98	.07	5	.6	1.1	11	SF4
		22	120	36.28	19	20.95	155	7.99	7.78	1.2	1.1	13	1	163	.06	4	1.1	1.7	7	SF4
		22	3 8	11.66	19	28.30	155	51.83	1.80	1.8	1.1	16	2	166	.09	6	.8	1.1	6	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	22	1017	24.53	19	22.90	155	1.87	7.51	1.8	1.4	30	0	134	.14	5	.6	.9	20	SF5
		22	1245	45.29	19	20.04	155	12.60	8.58		1.0	19	2	75	.06	5	.5	1.2	15	SF2
		22	1340	48.63	19	21.20	155	15.01	9.07	1.4	1.0	22	3	67	.07	3	.6	.8	17	SF1
		22	1713	59.33	19	20.72	155	8.47	5.78	1.8	1.4	21	1	73	.06	3	.5	1.1	19	SF4
		22	19	0 40.77	19	19.82	155	8.12	7.01	1.8	1.4	29	2	88	.09	5	.5	1.0	24	SF4
		22	1929	16.41	19	20.52	155	5.93	8.25	2.2	1.9	33	2	110	.09	5	.4	.8	24	SF4
		22	2346	55.14	19	20.74	155	8.40	5.67	1.7	1.5	21	3	73	.07	4	.5	1.4	14	SF4
		23	131	55.92	19	21.43	155	2.93	9.12	4.2	4.1	46	1	120	.10	3	.6	.4	45	SF5 F
		23	135	40.02	19	21.46	155	2.85	9.01	3.2	3.4	45	3	123	.10	3	.6	.4	41	SF5 F
		23	312	10.45	19	22.21	155	7.60	1.96	1.2	1.5	15	1	92	.07	3	.4	.5	10	SER
		23	628	14.55	19	19.39	155	12.59	7.36	1.4	1.0	20	2	86	.07	5	.5	1.1	12	SF2
		23	657	3.64	19	21.83	155	6.71	9.24	2.6	2.4	42	3	77	.08	2	.4	.5	26	SF4
		23	751	22.03	19	25.26	155	39.82	4.07	2.3	1.7	7	0	295	.06	7	6.0	5.5	6	MLO
		23	911	36.81	19	19.38	155	15.64	8.67	2.3	2.7	40	3	106	.11	3	.4	.5	30	SF1
		23	12	5 11.46	19	19.78	155	13.11	5.11	1.6	1.7	30	3	71	.14	5	.5	1.5	21	SF2
		23	1240	33.25	19	24.86	155	24.50	9.83	2.4	2.4	42	5	47	.13	1	.3	.5	33	KAO
		23	1338	49.46	19	21.32	155	8.08	8.41	2.1	2.4	34	2	72	.08	3	.4	.7	21	SF4
		23	14	2 49.03	19	20.04	155	9.68	7.32	1.6	1.4	22	3	82	.06	4	.5	1.0	16	SF3
		23	1410	49.71	19	20.02	155	9.56	6.59		1.6	26	3	82	.08	4	.5	.9	17	SF3
		23	1518	47.61	19	19.70	155	10.61	7.74	1.7	1.9	39	2	93	.12	5	.4	.6	26	SF3
		23	1646	59.34	19	11.47	155	36.52	9.54	3.0	2.7	40	5	92	.24	7	.6	1.0	28	LSW
		23	1714	54.67	19	20.76	155	13.17	8.53	2.4	2.6	40	2	61	.10	3	.3	.4	30	SF2
		23	2253	3.35	19	27.51	155	29.30	8.71	1.5	1.4	26	2	75	.11	8	.4	1.1	15	KAO
		23	2344	3.40	19	20.37	155	8.86	8.29	1.5	1.3	27	2	70	.07	4	.5	.9	16	SF4
		24	019	52.95	19	19.97	155	9.09	7.22	1.4	1.4	26	3	78	.08	4	.4	.9	16	SF4
		24	4	2 51.05	19	19.39	155	10.97	7.78	1.5	1.3	20	2	100	.07	5	.5	1.2	11	SF3
		24	5	0 47.46	19	21.77	155	1.68	2.80	1.3	1.4	24	2	167	.17	4	.7	1.1	15	SSF
		24	943	49.78	19	5.20	155	31.87	13.67	2.9	3.2	38	0	170	.11	11	.8	.4	31	DLS
		24	1738	2.71	19	22.79	155	48.78	11.84	2.7	2.5	31	2	112	.12	14	.5	.5	23	KON
		24	1748	10.86	19	26.10	155	24.32	10.25	2.9	2.6	46	3	32	.13	2	.4	.5	31	KAO
		24	1811	50.72	19	19.62	155	11.48	7.15	1.6	1.2	29	2	92	.11	5	.5	1.0	20	SF3
		24	1819	13.18	19	19.91	155	8.37	7.65	1.8	1.7	33	2	82	.08	5	.5	.9	22	SF4
		24	20	3 23.14	19	20.63	155	8.64	5.29	1.6	1.6	24	2	71	.07	3	.5	1.2	19	SF4
		25	0	3 10.11	19	19.93	155	11.22	7.60	2.1	1.8	31	2	88	.07	5	.4	.8	24	SF3
		25	233	46.20	19	20.70	155	8.65	5.15	1.4	1.3	23	3	70	.08	3	.5	1.3	15	SF4
		25	5	1 40.63	19	51.80	155	44.19	11.99	2.5	2.5	13	0	143	.09	22	.6	.9	8	HUA
		25	1141	17.29	19	21.04	155	6.91	6.93	2.2	2.4	35	2	90	.11	4	.4	.8	24	SF4
		25	1352	41.18	19	20.99	155	6.82	6.42	1.4	1.4	26	2	91	.13	4	.6	1.1	19	SF4
		25	1525	31.07	19	22.71	155	2.36	7.77	1.7	1.7	36	2	127	.14	5	.5	.7	29	SF5
		25	19	0 11.31	19	23.08	155	2.20	7.53	1.1	1.3	25	0	126	.14	5	.7	1.2	20	SF5
		25	1916	41.11	19	17.77	155	13.02	6.25	1.7	1.3	24	2	116	.08	2	.6	1.1	17	SF2
		25	1945	31.00	19	17.99	155	13.03	6.27	1.7	1.3	25	1	107	.09	2	.5	1.1	17	SF2
		26	827	9.16	19	20.25	155	7.59	7.65	1.4		24	2	93	.09	5	.5	.8	19	SF4
		26	838	25.62	19	21.58	155	28.05	10.47	1.7	1.5	30	1	67	.10	2	.4	.7	23	KAO
		26	1853	43.39	19	21.22	155	6.66	8.71	2.4	2.4	43	3	88	.11	3	.4	.6	26	SF4
		26	19	5 34.60	19	21.60	155	6.60	8.62	2.9	3.0	47	4	82	.11	3	.4	.4	35	SF4 F
		26	2240	50.98	19	19.07	155	12.03	5.25	1.4	1.3	30	2	101	.10	5	.5	1.5	19	SF3
		26	2333	3.09	19	22.25	155	2.07	6.48	1.7	1.6	33	1	137	.14	5	.6	1.0	23	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	27	010	31.11	19	19.87	155	11.56	8.66	2.1	2.2	34	2	87	.10	5	.4	.6	26	SF3
		27	5	6 58.38	19	10.65	155	29.31	33.91	2.2	1.9	34	2	92	.06	3	.6	1.2	31	DLS
		27	614	43.94	19	15.46	155	27.45	7.93	1.2	1.4	25	1	100	.18	5	.6	1.2	11	LSW
		27	15	7 38.02	19	20.08	155	13.13	7.28	1.6	1.4	31	3	67	.09	5	.5	.8	20	SF2
		27	21	7 33.57	19	19.84	155	12.02	8.12	1.4	1.4	30	1	84	.10	5	.5	.9	19	SF3
		27	2111	25.07	19	20.18	155	7.85	8.56	2.0	1.8	40	4	90	.08	5	.4	.6	23	SF4
		28	240	9.83	19	21.80	155	4.92	8.69	2.3	2.5	35	1	78	.11	3	.4	.7	22	SF5
		28	728	55.59	19	20.10	155	8.25	9.41	2.7	3.1	42	3	82	.08	5	.5	.4	34	SF4
		28	731	49.25	19	22.30	155	3.08	8.93	1.8	1.8	31	1	120	.08	4	.5	.4	18	SF5
		28	858	9.86	19	25.06	155	28.25	8.57	1.5	1.3	22	0	48	.10	5	.5	1.3	17	KAO
		28	946	54.66	19	19.74	155	11.15	8.86	1.5	1.3	24	0	91	.10	5	.6	1.2	16	SF3
		28	1333	15.37	19	17.46	155	3.01	19.77	2.0	1.6	33	3	220	.07	5	1.3	.9	25	DEP
		28	1542	41.78	19	23.98	155	23.26	10.07	1.6	1.4	29	3	70	.07	4	.5	.8	20	KAO
		29	055	57.76	19	21.38	156	2.76	41.02	2.3	1.8	30	1	254	.09	20	1.6	2.0	23	KON
		29	837	39.53	19	19.92	155	7.17	7.91	2.1	2.3	37	2	108	.09	5	.4	.7	24	SF4
		29	9	6 7.51	19	26.65	155	20.23	6.44	1.7	1.3	25	4	100	.11	2	.5	1.0	17	KAO
		29	14	2 43.01	19	20.50	155	6.13	7.57	1.3	1.3	21	0	109	.11	5	.6	1.3	14	SF4
		29	1542	1.18	19	20.17	155	11.38	8.09	2.0	1.7	33	2	82	.10	4	.5	.8	23	SF3
		29	2051	50.13	19	25.21	155	25.03	7.28	1.6	1.2	25	2	45	.09	0	.4	.9	19	KAO
		30	138	53.25	19	21.36	155	1.53	7.01	1.4	1.2	23	0	165	.11	4	.7	1.1	13	SF5
		30	338	30.55	19	20.13	155	12.91	7.60	1.5	1.6	25	3	70	.07	5	.4	.7	17	SF2
		30	6	7 46.65	19	22.55	154	58.51	6.54	1.6	1.3	26	1	184	.13	5	.9	1.3	13	LER
		30	832	23.17	19	31.78	155	53.95	9.98		1.6	21	1	177	.10	5	.8	.5	10	KON
		30	1512	32.16	19	19.79	155	12.34	6.78	1.6	1.4	33	2	82	.11	5	.4	.9	18	SF2
		30	1537	15.18	19	26.13	155	24.11	7.64	1.9	1.6	30	2	45	.11	2	.4	.9	20	KAO
		30	2221	13.85	19	20.15	155	13.18	8.74	2.2	2.4	40	2	66	.11	5	.4	.5	30	SF2
		30	2228	47.58	19	24.83	155	25.52	9.16	1.9	1.3	31	2	38	.11	1	.4	.8	21	KAO
		30	2246	11.77	19	19.70	155	12.41	6.40	1.7	1.9	38	3	82	.13	5	.4	.8	24	SF2
DEC		1	520	50.26	19	21.85	155	7.08	7.84	1.4	1.2	29	0	75	.10	3	.5	.9	22	SF4
		1	6	3 2.45	19	20.41	155	13.19	8.28	1.4	1.1	21	1	64	.08	4	.5	1.0	18	SF2
		1	7	3 49.60	19	24.69	155	25.85	8.71	2.0	1.2	21	1	53	.10	2	.5	1.0	17	KAO
		1	838	11.19	19	19.84	155	13.31	7.46	1.4	1.3	27	1	67	.09	5	.5	.8	19	SF2
		1	842	33.52	19	30.83	155	55.22	11.50	3.4	3.6	36	2	209	.12	3	.9	.4	31	KON F
		1	1246	56.85	19	22.37	155	26.69	9.72	1.8	1.5	35	2	62	.12	2	.4	.7	24	KAO
		1	1318	53.20	19	19.96	155	11.45	8.12	1.5	1.1	18	3	85	.06	5	.5	1.0	15	SF3
		1	1323	43.57	19	20.65	155	12.72	8.82	1.8	1.8	33	3	65	.10	4	.5	.7	22	SF2
		1	1456	19.07	19	40.57	155	3.14	3.02	2.0	1.6	17	0	205	.18	19	1.5	66.6	5	HIL B*
		1	1544	21.31	19	28.12	154	52.41	6.35	1.6	1.3	28	2	109	.10	2	.7	.6	21	LER
		1	1937	6.25	20	1.98	155	28.41	47.75	2.6	2.3	42	3	202	.09	21	1.0	2.0	31	KEA
		1	2223	58.06	19	20.22	155	7.85	7.91	1.5	1.2	22	2	90	.07	5	.5	1.1	16	SF4
		1	2227	3.14	19	20.15	155	7.87	7.47	1.5	1.2	22	2	90	.10	5	.6	1.3	16	SF4
		2	144	21.53	19	23.81	155	16.23	.01	1.0	1.3	8	0	97	.20	1	.4	.6	0	SEC L*
		2	223	54.57	19	7.78	155	39.80	6.74	2.5	2.3	25	0	124	.13	14	.6	1.3	19	LSW
		2	253	3.85	19	18.10	155	13.43	9.03	2.7	2.9	42	1	84	.13	2	.5	.4	32	SF2
		2	356	25.19	19	20.13	155	10.60	8.84	1.9	1.1	23	3	84	.07	4	.6	1.0	16	SF3
		2	418	57.97	19	18.66	155	11.23	6.38	1.9	1.5	33	3	121	.09	5	.5	1.0	22	SF3
		2	9	5 54.42	19	21.08	155	5.97	8.05	1.1	1.2	20	1	95	.08	4	.6	1.2	16	SF4
		2	916	47.70	19	23.97	155	16.09	3.42	1.3	1.2	15	2	109	.07	1	.4	.4	9	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	DEC	2	10 1	26.58	19	21.85	155	6.08	7.97	1.4	1.1	19	1	138	.10	2	.6	1.2	14	SF4
		2	16 0	58.76	19	20.82	155	5.82	5.71	1.4	1.6	24	2	103	.11	4	.5	1.4	15	SF4
		2	1627	25.88	19	26.38	155	37.17	3.11	2.5	2.8	31	1	84	.14	2	.5	.8	23	MLO
		2	1723	37.43	19	19.08	155	11.78	5.56	1.6	1.8	31	2	103	.12	5	.5	1.3	21	SF3
		2	1938	38.81	19	18.85	155	12.04	6.27	1.4	1.3	19	2	106	.09	4	.5	1.3	11	SF3
		2	1946	18.12	19	21.50	155	4.59	7.11	1.7	1.7	36	2	83	.14	4	.5	.8	22	SF5
		2	2016	56.21	19	22.96	155	2.43	7.01	1.5	1.4	33	2	122	.15	4	.6	.8	25	SF5
		2	2227	51.29	19	20.49	155	13.40	8.92	1.4	1.2	20	2	62	.06	4	.5	.9	14	SF2
		2	2346	49.29	19	20.05	155	7.49	7.94	1.4	1.3	21	0	99	.07	5	.6	1.4	17	SF4
		3	012	25.22	19	20.07	155	13.35	8.42	1.4	1.2	21	2	66	.04	5	.5	1.0	14	SF2
		3	047	53.59	19	21.47	155	5.68	7.45	2.0	2.2	34	1	88	.12	3	.5	.8	26	SF4
		3	054	45.96	19	24.01	155	16.24	1.16	1.0	1.4	13	2	100	.08	1	.3	.3	7	SEC
		3	240	5.41	19	19.79	155	10.26	7.74	1.6	1.8	26	3	90	.09	6	.5	1.1	16	SF3
		3	359	51.78	19	20.38	155	11.68	4.23	1.2	1.1	14	0	236	.07	5	1.6	2.5	14	SSF
		3	418	42.34	19	21.10	155	4.55	7.36	1.2	1.2	18	0	94	.11	4	.7	1.3	14	SF5
		3	425	40.07	19	25.01	155	25.25	9.09	1.9	1.7	34	4	49	.11	1	.4	.6	27	KAO
		3	710	1.66	19	25.72	155	23.39	9.33	2.0	1.5	31	2	48	.12	3	.5	.8	21	KAO
		3	911	39.90	19	20.38	155	13.14	6.92	1.6	1.5	31	2	65	.13	4	.5	.8	22	SF2
		3	924	9.69	19	21.24	155	6.05	6.16	2.0	1.8	31	3	91	.13	3	.6	1.1	20	SF4
		3	1146	3.91	19	20.16	155	13.57	9.61	2.0	1.8	26	4	91	.07	5	.5	.7	17	SF2
		3	1333	34.75	19	21.09	155	15.18	9.46	2.0	1.7	28	3	69	.07	3	.5	.6	20	SF1
		3	1355	16.34	19	21.79	155	7.05	8.93	2.4	2.5	39	4	76	.08	3	.4	.5	27	SF4
		3	1614	52.76	19	20.27	155	9.46	6.50	1.6	1.4	24	2	77	.07	3	.5	1.0	20	SF3
		3	1839	4.68	19	16.91	155	21.46	7.81	1.8	1.7	29	1	131	.12	5	.6	1.4	20	SWR
		3	2053	11.92	19	23.52	155	16.73	2.84	1.5	1.4	21	1	44	.08	0	.3	.2	18	SSC
		3	2341	2.87	19	24.20	155	16.07	1.36	2.0	2.6	26	3	111	.12	1	.2	.3	18	SEC
		3	2359	14.01	19	21.68	155	25.44	11.12	1.6	1.4	24	3	89	.09	4	.5	.9	17	KAO
		4	116	19.13	19	23.41	155	16.95	3.15	3.1	3.4	44	2	30	.11	0	.2	.3	37	SSC
		4	119	35.50	19	23.37	155	17.02	2.74	1.7	2.1	24	2	55	.09	0	.3	.2	19	SSC
		4	120	9.40	19	23.65	155	16.90	2.73	1.8	1.3	20	1	52	.09	1	.4	.3	12	SSC
		4	155	46.61	19	24.66	155	16.86	1.64	.8	1.0	10	1	117	.08	1	.4	.2	7	SNC
		4	2 7	9.73	19	24.28	155	17.16	1.38	.8	1.0	14	1	68	.08	1	.3	.2	13	SSC
		4	518	18.62	19	23.97	155	16.93	2.51	1.2	1.1	19	2	67	.08	1	.3	.2	12	SSC
		4	632	51.85	19	19.94	155	11.98	8.11	2.0	1.7	34	3	82	.07	5	.4	.5	23	SF3
		4	9 3	32.99	19	21.60	155	2.67	6.12	1.4	1.2	32	2	128	.15	3	.6	.9	19	SF5
		4	1035	49.30	19	24.35	155	16.26	1.56	2.0	2.3	22	2	112	.10	1	.3	.2	17	SEC
		4	1049	25.38	19	20.30	155	12.29	8.00	1.8	1.3	29	3	74	.10	5	.5	.9	18	SF3
		4	13 8	15.23	19	24.22	155	15.84	.86	2.3	2.9	22	2	113	.09	1	.2	.3	12	SEC
		4	1352	39.85	19	24.17	155	15.95	.71	1.4	1.6	11	2	122	.13	1	.3	.5	6	SEC
		4	1420	24.07	19	22.99	155	16.91	3.03	1.6	2.1	22	2	69	.10	1	.3	.3	16	SSC
		4	16 9	25.62	19	24.67	155	29.33	8.89	2.3	1.7	42	2	53	.10	5	.3	.7	29	KAO
		4	2147	10.24	19	23.98	155	16.93	2.93	1.2	1.0	13	2	78	.08	1	.4	.3	8	SSC
		5	4 2	17.87	19	23.09	155	17.09	2.58	1.7	2.1	26	2	41	.10	1	.2	.2	16	SSC
		5	734	11.20	19	19.41	155	7.60	8.13	2.1	2.2	37	2	107	.08	4	.4	.7	28	SF4
		5	848	9.16	19	20.41	155	8.40	7.80	2.1	2.4	40	2	77	.10	4	.4	.6	28	SF4
		5	1226	15.29	19	22.55	155	2.32	7.83	2.5	2.6	36	3	128	.12	5	.5	.6	26	SF5
		5	2247	39.92	19	19.83	155	12.19	7.06	1.4	1.0	21	1	83	.09	5	.5	1.2	13	SF3
		5	2346	57.64	19	18.86	155	12.06	7.66	1.7	1.1	20	1	106	.07	4	.6	1.2	15	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	DEC	6	151	35.30	19	23.69	155	16.85	2.76	1.3	1.2	20	1	55	.07	1	.3	.2	13	SSC
		6	334	40.08	19	19.08	155	15.42	6.93	1.3	1.0	23	2	113	.09	4	.5	1.1	18	SF1
		6	4 0	46.95	19	26.86	154	53.89	5.35	1.5	.9	26	1	154	.12	3	.7	1.0	21	LER
		6	634	2.76	19	26.49	155	24.46	5.54	1.8	1.1	27	3	68	.12	3	.4	1.3	23	KAO
		6	954	6.46	19	20.52	155	3.29	7.24	1.9	1.6	27	1	100	.12	1	.6	1.0	20	SF5
		6	1458	58.78	19	26.30	155	38.40	3.57	2.1	2.4	21	0	199	.08	4	.8	1.2	18	MLO
		6	1521	2.36	19	20.85	155	13.20	7.90	1.9	2.4	33	2	59	.10	3	.5	.6	25	SF2
		6	18 1	1.34	19	22.20	155	1.54	8.02	1.8	2.3	33	2	158	.11	5	.7	.5	24	SF5
		6	2038	30.80	19	22.22	155	5.63	8.31	2.7	2.6	40	3	73	.08	2	.4	.4	28	SF4
		7	9 1	17.37	19	24.42	155	17.42	3.12	1.0	1.2	12	0	83	.06	1	.5	.3	7	SSC
		7	1059	4.24	19	23.82	155	15.77	2.88	1.2	1.2	18	2	104	.08	1	.3	.3	11	SEC
		7	1250	36.10	19	20.56	155	12.46	8.29	1.8	1.9	37	5	69	.09	4	.4	.6	22	SF2
		7	1348	23.28	19	19.86	155	8.59	8.31	1.9	1.4	27	2	77	.07	5	.5	.8	19	SF4
		7	1348	55.31	19	19.78	155	8.84	6.79	1.6	1.1	22	0	77	.08	5	.5	1.3	18	SF4
		7	1349	19.75	19	19.85	155	8.97	7.13	2.4	2.6	45	4	78	.09	4	.4	.6	31	SF4
		8	018	6.01	19	51.95	156	25.78	1.75		1.8	20	1	230	.37	65	6.4	3.0	13	DIS *
		8	214	33.81	19	15.84	155	5.17	48.22	2.5	2.3	41	1	206	.10	6	1.2	2.1	37	DEP
		8	1024	54.51	19	23.90	155	15.62	3.20	.9	1.0	14	2	147	.08	2	.4	.3	7	SEC
		8	1048	45.16	19	19.71	155	7.65	7.47	1.4	1.2	23	1	101	.07	4	.5	1.0	16	SF4
		8	1140	22.73	19	32.49	155	43.93	7.41	1.4	1.2	20	1	108	.14	5	.7	1.7	14	KON
		8	1623	29.42	19	17.92	155	14.91	6.79	1.2	1.0	23	3	140	.09	3	.6	1.0	14	SF1
		8	1647	51.03	19	19.77	155	7.86	8.40	2.2	2.4	39	3	95	.07	4	.4	.5	31	SF4
		8	1756	5.60	19	21.97	155	5.23	8.02	1.9	1.8	29	1	77	.09	3	.5	.8	17	SF5
		8	1837	27.50	19	19.61	155	11.33	7.30	1.7	1.7	30	2	94	.09	5	.5	1.0	22	SF3
		8	1858	33.26	19	21.73	155	7.35	7.85	1.7	1.4	27	1	75	.10	3	.5	.9	20	SF4
		8	2136	38.34	19	20.58	155	12.06	8.44	1.8	1.9	30	2	72	.09	4	.5	.7	24	SF3
		9	326	23.62	19	20.13	155	7.83	8.35	2.2	2.6	37	2	91	.08	5	.4	.6	29	SF4
		9	433	16.14	19	23.47	155	25.76	9.66	1.6	1.0	25	2	63	.08	4	.5	.9	19	KAO
		9	719	35.32	19	18.28	155	15.09	7.57	1.3	1.0	20	2	137	.07	4	.6	1.2	14	SF1
		9	822	57.07	19	23.05	155	3.04	8.77		1.2	19	0	115	.10	4	.6	.9	18	SF5
		9	856	49.72	19	14.17	155	20.56	42.94	2.1	1.7	37	2	162	.08	8	1.0	1.4	30	DEP
		9	859	25.37	19	19.94	155	10.76	8.77	1.8	1.8	33	1	88	.09	4	.4	.7	23	SF3
		9	1114	43.48	19	19.77	155	8.82	7.40	1.7	1.7	31	2	78	.09	5	.5	.8	21	SF4
		9	15 9	20.64	19	19.99	155	7.02	9.55	3.1	3.1	33	1	108	.07	5	.6	.4	28	SF4
		9	1853	1.22	19	24.17	155	24.99	9.60	1.7	1.4	26	3	52	.09	2	.4	.9	21	KAO
		9	1922	28.62	19	23.11	155	16.88	2.96	2.2	2.6	28	2	40	.10	1	.3	.2	21	SSC
		9	1924	52.55	19	23.20	155	17.16	2.76	.9	1.1	19	4	71	.09	1	.3	.3	12	SSC
		9	2034	58.75	19	19.51	155	10.46	8.03	1.9	1.5	31	2	97	.08	5	.4	.8	21	SF3
		9	2151	11.81	19	17.99	155	12.98	5.93	2.0	1.8	36	4	109	.12	2	.4	1.0	23	SF2
		9	2216	46.06	19	27.01	155	23.72	7.47	2.3	2.3	33	2	45	.12	4	.4	.9	29	KAO
		10	521	40.26	19	20.68	155	7.19	7.22	2.1	1.8	36	1	93	.11	5	.5	.9	24	SF4
		10	824	11.64	19	18.58	155	15.55	8.76		1.1	14	0	132	.04	4	.6	1.3	11	SF1
		10	847	30.60	19	19.88	155	10.14	8.22	1.8	1.4	27	3	88	.09	4	.6	1.0	19	SF3
		10	855	51.83	19	20.52	155	6.98	8.75	2.6	2.7	40	2	99	.09	5	.4	.6	27	SF4
		10	10 3	28.50	19	19.82	155	12.03	6.51	1.8	1.5	31	2	84	.11	6	.5	1.0	20	SF3
		10	10 7	46.32	19	20.35	155	7.35	6.40	1.3	1.1	24	1	96	.10	5	.5	1.2	17	SF4
		10	1312	54.28	19	20.14	155	13.23	7.54	1.6	1.3	27	2	65	.12	5	.6	1.0	22	SF2
		10	1932	15.80	19	24.22	155	17.15	1.46	1.0	1.2	11	0	70	.10	1	.3	.2	9	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	DEC	10	2137	36.26	19	21.06	155	1.37	7.91	1.9	1.7	20	0	177	.09	3	.6	1.0	14	SF5
		10	23 6	29.72	19	24.74	155	24.76	8.84	2.4	2.5	40	3	46	.11	1	.4	.6	26	KAO
		11	010	9.97	19	25.89	154	55.65	6.10	1.9	1.8	31	1	159	.11	3	.6	.8	17	LER
		11	8 9	56.01	19	24.28	155	24.96	9.26	2.1	2.0	36	2	36	.11	2	.4	.7	23	KAO
		11	816	56.42	19	21.72	155	7.32	7.62	1.4	1.3	27	2	75	.09	3	.5	.8	11	SF4
		11	819	45.64	19	30.86	155	29.09	4.33	1.2	1.1	14	2	103	.08	3	.4	1.2	9	MLO
		11	14 4	41.41	19	18.76	155	12.01	6.85	2.0	1.8	35	3	109	.09	4	.4	.7	20	SF3
		11	1631	22.97	19	20.16	155	13.35	8.08	1.3	1.3	24	2	65	.09	5	.5	.9	18	SF2
		11	1657	39.44	19	30.72	155	46.92	9.00	1.9	1.9	28	2	84	.13	2	.6	.8	15	KON
		11	18 2	10.93	20	3.34	156	.84	10.16	3.4	3.5	35	0	173	.14	26	.6	.6	25	KOH
		11	2059	30.58	19	17.91	155	12.91	9.58	2.5	2.7	43	3	138	.10	9	.5	.6	24	SF2
		11	2137	.89	19	20.99	155	5.88	7.63	1.1	1.2	19	0	98	.10	4	.6	1.3	16	SF4
		12	157	4.51	19	19.88	155	11.86	7.71	1.6	1.4	26	1	84	.09	5	.5	.9	16	SF3
		12	3 6	47.21	19	20.00	155	9.86	7.98	1.4	1.1	23	2	84	.08	4	.5	1.1	18	SF3
		12	423	45.98	18	57.23	155	33.51	37.15	2.2	1.7	30	2	243	.09	12	1.6	1.7	25	DLS
		12	524	13.65	19	20.38	155	12.96	8.99	2.0	2.0	36	3	67	.09	4	.4	.6	26	SF2
		12	657	39.76	19	19.53	155	7.06	7.83	2.0	1.9	32	2	118	.10	4	.5	1.0	23	SF4
		12	1030	24.97	19	23.18	155	16.98	2.43	.8	1.0	10	1	94	.03	0	.3	.4	8	SSC
		12	1114	11.55	19	18.86	155	15.27	7.94	1.3	1.1	20	1	119	.08	4	.5	1.0	17	SF1
		12	1523	50.08	19	23.16	155	17.01	2.49	.8	1.1	16	3	80	.09	0	.3	.3	9	SSC
		12	1650	15.85	19	20.04	155	13.08	9.27	2.1	2.6	40	2	68	.10	5	.4	.5	32	SF2
		12	2338	35.18	19	18.95	155	15.76	8.24	1.4	1.3	19	2	120	.06	4	.5	1.1	14	SF1
		13	2 3	36.51	19	19.68	155	12.43	7.98	1.8	1.7	25	3	83	.07	5	.5	.8	16	SF2
		13	447	53.68	19	18.13	155	15.54	8.21	2.0	2.0	29	1	143	.06	4	.5	.7	17	SF1
		13	548	8.80	19	21.85	155	4.99	8.38	2.2	2.2	36	1	78	.09	3	.4	.4	23	SF5
		13	553	23.31	19	20.52	155	13.11	8.56	1.3	1.1	21	2	63	.05	4	.5	1.0	14	SF2
		13	6 1	27.66	19	26.02	155	28.39	8.16	1.8	1.3	21	1	62	.08	6	.5	1.2	17	KAO
		13	1321	8.00	19	20.00	155	25.08	10.50	2.5	2.8	46	3	87	.12	3	.4	.5	33	KAO
		13	15 1	43.17	19	22.38	155	27.43	8.33	1.6	1.1	26	1	64	.11	0	.4	.8	21	KAO
		13	1738	33.79	19	21.72	155	4.66	8.18	2.1	2.1	30	0	79	.12	4	.5	.6	20	SF5
		13	2337	55.60	19	25.24	155	24.52	9.08	2.0	1.8	28	1	61	.09	1	.4	.9	23	KAO
		14	015	32.21	19	22.26	155	5.72	6.60	1.5	1.7	25	1	73	.12	2	.5	.9	15	SF4
		14	252	48.45	19	21.44	155	1.91	7.34	1.4	1.1	23	1	167	.11	3	.7	.9	7	SF5
		14	419	5.67	19	18.41	155	15.51	8.24	1.2	1.2	18	1	137	.03	4	.6	1.1	15	SF1
		14	5 4	48.56	19	20.27	155	7.38	7.65	2.0	1.8	29	0	97	.09	5	.5	1.0	22	SF4
		14	629	15.32	19	20.10	155	12.72	9.02	1.5	1.3	24	2	72	.07	5	.6	.8	17	SF2
		14	633	33.75	19	20.05	155	12.85	8.50	1.5	1.3	23	3	71	.06	5	.5	.9	14	SF2
		14	9 0	7.06	19	19.93	155	10.19	7.65	1.5	1.4	20	0	87	.09	4	.5	1.1	17	SF3
		14	1257	45.97	19	19.85	155	8.20	8.90	3.0	3.2	43	3	85	.09	5	.4	.4	33	SF4
		14	1513	6.87	19	19.86	155	7.62	4.84	1.8	1.6	23	3	99	.12	5	.6	1.9	14	SSF
		14	1547	56.43	19	26.46	155	20.54	2.42	1.6	1.5	24	3	82	.12	2	.3	.5	16	KAO
		14	1930	36.02	19	20.60	155	10.90	8.10	2.1	1.9	32	3	76	.07	3	.4	.6	23	SF3
		14	20 1	.75	19	23.00	155	4.02	7.15	1.6	1.2	23	1	94	.11	3	.5	.8	13	SF5
		14	22 6	52.12	19	25.88	155	25.66	6.64	1.8	1.7	30	2	53	.12	1	.4	1.0	21	KAO
		15	2 6	59.17	19	27.03	155	24.34	7.77	2.4	1.8	41	3	46	.13	4	.4	.7	30	KAO
		15	214	.38	19	19.77	155	7.97	9.60	3.1	3.1	45	3	91	.10	4	.5	.4	36	SF4 F
		15	346	29.74	19	24.88	155	24.69	7.68	1.5	1.5	29	2	44	.10	1	.4	.9	22	KAO
		15	533	8.35	19	19.73	155	12.00	8.63	3.6	3.6	42	2	86	.11	6	.4	.4	37	SF3 F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	DEC	15	552	9.75	19	23.88	155	15.85	2.96	1.3	1.1	21	3	106	.08	1	.3	.3	10	SEC
		15	845	42.80	19	23.50	155	16.86	3.27	1.6	1.8	22	4	61	.09	0	.3	.2	14	SSC
		15	9 4	49.58	19	24.95	155	25.54	9.86	2.6	2.7	38	3	41	.12	1	.4	.6	29	KAO
		15	919	14.41	19	24.79	155	25.70	10.90	3.1	3.0	40	4	39	.12	1	.3	.4	31	KAO
		15	10 7	12.00	19	26.52	155	24.37	8.55	3.1	2.9	38	3	61	.13	3	.4	.7	29	KAO
		15	1042	22.50	19	18.45	155	11.06	7.50	1.6	1.2	15	1	134	.06	5	.7	1.5	12	SF3
		15	11 0	37.53	19	19.48	155	11.85	8.69	1.7	1.4	25	2	93	.07	5	.5	.8	20	SF3
		15	1323	43.64	19	25.59	155	27.96	8.63	1.8	1.2	25	2	106	.09	5	.4	.9	18	KAO
		15	16 9	3.52	19	23.24	155	16.92	2.80	2.1	2.3	21	0	40	.09	0	.3	.3	19	SSC
		15	1741	7.45	19	23.22	155	17.01	2.61	1.2	1.6	17	2	69	.07	0	.4	.3	11	SSC
		15	2011	36.16	19	21.52	155	14.79	10.30	3.5	3.8	44	1	62	.10	3	.4	.4	40	SF1 F
		16	1 0	.91	19	19.85	155	11.30	7.68	2.6	2.7	38	3	89	.11	5	.4	.6	31	SF3
		16	1 2	21.17	19	19.69	155	12.35	7.79	1.7	1.4	21	3	83	.06	5	.5	.9	16	SF2
		16	126	48.04	19	23.98	155	17.19	2.98	1.1	1.2	16	4	64	.07	1	.4	.3	8	SSC
		16	2 7	38.14	19	20.07	155	12.91	8.35	1.6	1.1	22	2	70	.07	5	.5	1.0	14	SF2
		16	251	48.07	19	20.03	155	6.90	7.11	1.9	1.4	24	0	110	.11	5	.6	1.2	19	SF4
		16	920	38.64	19	22.04	155	10.76	2.87	.8	1.2	14	1	118	.09	2	.5	.4	11	SER
		16	1336	34.02	19	18.55	155	15.07	7.96	1.3	1.2	21	2	100	.05	4	.5	1.1	13	SF1
		16	2347	51.71	19	20.82	155	6.52	8.71	1.2	1.3	18	2	98	.05	4	.5	1.1	13	SF4
		16	2356	49.36	19	18.03	155	26.02	10.39	1.9	2.0	25	1	98	.10	6	.5	.8	17	LSW
		17	556	31.68	19	19.63	155	7.60	7.22	1.6	1.3	27	2	103	.08	4	.5	1.0	18	SF4
		17	1236	11.35	19	19.15	155	8.86	7.49	1.9	1.8	25	4	91	.05	4	.4	.7	16	SF4
		17	1631	29.75	19	19.09	155	26.13	9.80	1.4	1.3	25	3	91	.10	5	.4	.7	16	KAO
		17	1754	35.79	19	19.30	155	13.46	7.23	1.5	1.4	31	2	74	.12	4	.5	.9	20	SF2
		17	2048	31.87	19	19.64	155	6.88	8.17	1.8	1.4	28	2	120	.07	5	.5	.9	19	SF4
		18	7 0	38.13	19	20.27	155	11.76	8.16	2.2	1.9	32	3	78	.11	5	.4	.7	26	SF3
		18	737	48.94	19	17.99	155	13.05	5.10	1.7	1.3	24	3	105	.09	2	.4	1.1	19	SF2
		18	852	53.61	19	23.34	155	17.10	2.86	.9	1.0	17	2	56	.09	0	.4	.3	12	SSC
		18	945	18.17	19	23.55	155	16.98	15.26	2.2	2.4	31	1	37	.10	3	.5	.4	30	DEP
		18	1152	56.90	19	19.00	155	13.30	7.32	1.7	1.2	23	2	77	.07	4	.5	.9	17	SF2
		18	1251	50.08	19	20.32	155	10.56	7.81	1.8	1.3	25	3	84	.09	3	.5	.9	19	SF3
		18	1411	53.60	19	24.08	155	15.63	3.43	2.6	2.4	18	0	115	.08	3	.3	.4	17	SEC
		18	1620	7.65	19	19.46	155	11.34	6.63	2.3	2.4	24	1	97	.12	5	.6	.9	20	SF3
		18	2042	2.47	19	19.15	155	15.69	8.11	1.9	1.9	31	3	112	.09	4	.5	.6	22	SF1
		19	037	47.96	19	18.99	155	30.32	8.04	1.6	1.2	12	0	108	.10	8	.7	2.2	10	LSW
		19	055	43.46	19	23.02	155	16.93	3.04	1.9	2.4	19	0	47	.07	2	.3	.5	16	SSC
		19	150	46.61	19	23.92	155	16.86	3.00	1.1	1.0	19	3	79	.10	0	.4	.3	12	SSC
		19	330	.37	19	22.99	155	16.88	2.93	1.9	2.3	28	2	39	.08	1	.3	.3	19	SSC
		19	453	16.60	19	17.42	155	14.11	6.95	1.1	1.2	18	2	156	.07	1	.6	1.2	13	SF2
		19	7 9	35.79	20	12.89	156	41.08	2.38	3.5	3.0	31	4	254	.13	76	2.8	1.8	22	DIS
		19	735	51.58	19	23.13	155	17.11	2.74	1.2	1.1	10	1	75	.06	3	.4	.6	4	SSC
		19	1033	35.11	19	25.70	155	24.94	8.21	1.9	1.6	31	2	48	.11	1	.4	.9	28	KAO
		19	2125	38.78	19	19.83	155	13.36	8.90	2.2	2.6	40	1	68	.10	5	.4	.4	30	SF2
		20	359	40.96	19	19.18	155	10.04	8.67	1.9	1.8	24	1	105	.07	5	.6	1.0	21	SF3
		20	644	32.26	19	20.25	155	7.08	7.99	2.4	2.6	40	3	103	.09	5	.4	.6	28	SF4
		20	1412	10.36	19	19.60	155	10.03	8.45	2.6	2.8	32	1	94	.08	5	.4	.6	28	SF3
		20	1657	16.21	19	20.14	155	11.74	8.58	1.7	1.3	26	2	81	.08	5	.5	.7	17	SF3
		20	1924	57.25	19	20.87	155	11.20	8.43	1.6	1.3	27	3	72	.09	3	.5	.8	21	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	DEC	20	2053	17.17	19	20.18	155	8.81	7.43	1.8	1.3	27	3	72	.07	4	.5	.8	16	SF4
		21	7	4 35.37	19	21.51	155	4.86	8.72	3.4	3.8	39	1	85	.09	4	.4	.4	37	SF5
		21	12	6 31.05	19	21.14	155	11.24	9.54	1.8	1.9	20	0	72	.06	3	.5	.9	15	SF3
		21	1253	31.99	19	19.09	155	13.46	5.51	2.0	1.6	30	4	78	.10	4	.4	1.1	18	SF2
		21	1423	38.81	19	20.38	155	11.86	8.38	1.9	1.7	34	5	76	.10	5	.5	.8	26	SF3
		21	1626	25.54	19	21.18	155	6.07	7.84	2.1	1.9	30	2	93	.08	3	.5	.8	20	SF4
		21	1922	20.82	19	19.76	155	7.69	7.94	1.9	1.6	31	3	99	.08	5	.5	1.0	19	SF4
		21	1932	34.33	19	26.63	155	50.48	7.67	2.2	1.8	16	0	113	.14	9	.6	1.1	14	KON
		21	1955	8.71	19	26.10	155	22.30	4.19	1.9	1.7	22	3	67	.09	4	.3	1.1	14	KAO
		22	043	34.08	19	20.37	155	12.83	8.74	2.0	1.7	37	5	68	.11	4	.4	.6	23	SF2
		22	443	30.87	19	8.94	155	33.47	32.17	3.0	2.9	47	4	129	.08	10	.7	1.2	39	DLS
		22	541	8.67	19	23.36	155	16.78	2.68	2.7	3.1	34	2	39	.11	0	.3	.2	28	SSC
		22	653	24.00	19	23.48	155	16.79	3.60		1.6	10	0	70	.06	3	.5	.8	9	SSC
		22	1753	16.11	19	19.47	155	8.83	7.70	1.6	1.1	21	1	83	.06	4	.5	1.2	15	SF4
		22	2129	12.58	19	19.74	155	9.74	7.76	1.6	1.2	24	3	89	.08	4	.5	1.0	18	SF3
		23	150	26.62	19	16.36	155	27.32	8.19	1.6	1.3	29	1	128	.14	5	.5	1.0	13	LSW
		23	227	8.89	19	23.55	155	1.33	8.08	1.8	1.3	29	1	146	.13	5	.6	.8	20	SF5
		23	755	33.53	19	25.55	155	29.50	8.39	2.1	1.4	31	2	59	.11	7	.4	1.1	20	KAO
		23	1411	30.28	19	20.41	155	13.21	7.44	1.6	1.3	27	3	64	.10	4	.4	.8	19	SF2
		23	18	8 58.53	19	23.88	155	24.55	8.57	1.6	1.2	28	2	50	.12	3	.4	.9	23	KAO
		23	1946	22.04	19	22.39	155	17.17	2.80	1.0	1.1	18	1	94	.07	2	.3	.4	10	SSC
		23	2243	40.30	19	23.20	155	16.86	2.86	1.0	1.0	21	3	46	.09	0	.3	.3	13	SSC
		24	029	19.99	19	22.63	155	22.98	6.52	1.5	1.4	22	2	82	.08	5	.4	1.2	16	KAO
		24	053	19.44	19	23.67	155	2.33	8.56	1.7	1.7	29	1	122	.12	4	.6	.8	19	SF5
		24	1	2 19.53	19	21.35	155	2.49	7.05	1.9	1.6	36	2	137	.11	3	.5	.7	18	SF5
		24	516	1.43	19	25.36	155	15.97	2.37	2.8	3.3	35	2	40	.12	2	.3	.3	31	SNC F
		24	1119	35.52	19	40.32	155	3.35	4.43	2.1	2.6	24	0	181	.17	19	1.0	2.6	8	HIL B
		24	1123	34.26	19	23.02	155	16.77	2.29	2.2	2.4	26	4	40	.10	1	.3	.2	20	SSC
		24	13	5 24.76	19	20.54	155	13.05	9.33	1.6	1.2	23	2	64	.08	4	.5	.9	14	SF2
		24	1314	.50	19	20.35	155	13.26	8.34	1.7	1.4	26	2	64	.08	4	.5	.8	17	SF2
		24	1339	.58	19	18.64	155	13.54	9.60	2.8	2.7	43	2	74	.11	3	.5	.4	36	SF2
		24	1430	56.67	19	20.56	155	30.03	10.57	2.6	2.9	39	1	66	.10	6	.4	.6	30	KAO
		24	15	5 31.21	19	20.08	155	12.83	7.69	1.6	1.5	23	2	72	.08	5	.5	.9	17	SF2
		24	1545	37.10	19	23.20	155	16.98	2.85	1.2	1.4	19	2	47	.06	0	.3	.3	12	SSC
		24	2251	21.16	19	25.22	155	24.04	8.75	2.2	2.2	41	2	36	.12	2	.4	.6	26	KAO
		24	2353	57.17	19	21.35	155	1.90	8.14	1.4	1.5	24	1	164	.11	3	.9	1.0	14	SF5
		25	2	2 56.11	19	22.33	155	6.55	7.96	2.3	2.3	36	2	70	.10	1	.4	.6	21	SF4
		25	255	16.83	19	20.04	155	12.15	9.03	1.7	1.4	31	3	79	.08	5	.5	.7	23	SF3
		25	256	15.24	19	22.16	155	3.06	8.34	1.9	1.9	30	1	121	.11	4	.6	.6	23	SF5
		25	315	38.84	19	18.46	155	30.20	7.67	1.6	1.1	20	0	83	.11	6	.6	1.5	15	LSW
		25	1331	33.69	19	19.22	155	11.39	7.94	1.7	1.1	21	1	103	.06	5	.5	1.1	15	SF3
		25	1844	56.36	19	16.46	155	22.87	1.89	1.2	1.4	24	2	129	.12	7	.5	1.1	17	SWR
		26	112	13.79	19	23.99	155	15.61	2.77	1.0	1.1	17	3	115	.06	2	.3	.4	9	SEC
		26	215	37.30	19	20.50	155	12.93	8.65	1.8	1.8	33	2	66	.08	4	.4	.6	21	SF2
		26	3	7 28.86	19	20.59	155	12.66	8.71	1.9	1.8	37	5	67	.10	4	.4	.5	23	SF2
		26	713	17.28	19	24.11	155	17.99	3.57	1.8	1.1	22	4	52	.07	2	.3	.4	12	SSC
		26	731	16.96	19	20.05	155	12.11	8.72	2.2	2.0	36	1	79	.11	5	.4	.6	27	SF3
		26	10	2 16.19	19	23.77	155	15.93	2.91	1.8	2.3	25	2	100	.09	1	.3	.2	14	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	DEC	26	1118	30.21	19	20.74	155	9.57	8.37	1.8	1.9	33	3	70	.08	3	.4	.7	22	SF3
		26	1133	22.34	19	22.03	155	24.40	10.21	1.6	1.3	19	1	69	.08	4	.6	1.1	15	KAO
		26	1237	15.74	19	19.99	155	12.82	6.95	1.3	1.1	22	2	73	.10	5	.5	1.1	11	SF2
		26	1347	59.99	19	23.88	155	17.02	2.68	1.1	1.3	16	1	71	.07	1	.3	.2	12	SSC
		26	15	6 56.11	19	20.07	155	13.09	8.58	1.6	1.2	28	1	68	.08	5	.5	.8	18	SF2
		26	1730	43.02	19	20.70	155	13.37	9.17	1.6	1.2	24	2	60	.07	4	.5	.8	15	SF2
		26	1742	47.17	19	11.35	155	27.96	9.20	1.4	1.5	22	1	110	.14	3	.6	1.1	13	LSW
		26	18	2 21.11	19	19.84	155	11.08	10.16	1.6	1.1	21	1	89	.07	5	.6	1.2	15	SF3
		26	1839	20.00	19	20.74	155	10.65	9.02	1.6	1.3	28	3	73	.06	3	.5	.8	15	SF3
		26	1912	5.41	19	20.28	155	12.83	9.15	1.6	1.2	23	2	69	.06	4	.5	.9	17	SF2
		26	1941	15.96	19	19.62	155	11.12	6.79	1.8	1.7	23	3	94	.07	5	.5	1.1	15	SF3
		26	2257	45.15	19	23.23	155	16.78	3.04	2.2	2.6	28	4	45	.09	0	.2	.2	19	SSC
		26	2345	25.85	19	20.15	155	12.79	8.47	1.6	1.2	24	3	71	.08	5	.5	.9	16	SF2
		27	0	0 47.41	19	19.44	155	10.37	8.04	1.4	1.2	29	3	99	.07	5	.4	.8	18	SF3
		27	142	21.95	19	8.46	155	33.37	33.55	2.3	1.6	30	1	135	.06	10	.7	1.4	26	DLS
		27	149	42.44	19	20.49	155	13.10	8.88	1.5	1.6	30	3	64	.10	4	.5	.8	20	SF2
		27	11	2 50.78	19	20.38	155	3.03	6.72	1.2	1.3	24	0	124	.11	1	.7	1.0	16	SF5
		27	1126	16.67	19	19.18	155	10.02	7.84	1.4	1.0	24	2	104	.07	5	.5	1.0	16	SF3
		27	2021	15.16	19	25.17	155	27.20	11.61	2.7	2.8	45	3	40	.12	4	.4	.4	31	KAO
		28	031	46.76	19	20.42	155	13.11	9.01	1.6	1.2	24	2	64	.06	4	.5	.8	18	SF2
		28	035	19.49	19	19.78	155	6.93	8.78	2.5	2.9	40	1	115	.10	5	.4	.5	27	SF4
		28	312	3.68	19	19.84	155	12.02	6.53	1.6	1.4	24	3	84	.07	5	.4	.9	17	SF3
		28	4	9 56.62	19	27.07	155	26.59	10.01	1.6		34	1	43	.10	4	.4	.8	20	KAO
		28	410	21.58	19	20.04	155	12.46	5.03	1.8	1.9	33	3	76	.14	5	.4	1.3	21	SF2
		28	915	24.78	19	23.16	155	16.99	2.77	.7	1.8	24	0	40	.07	0	.3	.2	18	SSC
		28	1126	30.91	19	19.79	155	12.38	8.77	2.8	2.6	43	4	81	.10	5	.3	.5	29	SF2
		28	1331	12.27	19	23.29	155	16.66	3.15	2.1	2.1	29	3	39	.09	2	.3	.4	20	SSC
		28	1348	26.36	19	27.89	155	28.14	8.15	2.1	1.5	35	1	52	.10	7	.4	1.0	22	KAO
		28	1814	15.02	19	21.43	155	2.89	6.57	1.5	1.2	30	1	129	.12	3	.6	1.0	16	SF5
		28	2111	25.67	19	20.74	155	13.37	9.31	1.5	1.3	28	3	59	.07	4	.4	.7	21	SF2
		28	2320	42.16	19	24.85	155	17.35	1.24	1.3	1.3	17	1	88	.07	1	.4	.2	11	SNC
		28	2354	20.40	19	17.96	155	13.27	8.02	2.0	1.9	34	3	96	.10	2	.5	.7	23	SF2
		29	314	7.94	19	18.52	155	13.39	9.12	2.7	2.4	40	3	135	.11	8	.4	.4	29	SF2
		29	325	59.22	19	18.58	155	12.91	5.54	1.7	1.1	29	1	95	.10	3	.4	1.3	21	SF2
		29	341	5.62	19	18.38	155	13.02	5.60	1.7	1.3	31	3	96	.12	3	.5	1.1	15	SF2
		29	428	43.46	19	21.52	155	1.68	8.34	1.5	1.2	25	0	166	.09	4	.8	.7	15	SF5
		29	522	21.58	19	18.76	155	15.28	8.57	2.1	1.9	39	4	121	.08	5	.4	.5	22	SF1
		29	546	10.73	19	18.15	155	10.98	4.54	1.3	1.1	25	1	137	.08	5	.4	2.1	11	SSF
		29	855	5.38	19	18.52	155	13.26	5.52	1.9	1.4	30	2	85	.10	3	.4	1.2	23	SF2
		29	1339	30.31	19	18.75	155	13.79	7.50	2.1	1.7	40	4	88	.12	3	.5	.7	31	SF2
		29	1758	39.62	19	56.18	155	9.79	7.50		1.8	21	0	256	.11	19	2.5	.9	17	KEA
		30	244	8.29	19	22.00	155	26.33	12.38	2.3	1.9	42	4	66	.11	2	.4	.4	31	KAO
		30	355	59.56	19	20.59	155	11.89	8.38	1.5	1.4	31	2	73	.10	4	.5	.7	22	SF3
		30	517	48.63	19	19.56	155	12.49	7.12	1.6	1.4	28	4	84	.06	5	.4	.7	19	SF2
		30	534	13.29	19	23.66	155	17.16	2.86	1.2	1.1	18	3	56	.08	1	.3	.3	11	SSC
		30	11	5 15.63	19	23.73	155	16.82	2.74	1.1	.9	20	3	58	.06	1	.3	.2	13	SSC
		30	1130	55.31	19	18.01	155	46.64	9.88	3.9	3.5	47	2	89	.12	11	.4	.5	44	KON
		30	1221	55.91	19	23.73	155	16.77	3.08	1.3	1.0	18	2	55	.09	0	.4	.2	12	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	DEC	30	1242	16.35	19	23.87	155	16.91	2.88	1.1	1.0	17	3	75	.06	1	.3	.3	9	SSC
		30	1812	46.92	19	18.41	155	14.26	9.29	2.9	2.8	41	2	136	.10	6	.5	.6	36	SF2
		30	1817	12.77	19	25.89	155	22.57	6.86	1.8	1.5	28	3	43	.10	5	.4	.9	18	KAO
		30	2028	37.21	19	24.29	155	29.13	9.75	2.5	2.0	37	2	34	.11	4	.4	.8	25	KAO
		31	013	34.80	19	17.60	155	14.12	5.62	1.1	1.3	13	0	144	.06	2	1.2	2.1	9	SF2
		31	230	43.45	19	26.07	155	24.97	8.50	2.6	2.3	39	1	46	.14	2	.4	.8	30	KAO
		31	727	53.63	19	20.09	155	11.89	8.45	2.2	2.1	36	3	80	.09	5	.4	.6	29	SF3
		31	734	33.87	19	20.27	155	11.81	8.72	2.6	2.7	39	2	78	.10	5	.4	.6	32	SF3
		31	958	23.56	19	30.57	156	2.83	36.88	2.2	1.8	32	1	275	.10	14	1.8	1.8	26	KON
		31	1618	6.18	19	26.84	155	23.57	8.67	2.0	1.7	26	5	58	.10	4	.4	1.0	19	KAO
		31	1843	17.53	19	22.95	155	16.83	2.84	2.4	2.6	28	2	47	.08	1	.2	.3	20	SSC
		31	1858	8.65	19	22.22	155	6.21	8.02	1.9	1.7	28	1	73	.10	1	.5	.8	20	SF4
		31	1916	4.55	19	19.54	155	11.97	8.55	2.3	1.9	28	2	91	.08	5	.5	.9	22	SF3

TABLE 6. HVO EARTHQUAKE SUMMARY LIST, MAGNITUDE 3.0 AND LARGER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JAN	1	5 7	3.13	19	20.29	155	6.62	9.84	3.4	3.2	37	0	108	.11	5	.6	.5	33	SF4 F
		2	2136	37.20	19	23.26	155	16.92	2.87	2.7	3.1	32	1	40	.08	0	.2	.2	28	SSC F
		3	1 6	16.75	19	23.43	155	14.99	3.22	3.4	3.8	39	1	46	.10	3	.3	.4	31	SEC F
		9	1240	13.38	19	20.25	155	11.66	8.59	2.9	3.1	31	0	79	.10	5	.4	.7	26	SF3
		9	19 7	27.96	19	24.83	155	28.40	10.47	2.9	3.2	33	1	55	.10	5	.4	.6	28	KAO
		15	1213	11.23	19	18.98	155	13.16	8.31	2.9	3.0	29	1	81	.09	4	.4	.7	21	SF2
		15	1341	2.75	19	41.29	156	2.21	35.32	3.8	3.7	32	0	306	.08	35	7.7	2.4	32	HUA
		16	19 3	39.82	19	23.30	155	14.69	3.42	3.1	3.2	33	1	46	.09	3	.3	.4	24	SEC
		16	2159	56.07	19	23.25	155	14.69	3.62	3.4	3.6	34	0	47	.08	3	.3	.5	27	SEC
		17	623	39.85	19	24.11	155	14.70	4.22	3.1	3.3	37	1	79	.11	1	.4	.5	30	SEC F
		17	858	51.53	19	25.11	155	15.76	2.07		3.1	18	0	47	.13	2	.4	.8	17	SNC
		17	1221	47.51	19	22.28	155	5.27	8.15	3.3	3.7	37	2	72	.10	5	.4	.6	32	SF5
		17	1933	42.23	19	19.77	155	12.97	9.89	3.6	3.6	37	0	74	.09	5	.4	.4	35	SF2
		18	055	16.03	19	19.61	155	8.64	8.24	2.6	3.0	30	0	78	.07	4	.5	.9	24	SF4
		19	843	29.58	19	25.40	155	15.23	1.77	2.4	3.0	23	1	75	.08	2	.4	.3	20	SNC
		19	1528	48.56	19	18.72	155	32.46	26.88	4.6	4.4	39	1	59	.07	11	.6	1.2	38	DLS
		19	2028	9.63	19	25.23	155	15.61	1.91	2.8	3.5	20	1	122	.09	2	.4	.3	16	SNC
		20	258	2.09	19	26.83	154	51.64	9.42	3.1	3.2	30	3	269	.11	6	1.4	.5	16	LER
		20	1752	15.30	19	20.91	155	17.07	32.73	3.1	3.5	37	0	64	.10	2	.7	1.2	36	DEP
		20	2343	15.53	19	20.64	155	6.10	8.77	2.4	3.1	35	1	106	.08	6	.4	.6	28	SF4
		21	454	33.97	19	25.18	155	15.10	1.77	2.8	3.3	29	1	46	.10	2	.2	.3	21	SNC
		21	2338	39.40	19	25.77	155	15.20	1.53	2.9	3.4	20	1	137	.09	3	.5	.5	17	SNC
		22	752	4.61	19	19.85	155	13.28	9.79	3.5	3.6	19	0	123	.05	5	.6	1.1	18	SF2
		23	1637	24.58	19	26.82	155	29.83	10.26	3.3	2.8	39	2	57	.10	9	.4	.6	31	KAO
		23	2155	23.85	19	22.98	155	14.54	3.57	2.9	3.1	30	0	49	.08	3	.3	.4	22	SEC
		24	1114	40.47	19	19.57	155	11.89	9.56	3.6	3.9	35	0	91	.09	5	.4	.5	29	SF3
		24	1851	47.50	19	18.44	155	13.04	10.18	2.5	3.0	33	0	136	.09	8	.5	.6	26	SF2
		28	1914	2.16	19	23.17	155	14.56	3.34	3.1		31	0	50	.09	3	.3	.4	25	SEC F
		29	2114	54.20	19	21.02	155	15.67	28.41	3.6	3.1	39	0	71	.09	3	.6	1.0	39	DEP F
	FEB	1	14 5	26.48	19	23.39	155	15.03	3.05	2.6	3.1	32	0	46	.09	2	.3	.4	27	SEC
		2	931	44.49	19	23.14	155	14.80	3.26	3.0		30	1	47	.07	2	.3	.3	22	SEC
		2	932	48.26	19	23.21	155	14.91	3.12	2.3	3.6	23	0	69	.07	2	.3	.3	17	SEC
		5	1248	9.84	19	21.36	155	14.07	28.93	3.8	3.2	40	0	56	.10	3	.7	1.1	40	DEP F
		10	13 7	43.93	19	40.52	156	4.07	36.31	3.1	2.8	41	2	235	.11	26	1.0	1.8	34	HUA
		12	555	22.10	19	18.21	155	23.48	6.63	2.8	3.1	28	0	109	.13	9	.5	1.1	25	SWR
		12	19 0	8.37	19	23.21	155	16.92	3.04	3.2		35	0	37	.11	0	.2	.2	27	SSC F
		14	1256	39.31	19	24.10	155	16.50	2.34	2.9	3.2	29	0	44	.11	0	.3	.2	28	SEC F
		14	2130	4.75	19	21.72	155	15.00	9.36	2.9	3.0	34	0	64	.10	2	.4	.4	26	SF1
		15	1259	25.90	19	19.68	155	11.09	8.47	3.1	3.1	32	1	93	.10	5	.4	.6	27	SF3 F
		17	1616	13.66	19	46.99	155	22.55	25.34	3.8	3.4	44	3	87	.10	9	.6	1.5	41	KEA F
		18	013	17.73	19	28.18	155	26.56	10.79	3.5	3.1	37	1	64	.11	6	.4	.6	34	KAO
		18	643	13.55	20	16.63	155	46.57	.03	3.3	2.7	38	1	307	.12	63	4.7	1.4	33	KOH *
		19	918	42.91	19	23.39	155	14.75	3.63	3.1	3.0	30	0	63	.09	3	.3	.4	25	SEC F
		20	1642	39.16	19	23.06	155	14.53	3.71	2.9	3.0	38	0	48	.11	3	.3	.4	30	SEC F
		24	1648	10.64	20	3.71	155	56.99	10.30	3.7	3.5	37	2	289	.10	43	1.8	1.2	30	KOH F
		26	030	6.95	19	20.08	155	12.17	10.01	3.6	3.5	37	0	134	.09	5	.6	.4	33	SF3 F
	MAR	1	1938	28.20	19	46.78	156	41.42	16.27	4.2	4.5	31	0	298	.12	87	5.9	99.0	23	DIS *
		2	524	57.18	19	21.93	155	30.33	9.46	3.0	2.7	40	1	60	.08	5	.3	.8	30	KAO
1980	MAR	2	9 8	57.83	19	22.11	155	14.26	1.27	2.4	3.0	20	1	54	.12	3	.4	.7	12	SEC
		2	1013	33.64	19	22.60	155	14.78	1.16	2.4	3.0	28	1	52	.10	2	.3	.3	20	SEC
		2	1022	19.44	19	22.08	155	14.29	1.28	2.4	3.1	21	2	81	.07	2	.2	.4	13	SEC
		2	14 7	6.73	19	22.66	155	14.39	.91	3.1	3.5	20	0	74	.09	2	.2	.4	18	SEC
		5	021	6.96	18	47.70	156	11.51	32.07	3.1	3.3	9	0	311	.08	59	13.4	5.0	8	DIS
		7	1947	42.48	19	19.81	155	11.36	9.54	3.2	3.5	38	0	89	.08	5	.4	.5	27	SF3 F
		8	1646	5.82	19	20.58	155	6.48	8.67	2.9	3.4	41	2	103	.09	5	.4	.5	31	SF4 F
		9	1627	20.71	19	19.70	155	13.34	9.47	3.1	3.0	39	0	69	.10	5	.4	.4	34	SF2
		12	257	52.71	19	21.51	155	14.18	1.92	3.9	4.5	35	0	57	.13	3	.2	.5	33	KOA
		14	22 4	8.22	19	20.90	155	6.22	8.26	3.0	3.1	37	2	98	.09	4	.4	.6	24	SF4
		15	542	9.93	19	26.05	155	23.83	11.59	3.2	2.7	35	0	49	.09	3	.4	.7	25	KAO
		21	746	39.84	19	31.56	156	1.83	13.45	3.3	2.8	25	0	232	.12	13	1.9	.5	17	KON F
		21	1256	20.21	19	46.26	155	32.32	15.00	3.7	3.5	40	2	89	.10	9	.5	.6	36	KEA F
		22	1 9	53.53	19	26.52	155	23.61	10.70	3.3	3.1	42	2	46	.10	4	.3	.5	36	KAO F
		25	1916	31.75	19	59.15	155	50.61	4.84	4.0	3.5	35	3	193	.09	17	.7	.8	28	KOH F
		26	1056	40.08	19	41.95	155	10.39	29.43	3.4	2.5	37	1	168	.10	25	.7	2.2	35	KEA
		27	2324	2.61	19	19.31	155	17.15	34.48	3.3	2.9	36	0	103	.10	2	.7	1.3	35	DEP
		28	832	3.02	19	23.99	155	28.18	9.31	3.1	2.8	37	1	31	.12	3	.4	.7	32	KAO
	APR	7	017	41.64	19	22.52	155	27.20	10.05	3.4	3.3	38	2	62	.12	1	.4	.6	36	KAO
		12	940	9.56	19	23.21	155	29.72	9.60	3.2	3.1	42	4	56	.09	4	.3	.6	35	KAO
		16	2030	44.86	19	21.76	155	4.89	8.83	3.0	3.1	38	1	79	.10	5	.5	.5	35	SF5
		16	2213	.90	19	10.12	155	28.82	33.65	3.4	3.0	39	2	101	.07	2	.7	1.3	35	DLS
		17	1414	45.45	19	27.27	156	3.00	42.75	3.2	2.8	36	1	238	.09	14	1.3	1.9	35	KON
		17	1616	45.50	19	27.05	155	14.39	33.06	3.2	2.8	43	3	39	.10	4	.6	1.1	40	DEP
		17	1620	4.41	19	27.25	155	14.40	32.63	3.0	2.6	44	4	40	.10	5	.6	1.0	40	DEP
		17	1622	5.41	19	22.35	155	18.70	31.63	3.1	2.8	45	4	36	.10	3	.6	.9	40	DEP
		18	2220	54.55	19	26.29	155	25.15	6.13	2.9	3.1	40	2	37	.12	2	.4	.9	32	KAO F
		30	046	23.64	19	25.07	155	25.20	10.75	3.3	3.4	42	3	31	.12	0	.4	.5	38	KAO
		30	1622	14.02	19	17.41	155	6.02	10.80	3.4	3.5	40	2	201	.12	7	.8	.5	36	SF4
	MAY	4	23 7	37.65	19	13.71	155	33.11	11.24	3.9	4.0	37	0	123	.13	6	.6	.6	35	LSW F
		5	2054	43.02	19	20.80	155	6.18	8.63	3.1	3.0	44	3	100	.10	4	.4	.5	34	SF4 F
		6	4 8	36.77	19	23.97	155	25.69	10.84	3.6	3.6	45	2	41	.14	3	.4	.5	42	KAO F
		7	2342	33.40	19	44.05	155	44.74	12.43	3.4	3.5	40	0	114	.10	11	.5	.5	37	HUA F
		12	652	31.45	19	20.23	155	13.69	9.99	3.4	3.3	41	2	59	.09	5	.4	.3	38	SF2
		12	1440	27.14	19	19.46	155	6.55	9.43	3.3	3.2	41	1	131	.11	5	.6	.4	37	SF4 F
		12	1443	44.64	19	19.83	155	6.54	9.02	3.4	3.2	40	1	121	.09	5	.6	.4	37	SF4 F
		12	1718	48.51	19	27.73	155	14.57	33.13	3.1	2.8	45	2	41	.10	6	.5	1.1	42	DEP
		16	1921	22.32	19	23.63	155	15.25	3.22	2.7	3.1	32	1	49	.11	2	.3	.4	29	SEC
		19	1515	12.17	19	22.53	155	6.47	1.32	2.7	3.4	29	0	68	.10	1	.3	.4	22	SME
		21	1 7	54.46	19	20.57	155	9.22	7.64	2.5	3.0	37	4	94	.10	3	.4	.8	26	SF3
		22	1828	39.03	19	20.57	155	17.00	33.32	3.8	4.1	41	0	75	.10	1	.7	1.1	40	DEP F
		28	8 4	50.94	19	19.13	155	13.76	10.13	3.2	3.4	38	0	128	.09	7	.5	.6	34	SF2 F
	JUN	3	026	41.51	19	.59	155	40.14	31.31	3.2	3.2	38	3	152	.07	3	1.1	1.7	33	DLS
		3	1614	18.93	19	22.82	155	6.19	.01	2.4	3.1	26	1	68	.17	5	.5	1.2	20	SME *
		7	146	29.89	19	12.00	155	35.01	7.79	2.6	3.0	33	2	90	.21	7	.6	1.3	23	LSW
		9	0 1	16.71	19	26.03	155	23.75	11.28	3.2	3.2	41	2	55	.10	3	.4	.5	35	KAO
		9	043	23.30	19	25.89	155	23.82	11.68	3.5	3.7	43	2	53	.11	3	.4	.5	41	KAO F
		9	13 4	15.67	19	31.42	156	16.72	34.38	3.1	3.1	27	3	264	.11	38	1.5	2.1	21	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	JUN	14	1234	2.83	19	19.40	155	11.49	8.54	3.0	3.0	43	4	98	.10	6	.4	.5	31	SF3
		17	1339	37.43	19	22.94	155	14.71	3.10	2.5	3.0	25	1	49	.08	2	.3	.4	24	SEC
		17	2037	11.36	19	35.16	156	18.30	37.89	2.9	3.4	38	0	267	.12	42	2.5	1.6	31	KON
		19	1810	49.88	19	13.77	155	39.54	8.89	2.8	3.0	31	0	257	.18	5	1.8	.9	23	LSW
		20	530	37.71	19	23.24	155	5.65	1.53	2.3	3.0	21	0	80	.11	1	.4	.3	14	SME
		23	1943	24.35	19	22.60	155	5.92	1.19	2.7	3.1	26	1	116	.13	1	.4	.2	12	SME
		24	8	5 24.59	19	22.88	155	6.21	1.37	3.4	4.1	32	1	97	.12	0	.5	.3	25	SME
		24	915	17.55	19	22.48	155	6.43	1.14	3.0	3.9	25	0	122	.13	1	.5	.3	18	SME
		25	148	44.44	19	43.38	155	44.34	16.36	3.3	3.5	44	3	105	.09	11	.5	1.6	37	HUA F
	JUL	4	1936	.66	20	53.05	157	47.47	9.70	3.7		16	6	206	.15	64	1.6	2.0	14	DIS
		8	352	6.14	19	21.22	155	7.82	8.41	2.9	3.0	39	3	77	.09	4	.4	.6	33	SF4
		9	1042	13.06	19	22.82	155	14.55	3.43	3.0		33	1	50	.09	3	.3	.4	27	SEC
		16	14	9 14.65	19	19.42	155	11.08	8.80	2.8	3.0	33	3	99	.08	5	.4	.7	26	SF3
		18	126	30.05	19	22.86	155	4.87	1.81	3.3	3.9	27	1	167	.15	2	1.0	.5	22	SME
		18	1031	10.57	19	31.54	155	28.12	3.80	3.2	3.3	39	1	68	.11	1	.4	.7	35	MLO
		18	1930	48.92	19	19.79	155	11.61	8.95	2.7	3.0	38	2	88	.08	5	.4	.6	32	SF3
		20	855	34.92	19	20.06	155	11.76	9.82	3.0	3.2	42	1	82	.08	5	.4	.3	38	SF3
		27	1135	44.00	18	43.42	156	18.73	35.42	3.7	3.9	46	4	312	.08	74	1.5	1.6	42	DIS
		28	618	7.15	19	20.69	155	30.00	11.15	3.4	3.3	42	0	65	.09	5	.4	.5	39	KAO
	AUG	1	142	15.56	19	23.08	155	14.62	4.96	3.4	3.7	24	1	82	.11	7	.5	1.5	19	SEC F
		1	15	6 33.71	19	17.44	155	21.29	4.02	2.6	3.1	35	1	126	.14	6	.5	1.7	28	SWR
		2	1849	24.46	19	23.47	155	15.19	3.29	2.8	3.0	28	1	52	.08	2	.3	.4	21	SEC F
		2	2044	51.21	19	19.74	155	10.84	9.86	2.8	3.0	42	3	92	.09	5	.4	.5	35	SF3
		5	745	41.92	20	2.87	155	43.46	9.66	2.9	3.0	40	3	145	.10	11	.6	.6	27	KOH F
		5	858	11.05	19	19.60	155	10.50	9.94	3.3	3.3	42	2	95	.08	5	.4	.3	40	SF3
		5	1812	28.23	19	22.67	155	6.44	1.96	2.9	3.1	33	0	67	.10	1	.4	.3	26	SME
		6	1944	7.26	19	23.09	155	6.37	.63	2.4	3.1	28	0	61	.08	0	.4	.2	20	SME
		10	616	6.35	19	22.80	155	6.66	1.67	2.2	3.0	17	0	95	.06	1	.4	.2	9	SME
		11	2042	33.11	19	20.07	155	6.22	10.20	4.2	4.3	42	1	120	.09	5	.6	.4	40	SF4 F
		12	723	44.58	19	20.37	155	6.07	9.72	3.2	3.1	43	2	113	.09	5	.4	.3	37	SF4 F
		12	741	36.80	19	20.42	155	5.96	9.72	2.9	3.0	41	3	112	.08	5	.4	.4	31	SF4 F
		12	11	1 55.95	19	19.84	155	10.48	10.25	3.5	3.6	41	1	90	.08	4	.4	.3	39	SF3 F
		13	1234	58.84	19	22.97	155	6.57	1.48	2.9	3.5	26	1	85	.10	1	.5	.3	20	SME
		13	2127	16.70	19	21.12	155	25.24	10.71	4.1	4.0	46	2	77	.13	4	.4	.5	43	KAO F
		17	1732	48.59	19	15.86	155	27.12	10.53	3.6	3.8	44	4	103	.13	5	.4	.4	37	LSW F
		20	6	6 25.94	19	36.09	156	9.01	24.60	3.6	4.2	39	4	213	.13	27	1.3	2.1	34	KON F
		20	2315	28.36	19	15.62	155	6.58	46.27	3.0	2.7	44	1	200	.09	4	1.0	1.7	42	DEP
		23	1328	57.25	19	23.35	155	16.87	3.01	2.5	3.0	35	4	53	.09	0	.2	.2	25	SSC
		26	1238	26.46	19	19.97	155	11.73	9.42	3.0	3.1	46	4	84	.09	5	.4	.4	35	SF3
		27	158	53.97	19	54.60	155	17.04	38.12	3.0	3.0	44	2	194	.10	7	.7	1.5	37	KEA F
		27	1525	58.73	19	23.49	155	14.80	3.52	3.1	3.0	34	1	46	.09	2	.3	.4	28	SEC
		27	1535	35.66	19	23.50	155	14.84	3.30	2.7	3.0	36	0	45	.09	2	.3	.4	30	SEC
		27	1626	54.93	19	23.46	155	14.65	3.15	3.0	3.1	40	0	45	.09	2	.3	.4	33	SEC
		27	1634	1.24	19	23.10	155	14.81	.51	3.6	4.1	43	1	48	.11	2	.2	.3	33	SEC F
		27	2048	45.16	19	23.33	155	15.59	1.49	3.1	3.6	30	1	38	.12	2	.2	.3	23	SEC
		28	1	4 14.11	19	24.02	155	15.87	3.04	2.6	3.3	33	1	43	.10	1	.3	.3	25	SEC F
		28	14	6 57.07	19	23.23	155	15.56	1.04	3.5	3.9	38	2	40	.13	2	.2	.3	31	SEC F
		31	9	2 41.51	19	54.21	155	36.56	14.36	2.6	3.0	26	3	128	.07	21	.5	.6	18	KEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	AUG	31	1816	53.76	19	20.80	155	6.46	9.12	3.7	4.0	43	2	99	.11	4	.5	.4	35	SF4 F
		31	2012	58.04	19	26.64	155	24.22	6.75	2.7	3.2	37	1	45	.13	3	.4	1.0	26	KAO
	SEP	2	523	5.75	19	19.81	155	13.37	9.31	2.8	3.3	41	2	68	.09	5	.4	.4	36	SF2
		3	1043	6.28	19	21.51	155	1.21	8.03	3.2	3.1	41	3	182	.09	4	.6	.4	32	SF5 F
		7	621	36.32	19	26.91	155	49.03	9.25	3.0	3.1	36	2	97	.15	9	.5	.6	30	KON
		7	1118	16.29	19	20.28	155	11.68	9.85	2.8	3.0	42	1	79	.08	5	.4	.4	36	SF3
		9	1454	45.57	19	20.44	155	11.88	8.51	2.8	3.1	38	1	75	.11	5	.4	.7	36	SF3
		10	1221	43.49	19	16.71	155	6.91	44.57	3.5	3.4	47	3	192	.11	2	.9	1.4	44	DEP
		12	711	11.58	19	19.70	155	11.10	9.47	3.2	3.3	36	1	155	.08	5	.5	.4	32	SF3
		12	1959	56.09	19	23.37	155	26.32	9.72	3.1	3.0	45	1	49	.13	3	.4	.6	39	KAO
		13	9	4 11.82	19	19.28	155	11.49	9.92	3.2	3.3	41	2	156	.10	5	.6	.4	35	SF3 F
		16	853	53.26	19	19.33	155	9.94	8.86	2.6	3.0	43	2	99	.10	5	.4	.4	34	SF3
		19	2257	11.27	19	20.61	155	3.80	8.63	3.4	3.5	37	0	195	.12	6	.9	.6	33	SF5 F
		21	055	39.99	19	20.55	155	8.65	8.39	2.5	3.1	41	4	170	.10	4	.5	.4	26	SF4
		22	16	4 13.48	19	23.37	155	16.84	2.88	2.6	3.6	35	0	37	.08	0	.2	.2	25	SSC F
		23	1430	55.79	19	11.58	155	19.34	14.74	3.1	3.2	45	3	176	.10	12	.7	.4	38	DEP
		30	2220	7.27	19	26.11	155	37.39	2.90	2.6	3.0	36	2	83	.14	3	.4	.8	27	MLO
	OCT	4	2255	16.59	19	21.50	155	6.78	8.32	3.2	3.2	43	3	83	.09	3	.4	.4	33	SF4 F
		9	11	5 55.65	19	23.00	155	49.51	12.62	3.3	3.1	36	1	120	.13	14	.6	.4	30	KON
		10	226	10.54	19	21.23	155	1.41	7.18	3.1	3.1	45	4	179	.10	4	.5	.4	33	SF5
		12	2350	59.89	19	28.72	154	53.71	2.62	2.6	3.1	13	0	159	.08	1	.5	.2	7	SLE
		14	2034	29.48	19	20.31	155	14.01	9.51	3.4	3.4	47	1	59	.11	5	.4	.3	40	SF2 F
		16	1815	24.72	19	19.77	155	8.90	9.27	2.9	3.0	41	1	79	.10	5	.5	.4	37	SF4
		17	2115	37.84	19	16.86	155	22.27	8.50	3.0	3.4	47	2	128	.14	6	.5	.5	43	SWR
		21	2038	25.07	19	22.62	155	5.12	3.87	3.4	4.0	37	1	75	.13	6	.4	3.4	26	SME
		21	2148	19.63	19	21.88	155	6.85	.50	3.7	4.2	46	2	75	.23	2	.4	.6	31	SME F
		21	22	5 42.17	19	22.15	155	6.26	.57	3.0	3.6	34	3	74	.22	2	.4	.5	25	SME *
		22	1016	55.55	19	28.01	154	53.21	5.17	3.5	3.7	36	0	122	.16	4	.5	.9	24	LER F
		22	1542	17.03	19	23.10	155	5.05	.99	2.4	3.1	31	0	77	.14	2	.3	.3	10	SME
		23	1032	54.87	19	26.27	155	37.59	3.52	2.8	3.0	27	2	185	.16	3	.6	.8	16	MLO
		25	1330	29.17	19	20.18	155	12.88	8.56	3.0	3.0	40	1	69	.13	5	.4	.6	31	SF2
		26	150	42.00	19	26.43	155	38.48	2.94	3.3	3.4	32	1	189	.07	4	.6	.8	27	MLO
		28	047	56.43	19	23.67	155	24.45	10.94	3.1	2.9	42	3	40	.11	3	.4	.5	30	KAO
		30	1029	14.03	19	27.29	155	12.59	27.42	3.6	3.9	43	2	39	.11	6	.5	1.1	41	DEP F
		31	1139	58.05	19	19.92	155	13.15	9.66	3.2	3.5	39	1	69	.10	5	.4	.4	27	SF2
	NOV	2	1451	38.05	19	23.04	155	14.60	2.51	2.4	3.4	16	2	63	.06	3	.3	.3	13	SEC
		2	15	4 49.87	19	22.67	155	14.25	2.75	2.7	3.1	23	2	74	.07	2	.3	.3	20	SEC
		2	1526	12.20	19	22.91	155	14.31	2.96	2.8	3.1	21	1	51	.08	2	.3	.3	19	SEC
		2	1644	33.82	19	22.85	155	14.38	.02	3.2	3.8	33	3	49	.16	2	.3	.3	19	SEC *
		4	622	32.44	19	23.62	155	25.69	11.11	3.5	3.4	43	1	59	.12	3	.4	.4	40	KAO F
		5	2041	42.58	19	18.66	155	13.58	9.87	3.7	3.9	41	0	72	.10	3	.5	.4	38	SF2 F
		9	1757	28.65	19	25.60	155	24.81	10.43	3.1	2.8	40	1	34	.13	1	.4	.6	33	KAO
		11	16	5 22.54	19	23.32	155	26.41	9.06	3.0	2.7	44	2	50	.13	3	.4	.6	36	KAO
		12	1138	2.64	21	28.17	158	15.77	13.74	4.0	4.2	34	1	326	.26	26	4.6	1.6	21	DIS
		14	1822	24.91	19	23.40	155	26.66	8.71	3.5	3.7	44	1	51	.15	2	.4	.6	40	KAO F
		16	1946	38.43	19	20.17	155	11.02	9.63	3.6	3.8	35	1	83	.08	4	.3	.5	30	SF3 F
		17	047	36.54	19	18.11	155	13.34	10.13	3.8	4.0	36	1	89	.10	2	.6	.4	33	SF2
		20	054	3.83	19	20.36	155	13.84	8.94	2.7	3.1	46	3	56	.11	4	.3	.3	33	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1980	NOV	23	131	55.92	19	21.43	155	2.93	9.12	4.2	4.1	46	1	120	.10	3	.6	.4	45	SF5 F
		23	135	40.02	19	21.46	155	2.85	9.01	3.2	3.4	45	3	123	.10	3	.6	.4	41	SF5 F
		23	1646	59.34	19	11.47	155	36.52	9.54	3.0	2.7	40	5	92	.24	7	.6	1.0	28	LSW
		24	943	49.78	19	5.20	155	31.87	13.67	2.9	3.2	38	0	170	.11	11	.8	.4	31	DLS
		26	19 5	34.60	19	21.60	155	6.60	8.62	2.9	3.0	47	4	82	.11	3	.4	.4	35	SF4 F
		28	728	55.59	19	20.10	155	8.25	9.41	2.7	3.1	42	3	82	.08	5	.5	.4	34	SF4
	DEC	1	842	33.52	19	30.83	155	55.22	11.50	3.4	3.6	36	2	209	.12	3	.9	.4	31	KON F
		4	116	19.13	19	23.41	155	16.95	3.15	3.1	3.4	44	2	30	.11	0	.2	.3	37	SSC
		9	15 9	20.64	19	19.99	155	7.02	9.55	3.1	3.1	33	1	108	.07	5	.6	.4	28	SF4
		11	18 2	10.93	20	3.34	156	.84	10.16	3.4	3.5	35	0	173	.14	26	.6	.6	25	KOH
		14	1257	45.97	19	19.85	155	8.20	8.90	3.0	3.2	43	3	85	.09	5	.4	.4	33	SF4
		15	214	.38	19	19.77	155	7.97	9.60	3.1	3.1	45	3	91	.10	4	.5	.4	36	SF4 F
		15	533	8.35	19	19.73	155	12.00	8.63	3.6	3.6	42	2	86	.11	6	.4	.4	37	SF3 F
		15	919	14.41	19	24.79	155	25.70	10.90	3.1	3.0	40	4	39	.12	1	.3	.4	31	KAO
		15	10 7	12.00	19	26.52	155	24.37	8.55	3.1	2.9	38	3	61	.13	3	.4	.7	29	KAO
		15	2011	36.16	19	21.52	155	14.79	10.30	3.5	3.8	44	1	62	.10	3	.4	.4	40	SF1 F
		19	7 9	35.79	20	12.89	156	41.08	2.38	3.5	3.0	31	4	254	.13	76	2.8	1.8	22	DIS
		21	7 4	35.37	19	21.51	155	4.86	8.72	3.4	3.8	39	1	85	.09	4	.4	.4	37	SF5
		22	443	30.87	19	8.94	155	33.47	32.17	3.0	2.9	47	4	129	.08	10	.7	1.2	39	DLS
		22	541	8.67	19	23.36	155	16.78	2.68	2.7	3.1	34	2	39	.11	0	.3	.2	28	SSC
		24	516	1.43	19	25.36	155	15.97	2.37	2.8	3.3	35	2	40	.12	2	.3	.3	31	SNC F
		30	1130	55.31	19	18.01	155	46.64	9.88	3.9	3.5	47	2	89	.12	11	.4	.5	44	KON

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Hawaiian Volcano Observatory
1981 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 81, Part 1

Seismic Data, January to December 1981

By Jennifer S. Nakata, Wilfred R. Tanigawa, and Fred W. Klein

Chronological Summary

By Robert W. Decker

Open-File Report 2007-1341

U.S. Department of the Interior

U.S. Geological Survey

U.S. Department of the Interior
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U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 81, PART 1

SEISMIC DATA, JANUARY TO DECEMBER 1981

This report (map) is preliminary and has not been reviewed for conformity with U.S.Geological Survey editorial standards (and stratigraphic nomenclature). Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S.G.S.

Menlo Park, California

1982

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 81, PART 1

SEISMIC DATA, JANUARY TO DECEMBER 1981

BY

JENNIFER S. NAKATA, WILFRED R. TANIGAWA, FRED W. KLEIN

CHRONOLOGICAL SUMMARY

BY

ROBERT W. DECKER

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summaries present data gathered during the year together with a chronological narrative intended to describe in geologic terms the volcanic activity associated with the seismic events included. The summaries are issued in two parts. Seismic data appears in Part 1, and deformation data appears in Part 2. The seismic summaries are offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has recently shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries will be published separately.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS open file report ("Hawaiian Volcano Observatory Seismic Network History 1950-79," U.S.G.S. open file report 80-302, 1980). It is designed as a reference for users of seismograms and phase data, and so includes and goes a bit beyond the information in the station table in this summary.

CHRONOLOGICAL SUMMARY - 1981

by

Robert W. Decker

Yearly summary: The most notable activity of Kilauea Volcano during 1981 was the major intrusive event into the southwest rift on August 10-12. About 40 million cubic meters of magma moved from the summit storage chamber into a dike 18km long, 4km high, and up to 1m wide. Deformation of the ground surface above the intruding dike indicates that it dips 85 to the SE and reaches to within 250 m of the surface. Since the major M 7.2 earthquake in 1975, there have been 14 intrusions at Kilauea and only 2 eruptions nearly the reverse of the ratio of intrusions to eruptions before the 1975 earthquake. The August 1981 intrusion is the largest one to occur during the last 25 years of geophysical monitoring of Kilauea. The tendency since 1975 for intrusions to not culminate in eruptions is apparently related to the major strain release and reduction of stress on the east and southwest rift zones of Kilauea from the 1975 earthquake. Dikes can now more easily dilate the rift zones than erupt to the surface. Even Mother Nature believes in the principle of least effort. The major question is when will the present slack be used up and Kilauea return to its 1959 to 1975 eruptive habits?

In addition to the major August 10-12 intrusion, there were three other Kilauea intrusive events during 1981. A south summit to upper southwest rift intrusion occurred on January 20. This was followed by a middle southwest rift intrusion that began on January 25, intensified on February 6, and continued intermittently into early June. On June 25, there was a small but rapid intrusion in the south caldera area. It should be mentioned that these rift and summit intrusions are distinguished from the more or less continuous slow filling of the summit magma chamber by the occurrence of earthquake swarms and sudden tilt changes. Both the formation of new dikes by magma fracturing, and the more continuous and more passive upwelling of magma into the summit magma reservoirs are intrusive processes, but their distinction is important in understanding the dynamics of the system. A major change between the intrusions of 1980 (see December 1980 monthly report) and the 1981 intrusions listed in the following table is their location. Until this year, all post-1975 intrusions were into the east rift of Kilauea; beginning in 1981, they have all been into the southwest rift.

KILAUEA INTRUSIONS 1981

Starting Date	Location	Length	Height	Minimum Depth	Volume	Propagation Rate	Local Gases	Electrical Anomalies
Jan. 20	South Caldera	1.5 km	1 km	2.5 km	unknown	20 m/hr	no	no
Jan. 25	SW Rift	18 km	3 km	2 km	>8 X $10^6 m^3$	30 m/hr	CO_2 increase	yes
Jun. 25	South Caldera	1 km	1 km	2 km	unknown	unknown	no	not measured
Aug. 10	SW Rift	18 km	4 km	250 m	40 X $10^6 m^3$	2 km/hr	yes	yes

The experiment in eruption forecasting for Kilauea based on earthquake, tilt, and tidal data shows considerable promise from its first full year of

trial. The results were 77% better than random guessing, but 23% poorer than a perfect forecasting system. The only time during 1981 that the forecasting estimates exceeded the long-term statistical estimates based on historical eruption frequency was a period of 6 weeks preceding the August 1981 intrusive event.

Gas emissions at the summit and along the rift zones of Kilauea have been characterized high and variable in CO_2 content. Major changes in gas composition and volume have both preceded, accompanied, and followed the intrusive events. Confidence in interpreting the seismic and deformation changes related to Kilauea have grown over the years, as long-term and short-term patterns, and "noise" became recognizable. The same can be expected for the gas monitoring program after several more years of sampling and analysis.

Self-potential (SP) and controlled-source electromagnetic induction (EM) surveys on Kilauea have shown marked changes related to the intrusive events near the sensors. Large EM amplitude changes preceded the January 20 intrusion. The EM surveys have also provided a more detailed picture of the resistivity structure beneath the summit area of Kilauea to depths of 6 km.

Mauna Loa Volcano continues to slowly inflate at a more or less steady rate of about 12 million cubic meters per year. This estimate is based on deformation data which indicates the top of the inflating magma chamber beneath Mauna Loa is at a depth of about 5km. Although inflation of Mauna Loa has been continuous since its last eruption 1975, seismicity beneath Mauna Loa has remained at relatively low levels compared to the high number of earthquakes in 1974 and 1975 which preceded the July 1975 eruption.

Twenty-three earthquakes of magnitude 4 or greater occurred beneath or near the Island of Hawaii in 1981. The largest of these, a magnitude 5.3 earthquake occurred on March 5 at 04:09:41 Hawaiian Standard Time about 30 km west of Hawaii. The total number of recorded microearthquakes exceeded 100,000 during 1981. The observatory staff of 26 people consisted of 10 scientists and 16 support personnel, plus several students and volunteers. This group monitored 48 seismic stations, 535 horizontal distance lines, 275km of level lines, 135 tilt stations, 1 tide gage, 127 gravity stations, 12 self-potential lines, 1 electromagnetic induction loop, 4 controlled-source indection loop sensors, and 21 gas-sampling and temperature sites. Some of these monitors are continuously recording; others are observed at various intervals. Most of the data reduction and graphics are handled by an in-house computer system. Ten members of the staff were involved with investigations of eruptions at Pagan Volcano in the Northern Marianas Islands, at Mount St. Helens Volcano in the Cascades, and at various Indonesian volcanoes. Geologic mapping was continued by two USGS geologists closely associated with the Observatory. HVO cooperated with 79 guest investigators on 42 research projects ranging in duration from 2 days to 2 months. HVO staff members and guest investigators presented 31 papers at scientific meetings and published or contributed to 20 papers and 6 open-file reports. HVO also issued weekly, monthly, and annual reports. Hawaii Volcanoes National Park estimated their 1981 visitors at 2,369,000. About 70% of these visitors (1,658,000) stopped at HVO to view Kilauea Caldera and observed our seismic exhibit through the observatory windows. A small fraction of these visitors (980 in 1980), mostly professional geologists, students, and junketing VIPs, were shown the inner workings of the observatory.

It's been a busy year at HVO even without eruptions. From the standpoint of subsurface activity and gas emissions, the volcanoes are continuously active, and we continued to learn a few more answers and many more questions.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory has installed and maintains an extensive telemetering seismometer network on the island of Hawaii. In 1981 the seismometer network consisted of 48 stations; two are low-gain multicomponent stations (optical), ten are three-component, and 38 are vertical only. During 1981, one new station (HTC) was installed on Kilauea's southwest rift. The coverage is most complete on and around Kilauea Volcano. With the exception of HIL, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated on the Island of Hawaii during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1981. Listed are station names, three and four letter codes, coordinates in degrees and minutes, elevation in meters, and other data described below. In addition to seismometers listed in Table 1, a horizontal seismometer of Type 3 or H1 and a long-period, three-component set of Press-Ewing seismometers are operated in the Uwekahuna vault, all recorded on photographic paper.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or radio. These telemetering stations are now all of Type 1, the NCER standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from 36 stations are recorded on two Develocorders using 16mm microfilm. FM signals from the telemetering network are also recorded directly on one-inch magnetic tape. Selected larger events are copied onto condensed FM library tapes which are currently archived in Menlo Park and archived in digital form at HVO as part of the routine location processing. The type of recording used for each station (in addition to magnetic tape for the telemetered stations) is coded in Table 1 as follows: D - Develocorder film, S - smoked paper drum, P - photographic paper, H - Helicorder paper.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Kipapa station operated by the Pacific Tsunami Warning Center). The less sensitive optical records are used primarily for amplitude measurements for magnitude calculations to supplement readings from the high-gain stations. The paper (optical) records as well as the 16mm Develocorder microfilm are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard NCER system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL, table 1) to get the response for an individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20x Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited. CAL factors range from about 1 to 8, averaging about 4. A detailed history of Cal factors and other data is given in F.W. Klein and R.Y. Koyanagi, Hawaiian Volcano Observatory Seismic Network History 1950-79, U.S. Geological Survey Open File Report 80-302, 1980.

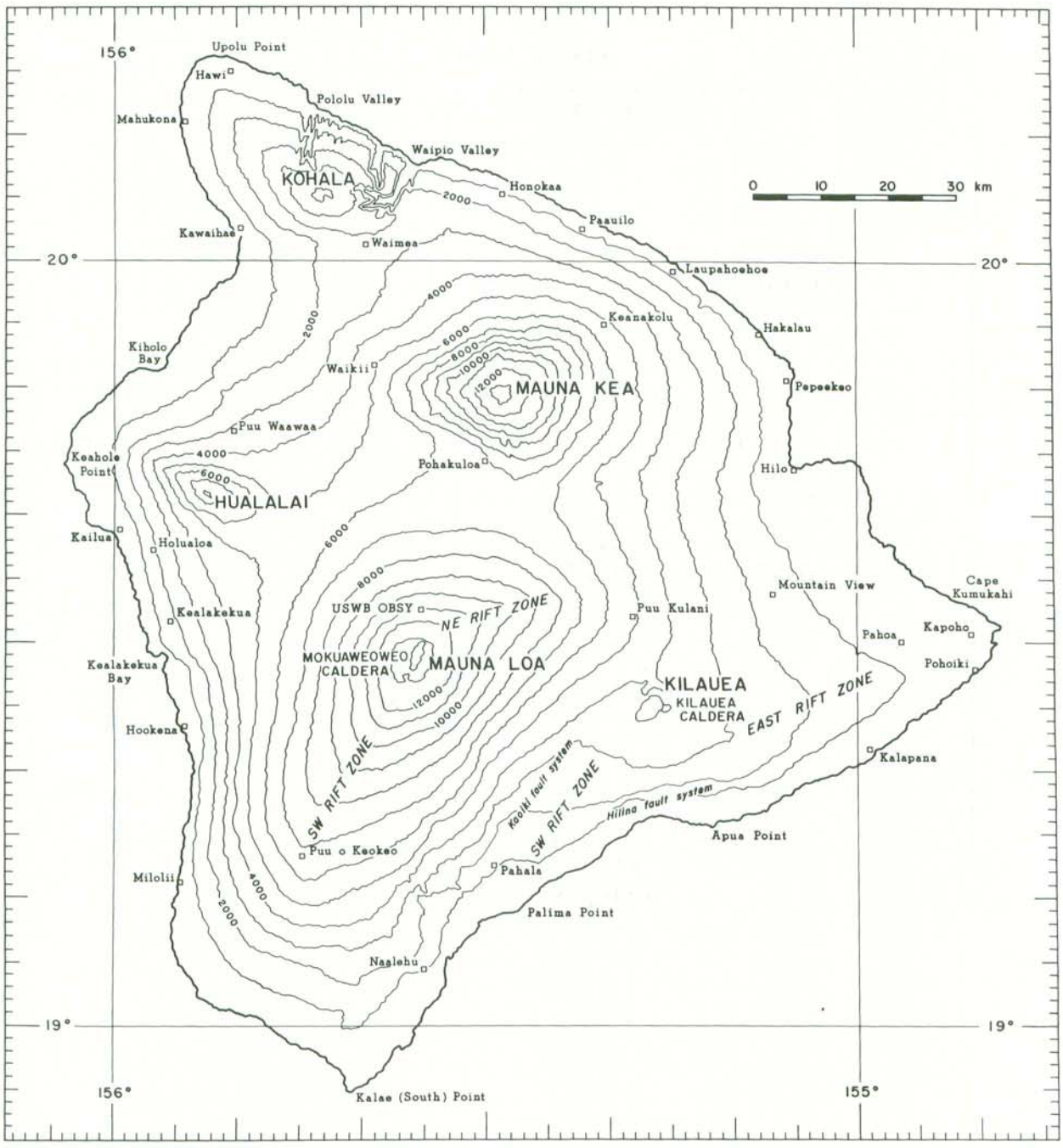


Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

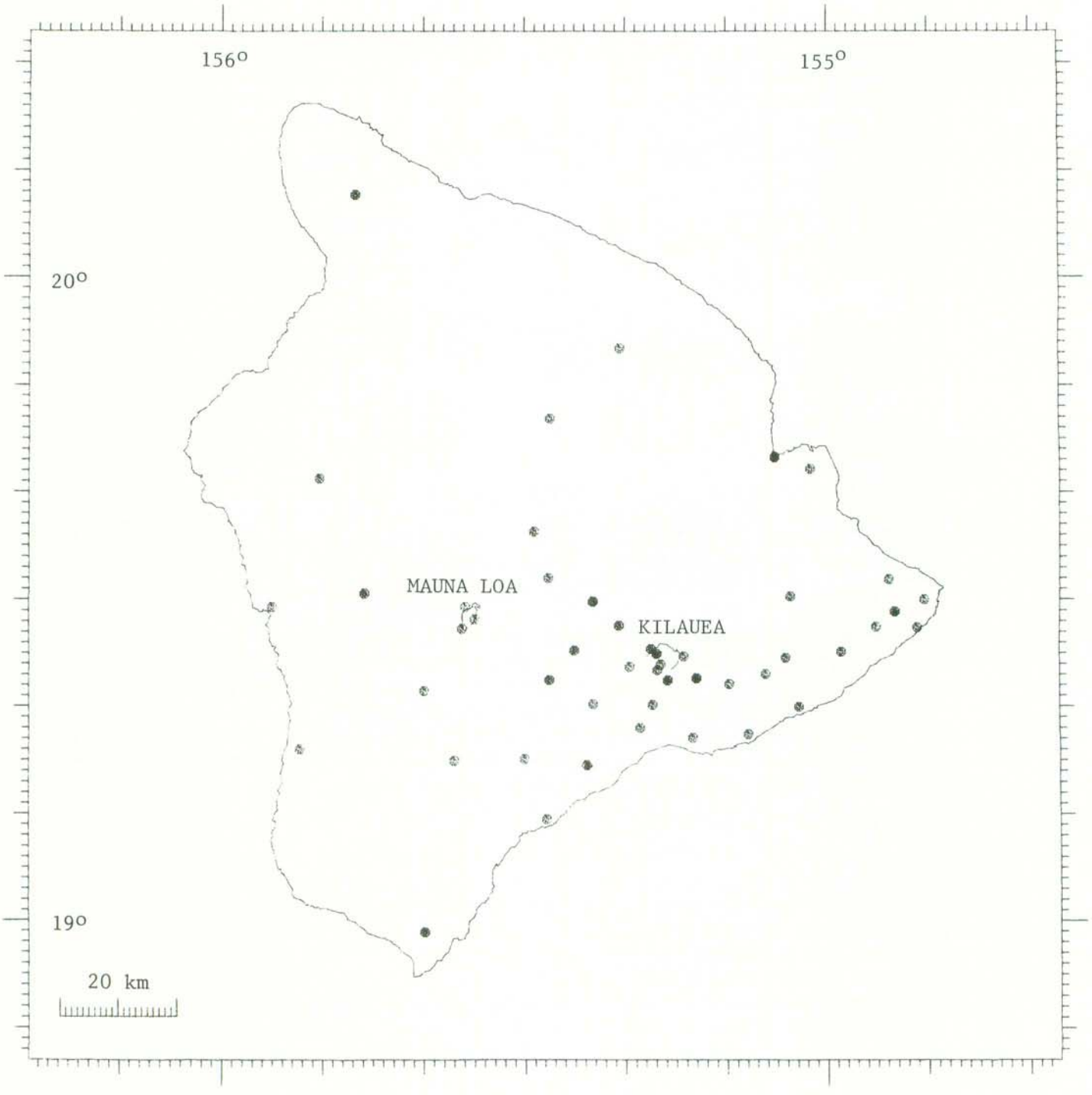


Figure 2. Map of the island of Hawaii showing seismic stations operational during 1981.

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1981.

STATION NAME	CODE	--LAT--- D	M	---LON--- D	M	ELEV (M)	DELAY 1	DELAY 2	CAL	SEIS TYPE	OPTIC RECORD
AHUA	AHU Z	19	22.40	155	15.90	1070	-.10	-.13	2.7	E4	SD
AHUA	AHUE E	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AHUA	AHUN N	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AINAPO	AIN Z	19	22.50	155	27.62	1524	.13	.17	5.5	L4	D
AINAPO	AINE E	19	22.50	155	27.62	1524	.13	.17	.0	L4	
AINAPO	AINN N	19	22.50	155	27.62	1524	.13	.17	.0	L4	
CAPTAIN COOK	CAC Z	19	29.29	155	55.09	323	.00	-.16	3.6	L4	D
CONE PEAK	CPK Z	19	23.70	155	19.70	1038	-.26	-.07	6.0	L4	D
DANDELION	DAN Z	19	21.42	155	40.04	3003	-.27	.03	7.0	L4	D
DESERT	DES Z	19	20.20	155	23.30	815	-.29	-.13	3.0	E4	SD
ESCAPE ROAD	ESR Z	19	24.68	155	14.33	1177	-.17	-.19	2.1	L	D
HAWAIIAN BEACHES	HAB Z	19	31.89	154	53.89	92	-.09	-.24	1.0	L4	
HALEAKALA, MAUI	HAE E	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HALEAKALA, MAUI	HAL Z	20	46.00	156	15.00	2090	.00	.00	.7	H1	P
HALEAKALA, MAUI	HAN N	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HILO	HIE E	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILO	HIL Z	19	43.20	155	5.30	20	.54	.30	1.0	H1	P
HILO	HIN N	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILINA PALI	HLP Z	19	17.96	155	18.63	707	.02	.07	2.6	L4	D
HALE POHAKU	HPU Z	19	46.85	155	27.50	3396	.31	.17	3.7	L4	D
HUMUULA SHEEP ST	HSS Z	19	36.31	155	29.13	2445	.20	.35	2.7	L4	D
HOT CAVES	HTC Z	19	14.33	155	24.02	381	-.16	-.07	.0	E4	
HUALALAI	HUA Z	19	41.25	155	50.32	2189	.67	.38	2.8	L4	D
HEIHEIAHULU	HUL Z	19	25.13	154	58.72	369	-.17	-.16	1.6	E4	DS
HEIHEIAHULU	HULE E	19	25.13	154	58.72	369	-.17	-.16	.0	E4	
HEIHEIAHULU	HULN N	19	25.13	154	58.72	369	-.17	-.16	.0	L4	
KAAPUNA	KAA Z	19	15.98	155	52.28	524	-.12	-.01	3.6	L4	
KAENA POINT	KAE Z	19	17.35	155	7.95	37	-.01	.06	3.0	L4	D
KAOIKI FAULTS	KFA Z	19	25.26	155	25.14	1579	.13	.17	.0	E	H
KAOIKI FAULTS	KFB Z	19	25.26	155	25.14	1579	.13	.17	.0	TE	S
KAHUKU	KHU Z	19	14.90	155	37.10	1939	.03	-.03	2.7	E4	D
KANEKII	KII Z	19	30.56	155	45.90	1841	.15	.37	4.1	L4	D
KIPAPA, OAHU	KIP Z	21	25.40	158	.90	76	.00	.00	.6	H1	P
KEANAKOLU	KKU Z	19	53.39	155	20.58	1863	.68	.24	1.2	L	D
PUU KALIU	KLU Z	19	27.48	154	55.26	271	-.17	-.30	2.9	L4	D
KOHALA	KOH Z	20	7.69	155	46.77	1166	-.03	-.17	1.5	L4	D
KOHALA	KOHE E	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KOHALA	KOHN N	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KIPUKA NENE	KPN Z	19	20.10	155	17.40	924	-.11	-.08	4.3	E	D
KAPOHO	KPO Z	19	30.02	154	50.51	134	-.09	-.24	.0	L4	
KALALUA	LUA Z	19	24.55	155	4.25	622	-.25	-.30	2.8	L4	DH
MAUNA LOA	MLE E	19	29.80	155	23.30	2010	.03	.08	.0	S5	
MAUNA LOA	MLN N	19	29.80	155	23.30	2010	.03	.08	.0	S5	
MAUNA LOA	MLO Z	19	29.80	155	23.30	2010	.03	.08	5.8	L4	SD
MAUNA LOA	MLOE E	19	29.80	155	23.30	2010	.03	.08	.0	L4	D
MAUNA LOA	MLON N	19	29.80	155	23.30	2010	.03	.08	1.5	L4	
MAUNA LOA	MLV Z	19	29.80	155	23.30	2010	.03	.08	.0	S5	
MAUNA LOA X	MLX Z	19	27.60	155	20.70	1475	.06	.15	3.0	L4	
MOKUAWEOWEO	MOK Z	19	29.28	155	35.98	4104	.15	.16	4.0	L4	DH
MAKAOPUHI	MPR Z	19	22.07	155	9.85	881	-.17	-.20	3.0	L4	D
MOUNTAIN VIEW	MTV Z	19	30.25	155	3.75	409	-.02	.01	4.8	E	D
NATIONAL GUARD	NAG Z	19	42.12	155	1.72	18	.54	.30	4.5	E	D
NORTH PIT	NPT Z	19	24.90	155	17.00	1115	-.30	-.18	3.2	E4	SD
NORTH PIT	NPTE E	19	24.90	155	17.00	1115	-.30	-.18	.0	E4	
NORTH PIT	NPTN N	19	24.90	155	17.00	1115	-.30	-.18	.0	E4	
OUTLET	OTL Z	19	23.38	155	16.94	1038	-.19	-.18	4.9	L4	
PAUAHI	PAU Z	19	22.62	155	13.10	994	-.21	-.24	4.6	L4	SD
PAUAHI	PAUE E	19	22.62	155	13.10	994	-.21	-.24	.0	L4	
PAUAHI	PAUN N	19	22.62	155	13.10	994	-.21	-.24	.0	L4	

Table 1 (continued)

PUU HONUAULA	PHO	Z	19 28.90	154 53.40	215	-.09	-.24	2.2	L4	D
PUU HONUAULA	PHOE	E	19 28.90	154 53.40	215	-.09	-.24	.0	L4	
PUU HONUAULA	PHON	N	19 28.90	154 53.40	215	-.09	-.24	.0	L4	
PUU ULAULA	PLA	Z	19 32.00	155 27.67	2992	-.03	.13	5.4	L	D
PUU NAHAHA	PNA	Z	19 14.96	155 25.62	488	-.16	-.07	.0	L	S
POHOIKI	POI	Z	19 27.42	154 51.22	16	-.09	-.24	.0	L4	
POLIOKEAWE PALI	POL	Z	19 17.02	155 13.47	169	-.02	.03	3.0	E4	D
PUU PILI	PPL	Z	19 9.50	155 27.87	35	-.15	-.15	1.4	E4	D
PUU KAMOAMOA	PUK	Z	19 23.00	155 6.25	704	-.25	-.30	.0	E4	D
RIM	RIM	Z	19 23.90	155 16.60	1128	-.21	-.13	.0	L4	
SOUTH POINT	SPT	Z	18 58.91	155 39.92	244	-.17	-.22	1.4	L4	D
SOUTH POINT	SPTE	E	18 58.91	155 39.92	244	-.17	-.22	.0	L4	
SOUTH POINT	SPTN	N	18 58.91	155 39.92	244	-.17	-.22	.0	L4	
SOUTHWEST RIFT	SWR	Z	19 27.26	155 36.30	4048	.01	.04	6.0	E4	D
UWEKAHUNA	USE	E	19 25.40	155 17.60	1240	-.21	.00	1.0	S	P
UWEKAHUNA	USZ	Z	19 25.40	155 17.60	1240	-.21	.00	1.0	S	P
WAHAULA	WHA	Z	19 19.90	155 2.92	29	-.10	-.04	1.1	E4	D
WILKES CAMP	WIL	Z	19 28.15	155 35.02	4037	.22	.17	2.6	E4	D
WOOD VALLEY	WOO	Z	19 15.08	155 30.12	909	-.15	-.06	4.6	E4	D

Table 2. Seismic Instrumentation Types

The codes in parentheses refer to the seismometer types litsted in Table 1.

Type 1. (Codes E, L, and 4) Consists of:

a) Geophone - Electrotech EV-17 (E) or Mark Products L4C (L) 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - USGS/NCER Model J302 or J402 (4) voltage controlled oscillator. Three db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 3. (Code H1) Consists of:
Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. (Code S) Consists of:
Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Type 2 instruments have been discontinued.

Code (W) is a Wood-Anderson torsion seismograph.

Codes (TE) and (S5) are experimental seismometers.

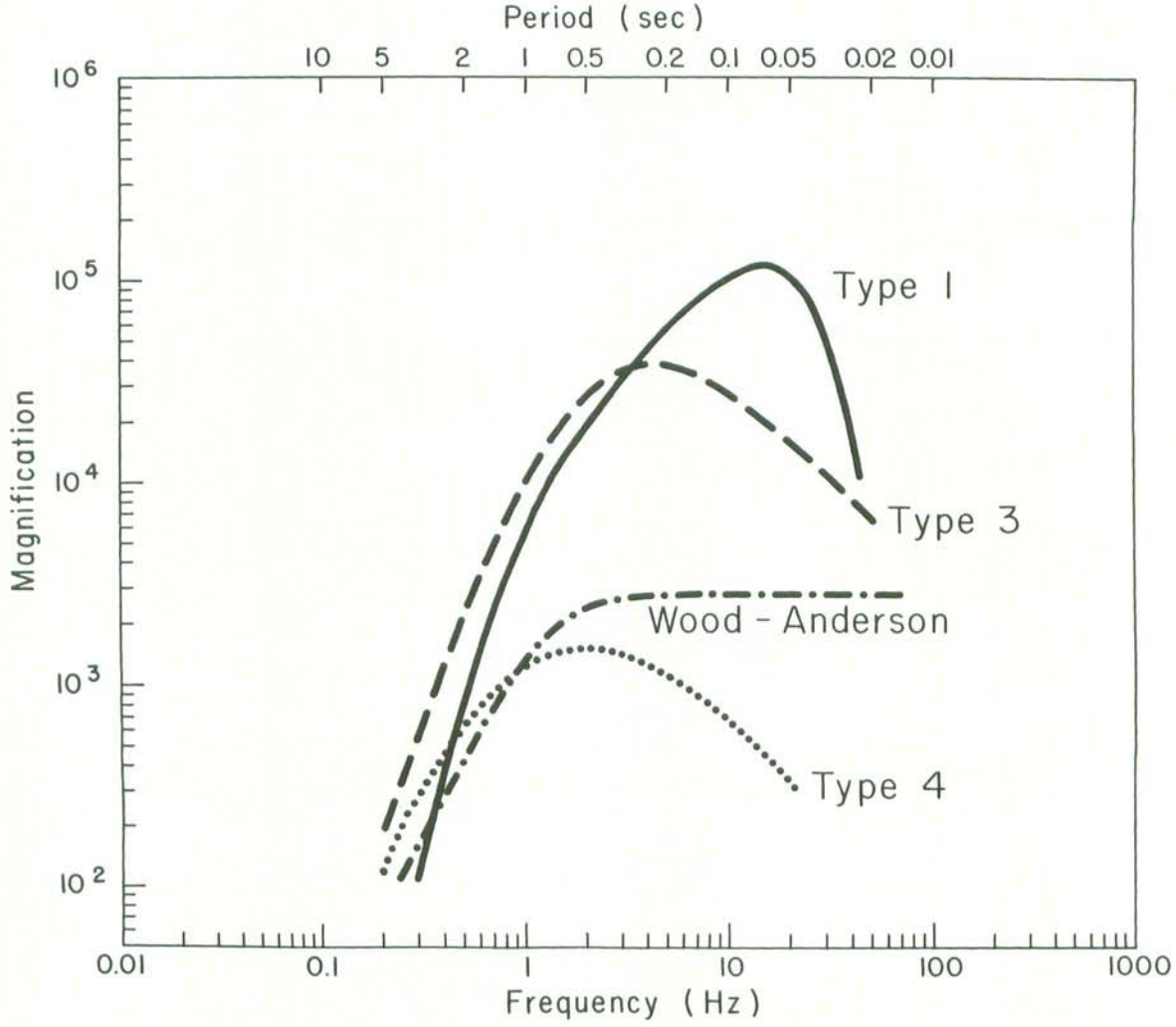


Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard NCER seismometer recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL), to get the reponse for an individual station.

SEISMIC DATA PROCESSING

Develocorder films are scanned for earthquakes, and coda durations are measured for magnitude determination. Events are digitized, timed, and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, F.W., Hypocenter location program HYPOINVERSE, U.S.G.S. Open file report 78-694, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival time and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are in fact separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations and signal or coda duration on short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, KAA, OTL, PPL, KHU, PHO, or WIL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed nearly to the noise level. A bilinear relation is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

The equations used in magnitude determination are:

$$\text{duration } <210 \text{ sec} \quad M = -5.2 + 3.89 \log (F-P) + .013\, Z + .0037\, D$$
$$\text{duration } >210 \text{ sec} \quad M = -.905 + 2.026 \log (F-P) + .013\, Z + .0037\, D$$

where Z and D are the depth and epicentral distance in km.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south half of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters are given in Figures 8-13. The epicenter maps are on different scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and depth. Figures 4-7 are maps of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figures 4-7. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea.

Earthquake categories are:

1) Kilauea summit, short period caldera: shallow earthquakes beneath the caldera.
2) Kilauea summit, long period caldera: earthquakes characterized by low frequency signatures, often originating 5-10 km below the caldera.
3) Kilauea summit 30 km: from about 30 km depth.
4) Kaoiki and southwest rift: southwest rift of Kilauea, western parts of the Koae faults and adjacent Kaoiki fault system.
5) Upper east rift zone of Kilauea including the eastern parts of the Koae faults.
6) Lower east rift zone of Kilauea.
7) Offshore PPL: earthquakes from offshore areas south of the Puu Pili station, including Loihi seamount.
8) Mauna Loa long period: low frequency events near Mauna Loa summit.
9) Mauna Loa short period: shallow earthquakes in the Mauna Loa caldera region.

Tremor is separated into four categories: shallow, intermediate and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs.

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1981	SHORT PER.	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
JAN 1	125	4	2	19	132	15					
2	126	6		27	98	19					
3	83	10		30	104	17				15	
4	220	9		36	158	8				40	
5	171	6		24	145	10			1		
6	461	25		30	136	10	1				
7	446	94		32	153	10			2		
8	290	9		22	150	8			2		
9	240	29		31	133	10			1		
10	154	6		32	138	8					
11	294	40	60	47	176	13	1				
12	242	26		38	165	8					
13	239	30	11	40	166	17		1	1		
14	182	31		23	144	5			4		
15	103	9		32	164	12			8		
16	225	18	5	13	103	15					
17	762	21		13	113	19			1		
18	252	19		41	120	5					
19	311	5	2	25	192	12					
20	1380	11	4	20	122	12					
21	199	10	1	21	137	13			1	6	
22	215	33		17	153	15			4		
23	206	12	3	31	155	23			2		
24	226		2	34	389	31			1		
25	176	6		29	403	9					
26	224	9	2	40	344	16					
27	158	10		11	222	8	1		1		
28	188	15		28	185	15				5	
29	165	8		30	217	9			4		
30	168	15	1	14	142	13					
31	82	4		24	120	15					
FEB 1	102	8		30	202	22			1		
2	67	5	2	47	148	24					
3	185	5		39	168	11					
4	172	2	4	40	159	27					
5	141	1		60	163	4					
6	86	2		140	94	18					5
7	62			333	147	33					18
8	36	3		421	190	8			5		
9	32	1		1262	124	17			1		
10	30	13		1846	96	3					
11	16		2	984	78	12					55
12	38	1		1523	144	3			1		
13	41	7	4	818	89	23			3	28	
14	18	5		830	82	23		1	3	25	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1981	SHORT PER. CALDERA	LONG PER. 30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
FEB15	15	1		756	101	18		2	1	5	
16	22	5	1	739	110	16		2	2		
17	44	1		351	133	7			3	30	
18	36	1		267	85	6			2		
19	36	8		409	108	7			2		
20	17			501	58	14			5		
21	11	1		504	40	13			1		
22	25	6	2	529	87	7		4	7		
23	23	5		432	53	8		1	1		
24	39	1		153	78	6			1		
25	38	3		135	66	13					
26	23			108	59	3			2		
27	29	2	1	71	77	6			4		
28	33	4		120	161	12		1	16		
MAR 1	17	4	2	332	141	5			1		
2	47	2		410	85	7			7	2	
3	17	4		273	56	6					
4	47	3	1	294	83	10			1		
5	53	41		339	91	8			2		
6	99	31		340	81	16			12		
7	108	53		272	101	27			3		
8	57	48		339	108	10			5		
9	31	4		530	103	7			7		
10	33	2		648	129	2			4		
11	56	3		390	97	10			4		
12	31	47	1	354	114	5			2	10	
13	30	21	1	319	114	11			1	4	
14	73	5		425	125	15			2		3
15	40	6	7	939	123	13			1		
16	22	4		417	118	8			2		
17	31	1	1	349	114	10		1	2		
18	117	10	1	367	139	4			1		
19	79	140		380	161	10			4	15	
20	78	34	4	194	123	14		25	29		
21	154	22	1	108	170	14		42	50		8
22	73	2	2	214	156	20		8	11	4	
23	67	5	1	346	113	17		10	31		
24	56	10		383	159	13		4	31		
25	39	61		314	100	12		1	7		5
26	90	16		349	130	14		1	7		
27	60	2	1	321	103	7		1	17		
28	46	9	1	176	86	9			2		
29	110	32		111	92	8			5		
30	118	10	2	164	147	10		4	25		
31	123	14	1	172	144	2		3	16		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1981	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
APR 1	83	2	1	303	87	9			1			
2	192	10		199	128	1			4			
3	111	22	1	122	110	4		6	7			
4	96	11	2	124	179	13		2	8			
5	140	21		302	236	12				4		
6	110	1	1	204	113	6			2			
7	95	6		260	138	4			5	7		
8	144	3	2	147	139	7			4		5	
9	127	16		133	335	3			5	15		
10	70	4		85	174	12		5	11		33	
11	69	2		101	148	23	1	10	15			
12	104	15		146	178	12		1	5		15	
13	124	2		125	145	12		1	2			
14	119	15	2	138	189	6			1	6		
15	89	8		98	174	8			7		28	
16	84	9	2	94	173	17			6		5	2
17	101	2	2	55	197	10		1	22			
18	114	1	1	63	137	11			7		10	
19	165	4		59	207	12			5			
20	229	18	1	49	180	6			5		15	
21	118	11	1	50	147	11			3			
22	102	23		59	144	15			5		30	
23	67	1		43	129	7			2			
24	245	6	3	56	137	17		5	3			
25	223	10	1	33	113	8			3			
26	389	9		91	277	12			4			
27	253	8		47	205	11		3	1		4	
28	235	12		101	299	6				15		
29	292	5	1	68	580	18		2				
30	142	2	1	68	154	36		2				
MAY 1	63	4		51	118	18		8	7			4
2	119	17	4	64	120	21		8	3	5		
3	120	12		125	164	14						
4	272	15		216	144	18						
5	292	18		101	215	8						
6	203	10		111	188	13						
7	265	6		100	322	17		1	3			
8	115	3		99	87	12		2	3			
9	201	24		165	144	9		3	2		3	
10	148	2		174	203	13	1				41	
11	127	3		207	157	10			6			
12	77	5		187	123	5		2	1		4	
13	240	12		169	151	11						
14	170	5		187	161	5		1			49	
15	198	3		187	172	9			1		5	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1981	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
MAY16	150	61		222	227	6			2	64	
17	80	187		110	111	10			1		
18	166	103		92	117	7					
19	161	28		83	101	5			1		
20	220	44		131	141	13		2	3		
21	202	39	1	130	158	4			2	4	
22	129	10	1	97	145	6		1			
23	301	18		99	193	11			3	5	
24	217	22		146	341	18		2	1		
25	152	11		252	330	10			1	21	
26	212	15		205	232	10			1		26
27	202	14		226	182	8			2		47
28	164	35		189	180	13			1		
29	186	6		119	87	6		1	3		
30	109	52	3	102	80	8			4		
31	107	29	1	154	133	14					20
JUN 1	97	32		129	129	8			3		60
2	116	23		81	184	1			2		
3	121	10		121	129	6		1	10		
4	151	21		111	112	12			5		
5	242	9		41	105	19			4		
6	485	43	1	47	117	8			5		
7	320	10	2	35	123	7			2		
8	215	6	1	30	113	14			1		38
9	135	20	1	55	107	2			3		25
10	109	22	1	38	113	12			3		
11	69	8		49	125	8					
12	166	33		45	157	1		2	1		3
13	413	53		51	147				1		9
14	308	23		65	96			1	1		
15	498	18	1	70	146	7			2		
16	129	1	1	46	126	16		2	4		
17	258	42		61	156	1			6		
18	179	9	1	46	102	10		2	4		
19	141	10		69	123	6		1	2		
20	123	1	2	57	129	16			5		
21	112	7	1	42	117	5			2		
22	110	13		58	140	13			6		
23	108	11		61	99	33		3	7		
24	197	27	2	59	150	3			9		
25	1442		4	38	145	19		1	4	65	3
26	910	21	1	33	112	15		2	2		3
27	572	4	1	36	124	18			4		
28	225	9		47	97	3			1		
29	64	3		25	74	10					

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1981	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
JUN30	148		1	31	103	4		1			5	
JUL 1	184	26		36	159				1			
2	130	29		13	112	24		18	6	11		
3	199	20		14	100	12		9	6	4	4	
4	127	29	3	21	109	15		6	1	6		
5	305	6	3	35	120	7		2	9		48	
6	243	3		40	124	3			1			
7	268			20	125	21		4	4		99	
8	308			28	151	6		1	2			
9	250	9	1	32	105	9			3			
10	264	8		28	123	16		1	5			
11	314	23	3	30	149	18			1			
12	258	72	1	25	94	5		1	2			
13	167	65		33	124	2			1			
14	192	4	1	19	92	7		1	3		41	
15	190	30		23	107	10		2				
16	419	16	2	38	133	2			6			
17	451	19	1	22	95	17		3	6		10	
18	246	3		34	78	12		3	3			
19	241	15	1	32	79	14		3	1			
20	433	20		24	150	6						
21	232	6		28	67	16			1			
22	303	37		27	105	9			2			
23	307	8		30	95	34			1	5		
24	377	36	1	15	61	20		6	4			
25	383	26		30	63	18		7	5			
26	489	13	1	31	85	27		1	3			
27	262	32		57	168	11			4	55		
28	342	12		18	101	35			3			4
29	319	14		26	124	6			1			
30	351	31		41	89	28					27	
31	515	28		26	93	17			5		6	
AUG 1	384	26	5	23	166	14			4			
2	155	1	4	27	200	16			1			
3	117			23	237	5			1			
4	284	6	1	16	226	11			1			
5	136	1	1	38	374	3			10			
6	408	19	1	24	118	13			1			
7	433	1		39	106	4		2				
8	337	109		26	131	14		6	2	3		
9	1082	42	1	46	106	7			5	300		
10	320	29		2783	143	3			2	1200		
11	129	130	1	5760	58	2		1	1			
12	80	547	1	4152	100	4			8			
13	29	914		2634	78	12		2	2			

	KILAUEA SUMMIT			KILAUEA FLANK			MAUNA LOA		TREMOR (MINUTES)	
DATE 1981	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
AUG14	44	1851		904	61	1			5	287		
15	33	148		476	62	10		1	7	1440		
16	12		9	404	105	4			20	1440		
17	11	4		501	66	11			5	1440		
18	18			666	106	9			1	1440		
19	21	15	2	403	90	8			11	1440		
20	40	61		394	105	14		3	17	650		
21	25	36	1	312	101	15		1	13			
22	29	76	2	353	125	7			8		9	
23	42	82		353	143	10		3	3	2		
24	38	27		407	124	5			15			
25	31	74		355	122	11		7	8	13	26	
26	25	21		292	118	10			9			
27	37	20		286	81	10		2	5			
28	29	14	1	271	109	22		1	3			
29	28	13	2	292	103	11		1	11			
30	26	5	2	231	117	9			14			
31	31	8		223	108	4			2		16	
SEP 1	32	23		214	134	13		3	6			
2	29	3	1	171	86	8						
3	21	5	2	86	103	1			7		3	
4	18	9		114	99	21		1	8		23	
5	15	9	1	80	121	8		2	9			
6	12	1		86	80	11			7		38	
7	43	18		185	110	5			4			
8	38	3	1	99	104	5			7		6	
9	43	8	2	170	138	2			4		3	
10	26	12	3	149	105	6		2	10			
11	51	21	1	137	93	10			9			
12	36	10	2	82	128	10			12			
13	59	11	3	74	132	7			20			
14	29	10	2	117	100	3			17			
15	40	7	4	107	101	13		1	11	2		
16	49	9	2	127	100	6			45			
17	39	8	1	66	70	4			7			
18	41	8	1	103	101	12			12			
19	53	8	2	87	118	10			7			
20	50	8	3	97	117	6			9			
21	36	4		122	149	2			4		4	
22	29	3		41	139	4			1			
23	36	14		77	114				1			
24	53	5		84	106	1			4			
25	27	4	8	49	65	7			7		58	
26	28	7		34	87	5			11		34	
27	51	76	3	75	115				3			

	KILAUEA SUMMIT			KILAUEA FLANK			MAUNA LOA		TREMOR (MINUTES)		
DATE 1981	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
SEP28	67	12		78	136	1			9			
29	48	13	1	75	113	15		1	1			
30	34	14	2	95	94	1			5			
OCT 1	49	8	2	55	134	30			2	4		
2	37	10	2	69	101				9		6	
3	71	7		60	131		2	3	19			
4	63	3	3	59	121	6		2	27		12	
5	69	11	1	54	123	5			18			
6	75	21	1	38	117	28		1	4	3	10	
7	106	19		87	124	2			6			
8	65	9	3	37	115	3			6			6
9	63	25	2	43	105	13		2	2		15	
10	71	3	1	58	112	20			5			
11	54	4	3	54	96	18		4	13			
12	114	9		96	157	3			51			
13	93	5	2	79	114	9			10			
14	113	7		95	122	8			12		22	
15	98	37	1	52	115	10			16			
16	39	5	2	25	98	18			8	9		
17	48	1		27	94	20			7			
18	125	14	5	42	119	21			9			
19	134	18		72	180	1		3	8			
20	119	8	2	42	116	14			2			
21	90	10		51	109	2			17			
22	82	7	3	51	116	3		1	22		27	
23	108	3	2	38	137	4		2	23			
24	143	6	2	36	154	1		1	30		4	
25	111	10	2	27	129	1			24		4	
26	93	2		69	96				17			
27	82	3	23	72	132	2			21			
28	94	8	3	52	154	2			9			
29	94	4	5	75	105	1		1	14	7		
30	71	4	3	43	100	19		3	8	6		
31	81	4	4	35	106	10		1	11		4	
NOV 1	122	8	1	38	104	4			10			
2	103	56	1	64	140				8	6		
3	146	7		45	83	3			9		8	
4	125	25		53	152	2			12			
5	97	8	1	40	135	5			20			
6	59	20		17	66	5			13		25	
7	40	16	1	16	72	9			13			
8	112	5		50	135	12			10		40	
9	102	18		53	442	6			14			
10	104	20	2	46	232	12		1	5			
11	71	33	1	40	160	3			6			

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1981	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
NOV12	68	8	1	29	109	19			1	5	
13	115	15	1	29	112	16			2		4
14	106	24	2	36	111	15			3		
15	103	15		31	92	17			5		
16	126	24	1	72	133	4			1		
17	186	4	3	27	122	9		1	5		
18	136	1		46	110	6			4		
19	96			18	70	19			4		
20	71		2	24	57	11	1		1		
21	69	4	1	13	79	16			2		
22	154	2	1	37	94	5	2		3		
23	118	5		34	91	9					
24	59			50	89	5			1		
25	70	2		39	77	8			2		25
26	101	1		44	82	8			1		
27	122	3	2	56	92	2			3		
28	145	7	2	38	76	12			1		
29	128	2		37	95	17			5		
30	96	5		35	67	3			1		
DEC 1	33	1		36	73	5			3		2
2	53	12		18	65	6			2		
3	77	18		51	70	9			2		
4	84	2	2	52	71	6					
5	131	1	1	35	74	8		2		2	
6	113			37	89	17			2		
7	80	43	1	44	70	2					
8	49	53	3	15	59	10			2		5
9	132	1		31	60	1			3		
10	161	2	1	25	57	11			2		
11	128	3		33	63	23			2		9
12	82	2	1	33	78	20		4			
13	69	2	2	36	67	11		2	3		
14	91	1	1	39	72	21		3	3		
15	147	1	3	43	78	25		3			4
16	61	7	2	36	103			8	3		
17	129	3		43	102			1	3		
18	234			29	73	8			2		
19	176	5	1	18	103	14			3		
20	93	11	1	16	74	14					13
21	308	6	3	44	82	20					3
22	176	2	1	28	90	2			4		
23	253	5	1	41	86	6					
24	305	1		22	90	13		3		5	
25	562	1		19	44	4					
26	311	10	2	28	78	6			2		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1981	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
DEC27	256	2	1	49	78	16		3	3		
28	277	10	1	32	118	2			7		
29	239	6		57	120	1		3	6		
30	232	4		53	116			3	6		
31	140	8	2	14	79	12		5			

Table 4. Coordinates of named earthquake regions.

--All earthquakes are in one of the following groups.
--Identified by a numerical class or 3-letter code:

--Shallow:
1 SNC - Shallow north caldera (0-5 km)
2 SSC - Shallow south caldera (0-5 km)
3 SEC - Shallow east caldera (0-5 km)
4 SER - Shallow east rift (0-5 km)
5 SME - Shallow middle east rift (0-5 km)
6 KOA - Koae fault zone (0-5 km)
7 SSF - Shallow south flank (0-5 km)
8 SLF - Shallow lower east rift (0-5 km)

--Intermediate depth:
9 SF1 - Kilauea south flank (5-13 km) (west end)
10 SF2 - Kilauea south flank (5-13 km)
11 SF3 - Kilauea south flank (5-13 km)
12 SF4 - Kilauea south flank (5-13 km)
13 SF5 - Kilauea south flank (5-13 km) (east end)
14 LER - Lower east rift (5-99 km)
15 MLO - Mauna Loa (0-13 km)
16 LSW - Lower SW rifts of Kilauea & Mauna Loa (0-13 km)
17 GLN - Glenwood (0-13 km)
18 SWR - SW rift (0-13 km)
19 INT - Intermediate caldera (5-13 km)
20 KAO - Kaoiki (0-13 km)

--Deep:
21 DEP - Deep Kilauea (>13 km) (below regions 1-13, 17-19)
22 DLS - Deep lower SW rift (>13 km) (below region 14)
23 DML - Deep Mauna Loa (>13 km) (below regions 15, 20)

--Outer regions, all depths:
24 LOI - Loihi (all depths)
25 KON - South Kona (all depths)
26 HUA - Hualalai (all depths)
27 KOH - Kohala (all depths)
28 KEA - Mauna Kea (all depths)
29 HIL - Hilo (all depths)
30 DIS - Distant, everywhere else

Table 4 (continued)

--The latitude and longitude limits of the regions are given below.
--When the coordinates imply an overlap, precedence is given as in the maps.

No.	Code	N.Lat.	S.Lat.	W.Lon.	E.Lon.
1	SNC	19 28	19 24.5	155 19	155 14
2	SSC	19 24.5	19 22	155 19	155 16.5
3	SEC	19 24.5	19 22	155 16.5	155 14
4	SER	19 26	19 20.5	155 14	155 07.2
5	SME	19 26	-----	155 07.2	155 00
6	KOA	19 22	19 20.5	155 17	155 14
7	SSF	-----	19 10	155 17	155 00
8	SLE	19 32	19 16	155 00	154 40
9	SF1	19 22	19 10	155 17	155 14.5
10	SF2	19 26	19 10	155 14.5	155 12.3
11	SF3	19 26	19 10	155 12.3	155 09.1
12	SF4	19 26	19 10	155 09.1	155 05.3
13	SF5	19 26	19 10	155 05.3	155 00
14	LER	19 32	19 16	155 00	154 40
15	MLO	19 43	19 19	155 35	155 19
16	LSW	19 19	18 40	155 43	155 25
17	GLN	19 43	19 26	155 19	155 00
18	SWR	19 22	19 10	155 25	155 17
19	INT	19 28	19 22	155 19	155 14
20	KAO	19 30	19 19	155 32	155 19
21	DEP	19 43	19 10	155 25	155 00
22	DLS	19 19	18 40	155 43	155 25
23	DML	19 43	19 19	155 35	155 19
24	LOI	19 10	18 40	155 25	155 00
25	KON	19 39	19 00	156 20	155 43
26	HUA	19 55	19 39	156 20	155 43
27	KOH	20 25	19 55	156 20	155 34
28	KEA	20 25	19 43	155 43	154 40
29	HIL	19 47	19 32	155 09	154 40

Figure 4. Earthquake classification, shallow 0-5 km deep Kilauea and east flank Mauna Loa.

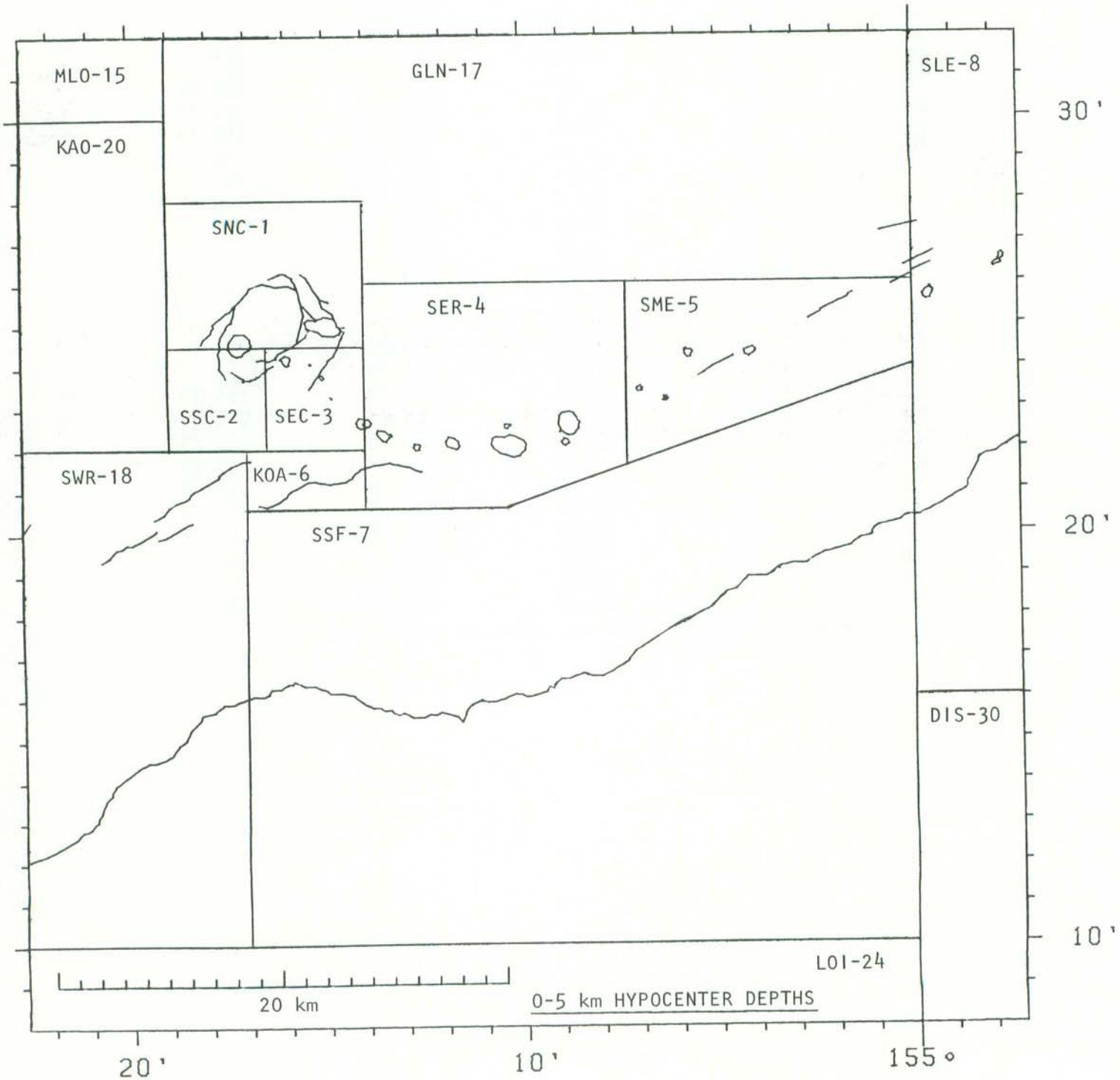


Figure 5. Earthquake classification, intermediate 5-13 km Kilauea and east flank Mauna Loa.

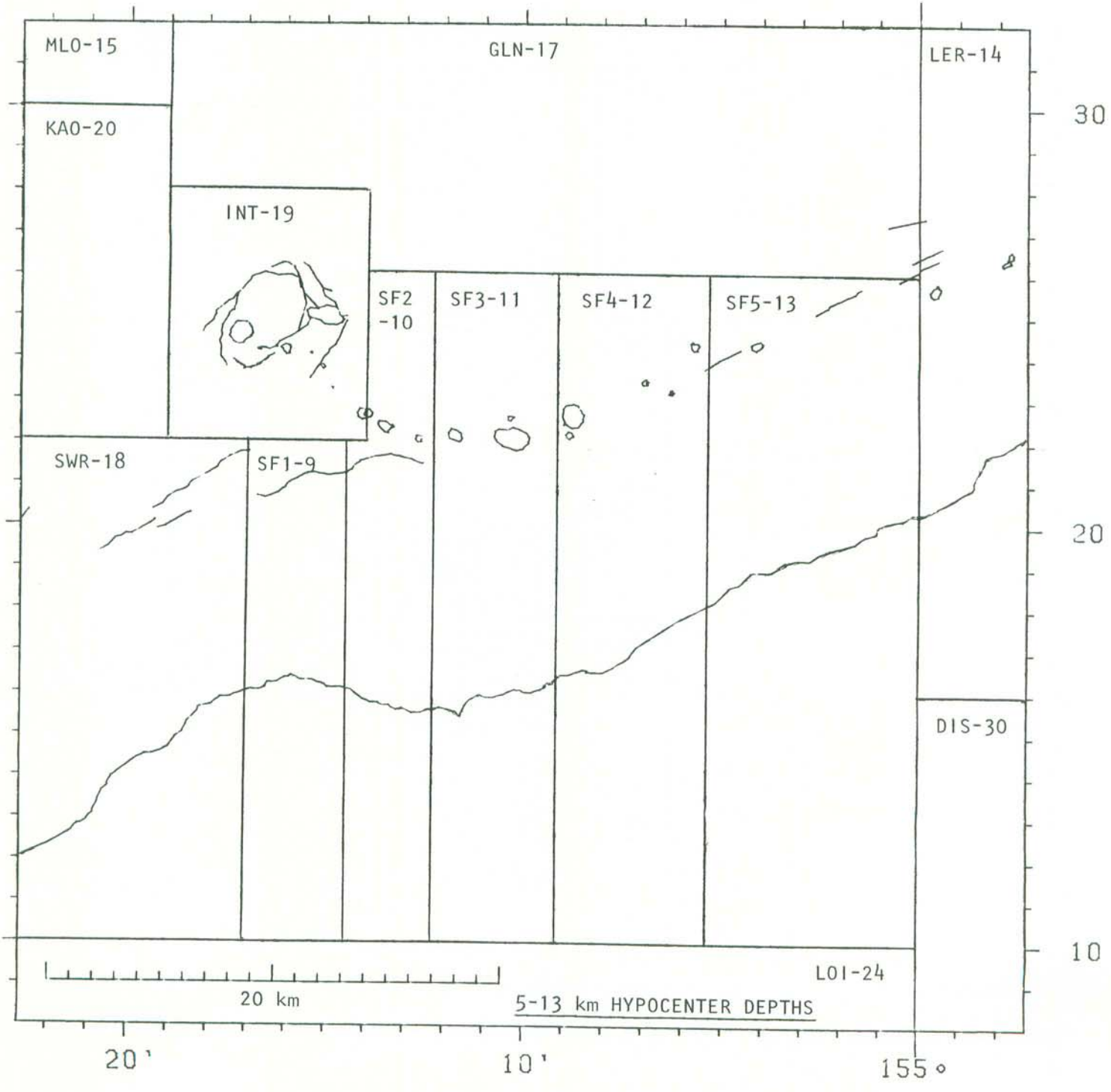


Figure 6. Earthquake classification, crustal 0-13 km deep island of Hawaii.

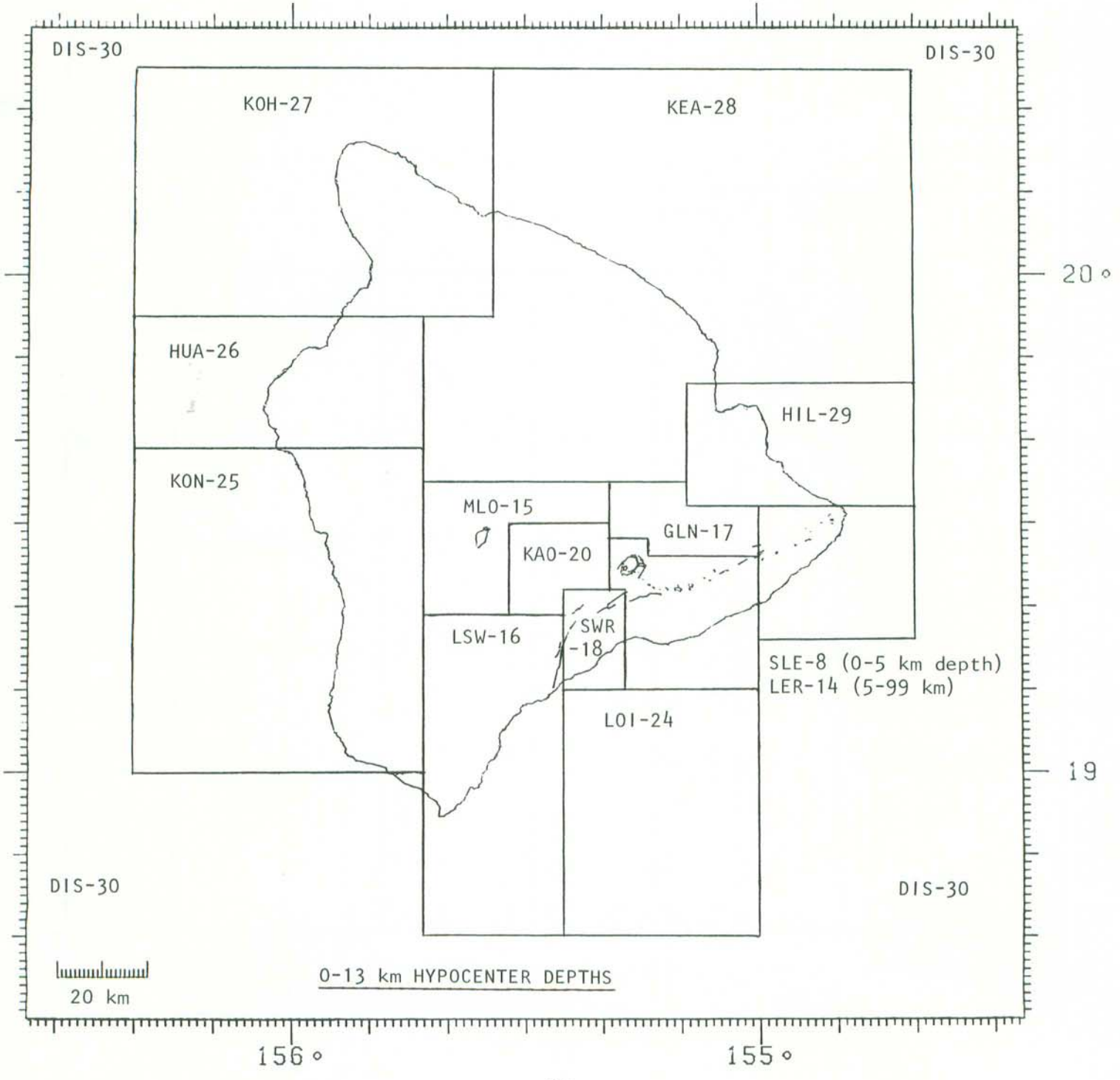
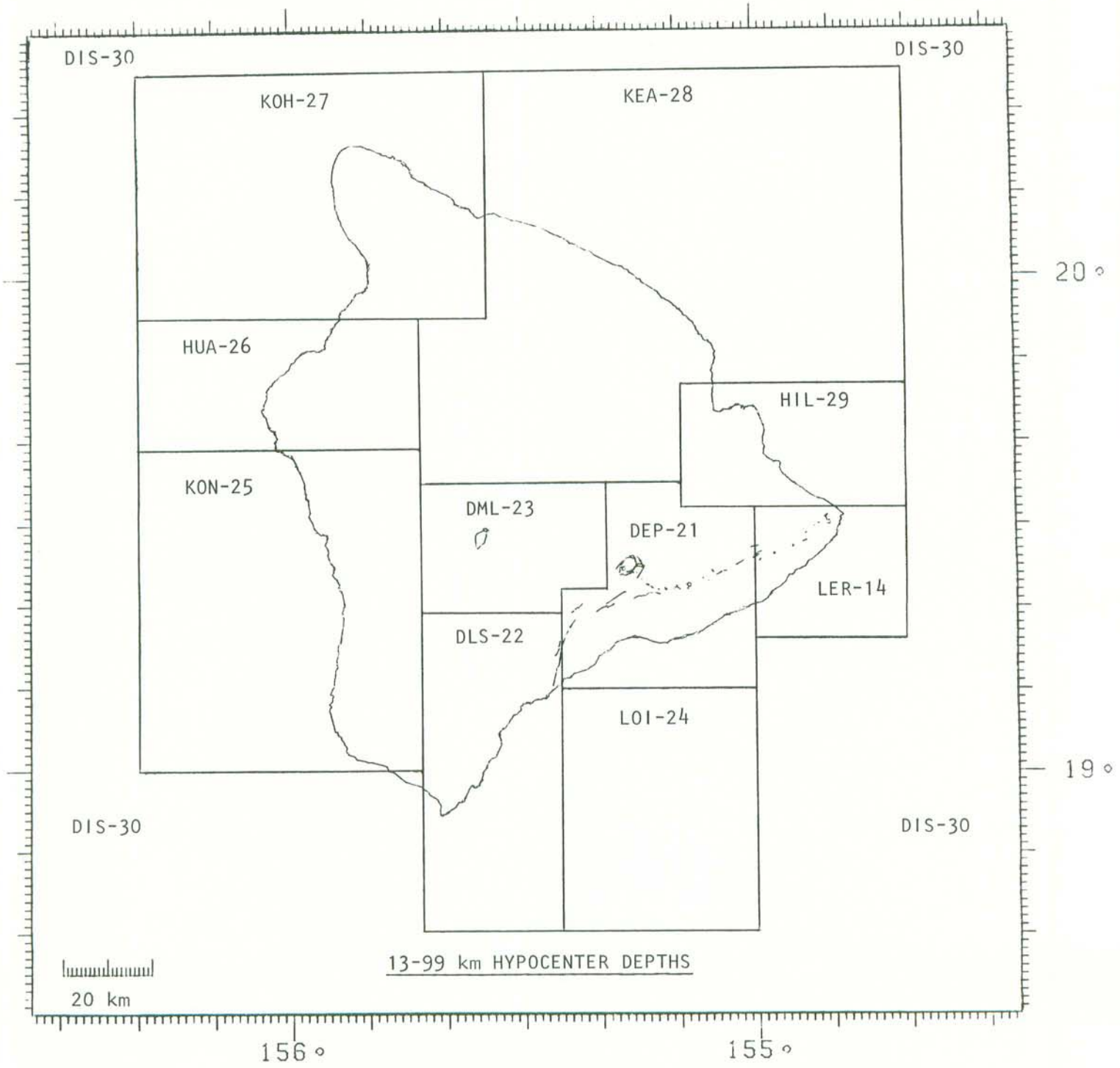


Figure 7. Earthquake classification mantle >13 km deep island of Hawaii.



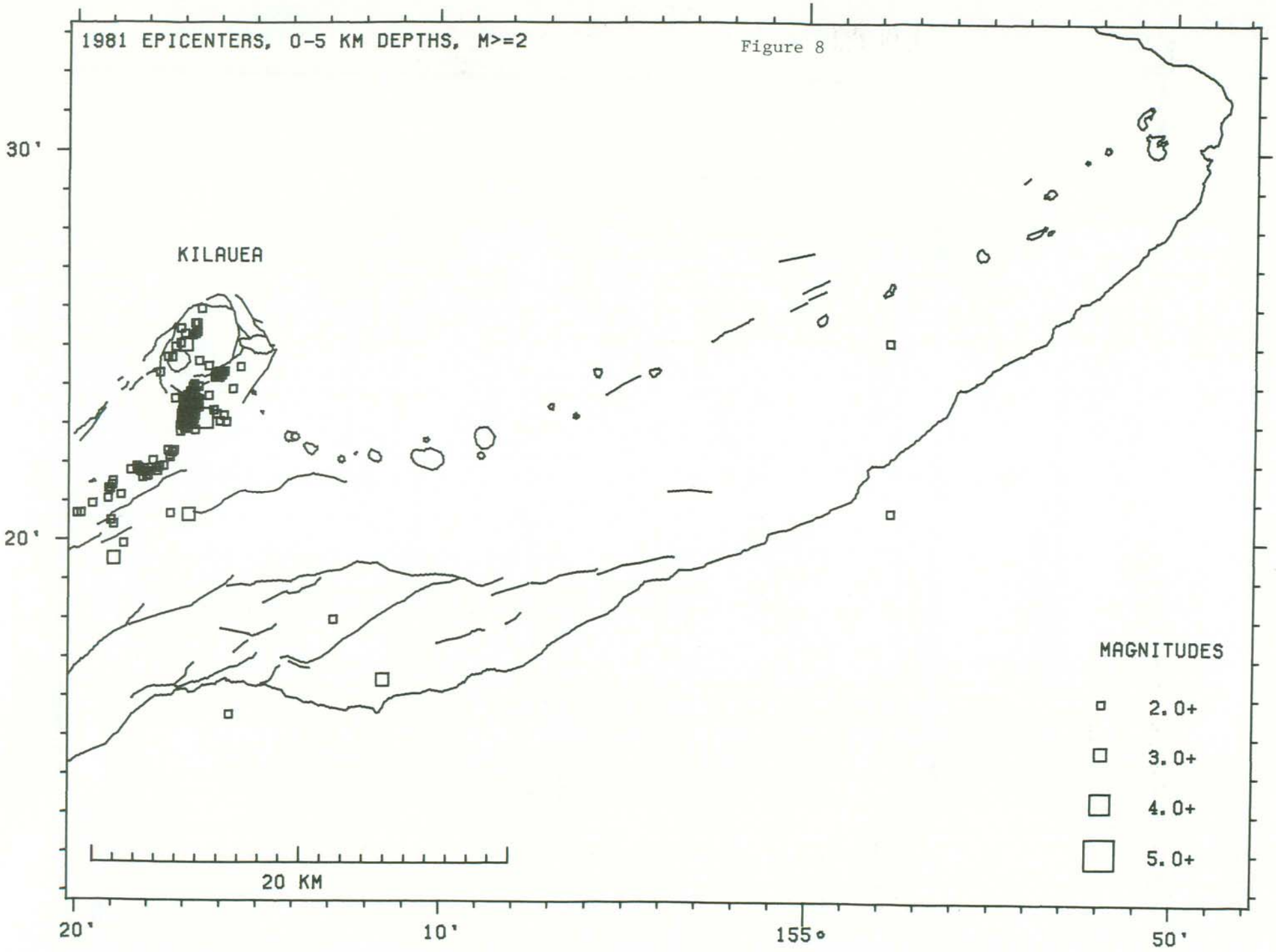

1981 EPICENTERS, 0-5 KM DEPTHS, M>=2
KILAUEA
30°
20°
20°
10°
155°
50°
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+

Figure 8

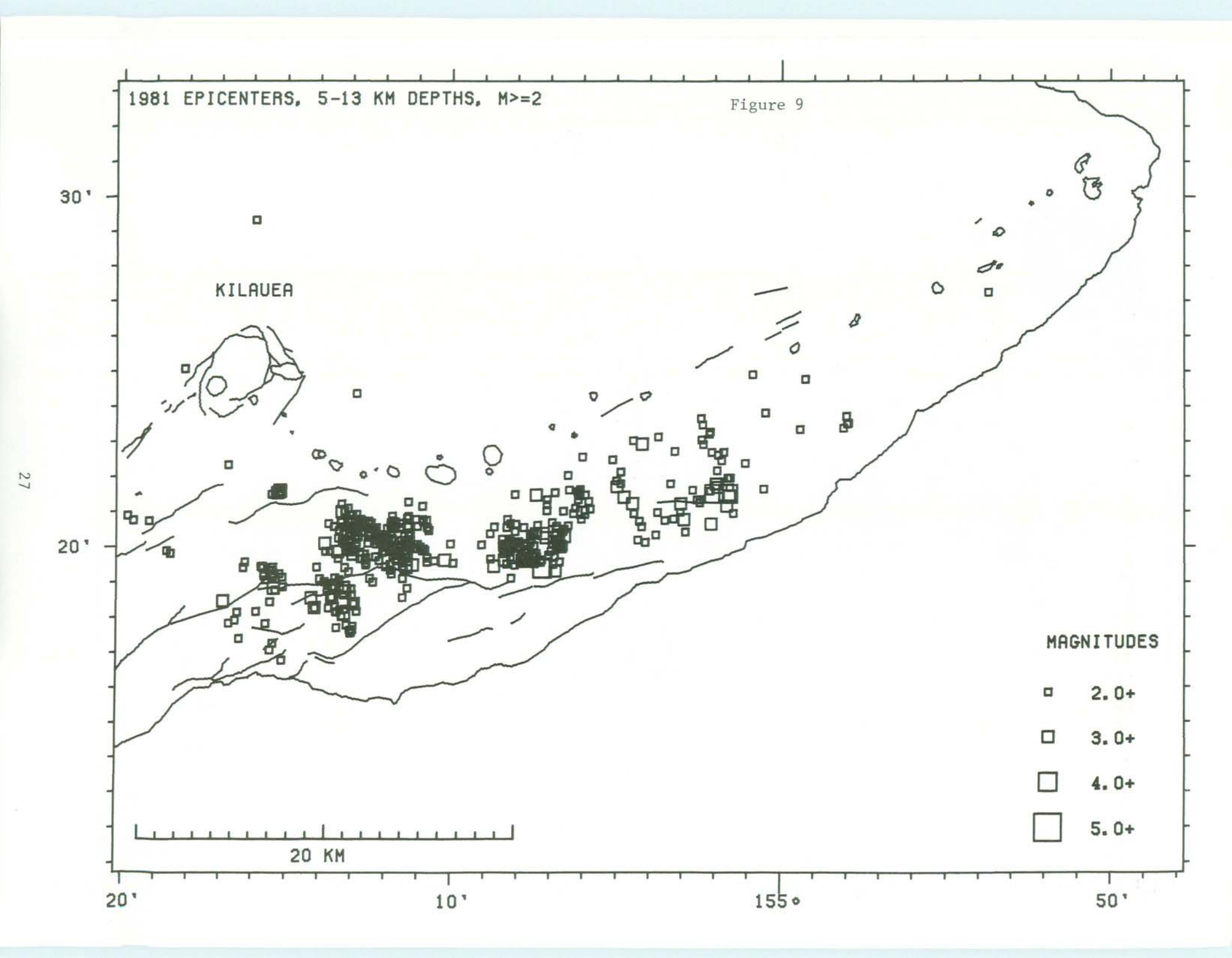

1981 EPICENTERS, 5-13 KM DEPTHS, M>=2
KILAUEA
30'
20'
20'
10'
155°
50'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+

Figure 9

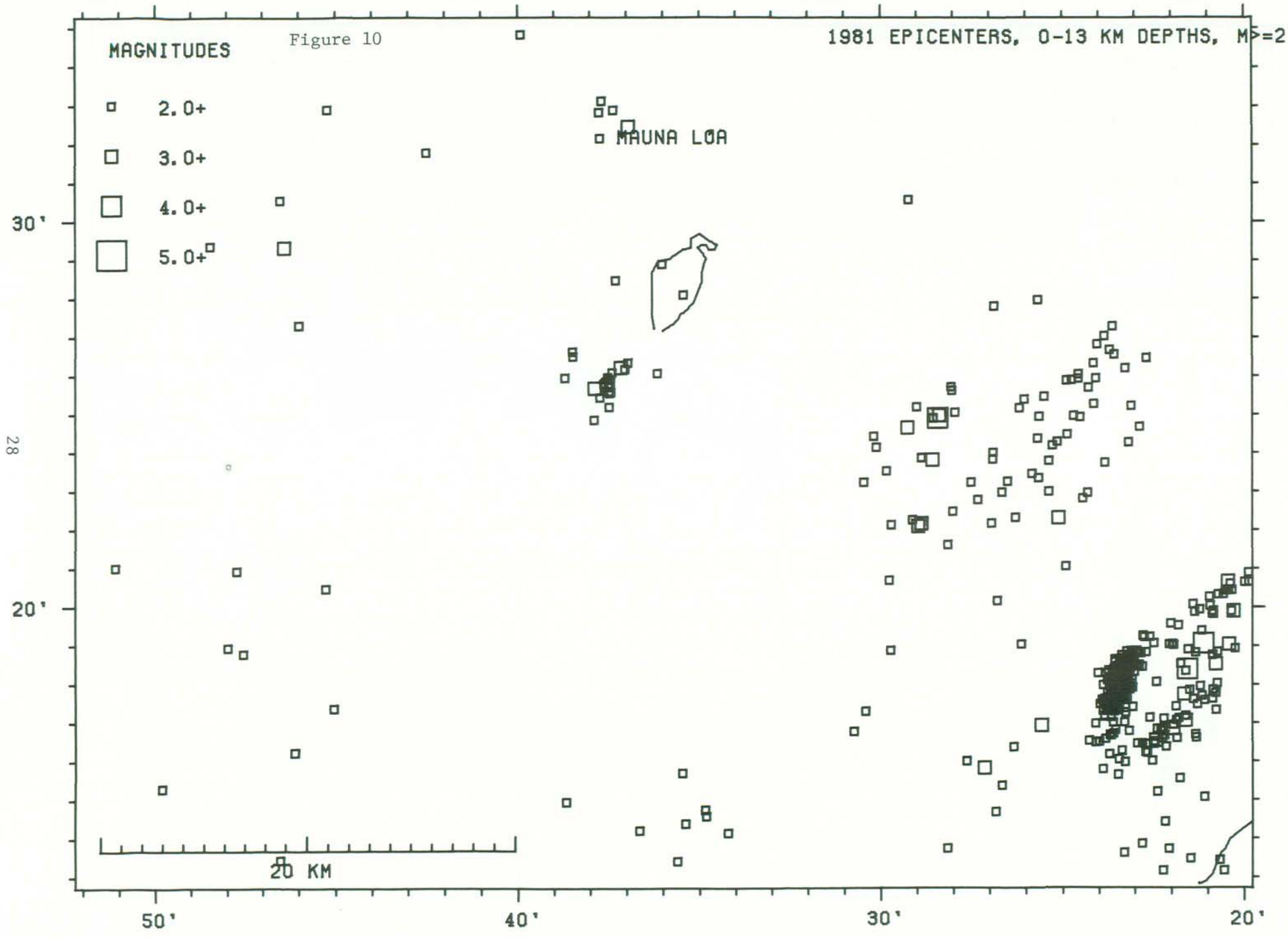

MAGNITUDES
2.0+
3.0+
4.0+
5.0+
1981 EPICENTERS, 0-13 KM DEPTHS, M>=2
MAUNA LOA
30'
20'
20 KM
50'
40'
30'
20'

Figure 10

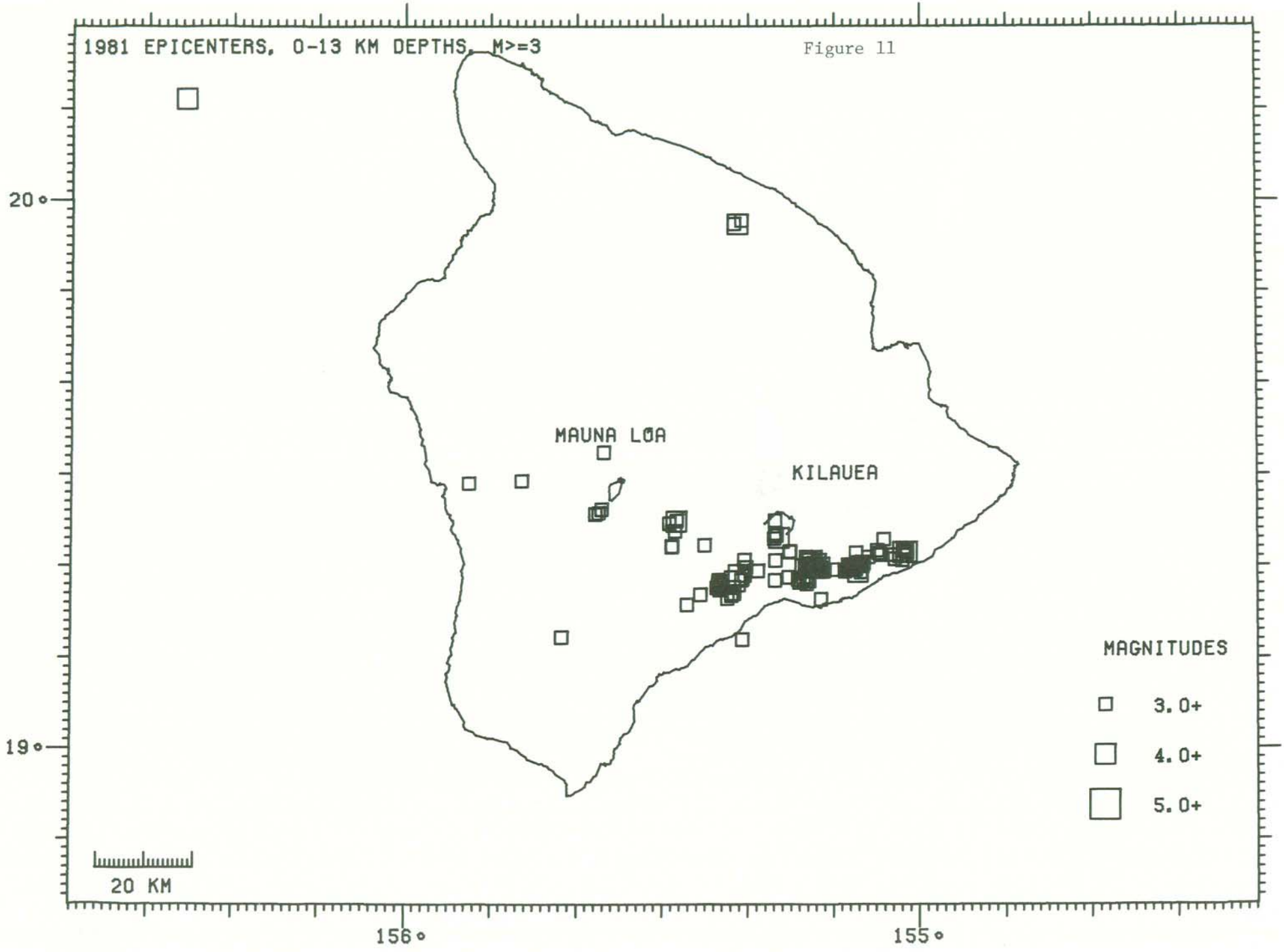

1981 EPICENTERS, 0-13 KM DEPTHS, M>=3
MAUNA LOA
KILAUEA
MAGNITUDES
3.0+
4.0+
5.0+
20 KM
20°
19°
156°
155°

Figure 11

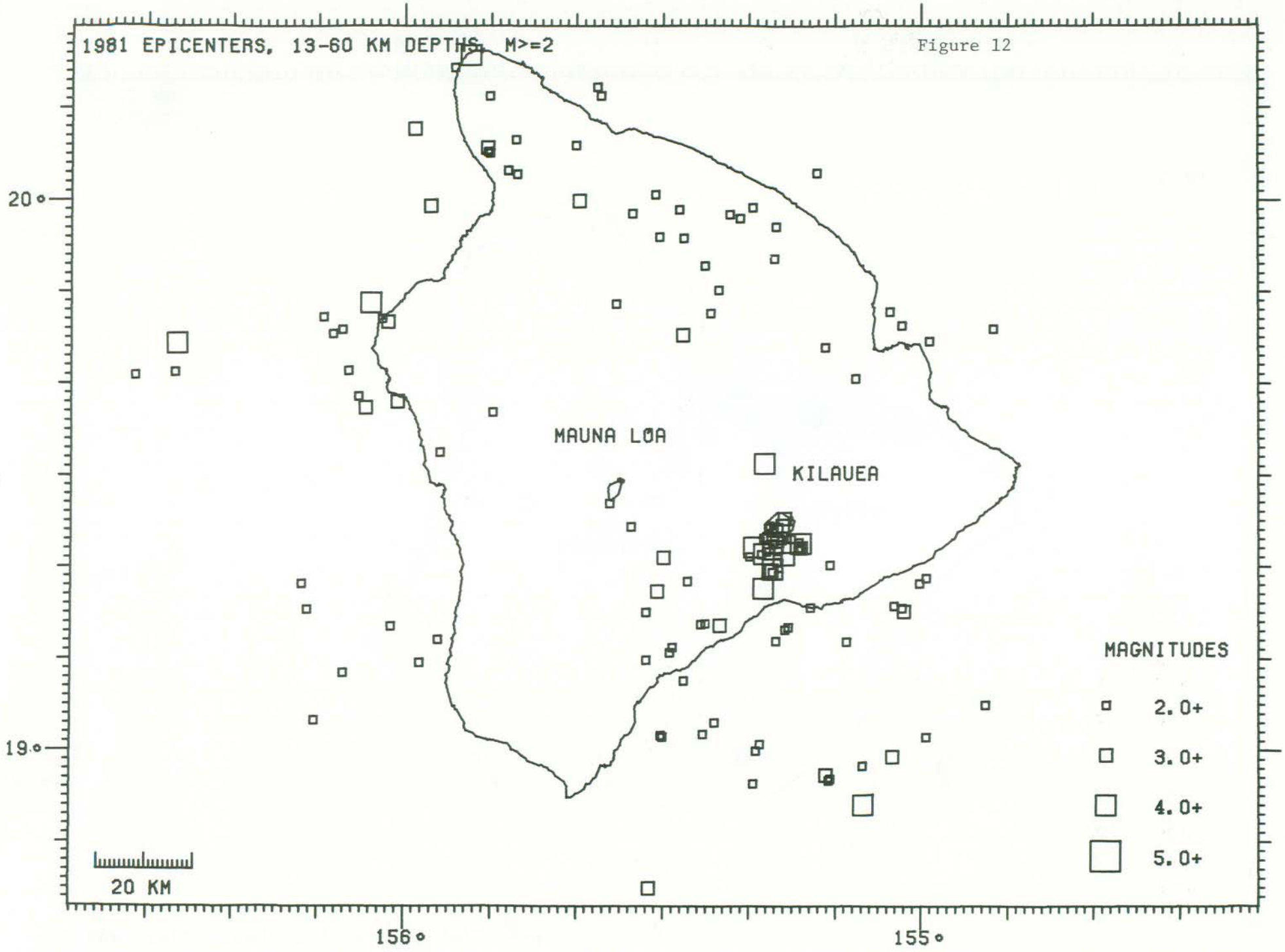

1981 EPICENTERS, 13-60 KM DEPTHS, M>=2
MAUNA LOA
KILAUEA
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20 KM
20°
19°
156°
155°

Figure 12

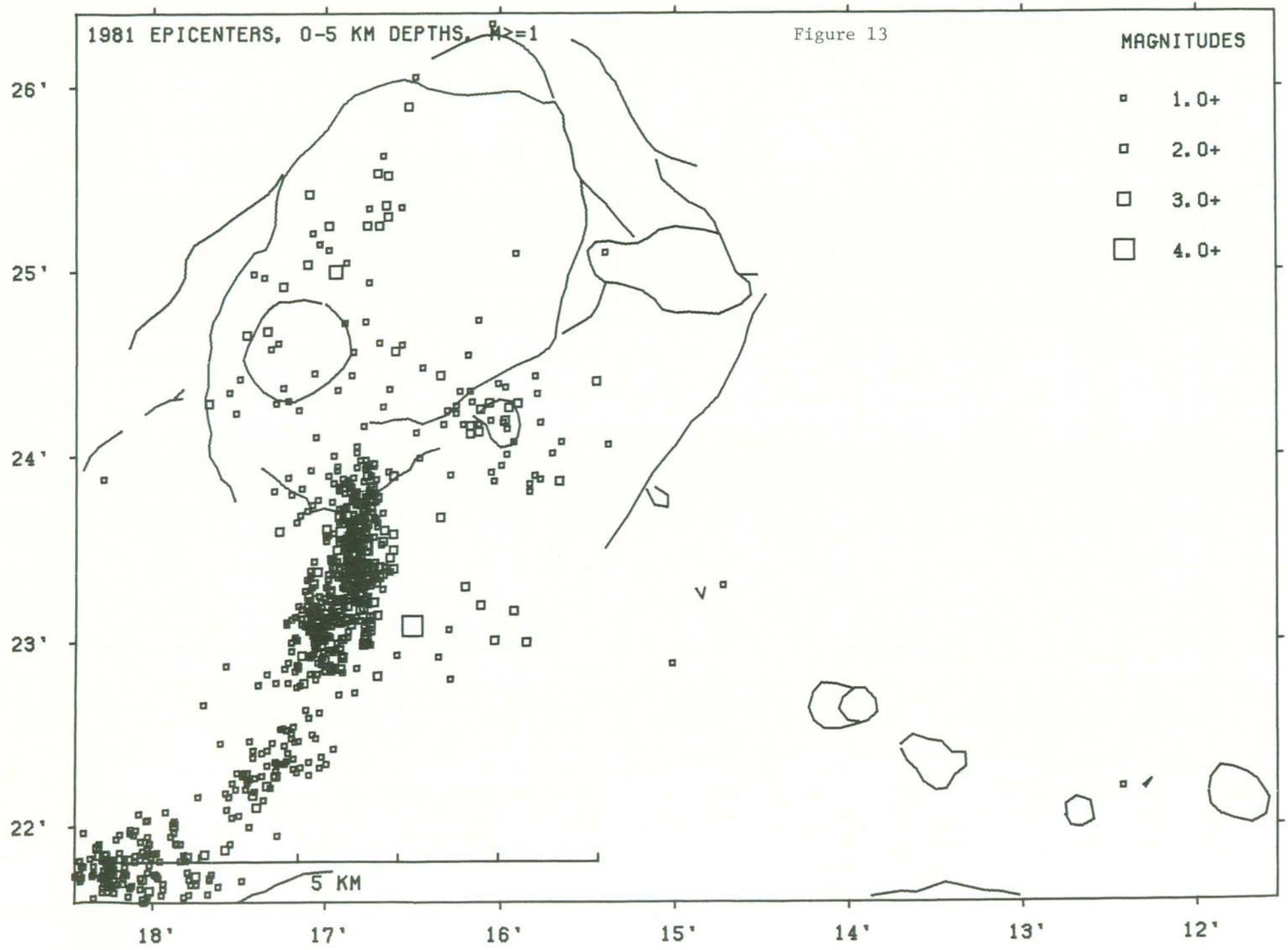

1981 EPICENTERS, 0-5 KM DEPTHS, M>=1
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
26'
25'
24'
23'
22'
18'
17'
16'
15'
14'
13'
12'
5 KM

Figure 13

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = (\Sigma R_i^2/NR)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 2 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

* - the location program had a convergence problem, which usually means that the depth may be unreliable.

Table 5 lists all events located during 1981. Table 6 lists only events of magnitude 3.0 or larger.

Table 5. HVO EARTHQUAKE SUMMARY LIST PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JAN	1	222	18.70	19	24.29	155	17.68	3.15	2.3	2.3	25	1	43	.07	2	.3	.3	22	SSC
		1	250	11.01	19	19.39	155	12.35	7.53	1.5	1.2	21	3	88	.07	5	.5	1.0	15	SF2
		1	340	38.05	19	30.61	155	42.38	8.14	2.1	1.3	25	1	75	.12	6	.6	1.2	20	MLO
		1	346	55.37	19	20.70	155	2.78	6.90	1.5	1.3	26	0	134	.11	1	.6	.9	21	SF5
		1	616	20.25	19	20.63	155	11.16	7.81	2.1	1.8	36	4	75	.11	4	.5	.7	20	SF3
		1	1151	12.26	19	19.05	155	10.90	8.24	1.9	1.8	26	1	110	.06	6	.5	.9	17	SF3
		1	1312	43.54	19	18.56	155	23.44	3.96	1.7	1.9	23	1	106	.09	3	.4	1.0	13	SWR
		1	2134	49.15	19	19.64	155	7.25	8.25	2.7	2.9	39	2	111	.09	4	.4	.5	26	SF4
		1	2231	49.52	19	20.94	155	29.95	29.85	3.4	3.4	47	2	65	.08	5	.5	1.0	45	DML
		1	2335	7.86	19	20.51	155	12.82	8.52	2.1	2.3	40	3	66	.10	4	.4	.6	25	SF2
		2	043	55.45	19	19.77	155	7.70	6.36	2.0	1.8	31	1	98	.11	5	.5	1.1	22	SF4
		2	556	34.46	19	21.61	155	2.70	8.08	2.1	1.9	29	1	127	.09	3	.5	.6	19	SF5
		2	742	8.00	19	18.27	155	14.15	10.19	3.6	3.7	42	1	138	.11	7	.5	.4	41	SF2 F
		2	15 8	11.17	19	23.88	155	18.29	3.06	1.6	1.1	17	2	54	.09	3	.4	.5	13	SSC
		2	2043	40.10	19	19.61	155	7.73	8.94	2.1	2.2	34	2	100	.08	4	.4	.6	20	SF4
		3	3 4	40.11	20	15.69	155	52.39	27.57	3.9	4.3	47	3	160	.12	18	.9	1.1	43	KOH F
		3	318	17.98	19	22.67	155	2.75	8.20	2.0	1.9	34	1	118	.12	4	.4	.7	19	SF5
		3	1123	44.69	19	27.76	155	20.86	8.54	1.9	1.6	24	2	119	.10	0	.5	.8	17	KAO
		3	1217	9.54	19	19.88	155	12.79	7.25	1.4	1.1	27	2	75	.09	5	.4	.9	16	SF2
		4	458	10.12	19	19.97	155	12.74	8.56	1.5	1.2	26	3	74	.06	5	.4	.8	16	SF2
		4	1323	.18	19	23.54	155	16.89	2.90	2.1	2.1	26	3	38	.09	0	.3	.2	20	SSC
		4	1533	42.28	19	19.84	155	12.41	9.06	1.5	1.2	25	1	80	.07	5	.5	.9	19	SF2
		4	18 2	32.57	19	23.31	155	16.77	3.12	1.3	1.3	20	3	67	.07	0	.3	.3	11	SSC
		4	2051	15.53	19	19.95	155	11.25	8.13	1.9	1.4	33	4	87	.08	5	.5	.7	20	SF3
		4	2055	52.13	19	19.77	155	11.25	7.71	1.8	1.3	31	3	91	.07	5	.4	.7	16	SF3
		5	041	46.37	19	16.36	155	26.33	9.68	2.6	2.4	38	2	106	.11	7	.4	.6	29	LSW
		5	337	25.86	19	18.30	155	13.72	8.71	1.8	1.2	26	1	98	.08	2	.5	1.0	18	SF2
		5	6 4	37.12	19	27.28	155	23.62	8.41	3.1	2.8	40	2	73	.11	5	.3	.7	32	KAO
		5	629	53.11	19	19.20	155	11.71	8.83	1.6	1.1	24	3	101	.07	5	.6	1.0	17	SF3
		5	10 3	20.60	19	27.03	155	23.85	7.31	2.7	2.2	41	3	43	.13	4	.4	.8	29	KAO
		5	1151	17.20	19	23.39	155	17.09	2.76	1.1	1.2	21	3	55	.08	0	.3	.3	16	SSC
		5	1712	50.96	19	19.59	155	13.25	7.71	1.6	1.3	27	2	71	.10	5	.5	.9	20	SF2
		6	8 7	39.26	19	22.33	155	2.63	7.98	2.0	1.7	29	0	123	.14	5	.6	.7	15	SF5
		6	1242	18.94	19	19.56	155	15.25	8.43	2.0	1.7	32	4	98	.08	4	.5	.6	22	SF1
		6	1535	49.73	19	24.19	155	24.02	9.95	1.8	1.1	30	3	44	.08	3	.4	.8	23	KAO
		6	1814	5.43	18	54.01	155	6.75	51.98	4.1	4.4	46	2	256	.09	43	1.8	2.4	44	LOI F
		6	1927	57.51	19	45.35	156	8.23	35.50	2.6	1.9	34	2	250	.13	38	1.3	2.3	27	HUA
		7	021	32.35	19	24.26	155	16.12	1.59	2.0	2.4	24	2	112	.11	1	.3	.2	18	SEC
		7	149	40.14	19	26.43	154	55.75	5.78	1.8	1.3	25	1	150	.09	2	.6	.9	12	LER
		7	318	3.18	19	19.89	155	12.06	8.32	1.8	1.3	29	2	82	.09	5	.5	.8	22	SF3
		7	515	16.63	19	20.26	155	13.13	8.50	1.6	1.1	23	2	66	.08	4	.6	1.0	16	SF2
		7	537	27.08	19	23.66	155	16.91	2.87	1.6	1.4	23	2	54	.08	1	.3	.2	15	SSC
		7	711	10.42	19	23.57	155	16.73	2.54	1.2	1.0	19	4	45	.09	1	.3	.2	10	SSC
		7	837	51.93	19	23.64	155	16.89	2.87	1.2	.5	20	4	50	.06	1	.3	.3	12	SSC
		7	838	9.41	19	23.71	155	16.79	2.77	1.7	1.5	23	2	53	.10	1	.3	.2	17	SSC
		7	1016	46.40	19	25.21	155	15.84	15.83	3.4	3.2	47	2	36	.11	2	.4	.3	43	DEP F
		7	1118	56.80	19	18.43	155	13.37	9.94	1.9	1.1	27	3	83	.10	3	.6	.9	19	SF2
		7	1129	5.25	19	22.95	155	16.96	2.72	1.8	1.0	23	4	57	.08	1	.3	.2	15	SSC

HVO EARTHQUAKE SUMMARY LIST PAGE 2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JAN	7	1129	43.11	19	24.35	155	17.47	2.98	1.0	.8	12	1	80	.04	1	.6	.5	9	SSC
		7	1238	25.90	19	24.74	155	16.13	1.57	1.4	1.1	17	3	120	.05	2	.3	.3	9	SNC
		7	1314	19.41	19	12.40	155	37.44	8.44	2.4	1.4	23	1	206	.17	5	1.2	1.0	17	LSW
		7	1450	41.33	19	21.08	155	5.98	8.05	2.0	1.3	27	2	95	.07	4	.5	.9	19	SF4
		7	1458	55.29	19	22.84	155	3.45	8.44	2.0	1.1	28	1	108	.10	3	.5	.7	24	SF5
		7	2154	7.88	19	25.38	155	24.22	9.66	2.3	1.6	39	4	44	.12	2	.4	.6	27	KAO
		8	023	36.74	19	21.20	155	7.12	8.45	2.2	1.8	29	3	85	.06	4	.4	.8	19	SF4
		8	259	23.00	19	23.75	155	16.82	3.15	1.3	.8	14	3	79	.06	1	.5	.4	9	SSC
		8	6 6	33.36	19	23.24	155	17.01	2.93	1.8	1.4	23	4	46	.10	0	.2	.3	16	SSC
		8	6 7	2.17	19	23.30	155	17.00	2.83	1.6	1.5	19	4	57	.09	0	.3	.3	11	SSC
		8	1026	37.12	19	19.89	155	11.90	7.99	1.9	1.1	27	4	84	.08	5	.4	.8	18	SF3
		8	1344	26.54	19	23.89	155	15.75	2.98	1.0	.9	17	3	107	.11	2	.4	.4	10	SEC
		9	1 0	43.86	19	23.00	155	16.77	2.89	2.1	2.1	30	4	40	.10	1	.2	.3	22	SSC
		9	821	19.18	19	24.02	155	23.89	11.16	2.1	1.3	20	1	70	.07	7	.5	1.0	19	KAO
		9	1048	51.66	19	25.42	155	17.10	1.44	1.7	2.4	19	1	156	.10	1	.5	.2	13	SNC
		9	1114	46.72	19	20.33	155	6.65	7.68	1.7	1.8	27	1	107	.08	5	.5	1.0	21	SF4
		9	1954	48.34	19	14.95	155	38.67	7.52	2.4	2.5	24	1	246	.15	3	1.4	.9	15	LSW
		9	2032	21.62	19	20.46	155	13.23	9.31	1.5	1.3	21	2	63	.06	4	.5	.9	16	SF2
		9	2337	10.00	19	23.04	155	4.12	8.47	1.9	1.8	28	1	93	.08	3	.4	.7	17	SF5
		10	3 1	23.66	19	24.25	155	25.79	10.59	1.9		31	1	39	.11	2	.3	.6	23	KAO
		10	3 1	54.81	19	24.15	155	25.86	9.29	1.6	1.7	23	2	47	.11	2	.4	.8	17	KAO
		10	736	41.34	19	25.83	155	24.23	9.24	1.4	1.6	21	1	50	.10	2	.5	1.1	14	KAO
		10	758	29.46	19	10.62	155	38.75	4.92	1.7	1.8	21	0	107	.12	8	.7	1.9	12	LSW
		10	827	56.72	19	23.09	155	16.97	3.09	.9	1.1	18	2	48	.08	1	.3	.3	12	SSC
		10	1437	50.17	19	18.79	155	16.10	8.00	1.6	1.5	22	2	127	.05	3	.5	.9	16	SF1
		10	2155	25.50	19	25.36	155	16.66	2.16	1.8	2.4	21	2	122	.07	1	.4	.2	16	SNC
		11	020	44.30	19	18.53	155	13.31	7.41	1.4	1.3	28	2	83	.10	3	.5	1.0	19	SF2
		11	032	47.29	19	19.48	155	11.13	9.20	1.9	1.7	28	1	97	.06	5	.5	.9	24	SF3
		11	058	54.76	19	19.67	155	8.29	7.26	1.6	1.5	26	3	85	.06	4	.4	.9	14	SF4
		11	1 7	45.25	19	19.04	155	15.40	8.07	1.8	1.7	27	1	95	.06	4	.5	.8	18	SF1
		11	1228	19.88	19	23.58	155	16.99	2.09	1.0	1.5	17	1	49	.09	0	.4	.2	6	SSC
		11	1256	41.41	19	24.20	155	16.06	3.27	.9	1.3	13	2	124	.04	1	.4	.4	8	SEC
		11	13 0	40.39	19	24.29	155	17.29	3.62	1.2	1.1	15	2	58	.11	1	.7	.6	7	SSC
		11	1748	40.95	19	20.58	155	2.16	6.72	1.6	1.7	23	1	173	.09	2	.6	.8	13	SFS
		11	21 7	7.33	19	25.04	155	17.11	1.86	1.9	2.8	20	0	117	.07	0	.3	.2	15	SNC
		11	2122	50.54	19	21.75	155	1.52	7.58	1.5	1.4	30	0	158	.12	4	.6	1.0	18	SF5
		11	2224	40.71	19	24.82	155	15.83	19.30	1.6	1.7	30	1	72	.10	2	.6	.9	25	DEP
		11	2345	31.27	19	23.84	155	1.31	8.06	1.7	1.6	27	1	133	.10	5	.5	.9	14	SF5
		11	2347	13.24	19	23.81	155	1.93	8.90	1.7	1.6	31	1	124	.12	4	.5	.9	18	SF5
		12	022	41.11	19	9.81	155	31.99	38.04	2.5	2.7	42	3	194	.08	7	.8	1.1	35	DLS
		12	047	1.93	19	23.87	155	16.04	3.04	.9	1.5	20	2	102	.08	1	.3	.3	10	SEC
		12	1 8	58.23	19	23.57	155	16.91	3.06	.8	1.1	12	1	83	.08	0	.4	.3	9	SSC
		12	111	51.97	19	20.10	155	10.58	8.56	1.9	2.0	34	2	84	.10	4	.4	.7	23	SF3
		12	234	6.97	19	26.05	155	24.57	6.72	2.2	2.2	31	2	47	.11	2	.4	1.0	22	KAO
		12	418	10.63	19	21.35	155	18.28	31.06	4.5	4.6	43	0	40	.10	3	.6	1.0	43	DEP F
		12	423	19.23	19	22.11	155	16.81	32.70	2.9	3.9	45	2	48	.09	2	.6	.9	38	DEP F
		12	430	17.11	19	17.60	155	18.31	33.28	4.0	4.3	43	0	132	.09	1	.7	1.0	43	DEP F
		12	441	23.42	19	21.60	155	17.96	27.99	2.2	2.2	36	2	30	.10	3	.7	1.1	27	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	JAN	12	5 7	48.91	19	19.68	155	17.26	33.42	4.0	4.4	45	1	92	.10	1	.6	1.0	44	DEP F	
		12	518	35.77	19	17.73	155	17.78	32.46	1.8	1.6	29	1	130	.07	2	.9	1.5	24	DEP	
		12	653	44.58	19	20.67	155	18.13	29.85	2.1	1.5	35	0	61	.08	2	.8	1.0	29	DEP	
		12	810	49.40	19	20.27	155	12.81	7.91	2.2	2.4	33	3	69	.09	4	.4	.5	26	SF2	
		12	1121	41.15	19	31.27	155	18.18	32.92	4.3	4.5	44	0	50	.10	8	.6	1.2	44	DEP F	
		12	2349	11.93	19	20.38	155	11.97	9.28	1.8	1.5	30	2	75	.08	5	.5	.8	24	SF3	
		13	1 2	30.49	19	23.04	155	4.52	9.00	2.3	1.7	30	1	141	.06	3	.5	.8	21	SF5	
		13	139	52.93	19	23.52	155	16.82	2.76	2.3	2.2	31	1	37	.10	0	.3	.2	28	SSC	
		13	220	39.58	19	21.85	155	14.27	30.76	2.5	1.9	42	1	57	.09	3	.7	.9	41	DEP	
		13	417	55.68	19	20.15	155	7.73	6.93	1.8	1.1	28	3	93	.08	5	.4	.9	16	SF4	
		13	450	46.90	19	20.50	155	20.75	30.42	2.2	1.4	37	2	71	.09	4	.6	1.1	31	DEP	
		13	6 8	1.77	19	27.04	155	30.10	9.23	2.3	1.3	28	2	72	.09	9	.4	1.2	19	KAO	
		13	958	44.02	19	23.87	155	16.88	2.97	1.1	1.3	17	3	77	.07	1	.4	.2	13	SSC	
		13	1058	24.91	19	23.12	155	16.89	2.79	2.2	2.6	30	3	40	.09	1	.2	.2	22	SSC	
		13	1131	8.14	19	23.24	155	16.84	5.05	1.2	1.6	18	4	57	.06	0	.2	.3	10	SSC	
		13	1141	11.04	19	23.10	155	16.86	2.94	2.3	2.8	27	3	40	.09	1	.2	.3	21	SSC	
		13	1143	37.15	19	23.46	155	16.88	2.95	1.9	2.3	21	2	36	.08	0	.3	.3	17	SSC	
		13	1530	1.36	19	23.90	155	15.81	3.09	1.8	1.9	18	2	108	.06	1	.3	.3	11	SEC	
		13	1722	41.43	19	21.59	155	1.97	7.35	1.6	1.6	27	0	157	.10	4	.7	1.0	20	SF5	
		13	18 0	5.19	19	19.15	155	16.11	7.26	1.3	1.1	18	1	114	.07	3	.5	1.1	12	SF1	
		13	18 3	40.19	19	23.67	154	58.82	6.49	1.6	1.6	27	0	164	.13	3	.8	1.1	18	LER	
		13	18 8	41.82	19	19.08	155	11.39	8.49	1.5	1.5	21	1	107	.05	5	.6	1.2	15	SF3	
		13	18 9	43.90	19	23.34	155	16.86	2.97	2.1	2.7	27	2	39	.09	0	.3	.2	21	SSC	
		13	1813	31.52	19	20.80	155	15.48	15.37	3.1	3.4	41	0	74	.11	3	.6	.4	41	DEP	
		13	1820	16.51	19	22.08	155	19.42	28.88	4.3	4.4	44	0	44	.10	3	.6	.9	44	DML F	
		13	19 3	45.40	19	20.24	155	13.42	8.80	2.5	2.8	41	3	65	.09	4	.4	.5	29	SF2	
		14	411	4.00	19	23.10	155	27.68	9.96	1.4	1.5	25	1	50	.10	1	.5	.9	17	KAO	
		14	418	57.40	20	5.92	155	40.03	21.98	2.8	3.1	43	2	197	.10	12	1.4	2.3	38	KOH	
		14	423	7.80	19	11.18	155	28.90	33.89	2.3	1.9	29	1	77	.08	4	.8	1.7	25	DLS	
		14	527	40.13	19	23.07	155	17.07	2.65	.9	1.5	20	3	66	.06	1	.3	.3	14	SSC	
		14	741	47.53	19	20.65	155	12.44	9.05	1.8	2.2	32	2	68	.10	4	.5	.6	24	SF2	
		14	1317	59.77	19	18.72	155	13.55	7.08	2.1	1.7	34	1	72	.10	3	.4	.9	24	SF2	
		14	1426	15.17	19	24.02	155	15.71	3.32	1.4	1.6	20	2	114	.09	2	.3	.3	12	SEC	
		14	1436	53.03	19	25.78	155	37.51	.00	3.1	3.4	33	1	93	.10	7	.4	1.4	29	MLO	*
		14	1438	45.52	19	25.58	155	37.43	.00	2.5	1.6	20	0	91	.15	7	.4	2.7	8	MLO	*
		14	2142	17.23	19	21.44	155	2.44	7.55	1.6	1.2	25	1	150	.10	3	.6	1.0	10	SF5	
		14	2316	34.35	19	17.68	158	19.54	15.02	3.3	3.5	22	0	315	.12	264	7.9	99.0	5	DIS	*
		15	0 9	16.11	19	21.32	155	.64	5.51	1.9	1.6	32	2	183	.10	5	.6	.9	23	SF5	
		15	019	35.17	19	20.66	155	9.77	8.59	1.7	1.1	26	3	72	.08	3	.5	1.0	21	SF3	
		15	233	56.72	19	20.18	155	13.32	7.59	1.6	1.3	31	1	64	.14	5	.6	.9	24	SF2	
		15	242	46.51	19	25.02	155	37.55	1.11	2.2	1.4	14	0	124	.09	8	.6	6.3	5	MLO	*
		15	859	48.06	19	22.66	155	17.71	3.65	1.3	1.0	20	2	55	.07	2	.3	.5	13	SSC	
		15	1437	11.96	19	19.50	155	17.39	34.35	3.8	3.7	44	1	95	.10	1	.6	1.0	43	DEP F	
		15	1651	6.97	19	23.25	155	26.50	9.71	2.8	2.2	41	0	52	.13	2	.4	.6	31	KAO	
		15	19 0	10.61	19	19.51	155	6.92	8.52	2.2	1.9	35	2	122	.08	4	.5	.4	24	SF4	
		15	1937	36.39	19	24.54	154	59.55	6.33	1.6	1.1	25	0	145	.11	2	.6	1.1	9	LER	
		15	21 4	57.70	19	20.29	155	16.80	26.98	2.1	1.4	40	4	82	.08	1	.7	.8	33	DEP	
		15	2316	34.81	19	21.16	155	5.96	7.35	1.8	1.1	25	1	94	.10	3	.5	.9	16	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	JAN	16	317	14.08	19	21.01	155	2.47	5.27	1.6	1.1	24	1	144	.13	2	.7	1.1	11	SF5	
		17	623	1.70	19	19.84	155	12.07	9.11	2.4	2.8	36	1	84	.10	5	.4	.5	26	SF3	
		17	1021	55.33	19	21.16	155	1.65	8.76	2.9	3.2	40	1	168	.10	3	.6	.4	34	SF5	
		17	1049	2.73	19	21.69	155	1.56	5.62	2.2	2.5	34	2	158	.13	4	.6	.9	23	SF5	
		17	11 8	26.56	19	23.16	155	17.07	2.65	1.6	1.6	18	2	72	.10	0	.3	.2	13	SSC	
		17	1821	16.30	19	23.34	155	16.99	2.82	1.2	1.3	18	2	64	.08	0	.4	.2	14	SSC	
		17	1822	17.83	19	25.25	155	16.77	1.88	2.2	2.8	28	2	39	.09	1	.2	.3	24	SNC	F
		17	19 6	34.03	19	23.88	155	15.78	2.95	1.4	1.7	24	4	107	.06	1	.3	.3	15	SEC	
		17	1956	9.48	19	24.37	155	16.64	2.18	1.3	1.3	16	2	96	.10	1	.3	.2	9	SSC	
		17	2133	43.16	19	20.14	155	12.70	9.90	1.7	1.7	20	1	72	.06	5	.6	1.0	16	SF2	
		18	1 0	16.08	19	25.15	155	17.04	1.67	1.8	2.1	17	1	118	.07	0	.4	.2	15	SNC	
		18	115	14.80	19	19.66	155	11.91	7.77	1.4	1.1	19	2	89	.04	6	.5	1.2	14	SF3	
		18	125	53.54	19	25.00	155	16.95	1.67	3.4	3.8	32	1	39	.10	0	.3	.2	23	SNC	F
		18	128	35.61	19	23.87	155	15.67	3.13	1.8	2.3	18	1	106	.08	2	.4	.3	14	SEC	F
		18	253	46.44	19	20.71	155	11.34	7.28	1.7	1.3	28	3	73	.11	4	.5	.8	18	SF3	
		18	438	57.07	19	21.62	155	6.43	8.30	2.0	2.3	31	2	82	.08	3	.4	.7	13	SF4	
		18	459	27.03	19	23.90	155	26.87	11.32	1.4	1.3	20	2	96	.08	3	.5	1.0	13	KAO	
		18	636	54.08	19	25.35	155	16.57	1.69	1.5	1.4	14	0	121	.08	1	.4	.3	9	SNC	
		18	643	59.75	19	24.68	155	17.34	1.41	2.4	2.9	26	2	41	.10	1	.3	.2	22	SNC	F
		18	917	31.37	19	26.06	155	16.49	2.16	1.6	1.3	14	2	192	.09	2	.5	.4	9	SNC	
		18	1255	39.53	19	26.66	155	24.56	6.90	2.0	1.2	23	4	117	.11	3	.4	1.1	13	KAO	
		18	1336	51.62	19	22.20	155	29.02	10.95	2.1	1.5	25	0	62	.08	3	.4	1.1	20	KAO	
		19	510	53.17	19	14.63	155	32.26	5.40	2.1	1.3	33	2	122	.16	4	.5	1.2	24	LSW	
		19	529	33.95	19	16.91	155	14.28	9.62	2.2	1.7	25	4	185	.07	1	.8	.5	13	SF2	
		19	8 2	9.39	19	20.79	155	3.28	7.22	2.5	2.0	35	3	100	.10	2	.5	.7	24	SF5	
		19	8 3	6.14	19	19.16	155	12.27	7.85	1.7	1.0	21	2	95	.07	4	.6	1.1	17	SF3	
		19	8 3	31.89	19	19.23	155	12.43	7.90	1.7	1.0	17	1	91	.07	4	.6	1.3	12	SF2	
		19	1526	43.90	19	17.74	155	12.99	6.37	2.0	2.1	32	2	119	.10	2	.5	1.0	17	SF2	
		19	1547	30.95	19	20.23	155	7.37	9.04	1.3	1.1	18	1	97	.06	5	.7	1.6	16	SF4	
		19	1821	40.44	19	18.39	155	12.95	9.32	3.0	3.6	43	3	136	.11	8	.5	.6	34	SF2	F
		19	1858	53.46	19	18.11	155	12.85	5.18	1.5	1.7	23	2	110	.10	2	.5	1.1	10	SF2	
		19	19 5	15.08	19	17.75	155	12.91	6.83	1.7		30	3	123	.11	2	.5	.9	15	SF2	
		19	19 5	50.07	19	17.99	155	12.97	5.35	1.7	1.7	26	2	109	.09	2	.5	1.1	15	SF2	
		19	1912	23.42	19	20.26	155	7.35	8.93	1.4	1.5	20	2	98	.05	5	.6	1.3	17	SF4	
		19	1934	7.07	19	20.14	155	12.90	8.72	1.7	1.2	18	2	70	.05	5	.5	1.2	13	SF2	
		19	2112	24.62	19	26.87	155	19.91	7.82	1.4	1.2	15	3	165	.09	5	.7	1.2	7	KAO	
		19	2249	45.05	19	20.10	155	7.20	7.06	1.2	1.1	16	1	103	.07	5	.6	1.5	12	SF4	
		20	028	8.48	19	20.27	155	7.13	8.46	2.8	3.2	37	3	101	.10	5	.4	.6	28	SF4	
		20	226	4.36	19	24.01	154	57.90	6.00	1.8	1.6	23	1	169	.13	3	.8	1.1	18	LER	
		20	251	56.58	19	19.94	155	11.30	7.93	1.9	1.5	25	2	87	.06	5	.5	.9	19	SF3	
		20	310	35.83	19	23.16	155	17.10	2.89	1.0	1.5	16	2	72	.09	1	.4	.3	13	SSC	
		20	339	51.02	19	23.16	155	17.04	2.75	.9	1.1	14	1	62	.05	0	.4	.3	10	SSC	
		20	344	8.30	19	22.83	155	17.05	2.57	1.0	1.3	16	3	86	.06	1	.3	.3	10	SSC	
		20	358	11.74	19	22.85	155	17.00	2.62	2.3		24	2	48	.07	1	.3	.3	20	SSC	
		20	359	29.31	19	23.14	155	16.75	2.96	2.3		24	3	46	.09	1	.3	.3	20	SSC	
		20	4 3	44.82	19	23.03	155	16.98	2.92	1.3	1.3	19	3	48	.08	1	.3	.3	11	SSC	
		20	526	35.42	19	21.38	155	8.39	8.84	1.7	2.0	31	2	69	.08	3	.4	.6	19	SF4	
		20	538	13.01	19	23.35	155	16.91	3.17	1.3	1.3	18	3	46	.10	0	.5	.3	11	SSC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JAN	20	618	53.36	19	23.31	155	16.83	2.95	2.4	2.2	27	3	46	.08	0	.3	.2	21	SSC F
		20	630	57.05	19	23.02	155	17.04	2.73	.9	1.1	17	3	78	.08	1	.3	.3	11	SSC
		20	7 8	24.57	19	23.11	155	16.93	3.28	1.7	2.0	22	4	47	.10	1	.3	.3	14	SSC
		20	719	44.12	19	22.92	155	17.02	2.53	1.6	2.3	21	2	49	.08	1	.3	.2	14	SSC
		20	934	2.67	19	22.98	155	16.90	3.06	1.0	.8	19	3	48	.07	1	.3	.3	8	SSC
		20	944	1.09	19	23.03	155	17.10	2.45	.9	.8	15	2	67	.06	1	.3	.3	7	SSC
		20	10 0	38.16	19	22.77	155	17.39	2.49	1.7	1.8	22	4	52	.11	1	.3	.3	13	SSC
		20	10 1	53.66	19	23.15	155	16.94	3.19	.9	1.3	12	1	63	.04	0	.4	.4	8	SSC
		20	10 7	22.81	19	23.09	155	17.06	2.55	1.5	1.8	20	4	47	.08	1	.3	.3	12	SSC
		20	10 9	4.42	19	22.86	155	16.97	2.59	2.3	2.8	24	4	49	.09	1	.3	.3	19	SSC
		20	1042	59.69	19	23.28	155	17.12	2.82	.9	1.1	14	2	85	.09	0	.3	.3	10	SSC
		20	11 0	17.23	19	23.31	155	17.19	2.52	.8	.9	14	2	81	.07	0	.3	.3	7	SSC
		20	11 8	50.38	19	23.20	155	17.11	2.81	1.3	1.3	17	2	47	.07	0	.3	.3	10	SSC
		20	1158	7.69	19	23.06	155	17.10	2.84	1.2	1.1	18	3	66	.09	1	.3	.3	14	SSC
		20	12 2	29.41	19	23.35	155	16.77	3.22	2.9	2.4	26	1	39	.10	0	.3	.3	21	SSC
		20	1210	11.36	19	23.23	155	17.08	2.50	.8	1.0	13	2	85	.07	0	.4	.2	8	SSC
		20	1237	23.56	19	23.20	155	17.08	2.85	1.0	1.3	16	2	61	.08	0	.3	.3	11	SSC
		20	13 0	59.93	19	23.20	155	16.99	2.82	2.0	2.3	22	4	47	.08	0	.3	.3	16	SSC
		20	1319	33.80	19	23.13	155	16.88	2.98	2.1	2.3	24	3	47	.07	0	.2	.3	16	SSC
		20	1358	42.91	19	23.14	155	17.19	2.38	.8	.9	14	1	79	.07	1	.3	.3	10	SSC
		20	1446	9.35	19	23.16	155	17.08	2.57	1.0	1.3	14	1	48	.07	0	.3	.3	8	SSC
		20	15 1	31.37	19	23.03	155	16.88	2.87	1.8	1.8	21	2	48	.09	1	.3	.3	15	SSC
		20	1541	52.52	19	23.25	155	17.06	2.71	.8	.9	13	2	77	.05	0	.3	.3	8	SSC
		20	1542	15.78	19	22.99	155	16.79	2.77	2.0	2.1	29	3	40	.11	1	.2	.2	22	SSC
		20	1551	2.14	19	23.23	155	16.91	3.33	1.4	1.8	21	3	46	.09	0	.3	.3	14	SSC
		20	1559	18.75	19	23.09	155	16.78	2.91	2.3	2.4	25	3	43	.07	1	.2	.2	21	SSC
		20	1617	39.54	19	23.24	155	17.05	2.49	.8	.5	8	1	154	.03	0	.4	.4	5	SSC
		20	1620	31.47	19	23.00	155	16.94	2.90	1.8	1.8	21	3	48	.09	1	.3	.3	17	SSC
		20	1623	33.45	19	23.36	155	16.99	2.61	.8	.4	9	2	146	.04	0	.5	.4	7	SSC
		20	1623	49.16	19	23.34	155	16.96	2.82	.8	.4	9	2	145	.04	0	.4	.4	7	SSC
		20	1628	56.62	19	23.23	155	17.03	3.04	.9	.4	14	3	79	.07	0	.3	.4	9	SSC
		20	1629	8.66	19	23.04	155	16.78	2.89	2.4	2.8	29	3	40	.09	1	.2	.3	14	SSC
		20	1631	51.59	19	23.16	155	17.14	2.65	.9	.7	12	2	81	.04	1	.3	.3	7	SSC
		20	1634	1.04	19	23.23	155	17.00	2.59	.9	.4	7	0	153	.03	0	.6	.5	7	SSC
		20	1634	44.51	19	23.15	155	16.96	2.71	1.4	1.2	19	3	62	.07	0	.3	.3	11	SSC
		20	1642	12.76	19	23.23	155	17.00	2.63	.8	.7	9	2	153	.03	0	.4	.4	7	SSC
		20	1644	4.31	19	23.23	155	17.09	2.41	1.3	1.8	22	4	47	.11	0	.3	.2	13	SSC
		20	1646	35.32	19	23.24	155	17.05	2.72	.8	.9	12	2	85	.05	0	.3	.3	5	SSC
		20	1648	31.71	19	23.30	155	17.03	2.64	.8	.9	10	1	113	.05	0	.3	.3	7	SSC
		20	1651	2.90	19	23.32	155	17.07	2.66	2.1	2.1	22	2	45	.10	0	.3	.3	18	SSC
		20	1651	35.12	19	23.25	155	17.04	2.77	1.2	1.5	11	1	85	.06	0	.4	.4	9	SSC
		20	1652	51.21	19	23.24	155	17.04	2.68	1.1	.7	11	2	94	.04	0	.3	.3	7	SSC
		20	1654	3.01	19	23.04	155	17.10	2.56	.9	.9	12	0	71	.04	1	.4	.3	7	SSC
		20	1658	.65	19	23.28	155	16.97	2.44	.9	1.1	15	2	55	.06	0	.3	.2	8	SSC
		20	1659	4.89	19	23.23	155	16.97	2.64	2.1	2.0	22	2	40	.08	0	.3	.3	20	SSC
		20	17 2	27.68	19	23.22	155	17.05	2.47	.9	1.0	11	3	95	.05	0	.3	.4	7	SSC
		20	17 5	27.31	19	23.19	155	17.07	2.86	1.3	1.1	14	2	71	.09	0	.4	.3	11	SSC
		20	17 7	26.02	19	23.11	155	16.92	2.50	2.1	2.3	23	2	40	.11	1	.3	.2	15	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JAN	20	1715	45.83	19	22.96	155	17.06	2.85	1.0	.7	16	2	48	.08	1	.3	.3	9	SSC
		20	1717	46.55	19	23.03	155	17.05	2.49	2.1	2.6	26	3	64	.08	1	.2	.3	17	SSC
		20	1719	40.94	19	23.10	155	17.14	2.79	1.8	1.8	24	2	41	.09	1	.3	.3	17	SSC
		20	1743	47.84	19	23.27	155	17.09	2.92	.9	.8	13	2	84	.07	0	.3	.3	7	SSC
		20	1745	23.65	19	22.83	155	17.09	3.05	1.3	.9	18	3	49	.10	1	.3	.4	9	SSC
		20	1752	43.64	19	22.91	155	17.18	2.79	.9	.4	12	1	92	.07	1	.4	.4	7	SSC
		20	18 3	16.81	19	23.39	155	16.80	2.79	.8	1.0	13	3	76	.06	0	.3	.3	8	SSC
		20	18 4	4.68	19	23.22	155	16.73	2.84	2.3	2.5	26	3	47	.08	0	.3	.2	21	SSC
		20	1812	20.34	19	22.94	155	17.07	2.85	1.3	1.5	19	3	71	.09	1	.3	.3	9	SSC
		20	1815	15.07	19	23.21	155	17.03	2.98	1.0	.9	17	2	47	.09	0	.3	.3	9	SSC
		20	1817	6.92	19	23.22	155	17.04	2.66	.8	.9	17	2	60	.08	0	.3	.3	11	SSC
		20	1817	36.64	19	23.15	155	17.05	2.84	2.4	2.3	25	2	41	.08	0	.2	.3	18	SSC
		20	1828	56.08	19	23.20	155	17.02	2.96	.9	.9	18	3	47	.06	0	.3	.3	11	SSC
		20	1829	40.07	19	23.14	155	17.11	2.74	.9	.7	13	2	66	.08	1	.3	.4	8	SSC
		20	1836	41.17	19	23.37	155	16.94	2.76	1.2	1.0	19	3	46	.08	0	.3	.3	10	SSC
		20	1837	30.40	19	23.13	155	17.14	2.83	1.4	.7	16	1	48	.10	1	.4	.3	9	SSC
		20	1838	14.51	19	23.31	155	16.84	3.19	2.0	1.9	24	3	40	.09	0	.3	.3	16	SSC
		20	1843	16.28	19	23.22	155	17.03	2.89	1.3	.9	17	3	48	.09	0	.3	.3	11	SSC
		20	1844	57.35	19	23.09	155	17.09	2.59	1.8	2.1	26	4	41	.08	1	.2	.3	18	SSC
		20	1847	54.27	19	23.24	155	16.93	2.76	1.6	1.5	23	4	47	.08	0	.3	.2	18	SSC
		20	1848	21.00	19	23.57	155	17.00	2.81	1.5	.9	19	4	49	.09	0	.3	.3	10	SSC
		20	1850	40.26	19	23.74	155	23.96	9.86	1.8	1.5	21	2	73	.06	4	.5	1.0	19	KAO
		20	1851	28.65	19	23.00	155	17.20	2.54	1.4	1.3	18	2	50	.08	1	.3	.4	13	SSC
		20	1852	49.98	19	23.09	155	17.12	2.58	1.9	1.8	20	0	48	.09	1	.3	.3	14	SSC
		20	1943	15.52	19	23.85	155	16.87	2.84	1.2	1.3	15	3	76	.06	1	.3	.3	9	SSC
		20	20 3	59.72	19	23.55	155	17.00	3.19	.8	.8	14	2	47	.08	0	.4	.4	8	SSC
		20	2016	39.44	19	23.70	155	16.90	2.85	.8	.5	13	3	74	.05	1	.3	.3	8	SSC
		20	2017	6.71	19	23.76	155	16.91	2.82	.9	.7	10	2	87	.05	1	.4	.4	8	SSC
		20	2027	49.70	19	23.41	155	16.83	3.20	1.2	1.5	15	3	52	.09	0	.4	.3	10	SSC
		20	2057	11.17	19	23.28	155	16.84	3.05	2.8	2.9	34	2	38	.08	0	.2	.2	21	SSC
		20	2121	25.50	19	23.42	155	16.87	3.23	1.6	1.6	18	2	51	.09	0	.4	.3	15	SSC
		20	2128	8.21	19	22.99	155	17.15	2.66	1.1	.7	16	2	49	.06	1	.3	.3	8	SSC
		20	2129	11.18	19	23.23	155	16.91	2.88	2.7	3.0	36	3	37	.09	0	.2	.2	26	SSC
		20	2146	.85	19	23.18	155	17.07	2.72	.9	.9	15	3	71	.07	0	.3	.3	10	SSC
		20	2150	54.52	19	24.69	155	22.71	10.15	1.5	1.5	20	2	54	.09	4	.5	1.2	17	KAO
		20	2153	1.43	19	23.40	155	16.93	3.15	.9	1.1	15	2	53	.06	0	.3	.3	11	SSC
		20	23 7	44.90	19	23.05	155	17.05	2.53	.6	.7	10	2	88	.02	1	.4	.4	5	SSC
		21	143	51.69	19	23.86	155	16.96	2.92	1.1	.9	14	3	73	.05	1	.3	.3	9	SSC
		21	242	55.50	19	23.14	155	17.01	2.65	.9	.9	13	2	142	.03	0	.3	.2	8	SSC
		21	443	.72	19	23.05	155	17.11	2.47	.9	.9	13	2	77	.07	1	.4	.3	7	SSC
		21	518	1.09	19	23.88	155	16.72	2.69	1.0	1.1	11	2	84	.08	0	.5	.4	8	SSC
		21	618	56.53	19	22.92	155	17.09	2.47	1.2	1.4	15	2	83	.05	1	.3	.3	11	SSC
		21	620	10.25	19	20.55	155	12.74	8.89	2.0	2.0	32	4	66	.10	4	.4	.6	23	SF2
		21	1029	57.40	19	20.44	155	13.66	8.87	1.5	1.3	21	2	67	.05	4	.5	.9	16	SF2
		21	1242	8.04	19	19.42	155	14.89	7.75	1.9	2.0	31	1	98	.10	5	.5	.8	21	SF1 F
		21	1635	7.12	19	22.82	155	16.71	3.29	2.6	3.3	31	2	42	.09	1	.2	.3	25	SSC
		21	1718	27.88	19	20.23	155	12.84	9.22	1.8	1.4	25	2	69	.06	4	.5	.9	17	SF2
		21	1744	37.73	19	22.59	155	17.10	2.60	1.1	1.3	18	3	50	.09	2	.3	.4	9	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	JAN	21	1817	38.83	19	23.54	155	16.86	2.91	2.5	2.8	28	3	36	.09	0	.3	.2	21	SSC	
		21	1847	27.44	19	24.31	155	16.43	8.85	1.8		26	4	79	.10	1	.5	.6	14	INT T	
		21	1848	45.79	19	24.23	155	16.80	9.08	1.7		24	4	78	.08	1	.5	.5	7	INT T	
		21	2236	7.08	19	20.91	155	10.51	9.10	1.7	1.4	23	2	71	.04	2	.5	.9	19	SF3	
		22	339	2.48	19	46.66	156	1.85	40.63	3.8	4.1	47	5	186	.09	23	.8	1.6	41	HUA F	
		22	540	49.03	19	23.55	155	17.00	2.69	.8	1.3	13	1	77	.05	0	.4	.2	11	SSC	
		22	1020	29.15	19	23.14	155	16.83	3.01	1.7	1.3	20	3	46	.06	0	.3	.3	14	SSC	
		22	1448	19.48	19	17.96	155	12.86	5.81	1.7	1.2	25	1	115	.07	2	.5	1.1	14	SF2	
		22	16	4 10.67	19	23.35	155	16.81	3.01	1.0	1.0	15	2	56	.08	0	.3	.3	10	SSC	
		23	215	15.02	19	18.76	155	15.43	8.37	1.9	1.2	20	3	124	.05	4	.6	1.1	14	SF1	
		23	233	26.72	19	26.61	155	29.88	10.69	2.2	1.4	26	2	69	.09	9	.4	.9	22	KAO	
		23	354	3.95	19	9.09	155	42.06	3.50	2.5	1.3	12	1	138	.22	14	.9	7.2	10	LSW	*
		23	439	21.29	19	17.95	155	12.89	4.50	2.3	1.9	34	2	114	.11	2	.4	1.0	22	SSF	
		23	616	3.29	19	21.05	155	19.91	31.89	2.5	1.6	35	0	56	.08	5	.7	1.3	33	DEP	
		23	853	48.35	19	20.20	155	13.82	7.46	1.8	1.9	27	2	105	.09	5	.5	.9	19	SF2	
		23	957	37.97	19	22.20	155	17.46	2.56	1.4	1.4	16	1	87	.08	2	.3	.5	13	SSC	
		23	1049	35.28	19	23.23	155	16.78	2.98	2.0	2.3	19	2	56	.06	0	.3	.3	14	SSC	
		23	1220	35.80	19	10.07	155	39.89	7.64	2.4	1.8	15	0	116	.12	10	.6	2.1	11	LSW	
		23	1453	25.45	19	17.53	155	12.49	10.32		1.3	17	4	228	.08	10	1.0	1.6	10	SF2	
		23	1615	41.99	19	22.53	155	17.26	3.04	1.0	1.1	15	2	89	.07	2	.3	.5	9	SSC	
		23	2024	25.14	19	17.70	155	13.48	7.20	2.2	2.3	37	4	84	.09	1	.4	.7	23	SF2	
		24	224	28.99	19	21.79	155	18.23	2.80	1.5	1.6	15	2	89	.08	3	.3	.6	8	SWR	
		24	321	41.80	19	20.14	155	13.08	8.74	2.0	2.1	28	1	68	.08	5	.5	.8	20	SF2	
		24	611	31.15	19	22.37	154	58.76	5.61	1.6	1.4	19	0	194	.08	5	.7	1.9	9	LER	
		24	644	42.55	19	20.35	155	12.99	9.32	1.5	1.6	18	1	179	.05	4	.9	1.2	14	SF2	
		24	715	46.90	19	26.20	155	23.27	8.58	2.2	2.2	34	4	46	.10	4	.4	.8	30	KAO	
		24	740	1.17	19	19.68	155	7.78	8.07	2.1	2.1	29	1	98	.06	4	.4	.8	18	SF4	
		24	934	.27	19	19.20	155	10.96	8.41	1.4	1.2	17	2	212	.06	6	.9	1.2	11	SF3	
		24	1525	3.98	19	18.89	155	26.18	9.08	1.9	1.6	20	0	116	.08	6	.5	.9	12	LSW	
		24	1530	34.47	19	21.57	155	15.19	9.23	3.4	3.6	40	2	63	.10	2	.4	.5	38	SF1	
		24	1551	34.62	19	21.23	155	14.97	8.95	1.4	1.0	14	1	147	.03	3	.8	1.2	8	SF1	
		24	1642	1.13	19	20.50	155	13.24	9.50	1.4	1.2	15	0	175	.03	4	.9	1.4	11	SF2	
		24	2023	28.71	19	22.07	155	18.08	3.19	1.2	1.0	14	1	71	.06	3	.3	.7	9	SSC	
		24	2030	56.17	19	21.82	155	18.42	2.81	1.2	1.1	21	4	68	.08	4	.3	.6	11	SWR	
		24	21	2 30.64	19	22.36	155	17.10	2.90	1.0	.9	15	1	63	.06	2	.3	.4	9	SSC	
		24	2117	15.43	19	21.73	155	18.54	1.82	1.2	1.1	16	2	70	.10	4	.3	.7	13	SWR	
		24	2124	47.34	19	23.47	155	16.88	2.95	.9	1.1	19	3	50	.07	0	.3	.3	11	SSC	
		24	2134	39.13	19	21.97	155	18.13	3.26	1.5	1.1	24	2	52	.07	3	.3	.5	15	SWR	
		24	2140	55.11	19	22.09	155	17.57	3.34	1.4	1.1	19	3	57	.06	3	.3	.5	13	SSC	
		24	2224	32.02	19	23.25	155	17.10	2.43	2.1	2.4	27	1	41	.09	0	.2	.2	21	SSC	
		24	2253	53.81	19	18.15	155	13.34	4.90	1.8		30	2	88	.10	2	.4	1.1	19	SSF	
		24	2254	23.50	19	18.57	155	13.63	7.39	2.3	2.7	35	2	135	.11	7	.5	.9	19	SF2	
		24	2255	19.92	19	18.24	155	13.64	4.83	1.6	.9	16	1	72	.09	2	.6	1.5	12	SSF	
		24	2256	15.64	19	17.91	155	13.53	6.16	1.3	1.0	22	1	80	.09	2	.6	1.3	16	SF2	
		24	2326	53.30	19	23.91	155	37.64	11.64	1.7	1.5	26	2	70	.10	6	.4	.8	18	MLO	
		24	2342	32.54	19	20.15	155	12.31	8.70	1.8	1.4	24	3	76	.06	5	.5	.8	17	SF2	
		25	2 4	55.95	19	27.01	155	27.03	7.74	1.6	1.2	25	2	63	.10	5	.4	1.0	14	KAU	
		25	2 9	17.53	19	23.30	155	17.08	2.69	1.1	.9	15	3	63	.09	0	.3	.4	11	SSC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JAN	25	240	7.23	19	23.31	155	16.79	2.92	2.1	2.3	17	1	43	.08	0	.3	.3	15	SSC
		25	256	24.59	19	23.69	155	16.91	3.17	1.6	1.5	24	3	58	.09	1	.3	.2	17	SSC
		25	321	35.33	19	23.65	155	28.71	9.42	1.6	1.1	24	2	70	.08	3	.4	.9	16	KAO
		25	326	14.67	19	18.23	155	13.19	7.69	2.1	1.9	37	2	92	.11	2	.5	.7	27	SF2
		25	435	47.09	19	21.79	155	18.41	2.73	1.1	.9	19	2	69	.07	4	.3	.6	13	SWR
		25	519	48.48	19	20.60	155	6.09	9.06	1.9	1.4	16	0	235	.05	4	2.2	1.1	8	SF4
		25	539	57.19	19	21.74	155	18.29	2.87	1.1	.9	14	2	73	.05	3	.4	.8	9	SWR
		25	615	51.77	19	21.89	155	20.50	12.22	1.6	1.6	24	3	79	.07	4	.5	.9	15	SWR
		25	623	12.14	19	23.95	155	16.96	2.85	1.0	.9	11	1	74	.02	1	.3	.3	7	SSC
		25	640	37.94	19	23.65	155	17.17	2.48	1.3	1.1	18	2	57	.07	1	.3	.2	8	SSC
		25	643	15.96	19	21.75	155	18.24	3.12	1.1	.9	13	1	75	.08	3	.4	.9	8	SWR
		25	647	14.22	19	21.77	155	18.23	2.69	2.1	2.0	29	3	54	.12	3	.3	.5	18	SWR
		25	7	1 33.35	19	17.81	155	23.28	3.33	1.7	1.4	15	1	189	.05	4	.5	.9	7	SWR
		25	732	22.11	19	23.22	155	2.19	9.61	2.3	2.1	27	2	134	.07	4	.4	.8	14	SF5
		25	751	19.78	19	23.83	155	17.14	2.24	1.6	1.6	18	1	56	.09	1	.3	.2	9	SSC
		25	851	11.29	19	21.79	155	18.24	3.38	1.7	1.6	15	1	73	.07	3	.4	.7	10	SWR
		25	1051	31.46	19	21.89	155	18.05	3.01	1.4	1.1	19	3	63	.08	3	.3	.6	14	SWR
		25	12	0 19.64	19	22.40	155	17.22	2.58	1.4	1.1	17	3	65	.06	2	.3	.4	11	SSC
		25	1532	6.19	19	23.51	155	16.90	2.99	1.8	1.9	21	1	45	.07	0	.3	.2	20	SSC
		25	1721	58.99	19	23.37	155	16.73	3.26	2.2	2.0	22	2	47	.08	0	.3	.2	15	SSC
		25	1731	15.51	19	21.86	155	17.99	2.94	1.4	1.0	18	2	63	.07	3	.3	.6	9	SWR
		25	1814	57.49	19	24.18	155	16.13	3.11	1.7	1.3	19	0	110	.06	1	.3	.2	14	SEC
		25	1845	20.81	19	22.35	155	17.29	3.22	1.7	1.5	21	1	53	.08	2	.3	.4	16	SSC
		25	19	0 9.97	19	5.65	155	29.41	40.27		1.6	28	0	181	.11	8	3.5	4.4	21	DLS
		25	1937	7.93	19	26.08	155	23.39	8.73	1.9	1.2	30	4	42	.09	3	.4	.8	17	KAO
		26	231	38.90	19	22.02	155	17.88	3.37	1.4	1.1	19	3	84	.08	3	.3	.6	14	SWR
		26	723	7.21	19	21.77	155	18.28	4.14	1.8	1.1	21	3	67	.10	3	.3	.9	12	SWR
		26	854	12.65	19	21.41	155	5.99	8.40	1.4	1.6	17	0	88	.08	3	.6	1.3	14	SF4
		26	917	53.11	19	21.81	155	18.24	2.91	1.9	2.1	28	4	54	.10	3	.3	.6	21	SWR
		26	929	11.18	19	22.35	155	17.10	2.79	1.5	1.4	17	2	96	.08	2	.3	.4	12	SSC
		26	1021	59.18	19	26.31	155	23.86	9.87	1.9	1.2	17	1	111	.09	3	.5	1.2	12	KAO
		26	1053	11.66	19	23.10	155	17.12	2.39	1.2	1.0	13	2	77	.04	1	.3	.3	9	SSC
		26	1053	21.29	19	23.11	155	17.08	2.55	1.7	1.6	17	2	41	.07	1	.3	.3	12	SSC
		26	1054	15.97	19	22.25	155	29.12	9.36	2.4	2.8	33	3	61	.08	3	.3	.6	29	KAO
		26	11	4 50.59	19	22.24	155	17.45	2.70	1.0	1.1	12	1	94	.06	2	.4	.6	7	SSC
		26	1144	38.67	19	46.83	156	.11	1.27	2.2	2.6	13	1	226	.13	20	2.2	1.6	5	HUA
		26	1222	51.33	19	23.69	155	16.85	2.49	1.3	1.3	16	2	68	.06	1	.3	.2	8	SSC
		26	1226	43.48	19	23.77	155	16.83	2.00	1.6	1.6	20	2	66	.11	0	.3	.2	11	SSC
		26	1315	17.51	19	21.80	155	18.02	2.87	1.1	1.2	13	1	80	.08	3	.4	.9	10	SWR
		26	1336	28.63	19	21.75	155	18.34	2.94	1.4	1.6	17	2	68	.05	3	.3	.7	9	SWR
		26	1351	18.98	19	19.64	155	11.11	9.55	1.8	1.3	20	0	94	.06	5	.6	1.2	15	SF3
		26	15	8 38.33	19	21.95	155	18.03	3.23	1.4	1.5	15	2	86	.05	3	.3	.7	11	SWR
		26	1512	8.07	19	25.68	155	29.36	8.31	2.0	1.5	20	1	73	.08	7	.4	1.2	16	KAO
		26	1735	14.12	19	21.74	155	18.26	2.99	1.1	1.0	11	1	89	.07	3	.4	.9	8	SWR
		26	1835	34.44	19	22.73	155	3.26	8.94	2.1	2.1	11	0	113	.05	4	.8	1.3	9	SF5
		26	2014	53.38	19	26.62	155	29.67	9.82	1.6	1.4	22	1	68	.08	8	.5	1.2	17	KAO
		26	2016	54.49	19	23.00	155	17.07	2.56	1.2	1.6	17	2	69	.06	1	.3	.3	10	SSC
		26	2322	47.11	19	23.09	155	16.99	2.88	1.6	1.7	21	3	41	.08	1	.3	.3	12	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	JAN	26	2358	25.41	19	22.80	155	17.06	2.73	1.4	1.6	20	3	60	.08	1	.3	.3	9	SSC	
		27	022	55.83	19	23.02	155	17.06	2.74	1.3	1.6	15	3	68	.06	1	.3	.4	11	SSC	
		27	145	23.35	19	23.09	155	18.26	30.35	2.6	2.9	46	2	30	.11	2	.6	.9	40	DEP	
		27	250	26.28	19	22.34	155	17.28	3.01	1.1	1.5	17	1	53	.08	2	.3	.4	8	SSC	
		27	415	1.55	19	21.74	155	18.45	1.79	1.0	1.2	13	1	69	.06	4	.3	.8	6	SWR	
		27	512	59.33	19	23.42	155	16.84	2.67	.8	1.3	14	3	57	.09	0	.3	.3	10	SSC	
		27	515	20.82	19	23.20	155	17.15	2.44	.8	.7	13	1	78	.04	1	.3	.3	8	SSC	
		27	516	16.96	19	23.60	155	16.87	2.95	1.2	1.6	14	3	57	.06	0	.3	.3	8	SSC	
		27	627	47.53	19	55.78	155	23.72	10.31	2.8	2.9	44	3	243	.12	7	1.0	.4	34	KEA	
		27	657	2.13	19	22.46	155	17.18	2.69	1.3	1.6	21	2	54	.07	2	.3	.3	12	SSC	
		27	955	21.87	19	23.31	155	16.81	2.94	2.1	2.0	27	3	54	.10	0	.3	.2	20	SSC	
		27	1220	.00	19	21.73	155	18.41	2.71	1.9	1.3	20	2	69	.08	4	.3	.6	16	SWR	
		27	1338	26.49	19	22.20	155	17.52	2.81	1.4	.9	19	2	56	.07	2	.3	.5	11	SSC	
		27	1447	18.72	19	23.65	155	16.87	2.77	2.2	2.1	24	3	47	.08	1	.3	.3	19	SSC	
		27	2014	57.55	19	22.29	155	17.51	2.95	1.8	1.3	21	1	56	.09	2	.3	.5	18	SSC	
		27	2025	39.09	19	23.51	155	16.85	3.01	1.5	1.3	22	3	37	.07	0	.3	.2	11	SSC	
		28	1 5	26.73	19	23.05	155	17.06	2.36	1.2	1.0	19	2	67	.07	1	.2	.2	13	SSC	
		28	124	49.79	18	32.21	154	59.63	16.50	2.6	2.5	40	3	297	.13	85	4.6	43.3	24	DIS	*
		28	517	32.58	19	18.81	155	13.72	8.19	1.7	1.3	25	2	85	.08	3	.5	1.0	18	SFZ	
		28	925	48.48	19	23.59	155	16.91	3.19	2.8	3.3	37	1	40	.11	0	.2	.2	27	SSC	F
		28	1354	9.69	19	20.98	155	3.08	7.53	2.1	2.3	37	1	112	.11	2	.6	.5	30	SFS	
		28	1652	17.77	19	23.08	155	17.09	2.37	2.0	2.0	24	3	42	.09	1	.2	.3	18	SSC	
		28	2034	29.31	19	19.79	155	12.06	7.90	1.8	1.4	23	3	84	.07	6	.5	.9	18	SF3	
		28	2051	33.47	19	21.82	155	17.81	3.00	1.4	1.6	19	0	51	.12	3	.3	.7	15	SWR	
		29	032	8.86	19	19.67	155	10.01	8.86	1.9	1.8	29	1	92	.09	4	.5	1.0	21	SF3	
		29	3 0	40.93	19	21.72	155	18.22	2.57	1.6	2.0	25	2	54	.11	3	.3	.5	21	SWR	
		29	422	28.16	19	21.66	155	18.02	3.09	1.9	2.1	22	1	59	.07	3	.5	.6	17	SWR	
		29	846	2.10	19	23.79	155	16.84	2.88	2.3	2.3	20	2	44	.07	0	.3	.3	14	SSC	
		29	928	38.16	19	23.41	154	58.12	7.61	2.6	2.2	40	2	175	.13	3	.7	.5	27	LER	
		29	1111	41.22	19	19.86	155	11.13	8.43	2.1	1.6	32	1	89	.10	5	.5	.8	25	SF3	
		29	1145	29.72	19	18.72	155	15.34	7.19	2.0	1.6	29	0	123	.10	4	.5	.8	24	SF1	
		29	13 0	16.73	19	21.06	155	24.91	10.30	2.9	2.8	42	3	76	.12	3	.4	.5	33	SWR	
		29	1413	53.19	19	21.72	155	1.89	6.79	2.0	1.4	32	1	157	.15	4	.6	.9	19	SFS	
		29	1858	53.50	19	23.37	155	16.94	2.83	1.8	1.7	23	2	54	.10	0	.3	.3	16	SSC	
		29	2150	10.24	19	19.96	155	7.10	7.83	2.1	1.7	36	2	108	.09	5	.4	.8	19	SF4	
		29	2215	29.66	19	23.58	155	3.48	11.42	2.0	1.4	33	3	101	.10	2	.5	.9	20	SFS	
		30	10 5	20.95	19	20.26	155	13.12	9.32	1.7	1.4	15	0	120	.04	4	.7	1.5	14	SFZ	
		30	1232	27.72	19	21.74	155	2.82	7.14	1.8	1.6	24	0	130	.11	3	.6	1.0	10	SFS	
		30	1251	59.40	19	21.34	155	2.56	8.50	2.2	2.4	34	1	143	.09	3	.7	.4	12	SFS	
		30	1441	4.60	19	22.88	155	16.98	2.80	1.7	2.2	22	3	48	.07	1	.3	.3	13	SSC	
		30	1551	5.99	19	23.08	155	17.06	2.52	.9	1.1	14	2	75	.07	1	.3	.4	9	SSC	
		30	18 5	33.91	19	23.49	155	2.39	8.80	1.9	2.1	32	1	125	.10	4	.5	.6	21	SFS	
		30	1946	13.24	19	20.42	155	12.94	8.00	1.4	1.2	22	3	66	.05	4	.4	.9	10	SFZ	
		31	422	52.89	19	19.05	155	12.99	8.11	1.4	1.4	21	1	84	.06	4	.6	1.2	18	SFZ	
		31	1123	32.29	19	22.35	155	24.43	9.63	1.4	1.8	28	2	43	.11	4	.4	.7	18	KAO	
		31	1336	14.25	19	21.73	155	17.97	3.82	1.2	1.6	21	2	50	.16	3	.4	.8	13	SWR	
		31	1512	8.91	19	22.50	155	28.88	10.06	1.9	2.0	26	0	60	.10	2	.4	.9	20	KAO	
		31	2058	28.99	19	20.34	155	13.22	9.08	1.5	1.1	21	2	63	.06	4	.6	.9	15	SFZ	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	FEB	1	247	27.52	19	13.57	155	30.03	34.77	1.8	1.6	22	1	97	.07	3	.8	1.7	19	DLS	
		1	256	18.35	19	13.16	155	30.39	34.18	2.1	1.8	38	2	68	.07	4	.6	1.2	32	DLS	
		1	742	47.70	19	20.07	155	11.02	8.91	2.9	2.6	31	0	171	.12	4	.8	.7	24	SF3	
		1	812	19.83	19	19.10	155	11.14	8.22	1.9	1.1	26	2	107	.08	6	.5	1.0	16	SF3	
		1	1346	31.86	19	19.50	155	11.85	9.74	2.4	2.6	36	0	92	.08	5	.4	.4	30	SF3	
		1	17 6	32.15	19	21.25	155	5.71	8.48	1.7	1.2	20	0	93	.06	3	.6	1.3	16	SF4	
		1	2348	19.98	19	21.83	155	18.22	3.16	1.7	1.4	22	2	56	.09	4	.3	.6	14	SWR	
		2	1 3	12.83	19	19.60	155	11.65	9.30	2.9	2.9	40	1	92	.09	6	.4	.5	30	SF3	
		2	432	44.25	19	8.63	155	37.30	8.33	1.9	1.4	21	2	111	.13	12	.5	1.2	9	LSW	
		2	542	27.94	19	22.50	155	17.08	2.77	1.7	1.5	23	1	52	.09	2	.3	.4	16	SSC	
		2	12 1	6.62	19	23.08	155	16.93	2.98	.9	.9	15	3	64	.08	1	.4	.4	8	SSC	
		2	1436	17.51	19	41.42	155	2.65	1.48	2.2	2.4	24	1	188	.13	21	.8	1.6	6	HIL	R
		2	15 4	12.38	19	18.20	155	15.70	7.62	1.0	1.0	16	0	148	.07	4	.7	1.4	13	SF1	
		2	1841	44.95	19	20.05	155	11.51	8.72	2.5	2.8	40	2	84	.10	5	.4	.5	31	SF3	
		2	1942	42.32	19	19.04	155	15.12	8.23	1.8	1.2	24	2	111	.06	4	.5	.8	16	SF1	
		3	532	11.20	19	24.92	155	.87	7.11	2.4	2.2	38	3	118	.14	4	.4	.7	19	SF5	
		3	649	26.46	19	21.86	155	6.97	8.02	1.4	1.4	25	1	75	.08	2	.4	.8	15	SF4	
		3	1348	12.59	19	20.21	155	11.18	8.82	2.1	1.7	34	1	82	.09	4	.4	.7	26	SF3	
		3	1352	59.68	19	24.00	155	24.46	8.20	2.2	1.6	35	2	48	.10	3	.4	.7	26	KAO	
		3	19 0	34.53	19	10.53	155	32.26	7.82	2.4	1.5	30	4	109	.17	8	.5	1.0	17	LSW	
		3	1935	35.95	19	23.83	155	16.90	2.73	1.4	1.3	19	2	67	.05	1	.3	.2	14	SSC	
		3	2131	9.45	19	23.94	155	16.78	2.71	1.7	1.3	21	2	74	.08	0	.3	.3	13	SSC	
		3	2146	44.11	19	11.33	155	32.57	9.24	2.5	2.3	35	4	135	.13	8	.5	.7	22	LSW	
		3	2149	16.24	19	19.43	155	8.45	8.89	1.5	1.0	20	1	83	.06	4	.6	1.3	17	SF4	
		3	2324	4.68	19	23.05	155	17.00	2.63	1.0	.8	17	3	76	.06	1	.3	.2	11	SSC	
		4	016	41.92	19	23.60	155	16.86	2.85	1.8	1.6	23	2	45	.09	0	.3	.2	18	SSC	
		4	3 8	34.67	19	23.11	155	16.92	2.59	1.4	1.1	14	2	63	.04	1	.3	.3	10	SSC	
		4	451	34.56	19	24.14	155	1.66	7.24	1.5	1.1	26	2	125	.13	5	.5	1.0	11	SF5	
		4	659	52.74	19	19.75	155	12.71	7.12	1.8	1.2	23	2	77	.11	5	.5	1.2	14	SF2	
		4	810	23.98	19	20.87	155	11.29	8.80	2.2	1.9	33	3	71	.08	3	.4	.6	23	SF3	
		4	1123	34.37	19	19.52	155	13.27	6.86	1.3	1.3	25	1	72	.11	5	.5	1.0	20	SF2	
		4	14 1	57.98	19	23.49	155	16.77	2.63	1.2	1.5	19	3	44	.07	0	.3	.2	11	SSC	
		4	2046	46.37	19	20.33	155	4.13	6.90	1.9	1.8	33	0	122	.11	2	.5	.8	20	SF5	
		4	23 2	27.72	19	23.31	155	16.81	3.09	2.1	2.2	23	1	46	.09	0	.3	.3	20	SSC	
		5	0 4	22.04	19	22.86	155	16.92	2.80	2.4	2.9	22	2	40	.06	1	.3	.3	18	SSC	
		5	046	42.65	19	19.83	155	12.72	8.55	1.7	1.5	26	1	76	.08	5	.5	.9	17	SF2	
		5	3 2	52.53	19	41.36	156	6.43	39.41	2.2	2.2	26	1	243	.10	41	1.5	2.7	22	HUA	
		5	333	41.68	19	20.44	155	13.11	7.40	1.5	1.3	23	2	64	.11	4	.5	1.0	17	SF2	
		5	436	48.22	19	19.76	155	11.68	9.66	2.3	2.5	38	0	88	.08	5	.4	.4	31	SF3	
		5	624	15.57	19	20.25	155	12.96	7.48	1.9	1.9	29	3	68	.09	4	.5	.8	20	SF2	
		5	730	44.31	19	23.54	155	16.89	3.07	1.2	1.1	17	3	58	.06	0	.3	.3	10	SSC	
		5	738	44.87	19	20.07	155	8.58	8.10	1.3	1.1	20	1	76	.05	4	.6	1.1	15	SF4	
		5	839	15.33	19	23.54	155	16.82	2.92	2.3	3.0	32	0	37	.09	0	.3	.2	23	SSC	F
		5	929	15.03	19	22.21	155	17.32	3.34	1.4	1.2	17	2	60	.07	2	.3	.5	12	SSC	
		5	1059	6.45	19	23.48	155	16.86	2.89	.9	1.0	15	3	58	.05	0	.3	.3	8	SSC	
		5	1158	4.98	19	20.34	155	11.93	7.44	1.8	1.1	25	3	76	.11	5	.5	1.0	18	SF3	
		5	1254	52.57	19	19.18	155	15.41	8.54	2.3	1.9	35	2	92	.08	4	.4	.5	22	SF1	
		5	1327	3.89	19	19.51	155	11.29	7.66	1.9	1.2	28	2	96	.10	5	.6	1.1	21	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	FEB	5	1552	8.24	19	19.62	155	8.24	7.55	2.0	1.6	26	1	87	.07	4	.5	1.0	20	SF4	
		5	1729	43.40	19	25.83	155	24.66	7.37	2.1	1.5	32	2	40	.13	1	.4	.9	24	KAO	
		5	1744	7.52	19	25.89	155	24.89	7.22	2.6	2.1	35	1	35	.13	1	.4	.9	21	KAO	
		5	2132	.38	19	23.13	155	16.99	2.77	1.4	1.3	19	3	63	.09	0	.3	.3	13	SSC	
		5	2221	10.79	19	19.88	155	12.73	8.91	2.0	1.6	32	1	75	.08	5	.4	.7	20	SF2	
		6	611	5.42	19	19.83	155	6.36	8.63	2.2	1.4	29	1	124	.06	5	.6	.8	22	SF4	
		6	1449	25.12	19	17.95	155	23.15	3.17	1.0	1.1	17	1	113	.06	4	.5	.9	11	SWR	
		6	1531	47.52	19	17.90	155	23.26	3.47	1.7	1.8	23	1	113	.07	4	.4	1.1	17	SWR	
		6	2211	41.02	19	18.52	155	21.75	4.37	1.9	2.4	37	2	113	.12	4	.4	1.4	24	SWR	
		7	2	5 43.08	19	20.36	155	12.45	8.05	2.4	2.4	42	4	72	.09	4	.4	.5	25	SF2	
		7	255	59.48	19	20.39	155	19.47	3.60	1.4	1.0	12	0	107	.07	4	.4	1.0	9	SWR	
		7	330	36.20	19	18.00	155	23.28	3.17	.9	1.1	13	1	151	.07	4	.6	1.2	10	SWR	
		7	349	32.81	19	21.37	155	18.92	3.09	1.2	1.2	18	2	65	.10	4	.4	.9	12	SWR	
		7	656	18.93	19	18.12	155	23.16	3.74	1.3	1.4	17	1	150	.08	4	.5	1.1	11	SWR	
		7	1012	15.77	19	21.09	155	6.81	8.10	1.1	1.2	16	1	90	.06	4	.6	1.3	11	SF4	
		7	1223	20.77	19	18.04	155	23.23	5.45	2.4	3.0	33	0	112	.12	4	.4	.9	22	SWR	
		7	14	9 32.65	19	19.54	155	11.28	8.58	1.8	1.5	27	1	96	.08	5	.5	.8	21	SF3	
		7	1413	4.47	19	15.37	155	28.82	9.68	1.5	1.4	23	2	87	.12	2	.5	1.0	15	LSW	
		7	1720	34.77	19	26.19	155	24.89	6.27	1.6	1.4	17	2	121	.09	2	.5	1.1	11	KAO	
		7	1733	59.56	19	20.43	155	12.67	9.24	1.4	1.2	22	3	69	.08	4	.6	.9	16	SF2	
		7	1735	43.80	19	24.34	155	30.36	9.61	1.8	1.6	20	1	72	.10	6	.4	1.3	14	KAO	
		7	1852	39.10	19	18.01	155	23.15	3.28	2.1	2.5	24	2	112	.09	4	.4	.8	9	SWR	
		7	19	6 28.00	19	25.08	154	57.75	4.96	2.2	2.3	16	1	182	.10	2	1.0	.7	8	SLE	
		7	2032	53.89	19	21.34	155	3.68	7.36	1.2	1.1	14	0	102	.08	3	.7	1.1	9	SFS	
		7	2229	35.04	19	18.00	155	23.19	3.76	1.0	1.1	11	1	113	.05	4	.5	1.1	7	SWR	
		7	2230	2.57	19	18.00	155	23.28	6.04	2.5	3.3	38	2	112	.13	4	.4	.9	25	SWR	
		8	154	38.44	19	18.06	155	13.21	7.95	1.6	1.3	17	2	95	.07	2	.6	1.1	11	SF2	
		8	156	2.06	19	18.21	155	13.38	7.48	1.9	2.1	35	3	85	.11	2	.5	.7	19	SF2	
		8	253	31.34	19	18.32	155	23.12	3.90	1.7	1.9	22	1	146	.09	4	.5	1.0	16	SWR	
		8	3	1 2.11	19	18.26	155	23.21	3.41	1.7	1.8	20	1	110	.09	4	.4	.9	13	SWR	
		8	311	38.66	19	18.03	155	23.36	3.33	1.1	1.5	18	2	150	.08	4	.6	.9	12	SWR	
		8	5	1 7.51	19	15.62	155	28.59	24.62	1.5		18	0	108	.14	3	1.7	3.1	6	DLS	T
		8	519	20.45	19	17.82	155	22.91	8.04	1.0	1.3	11	1	116	.11	5	.7	2.1	4	SWR	
		8	953	47.64	19	18.87	155	15.48	8.25	1.7	1.2	24	3	99	.06	4	.5	.9	18	SF1	
		8	1325	42.55	19	24.37	155	25.67	9.89	2.4	2.1	43	4	38	.11	2	.3	.5	30	KAO	
		8	18	3 37.44	19	19.71	155	8.23	7.36	2.2	1.8	37	2	86	.11	4	.4	.7	24	SF4	
		8	18	7 52.83	19	18.25	155	22.85	3.50	1.7	1.3	19	1	112	.08	4	.5	.9	14	SWR	
		8	20	3 59.94	19	21.01	155	51.12	11.22	3.0	2.9	24	0	143	.10	10	.8	.7	21	KON	
		8	2239	5.36	19	21.11	155	6.93	8.22	1.9	1.3	23	2	88	.06	4	.5	1.1	18	SF4	
		9	536	39.17	19	18.54	155	23.07	5.49	2.1	1.8	33	1	108	.12	3	.4	1.2	29	SWR	
		9	543	26.40	19	20.79	155	12.84	9.05	1.7	1.4	29	3	63	.08	3	.5	.6	22	SF2	
		9	553	13.65	19	16.15	155	23.50	7.18	2.2	1.5	23	1	128	.11	8	.6	2.0	20	SWR	
		9	6	2 44.04	19	32.48	155	36.95	11.12	3.8	3.2	42	1	45	.14	6	.4	.5	41	MLO	F
		9	6	5 21.38	19	32.85	155	37.75	10.45	2.8	1.9	41	4	140	.12	7	.5	.4	26	MLO	
		9	629	19.33	19	31.24	155	36.17	8.52	2.5	1.3	29	0	105	.15	4	.8	1.0	22	MLO	*
		9	635	39.84	19	20.72	155	13.14	10.90	2.1	1.8	28	3	61	.07	4	.5	.8	17	SF2	
		9	918	46.74	19	18.35	155	23.26	5.45	2.4	3.1	34	1	109	.12	3	.4	1.0	27	SWR	
		9	1026	30.61	19	20.54	155	11.02	8.79	2.0	1.7	34	4	77	.08	4	.4	.6	22	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	FEB	9	1138	10.22	19	20.80	155	12.83	11.00	2.0	1.8	31	3	63	.07	3	.5	.6	18	SF2	
		9	1234	48.92	19	18.21	155	21.93	3.97	1.7	1.8	24	1	115	.10	4	.5	1.4	20	SWR	
		9	1334	11.13	19	33.14	155	37.68	10.00	3.0	2.7	37	2	95	.14	8	.5	.6	33	MLO	
		9	1430	58.66	19	10.58	155	39.51	5.09	2.4	1.9	26	1	113	.14	9	.5	1.3	16	LSW	
		9	1511	14.94	19	18.67	155	21.81	3.63	1.6	1.0	17	1	110	.07	4	.6	.9	14	SWR	
		9	1638	31.83	19	19.90	155	8.29	8.30	1.5	1.2	20	1	83	.07	5	.6	1.2	17	SF4	
		9	17	1 59.34	19	17.77	155	23.20	2.92	1.0	1.0	17	2	154	.08	5	.5	1.0	12	SWR	
		9	2139	4.72	19	17.77	155	23.33	3.83	1.8	2.0	29	3	114	.11	5	.4	1.4	21	SWR	
		9	2147	34.67	19	20.23	155	7.58	6.77	2.1	1.9	35	2	147	.12	5	.6	.8	23	SF4	
		9	2223	45.62	19	17.49	155	23.20	2.69	.9	1.1	16	1	158	.07	5	.5	1.0	10	SWR	
		9	23	2 57.28	19	17.93	155	23.18	3.20	1.8	2.0	24	2	152	.08	4	.5	1.0	17	SWR	
		9	2310	23.79	19	18.30	155	22.99	3.48	1.7	1.8	16	1	148	.09	4	.5	.9	12	SWR	
		10	018	27.26	19	18.21	155	23.16	3.69	1.1	1.1	17	1	148	.10	4	.5	1.0	10	SWR	
		10	142	50.94	19	17.48	155	23.21	3.06	1.1	1.1	18	2	117	.07	5	.4	1.0	12	SWR	
		10	213	50.03	19	17.91	155	23.25	3.51	1.1	1.4	16	1	113	.04	4	.5	1.1	13	SWR	
		10	258	45.54	19	18.47	155	23.16	4.02	2.0	2.6	31	1	109	.10	3	.4	1.1	23	SWR	
		10	329	13.57	19	17.55	155	23.18	2.65	1.7	1.6	18	1	116	.07	5	.4	1.0	9	SWR	
		10	523	44.86	19	18.49	155	13.05	8.29	1.4	1.0	20	1	93	.07	3	.6	1.1	14	SF2	
		10	6	1 3.19	19	17.47	155	23.65	2.89	1.7	1.9	23	1	115	.10	5	.5	1.4	19	SWR	
		10	6	2 17.61	19	17.55	155	23.48	5.31	1.5	1.6	18	1	156	.08	5	.6	1.9	9	SWR	
		10	6	4 20.16	19	18.66	155	23.17	3.53	.9		11	1	144	.04	3	.5	.7	6	SWR	
		10	713	24.99	19	18.05	155	23.07	4.36	1.7	1.7	21	2	112	.08	4	.5	1.6	16	SWR	
		10	755	4.06	19	20.11	155	24.88	10.53	1.8	1.8	26	2	105	.10	3	.5	.7	20	SWR	
		10	831	44.72	19	18.63	155	23.18	3.99	1.8	1.7	22	1	143	.09	3	.5	1.0	20	SWR	
		10	1031	6.78	19	25.27	155	24.14	11.75	2.2	1.8	29	3	44	.08	2	.4	.6	21	KAO	
		10	1045	17.16	19	20.08	155	12.45	8.99	1.9	1.5	33	3	76	.08	5	.4	.7	25	SF2	
		10	1149	36.51	19	25.40	155	24.40	7.66	1.8	1.1	22	2	46	.10	1	.5	1.1	16	KAO	
		10	1319	23.08	19	18.03	155	23.28	3.74	2.3	2.0	25	2	111	.09	4	.4	1.0	16	SWR	
		10	1327	30.47	19	17.81	155	23.49	3.20	1.7	1.2	18	1	113	.11	5	.5	1.2	12	SWR	
		10	1417	21.21	19	18.11	155	23.07	3.52	1.7	1.2	16	1	150	.06	4	.5	1.0	13	SWR	
		10	1425	8.14	19	19.81	155	12.15	9.57	1.6	1.3	23	3	84	.09	5	.6	1.0	19	SF3	
		10	1445	38.79	19	18.29	155	23.18	3.97	1.2	1.1	23	1	110	.09	4	.5	1.2	16	SWR	
		10	1557	54.92	19	17.58	155	23.31	3.26	1.8	1.4	20	1	156	.09	5	.5	1.2	12	SWR	
		10	1916	44.43	19	17.63	155	23.51	2.80	1.7	1.2	20	2	114	.08	5	.4	1.1	12	SWR	
		10	1919	48.89	19	17.62	155	23.54	2.97	1.9	1.7	26	2	114	.10	5	.4	1.1	22	SWR	
		10	1934	2.06	19	20.02	155	8.33	8.68	3.0	3.0	41	2	81	.10	5	.4	.6	32	SF4	
		10	20	2 45.17	19	17.41	155	23.34	2.38	1.1	1.1	20	2	117	.08	5	.4	.9	13	SWR	
		10	20	8 36.27	19	18.02	155	23.35	3.57	1.7	1.2	26	2	112	.10	4	.4	1.0	17	SWR	
		10	2034	30.79	19	18.34	155	22.92	3.49	1.7	1.2	19	1	147	.07	4	.5	.9	16	SWR	
		10	21	3 32.89	19	18.02	155	23.28	4.31	2.1	1.8	30	3	111	.11	4	.4	1.4	17	SWR	
		10	2211	38.63	19	17.84	155	23.17	3.20	1.8	1.6	23	2	114	.09	4	.4	.9	13	SWR	
		11	150	27.34	19	17.85	155	23.13	3.30	2.0	2.1	27	1	114	.09	4	.5	1.2	20	SWR	
		11	3	5 35.91	19	18.23	155	23.04	3.97	2.0	1.7	29	2	111	.10	4	.4	1.1	17	SWR	
		11	440	1.59	19	18.16	155	23.53	3.53	2.4	2.4	32	4	110	.11	4	.4	.8	21	SWR	
		11	444	31.19	19	18.30	155	23.25	2.89	3.0	3.3	42	2	110	.13	4	.3	.8	26	SWR	
		11	539	58.58	19	17.81	155	23.29	3.03	2.0	2.1	21	1	114	.10	4	.4	1.1	15	SWR	
		11	751	43.81	19	17.47	155	23.55	3.34	1.3	1.4	12	0	158	.08	5	.7	1.9	10	SWR	
		11	910	8.44	19	17.44	155	23.60	2.25	1.6	2.2	24	2	124	.10	5	.5	1.0	16	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	FEB	11	921	7.90	19	18.62	155	23.24	4.03	1.7	1.6	20	1	107	.07	3	.5	1.0	14	SWR
		11	922	37.58	19	17.35	155	23.81	2.10	1.A	1.6	17	2	116	.06	5	.5	.A	9	SWR
		11	1216	3.63	19	17.41	155	23.46	2.35	1.A	1.9	21	1	116	.10	5	.5	1.2	13	SWR
		11	1647	7.49	19	17.46	155	23.43	2.94	2.0	2.1	24	1	116	.08	5	.4	1.1	17	SWR
		11	1738	20.30	19	18.75	155	21.98	3.54	1.6	1.3	15	1	142	.06	4	.6	.9	12	SWR
		11	1846	14.54	19	17.82	155	23.32	3.34	2.1	2.2	20	1	114	.07	4	.5	1.1	16	SWR
		11	19	8 46.02	19	19.10	155	12.47	7.19	2.4	2.4	31	3	93	.13	4	.5	.9	24	SF2
		11	1930	38.69	19	17.39	155	23.14	3.22	1.7	1.2	20	1	159	.08	5	.6	1.4	17	SWR
		11	1932	39.29	19	18.88	155	13.13	8.84	1.5	1.3	23	3	83	.07	3	.6	.9	18	SF2
		11	2130	24.94	19	17.77	155	23.15	3.22	1.7	1.5	16	1	154	.07	5	.6	1.2	13	SWR
		11	2140	12.06	19	17.35	155	23.66	4.22	1.8	2.4	24	1	116	.09	5	.4	2.2	17	SWR
		11	2142	42.04	19	17.80	155	23.27	3.10	1.A	2.4	27	3	114	.07	5	.4	.9	19	SWR
		11	2149	16.30	19	18.47	155	23.47	4.25	2.5	3.1	28	1	107	.12	3	.4	1.2	25	SWR
		11	2235	58.07	19	58.37	155	22.20	14.25	2.7	2.8	28	3	198	.13	10	.8	.4	15	KEA
		12	141	38.25	19	22.12	155	29.71	8.87	2.3	2.1	27	1	73	.09	4	.4	1.0	21	KAO
		12	2	4 13.79	19	18.01	155	23.04	3.48	1.7	2.0	16	1	113	.06	4	.5	1.0	12	SWR
		12	315	14.11	19	17.96	155	23.21	3.13	.9	1.3	19	1	113	.07	4	.4	1.0	14	SWR
		12	325	46.94	19	17.36	155	23.70	2.20	1.A	1.9	23	2	116	.11	5	.4	1.0	15	SWR
		12	421	15.45	19	19.12	155	21.93	3.31	1.6	1.4	19	1	133	.06	3	.5	.7	12	SWR
		12	441	3.47	19	18.14	155	23.10	3.85	1.1	1.5	17	1	112	.07	4	.6	1.1	14	SWR
		12	656	53.60	19	17.96	155	23.19	3.31	1.1	1.3	15	1	152	.06	4	.6	1.1	13	SWR
		12	737	8.44	19	17.26	155	23.43	2.80	1.1	1.3	18	1	118	.06	6	.5	1.3	12	SWR
		12	755	39.53	19	20.05	155	21.40	2.80	1.5	1.3	16	1	111	.07	3	.4	.6	11	SWR
		12	855	45.71	19	18.48	155	23.26	3.65	2.0	2.1	27	2	108	.10	3	.4	.8	18	SWR
		12	945	26.17	19	18.55	155	23.32	3.57	1.A	1.5	20	1	143	.09	3	.5	.8	14	SWR
		12	946	13.78	19	18.73	155	23.07	3.63	2.0	1.6	23	1	119	.10	3	.4	.9	17	SWR
		12	10	7 52.12	19	21.25	155	6.28	9.14	1.9	1.3	20	0	91	.08	3	.7	1.2	15	SF4
		12	1015	18.02	19	17.08	155	20.83	6.37		1.3	4	0	197	.02	4	1.7	2.3	2	SWR
		12	11	3 23.37	19	17.65	155	23.56	3.12		1.0	11	1	191	.08	5	.7	1.2	8	SWR
		12	1113	49.27	19	20.31	155	12.50	8.83	1.A	1.2	21	1	72	.06	4	.6	.9	15	SF2
		12	1134	54.16	19	17.86	155	23.34	3.71	1.7	1.5	23	1	113	.09	4	.4	1.1	16	SWR F
		12	1221	43.43	19	17.51	155	23.27	2.69		1.1	19	2	117	.07	5	.5	.9	12	SWR
		12	1321	15.19	19	17.39	155	23.64	1.96	1.0	1.2	17	1	115	.07	5	.5	1.0	7	SWR
		12	1343	41.27	19	17.88	155	23.25	3.16	1.7	1.3	17	1	152	.08	4	.5	1.1	13	SWR F
		12	1422	13.93	19	18.72	155	23.14	3.90	1.A	1.7	21	1	119	.13	3	.5	1.0	11	SWR
		12	1428	54.33	19	18.43	155	23.28	5.66	2.A	3.0	40	0	108	.13	3	.4	.9	33	SWR
		12	1433	22.98	19	17.92	155	23.23	3.95	2.1	1.9	26	3	113	.11	4	.4	1.3	19	SWR F
		12	1439	39.59	19	17.41	155	23.24	2.84	1.3	1.2	18	1	159	.06	5	.5	1.2	14	SWR
		12	1510	20.81	19	17.78	155	23.48	4.50	2.3	2.7	35	2	113	.10	5	.4	1.7	27	SWR
		12	1624	54.78	19	17.37	155	23.68	3.04	2.3	2.2	36	3	116	.10	5	.4	1.2	22	SWR
		12	1759	21.87	19	20.40	155	19.28	3.56	1.4	1.0	19	2	78	.08	3	.4	.9	15	SWR
		12	1837	48.27	19	18.60	155	12.94	7.32	1.6	1.2	21	1	94	.08	3	.5	1.2	13	SF2
		12	1912	58.63	19	17.54	155	23.52	5.18	1.9	1.7	25	2	115	.10	5	.5	2.2	20	SWR
		12	1949	25.60	19	17.45	155	23.55	2.63	1.A	1.1	21	1	116	.07	5	.4	1.2	14	SWR
		12	1958	46.93	19	23.97	155	25.73	8.54	1.A	1.2	28	2	58	.09	3	.4	.8	21	KAO
		12	2052	10.18	19	18.72	155	15.39	8.03	1.A	1.3	19	3	124	.06	4	.6	1.1	15	SF1
		12	2221	5.51	19	17.71	155	23.29	3.48	1.0	1.1	14	1	154	.07	5	.6	1.3	11	SWR
		12	2325	21.05	19	18.44	155	22.79	5.48	2.1	2.4	35	2	121	.12	3	.4	1.1	25	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	FEB	12	2338	9.77	19	18.36	155	21.98	4.09	1.6	1.2	18	1	149	.09	4	.6	1.3	16	SWR
		13	0	0 38.69	19	21.44	155	2.41	8.24	1.9	1.1	16	1	147	.05	3	.8	1.4	8	SFS
		13	028	26.08	19	20.95	155	6.03	8.76	1.A	1.3	23	2	98	.08	4	.6	1.2	18	SF4
		13	053	42.44	19	17.75	155	23.57	3.04	2.0	2.2	22	1	113	.10	5	.5	1.2	14	SWR
		13	111	40.07	19	17.44	155	23.49	2.91	1.A	1.2	20	1	116	.07	5	.5	1.1	9	SWR
		13	124	8.67	19	17.90	155	23.10	3.43		1.1	20	1	114	.09	4	.5	1.2	16	SWR
		13	140	13.63	19	17.85	155	23.30	3.71	2.0	2.2	26	2	114	.11	4	.5	1.3	19	SWR
		13	141	42.61	19	18.65	155	22.89	3.64	1.A	1.3	22	2	108	.10	3	.5	.8	16	SWR
		13	213	59.39	19	17.60	155	23.27	2.81	1.0	1.0	19	1	116	.07	5	.4	1.1	15	SWR
		13	235	27.01	19	19.07	155	21.38	3.26	1.6	1.2	21	1	133	.09	4	.5	.9	18	SWR
		13	254	42.83	19	17.76	155	23.43	3.80	1.1	1.3	24	1	126	.11	5	.5	1.5	16	SWR
		13	355	12.06	19	16.01	155	27.62	9.48	2.2	1.9	28	2	97	.12	5	.4	.6	23	LSW
		13	5	4 42.50	19	17.62	155	23.26	2.95	1.0	1.1	18	1	116	.07	5	.5	1.1	12	SWR
		13	518	.96	19	17.70	155	23.33	3.79	1.A	1.6	24	1	114	.09	5	.4	1.5	20	SWR
		13	610	26.46	19	17.48	155	23.24	2.49	1.1	1.0	18	1	117	.09	5	.5	1.2	11	SWR
		13	657	7.22	19	17.91	155	23.13	3.33	1.7	1.3	22	1	114	.10	4	.4	1.0	10	SWR
		13	7	2 22.15	19	17.83	155	23.29	3.06	1.7	1.2	20	1	114	.10	4	.5	1.0	11	SWR
		13	759	44.95	19	18.38	155	23.13	3.56	1.5	1.1	21	2	183	.08	3	.6	.8	13	SWR
		13	823	53.30	19	18.76	155	20.07	6.73		1.7	11	0	100	.07	3	.7	1.4	11	SWR
		13	1147	31.74	19	18.27	155	23.32	4.01	1.0	1.1	18	1	147	.09	4	.6	1.3	13	SWR
		13	1214	29.16	19	18.22	155	23.20	3.89	1.2	1.3	20	1	148	.08	4	.5	1.0	11	SWR
		13	1216	50.22	19	17.89	155	23.35	3.74	1.7	2.1	27	2	112	.11	4	.5	1.2	18	SWR
		13	1225	19.29	19	26.17	155	37.04	2.42	2.5	2.9	32	1	80	.13	2	.4	.7	21	MLO
		13	1255	17.65	19	17.59	155	23.54	2.40	1.2	1.4	21	2	156	.08	5	.5	.9	14	SWR
		13	1314	46.02	19	17.71	155	23.22	5.41	1.7	2.2	23	1	115	.10	5	.5	1.8	16	SWR
		13	1320	39.63	19	18.44	155	23.24	4.60	1.2	1.6	19	1	145	.10	3	.6	1.4	14	SWR
		13	1329	11.43	19	17.83	155	23.02	3.16	1.1	1.4	16	1	153	.06	4	.6	1.1	11	SWR
		13	1334	12.51	19	18.85	155	23.23	5.52	2.1	2.A	29	1	105	.10	3	.4	.9	23	SWR
		13	15	8 52.81	19	18.69	155	23.09	6.73	1.A	2.3	32	2	107	.13	3	.5	.9	20	SWR
		13	1519	20.95	19	19.73	155	7.39	6.72	1.4	1.A	19	0	106	.07	5	.5	1.3	12	SF4
		13	1539	21.91	19	18.19	155	23.04	3.14	1.0	1.4	17	1	149	.09	4	.5	.9	12	SWR
		13	1547	55.34	19	17.22	155	23.80	4.78	1.2	1.8	23	1	116	.10	6	.6	3.1	14	SWR
		13	16	0 28.16	19	18.53	155	23.41	3.53	1.1	1.3	17	1	143	.09	3	.5	.9	12	SWR
		13	17	8 53.20	19	17.70	155	23.70	5.68	2.A	3.A	42	0	113	.11	5	.4	.9	26	SWR F
		13	1722	4.92	19	17.51	155	23.49	3.09	1.1	1.4	23	1	116	.09	5	.5	1.1	13	SWR
		13	1749	31.45	19	17.82	155	23.28	3.08	1.7	1.9	22	1	154	.07	4	.5	1.0	14	SWR
		13	1815	48.12	19	1.66	155	25.37	44.20	2.3	1.9	24	0	218	.06	15	1.7	3.6	22	DLS
		13	1952	44.20	19	18.07	155	23.46	6.48	3.3	3.9	45	1	110	.15	4	.4	.9	42	SWR F
		13	2038	52.57	19	18.30	155	22.91	4.15	1.0	1.4	15	1	147	.06	4	.6	1.2	13	SWR
		13	2040	9.18	19	18.27	155	23.17	4.58	1.0	1.7	21	1	148	.09	4	.6	1.6	17	SWR
		13	21	3 40.62	19	17.07	155	23.57	2.57	1.A	1.A	21	1	119	.09	6	.5	1.4	15	SWR
		13	2257	40.79	19	19.34	155	17.26	32.22	1.9	2.1	30	1	102	.08	1	.9	1.5	27	DEP
		14	046	53.68	19	20.78	155	20.27	1.91	1.3	1.3	17	1	89	.10	5	.4	.8	15	SWR
		14	238	33.66	19	18.46	155	23.21	5.44	1.A	2.4	32	1	109	.12	3	.4	1.1	23	SWR
		14	310	40.84	19	18.78	155	22.83	3.42	1.1	1.7	21	0	141	.12	3	.6	.9	15	SWR
		14	517	2.04	19	19.05	155	15.62	8.59	2.3	2.6	37	4	116	.11	4	.5	.6	24	SF1
		14	552	57.98	19	18.82	155	15.38	8.70	2.A	3.2	46	2	96	.11	4	.4	.4	35	SF1
		14	624	46.31	19	18.28	155	23.08	4.74	1.7	1.9	22	1	111	.11	4	.5	1.6	18	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	FEB	14	824	11.06	19	18.30	155	21.38	3.09	.9	1.5	15	2	207	.04	5	.8	.6	11	SWR
		14	955	58.47	19	18.09	155	23.10	3.54	.9	1.2	12	1	155	.04	4	.4	.8	11	SWR
		14	10 1	33.21	19	17.51	155	23.34	2.94	.9	1.1	15	1	158	.07	5	.5	1.1	13	SWR
		14	1010	24.04	19	14.14	155	34.22	8.41	2.5	2.7	37	3	118	.15	5	.5	.8	30	LSW
		14	14 0	35.43	19	19.01	155	21.32	3.08	.8	1.0	15	1	189	.04	4	.6	.7	14	SWR
		14	1440	.49	19	18.32	155	23.09	3.77	.7	1.3	18	1	147	.06	4	.4	.8	14	SWR
		14	1556	18.36	19	17.94	155	23.09	3.21	.9	1.2	17	1	152	.06	4	.5	.9	16	SWR
		14	1648	13.62	19	17.67	155	23.23	3.11	1.1	1.3	16	1	116	.11	5	.5	1.0	13	SWR
		14	1759	.81	19	17.51	155	23.26	2.91	.8	1.3	14	1	158	.06	5	.5	1.1	13	SWR
		14	1839	15.34	19	18.58	155	23.41	4.90	1.6	2.1	26	1	106	.12	3	.5	1.3	21	SWR
		14	19 3	44.69	19	23.80	155	25.68	9.70	1.8	1.6	28	2	59	.09	3	.4	.9	24	KAO
		14	1928	48.68	19	17.34	155	23.32	2.71	.8	1.3	13	1	170	.05	5	.5	1.1	12	SWR
		14	1940	18.57	19	17.59	155	23.28	3.32	1.8	2.4	27	1	116	.09	5	.4	1.1	22	SWR
		14	22 3	35.68	19	18.32	155	22.84	4.14	1.4	1.6	18	1	147	.07	4	.6	1.3	16	SWR
		14	2313	2.31	19	20.11	155	3.57	7.93	1.5	1.8	19	0	130	.10	1	.9	1.0	12	SFS
		14	2346	58.03	19	20.34	155	3.83	8.43	2.5	2.9	35	1	117	.09	2	.5	.7	28	SFS
		15	012	50.89	19	17.77	155	23.27	3.04	.8	1.3	16	1	154	.06	5	.5	.9	13	SWR
		15	031	55.22	19	18.21	155	23.00	4.15	1.6	1.8	19	1	149	.07	4	.5	1.2	15	SWR
		15	055	44.89	19	17.60	155	23.29	3.00	1.1	1.2	17	1	156	.07	5	.5	1.0	13	SWR
		15	1 2	31.96	19	17.86	155	23.05	2.59	.8	1.1	11	1	223	.08	4	1.4	.9	10	SWR
		15	239	48.44	19	18.16	155	23.25	3.83	1.2	1.6	16	1	149	.07	4	.7	1.1	13	SWR
		15	251	29.62	19	18.03	155	23.27	3.55	.8	1.1	19	2	150	.08	4	.5	.9	12	SWR
		15	3 4	58.52	19	20.69	155	10.76	8.89	1.7	1.4	20	3	74	.06	3	.6	.9	13	SF3
		15	635	34.01	19	18.49	155	23.10	3.67	.9	1.1	19	1	144	.10	3	.5	.9	14	SWR
		15	643	13.91	19	18.24	155	23.22	4.03	1.0	1.3	24	2	148	.09	4	.5	.9	11	SWR
		15	8 6	36.10	19	17.31	155	23.45	2.26	1.8	2.2	27	2	118	.12	5	.5	1.0	19	SWR
		15	823	51.91	19	17.48	155	23.88	6.09	1.9	2.4	32	1	114	.10	5	.4	1.1	26	SWR
		15	826	6.02	19	18.40	155	23.34	4.00	1.2	1.3	19	1	157	.10	3	.6	1.0	13	SWR
		15	932	47.53	19	18.07	155	23.26	5.47	1.9	2.4	26	1	124	.11	4	.5	1.6	20	SWR
		15	1057	51.27	19	16.44	155	22.93	6.07	1.3	1.2	13	1	190	.03	7	.7	2.0	10	SWR
		15	1116	18.97	19	17.27	155	23.79	2.39	.9	1.0	20	1	126	.10	6	.5	1.3	15	SWR
		15	1210	22.42	19	17.29	155	23.97	2.22	1.8	1.8	23	1	115	.09	6	.4	1.6	14	SWR
		15	1226	14.40	19	18.02	155	22.94	3.09	1.1	1.4	16	2	151	.08	4	.6	.9	13	SWR
		15	1241	33.83	19	18.48	155	23.25	5.45	2.3	3.2	40	3	108	.13	3	.4	.9	27	SWR
		15	1254	31.57	19	18.30	155	23.22	4.09	1.5	1.8	23	1	110	.11	4	.5	1.1	21	SWR
		15	1316	.62	19	17.54	155	23.79	3.48	1.7	2.7	27	0	114	.10	5	.4	1.3	23	SWR
		15	1325	10.66	19	18.00	155	23.11	3.46	1.5	1.6	16	1	151	.05	4	.5	.9	14	SWR
		15	1332	22.42	19	18.35	155	23.25	5.45	2.4	3.6	33	1	109	.11	3	.4	1.1	28	SWR F
		15	1346	20.31	19	17.35	155	23.44	2.83	1.0	1.4	20	1	118	.06	5	.4	.9	16	SWR
		15	1351	59.95	19	57.81	155	20.97	12.25	1.3	1.8	17	3	197	.06	8	.9	.3	16	KEA
		15	15 7	35.36	19	18.57	155	23.42	4.12	1.7	2.3	25	1	106	.11	3	.4	1.1	22	SWR
		15	1514	46.20	19	18.72	155	23.06	4.58	.9	1.2	16	1	142	.08	5	.6	1.0	13	SWR
		15	1521	49.58	19	18.72	155	23.22	5.41	1.3	1.6	20	1	141	.11	3	.6	1.4	18	SWR
		15	1524	4.26	19	18.22	155	22.85	4.07	1.2	1.6	17	1	149	.09	4	.6	1.2	14	SWR
		15	1537	47.22	19	17.65	155	23.30	3.37	.9	1.2	14	1	164	.05	5	.5	1.1	11	SWR
		15	1551	.07	19	22.95	155	24.40	9.77	1.5	1.1	22	1	80	.06	4	.5	.9	20	KAO
		15	1615	55.37	19	17.32	155	23.34	2.71	1.5	1.8	24	1	118	.08	5	.4	1.1	18	SWR
		15	1618	30.05	19	17.75	155	23.12	3.24	1.7	2.1	24	1	115	.09	5	.5	1.2	18	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	FEB	15	1644	26.76	19	17.08	155	23.44	2.95	.9	1.1	17	1	163	.08	6	.6	1.5	13	SWR
		15	18 3	56.83	19	19.21	155	21.70	2.86	.9	1.1	16	1	131	.08	3	.5	.8	15	SWR
		15	19 6	54.32	19	24.94	155	29.54	8.96	1.9	1.3	23	1	71	.06	6	.4	1.0	18	KAO
		15	1958	26.79	19	18.75	155	23.00	4.31	.8	1.1	19	2	142	.09	3	.5	.9	16	SWR
		15	2055	49.73	19	20.55	155	17.38	2.12	1.1	1.2	17	2	62	.07	1	.5	.3	13	SWR
		15	2116	30.94	19	18.20	155	23.26	3.56	1.0	1.3	17	1	148	.07	4	.5	1.0	12	SWR
		15	2129	45.21	19	20.08	155	8.45	8.23	2.1	2.5	33	2	79	.09	4	.4	.9	26	SF4
		15	22 0	28.86	19	17.60	155	23.35	4.61	1.8	2.2	25	1	123	.10	5	.5	2.2	19	SWR
		15	2235	30.10	19	17.63	155	23.28	3.30	1.3	1.4	22	1	156	.08	5	.5	1.2	16	SWR
		16	017	53.08	19	17.45	155	23.47	2.96	1.1	1.5	17	1	158	.08	5	.5	1.3	12	SWR
		16	045	46.35	19	18.70	155	23.09	3.60	1.7	1.6	22	1	119	.07	3	.5	.8	17	SWR
		16	220	15.48	19	18.63	155	23.30	6.82	2.4	3.4	45	2	107	.14	3	.4	.8	33	SWR
		16	4 2	42.62	19	17.31	155	23.69	2.70	1.8	1.7	25	1	159	.09	5	.6	1.4	21	SWR
		16	517	35.31	19	17.85	155	23.31	4.94	1.7	2.1	28	2	113	.10	4	.5	1.9	19	SWR
		16	6 2	28.00	19	19.53	155	17.38	33.90	2.9	3.5	45	0	94	.09	1	.6	1.0	44	DEP F
		16	610	43.11	19	18.97	155	12.26	7.70	1.8	1.1	21	1	100	.06	4	.6	1.2	16	SF3
		16	728	37.10	19	20.56	155	12.55	9.12	1.5	.9	19	1	72	.06	4	.6	1.0	12	SF2
		16	918	11.69	19	18.94	155	22.01	3.07	.9	1.4	17	2	138	.08	3	.8	.6	12	SWR
		16	929	35.53	19	17.49	155	23.60	2.53	.8	1.3	18	2	165	.10	5	.6	1.0	11	SWR
		16	933	14.72	19	17.53	155	23.58	2.50	.9	1.3	20	2	115	.08	5	.4	1.0	13	SWR
		16	938	52.68	19	17.55	155	23.31	3.54	1.7	1.8	15	2	157	.06	5	.5	1.2	11	SWR
		16	944	19.24	19	17.65	155	23.50	3.12	.9	1.3	14	1	155	.08	5	.5	1.0	8	SWR
		16	953	52.15	19	17.58	155	23.51	4.51	1.8	1.6	25	1	114	.10	5	.5	2.3	17	SWR
		16	1045	33.68	19	20.87	155	11.59	8.16	1.6	1.2	23	3	71	.07	3	.5	.9	14	SF3
		16	1344	35.88	19	18.19	155	23.42	5.92	2.4	3.0	34	2	110	.12	4	.4	1.1	27	SWR
		16	14 8	.01	19	17.92	155	23.36	3.48	1.1	1.4	22	2	152	.10	4	.5	1.0	15	SWR
		16	1412	56.71	19	18.03	155	23.71	5.27	2.6	3.2	44	3	110	.12	4	.4	1.0	30	SWR
		16	1430	4.55	19	18.11	155	23.30	5.59	1.8	2.5	27	1	111	.11	4	.5	1.4	21	SWR
		16	1634	28.34	19	23.67	155	28.59	10.34	1.8	1.7	23	1	69	.07	3	.5	.9	20	KAO
		16	17 4	46.68	19	18.54	155	23.17	4.11	1.1	1.1	16	2	144	.04	3	.5	.9	15	SWR
		16	1716	49.46	19	16.65	155	23.20	6.17	1.7	1.8	22	1	125	.11	7	.5	2.0	17	SWR
		16	1728	54.54	19	18.78	155	23.37	5.33	1.3	1.7	20	2	105	.09	3	.5	.9	17	SWR
		16	1831	58.07	19	18.38	155	23.52	4.00	1.5	1.8	23	2	145	.09	3	.5	.9	21	SWR
		16	1924	16.91	19	19.58	155	7.23	7.51	2.0	1.8	31	3	113	.08	4	.4	.8	22	SF4
		16	1938	18.61	19	24.29	155	25.14	9.92	2.2	2.2	38	3	52	.10	2	.4	.7	24	KAO
		16	2037	37.70	19	18.35	155	23.21	5.51	2.7	3.5	46	3	109	.14	3	.3	.9	34	SWR
		16	2054	15.27	19	18.25	155	23.17	4.30	1.1	1.5	22	2	110	.07	4	.4	1.0	19	SWR
		16	2230	30.32	19	18.26	155	22.88	3.58	.9	1.1	22	2	149	.07	4	.5	.8	14	SWR
		16	2259	21.22	19	18.05	155	23.43	4.01	.9	1.1	17	1	149	.10	4	.6	1.5	14	SWR
		17	012	2.77	19	27.26	154	53.74	6.25	2.3	1.9	28	0	144	.14	3	.7	.9	23	LER
		17	117	54.01	19	18.21	155	22.95	3.42	1.7	1.8	28	2	112	.10	4	.5	1.0	19	SWR
		17	126	29.12	19	27.27	154	53.65	6.07	1.8	1.5	29	2	145	.08	3	.5	.7	14	LER
		17	139	49.71	19	24.71	155	25.57	12.04	1.8	1.4	27	2	51	.08	1	.5	.9	20	KAO
		17	425	34.27	19	21.73	155	2.70	7.54	1.4	1.1	19	0	134	.11	3	.7	1.1	13	SFS
		17	441	26.82	19	20.31	155	12.86	8.20	1.6	1.6	25	2	68	.08	4	.5	.7	17	SF2
		17	7 0	6.97	19	20.51	155	7.46	7.21	.9	1.1	13	1	92	.06	5	.6	1.3	9	SF4
		17	827	39.87	19	19.49	155	28.57	8.52	1.9	1.5	29	2	77	.12	6	.4	1.0	23	KAO
		17	1912	55.23	19	18.28	155	22.89	4.07	1.1	1.0	26	3	121	.08	4	.4	.9	19	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	ND FM	REMK
1981	FEB	18	055	13.65	19	18.46	155	22.94	5.30	1.2	.9	26	3	118	.09	3	.4	1.0	18	SWR
		18	1 6	20.76	19	18.33	155	22.86	5.28	1.1	1.0	28	3	120	.09	4	.4	1.3	21	SWR
		18	145	14.81	19	18.43	155	22.18	8.17	1.8	1.7	25	1	156	.08	6	.5	1.1	17	SWR
		18	5 3	24.11	19	18.85	155	16.11	8.33	1.4	1.1	16	1	125	.04	3	.6	1.4	14	SF1
		18	522	20.06	19	23.13	155	26.45	8.58	1.6	1.1	29	3	52	.10	2	.4	.8	22	KAO
		18	648	16.23	19	27.51	154	53.66	7.47	1.7	1.2	22	0	138	.12	3	.8	.7	10	LER
		18	715	26.09	19	17.07	155	23.50	3.09	1.2	1.1	16	2	163	.04	6	.5	1.3	11	SWR
		18	745	.05	19	14.62	155	22.14	7.72	1.3	1.0	15	0	154	.05	9	.7	2.4	10	SWR
		18	1231	8.06	19	19.77	155	10.01	7.84	1.9	1.3	27	3	89	.10	4	.5	.8	23	SF3
		18	14 4	40.30	19	18.05	155	23.35	3.17	1.4	1.3	20	3	119	.07	4	.4	.8	16	SWR
		18	20 7	49.69	19	18.51	155	23.48	5.92	3.5	3.8	47	6	107	.13	3	.3	.7	42	SWR
		18	2029	55.29	19	18.40	155	23.21	3.67	1.6	1.3	21	2	109	.08	3	.4	.8	20	SWR
		18	2035	42.69	19	18.43	155	23.29	3.67	1.1	1.3	21	3	115	.09	3	.4	.8	19	SWR
		19	221	22.01	19	19.97	155	12.79	8.53	1.5	1.1	18	1	74	.05	5	.5	1.1	16	SF2
		19	750	25.45	19	18.38	155	22.91	3.94	.7	.8	15	2	147	.06	3	.5	.8	13	SWR
		19	9 1	48.56	19	17.89	155	23.48	3.12	1.7	1.2	19	1	112	.09	4	.5	1.1	13	SWR
		19	1128	1.23	19	20.11	155	8.25	7.44	2.0	1.7	30	3	82	.11	5	.5	1.0	21	SF4
		19	13 5	1.41	19	17.43	155	23.61	5.58	1.8	1.6	21	1	158	.11	5	.7	2.0	12	SWR
		19	23 2	9.38	19	17.83	155	16.76	8.65	2.8	2.7	38	2	154	.11	5	.5	.5	28	SF1
		20	039	5.31	19	17.52	155	23.49	2.42	1.0	1.3	19	2	157	.07	5	.4	1.0	15	SWR
		20	230	37.69	19	17.63	155	23.91	4.96	1.8	1.5	25	0	126	.10	5	.6	2.1	19	SWR
		20	250	8.30	19	20.94	155	18.38	31.05	2.2	1.3	38	2	54	.07	2	.7	1.1	30	DEP
		20	724	22.93	19	17.58	155	23.91	5.74	2.6	2.6	40	1	112	.11	5	.4	.8	30	SWR
		20	1319	39.60	19	22.91	155	24.08	11.13	1.7	1.2	27	2	73	.07	5	.5	.9	24	KAO
		20	15 1	22.21	19	43.49	155	2.47	1.11	2.3	2.7	20	0	199	.26	5	1.4	5.3	8	HIL B*
		20	1539	31.00	19	19.90	155	8.67	7.84	1.6	1.0	19	2	87	.06	5	.7	1.1	8	SF4
		20	1616	11.66	19	24.66	155	25.52	5.15	2.0	1.8	34	3	51	.13	1	.4	1.0	27	KAO
		20	1733	13.58	19	18.98	155	21.42	8.80	1.4	1.3	24	2	112	.10	4	.6	1.1	18	SWR
		20	20 4	12.31	19	17.23	155	23.33	2.68	1.1	1.3	21	2	130	.08	6	.4	1.0	11	SWR
		20	2344	9.13	19	17.40	155	23.33	2.32	1.3	1.4	15	2	159	.08	5	.4	.8	9	SWR
		21	055	4.72	19	17.50	155	23.79	3.42	1.1	1.1	16	1	157	.07	5	.5	1.4	7	SWR
		21	517	33.69	19	18.43	155	21.91	3.62	1.6	1.6	25	1	123	.08	4	.5	.9	16	SWR
		21	637	57.05	19	17.91	155	23.32	3.64	1.7	1.6	21	1	152	.11	4	.5	1.1	9	SWR
		21	733	6.78	19	17.57	155	23.31	2.58	1.2	1.2	16	1	165	.08	5	.6	1.0	9	SWR
		21	1019	7.30	19	17.75	155	23.54	5.02	1.9	2.1	27	1	113	.12	5	.5	1.9	20	SWR
		21	1036	44.99	19	26.21	155	37.15	2.91	2.9	3.1	34	1	82	.15	2	.5	.7	22	MLO
		21	1137	12.06	19	20.30	155	6.58	8.94	3.1	3.2	44	2	108	.08	5	.4	.5	35	SF4
		21	1338	5.86	19	17.37	155	23.92	2.77	1.8	1.4	16	1	158	.11	5	.6	1.5	11	SWR
		21	1520	51.95	19	20.52	155	3.26	7.53	1.7	1.2	17	0	117	.11	1	1.1	.9	9	SFS
		21	1551	9.46	19	16.24	155	21.81	7.47	1.5	1.4	24	3	178	.09	6	.7	1.2	15	SWR
		21	1617	11.69	19	18.23	155	22.92	3.53	1.2	1.1	13	1	176	.04	4	.5	.8	8	SWR
		21	2033	12.53	19	18.98	155	21.96	3.96	1.2	1.1	12	1	169	.05	3	.6	.6	4	SWR
		21	2148	20.96	19	17.51	155	23.40	3.21	1.2	1.3	20	1	166	.10	5	.5	1.2	9	SWR
		22	117	50.44	19	20.12	155	6.72	8.49	2.3	2.2	36	0	110	.08	5	.4	.7	24	SF4
		22	4 3	57.17	19	17.47	155	23.28	3.79	1.9	1.8	23	1	117	.10	5	.5	1.8	18	SWR
		22	841	28.72	19	18.64	155	21.74	3.96	1.8	1.8	16	1	154	.08	4	.5	1.0	15	SWR
		22	1213	33.98	19	20.38	155	12.80	8.80	1.7	1.0	25	2	68	.06	4	.5	.8	23	SF2
		22	14 6	45.45	19	18.70	155	21.54	2.94	1.2	1.2	16	2	200	.07	4	.8	.6	15	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	ND FM	REMK
1981	FEB	22	15 2	36.75	19	17.60	155	23.91	2.52	.9	1.1	15	2	162	.08	5	.6	1.0	14	SWR
		22	1639	3.99	19	17.54	155	23.61	3.10	1.5	1.6	24	2	114	.08	5	.4	1.1	20	SWR
		22	17 7	48.90	19	17.80	155	23.14	3.18	1.8	1.8	23	2	115	.10	5	.4	1.1	22	SWR
		22	2038	49.16	19	17.71	155	23.23	3.95	1.5	1.7	18	2	190	.06	5	.7	1.4	16	SWR
		23	036	18.37	19	21.44	155	1.51	6.76	1.5	1.2	20	2	164	.11	4	.7	1.2	18	SF5
		23	059	21.93	19	18.28	155	22.87	4.42	1.4	1.4	21	2	149	.05	4	.6	1.0	19	SWR
		23	134	30.48	19	18.10	155	23.34	3.66	.8	1.1	15	2	149	.06	4	.5	.8	13	SWR
		23	210	42.58	19	20.95	155	1.46	8.63	2.9		47	4	178	.11	3	.5	.4	39	SF5
		23	254	42.72	19	18.49	155	22.88	6.25	2.3	2.8	38	2	109	.14	3	.4	1.0	32	SWR
		23	259	45.57	19	17.76	155	23.02	2.86	1.4	1.3	21	3	155	.06	5	.5	.9	17	SWR
		23	422	32.21	19	21.32	155	1.72	7.51	1.2	1.0	21	2	170	.12	3	.6	1.1	18	SF5
		23	433	7.60	19	21.07	155	1.46	8.15	1.4	1.0	23	2	175	.12	3	.6	.9	18	SF5
		23	452	55.12	19	17.27	155	23.51	2.80	1.5	1.3	25	2	117	.09	6	.4	1.3	23	SWR
		23	6 2	41.98	19	17.09	155	23.76	2.41	1.4	1.5	25	2	118	.08	6	.5	1.1	21	SWR
		23	653	21.04	19	17.12	155	23.93	5.41	1.8	1.9	31	2	117	.10	6	.5	1.6	28	SWR
		23	1221	10.13	19	17.45	155	23.18	3.18	1.7	1.6	20	1	169	.06	5	.6	1.2	14	SWR
		23	1222	8.00	19	17.51	155	23.79	6.24	2.4	2.2	39	3	114	.13	5	.5	1.1	26	SWR
		23	1620	54.85	19	20.49	155	12.95	8.53	2.4	2.4	39	2	65	.11	4	.4	.5	29	SF2
		23	1827	37.84	19	17.99	155	23.53	3.37	1.0	1.1	19	2	151	.09	4	.5	.9	9	SWR
		23	2141	4.25	19	59.12	155	19.53	13.75	2.6	2.6	19	2	206	.13	11	1.0	.4	13	KEA
		24	055	21.78	19	20.47	155	13.01	7.39	1.4	1.0	23	2	65	.10	4	.5	1.0	13	SF2
		24	140	24.82	19	24.17	155	25.10	10.12	1.7	1.2	27	2	52	.10	2	.4	.8	14	KAO
		24	358	12.23	19	18.04	155	22.41	5.78	2.3	2.2	19	1	162	.11	4	.7	1.6	17	SWR
		24	12 8	6.69	19	17.80	155	23.12	3.40	1.7	1.7	15	1	161	.05	5	.6	1.1	10	SWR
		24	13 0	47.56	19	17.21	155	23.84	1.95	1.0	1.2	22	2	161	.09	6	.4	1.0	11	SWR
		24	1339	31.42	19	20.21	155	12.84	7.83	1.9	1.7	29	3	70	.09	5	.5	.8	19	SF2
		24	1345	57.53	19	20.25	155	11.35	7.86	3.0	4.0	40	4	80	.09	4	.4	.6	30	SF3
		24	1430	26.71	19	17.95	155	20.63	7.35	1.7	.6	23	3	122	.07	4	.5	1.0	15	SWR
		24	1430	47.94	19	19.23	155	22.11	3.47	1.9	1.3	10	1	132	.05	3	.7	.7	7	SWR
		24	15 3	9.38	19	18.09	155	23.42	4.61	2.4	2.8	31	2	111	.12	4	.4	1.5	20	SWR
		24	1545	35.64	19	20.14	155	7.61	7.98	2.2	2.3	25	1	95	.07	5	.4	.7	16	SF4
		24	1611	42.28	20	7.70	155	58.84	52.49	3.1	3.2	17	1	277	.14	21	1.6	2.3	6	KOH
		24	1630	32.99	19	17.56	155	23.79	2.39	1.0	1.3	19	1	163	.12	5	.6	1.2	11	SWR
		25	020	27.39	19	19.62	155	12.61	9.06	3.0	2.8	40	2	81	.10	5	.4	.5	27	SF2
		25	140	49.74	19	19.91	155	12.40	7.53	1.6	1.6	26	1	79	.08	5	.5	.8	19	SF2
		25	4 8	2.88	19	22.15	155	5.06	7.47	2.0	1.7	25	1	75	.09	6	.6	1.5	18	SFS
		25	440	16.75	19	17.62	155	23.65	2.83	1.7	1.6	16	1	114	.10	5	.6	1.2	10	SWR
		25	518	53.62	20	11.26	155	50.16	14.59		2.3	12	0	315	.11	9	32.5	6.5	7	KOH *
		25	631	4.67	19	20.55	155	8.25	9.01	1.9	1.5	20	2	78	.07	4	.6	1.0	12	SF4
		25	647	27.21	19	17.38	155	23.33	6.52	1.8	1.7	21	1	127	.10	5	.5	1.5	12	SWR
		25	1647	56.52	19	22.58	155	6.05	8.17	2.8	2.5	41	3	68	.09	1	.4	.6	29	SF4
		25	1945	18.93	19	18.18	155	23.30	4.61	1.8	2.3	24	2	149	.10	4	.5	1.5	15	SWR
		26	2 5	53.92	19	18.61	155	15.42	6.70	1.5	1.3	24	0	103	.10	4	.5	1.0	14	SF1
		26	414	38.37	19	18.14	155	23.44	4.28	2.3	2.6	29	2	110	.11	4	.4	1.4	23	SWR
		26	746	37.12	19	17.51	155	23.41	2.83	1.1	.9	14	1	158	.04	5	1.0	1.0	8	SWR
		26	849	49.17	19	22.47	155	1.82	8.32	2.4	2.0	34	0	149	.11	5	.5	.5	24	SF5
		26	18 7	40.87	19	17.97	155	23.51	4.39	2.6	2.9	40	4	111	.13	4	.4	1.5	30	SWR
		26	2226	42.91	19	17.03	155	23.46	1.65	1.3	1.0	17	1	164	.08	6	.6	1.0	9	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	FEB	26	2323	24.01	19	34.75	155	38.62	7.33	2.3	1.2	14	0	139	.12	11	.8	1.8	7	MLO	
		26	2348	3.97	19	16.82	155	23.75	2.84	1.8	1.2	18	2	167	.06	6	.6	1.3	7	SWR	
		27	13 2	15.47	19	19.54	155	12.51	8.62	1.7	1.4	21	2	84	.05	5	.5	.8	13	SF2	
		27	2348	38.59	19	25.19	155	37.48	3.10	2.5	2.6	20	1	160	.13	4	.6	1.2	11	MLO	
		28	533	42.45	19	21.17	155	5.82	8.62	1.3	1.3	15	0	94	.09	3	.6	1.3	10	SF4	
		28	9 7	28.49	19	17.57	155	23.88	2.67	1.5	2.1	22	1	113	.11	5	.4	1.2	15	SWR	
		28	942	35.70	19	19.79	155	7.76	7.33	1.6	1.8	23	2	97	.09	5	.5	1.1	19	SF4	
		28	1141	59.47	19	17.10	155	23.97	1.89	1.8	1.9	24	2	126	.10	6	.5	.9	14	SWR	
		28	1614	8.39	19	17.11	155	23.23	8.43	1.4	1.3	18	1	163	.12	6	.7	1.3	10	SWR	
		28	1723	18.21	19	30.57	155	29.23	3.66	2.2	2.0	30	1	102	.13	4	.4	1.1	17	MLO	
		28	1744	42.37	19	17.97	155	23.41	5.88		1.4	16	0	168	.08	4	.8	1.6	14	SWR	
		28	2020	38.41	19	18.07	155	23.19	3.80	1.8	1.8	24	1	112	.09	4	.4	1.1	14	SWR	
		28	2049	38.26	19	19.03	155	13.28	8.23	1.4	.9	19	1	77	.06	4	.6	1.1	12	SF2	
		28	2110	25.16	19	23.15	155	3.76	8.75	2.5	2.8	39	1	96	.10	3	.4	.5	24	SF5	
		28	2254	59.56	19	17.91	155	23.16	3.26	1.1	.9	15	1	152	.08	4	.5	1.0	10	SWR	
		28	2349	29.73	19	19.85	155	12.77	9.20	2.0	2.4	23	2	76	.06	5	.4	.8	20	SF2	
	MAR	1	211	52.52	19	20.03	155	12.88	8.73	1.6	1.3	19	2	72	.06	5	.6	1.2	14	SF2	
		1	638	10.16	19	21.64	155	1.67	7.37	1.8	1.5	25	0	164	.12	4	.7	1.0	16	SF5	
		1	7 1	21.26	19	21.52	155	2.05	9.07	4.3	4.3	48	1	148	.10	3	.6	.4	44	SF5	F
		1	7 4	36.79	19	21.48	155	2.77	8.23	1.1	.5	13	0	140	.07	3	1.0	1.3	9	SF5	
		1	713	30.46	19	21.82	155	1.74	4.87	1.2	.7	17	0	171	.13	4	.9	2.2	12	SSF	
		1	716	15.43	19	21.61	155	2.72	7.46	1.4	1.0	20	2	134	.09	3	.5	.7	11	SF5	
		1	718	4.58	19	22.08	155	1.59	6.21	1.2	.8	21	2	159	.13	5	.6	1.2	10	SF5	
		1	726	25.22	19	18.64	155	13.26	8.81	2.8	2.8	39	3	83	.09	3	.4	.5	25	SF2	
		1	11 1	38.30	19	20.76	155	3.56	8.86	2.4	2.3	41	2	87	.11	2	.5	.5	27	SF5	
		1	11 8	23.57	19	20.58	155	3.55	8.26	1.9	1.3	25	1	95	.07	2	.5	.7	14	SF5	
		1	1133	11.90	19	16.89	155	23.91	7.44	1.8	1.5	22	2	118	.12	6	.5	1.2	13	SWR	
		1	1410	22.93	19	11.60	155	32.43	6.29	1.7	1.3	20	1	95	.19	8	.6	2.0	9	LSW	
		1	1435	28.33	19	16.58	155	24.05	3.80	1.8	1.4	20	2	121	.12	7	.5	3.8	14	SWR	
		1	16 6	8.68	19	17.90	155	23.20	3.48	2.1	2.0	28	4	152	.07	4	.4	.8	18	SWR	
		1	1858	11.55	19	17.81	155	23.39	3.18	2.0	2.0	23	2	113	.10	4	.4	.9	15	SWR	
		1	2130	37.06	19	17.05	155	23.70	7.01	1.8	1.6	21	2	163	.11	6	.6	1.1	14	SWR	
		1	2131	48.15	19	17.34	155	23.28	2.85		1.6	26	2	118	.10	5	.5	1.0	17	SWR	
		1	2219	45.18	19	19.63	155	7.86	9.13	3.0	3.1	43	2	97	.09	4	.4	.4	27	SF4	
		1	2328	36.95	19	19.39	155	10.92	8.80	1.8	1.5	25	3	101	.05	5	.5	1.0	17	SF3	
		1	2339	22.44	19	12.18	155	32.33	5.17	2.2	1.7	22	2	87	.19	7	.6	2.0	13	LSW	
		2	139	37.42	19	20.38	155	11.82	8.83	2.3	2.1	37	3	76	.11	5	.4	.6	25	SF3	
		2	310	42.80	19	23.86	155	28.87	10.32	2.6	2.4	46	3	37	.09	3	.3	.5	33	KAO	
		2	6 4	32.54	19	19.25	155	11.69	7.83	1.7	1.8	29	2	99	.07	5	.5	.7	19	SF3	
		2	1057	38.00	19	16.21	155	23.67	6.47	1.8	1.7	20	2	126	.07	7	.6	1.5	14	SWR	
		2	1342	23.27	19	22.80	155	2.30	7.27	2.2	1.6	22	1	126	.11	5	.5	1.0	13	SF5	
		2	1846	53.04	19	19.85	155	12.56	7.92	1.9	1.6	35	2	78	.11	5	.4	.7	22	SF2	
		2	1920	16.33	19	25.45	155	24.99	11.54	2.0	1.5	41	1	35	.10	0	.4	.5	29	KAO	
		2	1923	43.41	19	17.15	155	21.62	6.78	2.0	2.3	38	1	128	.12	5	.5	.9	28	SWR	
		2	1956	6.93	19	17.62	155	23.28	3.18	1.8	1.7	27	1	116	.13	5	.5	1.4	19	SWR	
		2	21 8	19.40	19	21.10	155	7.54	8.37	1.6	1.1	20	2	82	.07	4	.5	1.1	14	SF4	
		2	2311	8.83	19	17.88	155	23.42	3.56	1.7	1.3	24	1	152	.09	4	.5	1.1	15	SWR	
		3	119	23.05	19	20.27	155	12.05	9.39	2.5	2.5	42	3	76	.10	5	.3	.4	24	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	MAR	3	127	2.85	19	16.48	155	23.99	1.90	2.2	2.4	30	3	122	.13	7	.4	1.0	21	SWR	
		3	444	34.38	19	16.90	155	28.25	12.06	1.9	1.3	23	2	104	.11	5	.5	.9	15	LSW	
		3	527	44.98	19	18.09	155	23.14	3.59	1.7	1.2	15	1	112	.09	4	.5	1.0	8	SWR	
		3	858	31.78	19	20.58	155	13.76	8.77	1.8	1.4	34	4	66	.09	4	.5	.6	17	SF2	
		3	859	58.24	19	20.02	155	12.10	7.65	1.7	1.1	16	2	80	.05	5	.5	1.0	13	SF3	
		3	1025	22.10	19	22.09	155	2.30	8.35	1.8	1.9	29	1	142	.09	4	.6	.5	21	SF5	
		3	1119	12.28	19	18.31	155	23.01	5.22	2.0	2.0	29	1	111	.11	4	.5	1.3	19	SWR	
		3	1426	39.89	19	17.52	155	23.66	4.60	1.8	1.5	26	2	115	.11	5	.4	1.9	18	SWR	
		3	17 3	40.59	19	18.85	155	22.02	3.87	1.9	1.7	27	2	106	.08	3	.4	.8	14	SWR	
		3	17 5	17.58	19	16.56	155	23.90	7.61	2.0	1.9	28	4	121	.12	7	.6	1.3	22	SWR	
		3	1715	55.31	19	17.31	155	23.79	2.86	1.8	1.2	22	3	168	.07	5	.4	1.0	13	SWR	
		3	1818	27.90	19	20.42	155	13.25	9.86	2.2	2.1	40	5	63	.10	4	.4	.5	28	SF2	
		3	1920	56.02	19	21.98	155	1.55	8.57	2.4	2.2	33	0	153	.09	5	.6	.6	26	SF5	
		3	1924	1.92	19	20.15	155	2.50	8.60	1.6	1.2	17	0	206	.07	1	1.2	1.3	7	SF5	
		3	1932	27.69	19	20.08	155	12.86	8.84	1.5	1.3	21	1	71	.07	5	.6	1.0	18	SF2	
		3	2025	18.99	19	19.10	155	15.47	8.08	1.4	1.2	20	2	113	.04	4	.5	1.0	14	SF1	
		3	21 5	59.17	19	17.22	155	23.83	2.15	1.8	1.7	29	4	116	.09	6	.4	.9	21	SWR	
		3	2139	58.08	19	17.87	155	23.43	3.39	1.7	1.3	22	2	152	.11	4	.5	1.0	14	SWR	
		3	23 4	52.95	19	16.78	155	23.50	2.61	1.8	1.3	21	2	167	.10	6	.5	1.4	13	SWR	
		4	4 2	44.05	19	17.35	155	23.85	2.52	1.8	1.5	24	4	115	.07	5	.4	.8	14	SWR	
		4	432	42.01	19	19.81	155	7.79	9.08	1.9	1.5	22	1	96	.06	5	.6	1.2	20	SF4	
		4	530	13.95	19	17.83	155	23.68	5.69	2.1	2.2	30	2	112	.11	5	.5	1.0	18	SWR	
		4	718	27.23	19	17.82	155	13.57	7.42	2.1	1.8	32	4	91	.11	1	.5	.8	19	SF2	
		4	1556	45.69	19	24.90	155	28.42	11.09	4.1	4.1	49	2	30	.12	5	.3	.4	45	KAO	F
		4	16 0	27.23	19	24.97	155	28.38	11.07	3.4	3.4	49	3	30	.11	5	.3	.4	43	KAO	
		4	16 3	31.01	19	24.90	155	28.55	9.74	2.3	1.8	36	4	49	.10	5	.4	.7	27	KAO	
		4	16 7	37.93	19	25.50	155	28.30	10.05	2.0	1.6	22	1	88	.11	6	.5	1.1	16	KAO	
		4	1811	32.82	19	21.65	155	15.18	9.95	2.8	2.8	43	1	62	.11	2	.4	.4	32	SF1	
		4	2215	56.85	19	17.36	155	23.83	4.27	1.2	1.3	22	2	159	.10	5	.5	2.0	13	SWR	
		4	2218	46.86	19	25.61	155	28.28	9.71	2.1	1.4	27	1	59	.10	6	.4	1.1	20	KAO	
		5	4 2	34.56	19	16.91	155	24.11	4.46	1.8	1.1	20	2	117	.13	6	.5	4.3	17	SWR	
		5	4 9	40.85	21	25.94	156	47.79	.00	5.1	5.3	45	7	226	.50	93	6.8	.8	42	DIS	F*
		5	416	15.66	21	15.97	156	52.16	1.26	3.4	2.1	26	2	211	.12	85	2.9	.7	21	DIS	
		5	9 7	16.49	19	16.92	155	23.58	5.03	1.3	1.3	19	1	165	.12	6	.7	3.5	13	SWR	
		5	1255	3.41	19	16.24	155	23.36	8.39	2.3	2.3	34	5	128	.11	7	.4	1.0	17	SWR	
		5	13 6	37.74	19	24.97	155	29.02	8.34	2.2	1.5	31	3	56	.11	5	.4	1.0	22	KAO	
		5	1610	36.28	19	20.47	155	45.28	11.27	2.6	2.0	30	2	182	.08	9	.7	.5	15	KON	
		5	1643	36.41	21	9.52	156	54.58	.31	4.5	4.8	44	2	197	.12	81	1.6	.3	35	DIS	
		5	1745	34.56	19	38.57	155	57.75	.63	1.9	1.3	14	2	212	.15	14	1.2	.8	8	KON	
		5	1810	.40	19	22.19	155	1.95	8.67	2.5	2.3	38	1	141	.10	5	.6	.5	26	SF5	
		5	1813	59.91	19	20.29	155	11.35	9.54	1.6	1.3	18	2	94	.05	4	.7	1.4	14	SF3	
		5	1933	30.10	19	16.25	155	23.01	3.68	1.1	1.4	18	2	148	.06	4	.5	.8	12	SWR	
		5	2141	45.79	19	17.60	155	23.84	6.23	1.9	2.3	33	3	113	.13	5	.4	1.3	24	SWR	
		5	22 8	9.25	19	17.12	155	23.84	8.81	2.3	2.8	35	2	117	.15	6	.5	.9	24	SWR	
		5	23 1	20.96	19	20.30	155	17.39	1.66	1.7	2.1	18	1	63	.07	0	.3	.2	13	SWR	
		6	1 5	34.81	19	17.45	155	15.14	6.75	1.6	1.2	18	3	133	.08	3	.6	1.1	15	SF1	
		6	220	8.91	19	16.27	155	14.91	8.67	1.6	1.2	19	4	236	.07	3	.7	1.2	10	SF1	
		6	519	8.10	21	41.04	156	39.48	15.05	3.6	3.9	11	2	243	.14	110	12.2	13.9	3	DIS	*

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	6	745	4.95	19	18.36	155	14.70	7.89	1.A	1.2	17	2	127	.03	3	.6	1.2	15	SF1
		6	957	46.90	19	20.68	155	29.76	10.54	3.1	2.6	42	0	66	.11	5	.4	.6	32	KAO
		6	1032	9.82	19	18.61	155	13.51	8.47	1.7	1.3	25	2	80	.06	3	.5	.A	17	SF2
		6	1116	35.42	19	17.96	155	23.18	4.67	1.7	1.6	26	2	125	.11	4	.5	1.A	20	SWR
		6	1229	28.24	19	17.29	155	23.82	2.49	1.A	1.0	21	3	159	.08	6	.5	1.0	12	SWR
		6	13 5	18.90	19	18.03	155	23.37	5.00	2.0	2.0	26	1	111	.11	4	.5	1.7	17	SWR
		6	1615	32.78	19	20.96	155	6.31	8.53	2.7	2.4	40	3	96	.08	4	.4	.5	29	SF4
		6	1756	.74	19	44.34	156	26.57	15.01	4.0	4.1	51	5	234	.13	62	1.1	3.1	45	DIS F
		6	1856	22.66	19	17.91	155	23.29	3.79	2.5	2.9	37	1	113	.10	4	.4	1.1	23	SWR
		6	2015	13.33	19	17.86	155	23.16	3.35	1.7	1.2	19	1	114	.10	4	.6	1.2	15	SWR
		6	2211	1.15	19	20.41	155	11.23	8.AA	2.5	2.5	44	2	78	.12	4	.4	.6	31	SF3
		6	2315	59.08	19	18.31	155	23.36	5.85	2.2	2.5	30	1	122	.11	4	.5	.9	21	SWR
		6	2326	58.63	19	18.98	155	12.49	5.62	2.1	1.A	25	2	96	.11	4	.4	1.1	17	SF2
		6	2345	56.84	19	20.23	155	11.74	7.30	1.5	1.1	13	2	92	.04	5	.6	1.3	10	SF3
		7	0 3	27.54	19	26.77	155	52.41	9.41	2.4	2.0	23	1	136	.18	7	.7	.8	14	KON
		7	052	49.04	19	21.38	155	2.21	8.13	1.A	1.1	27	1	159	.10	3	.8	.6	18	SF5
		7	112	20.31	19	19.78	155	11.20	8.53	1.7	1.2	26	0	90	.11	5	.5	.8	21	SF3
		7	2 9	51.31	19	20.02	155	8.23	7.10	1.9	1.9	29	1	83	.10	5	.5	1.0	23	SF4
		7	258	25.03	19	17.66	155	23.98	4.51	1.A	1.9	21	1	112	.08	5	.5	1.A	17	SWR
		7	259	56.67	19	18.27	155	13.31	8.50	1.6	1.3	24	0	87	.11	2	.5	.9	18	SF2
		7	1125	16.57	19	17.17	155	23.94	2.57	1.A	1.2	24	2	116	.09	6	.4	1.4	18	SWR
		7	1351	42.82	19	18.41	155	22.97	6.32	1.7	1.3	26	1	110	.13	3	.5	1.4	20	SWR
		7	15 0	21.01	19	23.86	155	28.42	9.60	2.2	1.7	3A	3	32	.11	3	.4	.7	2A	KAO
		7	1A23	50.26	19	17.42	155	23.89	2.45	1.1	1.3	21	2	114	.0A	5	.4	1.2	15	SWR
		7	1933	33.58	19	19.86	155	13.04	9.39	2.7	2.5	40	1	71	.10	5	.3	.4	32	SF2
		7	21 1	55.44	19	40.23	155	57.80	7.35	2.7	1.5	17	2	213	.1A	13	1.6	1.3	11	HUA
		7	2214	26.10	19	16.49	155	23.85	8.13	1.9	1.6	21	1	123	.10	7	.5	1.5	18	SWR
		8	315	41.94	19	19.56	155	11.69	8.45	1.7	1.5	29	1	93	.09	6	.5	.8	23	SF3
		8	436	8.27	19	18.53	155	23.36	4.91	1.7	1.8	25	1	107	.10	3	.4	1.4	1A	SWR
		8	620	21.64	19	19.31	155	11.25	9.30	1.A	1.3	21	1	101	.05	6	.6	1.2	1A	SF3
		8	915	17.32	19	16.47	155	23.68	5.42	1.A	2.1	26	2	124	.12	7	.5	1.5	20	SWR
		8	1314	52.63	19	17.42	155	23.54	4.37	1.A	1.3	18	2	158	.09	5	.6	2.3	15	SWR
		8	1855	57.86	19	19.89	155	6.99	7.24	2.1	1.9	38	2	111	.10	5	.4	.A	24	SF4
		8	1923	43.21	19	18.33	155	23.08	4.17	1.1	1.4	24	2	110	.12	4	.4	1.1	17	SWR
		8	23 9	58.61	19	17.18	155	23.84	2.54	1.A	1.6	24	2	127	.09	6	.5	1.3	18	SWR
		9	041	21.31	19	17.99	155	23.30	4.81	1.9	2.5	27	1	112	.11	4	.5	1.6	16	SWR
		9	1 0	14.78	19	17.44	155	23.51	3.47	1.A	1.4	26	3	158	.11	5	.5	1.2	15	SWR
		9	2 2	49.04	19	18.69	155	23.28	4.21	1.2	1.3	20	1	141	.09	3	.5	.9	10	SWR
		9	317	35.56	19	21.71	155	18.26	2.77	1.1	.9	12	0	101	.05	3	.4	.7	10	SWR
		9	327	45.20	19	21.23	155	3.07	8.52	3.3	3.4	45	1	113	.11	2	.6	.4	40	SF5 F
		9	921	50.96	19	21.75	155	18.42	2.70	1.2	1.1	20	5	69	.0A	4	.3	.7	14	SWR
		9	925	2.63	19	24.83	155	25.33	8.12	2.1	1.A	35	1	38	.14	1	.5	1.0	2A	KAO
		9	12 2	31.94	19	21.85	155	17.82	3.24	1.6	1.3	25	2	51	.10	3	.3	.6	1A	SWR
		9	1220	25.56	19	21.73	155	18.30	2.56	1.1	.9	14	2	73	.0A	3	.3	.7	11	SWR
		9	1248	37.39	19	21.72	155	17.79	3.25	1.5	1.5	20	3	84	.0A	3	.3	.5	14	SWR
		9	1528	34.07	19	18.91	155	13.24	7.71	1.5	1.2	21	2	80	.0A	4	.6	1.1	18	SF2
		9	16 6	7.74	19	18.28	155	23.41	5.18	1.7	1.A	25	1	147	.11	4	.5	1.5	21	SWR
		9	1623	52.53	19	18.26	155	22.90	3.94	1.1	1.1	19	3	149	.0A	4	.5	.9	15	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	9	1739	25.49	19	19.61	155	7.79	9.09	2.A	2.9	45	3	98	.09	4	.4	.4	35	SF4
		9	1851	28.98	19	20.30	155	19.17	3.66	1.4	1.2	21	3	77	.16	3	.4	1.1	16	SWR
		9	2016	52.40	19	17.86	155	23.25	6.17	2.3	2.1	29	1	113	.13	4	.5	1.2	20	SWR
		9	2245	25.41	19	17.81	155	23.30	3.34	1.7	1.3	1A	1	154	.0A	4	.5	1.1	9	SWR
		9	2313	14.35	19	18.43	155	23.06	3.66	1.0	1.0	16	1	146	.0A	3	.6	1.0	13	SWR
		10	4 9	19.09	19	19.44	155	12.34	8.40	1.4	1.1	21	1	AA	.06	5	.6	1.0	17	SF2
		10	523	11.08	19	18.87	155	23.10	4.06	1.7	1.1	19	1	140	.07	3	.6	.9	13	SWR
		10	944	15.73	19	17.06	155	23.87	1.52	1.A	1.A	31	4	117	.09	6	.4	.7	20	SWR
		10	1133	47.23	19	17.17	155	23.A2	2.35	.9	1.2	24	2	161	.08	6	.4	1.1	15	SWR
		10	12 6	38.03	19	17.16	155	23.49	2.69	.9	1.2	16	2	162	.04	6	.5	1.1	10	SWR
		10	1454	56.14	19	17.44	155	23.51	3.52	1.9	1.A	20	1	138	.09	5	.5	1.3	12	SWR
		10	1630	50.47	19	20.19	155	8.27	8.4A	2.3	2.1	32	3	180	.08	4	.9	.7	21	SF4
		10	1631	56.84	19	20.58	155	8.71	7.95	2.4	2.1	36	1	172	.12	3	.8	.7	22	SF4
		10	1632	27.70	19	20.80	155	8.31	7.01	2.2	2.1	23	2	172	.12	4	1.0	1.1	12	SF4
		10	1654	15.08	19	20.74	155	5.69	7.92	1.3	1.2	17	0	211	.08	4	1.7	1.2	11	SF4
		10	1721	7.37	19	21.83	155	18.47	2.56	1.2	1.0	1A	5	102	.07	4	.3	.6	11	SWR
		10	19 7	39.19	19	16.57	155	24.10	5.29	1.2	1.4	23	1	91	.10	4	.4	1.9	13	SWR
		10	1957	51.64	19	17.70	155	23.19	3.39	1.7	1.4	20	3	100	.0A	5	.4	.9	15	SWR
		10	2146	14.3A	19	17.50	155	51.74	7.44		1.4	1A	0	147	.22	3	1.4	1.6	10	KON
		11	034	41.89	19	18.33	155	15.01	8.55	1.5	1.4	21	3	134	.05	4	.6	.9	14	SF1
		11	231	53.29	19	20.76	155	13.60	8.69	1.7	1.6	37	3	55	.10	4	.4	.6	24	SF2
		11	356	57.41	19	18.25	155	23.16	3.96	.9	1.1	17	2	95	.0A	4	.4	.9	10	SWR
		11	439	22.37	19	17.30	155	23.55	2.90	1.0	1.2	24	3	98	.07	5	.3	1.0	15	SWR
		11	458	29.62	19	17.80	155	23.63	4.39	2.4	2.1	33	2	92	.12	5	.4	1.6	28	SWR
		11	530	43.47	19	18.36	155	22.85	3.49	1.7	1.1	24	2	98	.11	4	.4	.9	17	SWR
		11	656	50.7A	19	16.58	155	23.92	3.2A	1.A	1.2	22	1	96	.11	4	.3	1.0	13	SWR
		11	7 7	7.8A	19	17.87	155	23.23	3.51	1.7	1.2	22	3	97	.07	4	.4	.9	14	SWR
		11	1019	59.12	19	21.39	155	18.93	3.35	1.4	1.2	22	3	45	.10	4	.3	.A	17	SWR
		11	1259	25.12	19	21.66	155	.54	7.40	2.A	2.4	37	1	177	.09	5	.6	.4	25	SF5 F
		11	1323	8.96	19	21.71	155	1.93	6.50	3.1	3.1	44	2	148	.12	4	.4	.6	32	SF5 F
		11	1848	37.07	19	35.82	155	45.44	11.39	2.0	1.A	13	2	263	.11	10	1.3	1.0	A	KON
		11	1858	51.60	19	18.04	155	23.18	3.56	1.1	1.1	1A	2	97	.06	4	.4	.A	15	SWR
		11	19 9	56.66	19	18.29	155	23.27	4.44	1.1	1.1	26	2	94	.10	4	.4	1.3	16	SWR
		11	1939	32.33	19	16.38	155	23.6A	6.30	1.2	1.3	23	3	103	.10	4	.5	1.3	15	SWR
		11	20 4	15.29	19	16.60	155	23.62	3.35	1.A	1.2	22	1	103	.07	4	.3	1.0	13	SWR
		11	2237	44.93	19	15.10	155	1.99	44.22	3.7	3.4	49	2	207	.10	9	.9	1.4	47	DEP F
		11	2252	3.87	19	17.29	155	23.66	2.51	1.A	1.2	26	2	92	.09	6	.4	1.0	19	SWR
		11	2311	32.66	19	16.94	155	23.41	5.45	1.A	2.1	23	2	104	.0A	5	.4	1.9	12	SWR
		12	238	11.26	19	16.36	155	23.44	6.90	1.9	1.6	2A	4	114	.11	4	.4	.9	1A	SWR
		12	332	37.44	19	24.15	155	25.11	9.45	1.7	1.2	29	2	46	.09	2	.4	.A	23	KAO
		12	438	20.91	19	17.83	155	23.35	4.21	2.0	2.4	31	2	97	.11	4	.4	1.5	18	SWR
		12	441	30.18	19	17.83	155	23.24	3.31	1.7	1.4	23	1	9A	.10	4	.4	1.1	16	SWR
		12	455	3.30	19	17.21	155	23.78	3.21	1.A	1.5	25	2	95	.09	5	.3	1.0	16	SWR
		12	833	51.50	19	23.69	155	2.39	7.21	2.0	1.9	24	1	121	.14	4	.6	1.1	16	SF5
		12	9 6	50.96	19	18.65	155	23.35	5.53	2.5	2.1	39	2	90	.13	3	.4	1.0	30	SWR
		12	1030	25.62	19	19.58	155	7.70	7.50	2.0	1.A	31	3	102	.07	4	.4	.9	19	SF4
		12	1130	40.07	19	20.79	155	12.75	9.01	2.1	2.2	3A	4	64	.10	3	.4	.5	24	SF2
		12	1225	6.19	19	22.97	155	22.08	33.22	1.A	1.A	22	0	57	.09	4	.9	2.4	19	DML

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	12	1325	17.60	19	18.63	155	23.56	5.59	2.2	2.6	34	2	87	.13	3	.4	1.0	25	SWR
		12	1344	42.09	19	44.38	155	3.25	.00	1.9	2.1	16	1	201	.36	4	1.3	1.7	2	HIL B*
		12	1416	21.40	19	20.24	155	19.86	7.30	1.5	1.4	17	2	62	.07	4	.4	1.2	11	SWR
		12	16	6 56.20	19	17.78	155	23.59	2.72	1.7	1.6	26	3	93	.10	5	.3	.8	15	SWR
		12	1630	32.87	19	19.23	155	11.81	6.80	2.7	2.7	47	5	99	.12	5	.4	.6	35	SF3
		12	17	8 41.50	19	17.28	155	23.82	2.70	1.1	1.4	25	2	93	.10	5	.4	1.0	17	SWR
		12	18	7 15.30	19	17.60	155	23.28	2.91	.8	1.0	15	1	100	.08	5	.5	.9	8	SWR
		12	1847	16.59	19	17.05	155	23.78	2.57	.9	1.2	18	2	95	.07	5	.4	1.0	14	SWR
		12	1935	1.73	19	16.59	155	23.78	3.20	.9	1.2	19	2	99	.08	4	.4	1.0	10	SWR
		12	2037	42.70	19	17.20	155	23.97	2.73	1.0	1.4	27	2	92	.09	5	.3	1.1	17	SWR
		12	2039	58.51	19	31.79	155	42.50	8.65	2.6	2.2	34	2	80	.13	6	.5	.8	26	MLO
		12	2049	30.27	19	31.84	155	42.40	2.84	2.4	1.3	25	2	82	.13	7	.5	2.4	15	MLO
		12	2050	15.51	19	18.68	155	22.06	3.80	1.4	1.4	23	3	102	.08	4	.4	.9	16	SWR
		12	2054	44.62	19	18.56	155	22.08	3.70	1.6	1.4	20	1	104	.05	4	.4	.9	13	SWR
		12	2125	54.10	19	20.48	155	12.82	9.22	1.5	1.4	23	2	66	.07	4	.5	1.0	15	SF2
		12	2333	12.33	19	22.00	155	26.64	10.35	1.7	1.8	30	3	59	.10	2	.4	1.0	20	KAO
		13	138	15.11	19	17.30	155	23.78	2.46	1.2	1.7	25	2	94	.09	6	.3	1.0	15	SWR
		13	532	51.41	19	22.86	155	16.16	26.72	2.2	1.9	46	2	48	.10	1	.5	.8	39	DEP
		13	642	52.17	19	17.33	155	23.57	3.23	1.0	1.3	19	2	107	.11	5	.4	1.1	13	SWR
		13	821	20.43	19	20.34	155	13.25	8.80	1.9	1.7	33	3	64	.11	4	.4	.8	24	SF2
		13	832	4.44	19	17.14	155	24.08	3.58	1.8	2.0	19	0	170	.09	6	.7	2.5	19	SWR
		13	10	5 58.35	19	17.58	155	23.37	3.11	.9	1.2	15	2	156	.06	5	.5	1.1	12	SWR
		13	1044	23.06	19	18.20	155	23.23	6.94	2.1	2.7	34	2	94	.12	4	.4	.9	28	SWR
		13	11	0 24.29	19	18.12	155	23.28	6.41	2.3	2.9	36	3	95	.12	4	.4	.8	25	SWR
		13	12	0 46.80	19	17.06	155	23.78	2.76	1.0	1.1	16	2	106	.06	5	.4	1.1	10	SWR
		13	1720	29.92	19	20.20	155	12.20	8.13	2.2	2.0	38	3	76	.12	5	.4	.7	29	SF3
		13	1736	11.85	19	22.08	155	.82	3.76	1.8	1.4	23	3	164	.14	5	.6	1.8	11	SSF
		13	1856	38.11	19	25.21	155	23.10	11.37	2.2	2.0	39	3	39	.09	4	.4	.5	28	KAO
		13	1940	1.89	19	18.23	155	23.14	3.62	.9	1.0	20	1	96	.07	4	.4	.9	14	SWR
		13	20	8 23.97	19	19.54	155	9.02	7.97	1.5	1.0	19	1	85	.05	4	.5	1.2	14	SF4
		13	2156	54.55	19	17.14	155	23.81	2.60	1.1	1.2	22	2	95	.08	5	.3	1.0	16	SWR
		13	221A	33.78	19	17.95	155	23.31	3.38	.9	1.2	18	1	96	.06	4	.4	.9	13	SWR
		13	2225	47.19	19	16.13	155	23.96	6.17	1.0	1.2	19	2	98	.11	3	.5	1.3	11	SWR
		13	23	0 37.64	19	19.81	155	9.48	8.47	1.6	1.0	15	2	103	.04	4	.6	1.3	8	SF3
		14	224	7.75	19	18.99	155	22.60	3.28	.7	1.1	14	0	92	.06	3	.4	.6	10	SWR
		14	414	47.57	19	17.78	155	23.32	3.07	.9	1.1	20	2	97	.07	5	.4	.9	16	SWR
		14	949	33.87	19	19.86	155	11.33	8.05	1.9	1.5	36	1	88	.10	5	.4	.7	30	SF3
		14	953	25.74	19	20.70	155	12.80	8.58	2.1	1.9	39	5	64	.11	4	.4	.6	32	SF2
		14	1324	53.56	19	24.19	155	16.38	16.21	2.0	1.8	48	5	35	.10	1	.4	.3	40	DEP
		15	352	20.80	19	21.26	155	2.48	6.79	2.2	1.8	36	2	139	.10	3	.4	.7	28	SF5
		15	728	22.92	19	17.75	155	23.38	4.95	2.0	2.3	32	2	97	.10	5	.3	1.4	26	SWR
		15	753	4.16	19	18.18	155	23.52	4.13		1.3	15	2	110	.13	4	.6	1.4	10	SWR
		15	853	1.28	19	29.66	157	12.51	30.13	2.8	2.9	20	0	286	.13	135	5.2	4.5	12	DIS
		15	1211	19.28	19	18.64	155	22.26	4.80	.9	1.1	16	1	102	.09	3	.4	1.0	10	SWR
		15	13	3 20.32	19	18.93	155	21.17	2.99	.8	1.2	14	2	100	.07	4	.4	.8	9	SWR
		15	1347	29.64	19	20.33	155	19.18	4.43	1.2	1.4	16	2	102	.07	3	.4	1.3	11	SWR
		15	1845	21.98	19	17.08	155	23.91	2.44	1.1	1.5	23	2	93	.12	5	.4	1.0	15	SWR
		15	2017	19.59	19	22.49	155	14.03	31.32	4.0	4.1	49	1	50	.12	2	.6	1.0	47	DEP F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	15	2026	14.52	19	17.70	155	23.44	6.62	3.1	3.6	44	0	96	.14	5	.4	.8	39	SWR F
		15	2038	34.62	19	21.33	155	18.52	30.39	2.0	2.3	46	3	44	.09	3	.6	.9	36	DEP
		15	2051	14.42	19	17.20	155	23.54	3.53	1.8	1.4	23	2	99	.07	5	.3	1.0	10	SWR
		15	2131	34.26	19	18.14	155	23.24	3.18	1.7	1.8	26	1	95	.12	4	.4	1.0	19	SWR
		15	2132	57.02	19	22.00	155	13.99	30.53	2.6	2.6	49	4	53	.11	2	.6	.9	43	DEP
		15	2134	3.81	19	18.20	155	23.17	3.37	1.7	1.8	20	1	95	.09	4	.4	.9	14	SWR
		15	2136	35.83	19	17.47	155	23.65	2.47	.8	1.4	23	2	95	.10	5	.4	.9	8	SWR
		15	2223	21.32	19	22.00	155	14.04	31.01	3.2	3.3	49	1	54	.11	2	.6	.9	47	DEP F
		15	2336	4.78	19	21.94	155	1.77	7.34	1.6	1.4	24	2	148	.11	4	.6	.8	12	SF5
		15	2348	40.64	19	18.01	155	23.28	5.62	2.0	2.5	32	2	96	.12	4	.4	1.4	19	SWR
		15	2352	40.03	19	17.89	155	23.25	3.12	1.1	1.4	16	2	97	.08	4	.4	.8	10	SWR
		16	034	55.24	19	21.89	155	14.08	30.79	2.9	3.0	49	2	54	.10	2	.6	.9	45	DEP
		16	116	42.08	19	18.20	155	23.09	3.86	.8	1.1	15	1	96	.10	4	.4	1.1	7	SWR
		16	131	52.50	19	18.04	155	22.99	3.55	1.7	1.6	18	1	99	.08	4	.4	1.0	10	SWR
		16	143	44.56	19	17.87	155	23.20	3.33	1.7	1.7	19	2	98	.06	4	.4	1.0	18	SWR
		16	342	39.44	19	19.94	155	11.48	9.30	1.6	1.3	22	1	86	.05	5	.5	1.0	20	SF3
		16	4	0 43.82	19	19.57	155	21.62	2.96	1.8	2.1	30	2	85	.11	3	.3	.6	24	SWR
		16	532	18.76	19	46.96	156	1.64	7.36		2.0	16	2	230	.13	22	1.5	1.0	13	HUA
		16	535	12.99	19	18.82	155	22.07	3.83	1.3	1.4	18	2	103	.07	3	.5	.9	17	SWR
		16	541	45.35	19	17.30	155	20.77	5.87	2.5	3.2	39	4	135	.09	4	.4	.9	30	SWR
		16	545	32.65	19	17.92	155	20.98	3.69	.7	1.1	17	3	122	.08	4	.5	1.0	16	SWR
		16	546	14.50	19	17.94	155	20.85	3.63	1.5	1.4	23	4	123	.10	4	.4	.9	21	SWR
		16	547	17.29	19	18.44	155	22.81	4.57	1.4	1.7	25	3	97	.07	3	.3	1.0	20	SWR
		16	553	54.07	19	18.12	155	23.04	3.81	1.0	1.4	18	3	98	.06	4	.4	.9	16	SWR
		16	558	16.78	19	17.90	155	20.88	3.41	1.6	1.9	27	5	123	.08	4	.4	.8	25	SWR
		16	646	22.60	19	18.19	155	23.31	4.54	2.3	2.9	38	2	93	.10	4	.3	1.1	35	SWR
		16	742	59.71	19	24.21	154	58.71	6.36	1.7	1.4	24	1	158	.12	2	.8	1.2	22	LER
		16	747	34.62	19	18.04	155	23.17	3.50	.9	1.2	18	3	97	.06	4	.4	.8	16	SWR
		16	1022	7.34	19	18.22	155	22.99	4.35	1.2	1.1	24	1	98	.09	4	.4	1.3	15	SWR
		16	12	6 54.45	19	17.36	155	23.26	3.06	1.4	1.3	25	2	103	.09	5	.3	1.0	19	SWR
		16	1442	28.47	19	17.04	155	23.94	4.27	1.0	1.2	25	3	93	.10	5	.4	1.9	20	SWR
		16	17	3 15.69	19	20.77	155	2.97	8.86	2.9	3.2	42	0	119	.10	2	.7	.5	37	SF5
		16	1734	24.53	19	17.44	155	23.46	2.95	2.1	2.2	32	1	98	.11	5	.3	1.0	26	SWR
		16	22	9 43.45	19	25.45	155	25.50	8.97	2.7	2.5	43	0	30	.12	1	.3	.7	34	KAO
		17	129	54.77	19	18.10	155	23.08	3.63	1.0	1.3	20	2	98	.07	4	.4	1.0	14	SWR
		17	4	8 42.75	19	19.18	155	15.34	7.34	1.6	1.4	27	1	100	.09	4	.5	.9	22	SF1
		17	635	55.75	19	58.68	155	21.95	12.27	2.3	2.4	16	3	216	.06	10	.9	.4	10	KEA
		17	941	58.35	19	17.93	155	23.22	3.50	1.1	1.1	23	4	103	.07	4	.3	.8	12	SWR
		17	1014	30.87	19	17.15	155	23.84	5.76	2.1	2.2	30	2	94	.12	5	.4	1.3	25	SWR
		17	1320	55.17	19	17.47	155	23.43	2.70	1.2	1.3	24	1	99	.09	5	.3	.9	15	SWR
		17	1437	27.94	19	22.40	155	24.56	10.99	1.7	1.4	29	1	44	.08	5	.5	.8	24	KAO
		17	1646	54.36	19	27.29	155	45.99	9.85	2.7	2.5	30	2	77	.10	6	.6	.6	15	KON
		17	1724	28.74	19	41.52	156	1.62	9.46	2.7	2.8	18	1	228	.13	20	1.2	.7	9	HUA
		17	1824	40.93	19	20.67	155	8.22	8.45	2.4	2.5	43	1	77	.12	4	.4	.7	30	SF4
		17	1827	44.64	19	41.43	156	.97	9.19	2.6	2.4	13	1	231	.14	19	1.8	.9	9	HUA
		17	1943	17.82	19	41.39	156	2.25	9.45	2.9	3.0	25	1	229	.14	21	1.3	.7	18	HUA
		17	2241	14.00	19	20.95	155	19.65	2.94	1.7	1.9	29	4	51	.10	4	.3	.8	21	SWR
		17	2243	33.53	19	20.92	155	19.56	3.64	2.3	2.5	38	4	52	.10	4	.3	.8	24	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	17	2313	4.68	19	19.80	155	11.37	6.85	2.3	2.3	44	4	89	.15	5	.5	.9	30	SF3
		18	036	36.01	19	21.69	155	18.12	2.72	1.5	1.7	23	4	52	.10	3	.3	.6	15	SWR
		18	313	31.11	19	17.65	155	23.14	3.30	1.2	1.1	22	2	102	.08	5	.4	1.0	14	SWR
		18	434	38.44	19	27.83	155	20.58	6.84	1.9	1.6	26	3	120	.11	0	.5	.9	16	KAO
		18	5 0	34.12	19	51.98	155	34.37	12.79	2.7	2.7	35	3	208	.09	15	.9	.4	20	KEA F
		18	548	27.78	19	17.22	155	23.88	2.60	1.3	1.2	26	3	92	.10	5	.4	1.0	18	SWR
		18	840	38.52	19	17.86	155	23.19	3.84	1.7	1.3	26	2	98	.10	4	.4	1.1	15	SWR
		18	858	47.27	19	20.43	155	16.71	35.50	2.4	2.2	49	3	80	.09	1	.6	1.0	40	DEP
		18	930	53.47	19	18.90	155	21.96	3.54	1.9	1.6	28	2	98	.09	3	.4	.8	20	SWR
		18	11 3	47.53	19	18.15	155	23.24	3.45	2.3	2.8	33	2	95	.11	4	.3	.9	23	SWR
		18	1238	41.84	19	19.95	155	11.07	7.89	2.3	2.3	36	3	87	.10	4	.4	.8	21	SF3
		18	1539	3.81	19	18.98	155	21.82	2.85	1.6	1.1	12	0	97	.08	3	.5	.8	10	SWR
		18	1544	38.50	19	19.12	155	13.53	7.08	2.1	2.0	39	4	70	.12	4	.4	.8	25	SF2
		18	1722	33.57	19	16.23	155	23.89	5.00	1.9	1.6	27	2	99	.09	4	.4	1.6	14	SWR
		18	1742	8.34	19	16.14	155	23.71	6.57	2.4	2.6	36	2	105	.13	3	.4	.9	25	SWR
		19	017	53.60	19	20.16	155	8.78	8.07	1.8	1.3	20	0	72	.06	4	.6	1.2	19	SF4
		19	020	2.79	19	21.20	155	18.19	30.86	2.1	1.5	35	0	43	.10	2	.7	1.2	27	DEP
		19	033	57.42	19	20.38	155	8.84	7.88	2.1	2.0	36	1	70	.09	4	.4	.7	29	SF4
		19	121	.76	19	20.00	155	11.50	7.69	2.0	1.6	35	2	84	.10	5	.5	.8	21	SF3
		19	432	32.28	19	17.28	155	23.89	5.99	2.2	2.5	32	1	92	.12	5	.4	1.5	24	SWR
		19	445	59.16	19	17.33	155	23.89	2.92	1.8	1.8	29	1	92	.10	5	.3	1.1	19	SWR
		19	458	14.14	19	16.16	155	23.97	6.55	1.9	1.3	27	3	98	.15	3	.5	1.3	16	SWR
		19	622	3.90	19	18.42	155	22.84	4.06	1.7	1.4	25	1	98	.09	3	.4	1.1	19	SWR
		19	711	11.63	19	24.93	155	25.64	6.56	2.7	2.7	42	1	38	.16	1	.4	.9	31	KAO
		19	810	35.33	19	17.34	155	45.05	10.45	2.5	1.5	29	1	184	.11	12	.6	.7	18	KON
		19	851	17.91	19	19.53	155	7.48	7.94	2.1	2.3	32	1	108	.08	4	.4	.8	19	SF4
		19	9 9	36.73	19	37.35	155	53.90	2.63		2.1	14	0	312	.13	19	10.1	10.6	8	KON
		19	912	36.42	19	41.25	156	2.02	9.52	2.1	1.7	18	1	229	.11	20	1.1	.8	7	HUA
		19	913	19.77	19	18.88	155	11.51	5.00	1.5	1.2	21	2	111	.07	5	.5	1.9	16	SSF
		19	1044	14.53	19	18.03	155	22.98	3.42	1.7	1.8	23	2	99	.07	4	.4	.9	16	SWR
		19	1120	53.73	19	19.02	155	21.97	3.50	2.0	2.2	33	2	95	.09	3	.3	.8	21	SWR
		19	1222	33.51	19	19.74	155	7.31	7.70	1.8	1.7	27	2	108	.09	5	.6	1.1	17	SF4
		19	1257	16.84	19	17.03	155	23.01	7.54	1.4	1.8	19	3	111	.12	5	.5	1.3	10	SWR
		19	1259	18.10	19	16.84	155	23.22	7.15	1.1	1.5	20	2	109	.10	5	.5	1.3	12	SWR
		19	1425	2.91	19	17.72	155	23.41	2.95	.7	1.2	16	2	96	.06	5	.4	.9	14	SWR
		19	1451	2.79	19	18.29	155	30.63	8.53	2.0	1.6	30	3	71	.12	6	.4	1.1	22	LSW
		19	15 6	38.21	19	21.22	155	13.32	9.07	2.5	2.8	45	3	55	.12	3	.4	.6	32	SF2
		19	17 5	45.50	19	15.30	156	11.27	28.66	2.4	2.4	24	0	265	.09	33	3.5	2.3	18	KON
		19	1947	41.56	19	17.86	155	23.41	5.77	2.3	2.6	39	2	96	.12	4	.4	1.0	28	SWR
		19	2010	12.88	19	22.55	155	3.52	9.03	2.0	1.9	31	2	108	.09	4	.5	.5	20	SF5
		19	2057	19.08	19	52.00	155	32.18	17.22	1.8	1.8	20	2	123	.09	13	.5	1.5	11	KEA
		19	2114	12.78	19	17.06	155	23.81	2.65		1.6	27	2	95	.08	5	.3	.9	15	SWR
		19	2119	44.67	19	20.78	155	10.87	9.14	2.3	2.4	43	5	73	.10	3	.3	.5	31	SF3
		19	2126	32.19	19	16.77	155	23.69	3.56	1.8	1.8	25	1	100	.12	5	.4	1.4	18	SWR
		19	2136	39.46	19	20.77	155	10.63	7.53	1.7	1.6	36	6	73	.08	3	.4	.6	25	SF3
		19	2228	26.94	19	17.53	155	23.38	4.53	1.2	1.5	26	2	98	.10	5	.4	2.0	16	SWR
		19	23 8	27.91	19	20.33	155	12.87	8.96	1.6	1.3	23	3	68	.06	4	.5	.9	14	SF2
		20	[illegible]	55.07	19	18.23	155	23.43	4.58	2.0	2.6	34	3	92	.12	4	.3	1.4	23	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	20	151	7.84	19	18.12	155	23.35	3.81	.8	1.4	21	2	94	.06	4	.4	.9	14	SWR
		20	358	36.64	19	20.94	155	12.92	9.22	1.8	1.8	35	4	61	.10	3	.4	.7	23	SF2
		20	4 4	14.45	20	2.89	155	12.16	45.09	2.4	1.9	39	2	229	.12	23	1.0	1.5	33	KEA
		20	414	36.11	19	19.48	155	8.14	8.73	1.5	1.3	19	0	91	.05	4	.6	1.4	16	SF4
		20	5 5	58.28	19	14.10	155	20.12	45.50	2.1	1.8	34	1	167	.10	7	1.0	1.9	26	DEP
		20	528	28.62	19	18.25	155	23.22	5.80	2.0	2.3	31	2	94	.11	4	.4	1.2	24	SWR
		20	1159	24.54	19	17.30	155	23.97	2.73	.9	1.3	22	1	90	.08	6	.3	1.0	14	SWR
		20	12 3	52.84	19	17.78	155	23.38	4.47	1.2	1.6	25	2	96	.10	5	.4	1.8	15	SWR
		20	1220	3.81	19	18.93	155	12.69	7.52	1.9	1.6	32	4	92	.11	4	.5	.8	25	SF2
		20	1235	12.47	19	16.59	155	23.54	4.74	1.8	1.9	24	3	109	.10	4	.4	1.8	13	SWR
		20	1332	39.98	19	24.45	155	16.11	15.78	2.9	3.1	49	3	36	.11	1	.4	.3	43	DEP
		20	1455	5.49	19	18.49	155	23.11	4.65	1.4	1.5	23	1	93	.08	3	.4	1.3	19	SWR
		20	1831	54.03	18	56.82	155	10.62	46.02	2.6	2.1	33	0	250	.06	38	2.1	3.0	29	LOI
		20	2211	53.08	19	2.96	155	24.01	37.78	2.5	2.2	40	1	208	.06	14	.8	1.4	36	LOI
		20	2329	.27	19	17.33	155	23.41	2.93	1.1	1.2	20	3	100	.08	5	.3	1.0	16	SWR
		21	416	1.66	19	19.36	155	12.67	7.96	1.8	1.7	30	2	84	.14	5	.5	.9	22	SF2
		21	451	41.19	19	14.94	155	19.92	8.50	1.7	1.6	29	2	165	.09	6	.6	1.1	15	SWR
		21	626	18.40	19	20.10	155	12.53	8.79	2.4	2.4	36	0	75	.11	5	.4	.6	30	SF2
		21	635	53.45	19	20.53	155	11.94	7.42	2.3	2.4	39	2	73	.13	4	.4	.8	29	SF3
		21	647	58.75	19	10.63	155	29.25	34.33	2.4	1.9	32	2	91	.06	3	.7	1.4	26	DLS
		21	718	53.91	19	17.56	155	13.06	7.64	2.1	2.1	38	2	125	.13	1	.5	.8	22	SF2
		21	839	4.78	19	21.81	155	2.25	8.38	2.1	1.6	25	0	150	.09	4	.8	.4	12	SF5
		21	911	25.10	19	20.52	155	11.69	8.10	2.2	1.8	34	3	75	.10	4	.4	.6	21	SF3
		21	924	45.03	19	26.33	155	36.97	3.54	2.1	2.3	19	0	111	.14	2	.6	.8	14	MLO
		21	939	21.04	19	17.77	155	12.88	6.70	2.0	1.8	33	2	122	.10	2	.5	.9	23	SF2
		21	940	11.82	19	18.66	155	13.27	8.50	2.0	1.8	35	1	83	.11	3	.4	.7	20	SF2
		21	1235	6.43	19	17.67	155	23.31	3.54	1.1	1.0	22	3	99	.07	5	.4	.9	14	SWR
		21	1258	24.31	19	19.03	155	11.81	8.76	1.8	1.3	26	1	105	.09	5	.5	.8	24	SF3
		21	1446	3.93	19	26.58	155	36.22	2.79	.9	1.4	13	2	178	.13	1	.7	.4	12	MLO
		21	1520	13.21	19	18.58	155	13.54	8.10	1.5	1.4	29	3	86	.09	3	.4	.7	22	SF2
		21	1532	13.46	19	19.62	155	7.56	6.78	1.5	1.0	26	2	104	.09	4	.5	1.2	24	SF4
		21	16 0	1.78	19	21.50	155	8.09	9.25	2.5	2.8	47	3	70	.08	3	.3	.5	38	SF4
		21	1747	37.90	19	17.62	155	23.14	3.05	1.0	1.3	18	2	102	.06	5	.3	.9	15	SWR
		21	1750	28.83	19	17.89	155	13.08	5.33	1.4	1.4	26	1	107	.07	2	.4	1.0	22	SF2
		21	1833	12.19	19	20.57	155	11.31	8.67	2.0	2.1	38	4	75	.09	4	.4	.6	29	SF3
		21	1839	5.19	19	19.04	155	13.59	5.97	2.0	1.9	38	3	69	.11	4	.4	.9	28	SF2
		21	2333	43.21	19	15.61	155	23.47	9.50	2.5	2.9	32	3	138	.10	3	.4	.7	21	SWR
		22	116	38.49	19	20.50	155	6.60	8.57	2.8	2.9	44	2	104	.09	5	.4	.5	34	SF4 F
		22	315	14.34	19	19.47	155	11.93	8.47	1.5	1.2	21	1	92	.06	5	.6	1.1	18	SF3
		22	330	47.06	19	21.68	155	18.13	3.26	1.5	1.3	21	2	66	.08	3	.3	.6	16	SWR
		22	359	49.25	19	22.48	155	17.06	2.94	1.1	1.1	19	1	94	.09	2	.4	.4	13	SSC
		22	443	19.30	19	21.89	155	18.31	2.47	1.5	1.6	23	1	48	.10	4	.3	.6	18	SWR
		22	710	6.10	19	21.74	155	18.35	2.48	1.5	1.6	25	3	48	.09	5	.3	.5	17	SWR
		22	814	32.98	19	18.30	155	23.59	5.37	1.7	1.8	20	0	109	.13	4	.6	1.6	16	SWR
		22	851	20.39	19	21.62	155	18.34	3.05	1.3	1.1	22	4	69	.09	3	.3	.6	16	SWR
		22	910	13.47	19	18.47	155	13.17	7.93	1.6	1.1	18	0	89	.06	3	.6	1.3	14	SF2
		22	1441	34.49	19	21.33	155	19.11	3.10	2.1	2.0	25	2	44	.11	4	.3	.8	19	SWR
		22	1545	54.83	19	26.57	155	20.17	15.03	1.7	1.4	39	2	76	.11	2	.5	.4	30	DML

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	22	1925	15.97	19	17.27	155	23.59	2.78	1.8	1.3	25	2	97	.09	6	.4	1.1	17	SWR
		22	22 6	59.71	19	17.14	155	23.93	2.36	1.0	1.1	25	2	92	.11	5	.3	1.0	19	SWR
		22	2335	4.10	19	21.53	155	17.33	3.89	1.2	.9	15	1	102	.12	3	.5	.8	12	SWR
		23	0 3	32.90	19	18.45	155	15.36	7.15	1.0	1.2	24	1	116	.07	4	.4	.9	15	SF1
		23	042	49.50	19	17.54	155	23.57	5.61	2.4	3.0	34	2	96	.11	5	.4	1.4	23	SWR
		23	333	24.53	19	17.09	155	23.57	2.90	1.8	1.3	25	1	99	.09	5	.4	1.1	17	SWR
		23	443	10.34	19	21.83	155	18.14	3.24	2.3	2.4	40	3	49	.12	3	.3	.5	27	SWR
		23	659	33.39	19	18.59	155	13.18	8.15	1.4	1.2	20	1	86	.07	3	.6	1.1	16	SF2
		23	729	35.50	19	18.40	155	13.13	7.17	1.5	1.2	26	2	91	.08	3	.5	1.1	20	SF2
		23	741	13.18	19	23.54	154	57.97	6.49	2.3	2.4	37	1	175	.16	3	.6	.6	25	LER
		23	1045	2.07	19	25.33	155	24.58	4.39	1.5	1.0	23	2	46	.10	1	.3	.8	17	KAO
		23	1549	10.76	19	24.41	155	24.62	10.62	1.8	1.5	31	2	46	.10	2	.4	1.0	23	KAO
		23	1735	13.75	19	18.03	155	23.24	5.31	2.2	2.1	34	3	96	.12	4	.4	1.4	24	SWR
		23	1853	22.15	19	18.17	155	23.41	6.72	2.8	3.3	49	1	93	.13	4	.4	.7	40	SWR
		23	19 8	56.98	19	18.47	155	23.20	3.82	1.5	1.5	30	4	93	.08	3	.3	.7	26	SWR
		23	2047	34.42	19	18.47	155	23.16	3.65	1.5	1.8	26	4	94	.12	3	.4	.8	18	SWR
		23	2223	55.18	19	19.99	155	8.22	8.18	1.6	1.2	31	3	84	.08	5	.5	.8	25	SF4
		23	2226	16.54	19	20.25	155	12.00	9.35	1.5	1.0	24	2	77	.05	5	.5	.8	20	SF3
		23	2350	5.75	19	17.23	155	23.71	2.74	1.0	1.2	18	2	95	.06	5	.4	.9	13	SWR
		24	5 1	10.38	19	17.79	155	23.49	5.86	2.3	3.0	47	7	95	.12	5	.3	1.0	36	SWR
		24	6 0	43.99	19	15.50	155	15.77	3.47	2.2	2.2	40	3	168	.08	5	.5	1.0	24	SSF
		24	732	23.47	19	15.58	155	16.38	2.83	1.8	1.5	23	2	164	.08	6	.6	1.0	21	SSF
		24	753	14.16	19	25.70	155	28.90	9.27	2.0	1.7	37	2	51	.09	6	.3	.8	26	KAO
		24	924	58.17	19	20.32	155	4.24	7.19	1.4	1.5	28	1	122	.11	2	.6	.9	14	SFS
		24	947	45.20	19	18.73	155	20.67	7.52	2.3	2.9	47	6	106	.13	4	.3	.6	30	SWR
		24	1124	9.88	19	20.30	155	20.65	3.30	1.4	1.5	24	4	69	.10	5	.4	.9	20	SWR
		24	1128	58.91	19	20.62	155	12.93	7.85	1.6	1.4	32	4	64	.12	4	.5	.8	21	SF2
		24	1336	24.47	19	20.48	155	19.11	3.33	1.3	1.4	22	3	67	.09	3	.3	.8	16	SWR
		24	17 3	19.36	19	23.86	155	26.89	7.34	1.4	1.3	27	2	48	.11	3	.4	.9	20	KAO
		24	1916	8.30	19	15.44	155	2.19	43.64	2.6	2.2	46	2	206	.11	8	1.0	1.4	40	DEP
		24	1937	41.95	19	20.12	155	11.48	8.66	1.4	1.5	29	3	83	.11	5	.5	.8	22	SF3
		24	20 3	41.74	19	15.61	155	15.74	3.36	1.2	1.3	24	0	184	.09	5	.7	1.2	8	SSF
		24	2126	38.81	19	19.01	155	22.06	3.45	2.0	2.0	31	2	95	.09	3	.4	.7	24	SWR
		24	2142	42.94	19	18.68	155	22.80	3.42	1.7	1.5	21	2	95	.10	3	.4	.7	12	SWR
		25	052	17.49	19	19.12	155	21.45	3.25	1.6	1.7	26	3	94	.09	4	.4	.8	17	SWR
		25	053	35.90	19	25.90	155	37.51	2.18	2.3	2.3	24	1	92	.11	3	.4	.9	16	MLO
		25	139	43.73	19	34.12	155	56.16	.64	2.1	1.9	25	2	206	.14	9	1.1	.8	17	KON
		25	3 7	29.00	19	18.27	155	21.45	2.79	1.0	1.3	18	3	113	.10	5	.5	.8	9	SWR
		25	516	44.51	19	18.31	155	21.61	2.80	2.2	2.8	34	2	111	.12	5	.4	.8	24	SWR
		25	625	5.10	19	45.26	155	27.66	24.51	3.3	3.6	50	3	62	.10	3	.5	1.2	34	KEA F
		25	748	45.71	19	17.48	155	23.53	2.36	.9	1.3	17	3	97	.09	5	.4	.9	13	SWR
		25	9 3	8.40	19	33.38	155	41.45	7.96	1.5	1.2	24	2	121	.12	9	.6	1.2	13	MLO
		25	917	37.12	19	17.34	155	23.56	5.44	2.2	1.8	31	3	98	.11	5	.4	1.7	24	SWR
		25	1034	7.09	19	47.18	156	9.38	36.99	2.2	1.8	36	4	254	.10	35	1.6	1.2	26	HUA
		25	1414	55.57	19	18.84	155	11.33	8.84	2.9	2.8	42	3	115	.11	5	.4	.4	35	SF3
		25	16 1	37.47	19	18.96	155	13.58	8.28	1.7	1.1	34	5	70	.08	4	.4	.6	21	SF2
		25	18 4	14.67	19	19.03	155	20.75	8.27	1.4	1.1	26	4	97	.10	4	.5	.9	21	SWR
		26	119	34.28	19	20.77	155	13.60	8.41	1.8	1.5	33	2	59	.11	4	.4	.7	24	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	26	155	40.21	19	21.24	155	4.54	9.00	3.2	3.2	46	2	89	.10	4	.5	.4	34	SFS F
		26	1050	35.96	19	19.99	155	9.79	7.24	1.6	1.5	27	3	84	.09	4	.5	1.0	18	SF3
		26	1349	31.64	19	20.68	155	20.38	2.19	1.4	1.4	21	3	61	.08	5	.3	.8	14	SWR
		26	1414	5.18	19	20.96	155	25.47	10.28	1.9	1.7	33	4	54	.11	4	.4	.9	25	KAO
		26	1435	.47	19	17.60	155	23.03	4.11	1.1	1.6	18	1	113	.08	5	.5	1.6	12	SWR
		26	1950	19.67	19	14.78	155	34.69	8.13	1.9	1.4	31	3	106	.17	4	.5	.9	18	LSW
		26	223A	27.23	19	18.16	155	23.23	4.14	1.7	1.8	27	2	96	.11	4	.4	1.3	19	SWR
		27	319	56.35	19	21.59	155	28.15	9.58	2.2	2.1	40	4	40	.13	2	.4	.7	27	KAO
		27	417	55.65	19	17.57	155	23.66	2.56	1.9	2.2	33	4	94	.12	5	.3	.9	24	SWR
		27	458	49.48	19	18.66	155	21.99	3.63	.9	1.2	18	1	102	.07	4	.5	.9	11	SWR
		27	5 1	24.60	19	26.31	155	24.15	9.70	2.2	1.9	37	4	33	.10	3	.4	.7	23	KAO
		27	6 4	4.01	19	18.34	155	23.16	5.39	1.1	1.3	24	2	94	.10	4	.4	1.4	16	SWR
		27	650	45.43	19	20.73	155	6.76	8.45	1.3	1.3	20	1	97	.05	4	.6	1.1	16	SF4
		27	825	41.39	19	19.97	155	11.59	9.05	1.7	1.7	23	0	85	.09	5	.5	.8	20	SF3
		27	932	19.41	19	26.49	155	38.48	3.35	2.7	2.5	32	0	203	.12	4	.9	1.2	25	MLO
		27	1026	34.73	19	23.07	155	2.43	8.09	2.1	1.9	32	2	130	.10	4	.4	.7	22	SFS
		27	1214	38.20	19	20.09	155	12.51	7.06	1.9	1.8	35	2	75	.11	5	.4	.8	25	SF2
		27	1237	41.64	19	21.66	155	16.61	34.74	2.4	1.8	48	4	59	.10	2	.7	.9	43	DEP
		27	1510	6.30	19	21.70	155	15.01	8.72	2.0	1.2	35	4	61	.12	2	.5	.6	22	SF1
		28	043	25.22	19	17.91	155	23.41	3.34	2.0	1.1	20	1	95	.09	4	.4	1.0	16	SWR
		28	057	20.96	19	18.47	155	23.01	5.37	1.8	1.8	26	1	94	.12	3	.5	1.4	22	SWR
		28	315	36.63	19	17.97	155	23.41	3.87	1.7	1.3	25	2	94	.10	4	.4	1.2	19	SWR
		28	325	41.23	19	17.83	155	23.20	3.59	1.2	1.1	20	2	99	.08	4	.4	1.0	13	SWR
		28	949	57.46	19	17.75	155	23.47	3.30	1.3	1.2	18	3	95	.09	5	.4	.9	12	SWR
		28	1636	2.69	19	17.75	155	23.21	3.17	1.6	1.4	21	2	106	.06	5	.5	.8	13	SWR
		28	1742	38.80	19	13.41	155	35.62	9.57	2.4	1.6	34	4	115	.15	4	.4	.7	15	LSW
		28	18 1	1.44	19	20.07	155	6.72	8.09	1.9	1.3	26	1	112	.07	5	.5	1.1	19	SF4
		29	146	43.48	19	19.38	155	11.44	8.25	1.5	1.2	26	2	99	.08	6	.5	.9	19	SF3
		29	148	20.25	19	18.05	155	23.25	5.08	1.7	1.4	23	1	102	.11	4	.4	1.5	10	SWR
		29	513	54.86	19	18.07	155	23.27	5.03	2.0	2.4	35	1	95	.12	4	.3	1.3	24	SWR
		29	653	.26	19	20.16	155	7.85	7.16	1.9	1.1	29	4	90	.10	5	.4	.9	16	SF4
		29	10 3	42.60	19	19.84	155	11.99	7.94	1.9	1.3	32	2	84	.09	6	.5	.8	20	SF3
		29	1255	49.49	19	22.45	155	17.61	3.09	1.3	1.0	13	4	96	.03	2	.3	.5	8	SSC
		29	1952	34.04	19	17.75	155	23.43	4.02	2.1	2.1	32	3	96	.10	5	.5	1.2	17	SWR
		30	022	37.41	19	26.27	155	37.91	2.51	1.3	1.6	9	1	188	.11	3	1.1	.8	4	MLO
		30	242	2.32	19	19.10	155	13.51	7.27	1.4	1.3	32	2	70	.10	4	.5	.8	27	SF2
		30	517	35.41	19	9.88	155	40.84	2.38	2.5	1.8	25	1	125	.15	11	.7	2.3	12	LSW
		30	859	28.79	19	20.55	155	12.26	7.84	2.2	2.1	44	4	70	.14	4	.5	.7	32	SF3
		30	9 6	14.00	19	19.94	155	11.94	9.11	3.6	3.9	46	3	83	.10	5	.3	.4	38	SF3 F
		30	1216	46.51	20	3.03	155	21.17	12.18	2.1	1.9	15	3	217	.13	18	1.2	.7	7	KEA
		30	1344	28.10	19	21.92	155	1.02	5.01	1.9	1.6	24	2	173	.12	5	.6	1.7	12	SFS
		30	1440	43.13	19	20.43	155	18.99	3.44	1.4	1.3	22	2	49	.07	3	.3	.7	15	SWR
		30	1910	53.21	19	19.77	155	7.61	6.81	1.8	1.3	30	2	100	.11	5	.5	1.1	17	SF4
		30	1940	53.17	19	18.30	155	23.29	4.59	1.7	1.8	29	3	93	.10	4	.4	1.3	21	SWR
		31	222	32.22	19	17.88	155	23.19	4.69	1.7	2.0	31	2	98	.11	4	.4	1.8	20	SWR
		31	257	50.33	19	26.06	155	36.16	2.97	2.2	1.9	16	2	102	.14	2	.5	.7	9	MLO
		31	846	9.06	19	19.87	155	13.11	9.49	2.4	2.4	49	4	70	.13	5	.4	.5	31	SF2
		31	951	44.45	19	20.02	155	12.91	8.77	1.4	1.3	20	2	71	.06	5	.6	1.0	15	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAR	31	956	11.51	19	20.40	155	12.93	8.00	1.6	1.5	29	2	67	.09	4	.5	.8	17	SF2
		31	1047	30.74	19	17.76	155	23.97	2.50	1.0	1.3	15	2	129	.07	5	.5	.8	9	SWR
		31	15 8	26.07	19	19.64	155	7.79	6.85	2.0	1.7	31	2	98	.12	4	.5	1.1	17	SF4
		31	1746	42.40	19	20.39	155	18.99	3.46	1.8	1.9	26	4	49	.11	3	.3	.8	17	SWR
		31	2050	20.81	19	32.17	155	37.73	9.86	2.6	1.4	29	0	115	.17	6	.7	.9	16	MLO
		31	2235	32.67	19	16.46	155	24.09	4.70	2.1	2.3	34	3	92	.12	4	.4	1.7	23	SWR
		31	2334	57.82	19	17.68	155	23.46	1.83	.8	1.2	18	3	96	.07	5	.3	.9	10	SWR
	APR	1	0 0	39.43	21	13.53	156	52.02	.00	3.7	4.2	31	1	207	.29	82	4.4	.7	9	DIS *
		1	1 5	45.17	19	17.61	155	23.32	3.50	.9	1.2	20	2	99	.08	5	.3	1.0	10	SWR
		1	128	25.87	19	17.23	155	23.67	2.66	.9	1.3	22	3	106	.09	5	.4	1.0	15	SWR
		1	12 2	34.29	19	17.48	155	23.66	5.61	1.8	1.5	25	2	95	.11	5	.4	1.5	14	SWR
		1	1446	25.11	19	17.99	155	23.32	5.27	2.3	2.4	32	1	96	.11	4	.3	1.1	24	SWR
		1	2023	2.64	19	18.16	155	23.17	3.54	1.7	1.2	24	3	96	.08	4	.4	.8	16	SWR
		2	249	11.20	19	20.05	155	11.96	9.46	3.0	3.0	44	2	81	.10	5	.4	.4	37	SF3
		2	6 1	12.34	19	20.42	155	11.83	8.52	2.0	1.9	38	3	76	.11	5	.4	.7	25	SF3
		2	10 4	55.89	19	17.04	155	23.46	3.29	1.8	1.3	19	2	113	.08	5	.4	1.2	13	SWR
		2	1049	29.99	19	19.67	155	11.49	7.54	2.2	1.9	36	5	92	.13	5	.4	.7	23	SF3
		2	11 4	42.84	19	17.59	155	21.40	7.12	2.2	2.3	30	2	124	.12	5	.4	1.2	21	SWR
		2	1318	29.71	19	20.56	155	13.11	7.89	2.1	1.9	35	4	63	.11	4	.4	.6	19	SF2
		2	20 0	40.97	19	18.14	155	23.16	3.83	.8	1.2	18	2	97	.09	4	.4	1.0	12	SWR
		2	2156	52.85	19	21.52	155	1.80	6.82	1.6	1.5	29	4	163	.11	4	.5	.8	18	SF5
		3	713	1.03	19	24.96	155	24.70	9.51	2.5	2.2	40	2	36	.12	1	.4	.6	30	KAO
		3	1051	21.52	19	18.10	155	23.21	3.54	1.7	1.4	26	3	96	.09	4	.4	.9	19	SWR
		3	1155	1.90	19	17.34	155	23.32	2.26	1.3	1.3	24	3	102	.13	5	.3	.8	12	SWR
		3	1320	53.14	19	22.93	155	17.14	2.76	2.4	2.6	35	3	36	.09	1	.2	.3	22	SSC
		3	16 3	30.45	19	22.28	155	17.10	3.28	1.4	1.3	20	2	55	.08	2	.3	.4	12	SSC
		3	1820	23.56	19	21.51	155	18.27	2.77	1.5	1.1	19	3	69	.11	3	.3	.7	13	SWR
		3	1852	49.08	19	21.71	155	18.26	2.29	1.9	1.8	21	1	56	.11	3	.3	.6	9	SWR
		3	2144	31.18	19	21.63	155	18.03	3.48	1.5	1.3	20	2	58	.10	3	.4	.8	11	SWR
		3	22 1	43.89	19	20.04	155	13.31	9.41	1.7	1.5	27	1	66	.08	5	.5	.8	20	SF2
		3	2210	54.99	19	21.76	155	18.03	2.88	1.6	1.5	23	4	50	.14	3	.3	.7	17	SWR
		3	2240	42.10	19	19.61	155	16.26	7.81	1.9	1.8	36	3	94	.10	2	.4	.8	17	SF1
		4	2 1	8.44	19	19.93	155	7.64	7.88	1.9	1.4	31	3	97	.07	5	.5	.8	22	SF4
		4	354	30.30	19	20.61	155	6.47	8.82	2.8	2.7	45	3	103	.09	4	.4	.5	34	SF4
		4	558	21.82	19	32.90	155	37.36	10.49	2.6	2.3	39	1	139	.11	7	.5	.5	26	MLO
		4	722	35.08	19	17.50	155	23.42	3.38	1.8	1.4	29	3	99	.11	5	.3	1.1	20	SWR
		4	855	27.39	19	17.19	155	16.01	7.60	1.7	1.4	30	2	143	.09	4	.5	.9	16	SF1
		4	935	2.79	19	17.58	155	23.38	3.15	1.0	1.3	24	3	98	.09	5	.3	1.0	16	SWR
		4	1039	26.24	19	17.22	155	23.89	2.77	1.8	1.4	29	3	92	.11	5	.3	1.1	18	SWR
		4	1617	54.91	19	18.06	155	23.27	3.46	1.1	1.1	26	3	100	.09	4	.3	.8	13	SWR
		4	21 9	55.09	19	21.95	155	17.90	3.35	1.8	1.7	24	3	50	.11	3	.3	.6	18	SWR
		5	043	4.71	19	23.24	155	16.88	2.75	2.1	2.5	25	4	39	.09	0	.2	.2	16	SSC
		5	328	13.55	19	21.79	155	18.34	2.80	1.4	1.1	21	2	55	.10	4	.3	.7	16	SWR
		5	347	23.65	19	20.19	155	11.23	9.30	2.4	2.4	41	4	122	.11	4	.4	.6	28	SF3
		5	526	20.72	19	18.67	155	13.49	7.19	1.7	1.4	26	1	75	.09	3	.5	.9	15	SF2
		5	540	19.05	19	23.31	155	.13	6.27	1.7	1.1	22	2	154	.11	4	.6	1.1	13	SF5
		5	624	38.20	19	20.10	155	19.14	3.70	1.4	.9	16	2	78	.09	3	.4	1.0	12	SWR
		5	7 2	23.24	19	22.16	155	17.74	3.34	1.4	.8	19	2	58	.08	3	.3	.5	11	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	APR	5	735	19.07	19	21.85	155	18.10	2.90	1.5	.9	23	2	49	.12	3	.3	.6	18	SWR
		5	1113	5.76	19	19.41	155	15.73	8.15	2.4	2.4	39	2	101	.12	3	.4	.6	29	SF1
		5	1749	3.40	19	53.50	155	23.21	8.49	1.4	1.6	16	0	240	.11	5	1.9	.6	9	KEA
		5	1941	41.09	19	48.26	155	51.52	12.24	2.5	2.3	31	3	181	.13	13	1.0	.8	15	HUA
		5	1943	25.10	19	20.24	155	7.27	8.72	1.6	1.2	21	1	99	.07	5	.6	1.2	14	SF4
		5	2040	60.00	19	25.16	155	23.58	8.45	1.8	1.6	31	2	45	.11	3	.4	.9	21	KAO
		5	22 9	37.93	19	16.64	155	23.67	7.75	2.1	2.5	31	3	102	.13	4	.4	1.0	23	SWR
		5	2243	55.25	19	20.42	155	18.98	3.40	1.3	1.5	20	3	96	.07	3	.3	.8	15	SWR
		5	2246	31.58	19	20.55	155	19.12	2.54	1.3	1.4	20	4	74	.11	3	.3	.8	14	SWR
		5	2258	5.19	19	16.23	155	23.89	5.70	1.9	1.9	26	2	99	.11	4	.4	1.4	21	SWR
		6	135	16.47	19	17.23	155	23.60	6.18	1.8	1.9	32	2	97	.12	5	.4	1.2	21	SWR
		6	210	2.96	19	18.10	155	23.08	5.93	2.2	2.9	43	3	98	.14	4	.4	.9	29	SWR
		6	3 8	11.52	19	17.35	155	23.12	2.97	1.7	1.4	22	1	105	.07	5	.4	1.1	14	SWR
		6	519	56.04	19	21.75	155	18.20	2.97	1.8	2.3	26	3	49	.11	3	.3	.6	16	SWR
		6	542	42.37	19	25.99	155	24.50	6.38	1.6	1.2	23	2	62	.09	2	.4	1.1	14	KAO
		6	743	58.41	19	19.41	155	13.14	7.06	1.7	1.8	33	2	76	.12	4	.5	.8	21	SF2
		6	1022	29.81	19	17.99	155	23.33	5.69	2.0	1.9	30	1	96	.12	4	.4	1.4	21	SWR
		6	1344	44.40	19	18.66	155	23.04	4.44	2.2	1.8	29	1	93	.14	3	.4	1.4	23	SWR
		6	1424	31.65	19	16.09	155	23.49	7.20	1.9	1.4	24	1	113	.10	3	.5	1.2	15	SWR
		6	1633	28.93	19	18.86	155	21.37	3.47	1.8	1.4	26	2	101	.09	4	.4	.9	20	SWR
		6	1813	20.27	19	18.07	156	11.90	38.05	2.5	1.8	35	0	263	.08	35	2.6	1.6	25	KON
		6	1921	54.52	19	19.08	155	13.65	6.95	1.7	1.4	31	1	71	.11	4	.5	1.0	24	SF2
		6	23 6	36.85	19	18.73	155	23.37	5.02	2.4	2.8	42	1	88	.12	3	.4	1.1	30	SWR
		6	23 7	54.16	19	18.63	155	23.08	3.56	2.4	2.6	36	0	93	.12	3	.4	.9	29	SWR
		7	556	43.07	19	17.58	155	23.40	2.66	1.7	1.2	27	3	98	.11	5	.4	1.1	20	SWR
		7	741	49.92	19	22.84	155	24.74	9.06	1.7	1.3	30	2	61	.08	5	.4	.7	24	KAO
		7	1352	46.15	19	15.99	155	23.45	8.66	1.1	1.4	21	2	132	.09	3	.5	1.0	10	SWR
		7	1556	.33	19	16.68	155	23.60	7.82	2.1	2.2	32	2	103	.12	4	.4	.9	20	SWR
		7	16 4	22.12	19	20.58	155	13.30	8.65	1.3	1.2	20	1	61	.08	4	.6	1.0	15	SF2
		7	1647	48.94	19	21.46	155	1.58	8.54	2.9	3.1	42	0	162	.08	4	.6	.4	30	SF5 F
		7	1754	37.54	19	17.48	155	23.71	2.64	.9	1.4	21	3	94	.09	5	.4	.9	15	SWR
		7	19 6	58.74	19	16.50	155	24.27	6.37	2.3	2.5	30	1	87	.13	4	.4	1.2	18	SWR
		7	2035	10.70	19	19.95	155	12.19	7.35	1.6	1.3	20	3	81	.05	5	.5	.9	13	SF3
		7	21 8	22.86	19	17.45	155	23.44	2.21	1.7	1.7	26	3	99	.11	5	.3	.9	17	SWR
		7	2247	33.88	19	17.29	155	23.71	3.68	1.9	2.3	32	2	95	.10	6	.3	1.4	22	SWR
		8	137	20.94	19	23.14	155	2.42	7.59	2.1	1.7	36	2	121	.14	4	.4	.7	19	SF5
		8	359	52.48	19	17.63	155	23.60	2.01	1.0	1.4	17	2	94	.08	5	.4	.8	11	SWR
		8	4 6	53.13	19	9.54	155	58.27	15.35	2.3	2.1	18	2	247	.11	16	2.0	.9	11	KON
		8	452	55.47	19	20.36	155	13.22	8.40	1.5	1.2	29	2	63	.09	4	.5	.8	19	SF2
		8	1236	9.44	19	17.96	155	23.26	3.60	1.7	1.1	21	1	97	.07	4	.4	1.0	12	SWR
		8	1853	24.22	19	19.61	155	10.51	9.13	2.9	3.0	46	4	95	.11	5	.3	.4	33	SF3
		8	21 4	39.98	19	20.48	155	13.30	8.43	1.8	1.5	30	1	62	.12	4	.5	.8	25	SF2
		9	043	51.54	19	21.86	155	18.27	2.77	1.6	1.2	23	4	54	.10	4	.3	.5	13	SWR
		9	439	32.22	19	20.23	155	13.34	7.33	1.5	1.4	29	2	64	.11	4	.5	.8	19	SF2
		9	554	20.47	19	20.80	155	6.01	8.54	1.7	1.2	27	1	103	.10	4	.5	.9	21	SF4
		9	1320	5.49	19	21.49	155	5.96	8.20	2.0	2.0	35	2	87	.10	3	.4	.8	25	SF4
		9	1556	54.86	19	21.85	155	18.04	2.73	1.2	1.2	21	3	58	.11	3	.3	.6	14	SWR
		9	1853	37.50	19	20.11	155	7.80	8.40	1.9	2.1	28	1	92	.08	5	.4	.7	21	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	APR	9	19 1	21.03	19	21.67	155	17.94	2.83	1.2	1.2	22	4	59	.10	3	.3	.6	17	SWR
		9	1915	11.17	19	15.66	155	25.38	7.94	1.1	1.3	24	2	85	.11	3	.5	1.0	12	LSW
		9	2033	21.08	19	24.02	155	14.30	13.21	1.8	1.5	41	5	47	.10	1	.4	.4	25	DEP
		9	2144	11.40	19	20.01	155	10.94	7.80	2.1	2.0	36	5	66	.12	4	.5	.8	25	SF3
		10	222	.29	19	21.96	155	18.11	2.63	1.4	1.2	23	4	49	.09	3	.3	.5	11	SWR
		10	3 4	4.99	19	22.17	155	17.42	2.88	2.0	2.2	30	3	53	.10	2	.3	.4	22	SSC
		10	312	40.39	19	21.70	155	18.17	2.82	1.1	1.0	18	2	66	.09	3	.3	.6	13	SWR
		10	330	21.43	19	24.80	154	59.28	6.48	2.2	2.2	34	2	145	.14	1	.5	1.0	21	LER
		10	4 9	47.56	19	20.14	155	19.24	3.08	1.4	1.1	21	4	80	.08	3	.3	.7	15	SWR
		10	447	24.09	19	21.83	155	18.07	2.70	1.6	1.9	26	2	49	.11	3	.3	.5	15	SWR
		10	524	32.82	19	20.99	155	17.92	30.54	2.1	1.6	38	1	43	.10	2	.7	1.1	30	DEP
		10	959	46.30	19	22.98	155	25.37	10.43	2.6	2.6	41	1	39	.11	4	.4	.5	32	KAO
		10	1547	51.34	19	20.33	155	12.28	7.53	2.0	2.3	39	1	73	.13	4	.5	.8	26	SF3
		10	1942	6.89	19	19.13	155	8.20	5.63	2.3	2.4	38	3	92	.11	3	.4	1.0	23	SF4
		11	144	15.04	19	23.00	155	2.95	7.80	1.8	1.6	40	4	111	.17	4	.4	.7	22	SF5
		11	525	45.31	19	17.94	155	23.45	5.54	1.8	1.8	31	3	94	.12	4	.4	1.2	23	SWR
		11	542	1.18	19	19.24	155	15.78	7.80	1.5	1.4	27	3	103	.07	3	.4	.7	16	SF1
		11	1054	59.33	19	32.89	155	45.22	9.19	2.5	2.1	34	5	82	.12	5	.5	.7	22	KON
		11	14 2	41.24	19	17.91	155	23.15	3.23	1.3	1.1	24	3	98	.09	4	.3	1.0	18	SWR
		11	14 5	7.21	19	21.75	155	18.15	2.95	1.6	1.2	26	4	49	.11	3	.3	.6	15	SWR
		11	1422	22.34	19	21.83	155	18.16	3.00	1.6	1.1	19	3	77	.11	3	.4	.8	15	SWR
		11	1449	30.29	19	26.46	155	22.68	8.50	2.4	2.3	40	5	40	.10	4	.3	.6	27	KAO
		11	1643	52.52	19	26.84	155	27.60	7.03	1.7	1.1	27	3	64	.11	5	.4	1.2	19	KAO
		11	1656	41.45	19	19.70	155	11.97	7.36	1.6	1.0	22	3	87	.07	6	.5	1.0	12	SF3
		11	1746	14.93	19	18.90	155	21.29	8.07	1.7	1.4	30	3	100	.10	4	.4	1.0	22	SWR
		11	18 0	21.46	19	20.42	155	18.93	3.63	1.7	1.6	23	2	50	.07	3	.3	.7	15	SWR
		11	1926	49.77	19	22.99	155	16.75	3.26	1.3	1.4	25	4	44	.11	1	.3	.3	14	SSC
		11	2159	8.60	19	22.78	155	17.13	2.31	1.9	2.4	28	3	40	.10	1	.2	.3	15	SSC
		11	2247	33.13	19	19.76	155	9.99	10.68	1.8	1.3	23	2	90	.10	4	.5	1.2	17	SF3
		11	2255	19.47	19	21.73	155	17.67	3.46	1.1	1.2	20	2	52	.09	3	.3	.6	9	SWR
		12	246	33.95	19	22.83	155	17.34	2.64	1.7	1.8	26	3	40	.08	1	.2	.3	17	SSC
		12	714	11.31	19	26.67	155	23.70	7.78	2.2	2.2	40	3	39	.12	4	.3	.7	29	KAO
		12	840	16.85	19	22.66	155	1.46	7.80	1.6	1.5	31	4	157	.15	6	.6	1.0	17	SF5
		12	1155	16.02	19	17.76	155	21.24	5.82	.9	1.3	21	2	123	.11	5	.5	1.6	9	SWR
		12	1353	23.30	19	25.66	155	28.53	8.27	1.5	1.2	26	1	60	.09	6	.4	1.1	17	KAO
		12	14 2	27.15	19	20.84	155	5.87	8.27	1.0	1.2	17	0	102	.08	4	.7	1.5	13	SF4
		12	1550	39.68	19	20.52	155	9.44	9.09	1.4	1.3	21	1	72	.05	3	.6	1.1	18	SF3
		13	317	48.44	19	46.72	155	47.79	12.51	2.6	2.6	32	3	158	.11	11	.6	.4	15	HUA
		13	323	20.52	19	20.31	155	9.62	7.28	1.6	1.6	33	2	76	.09	3	.5	.9	21	SF3
		13	451	10.61	19	11.44	155	41.19	5.10	2.5	2.4	30	3	120	.25	10	.8	3.4	15	LSW
		13	534	22.61	19	18.72	154	59.42	39.03	2.2	1.8	37	1	202	.08	7	1.1	1.6	30	LER
		13	845	29.47	19	19.25	155	11.59	6.28	1.7	1.2	21	0	101	.11	5	.6	1.4	19	SF3
		13	1113	8.48	19	17.54	155	20.98	8.46	1.7	1.4	28	3	125	.09	4	.4	.8	18	SWR
		13	1914	47.11	19	19.24	155	15.22	9.01	2.5	2.4	44	3	88	.11	4	.4	.5	32	SF1
		14	329	38.90	19	21.75	155	18.15	3.15	1.4	1.6	24	1	49	.10	3	.3	.6	16	SWR
		14	629	32.67	19	21.75	155	17.99	3.28	1.8	2.0	24	3	50	.11	3	.3	.6	18	SWR
		14	1122	47.61	19	23.11	155	17.02	2.95	1.2	1.3	14	2	87	.06	1	.3	.4	10	SSC
		14	1149	59.93	19	16.03	155	23.69	7.37	1.2	1.6	22	3	124	.09	3	.4	1.1	16	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	APR	14	1355	39.68	19	16.61	155	22.33	8.18	1.8	1.8	28	2	129	.09	5	.4	1.1	18	SWR
		14	14 7	8.59	19	21.55	155	6.12	9.06	2.2	2.5	30	3	141	.07	3	.5	.7	18	SF4
		14	2112	16.08	19	18.00	155	23.36	5.44	1.8	2.3	30	2	95	.11	4	.4	1.2	19	SWR
		14	2117	51.75	19	18.03	155	23.24	3.66	1.7	1.5	23	1	96	.09	4	.4	1.0	11	SWR
		14	2321	35.81	19	16.99	155	23.48	2.80	1.8	1.8	21	1	102	.08	5	.4	1.1	13	SWR
		15	234	13.87	19	18.04	155	23.22	5.16	2.1	2.4	32	3	96	.11	4	.4	1.5	21	SWR
		15	357	33.14	19	21.60	155	18.05	3.02	1.4	1.3	23	3	52	.08	3	.3	.6	17	SWR
		15	747	11.79	19	21.51	155	18.50	2.32	1.5	1.3	15	1	72	.10	3	.3	.7	9	SWR
		15	921	39.21	19	21.37	155	18.91	3.31	1.5	1.7	22	2	65	.09	4	.3	.8	15	SWR
		15	1048	9.92	19	29.35	155	27.75	9.97	2.3	1.4	33	4	82	.12	5	.4	1.0	21	KAO
		15	1132	41.37	19	18.33	155	22.92	5.03	1.8	1.2	29	2	97	.11	4	.4	1.4	16	SWR
		15	1226	14.41	19	20.71	155	12.71	8.30	2.0	2.0	37	4	65	.11	4	.4	.7	27	SF2
		15	15 9	56.28	19	20.95	155	13.18	9.41	1.6	1.1	22	2	63	.06	3	.6	.9	20	SF2
		15	16 8	48.15	19	20.91	155	17.08	1.79	1.2	1.3	18	2	64	.06	2	.3	.3	15	SWR
		15	1658	30.08	19	22.39	155	3.28	8.97	1.4	1.2	26	1	115	.07	4	.5	.9	18	SF5
		15	2243	30.50	19	21.11	155	5.96	6.37	2.0	1.9	26	3	95	.14	4	.5	1.3	13	SF4
		15	2254	26.78	19	19.81	155	7.05	8.30	1.9	1.5	34	4	112	.10	5	.5	.7	20	SF4
		15	2346	1.93	19	18.87	155	19.94	8.37	1.6	1.3	26	3	96	.09	3	.4	.8	21	SWR
		16	120	2.39	19	20.91	155	10.70	9.63	1.6	1.2	23	3	76	.07	3	.6	.9	17	SF3
		16	327	32.08	19	18.35	155	23.16	5.91	1.9	2.4	34	1	94	.12	3	.4	1.1	26	SWR
		16	356	2.75	19	20.49	155	11.43	9.52	1.5	1.4	23	2	77	.07	4	.6	1.0	19	SF3
		16	523	12.44	19	15.78	155	23.89	8.49	2.2	1.9	26	1	119	.08	3	.4	.7	16	SWR
		16	657	38.04	19	20.22	155	11.80	9.13	1.7	1.2	23	1	79	.07	5	.6	1.1	21	SF3
		16	1330	46.30	19	20.03	155	12.96	8.77	1.6	1.4	30	2	70	.09	5	.5	.8	21	SF2
		16	2017	13.71	19	19.68	155	12.49	9.67	1.6	1.4	39	4	82	.12	5	.4	1.1	23	SF2
		16	2228	26.14	19	14.70	155	26.82	8.94	2.5	2.7	43	3	94	.13	5	.4	.6	21	LSW
		17	1148	35.57	19	21.82	155	17.84	2.42	1.8	1.7	26	3	78	.10	3	.3	.5	20	SWR
		17	1236	24.94	19	20.36	155	12.11	7.40	2.6	2.4	44	4	74	.15	5	.5	.7	35	SF3
		17	1731	57.15	19	23.71	155	27.42	9.50	1.9	1.2	27	2	48	.09	2	.4	.8	21	KAO
		17	1855	46.79	19	20.17	155	7.79	6.96	1.9	1.5	31	3	91	.11	5	.5	.9	24	SF4
		17	2026	19.36	19	20.63	155	16.89	1.68	3.7	4.0	35	2	75	.09	1	.3	.3	18	KOA F
		17	2059	48.68	19	26.02	155	24.30	8.15	1.8	1.1	25	2	46	.08	2	.4	.9	17	KAO
		17	21 1	53.95	19	18.33	155	13.53	8.17	2.4	2.2	42	3	77	.12	2	.5	.7	32	SF2
		17	21 3	39.41	19	20.66	155	17.39	2.18	1.8	2.2	28	2	56	.08	1	.2	.3	17	SWR
		17	2350	.70	19	25.32	155	37.71	2.49	2.2	1.3	18	2	95	.09	4	.5	1.0	7	MLO
		18	1 4	52.78	19	20.93	155	17.17	1.42	1.2	1.4	20	2	58	.07	2	.2	.3	12	SWR
		18	2 9	2.96	19	20.66	155	16.69	1.54	1.3	1.5	15	2	79	.06	2	.3	.3	8	KOA
		18	7 3	40.80	19	21.90	155	5.03	8.40	2.5	2.4	40	2	77	.10	3	.4	.6	23	SF5
		18	746	7.14	19	24.49	155	17.03	9.06	1.4	1.3	15	3	82	.06	1	.6	.8	10	INT L
		18	1049	6.78	19	20.70	154	57.71	.50	2.3	2.2	32	1	209	.21	8	.9	1.3	24	SLE *
		18	1128	25.18	19	19.79	155	7.31	7.74	2.1	1.8	38	4	107	.10	5	.5	.8	23	SF4
		18	1524	20.79	19	20.73	155	13.33	8.56	2.4	2.3	45	2	59	.12	4	.4	.6	31	SF2
		18	1611	37.75	19	23.89	155	16.85	2.98	1.5	1.4	18	3	78	.07	0	.3	.3	12	SSC
		18	1751	38.16	19	18.24	155	13.23	7.10	2.1	1.9	40	5	91	.11	2	.5	.8	24	SF2
		18	1834	37.11	19	20.06	155	8.41	8.08	1.8	1.6	28	1	80	.09	5	.4	1.0	18	SF4
		18	1858	25.00	19	12.58	155	30.23	7.83	2.2	1.2	28	0	137	.14	5	.6	.9	9	LSW
		18	19 2	17.31	19	41.05	156	2.27	10.62	2.9	2.2	30	0	229	.13	25	1.4	.8	16	HUA
		18	2112	1.07	19	21.69	155	18.24	2.73	1.6	1.7	26	4	54	.10	3	.3	.5	19	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	APR	18	2254	33.50	19	24.56	155	1.09	7.49	1.9	1.3	30	3	126	.11	4	.4	.7	13	SF5	
		19	037	40.90	19	21.79	155	18.40	2.32	1.6	1.1	23	4	62	.10	4	.3	.6	11	SWR	
		19	336	52.02	19	21.09	155	13.17	8.96	1.8	1.7	35	3	57	.09	3	.4	.5	19	SF2	
		19	413	46.13	19	19.43	155	14.09	8.46	2.6	2.0	44	2	68	.11	5	.4	.5	33	SF2	
		19	811	21.17	19	18.36	155	13.16	7.90	1.5	1.3	9	0	226	.03	8	1.4	2.9	8	SF2	
		19	922	55.25	19	24.42	155	26.47	8.46	1.7	1.4	28	2	50	.11	3	.4	.9	20	KAO	
		19	1053	37.84	19	21.65	155	18.38	.47		.9	9	0	69	.06	3	.5	1.6	8	SWR	
		19	13 4	7.47	19	19.95	155	13.12	8.09	2.3	2.4	41	2	69	.12	5	.4	.6	32	SF2	
		19	15 6	55.03	19	20.49	155	19.04	3.54	1.8	2.3	32	4	48	.10	3	.3	.7	24	SWR	
		19	1642	10.03	19	21.75	155	18.25	3.42	1.5	1.4	22	4	54	.12	3	.4	.6	13	SWR	
		19	1733	34.00	19	21.85	155	18.27	2.50	1.7	2.3	22	3	48	.11	4	.3	.5	17	SWR	
		19	1748	28.25	19	24.20	155	25.27	8.68	2.1	1.9	40	2	38	.12	2	.4	.7	32	KAO	
		19	1851	27.40	19	22.39	155	25.63	10.90	1.8	1.6	29	2	42	.10	4	.4	.9	19	KAO	
		19	1953	26.36	19	19.90	155	11.26	7.00	1.9	1.8	37	4	87	.13	5	.5	.7	21	SF3	
		19	2132	34.53	19	22.76	155	17.17	2.80	1.4	1.7	23	3	51	.09	1	.3	.3	12	SSC	
		20	12 0	52.66	19	26.51	155	23.99	6.10	1.8	1.2	28	3	59	.11	3	.4	1.0	20	KAO	
		20	1220	11.16	19	21.99	155	18.13	3.13	1.7	1.3	21	3	70	.10	3	.3	.6	14	SWR	
		21	2 4	31.89	19	21.85	155	18.31	2.86	2.9	2.7	44	3	48	.12	4	.3	.5	34	SWR	
		21	236	32.38	19	18.31	155	13.29	8.88	2.1	1.8	44	4	88	.10	2	.5	.5	24	SF2	
		21	447	44.15	19	21.91	155	18.02	3.17	1.4	1.0	23	3	54	.09	3	.3	.5	14	SWR	
		21	9 0	14.08	19	23.21	155	2.38	6.92	2.0	1.8	28	2	122	.12	4	.5	.7	18	SF5	
		21	1748	17.50	19	30.88	155	43.24	8.63	.9	1.0	21	2	164	.11	5	.8	1.2	13	KON	
		21	1849	50.58	19	18.42	155	13.10	7.14	2.0	1.5	41	4	92	.12	3	.5	.8	26	SF2	
		21	1933	19.54	19	20.34	155	12.96	8.58	1.8	1.4	37	4	67	.11	4	.5	.6	26	SF2	
		21	20 7	39.82	19	20.26	155	13.04	8.11	1.5	1.1	31	4	67	.09	4	.5	.7	23	SF2	
		21	2212	19.93	19	20.91	155	12.95	8.42	1.5	1.1	30	3	62	.11	3	.5	.8	24	SF2	
		22	1727	31.38	19	18.40	155	13.24	7.08	1.7	1.2	39	6	88	.12	3	.5	.7	22	SF2	
		22	2132	44.69	19	23.71	155	17.11	3.13	1.2	1.0	18	5	64	.13	1	.4	.3	10	SSC	
		22	2322	54.79	19	21.09	155	5.81	8.91	2.4	2.2	37	2	96	.08	4	.4	.5	26	SF4	
		23	228	14.04	19	20.36	155	7.49	8.26	2.3	2.0	42	3	94	.09	5	.4	.5	22	SF4	
		23	344	34.17	19	22.95	155	4.25	8.71	3.4	3.2	47	4	87	.11	3	.4	.4	37	SF5	F
		23	635	9.10	19	19.79	155	12.14	9.12	1.5	1.1	22	4	84	.05	6	.5	.8	17	SF3	
		23	1145	8.20	19	18.85	155	13.63	8.87	1.4	1.5	29	3	71	.09	3	.6	.8	17	SF2	
		23	1236	58.49	19	21.09	155	13.18	7.76	1.5	1.8	34	2	57	.11	3	.5	.5	22	SF2	
		23	2138	45.74	19	56.97	155	52.48	10.83	2.8	2.5	22	1	214	.0A	22	1.5	1.0	14	KOH	
		23	2248	41.03	19	20.14	155	6.76	8.48	3.1	3.4	44	3	110	.11	5	.4	.6	35	SF4	
		24	139	5.03	19	24.60	155	37.53	.03	2.0	1.9	15	1	91	.13	5	.4	.8	9	MLO	*
		24	738	48.69	19	19.42	155	8.55	5.87	1.8	1.6	33	4	80	.10	4	.4	.9	20	SF4	
		24	1246	45.43	19	19.31	155	15.32	7.53	2.0	1.1	29	2	89	.09	4	.5	.9	21	SF1	
		24	18 0	5.58	19	23.66	155	16.78	2.89	1.6	1.2	23	4	44	.07	1	.3	.2	14	SSC	
		24	2037	24.35	19	23.19	155	16.79	2.90	2.3	2.1	29	4	39	.09	0	.2	.2	20	SSC	
		24	2044	8.85	19	23.62	155	16.77	2.93	1.9	1.7	24	2	40	.09	1	.3	.2	22	SSC	
		24	2213	27.69	19	23.18	155	16.97	3.14	.9	1.1	16	3	56	.08	0	.3	.4	9	SSC	
		25	1 2	49.42	19	17.41	155	21.87	9.16	2.4	1.9	36	4	124	.12	6	.4	.5	26	SWR	
		25	323	39.48	19	21.78	155	18.26	2.90	2.1	1.8	23	3	48	.10	3	.3	.6	18	SWR	
		25	426	35.96	19	18.27	155	14.14	8.54	2.2		40	4	84	.12	3	.5	.6	23	SF2	
		25	439	21.77	19	20.64	155	12.55	8.00	2.0	1.6	38	4	67	.12	4	.4	.6	29	SF2	
		25	950	51.60	19	19.89	155	7.77	7.86	2.0	1.6	36	3	96	.08	5	.4	.7	25	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	APR	25	10 3	1.22	19	20.01	155	12.38	7.47	1.8	1.5	36	1	77	.13	5	.5	.8	26	SF2	
		25	1213	56.42	19	19.88	155	11.70	7.94	2.5	2.2	40	5	86	.12	5	.4	.7	29	SF3	
		25	14 6	42.49	19	20.28	155	11.71	8.70	1.7	1.0	32	2	79	.12	5	.6	.8	19	SF3	
		25	1534	28.83	19	19.10	155	13.99	9.91	2.1	2.0	46	3	125	.11	6	.3	.4	26	SF2	
		25	1549	58.00	19	18.09	155	13.86	8.19	1.7		19	0	105	.07	2	.7	.8	15	SF2	
		25	1835	11.49	19	19.67	155	8.83	8.64	2.5	2.2	46	4	79	.11	5	.4	.6	24	SF4	
		25	1848	10.43	19	20.60	155	6.83	8.98	2.6	2.6	45	4	99	.09	5	.4	.5	31	SF4	
		25	1920	9.55	19	20.63	155	12.70	8.16	2.2	2.0	40	5	66	.12	4	.4	.6	28	SF2	
		25	1953	31.23	19	20.40	155	13.08	8.68	2.5	2.4	46	3	65	.12	4	.4	.6	35	SF2	
		26	112	26.06	19	20.74	155	6.30	8.44	2.1	1.6	37	1	101	.10	4	.5	.8	24	SF4	
		26	141	3.93	19	20.08	155	13.48	7.55	1.8	1.2	34	3	62	.12	5	.4	.8	24	SF2	
		26	248	8.06	19	19.78	155	11.76	7.77	1.9	1.5	38	3	88	.12	5	.4	.7	26	SF3	
		26	5 9	28.99	19	20.00	155	11.39	7.60	1.7	1.1	29	4	85	.09	5	.5	.8	21	SF3	
		26	845	2.08	19	22.17	155	26.94	12.04	2.4	2.3	38	2	41	.10	1	.4	.6	28	KAO	
		26	10 2	10.91	19	20.31	155	12.41	7.59	1.5	1.2	26	0	72	.13	4	.5	1.0	23	SF2	
		26	1150	43.07	19	21.61	155	6.13	8.34	2.0	2.0	35	1	84	.11	3	.4	.6	24	SF4	
		26	1428	54.10	19	17.85	155	21.69	6.75	1.7	1.5	23	2	118	.08	5	.4	1.2	16	SWR	
		26	1429	57.57	19	22.18	155	17.58	2.95	1.6	1.6	20	2	52	.14	3	.4	.6	14	SSC	
		26	1610	4.97	19	18.88	155	13.56	7.42	2.0	2.1	41	2	70	.11	3	.4	.8	27	SF2	
		26	19 1	4.41	19	21.89	155	18.32	2.76	2.3	2.9	32	3	65	.12	4	.3	.6	26	SWR	
		26	2038	39.75	19	19.78	155	10.30	8.03	1.6	1.5	29	1	91	.08	4	.5	1.0	23	SF3	
		26	22 4	27.83	19	18.89	155	13.62	7.52	1.7	1.7	33	2	71	.10	3	.5	.8	21	SF2	
		26	23 6	54.94	19	19.53	155	21.81	3.18	1.9	2.1	32	4	85	.11	3	.4	.7	27	SWR	
		26	2349	14.30	19	22.82	155	24.44	9.77	2.5	2.7	45	3	35	.12	5	.4	.5	31	KAO	
		26	2353	57.39	19	22.08	155	17.93	3.13	1.5	1.6	24	4	50	.09	3	.3	.5	15	SSC	
		27	043	52.67	20	44.03	155	59.07	3.15	2.4	2.6	20	1	222	.10	28	1.7	1.3	11	DIS	
		27	2 4	6.88	19	19.89	155	11.37	6.45	1.9	1.9	42	4	87	.12	5	.4	.7	30	SF3	
		27	221	41.43	19	23.11	155	17.23	2.16	1.3	1.6	20	3	49	.06	1	.2	.3	13	SSC	
		27	333	20.65	19	23.04	155	17.00	2.88	1.4	1.7	22	4	48	.07	1	.3	.3	16	SSC	
		27	334	15.23	19	24.87	155	37.90	1.25	2.1	1.9	17	1	97	.12	5	.5	1.5	11	MLO	
		27	4 0	53.29	19	20.21	155	12.03	8.13	1.9	1.8	35	2	78	.10	5	.4	.7	24	SF3	
		27	457	53.63	19	19.34	155	6.86	8.67	3.0	3.4	34	3	127	.09	4	.5	.4	21	SF4	
		27	519	8.40	19	19.58	155	6.77	7.52	2.0	1.7	32	3	123	.12	5	.5	.9	26	SF4	
		27	846	25.47	19	22.93	155	16.91	2.89	1.5	1.6	22	2	47	.08	1	.3	.3	14	SSC	
		27	922	38.33	19	20.48	155	12.97	7.29	1.6	1.2	32	3	65	.11	4	.5	.8	22	SF2	
		27	924	13.97	19	23.20	155	17.16	2.88	1.3	1.2	15	1	62	.10	1	.4	.4	12	SSC	
		27	1129	21.53	19	16.40	155	11.55	3.57	3.4	3.6	43	4	172	.15	4	.6	1.0	39	SSF	F
		27	1222	48.34	19	20.50	155	18.95	3.61	1.6	1.3	24	4	49	.10	3	.5	.8	18	SWR	
		27	1310	43.41	19	16.42	155	11.63	5.19	1.8	1.4	28	0	172	.12	3	.7	2.5	20	SF3	
		27	18 8	47.32	19	23.50	155	16.94	2.90	2.8	3.0	39	1	39	.11	0	.2	.2	25	SSC	
		27	2123	30.99	19	20.04	155	12.20	8.28	1.6	1.4	31	2	79	.11	5	.5	.8	21	SF3	
		28	7 9	45.55	19	21.49	155	17.97	3.72	1.5	1.4	23	4	73	.18	3	.4	.9	16	SWR	
		28	846	29.26	19	19.50	155	11.17	9.75	3.0	3.4	44	4	97	.10	5	.4	.4	35	SF3	F
		28	850	39.48	19	21.84	155	17.80	3.42	1.8	2.2	29	4	51	.11	3	.5	.6	22	SWR	
		28	1042	32.88	19	15.70	155	35.47	8.93	2.2	1.8	30	3	148	.15	3	.6	.9	22	LSW	
		28	1223	13.63	19	19.44	155	7.10	8.34	2.0	1.8	35	2	119	.10	4	.4	.6	26	SF4	
		28	1223	52.63	19	19.66	155	6.91	7.55	1.9	1.8	26	3	119	.07	5	.4	.7	19	SF4	
		28	13 5	39.90	19	20.47	155	12.08	8.42	1.6	1.5	29	3	73	.10	4	.5	.8	21	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	APR	28	1312	36.11	19	19.69	155	7.23	7.14	1.9	1.5	32	3	111	.11	5	.5	.9	24	SF4
		28	1352	7.20	19	19.93	155	9.85	6.54	1.8	1.6	29	2	85	.08	4	.5	.9	16	SF3
		28	1451	50.30	19	19.58	155	7.30	8.58	2.6	3.0	42	1	111	.10	4	.5	.5	29	SF4
		28	1755	6.26	19	16.67	155	11.68	2.22	1.1	1.4	26	1	167	.09	3	.6	.5	14	SSF
		28	1756	41.49	19	40.51	155	7.66	35.12	2.2	2.3	44	4	82	.09	6	.6	1.3	37	HIL
		28	1928	41.07	19	23.23	155	16.90	2.96	1.4	1.6	19	3	46	.07	0	.3	.3	12	SSC
		29	040	9.10	19	17.55	155	23.60	2.72	1.8	1.9	26	2	95	.09	5	.3	.8	16	SWR
		29	151	28.35	19	21.64	155	17.79	3.08	1.5	1.6	19	1	52	.12	3	.3	.6	14	SWR
		29	636	6.52	19	17.46	155	23.59	2.74	.9	1.3	23	3	96	.08	5	.3	.9	17	SWR
		29	640	35.93	19	22.00	155	3.27	7.26	1.6	1.2	34	5	115	.17	4	.5	.7	23	SF5
		29	640	59.21	19	22.06	155	3.42	7.63	1.7	1.6	29	3	111	.11	4	.5	.8	21	SF5
		29	641	49.57	19	21.81	155	3.39	8.84	2.0	2.0	33	1	112	.08	4	.5	.5	21	SF5
		29	923	8.37	19	23.73	155	16.75	2.93	1.9	2.2	27	4	52	.09	0	.3	.2	16	SSC
		29	1045	30.37	19	20.82	155	17.96	4.02	1.4	1.3	22	3	51	.12	2	.4	.8	13	SWR
		29	1449	48.02	19	19.76	155	11.98	5.90	1.5	1.1	26	3	86	.10	6	.5	1.1	16	SF3
		29	1739	15.51	19	21.65	155	18.22	2.90	1.6	1.6	24	3	48	.08	3	.3	.5	18	SWR
		29	2241	1.42	19	20.22	155	19.27	3.00	1.5	1.3	19	2	54	.11	3	.4	.8	16	SWR
		29	2335	30.08	19	23.12	155	16.84	2.95	1.9	1.8	23	2	40	.10	1	.3	.3	17	SSC
		30	050	51.37	19	23.00	155	16.79	2.90	1.8	1.7	23	2	43	.10	1	.3	.3	14	SSC
		30	115	33.41	19	23.39	155	16.93	2.62	3.1	3.5	45	3	36	.11	0	.2	.2	31	SSC F
		30	118	2.41	19	23.40	155	16.62	2.81	2.7	2.8	35	2	39	.12	1	.3	.2	24	SSC F
		30	152	15.95	19	22.91	155	17.01	2.71	2.0	2.1	30	3	38	.11	1	.2	.3	16	SSC
		30	714	59.89	19	19.92	155	13.20	9.68	2.7	2.7	45	3	68	.09	5	.4	.3	35	SF2
		30	852	32.23	19	21.91	155	17.55	2.97	1.5	1.3	23	4	57	.08	3	.2	.4	17	SWR
		30	1256	19.36	19	21.16	155	18.24	30.30	2.1	1.8	42	1	45	.10	2	.6	1.1	33	DEP
		30	1550	58.36	19	22.47	155	28.01	4.12	2.4	2.2	33	1	43	.12	1	.4	.7	25	KAO
		30	16	1 40.90	19	21.95	155	1.67	7.68	2.1	1.6	34	2	150	.10	4	.5	.5	25	SF5
		30	1647	13.38	19	18.37	155	13.31	7.03	1.6	1.3	34	4	85	.11	3	.5	.8	17	SF2
		30	1959	10.62	19	27.35	154	52.25	7.28	1.9	1.4	25	2	147	.09	2	.7	.4	14	LER
		30	2128	14.92	19	23.86	155	16.89	2.81	1.3	1.0	18	2	76	.07	1	.3	.2	10	SSC
		30	2327	29.78	19	20.47	155	12.49	7.63	1.6	1.3	31	2	69	.11	4	.5	.8	22	SF2
	MAY	1	1944	43.04	19	20.02	155	11.99	8.68	1.7	1.1	25	2	81	.08	5	.6	.9	19	SF3
		1	2032	48.36	19	20.30	155	6.89	7.48	1.6	1.3	29	3	104	.09	5	.5	.8	17	SF4
		1	2039	59.22	19	19.74	155	7.62	7.14	1.6	1.4	31	4	101	.10	4	.5	.9	20	SF4
		1	2111	3.55	19	32.90	155	37.31	9.90	1.6	1.3	24	1	88	.14	7	.7	1.3	16	MLO
		1	23	5 31.06	19	19.16	155	12.23	4.50	1.6	1.3	31	3	95	.12	4	.4	1.8	18	SSF
		1	2323	37.50	19	20.12	155	8.04	9.21	2.2	2.4	37	3	86	.08	5	.4	.5	25	SF4
		2	127	34.04	19	19.72	155	8.64	7.65	1.8	1.5	28	2	77	.08	5	.5	1.0	19	SF4
		2	227	33.11	19	25.35	155	29.71	9.37	1.8	1.3	29	2	58	.08	6	.4	1.0	20	KAO
		2	236	7.46	19	18.11	155	13.24	10.77	3.8	3.8	45	1	93	.12	2	.6	.5	41	SF2 F
		2	424	14.61	19	17.79	155	13.17	8.23	2.1	2.3	38	3	106	.11	2	.5	.6	23	SF2
		2	429	34.34	19	21.92	155	.35	6.27	1.8	1.4	28	3	174	.15	6	.7	1.1	17	SF5
		2	710	46.28	19	20.05	155	8.02	8.81	3.2	3.4	44	2	87	.10	5	.5	.4	35	SF4 F
		2	10	0 47.74	19	18.00	155	21.60	7.63	1.0	1.3	24	4	115	.09	5	.4	1.0	13	SWR
		2	1624	28.65	19	18.86	155	21.27	7.55	1.4	1.3	27	4	101	.09	4	.4	.9	19	SWR
		2	18	6 58.09	19	19.62	155	10.56	8.04	1.9	1.8	30	1	95	.10	5	.5	.9	22	SF3
		2	1810	3.54	19	20.32	155	7.61	8.24	2.1	2.1	38	2	92	.09	5	.4	.6	21	SF4
		3	042	37.85	19	20.36	155	6.47	7.43	2.0	1.8	33	2	109	.09	5	.4	.7	22	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAY	3	1	2 51.15	19	20.31	155	12.10	8.17	2.1	2.2	43	2	75	.12	5	.4	.6	29	SF3
		3	2	7 21.56	19	18.93	155	13.06	7.40	1.4	1.1	30	1	84	.10	4	.5	.8	17	SF2
		3	624	54.17	19	22.32	155	17.15	3.15	.9	1.4	16	1	54	.07	2	.3	.5	13	SSC
		3	636	20.95	19	24.15	155	30.13	9.97	2.4	2.1	40	0	51	.08	5	.5	.7	28	KAO
		3	945	8.95	19	17.69	155	20.95	7.08	1.0	1.2	21	3	126	.08	4	.4	1.0	13	SWR
		3	14	5 19.18	19	18.31	155	23.36	6.20	1.8	2.2	31	2	92	.12	4	.4	1.1	21	SWR
		3	1456	21.15	19	19.46	155	12.35	6.88	1.5	1.3	25	0	88	.09	5	.5	1.2	16	SF2
		3	1556	46.83	19	18.44	155	23.25	6.19	2.1	2.7	36	2	93	.11	3	.4	.9	27	SWR
		3	1750	44.14	19	11.11	155	28.33	7.04	2.2	1.6	24	1	119	.16	3	.6	1.3	12	LSW
		3	1856	14.51	19	20.29	155	12.67	8.44	1.6	1.8	26	3	75	.09	4	.5	.8	16	SF2
		3	1946	37.49	19	20.81	155	12.73	7.52	1.9	1.9	40	3	64	.14	3	.5	.7	21	SF2
		4	2	9 40.19	19	20.45	155	13.46	8.19	1.4	1.1	21	3	63	.07	4	.5	.9	15	SF2
		4	3	4 50.51	19	19.84	155	12.39	7.88	1.7	1.8	35	3	80	.12	5	.5	.7	19	SF2
		4	314	43.08	19	21.36	155	6.64	7.79	1.9	1.7	29	1	86	.09	3	.5	.9	16	SF4
		4	643	.30	19	16.79	155	30.74	6.50	2.4	2.2	38	1	48	.17	3	.4	1.1	27	LSW
		4	1346	30.36	19	23.93	155	17.09	2.91	1.6	1.8	22	3	69	.09	1	.4	.2	14	SSC
		4	1350	14.27	19	20.44	155	12.93	9.15	2.8	2.8	45	2	66	.12	4	.4	.5	35	SF2 F
		4	1651	31.02	19	23.93	155	16.94	2.53	1.4	1.5	20	2	76	.08	1	.3	.2	9	SSC
		4	2215	46.67	19	21.39	155	3.04	7.22	1.8	1.4	21	2	115	.07	3	.5	.9	11	SF5
		5	113	28.25	19	17.88	155	23.48	3.72	2.3	2.5	38	2	94	.12	4	.3	1.1	21	SWR
		5	114	4.26	19	18.07	155	23.42	4.53	2.6	2.7	42	3	93	.11	4	.3	1.5	26	SWR
		5	149	58.03	19	17.69	155	23.47	5.38	2.4	2.8	39	2	96	.14	5	.4	1.1	22	SWR
		5	2	6 29.92	19	23.49	155	17.04	3.17	.9	.9	14	3	79	.07	0	.4	.4	8	SSC
		5	216	34.44	19	20.32	155	12.39	8.54	1.9	1.6	37	2	73	.10	4	.4	.6	22	SF2
		5	312	49.29	19	18.11	155	23.25	6.13	2.0	2.1	32	2	95	.12	4	.4	1.1	23	SWR
		5	615	40.16	19	21.59	155	1.33	6.53	2.1	1.6	31	2	165	.12	4	.6	.9	21	SF5
		5	636	43.42	19	23.87	155	16.79	3.24	1.6	1.5	24	3	80	.08	0	.3	.2	12	SSC
		5	655	56.31	19	23.96	155	16.74	3.17	1.9	2.1	24	3	76	.09	0	.3	.2	15	SSC F
		5	659	4.60	19	23.58	155	16.78	3.35	2.1	2.3	37	5	39	.11	0	.2	.2	22	SSC F
		5	15	8 11.17	19	57.09	155	16.83	36.27	2.6	2.7	48	3	205	.11	9	.8	1.4	42	KEA
		5	1720	15.70	19	23.31	155	16.75	3.10	1.5	1.3	21	3	46	.06	0	.3	.3	14	SSC
		5	1859	15.41	19	43.64	155	58.65	7.33	1.9	1.8	12	1	217	.15	15	1.6	1.2	4	HUA
		5	2055	52.30	19	16.22	155	22.70	7.16	2.1	2.2	35	1	130	.12	4	.5	.9	23	SWR
		5	2330	39.59	19	20.21	155	12.70	7.83	1.6	1.3	32	3	71	.12	5	.5	.8	26	SF2
		5	2331	32.08	19	22.34	155	17.24	2.66	1.1	1.1	18	3	92	.07	2	.3	.4	9	SSC
		6	634	51.70	19	20.23	155	6.54	7.26	2.0	1.3	35	3	110	.10	5	.5	1.0	22	SF4
		6	713	40.75	19	25.20	155	24.28	8.39	1.8	1.4	30	3	44	.10	2	.4	.9	24	KAO
		6	943	51.58	19	17.31	155	15.00	5.29	1.1	1.6	21	2	151	.13	3	.6	1.4	10	SF1
		6	1055	51.08	19	19.02	155	21.94	3.84	2.1	2.5	33	3	95	.10	3	.3	.8	24	SWR
		6	1137	14.69	19	19.58	155	26.17	30.10	2.1	1.7	27	2	56	.10	5	.6	1.3	23	DML
		6	1427	53.93	19	23.34	155	25.65	7.50	2.1	1.9	36	3	44	.10	4	.3	.8	22	KAO
		6	1825	25.01	19	18.82	155	21.34	9.04	2.6	2.9	43	4	102	.12	4	.4	.6	29	SWR
		6	19	1 39.35	19	55.84	155	27.57	33.12	2.3	2.0	37	3	234	.09	13	.8	1.2	23	KEA
		6	1958	12.68	19	20.77	155	19.83	3.37	1.3	1.4	20	3	55	.09	4	.4	.9	12	SWR
		6	2222	41.83	19	18.36	155	15.08	6.44	1.2	1.1	22	3	104	.13	4	.5	1.2	17	SF1
		6	2252	13.54	19	17.46	155	23.49	5.04	1.8	1.8	31	3	98	.10	5	.4	1.3	21	SWR
		6	23	8 24.18	19	18.16	155	13.47	8.30	2.1	2.0	46	5	81	.11	2	.5	.5	32	SF2
		7	247	59.70	19	19.73	155	12.69	9.01	3.2	3.5	43	1	79	.11	5	.4	.4	26	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAY	7	650	27.44	19	20.17	155	8.40	8.73	2.9	3.1	46	3	79	.09	4	.4	.5	31	SF4
		7	7 1	26.64	19	20.45	155	12.65	8.91	2.0	1.8	39	3	69	.11	4	.4	.6	26	SF2
		7	1043	51.60	19	22.16	155	17.56	2.52	1.3	1.2	20	2	59	.10	3	.3	.5	17	SSC
		7	1310	52.77	19	21.76	155	17.80	2.94	1.4	1.1	21	2	52	.10	3	.3	.6	15	SWR
		7	1320	30.20	19	21.97	155	17.88	3.20	1.7	1.8	25	3	50	.10	3	.3	.6	19	SWR
		7	1330	28.07	19	22.33	155	17.34	2.72	1.0	1.0	22	3	53	.09	2	.3	.4	13	SSC
		7	14 1	4.04	19	22.03	155	17.88	3.34	1.6	1.3	25	3	29	.09	3	.3	.6	17	SSC
		7	19 4	14.89	19	14.68	155	32.79	6.87	2.2	1.7	29	1	137	.12	5	.5	1.1	22	LSW
		7	1926	42.22	19	21.68	155	18.23	2.39	1.4	1.0	19	3	74	.12	3	.3	.7	13	SWR
		7	1929	59.78	19	20.41	155	12.85	8.06	1.5	1.4	35	2	67	.11	4	.5	.7	20	SF2
		7	2024	14.70	19	18.90	155	21.96	3.10	1.8	1.8	25	2	98	.10	3	.4	.8	19	SWR
		7	2146	20.53	19	22.38	155	17.03	2.84	1.4	1.0	26	5	55	.08	2	.3	.4	17	SSC
		8	151	12.00	19	20.45	155	18.89	3.82	1.7	1.9	24	4	51	.09	3	.3	.8	17	SWR
		8	232	28.27	19	21.13	155	17.24	1.89	1.5	2.0	21	2	56	.10	2	.3	.4	14	SWR
		8	534	42.20	19	23.29	155	16.85	3.07	1.6	1.5	22	2	39	.09	0	.3	.3	16	SSC
		8	738	19.46	19	19.01	155	12.31	7.42	1.7	1.2	30	3	98	.09	4	.5	.8	19	SF2
		8	11 1	.08	19	13.77	155	28.16	7.48	2.5	2.6	39	3	136	.16	4	.5	.8	25	LSW F
		8	1546	43.61	19	20.63	155	7.39	8.76	2.2	1.9	42	2	91	.10	5	.4	.6	31	SF4
		9	1116	42.11	19	20.80	155	12.83	8.49	1.8	1.3	36	3	63	.10	3	.4	.6	25	SF2
		9	1255	2.88	19	17.46	155	23.47	2.68	1.1	1.1	21	2	98	.08	5	.4	1.0	16	SWR
		9	1825	38.98	19	20.88	155	7.40	6.75	1.4	1.1	30	1	87	.12	4	.5	1.0	17	SF4
		9	1952	1.48	19	24.68	155	22.87	10.58	2.4	2.1	45	1	36	.12	4	.4	.5	33	KAO
		9	2112	29.51	19	23.70	155	16.68	2.84	1.8	2.0	24	2	43	.11	0	.3	.2	16	SSC
		9	2225	24.07	19	29.16	155	33.32	13.71	2.2	1.7	35	4	35	.09	4	.4	.4	27	DML
		9	2247	2.23	19	23.29	155	16.86	2.96	1.4	1.1	19	4	56	.08	0	.3	.3	14	SSC
		9	2251	14.57	19	23.43	155	16.78	3.12	2.4	2.6	32	3	50	.10	0	.2	.2	19	SSC
		9	2343	52.70	19	21.70	155	18.28	2.55	1.5	1.1	22	4	48	.09	3	.3	.6	15	SWR
		10	030	3.59	19	21.70	155	17.94	2.69	1.5	1.1	20	4	75	.10	3	.3	.6	13	SWR
		10	358	40.82	19	21.91	155	18.31	2.78	1.9	1.7	34	4	48	.10	4	.3	.5	18	SWR
		10	359	52.63	19	23.49	155	16.88	2.92	2.7	2.9	38	1	36	.12	0	.2	.3	33	SSC
		10	836	8.69	19	20.06	155	19.42	4.56	1.7	1.4	22	3	58	.12	4	.4	1.4	14	SWR
		10	1532	27.73	19	23.07	155	17.09	2.81	.9	1.0	16	3	66	.07	1	.3	.3	10	SSC
		10	2117	36.37	19	20.52	155	20.60	2.48	1.4	1.2	21	3	65	.09	5	.3	.7	15	SWR
		11	4 1	26.95	19	20.23	155	12.73	7.85	1.5	1.2	28	2	71	.10	4	.5	.9	20	SF2
		11	525	35.29	19	18.98	155	21.95	3.40	1.8	1.2	21	1	96	.08	3	.4	.8	18	SWR
		11	639	32.38	19	20.53	155	13.10	7.70	1.8	1.5	33	3	63	.10	4	.5	.8	20	SF2
		11	9 9	21.55	19	17.48	155	23.97	4.81	1.9	2.3	29	1	89	.13	5	.4	1.7	23	SWR
		11	1044	24.72	19	20.69	155	8.31	8.49	2.1	1.6	34	4	76	.07	4	.4	.8	22	SF4
		11	16 9	27.76	19	23.36	155	16.93	2.93	2.1	2.0	35	5	36	.10	0	.2	.2	25	SSC
		11	2036	44.45	19	18.80	155	20.62	2.32	1.9	1.3	19	1	103	.14	4	.5	.9	17	SWR
		11	2038	24.09	19	18.68	155	23.23	5.68	2.3	2.0	33	4	90	.11	3	.3	1.1	23	SWR
		11	2348	29.57	19	19.98	155	11.62	9.54	2.7	2.4	40	4	84	.10	5	.4	.6	32	SF3
		12	143	41.44	19	24.97	155	22.07	9.33	1.9	1.3	28	4	44	.08	5	.4	.9	19	KAO
		12	2 6	31.85	19	18.58	155	23.36	5.49	2.4	2.8	39	0	90	.14	3	.4	1.0	28	SWR
		12	217	43.07	19	18.23	155	23.12	5.12	1.7	1.2	25	1	96	.10	4	.4	1.5	16	SWR
		12	4 8	23.68	19	21.15	155	17.06	1.88	1.2	1.6	12	0	72	.05	2	.3	.4	10	SWR
		12	410	17.48	19	21.91	155	17.84	3.15	1.9	1.8	29	3	51	.11	3	.3	.6	20	SWR
		12	1132	15.07	19	20.38	155	19.00	3.68	1.8	1.6	21	2	49	.07	3	.3	.8	13	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAY	12	1140	3.08	19	19.64	155	11.36	8.75	3.0	3.0	45	1	93	.12	5	.4	.5	37	SF3
		12	1218	37.46	19	18.79	155	22.03	3.87	1.6	1.2	13	1	103	.05	3	.5	1.0	8	SWR
		12	1624	9.67	19	17.14	155	23.66	5.48	2.2	2.5	36	2	97	.12	5	.4	1.2	26	SWR
		12	21 1	29.72	19	18.32	155	23.29	5.48	1.9	2.2	29	2	93	.11	4	.4	1.1	17	SWR
		12	22 1	46.24	19	21.27	155	19.19	2.82	1.5	1.6	23	3	44	.12	4	.3	.8	15	SWR
		12	2332	14.86	19	19.23	155	13.50	7.53	2.0	1.9	32	4	70	.10	4	.5	.8	21	SF2
		13	626	42.08	19	23.53	155	29.84	9.32	2.4	2.3	35	2	48	.09	4	.3	.9	26	KAO
		13	831	58.22	19	18.65	155	23.25	4.92		1.1	19	0	156	.10	3	.8	1.3	17	SWR
		13	1051	7.42	19	19.75	155	8.23	7.18	2.0	1.9	34	3	85	.11	4	.5	.9	21	SF4
		13	1056	56.67	19	18.46	155	23.14	5.74	2.3	2.8	35	2	96	.12	3	.4	.9	29	SWR
		13	1624	56.75	19	20.30	155	13.09	8.79	2.2	2.4	41	2	66	.12	4	.4	.6	28	SF2
		13	18 1	29.99	19	19.44	155	15.76	8.72	2.1	2.2	39	3	93	.10	3	.4	.5	30	SF1
		13	21 3	30.25	19	19.87	155	13.44	10.02	3.4	3.7	46	2	66	.11	5	.4	.4	41	SF2
		13	2126	44.39	19	27.50	154	53.71	6.21	1.6	1.5	29	2	137	.13	3	.7	.6	18	LER
		13	2135	32.01	19	27.13	155	24.34	6.44	1.7	1.6	25	4	62	.12	4	.4	1.1	15	KAO
		14	016	26.09	19	23.90	155	16.77	3.16	2.0	2.4	27	3	74	.10	0	.3	.2	19	SSC
		14	020	27.18	19	13.46	155	46.51	8.64		2.9	13	0	314	.08	17	7.4	1.0	2	KON
		14	120	58.77	19	23.62	155	16.81	2.83	2.5	2.8	32	2	41	.11	1	.3	.2	23	SSC
		14	614	39.12	19	18.50	155	22.92	6.79	2.5	3.0	41	2	95	.13	3	.4	1.0	32	SWR
		14	1051	8.39	19	17.75	155	23.10	3.12	1.7	1.7	23	3	101	.09	5	.4	.9	12	SWR
		14	1116	6.78	19	21.00	155	13.32	8.97	3.0	3.0	45	3	57	.12	3	.4	.5	33	SF2 F
		14	1326	4.04	19	20.78	155	13.12	9.30	2.4	2.2	46	4	60	.13	3	.4	.5	28	SF2
		14	17 3	3.40	19	19.81	155	7.44	8.14	2.5	2.3	42	2	104	.09	5	.4	.5	28	SF4
		14	1712	22.72	19	21.97	155	18.40	2.60	1.6	1.2	21	4	71	.11	4	.3	.7	15	SWR
		14	1835	43.79	19	38.57	156	5.30	33.07	2.9	1.8	36	4	239	.10	25	.9	1.5	26	KON
		14	2255	52.65	19	19.00	155	45.67	10.90	2.1	1.4	27	0	185	.10	11	1.0	.7	19	KON
		15	121	40.25	19	24.80	155	28.11	9.71	1.6	1.2	28	2	62	.09	4	.4	.9	19	KAO
		15	347	57.64	19	19.43	155	15.70	8.11	2.6	2.4	44	2	92	.12	3	.4	.6	31	SF1
		15	5 7	38.86	19	17.61	155	23.38	4.61	1.8	1.2	21	1	98	.12	5	.5	2.2	14	SWR
		15	7 0	26.95	19	17.66	155	23.63	3.38	1.7	1.3	26	1	94	.11	5	.4	1.2	17	SWR
		15	7 5	6.90	19	26.94	155	24.24	7.41	2.1	1.5	36	4	46	.14	4	.4	.9	26	KAO
		15	11 2	19.98	19	26.83	155	24.05	6.77	2.2	1.9	32	3	34	.12	4	.4	.9	26	KAO
		15	1356	43.66	19	17.45	155	23.78	2.70	2.1	2.1	33	5	93	.10	5	.3	.8	22	SWR
		15	1357	55.27	19	17.51	155	23.63	2.52	1.8	1.2	20	3	95	.07	5	.4	.8	13	SWR
		15	18 2	56.51	19	18.64	155	13.01	9.41	2.4	2.2	43	3	132	.10	7	.5	.6	35	SF2
		15	1945	36.85	19	17.34	155	23.82	3.10	1.8	1.9	32	2	93	.10	5	.3	1.1	22	SWR
		15	2018	28.39	19	22.32	155	17.04	3.06	1.3	1.1	19	0	55	.07	2	.3	.4	13	SSC
		15	2124	44.42	19	18.06	155	13.07	6.85	2.0	1.4	37	3	102	.11	2	.5	.9	22	SF2
		16	357	23.92	19	19.97	155	20.03	8.53	1.9	1.5	29	4	68	.10	4	.4	.8	23	SWR
		16	813	38.47	19	22.88	155	17.17	2.18	1.4	1.3	9	0	75	.07	2	.4	.7	8	SSC
		16	816	13.85	19	21.72	155	1.88	6.49	2.0	1.2	25	3	161	.13	4	.6	1.1	23	SF5
		16	928	54.25	19	21.79	155	18.16	3.04	1.6	1.2	20	2	53	.10	3	.3	.7	14	SWR
		16	932	36.92	19	21.82	155	18.10	3.01	1.6	1.1	21	5	64	.08	3	.3	.6	15	SWR
		16	1051	3.74	19	19.70	155	11.62	9.19	1.9	1.4	27	1	90	.06	5	.5	.9	21	SF3
		16	1243	9.98	19	22.19	155	17.41	2.46	1.9	1.9	26	3	53	.10	2	.3	.4	20	SSC
		16	1511	43.90	19	23.35	155	17.09	2.64	1.3	1.1	17	3	56	.07	0	.3	.3	12	SSC
		16	1520	43.09	19	23.20	155	17.07	2.68	1.7	1.5	22	2	41	.10	0	.3	.3	15	SSC
		16	1531	26.37	19	18.84	155	11.28	8.40	1.8	1.2	25	3	114	.06	5	.5	.9	18	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAY	16	1558	34.32	19	17.56	155	23.80	6.35	2.3	2.6	38	2	91	.13	5	.4	1.0	28	SWR
		16	17 9	.25	19	21.86	155	18.03	2.74	1.6	1.2	20	3	72	.08	3	.3	.6	15	SWR
		16	1837	33.41	19	17.88	155	23.40	7.19	2.6	2.6	38	2	95	.13	4	.4	.9	22	SWR
		16	1948	52.86	19	17.92	155	23.35	6.70	2.1	1.9	28	1	95	.12	4	.4	1.1	22	SWR
		16	2320	30.45	19	20.09	155	10.64	8.08	1.9	1.2	31	2	85	.10	4	.5	.9	22	SF3
		17	140	53.58	19	23.23	155	30.47	8.54	2.5	1.9	38	0	45	.10	5	.4	1.0	33	KAO
		17	427	59.00	19	21.87	155	1.43	5.97	2.1	1.4	31	2	157	.14	5	.6	1.4	18	SFS
		17	542	5.35	19	17.19	155	23.99	2.93	1.8	1.4	27	2	91	.11	5	.4	1.2	18	SWR
		17	843	52.12	19	20.00	155	6.83	7.76	2.2	2.2	39	4	111	.09	5	.4	.6	25	SF4
		17	921	45.59	19	20.10	155	13.83	9.79	3.2	3.3	46	2	57	.10	5	.3	.3	35	SF2 F
		17	11 6	4.97	19	18.86	155	13.58	6.88	1.5	1.6	30	2	71	.10	3	.5	1.0	20	SF2
		17	1152	5.44	19	25.53	155	24.54	7.71	2.0	1.8	28	1	46	.12	1	.4	.9	20	KAO
		17	1936	4.50	19	18.02	155	23.46	3.28	1.7	1.6	20	2	94	.09	4	.4	1.0	17	SWR
		17	2126	26.38	19	25.47	155	25.69	7.61	1.8	1.5	26	3	52	.11	1	.4	1.0	22	KAO
		17	2316	29.56	19	19.18	155	13.73	7.08	1.7	1.6	33	3	71	.12	4	.5	.8	20	SF2
		18	129	12.52	19	17.64	155	13.08	6.95	2.4	2.4	40	4	118	.10	1	.5	.8	24	SF2
		18	347	58.58	19	18.38	155	23.47	7.14	2.8	3.3	46	2	90	.14	3	.4	.8	37	SWR
		18	6 8	37.27	19	23.21	155	16.76	3.02	1.3	1.3	22	3	57	.06	0	.3	.2	14	SSC
		18	12 9	37.49	19	20.68	155	12.94	7.71	1.8	1.6	30	4	63	.12	4	.5	.7	24	SF2
		18	1229	33.63	19	21.69	155	6.77	6.56	1.5	1.2	29	5	79	.11	3	.5	.8	24	SF4
		18	1339	55.07	19	17.77	155	20.78	4.13	2.2	2.4	37	2	124	.11	4	.4	1.3	24	SWR
		18	2242	31.73	19	27.15	155	51.89	7.46	1.8	1.4	29	3	124	.17	7	.6	.9	19	KON
		19	3 3	35.26	19	20.50	155	13.53	6.86	1.5	1.2	31	4	65	.13	4	.5	.8	22	SF2
		19	841	18.66	19	19.37	155	9.90	8.15	1.8	1.7	19	1	99	.07	5	.4	.8	15	SF3
		19	922	42.59	19	16.69	155	21.56	6.82	1.8	1.8	27	2	133	.10	6	.5	1.2	19	SWR
		19	1117	59.89	19	19.61	155	12.19	7.20	2.2	2.2	43	5	86	.13	5	.4	.7	25	SF3
		19	14 8	28.72	19	23.41	155	16.96	2.88	2.3	2.7	33	2	36	.09	0	.2	.2	21	SSC
		19	1410	33.49	19	24.07	155	15.39	4.58	1.4	1.3	18	3	137	.11	2	.5	.7	10	SEC
		19	1454	21.91	19	19.44	155	11.99	7.27	2.3	2.3	42	3	93	.12	5	.4	.6	32	SF3
		19	15 4	14.78	19	18.63	155	21.97	4.67	1.6	1.4	20	3	104	.08	4	.4	1.1	13	SWR
		19	1623	37.66	19	16.78	155	22.28	7.52	2.1	2.3	45	3	126	.14	5	.4	.7	34	SWR
		19	1849	25.29	19	19.60	155	7.86	6.60	1.8	1.3	30	3	97	.09	4	.5	1.1	19	SF4
		19	2252	14.55	19	23.43	155	16.86	2.67	2.7	3.0	41	2	36	.12	0	.2	.2	28	SSC
		19	23 8	32.26	19	23.05	155	17.04	2.59	2.9	3.3	45	2	37	.13	1	.2	.3	30	SSC
		20	137	32.19	19	30.68	155	39.33	6.91	1.4	1.3	17	4	103	.13	6	.6	1.5	12	MLO
		20	157	46.84	19	21.89	155	1.23	3.43	1.5	1.5	23	4	169	.18	5	.6	1.5	13	SSF
		20	226	8.35	19	19.07	155	10.17	5.90	1.5	1.4	35	5	108	.12	5	.5	1.1	24	SF3
		20	1323	41.21	19	18.06	155	13.42	6.66	1.7	1.3	29	1	85	.11	2	.5	1.0	15	SF2
		20	14 1	31.60	19	17.62	155	23.45	4.03	1.9	1.7	26	2	97	.10	5	.4	1.5	17	SWR
		20	1431	11.56	19	23.43	155	16.73	3.26	2.3	2.4	30	5	46	.11	0	.3	.3	21	SSC
		20	1458	34.67	19	17.00	155	23.61	2.92	2.3	2.2	27	2	100	.10	5	.4	1.1	19	SWR
		21	057	13.07	19	23.32	155	16.71	3.37	1.7	1.4	24	3	48	.09	0	.3	.3	16	SSC
		21	057	39.76	19	12.29	155	41.78	6.82	3.5	3.1	42	2	190	.21	10	.8	1.0	31	LSW
		21	243	11.19	19	16.81	155	23.54	7.71	2.0	2.4	31	2	103	.12	5	.4	.8	25	SWR
		21	1158	48.83	19	21.04	155	7.12	7.96	2.2	2.2	34	2	132	.09	4	.5	.7	23	SF4
		21	12 1	16.04	19	23.64	155	16.81	2.98	2.1	1.9	22	3	45	.07	1	.3	.2	16	SSC
		21	12 1	51.68	19	23.79	155	16.78	2.62	1.9	1.7	23	4	67	.10	0	.3	.2	14	SSC
		21	12 2	24.07	19	23.78	155	16.77	2.95	1.5	1.5	17	3	65	.08	0	.3	.2	11	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAY	21	1624	29.36	19	18.25	155	23.35	3.44	2.1	2.4	34	4	93	.11	4	.3	.9	21	SWR
		21	1715	57.47	19	24.36	155	16.18	1.55	1.3	1.6	13	3	130	.07	1	.5	.3	7	SEC
		21	1958	41.55	19	21.47	155	6.10	7.81	1.8	1.2	28	2	87	.10	3	.5	.8	22	SF4
		22	725	47.22	19	24.06	155	1.89	4.76	1.6	1.4	29	2	124	.13	4	.8	1.6	15	SME
		22	9 6	55.26	19	18.62	155	13.69	8.21	1.9	1.7	34	2	89	.12	5	.5	.7	21	SF2
		22	927	53.72	19	22.44	155	17.24	2.48	1.8	1.5	21	3	53	.09	2	.3	.4	16	SSC
		22	1140	20.20	19	21.73	155	18.29	3.00	2.1	1.7	28	5	55	.11	3	.3	.5	18	SWR
		22	1344	44.81	18	44.92	155	31.65	26.29	3.8	3.9	50	4	287	.08	30	1.6	2.5	46	DLS
		22	1455	43.86	19	20.47	155	13.40	8.20	2.4	2.4	42	4	60	.12	4	.4	.5	30	SF2
		22	2226	59.56	19	22.05	155	17.54	3.18	1.6	1.3	26	4	53	.09	3	.3	.5	12	SSC
		22	2318	59.07	19	20.47	155	12.64	7.72	1.8	1.6	37	4	68	.11	4	.5	.7	29	SF2
		23	417	57.22	19	17.32	155	23.49	3.31	2.1	1.9	31	3	99	.11	5	.3	1.0	20	SWR
		23	443	37.33	19	19.92	155	8.48	7.05	1.4	1.1	31	3	80	.10	5	.5	.9	20	SF4
		23	514	30.68	19	22.22	155	17.34	2.87	2.1	2.0	31	3	53	.10	2	.3	.4	23	SSC
		23	539	52.60	19	21.17	155	4.65	8.62	2.1	1.8	37	0	93	.08	4	.5	.5	18	SFS
		23	1224	31.43	19	25.18	155	26.17	5.74	2.8	2.6	42	3	52	.12	2	.3	.8	33	KAO
		23	1727	58.54	19	22.00	155	17.44	3.25	1.8	1.4	25	4	53	.10	3	.3	.5	17	SWR
		23	1732	46.71	19	21.82	155	17.96	3.11	1.7	1.6	24	4	50	.11	3	.3	.6	14	SWR
		23	1823	48.38	19	21.84	155	18.01	3.10	1.8	1.5	21	3	54	.11	3	.3	.6	16	SWR
		24	056	32.81	19	24.40	155	16.02	1.51	1.6	2.1	17	1	118	.08	1	.3	.3	11	SEC
		24	2 6	30.57	19	21.17	155	15.17	8.99	1.9	1.5	31	3	68	.09	3	.4	.6	22	SF1
		24	3 7	57.30	19	20.08	155	12.26	8.60	2.2	2.1	41	3	78	.12	5	.4	.6	28	SF3
		24	410	51.46	19	22.41	155	28.52	9.49	2.1	1.7	36	1	43	.10	2	.3	.8	30	KAO
		24	12 9	8.73	19	21.14	155	18.03	1.88	1.3	1.8	13	1	77	.09	2	.3	.7	10	SWR
		24	1210	26.56	19	24.86	155	24.39	10.66	2.2	1.7	32	5	37	.09	2	.4	.7	21	KAO
		24	2211	30.80	19	23.43	155	16.79	2.96	1.2	1.1	20	3	50	.05	0	.3	.3	11	SSC
		24	2222	12.75	19	22.25	155	3.69	9.34	1.7	1.3	28	3	97	.07	4	.5	.8	16	SF5
		24	2242	59.73	19	20.49	155	18.94	3.33	1.7	1.7	26	2	50	.10	3	.3	.7	19	SWR
		24	2244	52.47	19	20.37	155	18.96	3.58	2.2	2.2	37	3	50	.12	3	.3	.7	24	SWR
		25	024	28.45	19	12.91	155	37.02	7.74	2.1	1.9	30	2	91	.20	4	.6	.8	21	LSW
		25	2 6	9.80	19	19.89	155	13.04	7.90	1.6	1.1	30	2	71	.09	5	.5	.9	18	SF2
		25	211	19.06	19	20.28	155	12.96	9.40	3.1	3.1	49	4	68	.11	4	.3	.4	35	SF2 F
		25	256	22.27	19	20.60	155	12.71	8.46	2.0	1.6	36	3	67	.11	4	.4	.6	24	SF2
		25	345	.96	19	23.77	155	17.05	2.83	1.6	1.6	25	5	68	.07	1	.3	.2	15	SSC
		25	445	27.96	19	21.74	155	17.75	3.39	2.0	2.0	30	4	52	.10	3	.3	.5	21	SWR
		25	640	57.92	19	16.33	155	22.98	4.53	1.8	1.6	29	1	122	.12	4	.4	1.7	17	SWR
		25	1059	20.64	19	23.42	155	16.75	3.11	1.6	1.8	22	2	45	.09	0	.3	.3	15	SSC
		25	1115	30.51	19	18.63	155	22.10	3.90	1.9	1.6	27	1	102	.10	4	.4	1.0	18	SWR
		25	1136	13.17	19	22.06	155	17.50	2.94	1.6	1.5	21	3	52	.10	3	.3	.5	16	SSC
		25	1154	19.35	19	20.18	155	12.27	7.74	2.1	2.3	46	3	76	.14	5	.4	.6	30	SF3
		25	1256	52.10	19	20.57	155	13.06	8.85	1.6	1.4	28	2	64	.07	4	.5	.7	22	SF2
		25	13 9	13.95	19	15.77	155	27.14	11.57	1.8	1.6	25	2	72	.09	5	.4	.8	17	LSW
		25	1316	22.09	19	25.62	155	37.48	1.25	2.2	2.0	22	1	92	.14	4	.5	1.2	16	MLO
		25	1321	43.48	19	21.58	155	18.16	2.77	1.9	2.3	29	4	49	.11	3	.3	.6	23	SWR
		25	1336	50.37	19	19.74	155	12.96	6.66	1.6	1.7	34	4	74	.12	5	.5	.9	21	SF2
		25	1557	54.24	19	21.21	155	14.99	8.07	1.7	1.5	34	3	67	.11	3	.5	.7	25	SF1
		25	1753	49.78	19	20.07	155	4.18	6.62	1.6	1.4	33	2	136	.13	2	.6	1.0	15	SF5
		25	2010	23.94	19	23.01	155	15.11	30.31	2.2	2.1	45	2	50	.09	2	.6	.9	40	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAY	25	2114	51.30	19	20.47	155	19.15	2.92	1.7	2.1	34	4	48	.11	3	.3	.7	21	SWR
		25	2231	6.81	19	17.42	155	23.58	5.46	1.8	1.9	28	2	96	.12	5	.4	1.6	18	SWR
		25	2235	.53	19	21.72	155	17.67	3.24	1.8	1.9	27	4	52	.10	3	.3	.5	17	SWR
		25	2345	7.35	19	38.14	155	31.24	26.80	2.2	1.7	41	2	54	.08	5	.5	1.2	29	KEA
		26	010	4.64	19	19.71	155	8.15	7.86	3.0	3.2	47	4	88	.09	4	.4	.5	28	SF4
		26	111	6.52	19	20.61	155	20.38	2.25	1.9	2.1	29	5	62	.09	5	.3	.7	23	SWR
		26	121	17.65	19	20.17	155	13.31	8.87	2.6	2.8	46	3	64	.12	5	.4	.5	39	SF2
		26	2 8	39.90	19	24.29	155	23.17	9.73	2.4	2.1	43	3	37	.11	4	.3	.6	30	KAO
		26	232	13.59	19	19.90	155	13.30	7.90	1.5	1.2	27	2	68	.11	5	.5	.9	20	SF2
		26	426	34.66	19	22.81	155	15.17	30.27	1.8	1.7	35	1	67	.08	2	.8	1.2	29	DEP
		26	451	38.87	19	21.91	155	17.86	3.24	1.4	1.5	20	2	58	.09	3	.3	.6	12	SWR
		26	1013	6.79	19	20.39	155	12.44	8.27	2.0	1.8	34	2	72	.12	4	.5	.7	23	SF2
		26	1059	49.56	19	23.09	155	17.01	2.31	1.6	1.2	14	1	57	.09	2	.3	.5	9	SSC
		26	1331	59.27	19	23.20	155	16.88	3.38	2.0	2.0	19	1	46	.07	2	.3	.5	14	SSC
		26	1434	14.69	19	23.75	155	23.83	10.02	2.2	2.1	36	2	36	.11	4	.4	.8	27	KAO
		27	116	14.04	19	23.80	155	17.20	2.35	1.6	1.7	15	1	62	.09	2	.3	.5	11	SSC
		27	124	58.09	19	21.34	155	18.15	3.37	2.1	1.8	19	0	70	.09	3	.3	.7	18	SWR
		27	333	26.69	19	17.97	155	23.30	3.29	1.8	2.1	22	1	96	.09	4	.4	1.1	19	SWR
		27	545	30.48	19	23.22	155	16.91	3.13	1.6	1.3	18	3	46	.08	0	.3	.3	12	SSC
		27	7 2	47.01	19	17.77	155	23.22	6.00	2.0	2.4	35	2	99	.11	5	.4	1.1	19	SWR
		27	831	27.28	19	21.52	155	18.57	3.58	1.5	1.4	17	2	73	.07	3	.3	.8	11	SWR
		27	1418	51.91	19	25.09	155	24.95	9.55	1.7	1.2	26	0	63	.11	7	.5	1.2	19	KAO
		27	1555	13.30	19	11.79	155	8.70	51.62	2.3	1.8	32	0	204	.09	13	1.3	2.5	28	DEP
		27	1646	55.70	19	25.64	155	24.66	8.40	2.0	1.9	36	3	47	.12	1	.4	.8	31	KAO
		27	2229	50.49	19	17.76	155	23.41	2.70	.8	1.2	14	1	103	.06	5	.4	.9	13	SWR
		27	23 2	38.76	19	20.91	155	6.24	7.67	2.0	1.6	31	3	98	.11	4	.5	.9	19	SF4
		28	044	12.59	19	20.43	155	19.23	2.35	1.0	1.3	17	1	52	.09	5	.4	1.0	13	SWR
		28	144	41.78	19	23.06	155	17.02	2.49	1.9	2.4	29	4	37	.10	1	.2	.3	19	SSC
		28	359	29.09	19	18.01	155	23.35	3.64	1.7	1.9	22	1	95	.10	4	.4	1.2	18	SWR
		28	711	30.28	19	19.11	155	11.48	8.21	2.8	3.1	47	4	105	.11	5	.4	.5	33	SF3
		28	727	10.23	19	20.28	155	13.17	9.01	1.6	1.5	23	1	65	.08	4	.5	1.0	20	SF2
		28	811	23.60	19	20.64	155	12.63	8.64	1.6	1.3	24	1	67	.09	4	.4	.6	22	SF2
		28	1011	21.60	19	17.26	155	23.55	3.23	1.8	1.8	26	2	98	.10	5	.4	1.0	17	SWR
		28	1544	36.42	19	19.55	155	9.97	8.59	2.4	2.4	24	1	94	.09	5	.4	.8	22	SF3
		28	17 6	39.19	19	18.86	155	21.67	2.66	1.8	1.8	23	2	101	.09	4	.4	.7	17	SWR
		28	1948	17.48	19	18.85	155	20.73	2.49	2.0	2.4	29	3	102	.10	4	.4	.7	17	SWR
		28	2037	8.84	19	27.03	155	27.24	7.85	1.9	1.3	26	4	64	.09	5	.4	1.1	18	KAO
		29	022	37.00	19	25.76	154	58.28	6.49	1.8	.9	23	1	137	.12	1	.6	1.2	14	LER
		29	026	4.64	19	20.35	155	12.24	7.10	1.5	1.4	35	3	74	.14	4	.6	.9	24	SF3
		29	129	30.27	19	23.37	154	59.45	7.94	2.3	2.1	41	4	162	.16	4	.7	.5	24	LER
		29	137	59.81	19	23.24	155	27.50	10.45	2.7	2.6	43	2	32	.11	1	.4	.6	32	KAO
		29	215	31.71	19	20.31	155	11.21	7.81	2.0	1.6	36	1	80	.13	4	.5	.9	29	SF3
		29	840	14.10	19	19.06	155	22.72	3.49	1.6	1.5	23	1	90	.11	2	.4	.7	16	SWR
		29	940	17.67	19	23.10	155	17.23	2.64	1.7	1.4	22	3	72	.12	1	.3	.3	14	SSC
		29	948	45.56	19	25.75	155	24.65	10.16	2.0	1.2	27	2	47	.10	1	.4	.9	22	KAO
		29	949	28.28	19	23.50	155	16.62	3.09	2.5	2.6	36	4	38	.10	1	.2	.2	27	SSC F
		29	1531	4.67	19	17.36	155	21.04	7.81	1.7	1.5	28	3	131	.10	4	.4	.9	14	SWR
		29	2021	2.49	19	18.61	155	15.58	7.50	2.0	1.5	30	1	104	.10	4	.4	.9	19	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	MAY	29	2124	11.39	19	11.09	155	41.49	6.49	2.6	2.1	30	4	123	.22	10	.6	2.7	19	LSW
		30	335	10.34	19	19.02	155	13.86	7.92	2.4	2.2	42	3	76	.13	4	.4	.6	31	SF2
		30	628	32.05	19	19.38	155	10.65	8.67	1.9	1.1	27	3	101	.12	5	.5	1.0	19	SF3
		30	2048	1.05	19	24.20	155	17.71	16.03	2.4	2.0	43	3	38	.10	2	.4	.3	32	DEP
		30	2117	25.47	19	23.25	155	26.51	9.64	1.9	1.4	30	2	45	.11	2	.4	.9	23	KAO
		31	5 6	56.93	19	24.14	155	16.13	1.49	2.0		24	3	109	.11	1	.2	.2	17	SEC
		31	6 4	28.16	19	20.38	155	46.35	9.90	2.5	1.4	29	4	86	.10	11	.4	.8	15	KON
		31	1559	2.91	19	19.03	155	16.53	31.96	2.4	2.1	49	3	104	.11	3	.7	.9	38	DEP
		31	1725	25.81	19	29.33	155	46.39	10.00	3.2	2.8	39	4	73	.11	2	.4	.5	22	KON
		31	19 4	3.80	19	25.40	155	26.04	6.12	2.8	2.7	42	3	42	.13	2	.3	.9	25	KAO
		31	1959	46.40	19	18.82	155	13.04	6.21	1.9	1.6	31	1	87	.13	3	.5	1.1	21	SF2
		31	22 9	35.06	19	17.63	155	23.25	3.01	1.9	2.3	28	3	100	.10	5	.4	1.0	20	SWR
		31	2232	.15	19	26.65	156	53.65	31.33	3.0	3.2	30	3	222	.11	102	2.8	3.6	18	DIS
	JUN	1	0 9	16.50	19	17.13	155	22.39	6.26	1.7	1.8	27	2	119	.12	6	.4	1.0	11	SWR
		1	2 5	33.28	19	23.07	155	2.02	8.45	1.4	1.4	17	2	140	.12	5	.6	.9	11	SF5
		1	356	59.43	19	23.07	155	16.75	2.81	2.1	2.5	29	3	40	.10	1	.3	.3	21	SSC
		1	12 5	5.75	19	20.53	155	11.19	8.52	1.8	1.3	31	3	76	.08	4	.4	.6	21	SF3
		1	1521	5.21	19	17.54	155	23.47	6.41	2.3	2.6	35	2	97	.12	5	.4	.9	27	SWR
		1	1532	34.27	19	22.00	155	25.79	9.02	1.7	1.6	30	2	40	.12	3	.4	.8	20	KAO
		1	21 3	7.34	19	22.24	155	5.59	8.11	2.0	1.7	21	3	73	.07	2	.5	.9	11	SF4
		2	325	51.20	19	17.34	155	23.44	2.37	1.8	1.6	24	1	100	.10	5	.4	1.0	12	SWR
		2	537	36.70	19	16.57	155	31.31	6.63	2.2	1.4	32	2	63	.15	3	.4	1.3	18	LSW
		2	1024	21.86	19	22.10	155	28.96	10.55	3.2	3.2	44	2	36	.11	2	.4	.6	34	KAO
		2	16 3	58.10	19	20.17	155	8.22	8.65	2.8	2.8	45	1	83	.09	5	.4	.4	25	SF4
		2	16 4	56.80	19	20.45	155	8.08	7.79	2.5	2.7	40	2	81	.09	4	.4	.6	26	SF4
		2	2119	57.42	19	18.89	155	13.51	7.30	1.5	1.2	21	0	82	.11	3	.6	.9	17	SF2
		2	2138	45.32	19	17.92	155	16.57	8.21	2.3	2.3	39	1	126	.11	4	.4	.6	26	SF1
		2	2143	13.80	19	8.35	155	19.43	7.83	1.6	1.6	19	0	247	.14	15	1.7	1.5	9	LOI
		3	155	20.08	19	21.00	155	6.04	8.83	3.1	3.2	46	3	97	.12	4	.4	.5	36	SF4
		3	3 3	25.50	19	23.49	155	16.81	2.85	1.6	1.6	24	3	38	.08	0	.3	.2	14	SSC
		3	717	18.17	19	20.53	155	12.88	9.12	1.6	1.7	28	3	65	.08	4	.5	.8	19	SF2
		3	1010	34.61	19	23.46	155	25.83	10.88	2.6	2.1	42	4	37	.11	4	.3	.5	36	KAO
		3	1035	21.08	19	19.25	155	15.43	7.53	1.3	.6	26	2	100	.09	4	.5	.9	16	SF1
		3	13 6	16.36	19	20.14	155	4.16	6.03	2.5	2.4	35	1	133	.08	2	.5	.7	23	SF5
		3	1336	14.45	19	19.82	155	11.04	8.60	1.9	1.4	30	2	90	.11	5	.5	.9	22	SF3
		3	1352	55.90	19	17.79	155	20.88	8.41	1.7	1.4	27	5	125	.12	4	.5	.9	19	SWR
		4	0 6	48.00	19	19.84	155	10.30	9.35	1.6	1.3	21	1	89	.04	4	.6	1.0	19	SF3
		4	128	2.35	19	18.85	155	11.38	8.88	1.9	1.3	22	1	114	.08	5	.6	1.2	17	SF3
		4	128	25.02	19	23.53	155	16.77	3.09	2.4	2.6	25	2	38	.10	0	.3	.2	17	SSC
		4	156	20.61	19	30.22	155	32.39	12.96	1.9	1.3	23	1	71	.10	6	.4	.7	15	MLO
		4	259	58.10	19	15.66	155	15.52	9.36	1.8	1.5	33	0	167	.10	7	.6	.8	25	SF1
		4	425	5.68	19	54.24	155	20.71	11.58	2.0	1.8	19	0	261	.07	2	1.2	.4	14	KEA
		4	714	37.03	19	18.18	155	23.58	4.38	2.6	3.0	43	3	91	.13	4	.4	1.4	33	SWR
		4	730	12.83	19	17.88	155	23.34	5.94	2.7	3.0	42	2	96	.12	4	.4	.9	30	SWR
		4	937	38.48	19	22.86	155	17.16	2.16	1.2	1.3	16	3	74	.08	1	.3	.3	9	SSC
		4	957	49.63	19	17.61	155	23.56	3.06	2.1	2.2	30	1	95	.13	5	.4	1.2	18	SWR
		4	1133	41.13	20	.51	155	52.93	10.70		2.4	9	0	226	.09	17	3.4	1.2	3	KOH
		4	1651	5.27	19	18.11	155	23.39	3.38	1.8	1.8	27	3	93	.11	4	.4	.9	16	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUN	4	2243	18.64	19	17.97	155	22.82	4.18	1.7	1.4	20	2	103	.08	4	.4	1.2	14	SWR
		5	135	27.25	19	23.67	155	16.85	2.51	1.2	1.3	16	2	52	.11	1	.4	.3	9	SSC
		5	6 2	33.57	19	20.33	155	11.28	8.35	1.9	1.9	34	2	79	.11	4	.5	.7	22	SF3
		5	1028	40.26	19	42.57	155	2.70	.00	2.2	2.4	27	1	172	.39	2	2.2	1.0	13	HIL B*
		5	1125	6.52	19	19.91	155	11.34	7.66	2.2	1.8	40	4	87	.13	5	.5	.7	29	SF3
		5	1417	26.80	19	20.20	155	11.38	7.67	2.1	1.8	38	3	81	.13	4	.5	.7	27	SF3
		6	354	1.51	19	22.99	155	3.44	8.57	2.1	1.8	35	1	107	.09	3	.5	.5	20	SF5
		6	512	8.43	19	23.76	155	16.97	2.62	1.9	2.0	30	5	63	.08	1	.2	.2	19	SSC
		6	1032	25.25	19	23.43	155	16.86	2.98	3.1	3.3	45	2	36	.12	0	.2	.3	33	SSC F
		6	1034	33.71	19	23.47	155	16.80	3.22	1.6	1.1	21	3	39	.08	0	.3	.3	13	SSC
		6	1210	48.94	19	19.30	155	16.21	7.27	1.9	1.1	34	4	106	.08	3	.4	.7	18	SF1
		6	1429	57.18	19	23.00	155	16.79	2.78	2.0	2.0	28	2	40	.09	1	.3	.3	19	SSC
		6	1858	42.82	19	23.56	155	16.89	3.27	1.6	1.3	18	2	47	.08	0	.4	.3	13	SSC
		7	033	51.65	19	20.56	155	11.55	8.91	2.7	2.5	43	2	75	.11	4	.4	.5	31	SF3
		7	043	29.59	19	24.61	155	16.57	1.60	1.2	1.0	10	1	138	.07	1	.4	.3	8	SNC
		7	516	10.69	19	19.99	155	11.19	8.32	1.9	1.6	35	1	87	.12	5	.5	.8	28	SF3
		7	6 7	32.58	19	26.09	155	37.28	2.67	2.0	1.8	18	2	89	.14	3	.5	.7	11	MLO
		7	811	56.92	19	19.65	155	11.52	7.25	1.8	1.5	33	4	91	.10	5	.4	.6	20	SF3
		7	9 5	56.55	19	26.15	154	53.27	7.20	1.9	1.4	24	1	179	.11	4	.9	.8	11	LER
		7	1050	35.17	19	19.96	155	11.13	8.58	2.2	2.2	40	5	87	.10	5	.4	.5	22	SF3
		7	1231	29.55	19	23.23	155	16.98	2.95	1.6	1.8	19	3	59	.08	0	.3	.3	15	SSC
		7	1240	44.09	19	18.27	155	22.91	3.73	1.2	1.3	19	1	98	.09	4	.4	.9	10	SWR
		7	1327	13.55	19	20.54	155	4.38	6.90	1.8	1.4	29	1	113	.12	3	.5	.9	11	SF5
		8	026	40.08	19	17.12	155	24.67	8.80	1.3	1.5	19	1	82	.13	5	.5	.9	11	SWR
		8	223	5.07	19	23.30	155	16.89	2.96	2.0	2.1	24	3	45	.06	0	.2	.2	16	SSC
		8	4 0	27.03	19	25.91	155	24.75	4.03	2.0	2.0	28	3	40	.10	1	.3	.7	18	KAO
		8	729	24.53	19	23.53	154	58.01	6.29	2.5	2.3	34	3	175	.14	3	.6	.8	18	LER
		8	16 6	35.84	19	21.11	155	13.13	8.69	2.1	1.9	43	4	58	.11	3	.3	.5	31	SF2
		8	2112	7.82	19	21.49	155	7.45	8.75	3.4	3.2	50	3	77	.12	4	.4	.5	39	SF4 F
		8	2130	58.40	19	20.86	155	6.51	7.90	1.9	1.1	29	2	97	.10	4	.5	1.0	19	SF4
		9	610	57.33	19	19.98	155	10.17	7.04	1.7	1.1	29	3	86	.08	4	.5	.9	20	SF3
		9	649	41.91	19	19.98	155	8.03	8.21	2.1	1.5	31	3	88	.09	5	.5	.9	23	SF4
		9	920	32.72	19	25.05	155	16.89	1.81	1.8	1.7	19	2	149	.07	0	.4	.2	14	SNC
		9	11 3	13.58	19	22.77	155	17.15	2.64	1.8	1.6	21	2	50	.09	1	.3	.4	14	SSC
		9	1324	22.08	19	25.94	155	24.56	7.65	2.8	2.7	44	1	32	.13	2	.4	.7	29	KAO
		9	1354	53.63	19	20.59	155	11.03	8.81	2.4	2.3	36	3	75	.10	3	.4	.6	27	SF3
		9	1417	2.51	19	8.42	156	7.11	37.16	2.4	1.8	27	1	278	.11	30	2.6	1.6	20	KON
		9	2039	2.58	19	20.55	155	13.56	7.89	1.8	1.5	33	3	60	.13	4	.5	.8	21	SF2
		10	552	19.33	19	18.10	155	21.51	3.22	1.2	1.4	24	4	116	.08	5	.3	.8	15	SWR
		10	843	4.55	19	27.27	155	29.15	9.96	2.2	1.3	24	0	94	.07	8	.4	1.2	17	KAO
		10	2130	6.38	19	19.89	155	10.55	9.52	1.6	1.3	27	2	89	.07	4	.5	1.0	21	SF3
		10	2320	.71	19	28.84	154	51.30	3.58	1.7	1.1	15	1	146	.11	3	.6	.5	8	SLE
		11	137	13.10	19	23.58	155	16.82	3.13	1.6	1.8	25	4	40	.09	0	.3	.2	14	SSC
		11	139	4.42	19	23.56	155	16.93	2.92	1.2	1.4	20	3	53	.07	0	.3	.2	11	SSC
		11	629	45.18	19	20.75	155	11.76	8.73	2.5	2.6	42	3	71	.11	4	.4	.5	31	SF3
		11	9 1	25.02	19	21.88	155	17.58	3.59	2.3	2.7	31	2	33	.10	3	.3	.5	26	SWR
		11	12 6	2.14	19	24.94	155	24.51	10.96	2.9	2.8	43	3	39	.11	1	.3	.4	30	KAO
		11	2324	1.58	19	20.38	155	4.44	7.41	2.1	1.8	34	3	120	.11	3	.5	.8	16	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUN	12	345	29.32	19	18.44	155	7.95	6.68	1.5	1.4	28	1	109	.10	2	.6	1.1	18	SF4
		12	427	18.95	19	23.94	155	26.68	3.63	1.7	1.2	14	0	142	.09	3	.5	.7	13	KAO
		12	713	57.29	19	24.41	155	17.60	15.82	2.4	1.7	34	2	71	.09	1	.5	.4	28	DEP
		12	1121	13.44	19	23.04	155	17.08	2.76	1.6	1.3	22	5	67	.09	1	.2	.3	14	SSC
		12	1122	40.89	19	22.73	155	16.84	2.62	2.0	1.8	24	2	42	.11	1	.3	.3	16	SSC
		12	1133	39.30	19	23.95	155	16.94	3.47	1.5	1.0	18	3	76	.10	1	.4	.3	11	SSC
		12	15 0	16.74	19	23.34	155	16.90	3.42	1.5	1.1	13	2	89	.08	0	.4	.4	10	SSC
		12	17 9	2.43	19	22.97	155	17.06	2.68	1.8	1.7	23	3	48	.09	1	.3	.3	17	SSC
		12	1720	55.31	19	23.14	155	17.18	2.48	1.1	1.0	18	3	63	.09	1	.3	.3	11	SSC
		12	20 8	13.04	19	21.63	155	17.82	2.43	1.1	1.1	19	2	61	.10	3	.3	.6	12	SWR
		12	2047	59.11	19	19.88	155	12.96	8.55	1.6	1.6	28	2	72	.08	5	.5	.9	22	SF2
		12	2312	37.32	19	25.38	155	29.40	10.09	2.0	1.5	27	1	58	.09	6	.4	.9	16	KAO
		13	1 4	51.15	19	20.28	155	18.47	3.20	1.6	1.3	21	3	60	.10	2	.3	.6	13	SWR
		13	412	52.73	19	24.97	155	17.36	1.54	1.2	1.0	12	1	121	.09	1	.4	.3	8	SNC
		13	1653	36.20	19	21.64	155	17.95	3.15	1.6	1.3	25	3	51	.09	3	.3	.5	13	SWR
		13	1744	43.50	19	22.01	155	17.88	3.26	2.1	2.0	32	4	50	.10	3	.3	.5	18	SWR
		13	1748	19.19	19	20.04	155	7.50	9.56	2.4	2.2	32	4	99	.07	5	.5	.8	23	SF4
		13	1830	37.02	19	20.91	155	11.53	8.06	1.9	1.5	35	5	72	.11	4	.5	.7	23	SF3
		13	1840	7.29	19	22.34	155	17.00	2.83	1.9	1.5	26	3	98	.11	2	.3	.4	15	SSC
		13	1923	52.61	19	21.75	155	17.66	3.29	1.4	1.0	20	2	52	.10	3	.3	.6	16	SWR
		13	2114	7.09	19	20.81	155	6.80	7.67	1.9	1.5	31	2	95	.12	4	.6	1.1	24	SF4
		14	341	5.02	19	22.13	155	3.17	8.34	2.1	1.4	28	0	110	.10	4	.5	.5	20	SF5
		14	1014	1.18	19	19.18	155	21.43	8.09	1.4	1.1	24	2	93	.12	4	.5	1.0	16	SWR
		14	2222	39.79	19	9.41	155	35.35	7.94	2.4	1.5	28	3	114	.19	11	.6	1.2	14	LSW
		14	2252	35.29	19	18.33	155	13.21	7.68	1.7	1.2	26	3	90	.09	2	.6	1.0	20	SF2
		14	2356	54.36	19	24.20	155	24.61	8.95	1.7	1.1	28	3	46	.10	2	.4	.8	20	KAO
		15	033	50.10	19	24.62	155	16.70	1.55	1.3	1.5	14	2	132	.09	1	.4	.3	9	SNC
		15	626	8.49	19	19.18	155	15.54	7.38	1.6	1.1	30	2	102	.08	4	.4	.9	20	SF1
		15	955	41.06	19	23.64	155	16.82	3.03	2.2	2.6	28	1	45	.10	1	.3	.2	20	SSC
		15	13 1	57.25	19	23.63	155	16.86	3.22	1.9	2.1	23	2	47	.10	1	.3	.2	12	SSC
		15	13 4	39.72	19	23.82	155	16.76	2.72	1.3	1.0	19	4	72	.07	0	.3	.2	12	SSC
		15	1322	53.15	19	20.56	155	8.80	8.50	1.6	1.1	23	1	70	.06	3	.6	1.1	19	SF4
		15	1543	22.73	19	20.71	155	13.01	9.63	3.5	3.6	48	3	62	.11	4	.4	.4	43	SF2 F
		15	1728	31.79	19	18.20	155	23.10	3.62	1.1	1.1	21	2	101	.09	4	.4	1.1	15	SWR
		15	1837	7.36	19	24.28	155	16.26	1.59	1.1	1.0	12	3	124	.06	1	.3	.3	7	SEC
		16	059	52.65	19	24.44	155	15.81	1.49	1.4	1.8	17	1	114	.09	2	.3	.3	7	SEC
		16	2 2	26.45	19	8.60	155	37.65	8.20	1.8	1.6	25	2	108	.12	12	.4	1.2	9	LSW
		16	236	3.97	19	21.50	155	15.45	8.01	2.1	2.1	41	5	64	.12	2	.4	.5	24	SF1
		16	257	38.29	19	19.98	155	13.53	7.68	1.5	1.5	34	2	66	.12	5	.5	.9	24	SF2
		16	437	2.92	19	19.59	155	6.73	8.14	2.1	2.2	41	2	124	.11	5	.4	.6	29	SF4
		16	448	59.85	19	24.38	155	15.98	1.72	1.7	2.0	27	4	114	.09	1	.3	.3	16	SEC
		16	452	56.81	19	24.17	155	16.18	1.50	2.2	2.6	26	3	74	.11	1	.2	.2	18	SEC
		16	856	52.33	19	24.19	155	15.78	1.92	1.0		9	0	128	.11	2	.4	.4	2	SEC
		16	918	54.17	19	17.59	155	23.50	4.37	1.8	1.8	29	1	96	.11	5	.4	1.9	21	SWR
		16	17 4	40.78	19	19.70	155	6.84	8.35	1.7	1.2	24	2	119	.07	5	.6	1.0	22	SF4
		16	1859	26.76	19	21.12	155	10.62	8.72	1.9	1.7	32	3	68	.09	2	.5	.6	20	SF3
		16	19 1	56.02	19	23.50	155	16.80	3.04	1.4	1.6	25	4	38	.07	0	.3	.2	18	SSC
		16	1947	29.43	19	20.46	155	12.81	7.77	1.5	1.3	31	2	67	.11	4	.5	.8	25	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUN	17	358	18.08	19	21.03	155	6.62	8.54	2.8	2.6	48	4	92	.11	4	.4	.6	35	SF4
		17	4 7	39.95	19	19.00	155	16.11	7.80	1.7	1.1	32	4	111	.10	3	.4	.7	20	SF1
		17	417	57.72	19	17.84	155	23.47	3.25	1.7	1.3	23	2	95	.09	4	.4	.9	11	SWR
		17	859	37.44	19	19.84	155	10.82	8.07	1.7	1.9	31	2	90	.09	4	.5	.8	25	SF3
		17	912	41.11	19	21.63	155	15.21	9.50	3.0	3.0	46	3	62	.10	2	.4	.4	32	SF1
		17	1359	36.44	19	22.21	155	12.43	1.46	1.4	2.0	8	1	153	.07	1	.7	.3	3	SER
		18	115	16.88	19	18.78	155	15.34	7.94	2.2	2.2	42	3	108	.11	4	.4	.6	25	SF1
		18	320	56.59	19	19.94	155	11.81	8.32	2.2	2.3	46	4	84	.12	5	.4	.5	35	SF3
		18	1511	26.99	19	58.87	155	36.11	11.19	2.8	2.6	28	1	158	.12	25	.6	.7	16	KOH F
		18	2131	57.79	19	23.84	155	16.86	2.83	1.3	1.2	19	2	76	.03	1	.3	.2	9	SSC
		19	634	22.29	19	20.57	155	12.14	7.95	1.9	.9	25	1	71	.10	4	.5	.9	18	SF3
		19	911	17.19	19	22.50	155	5.15	8.00	2.3	1.8	32	2	75	.08	2	.4	.7	18	SF5
		19	1334	56.93	19	1.33	154	59.46	37.46	2.7	1.6	24	0	288	.08	35	4.9	3.9	16	DIS
		19	1339	3.63	19	19.53	155	8.34	8.20	2.0	2.0	32	1	85	.08	4	.4	.6	20	SF4
		19	1345	48.47	19	19.72	155	8.25	7.96	2.0	1.5	33	2	86	.07	4	.5	.7	24	SF4
		20	251	23.72	19	21.98	155	1.63	8.99	2.3	1.8	38	1	150	.10	4	.6	.5	25	SF5
		20	542	35.43	19	19.24	155	12.23	6.80	1.5	1.1	29	1	94	.13	5	.6	1.1	25	SF3
		20	659	9.74	19	25.05	155	24.31	8.42	2.2	1.6	30	2	44	.11	2	.4	.9	28	KAO
		20	1216	57.05	19	19.67	155	7.99	7.36	2.0	1.1	37	2	93	.11	4	.5	.9	26	SF4
		20	1627	16.22	19	17.83	155	15.62	9.30	3.0	2.8	43	1	142	.11	5	.5	.6	34	SF1
		20	1641	24.46	19	17.27	155	15.41	8.02	2.2	1.8	35	0	140	.12	3	.6	.8	24	SF1
		21	114	37.31	19	19.69	155	7.70	8.77	3.0	3.2	40	2	100	.10	4	.4	.7	24	SF4
		21	136	32.43	19	22.38	155	27.49	9.11	2.1	1.6	37	1	40	.11	0	.3	.7	29	KAO
		21	156	39.61	19	41.21	156	26.83	35.32	2.9	2.6	38	2	281	.15	60	2.4	2.6	32	DIS
		21	519	32.93	19	18.96	155	13.38	9.51	1.9	1.6	39	2	76	.10	4	.4	.5	24	SF2
		21	1123	58.46	19	20.33	155	13.03	8.34	2.1	1.8	39	3	67	.12	4	.4	.7	28	SF2
		21	1232	5.04	19	18.73	155	13.61	6.56	1.8	1.1	24	1	71	.09	3	.5	1.1	20	SF2
		21	1937	54.23	19	24.98	155	25.51	11.23	1.8	1.1	31	2	50	.10	1	.4	.8	22	KAO
		22	955	52.04	19	23.86	155	2.50	7.58	1.3	1.4	23	0	117	.13	3	.5	.9	14	SF5
		22	2015	54.53	19	17.99	155	14.14	5.75	1.3	1.3	22	0	114	.09	2	.6	1.2	20	SF2
		22	2335	37.63	19	24.32	155	26.34	8.56	1.6	1.5	30	2	49	.11	3	.4	.9	23	KAO
		23	116	23.76	19	20.52	155	12.88	7.96	2.0	2.1	41	3	65	.12	4	.5	.7	24	SF2
		23	130	29.83	19	19.79	155	12.16	8.12	1.5	1.6	30	2	83	.11	4	.5	.9	20	SF3
		23	137	59.99	19	59.55	155	35.90	11.64	2.5	2.3	17	4	164	.12	24	.8	.8	11	KOH
		23	917	15.84	19	20.53	155	6.95	6.87	1.6	1.1	27	1	96	.10	5	.5	1.0	16	SF4
		23	1026	25.54	19	20.04	155	6.65	7.48	2.1	1.7	13	1	205	.06	6	1.2	1.5	12	SF4
		23	1038	38.87	19	25.71	155	24.28	7.65	2.3	1.9	34	3	48	.12	2	.4	.9	26	KAO
		23	18 9	26.26	19	24.80	155	16.84	12.24	1.9	1.2	46	4	36	.12	0	.4	.4	28	INT
		23	2053	18.36	19	19.04	155	11.79	5.59	1.7	1.2	28	3	105	.12	5	.5	1.3	18	SF3
		23	2133	45.65	19	26.80	154	53.61	8.19	2.1	1.8	36	2	157	.15	3	.9	.5	24	LER
		23	2224	27.69	19	12.43	155	37.21	9.06	2.5	2.6	29	2	94	.17	5	.4	1.0	23	LSW
		23	2233	9.28	19	20.46	155	13.26	7.51	1.6	1.0	27	2	63	.10	4	.5	.8	19	SF2
		23	2333	15.29	19	17.87	155	12.97	7.21	1.7	1.1	28	2	113	.11	2	.5	1.0	15	SF2
		24	0 0	57.16	19	19.72	155	12.28	7.24	1.7	1.4	32	4	83	.10	5	.5	.8	19	SF3
		24	330	46.89	19	16.39	155	23.72	8.41	2.0	1.8	31	3	102	.11	4	.4	.8	22	SWR
		24	531	15.74	19	18.25	155	14.81	6.85	1.6	1.2	29	2	113	.10	3	.4	.9	16	SF1
		24	1355	55.29	19	21.03	155	13.17	9.36	1.8	1.3	28	3	58	.07	3	.5	.7	19	SF2
		24	1444	37.94	19	23.29	155	24.76	12.00	1.7	1.3	30	2	43	.10	4	.4	.9	26	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUN	24	1650	29.39	19	19.45	155	13.79	6.85	1.6	1.9	38	3	62	.13	5	.5	.9	24	SF2
		24	1713	42.75	19	19.13	155	9.75	8.40	1.7	1.7	26	1	104	.06	5	.5	.9	16	SF3
		24	2055	28.17	19	22.20	155	2.38	7.73	1.9	1.7	36	2	139	.11	4	.4	.6	20	SF5
		25	615	59.29	19	20.51	155	12.13	8.15	2.0	1.9	33	3	72	.09	4	.4	.7	19	SF3
		25	811	23.25	19	43.89	155	11.20	36.94	2.5	2.3	45	1	139	.10	10	.7	1.7	39	KEA
		25	1043	2.92	19	20.66	155	3.77	8.46	2.1	1.8	37	1	98	.10	2	.6	.5	23	SF5
		25	1517	38.73	19	24.57	155	16.85	1.80	1.4	1.3	15	1	88	.06	1	.3	.2	8	SNC
		25	1522	15.46	19	24.11	155	17.06	2.89	1.8	1.8	19	4	67	.11	1	.4	.3	14	SSC
		25	1526	1.54	19	20.15	155	7.61	8.36	2.1	1.7	24	3	94	.08	5	.5	1.0	20	SF4
		25	1527	1.98	19	24.24	155	16.26	2.75	1.7	1.4	16	3	109	.06	1	.3	.3	9	SEC
		25	1543	22.74	19	24.18	155	16.33	1.67	1.6	1.8	20	4	103	.11	1	.3	.2	11	SEC
		25	1627	27.72	19	24.19	155	15.99	2.05	1.6	1.6	12	2	123	.09	1	.4	.4	10	SEC
		25	1715	3.87	19	24.41	155	16.98	1.46	.9	1.0	11	2	84	.07	1	.3	.2	9	SSC
		25	1730	21.14	19	18.50	155	15.55	5.81	1.9	1.6	34	3	107	.12	4	.4	1.0	27	SF1
		26	121	26.94	19	19.64	155	21.65	4.42	1.5	1.8	29	4	84	.12	3	.4	1.5	19	SWR
		26	554	47.64	19	48.40	155	32.95	8.11	2.0	1.3	16	1	138	.14	23	.8	1.7	8	KEA
		26	10 4	55.02	19	24.41	155	15.46	.05		2.1	13	1	152	.10	2	.4	.6	7	SEC
		26	1453	11.78	19	20.81	155	7.08	7.24	1.8	1.5	33	4	92	.10	4	.4	.9	17	SF4
		26	17 5	31.14	19	23.52	155	16.79	2.74		1.8	25	3	47	.08	0	.3	.2	20	SSC
		26	1848	21.65	19	25.21	155	17.08	1.67	1.5		22	1	119	.06	1	.3	.2	11	SNC F
		26	1848	31.53	19	25.90	155	16.53	.39	2.3	2.6	14	3	164	.08	2	.3	.4	7	SNC F
		26	20 0	43.97	19	23.29	155	2.17	8.68	2.2	2.3	39	0	125	.12	4	.6	.5	24	SF5 F
		26	2042	7.45	19	23.31	155	16.84	2.47	1.6	2.0	30	2	40	.10	0	.3	.3	19	SSC
		26	2114	53.08	19	18.91	155	21.54	9.50	2.5	2.7	44	3	100	.13	4	.4	.5	32	SWR
		26	2117	53.67	19	23.44	155	17.07	2.66	1.3	1.3	18	2	56	.08	0	.3	.2	10	SSC
		26	2223	42.30	19	25.25	155	16.70	2.03	2.0	2.3	24	2	74	.08	1	.3	.3	20	SNC
		27	255	21.98	19	25.30	155	16.65	2.14	2.0	2.2	27	1	47	.09	1	.3	.2	17	SNC
		27	1050	40.66	19	16.80	155	13.56	2.48	2.1	1.8	36	0	159	.11	1	.6	.4	18	SSF
		27	1737	50.43	19	20.55	155	12.66	8.47	1.9	1.8	36	3	68	.09	4	.4	.6	23	SF2
		27	2143	34.90	19	16.67	155	12.14	2.21	1.4	1.1	29	0	165	.10	2	.8	.5	15	SSF
		27	22 9	42.09	19	17.07	155	12.18	2.43	1.4	1.1	28	0	172	.08	2	.7	.4	15	SSF
		28	025	54.38	19	20.67	155	11.49	7.82	1.6	1.3	28	2	70	.12	5	.5	1.0	22	SF3
		28	056	33.38	19	19.94	155	10.24	7.27	1.6	1.0	20	3	90	.08	4	.5	1.3	15	SF3
		28	326	24.79	19	24.24	155	17.52	2.42	1.2	1.4	19	0	77	.07	2	.3	.3	10	SSC
		28	524	46.48	19	18.43	155	15.44	8.22	1.8	1.5	27	1	118	.05	4	.4	.7	16	SF1
		28	1140	43.86	19	19.14	155	13.71	8.09	2.1	1.6	41	3	71	.12	4	.4	.7	29	SF2
		28	1631	50.44	19	20.11	155	10.77	8.91	1.6	1.1	30	3	84	.07	4	.5	.8	22	SF3
		29	23 S	7.24	20	12.26	155	37.62	27.54	2.8	2.4	23	4	249	.10	18	1.2	1.5	18	KOH
		29	2348	17.08	19	19.65	155	13.77	6.26	1.9	1.7	35	1	69	.11	5	.4	.7	17	SF2
		30	147	26.16	19	19.88	155	13.82	7.51	2.3	2.2	46	3	68	.12	5	.4	.6	35	SF2
		30	156	59.93	19	23.12	155	16.98	3.03	1.2	1.2	15	2	67	.10	1	.4	.5	10	SSC
		30	229	8.03	19	20.65	155	12.64	8.24	1.6	1.1	29	2	67	.12	4	.6	.9	17	SF2
		30	636	12.81	19	21.25	155	30.21	10.09	2.2	1.6	34	1	38	.09	5	.4	.9	23	KAO
		30	1146	25.71	19	18.86	155	13.26	11.02	3.5	3.5	48	3	126	.11	7	.5	.4	40	SF2 F
		30	1158	19.08	19	18.28	155	13.72	7.65	2.2	1.9	39	5	94	.11	2	.5	.6	23	SF2
		30	1431	32.76	19	20.24	155	11.79	8.07	2.4	1.9	37	3	79	.12	5	.5	.7	27	SF3
		30	2012	19.63	19	22.37	155	17.19	2.65	1.5	1.0	19	3	97	.07	2	.3	.4	13	SSC
JUL		1	141	3.83	19	24.75	155	24.47	10.44	2.1	1.4	33	4	32	.10	2	.4	.7	24	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUL	1	214	55.75	19	24.52	155	17.10	11.95	1.9	1.1	36	5	50	.10	1	.3	.5	22	INT
		1	321	13.36	18	56.25	155	19.50	24.65	2.4	1.6	37	1	251	.07	29	1.8	2.8	27	LOI
		1	5 8	44.41	19	27.53	155	23.72	6.05	1.9	1.3	20	2	104	.11	4	.4	1.1	12	KAO
		1	733	31.75	19	23.64	154	58.95	5.56	1.6	1.1	25	2	164	.15	3	.9	1.3	16	LER
		1	947	40.70	19	18.18	155	23.24	[illegible]	1.3	1.2	18	1	94	.07	4	.4	.9	13	SWR
		1	1133	42.65	19	19.98	155	11.24	8.22	2.6	2.4	40	1	86	.12	5	.4	.6	32	SF3
		1	2322	28.69	19	36.62	155	26.08	13.43	1.6	1.5	29	3	89	.07	5	.5	.4	23	KEA
		2	231	54.70	19	19.43	155	11.37	10.33	3.6	3.6	43	1	98	.08	6	.5	.4	41	SF3 F
		2	7 3	11.71	19	19.41	155	11.25	8.47	1.5	1.2	25	2	99	.08	6	.5	1.0	17	SF3
		2	1246	59.89	19	21.40	155	6.45	7.29	1.4	1.2	22	0	86	.09	3	.5	1.0	13	SF4
		2	1454	25.86	19	23.46	155	16.64	3.22	1.8	2.2	26	4	56	.09	1	.5	.2	17	SSC
		2	1522	25.15	19	23.53	155	16.69	3.18	1.8	2.1	26	4	50	.10	1	.3	.2	17	SSC
		2	2356	18.96	19	19.45	155	11.88	8.37	1.5	1.1	19	1	93	.06	5	.5	1.2	15	SF3
		3	116	34.89	19	21.03	155	24.24	9.44	1.6	1.3	22	3	49	.07	2	.4	1.0	17	SWR
		3	513	4.80	19	19.94	155	13.52	7.30	1.5	1.4	33	3	62	.11	5	.4	.7	21	SF2
		3	717	55.18	19	19.79	155	12.56	5.95	1.5	1.4	30	2	79	.12	5	.5	1.1	20	SF2
		3	1129	18.67	19	18.16	155	14.03	5.91	1.2	1.1	23	0	83	.10	2	.6	1.3	15	SF2
		3	1221	53.53	19	16.98	155	13.88	7.09	1.4	1.1	24	2	197	.06	1	.6	.9	14	SF2
		3	1237	16.78	19	22.11	155	1.61	6.38	1.6	1.7	29	0	149	.12	5	.6	.8	18	SF5
		3	1328	42.62	19	23.41	155	16.85	2.99	3.1	3.4	41	1	36	.11	0	.2	.2	26	SSC F
		3	21 6	54.46	19	19.59	155	6.85	8.01	1.6	1.5	33	3	122	.09	5	.4	.6	22	SF4
		3	2117	.52	19	25.63	155	28.03	9.94	2.2	1.8	40	3	57	.09	5	.3	.7	26	KAO
		3	2212	14.38	19	18.31	155	14.45	8.74	2.0	1.9	43	4	89	.11	3	.4	.5	26	SF2
		3	2332	40.47	19	23.12	155	17.09	2.64	1.5	1.3	22	3	41	.09	1	.3	.3	15	SSC
		4	058	34.57	19	19.47	155	12.23	6.98	1.5	1.1	20	1	144	.11	5	.6	1.0	14	SF3
		4	224	43.88	19	19.87	155	12.48	8.92	1.6	1.0	23	3	197	.08	5	1.0	.8	11	SF2
		4	5 4	18.70	19	20.85	155	13.59	8.33	1.6	1.6	29	2	158	.11	3	.5	.6	21	SF2
		4	956	46.74	19	22.59	155	14.26	27.40	2.3	2.4	48	3	50	.10	2	.6	.8	43	DEP
		4	1240	.91	19	19.00	155	8.46	7.17		1.3	20	0	85	.08	3	.6	1.3	20	SF4
		4	1317	46.77	19	22.68	155	24.94	9.16	1.3	1.0	21	1	53	.09	5	.5	1.1	19	KAO
		4	1648	6.29	19	20.79	155	25.27	10.54	1.5	1.6	28	2	55	.09	4	.4	.9	16	KAO
		4	1712	1.40	19	26.56	155	23.57	3.68	2.1	2.0	29	2	55	.12	4	.3	.9	22	KAO
		4	1821	17.41	19	23.90	155	16.75	3.08	1.8	1.8	24	2	74	.09	0	.4	.3	17	SSC
		5	356	41.92	19	23.22	155	16.83	2.96	1.0	1.1	14	2	57	.06	0	.3	.3	10	SSC
		5	1024	49.25	19	24.17	155	16.79	2.87	1.6	1.5	26	4	78	.11	1	.3	.2	10	SSC
		5	1143	56.75	19	21.50	155	15.17	9.02	2.3	1.8	41	4	63	.10	2	.4	.5	27	SF1
		5	1450	55.23	19	20.01	155	6.62	9.03	2.9	3.0	43	2	115	.10	5	.5	.5	31	SF4
		5	1823	27.84	19	12.97	155	30.48	34.42	2.1	1.5	34	1	69	.06	4	.7	1.4	30	DLS
		5	22 9	55.60	19	23.95	155	16.77	2.91	1.8	1.7	20	3	85	.09	0	.3	.2	14	SSC
		6	140	59.54	19	7.56	155	27.60	46.38	2.6		25	0	172	.12	4	1.6	3.7	8	DLS T
		6	319	5.01	19	23.34	155	16.90	3.15	1.3	1.0	17	4	81	.07	0	.4	.3	10	SSC
		6	531	44.66	19	20.31	155	12.27	7.69	2.0	2.1	40	3	74	.11	5	.4	.6	30	SF3
		6	750	33.06	20	55.95	156	17.67	34.79	2.8	2.4	17	1	333	.14	19	3.6	.9	12	DIS
		6	1026	18.58	19	20.45	155	10.36	7.91	1.8	1.4	29	4	78	.08	3	.5	.6	13	SF3
		6	1030	38.60	19	20.65	155	11.75	9.71	3.0	3.2	47	2	73	.12	4	.3	.4	37	SF3
		6	1155	38.37	19	23.90	155	27.58	9.89	1.8	1.6	32	1	28	.11	3	.4	.7	21	KAO
		6	1250	25.63	19	19.38	155	11.33	8.34	1.8	1.3	29	1	99	.09	6	.5	.8	22	SF3
		6	1531	59.35	19	23.27	155	16.84	2.77	1.3	1.3	20	3	54	.07	0	.3	.2	14	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUL	6	1535	48.14	19	9.96	155	42.09	3.06	1.8	1.8	16	1	134	.17	13	.8	3.9	10	LSW
		6	1828	.60	19	21.32	155	1.98	6.42	2.1	1.6	33	1	162	.16	3	.6	1.0	20	SFS
		6	20 3	57.37	19	19.76	155	8.60	8.06	1.9	1.6	34	3	77	.09	5	.5	.8	22	SF4
		6	2050	59.08	19	23.29	155	16.68	2.91	1.5	1.4	20	3	53	.07	1	.3	.2	10	SSC
		6	2130	48.82	19	23.62	155	16.85	2.94	1.8	1.5	25	4	46	.06	1	.3	.2	17	SSC
		7	325	31.37	19	23.41	155	16.67	3.14	1.8	2.0	27	3	53	.09	1	.3	.2	21	SSC
		7	657	35.14	19	18.38	155	23.19	3.78	2.2	2.2	30	2	93	.11	3	.3	.9	20	SWR
		7	8 5	55.77	19	23.18	155	16.81	3.44	2.7	2.9	26	1	46	.09	2	.3	.5	22	SSC F
		7	1016	33.95	19	23.75	155	16.85	2.98	1.9	2.2	25	3	62	.09	1	.3	.2	18	SSC
		7	1349	50.68	19	11.61	155	32.29	6.05	1.9	1.4	29	2	94	.19	8	.6	1.2	18	LSW
		7	1426	6.99	19	20.08	155	11.71	7.27	1.8	1.2	28	3	82	.07	5	.4	.8	20	SF3
		7	1457	11.27	19	32.30	155	42.68	7.24	2.6	1.2	27	2	82	.11	7	.5	1.7	19	MLO
		7	1611	58.02	19	19.77	155	7.52	8.18	2.9	2.7	44	3	102	.10	5	.4	.5	33	SF4
		7	1617	54.16	19	20.57	155	8.34	7.35	2.2	2.2	41	2	76	.12	4	.5	.7	28	SF4
		7	1823	19.23	19	23.72	155	16.89	2.95	1.4	1.5	23	3	61	.09	1	.3	.2	16	SSC
		7	1841	13.57	19	23.90	155	16.62	3.02	1.8	2.3	26	4	81	.10	0	.3	.3	20	SSC
		7	2030	45.05	19	25.76	154	59.08	4.41	1.5	1.1	27	2	86	.15	1	.7	1.0	12	SLE
		7	2327	15.37	19	19.18	155	15.68	8.46	2.1	2.3	45	3	94	.11	3	.4	.5	26	SF1
		8	0 1	47.44	19	15.01	155	32.00	36.74	2.2		22	0	176	.14	3	1.3	3.4	10	DLS T
		8	1017	10.69	19	23.34	155	16.87	2.78	.9	1.0	16	2	54	.10	0	.4	.3	9	SSC
		8	1321	46.89	19	23.03	155	17.18	2.33	1.0	1.0	14	1	68	.06	1	.3	.4	12	SSC
		8	1846	24.21	19	23.37	155	16.87	3.07	2.1	2.1	28	4	36	.08	0	.3	.3	21	SSC
		9	135	49.15	19	19.87	155	8.25	7.75	2.1	2.4	34	1	84	.07	5	.4	.7	22	SF4
		9	358	13.95	19	23.75	155	16.83	2.87	1.6	1.7	23	3	61	.08	1	.3	.2	17	SSC
		9	5 0	19.31	19	23.18	155	17.14	2.65	1.2	1.0	19	3	62	.07	1	.3	.3	12	SSC
		9	5 4	39.21	19	23.65	155	16.87	2.48	1.3	1.4	22	4	50	.12	1	.3	.2	13	SSC
		9	745	26.27	19	23.44	155	16.85	2.94	1.2	1.3	21	2	50	.06	0	.3	.2	15	SSC
		9	11 2	39.09	19	25.72	155	37.50	2.37	2.4	2.1	16	0	92	.13	4	.5	1.0	12	MLO
		9	1236	45.92	19	22.92	155	16.91	2.93	2.1	2.1	24	5	47	.08	1	.2	.3	20	SSC
		9	1333	24.08	19	23.68	155	16.93	3.10	2.2	2.2	24	4	56	.09	1	.3	.2	17	SSC
		9	1512	21.18	19	25.97	155	37.52	3.61	3.0	2.9	32	2	83	.12	3	.4	1.0	30	MLO
		9	1829	12.61	19	23.90	155	16.99	2.96	1.6	1.4	15	3	74	.05	1	.3	.2	10	SSC
		10	034	42.00	19	16.73	155	23.39	7.41	1.3	1.1	14	1	106	.10	5	.6	1.6	12	SWR
		10	721	2.37	19	11.84	155	39.67	7.33	2.6	2.3	34	1	108	.20	7	.6	1.5	25	LSW
		10	1132	2.72	19	18.01	155	16.55	6.99	2.1	1.8	27	2	161	.11	4	.5	.9	18	SF1
		10	1557	45.89	19	20.95	155	6.11	8.27	1.9	1.7	21	2	97	.06	4	.6	1.2	18	SF4
		10	2056	25.45	19	20.09	155	13.05	9.73	2.1	1.8	24	2	69	.08	5	.5	.8	21	SF2
		10	2231	55.51	19	32.55	155	43.37	8.84	2.2	1.4	22	3	82	.10	6	.5	1.3	15	KON
		11	20 0	49.29	19	23.31	155	16.81	3.02	2.2	2.5	31	5	37	.08	0	.2	.2	25	SSC
		11	2148	44.97	19	20.04	155	11.85	9.48	2.7	3.0	47	4	81	.08	5	.4	.5	29	SF3
		11	2312	58.76	19	25.20	155	25.19	8.86	2.1	1.5	33	1	50	.11	0	.4	.9	26	KAO
		12	018	37.97	19	11.30	155	40.89	1.79	2.4	1.4	19	2	172	.12	9	.6	1.2	14	LSW
		12	3 2	32.67	19	12.01	155	41.08	3.52	2.4	1.3	25	2	172	.21	9	.9	3.4	20	LSW
		12	513	42.90	19	20.71	155	11.39	8.89	1.7	1.4	26	2	73	.07	4	.5	.7	21	SF3
		12	648	38.48	19	23.77	155	16.85	3.09	2.1	2.3	24	4	68	.06	1	.3	.2	16	SSC
		12	7 1	18.68	19	24.18	155	16.22	1.58	1.6	1.7	15	6	119	.07	1	.2	.3	10	SEC
		12	10 1	51.24	19	18.38	155	15.71	7.08	1.8	1.2	20	0	139	.10	4	.5	.8	19	SF1
		12	1043	43.47	19	21.13	155	5.87	8.13	1.8	1.3	20	0	128	.07	4	.6	.9	18	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUL	12	17 3	1.97	19	23.77	155	16.78	3.11	1.6	1.3	20	3	63	.08	0	.3	.2	10	SSC
		12	1722	46.82	19	24.36	155	16.24	1.52	1.8	2.1	21	4	113	.08	1	.2	.2	10	SEC
		12	1813	4.44	19	22.86	155	17.24	2.06	1.7	1.6	22	3	43	.10	1	.3	.3	12	SSC
		13	048	9.92	19	19.87	155	7.70	7.78	2.3	2.0	40	4	97	.11	5	.5	.8	26	SF4
		13	242	11.18	19	23.12	155	16.78	3.19	1.4	1.0	16	2	46	.09	1	.4	.4	12	SSC
		13	815	3.63	19	18.18	155	13.36	6.13	1.7	1.0	29	1	86	.09	2	.4	.9	15	SF2
		13	1118	20.99	19	17.98	155	13.31	6.71	1.6	1.6	32	0	92	.11	2	.5	.9	17	SF2
		13	1316	41.45	19	20.02	155	11.92	9.27	2.9	2.8	44	3	81	.09	5	.3	.4	33	SF3
		13	1756	50.64	19	19.42	155	15.41	7.94	2.2	2.3	41	2	88	.11	4	.4	.6	22	SF1
		13	18 1	23.20	19	18.89	155	29.73	10.40	2.4	2.1	37	2	55	.10	7	.4	.6	25	LSW
		13	2245	14.71	19	22.76	155	25.71	9.99	1.8	1.7	35	4	38	.11	3	.4	.6	22	KAO
		14	511	58.25	19	23.66	155	16.79	2.98	2.0	2.5	29	3	45	.10	1	.3	.3	20	SSC
		14	551	23.69	19	22.99	155	17.06	2.27	1.8	2.4	14	1	89	.08	1	.3	.3	12	SSC
		14	953	20.47	19	23.08	155	17.02	2.59	1.3	1.0	13	3	97	.08	1	.3	.4	9	SSC
		14	1417	50.16	19	23.30	155	16.91	3.08	2.0	1.7	24	4	56	.10	0	.3	.2	13	SSC
		14	1428	2.03	19	20.04	155	6.86	8.72	1.9	1.2	28	1	111	.07	5	.5	.8	22	SF4
		15	911	9.41	19	27.96	155	25.67	4.31	2.2	1.8	37	5	71	.13	5	.3	1.5	22	KAO
		15	1039	8.51	19	20.07	155	9.10	8.14	1.9	2.1	39	3	76	.12	4	.4	.7	23	SF4
		15	1324	51.80	19	18.87	155	14.00	7.05	1.4	1.2	23	2	95	.11	4	.6	1.2	12	SF2
		15	2246	5.51	19	23.29	155	16.87	2.98	1.3	1.2	17	3	56	.08	0	.3	.3	9	SSC
		16	950	5.41	19	22.84	155	16.91	2.53	1.6	1.6	19	3	76	.09	1	.3	.3	13	SSC
		16	17 5	36.27	19	23.64	155	16.88	3.08	1.3	1.0	18	3	49	.10	1	.3	.3	10	SSC
		16	1748	20.77	19	24.35	155	17.56	2.85	1.6	1.4	20	3	44	.11	1	.4	.3	14	SSC
		17	159	19.06	19	23.62	155	1.82	9.65	1.7	1.3	36	1	128	.11	5	.7	.5	20	SF5
		17	3 3	15.83	19	23.51	155	16.78	3.05	3.1	3.2	43	6	36	.11	0	.2	.2	29	SSC
		17	312	38.58	19	23.64	155	16.77	2.82	2.9	2.9	39	1	37	.11	1	.2	.2	24	SSC
		17	314	37.42	19	23.66	155	16.84	2.79	1.2	1.0	16	3	57	.05	1	.3	.3	11	SSC
		17	1056	31.31	19	20.15	155	12.81	7.91	1.6	1.1	27	2	71	.10	5	.5	.9	20	SF2
		17	1213	22.14	19	23.35	155	16.88	3.16	1.7	1.4	22	2	37	.09	0	.3	.3	13	SSC
		17	1234	44.17	19	23.37	155	16.81	3.05	2.4	2.2	28	2	40	.11	0	.3	.2	19	SSC
		17	1525	1.56	19	23.19	155	16.90	2.95	1.4	1.0	20	3	40	.07	0	.3	.3	12	SSC
		17	1536	7.69	19	23.44	155	16.94	3.25	1.7	1.2	18	3	45	.08	0	.3	.3	12	SSC
		17	1541	5.63	19	23.41	155	16.70	3.17	2.8	2.5	40	4	38	.10	0	.2	.2	24	SSC
		17	1732	21.14	19	19.79	155	7.53	8.94	2.4	2.3	40	3	102	.08	5	.4	.5	23	SF4
		17	1832	15.71	19	23.15	155	16.74	3.04	2.1	1.7	26	3	47	.09	1	.3	.3	15	SSC
		17	2135	48.31	19	20.35	155	6.87	8.93	2.4	2.3	45	3	104	.08	5	.4	.4	28	SF4
		17	22 8	6.94	19	25.63	155	16.68	2.17	1.7	1.3	17	2	151	.08	1	.5	.2	12	SNC
		17	2229	10.93	19	22.90	155	2.94	6.73	2.0	1.2	28	1	114	.14	4	.6	1.0	16	SF5
		17	2252	18.79	19	25.25	155	16.99	1.66	2.1	2.1	20	1	154	.10	1	.5	.2	13	SNC
		17	2330	42.60	19	20.36	155	11.28	8.84	2.1	2.0	38	2	79	.12	4	.4	.6	30	SF3
		18	0 8	55.52	19	19.94	155	12.57	7.18	1.6	1.2	28	1	77	.12	5	.5	.9	18	SF2
		18	114	52.14	19	23.81	155	16.87	2.92	1.6	1.1	15	2	76	.04	1	.3	.3	11	SSC
		18	2 2	32.59	19	12.25	155	27.27	7.62	2.5	2.2	37	1	118	.16	5	.5	.8	21	LSW
		18	228	7.12	19	23.92	155	16.06	3.03	1.9	1.6	23	3	107	.08	1	.3	.2	14	SEC
		18	338	34.78	19	19.92	155	11.91	7.49	1.7	1.1	31	2	83	.11	5	.5	.9	18	SF3
		18	931	26.07	19	23.76	155	16.72	3.27	2.1	1.7	18	1	79	.06	2	.3	.5	16	SSC
		18	1435	28.55	19	23.81	155	16.83	3.05	1.9	1.6	25	5	76	.08	0	.3	.2	14	SSC
		18	1441	13.27	19	23.23	155	16.79	2.88	2.2	2.2	18	1	45	.09	0	.3	.2	9	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUL	18	16 3	46.38	19	19.47	155	10.21	8.75	1.8	1.1	28	2	98	.06	5	.5	.8	20	SF3
		18	18 7	45.11	19	22.72	155	16.93	2.58	2.0	1.7	26	2	42	.09	1	.3	.3	17	SSC
		18	2016	4.65	19	19.68	155	13.81	6.70	1.6	1.1	34	2	69	.12	5	.4	.9	21	SF2
		18	2031	56.62	19	23.37	155	16.99	2.97	1.2	.9	20	4	47	.08	0	.3	.3	14	SSC
		19	438	48.57	19	20.38	155	12.05	7.42	1.8	1.3	31	3	74	.11	5	.5	.7	20	SF3
		19	1743	36.08	19	23.84	155	16.93	2.97	1.3	1.2	19	4	74	.06	1	.3	.3	12	SSC
		19	1756	39.77	19	23.74	155	17.08	2.18	1.3	1.0	19	4	67	.13	1	.3	.3	10	SSC
		19	2025	3.50	19	23.31	155	14.73	1.24	1.3	1.4	12	2	102	.07	3	.3	.5	6	SEC
		20	213	19.21	19	24.01	155	26.90	7.25	2.6	2.1	43	3	32	.12	3	.3	.7	35	KAO
		20	241	30.73	19	18.04	155	15.03	3.57	1.6	1.1	25	1	112	.10	3	.4	.9	16	SSF
		20	514	55.50	19	20.68	155	11.54	8.12	2.3	1.7	38	5	73	.11	4	.4	.6	27	SF3
		20	612	46.42	19	19.80	155	12.98	9.65	3.9	3.9	44	1	73	.11	5	.4	.4	38	SF2 F
		20	7 2	52.28	19	20.65	155	13.47	8.77	2.2	1.6	36	3	59	.10	4	.4	.6	25	SF2
		20	7 8	58.46	19	20.71	155	13.35	8.60	2.8	2.6	48	5	59	.11	4	.4	.5	30	SF2
		20	814	33.47	19	21.91	155	12.53	9.31	2.0	1.6	21	1	100	.15	2	.6	.7	16	SF2
		20	843	59.34	19	23.36	155	16.76	3.04	2.4	2.8	34	4	45	.10	0	.2	.2	23	SSC
		20	848	6.81	19	23.67	155	16.80	2.89	2.1	2.5	28	4	48	.10	1	.3	.2	20	SSC
		20	922	33.55	19	21.02	155	13.24	7.92	2.4	2.6	43	4	156	.13	3	.4	.5	30	SF2
		20	13 5	58.96	19	22.97	155	16.92	2.88	1.4	1.6	19	3	48	.06	1	.3	.3	15	SSC
		20	1554	33.82	19	20.09	155	12.58	7.89	2.0	1.9	40	4	74	.13	5	.4	.6	25	SF2
		20	1956	10.98	19	23.77	155	16.75	2.89	2.1	2.3	30	3	54	.12	0	.3	.2	22	SSC
		20	2050	28.44	19	22.62	155	17.04	2.97	1.3	1.1	20	2	47	.07	1	.3	.4	13	SSC
		20	2258	4.95	19	23.09	155	16.75	2.90	1.8	2.2	25	4	46	.10	1	.3	.3	18	SSC
		20	2318	43.90	19	23.23	155	16.85	3.25	1.3	1.3	18	3	46	.08	0	.4	.4	14	SSC
		21	139	35.18	19	23.45	155	16.97	2.67	2.5	2.8	36	3	30	.11	0	.2	.2	25	SSC
		21	318	20.82	19	23.60	155	17.27	2.55	2.0	2.1	23	2	52	.08	1	.3	.3	19	SSC
		21	539	32.64	19	23.89	155	17.22	2.63	1.3	1.4	21	5	62	.06	1	.3	.2	13	SSC
		21	651	38.08	19	23.37	155	16.68	3.08	2.3	2.4	35	3	38	.10	0	.2	.2	24	SSC
		21	743	55.48	19	23.33	155	16.78	2.97	1.4	1.2	21	4	46	.10	0	.3	.3	11	SSC
		21	752	49.78	19	23.30	155	16.85	2.70	2.8	2.8	35	2	38	.10	0	.2	.2	22	SSC F
		21	759	16.47	19	15.85	155	27.14	10.40	3.9	4.0	47	3	70	.13	5	.5	.4	42	LSW F
		21	1313	5.23	19	23.60	155	16.81	2.83	1.6	1.0	17	5	53	.07	0	.3	.2	13	SSC
		22	610	8.97	19	20.16	155	7.98	8.73	2.9	3.0	39	3	87	.06	5	.3	.5	29	SF4
		22	833	37.65	19	24.01	155	16.96	3.00	1.8	1.8	21	4	77	.08	1	.3	.2	13	SSC
		22	1617	9.05	19	19.32	155	12.53	5.53	1.4	1.6	33	1	88	.11	5	.4	1.1	21	SF2
		22	19 6	13.59	19	23.23	155	16.87	2.63	1.7	1.9	16	2	58	.08	0	.5	.3	10	SSC
		22	2242	5.42	19	20.64	155	11.00	8.71	1.6	1.3	27	3	75	.08	3	.5	.7	18	SF3
		22	2256	52.48	19	23.58	155	16.87	2.86	2.0	2.1	26	4	43	.09	0	.3	.2	16	SSC
		23	138	17.55	18	57.24	155	11.14	45.64	3.0	3.2	47	3	243	.08	37	1.4	1.8	36	LOI
		23	226	17.36	19	23.06	155	16.77	3.09	2.2	2.3	33	3	40	.11	1	.3	.3	21	SSC
		23	344	15.25	19	19.57	155	16.26	7.84	2.1	1.9	42	2	95	.13	2	.4	.7	23	SF1
		23	547	26.33	19	20.34	155	6.34	5.64	2.1	1.4	34	2	111	.11	6	.5	1.7	22	SF4
		23	650	10.20	19	19.03	155	13.37	7.04	1.8	1.4	32	1	75	.12	4	.5	.9	22	SF2
		23	1322	17.79	19	20.69	155	12.43	7.55	2.5	2.4	43	3	139	.14	4	.5	.6	34	SF2
		23	1827	15.06	19	24.99	155	17.42	1.52	1.6	1.4	15	1	116	.09	1	.4	.2	12	SNC
		23	2022	47.24	19	23.80	155	25.37	9.27	2.6	2.3	45	2	37	.12	3	.4	.6	32	KAO
		23	2344	24.05	19	19.83	155	8.33	8.33	2.1	1.8	32	2	84	.08	5	.4	.9	21	SF4
		24	824	26.19	19	24.66	155	17.46	.71	2.6	3.3	32	2	36	.12	1	.2	.2	22	SNC F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUL	24	1137	42.18	19	23.82	155	28.57	10.26	3.0	3.2	42	1	47	.10	3	.3	.5	35	KAO
		24	1142	45.36	19	23.64	155	28.64	9.23	1.7	1.4	32	1	47	.11	3	.4	.8	23	KAO
		24	1624	11.62	19	24.13	155	16.18	1.11	2.4	3.0	32	3	45	.14	1	.2	.2	20	SEC
		24	20	4 58.21	19	21.36	155	6.17	6.95	2.1	2.1	36	2	88	.11	6	.5	1.1	22	SF4
		24	2040	41.35	19	25.12	155	16.99	1.81	1.6	1.7	15	2	150	.11	0	.5	.2	10	SNC
		24	23	4 36.21	19	24.27	155	15.96	1.19	2.3	2.9	24	3	78	.09	1	.2	.2	11	SEC F
		25	0	4 51.92	19	25.10	155	15.92	3.25	1.3	1.5	16	2	160	.11	2	.6	.4	14	SNC
		25	057	11.55	19	24.30	155	16.17	1.38	1.6	2.1	18	3	127	.08	1	.2	.2	10	SEC
		25	323	39.13	19	23.44	155	16.80	3.12	1.2	1.1	19	4	45	.07	0	.3	.3	11	SSC
		25	324	36.92	19	23.39	155	16.84	3.20	.9	.9	17	3	53	.09	0	.3	.3	9	SSC
		25	433	14.54	19	22.48	155	17.20	2.77	1.0	1.2	20	2	92	.11	2	.3	.5	9	SSC
		25	8	7 18.96	19	20.87	155	13.31	8.20	1.5	1.5	27	2	59	.11	3	.5	.8	19	SF2
		25	14	9 8.32	19	23.22	155	16.95	3.04	1.7	1.9	17	2	59	.09	0	.5	.3	13	SSC
		25	1415	48.06	19	23.14	155	16.92	2.79	2.4	2.8	31	3	38	.09	0	.3	.3	24	SSC
		25	1432	13.35	19	20.64	155	13.19	8.36	1.8	1.8	28	2	62	.10	4	.5	.8	20	SF2
		25	1558	27.63	19	23.14	155	17.04	2.50	.9	1.1	13	2	75	.06	0	.3	.3	9	SSC
		25	1648	20.49	19	23.04	155	16.99	2.84	1.4	1.7	18	3	67	.08	1	.3	.3	11	SSC
		25	1940	4.88	18	56.65	155	10.81	37.37	2.7	2.8	43	1	244	.08	38	1.6	2.0	36	LDI
		26	047	29.25	19	24.20	155	15.98	1.18	2.5	3.1	26	4	42	.12	1	.2	.3	19	SEC
		26	311	7.57	19	24.92	155	17.25	1.45	2.3	3.0	22	1	73	.10	0	.3	.2	15	SNC
		26	740	35.17	19	23.16	155	17.04	2.59	2.5	2.9	33	4	36	.12	0	.3	.2	19	SSC
		26	743	7.35	19	19.58	155	9.79	8.55	1.5	1.1	20	2	92	.05	5	.6	1.0	15	SF3
		26	813	32.88	19	24.06	155	16.83	1.50	1.1	1.0	9	0	85	.10	2	.4	.5	9	SSC
		26	1152	56.83	19	23.42	155	16.80	2.89	1.4	1.6	21	4	41	.08	0	.3	.3	16	SSC
		26	18	8 44.64	19	23.14	155	16.96	2.50	1.2	1.0	13	3	118	.06	0	.3	.3	10	SSC
		27	144	33.67	19	23.01	155	17.01	2.37	1.8	1.6	24	4	68	.09	1	.3	.3	18	SSC
		27	343	8.83	19	21.06	155	15.41	7.86	1.6	1.1	27	2	70	.12	3	.5	.6	20	SF1
		27	847	2.67	19	19.06	155	15.78	8.71	1.8	1.8	13	0	187	.06	5	1.3	1.5	8	SF1
		27	1136	54.16	19	15.39	155	26.65	9.99	2.4	2.6	36	2	79	.10	5	.3	.5	22	LSW
		27	1243	29.68	19	19.77	155	10.30	7.87	2.0	1.8	36	2	91	.11	4	.4	.6	25	SF3
		27	1627	58.76	19	30.02	155	28.95	3.46	2.0	1.8	23	4	95	.10	4	.3	1.1	16	MLO
		27	1715	15.59	19	19.44	155	11.36	9.51	3.3	3.7	42	2	98	.11	6	.4	.4	36	SF3 F
		27	1854	15.02	19	23.82	155	16.93	2.75	1.7	1.8	24	5	65	.08	1	.3	.2	17	SSC
		27	2151	58.11	19	20.43	155	8.62	6.47	1.8	1.9	36	1	73	.15	4	.5	1.0	26	SF4
		27	2330	1.08	19	23.03	155	16.90	2.63	1.7	1.8	23	4	40	.08	1	.2	.3	17	SSC
		28	138	37.71	19	27.06	154	53.80	7.34	1.8	1.6	21	0	160	.13	3	.8	.9	16	LER
		28	356	24.38	19	19.85	155	13.09	3.94	1.7	1.3	32	2	71	.14	5	.4	1.4	19	SSF
		28	533	17.78	19	23.56	155	16.76	2.91	1.7	1.6	20	3	41	.09	0	.3	.3	17	SSC
		28	533	55.40	19	23.59	155	16.96	3.05	1.4	1.0	19	3	48	.09	0	.4	.3	12	SSC
		28	755	40.09	19	23.12	155	16.81	2.92	1.5	1.0	20	4	46	.09	1	.3	.3	14	SSC
		28	822	29.20	19	22.40	155	17.37	2.47	1.4	1.1	10	1	92	.07	3	.4	.7	10	SSC
		28	10	0 44.86	19	21.53	155	1.61	8.59	4.1	4.1	43	1	160	.10	4	.6	.4	40	SF5 F
		28	1018	33.92	19	21.81	155	1.98	7.89	3.3	3.3	43	2	145	.10	4	.5	.5	37	SF5 F
		28	1430	26.79	19	22.87	155	16.95	2.71	2.0	1.8	24	4	41	.08	1	.3	.3	16	SSC
		28	17	2 35.44	19	23.29	155	16.79	2.91	1.8	1.8	24	3	43	.10	0	.3	.3	19	SSC
		28	1929	54.37	19	20.14	155	11.53	6.96	2.0	1.5	35	4	82	.12	5	.5	.8	24	SF3
		28	2114	9.36	19	23.74	155	16.82	2.68	1.4	1.3	19	4	59	.09	1	.3	.2	14	SSC
		28	2117	6.66	19	23.72	155	16.93	2.95	1.6	1.3	20	3	63	.08	1	.3	.3	14	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	JUL	29	1	4 18.21	19	23.34	155	17.11	2.77	1.2	1.1	15	2	63	.05	0	.3	.3	10	SSC
		29	144	34.11	19	28.25	155	52.08	2.98	2.6	1.2	21	2	110	.10	6	.7	2.2	13	KON
		29	416	7.06	19	23.72	155	16.79	2.41	1.7	1.8	23	4	53	.09	0	.3	.2	17	SSC
		29	11	6 42.55	19	22.32	155	26.28	8.28	2.2	2.2	35	4	42	.12	2	.3	.7	27	KAO
		29	1121	49.26	20	3.23	155	48.01	23.76	2.1	2.2	27	3	182	.10	9	1.6	2.4	19	KOH
		29	1431	.16	19	23.54	155	16.93	2.92	1.8	2.1	20	1	45	.09	0	.3	.3	17	SSC
		29	1557	50.04	19	21.55	155	15.28	9.79	3.4	3.4	44	2	63	.10	2	.4	.4	32	SF1 F
		29	1643	1.27	19	23.15	155	16.71	3.07	2.3	2.8	27	3	59	.11	1	.3	.3	14	SSC
		29	1928	32.03	19	23.42	155	16.82	2.79	2.2	2.7	31	4	40	.09	0	.3	.2	23	SSC
		29	2127	45.79	19	20.74	155	13.02	9.11	2.0	2.2	39	4	62	.11	4	.4	.4	25	SF2
		30	1	6 5.62	19	23.65	155	16.93	3.19	1.6	1.7	20	3	54	.11	1	.4	.3	15	SSC
		30	131	19.44	19	23.78	155	16.71	2.63	1.8	2.2	21	2	54	.10	0	.4	.2	18	SSC
		30	233	27.63	19	22.30	155	17.29	2.75	1.1	1.1	15	1	98	.08	2	.3	.5	9	SSC
		30	351	12.01	19	22.89	155	17.05	2.64	1.5	1.7	20	3	49	.07	1	.3	.3	13	SSC
		30	921	40.80	19	20.94	155	47.74	11.31	2.4	1.7	26	2	101	.10	12	.5	.5	21	KON
		30	1148	33.87	19	20.78	155	12.72	9.20	2.3	2.1	40	2	64	.12	3	.4	.6	31	SF2
		30	1413	6.44	19	20.12	155	12.15	7.96	2.2	2.1	41	4	78	.12	5	.4	.5	27	SF3
		30	1938	32.28	19	19.98	155	7.21	7.70	1.6	1.1	22	3	106	.08	5	.5	1.2	17	SF4
		31	528	59.21	19	21.95	155	17.28	3.15	1.7	1.4	20	2	63	.07	3	.3	.5	13	SWR
		31	734	29.76	19	23.55	155	16.87	2.94	1.6	1.5	17	3	48	.08	0	.3	.3	11	SSC
		31	8	9 14.10	19	18.68	155	13.58	7.59	1.7	1.4	23	0	79	.15	3	.6	.9	20	SF2
		31	817	28.55	19	23.98	155	16.81	2.97	1.6	1.4	20	3	84	.09	0	.4	.2	11	SSC
		31	14	1 13.34	19	21.04	155	12.97	8.53	1.6	1.3	29	3	60	.09	3	.5	.7	15	SF2
		31	1645	6.05	19	19.81	155	8.22	6.57	1.9	1.8	34	2	86	.10	5	.5	.8	20	SF4
		31	18	4 24.69	19	23.74	155	16.77	1.85	2.0	1.9	23	2	55	.21	0	.4	.3	15	SSC
		31	1918	17.56	19	22.96	155	16.95	2.85	1.4	1.3	24	4	40	.09	1	.3	.3	14	SSC
	AUG	1	131	27.87	19	23.64	155	16.88	2.89	1.7	1.8	24	4	50	.08	1	.3	.2	16	SSC
		1	147	45.62	19	19.73	155	15.66	7.89	1.9	1.4	35	1	87	.10	3	.4	.7	27	SF1
		1	221	36.57	19	23.07	155	17.08	2.81	1.4	1.3	19	3	65	.11	1	.3	.3	12	SSC
		1	538	12.57	19	23.38	155	16.64	2.97	1.8	1.8	23	3	56	.09	1	.3	.2	17	SSC
		1	747	17.29	19	23.92	155	16.65	3.21	1.8	2.1	29	4	55	.09	0	.3	.2	15	SSC
		1	850	49.29	19	20.34	155	6.78	6.58	2.0	1.3	34	3	105	.12	5	.5	1.1	16	SF4
		1	1034	2.33	19	20.05	155	7.73	9.41	3.0	2.9	45	2	94	.10	5	.4	.3	29	SF4
		1	13	5 41.62	19	20.64	155	11.83	7.31	2.2	2.1	42	3	73	.13	4	.4	.7	32	SF3
		1	1633	36.17	19	23.06	155	16.88	2.78	1.8	1.4	23	4	65	.09	1	.3	.3	14	SSC
		1	1744	26.11	19	23.57	155	16.80	3.09	1.9	1.9	26	4	39	.09	0	.3	.2	20	SSC
		1	1745	27.84	19	23.38	155	16.78	3.04	2.7	2.6	39	5	42	.11	0	.2	.2	25	SSC
		1	1748	25.18	19	23.17	155	16.93	2.80	1.8	1.5	22	4	61	.08	0	.3	.3	16	SSC
		1	18	3 12.92	19	23.11	155	16.77	3.29	1.6	1.7	23	4	44	.12	1	.4	.4	18	SSC
		1	1816	34.30	19	23.88	155	16.91	3.04	1.3	1.1	18	3	75	.07	1	.4	.3	11	SSC
		1	2330	43.32	19	23.63	155	16.87	3.01	1.3	1.3	17	3	49	.07	1	.3	.3	12	SSC
		2	111	51.70	19	19.33	155	15.47	8.29	2.4	2.2	45	4	91	.13	4	.4	.6	28	SF1
		2	336	32.67	19	21.29	155	11.30	8.40	2.5	2.4	44	4	65	.13	3	.4	.5	30	SF3
		2	352	31.09	19	22.23	155	17.54	3.22	1.4	1.0	18	2	59	.06	2	.3	.5	10	SSC
		2	6	1 37.49	19	21.68	155	17.62	3.45	1.5	1.1	17	1	95	.07	3	.3	.6	12	SWR
		2	848	16.20	20	6.53	155	47.08	23.22	3.0	2.9	46	4	187	.11	2	1.2	1.3	35	KOH F
		2	9	2 40.04	19	24.15	155	29.52	8.90	1.9	1.2	27	2	51	.09	5	.4	.8	20	KAO
		2	918	36.74	19	24.42	155	17.50	3.47		1.3	12	1	87	.09	1	.6	.5	9	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	2	1045	28.56	19	23.60	155	19.84	12.96	2.1	1.6	38	5	45	.11	0	.4	.4	28	KAO
		2	1740	43.54	19	21.83	155	18.36	2.59	1.6	1.4	20	3	67	.11	4	.3	.7	13	SWR
		2	1750	4.79	19	21.96	155	18.19	2.72	1.6	1.3	25	4	55	.11	3	.3	.7	16	SWR
		2	1819	24.52	19	22.78	155	17.22	2.58	1.7	1.4	25	5	42	.10	1	.3	.4	20	SSC
		2	1843	26.72	19	21.74	155	1.52	7.73	2.1	1.3	35	2	158	.13	4	.6	.6	16	SFS
		2	21	6 12.01	19	21.73	155	18.07	2.63	1.4	1.1	24	6	75	.11	3	.3	.6	16	SWR
		2	23	7 44.76	19	21.71	155	17.48	3.23	1.5	1.2	22	3	57	.10	3	.3	.5	15	SWR
		3	0	3 21.13	19	23.75	154	58.03	7.84	2.4	2.0	41	3	171	.14	3	.6	.4	25	LER
		3	539	.30	19	21.73	155	18.17	2.85	1.2	1.0	18	2	76	.09	3	.3	.7	12	SWR
		3	556	5.79	19	21.91	155	17.87	2.73	1.9	1.6	27	4	55	.11	3	.3	.6	18	SWR
		3	758	8.12	19	21.65	155	18.29	2.63	1.4	.9	17	2	69	.08	3	.3	.7	12	SWR
		3	11	5 16.96	20	2.81	155	46.95	23.53	2.0	2.0	37	3	169	.09	9	1.5	2.3	26	KOH
		3	1143	58.70	19	23.85	155	.48	7.74	2.4	2.0	35	4	144	.13	4	.5	.7	29	SFS
		3	1341	47.89	19	21.67	155	18.07	3.17	1.9	1.8	25	4	53	.09	3	.3	.6	17	SWR
		3	1626	34.30	19	22.14	155	17.36	2.72	1.8	1.9	24	2	54	.10	2	.3	.4	15	SSC
		3	1815	26.24	19	25.31	155	24.24	9.44	2.0	1.6	34	3	45	.09	2	.4	.7	25	KAO
		3	2013	42.72	19	21.59	155	18.30	3.10	1.6	1.2	20	3	56	.07	3	.3	.6	12	SWR
		3	2124	22.28	19	21.69	155	17.78	2.97	1.8	2.0	26	2	51	.11	3	.3	.5	18	SWR
		3	2125	41.87	19	21.67	155	18.29	2.82	1.6	1.5	22	4	56	.10	3	.3	.6	17	SWR
		3	2136	32.04	19	21.87	155	18.06	2.69	1.8	1.8	27	5	58	.13	3	.3	.6	21	SWR
		3	2151	36.81	19	26.71	155	24.45	8.32	2.0	1.6	33	3	47	.12	3	.3	.7	22	KAO
		3	2246	24.45	19	21.53	155	18.04	3.28	1.8	1.4	20	3	60	.10	3	.3	.7	13	SWR
		4	125	3.24	19	16.83	155	29.88	7.16	2.0	1.8	24	1	76	.17	3	.5	1.5	17	LSW
		4	318	3.04	19	25.52	155	16.65	1.84	2.3	2.4	23	2	123	.07	1	.4	.2	18	SNC
		4	456	9.98	19	21.71	155	18.42	2.63	1.4	1.0	20	5	69	.09	3	.2	.6	12	SWR
		4	526	7.85	19	21.50	155	17.83	3.44	2.0	1.7	25	4	55	.10	3	.3	.5	13	SWR
		4	747	50.64	19	27.80	155	26.87	9.44	3.0	2.6	46	5	59	.12	6	.3	.6	28	KAO F
		4	18	0 40.40	19	19.50	155	11.73	6.69	1.7	1.3	31	3	94	.09	5	.5	.9	19	SF3
		4	1939	54.13	19	22.26	155	17.41	3.07	1.3	1.0	19	3	60	.09	2	.3	.5	12	SSC
		4	2136	52.57	19	21.69	155	18.21	3.13	1.8	1.9	24	3	53	.11	3	.3	.6	17	SWR
		4	2310	56.56	19	21.82	155	18.29	2.88	1.4	1.2	19	2	73	.11	4	.4	.7	13	SWR
		5	011	44.11	19	20.56	155	10.81	7.87	1.7	1.8	40	1	77	.12	3	.4	.6	32	SF3
		5	054	26.32	20	.03	155	33.52	8.93	2.3	1.8	25	2	176	.10	26	.7	.5	13	KEA
		5	426	54.78	19	21.75	155	18.16	2.94	1.4	1.1	19	2	57	.07	3	.3	.6	13	SWR
		5	440	24.21	19	20.14	155	10.42	8.14	2.2	1.1	30	1	87	.10	4	.5	.8	21	SF3
		5	1151	39.02	19	15.12	155	34.99	7.13	1.5	1.3	31	3	68	.19	4	.5	1.0	20	LSW
		5	1648	.43	19	22.31	155	17.19	3.15	1.5	1.7	21	4	61	.07	2	.3	.4	14	SSC
		5	1745	35.28	19	15.69	155	3.14	45.85	2.4	2.0	44	0	206	.10	8	1.2	1.9	39	DEP
		5	1815	15.67	19	21.85	155	17.70	3.72	2.1	2.3	31	3	52	.10	3	.3	.6	18	SWR
		5	19	5 23.29	19	22.52	155	17.23	2.67	1.5	1.6	23	4	51	.11	2	.3	.4	16	SSC
		5	2026	56.94	19	21.72	155	18.28	2.80	1.2	1.1	18	2	68	.10	3	.3	.7	12	SWR
		5	2120	59.94	19	21.69	155	17.75	3.61	1.6	1.4	23	5	60	.17	3	.4	.8	15	SWR
		5	2132	1.17	19	22.27	155	17.30	2.82	1.3	1.3	22	3	59	.10	2	.3	.5	14	SSC
		5	2224	28.62	19	23.09	154	59.01	7.51	2.0	1.6	28	1	181	.12	4	.7	.6	22	LER
		6	0	0 30.06	19	26.66	155	29.39	10.70	1.9	1.3	25	1	68	.07	8	.4	1.2	21	KAO
		6	1	7 56.23	19	21.74	155	18.26	2.72	1.4	1.3	16	2	74	.08	3	.3	.7	10	SWR
		6	113	46.29	19	21.68	155	18.07	3.16	1.1	.8	18	1	66	.07	3	.3	.6	13	SWR
		6	114	5.22	19	21.63	155	18.14	2.98	1.7	1.7	17	2	58	.09	3	.3	.7	14	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	6	10	9 24.77	19	23.52	155	16.89	3.12	1.3	1.1	18	3	49	.06	0	.4	.3	12	SSC
		6	1032	50.19	19	22.03	155	18.04	3.17	1.5	1.1	18	4	80	.09	3	.3	.6	9	SSC
		6	11	0 20.49	19	21.77	155	18.49	2.54	2.1	2.0	28	4	65	.11	4	.3	.6	19	SWR
		6	13	0 18.05	19	46.27	155	2.24	39.56	3.2	2.5	47	2	212	.11	8	.9	1.7	43	HIL
		6	1755	50.81	19	22.98	155	17.03	3.00	2.1	2.1	30	3	37	.10	1	.2	.3	20	SSC
		6	1815	26.52	19	20.01	155	8.00	8.45	2.1	2.1	42	4	88	.10	5	.4	.6	28	SF4
		6	2317	25.03	19	23.38	155	17.05	2.58	2.5	2.9	42	4	35	.12	0	.2	.2	28	SSC
		7	029	56.82	19	22.42	155	16.96	3.01	1.5	1.7	25	4	55	.10	2	.3	.4	16	SSC
		7	3	1 57.93	19	23.00	155	17.05	3.01	1.2	1.0	17	3	48	.11	1	.3	.4	10	SSC
		7	347	58.65	19	21.94	155	1.65	6.89	2.1	1.6	26	3	159	.11	4	.5	1.0	17	SF5
		7	947	7.27	19	21.64	155	17.68	3.08	1.4	1.1	18	3	62	.10	3	.3	.6	12	SWR
		7	1210	38.55	19	22.41	155	17.42	3.14	1.6	1.6	20	2	89	.11	2	.3	.5	14	SSC
		7	1319	59.87	19	19.92	155	6.75	7.94	2.1	1.7	37	2	116	.09	5	.4	.7	21	SF4
		7	1640	24.07	19	22.27	155	17.37	2.59	1.4	1.2	18	2	59	.09	2	.3	.5	15	SSC
		7	1657	2.10	19	23.72	155	16.91	3.02	1.6	1.1	16	3	61	.06	1	.3	.3	11	SSC
		7	1658	23.64	19	23.47	155	16.88	2.72	2.4	2.4	36	4	36	.10	0	.2	.2	28	SSC
		7	1737	15.59	19	21.86	155	17.98	2.73	1.2	.9	16	2	82	.07	3	.3	.7	13	SWR
		7	1911	34.41	19	23.13	155	17.00	2.48	2.6	2.9	41	3	37	.11	0	.2	.2	27	SSC
		7	1938	20.18	19	23.76	155	16.74	3.10	2.0	2.2	27	4	55	.09	0	.3	.2	18	SSC
		7	2324	13.57	19	22.88	155	17.03	2.24	1.5	1.3	19	4	58	.07	1	.2	.3	11	SSC
		8	547	26.38	19	21.35	155	18.11	2.44	1.5	1.1	16	3	68	.06	3	.3	.6	9	SWR
		8	714	47.53	19	22.46	155	17.16	3.26	1.4	1.0	17	2	55	.09	2	.3	.5	13	SSC
		8	728	5.94	19	19.92	155	11.86	7.22	2.4	2.2	42	5	84	.13	5	.4	.6	26	SF3
		8	758	7.26	19	25.91	155	24.64	9.14	1.8	1.3	27	3	47	.09	2	.4	1.0	22	KAO
		8	848	15.84	19	23.66	155	16.72	3.25	1.6	1.1	22	3	42	.08	1	.3	.3	15	SSC
		8	10	0 39.72	19	21.61	155	18.05	2.82	2.7	2.9	43	3	32	.12	3	.3	.5	26	SWR
		8	1259	19.33	19	21.74	155	17.98	2.54	1.9	1.7	30	3	50	.11	3	.3	.5	17	SWR
		8	15	2 37.10	19	19.37	155	11.58	8.34	1.7	1.2	26	2	98	.08	5	.5	1.0	21	SF3
		8	15	4 5.46	19	21.92	155	18.07	3.12	1.8	1.4	22	4	76	.13	3	.3	.7	15	SWR
		9	539	37.17	19	18.10	155	15.11	7.43	1.8	1.3	21	0	111	.10	4	.6	1.0	20	SF1
		9	825	2.46	19	21.65	155	18.26	2.85	1.4	1.4	19	2	68	.09	3	.3	.6	15	SWR
		9	9	2 21.79	19	21.57	155	7.19	8.66	2.0	1.7	29	2	78	.08	3	.4	.8	21	SF4
		9	929	28.92	19	22.89	155	17.22	2.24	1.3	1.2	18	5	73	.06	1	.2	.3	14	SSC
		9	1720	55.20	19	23.69	155	16.85	3.04	1.6	1.3	22	5	54	.07	1	.3	.2	18	SSC
		9	1723	40.59	19	19.59	155	10.73	8.31	2.1	1.9	35	3	96	.07	5	.3	.6	24	SF3
		9	1732	13.65	19	21.54	155	18.15	2.17	1.4	.9	18	6	111	.07	4	.3	.7	14	SWR
		9	1750	40.40	19	17.75	155	12.98	6.63	1.6	1.3	30	3	119	.10	2	.4	.9	20	SF2
		9	1751	26.52	19	23.26	155	16.81	3.00	2.3	2.5	34	7	41	.10	0	.2	.2	26	SSC
		9	1820	29.93	19	19.96	155	13.14	8.53	2.3	2.2	41	3	68	.10	5	.4	.6	30	SF2
		9	19	0 35.63	19	21.98	155	18.10	2.85	1.2	.9	17	5	91	.09	3	.3	.7	13	SWR
		9	1932	38.72	19	22.84	155	17.01	2.80	1.4	1.4	19	4	76	.06	1	.3	.3	15	SSC
		9	1941	37.31	19	23.83	155	16.93	2.83	1.7	2.0	23	6	74	.07	1	.3	.2	16	SSC
		9	2027	7.58	19	22.84	155	17.18	2.54	1.5	1.3	15	5	86	.09	1	.3	.4	10	SSC
		9	2133	4.33	19	21.72	155	18.06	3.01	2.1	2.4	26	5	58	.08	3	.3	.5	20	SWR
		9	2253	56.59	19	21.81	155	18.27	2.94	1.6	1.1	20	4	67	.07	4	.3	.6	15	SWR
		9	2254	24.33	19	21.56	155	18.18	2.99	1.7	1.1	17	4	76	.07	3	.3	.7	14	SWR
		10	220	21.36	19	22.95	155	17.20	2.21	1.4	1.3	18	6	70	.06	1	.2	.3	14	SSC
		10	331	49.49	19	22.41	155	17.34	2.53	1.6	1.0	21	6	92	.10	2	.3	.4	16	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	10	332	20.52	19	22.63	155	17.12	2.85	1.4	.7	16	4	85	.07	1	.3	.4	12	SSC
		10	334	56.24	19	22.54	155	17.19	3.11	1.4	.9	18	5	89	.08	2	.3	.4	14	SSC
		10	335	18.38	19	22.53	155	17.25	2.88	1.3	.8	15	4	88	.04	2	.3	.4	13	SSC
		10	339	43.35	19	22.46	155	17.44	2.38	1.1	1.1	16	3	87	.16	2	.4	.6	14	SSC
		10	342	17.31	19	23.41	155	16.90	2.99	2.0	1.6	21	5	40	.08	0	.3	.2	17	SSC
		10	343	49.64	19	22.27	155	17.47	2.78	1.4	1.0	17	4	93	.07	2	.3	.5	14	SSC
		10	344	52.63	19	22.45	155	17.31	2.78	2.0	1.7	22	4	53	.09	2	.3	.4	20	SSC
		10	347	53.41	19	23.15	155	17.09	2.86		1.3	14	3	63	.08	1	.3	.3	12	SSC
		10	348	12.19	19	22.37	155	17.42	2.69	1.4	1.5	17	3	56	.07	2	.3	.4	14	SSC
		10	349	40.15	19	22.35	155	17.23	2.92		1.7	20	4	54	.07	2	.3	.4	18	SSC
		10	350	38.69	19	22.50	155	17.20	2.84		1.4	20	5	53	.07	2	.3	.4	17	SSC
		10	351	19.14	19	22.93	155	17.08	2.29		1.5	17	3	49	.08	1	.3	.3	15	SSC
		10	352	9.59	19	22.87	155	17.16	2.35		1.8	15	4	74	.09	1	.3	.3	13	SSC
		10	353	46.57	19	22.92	155	16.91	2.92	2.3	2.4	36	4	39	.09	1	.2	.2	23	SSC
		10	357	35.87	19	22.95	155	17.02	2.65		1.1	15	3	73	.04	1	.3	.3	13	SSC
		10	357	58.14	19	23.01	155	17.17	2.09		1.1	15	4	77	.08	1	.3	.3	13	SSC
		10	358	57.92	19	22.10	155	17.40	3.09	2.0	2.1	32	3	53	.09	3	.2	.4	21	SSC
		10	359	54.76	19	22.28	155	17.46	2.56	2.4	2.8	27	3	53	.10	2	.2	.3	18	SSC
		10	4	0 55.35	19	22.27	155	17.29	3.08	2.2	2.1	33	4	54	.07	2	.2	.3	22	SSC
		10	4	2 11.97	19	22.91	155	17.03	2.69		1.3	14	3	73	.09	1	.4	.4	12	SSC
		10	4	3 28.08	19	22.27	155	17.48	2.98	1.4	.8	19	3	55	.08	2	.3	.5	17	SSC
		10	4	4 59.70	19	22.99	155	17.02	2.60		.8	15	4	69	.07	1	.3	.3	13	SSC
		10	4	5 12.13	19	23.10	155	17.12	2.66	1.4	1.7	18	4	64	.10	1	.3	.3	15	SSC
		10	4	8 46.78	19	22.84	155	16.97	3.57		1.0	10	2	100	.10	1	.5	.6	9	SSC
		10	4	9 56.92	19	22.96	155	16.98	2.84		1.4	17	4	73	.09	1	.3	.3	15	SSC
		10	410	59.23	19	23.29	155	16.36	1.97		.7	12	4	72	.08	1	.3	.2	10	SEC
		10	411	57.25	19	23.44	155	16.97	3.02	1.3	1.7	19	3	46	.09	0	.4	.3	16	SSC
		10	412	24.94	19	23.18	155	17.05	2.49	1.4	1.9	19	3	62	.04	0	.3	.2	15	SSC
		10	414	36.72	19	22.93	155	17.09	2.89	1.4	1.6	17	4	71	.08	1	.3	.3	15	SSC
		10	417	6.55	19	23.61	155	17.00	3.00	2.6	2.3	29	4	38	.10	0	.3	.2	23	SSC
		10	419	4.09	19	23.28	155	16.98	2.83	2.1	2.0	26	4	58	.08	0	.2	.2	18	SSC
		10	420	19.79	19	23.02	155	16.91	2.64	2.2	2.4	26	4	39	.09	1	.2	.2	20	SSC
		10	421	56.51	19	23.84	155	16.74	2.53	2.2	2.9	26	5	68	.10	0	.2	.2	20	SSC
		10	451	42.30	19	23.53	155	16.85	3.35	2.8	1.9	28	5	36	.10	0	.3	.2	24	SSC
		10	453	25.20	19	24.48	155	12.79	9.80			6	1	271	.14	3	3.4	3.1	5	SFZ
		10	456	52.86	19	22.80	155	16.29	1.65	2.0	1.9	17	4	58	.07	1	.2	.2	13	SEC
		10	458	3.06	19	22.86	155	16.83	2.62	2.0	1.2	27	4	41	.08	1	.2	.2	22	SSC
		10	459	4.89	19	23.38	155	16.80	3.56		1.1	18	2	45	.11	0	.3	.4	15	SSC
		10	5	0 .29	19	22.87	155	17.58	1.09	1.8	1.6	11	1	101	.14	1	.4	.5	10	SSC
		10	5	4 22.26	19	23.35	155	16.74	2.90	2.0	1.3	20	5	53	.06	0	.2	.2	14	SSC
		10	5	6 35.32	19	23.07	155	16.30	1.96		1.0	19	4	67	.07	1	.2	.2	14	SEC
		10	516	26.79	19	22.92	155	16.36	1.84	2.3	1.5	14	3	84	.08	1	.3	.2	12	SEC
		10	526	28.24	19	20.11	155	19.46	2.32	1.5	1.4	11	1	113	.09	4	.4	.8	9	SWR
		10	530	26.49	19	21.15	155	19.19	3.14	2.1	1.1	23	4	49	.08	4	.3	.7	17	SWR
		10	532	19.58	19	23.00	155	15.86	1.28	3.1	1.9	17	2	69	.11	1	.2	.2	11	SEC
		10	533	35.43	19	21.31	155	19.37	2.50	2.1	1.7	21	2	51	.10	4	.3	.7	13	SWR
		10	542	9.38	19	23.09	155	16.51	2.08	4.2	3.8	44	1	42	.16	1	.3	.4	33	SSC
		10	548	53.59	19	20.70	155	17.66	3.09		1.2	10	2	133	.17	4	.8	1.3	4	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	10	552	40.22	19	23.17	155	15.93	1.91	2.5	2.2	17	1	71	.13	1	.4	.3	14	SEC
		10	6	0 55.92	19	23.01	155	16.04	1.90	2.4	1.7	26	1	37	.10	1	.3	.2	20	SEC
		10	6	5 58.22	19	23.30	155	16.21	2.43	3.1	2.2	39	1	42	.12	1	.3	.2	27	SEC
		10	614	25.21	19	23.20	155	16.12	1.89	2.4	1.7	23	2	42	.11	2	.2	.2	14	SEC
		10	617	35.48	19	22.93	155	16.60	2.62		1.2	16	2	86	.08	1	.4	.2	12	SSC
		10	623	39.28	19	18.47	155	16.94	5.17	3.6	3.9	32	0	115	.14	3	.5	1.4	27	SF1
		10	630	56.88	19	22.78	155	17.29	2.42		1.3	9	2	146	.13	3	.5	.7	4	SSC
		10	637	30.45	19	20.66	155	19.87	.69	2.3	2.2	10	1	109	.13	4	.6	1.6	5	SWR
		10	646	7.20	19	21.54	155	19.50	2.25		1.4	12	1	192	.11	4	1.3	1.5	4	SWR
		10	7	1 58.70	19	21.49	155	18.98	2.09	2.8	2.4	29	1	44	.12	4	.3	.7	15	SWR
		10	7	4 34.05	19	21.51	155	18.99	1.43	2.5	1.2	6	2	311	.05	6	1.0	.6	3	SWR
		10	716	45.98	19	21.04	155	19.12	3.18	2.8	2.4	26	1	45	.12	3	.4	.8	13	SWR
		10	720	45.25	19	21.39	155	19.00	1.71	2.3	1.7	18	2	88	.09	4	.4	.8	6	SWR
		10	722	50.11	19	21.13	155	18.76	2.78	2.5	1.7	24	1	48	.14	3	.3	.7	10	SWR
		10	723	12.88	19	19.04	155	20.42	7.85	3.4	3.0	27	0	111	.16	12	.5	1.9	14	SWR
		10	732	34.45	19	20.90	155	19.88	5.62	2.6	2.3	28	2	89	.11	7	.4	1.8	13	SWR
		10	734	50.78	19	20.60	155	20.04	3.62		.8	16	1	88	.09	5	.5	1.3	11	SWR
		10	737	58.98	19	20.76	155	19.70	7.86	2.6	1.8	17	1	91	.11	7	.5	1.8	10	SWR
		10	743	28.55	19	20.49	155	20.43	3.11		1.3	11	1	95	.07	5	.5	.9	4	SWR
		10	747	51.74	19	18.53	155	20.78	1.09	3.4	3.0	40	1	115	.15	5	.4	1.1	20	SWR
		10	750	43.90	19	21.28	155	19.06	.37	2.4	1.7	18	3	87	.09	5	.3	.5	8	SWR
		10	8	2 17.33	19	20.53	155	20.33	3.46		1.0	24	1	63	.10	5	.3	1.1	20	SWR
		10	8	3 58.33	19	20.66	155	20.31	3.04	2.2	1.1	24	1	90	.09	5	.4	1.2	14	SWR
		10	820	8.74	19	19.07	155	21.11	4.67	4.2	3.9	40	0	106	.14	4	.4	2.0	27	SWR
		10	841	39.99	19	19.90	155	20.29	2.97	3.1	3.0	49	8	73	.07	5	.2	.5	37	SWR
		10	847	42.35	19	20.08	155	19.12	4.46		1.3	14	2	106	.12	3	.6	1.5	14	SWR
		10	851	12.40	19	25.08	155	18.14	5.58	2.4	2.0	19	4	175	.12	2	.6	.7	13	INT
		10	858	27.76	19	19.90	155	20.35	1.14	2.4	2.4	35	4	73	.10	5	.2	.5	21	SWR
		10	940	34.97	19	18.39	155	21.56	4.05	4.5	3.8	39	0	123	.20	5	.6	1.3	33	SWR
		10	959	13.09	19	19.92	155	21.32	2.92	2.1	1.3	24	2	78	.11	3	.3	.7	17	SWR
		10	1014	21.17	19	17.70	155	21.16	6.85	2.7	2.2	42	1	123	.16	5	.5	1.0	28	SWR
		10	1024	6.78	19	18.88	155	17.57	5.42	2.2	1.5	32	3	128	.17	2	.5	1.3	25	SWR
		10	1038	22.38	19	19.83	155	20.84	1.80	2.7	2.5	38	3	78	.12	4	.3	.6	24	SWR
		10	1043	58.96	19	19.81	155	18.57	6.06	3.1	2.5	46	4	63	.13	2	.4	.7	34	SWR
		10	12	1 44.76	19	18.51	155	21.11	3.13	1.8	1.6	27	2	112	.11	4	.4	.9	20	SWR
		10	1216	34.19	19	17.90	155	21.55	6.74	2.2	1.7	27	1	118	.13	5	.5	1.2	22	SWR
		10	13	2 57.77	19	20.67	155	20.44	.01	3.2	2.9	36	2	74	.16	5	.4	.7	20	SWR *
		10	13	5 52.05	19	19.41	155	21.92	5.02		1.1	28	3	88	.12	6	.4	2.4	18	SWR
		10	1314	.95	19	24.55	155	16.19	2.76		1.0	15	2	129	.06	1	.4	.3	12	SNC
		10	1329	11.28	19	17.74	155	21.65	7.10	3.6	3.4	47	3	119	.18	5	.5	.9	42	SWR
		10	1432	53.26	19	19.24	155	22.59	5.38	2.3	2.2	32	2	88	.14	7	.4	1.6	24	SWR
		10	1458	3.03	19	19.24	155	22.74	1.67	2.2	2.3	30	1	87	.11	8	.4	1.6	22	SWR
		10	15	5 16.92	19	19.27	155	22.78	6.65	2.6	1.9	45	1	86	.14	8	.4	.9	36	SWR
		10	1510	52.11	19	18.88	155	22.95	1.05	2.2	1.9	32	1	91	.13	8	.4	2.2	22	SWR
		10	1529	49.24	19	18.81	155	22.83	5.00	2.4	2.0	35	1	94	.12	8	.4	2.9	23	SWR
		10	1542	45.41	19	18.82	155	23.03	3.39	2.3	2.1	44	6	91	.10	3	.3	.5	38	SWR
		10	1559	8.15	19	18.73	155	23.04	8.42	2.9	2.7	47	8	92	.11	3	.3	.5	39	SWR
		10	1641	22.67	19	18.58	155	23.02	8.47	2.6	2.5	48	9	94	.14	3	.3	.6	35	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	10	1722	20.12	19	18.12	155	23.21	2.83	2.8	2.6	39	5	96	.09	4	.3	.5	27	SWR
		10	1729	26.09	19	18.37	155	23.61	4.65	2.4	2.6	40	6	89	.10	3	.3	1.0	31	SWR
		10	1731	24.71	19	18.42	155	23.58	4.51	2.5	2.2	38	7	88	.13	3	.3	1.0	30	SWR
		10	1736	20.68	19	16.00	155	22.52	3.80	2.8	2.3	36	1	134	.11	4	.3	.9	27	SWR
		10	1747	11.90	19	17.65	155	23.28	2.96	2.7	3.3	42	6	99	.10	5	.2	.6	28	SWR
		10	1754	30.23	19	18.02	155	23.56	3.09	2.1	1.9	28	6	92	.11	4	.3	.7	26	SWR
		10	1811	54.22	19	17.91	155	23.06	2.91	2.4	2.3	34	6	100	.11	4	.3	.7	26	SWR
		10	1815	56.65	19	17.53	155	23.46	3.32	2.4	2.2	36	4	98	.09	5	.3	.8	29	SWR
		10	1825	54.77	19	18.37	155	23.73	4.36	2.1	1.9	29	4	87	.08	4	.3	.9	24	SWR
		10	1853	46.63	19	18.01	155	23.52	5.19	3.6	3.1	47	8	93	.12	4	.3	.8	34	SWR
		10	19	7 44.71	19	17.95	155	23.42	3.35	2.4	1.9	31	4	94	.11	4	.3	.7	24	SWR
		10	1917	17.19	19	19.49	155	18.95	4.44	3.3	3.1	25	3	53	.14	3	.4	1.0	19	SWR
		10	1923	43.37	19	14.45	155	22.17	3.25	3.3	2.2	37	1	156	.10	3	.5	.7	26	SWR
		10	1938	28.26	19	17.87	155	23.25	2.50	2.4	2.0	33	6	97	.10	4	.3	.6	27	SWR
		10	1953	48.33	19	18.11	155	23.69	5.36	2.4	2.2	32	1	89	.12	4	.4	1.3	21	SWR
		10	2015	50.91	19	19.40	155	21.16	1.18	2.8	2.5	33	1	89	.13	4	.4	.8	15	SWR
		10	2023	8.62	19	18.00	155	23.72	4.96	2.4	2.7	41	3	90	.13	4	.4	1.3	24	SWR
		10	2032	36.03	19	15.81	155	23.92	3.04	2.0	1.7	5	0	122	.09	3	.8	1.9	5	SWR
		10	2035	59.87	19	18.07	155	23.69	4.91	2.6	2.5	42	4	89	.14	4	.4	1.5	26	SWR
		10	2046	29.02	19	18.66	155	23.14	2.76	3.0	1.9	17	2	91	.15	3	.5	.7	10	SWR
		10	2058	30.18	19	16.93	155	25.57	7.64	3.3	3.0	32	3	61	.17	6	.5	1.2	28	LSW
		10	2114	34.86	19	24.29	155	15.91	2.50	2.7	2.3	31	4	44	.13	1	.3	.3	24	SEC
		10	2127	50.17	19	24.73	155	16.78	2.67	1.8	1.0	13	3	139	.08	1	.5	.3	9	SNC
		10	2143	9.36	19	18.30	155	24.02	1.60	2.1	1.9	21	1	88	.12	7	.4	1.8	13	SWR
		10	2153	52.69	19	18.30	155	23.80	.57	2.3	2.3	38	4	86	.14	4	.3	.6	24	SWR
		10	22	8 55.92	19	18.94	155	20.25	.96	2.6	1.9	12	1	152	.19	5	.9	1.4	4	SWR
		10	2223	21.88	19	15.21	155	22.38	2.88	2.7	2.7	37	2	146	.12	3	.4	.8	27	SWR
		10	2256	12.15	19	17.27	155	23.26	3.51	2.1	2.8	18	3	103	.11	5	.4	1.2	10	SWR
		10	2256	36.83	19	20.05	155	20.93	1.10	2.5	2.6	25	0	75	.11	4	.4	1.0	13	SWR
		10	23	7 12.84	19	17.65	155	23.64	3.50	2.2	1.9	21	3	94	.11	5	.3	1.0	14	SWR
		10	2317	31.51	19	17.29	155	22.31	.47	1.9	1.9	19	1	118	.11	6	.4	1.0	12	SWR
		10	2318	20.87	19	15.86	155	22.95	7.08	1.7	1.3	26	5	132	.11	3	.5	1.1	22	SWR
		10	2326	45.41	19	17.61	155	23.52	3.37	2.4	2.5	37	4	96	.11	5	.3	1.0	29	SWR
		10	2328	18.42	19	18.60	155	23.27	3.08	2.0	1.2	22	2	91	.11	3	.3	.7	15	SWR
		10	2328	53.77	19	19.73	155	21.76	3.22	1.8	1.4	24	5	82	.10	3	.4	.6	19	SWR
		10	2335	11.95	19	18.09	155	23.65	4.04	2.8	3.1	32	3	90	.13	4	.4	1.4	23	SWR
		10	2343	40.84	19	16.05	155	22.04	3.73	1.8	1.5	25	4	138	.12	5	.5	1.7	20	SWR
		10	2349	51.50	19	17.29	155	23.57	3.31	1.9	2.1	23	2	98	.08	5	.4	1.1	17	SWR
		11	0	6 32.66	19	17.68	155	23.38	3.36	2.4	2.5	42	4	98	.12	5	.3	.9	26	SWR
		11	011	35.71	19	20.34	155	20.71	1.29	2.2	1.9	24	2	68	.10	5	.3	.9	18	SWR
		11	020	15.42	19	13.50	155	21.48	2.20	2.4	2.0	40	3	167	.12	5	.5	.8	21	SWR
		11	047	7.18	19	19.73	155	12.30	7.68	2.4	1.8	40	3	83	.12	5	.4	.6	30	SF2
		11	1	8 50.79	19	13.00	155	21.88	3.41	1.9	1.3	21	0	168	.09	5	.7	1.2	11	SWR
		11	123	5.52	19	22.29	155	17.17	4.00	2.1	1.4	10	1	115	.12	2	.7	.9	5	SSC
		11	130	12.82	19	18.16	155	23.52	3.94	2.3	2.3	38	4	94	.14	4	.4	1.2	27	SWR
		11	152	54.73	19	16.87	155	23.64	3.09	1.6	1.3	21	1	99	.13	5	.4	1.3	13	SWR
		11	159	58.88	19	15.55	155	21.77	8.05	2.2	1.8	40	3	145	.14	5	.6	.7	30	SWR
		11	214	32.61	19	18.17	155	23.55	3.86	2.7	2.6	44	4	91	.14	4	.3	1.1	23	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	11	222	14.98	19	16.30	155	14.92	5.77	2.1	1.4	31	1	178	.12	3	.7	1.2	21	SF1
		11	226	42.61	19	19.23	155	22.17	5.53	1.6	1.4	25	4	90	.10	3	.4	2.0	21	SWR
		11	229	53.82	19	13.75	155	22.07	3.65	2.0		30	1	162	.12	4	.5	1.0	14	SWR
		11	245	1.85	19	16.69	155	21.34	7.00	2.2	2.3	45	7	134	.13	5	.4	.7	32	SWR
		11	3	2 45.74	19	17.39	155	23.13	3.10	1.9	1.1	20	4	104	.07	5	.4	1.0	18	SWR
		11	3	4 13.56	19	16.59	155	22.24	6.51	2.2	1.8	38	2	131	.14	5	.4	1.1	27	SWR
		11	314	54.65	19	20.37	155	20.39	4.17	1.7	1.4	25	3	65	.12	5	.4	1.0	18	SWR
		11	329	31.54	19	16.98	155	24.09	2.64	2.9	2.9	42	2	89	.14	5	.3	1.1	23	SWR
		11	340	59.90	19	16.70	155	24.01	3.21	1.8	1.3	23	3	106	.11	4	.4	1.2	17	SWR
		11	345	49.28	19	17.84	155	23.68	2.71	2.6	2.1	29	1	92	.13	4	.4	1.0	18	SWR
		11	353	36.33	19	17.45	155	23.33	5.78	3.3	2.8	45	2	100	.12	5	.4	1.0	36	SWR
		11	4	6 23.56	19	24.08	155	15.66	3.11	1.6	1.0	14	4	117	.03	2	.4	.4	7	SEC
		11	421	50.25	19	18.19	155	23.53	1.38	2.8	2.9	44	3	91	.12	4	.3	.7	34	SWR
		11	446	40.75	19	19.69	155	21.50	3.40	1.8	1.3	21	3	82	.08	3	.4	.8	14	SWR
		11	456	50.38	19	20.71	155	20.40	2.81	1.8	1.4	21	2	61	.10	5	.4	.9	14	SWR
		11	5	8 5.93	19	18.06	155	23.34	2.46	2.1	1.5	25	2	94	.09	4	.3	.7	12	SWR
		11	539	57.06	19	18.12	155	23.57	3.79	2.5	2.5	44	5	91	.13	4	.4	1.1	33	SWR
		11	559	21.52	19	13.19	155	20.47	.01	1.9	1.1	25	1	174	.09	7	.5	.6	14	SWR *
		11	6	1 9.10	19	24.94	155	16.76	1.54	1.8	1.4	10	1	150	.08	0	.5	.3	3	SNC
		11	611	26.32	19	20.40	155	20.56	2.46	1.9	1.1	25	4	124	.11	5	.4	.9	21	SWR
		11	627	39.64	19	20.05	155	20.65	.82	2.0	1.1	20	1	73	.18	5	.4	1.0	14	SWR
		11	655	32.05	19	19.85	155	20.87	1.02	2.8	2.8	38	1	78	.11	4	.3	.7	19	SWR
		11	751	54.21	19	20.35	155	20.57	1.19	2.6	2.1	27	2	67	.09	5	.3	.6	20	SWR
		11	758	26.66	19	17.80	155	23.39	4.54	2.0	1.1	26	1	96	.09	5	.4	1.8	20	SWR
		11	830	36.01	19	14.72	155	20.65	1.23	2.0	1.4	33	3	159	.09	6	.5	.7	24	SWR
		11	847	29.83	19	13.66	155	23.30	8.88	3.1	2.4	40	1	157	.12	11	.5	.7	32	SWR
		11	849	27.24	19	19.73	155	21.40	3.47	2.0	1.1	24	2	82	.09	3	.4	.8	13	SWR
		11	856	49.73	19	18.80	155	20.40	.03	2.1	1.2	14	0	184	.19	3	1.3	3.2	8	SWR *
		11	9	3 51.01	19	18.17	155	15.91	9.27	2.7	1.5	38	1	137	.11	4	.5	.6	30	SF1
		11	911	22.44	19	16.69	155	23.69	5.49	2.4	1.8	27	1	122	.11	7	.5	2.3	19	SWR
		11	959	35.67	19	19.78	155	21.56	3.35	1.9	1.4	24	3	82	.07	3	.3	.7	19	SWR
		11	1024	58.81	19	20.45	155	20.34	1.48	2.5	2.6	19	1	64	.09	5	.3	.9	16	SWR
		11	1027	35.68	19	19.74	155	6.89	7.18	2.3	2.5	28	3	116	.10	5	.4	1.0	21	SF4
		11	1030	10.92	19	24.30	155	17.22	2.54	1.8	2.0	12	4	92	.10	1	.4	.4	10	SSC
		11	1040	18.59	19	20.66	155	19.98	2.58	2.1		22	3	58	.10	5	.3	.8	17	SWR
		11	11	1 27.83	19	19.75	155	21.51	2.84	1.8	1.1	18	2	82	.11	4	.4	.8	13	SWR
		11	1140	56.45	19	20.38	155	20.62	2.09	1.8	1.0	20	2	99	.10	5	.4	.9	17	SWR
		11	1143	58.65	19	19.89	155	21.56	3.45	2.0	2.1	27	3	79	.11	3	.4	.9	20	SWR
		11	12	0 49.52	19	20.87	155	19.51	3.56	1.6	1.3	22	4	51	.09	4	.3	.9	16	SWR
		11	1241	58.56	19	19.98	155	21.35	3.17	1.8	1.3	22	3	77	.07	3	.3	.6	17	SWR
		11	13	9 23.19	19	17.66	155	23.46	3.00	2.3	2.4	26	3	97	.10	5	.4	.9	16	SWR
		11	1320	36.23	19	16.60	155	15.24	10.47	2.2	1.7	29	5	207	.06	3	.8	.4	21	SF1
		11	1331	17.69	19	20.74	155	19.22	6.01	2.4	2.6	14	1	59	.19	3	.7	2.7	6	SWR
		11	1332	41.80	19	18.02	155	15.84	7.75	2.0	1.7	35	1	121	.11	5	.5	.7	24	SF1
		11	1334	27.72	19	20.49	155	20.19	2.96	1.8	1.6	20	4	62	.10	5	.4	.9	15	SWR
		11	1345	58.51	19	24.57	155	16.61	.87	2.5	2.6	10	1	134	.12	1	.5	.4	7	SNC
		11	1348	28.17	19	19.61	155	21.87	3.18	1.8	1.4	23	3	85	.10	3	.4	.6	17	SWR
		11	1352	45.32	19	17.44	155	23.60	3.52	2.2	2.0	29	3	92	.13	5	.4	1.3	21	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	AUG	11	1355	19.83	19	20.80	155	19.75	3.29	1.6	1.1	21	4	53	.08	4	.3	.8	17	SWR	
		11	14 7	10.68	19	17.96	155	15.93	7.39	1.7	1.5	32	2	123	.10	5	.5	.9	21	SF1	
		11	1436	8.18	19	20.24	155	21.26	2.92	1.8	1.7	23	5	72	.10	4	.3	.7	16	SWR	
		11	1440	37.59	19	22.88	155	15.02	1.68	1.8	2.0	21	4	66	.09	2	.3	.3	12	SEC	
		11	1455	31.36	19	13.48	155	20.94	.15	2.0	1.9	28	0	159	.13	6	.6	2.0	25	SWR	*
		11	15 4	17.95	19	13.19	155	20.56	.86	2.9	2.8	43	2	171	.11	6	.5	.9	27	SWR	
		11	15 6	54.07	19	13.06	155	20.54	.02	1.8	1.4	24	1	184	.12	7	.6	.8	17	SWR	*
		11	1540	41.96	19	17.58	155	23.84	3.06	2.1	1.8	30	3	91	.12	5	.4	1.2	25	SWR	
		11	1548	30.46	19	18.88	155	23.10	4.19	2.0		27	3	89	.10	3	.4	1.0	21	SWR	
		11	1553	52.51	19	20.18	155	21.04	1.35	1.4	1.9	16	0	73	.12	4	.4	1.0	13	SWR	
		11	1652	24.01	19	20.40	155	20.49	1.68	1.8	1.9	19	3	66	.09	5	.3	.8	15	SWR	
		11	1653	9.95	19	20.42	155	20.56	3.12	1.7	1.9	20	4	66	.08	5	.3	.9	17	SWR	
		11	17 2	33.48	19	18.13	155	23.54	4.18	2.2	2.5	36	6	91	.10	4	.3	.9	25	SWR	
		11	17 5	46.20	19	20.41	155	20.34	3.35	1.4	1.4	19	2	64	.08	5	.4	1.0	17	SWR	
		11	1733	46.07	19	17.76	155	23.29	3.41	1.7	1.5	28	5	98	.10	5	.3	.9	25	SWR	
		11	1756	29.91	19	15.98	155	23.28	2.13	2.4	2.1	31	4	121	.10	3	.4	.8	21	SWR	
		11	18 0	4.04	19	17.95	155	23.16	3.39	2.3	2.5	32	6	98	.08	4	.3	.7	24	SWR	
		11	18 5	2.77	19	18.61	155	22.03	6.45		1.3	22	4	103	.19	4	.6	1.4	19	SWR	
		11	1814	27.21	19	20.09	155	21.41	3.78	2.0		35	7	76	.09	3	.3	.7	26	SWR	
		11	1820	42.39	19	12.05	155	20.70	7.28	3.3	3.5	44	3	193	.11	7	.6	1.2	32	SWR	
		11	1851	35.97	19	20.71	155	19.77	3.57	1.3	1.1	17	1	55	.06	4	.4	1.0	11	SWR	
		11	1855	55.67	19	17.56	155	23.19	2.98	1.7	1.8	24	3	101	.08	5	.4	.9	18	SWR	
		11	1919	56.53	19	20.45	155	20.44	3.34	2.0	1.9	26	5	121	.08	5	.5	.9	21	SWR	
		11	1956	27.61	19	20.28	155	20.96	1.80	1.8	2.8	28	4	70	.09	4	.3	.6	18	SWR	
		11	1959	50.89	19	17.48	155	23.26	2.91	1.7	1.8	25	3	101	.09	5	.3	.9	20	SWR	
		11	20 5	17.39	19	18.04	155	23.24	3.92	1.8	1.9	26	5	96	.09	4	.4	.9	17	SWR	
		11	20 6	43.18	19	20.96	155	19.52	3.70	1.6	1.3	22	3	49	.07	4	.3	.9	18	SWR	
		11	2025	50.93	19	16.05	155	23.45	1.53	2.2	1.8	27	5	114	.09	3	.3	.7	23	SWR	
		11	2038	1.04	19	17.58	155	23.01	3.24	1.8	1.8	27	3	104	.09	5	.3	.9	18	SWR	
		11	2050	54.53	19	20.26	155	20.41	2.49	1.7	1.7	15	0	67	.08	5	.4	.9	14	SWR	
		11	2059	21.66	19	19.81	155	21.23	2.92		1.3	18	3	80	.06	4	.4	.7	17	SWR	
		11	2133	20.05	19	16.35	155	22.07	3.13	1.8	1.8	24	4	134	.11	5	.4	1.3	20	SWR	
		11	2134	34.40	19	17.68	155	23.33	2.85	2.0	2.5	26	3	99	.07	5	.3	.8	22	SWR	
		11	2144	13.53	19	17.41	155	23.06	2.83	2.0	2.2	25	4	105	.09	5	.4	1.1	23	SWR	
		11	2240	29.16	19	20.23	155	20.75	1.79	1.4	1.6	18	3	70	.08	4	.3	.8	16	SWR	
		11	2256	40.12	19	13.89	155	22.80	2.25	2.0	2.4	24	2	158	.10	2	.5	.4	15	SWR	
		11	23 6	34.76	19	20.87	155	19.56	3.55	1.7	1.4	22	2	51	.07	4	.3	.8	19	SWR	
		11	23 8	11.01	19	19.67	155	21.48	3.24	1.8	1.6	26	4	83	.10	3	.4	.7	23	SWR	
		11	2312	36.40	19	17.89	155	23.22	3.31	1.7	1.3	26	2	98	.08	4	.4	1.0	22	SWR	
		11	2340	20.50	19	20.13	155	20.61	3.31	1.5	1.7	10	0	135	.06	5	.5	1.3	9	SWR	
		11	2344	42.10	19	20.54	155	20.25	2.78	1.7	1.7	23	4	61	.09	5	.3	.8	20	SWR	
		12	016	51.41	19	17.95	155	23.26	3.49	2.0	1.6	28	2	97	.12	4	.4	1.1	21	SWR	
		12	133	25.38	19	20.30	155	20.47	3.78	1.3	1.6	21	3	98	.07	5	.4	1.0	17	SWR	
		12	138	31.66	19	20.03	155	21.20	3.19	1.8	1.6	24	4	76	.07	4	.3	.7	19	SWR	
		12	140	.38	19	20.46	155	20.43	1.34	2.4	2.7	18	0	64	.07	5	.3	.9	12	SWR	
		12	144	38.04	19	20.57	155	20.23	3.03	1.1	1.1	21	3	61	.07	5	.3	.9	19	SWR	
		12	242	19.72	19	19.91	155	21.47	3.38	1.6	1.4	21	2	79	.11	3	.4	.7	18	SWR	
		12	246	46.13	19	19.77	155	21.45	3.00	1.5	1.1	22	4	82	.06	3	.3	.6	15	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	AUG	12	250	43.64	19	19.08	155	22.48	3.16	2.1	1.9	21	4	91	.08	5	.3	.6	15	SWR	
		12	310	44.29	19	15.08	155	21.09	10.70	2.6	2.6	12	1	184	.07	7	1.0	1.5	6	SWR	
		12	4 7	40.38	19	17.68	155	23.55	3.61	1.7	1.5	27	2	95	.13	5	.4	1.4	23	SWR	
		12	416	29.37	19	17.43	155	23.48	3.08	1.8	1.6	27	2	98	.13	5	.4	1.1	19	SWR	
		12	423	46.96	19	21.30	155	18.80	3.52	1.2	1.9	20	4	64	.09	3	.3	.8	15	SWR	
		12	451	9.68	19	20.32	155	20.42	3.58	1.7	1.6	21	2	66	.06	5	.4	1.0	18	SWR	
		12	453	32.85	19	18.97	155	22.97	4.05	1.4	1.1	25	3	90	.11	2	.4	.9	16	SWR	
		12	5 7	25.56	19	21.36	155	18.72	3.35	1.2	1.4	19	3	62	.09	3	.3	.7	17	SWR	
		12	540	52.86	19	19.71	155	21.59	3.27	1.4	1.1	23	4	83	.10	3	.4	.8	19	SWR	
		12	6 3	36.75	19	21.08	155	17.94	2.66	1.2	1.4	9	1	136	.07	2	.4	.6	5	SWR	
		12	6 4	1.99	19	19.60	155	21.65	3.55	1.3	1.1	20	3	88	.06	3	.4	.7	17	SWR	
		12	620	22.90	19	24.44	155	16.35	.16	2.3	2.9	18	5	132	.13	1	.2	.3	11	SEC	L
		12	651	25.15	19	21.34	155	18.33	30.56	2.1	1.8	41	1	41	.10	3	.7	1.0	39	DEP	
		12	7 1	17.93	19	20.45	155	20.49	.03	2.1	2.2	17	1	65	.09	5	.3	1.1	9	SWR	*
		12	717	14.62	19	19.73	155	21.51	4.24	2.1	1.8	29	6	82	.09	3	.4	1.0	23	SWR	
		12	732	32.79	19	16.22	155	22.66	3.34	2.1	2.1	31	4	131	.13	4	.4	1.2	24	SWR	
		12	734	57.49	19	21.32	155	18.82	3.48	1.5	1.6	24	4	54	.10	3	.3	.7	17	SWR	
		12	846	13.19	19	24.54	155	16.44	.48	.5	1.0	10	2	142	.09	1	.2	.3	8	SNC	
		12	848	.84	19	19.68	155	21.51	3.20	1.0	1.1	15	3	167	.05	3	.6	.7	12	SWR	
		12	848	53.46	19	19.80	155	21.56	3.26	.8	1.3	16	3	81	.08	3	.4	.7	15	SWR	
		12	855	26.83	19	20.25	155	6.34	8.56	1.8	1.5	23	1	113	.06	5	.5	.8	18	SFA	
		12	857	28.30	19	20.66	155	20.56	3.07	1.5	1.7	22	5	63	.09	5	.3	.9	20	SWR	
		12	9 5	46.41	19	17.99	155	23.19	3.50	1.4	1.5	19	3	103	.09	4	.4	.9	17	SWR	
		12	9 8	17.96	19	17.85	155	23.03	3.41	1.2	1.2	17	3	107	.05	4	.4	.8	12	SWR	
		12	916	13.04	19	19.58	155	21.48	3.34	.9	1.3	14	3	171	.08	3	.6	.7	13	SWR	
		12	920	59.65	19	17.52	155	23.48	2.52		1.0	14	3	106	.04	5	.4	.8	11	SWR	
		12	924	37.30	19	20.25	155	20.53	3.53	1.1	1.2	19	5	129	.07	5	.4	1.0	18	SWR	
		12	938	5.62	19	17.07	155	21.71	3.58	1.1	1.2	18	2	128	.12	6	.5	1.6	14	SWR	
		12	945	38.64	19	20.36	155	20.91	1.20	.7	.9	11	0	130	.08	4	.4	1.3	10	SWR	
		12	952	35.19	19	18.61	155	23.21	3.95	1.1	1.2	18	1	92	.09	3	.4	1.0	12	SWR	
		12	10 1	13.58	19	20.37	155	21.18	3.07	.8	1.3	11	3	172	.04	4	.6	.7	7	SWR	
		12	1016	21.67	19	20.40	155	20.37	3.27	1.4	1.4	21	3	65	.06	5	.4	.9	17	SWR	
		12	1058	4.65	19	19.89	155	21.03	2.47	1.5	1.7	16	1	77	.08	4	.4	.9	13	SWR	
		12	11 3	30.75	19	20.85	155	19.65	3.56	1.0	1.1	14	1	99	.06	4	.4	1.1	13	SWR	
		12	11 8	51.25	19	19.61	155	21.51	3.36	1.1	.9	15	2	85	.09	3	.5	.8	14	SWR	
		12	1111	23.61	19	19.71	155	21.41	3.40	1.2	1.0	15	3	82	.06	3	.4	.6	13	SWR	
		12	1146	1.82	19	20.10	155	21.24	3.40	1.9	1.9	25	4	75	.12	4	.4	.9	17	SWR	
		12	1211	28.81	19	19.66	155	21.67	3.55	1.6	1.4	24	3	83	.10	3	.4	.7	16	SWR	
		12	1214	14.88	19	18.16	155	23.20	3.98	1.7	.8	16	1	100	.06	4	.4	1.2	15	SWR	
		12	1218	3.18	19	21.28	155	18.88	3.42	1.2	1.4	17	3	81	.07	3	.3	.7	15	SWR	
		12	1218	43.06	19	21.25	155	18.91	3.61	1.2	1.1	17	2	82	.04	3	.3	.8	15	SWR	
		12	1227	46.68	19	19.91	155	20.85	1.12	2.4	2.1	28	2	77	.11	4	.5	.8	19	SWR	
		12	1228	27.64	19	20.44	155	20.52	1.18	2.2	2.3	17	2	66	.07	5	.3	.8	11	SWR	
		12	1244	.14	19	19.79	155	21.54	3.26	1.9	2.0	31	4	81	.11	3	.3	.7	21	SWR	
		12	1257	44.93	19	20.98	155	19.51	3.31	1.6	1.2	21	4	76	.08	4	.3	.9	20	SWR	
		12	13 2	47.68	19	20.38	155	20.59	.97	1.4	1.1	14	0	67	.10	5	.4	1.1	9	SWR	
		12	13 8	29.71	19	20.13	155	20.94	2.99		1.0	16	4	73	.08	4	.4	.8	12	SWR	
		12	1331	40.58	19	18.76	155	22.89	3.96	1.8	1.5	23	1	94	.08	3	.4	.8	17	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	12	1334	23.09	19	19.60	155	21.69	3.26	1.6	1.4	17	1	84	.08	3	.5	.8	15	SWR
		12	1339	2.60	19	20.27	155	20.47	3.39	1.2	1.0	16	3	127	.07	5	.4	1.2	14	SWR
		12	1355	13.31	19	19.48	155	21.44	3.18		.8	11	2	175	.14	4	1.0	1.0	9	SWR
		12	1356	17.39	19	20.09	155	21.43	3.71		1.4	17	3	76	.12	3	.5	.9	11	SWR
		12	1357	13.44	19	18.92	155	22.82	3.61	1.0	1.2	17	1	91	.09	3	.5	.8	14	SWR
		12	14	6 48.56	19	16.44	155	23.72	4.93	1.3	1.4	18	3	102	.10	4	.4	1.6	11	SWR
		12	1416	24.52	19	16.86	155	22.17	6.82	1.3	1.3	21	2	127	.10	6	.4	1.2	14	SWR
		12	1418	17.97	19	17.14	155	23.35	3.46	1.1	1.1	18	1	114	.09	5	.4	1.3	11	SWR
		12	1420	49.94	19	17.31	155	23.53	2.44	1.3		16	2	98	.10	5	.4	.9	12	SWR
		12	1425	26.15	19	18.83	155	23.23	3.58	1.0	1.3	15	1	114	.10	3	.5	.8	11	SWR
		12	1431	57.90	19	21.10	155	18.80	3.99	1.7		18	3	83	.08	3	.4	1.0	14	SWR
		12	1444	49.47	19	19.73	155	21.49	3.31	.9	1.0	13	3	83	.05	3	.5	.7	11	SWR
		12	15	1 8.79	19	18.89	155	23.05	4.01	1.3	1.5	22	3	90	.10	3	.4	.8	13	SWR
		12	15	7 30.90	19	21.34	155	18.83	4.18	1.5	1.6	22	5	64	.10	3	.4	1.1	21	SWR
		12	1512	19.80	19	17.51	155	23.17	2.67	1.2	1.2	18	3	103	.07	5	.4	.9	17	SWR
		12	1514	22.33	19	24.99	155	16.37	5.64	1.3	.8	12	3	156	.13	1	.9	1.2	9	INT
		12	1514	39.27	19	17.42	155	23.27	2.83	1.3	1.7	14	2	111	.06	5	.4	.9	11	SWR
		12	1522	.90	19	20.46	155	20.52	2.96	1.3	1.3	18	4	65	.08	5	.3	.9	16	SWR
		12	1553	9.28	19	17.85	155	23.18	3.08	1.1	1.0	13	2	105	.07	4	.4	.8	10	SWR
		12	1553	32.44	19	17.56	155	20.90	6.59	2.0	1.8	29	2	126	.10	4	.4	1.1	18	SWR
		12	16	1 17.72	19	19.23	155	21.71	4.43	1.6	1.3	24	4	92	.06	3	.3	.9	21	SWR
		12	16	5 18.64	19	19.78	155	21.23	2.95	1.1	1.3	18	2	80	.09	4	.4	.7	14	SWR
		12	16	8 12.63	19	20.38	155	20.33	3.11	1.3	1.1	16	3	121	.08	5	.4	1.1	15	SWR
		12	1618	22.89	19	17.45	155	23.66	3.22	1.9	2.4	28	2	95	.12	5	.4	1.2	19	SWR
		12	1632	33.93	19	20.63	155	20.21	2.83	1.0	1.2	20	3	60	.09	5	.3	.8	16	SWR
		12	17	1 35.52	19	16.21	155	22.75	7.10	1.3	1.3	22	3	148	.10	4	.5	1.2	20	SWR
		12	17	3 7.49	19	23.67	155	16.35	.92	2.0	2.2	13	2	88	.15	1	.3	.3	4	SEC
		12	1710	11.05	19	17.60	155	23.67	3.21	1.0	1.1	19	3	120	.10	5	.4	1.1	14	SWR
		12	1710	41.57	19	18.23	155	23.30	3.43	1.7	1.6	19	2	93	.09	4	.4	.9	16	SWR
		12	1716	32.26	19	17.96	155	23.29	3.46	1.2	1.3	17	3	96	.10	4	.4	1.0	13	SWR
		12	1719	24.77	19	16.38	155	22.37	5.53	1.2	1.1	13	3	133	.10	5	.5	1.8	8	SWR
		12	1733	58.53	19	24.29	155	16.07	.03	2.1	2.2	10	2	126	.24	2	.3	.9	3	SEC
		12	1736	20.61	19	20.96	155	19.54	3.06	1.3	.8	20	3	77	.08	4	.3	.9	18	SWR
		12	1744	4.29	19	20.01	155	21.13	2.33	1.0	1.0	19	5	76	.09	4	.3	.6	15	SWR
		12	1753	15.55	19	21.22	155	18.86	3.39	1.1	1.2	20	4	82	.07	3	.3	.7	19	SWR
		12	18	2 30.23	19	20.45	155	20.52	3.00	1.3	1.0	21	5	66	.08	5	.3	.9	19	SWR
		12	1813	51.71	19	17.36	155	23.69	2.50	1.1	1.4	25	3	95	.09	5	.3	1.0	21	SWR
		12	1831	11.61	19	20.27	155	20.38	3.18	1.4	.8	23	4	67	.06	5	.3	.8	19	SWR
		12	1832	56.92	19	20.96	155	19.28	3.75	.8	.6	20	4	91	.08	4	.4	1.0	16	SWR
		12	1834	33.03	19	20.30	155	20.47	3.23	.9	1.1	20	4	126	.07	5	.3	.9	18	SWR
		12	1840	20.14	19	17.88	155	23.12	3.33	1.0	.6	19	2	99	.08	4	.4	1.0	15	SWR
		12	1915	23.61	19	22.25	155	17.44	3.02		1.0	10	2	166	.07	2	.6	.5	8	SSC
		12	1917	25.14	19	18.08	155	20.41	8.90	.9	.9	12	2	166	.12	6	.7	1.6	8	SWR
		12	1921	42.12	19	17.83	155	23.38	2.59	1.2	.8	17	3	96	.10	4	.4	.9	13	SWR
		12	1924	14.36	19	17.22	155	22.21	5.43	1.0	.9	18	2	120	.09	6	.5	2.1	15	SWR
		12	1942	56.83	19	19.61	155	21.51	2.93	1.2	1.3	21	2	85	.06	3	.4	.7	16	SWR
		12	1949	4.36	19	20.99	155	19.52	3.23	1.0	.8	17	2	76	.10	4	.4	1.0	17	SWR
		12	1951	7.05	19	18.05	155	23.44	3.67	1.7	1.8	21	1	99	.12	4	.4	1.2	15	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	12	2017	55.81	19	20.53	155	20.28	2.66	1.1	1.1	19	3	62	.08	5	.3	.9	14	SWR
		12	2018	48.70	19	19.89	155	10.24	8.21	1.7	1.1	21	3	89	.06	4	.6	1.0	15	SF3
		12	2020	40.34	19	19.74	155	21.35	3.00	1.3	1.1	18	3	82	.07	4	.4	.7	15	SWR
		12	2022	.72	19	17.35	155	23.97	2.54	1.3	1.0	17	3	90	.09	5	.4	1.1	13	SWR
		12	2030	38.55	19	21.69	155	18.34	7.98	2.0	1.4	10	1	103	.13	3	.9	2.2	7	SWR
		12	2033	53.95	19	19.59	155	22.02	4.19	2.1	1.9	27	3	84	.13	3	.4	1.0	24	SWR
		12	2035	1.63	19	20.37	155	20.45	3.18	1.2	1.0	21	4	66	.07	5	.3	.9	17	SWR
		12	2039	53.80	19	19.65	155	21.53	3.35	1.1	1.0	18	2	86	.05	3	.4	.6	16	SWR
		12	2049	28.44	19	20.26	155	20.84	.26	1.5	1.6	17	3	70	.20	4	.5	.9	14	SWR
		12	2057	35.75	19	19.89	155	21.40	3.27	1.6	2.1	26	5	79	.07	3	.3	.6	19	SWR
		12	2059	10.16	19	19.95	155	21.22	3.33	2.1	2.1	30	4	78	.11	4	.3	.7	22	SWR
		12	21	5 23.26	19	19.66	155	21.34	3.61	1.1	1.1	21	3	83	.06	4	.4	.7	15	SWR
		12	2110	40.59	19	18.88	155	20.63	7.23	1.3	.9	19	3	101	.11	4	.5	1.3	15	SWR
		12	2140	4.32	19	17.59	155	23.54	2.73		1.9	24	3	95	.09	5	.3	.8	19	SWR
		12	2152	2.89	19	28.48	155	37.30	.97	2.5	2.5	23	0	106	.15	3	.4	.6	15	MLO
		12	22	8 33.51	19	16.43	155	21.82	3.59	1.4	.6	23	3	135	.09	5	.4	1.5	20	SWR
		12	22	8 50.45	19	13.20	155	22.23	4.64	2.2	2.3	28	2	171	.10	4	.6	1.9	21	SWR
		12	2218	24.67	19	19.23	155	21.67	4.38	.8	1.2	13	2	188	.08	3	.8	1.0	11	SWR
		12	2218	54.62	19	17.07	155	21.00	7.06	1.4	1.3	22	4	131	.09	5	.5	1.1	19	SWR
		12	2224	29.66	19	20.29	155	20.51	3.46	1.2	1.4	23	3	68	.08	5	.3	.9	17	SWR
		12	2232	48.56	19	20.33	155	20.44	3.28	1.3	1.0	21	3	67	.07	5	.3	.8	16	SWR
		12	2234	53.67	19	19.04	155	23.08	4.17	1.3	1.3	22	2	87	.11	2	.4	.7	11	SWR
		12	2236	53.14	19	18.29	155	23.63	3.42	2.0	2.3	34	4	89	.12	4	.4	1.0	25	SWR
		12	2254	15.17	19	20.01	155	20.65	4.63	.9	1.0	18	2	139	.05	5	.4	1.6	12	SWR
		12	23	0 23.25	19	20.80	155	19.54	3.39	1.0	1.0	20	3	79	.08	4	.3	.9	19	SWR
		12	23	4 48.24	19	19.40	155	20.63	4.75	1.0	1.2	13	0	87	.14	4	.7	2.4	8	SWR
		12	2322	35.41	19	17.63	155	23.72	3.65	1.0	1.9	27	3	92	.11	5	.3	1.3	19	SWR
		12	2325	46.53	19	16.99	155	24.52	1.61		1.0	18	2	82	.09	5	.3	1.0	10	SWR
		12	2326	25.99	19	21.37	155	18.79	3.57	1.2	1.3	16	3	65	.11	3	.4	.9	14	SWR
		12	2331	10.24	19	19.26	155	22.14	3.43	.8	.9	17	3	89	.07	3	.4	.6	9	SWR
		13	019	55.05	19	20.63	155	19.89	3.16	.9	1.1	20	4	57	.07	4	.3	.8	14	SWR
		13	044	49.57	19	20.83	155	19.44	4.58	1.2	1.2	18	2	50	.08	4	.4	1.2	14	SWR
		13	111	27.01	19	17.87	155	23.35	3.57	1.7	1.9	29	5	96	.09	4	.3	.8	17	SWR
		13	135	12.00	19	20.35	155	20.51	3.95	1.0	1.1	20	3	66	.10	5	.4	1.2	17	SWR
		13	140	22.12	19	21.28	155	18.79	3.50	1.1	1.2	23	4	63	.08	3	.3	.6	17	SWR
		13	154	31.56	19	21.10	155	18.85	3.58	1.0	.9	18	2	83	.07	3	.3	.8	15	SWR
		13	2	7 39.02	19	20.48	155	20.43	3.22	1.3	1.3	24	3	64	.09	5	.3	.9	18	SWR
		13	231	51.45	19	20.33	155	20.35	3.40	1.1	.9	19	3	65	.08	5	.4	.9	14	SWR
		13	236	4.81	19	18.17	155	23.86	3.65	1.0	1.0	20	1	87	.09	4	.4	1.0	11	SWR
		13	253	12.78	19	16.66	155	21.85	6.70	1.1	1.1	19	2	132	.09	6	.5	1.4	15	SWR
		13	254	35.70	19	16.33	155	21.97	3.05	1.0	1.3	23	3	136	.08	5	.4	1.3	18	SWR
		13	256	48.16	19	20.94	155	19.47	3.52	1.3	1.4	22	4	76	.07	4	.3	.8	18	SWR
		13	3	8 45.56	19	16.28	155	23.89	5.97	1.3	1.5	26	2	99	.14	4	.5	1.6	17	SWR
		13	3	9 45.76	19	20.70	155	19.70	3.42	.8	.9	19	3	54	.09	4	.4	1.1	14	SWR
		13	319	47.28	19	24.41	155	17.16	8.50	1.0	1.0	18	2	63	.11	1	.6	.9	10	INT
		13	333	7.34	19	17.20	155	22.43	4.31	1.1	1.1	23	1	117	.13	6	.5	1.6	14	SWR
		13	342	54.54	19	20.41	155	20.34	3.26	.9	.9	17	2	121	.09	5	.4	1.2	13	SWR
		13	351	52.41	19	19.59	155	21.49	3.10	1.3	1.0	23	4	85	.09	3	.4	.7	16	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	AUG	13	359	48.03	19	21.33	155	18.83	3.64	1.0	.9	19	2	64	.08	3	.4	.8	15	SWR	
		13	413	50.77	19	14.90	155	15.43	5.68	1.4	1.6	31	2	176	.13	5	.7	1.4	21	SF1	
		13	420	18.69	19	21.34	155	18.71	3.52	1.3	1.3	25	5	45	.10	3	.3	.6	19	SWR	
		13	423	49.79	19	20.77	155	19.55	3.45	1.3	1.2	19	2	52	.07	4	.3	.9	15	SWR	
		13	455	38.09	19	12.79	155	20.97	.01	1.5	1.7	20	0	174	.13	6	.8	2.6	16	SWR	*
		13	513	23.75	19	20.65	155	20.42	2.91	1.2	1.2	22	5	62	.10	5	.3	.9	19	SWR	
		13	525	57.49	19	17.70	155	23.48	3.20	1.3	1.2	24	4	96	.10	5	.3	.9	16	SWR	
		13	538	28.13	19	17.68	155	23.70	4.48	2.2	2.5	32	2	93	.12	5	.3	1.9	20	SWR	
		13	546	36.87	19	17.87	155	23.38	2.98	2.0	2.2	34	3	95	.09	4	.3	.8	20	SWR	
		13	6	0 1.46	19	17.10	155	22.21	7.27	2.0	2.4	44	1	122	.14	6	.4	.8	31	SWR	
		13	6	8 23.69	19	19.76	155	21.39	4.42	1.5	1.2	23	2	81	.09	3	.4	1.2	12	SWR	
		13	623	36.40	19	18.99	155	22.71	3.61	1.0	1.3	18	2	91	.08	3	.4	.6	11	SWR	
		13	659	50.32	19	17.05	155	20.88	7.20	1.2	.9	21	2	132	.08	4	.5	1.4	13	SWR	
		13	755	45.94	19	17.35	155	23.49	3.32	1.1	1.0	22	2	99	.11	5	.4	1.1	11	SWR	
		13	832	26.55	19	18.56	155	15.43	8.21	1.9	1.8	27	0	114	.09	4	.6	.9	25	SF1	
		13	1019	40.11	19	21.40	155	18.82	3.55	1.2	1.2	21	3	56	.11	3	.3	.8	19	SWR	
		13	1034	19.43	19	17.92	155	23.58	3.46	2.4	2.9	43	6	92	.12	4	.3	.9	28	SWR	
		13	1051	54.01	19	20.54	155	20.31	3.42	1.2	1.1	19	3	62	.07	5	.4	.9	13	SWR	
		13	1134	32.78	19	17.83	155	23.30	4.67	1.7	1.1	23	2	98	.12	4	.4	1.5	14	SWR	
		13	1136	31.01	19	17.35	155	22.86	6.84	1.4	1.4	27	1	110	.12	5	.5	1.0	18	SWR	
		13	1151	33.09	19	22.98	155	26.66	10.46	2.9	2.8	48	6	33	.12	2	.3	.4	35	KAO	
		13	1222	42.96	19	21.17	155	11.15	7.93	2.1	1.7	40	4	67	.12	3	.4	.6	27	SF3	
		13	1228	40.40	19	20.43	155	20.41	3.52	1.4	1.3	22	2	65	.08	5	.4	1.0	18	SWR	
		13	1253	36.50	19	20.80	155	19.50	4.07	1.2	1.1	16	0	51	.07	4	.4	1.2	12	SWR	
		13	1323	7.04	19	22.35	155	16.79	8.53	2.3	1.9	9	1	109	.13	2	.9	2.0	6	INT	
		13	15	1 42.33	19	16.24	155	46.11	10.53	2.9	2.5	29	2	107	.16	11	.5	.8	13	KON	
		13	17	0 17.82	19	20.53	155	20.31	2.93	1.1	1.1	22	4	63	.09	5	.3	.9	18	SWR	
		13	18	9 27.43	19	21.14	155	18.93	4.02	1.5	1.6	18	0	51	.10	3	.4	1.1	14	SWR	
		13	2041	59.36	19	25.38	155	16.60	2.93	.6	.7	8	0	195	.03	1	.7	.5	4	SNC	
		13	2211	7.06	19	19.50	155	12.14	7.99	2.0	1.5	41	3	89	.11	5	.4	.7	28	SF3	
		13	2223	31.99	19	15.49	155	24.11	7.07	1.4	1.3	22	1	94	.11	2	.8	1.3	14	SWR	
		13	2252	49.83	19	19.52	155	21.92	3.66	1.6	1.5	26	1	85	.09	3	.4	.8	19	SWR	
		13	2330	4.60	19	23.12	155	17.20	4.73	1.3	.8	11	0	66	.15	1	.8	1.3	3	SSC	L
		14	022	15.13	19	17.40	155	22.20	8.59	1.5	1.1	26	1	118	.14	6	.5	1.3	15	SWR	
		14	028	12.66	19	24.25	155	16.31	4.19	1.4	1.0	17	0	108	.07	1	.4	.4	8	SEC	L
		14	038	2.68	19	24.34	155	15.80	1.07	1.1	1.2	13	1	133	.14	2	.4	.4	6	SEC	L
		14	050	2.60	19	21.67	155	16.14	7.33	1.5	.9	10	0	187	.13	1	1.3	1.9	6	SF1	L
		14	056	37.26	19	20.99	155	19.43	3.37	1.3	1.1	20	2	49	.09	4	.3	.9	18	SWR	
		14	150	15.13	19	24.27	155	16.68	2.78	1.0	1.2	18	0	88	.24	1	.7	.4	6	SSC	L
		14	155	22.50	19	24.13	155	16.49	3.66	1.1	1.0	19	0	94	.19	0	.7	.5	5	SEC	L
		14	257	13.78	19	20.64	155	13.34	7.87	2.0	1.7	36	4	60	.15	4	.4	.6	27	SF2	
		14	321	58.51	19	17.61	155	23.34	3.22	1.8	1.2	17	2	99	.06	5	.4	1.0	13	SWR	
		14	353	7.06	19	25.22	155	16.44	6.00	1.7	1.3	18	0	121	.11	1	.5	.8	5	INT	L
		14	520	38.57	19	23.99	155	16.47	2.24	1.1	1.2	10	0	99	.13	0	.6	.4	0	SEC	L
		14	521	34.27	19	20.88	155	19.57	3.38	1.0	1.1	18	1	78	.07	4	.4	.9	16	SWR	
		14	628	42.26	19	24.44	155	16.86	3.80	1.1	1.4	12	0	100	.11	1	.7	.4	6	SSC	L
		14	746	27.84	19	23.69	155	16.29	1.96	.8	.7	16	0	88	.26	1	.5	.4	3	SEC	L
		14	8	2 18.14	19	58.92	155	28.06	23.52	3.0	2.8	37	2	254	.10	17	1.1	1.8	27	KEA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	AUG	14	832	44.08	19	20.67	155	19.81	3.43	1.3	1.5	21	4	56	.08	4	.5	.8	15	SWR	
		14	843	6.03	19	21.44	155	18.78	3.40	1.0	1.3	19	3	54	.08	3	.3	.7	14	SWR	
		14	855	45.70	19	21.19	155	18.81	3.55	1.6	1.6	19	2	82	.09	3	.4	.7	15	SWR	
		14	857	26.32	19	20.59	155	20.39	2.89	1.1	1.5	24	5	62	.09	5	.3	.7	12	SWR	
		14	955	12.72	19	23.81	155	17.30	.01	1.6	1.9	8	2	100	.17	1	.5	.6	4	SSC	*
		14	1045	24.94	19	17.64	155	23.24	3.17	1.3	1.5	16	2	100	.08	5	.4	.9	12	SWR	
		14	1058	27.58	19	17.66	155	23.36	3.55	1.4	1.6	22	2	104	.08	5	.4	.9	13	SWR	
		14	11	9 28.10	19	17.78	155	23.12	4.08	.9	1.3	18	2	107	.07	5	.4	1.2	12	SWR	
		14	1143	18.51	19	21.29	155	18.81	3.61	.9	1.4	16	2	80	.08	3	.3	.9	12	SWR	
		14	1148	22.56	19	23.90	155	16.29	3.39	.8	1.3	12	0	100	.11	1	.5	.5	2	SEC	L
		14	1259	47.97	19	20.11	155	8.62	6.92	1.4	1.3	27	3	75	.09	4	.4	.9	10	SF4	
		14	1348	15.28	19	24.45	155	17.07	1.61	1.1	1.6	13	2	81	.10	1	.4	.2	10	SSC	L
		14	14	9 39.99	19	20.83	155	19.53	3.41	1.3	1.6	22	4	51	.08	4	.3	.9	20	SWR	
		14	1624	39.55	19	24.48	155	16.45	4.49	.8	1.3	10	1	133	.06	1	.8	.8	7	SEC	L
		14	1649	56.35	19	34.84	155	39.93	1.57	1.6	2.4	18	3	137	.09	12	.5	1.1	15	MLO	
		14	18	5 48.39	19	18.85	155	22.69	4.68	1.9	2.6	33	5	94	.10	3	.3	.7	27	SWR	
		14	1817	.64	19	17.39	155	23.11	2.80	1.3	1.9	22	3	104	.07	5	.3	.8	15	SWR	
		14	1932	28.62	19	16.59	155	23.82	3.39	2.5	2.9	43	4	98	.11	4	.3	.9	30	SWR	
		14	20	9 31.04	19	21.08	155	19.01	4.17	1.1	1.6	21	2	46	.07	3	.4	1.0	16	SWR	
		14	2019	45.68	19	18.58	155	13.19	7.46	1.6	1.8	31	0	87	.08	3	.4	.8	26	SF2	
		14	2047	37.24	19	17.08	155	20.77	5.93	1.2	1.4	19	4	132	.07	4	.5	1.2	15	SWR	
		14	2051	58.16	19	21.01	155	19.63	3.62	1.0	1.4	19	3	50	.07	4	.3	.9	17	SWR	
		14	2058	58.86	19	24.25	155	17.16	1.57	1.4	1.8	14	1	70	.11	1	.3	.2	10	SSC	L
		14	2139	11.00	19	19.01	155	12.37	6.79	2.2	1.9	44	3	97	.10	4	.3	.6	33	SF2	
		14	2139	54.07	19	21.33	155	18.78	3.48	1.4	1.7	20	3	63	.09	3	.4	.9	18	SWR	
		14	22	7 41.84	19	22.95	155	26.55	11.07	1.4	1.4	26	4	50	.07	2	.4	.8	22	KAO	
		14	2216	34.70	19	20.80	155	19.77	3.41	.9	1.4	21	4	54	.07	4	.3	.9	18	SWR	
		14	2227	18.71	19	5.90	155	19.39	10.28	1.8	2.1	25	0	249	.11	16	1.9	1.0	16	LOI	
		14	2233	22.00	19	17.33	155	23.64	3.26	1.3	1.8	29	4	96	.11	5	.3	1.1	20	SWR	
		14	2314	47.01	19	20.44	155	20.41	3.09	.9	1.4	21	4	65	.08	5	.3	.9	16	SWR	
		14	2351	36.77	19	59.39	155	57.00	14.60	3.2	3.2	33	1	233	.14	24	3.8	3.0	16	KOH	
		15	232	39.97	19	12.02	155	36.75	8.20	2.4	2.6	40	3	93	.23	5	.6	1.0	28	LSW	
		15	317	50.49	19	21.11	155	19.48	3.32	1.0	1.2	22	3	48	.11	4	.4	.9	17	SWR	
		15	344	56.42	19	21.34	155	18.71	3.48	1.0	1.2	20	4	62	.11	3	.4	.8	14	SWR	
		15	345	26.25	19	21.26	155	18.74	3.69	1.5	1.8	24	3	63	.08	3	.3	.7	23	SWR	
		15	442	30.72	19	20.88	155	12.30	7.65	1.9	1.9	43	4	66	.14	4	.4	.6	29	SF3	
		15	453	25.12	19	20.27	155	20.41	4.01	1.0	1.6	18	0	67	.09	5	.4	1.5	14	SWR	
		15	519	13.92	19	15.95	155	24.06	5.49	1.0	1.3	21	1	95	.12	3	.5	1.8	15	SWR	
		15	523	29.74	19	17.96	155	21.21	6.67	1.7	2.3	37	3	120	.12	5	.4	.7	19	SWR	
		15	9	5 51.59	19	18.39	155	21.69	7.99	.9	1.3	23	3	110	.11	4	.4	.9	13	SWR	
		15	1324	43.74	19	21.22	155	18.77	3.45	1.1	1.4	19	3	80	.08	3	.3	.7	16	SWR	
		15	1328	58.96	19	16.57	155	23.08	3.29		1.6	13	3	115	.05	4	.4	1.1	10	SWR	
		15	1347	21.04	19	19.68	155	13.43	9.25	2.4	2.7	43	3	70	.10	5	.3	.4	29	SF2	
		15	1414	40.14	19	21.30	155	18.81	3.59	1.2	1.6	21	4	53	.07	3	.3	.6	15	SWR	
		15	17	7 17.61	19	21.26	155	18.81	3.72	1.1	1.5	22	4	64	.10	3	.5	.8	16	SWR	
		15	1721	24.30	19	17.50	155	21.57	6.76	1.3	1.6	23	2	124	.11	5	.4	1.3	14	SWR	
		15	1743	20.66	19	17.18	155	23.35	3.58	.9	1.6	18	2	103	.08	5	.4	1.2	8	SWR	
		15	1745	54.98	19	16.45	155	22.67	5.80	1.8	2.3	37	2	126	.12	5	.4	1.1	25	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	15	19 2	44.81	19	21.31	155	18.83	3.41	1.3	1.6	26	4	46	.09	3	.3	.7	19	SWR
		15	19 5	46.10	19	25.27	155	15.92	14.98	1.6	1.6	37	2	92	.09	2	.5	.3	25	DEP
		15	1918	22.85	19	20.60	155	10.90	8.89	1.7	1.4	33	4	76	.10	3	.4	.6	23	SF3
		15	2032	.21	19	4.87	154	52.64	40.34	2.6	2.6	40	0	278	.10	33	3.5	1.9	36	DIS
		15	2139	23.68	19	16.05	155	21.42	7.17	1.6	2.1	35	1	141	.12	6	.5	.8	19	SWR
		15	23 9	25.74	19	24.72	155	16.90	1.34	1.3	1.8	15	1	116	.12	0	.4	.2	9	SNC
		15	2320	44.65	19	21.20	155	18.83	3.59	.9	1.4	20	2	47	.07	3	.3	.7	15	SWR
		15	2356	50.20	19	13.47	155	20.68	7.01	1.7	2.6	26	1	172	.12	9	.7	1.2	19	SWR
		16	241	39.13	19	17.57	155	22.96	2.77	1.2	1.6	26	5	105	.07	5	.3	.8	23	SWR
		16	511	8.60	19	21.30	155	18.75	3.59	1.2	1.4	26	5	46	.09	3	.3	.7	19	SWR
		16	656	36.34	19	16.62	155	21.32	7.61	2.0	2.5	45	5	135	.10	5	.4	.7	31	SWR
		16	1514	32.66	19	23.95	155	16.82	15.27	3.4	3.7	52	6	35	.12	0	.4	.3	44	DEP F
		16	1535	43.92	19	16.28	155	23.00	6.69	1.9	1.9	37	4	122	.12	4	.4	.9	27	SWR
		16	1546	9.03	19	17.07	155	21.79	6.44	1.3	1.1	19	3	128	.07	6	.4	1.1	17	SWR
		16	2032	.66	19	20.00	155	12.27	8.73	1.5	1.1	26	2	79	.07	5	.4	.8	19	SF3
		16	2333	22.90	19	17.09	155	21.35	7.47	1.3	1.1	23	4	133	.08	5	.5	1.0	18	SWR
		17	019	44.85	19	18.45	155	15.50	7.85	2.2	2.1	41	3	107	.09	4	.3	.6	25	SF1
		17	2 9	56.74	19	27.64	155	14.74	31.79	1.9	1.4	42	3	41	.10	6	.5	1.1	29	DEP
		17	220	35.70	19	19.66	155	11.68	8.88	2.4	2.4	39	4	90	.06	5	.3	.5	23	SF3
		17	4 9	28.22	19	19.76	155	12.38	8.40	1.7	1.3	31	2	82	.09	5	.4	.7	23	SF2
		17	530	37.45	19	16.38	155	22.15	3.83	2.1	2.3	42	3	134	.12	5	.3	1.3	30	SWR
		17	618	32.50	19	16.44	155	21.78	5.84	1.3	1.1	21	5	141	.09	6	.5	1.4	19	SWR
		17	648	21.86	19	16.24	155	22.66	3.27	1.3	1.2	14	1	130	.12	4	.6	1.3	9	SWR
		17	650	.10	19	17.98	155	20.87	6.10	1.5	1.7	21	3	121	.07	4	.4	1.1	12	SWR
		17	749	26.84	19	16.81	155	22.00	3.45	1.3	1.2	24	3	130	.12	6	.4	1.4	18	SWR
		17	910	15.88	19	23.72	155	28.83	10.15	1.7	1.2	26	1	69	.07	3	.4	1.1	24	KAO
		17	918	10.76	19	16.28	155	23.67	2.97	1.7	1.4	21	3	105	.10	4	.4	1.0	15	SWR
		17	14 8	24.42	19	20.12	155	11.88	8.85	1.9	1.1	29	1	80	.08	5	.5	.8	18	SF3
		17	1629	50.80	19	19.37	155	11.45	6.88	1.7	1.3	37	1	99	.11	6	.4	.8	28	SF3
		17	20 9	13.14	19	19.70	155	11.71	7.47	1.4	1.0	31	3	89	.13	5	.5	1.0	20	SF3
		18	036	29.62	19	24.61	155	17.28	1.29	.8	1.4	15	3	67	.11	1	.3	.2	8	SNC
		18	1 3	56.48	19	17.68	155	21.81	4.24		1.3	16	2	129	.09	5	.4	1.6	8	SWR
		18	516	52.95	19	17.86	155	20.58	4.42	1.6	2.2	33	2	124	.12	3	.4	1.3	28	SWR
		18	732	9.87	19	16.47	155	22.80	7.50	1.7	2.5	34	3	123	.10	5	.4	.7	20	SWR
		18	754	41.17	19	17.63	155	23.31	8.37	1.4	2.1	27	2	99	.11	5	.4	.7	16	SWR
		18	1253	1.72	19	20.61	155	10.99	7.32			37	3	76	.11	3	.5	.6	24	SF3
		18	1416	44.90	19	17.87	155	15.23	6.01	1.2	1.1	25	1	119	.10	3	.5	1.2	18	SF1
		18	1741	29.73	19	17.64	155	15.57	6.02	1.4	1.1	21	0	130	.11	4	.6	1.5	20	SF1
		18	2110	24.01	19	18.20	155	22.46	9.38	1.1	1.3	21	2	108	.09	4	.5	1.0	15	SWR
		18	2247	13.12	19	18.86	155	13.42	5.86	1.5	1.0	32	2	76	.13	3	.5	1.2	21	SF2
		19	238	47.29	19	20.08	155	8.18	9.09	3.5	3.9	44	2	84	.09	5	.5	.3	33	SF4
		19	246	12.45	19	20.30	155	8.48	7.10	1.9	1.6	41	4	76	.11	4	.5	.8	31	SF4
		19	350	39.66	19	18.74	155	15.00	8.24	1.4	1.1	22	0	104	.09	4	.6	1.0	20	SF1
		19	4 5	56.72	19	16.94	155	21.99	4.58	.9	1.1	21	1	128	.11	6	.5	3.1	16	SWR
		19	645	25.87	19	16.96	155	23.06	8.04	1.1	1.6	20	1	110	.11	5	.5	1.4	14	SWR
		19	716	33.09	19	17.95	155	23.16	3.35	.8	1.0	16	2	98	.07	4	.4	.8	12	SWR
		19	856	36.21	19	26.11	155	37.40	3.17	2.5	2.9	31	3	91	.12	3	.3	.6	25	MLO
		19	9 0	13.27	19	17.16	155	20.92	5.95	1.2	1.1	21	3	131	.09	4	.5	1.4	18	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	19	1056	27.98	19	19.25	155	8.99	7.41	2.0	1.8	33	1	90	.08	4	.4	.8	19	SF4
		19	1217	30.12	19	19.55	155	11.06	8.50	1.9	1.8	30	2	97	.07	5	.4	.7	19	SF3
		19	1240	44.55	19	17.94	155	23.08	3.91	1.5	1.5	22	4	105	.07	4	.3	.9	19	SWR
		19	1632	45.59	19	16.79	155	23.16	5.45	1.9	2.2	31	2	111	.12	5	.4	1.1	20	SWR
		19	2031	30.20	19	16.73	155	22.15	3.23	1.1	1.0	15	2	130	.11	6	.5	1.5	14	SWR
		20	012	25.70	19	17.53	155	22.86	3.25	.8	1.0	15	4	117	.07	5	.4	.9	14	SWR
		20	147	12.81	19	17.60	155	17.32	32.58	1.7	1.4	22	2	133	.06	2	1.1	2.1	16	DEP
		20	148	44.38	19	16.56	155	21.63	5.80	.9	1.0	20	3	140	.08	6	.4	1.4	14	SWR
		20	2 4	58.64	19	17.12	155	20.75	6.57	1.5	1.7	26	2	139	.09	4	.5	1.0	18	SWR
		20	331	31.67	19	25.72	155	23.84	10.15	1.7	1.3	27	3	43	.04	2	.4	.9	22	KAO
		20	722	22.17	19	44.54	154	59.07	36.96	2.9	2.5	48	3	212	.12	6	.8	1.4	41	HIL
		20	8 9	47.54	19	18.82	155	13.03	8.53	2.7	2.6	44	4	87	.11	3	.4	.6	33	SF2
		20	832	39.48	19	16.78	155	22.08	7.66		1.3	16	0	129	.11	6	.7	1.7	15	SWR
		20	913	46.75	19	17.44	155	21.55	6.40	1.7	2.1	41	3	125	.12	5	.4	.9	24	SWR
		20	1015	56.09	19	57.96	155	21.01	13.23	2.8	1.8	38	6	202	.11	9	.8	.4	26	KEA
		20	1052	43.34	19	19.86	155	7.44	8.02	1.9	1.3	34	3	134	.12	5	.6	.7	23	SF4
		20	1357	23.10	19	58.69	155	20.44	12.94	2.9	2.4	36	1	203	.11	10	.9	.6	27	KEA
		20	2349	14.43	19	20.23	155	11.67	7.14	1.8	1.3	36	1	79	.13	5	.5	.8	27	SF3
		21	035	49.46	19	18.43	155	13.41	6.97	1.7	1.7	32	2	82	.11	3	.5	.9	23	SF2
		21	729	30.72	19	20.60	155	3.67	7.05	1.4	1.1	29	2	98	.12	2	.5	.8	18	SF5
		21	851	9.60	19	19.49	155	13.11	9.37	1.4	1.4	27	2	75	.09	5	.5	.8	17	SF2
		21	12 2	.76	19	16.81	155	22.94	7.20	1.8	2.1	34	3	115	.13	5	.4	1.0	25	SWR
		21	14 4	57.77	19	19.50	155	12.66	4.95	1.5	1.4	33	2	83	.13	5	.5	1.6	21	SSF
		21	2328	48.10	19	59.11	155	19.70	12.04	2.9	2.9	43	4	206	.12	11	1.0	.6	33	KEA
		22	123	56.95	19	21.63	155	3.32	8.67	1.9	1.2	28	0	105	.10	3	.6	.7	21	SF5
		22	434	6.60	19	19.12	155	13.22	6.04	1.5	1.4	29	3	78	.10	4	.4	1.0	15	SF2
		22	441	44.96	19	19.83	155	7.97	8.66	1.5	1.1	31	3	91	.10	5	.5	.7	23	SF4
		22	1153	25.98	19	20.57	155	12.90	9.05	1.6	1.3	27	1	66	.08	4	.5	.8	22	SF2
		22	12 5	20.33	20	11.17	156	25.66	10.32	4.4	4.7	46	5	226	.12	67	.8	1.5	43	DIS F
		22	1346	11.73	19	21.59	155	6.59	8.85	1.6	1.3	30	1	82	.08	3	.4	.8	20	SF4
		22	1356	32.08	19	17.25	155	20.51	6.24	1.1	1.1	21	4	131	.07	4	.4	1.0	19	SWR
		22	1357	45.08	19	17.16	155	20.18	6.82	1.6	1.6	25	5	133	.08	3	.5	.8	19	SWR
		22	1644	32.15	19	23.68	155	2.45	8.60	2.2	2.3	37	6	121	.12	4	.4	.4	24	SF5
		22	1733	32.58	19	10.90	155	32.70	6.53	2.3	1.5	31	2	104	.17	9	.5	1.2	14	LSW
		23	246	2.92	19	19.70	155	12.59	8.92	2.1	2.2	42	4	80	.12	5	.4	.5	32	SF2
		23	7 1	34.14	19	7.52	155	23.95	44.31		1.8	25	0	188	.07	8	1.4	2.9	14	LOI T
		23	1019	27.55	19	17.21	155	20.58	7.34	1.3	1.1	33	3	134	.11	4	.5	.9	21	SWR
		23	1030	1.85	19	17.73	155	23.58	4.39	1.8	1.6	31	3	94	.11	5	.4	1.7	21	SWR
		23	11 3	37.58	19	17.47	155	20.83	6.44	1.6	1.6	39	5	131	.13	4	.4	.9	28	SWR
		23	1738	24.59	19	17.59	155	21.09	8.59	2.2	2.2	40	3	127	.14	4	.4	.6	28	SWR
		23	2226	53.21	19	20.63	155	12.89	8.03	2.0	1.8	46	4	64	.11	4	.4	.6	31	SF2
		24	0 2	18.49	19	22.55	155	1.97	8.54	1.7	1.4	28	2	136	.11	5	.6	.5	19	SF5
		24	17 8	53.33	19	17.70	155	23.35	3.86	.7	1.0	18	2	105	.05	5	.4	1.2	14	SWR
		24	2228	.11	19	18.10	155	13.14	6.03	1.4	1.1	29	2	99	.11	2	.4	.9	18	SF2
		25	226	51.92	19	20.02	155	8.56	7.14	1.6	1.5	42	5	76	.12	4	.4	.8	26	SF4
		25	232	41.56	19	18.99	155	19.93	8.08	1.2	1.1	26	1	91	.10	3	.5	.9	23	SWR
		25	257	39.72	19	24.53	155	29.75	7.60	1.9	1.3	36	2	51	.12	5	.4	1.0	22	KAO
		25	329	31.00	19	19.50	155	14.42	7.34	1.9	1.8	41	4	93	.13	5	.4	.7	25	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	AUG	25	355	2.15	19	30.56	155	46.50	8.39	2.1	1.9	22	2	126	.10	1	.6	.7	15	KON
		25	456	56.22	19	15.94	155	23.25	7.49	.8	1.1	19	3	140	.08	3	.5	.9	12	SWR
		25	615	26.97	19	16.33	155	23.10	5.67	1.7	2.0	38	4	119	.12	4	.4	1.0	24	SWR
		25	1019	4.83	19	17.86	155	21.51	6.64	2.2	2.3	44	4	118	.14	5	.4	.8	35	SWR
		25	1456	31.92	19	16.90	155	21.33	6.76	1.8	1.2	29	6	132	.11	5	.4	1.2	23	SWR
		25	1511	56.52	19	22.43	155	5.94	7.29	2.0	1.4	36	3	70	.11	1	.5	.7	16	SF4
		26	217	52.27	19	19.97	155	12.49	6.45	1.5	1.3	38	3	77	.13	5	.5	1.0	27	SF2
		26	346	25.55	19	19.24	155	15.38	8.42	2.5	2.1	45	3	91	.12	4	.4	.6	36	SF1
		26	444	7.96	19	15.77	155	22.36	7.21	1.9	1.5	29	4	164	.11	4	.5	1.0	23	SWR
		26	828	12.40	19	21.56	155	1.35	7.30	1.3	1.4	19	0	178	.12	4	1.0	.6	15	SF5
		26	1042	42.14	19	15.61	155	23.41	7.25	1.9	2.0	38	4	124	.12	3	.5	.7	28	SWR
		26	1043	40.29	19	15.42	155	23.10	7.65	1.2	1.1	22	1	156	.09	3	.5	1.2	15	SWR
		26	13	2 7.83	19	19.18	155	13.55	6.93	1.5	1.8	37	4	68	.11	4	.4	.7	25	SF2
		26	1629	45.39	19	19.46	155	.57	36.12	2.2	1.5	36	0	206	.10	4	1.5	2.0	34	DEP
		26	1757	31.14	19	17.38	155	23.37	3.13	.9	1.1	20	3	100	.07	5	.4	.9	14	SWR
		27	039	28.15	19	17.57	155	20.89	8.13	1.7	1.7	27	4	129	.09	4	.4	.8	16	SWR
		27	1	2 37.30	19	18.04	155	23.24	5.58	2.4	2.6	39	4	96	.13	4	.4	1.2	28	SWR
		27	656	40.13	19	17.48	155	21.29	7.96	2.0	2.1	34	4	127	.13	5	.4	.8	21	SWR
		27	8	5 29.06	19	17.43	155	21.48	6.72	1.7	1.9	42	2	126	.14	5	.5	.8	30	SWR
		27	15	5 47.19	19	24.58	155	17.32	1.51	.9	1.3	10	0	101	.10	1	.5	.2	8	SNC
		27	20	5 48.86	19	25.10	155	15.41	.83	1.5	1.8	15	2	160	.12	2	.3	.4	7	SNC
		28	113	36.37	19	22.16	155	4.90	8.48	2.2	1.9	32	1	77	.10	3	.5	.5	24	SF5
		28	2129	31.54	19	19.41	155	12.03	8.52	2.0	1.7	46	5	92	.12	5	.4	.5	26	SF3
		29	038	4.35	19	19.90	155	9.77	7.49	1.7	1.0	23	2	85	.08	4	.5	1.0	16	SF3
		29	221	32.66	19	16.57	155	23.89	3.36	1.8	1.5	23	2	97	.12	4	.4	1.4	18	SWR
		29	314	18.11	19	18.18	155	12.87	9.87	2.5	2.2	45	5	150	.12	8	.5	.6	31	SF2
		29	510	56.50	19	17.71	155	22.11	7.42	1.2	1.3	23	0	115	.11	6	.5	1.9	17	SWR
		29	646	30.47	19	23.42	155	1.35	7.77	1.7	1.3	32	2	137	.14	6	.6	.7	22	SF5
		29	959	26.76	19	52.83	155	25.08	29.18	2.8	1.8	29	2	135	.10	8	.7	1.4	24	KEA
		29	1320	39.85	19	18.41	155	12.95	9.14	2.2	2.3	44	5	136	.12	8	.5	.7	32	SF2
		29	1535	35.89	19	18.38	155	15.15	6.97	1.7	1.6	34	0	105	.13	4	.5	.9	26	SF1
		29	1536	21.84	19	16.90	155	21.95	6.91	1.8	1.5	31	3	129	.11	6	.4	1.1	17	SWR
		29	1549	55.00	19	15.37	155	23.17	7.93	1.1	1.1	24	2	160	.09	2	.5	1.1	14	SWR
		29	1713	45.63	19	15.92	155	23.15	8.06	1.4	1.3	27	2	125	.09	3	.5	.9	18	SWR
		29	23	7 3.73	19	23.07	155	2.96	8.25	1.9	1.3	32	3	117	.12	4	.6	.6	19	SF5
		30	924	23.98	19	17.41	155	16.43	9.41	2.4	2.3	42	5	137	.11	4	.4	.5	31	SF1
		30	1133	1.32	19	20.17	155	10.57	7.97	1.8	1.7	41	3	84	.13	4	.5	.7	30	SF3
		30	15	1 56.85	19	19.74	155	11.11	7.14	1.8	1.7	38	3	92	.13	5	.4	.7	28	SF3
		30	2115	32.30	19	18.38	155	14.64	7.42	1.8	1.3	29	3	106	.09	3	.5	.8	21	SF1
		30	2152	54.22	19	20.40	155	11.84	8.25	1.6	1.4	32	3	76	.10	5	.5	.7	24	SF3
		31	117	38.06	19	20.42	155	12.44	6.93	1.6	1.6	34	3	71	.10	4	.4	.7	19	SF2
		31	140	24.84	19	24.29	155	16.73	15.46	1.7	1.3	40	3	60	.09	1	.5	.3	32	DEP
		31	632	28.04	19	20.43	155	2.93	8.04	2.3	1.8	33	1	136	.11	1	.7	.5	25	SF5
		31	812	21.21	19	28.18	156	.82	12.02	2.8	1.5	20	1	251	.12	10	2.2	.6	12	KON
		31	1246	50.38	19	19.96	155	11.67	7.70	1.9	1.8	34	4	85	.11	5	.5	.7	24	SF3
		31	1653	.31	19	16.32	155	23.39	2.18	1.0	1.0	14	1	112	.08	4	.4	1.1	10	SWR
		31	23	4 10.14	19	21.62	155	28.45	9.77	1.2	1.2	24	2	44	.09	2	.4	.8	15	KAO
	SEP	1	017	41.31	19	22.36	155	2.31	6.99	2.1	1.2	32	2	130	.20	5	.7	1.0	24	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	SEP	1	510	36.96	19	22.52	155	.38	3.82	1.5	1.3	29	2	163	.19	6	.8	2.1	16	SSF
		1	9	3 52.33	19	20.11	155	12.65	9.14	1.5	1.0	28	1	73	.08	5	.5	.8	20	SF2
		1	1042	17.62	19	45.91	154	51.69	41.98	3.1	2.6	49	3	243	.11	19	1.1	1.4	43	HIL
		1	1547	56.61	19	19.70	155	10.74	7.99	2.2	2.3	39	3	94	.10	5	.4	.6	27	SF3
		1	1913	47.36	19	20.65	155	12.98	7.53	1.5	1.4	34	3	64	.13	4	.5	.8	19	SF2
		1	1921	52.72	19	20.66	155	8.06	8.14	2.1	2.1	40	3	80	.08	4	.4	.6	23	SF4
		2	1023	56.46	19	21.19	155	6.17	7.46	1.1	1.3	18	0	92	.10	3	.6	1.3	14	SF4
		2	1024	46.30	19	20.95	155	6.25	8.42	1.1	1.1	18	0	97	.07	4	.7	1.2	12	SF4
		2	1444	52.34	19	15.87	155	28.15	12.11	1.6	1.6	22	1	71	.12	4	.5	1.3	13	LSW
		2	2036	30.00	19	19.66	155	12.45	5.28	1.4	1.2	30	2	82	.11	5	.4	1.3	20	SF2
		2	2127	46.13	19	15.73	155	34.84	7.88	1.7	1.2	29	3	63	.19	4	.6	1.0	18	LSW
		3	959	38.60	19	22.94	155	26.85	8.39	1.8	1.2	26	4	44	.10	2	.4	.7	18	KAO
		3	1912	29.98	19	49.59	155	33.50	22.65	2.3	1.6	31	4	106	.08	12	.6	1.3	28	KEA
		3	2045	19.82	19	22.15	155	26.54	7.54	1.8	1.3	26	4	42	.11	2	.4	.8	20	KAO
		4	613	.34	19	22.64	155	1.92	7.86	2.2	2.0	35	3	136	.11	5	.5	.4	25	SF5
		4	1334	41.39	19	19.64	155	7.65	8.44	2.1	2.3	36	2	102	.08	4	.5	.6	27	SF4
		4	1450	36.92	19	21.06	155	5.97	9.19	2.6	2.1	41	3	96	.08	4	.4	.5	30	SF4
		4	2251	54.76	19	21.17	155	10.87	9.35	2.2	2.6	41	3	67	.08	2	.3	.5	27	SF3
		5	343	52.11	19	20.91	155	12.99	9.35	2.1	2.8	45	3	61	.12	3	.3	.5	28	SF2
		5	1115	9.98	19	19.72	155	11.65	7.36	1.8	1.6	35	2	89	.11	5	.5	.8	24	SF3
		5	1543	16.53	19	19.45	155	11.48	9.19	2.0	2.1	35	2	96	.10	6	.4	.6	23	SF3
		5	1848	26.59	19	1.40	155	30.11	40.79	2.7	2.4	43	3	201	.07	16	.8	1.4	32	DLS
		5	1932	31.85	19	19.48	155	11.98	7.45	1.6	1.6	28	4	91	.09	5	.4	.8	16	SF3
		5	2249	7.18	19	19.02	155	15.47	8.08	2.0	1.8	31	1	104	.09	4	.4	.8	20	SF1
		5	2338	40.07	19	18.96	155	13.82	7.67	1.7	1.6	34	3	76	.10	4	.5	.8	19	SF2
		6	357	8.09	19	20.33	155	12.48	8.54	1.9	2.1	39	3	72	.12	4	.4	.6	23	SF2
		6	422	31.80	19	20.56	155	10.73	9.70	2.6	3.0	42	3	77	.12	3	.4	.6	30	SF3
		6	655	39.84	19	22.64	155	3.55	8.39	1.8	2.1	28	0	106	.12	4	.5	.5	21	SF5
		6	1936	52.07	19	11.65	155	20.70	51.23	1.9	1.8	28	0	185	.09	8	1.6	3.5	22	DEP
		6	2046	45.13	19	19.15	155	15.55	7.28	1.4	1.9	33	3	95	.09	4	.4	.7	20	SF1
		6	2221	46.23	19	38.02	156	.80	41.56	3.3	3.8	45	2	225	.09	19	.8	1.6	34	KON F
		6	2234	47.61	19	24.67	155	29.26	9.93	3.3	3.3	52	6	32	.09	5	.3	.4	41	KAO F
		6	23	0 47.30	19	24.70	155	29.19	9.49	1.8	1.6	34	2	58	.09	5	.4	.8	22	KAO
		7	349	1.02	19	20.48	155	10.68	8.13	1.9	2.4	37	2	78	.11	3	.4	.6	29	SF3
		7	526	7.29	19	21.35	155	2.47	6.26	2.1	2.3	32	0	138	.13	3	.5	.7	23	SF5
		7	12	7 30.17	19	18.87	155	15.57	8.03	1.4	1.3	30	3	109	.11	4	.5	.8	16	SF1
		7	2152	39.52	19	23.92	154	59.01	5.98	1.6	1.2	29	1	159	.15	2	.7	1.1	20	LER
		8	2	5 19.03	19	24.05	155	29.61	10.01	2.1	1.8	38	3	50	.11	5	.3	.7	24	KAO
		8	329	49.03	19	21.93	155	18.21	2.57	1.2	1.0	18	2	76	.12	4	.3	.8	13	SWR
		8	431	22.86	19	20.76	155	25.49	9.46	1.8	1.2	30	4	55	.11	4	.4	.7	23	KAO
		8	917	2.57	19	19.81	155	12.20	8.01	1.7	1.6	24	0	83	.09	5	.5	.8	19	SF3
		8	1215	17.13	18	59.84	155	19.22	45.08	2.5	2.2	40	0	225	.08	23	1.4	2.4	31	LOI
		8	1243	45.12	19	41.44	155	.50	10.12	2.3	1.7	17	0	220	.23	9	2.6	2.0	5	HIL
		8	14	5 18.45	19	25.68	155	24.01	7.27	1.8	1.4	27	4	77	.12	2	.4	1.0	17	KAO
		8	1438	32.63	19	47.06	156	2.56	38.23	2.7	1.8	44	5	233	.11	24	.9	1.2	33	HUA
		8	1954	12.85	19	20.40	155	11.76	8.71	2.0	1.9	42	4	76	.12	5	.4	.6	26	SF3
		8	22	9 49.44	19	18.70	155	13.54	6.99	1.9	1.8	36	4	85	.11	3	.4	.8	22	SF2
		9	1123	34.40	19	25.38	155	16.11	15.03	1.8	1.1	33	2	75	.09	2	.5	.3	27	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	SEP	9	1338	1.55	19	19.83	155	8.61	7.80	1.7	1.4	25	0	105	.09	5	.6	.8	20	SF4
		9	1436	13.63	19	18.25	155	23.27	8.97	1.8	1.4	17	0	123	.12	4	.7	1.2	12	SWR
		9	1528	59.74	19	23.72	155	1.48	7.07	1.7	1.3	24	1	139	.12	5	.6	.6	17	SF5
		9	1614	8.16	19	21.80	155	4.76	6.92	1.3	1.0	25	1	78	.12	3	.5	.7	13	SF5
		9	1958	56.04	19	18.97	155	15.39	7.74	1.3	1.1	29	2	96	.09	4	.5	.8	15	SF1
		9	2056	46.90	19	19.64	155	12.21	7.39	1.5	1.3	26	2	86	.11	5	.5	1.0	17	SF3
		10	557	47.30	19	22.21	155	2.77	8.53	2.0	1.8	36	1	121	.09	4	.4	.5	16	SF5
		10	2150	17.69	19	13.81	155	25.53	38.38	2.0	1.5	34	0	134	.10	3	.8	2.0	30	DLS
		11	420	39.29	19	13.91	155	32.44	7.17	1.8	1.4	31	2	71	.15	5	.5	.9	16	LSW
		11	711	32.14	19	18.71	155	13.36	7.83	1.5	1.1	28	3	80	.08	3	.5	.8	19	SF2
		11	940	6.69	19	16.46	155	22.93	8.23	2.4	2.8	48	4	120	.15	4	.4	.6	30	SWR
		11	952	53.46	19	16.25	155	22.76	6.13	1.7	1.4	28	3	127	.10	4	.4	1.0	21	SWR
		11	1422	40.79	19	39.45	155	2.36	.02	1.8	2.4	19	0	121	.18	5	.9	3.7	12	HIL L*
		11	1514	6.66	19	26.75	155	2.19	44.08	2.1	1.6	43	1	70	.10	5	.8	1.8	28	DEP
		12	127	54.33	19	17.28	155	20.80	6.28	1.5	1.5	30	4	134	.08	4	.4	.9	20	SWR
		12	1542	43.69	19	19.50	155	12.59	9.16	2.7	2.8	45	3	83	.12	5	.4	.5	31	SF2
		12	1848	46.63	20	.76	155	20.85	10.91	2.6	2.6	34	4	210	.11	14	.9	.5	14	KEA
		13	042	42.67	19	24.18	155	28.68	9.62	2.0	1.8	32	0	52	.10	4	.4	.9	27	KAO
		13	123	3.70	19	22.71	155	1.75	8.21	2.3	1.8	34	1	150	.12	6	.6	.6	24	SF5
		13	2216	11.81	19	16.44	155	22.47	7.03	1.9	2.6	41	3	129	.14	5	.4	.9	27	SWR
		14	147	23.02	19	19.82	155	11.96	6.61	1.6	1.6	39	4	84	.13	6	.4	.7	31	SF3
		14	627	39.20	19	18.76	155	13.76	8.02	2.4	2.5	44	5	91	.11	3	.4	.5	26	SF2
		14	746	12.03	19	29.33	155	15.94	10.26	2.2	1.8	42	4	59	.09	8	.3	.6	31	GLN
		14	8 8	18.06	19	18.85	155	13.67	7.76	1.7	1.6	35	1	84	.10	3	.5	.7	26	SF2
		14	954	20.84	19	17.69	155	14.04	6.03	1.3	1.1	23	1	98	.09	2	.6	1.0	15	SF2
		14	1021	53.29	19	19.55	155	11.48	9.37	2.1	2.6	31	2	94	.12	5	.4	.5	24	SF3
		14	15 0	4.00	19	16.10	155	22.69	2.78	1.2	1.1	24	2	133	.10	4	.4	1.0	18	SWR
		14	1539	44.64	19	19.56	155	12.13	7.14	2.0	1.8	41	4	88	.13	5	.4	.7	28	SF3
		14	16 1	29.79	19	19.95	155	10.85	6.92	2.3	2.3	45	5	88	.13	4	.4	.7	30	SF3
		14	1641	19.56	19	18.43	155	13.03	7.94	1.8	1.8	39	4	95	.10	3	.4	.5	25	SF2
		15	310	34.11	19	11.92	155	38.96	8.29	2.2	1.9	31	3	105	.15	6	.5	.9	21	LSW
		15	657	19.23	19	45.83	156	7.15	33.54	2.9	2.5	45	4	247	.10	31	1.1	1.9	37	HUA
		15	948	44.92	19	15.51	155	23.18	8.99	2.3	1.5	14	1	155	.07	3	.7	1.5	10	SWR
		15	1114	58.47	19	20.99	155	26.21	9.09	1.4	1.2	27	1	76	.13	4	.4	.8	16	KAO
		15	2333	10.23	19	19.60	155	11.62	5.47	1.4	1.3	28	2	93	.11	6	.5	1.1	19	SF3
		16	12 4	47.50	19	12.05	155	56.14	42.35	2.6	2.3	36	3	233	.07	10	1.1	1.3	32	KON
		16	14 0	19.10	19	27.27	155	29.61	9.03	1.6	1.2	25	3	73	.08	9	.4	1.2	14	KAO
		16	1445	20.99	19	25.66	155	28.54	6.91	1.6	1.4	32	3	60	.09	6	.5	.9	21	KAO
		16	1832	28.79	19	21.06	155	6.28	6.35	1.6	1.3	31	1	95	.12	4	.5	.9	12	SF4
		16	2113	16.59	19	21.77	155	2.47	6.58	2.0	1.8	37	4	141	.15	4	.5	.6	21	SF5
		16	2310	20.71	19	1.57	155	30.31	40.53	2.6	2.3	29	2	201	.08	15	.9	1.6	18	DLS
		17	221	55.84	19	28.11	155	35.45	.38	2.1	2.2	9	0	103	.09	1	.2	.2	5	MLO
		17	1049	46.55	19	18.16	155	23.59	4.67	2.1	2.1	22	0	114	.11	4	.5	1.6	16	SWR
		17	1114	27.69	19	17.28	155	21.98	4.63	1.4	1.1	34	7	123	.12	6	.4	1.9	23	SWR
		17	1246	7.84	19	18.38	155	15.22	7.55	1.6	1.3	31	5	106	.11	4	.5	.8	22	SF1
		17	16 7	16.72	19	18.76	155	15.11	6.83	1.6	1.1	32	2	96	.10	4	.4	.8	19	SF1
		18	1 2	43.92	19	15.99	155	26.81	8.26	1.5	1.4	37	2	67	.14	6	.4	.8	18	LSW
		18	1839	55.33	19	20.12	155	12.88	9.01	2.6	2.7	43	3	71	.09	5	.4	.5	29	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	SEP	18	1844	17.62	19	20.26	155	12.89	8.14	1.8	1.5	34	3	69	.11	4	.5	.7	22	SF2
		18	1954	3.42	19	15.90	155	21.95	8.35	1.4	1.2	22	2	176	.11	5	.6	1.3	16	SWR
		19	2 4	35.44	19	20.26	155	8.11	7.43	1.7	1.3	37	3	84	.13	5	.4	.6	25	SF4
		19	3 1	10.03	19	19.72	155	11.92	5.67	1.8	1.4	32	5	87	.10	6	.4	1.0	21	SF3
		19	635	31.82	19	20.38	155	7.61	8.86	2.3	2.1	40	3	92	.11	5	.5	.6	23	SF4
		19	931	13.70	19	19.46	155	10.15	8.94	2.0	1.5	39	4	98	.10	5	.4	.5	22	SF3
		19	1350	2.98	19	19.15	155	47.38	8.44	1.7	1.2	22	2	89	.13	10	.6	1.4	14	KON
		19	1736	54.43	19	17.07	155	21.87	5.41	2.0	2.1	31	2	127	.11	6	.4	1.5	26	SWR
		19	1812	31.85	19	20.58	155	13.55	8.05	2.5	2.5	42	3	57	.13	4	.4	.6	32	SF2
		19	2214	36.76	19	20.96	155	4.50	8.18	2.1	2.0	38	0	98	.10	3	.5	.4	26	SF5
		20	630	7.47	19	17.53	155	20.84	5.03	1.3	1.3	26	4	130	.09	4	.4	1.4	19	SWR
		20	643	24.25	19	21.68	155	6.57	7.04	1.9	1.8	31	2	80	.09	3	.4	.8	17	SF4
		20	1534	16.06	19	20.72	155	10.85	7.81	2.1	2.1	40	3	74	.12	3	.4	.7	26	SF3
		20	1641	8.55	19	17.61	155	23.32	2.71	1.7	1.3	17	1	99	.07	5	.4	.9	8	SWR
		20	1727	49.66	19	20.13	155	11.65	8.27	1.5	1.1	32	2	81	.11	5	.5	.9	18	SF3
		21	235	37.64	19	19.54	155	12.57	9.07	2.7	3.0	46	4	83	.12	5	.4	.4	29	SF2
		21	249	50.70	19	20.29	155	12.68	8.55	1.6	1.6	31	1	70	.10	4	.5	.8	21	SF2
		21	722	52.66	19	24.03	155	17.11	15.43	2.2	2.0	46	5	57	.11	1	.5	.3	35	DEP
		21	1035	33.43	19	19.77	155	10.68	8.49	1.8	1.5	27	2	91	.08	5	.5	.6	22	SF3
		21	1632	45.34	18	58.25	155	6.87	46.45	2.4	2.3	46	1	246	.09	35	1.5	2.2	41	LOI
		21	2014	54.56	19	16.27	155	23.25	7.05	1.7	1.9	35	4	116	.14	4	.5	1.2	28	SWR
		22	238	44.00	19	23.30	155	3.64	8.42	2.0	1.9	35	1	100	.11	3	.5	.5	17	SF5
		22	355	1.75	19	19.67	155	7.49	8.76	3.1	3.4	43	2	105	.09	4	.5	.4	29	SF4
		22	449	24.02	19	19.68	155	7.77	9.26	3.3	3.5	48	3	99	.10	4	.5	.4	39	SF4 F
		22	533	25.26	19	19.66	155	25.24	8.03	1.4	1.2	20	3	62	.08	4	.4	.8	14	KAO
		22	650	23.72	19	19.40	155	7.25	10.18	3.9	4.1	44	1	117	.11	4	.6	.4	40	SF4 F
		22	743	2.34	19	17.33	155	12.94	6.87	1.6	1.3	29	3	151	.11	1	.5	1.0	20	SF2
		23	5 1	54.04	19	19.57	155	12.21	7.58	1.9	1.3	34	2	88	.11	5	.4	.8	26	SF3
		23	820	21.91	19	20.50	155	4.21	6.86		1.3	8	0	306	.07	6	7.8	3.4	7	SF5
		23	1046	23.57	19	20.34	155	9.55	7.86	1.8	1.6	33	2	76	.08	3	.5	.7	17	SF3
		23	1140	48.93	19	17.42	155	12.93	7.29		1.1	25	2	143	.09	1	.6	.9	15	SF2
		23	12 6	48.97	19	17.60	155	20.82	5.98	1.7	1.2	19	1	126	.09	4	.6	1.4	15	SWR
		23	1541	4.43	19	23.65	155	2.83	6.82	1.3	1.3	20	0	111	.14	3	.6	1.1	11	SF5
		23	2011	44.07	20	16.74	155	4.93	6.94	1.6	2.4	5	0	307	.09	51	18.4	5.8	2	KEA *
		23	2055	18.78	19	16.69	155	22.12	7.68	1.3	1.2	20	3	131	.09	5	.5	1.1	11	SWR
		24	016	31.35	19	17.97	155	20.79	6.89	1.1	1.2	15	2	155	.07	4	.8	1.4	13	SWR
		24	439	42.76	19	18.49	155	20.07	14.16	1.8	1.4	29	4	112	.10	3	.5	.5	23	DEP
		24	1454	58.88	19	17.98	155	12.90	6.95	1.6	1.3	35	4	113	.11	2	.4	.8	17	SF2
		25	418	21.36	19	24.25	155	30.01	8.41	2.2	1.7	41	2	33	.09	5	.3	.7	29	KAO
		25	657	29.73	19	19.22	155	8.41	7.45	1.7	1.5	31	4	85	.07	4	.5	.8	22	SF4
		25	1238	32.98	19	19.79	155	11.22	8.09	1.9	1.8	27	2	90	.08	5	.5	1.0	17	SF3
		25	1422	15.48	19	20.16	155	11.83	7.80	2.0	1.9	37	5	81	.10	5	.4	.6	21	SF3
		25	1426	56.73	19	24.44	155	30.20	9.55	2.1	2.0	34	2	40	.08	6	.3	.7	20	KAO
		25	1441	7.26	19	19.45	155	8.80	8.23	1.4	1.6	28	3	80	.07	4	.5	.8	16	SF4
		25	1556	39.68	19	19.79	155	7.00	6.45	1.5	1.8	28	1	113	.11	5	.5	1.0	15	SF4
		25	21 6	56.19	19	19.02	155	13.33	6.67	1.8	1.3	25	4	128	.10	7	.6	1.1	15	SF2
		25	2146	46.75	19	20.23	155	12.55	8.24	1.6	1.1	26	2	73	.09	5	.5	.9	14	SF2
		25	2228	28.23	19	17.87	155	21.21	7.64	1.6	1.6	27	3	121	.10	5	.5	1.0	21	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	SEP	25	2257	34.86	19	20.08	155	12.66	8.38	1.6	1.3	25	1	73	.08	5	.5	.9	15	SF2
		26	047	53.54	19	21.82	155	18.42	12.63	1.6	1.6	36	6	33	.09	4	.4	.5	22	SWR
		26	049	42.22	19	20.77	155	4.36	8.43	1.8	1.9	27	0	103	.10	3	.6	.7	14	SF5
		26	514	16.10	19	13.76	155	25.10	38.50	2.0	2.4	33	0	135	.11	2	.8	1.7	20	DLS
		26	529	51.11	19	15.78	155	22.97	6.91	1.5	1.6	29	2	133	.09	3	.5	1.0	16	SWR
		26	638	8.85	19	11.16	155	33.25	7.25	2.0	1.8	28	1	101	.15	9	.6	1.1	14	LSW
		26	641	43.19	19	19.88	155	5.89	8.98	1.4	1.4	27	2	129	.09	5	.6	.8	13	SF4
		26	945	21.42	19	21.04	155	6.35	6.44	1.8	1.8	30	1	94	.13	4	.5	.9	22	SF4
		26	1237	45.45	19	17.36	155	20.65	6.93	1.6	1.6	25	3	149	.11	4	.5	1.0	17	SWR
		26	1238	28.53	19	16.92	155	20.97	7.41	1.8	2.1	29	3	133	.10	5	.5	1.1	18	SWR
		26	2213	38.21	19	20.57	155	13.26	8.47	2.1	2.4	39	2	62	.11	4	.4	.6	28	SF2
		27	150	.62	19	22.32	155	25.11	10.57	3.4	3.7	46	3	32	.11	4	.3	.4	41	KAO F
		27	434	1.28	19	20.47	155	12.30	9.13	2.1	2.5	41	2	71	.11	4	.4	.5	28	SF3
		27	10 2	59.55	19	19.06	155	13.43	5.87	1.6	1.4	27	2	77	.13	4	.5	1.2	16	SF2
		27	2053	31.06	19	18.15	155	16.50	8.32	2.0	2.4	39	2	121	.10	4	.5	.6	27	SF1
		28	432	39.96	19	17.74	155	23.48	4.63	1.8	1.3	22	1	95	.11	5	.4	2.1	18	SWR
		28	555	46.75	19	19.36	155	15.44	7.73	1.8	1.9	34	1	90	.10	4	.5	.7	22	SF1
		28	614	1.80	19	20.07	155	8.16	8.21	2.1	2.2	36	2	85	.11	5	.4	.6	26	SF4
		28	7 9	47.61	19	20.17	155	11.97	9.84	2.9	3.2	41	2	79	.09	5	.3	.4	32	SF3
		28	835	23.21	19	19.98	155	12.17	8.48	1.7	1.8	29	1	113	.09	5	.6	.9	20	SF3
		28	10 4	3.13	19	20.20	155	11.71	7.72		1.3	30	4	80	.11	5	.5	.8	17	SF3
		28	11 9	55.56	19	18.49	155	14.86	7.43	1.6	1.7	31	3	97	.11	4	.5	1.0	19	SF1
		28	1157	47.20	19	20.22	155	12.90	8.93	1.6	1.7	30	2	69	.08	4	.4	.6	22	SF2
		28	12 7	31.37	19	25.69	155	37.88	2.06	3.8	3.4	33	1	178	.10	4	.5	.9	29	MLO
		28	1214	13.68	19	20.34	155	11.41	7.85	1.7	1.3	28	3	79	.08	4	.4	.6	17	SF3
		28	1225	7.36	19	29.35	155	48.47	8.12	3.1	2.7	30	0	92	.13	12	.7	.9	20	KON
		28	1514	46.93	19	20.24	155	11.45	8.52	1.7	1.7	31	4	80	.09	4	.5	.6	19	SF3
		28	1859	27.74	19	20.31	155	11.26	8.13	1.7	1.8	36	3	80	.12	4	.5	.8	26	SF3
		29	257	28.72	19	17.56	155	21.05	8.82	1.7	1.8	33	4	128	.12	4	.5	.6	20	SWR
		29	357	49.58	19	21.56	155	6.88	8.23	2.4	2.6	39	3	81	.11	3	.4	.6	29	SF4
		29	416	52.71	19	19.88	155	9.10	6.50	1.8	1.3	31	3	80	.10	4	.5	1.1	25	SF4
		29	640	22.54	19	16.84	155	20.27	6.86	1.3	1.1	24	3	147	.09	4	.5	1.2	20	SWR
		29	752	36.10	19	16.60	155	23.79	2.71	1.1	1.1	21	1	99	.11	4	.4	1.1	15	SWR
		29	1225	9.81	19	19.88	155	11.87	7.69	1.7	1.5	32	2	84	.09	5	.4	.7	17	SF3
		29	1240	37.69	19	25.10	155	16.01	15.87	2.1	1.3	38	2	73	.09	2	.5	.4	27	DEP
		29	1943	53.36	19	20.74	155	13.34	9.05	1.6	1.4	27	1	59	.08	4	.5	.8	15	SF2
		29	22 6	52.59	19	20.51	155	10.57	7.41	2.1	1.8	43	4	78	.14	3	.4	.7	34	SF3
		30	7 4	29.70	19	18.79	155	13.62	8.73	1.5		32	2	71	.10	3	.5	.6	15	SF2
		30	7 4	45.75	19	18.58	155	13.62	10.25	3.9	4.0	44	2	72	.10	3	.5	.5	38	SF2 F
		30	959	.36	19	18.92	155	13.75	8.55	2.8	3.0	47	6	66	.11	4	.4	.5	33	SF2
		30	1417	49.09	19	19.41	155	16.32	8.02	2.3	2.4	38	3	105	.10	2	.4	.6	27	SF1
		30	1939	27.27	19	19.08	155	9.93	7.76	1.3	1.3	24	2	107	.06	5	.5	1.1	12	SF3
		30	21 3	45.54	19	50.16	155	23.49	30.07	2.4	2.6	38	4	172	.10	8	.8	1.6	31	KEA
		30	2234	42.57	19	22.98	154	58.30	7.99	1.7	1.6	29	0	180	.12	4	.7	.8	19	LER
	OCT	1	1440	57.20	19	20.09	155	6.94	7.79	2.4	2.0	37	1	108	.10	5	.4	.6	25	SF4
		1	1722	29.72	19	19.20	155	10.88	6.53	1.9	1.5	31	3	106	.10	6	.5	1.0	20	SF3
		1	2139	18.91	19	20.66	155	2.13	7.49	3.1	3.1	42	3	171	.10	2	.6	.4	34	SF5
		2	042	47.79	19	16.66	155	22.10	7.72	1.3	1.3	22	2	131	.10	5	.5	1.2	16	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	OCT	2	544	34.28	19	20.46	155	6.77	9.35	3.1	3.0	50	4	102	.10	5	.5	.4	37	SF4 F
		2	921	12.40	19	18.58	155	11.48	8.12	2.2	2.2	35	4	121	.09	5	.4	.7	21	SF3
		2	1143	40.50	19	20.40	155	7.23	8.97	3.1	3.1	43	2	97	.12	5	.4	.6	30	SF4
		2	1227	13.50	19	21.72	155	25.93	10.54	2.1	1.8	39	3	46	.11	3	.4	.6	24	KAO
		3	6 3	45.17	19	25.38	155	25.45	4.70	1.7	1.2	28	2	51	.11	1	.4	.9	20	KAO
		3	948	35.35	19	26.63	155	38.50	2.56	2.5	2.1	14	1	206	.11	4	.9	.8	8	MLO
		3	13 7	27.46	19	.54	155	18.75	37.76	2.6	2.1	39	2	222	.08	23	1.2	2.0	32	LOI
		3	1748	35.15	19	18.21	155	15.50	8.07	1.7	1.7	29	1	124	.08	4	.5	.6	22	SF1
		3	2216	7.23	19	16.32	155	22.71	2.49	1.8	1.3	29	2	128	.13	4	.4	1.1	18	SWR
		3	2228	5.01	19	20.18	155	12.91	8.91	1.5	1.6	36	2	69	.10	5	.5	.6	21	SF2
		3	2251	6.88	19	19.80	155	13.03	10.17	1.6	1.3	30	2	72	.07	5	.5	.7	19	SF2
		4	2 5	4.20	18	51.66	155	19.17	16.98	2.1	1.5	18	1	279	.09	36	3.0	52.9	10	LOI *
		4	1149	1.23	19	15.08	155	23.00	7.49	1.9	1.4	29	3	140	.12	2	.5	1.0	19	SWR
		4	14 9	13.07	19	20.48	155	9.55	8.43	1.6	1.2	33	3	73	.11	3	.6	.9	25	SF3
		4	1542	28.00	19	17.30	155	30.69	28.41	3.7	3.8	54	6	46	.09	4	.5	.9	47	DLS F
		4	1656	45.59	19	20.51	155	13.09	9.89	2.9	3.0	43	3	63	.11	4	.3	.4	29	SF2
		5	337	19.85	19	16.98	155	23.23	7.74	1.8	1.6	32	3	107	.11	5	.4	.7	18	SWR
		5	447	12.06	19	55.98	155	30.40	25.51	2.4	1.8	36	1	157	.09	18	.6	1.8	28	KEA
		5	10 7	47.13	19	20.52	155	11.35	8.48	1.5	1.5	30	4	76	.10	4	.5	.8	22	SF3
		5	1115	47.69	19	22.00	155	25.45	9.88	1.7	1.7	34	4	43	.10	4	.4	.6	26	KAO
		5	2154	54.01	19	21.30	155	17.58	27.96	1.7	1.2	40	3	34	.08	2	.6	.9	29	DEP
		5	2211	42.21	19	58.51	155	33.55	18.55	2.1	2.0	35	5	165	.09	24	.6	2.4	26	KEA
		6	229	46.64	19	20.36	155	12.99	8.70	1.7	1.8	36	3	66	.10	4	.4	.6	23	SF2
		6	919	54.72	19	18.82	155	13.39	8.48	1.3	1.1	20	1	78	.06	3	.6	1.0	13	SF2
		6	930	4.76	19	20.36	155	12.28	6.92	2.1	1.8	38	4	73	.11	4	.4	.7	23	SF3
		6	1215	45.39	19	25.95	155	38.71	4.03	2.8	2.8	31	1	195	.10	5	.7	1.4	20	MLO
		6	1430	46.87	19	24.38	155	12.88	6.10	2.8	2.6	44	5	44	.09	3	.3	.6	32	SF2
		6	1849	51.80	19	18.01	155	20.80	7.03	1.5	1.2	26	3	121	.09	4	.4	1.1	22	SWR
		6	1918	13.53	19	26.80	154	56.05	5.35	1.5	1.2	29	3	142	.12	2	.5	.9	18	LER
		6	2335	43.42	19	18.57	155	14.25	9.84	3.0	3.0	45	3	130	.11	6	.4	.5	36	SF2
		7	030	38.17	19	19.02	155	16.37	6.98	1.8	1.3	27	3	113	.11	3	.5	.9	21	SF1
		7	628	46.56	19	25.72	155	28.06	9.64	2.3	2.4	45	5	48	.10	5	.3	.7	29	KAO
		7	820	4.33	19	20.90	155	6.28	7.40	1.9	1.4	20	1	98	.10	4	.5	1.1	16	SF4
		7	13 1	36.24	19	26.83	155	36.15	40.80	2.8	2.5	26	1	58	.12	1	.9	2.0	3	DML
		7	1555	15.24	19	17.00	155	22.20	6.54	1.2	1.2	22	1	124	.10	6	.4	1.4	14	SWR
		7	1824	59.09	19	23.01	155	27.06	7.14	1.9	1.8	33	3	45	.10	1	.4	.8	24	KAO
		7	2259	52.40	19	14.13	155	32.91	7.48	1.8	1.5	22	1	194	.15	5	1.0	.9	11	LSW
		8	041	1.58	19	15.40	155	22.83	6.77	1.4	1.7	23	3	171	.09	3	.5	1.2	15	SWR
		8	149	28.68	19	21.18	155	18.47	12.93	1.5	1.8	43	7	47	.11	3	.4	.4	30	SWR
		8	211	26.65	19	23.84	155	16.75	3.06	1.4	1.6	19	2	74	.08	0	.3	.3	10	SSC
		8	10 2	35.01	19	20.78	155	13.51	8.55	1.6	1.5	37	4	58	.10	4	.4	.6	23	SF2
		8	1133	27.61	19	20.21	155	4.38	6.44	2.0	2.0	30	2	128	.07	3	.4	.6	17	SF5
		8	1327	58.43	19	22.94	155	2.38	8.17	2.2	2.0	38	2	123	.13	4	.5	.5	21	SF5
		8	1929	3.32	19	15.28	155	49.81	4.37	2.3	1.8	26	1	138	.13	5	.8	2.6	16	KON
		9	242	39.11	19	20.20	155	11.51	7.78	2.3	2.3	43	4	81	.14	5	.5	.6	34	SF3
		9	852	5.58	19	20.44	155	11.87	8.60	1.9	1.1	30	2	75	.09	5	.5	.7	18	SF3
		9	1110	5.47	19	22.60	155	29.89	8.61	1.9	1.3	37	3	43	.09	4	.3	.9	26	KAO
		9	1543	4.92	19	40.90	156	31.50	39.19	2.9	2.8	26	0	243	.15	67	2.6	3.1	16	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	OCT	9	2021	17.00	19	19.64	155	9.82	7.72	1.9	1.8	38	3	91	.12	4	.4	.8	26	SF3
		10	334	29.32	19	20.21	155	11.39	7.69	1.9	1.7	43	4	81	.13	4	.4	.7	25	SF3
		10	344	11.65	19	20.29	155	7.03	7.35	2.1	1.8	35	2	102	.10	5	.4	.7	18	SF4
		10	753	34.06	19	25.06	155	27.95	10.01	2.4	2.5	29	2	47	.12	5	.4	.8	21	KAO
		10	1113	38.48	19	58.85	155	45.97	10.10		1.5	11	1	162	.13	16	1.0	1.2	10	KOH
		10	1146	52.68	19	20.03	155	12.57	7.59	1.6	1.6	21	1	75	.09	5	.5	.9	17	SF2
		10	1643	7.94	19	18.88	155	12.14	6.52	1.9	1.5	36	5	104	.11	4	.5	.9	20	SF3
		10	1823	23.29	19	19.83	155	11.70	9.45	2.9	3.1	45	3	86	.10	5	.4	.4	31	SF3
		11	3	1 18.58	19	19.91	155	8.00	7.84	1.6	1.3	30	2	90	.07	5	.4	.8	20	SF4
		11	328	14.35	19	24.24	155	16.48	16.20	1.8	1.6	43	2	44	.12	1	.4	.4	27	DEP
		11	5	8 49.16	19	12.65	155	35.75	8.14	2.2	2.1	37	1	87	.21	5	.6	.9	18	LSW
		11	721	19.03	19	37.35	156	4.48	37.88	3.0	3.0	48	4	237	.10	22	1.1	.8	38	KON
		11	835	58.23	19	20.43	155	6.76	7.79	1.8	1.3	33	4	103	.10	5	.4	.6	24	SF4
		11	1537	18.48	19	21.02	155	2.49	7.16	2.1	1.8	40	2	143	.11	2	.4	.5	25	SF5
		12	516	33.60	19	19.40	155	15.23	7.57	1.4	1.3	29	1	95	.09	4	.5	.8	20	SF1
		12	725	23.34	19	19.69	155	6.82	7.79	2.1	1.7	39	6	119	.10	5	.4	.7	24	SF4
		12	930	15.71	19	20.46	155	7.51	7.50	2.2	2.1	39	4	91	.10	5	.4	.6	23	SF4
		12	935	17.41	19	21.03	155	13.23	8.03	2.4	2.5	43	3	58	.13	3	.4	.6	32	SF2
		12	947	50.40	19	20.79	155	11.06	8.16	2.0	2.0	40	4	73	.10	3	.4	.5	26	SF3
		12	1028	38.30	19	20.17	155	26.79	10.11	2.3	2.2	42	2	50	.13	5	.4	.7	28	KAO
		12	1053	8.30	19	17.47	155	13.09	7.20	1.7	1.3	29	2	129	.10	1	.5	.9	17	SF2
		12	1443	59.09	19	20.80	155	6.08	7.97	2.1	2.1	36	0	102	.11	4	.5	.7	29	SF4
		12	2226	40.61	19	19.33	155	15.51	9.18	2.4	2.5	44	3	100	.11	4	.4	.5	31	SF1
		13	013	31.38	19	18.04	155	13.33	8.46	2.4	2.5	44	5	90	.11	2	.4	.5	28	SF2
		13	415	53.64	19	20.55	155	11.55	8.76	1.9	1.6	35	3	75	.09	4	.4	.6	29	SF3
		13	5	3 26.37	19	19.46	155	6.85	7.98	1.8	1.3	35	5	125	.08	4	.4	.5	22	SF4
		13	14	1 45.25	19	19.27	155	25.97	29.91	1.8	1.3	38	2	59	.11	5	.7	1.1	32	DML
		13	1540	31.18	19	20.67	155	13.75	9.04	2.6	2.8	44	3	55	.13	4	.4	.5	35	SF2
		13	1824	35.55	19	23.04	155	24.23	9.38	1.6	1.5	40	3	32	.12	4	.3	.5	29	KAO
		13	1911	22.84	19	17.05	155	21.61	8.69	3.1	3.4	47	2	129	.14	6	.4	.5	42	SWR
		13	1914	16.35	19	17.11	155	21.80	8.50	2.8	3.0	48	4	128	.14	6	.4	.6	40	SWR
		14	036	21.10	19	24.09	154	58.72	6.49	1.7	1.1	31	2	160	.14	2	.8	.7	15	LER
		14	451	3.44	19	20.89	154	4.65	47.87	2.5	2.9	21	1	335	.14	82	4.9	3.6	5	DIS
		14	520	59.10	19	20.34	155	11.96	7.39	2.4	2.5	46	3	76	.13	5	.4	.6	34	SF3
		14	1350	59.01	19	18.11	155	23.77	9.63	2.4	2.8	45	3	88	.14	4	.4	.6	33	SWR
		14	1438	20.54	19	59.90	155	39.69	13.98	3.1	3.4	50	5	149	.10	19	.8	1.0	39	KOH F
		14	1844	9.87	19	15.25	155	27.67	7.43	1.6	1.3	32	4	78	.16	4	.4	.8	22	LSW
		14	2058	42.75	19	19.87	155	7.22	8.60	1.4	1.3	27	1	107	.06	5	.5	.7	19	SF4
		14	23	5 53.15	19	16.93	155	21.56	6.43	1.4	1.8	34	4	133	.11	6	.4	.9	21	SWR
		15	1	0 .19	18	59.21	155	3.35	35.37	3.3	3.4	49	3	248	.10	35	1.4	2.0	43	LOI
		15	6	4 2.83	19	25.45	155	37.74	2.04	2.3	2.2	25	1	95	.11	4	.5	1.1	19	MLO
		15	610	41.88	19	22.41	155	3.36	8.36	1.9	1.8	33	2	104	.09	4	.5	.5	19	SF5
		15	656	5.13	19	20.77	155	3.03	7.31	1.6	1.3	26	2	115	.10	2	.5	.7	14	SF5
		15	1251	21.61	19	21.47	155	6.13	8.46	2.3	2.3	35	1	86	.07	3	.4	.6	24	SF4
		15	1413	39.97	19	19.24	155	10.15	8.01	1.8	1.8	35	3	103	.09	5	.4	.6	25	SF3
		15	2115	53.15	19	23.88	155	15.34	36.08	1.5	1.3	22	0	96	.09	2	1.2	3.0	7	DEP L
		16	134	46.73	19	20.28	155	6.57	7.65	1.7	1.1	30	2	110	.11	5	.5	.8	15	SF4
		16	1124	43.67	19	18.98	155	12.45	6.15	1.9	1.8	36	2	97	.13	4	.5	1.0	26	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	OCT	16	1216	24.95	19	20.65	155	6.99	8.53	1.4	1.6	26	2	96	.08	5	.5	.7	18	SF4
		16	1437	12.36	19	12.88	155	31.73	5.00	1.8	1.6	30	2	132	.16	5	.6	1.8	17	LSW
		16	1619	35.11	19	13.18	155	37.33	8.14	1.9	1.9	35	3	92	.20	3	.6	.8	23	LSW
		16	17	5 39.51	19	20.41	155	7.01	7.87	1.8	1.8	31	1	100	.11	5	.4	.8	19	SF4
		16	1737	16.80	19	20.86	155	17.40	32.58	1.6	1.4	31	2	44	.08	1	.9	1.5	22	DEP
		16	1857	50.31	19	19.50	155	10.98	7.22	1.8	2.1	37	3	98	.11	5	.4	.7	22	SF3
		16	22	3 4.57	19	21.22	155	8.27	8.51	1.8	2.1	39	2	71	.09	3	.3	.5	22	SF4
		16	2331	52.98	19	19.74	155	11.57	7.67	2.0	1.9	32	2	90	.10	5	.5	.8	21	SF3
		17	6	6 59.89	19	20.13	155	12.15	7.47	1.7	1.8	36	3	77	.10	5	.5	.6	24	SF3
		17	724	15.55	19	19.73	155	6.85	8.06	2.0	1.8	36	1	117	.09	5	.5	.6	20	SF4
		17	853	27.66	19	20.66	155	10.85	8.55	1.6	1.3	32	3	75	.09	3	.4	.6	16	SF3
		17	916	41.93	19	20.18	155	12.73	7.30	1.7	1.3	30	3	71	.11	5	.5	.8	21	SF2
		17	16	0 31.65	19	20.30	155	12.84	6.81	1.9	1.8	32	2	69	.13	4	.5	.8	21	SF2
		18	057	20.31	19	19.55	155	8.16	8.22	1.9	1.9	30	1	89	.08	4	.4	.7	20	SF4
		18	814	1.67	19	22.78	155	27.32	10.22	2.5	2.6	45	3	36	.11	1	.3	.5	31	KAO
		18	1130	8.35	19	18.31	155	13.26	6.87	1.7	1.1	34	4	89	.10	2	.5	.8	19	SF2
		18	1138	50.52	19	19.81	155	10.47	8.34	1.9	1.6	35	3	91	.08	4	.4	.7	25	SF3
		18	1142	28.81	19	23.80	155	16.90	2.79	1.2	1.1	18	2	74	.09	1	.4	.2	10	SSC
		18	1941	4.64	19	19.88	155	13.68	8.48	2.2	2.3	48	4	60	.12	5	.4	.5	28	SF2
		19	253	22.35	19	26.25	155	37.91	1.19	1.3	1.1	14	2	97	.14	3	.7	.9	6	MLO
		19	416	28.49	19	18.68	155	25.89	9.93	1.8	1.5	26	3	60	.10	5	.5	.9	23	LSW
		19	10	8 35.60	19	20.09	155	11.29	9.24	3.0	2.9	46	4	83	.11	4	.3	.4	32	SF3
		19	1149	4.01	19	.37	155	18.50	40.14	2.0	1.3	30	0	237	.08	24	1.8	2.7	24	LOI
		19	1230	18.87	19	18.77	155	14.93	6.98	2.0	1.4	33	1	92	.10	4	.5	.9	19	SF1
		19	1342	54.31	19	26.52	154	56.58	5.48	1.7	1.4	30	3	143	.10	3	.5	.9	18	LER
		19	14	9 39.68	19	18.65	155	14.77	7.35	1.4	1.3	27	2	102	.07	4	.4	.9	15	SF1
		19	1449	31.57	19	25.61	155	28.91	8.85	2.0	1.6	30	2	51	.11	6	.4	.8	22	KAO
		19	1713	45.43	19	24.15	155	15.97	3.11	.9	1.3	13	2	121	.04	1	.3	.4	9	SEC
		19	1743	16.73	19	30.62	155	52.04	8.74	1.6	1.7	17	2	190	.12	6	1.6	.6	13	KON
		19	1930	30.55	19	23.85	155	15.84	3.32	1.5	1.8	25	3	82	.09	1	.3	.3	14	SEC
		19	1934	25.31	19	19.63	155	9.14	6.58	1.6	1.3	33	3	85	.12	5	.5	1.0	22	SF3
		19	2216	36.56	19	19.94	155	13.62	7.40	1.6	1.3	38	4	62	.11	5	.4	.7	22	SF2
		20	1642	22.46	19	18.85	155	13.08	7.03	1.7	1.4	34	1	85	.11	3	.5	.8	19	SF2
		21	437	19.01	19	18.80	155	14.98	6.48	1.7	1.3	30	1	93	.10	4	.5	.9	20	SF1
		21	845	53.48	19	21.16	155	6.05	6.70	1.1	1.2	26	2	94	.12	3	.6	1.0	9	SF4
		21	1651	21.35	19	19.99	155	6.28	8.17	1.6	1.3	25	2	121	.11	6	.5	.9	16	SF4
		21	1738	47.16	19	25.56	155	37.46	2.48	2.2	1.8	12	1	92	.12	4	.6	1.2	5	MLO
		22	223	15.59	19	25.80	155	37.63	2.67	2.2	1.8	18	2	94	.12	4	.6	1.0	12	MLO
		22	325	7.90	19	24.83	155	36.95	.67	2.2	1.7	11	1	124	.12	5	.6	1.3	6	MLO
		22	411	40.44	19	19.70	155	11.35	7.13	2.1	2.1	43	4	91	.13	5	.4	.6	30	SF3
		22	514	4.36	19	20.74	155	13.03	8.68	2.4	2.7	48	5	62	.11	4	.4	.5	31	SF2
		22	1322	15.10	19	19.50	155	8.09	9.00	2.4	2.4	43	3	91	.08	4	.3	.5	28	SF4
		22	1323	31.14	19	20.03	155	8.43	8.17	2.3	2.0	44	5	79	.09	5	.4	.6	30	SF4
		22	1619	20.23	19	18.85	155	13.50	6.85	1.6	1.1	20	2	73	.08	3	.5	1.2	15	SF2
		22	2156	8.92	19	19.47	155	8.73	9.52	3.3	3.8	44	0	82	.11	4	.5	.4	38	SF4
		22	22	0 59.15	19	16.83	155	22.39	5.61	1.8	2.3	35	1	124	.12	5	.4	1.3	24	SWR
		22	2215	7.39	19	17.84	155	20.86	6.62	1.7	1.1	26	2	123	.08	4	.4	1.2	17	SWR
		23	226	21.04	19	30.26	155	27.60	5.02	1.8	1.0	16	3	96	.10	3	.5	1.2	8	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	OCT	23	435	34.92	19	26.68	154	56.04	5.88	1.5	1.1	24	3	143	.10	2	.5	.6	12	LER
		23	438	59.46	19	20.71	155	12.72	8.39	1.5	1.3	30	2	65	.09	4	.5	.7	16	SF2
		23	712	22.93	19	18.50	155	15.16	7.10	1.7	1.4	26	3	102	.10	4	.5	1.0	18	SF1
		23	1045	34.77	19	25.44	154	55.83	6.14	1.7	1.3	24	1	166	.10	4	.7	1.1	14	LER
		23	1311	41.99	19	19.92	155	10.80	8.64	2.4	2.4	42	6	89	.12	4	.4	.6	30	SF3
		23	1652	46.28	19	20.31	155	7.63	8.08	1.5	1.3	30	2	91	.09	5	.5	.9	20	SF4
		23	1745	11.47	19	23.89	155	26.73	10.05	1.8	1.3	25	2	48	.09	3	.4	.9	20	KAO
		23	2013	47.13	19	21.41	155	14.78	9.44	1.5	1.6	28	3	82	.10	3	.5	.8	16	SF1
		23	2049	35.78	19	50.41	155	10.39	43.99	2.3	1.3	30	1	200	.09	19	1.1	2.5	20	KEA
		24	120	46.12	19	27.91	155	41.92	9.23	1.4	1.3	25	2	89	.11	9	.4	1.1	17	MLO
		24	936	26.43	19	19.17	155	11.28	7.17	1.8	2.1	33	4	105	.09	6	.4	.7	21	SF3
		24	1153	55.75	19	15.44	154	52.49	40.34	2.3	1.6	40	0	253	.08	20	2.6	2.5	36	DIS
		24	1415	4.01	19	17.59	155	13.03	7.79	2.1	2.0	39	3	125	.14	1	.5	.8	26	SF2
		24	23 0	33.56	19	19.48	155	11.78	7.75	1.6	1.1	35	4	93	.12	5	.4	.8	21	SF3
		25	421	44.94	19	20.00	155	12.30	7.30	1.5	1.1	32	3	79	.11	5	.5	.9	20	SF3
		25	1119	10.40	19	20.52	155	12.75	8.43	1.5	1.3	29	2	67	.09	4	.5	.8	17	SF2
		25	1918	58.43	19	22.41	155	16.46	33.52	1.9	1.6	35	0	50	.08	1	.7	1.4	28	DEP
		26	543	19.35	19	18.91	155	13.20	6.69	1.7	1.6	40	2	81	.12	4	.4	.8	22	SF2
		26	919	51.56	19	24.36	155	16.94	2.00	1.2	1.6	14	3	87	.08	1	.4	.2	7	SSC
		26	1159	9.57	19	16.59	155	22.19	7.30	1.8	1.9	31	2	132	.12	5	.4	.9	23	SWR
		26	2159	40.36	19	22.71	155	2.12	7.90	2.1	2.2	35	1	131	.10	5	.4	.6	23	SF5
		27	3 2	33.51	19	19.43	155	11.67	7.67	1.5	1.3	34	4	96	.09	5	.5	.8	21	SF3
		27	425	19.95	19	20.59	155	4.25	8.62	2.2	2.3	38	1	110	.08	3	.5	.4	24	SF5
		27	632	43.01	19	11.79	155	28.95	5.75	2.2	1.6	27	0	85	.12	5	.5	1.2	15	LSW
		27	913	27.99	19	19.44	155	12.45	7.58	1.8	1.6	36	6	86	.10	5	.4	.7	15	SF2
		27	1228	54.66	19	22.06	155	6.48	8.13	2.4	2.1	42	5	75	.12	2	.4	.6	25	SF4
		27	1753	58.28	19	21.36	155	7.10	8.45	2.5	2.7	44	4	82	.08	3	.4	.4	23	SF4
		27	2333	32.26	19	22.60	155	17.21	32.88	4.0	4.2	49	2	38	.12	2	.6	1.1	47	DEP F
		28	143	20.66	19	22.42	155	17.23	32.67	2.7	3.0	51	3	38	.11	2	.5	.9	46	DEP
		28	414	32.81	19	16.79	155	23.17	8.54	1.8	1.6	30	2	111	.13	5	.5	.7	12	SWR
		28	636	23.18	19	22.46	155	17.10	32.76	2.5	2.2	49	2	40	.11	2	.5	.9	38	DEP
		28	750	13.14	19	16.66	155	22.18	8.28	2.3	1.8	47	5	130	.15	5	.4	.7	31	SWR
		28	750	39.62	19	16.59	155	21.85	7.45	2.7	2.8	49	3	133	.16	6	.4	.8	36	SWR
		28	752	29.96	19	16.77	155	21.63	6.92	1.8	1.4	33	4	133	.10	6	.4	.8	24	SWR
		28	837	42.25	19	24.07	155	16.93	14.30	1.6	.7	24	2	80	.08	1	.6	.8	15	DEP
		28	1332	26.74	19	20.71	155	6.95	8.96	2.9	2.8	42	2	95	.09	4	.4	.5	32	SF4
		28	1742	23.42	19	21.41	155	28.37	9.28	1.6	1.4	33	1	42	.11	2	.4	.7	27	KAO
		28	1856	33.08	19	19.51	155	7.16	8.45	1.6	1.3	32	3	116	.08	4	.5	.7	21	SF4
		28	2253	4.10	19	22.63	155	16.73	30.13	1.4	1.0	26	1	82	.07	1	1.0	1.7	19	DEP
		28	2336	43.39	19	22.42	155	16.43	30.84	1.5	1.2	24	0	50	.07	1	1.1	2.2	18	DEP
		28	2355	53.43	20	14.33	155	54.22	36.46	2.5	2.4	24	3	314	.09	18	1.7	.8	15	KOH
		29	117	16.39	19	22.30	155	6.15	7.79	2.0	1.5	35	1	72	.09	1	.4	.7	17	SF4
		29	118	33.76	19	22.20	155	6.36	8.45	2.0	1.8	34	4	73	.11	2	.4	.6	20	SF4
		29	557	12.89	19	20.01	155	10.16	8.05	1.8	1.7	31	2	86	.08	4	.5	.7	22	SF3
		29	634	.27	19	20.43	155	11.79	8.44	1.9	1.9	40	2	75	.11	5	.4	.6	24	SF3
		29	918	6.36	19	19.82	155	12.33	7.11	1.6	1.1	29	3	81	.09	5	.5	.9	18	SF2
		29	1447	17.41	19	20.29	155	12.11	8.81	2.3	2.4	44	4	76	.10	5	.4	.5	32	SF3
		29	20 6	7.55	19	22.96	155	1.68	7.49	1.9	1.3	31	2	146	.14	5	.6	.7	20	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	OCT	29	2014	6.19	19	24.00	155	16.40	10.01	1.8	1.1	20	2	102	.08	0	.6	.8	11	INT LT
		29	2112	2.96	19	19.44	155	11.99	4.18	1.5	1.4	37	4	92	.15	5	.4	1.8	23	SSF
		30	423	25.62	19	27.63	155	37.55	1.66	2.2	1.5	10	0	111	.13	2	.5	.8	5	MLO
		30	627	4.08	19	22.16	155	2.32	7.84	1.6	1.3	25	1	141	.14	4	.8	.8	20	SF5
		30	753	42.62	19	20.47	155	12.90	8.66	1.4	1.5	27	3	66	.09	4	.5	.7	20	SF2
		30	754	54.32	19	19.88	155	18.68	5.00	2.6	2.0	42	3	58	.11	2	.3	.9	27	SWR
		30	852	54.20	19	23.76	155	26.06	9.42	2.2	1.7	39	3	47	.12	3	.4	.7	28	KAO
		30	1233	39.38	19	18.42	155	13.81	8.37	1.7	1.5	34	1	95	.11	3	.5	.8	22	SF2
		30	1253	.33	19	41.42	155	3.48	6.76	2.5	2.6	30	0	186	.19	21	1.4	3.0	11	HIL R
		30	1648	55.41	19	16.92	155	22.82	6.58	1.8	1.5	34	4	115	.13	5	.4	.9	22	SWR
		30	1740	48.53	19	20.63	155	13.46	8.89	1.4	1.1	28	2	67	.07	4	.5	.7	17	SF2
		31	140	27.94	19	15.48	155	12.92	48.13	2.4	1.9	45	1	170	.09	3	.9	1.4	36	DEP
		31	237	9.85	19	16.50	155	22.45	5.53	1.9	2.1	39	2	129	.12	5	.4	1.0	25	SWR
		31	9 5	25.31	19	21.82	155	4.90	8.67	2.3	2.2	40	2	78	.09	3	.5	.5	24	SF5
		31	945	13.03	19	22.01	155	5.11	8.63	2.0	1.8	33	1	76	.08	3	.4	.6	21	SF5
		31	2157	35.75	19	19.90	155	10.88	7.40	2.5	2.6	37	1	89	.11	4	.4	.6	29	SF3
	NOV	1	252	9.12	19	19.36	155	13.37	6.47	1.5	1.3	32	3	72	.12	4	.4	.9	19	SF2
		1	550	14.80	19	23.46	155	16.82	2.86	1.3	1.1	21	3	50	.09	0	.3	.2	12	SSC
		1	727	32.97	19	30.50	155	20.76	13.89	2.1	1.6	37	5	69	.10	5	.4	.5	26	DML
		1	918	51.46	19	17.62	155	20.87	9.45	2.4	2.9	48	4	126	.12	4	.4	.5	31	SWR
		1	16 5	50.64	19	29.09	155	52.58	10.97	3.1	3.0	41	5	97	.15	4	.6	.4	25	KON
		1	1923	42.48	19	21.30	155	7.50	7.34	1.7	1.5	38	1	80	.12	4	.5	.8	20	SF4
		1	2033	3.37	19	7.26	155	28.11	29.91	2.3	1.5	38	2	180	.07	4	.7	1.4	31	DLS
		2	2 3	10.52	19	24.49	155	24.87	10.75	2.6	2.7	49	5	30	.12	2	.3	.4	37	KAO
		2	226	1.15	19	19.08	155	13.40	7.64	2.2	2.4	47	6	74	.12	4	.4	.6	23	SF2
		2	336	7.26	19	19.72	155	11.03	8.56	1.9	1.9	43	2	92	.12	5	.4	.6	32	SF3
		2	5 8	36.15	19	24.55	155	13.49	55.04	2.2	1.6	42	1	49	.11	2	.7	1.2	36	DEP
		2	643	51.80	19	20.93	155	12.60	8.01	1.8	1.8	31	1	122	.12	3	.6	.5	21	SF2
		2	1114	16.31	19	20.20	155	7.60	5.56	1.6	1.4	31	3	94	.11	5	.5	1.3	18	SF4
		2	1231	42.92	19	18.31	155	13.27	7.26	1.7	1.8	36	3	88	.10	2	.5	.8	20	SF2
		2	1726	17.11	19	30.91	155	57.44	10.44	2.7	2.5	29	2	232	.14	5	1.3	.6	18	KON
		3	118	56.10	19	17.50	155	21.02	5.50	1.7	1.5	24	2	126	.09	4	.5	1.4	19	SWR
		3	2 1	24.20	19	18.22	155	16.72	33.03	1.9	1.6	37	3	119	.09	3	.8	1.1	29	DEP
		3	215	58.83	19	13.46	156	1.53	14.49	2.1	2.3	22	1	255	.17	17	2.6	.8	9	KON
		3	320	22.66	19	20.40	155	12.36	7.98	1.5	1.5	34	2	72	.13	4	.5	.7	21	SF2
		3	326	44.49	20	.72	155	35.64	11.19	2.6	2.2	33	4	173	.09	23	.7	.5	17	KOH
		3	328	1.67	19	20.77	155	10.75	7.99	2.2	2.0	41	4	73	.11	3	.4	.6	21	SF3
		3	437	17.04	19	25.94	155	24.08	10.11	2.5	2.4	47	3	34	.12	2	.3	.4	32	KAO
		3	10 5	9.36	19	19.84	155	12.27	8.14	1.5	1.3	28	3	81	.06	5	.5	.8	19	SF3
		3	1956	23.84	19	23.82	155	16.76	2.92	1.6	2.0	23	3	74	.08	0	.3	.2	16	SSC
		3	2037	43.66	19	23.98	155	16.78	2.57	1.1	1.0	15	2	85	.08	0	.4	.3	13	SSC
		4	10 3	55.20	19	23.64	155	16.84	2.68	1.1	1.3	15	2	47	.10	1	.4	.2	9	SSC
		4	1045	10.73	19	18.79	155	47.56	7.49	2.5	2.1	31	3	116	.15	10	.6	1.0	13	KON
		4	1135	38.43	19	20.10	155	12.45	7.44	1.6	1.5	30	2	76	.11	5	.5	.9	17	SF2
		4	16 8	9.08	19	25.09	155	16.02	9.17	1.6	.9	24	3	147	.10	2	.6	.7	12	INT L
		4	18 8	22.70	19	20.60	155	13.05	8.32	1.6	2.0	37	3	63	.12	4	.5	.7	24	SF2
		4	1917	27.49	19	17.47	155	21.30	7.46	1.7	1.9	36	4	125	.12	5	.5	.7	23	SWR
		5	5 6	29.18	19	24.25	155	17.31	14.44	1.8	1.1	36	3	40	.08	1	.5	.4	24	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	NOV	5	5 6	46.79	19	18.95	155	47.99	11.06	2.7	2.3	33	3	94	.11	9	.5	.5	16	KON
		5	824	22.34	19	22.41	155	1.09	7.23	2.8	3.0	33	2	168	.09	6	.6	.4	26	SF5 F
		5	1355	30.43	19	19.88	155	12.15	8.70	1.6	1.1	25	2	82	.07	5	.5	.9	18	SF3
		5	1518	34.15	19	13.10	155	15.81	32.42	2.2	1.8	46	2	179	.09	8	.7	1.0	41	DEP
		5	21 7	16.63	19	21.60	155	2.15	8.19	2.5	2.7	41	3	145	.10	3	.5	.4	25	SF5
		6	031	9.59	19	19.92	155	12.09	7.44	1.6	1.4	21	0	82	.07	5	.5	1.0	18	SF3
		6	1429	7.37	19	20.30	155	13.05	7.54	1.8	1.8	43	3	66	.14	4	.5	.6	28	SF2
		7	014	6.35	19	25.92	155	26.48	4.95	2.0	1.4	32	2	56	.12	3	.3	1.1	17	KAO
		7	016	23.87	19	21.02	155	4.76	8.00	1.5	1.4	27	0	98	.11	4	.6	.7	16	SF5
		7	723	46.83	19	20.14	155	13.09	9.83	3.1	3.4	47	2	68	.10	5	.4	.3	40	SF2 F
		7	833	40.34	19	23.87	155	16.88	2.92	1.2	1.3	21	3	77	.06	1	.3	.2	11	SSC
		7	10 5	23.95	19	20.71	155	27.37	29.12	2.2	1.3	33	1	50	.10	3	.6	1.1	27	DML
		7	1311	3.38	19	19.98	155	12.14	8.09	1.8	1.7	37	3	80	.10	5	.4	.6	25	SF3
		7	1447	53.66	19	17.59	155	14.97	6.16	1.9	1.5	34	2	126	.11	3	.4	.8	23	SF1
		7	1538	48.94	19	10.12	155	36.62	8.94	2.0	1.8	31	2	102	.12	9	.5	.9	17	LSW
		7	1720	47.42	19	23.58	155	16.80	3.10	.9	.9	17	2	41	.09	0	.4	.3	7	SSC
		7	1737	37.48	19	18.51	155	13.86	8.01	1.5	1.3	25	0	93	.10	3	.5	.9	15	SF2
		7	18 1	12.02	19	29.41	155	37.35	3.61	1.5	1.8	14	1	253	.11	2	2.1	.6	9	MLO
		7	2336	3.56	19	23.65	155	16.84	2.67	1.1	1.3	19	3	48	.07	1	.3	.2	11	SSC
		8	330	45.42	19	16.93	155	21.95	6.17	1.9	2.3	39	0	128	.14	6	.4	.9	25	SWR
		8	555	33.30	19	19.01	155	12.26	5.55	1.6	1.0	32	3	98	.12	4	.5	1.3	20	SF3
		8	6 5	44.63	19	20.09	155	13.11	7.09	1.6	1.2	28	2	68	.10	5	.5	.9	17	SF2
		8	7 5	30.81	19	19.94	155	9.38	6.71	1.6	1.4	32	3	82	.11	4	.5	.9	14	SF3
		8	1314	5.40	19	19.07	155	15.69	7.09		1.1	18	0	116	.08	4	.6	1.1	13	SF1
		8	1721	9.40	19	28.90	155	36.03	2.73	2.5	2.4	19	1	88	.14	1	.5	.3	13	MLO
		8	1843	8.89	19	16.74	155	23.17	6.36	1.8	1.8	21	1	124	.11	6	.5	1.6	15	SWR
		8	2246	43.41	19	20.21	155	12.62	8.72		1.1	27	0	72	.09	5	.4	.7	14	SF2
		9	145	36.78	19	19.61	155	7.78	9.22	2.9	3.2	38	1	99	.10	4	.5	.4	29	SF4
		9	1327	50.82	19	20.45	155	12.94	7.77	1.6	1.3	28	2	66	.10	4	.5	.8	20	SF2
		9	1417	12.60	19	17.78	155	23.52	3.01	2.1	2.3	32	1	94	.10	5	.3	.9	17	SWR
		9	1639	20.31	19	20.18	155	6.92	7.54	1.9	1.3	31	2	106	.10	5	.5	.8	20	SF4
		9	2137	8.78	19	18.10	155	16.38	8.12	2.0	1.8	41	3	132	.10	4	.4	.6	23	SF1
		10	118	32.55	19	20.10	155	13.24	7.63	2.0	2.2	43	3	66	.13	5	.4	.7	29	SF2
		10	3 2	56.58	19	20.58	155	12.67	10.31	4.4	4.9	47	1	67	.11	4	.4	.3	43	SF2 F
		10	312	41.44	19	20.80	155	11.57	7.96	1.7	1.5	34	4	71	.10	4	.4	.7	22	SF3
		10	319	53.45	19	19.61	155	10.95	8.37	1.8	1.5	38	3	95	.14	5	.5	.7	20	SF3
		10	331	2.64	19	20.34	155	12.44	8.96	3.4	3.5	49	3	72	.12	4	.4	.5	42	SF2 F
		10	348	13.71	19	20.21	155	11.30	8.05	2.3	2.4	45	3	81	.13	4	.4	.6	32	SF3
		10	4 1	50.11	19	19.85	155	12.22	7.72	1.9	1.8	44	2	82	.12	5	.4	.6	29	SF3
		10	411	25.89	19	20.68	155	10.70	8.38	1.7	1.4	33	2	74	.07	3	.4	.7	18	SF3
		10	416	24.62	19	24.30	155	33.73	34.90	2.5	2.9	22	0	86	.13	7	.9	2.1	0	DML L
		10	5 5	41.33	19	20.21	155	11.49	6.95	1.7	1.6	31	2	81	.11	4	.5	.9	22	SF3
		10	616	22.78	19	17.27	155	12.77	6.62	1.6	1.4	33	2	163	.13	1	.6	.9	18	SF2
		10	1021	38.26	19	20.95	155	13.09	8.16	1.5	1.4	33	3	60	.09	3	.4	.6	22	SF2
		10	1355	26.32	19	20.96	155	11.85	9.01	1.9	1.7	36	3	68	.11	4	.4	.6	23	SF3
		10	1525	50.55	19	23.70	155	16.74	2.87	1.6	1.9	23	4	44	.12	0	.3	.3	16	SSC
		10	2031	6.90	19	18.03	155	20.75	7.23	1.9	2.2	45	6	121	.09	4	.3	.6	31	SWR
		11	048	52.28	19	18.86	155	15.30	6.70	1.3	1.1	27	3	106	.09	4	.5	.9	18	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	NOV	11	129	19.97	19	19.29	155	13.68	5.87	1.8	2.1	43	3	65	.13	4	.4	.9	29	SF2
		11	131	29.09	19	17.01	155	23.29	5.05	2.0	2.6	44	1	106	.14	5	.4	1.2	31	SWR
		11	6 1	6.48	19	19.25	155	11.49	7.84	1.6	1.2	32	3	102	.09	5	.5	.7	20	SF3
		11	1019	32.72	19	18.96	155	15.55	6.96	1.9	1.9	38	2	95	.12	4	.4	.8	27	SF1
		11	1215	.40	19	20.23	155	25.27	10.41	1.6	1.4	16	1	104	.08	4	.6	1.1	13	KAO
		11	16 8	1.18	19	15.95	155	23.25	8.10	1.4	1.1	20	3	140	.08	3	.5	1.0	16	SWR
		11	1936	34.31	19	20.68	155	9.85	8.64	1.8	1.3	27	2	73	.06	3	.5	.9	22	SF3
		11	2123	31.70	19	22.16	155	17.10	31.28	2.0	1.3	33	1	60	.08	2	.8	1.2	25	DEP
		11	22 3	52.28	19	21.93	155	2.91	9.05	1.8	1.5	28	3	126	.10	4	.5	.7	21	SF5
		11	2236	11.42	19	19.81	155	11.41	9.74	2.9	3.2	46	2	88	.10	5	.4	.3	37	SF3 F
		12	253	4.52	19	21.39	155	4.66	6.88	1.9	1.8	31	1	86	.13	4	.4	.7	20	SF5
		12	629	12.09	19	19.66	155	11.04	7.40	1.6	1.0	27	2	94	.11	5	.6	1.1	21	SF3
		12	1213	6.39	19	36.85	155	49.78	13.73	2.6	2.1	31	3	140	.13	8	.6	.4	24	KON
		12	1525	30.19	19	32.71	155	56.95	5.69	2.1	1.7	29	4	210	.18	7	.8	.9	18	KON
		13	2 0	13.64	19	21.64	155	4.44	7.62	1.7	1.3	32	0	83	.13	4	.5	.8	21	SF5
		13	513	38.38	19	17.16	155	21.87	5.24	1.4	1.3	28	1	126	.13	6	.5	1.8	23	SWR
		13	1451	42.25	19	23.64	155	16.71	2.73	1.4	1.5	21	3	43	.11	1	.4	.3	14	SSC
		13	1738	16.26	19	19.33	155	15.79	7.87	1.5	1.0	32	3	102	.12	3	.5	.8	20	SF1
		13	2011	13.29	19	15.96	155	22.80	6.66	1.6	1.5	30	1	133	.11	4	.4	1.0	22	SWR
		14	013	12.74	19	19.30	155	13.11	8.30	2.6	2.7	46	3	78	.12	4	.4	.5	39	SF2
		14	644	17.41	19	26.52	155	27.22	8.53	2.2	1.3	41	4	48	.11	4	.3	.7	28	KAO
		14	956	27.82	19	25.22	155	16.14	14.38	1.9	1.2	36	3	74	.10	2	.5	.3	26	DEP
		15	16 4	59.60	19	58.37	155	20.42	9.58	2.3	2.1	31	4	201	.12	9	.7	.6	18	KEA
		15	1725	53.48	19	17.36	155	13.72	7.50	1.5	1.1	25	2	137	.08	1	.7	.9	16	SF2
		15	1939	3.00	19	57.84	155	21.06	11.95	2.2	1.9	24	4	197	.11	8	.9	.4	14	KEA
		15	2023	59.37	19	57.76	155	21.13	10.11	3.0	2.9	37	4	197	.10	8	.6	.5	22	KEA F
		15	21 3	28.25	19	58.02	155	20.69	9.92	2.9	2.9	44	4	199	.11	9	.8	.6	32	KEA F
		15	2122	25.42	19	57.98	155	20.73	11.49	2.5		28	3	199	.12	9	.9	.4	20	KEA F
		15	2123	8.86	19	57.97	155	21.08	11.75	2.7	2.4	41	5	199	.12	9	.8	.4	29	KEA F
		15	2137	25.03	19	58.05	155	21.28	11.55	2.0	1.6	26	4	198	.11	9	.8	.4	18	KEA
		15	2159	45.44	19	57.53	155	20.88	11.54	2.0	1.6	21	3	201	.12	8	1.0	.5	12	KEA
		15	22 4	10.50	19	58.10	155	21.49	11.64	1.8	1.5	21	3	198	.12	9	1.1	.5	13	KEA
		15	2340	54.76	19	58.26	155	20.89	11.75	1.9	1.5	21	3	199	.12	9	1.0	.5	12	KEA
		16	152	31.93	19	20.52	155	9.83	7.49	1.8	1.3	28	2	75	.09	3	.5	.7	19	SF3
		16	2 8	40.36	19	58.34	155	20.48	12.54	2.5	2.4	37	4	201	.13	9	1.0	.6	25	KEA F
		16	226	40.23	19	57.43	155	21.65	12.15	3.4	3.4	49	3	174	.11	8	.8	.6	44	KEA F
		16	344	30.31	19	57.49	155	21.30	11.87	2.3	1.9	35	5	195	.11	8	.8	.3	19	KEA
		16	436	58.96	19	57.30	155	21.38	11.42	2.8	2.6	43	2	195	.12	7	.8	.6	35	KEA F
		16	515	44.81	19	58.22	155	20.97	11.75	2.0	1.5	20	4	199	.12	9	1.3	.4	13	KEA
		16	718	28.10	19	58.43	155	20.45	11.83	2.3	2.2	21	4	201	.10	9	1.0	.4	12	KEA
		16	720	10.49	19	58.64	155	20.15	11.72	2.5	2.6	29	4	203	.15	10	1.1	.5	17	KEA F
		16	1124	10.84	19	57.58	155	21.25	11.79	1.9	1.8	19	3	197	.10	8	1.0	.5	14	KEA
		16	12 4	4.90	19	19.92	155	8.37	8.11	2.1	2.5	40	3	82	.10	5	.4	.6	27	SF4
		16	12 6	12.10	19	19.98	155	8.44	7.25	2.4	2.8	40	2	80	.12	5	.4	.7	23	SF4
		16	1441	31.56	19	11.15	155	28.93	33.93	2.2	1.7	31	1	80	.06	4	.8	1.6	26	DLS
		16	1722	52.67	19	57.85	155	20.75	11.83	2.4	2.5	36	4	199	.11	8	.9	.5	25	KEA
		16	1735	3.12	19	54.17	155	19.92	10.43	1.9	1.7	21	1	239	.09	2	1.2	.4	13	KEA
		16	1739	2.52	19	21.80	155	2.10	8.18	1.7	1.8	30	0	150	.12	4	.8	.5	21	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	NOV	16	1747	12.81	19	58.02	155	20.76	12.10	2.3	2.3	27	4	199	.12	9	1.2	.5	16	KEA	
		16	1750	37.03	19	57.69	155	20.81	12.15	1.9	1.9	24	3	197	.12	8	.9	.5	13	KEA	
		16	1910	9.55	19	16.84	155	21.95	8.46	3.0	3.4	45	2	130	.15	6	.4	.6	39	SWR	
		16	21	3 45.12	19	57.15	155	21.98	12.53	1.8	1.6	13	2	225	.03	7	.9	.4	7	KEA	
		16	21	8 42.84	19	57.78	155	21.83	11.43	1.9	1.5	18	3	196	.13	8	1.1	.5	14	KEA	
		17	020	22.00	19	57.61	155	21.29	11.95	2.5	2.4	25	4	197	.07	8	.8	.4	15	KEA	
		17	418	45.10	19	18.01	155	23.62	3.29	1.7	1.9	33	3	91	.13	4	.4	1.0	19	SWR	
		17	650	1.37	19	53.90	155	19.86	10.41	2.1	2.1	27	3	237	.11	2	1.0	.4	24	KEA	
		17	933	28.67	19	12.57	155	28.62	.03	2.5	2.3	42	4	90	.17	6	.4	.6	25	LSW	*
		17	1040	30.06	19	57.59	155	21.64	12.22	2.4	2.0	25	5	195	.08	8	.8	.4	14	KEA	
		17	1810	41.66	19	23.44	155	24.64	11.36	1.6	1.2	40	3	35	.10	4	.4	.5	31	KAO	
		17	1942	4.14	19	57.75	155	21.28	11.80	2.2	1.8	20	6	197	.11	8	.9	.4	7	KEA	
		17	23	8 46.13	19	19.35	155	11.85	8.36	2.4	2.4	43	3	96	.11	5	.4	.5	28	SF3	
		18	118	33.03	19	23.58	155	16.62	2.38	2.2	2.9	36	4	37	.13	1	.3	.2	21	SSC	
		18	420	50.98	19	57.52	155	20.95	9.80	2.7	2.8	42	4	197	.11	23	.6	.6	29	KEA	
		18	7	9 26.68	19	17.75	155	23.61	4.42	2.1	2.6	35	4	93	.11	5	.3	1.7	18	SWR	
		18	753	2.84	19	58.08	155	19.97	9.65		1.4	13	2	201	.11	9	.9	.6	4	KEA	
		18	1029	38.67	19	18.87	155	13.37	9.58	2.7	3.0	47	5	130	.11	7	.4	.4	35	SF2	
		18	11	5 43.16	19	18.42	155	13.41	6.64	1.7	1.5	33	2	82	.11	3	.5	.9	23	SF2	
		18	1124	10.71	19	57.49	155	20.94	12.11	2.3	2.4	21	4	197	.10	8	1.1	.5	12	KEA	
		18	1239	8.35	19	24.02	155	16.83	2.81	1.1	1.1	16	4	84	.08	0	.4	.3	10	SSC	
		18	2229	54.85	19	22.17	155	28.88	10.89	3.6	3.7	50	3	36	.11	2	.3	.4	45	KAO	F
		19	310	41.72	19	19.34	155	11.53	7.82	1.7	1.4	32	3	99	.10	5	.5	.8	20	SF3	
		19	10	2 34.04	19	58.26	155	20.63	11.81	2.8	2.6	30	3	201	.12	9	.9	.5	14	KEA	F
		19	1058	41.91	19	59.09	155	20.02	11.19	2.5	2.4	18	1	205	.13	11	1.4	.5	10	KEA	
		19	1348	39.87	19	20.12	155	11.35	7.12	1.9	2.1	34	4	83	.11	4	.4	.6	27	SF3	
		19	1443	20.89	19	58.49	155	20.72	11.78	2.4	2.6	32	3	201	.10	10	1.0	.5	18	KEA	
		19	16	4 33.15	19	19.18	155	15.44	8.85	2.5	2.9	46	5	125	.12	4	.4	.5	31	SF1	
		19	1932	58.14	19	57.41	155	21.27	11.84	3.8	4.2	53	5	195	.12	8	.7	.6	47	KEA	F
		20	031	44.98	19	58.98	155	19.81	12.57	2.3	2.6	28	3	205	.14	10	1.3	.5	17	KEA	
		20	521	5.27	19	29.61	155	44.34	7.22	2.1	1.6	29	4	67	.10	3	.5	1.0	21	KON	
		20	742	52.41	19	21.73	155	5.01	8.77	3.4	4.0	49	4	81	.10	3	.5	.4	42	SF5	F
		20	947	7.88	19	21.63	155	1.44	7.31	1.7	1.6	30	1	170	.13	4	.8	.6	15	SF5	
		20	10	4 30.31	19	22.33	155	28.95	9.35	1.6	1.4	26	1	65	.11	2	.4	.9	20	KAO	
		20	1054	54.58	19	57.54	155	21.29	12.05	2.1	2.1	20	4	196	.08	8	.9	.4	14	KEA	
		20	1437	52.03	19	57.65	155	20.82	11.84	2.2	2.1	26	4	197	.10	8	.9	.4	18	KEA	
		20	16	0 2.96	19	58.16	155	20.46	12.11	2.7	2.8	38	4	200	.12	9	.9	.6	24	KEA	
		20	1841	15.12	19	19.69	155	6.78	6.74	2.0	1.9	38	4	120	.11	5	.5	.9	24	SF4	
		20	2038	54.14	19	20.88	155	11.78	8.27	1.9	2.3	44	3	69	.12	4	.4	.5	33	SF3	
		20	2342	26.31	19	54.23	155	19.93	10.54	1.9	2.2	20	2	239	.08	2	1.2	.4	12	KEA	
		21	1	6 54.93	19	23.76	155	16.75	2.90	1.8	2.1	25	3	55	.09	0	.3	.2	15	SSC	
		21	453	40.47	19	23.24	155	14.84	31.57	1.9	1.7	43	1	47	.10	2	.7	1.1	36	DEP	
		21	548	57.80	19	20.43	155	17.64	32.99	2.2	1.6	37	1	58	.10	1	.8	1.3	31	DEP	
		21	657	31.25	19	19.21	155	15.44	7.00	1.3	1.1	26	2	100	.10	4	.5	1.0	17	SF1	
		21	21	2 42.04	19	18.38	155	27.17	36.10	2.4	2.1	46	3	48	.10	8	.7	1.1	40	DLS	
		22	055	8.82	19	20.23	155	7.35	7.16	1.7	1.5	29	1	98	.10	5	.5	.8	19	SF4	
		22	1	6 31.57	19	28.39	155	53.53	14.24	1.6	1.6	16	0	128	.15	3	1.2	.7	5	KON	
		22	624	51.37	19	19.90	155	8.81	7.54	1.5	1.3	28	3	75	.10	4	.6	1.0	18	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	NOV	22	644	19.80	19	20.09	155	8.13	7.89	2.1	2.3	38	2	84	.11	5	.5	.8	22	SF4
		22	7	7 33.45	20	2.17	155	49.49	7.83		1.8	15	0	201	.06	11	1.3	1.1	11	KOH
		22	16	7 42.32	19	19.14	155	15.13	7.86	2.3	2.5	42	2	89	.12	4	.4	.6	27	SF1
		22	1613	41.94	19	23.54	155	16.68	2.88	2.5	2.9	41	3	42	.10	1	.2	.2	30	SSC
		22	1948	33.15	19	21.12	155	6.26	6.26	2.0	2.2	40	4	94	.13	4	.5	1.0	25	SF4
		22	1958	58.52	19	18.54	155	13.90	6.48	1.6	1.5	33	3	72	.11	3	.5	1.0	21	SF2
		22	2216	29.42	19	24.08	155	15.93	2.99	1.5	2.1	26	4	110	.10	1	.3	.3	21	SEC
		23	755	21.61	19	20.26	155	11.61	9.03	1.9	2.0	37	3	79	.11	5	.4	.6	25	SF3
		23	12	9 53.38	19	20.31	155	13.15	7.26	1.6	1.5	32	4	65	.11	4	.4	.8	18	SF2
		23	1444	41.08	19	58.13	155	21.03	12.44	1.6	1.5	19	3	199	.08	9	.9	.5	8	KEA
		23	1528	19.10	19	57.61	155	21.28	10.56	2.8	2.6	36	2	197	.12	8	.8	.5	18	KEA
		23	1545	24.91	19	16.22	155	23.41	5.12	1.6	1.8	31	1	113	.13	4	.5	1.5	24	SWR
		23	1621	36.97	19	44.04	156	4.64	10.29	2.9	2.4	19	2	238	.11	26	1.8	1.0	11	HUA
		23	1822	21.86	19	20.99	155	3.78	7.56	2.2	2.3	38	0	85	.12	3	.5	.5	32	SF5
		23	21	5 18.31	19	21.10	155	6.13	7.43	1.3	1.2	23	0	94	.09	4	.5	.9	14	SF4
		23	2149	16.80	19	20.43	155	13.24	7.11	1.6	1.8	39	3	63	.11	4	.4	.7	25	SF2
		24	1055	52.87	19	23.21	155	16.79	3.10	1.3	1.3	17	4	57	.09	1	.3	.4	11	SSC
		24	17	3 23.70	19	18.14	155	13.37	7.95	1.7	2.2	39	5	87	.12	2	.5	.6	27	SF2
		24	17	5 30.89	19	47.60	155	24.43	14.85	2.7	2.1	31	3	99	.07	6	.4	.4	23	KEA
		24	1915	26.72	19	18.17	155	13.50	7.38	1.8	2.4	40	3	80	.13	2	.5	.7	24	SF2
		25	339	43.09	19	21.30	155	5.86	7.66	2.3	2.4	38	3	91	.10	3	.4	.6	28	SF4
		25	1315	40.24	19	21.12	155	5.76	7.79	1.9	1.6	27	1	95	.11	4	.5	.7	18	SF4
		25	1611	31.71	19	23.95	155	16.00	3.06	1.7	2.1	24	5	105	.08	1	.3	.3	13	SEC
		25	1720	32.80	19	20.58	155	12.20	7.79	1.6	1.4	34	4	71	.12	4	.5	.7	21	SF3
		25	1818	32.96	19	23.81	155	16.83	2.40	1.6	1.8	26	4	70	.10	0	.3	.2	15	SSC
		26	054	20.98	19	57.77	155	20.53	11.28	2.5	2.4	31	4	199	.12	8	.9	.5	20	KEA
		26	116	31.56	19	21.58	155	6.19	7.67	2.1	1.9	37	0	84	.13	3	.5	.7	26	SF4
		26	250	2.32	19	17.28	155	21.04	6.66	1.7	1.9	34	3	133	.11	4	.4	.8	25	SWR
		26	318	51.95	20	5.23	155	50.35	27.95	2.9	2.0	41	3	226	.09	8	1.3	1.5	29	KOH
		26	849	19.07	19	19.06	155	13.25	4.73	1.6	1.3	37	2	78	.13	4	.4	1.6	29	SSF
		26	1718	3.65	19	23.31	155	16.82	2.87	1.3	1.3	21	4	54	.07	0	.3	.2	10	SSC
		26	1935	2.05	19	58.46	155	20.25	11.73	2.2	1.6	20	3	202	.12	9	1.2	.4	10	KEA
		26	2217	39.53	19	17.98	155	23.89	3.11	2.3	2.7	42	4	87	.11	4	.3	.9	29	SWR
		27	1	3 3.93	19	20.44	155	12.98	7.35	1.5	1.8	34	5	95	.12	4	.5	.7	23	SF2
		27	654	10.47	19	22.03	155	18.05	2.87	1.9	1.6	28	4	50	.11	3	.3	.5	18	SSC
		27	1353	58.66	19	23.53	155	16.83	3.18	1.2	1.2	17	3	50	.06	0	.3	.3	9	SSC
		27	20	4 20.24	19	58.30	155	20.77	10.02	2.7	2.8	39	4	200	.10	24	.8	.7	24	KEA	F
		28	354	30.29	19	58.24	155	20.75	9.76	2.8	2.8	39	4	200	.11	24	.7	.6	25	KEA	
		28	917	18.44	19	57.81	155	20.78	9.89	3.4	3.4	41	3	198	.10	23	.6	.5	26	KEA	F
		28	933	35.57	19	57.90	155	19.96	9.17	2.6	1.6	15	2	200	.07	24	.8	1.0	10	KEA	
		28	12	4 56.36	19	58.56	155	20.66	10.01	2.4	1.9	21	3	201	.11	25	1.0	.8	10	KEA	
		28	12	6 2.21	19	21.86	155	18.19	2.41	1.2	1.1	18	4	75	.10	4	.5	.7	14	SWR	
		28	1318	31.46	19	23.81	155	15.84	2.73	1.5	1.3	19	4	103	.11	1	.4	.3	12	SEC	
		28	1737	36.64	19	57.73	155	20.83	9.95	2.4	1.6	16	2	197	.08	23	.8	.8	8	KEA	
		28	1829	2.28	19	21.55	155	15.23	9.26	2.2	2.0	39	5	63	.10	2	.4	.4	29	SF1	
		28	1839	47.51	19	58.22	155	20.83	10.87	2.5	2.3	23	3	199	.08	24	.8	.6	8	KEA	
		28	2257	43.34	19	53.60	155	17.08	38.65	2.7	2.6	44	2	191	.12	22	1.0	2.0	42	KEA	
		28	2353	5.32	19	17.13	155	22.59	7.35	2.1	2.1	33	2	116	.14	6	.5	.8	22	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	NOV	28	2354	13.77	19	17.44	155	22.63	7.04	1.8	1.4	30	2	111	.14	5	.4	.9	20	SWR
		29	934	58.27	19	19.53	155	11.71	7.03	1.7	1.1	35	2	93	.11	6	.5	.9	26	SF3
		29	1414	8.42	19	58.43	155	20.37	9.15	2.6	2.4	31	3	201	.11	25	.9	.7	22	KEA
		29	1454	53.85	19	58.39	155	20.37	9.80	2.2	1.8	28	4	201	.10	25	.8	.7	20	KEA
		29	2020	23.46	19	18.65	155	15.11	6.77	1.9	1.5	31	2	108	.11	4	.5	.9	22	SF1
		29	2032	3.87	19	16.64	155	23.10	7.83	1.8	1.4	30	5	114	.10	5	.4	.7	19	SWR
		30	935	10.97	19	17.86	155	20.86	7.65	2.3	2.4	34	5	123	.10	4	.4	.8	20	SWR
		30	1613	21.14	19	20.20	155	13.00	7.49	1.6	1.7	30	2	68	.12	5	.5	.9	20	SF2
		30	20 7	9.73	19	21.42	155	4.80	8.71	3.4	3.4	41	3	87	.11	4	.5	.4	36	SF5 F
		30	2343	29.25	19	20.15	155	10.64	34.79	2.4	2.2	39	3	96	.11	4	.8	1.1	33	DEP
	DEC	1	310	50.45	19	13.73	155	25.63	37.70	2.6	2.6	39	2	134	.10	3	.8	1.5	34	DLS
		1	833	15.46	19	23.35	155	16.70	2.72	2.2	2.2	27	3	52	.10	0	.5	.3	19	SSC
		1	2111	33.93	20	5.11	155	50.10	27.41	2.9	2.5	38	3	222	.11	8	1.3	1.5	28	KOH
		2	534	43.87	19	17.43	155	21.83	8.11	1.9	1.8	30	3	122	.13	6	.4	.9	19	SWR
		2	11 9	42.96	19	16.76	155	15.35	6.37	1.7	1.3	26	1	169	.10	3	.6	.8	10	SF1
		2	1242	30.01	19	19.78	155	7.06	6.88	2.3	2.2	37	2	113	.11	5	.5	1.0	26	SF4
		2	20 9	23.01	19	54.82	155	19.94	10.32	2.5	2.1	21	0	188	.06	20	.9	.6	11	KEA
		3	144	52.02	19	21.67	155	15.40	8.06	1.5	1.4	29	3	62	.11	2	.5	.6	22	SF1
		3	457	19.68	19	18.16	155	13.37	6.70	1.7	1.4	31	2	87	.10	2	.5	.9	19	SF2
		3	520	35.27	19	58.62	155	20.54	9.54	2.6	1.6	23	2	201	.10	25	.8	.7	15	KEA
		3	723	44.93	19	20.68	155	13.66	7.23	1.5	1.4	32	3	55	.14	4	.5	.9	24	SF2
		3	1058	59.92	19	57.88	155	20.35	8.96	2.8	2.8	37	5	199	.12	24	.6	.6	21	KEA
		3	1355	30.74	19	20.16	155	7.26	5.09	2.1	1.2	32	4	101	.12	5	.5	2.1	24	SF4
		3	17 3	20.24	19	20.00	155	8.47	6.18	2.3	2.4	39	4	79	.13	5	.5	.9	28	SF4
		4	735	29.87	19	19.05	155	26.12	7.86	2.2	2.1	39	4	58	.13	5	.3	.7	31	KAU
		4	1222	56.74	19	24.01	155	15.97	2.78	1.5	1.3	16	2	108	.08	1	.3	.3	12	SEC
		4	1641	27.79	19	13.57	155	23.42	37.95	2.9	3.1	49	2	151	.11	2	.7	1.2	43	DEP
		5	0 7	33.58	19	23.52	155	16.79	2.86	1.3	1.3	16	1	47	.10	0	.3	.2	13	SSC
		5	034	16.16	19	19.29	155	16.28	7.62	2.0	1.8	38	3	106	.12	3	.4	.7	20	SF1
		5	625	.34	19	23.67	155	16.73	2.73	1.8	1.6	23	2	41	.08	1	.3	.2	18	SSC
		5	625	22.82	19	23.96	155	16.73	3.27	1.8	2.1	16	2	77	.06	0	.3	.3	11	SSC
		5	1226	30.91	19	19.88	155	7.72	7.90	3.3	3.6	45	4	97	.09	5	.4	.5	32	SF4
		5	1334	21.09	19	19.99	155	8.07	5.56	1.8	1.3	29	1	87	.10	5	.5	1.5	25	SF4
		6	954	24.54	19	23.22	155	16.83	2.78	1.3	1.1	17	3	58	.08	0	.3	.3	7	SSC
		6	11 2	55.08	19	23.79	155	16.83	2.68	1.7	1.8	21	1	70	.11	0	.3	.2	16	SSC
		6	2147	16.49	19	22.97	155	24.31	9.45	2.2	2.1	41	5	34	.11	5	.4	.5	31	KAO
		7	259	50.67	19	48.68	155	35.43	15.38	2.7	2.6	34	3	100	.11	14	.9	.8	21	KEA
		7	4 4	13.55	19	19.73	155	10.11	8.18	1.9	1.5	28	2	91	.07	4	.4	.6	19	SF3
		7	9 7	29.14	19	18.75	155	13.21	8.76	3.2	3.4	43	2	132	.11	7	.5	.6	38	SF2 F
		7	15 9	7.24	19	14.59	155	34.83	8.36	2.3	2.1	30	3	77	.18	4	.5	.9	16	LSW
		7	1739	27.19	19	48.79	156	3.87	41.12	4.0	4.0	47	4	239	.10	28	1.0	1.1	41	HUA F
		7	1955	49.20	19	20.59	155	13.15	7.63	1.6	1.8	39	4	62	.10	4	.4	.6	23	SF2
		7	2312	29.13	19	21.08	155	17.10	2.35	1.6	1.8	8	1	212	.07	3	.7	.9	0	SWR L
		8	112	51.34	19	10.04	155	41.33	7.54	2.5	1.5	30	1	128	.26	12	.9	1.8	19	LSW
		8	8 6	35.88	19	16.79	155	15.14	7.27	2.3	1.9	35	2	154	.11	3	.5	.9	24	SF1
		8	23 6	5.99	19	22.42	155	1.54	6.01	2.1	1.4	35	4	146	.14	5	.5	.8	13	SF5
		9	0 3	46.73	19	20.56	155	12.13	9.25	1.7	1.4	31	1	71	.09	4	.4	.6	22	SF3
		9	5 3	33.96	19	17.39	155	16.32	7.99	1.7	1.3	27	1	151	.09	4	.5	.5	17	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	DEC	9	1237	48.02	19	20.49	155	11.98	8.73	1.7	1.4	25	0	73	.08	4	.5	.9	18	SF3
		9	1926	47.10	19	58.31	155	20.77	11.66	1.9	1.6	22	3	201	.09	9	.9	.5	11	KEA
		10	158	10.51	19	20.22	155	13.38	7.29	1.8	1.2	30	3	63	.10	5	.4	.8	16	SF2
		10	1332	11.96	19	3.18	156	10.48	43.42	2.4	2.2	30	1	291	.10	40	2.9	1.7	21	KON
		11	146	54.14	19	23.68	155	17.15	2.62	1.3	1.1	12	2	94	.08	1	.4	.4	9	SSC
		11	1117	50.57	19	23.50	155	16.84	2.79	1.2	1.4	18	3	48	.10	0	.3	.3	11	SSC
		12	3 3	4.40	19	19.21	155	15.98	7.66	1.6	1.1	22	0	106	.07	3	.5	.9	17	SF1
		12	1325	27.93	19	20.64	155	12.90	8.53	1.8	1.1	35	3	64	.10	4	.4	.6	26	SF2
		12	1823	13.31	19	19.75	155	7.52	9.66	3.7	3.8	47	4	103	.10	5	.5	.4	42	SF4 F
		13	140	48.53	19	25.20	155	29.01	8.27	2.6	2.0	46	3	37	.11	6	.3	.7	31	KAO
		13	322	28.85	19	20.74	155	4.55	8.43	3.0	2.9	44	3	105	.10	3	.5	.4	31	SF5
		13	432	35.91	19	20.06	155	8.45	7.71	2.5	2.4	45	5	79	.11	4	.4	.6	29	SF4
		13	1420	21.31	19	19.64	155	8.41	9.15	3.3	3.7	47	3	83	.10	4	.4	.4	36	SF4 F
		14	345	29.18	19	22.44	155	18.27	30.44	1.9	1.6	42	2	29	.10	3	.6	1.0	36	DEP
		14	1038	.05	19	21.64	155	6.11	8.28	2.2	2.0	37	2	84	.10	6	.4	.7	20	SF4
		14	1718	24.26	19	17.67	155	21.25	7.17	1.7	1.2	25	3	125	.11	5	.5	1.1	15	SWR
		14	2246	30.25	19	19.51	155	8.23	7.65	1.7	1.3	28	1	88	.09	4	.5	.8	15	SF4
		15	441	22.96	19	20.45	155	6.62	8.34	2.5	2.4	44	3	105	.11	6	.4	.6	28	SF4
		15	1411	25.70	19	17.08	155	15.50	10.40	2.9	3.0	46	3	151	.10	6	.4	.4	36	SF1
		15	1740	29.63	19	20.52	155	10.40	7.66	1.7	1.3	27	2	77	.10	3	.5	.8	15	SF3
		15	2128	19.60	19	23.60	155	16.67	2.75	2.1	2.6	31	3	49	.10	1	.3	.2	20	SSC
		15	2130	54.30	19	23.54	155	16.47	2.42	2.8	3.0	41	3	36	.10	0	.2	.2	29	SSC
		16	344	56.28	19	17.66	155	13.00	7.18	2.0	2.1	37	2	123	.11	1	.5	.8	21	SF2
		16	448	18.41	19	19.42	155	13.24	7.43	2.0	2.3	42	4	73	.13	4	.4	.7	28	SF2
		16	453	26.52	19	20.66	155	9.62	7.95	1.7	1.8	35	1	71	.10	3	.4	.7	25	SF3
		16	923	24.83	20	1.53	155	22.26	11.17	2.7	2.7	37	4	210	.13	15	.9	.6	17	KEA
		16	1030	38.83	19	20.54	155	9.46	7.41	1.7	1.8	26	1	106	.09	3	.5	.9	14	SF3
		16	2021	51.51	19	20.17	155	6.89	9.40	3.4	3.8	43	1	143	.10	6	.6	.5	37	SF4 F
		17	2043	19.92	19	20.59	155	13.11	8.59	2.4	2.6	42	3	63	.11	4	.4	.5	32	SF2
		18	3 8	30.42	19	20.38	155	13.55	7.14	1.6	1.5	33	3	63	.13	4	.5	.8	21	SF2
		18	645	42.28	19	22.64	155	2.06	7.07	1.9	1.5	31	1	132	.16	5	.7	.8	19	SF5
		18	919	30.20	19	20.28	155	12.79	7.95	1.7	1.3	25	2	100	.09	4	.6	.8	19	SF2
		19	542	35.63	19	21.94	155	5.11	7.41	2.0	1.7	37	4	77	.11	5	.4	.6	24	SF5
		19	840	8.09	19	20.31	155	12.86	6.91	1.6	1.0	29	3	66	.10	4	.5	.8	20	SF2
		19	1037	55.38	19	19.42	155	8.53	5.90	2.0	1.3	28	2	81	.08	4	.4	1.2	13	SF4
		19	1230	7.22	19	22.72	155	1.38	8.22	2.1	1.8	38	3	145	.14	6	.6	.6	23	SF5
		19	1231	49.07	19	19.82	155	8.44	8.24	2.6	2.7	43	6	61	.10	5	.4	.6	25	SF4
		19	1736	23.32	19	23.37	155	16.79	2.80	1.5	1.6	24	4	53	.09	0	.3	.2	15	SSC
		19	1910	42.86	19	23.62	155	16.71	2.56	1.6	2.0	26	4	41	.11	1	.3	.2	17	SSC
		19	23 6	40.53	19	21.89	155	25.09	10.11	1.7	1.3	35	3	40	.11	4	.4	.7	22	KAO
		20	5 7	45.04	19	19.68	155	10.03	6.61	1.5		22	1	92	.11	4	.5	1.0	13	SF3
		20	5 8	2.65	19	19.63	155	10.22	9.19	3.1		42	2	94	.11	5	.4	.4	33	SF3
		20	5 9	28.33	19	20.09	155	10.04	8.08	2.7	2.9	45	3	83	.12	4	.4	.6	31	SF3
		20	637	11.57	19	19.60	155	10.53	5.99	1.6	1.1	18	2	162	.06	5	.6	1.2	9	SF3
		20	744	23.61	19	19.01	155	13.31	7.95	1.7	1.4	35	2	77	.10	4	.4	.6	22	SF2
		20	826	20.67	19	20.94	155	12.87	9.09	2.3	2.3	43	4	62	.12	3	.4	.5	33	SF2
		20	10 8	3.06	19	18.06	155	13.09	6.68	1.5	1.5	29	2	101	.08	2	.5	.9	18	SF2
		20	13 3	57.73	19	19.19	155	13.02	7.31	1.9	1.3	31	2	107	.10	4	.5	.8	19	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	DEC	21	613	55.06	19	23.94	155	16.83	2.95	1.2	1.2	16	3	81	.07	0	.4	.3	9	SSC
		21	1440	17.59	19	18.96	155	15.41	7.33	1.6	1.3	26	2	105	.09	4	.5	.9	16	SF1
		21	1724	11.51	19	23.24	155	16.77	3.06	1.9	2.4	24	3	45	.09	0	.3	.3	18	SSC
		21	1915	15.59	19	20.02	155	6.71	8.51	3.2	3.0	41	2	113	.10	5	.4	.5	29	SF4
		21	2037	53.94	19	17.88	155	13.04	6.08	1.6	1.8	30	2	110	.11	2	.5	1.0	18	SF2
		21	21 7	38.12	19	20.85	155	6.67	6.95	1.9	1.9	32	0	96	.13	6	.5	1.3	22	SF4
		21	2158	23.92	19	17.47	155	13.09	6.63	1.6	1.0	24	3	128	.09	1	.5	.9	15	SF2
		22	056	22.28	19	22.00	155	25.49	9.79	1.6	1.4	35	4	44	.09	4	.4	.6	26	KAO
		23	654	58.14	19	19.85	155	10.75	8.36	1.9	1.6	33	1	90	.08	4	.4	.6	24	SF3
		23	711	14.60	20	5.68	155	50.40	28.48	3.0	3.2	43	6	148	.11	7	.6	1.0	32	KOH F
		23	725	58.16	19	19.83	155	10.67	7.99	1.9	1.2	30	3	90	.07	4	.5	.7	17	SF3
		23	8 0	22.61	19	14.41	155	35.40	8.02	2.8	2.7	43	4	80	.20	3	.5	.9	29	LSW
		23	1127	56.96	19	23.73	155	16.89	2.66	1.7	.9	20	4	62	.07	1	.3	.2	13	SSC
		23	1518	46.87	19	14.76	155	34.85	7.62	2.5	2.4	40	3	105	.17	4	.5	1.0	29	LSW
		23	1548	23.35	19	19.15	155	15.42	8.24	1.9	2.1	44	3	91	.11	4	.4	.6	28	SF1
		23	1615	6.83	19	23.45	155	16.98	2.63	1.6	1.5	20	1	41	.08	0	.3	.2	11	SSC
		23	22 0	24.66	19	23.74	155	16.78	2.71	1.5	1.4	21	3	57	.08	0	.3	.2	13	SSC
		23	22 0	59.36	19	23.71	155	16.79	2.90	1.9	2.4	26	4	52	.08	1	.3	.2	15	SSC
		24	1 1	33.96	19	19.35	155	11.55	7.45	1.4	1.1	27	1	99	.10	5	.5	1.0	18	SF3
		24	121	55.02	19	21.22	155	14.93	8.16	1.6	1.6	32	3	67	.12	3	.5	.7	22	SF1
		24	132	5.05	19	20.61	155	12.68	8.30	1.9	1.8	38	4	66	.11	4	.4	.6	28	SF2
		24	2 9	16.15	19	23.56	155	16.79	3.17	1.3	1.7	18	2	47	.08	0	.3	.3	12	SSC
		24	552	20.98	19	19.58	155	13.28	7.22	1.5	1.4	26	2	71	.10	5	.5	1.0	19	SF2
		24	6 5	1.98	19	24.37	155	17.25	2.06	1.1	1.0	14	2	60	.05	1	.3	.2	5	SSC
		24	1437	1.85	19	15.62	155	23.11	7.75	1.9	1.7	27	0	133	.13	3	.6	1.1	23	SWR
		24	1819	56.38	19	19.84	155	10.26	7.88	1.8	1.1	31	3	90	.09	4	.5	.8	19	SF3
		24	2230	2.79	20	.57	155	30.93	39.79	2.5	1.8	36	2	189	.07	22	.8	1.5	27	KEA
		25	741	46.57	19	20.83	155	11.34	8.81	2.3	2.0	35	4	71	.10	3	.4	.5	20	SF3
		25	958	36.49	19	20.41	155	7.39	8.01	2.3	2.1	33	1	94	.10	5	.5	.9	23	SF4
		25	1210	19.30	19	20.57	155	7.82	6.66	2.2	1.9	37	3	85	.13	5	.5	.8	29	SF4
		26	234	1.54	19	20.12	155	7.28	5.62	1.8	1.1	25	3	101	.12	5	.6	1.7	17	SF4
		26	313	34.88	20	11.30	155	37.20	37.53	2.9	2.5	40	3	242	.08	18	1.3	1.3	34	KOH
		26	5 4	13.61	19	20.75	155	10.51	7.44	1.7	1.3	28	2	73	.11	3	.5	.8	18	SF3
		26	720	44.53	19	25.80	155	24.92	7.01	2.1	1.7	37	4	37	.12	1	.4	.8	27	KAO
		26	1047	.62	19	23.83	155	26.91	9.72	2.3	2.0	40	2	42	.13	3	.4	.7	28	KAO
		26	12 1	38.19	19	18.58	155	15.60	7.80	1.6	1.6	34	3	115	.12	4	.5	.7	23	SF1
		26	1221	1.69	19	20.33	155	12.52	7.19	1.6	1.2	30	2	72	.11	4	.5	.7	19	SF2
		27	244	26.37	19	18.13	155	.21	40.56	2.5	1.8	31	0	226	.08	6	2.1	2.5	29	DEP
		27	711	58.61	19	20.58	155	12.59	7.35	2.2	2.5	31	2	67	.13	4	.5	.7	24	SF2
		27	832	56.89	19	25.53	155	16.71	1.68	2.0	2.9	10	1	173	.03	1	.7	.2	9	SNC
		27	1125	56.25	19	22.44	155	5.20	7.76	2.0	1.6	35	2	70	.09	4	.4	.8	23	SF5
		27	1145	54.30	19	19.26	155	15.60	8.58	1.9	2.0	40	2	102	.10	4	.4	.4	27	SF1
		27	1334	36.17	19	25.34	155	16.76	2.04	1.7	1.8	17	3	122	.09	1	.4	.2	11	SNC
		27	16 9	30.37	19	16.52	155	22.42	7.84	3.2	3.7	48	2	129	.15	5	.4	.6	45	SWR
		27	1617	2.03	19	16.83	155	22.22	6.16	2.4	2.8	44	2	127	.14	6	.4	.9	34	SWR
		27	1625	13.32	19	16.81	155	22.13	4.16	1.8	1.7	33	2	128	.14	6	.5	1.7	25	SWR
		27	1927	45.85	19	20.43	155	11.27	8.70	1.7	1.4	29	1	78	.07	4	.4	.6	19	SF3
		27	23 0	46.00	19	19.45	155	8.13	6.05	1.8	1.3	31	2	91	.12	4	.6	1.2	22	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	DEC	27	23 2	23.99	19	26.34	155	16.05	1.98	1.3	1.4	13	2	208	.05	3	.5	.6	10	SNC
		28	418	52.74	19	17.84	155	21.06	5.56	1.7	1.3	20	4	123	.07	4	.4	1.3	14	SWR
		28	434	18.19	19	19.18	155	12.86	8.53	2.0	1.9	39	2	84	.12	4	.4	.6	29	SF2
		28	1042	53.01	19	15.97	155	22.20	7.00	1.0	1.3	19	1	168	.07	4	.6	1.6	14	SWR
		28	1130	41.39	19	23.34	155	16.99	3.04	1.4	1.4	21	4	55	.08	0	.3	.3	12	SSC
		28	1147	51.05	19	15.83	155	21.88	7.70	1.1	1.1	21	2	179	.08	5	.6	1.4	12	SWR
		28	1315	6.36	19	21.30	155	.44	5.62	2.1	1.8	31	3	186	.13	5	.7	1.8	20	SF5
		28	1617	21.61	19	18.01	155	23.42	3.44	1.7	1.8	30	5	94	.10	4	.5	.8	18	SWR
		28	1831	6.59	19	19.37	155	18.81	6.62	1.2	1.2	25	6	58	.12	3	.4	.8	17	SWR
		29	024	2.61	19	23.74	155	23.22	9.41	1.5	1.4	34	4	39	.11	4	.4	.5	22	KAO
		29	335	48.24	19	19.58	155	13.20	6.60	1.6	1.8	41	3	72	.13	5	.4	.8	28	SF2
		29	555	20.95	19	13.36	155	15.47	31.47	2.7	2.4	46	2	177	.09	8	.7	1.0	42	DEP
		29	651	8.89	19	19.99	155	7.63	8.11	1.7	1.1	30	1	97	.10	5	.5	.9	25	SF4
		29	656	59.89	19	20.12	155	7.83	7.70	1.3	.3	20	3	91	.08	5	.5	.9	12	SF4
		29	733	22.33	19	22.41	155	2.12	7.22	1.6	1.3	20	2	143	.12	5	.6	1.0	10	SF5
		29	940	44.45	19	23.80	155	16.72	2.63	1.1	1.3	20	3	63	.09	0	.4	.3	9	SSC
		29	1310	10.53	19	18.87	155	15.12	8.95	2.1	2.1	40	3	103	.10	4	.4	.5	23	SF1
		29	15 7	38.20	19	32.50	155	55.91	15.38	2.6	2.8	33	2	205	.11	6	1.0	.5	21	KON F
		29	20 3	33.37	19	11.85	155	16.89	47.45	2.1	1.9	35	1	182	.08	11	1.0	1.6	28	DEP L
		29	20 6	15.20	19	10.74	155	16.28	51.67	1.8	1.5	32	0	211	.09	13	1.6	2.9	18	DEP L
		30	331	29.27	19	20.04	155	9.64	7.03	1.5	1.5	25	3	82	.10	4	.5	1.0	15	SF3
		30	444	13.21	19	33.89	155	37.62	2.31	1.9	1.6	17	1	144	.14	9	.7	2.4	5	MLO
		30	7 5	3.61	19	17.01	155	21.38	6.41	1.5	1.8	29	3	131	.10	5	.4	1.0	21	SWR
		30	748	50.01	19	20.81	155	10.96	8.35	2.1	1.8	38	4	109	.10	3	.3	.4	22	SF3
		30	822	23.13	19	20.70	155	10.77	8.14	1.5	1.1	26	3	74	.12	3	.6	.9	20	SF3
		30	823	53.66	19	19.92	155	10.19	6.61	1.5	1.1	25	2	88	.09	4	.6	1.1	17	SF3
		30	1140	11.70	19	17.31	155	30.42	7.15	2.0	2.3	37	3	46	.17	4	.4	1.3	23	LSW
		30	12 3	48.56	19	18.22	155	15.94	7.51	1.1	1.1	24	3	117	.10	4	.6	.8	14	SF1
		30	1547	22.86	19	23.73	155	23.54	10.19	1.6	1.6	37	5	36	.10	4	.3	.5	25	KAO
		30	1817	51.68	19	20.34	155	13.24	7.17	1.8	1.3	24	2	121	.10	4	.6	.9	14	SF2
		30	2111	35.10	19	23.57	155	1.36	6.10	1.9	1.6	25	1	145	.11	5	.6	1.3	12	SF5
		31	147	43.40	19	20.65	155	12.99	9.02	1.6	1.8	32	3	64	.08	4	.4	.5	21	SF2
		31	723	14.46	19	19.72	155	10.55	7.74	1.9	1.4	28	1	92	.08	5	.5	.8	21	SF3
		31	8 0	4.20	19	23.42	155	16.88	2.94	1.3	1.2	17	3	52	.07	0	.3	.3	9	SSC
		31	953	41.20	19	18.85	155	13.61	9.48	2.8	2.9	44	4	108	.11	3	.6	.5	34	SF2
		31	1414	12.07	19	33.63	155	57.61	11.45	2.6	2.4	26	2	256	.12	9	1.8	.5	19	KON
		31	1735	25.06	19	22.75	155	16.76	28.29	3.0	3.0	45	1	42	.11	1	.6	.9	44	DEP
		31	2113	33.64	19	47.77	155	3.63	40.21	2.5	2.0	34	1	208	.08	11	1.0	2.3	28	KEA
		31	2216	20.33	19	14.22	155	36.65	7.64	2.4	1.8	30	1	188	.20	2	.9	1.1	20	LSW

Table 6. HVO EARTHQUAKE SUMMARY LIST PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	JAN	1	2231	49.52	19	20.94	155	29.95	29.85	3.4	3.4	47	2	65	.08	5	.5	1.0	45	DML	
		2	742	8.00	19	18.27	155	14.15	10.19	3.6	3.7	42	1	138	.11	7	.5	.4	41	SF2	F
		3	3 4	40.11	20	15.69	155	52.39	27.57	3.9	4.3	47	3	160	.12	18	.9	1.1	43	KOH	F
		5	6 4	37.12	19	27.28	155	23.62	8.41	3.1	2.8	40	2	73	.11	5	.3	.7	32	KAO	
		6	1814	5.43	18	54.01	155	6.75	51.98	4.1	4.4	46	2	256	.09	43	1.8	2.4	44	LOI	F
		7	1016	46.40	19	25.21	155	15.84	15.83	3.4	3.2	47	2	36	.11	2	.4	.3	43	DEP	F
		12	418	10.63	19	21.35	155	18.28	31.06	4.5	4.6	43	0	40	.10	3	.6	1.0	43	DEP	F
		12	423	19.23	19	22.11	155	16.81	32.70	2.9	3.9	45	2	48	.09	2	.6	.9	38	DEP	F
		12	430	17.11	19	17.60	155	18.31	33.28	4.0	4.3	43	0	132	.09	1	.7	1.0	43	DEP	F
		12	5 7	48.91	19	19.68	155	17.26	33.42	4.0	4.4	45	1	92	.10	1	.6	1.0	44	DEP	F
		12	1121	41.15	19	31.27	155	18.18	32.92	4.3	4.5	44	0	50	.10	8	.6	1.2	44	DEP	F
		13	1813	31.52	19	20.80	155	15.48	15.37	3.1	3.4	41	0	74	.11	3	.6	.4	41	DEP	
		13	1820	16.51	19	22.08	155	19.42	28.88	4.3	4.8	44	0	44	.10	3	.6	.9	44	DML	F
		14	418	57.40	20	5.92	155	40.03	21.98	2.8	3.1	43	2	197	.10	12	1.4	2.3	38	KOH	
		14	1436	53.03	19	25.78	155	37.51	.00	3.1	3.4	33	1	93	.10	7	.4	1.4	29	MLO	*
		14	2316	34.35	19	17.68	158	19.54	15.02	3.3	3.5	22	0	315	.12264		7.9	99.0	5	DIS	*
		15	1437	11.96	19	19.50	155	17.39	34.35	3.8	3.7	44	1	95	.10	1	.6	1.0	43	DEP	F
		17	1021	55.33	19	21.16	155	1.65	8.76	2.9	3.2	40	1	168	.10	3	.6	.4	34	SF5	
		18	125	53.54	19	25.00	155	16.95	1.67	3.4	3.8	32	1	39	.10	0	.3	.2	23	SNC	F
		19	1821	40.44	19	18.39	155	12.95	9.32	3.0	3.6	43	3	136	.11	8	.5	.6	34	SF2	F
		20	028	8.48	19	20.27	155	7.13	8.46	2.8	3.2	37	3	101	.10	5	.4	.6	28	SF4	
		20	618	53.36	19	23.31	155	16.83	2.95	2.4	3.2	27	3	46	.08	0	.3	.2	21	SSC	F
		20	12 2	29.41	19	23.35	155	16.77	3.22	2.9	3.4	26	1	39	.10	0	.3	.3	21	SSC	
		20	1542	15.78	19	22.99	155	16.79	2.77	2.4	3.1	29	3	40	.11	1	.2	.2	22	SSC	
		20	2129	11.18	19	23.23	155	16.91	2.88	2.7	3.0	36	3	37	.09	0	.2	.2	26	SSC	
		21	1635	7.12	19	22.82	155	16.71	3.29	2.6	3.3	31	2	42	.09	1	.2	.3	25	SSC	
		22	339	2.48	19	46.66	156	1.85	40.63	3.8	4.1	47	5	186	.09	23	.8	1.6	41	HUA	F
		24	1530	34.47	19	21.57	155	15.19	9.23	3.4	3.6	40	2	63	.10	2	.4	.5	38	SF1	
		28	925	48.48	19	23.59	155	16.91	3.19	2.8	3.3	37	1	40	.11	0	.2	.2	27	SSC	F
	FEB	5	839	15.33	19	23.54	155	16.82	2.92	2.3	3.0	32	0	37	.09	0	.3	.2	23	SSC	F
		7	1223	20.77	19	18.04	155	23.23	5.45	2.4	3.0	33	0	112	.12	4	.4	.9	22	SWR	
		7	2230	2.57	19	18.00	155	23.28	6.04	2.5	3.3	38	2	112	.13	4	.4	.9	25	SWR	
		8	20 3	59.94	19	21.01	155	51.12	11.22	3.0	2.9	24	0	143	.10	10	.8	.7	21	KON	
		9	6 2	44.04	19	32.48	155	36.95	11.12	3.8	3.2	42	1	45	.14	6	.4	.5	41	MLO	F
		9	918	46.74	19	18.35	155	23.26	5.45	2.4	3.1	34	1	109	.12	3	.4	1.0	27	SWR	
		9	1334	11.13	19	33.14	155	37.68	10.00	3.0	2.7	37	2	95	.14	8	.5	.6	33	MLO	
		10	1934	2.06	19	20.02	155	8.33	8.68	3.0	3.0	41	2	81	.10	5	.4	.6	32	SF4	
		11	444	31.19	19	18.30	155	23.25	2.89	3.0	3.3	42	2	110	.13	4	.3	.8	26	SWR	
		11	2149	16.30	19	18.47	155	23.47	4.25	2.5	3.1	28	1	107	.12	3	.4	1.2	25	SWR	
		12	1428	54.33	19	18.43	155	23.28	5.66	2.8	3.0	40	0	108	.13	3	.4	.9	33	SWR	
		13	17 8	53.20	19	17.70	155	23.70	5.88	2.8	3.8	42	0	113	.11	5	.4	.9	26	SWR	F
		13	1952	44.20	19	18.07	155	23.46	6.48	3.3	3.9	45	1	110	.15	4	.4	.9	42	SWR	F
		14	552	57.98	19	18.82	155	15.38	8.70	2.8	3.2	46	2	96	.11	4	.4	.4	35	SF1	
		15	1241	33.83	19	18.48	155	23.25	5.45	2.3	3.2	40	3	108	.13	3	.4	.9	27	SWR	
		15	1332	22.42	19	18.35	155	23.25	5.45	2.4	3.6	33	1	109	.11	3	.4	1.1	28	SWR	F
		16	220	15.48	19	18.63	155	23.30	6.82	2.8	3.4	45	2	107	.14	3	.4	.8	33	SWR	
		16	6 2	28.00	19	19.53	155	17.38	33.90	2.9	3.5	45	0	94	.09	1	.6	1.0	44	DEP	F
		16	1344	35.88	19	18.19	155	23.42	5.82	2.4	3.0	34	2	110	.12	4	.4	1.1	27	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	FEB	16	1412	56.71	19	18.03	155	23.71	5.27	2.6	3.2	44	3	110	.12	4	.4	1.0	30	SWR	
		16	2037	37.70	19	18.35	155	23.21	5.51	2.7	3.5	46	3	109	.14	3	.3	.9	34	SWR	
		18	20 7	49.69	19	18.51	155	23.48	5.92	3.5	3.8	47	6	107	.13	3	.3	.7	42	SWR	
		21	1036	44.99	19	26.21	155	37.15	2.91	2.9	3.1	34	1	82	.15	2	.5	.7	22	MLO	
		21	1137	12.06	19	20.30	155	6.58	8.94	3.1	3.2	44	2	108	.08	5	.4	.5	35	SF4	
		23	1222	8.00	19	17.51	155	23.79	6.24	2.4	3.2	39	3	114	.13	5	.5	1.1	26	SWR	
		24	1345	57.53	19	20.25	155	11.35	7.86	3.0	3.0	40	4	80	.09	4	.4	.6	30	SF3	
		24	1611	42.28	20	7.70	155	58.84	52.69	3.1	3.2	17	1	277	.14	21	1.6	2.3	6	KOH	
		25	020	27.39	19	19.62	155	12.61	9.06	3.0	2.8	40	2	81	.10	5	.4	.5	27	SF2	
	MAR	1	7 1	21.26	19	21.52	155	2.05	9.07	4.3	4.3	48	1	148	.10	3	.6	.4	44	SF5	F
		1	2219	45.18	19	19.63	155	7.86	9.13	3.0	3.1	43	2	97	.09	4	.4	.4	27	SF4	
		4	1556	45.69	19	24.90	155	28.42	11.09	4.1	4.1	49	2	30	.12	5	.3	.4	45	KAO	F
		4	16 0	27.23	19	24.97	155	28.38	11.07	3.4	3.4	49	3	30	.11	5	.3	.4	43	KAO	
		5	4 9	40.85	21	25.94	156	47.79	.00	5.1	5.3	45	7	226	.50	93	6.8	.8	42	DIS	F*
		5	416	15.66	21	15.97	156	52.16	1.26	3.4	2.1	26	2	211	.12	85	2.9	.7	21	DIS	
		5	1643	36.41	21	9.52	156	54.58	.31	4.5	4.8	44	2	197	.12	81	1.6	.3	35	DIS	
		6	519	8.10	21	41.04	156	39.48	15.05	3.6	3.9	11	2	243	.14110		12.2	13.9	3	DIS	*
		6	957	46.90	19	20.68	155	29.76	10.54	3.1	2.6	42	0	66	.11	5	.4	.6	32	KAO	
		6	1756	.74	19	44.34	156	26.57	15.01	4.0	4.1	51	5	234	.13	62	1.1	3.1	45	DIS	F
		9	327	45.20	19	21.23	155	3.07	8.52	3.3	3.4	45	1	113	.11	2	.6	.4	40	SF5	F
		11	458	29.62	19	17.80	155	23.63	4.39	2.4	3.1	33	2	92	.12	5	.4	1.6	28	SWR	
		11	1323	8.96	19	21.71	155	1.93	6.50	3.1	3.1	44	2	148	.12	4	.4	.6	32	SF5	F
		11	2237	44.93	19	15.10	155	1.99	44.22	3.7	3.4	49	2	207	.10	9	.9	1.4	47	DEP	F
		12	9 6	50.96	19	18.65	155	23.55	5.53	2.5	3.1	39	2	90	.13	3	.4	1.0	30	SWR	
		15	2017	19.59	19	22.49	155	14.03	31.32	4.0	4.1	49	1	50	.12	2	.6	1.0	47	DEP	F
		15	2026	14.52	19	17.70	155	23.44	6.62	3.1	3.6	44	0	96	.14	5	.4	.8	39	SWR	F
		15	2223	21.32	19	22.00	155	14.04	31.01	3.2	3.3	49	1	54	.11	2	.6	.9	47	DEP	F
		16	034	55.24	19	21.89	155	14.08	30.79	2.9	3.0	49	2	54	.10	2	.6	.9	45	DEP	
		16	541	45.35	19	17.30	155	20.77	5.87	2.5	3.2	39	4	135	.09	4	.4	.9	30	SWR	
		16	17 3	15.69	19	20.77	155	2.97	8.86	2.9	3.2	42	0	119	.10	2	.7	.5	37	SF5	
		17	1943	17.82	19	41.39	156	2.25	9.45	2.9	3.0	25	1	229	.14	21	1.3	.7	18	HUA	
		20	1332	39.98	19	24.45	155	16.11	15.74	2.9	3.1	49	3	36	.11	1	.4	.3	43	DEP	
		23	042	49.50	19	17.54	155	23.57	5.61	2.4	3.0	34	2	96	.11	5	.4	1.4	23	SWR	
		23	1853	22.15	19	18.17	155	23.41	6.72	2.8	3.3	49	1	93	.13	4	.4	.7	40	SWR	
		24	5 1	10.38	19	17.79	155	23.49	5.86	2.3	3.0	47	7	95	.12	5	.3	1.0	36	SWR	
		25	625	5.10	19	45.26	155	27.66	24.51	3.3	3.6	50	3	62	.10	3	.5	1.2	34	KEA	F
		26	155	40.21	19	21.24	155	4.54	9.00	3.2	3.2	46	2	89	.10	4	.5	.4	34	SF5	F
		30	9 6	14.00	19	19.94	155	11.94	9.11	3.6	3.9	46	3	83	.10	5	.3	.4	38	SF3	F
	APR	1	0 0	39.43	21	13.53	156	52.02	.00	3.7	4.2	31	1	207	.29	82	4.4	.7	9	DIS	*
		2	249	11.20	19	20.05	155	11.96	9.46	3.0	3.0	44	2	81	.10	5	.4	.4	37	SF3	
		7	1647	48.94	19	21.46	155	1.58	8.54	2.9	3.1	42	0	162	.08	4	.6	.4	30	SF5	F
		8	1853	24.22	19	19.61	155	10.51	9.13	2.9	3.0	46	4	95	.11	5	.3	.4	33	SF3	
		17	2026	19.36	19	20.63	155	16.89	1.68	3.7	4.0	35	2	75	.09	1	.3	.3	18	KOA	F
		25	344	34.17	19	22.95	155	4.25	8.71	3.4	3.2	47	4	87	.11	3	.4	.4	37	SF5	F
		25	2248	41.03	19	20.14	155	6.76	8.48	3.1	3.4	44	3	110	.11	5	.4	.6	35	SF4	
		27	457	53.63	19	19.34	155	6.86	8.67	3.0	3.4	34	3	127	.09	4	.5	.4	21	SF4	
		27	1129	21.53	19	16.40	155	11.55	5.37	3.4	3.6	43	4	172	.15	4	.6	1.0	39	SSF	F
		27	18 8	47.32	19	23.50	155	16.94	2.90	2.8	3.0	39	1	39	.11	0	.2	.2	25	SSC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	APR	28	846	29.26	19	19.50	155	11.17	9.75	3.0	3.4	44	4	97	.10	5	.4	.4	35	SF3 F	
		28	1451	50.30	19	19.58	155	7.30	8.58	2.6	3.0	42	1	111	.10	4	.5	.5	29	SF4	
		30	115	33.41	19	23.39	155	16.93	2.62	3.1	3.5	45	3	36	.11	0	.2	.2	31	SSC F	
	MAY	2	236	7.46	19	18.11	155	13.24	10.77	3.8	3.8	45	1	93	.12	2	.6	.5	41	SF2 F	
		2	710	46.28	19	20.05	155	8.02	8.81	3.2	3.4	44	2	87	.10	5	.5	.4	35	SF4 F	
		7	247	59.70	19	19.73	155	12.69	9.01	3.2	3.5	43	1	79	.11	5	.4	.4	26	SF2	
		7	650	27.44	19	20.17	155	8.40	8.73	2.9	3.1	46	3	79	.09	4	.4	.5	31	SF4	
		12	1140	3.08	19	19.64	155	11.36	8.75	3.0	3.0	45	1	93	.12	5	.4	.5	37	SF3	
		13	21 3	30.25	19	19.87	155	13.44	10.02	3.4	3.7	46	2	66	.11	5	.4	.4	41	SF2	
		14	614	39.12	19	18.50	155	22.92	6.79	2.5	3.0	41	2	95	.13	3	.4	1.0	32	SWR	
		14	1116	6.78	19	21.00	155	13.32	8.97	3.0	3.0	45	3	57	.12	3	.4	.5	33	SF2 F	
		17	921	45.59	19	20.10	155	13.83	9.79	3.2	3.3	46	2	57	.10	5	.3	.3	35	SF2 F	
		18	347	58.58	19	18.38	155	23.47	7.14	2.8	3.3	46	2	90	.14	3	.4	.8	37	SWR	
		19	2252	14.55	19	23.43	155	16.86	2.67	2.7	3.0	41	2	36	.12	0	.2	.2	28	SSC	
		19	23 8	32.26	19	23.05	155	17.04	2.59	2.9	3.3	45	2	37	.13	1	.2	.3	30	SSC	
		21	057	39.76	19	12.29	155	41.78	6.82	3.5	3.1	42	2	190	.21	10	.8	1.0	31	LSW	
		22	1344	44.81	18	44.92	155	31.65	26.29	3.8	3.9	50	4	287	.08	30	1.6	2.5	46	OLS	
		25	211	19.06	19	20.28	155	12.96	9.40	3.1	3.1	49	4	68	.11	4	.3	.4	35	SF2 F	
		26	010	4.64	19	19.71	155	8.15	7.86	3.0	3.2	47	4	88	.09	4	.4	.5	28	SF4	
		28	711	30.28	19	19.11	155	11.48	8.21	2.8	3.1	47	4	105	.11	5	.4	.5	33	SF3	
		31	1725	25.81	19	29.33	155	46.39	10.00	3.2	2.8	39	4	73	.11	2	.4	.5	22	KON	
		31	2232	.15	19	26.65	156	53.65	31.33	3.0	3.2	30	3	222	.11	102	2.8	3.6	18	DIS	
	JUN	2	1024	21.86	19	22.10	155	28.96	10.55	3.2	3.2	44	2	36	.11	2	.4	.6	34	KAO	
		3	155	20.08	19	21.00	155	6.04	8.83	3.1	3.2	46	3	97	.12	4	.4	.5	36	SF4	
		4	714	37.03	19	18.18	155	23.58	4.38	2.6	3.0	43	3	91	.13	4	.4	1.4	33	SWR	
		4	730	12.83	19	17.88	155	23.34	5.94	2.7	3.0	42	2	96	.12	4	.4	.9	30	SWR	
		6	1032	25.25	19	23.43	155	16.86	2.98	3.1	3.3	45	2	36	.12	0	.2	.3	33	SSC F	
		8	2112	7.82	19	21.49	155	7.45	8.75	3.4	3.2	50	3	77	.12	4	.4	.5	39	SF4 F	
		15	1543	22.73	19	20.71	155	13.01	9.63	3.5	3.6	48	3	62	.11	4	.4	.4	43	SF2 F	
		17	912	41.11	19	21.63	155	15.21	9.50	3.0	3.0	46	3	62	.10	2	.4	.4	32	SF1	
		20	1627	16.22	19	17.83	155	15.62	9.30	3.0	2.8	43	1	142	.11	5	.5	.6	34	SF1	
		21	114	37.31	19	19.69	155	7.70	8.77	3.0	3.2	40	2	100	.10	4	.4	.7	24	SF4	
		26	1848	31.53	19	25.90	155	16.53	.39	2.3	3.6	14	3	164	.08	2	.3	.4	7	SNC F	
		30	1146	25.71	19	18.86	155	13.26	11.02	3.5	3.5	48	3	126	.11	7	.5	.4	40	SF2 F	
	JUL	2	231	54.70	19	19.43	155	11.37	10.33	3.6	3.6	43	1	98	.08	6	.5	.4	41	SF3 F	
		3	1328	42.62	19	23.41	155	16.85	2.99	3.1	3.4	41	1	36	.11	0	.2	.2	26	SSC F	
		5	1450	55.23	19	20.01	155	6.62	9.03	2.9	3.0	43	2	115	.10	5	.5	.5	31	SF4	
		6	1030	38.60	19	20.65	155	11.75	9.71	3.0	3.2	47	2	73	.12	4	.3	.4	37	SF3	
		9	1512	21.18	19	25.97	155	37.52	3.61	3.0	2.9	32	2	83	.12	3	.4	1.0	30	MLO	
		11	2148	44.97	19	20.04	155	11.85	9.48	2.7	3.0	47	4	81	.08	5	.4	.5	29	SF3	
		17	3 3	15.83	19	23.51	155	16.78	3.05	3.1	3.2	43	6	36	.11	0	.2	.2	29	SSC	
		20	612	46.42	19	19.80	155	12.98	9.65	3.9	3.9	44	1	73	.11	5	.4	.4	38	SF2 F	
		21	759	16.47	19	15.85	155	27.14	10.40	3.9	4.0	47	3	70	.13	5	.5	.4	42	LSW F	
		22	610	8.97	19	20.16	155	7.98	8.73	2.9	3.0	39	3	87	.06	5	.3	.5	29	SF4	
		23	138	17.55	18	57.24	155	11.14	45.64	3.0	3.2	47	3	243	.08	37	1.4	1.8	36	LOI	
		24	824	26.19	19	24.66	155	17.46	.71	2.6	3.3	32	2	36	.12	1	.2	.2	22	SNC F	
		24	1137	42.18	19	23.82	155	28.57	10.26	3.0	3.2	42	1	47	.10	3	.3	.5	35	KAO	
		24	1624	11.62	19	24.13	155	16.18	1.11	2.4	3.0	32	3	45	.14	1	.2	.2	20	SFC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1981	JUL	26	047	29.25	19	24.20	155	15.98	1.18	2.5	3.1	26	4	42	.12	1	.2	.3	19	SEC	
		26	311	7.57	19	24.92	155	17.25	1.45	2.3	3.0	22	1	73	.10	0	.3	.2	15	SNC	
		27	1715	15.59	19	19.44	155	11.36	9.51	3.3	3.7	42	2	98	.11	6	.4	.4	36	SF3 F	
		28	10 0	44.86	19	21.53	155	1.61	8.59	4.1	4.1	43	1	160	.10	4	.6	.4	40	SF5 F	
		28	1018	33.92	19	21.81	155	1.98	7.89	3.3	3.3	43	2	145	.10	4	.5	.5	37	SF5 F	
		29	1557	50.04	19	21.55	155	15.28	9.79	3.4	3.4	44	2	63	.10	2	.4	.4	32	SF1 F	
	AUG	1	1034	2.33	19	20.05	155	7.73	9.81	3.0	2.9	45	2	94	.10	5	.4	.3	29	SF4	
		2	848	16.20	20	6.53	155	47.08	23.22	3.0	2.9	46	4	187	.11	2	1.2	1.3	35	KOH F	
		4	747	50.64	19	27.80	155	26.87	9.44	3.0	2.6	46	5	59	.12	6	.3	.6	28	KAO F	
		6	13 0	18.05	19	46.27	155	2.24	39.56	3.2	2.5	47	2	212	.11	8	.9	1.7	43	HIL	
		10	417	6.55	19	23.61	155	17.00	3.00	2.6	3.3	29	4	38	.10	0	.3	.2	23	SSC	
		10	532	19.58	19	23.00	155	15.86	1.28	3.1	1.9	17	2	69	.11	1	.2	.2	11	SEC	
		10	542	9.38	19	23.09	155	16.51	2.08	4.2	3.8	44	1	42	.16	1	.3	.4	33	SSC	
		10	6 5	58.22	19	23.30	155	16.21	2.43	3.1	2.2	39	1	42	.12	1	.3	.2	27	SEC	
		10	623	39.28	19	18.47	155	16.94	5.17	3.6	4.9	32	0	115	.14	3	.5	1.4	27	SF1	
		10	723	12.88	19	19.04	155	20.42	7.85	3.4	3.0	27	0	111	.16	12	.5	1.9	14	SWR	
		10	747	51.74	19	18.53	155	20.78	1.09	3.4	3.0	40	1	115	.15	5	.4	1.1	20	SWR	
		10	820	8.74	19	19.07	155	21.11	4.67	4.2	3.9	40	0	106	.14	4	.4	2.0	27	SWR	
		10	841	39.99	19	19.90	155	20.29	2.97	3.1	3.0	49	8	73	.07	5	.2	.5	37	SWR	
		10	940	34.97	19	18.39	155	21.56	4.05	4.5	3.8	39	0	123	.20	5	.6	1.3	33	SWR	
		10	1043	58.96	19	19.81	155	18.57	6.06	3.1	2.5	46	4	63	.13	2	.4	.7	34	SWR	
		10	13 2	57.77	19	20.67	155	20.44	.01	3.2	2.9	36	2	74	.16	5	.4	.7	20	SWR	*
		10	1329	11.28	19	17.74	155	21.65	7.10	3.6	3.4	47	3	119	.18	5	.5	.9	42	SWR	
		10	1747	11.90	19	17.65	155	23.28	2.96	2.7	3.3	42	6	99	.10	5	.2	.6	28	SWR	
		10	1853	46.63	19	18.01	155	23.52	5.19	3.6	3.1	47	8	93	.12	4	.3	.8	34	SWR	
		10	1917	17.19	19	19.49	155	18.95	4.44	3.3	3.1	25	3	53	.14	3	.4	1.0	19	SWR	
		10	1923	43.37	19	14.45	155	22.17	3.25	3.3	2.2	37	1	156	.10	3	.5	.7	26	SWR	
		10	2046	29.02	19	18.66	155	23.14	2.76	3.0	1.9	17	2	91	.15	3	.5	.7	10	SWR	
		10	2058	30.18	19	16.93	155	25.57	7.64	3.3	3.0	32	3	61	.17	6	.5	1.2	28	LSW	
		10	2335	11.95	19	18.09	155	23.65	4.04	2.8	3.1	32	3	90	.13	4	.4	1.4	23	SWR	
		11	353	36.33	19	17.45	155	23.33	5.78	3.3	2.8	45	2	100	.12	5	.4	1.0	36	SWR	
		11	847	29.83	19	13.66	155	23.30	8.88	3.1	2.4	40	1	157	.12	11	.5	.7	32	SWR	
		11	1820	42.39	19	12.05	155	20.70	7.28	3.3	3.5	44	3	193	.11	7	.6	1.2	32	SWR	
		14	8 2	18.14	19	58.92	155	28.06	23.52	3.0	2.8	37	2	254	.10	17	1.1	1.8	27	KEA	
		14	2351	36.77	19	59.39	155	57.00	14.60	3.2	3.2	33	1	233	.14	24	3.8	3.0	16	KOH	
		16	1514	32.66	19	23.95	155	16.82	15.27	3.4	3.7	52	6	35	.12	0	.4	.3	44	DEP F	
		19	238	47.29	19	20.08	155	8.18	9.09	3.5	3.9	44	2	84	.09	5	.5	.3	33	SF4	
		22	12 5	20.33	20	11.17	156	25.66	10.32	4.4	4.7	46	5	226	.12	67	.8	1.5	43	DIS F	
	SEP	1	1042	17.62	19	45.91	154	51.69	41.98	3.1	2.6	49	3	243	.11	19	1.1	1.4	43	HIL	
		4	1450	36.92	19	21.06	155	5.97	9.19	2.6	3.1	41	3	96	.08	4	.4	.5	30	SF4	
		6	422	31.80	19	20.56	155	10.73	9.70	2.6	3.0	42	3	77	.12	3	.4	.6	30	SF3	
		6	2221	46.23	19	38.02	156	.80	41.56	3.3	3.8	45	2	225	.09	19	.8	1.6	34	KON F	
		6	2234	47.61	19	24.67	155	29.26	9.93	3.3	3.3	52	6	32	.09	5	.3	.4	41	KAO F	
		21	235	37.64	19	19.54	155	12.57	9.07	2.7	3.0	46	4	83	.12	5	.4	.4	29	SF2	
		22	355	1.75	19	19.67	155	7.49	8.76	3.1	3.4	43	2	105	.09	4	.5	.4	29	SF4	
		22	449	24.02	19	19.68	155	7.77	9.26	3.3	3.5	48	3	99	.10	4	.5	.4	39	SF4 F	
		22	650	23.72	19	19.40	155	7.25	10.18	3.9	4.1	44	1	117	.11	4	.6	.4	40	SF4 F	
		27	150	.62	19	22.32	155	25.11	10.57	3.4	3.7	46	3	32	.11	4	.3	.4	41	KAO F	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	SEP	28	7 9	47.61	19	20.17	155	11.97	9.84	2.9	3.2	41	2	79	.09	5	.3	.4	32	SF3
		28	12 7	31.37	19	25.69	155	37.88	2.06	3.8	3.4	33	1	178	.10	4	.5	.9	29	MLO
		28	1225	7.36	19	29.35	155	48.47	8.12	3.1	2.7	30	0	92	.13	12	.7	.9	20	KON
		30	7 4	45.75	19	18.58	155	13.62	10.25	3.9	4.0	44	2	72	.10	3	.5	.5	38	SF2 F
		30	959	.36	19	18.92	155	13.75	8.55	2.8	3.0	47	6	66	.11	4	.4	.5	33	SF2
	OCT	1	2139	18.91	19	20.66	155	2.13	7.49	3.1	3.1	42	3	171	.10	2	.6	.4	34	SF5
		2	544	34.28	19	20.46	155	6.77	9.35	3.1	3.0	50	4	102	.10	5	.5	.4	37	SF4 F
		2	1143	40.50	19	20.40	155	7.23	8.97	3.1	3.1	43	2	97	.12	5	.4	.6	30	SF4
		4	1542	28.00	19	17.30	155	30.69	28.41	3.7	3.8	54	6	46	.09	4	.5	.9	47	DLS F
		4	1656	45.59	19	20.51	155	13.09	9.89	2.9	3.0	43	3	63	.11	4	.3	.4	29	SF2
		6	2335	43.42	19	18.57	155	14.25	9.84	3.0	3.0	45	3	130	.11	6	.4	.5	36	SF2
		10	1823	23.29	19	19.83	155	11.70	9.45	2.9	3.1	45	3	86	.10	5	.4	.4	31	SF3
		11	721	19.03	19	37.35	156	4.48	37.88	3.0	3.0	48	4	237	.10	22	1.1	.8	38	KON
		13	1911	22.84	19	17.05	155	21.61	8.69	3.1	3.4	47	2	129	.14	6	.4	.5	42	SWR
		13	1914	16.35	19	17.11	155	21.80	8.50	2.8	3.0	48	4	128	.14	6	.4	.6	40	SWR
		14	1438	20.54	19	59.90	155	39.69	13.98	3.1	3.4	50	5	149	.10	19	.8	1.0	39	KOH F
		15	1 0	.19	18	59.21	155	3.35	35.37	3.3	3.4	49	3	248	.10	35	1.4	2.0	43	LOI
		19	10 8	35.60	19	20.09	155	11.29	9.24	3.0	2.9	46	4	83	.11	4	.3	.4	32	SF3
		22	2156	8.92	19	19.47	155	8.73	9.52	3.3	3.8	44	0	82	.11	4	.5	.4	38	SF4
		27	2333	32.26	19	22.60	155	17.21	32.88	4.0	4.2	49	2	38	.12	2	.6	1.1	47	DEP F
		28	143	20.66	19	22.42	155	17.23	32.67	2.7	3.0	51	3	38	.11	2	.5	.9	46	DEP
	NOV	1	16 5	50.64	19	29.09	155	52.58	10.97	3.1	3.0	41	5	97	.15	4	.6	.4	25	KON
		5	824	22.34	19	22.41	155	1.09	7.23	2.8	3.0	33	2	168	.09	6	.6	.4	26	SF5 F
		7	723	46.83	19	20.14	155	13.09	9.83	3.1	3.4	47	2	68	.10	5	.4	.3	40	SF2 F
		9	145	36.78	19	19.61	155	7.78	9.22	2.9	3.2	38	1	99	.10	4	.5	.4	29	SF4
		10	3 2	56.58	19	20.58	155	12.67	10.31	4.4	4.9	47	1	67	.11	4	.4	.3	43	SF2 F
		10	331	2.64	19	20.34	155	12.44	8.96	3.4	3.5	49	3	72	.12	4	.4	.5	42	SF2 F
		11	2236	11.42	19	19.81	155	11.41	9.74	2.9	3.2	46	2	88	.10	5	.4	.3	37	SF3 F
		15	2023	59.37	19	57.76	155	21.13	10.11	3.0	2.9	37	4	197	.10	8	.6	.5	22	KEA F
		16	226	40.23	19	57.43	155	21.65	12.15	3.4	3.4	49	3	174	.11	8	.8	.6	44	KEA F
		16	1910	9.55	19	16.84	155	21.95	8.46	3.0	3.4	45	2	130	.15	6	.4	.6	39	SWR
		18	1029	38.67	19	18.87	155	13.37	9.58	2.7	3.0	47	5	130	.11	7	.4	.4	35	SF2
		18	2229	54.85	19	22.17	155	28.88	10.89	3.6	3.7	50	3	36	.11	2	.3	.4	45	KAO F
		19	1932	58.14	19	57.41	155	21.27	11.84	3.8	4.2	53	5	195	.12	8	.7	.6	47	KEA F
		20	742	52.41	19	21.73	155	5.01	8.77	3.4	4.0	49	4	81	.10	3	.5	.4	42	SF5 F
		28	917	18.44	19	57.81	155	20.78	9.89	3.4	3.4	41	3	198	.10	23	.6	.5	26	KEA F
		30	20 7	9.73	19	21.42	155	4.80	8.71	3.4	3.4	41	3	87	.11	4	.5	.4	36	SF5 F
	DEC	4	1641	27.79	19	13.57	155	23.42	37.95	2.9	3.1	49	2	151	.11	2	.7	1.2	43	DEP
		5	1226	30.91	19	19.88	155	7.72	7.90	3.3	3.6	45	4	97	.09	5	.4	.5	32	SF4
		7	9 7	29.14	19	18.75	155	13.21	8.76	3.2	3.4	43	2	132	.11	7	.5	.6	38	SF2 F
		7	1739	27.19	19	48.79	156	3.87	41.12	4.0	4.0	47	4	239	.10	28	1.0	1.1	41	HUA F
		12	1823	13.31	19	19.75	155	7.52	9.86	3.7	3.8	47	4	103	.10	5	.5	.4	42	SF4 F
		13	322	28.85	19	20.74	155	4.33	8.43	3.0	2.9	44	3	105	.10	3	.5	.4	31	SF5
		13	1420	21.31	19	19.64	155	8.41	9.15	3.3	3.7	47	3	83	.10	4	.4	.4	36	SF4 F
		15	1411	25.70	19	17.08	155	15.50	10.40	2.9	3.0	46	3	151	.10	6	.4	.4	36	SF1
		15	2130	54.30	19	23.54	155	16.87	2.82	2.8	3.4	41	3	36	.10	0	.2	.2	29	SSC
		16	2021	51.51	19	20.17	155	6.89	9.40	3.4	3.8	43	1	143	.10	6	.6	.5	37	SF4 F
		20	5 8	2.65	19	19.63	155	10.22	9.19	3.1		42	2	94	.11	5	.4	.4	33	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1981	DEC	21	1915	15.59	19	20.02	155	6.71	8.51	3.2	3.0	41	2	113	.10	5	.4	.5	29	SF4
		23	711	14.60	20	5.68	155	50.40	28.48	3.0	3.2	43	6	148	.11	7	.6	1.0	32	KOH F
		27	16 9	30.37	19	16.52	155	22.42	7.84	3.2	3.7	48	2	129	.15	5	.4	.6	45	SWR
		31	1735	25.06	19	22.75	155	16.76	28.29	3.0	3.0	45	1	42	.11	1	.6	.9	44	DEP

USGS
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Hawaiian Volcano Observatory
1982 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 82
Seismic Data, January to December 1982
By Wilfred R. Tanigawa, Jennifer S. Nakata, and Alvin H. Tomori

Chronological Summary
By Robert W. Decker

Open-File Report 2007-1342
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 82

SEISMIC DATA, JANUARY TO DECEMBER 1982

This report (map) is preliminary and has not been reviewed for conformity with U.S.Geological Survey editorial standards (and stratigraphic nomenclature). Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S.G.S.

Menlo Park, California

1983

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 82

SEISMIC DATA, JANUARY TO DECEMBER 1982

BY

WILFRED R. TANIGAWA, JENNIFER S. NAKATA, ALVIN H. TOMORI

CHRONOLOGICAL SUMMARY

BY

ROBERT W. DECKER

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summary presents data gathered during the year together with a chronological narrative describing the volcanic events and significant observatory related activities. The seismic summary is offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries will be published separately.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS open file report ("Hawaiian Volcano Observatory Seismic Network History 1950-79," U.S.G.S. open file report 80-302, 1980). It is designed as a reference for users of seismograms and phase data, and so includes and expands the information in the station table in this summary.

CHRONOLOGICAL SUMMARY - 1982

by

Robert W. Decker

1982 was an active year for Kilauea Volcano. The major events were a summit eruption on April 30-May 1, a southwest rift intrusion on June 22-24, another summit eruption on September 25-26, and an upper east rift intrusion on December 9.

The April 30 eruption began at 11:37 (Hawaiian Standard Time) following nearly 3 hours of rapid summit inflation, tremor, and an intense seismic swarm. Lava was erupted from an east-northeast-trending fissure about 1 km long extending across the floor of Kilauea Caldera from the northeast rim of Halemaumau Crater. The lava fountains were about 5 to 10 meters high, with bursts up to 25 to 50 meters. About 0.5 X 10^6 m^3 of pahoehoe flows covering 0.3 X $10^6 m^2$ were formed before the eruption ended at about 06:30 May 1.

On June 22-24 a major intrusion of magma moved into the southwest rift of Kilauea, continuing the series of intrusions into the southwest rift that began in January 1981. Summit deflation, an earthquake swarm, and tremor accompanied this injection of at least 20 X 10^6 m^3 of magma into the middle southwest rift between Puu Koae and Kamakaia Hills.

On September 25-26 another Kilauea summit eruption issued from an east-northeast-trending group of fissures about 1 km long in the south caldera area 1.2 km south-southeast of Halemaumau Crater. This eruption was preceded by nearly 2 hours of rapid summit inflation, tremor, and an earthquake swarm. The outbreak began at 18:45 on September 25 and lasted until about 08:30 on September 26. Lava fountains reached a general height of 20 to 40 meters with bursts up to 50 to 70 meters. About 3 X 10^6 m^3 of pahoehoe lava was erupted, and covered an area of 0.7 X 10^6. Some 2 X 10^6 m^3 of ponded lava drained back down the vents on September 26-27, lowering the lava surface by 2 to 4 meters. One tongue of lava extended northeast across the Crater Rim Road, and another flowed over the low south rim of the caldera and moved about 1.5 km to the south-southeast.

Following the September eruption, most of the earthquake activity shifted from the southwest rift to the east rift of Kilauea. From 17:30 until 20:00 on December 9, an intense earthquake swarm, but no tremor, occurred between Lua Manu and Kokoolau Craters on the upper east rift zone. This was accompanied by 3 microradians of summit deflation, indicating an intrusion of at least 1 X 10^6 m^3.

The fact that two eruptions and two intrusions without eruptions occurred in 1982 suggests that the rift zones of Kilauea may be getting back to a state more normal than during the years following the major 7.2 magnitude earthquake on the south flank of Kilauea in 1975. During 1976 through 1981, there were only 2 eruptions of Kilauea compared to 14 intrusions without eruptions--3 near the summit; 3 into the southwest rift; and 8 into the east rift.

It now appears that one of those east rift intrusions, the one beneath Mauna Ulu on March 10-11, 1980, may have been a very small eruption. In March 1982, Norm Banks and Jeff Judd discovered a small pad of lava spatter and flows of less than 3 m^3 in volume along the east end of the surface cracks that formed on March 10-11, 1980. Since that intrusion involved at least 5 X 10^6 m^3 of magma injected into the shallow subsurface beneath the Mauna Ulu area, less than 1/1,000,000 of which may have been erupted, we will leave to future statisticians the problem of whether this unobserved event should be officially listed as an eruption or an intrusion. It's somehow pleasing that science isn't always tidy.

Table 1. ERUPTIONS OF KILAUEA, 1982

Starting Date	Location	Vent Length	Vent Elevation	Duration	Area km^2	Volume X 10^6 m^3
Apr. 30	Summit	1 km	1100 m	19 hrs	0.3	0.5
Sept. 25	Summit	1 km	1100 m	14 hrs	0.7	3(-2)

Table 2. INTRUSIONS OF KILAUEA, 1982

Starting Date	Location	Length	Height	Minimum Depth	Volume X 10^6 m^3	Propagation Rate km/hr	Local Gases	Electrical Anomalies
June 22	SW Rift	20 km	8 km	1 km	>20	.32	yes	yes
Dec. 9	E Rift	2 km	3 km	2 km	>1	?	?	?

Mauna Loa Volcano continued to inflate during 1982 at about the same rate that it has since 1977. The increase in volume of the summit region is about 4 X 10^6 m^3/year, and the center of inflation remains southeast of the rim of the caldera. Shallow earthquakes beneath the summit area of Mauna Loa continued to occur at a gradually increasing rate that began in 1980. This rate of earthquake occurrence is higher than during 1971 to 1973, but much lower than during late 1974 and early 1975 preceding the July 1975 eruption. There have been no eruptions or apparent dike intrusions of Mauna Loa since the 1975 activity. The magma supply rate into Mauna Loa since 1975 appears to be only about 5 to 10% of the magma supply rate into Kilauea during this same period.

Twenty-one earthquakes of magnitude 4.0 or greater occurred beneath or near Hawaii in 1982, including a 5.6 M and a 5.4 M quake at 10-to-14 km depths beneath the south flank of Mauna Loa, on January 21. First motions of these two large quakes and the distribution of their aftershocks indicate failure on a nearly horizontal fault, with the upper plate moving away from the southwest rift of Mauna Loa in a seaward direction. It thus appears that the flanks of Mauna Loa move away from the growing rift zones in the direction of least resistance, probably as a result of push-apart stresses in the rift zones combined with gravitational stresses in the down-slope directions of the volcanic pile.

Besides the key role of deformation studies in estimating the volumes, locations and volume rates of new dikes formed during intrusions and eruptions, the deformation group has made at least two new significant steps in 1982. The increasing number of recording tiltmeters along the east and southwest rifts of Kilauea have produced a much clearer picture of the slow, relatively aseismic intrusions into the rift zones. Apparently the more active parts of the rifts develop fluid or plastic cores so hot that new magma from the summit can intrude slowly into them without forming the seismic swarms associated with cracking open new dikes. The main evidence for these slow intrusions are one or more of the following: (1) slow subsidence or no change in summit tilt; (2) local deformation along the rift zones, sometimes moving progressively down the rift, detected by recording tiltmeters, level lines or dry tilt stations along the rift zones; (3) scattered shallow earthquakes along those parts of the rift undergoing deformation; (4) gas temperature and composition anomalies along the rift zone; and (5) SP (self-potential) anomalies along the rift zone. The upper and middle east rift experienced one of these slow intrusions in late October and November 1982.

Another significant deformation study was the establishment of EDM (electronic distance measurement) lines across the locations where eruption fissures might occur. In the September eruptions the fissure vents formed directly across a segmented line of EDM stations. The extension of the ground surface by the erupting dike was at least 705 mm, and 392 mm of this was accommodated by contraction in the adjoining line segments within a few kilometers of the newly formed fissure.

The volcanic gas monitoring program continues to expand, as does the complexity of its results. Fundamental changes in temperature, volume, and composition of the escaping gases indicate real changes in the configuration and composition of magma bodies in the subsurface beneath Kilauea's summit and rift zones. Continuous measurements of temperature, CO_2 content, and condensate conductivity are now being made at five gas vents. Twelve-hour (tidal?) cycles of CO_2 content at some vents show that intermittent sampling could be quite misleading.

For 6 months in 1982, Dallas Jackson was on loan to the newly formed volcano observatory on Reunion Island in the Indian Ocean. Electromagnetic investigations were slowed down by his absence, but new SP (self-potential) anomalies were measured related to the rift zone intrusive events. A major effort in the electromagnetic program was automating the large inductance loop and sensors in the Kilauea summit area in order to obtain regular measurements on a daily basis.

The observatory staff consists of 9 scientists and 16 support personnel. In addition, 19 students and volunteers helped HVO during 1982. The staff monitored 48 seismic stations, 609 electronic distance measurement lines, 275 km of level lines, 135 tilt stations, 14 recording tilt meters, 2 strain gages, 127 gravity stations, 12 self-potential lines, 1 electromagnetic induction loop with 4 receiver stations, and 21 gas-sampling and temperature sites. Many of these monitors record continuously; others are observed at various intervals. Most of the data reduction, graphics, and data storage are handled by HVO's computer system.

Eight members of the staff were involved in investigations of Indonesian

volcanoes (particularly Galunggung and Merapi), Pagan Volcano in the Marianas, Piton de la Fournaise Volcano on Reunion Island, Mount St. Helens and Long Valley Caldera in the western United States, and three quarternary strato-volcanoes on San Miguel, Azores (Sete Cidades, Agua de Pau, Furnas).

Geologic mapping on Hawaii was conducted by four USGS geologists who were closely associated with the observatory. Their availability and help during the April and September eruptions was a great asset.

HVO cooperated with 40 guest investigators during the year for time periods up to 3 months. Staff members and guest investigators presented 4 papers at scientific meetings and published 20 papers and 9 open-file reports. HVO also issued weekly, monthly, and annual reports.

Hawaii Volcanoes National Park estimated they had 2,626,00 visitors in 1982. About 70% of these visitors stopped at HVO to view Kilauea Caldera and to peer through the windows at HVO's seismographs. Close to 1200 visitors, including 13 university student groups, 7 public school groups, 7 professional meeting groups, and 14 TV filmmakers, were shown the inner workings of the observatory.

It's been another busy year at HVO. The buildings are a wreck but morale is high. There's nothing like a few eruptions to raise the spirits of volcanologists.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory maintains an extensive telemetering seismometer network on the island of Hawaii. In 1982 the seismometer network consisted of 48 stations; two are low-gain multicomponent stations (optical), ten are three-component, and 38 are vertical only. The coverage is most complete on and around Kilauea Volcano. With the exception of self-contained systems at Uwekahuna and Hilo stations, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, and Figure 2 shows the seismic stations which were operated on the Island of Hawaii during the year. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1982. Listed are station names, three- and four-letter codes, coordinates in degrees and minutes, elevation in meters, and other data described below. In addition to seismometers listed in Table 1, a horizontal seismometer of Type 3 or H1 and a long-period, three-component set of Press-Ewing seismometers are operated in the Uwekahuna vault, all recorded on photographic paper.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or radio. These telemetering stations are now all of Type 1, the OEVE standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from 36 stations are recorded on two Develocorders using 16mm microfilm. FM signals from the telemetering network are also recorded directly on one-inch magnetic tape. Selected larger events are copied onto condensed FM library tapes which are currently archived in Menlo Park and archived in digital form at HVO as part of the routine location processing. The type of recording used for each station (in addition to magnetic tape for the telemetered stations) is coded in Table 1 as follows: D - Develocorder film, S - smoked paper drum, P - photographic paper, H - Helicorder paper.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Honolulu and Kipapa stations operated by the Pacific Tsunami Warning Center). The less sensitive optical records are used primarily for amplitude measurements for magnitude calculations to supplement readings from the high-gain stations. The paper (optical) records as well as the 16mm Develocorder microfilm are archived at HVO.

In late August, Rex Allen and Jim Ellis from the U.S. Geological Survey's Office of Earthquake Studies came to HVO to install their seismic monitoring system uniquely designed to automate picking of P-phase onset times, measuring coda lengths, and determinining preliminary epicenters for adequately recorded earthquakes. The Hawaii picker is configured to monitor a maximum of 80 stations, but is currently wired to 45 stations. Attached to the picker are a Datasouth Printer and an Apple II microcomputer. The picker output is logged on a disk and printed out on chart paper within three minutes after the earthquake occurs. The data collected on disk is tranferred to the Eclipse, the main computer system, on a daily basis using a second Apple II. The earthquake records are filtered and run through our standard location program (HYPOINVERSE). Summary listings and epicenter plots are prepared on chart paper, and the phase data are archived on tape. The picker output is routinely compared with readings from our standard format. Modifications are being made to adapt the

automated system to better accommodate seismic monitoring needs around Hawaii's active volcanoes.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard OEVE system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL, Table 1) to get the response for an individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20X Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited. CAL factors range from about 1 to 8, averaging about 4. A detailed history of CAL factors and other data is given in F.W. Klein and R.Y. Koyanagi, Hawaiian Volcano Observatory Seismic Network History 1950-79, U.S. Geological Survey Open File Report 80-302, 1980.

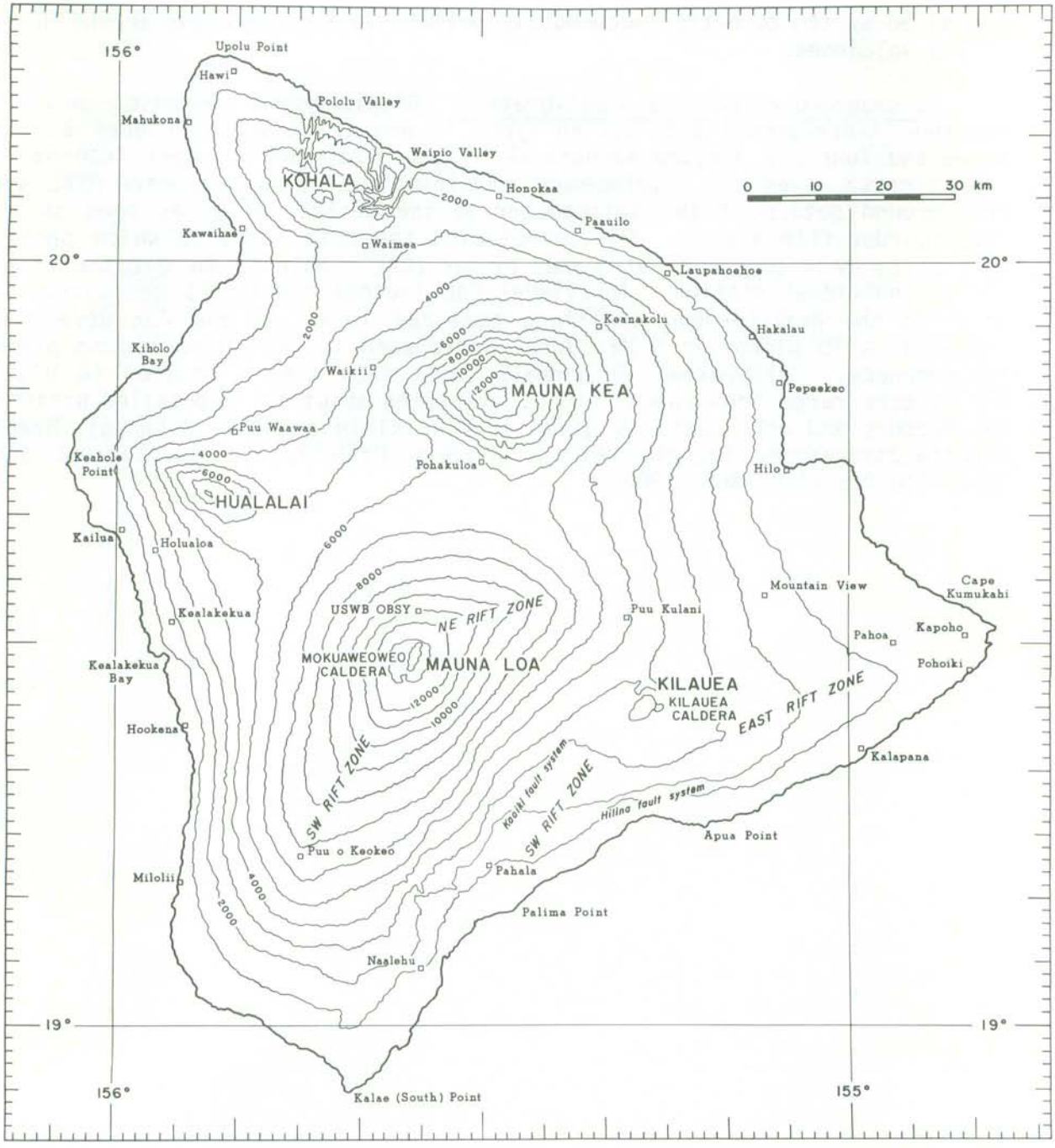


Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

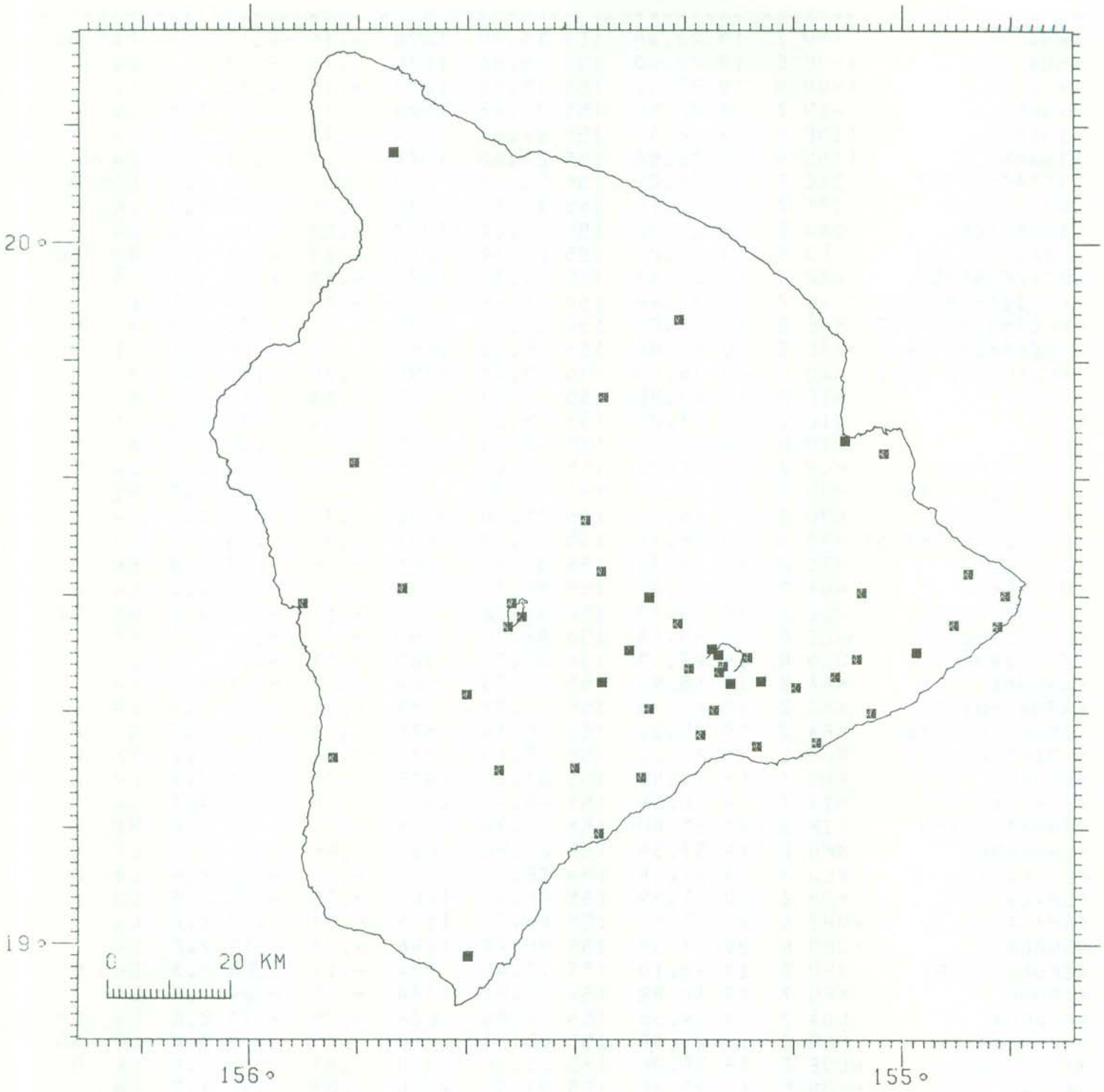


Figure 2. Map of the island of Hawaii showing seismic stations operational during 1982.

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1982

STATION NAME	CODE	--LAT--- D	M	---LON--- D	M	ELEV (M)	DELAY 1	DELAY 2	CAL	SEIS TYPE	OPTIC RECORD
AHUA	AHU Z	19	22.40	155	15.90	1070	-.10	-.13	2.1	E4	SD
AHUA	AHUE E	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AHUA	AHUN N	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AINAPO	AIN Z	19	22.50	155	27.62	1524	.13	.17	5.5	L4	D
AINAPO	AINE E	19	22.50	155	27.62	1524	.13	.17	.0	L4	
AINAPO	AINN N	19	22.50	155	27.62	1524	.13	.17	.0	L4	
CAPTAIN COOK	CAC Z	19	29.29	155	55.09	323	.00	-.16	1.1	L4	D
CONE PEAK	CPK Z	19	23.70	155	19.70	1038	-.26	-.07	6.0	L4	D
DANDELION	DAN Z	19	21.42	155	40.04	3003	-.27	.03	7.0	L4	D
DESERT	DES Z	19	20.20	155	23.30	815	-.29	-.13	3.0	E4	SD
ESCAPE ROAD	ESR Z	19	24.68	155	14.33	1177	-.17	-.19	1.8	L4	D
HAWAIIAN BEACHES	HAB Z	19	31.89	154	53.89	92	-.09	-.24	1.0	L4	
HALEAKALA, MAUI	HAE E	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HALEAKALA, MAUI	HAL Z	20	46.00	156	15.00	2090	.00	.00	.7	H1	P
HALEAKALA, MAUI	HAN N	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HILO	HIE E	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILO	HIL Z	19	43.20	155	5.30	20	.54	.30	1.0	H1	P
HILO	HIN N	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILINA PALI	HLP Z	19	17.96	155	18.63	707	.02	.07	2.6	L4	D
HONOLULU, OAHU	HON Z	21	19.30	158	.50	2	.00	.00	.0	H1	P
HALE POHAKU	HPU Z	19	46.85	155	27.50	3396	.31	.17	3.7	L4	D
HUMUULA SHEEP ST	HSS Z	19	36.31	155	29.13	2445	.20	.35	2.7	L4	D
HOT CAVES	HTC Z	19	14.33	155	24.02	381	-.16	-.07	.0	E4	
HUALALAI	HUA Z	19	41.25	155	50.32	2189	.67	.38	2.8	L4	D
HEIHEIAHULU	HUL Z	19	25.13	154	58.72	369	-.17	-.16	1.6	E4	DS
HEIHEIAHULU	HULE E	19	25.13	154	58.72	369	-.17	-.16	.0	E4	
HEIHEIAHULU	HULN N	19	25.13	154	58.72	369	-.17	-.16	.0	L4	
KAAPUNA	KAA Z	19	15.98	155	52.28	524	-.12	-.01	2.8	L4	
KAENA POINT	KAE Z	19	17.35	155	7.95	37	-.01	.06	.8	L4	D
KAOIKI FAULTS	KFA Z	19	25.26	155	25.14	1579	.13	.17	.0	E	H
KAOIKI FAULTS	KFB Z	19	25.26	155	25.14	1579	.13	.17	.0	TE	$
KAHUKU	KHU Z	19	14.90	155	37.10	1939	.03	-.03	2.7	E4	D
KANEKII	KII Z	19	30.56	155	45.90	1841	.15	.37	4.1	L4	D
KIPAPA, OAHU	KIP Z	21	25.40	158	.90	76	.00	.00	.6	H1	P
KEANAKOLU	KKU Z	19	53.39	155	20.58	1863	.68	.24	1.2	L4	D
PUU KALIU	KLU Z	19	27.48	154	55.26	271	-.17	-.30	2.9	L4	D
KOHALA	KOH Z	20	7.69	155	46.77	1166	-.03	-.17	1.5	L4	D
KOHALA	KOHE E	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KOHALA	KOHN N	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KIPUKA NENE	KPN Z	19	20.10	155	17.40	924	-.11	-.08	4.3	E4	D
KAPOHO	KPO Z	19	30.02	154	50.51	134	-.09	-.24	.0	L4	
KALALUA	LUA Z	19	24.55	155	4.25	622	-.25	-.30	2.8	L4	DH
MAUNA LOA	MLO Z	19	29.80	155	23.30	2010	.03	.08	5.8	L4	SD
MAUNA LOA	MLOE E	19	29.80	155	23.30	2010	.03	.08	.0	L4	D
MAUNA LOA	MLON N	19	29.80	155	23.30	2010	.03	.08	1.5	L4	
MAUNA LOA X	MLX Z	19	27.60	155	20.70	1475	.06	.15	3.0	L4	
MOKUAWEOWEO	MOK Z	19	29.28	155	35.98	4104	.15	.16	4.0	L4	DH
MAKAOPUHI	MPR Z	19	22.07	155	9.85	881	-.17	-.20	3.0	L4	D
MOUNTAIN VIEW	MTV Z	19	30.25	155	3.75	409	-.02	.01	5.0	E4	D
NATIONAL GUARD	NAG Z	19	42.12	155	1.72	18	.54	.30	4.5	E4	D
NORTH PIT	NPT Z	19	24.90	155	17.00	1115	-.30	-.18	3.0	E4	SD
NORTH PIT	NPTE E	19	24.90	155	17.00	1115	-.30	-.18	.0	E4	
NORTH PIT	NPTN N	19	24.90	155	17.00	1115	-.30	-.18	.0	E4	
OUTLET	OTL Z	19	23.38	155	16.94	1038	-.19	-.18	4.9	L4	
PAUAHI	PAU Z	19	22.62	155	13.10	994	-.21	-.24	2.8	L4	SD
PAUAHI	PAUE E	19	22.62	155	13.10	994	-.21	-.24	.0	L4	
PAUAHI	PAUN N	19	22.62	155	13.10	994	-.21	-.24	.0	L4	
PUU ULAULA	PLA Z	19	32.00	155	27.67	2992	-.03	.13	5.4	L	D
POHOIKI	POI Z	19	27.42	154	51.22	16	-.09	-.24	.0	L4	

Table 1 (continued)

POLIOKEAWE PALI	POL	Z	19 17.02	155 13.47	169	-.02	.03	3.0	E4	D
PUU PILI	PPL	Z	19 9.50	155 27.87	35	-.15	-.15	1.4	E4	D
PUU KAMOAMOA	PUK	Z	19 23.00	155 6.25	704	-.25	-.30	.0	E4	D
RIM	RIM	Z	19 23.90	155 16.60	1128	-.21	-.13	.0	L4	
SOUTH POINT	SPT	Z	18 58.91	155 39.92	244	-.17	-.22	1.4	L4	D
SOUTH POINT	SPTE	E	18 58.91	155 39.92	244	-.17	-.22	.0	L4	
SOUTH POINT	SPTN	N	18 58.91	155 39.92	244	-.17	-.22	.0	L4	
SOUTHWEST RIFT	SWR	Z	19 27.26	155 36.30	4048	.01	.04	6.0	E4	D
UWEKAHUNA	USE	E	19 25.40	155 17.60	1240	-.21	.00	1.0	S	P
UWEKAHUNA	USZ	Z	19 25.40	155 17.60	1240	-.21	.00	1.0	S	P
WAHAULA	WHA	Z	19 19.90	155 2.92	29	-.10	-.04	1.1	E4	D
WILKES CAMP	WIL	Z	19 28.15	155 35.02	4037	.22	.17	2.6	E4	D
WOOD VALLEY	WOO	Z	19 15.08	155 30.12	909	-.15	-.06	4.6	E4	D

Table 2. Seismic Instrumentation Types

The codes in parentheses refer to the seismometer types listed in Table 1.

Type 1. (Codes E, L, and 4) Consists of:

a) Geophone - Electrotech EV-17 (E) or Mark Products L4C (L) 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - USGS/OEVE Model J302 or J402 (4) voltage controlled oscillator. Three db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 3. (Code H1) Consists of:
Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. (Code S) Consists of:
Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Type 2 instruments have been discontinued.

Code (W) is a Wood-Anderson torsion seismograph.

Codes (TE) and (S5) are experimental seismometers.

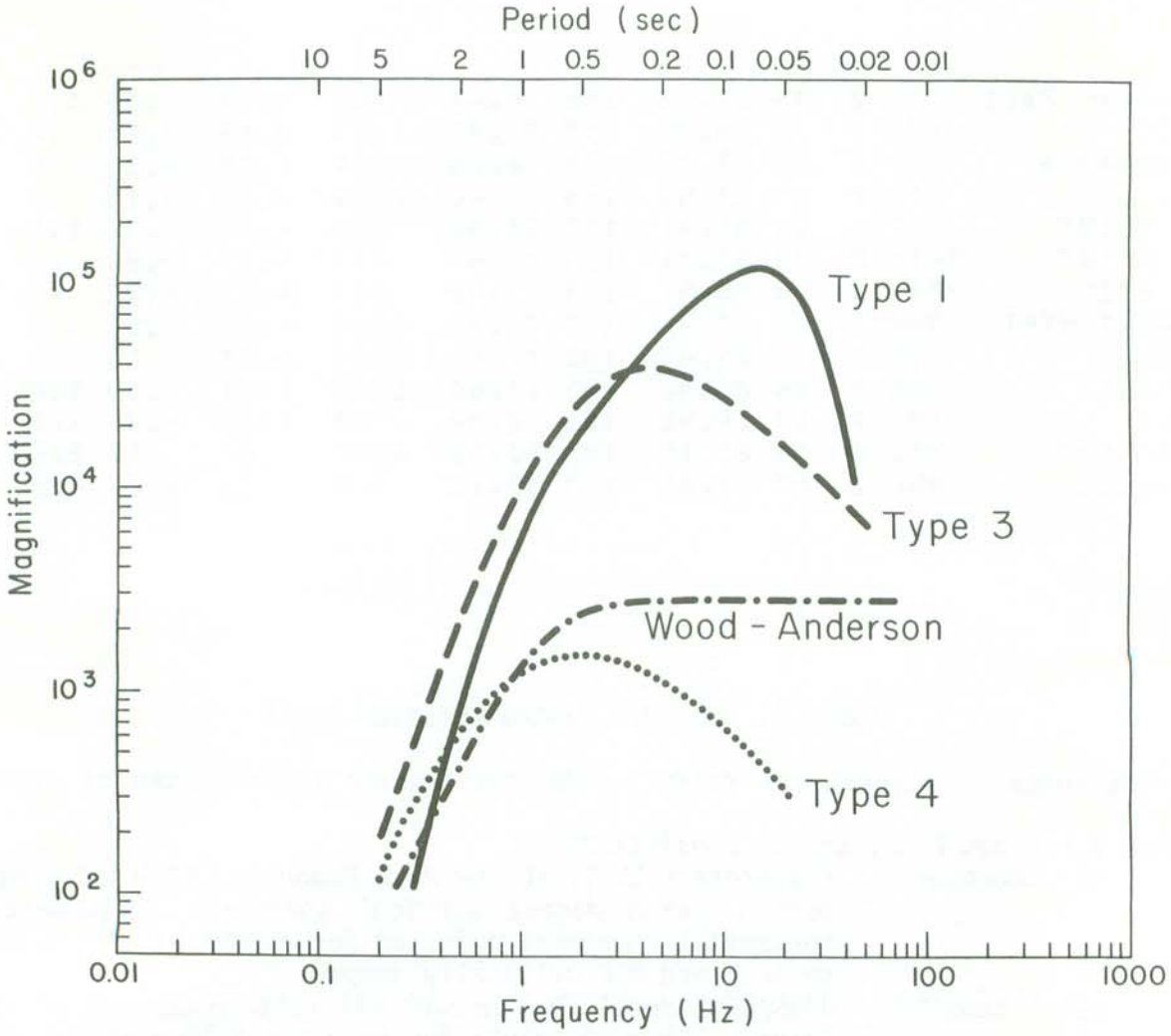


Figure 3. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard OEVE seismometer recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL), to get the reponse for an individual station.

SEISMIC DATA PROCESSING

Develocorder films are scanned on a daily basis for earthquakes, and coda durations are measured for magnitude determination. Events are digitized, timed, and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, F.W., Hypocenter location program HYPOINVERSE, U.S.G.S. Open file report 78-694, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival time and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are in fact separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations, and signal or coda duration on selected short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, OTL, PPL, KHU, or WIL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed nearly to the noise level. A bilinear relation is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

The equations used in magnitude determination are:

$$\text{duration } <210 \text{ sec} \quad M = -5.2 + 3.89 \log (F-P) + .013\, Z + .0037\, D$$
$$\text{duration } >210 \text{ sec} \quad M = -.905 + 2.026 \log (F-P) + .013\, Z + .0037\, D$$

where Z and D are the depth and epicentral distance in km, respectively.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south half of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters are given in Figures 8-13. The epicenter maps are on different scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and depth. Figures 4-7 are maps of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figures 4-7. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea.

Earthquake categories are:

1) Kilauea summit, short period caldera: shallow earthquakes beneath the caldera.
2) Kilauea summit, long period caldera: earthquakes characterized by low frequency signatures, often originating 5-10 km below the caldera.
3) Kilauea summit 30 km: deep earthquakes about 30 km beneath the summit region.
4) Kaoiki and southwest rift: earthquakes beneath the southwest rift of Kilauea, western parts of the Koae faults and adjacent Kaoiki fault system.
5) Upper east rift: earthquakes in the upper and middle east rift zone, the adjacent parts of the south flank, and eastern parts of the Koae faults.
6) Lower east rift: earthquakes in the lower east rift zone and adjacent parts of the south flank.
7) Offshore PPL: earthquakes from offshore areas south of the Puu Pili station, including Loihi seamount.
8) Mauna Loa long period: low frequency events near Mauna Loa summit.
9) Mauna Loa short period: shallow earthquakes in the Mauna Loa caldera region.

Tremor is separated into four categories: shallow, intermediate and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs.

	KILAUEA SUMMIT			KILAUEA FLANK			MAUNA LOA		TREMOR (MINUTES)	
DATE 1982	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
JAN 1	187	9		16	82	13		4			
2	228	25		28	86	10		1	2	15	
3	363	8		49	103	13			4		3
4	441	8		62	153	2			3		
5	421	7	1	57	131	1			3		25
6	7	2			2				1		
7	226	9		51	93	2			3		
8	126		1	38	112	12			5		
9	7		1	47	114	8			1		
10		1	1	42	106	4			3		
11	336	4		59	170	4			5		
12	263	3	3	32	114	12		1	1		
13	306	5		48	158	9			8		
14	179	7	1	47	184	5			3		
15	253	7	3	36	82	23		4	2		
16	173	11		28	145	20					
17	244	14		39	120	6			1		
18	129		6	43	92	16					
19	278	1		54	121	4			2		
20	114	7		33	105	5			1		56
21	175	3		895	67	4			11		
22	95	12		130	79	7			3		30
23	220	8	1	79	115	13					
24	228	1		118	90	4					
25	105	3		46	78	7		1	1		5
26	218		1	43	67	3			3		
27	86	4		49	63	8			1		
28	360	3	4	68	139	1			1		
29	240	2		46	88	4		1			15
30	166	2	1	54	127	8			1		
31	273			124	143	4			3		
FEB 1	172	7	2	46	98	4			3		
2	263	10		74	159	3			1		
3	132	5		54	113	9			1		
4	242	14		47	167	11		1	1		
5	73	78	7	41	129	10		2	8	86	
6	48	15	3	30	114	5		1	4	32	
7	46		2	36	105	15					
8	39		1	27	79	9					
9	67	6	1	22	74	5			1		
10	42	1	1	19	43	7					11
11	1			23	49	4					
12	56	2		21	140	17					
13	56	15		6	103	8			2	5	
14	70	14		22	92	6		1	1		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1982	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
FEB 15	100	11	2	69	103	7			1		
16	186	14		47	124	1			2		
17	117	14	2	70	113	7			3		
18	245	94		53	130	7			6		
19	106	25	2	34	72	7		2	10		4
20	200	30		65	84	19			9		
21	148	58	1	52	103	3			12		4
22	104	15	1	45	100	5			8		
23	229	22	1	42	90	1			23		
24	218	12		41	88	4			15		
25	187	29	3	48	104	3			11		
26	197	32	2	53	101	15		2	4		3
27	576	35	2	24	128	19		1	5		
28	239	20		61	164	7			5		
MAR 1	123	12	1	38	95	90		1	6		20
2	220	48		50	81	2			1		
3	380	26		64	109	9			10		4
4	236	36		67	130				5	7	
5	110	13		16	114	11			1	5	
6	91	8		5	82	5		1	6		
7	681	51		37	101	4			6		
8	380	21	2	42	95	7			2		
9	498	41	1	44	122	4			3		
10	159	6		43	122	12			4		15
11	239	21		54	118	4			4		
12	137	6		32	75	5			6		
13	330	5	1	29	78	2			4		14
14	181	15	1	37	86	7			2		
15	390	11		32	110	5		1	9		
16	435	24	1	35	103	1			7		
17	216	1	1	47	87	8					
18	230	45		30	80	5					
19	70	39	1	32	106	12				6	
20	112	19	8	25	96	10			1		
21	233	16		39	66	2					
22	192	7	3	66	96	10			3		
23	643	19		45	80	5			1		
24	278	73	2	18	66	3			2		
25	211	16	2	28	64	2			8		
26	67	8		10	76	10		1	6		
27	54	8	3	12	81	12	1				
28	197	12		26	90	1			5		
29	100	18		32	83	8			2		
30	146	42		36	86	3			3		
31	142	15	2	36	105	3			2		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1982	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
APR 1	140	25	3	35	85	13			1			
2	148	20		34	96	11		1	7			
3	158	7	2	39	89	9			1			
4	281	18	3	35	88	7						
5	254	16	1	36	85	12			3			
6	277	17	1	44	100	17			4			
7	270	19	1	44	85	7					15	
8	436	33		26	78	3						
9	248	9		29	103	16		1	1			
10	247	13	2	27	92	8			3			
11	379	4		109	233	6					54	
12	299	6	1	50	127	12			1		15	
13	425	13		73	109	10			3			
14	107	1		18	30	2			1			
15	363	18		23	97							
16	626	25		10	136	10		1	2			
17	189	5	1	17	119	11		1				
18	342	9	1	27	91	4						
19	303	15	1	37	81	24						
20	235	13	1	25	118	9			2			
21	223	6	4	24	94	13			3			
22	305	15	1	45	100	4			9			
23	157	14		29	82	8			1		8	
24	95	4		25	61	16			6		4	
25	109	61	3	41	97				2		10	
26	152	61	1	54	91	22			5		10	
27	110	37		31	128	2			3			
28	96	11	2	34	69	12			8			
29	121	8	1	27	65	3	1		6			
30	653	1		44	63	8				780		
MAY 1	549	5		58	84	12			8	480		
2	676	13	1	67	95	5			6			
3	412	12	2	38	91	11			8			
4	652	30		46	133	5			4		14	
5	455	19	3	37	89	14			8			
6	500	23	5	33	111	13			8			
7	520	86	3	21	84	17			3			
8	664	98		26	90	11			2		3	
9	455	27	2	47	113	15			5			
10	416	17	2	47	92	10			6			
11	401	8	2	54	82	10			6			
12	481	47	1	76	69	5			5		3	
13	499	24		34	84	7			7			
14	324	58	1	12	139	11			5			
15	221	36		8	94	5			7		44	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1982	SHORT PER. CALDERA	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
MAY 16	533	61	1	47	97	1			9		
17	418	6		34	82	7		1	1		18
18	679	90	2	49	99	7					
19	248	20		62	51	3			3		
20	364	67		20	83	3					
21	298	24		26	159	8		2	8		
22	301	42	1	25	120	1			19		86
23	472	47		39	67	2			6		38
24	352	35		46	111	11		1	12		21
25	349	29		47	108	8			2		
26	325	29	2	22	104	12		3	3		3
27	379	64		41	95	2			6		
28	339	67		53	84	3			3		
29	299	97		32	77	5			3		
30	285	42	1	27	87	5			2		
31	260	23	2	17	99	6		3	8		
JUN 1	379	39	2	41	154	2		1	4		
2	552	45	1	59	133	10			5		
3	202	135		21	95	6		4	8	9	
4	381	22	2	48	72	5			7		
5	367	43		38	95	23			13		4
6	269	33		52	100	4			5		
7	146	18		13	69	8			11		
8	877	84		70	129	2			2		
9	437	40	1	64	112	8			8		
10	463	76		67	118	3			6		
11	380	47	2	28	96	11		1	4		25
12	263	33	1	24	102	16			7		48
13	233	35	1	56	130	2			4		
14	62		1	9	39	9			1		
15	441	52		47	77				8		
16	197	7		39	110	2			4		
17	273	29		64	80	7			4		
18	268	24	1	125	110	5			2		40
19	227	35		75	103	8			8		
20	125	62	1	40	121	10			4	15	
21	80	66		214	138	14			6		
22	35	47		4752	64	6			3		
23	180	119		6022	89	7			1		
24	80	17		2824	86	10		1	3		
25	54	40		722	238	19			5		
26	59	33	1	951	86	19		1	7		19
27	26	16	1	726	151	14			1		
28	29	50	2	449	172	13			2		
29	47	105		628	112	4			4		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1982	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	MAUNA LOA DEEP
JUN30	23	42	1	288	208	6		1	1	5	
JUL 1	31	32		344	102	21			1		
2	13	19	2	109	142	13					
3	29	11		247	72	14					
4	29	17	1	628	70	8			10		
5	31	15	1	367	210	14		1	3		
6	27	16		362	138	13		1			
7	34	29	4	370	159	18		1		3	
8	19	21		353	117	15			2		31
9	32	16		469	99	2			1		
10	38	36	1	362	119	3					
11	18	14	1	310	143	20				8	
12	26	21		195	110	23			2	2	2
13	12	28	1	186	108	10				6	
14	14	20	2	111	80	13			1	4	
15	98	22		192	90	2					
16	20	7	1	379	128	10			1		
17	22	7	1	184	60	7					
18	17	46	3	169	113	13					
19	21	26	2	159	135	17		1		15	
20	42	118		216	132	9			1		
21	30	99		131	140	20			3		
22	30	16	2	167	100	4					
23	22	58	2	256	186	12		1	1		
24	27	36	2	195	109	11			5		
25	26	48	2	92	118	14				3	
26	11	31		94	108	16				3	
27	15	27		108	121	17				30	
28	17	19		91	171	17		1	2		
29	28	59		179	87	4			4		
30	21	52		103	50	1			7		
31	4	12	1	48	41	4			1		
AUG 1	1	12		102	63	2			1		
2	15	30		113	77	5			7	2	
3	17	17	2	59	120	11		1	1	42	
4	10	14		102	183	10			3	4	
5	26	24	4	73	108	15			2		
6	28	16		51	70	10					
7	14	21	1	42	63	5		1	7		
8	9	6	2	24	84	8					
9	27	79		28	120	19		1	1		
10	20	32		33	99	18					
11	15	87	1	29	62	11				10	
12	20	106		44	66	8			1	40	
13	26	53	2	48	82	8		3	5		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1982	SHORT PER. CALDERA	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
AUG14	18	47	1	64	130	28			2		8	
15	57	94		73	126	16		1				
16	53	70		103	80	6		3	7			
17	23	32	3	67	148	26		1	2			
18	38	114		60	103	20			3	30		
19	23	31	1	44	118	8		1	2		57	
20	44	39		83	119	26			4			
21	46	24		66	77	4			3			
22	37	13		77	59	6			1		60	
23	38	52		83	96	14		1		17		
24	17	11	1	74	132	9		1	1			
25	31	41		42	90	22		1	2			
26	33	10		44	40				3			
27	52	15		40	59	5			2			
28	69	6		80	63	4			6			
29	45	8	3	87	86	3			1			
30	23	3		47	81	11		4	1			
31	56	8	2	61	94	6		1	2			
SEP 1	78	7		83	74	2			6			
2	88	16		38	103	17			7			
3	30	7		44	42	15						
4	39			58	62	10		1	1		18	
5	36			69	78	9			2		24	
6	87	81		84	91	3			4			
7	49	1	1	75	81	14		1				
8	70	43		47	69	5						
9	41	14		36	66	7						
10	76	4		84	44	11		1	5			
11	72	2	1	69	82	14			17			
12	69		1	51	145	17		28	3		4	
13	64	61		77	89	3			6			
14	57	2	1	56	139	17			2		11	
15	90	40	1	110	78	8			5			
16	86	15		94	95	5			9			
17	89	13		113	80	2		2	21		8	
18	244	28	1	132	93	2			12			
19	78	3		45	206	22		1	13			
20	51	10	1	149	92	7		3	7			
21	114	48		86	148	13		4	1			
22	68	11	1	83	125	5			3			
23	70	1		38	66	11		1				
24	93	8		56	79	20		2				
25	483	1		67	77	11			3	969		
26	1038	19		74	122	5		2	3		34	
27	303	35	3	91	100	2		2	125			

	KILAUEA SUMMIT				KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1982	SHORT PER. CALDERA	LONG PER.	30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
SEP28	407	26	3		47	130	10		4	76		28	
29	400	35	1		63	115	7		1	58			
30	273	39			41	67	1		4	67			
OCT 1	166	80	1		65	157	6		7	29			
2	233	76			59	121	3		1	38			
3	163	159	2		47	138	16		7	35			
4	230	52			41	126	21		2	17	8	8	
5	166	34	2		66	128	20	2		19	5		
6	96	50			76	133	10	3		22			
7	116	24			77	134	2		3	5			
8	117	85			40	156	8		1	3	4		
9	106	47			44	166	15		1	1			
10	134	26			45	193	15		4	37			
11	112	89	2		53	170	4			28			
12	68	37			31	164	15		1	7		64	
13	90	55			64	133	2			14			
14	30	29			79	130	2			17		3	
15	55	32			27	193	6		2	29			
16	39	30	1		44	218	6		1	14			
17	81	16			26	232	6			4			
18	51	29	1		84	166	1		4	14			
19	33	10	1		84	149	5		7	9			
20	31	60			35	227	13		1	14		7	
21	37	28			85	169	2			1			
22	33	7			59	136	4		1	4			
23	33	19			96	246	7		2	9	40		
24	37	3			50	372	10		5	2			
25	62				94	485	4		2				
26	33	7			51	457	18			1			
27	29	11			32	297	14		1				3
28	40	7			105	208	3						
29	26	20	1		42	299	21		4	4		14	
30	25	4	2		74	194	20		1	3			3
31	26	15	2		40	232	9			4			
NOV 1	54	22			105	220	4		5	5			
2	41	25			38	317	19		1	3			
3	25	36			25	167	14		1	2			
4	45	22			53	193	7		12	52			
5	38	13			19	224	17		9	3			
6	29	7	2		44	125	11		7	4			1
7	35	46			27	178	9		9	2			
8	28	11			37	153	10		4	2			
9	28	24	1		35	284	15		4	3			
10	13	27			35	123	1		4	2			
11	10	9			40	72	1		2	4			

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1982	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP / MAUNA LOA
NOV 12	11	13		35	88	3		3	7		
13	16	22		33	52	2			4		
14	12	1	1	21	88	9		4	2		
15	12	1	1	20	78	2		4	6		
16	19	6	1	35	114	18		8	1		46
17	23	35		43	114	2		8	7		
18	35	12		86	119	1		5	65		
19	26	20	3	29	203	18		2	19		
20	37	7		57	75	16			21		
21	66	21	1	16	156	16		5	3		
22	37	25		35	84	1					
23	28	8		26	35	4					
24	90	62	2	24	99	7			4	14	
25	129	97	5	52	77	5		2	1		
26	84	40		24	89	18			11		
27	129	88		35	90	5		1	3	9	
28	62	9	2	79	89	6					
29	245	18	1	29	133	14		2	2		
30	155	12		43	79	1			3	27	
DEC 1	84	5		32	126	15		1	3		
2	281	23		36	127	18		1	9		
3	151	3	1	41	104	17			18		
4	70	3	2	17	29	7		2	2		
5	206	20	2	21	91	22			3	142	
6	229	20	2	32	80	18				8	
7	145	15	1	31	99	23					
8	145	8		49	89	2			1		
9	1625	13		41	151	3			1		
10	410	22		73	134	1		1	5		
11	139	27		134	144	1			3		
12	58	5		58	112				2		
13	266	22		28	135	12			3		
14	184	34		38	128	8		1	7		
15	220	22		29	77	2			1		
16	114	12		24	71				1		
17	125	6		24	84	6			5	34	
18	52			15	77	5			2		
19	26			17	77	5					
20	122	8	3	23	199	12		3	5	3	
21	190	7	1	44	434	8			4	4	
22	120	10	2	37	343	3			4	4	
23	94	23		49	366	13					
24	114	14		38	272	4					
25	95	48	2	66	284	4		1	3		
26	57	5	6	38	281	16		3	2		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)	
DATE 1982	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA
DEC27	57	27		55	329	5			2			
28	61		2	33	284	11		1	4			
29	61	12	2	44	669	7		1	1		3	
30	43	3	1	47	1213	16		1				
31	17	7	1	40	485	13			3		2	

Table 4. Coordinates of named earthquake regions.

--All earthquakes are in one of the following groups.
--Identified by a numerical class or 3-letter code:

--Shallow:
1 SNC - Shallow north caldera (0-5 km)
2 SSC - Shallow south caldera (0-5 km)
3 SEC - Shallow east caldera (0-5 km)
4 SER - Shallow east rift (0-5 km)
5 SME - Shallow middle east rift (0-5 km)
6 KOA - Koae fault zone (0-5 km)
7 SSF - Shallow south flank (0-5 km)
8 SLF - Shallow lower east rift (0-5 km)

--Intermediate depth:
9 SF1 - Kilauea south flank (5-13 km) (west end)
10 SF2 - Kilauea south flank (5-13 km)
11 SF3 - Kilauea south flank (5-13 km)
12 SF4 - Kilauea south flank (5-13 km)
13 SF5 - Kilauea south flank (5-13 km) (east end)
14 LER - Lower east rift (5-99 km)
15 MLO - Mauna Loa (0-13 km)
16 LSW - Lower SW rifts of Kilauea & Mauna Loa (0-13 km)
17 GLN - Glenwood (0-13 km)
18 SWR - SW rift (0-13 km)
19 INT - Intermediate caldera (5-13 km)
20 KAO - Kaoiki (0-13 km)

--Deep:
21 DEP - Deep Kilauea (>13 km) (below regions 1-13, 17-19)
22 DLS - Deep lower SW rift (>13 km) (below region 14)
23 DML - Deep Mauna Loa (>13 km) (below regions 15, 20)

--Outer regions, all depths:
24 LOI - Loihi (all depths)
25 KON - South Kona (all depths)
26 HUA - Hualalai (all depths)
27 KOH - Kohala (all depths)
28 KEA - Mauna Kea (all depths)
29 HIL - Hilo (all depths)
30 DIS - Distant, everywhere else

Table 4 (continued)

--The latitude and longitude limits of the regions are given below.
--When the coordinates imply an overlap, precedence is given as in the maps.

No.	Code	N.Lat.	S.Lat.	W.Lon.	E.Lon.
1	SNC	19 28	19 24.5	155 19	155 14
2	SSC	19 24.5	19 22	155 19	155 16.5
3	SEC	19 24.5	19 22	155 16.5	155 14
4	SER	19 26	19 20.5	155 14	155 07.2
5	SME	19 26	-----	155 07.2	155 00
6	KOA	19 22	19 20.5	155 17	155 14
7	SSF	-----	19 10	155 17	155 00
8	SLE	19 32	19 16	155 00	154 40
9	SF1	19 22	19 10	155 17	155 14.5
10	SF2	19 26	19 10	155 14.5	155 12.3
11	SF3	19 26	19 10	155 12.3	155 09.1
12	SF4	19 26	19 10	155 09.1	155 05.3
13	SF5	19 26	19 10	155 05.3	155 00
14	LER	19 32	19 16	155 00	154 40
15	MLO	19 43	19 19	155 35	155 19
16	LSW	19 19	18 40	155 43	155 25
17	GLN	19 43	19 26	155 19	155 00
18	SWR	19 22	19 10	155 25	155 17
19	INT	19 28	19 22	155 19	155 14
20	KAO	19 30	19 19	155 32	155 19
21	DEP	19 43	19 10	155 25	155 00
22	DLS	19 19	18 40	155 43	155 25
23	DML	19 43	19 19	155 35	155 19
24	LOI	19 10	18 40	155 25	155 00
25	KON	19 39	19 00	156 20	155 43
26	HUA	19 55	19 39	156 20	155 43
27	KOH	20 25	19 55	156 20	155 34
28	KEA	20 25	19 43	155 43	154 40
29	HIL	19 47	19 32	155 09	154 40

Figure 4. Earthquake classification, shallow 0-5 km deep Kilauea and east flank Mauna Loa.

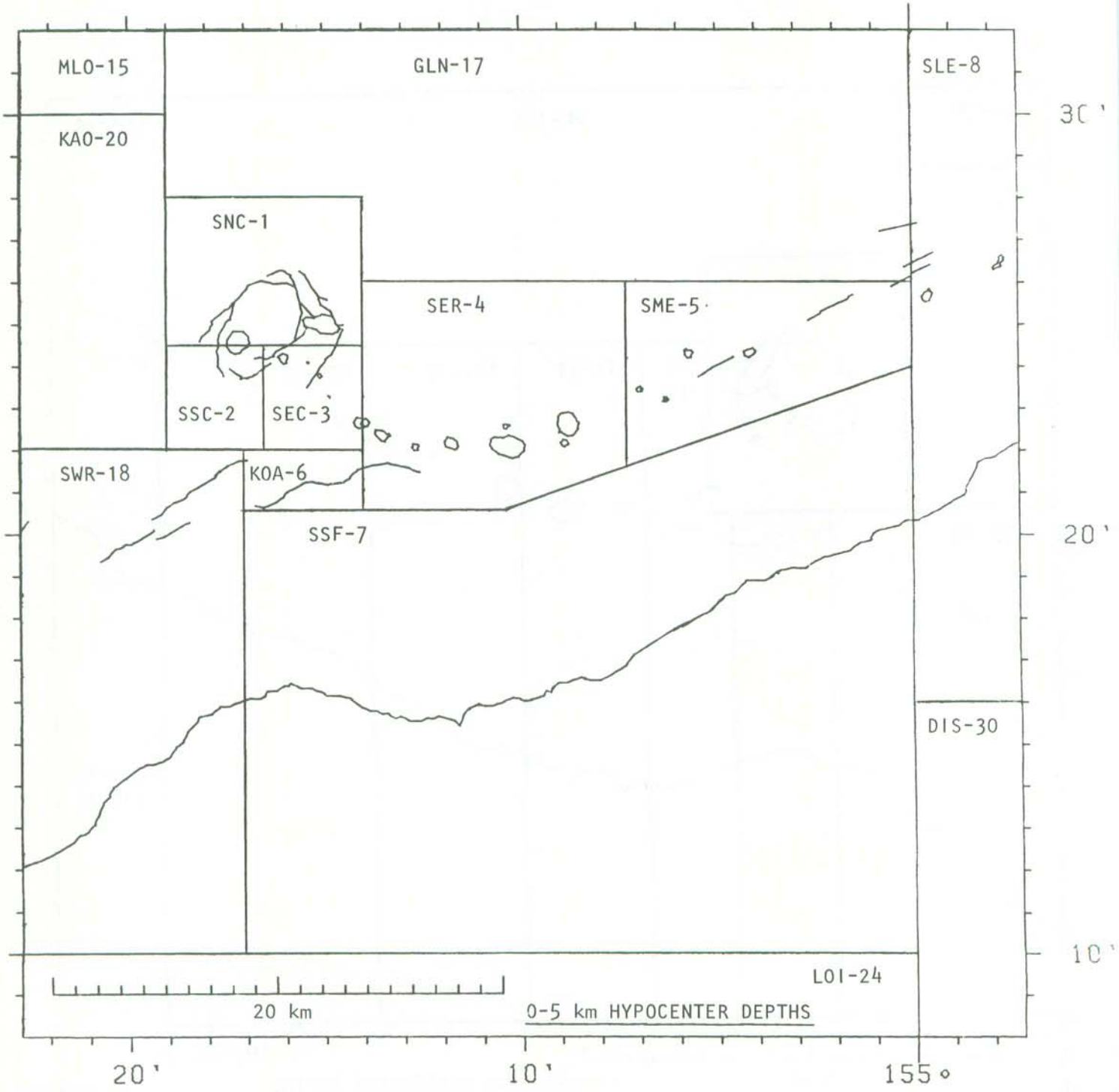


Figure 5. Earthquake classification, intermediate 5-13 km Kilauea and east flank Mauna Loa.

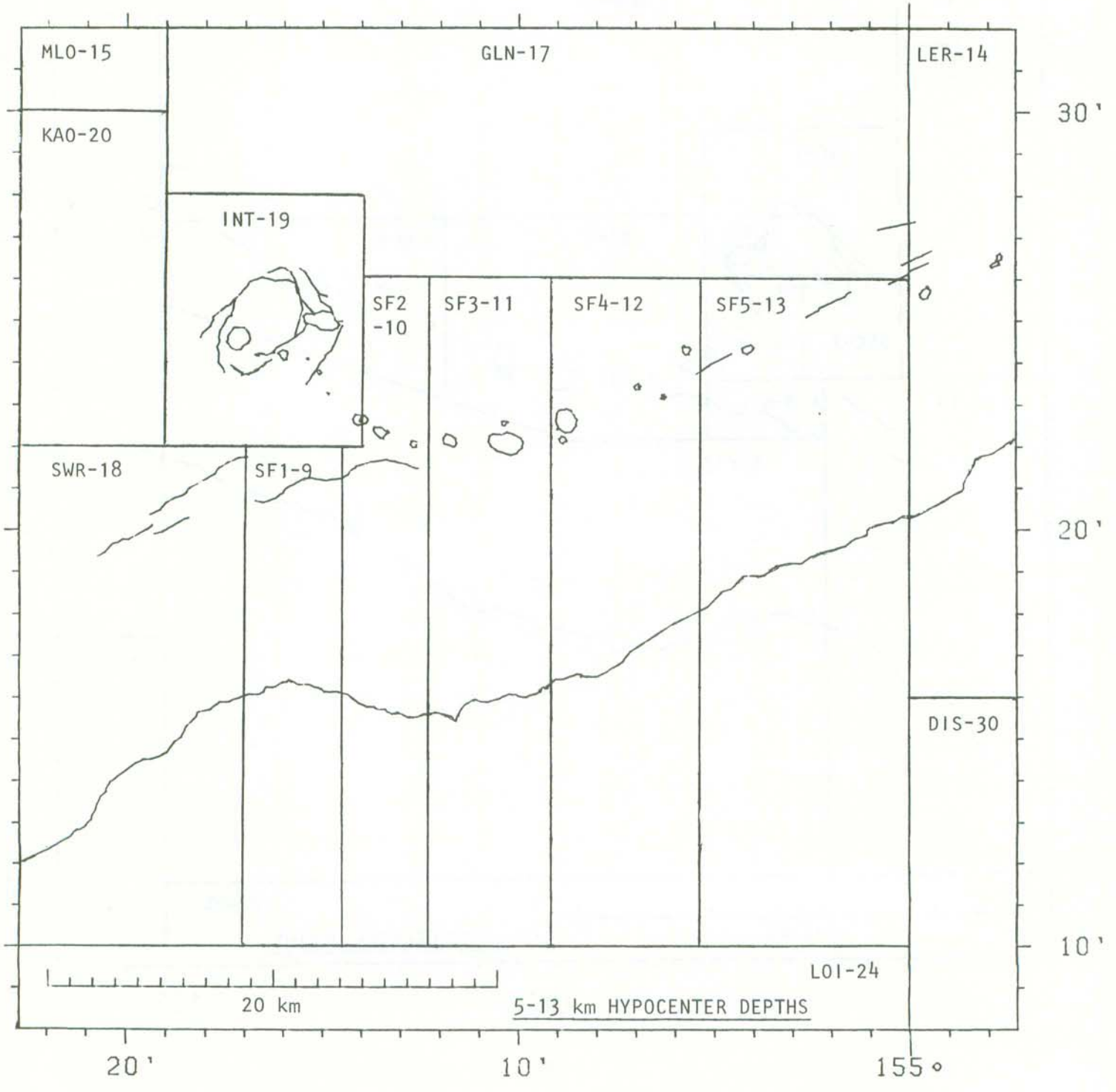


Figure 6. Earthquake classification, crustal 0-13 km deep island of Hawaii.

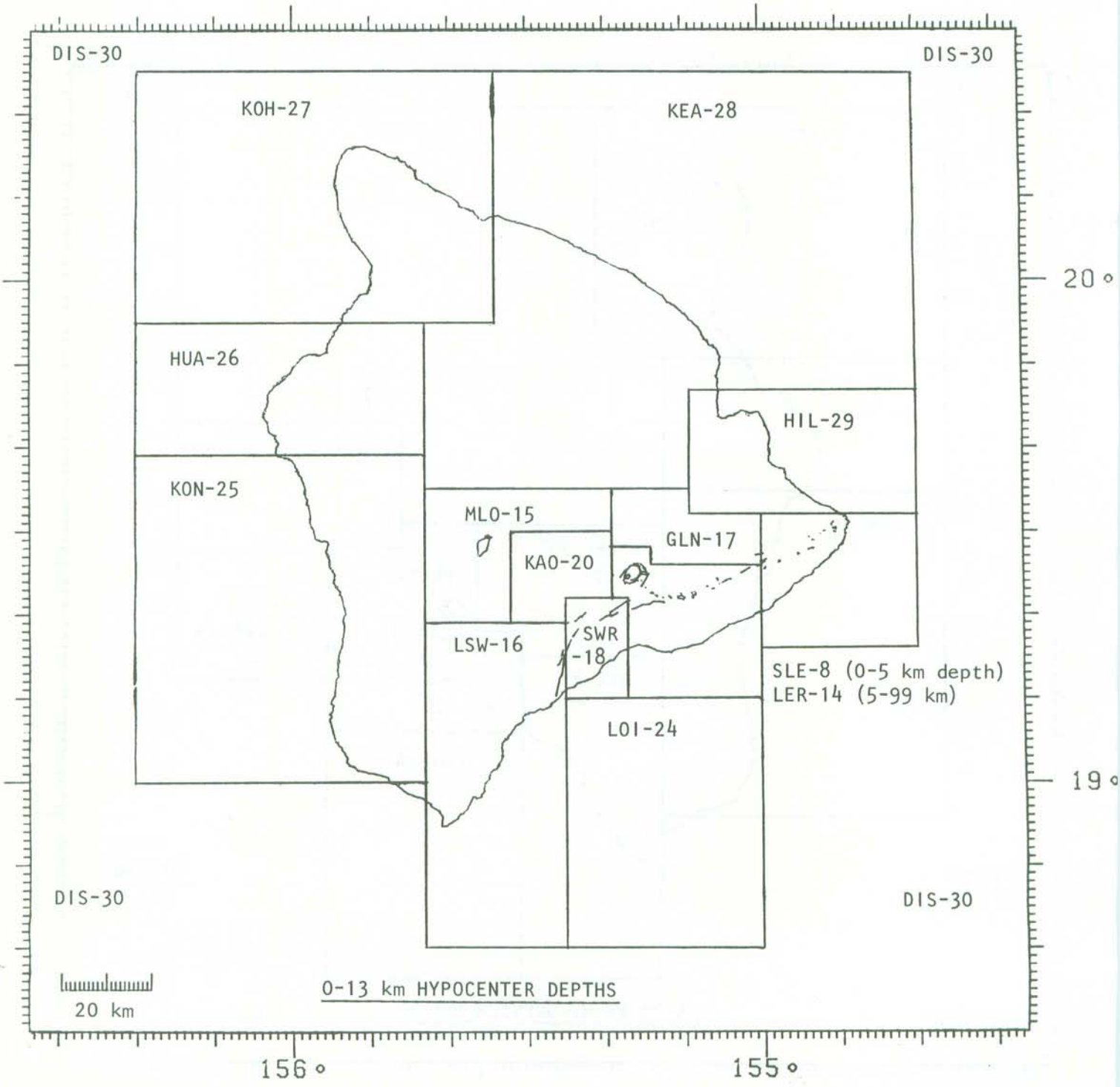
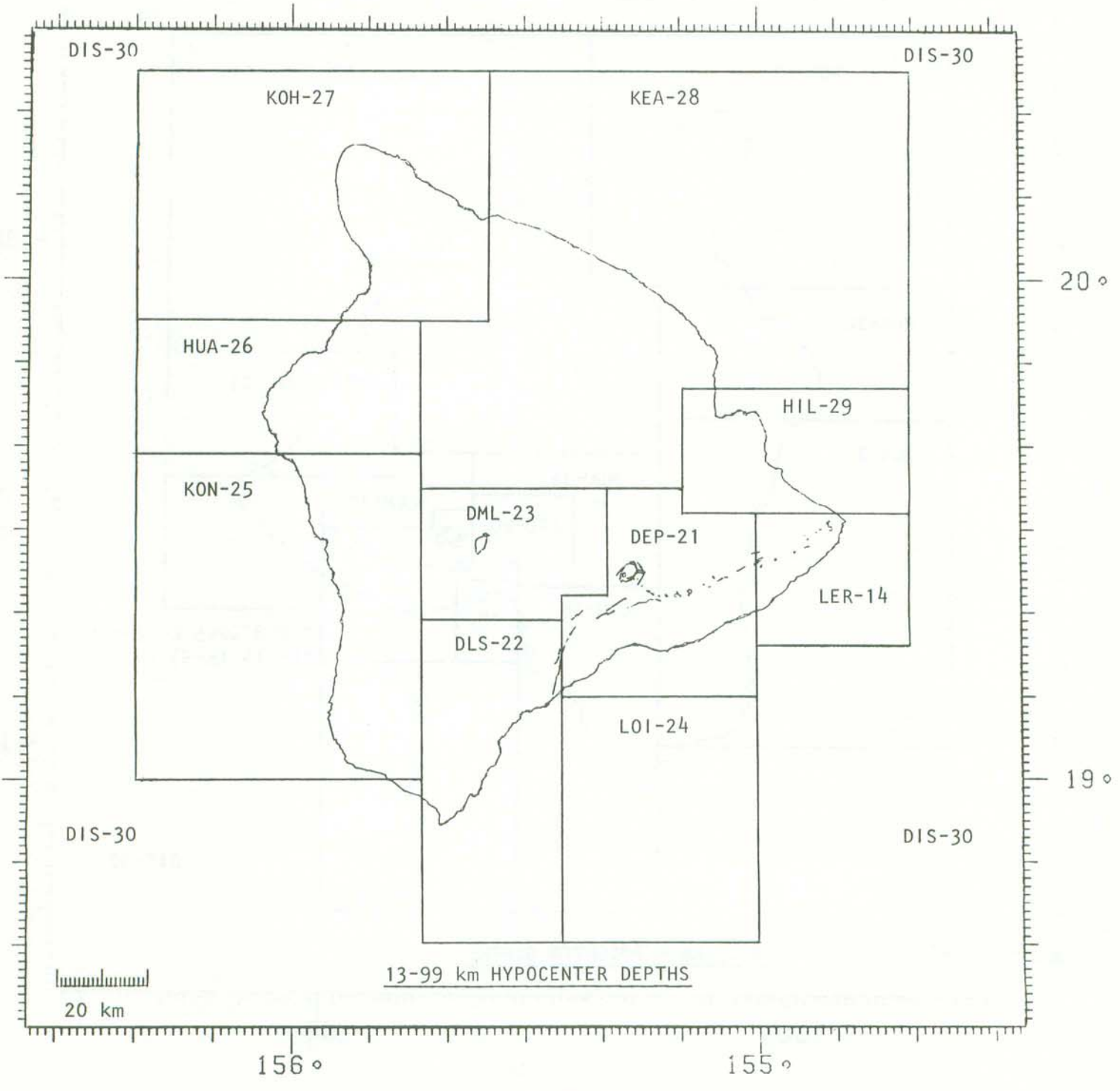
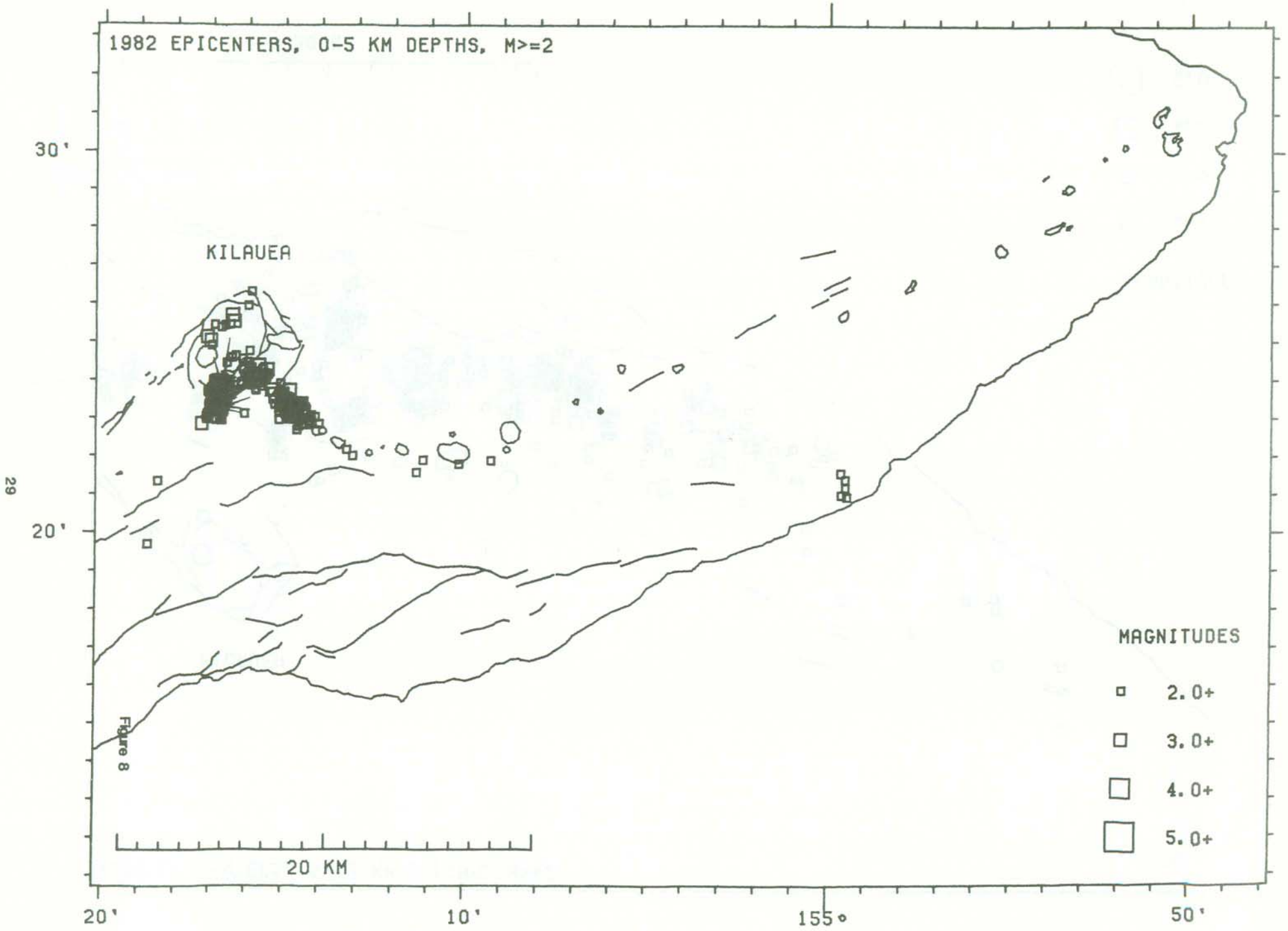


Figure 7. Earthquake classification mantle >13 km deep island of Hawaii.




1982 EPICENTERS, 0-5 KM DEPTHS, M>=2
KILAUEA
30'
20'
29
20'
10'
155°
50'
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20 KM
Figure 8

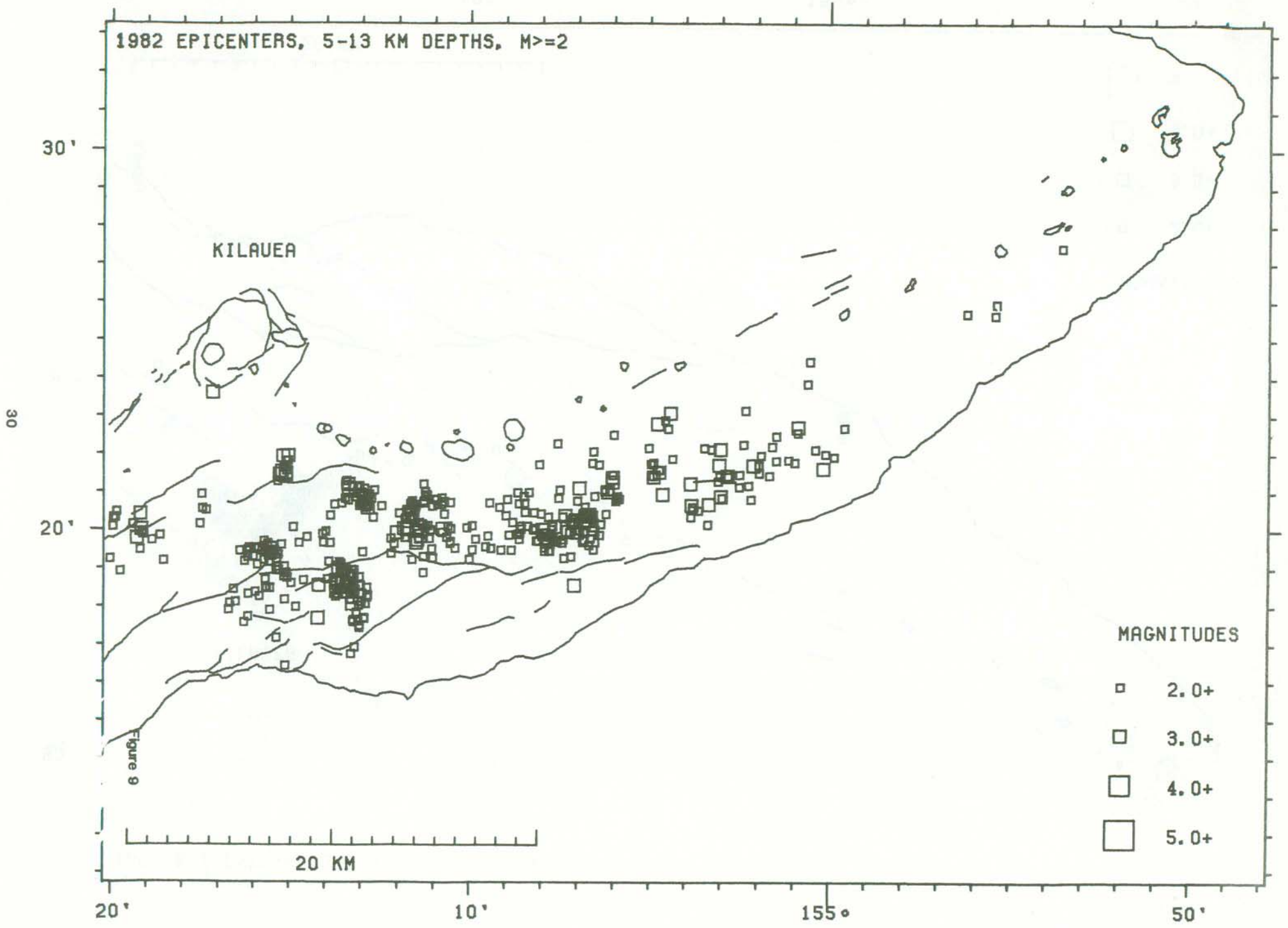

1982 EPICENTERS, 5-13 KM DEPTHS, M>=2
KILAUEA
30'
20'
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20 KM
20'
10'
155°
50'

Figure 9

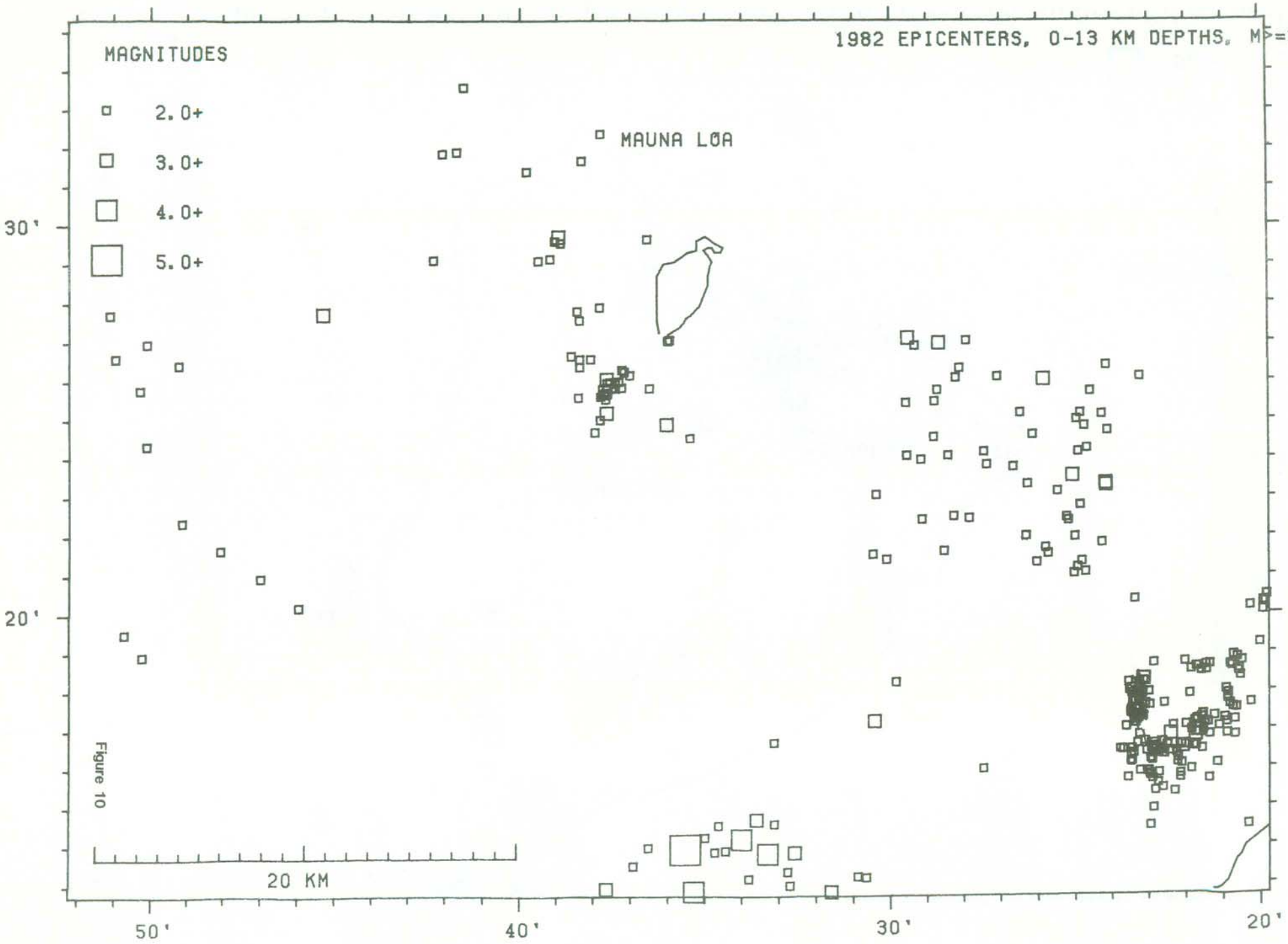

1982 EPICENTERS, 0-13 KM DEPTHS, M≥=2
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
MAUNA LOA
30'
20'
20 KM
50'
40'
30'
20'

Figure 10

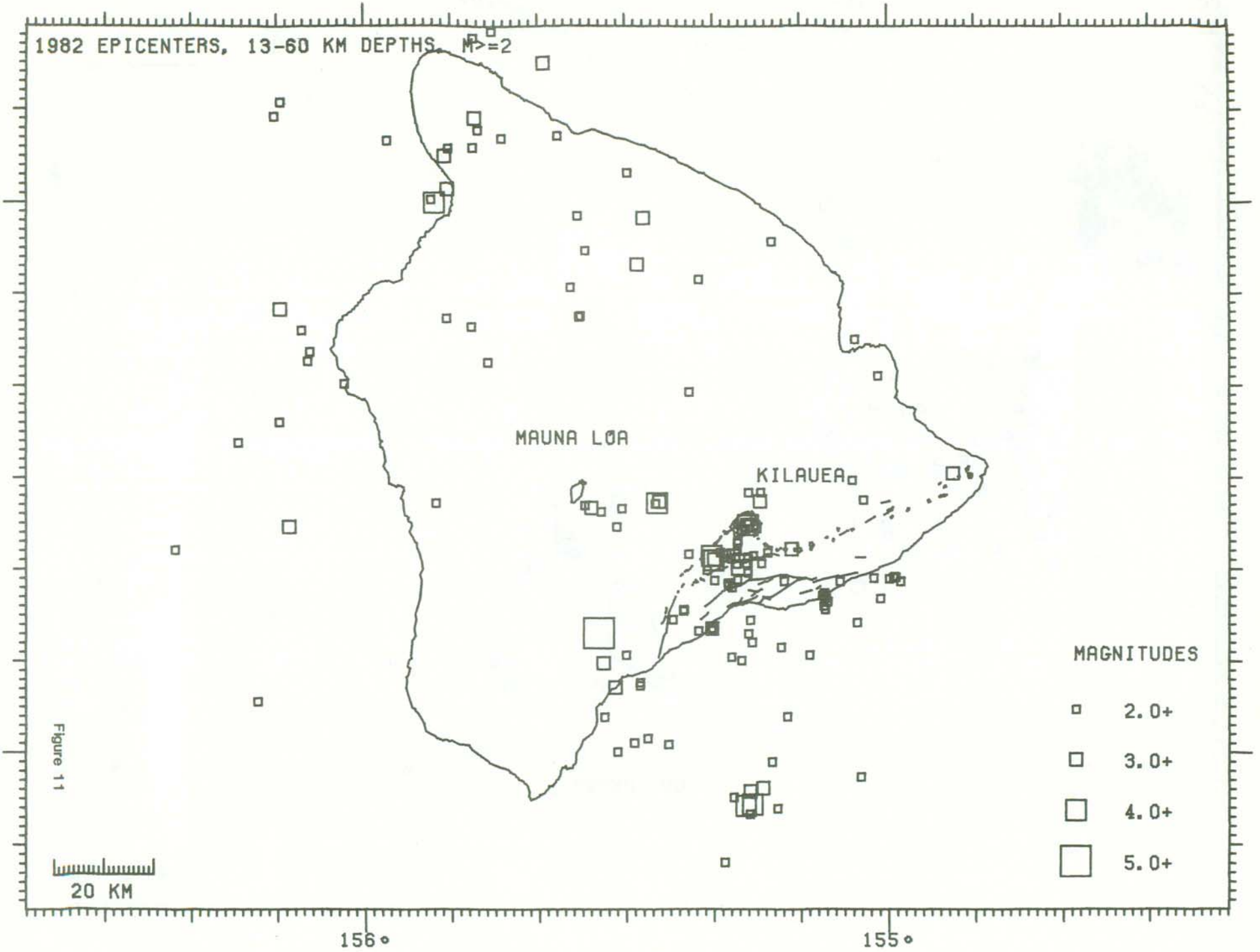

1982 EPICENTERS, 13-60 KM DEPTHS. M>=2
MAUNA LOA
KILAUEA
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20 KM
20°
19°
156°
155°

Figure 11

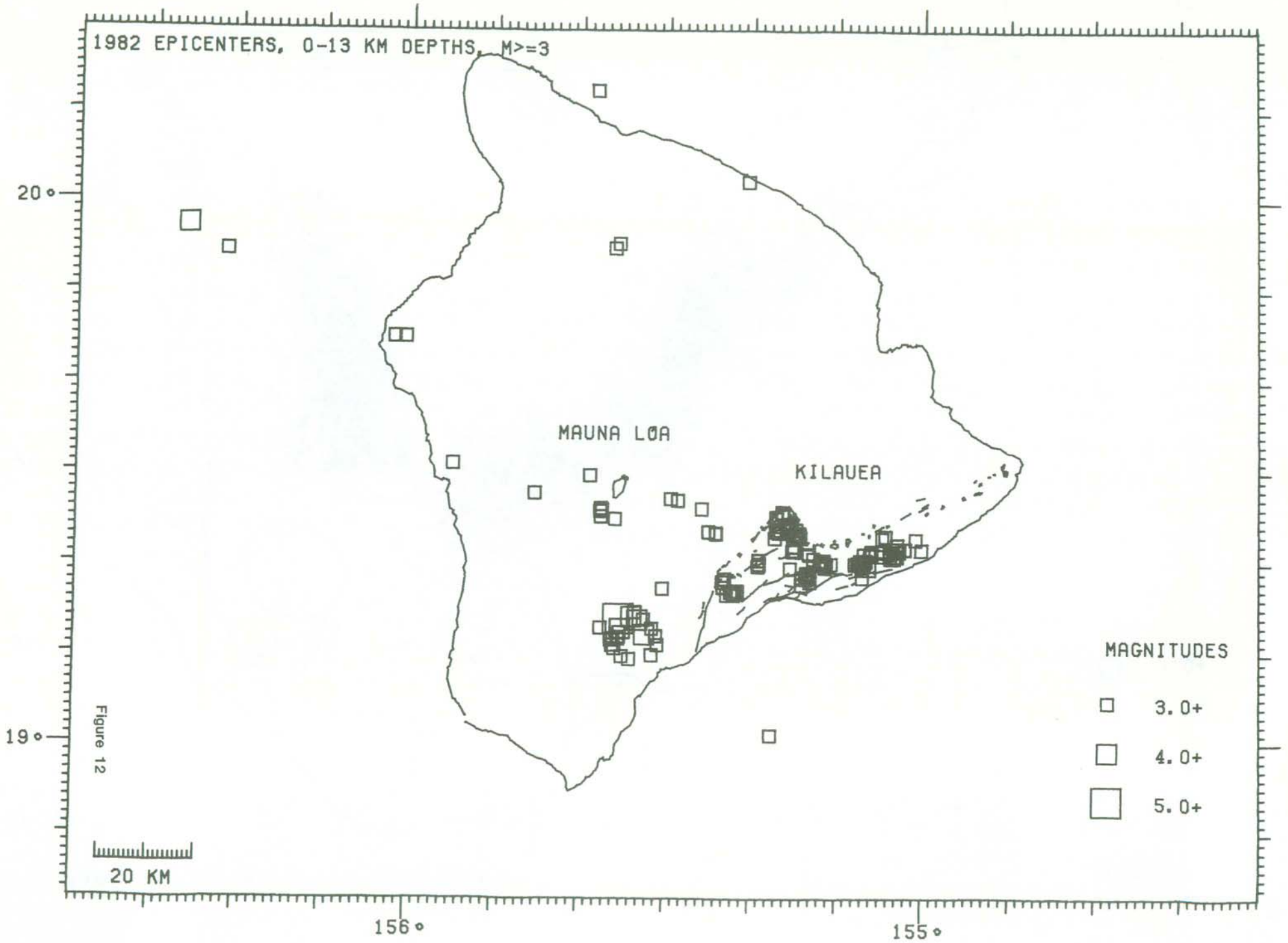

1982 EPICENTERS, 0-13 KM DEPTHS, M>=3
20°
19°
156°
155°
MAUNA LOA
KILAUEA
MAGNITUDES
3.0+
4.0+
5.0+
20 KM

Figure 12

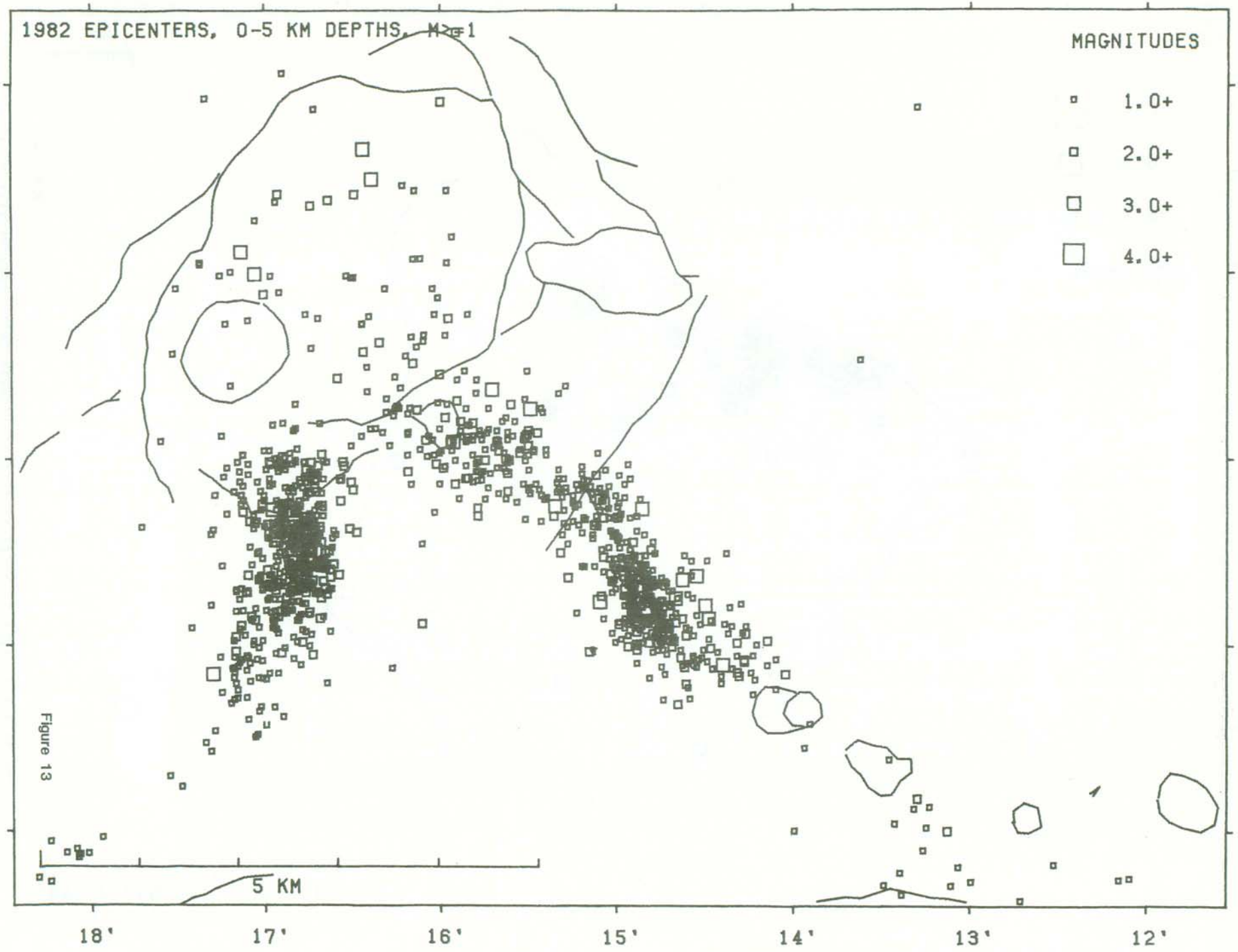

1982 EPICENTERS, 0-5 KM DEPTHS, M>=1
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
26'
25'
24'
23'
22'
18'
17'
16'
15'
14'
13'
12'
5 KM

Figure 13

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = (\Sigma R_i^2/NR)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 2 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

* - the location program had a convergence problem, which usually means that the depth may be unreliable.

Table 5 lists all events located during 1982. Table 6 lists only events of magnitude 3.0 or larger.

Table 5.

HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JAN	1	134	20.23	19	23.59	155	16.91	2.75	2.3	2.6	32	5	40	.11	0	.2	.2	20	SSC
		1	138	2.56	19	23.50	155	17.04	2.79	1.3	1.2	19	4	55	.08	0	.3	.3	11	SSC
		1	143	.27	19	23.79	155	16.77	2.52	1.1	1.0	17	3	67	.08	0	.3	.2	14	SSC
		1	156	5.11	19	23.22	155	16.95	2.58	.8	.5	15	5	59	.07	0	.3	.3	9	SSC
		1	2 2	2.00	19	23.60	155	16.96	3.13	.8	.5	13	4	69	.06	0	.3	.4	10	SSC
		2	341	22.74	19	26.10	155	27.09	8.20	2.8	2.8	31	2	49	.13	7	.4	.9	28	KAO
		2	6 1	8.62	19	23.18	155	16.91	2.36	1.9	2.4	22	2	60	.10	2	.3	.5	19	SSC
		2	918	6.28	19	25.95	155	23.91	9.09	2.1	1.7	24	1	52	.11	7	.4	1.0	19	KAO
		2	1430	50.72	19	42.44	155	42.98	16.80	1.8	2.0	26	0	91	.10	13	.6	2.8	15	KEA
		3	453	6.30	19	24.16	155	16.59	8.60	1.6	1.8	24	4	56	.11	1	.4	.7	12	INT L
		3	456	2.41	19	18.45	155	15.05	9.56	1.9	1.6	29	3	101	.09	4	.5	.7	18	SF1
		3	545	55.33	19	23.50	155	16.86	2.77	2.0	2.3	30	4	37	.10	0	.2	.2	20	SSC
		3	556	49.16	19	23.87	155	16.80	2.89	1.4	1.6	20	3	72	.05	0	.3	.2	10	SSC
		3	615	7.06	19	25.38	155	16.94	1.74	1.6	1.8	18	2	158	.11	1	.5	.2	12	SNC
		3	829	38.53	19	24.56	155	17.53	2.11	1.5	1.6	16	3	59	.10	1	.4	.3	11	SNC
		3	1415	10.50	19	23.30	155	16.62	2.64	1.7	1.4	18	3	56	.13	1	.4	.3	9	SSC
		3	16 4	39.02	19	23.39	155	16.89	2.99	1.1	1.2	19	3	53	.06	0	.3	.3	12	SSC
		3	19 7	44.81	19	25.76	155	50.30	11.67	2.6	2.4	34	3	117	.19	11	.6	.5	20	KON
		3	1955	44.36	19	23.75	155	16.67	2.62	1.3	1.4	21	3	43	.10	0	.3	.3	16	SSC
		3	2157	41.71	19	24.19	155	16.90	2.78	1.0	1.0	14	3	85	.05	1	.3	.2	10	SSC
		3	2359	38.32	19	23.23	155	16.81	3.03	1.6	1.9	24	5	57	.08	0	.3	.2	16	SSC
		4	034	23.32	19	16.68	155	12.53	7.13	1.7	1.4	31	1	187	.12	2	.7	1.0	18	SF2
		4	039	2.08	19	29.49	155	41.90	7.93	2.3	1.3	29	1	71	.14	7	.5	1.2	19	MLO
		4	449	8.39	19	20.60	155	12.44	8.86	1.9	2.1	34	3	102	.11	4	.5	.6	23	SF2
		4	1039	27.26	19	23.86	155	16.96	2.79	1.3	1.6	19	3	64	.08	1	.3	.2	11	SSC
		4	1114	40.27	19	18.48	155	13.26	9.99	2.9	3.0	39	3	171	.09	8	.6	.5	30	SF2
		4	1129	44.48	19	17.61	155	13.22	9.20	2.1	2.0	27	1	205	.09	9	1.0	.8	22	SF2
		4	1230	8.38	19	18.73	155	13.45	8.51	1.9	1.5	28	2	171	.09	7	.8	.7	9	SF2
		4	1254	47.60	19	18.08	155	13.05	6.30	1.9	1.6	26	2	174	.10	8	.6	1.6	16	SF2
		4	13 3	28.73	19	17.78	155	13.01	6.45	1.6	1.6	25	3	115	.10	2	.5	.9	15	SF2
		4	1336	1.87	19	24.77	155	16.77	1.70	1.3	1.8	15	1	142	.09	0	.4	.3	10	SNC
		4	1345	14.74	19	23.72	155	16.82	2.81	1.5	1.7	24	3	56	.08	1	.3	.2	14	SSC
		4	1433	9.20	19	17.27	155	13.02	7.92	1.9	1.8	33	1	154	.11	1	.6	.8	23	SF2
		4	1557	42.38	19	23.63	155	16.69	3.24	2.0	2.5	28	3	44	.10	1	.3	.2	19	SSC
		4	1814	11.12	19	19.97	155	26.32	10.37	1.9	1.9	36	4	59	.11	5	.4	.5	19	KAO
		4	1940	29.55	19	19.71	155	6.82	7.83	2.1	1.9	33	1	119	.10	5	.4	.7	20	SF4
		4	22 3	13.74	19	23.71	155	16.90	2.92	1.3	1.5	20	3	60	.08	1	.3	.2	10	SSC
		5	633	39.83	19	21.71	155	6.64	6.41	1.7	1.8	34	3	80	.13	6	.5	1.2	25	SF4
		5	849	11.37	19	19.29	155	15.27	7.10	1.6	1.3	29	1	89	.10	4	.5	.9	16	SF1
		5	1240	39.28	19	19.87	155	11.08	7.98	1.8	1.0	27	2	89	.11	5	.6	1.1	21	SF3
		5	1246	55.79	19	23.33	155	16.90	2.83	1.1	1.4	17	3	55	.06	0	.3	.3	10	SSC
		5	19 3	53.72	19	23.67	155	16.91	3.05	1.1	1.0	17	4	54	.05	1	.3	.2	9	SSC
		5	1920	56.40	19	20.48	155	13.45	7.02	1.5	1.3	27	2	62	.12	4	.5	.9	17	SF2
		5	1922	56.37	19	25.18	155	25.08	9.86	2.1	1.6	40	4	33	.11	0	.4	.5	23	KAO
		5	22 9	48.03	19	23.77	155	16.94	3.10	1.6	2.1	25	4	64	.08	1	.3	.2	16	SSC
		5	2211	52.44	19	23.65	155	16.88	2.68	1.9	1.8	23	4	51	.08	1	.3	.2	15	SSC
		6	152	2.68	19	23.98	155	16.65	3.35	1.7	1.7	22	3	81	.14	0	.4	.3	7	SSC
		6	218	28.79	19	23.28	155	17.17	2.85	.8	.8	14	3	70	.21	0	.5	.6	8	SSC

HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JAN	6	3 4	28.13	19	23.30	155	16.66	2.93	1.9	2.3	27	3	40	.10	1	.3	.2	19	SSC
		6	531	53.84	19	22.64	155	17.04	2.75	1.4	1.4	16	0	46	.06	1	.3	.4	12	SSC
		6	6 9	23.15	19	19.52	155	13.35	6.02	2.0	1.8	37	2	71	.14	5	.5	.9	24	SF2
		6	1147	10.63	19	21.14	155	2.42	7.09	1.3	1.3	14	2	143	.05	2	.5	.9	6	SF5
		6	12 8	32.00	19	21.32	155	7.17	5.67	1.4	1.3	29	5	82	.09	5	.4	1.0	16	SF4
		6	1640	12.30	19	23.58	155	16.91	2.88	1.7	1.7	18	3	46	.07	0	.3	.2	14	SSC
		6	2125	14.30	19	51.59	155	21.64	25.97	2.3	1.8	30	4	87	.09	4	.6	1.4	22	KEA
		6	2348	23.40	19	24.99	155	24.84	8.15	1.5	1.2	28	4	36	.09	1	.4	.9	18	KAO
		7	336	.58	19	23.83	155	27.89	9.48	1.9	1.8	35	2	49	.10	3	.4	.7	31	KAO
		7	9 8	42.32	19	16.80	155	22.21	6.31	1.8	1.8	30	2	127	.12	6	.5	1.3	21	SWR
		7	1239	15.79	19	21.09	155	18.06	31.08	2.1	1.8	36	0	43	.11	2	.7	1.3	28	DEP
		7	1838	48.66	19	18.25	155	14.94	6.86	1.3	1.6	25	2	128	.09	3	.5	1.0	19	SF1
		7	2348	22.30	19	23.81	155	16.68	2.80	1.7	1.4	23	4	54	.10	0	.3	.2	11	SSC
		8	116	36.08	19	23.37	155	16.98	2.67	1.3	1.6	21	3	46	.11	0	.3	.3	14	SSC
		8	136	30.49	19	20.54	155	4.27	7.94	1.9	1.6	32	2	112	.10	3	.5	.8	20	SF5
		8	624	51.43	19	26.24	155	37.17	2.90	2.4	2.3	28	2	112	.14	2	.5	.7	21	MLO
		8	836	30.57	19	26.32	155	38.35	3.28	2.2	1.5	13	1	102	.10	4	.6	1.2	9	MLO
		8	1325	20.23	19	23.61	155	16.92	2.75	1.5	1.3	20	4	49	.07	0	.3	.2	10	SSC
		8	1329	43.68	19	23.53	155	16.84	2.98	1.4	1.3	19	2	37	.07	0	.3	.2	13	SSC
		8	1825	37.61	19	19.79	155	14.51	8.68	2.5	2.2	36	0	79	.11	5	.4	.5	29	SF2
		8	2042	42.51	19	19.95	155	9.09	7.11	1.6	1.4	27	2	78	.11	4	.5	.9	19	SF4
		9	014	34.15	19	20.17	155	7.05	7.93	1.9	1.3	26	4	105	.07	5	.4	.7	13	SF4
		9	231	18.21	19	23.07	155	16.63	2.82	1.6	2.1	20	1	55	.09	1	.4	.3	15	SSC
		9	432	7.29	19	9.80	155	32.58	34.14	3.1	3.2	33	1	120	.08	8	.7	1.6	32	DLS
		9	640	32.38	19	16.69	155	23.12	8.76	2.1	2.5	22	0	125	.14	7	.7	1.0	17	SWR
		9	1055	22.15	19	23.70	155	16.89	2.89	1.4	1.1	13	0	96	.08	1	.6	.3	9	SSC
		9	1119	55.68	19	23.98	155	15.79	2.66	1.5	1.9	14	1	112	.10	3	.5	.8	11	SEC
		9	1324	59.53	20	14.94	155	39.28	42.95	3.6	3.3	47	3	267	.11	19	1.4	1.5	40	KOH F
		9	1354	36.88	19	42.13	156	9.10	12.77	2.7	2.4	39	2	251	.13	33	1.6	.9	27	HUA
		9	1728	59.82	19	23.42	155	16.66	3.00	2.4	2.7	34	3	38	.11	1	.2	.3	24	SSC
		9	1730	12.72	19	23.41	155	16.66	2.99	1.9	2.1	24	2	54	.11	1	.3	.3	17	SSC
		9	2143	23.54	19	33.77	156	14.42	28.39	2.1	1.9	12	0	267	.08	35	2.8	3.0	6	KON
		10	547	5.89	19	20.39	155	12.78	8.04	1.6	1.4	29	1	68	.11	4	.5	.8	18	SF2
		10	7 4	32.61	19	21.44	155	5.80	7.56	1.4	1.2	25	2	88	.13	3	.6	.7	19	SF4
		10	1643	9.02	19	21.56	155	18.53	1.52	1.1	1.5	11	1	96	.09	3	.4	.9	8	SWR
		10	22 9	11.04	19	17.58	155	21.17	5.47	1.7	1.2	19	2	126	.09	5	.5	1.5	9	SWR
		11	234	59.86	20	6.09	155	34.20	34.34	2.0	1.8	21	2	210	.08	22	.9	1.4	12	KOH
		11	825	31.75	19	23.31	155	16.98	2.61	1.1	1.4	10	1	88	.04	4	.4	1.0	10	SSC
		11	937	17.35	19	17.21	155	21.76	7.04	2.1	2.7	40	0	126	.15	6	.4	.8	31	SWR
		11	1127	15.94	19	23.93	155	16.75	2.70	1.1	1.0	13	2	84	.10	2	.4	.5	7	SSC
		11	1135	27.71	19	26.06	155	16.90	1.63	1.5	1.4	12	1	177	.09	2	.7	.5	11	SNC
		11	1347	39.79	19	19.70	155	11.25	7.77	1.8	2.1	39	2	92	.11	5	.5	.8	21	SF3
		11	1629	23.90	19	23.40	155	16.78	3.04	2.4	2.6	34	3	38	.10	0	.2	.2	21	SSC
		11	1746	14.77	19	23.59	155	16.85	2.78	1.6	1.8	22	2	43	.10	0	.3	.2	15	SSC
		11	2223	3.62	19	23.51	155	16.84	2.93	1.2	1.3	17	2	39	.08	0	.3	.3	10	SSC
		12	327	40.30	19	20.36	155	6.52	8.71	1.1	1.1	23	1	108	.07	5	.5	.8	13	SF4
		12	328	28.31	18	53.38	155	15.63	11.58	2.4	2.6	32	1	252	.11	37	1.7	.8	13	LOI
		12	613	33.50	19	18.21	155	20.95	7.73	2.0	1.8	37	3	118	.13	4	.4	.7	21	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JAN	12	835	59.22	19	17.11	155	23.41	4.97	1.7	1.6	25	1	119	.16	6	.6	1.9	20	SWR
		12	1032	2.80	19	20.17	155	6.54	8.60	2.5	2.2	39	4	112	.09	5	.4	.6	30	SF4
		12	1215	16.59	19	27.66	155	24.04	7.32	2.1	1.3	39	4	34	.12	4	.3	.7	27	KAO
		12	1255	4.06	19	23.84	155	.61	8.82	2.6	2.2	44	3	142	.14	4	.6	.5	33	SF5
		12	2030	24.97	19	24.72	155	17.23	2.51	1.8	1.6	26	3	46	.09	1	.3	.2	17	SNC
		12	2239	53.09	19	20.01	155	12.77	7.25	1.5	1.2	32	2	73	.10	5	.4	.7	19	SF2
		12	2254	1.37	19	23.16	155	16.75	2.95	1.6	1.3	23	3	46	.10	1	.3	.3	14	SSC
		12	2259	9.12	19	23.64	155	16.77	2.27	2.7	2.9	44	2	36	.12	1	.2	.2	32	SSC
		12	2352	53.52	19	21.48	155	15.18	8.68	2.0	1.6	33	1	64	.10	2	.4	.7	24	SF1
		13	848	53.50	19	23.93	155	15.79	3.57	1.0	1.2	14	2	110	.06	1	.4	.5	10	SEC
		13	853	55.99	19	23.29	155	16.84	3.01	1.0	1.4	15	1	46	.05	0	.3	.3	10	SSC
		13	936	34.86	19	11.94	155	36.70	7.13	2.2	1.6	34	3	92	.24	6	.8	1.2	20	LSW
		13	1029	9.04	19	25.60	155	37.81	1.72	2.8	2.8	33	1	97	.12	4	.4	1.1	26	MLO
		13	1327	11.87	19	18.31	155	12.98	10.00	2.7	2.5	43	4	137	.12	8	.5	.6	30	SF2
		13	1553	50.06	19	19.69	155	9.78	8.04	1.4	1.4	27	2	90	.08	4	.6	1.0	15	SF3
		13	16	8 29.83	19	19.44	155	50.74	7.15	2.6	1.6	30	2	158	.15	7	.5	.8	14	KON
		13	1613	53.75	19	24.00	155	16.95	2.66	1.8	1.9	25	3	65	.12	1	.3	.2	17	SSC
		13	1628	33.94	19	23.47	155	16.88	3.07	.9	1.0	17	4	59	.05	0	.3	.3	11	SSC
		14	239	42.45	19	23.54	155	16.92	3.20	.8	1.2	17	3	68	.06	0	.3	.3	8	SSC
		14	240	47.71	19	27.42	154	52.88	4.52	1.8	1.2	18	0	142	.14	3	.8	1.6	15	SLE
		14	356	23.51	19	21.06	155	12.91	7.84	2.1	2.3	41	3	60	.12	3	.4	.6	26	SF2
		14	542	25.37	19	18.05	155	23.51	3.26	1.7	1.4	24	2	92	.07	4	.3	.8	12	SWR
		14	637	34.89	19	43.63	156	6.19	32.19	2.4	2.1	32	3	243	.10	28	1.2	1.5	25	HUA
		14	650	32.68	20	5.81	155	50.14	28.46	2.4	2.0	33	3	231	.11	7	1.5	1.6	20	KOH
		14	1059	48.53	19	20.39	155	12.76	7.50	1.5	1.7	36	3	69	.10	4	.4	.7	23	SF2
		14	1142	44.69	19	16.68	155	21.85	6.30	.9	1.5	23	2	132	.09	6	.5	1.4	16	SWR
		14	2349	16.74	19	19.54	155	15.68	8.69	2.2	2.4	46	3	88	.12	3	.4	.5	22	SF1
		15	0	7 52.65	20	5.02	155	50.61	27.78	3.6	3.8	50	5	226	.11	8	1.1	1.4	44	KOH F
		15	1	4 42.07	19	18.59	155	13.67	9.55	3.7	3.8	47	3	70	.12	3	.5	.5	40	SF2 F
		15	235	21.55	19	18.97	155	13.25	7.52	1.6	1.5	29	2	79	.09	4	.4	.8	18	SF2
		15	4	1 39.10	19	20.79	155	3.05	7.11	1.6	1.5	30	2	121	.13	2	.5	.7	12	SF5
		15	417	53.67	19	20.99	155	13.33	8.92	1.3	1.3	26	1	57	.09	3	.5	.8	14	SF2
		15	749	20.61	19	16.74	155	22.25	5.51	1.8	1.8	33	3	128	.12	5	.4	1.3	18	SWR
		15	1135	44.30	19	27.69	155	51.12	7.96	2.8	2.0	29	3	108	.15	8	.6	.7	18	KON
		15	1434	45.03	19	20.16	155	12.52	7.80	1.6	1.5	31	2	73	.11	5	.5	.8	22	SF2
		15	16	7 26.34	19	18.07	155	16.68	9.09	2.5	2.7	44	3	123	.13	3	.4	.5	34	SF1
		15	1844	31.15	19	23.88	155	16.80	2.94	1.8	2.4	31	4	68	.11	0	.3	.2	16	SSC
		15	1956	15.96	19	23.61	155	16.84	2.87	1.4	1.6	19	3	44	.06	0	.3	.2	13	SSC
		15	2359	50.54	19	21.47	155	18.42	1.96	1.5	2.0	16	2	71	.08	3	.5	.7	12	SWR
		16	337	36.72	19	23.27	155	16.65	3.07	2.6	3.1	43	2	39	.11	1	.2	.3	32	SSC
		16	454	26.70	19	23.14	155	16.69	3.39	2.1	2.5	30	4	40	.11	1	.3	.3	23	SSC
		16	459	10.81	19	23.33	155	16.74	3.00	1.2	1.3	21	4	46	.08	0	.3	.3	13	SSC
		16	547	35.78	19	44.09	155	17.81	27.54	2.3	1.6	45	4	109	.11	18	.6	1.5	36	KEA
		16	6	9 28.25	19	19.43	155	20.72	31.48	2.0	1.7	43	2	86	.10	5	.6	1.0	33	DEP
		16	840	13.43	19	23.27	155	16.70	3.45	1.8		27	5	49	.09	0	.3	.3	18	SSC
		16	840	56.47	19	23.36	155	16.93	2.51	.8	1.1	16	4	54	.06	0	.3	.2	9	SSC
		16	957	9.95	19	21.52	155	15.21	9.87	3.1	3.4	46	2	64	.11	2	.4	.4	39	SF1 F
		16	10	8 50.19	19	23.49	155	16.97	3.13	.8	.9	16	3	46	.09	0	.3	.3	7	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JAN	16	1440	16.18	19	23.42	155	16.73	2.78	1.8	2.1	26	4	47	.10	0	.3	.2	19	SSC
		16	1616	49.84	19	23.59	155	16.89	3.18	.9	.9	19	5	47	.07	0	.3	.3	15	SSC
		16	17	9 16.86	19	18.46	155	13.34	5.39	1.3	1.0	32	3	83	.09	3	.4	1.0	18	SF2
		16	1945	.13	19	20.03	155	13.42	8.59	1.8	1.8	36	1	67	.10	5	.4	.6	24	SF2
		16	2330	17.13	19	19.92	155	6.80	7.35	2.1	2.2	35	1	115	.10	5	.4	.8	26	SF4
		17	2	5 28.51	19	19.76	155	7.68	7.66	2.0	2.2	37	0	100	.11	5	.5	.7	25	SF4
		17	4	0 3.19	19	19.92	155	10.49	8.04	1.5	1.1	27	1	88	.09	4	.5	1.0	19	SF3
		17	847	51.18	19	11.35	155	41.05	5.75	2.4	1.6	28	2	119	.22	10	.7	2.2	13	LSW
		17	1041	3.21	19	20.40	155	3.28	5.83	1.4	1.5	20	2	90	.11	1	.6	1.1	13	SF5
		17	1352	2.52	19	19.29	155	15.45	7.64	1.9	1.5	37	2	91	.09	4	.4	.6	24	SF1
		17	2215	43.87	19	25.81	155	25.49	5.27	1.5	1.7	32	3	41	.10	1	.3	.8	23	KAO
		18	023	44.54	19	30.20	155	53.32	7.49	2.5	2.1	29	2	128	.24	4	.7	.9	19	KON
		18	152	37.16	19	29.82	155	55.92	12.57	2.5	2.4	29	3	207	.10	2	.9	.4	17	KON
		18	17	3 32.50	19	16.61	155	22.12	6.60	1.9	2.4	34	4	131	.13	5	.4	1.0	27	SWR
		19	1111	50.80	19	21.75	155	25.84	9.41	1.9	1.4	36	5	45	.12	3	.4	.7	27	KAO
		19	1335	44.93	19	20.19	155	7.16	7.96	1.1	1.3	20	1	102	.04	5	.5	1.0	11	SF4
		19	17	7 39.67	19	17.77	155	21.01	5.42	1.7	1.5	29	2	124	.11	4	.4	1.2	16	SWR
		19	2142	52.62	19	20.01	155	10.55	7.76	2.6	2.9	43	2	86	.13	4	.5	.8	32	SF3
		19	2221	14.83	19	23.58	155	17.00	2.48	.7		12	4	86	.04	0	.4	.3	7	SSC
		19	2221	17.86	19	23.53	155	16.90	2.85	2.1	2.6	29	4	91	.09	0	.3	.2	22	SSC
		20	111	14.15	19	10.91	155	33.38	6.62	2.7	3.0	37	2	134	.14	10	.5	1.1	30	LSW
		20	710	37.44	19	20.78	155	12.99	7.84	1.6	1.6	35	4	67	.13	3	.5	.6	23	SF2
		20	1143	44.06	19	18.00	155	13.06	7.46	2.0	2.2	24	0	105	.09	2	.6	.8	19	SF2
		21	2	6 30.20	19	20.01	155	10.77	9.48	2.9	3.1	31	2	87	.09	4	.5	.4	24	SF3
		21	441	58.39	19	24.94	155	25.35	5.85	1.8	1.3	18	0	68	.11	6	.5	2.5	15	KAO
		21	841	14.17	19	19.92	155	10.82	7.12	1.5	1.1	21	3	88	.09	4	.5	.8	9	SF3
		21	1152	41.17	19	13.91	155	35.53	10.32	5.4	5.6	41	0	218	.12	3	.9	.5	40	LSW F
		21	12	3 26.79	19	14.17	155	34.20	6.98	1.9	1.2	36	3	111	.21	5	.6	1.4	19	LSW
		21	1216	42.50	19	12.41	155	32.08	8.87	2.1	1.5	31	1	132	.14	6	.5	.9	11	LSW
		21	1223	41.65	19	11.07	155	36.73	8.55	2.9	2.2	28	3	120	.11	7	.5	.8	17	LSW
		21	1229	13.88	19	13.11	155	33.10	13.73	5.4	5.4	36	1	126	.12	8	.6	.5	33	DLS F
		21	1240	49.48	19	10.55	155	31.37	7.69	2.9	2.5	34	1	108	.17	6	.6	1.0	25	LSW
		21	1242	5.91	19	10.28	155	31.52	8.31	3.0	2.9	31	1	143	.16	9	.7	1.1	20	LSW
		21	1245	12.69	19	11.58	155	33.45	7.26	3.0	2.5	34	3	130	.17	9	.6	1.2	22	LSW
		21	1246	22.64	19	10.04	155	32.46	.46	2.2	1.1	23	1	117	.16	8	.5	1.2	15	LSW
		21	1247	10.37	19	9.51	155	31.48	7.02	2.3	1.5	29	2	128	.13	6	.6	1.1	18	LSW
		21	1248	9.58	19	13.82	155	32.58	11.71	3.4	3.3	44	4	119	.17	5	.5	.6	35	LSW
		21	1251	56.43	19	9.45	155	31.82	12.28	3.0	2.7	37	3	147	.15	11	.5	.5	27	LSW
		21	1253	41.39	19	11.92	155	31.60	7.44	2.2	1.9	35	1	88	.18	6	.5	1.0	21	LSW
		21	13	1 9.69	19	12.16	155	32.48	10.44	4.1	4.0	44	1	87	.17	7	.6	.6	41	LSW F
		21	13	3 51.65	19	10.29	155	32.31	.87	1.9	.9	20	1	113	.10	8	.5	1.3	11	LSW
		21	13	5 39.70	19	12.98	155	32.71	8.45	2.8	2.4	37	3	79	.17	9	.6	1.0	19	LSW
		21	13	8 29.54	19	10.04	155	31.86	.39	2.0	1.4	24	1	118	.13	7	.5	1.0	16	LSW
		21	1312	59.70	19	12.19	155	31.11	7.78	2.7	2.7	32	0	137	.19	6	.8	1.2	21	LSW
		21	1317	13.88	19	13.10	155	31.57	8.60	2.3	1.6	17	1	133	.14	5	.8	1.0	9	LSW
		21	1321	7.39	19	13.36	155	31.46	8.68	1.8	1.4	22	2	127	.12	4	.5	.8	13	LSW
		21	1321	35.15	19	12.33	155	31.22	6.15	2.2	1.6	29	3	81	.13	6	.4	1.4	17	LSW
		21	1331	44.47	19	13.23	155	30.58	8.76	1.9	1.6	29	1	133	.11	4	.6	.9	22	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	JAN	21	1332	49.74	19	10.99	155	31.56	6.42	1.7	1.2	27	1	102	.13	7	.5	1.3	17	LSW	
		21	1335	10.86	19	11.01	155	30.96	6.43	3.1	3.0	41	2	99	.20	6	.6	1.1	33	LSW	
		21	1337	17.41	19	13.79	155	33.31	12.23	4.2	4.3	41	2	117	.14	6	.5	.6	39	LSW	
		21	1342	12.23	19	11.91	155	31.32	7.36	2.9	2.7	36	1	137	.15	6	.6	.9	33	LSW	
		21	1345	3.21	19	12.91	155	32.50	8.22	2.3	1.5	27	2	128	.15	6	.5	.9	15	LSW	
		21	1350	21.10	19	11.71	155	32.57	6.02	2.4	1.9	31	1	93	.16	8	.5	1.3	17	LSW	
		21	1359	47.13	19	11.48	155	33.75	8.37	1.8	1.6	25	2	96	.17	9	.5	1.1	15	LSW	
		21	1411	27.74	19	12.38	155	30.50	8.81	2.2	2.0	20	1	138	.14	5	.7	.8	12	LSW	
		21	1412	49.61	19	13.54	155	31.69	10.35	1.8	1.1	27	3	126	.15	4	.5	.9	19	LSW	
		21	1414	7.74	19	11.99	155	32.69	8.06	2.7	2.5	35	3	90	.15	7	.5	.8	24	LSW	
		21	1419	21.79	19	11.11	155	32.06	.28	1.9	1.5	26	2	101	.14	8	.4	.6	14	LSW	
		21	1420	49.74	19	11.02	155	31.63	6.58	2.2	2.1	24	1	101	.13	7	.5	1.3	14	LSW	
		21	1429	44.73	19	9.66	155	31.54	6.86	1.8	1.4	27	3	125	.12	6	.5	1.5	16	LSW	
		21	1430	52.13	19	12.69	155	30.32	7.86	1.9	1.4	23	2	107	.13	4	.5	.9	9	LSW	
		21	1436	42.46	19	11.54	155	30.68	6.33	1.7	1.6	17	0	88	.16	6	.7	1.7	11	LSW	
		21	1438	57.20	19	12.82	155	32.57	8.33	1.7	1.6	29	2	81	.15	6	.5	.9	12	LSW	
		21	1446	48.49	19	10.46	155	32.18	7.11	2.8	2.8	40	4	111	.17	8	.6	1.1	29	LSW	
		21	15 4	13.04	19	9.36	155	31.32	5.42	1.9	1.4	20	1	131	.11	6	.5	2.1	14	LSW	
		21	15 9	.33	19	14.03	155	34.46	8.12	1.6	1.2	20	2	78	.13	5	.4	.8	12	LSW	
		21	1511	17.79	19	15.48	155	35.35	8.37	1.5	1.4	22	1	167	.14	3	.7	1.0	17	LSW	
		21	1519	41.00	19	12.82	155	31.59	8.05	3.1	3.0	41	4	132	.15	5	.5	.8	33	LSW	
		21	1524	49.32	19	11.80	155	30.21	7.13	1.6	1.4	24	2	81	.13	6	.5	1.3	14	LSW	
		21	1524	49.33	19	11.94	155	30.20	7.07	1.6	1.3	24	1	79	.14	6	.5	1.4	10	LSW	
		21	1526	39.00	19	11.68	155	30.28	7.06	1.5	1.0	19	2	83	.11	6	.5	1.2	10	LSW	
		21	1535	12.49	19	12.02	155	31.15	8.85	3.2	3.1	39	2	85	.16	6	.5	.8	29	LSW	
		21	1538	1.02	19	10.48	155	32.61	7.41	1.9	1.7	34	5	109	.17	9	.5	1.2	29	LSW	
		21	1546	36.34	19	10.59	155	32.59	.85	1.8	1.3	23	3	108	.15	9	.5	.7	18	LSW	
		21	16 0	4.46	19	10.71	155	31.05	7.11	2.5	2.0	22	1	174	.13	6	.7	1.3	20	LSW	
		21	16 3	5.09	19	9.58	155	31.82	.05	1.8	1.1	24	2	126	.15	7	.5	.6	17	LSW	*
		21	1614	19.31	19	10.51	155	32.26	6.46	1.6	1.2	29	2	109	.15	8	.5	1.5	26	LSW	
		21	1623	36.02	19	9.87	155	31.65	11.88	3.1	3.1	40	3	145	.15	10	.6	.7	32	LSW	
		21	1626	3.30	19	12.47	155	32.76	8.28	2.4	2.0	37	4	159	.18	7	.6	.8	28	LSW	
		21	1634	54.04	19	9.85	155	35.57	8.41	2.2	1.8	22	2	130	.12	10	.5	1.2	17	LSW	
		21	1645	59.73	19	11.61	155	30.23	7.95	2.1	2.0	29	1	83	.13	6	.5	1.1	23	LSW	
		21	1648	30.97	19	12.17	155	30.75	8.82	2.2	1.7	25	2	80	.13	6	.5	.7	20	LSW	
		21	1657	58.61	19	11.75	155	32.56	8.79	1.9	1.5	19	3	93	.20	8	.7	1.1	18	LSW	
		21	1737	56.48	19	9.71	155	31.38	7.27	2.2	2.0	23	1	124	.13	6	.5	1.1	21	LSW	
		21	1758	59.02	19	9.94	155	32.69	.00	2.0	1.5	21	1	117	.18	9	.6	1.3	20	LSW	*
		21	18 0	45.07	19	10.66	155	32.27	7.44	2.2	2.0	26	3	107	.15	8	.5	1.0	19	LSW	
		21	1812	2.98	19	9.54	155	29.35	7.28	2.1	1.9	29	2	197	.12	3	.8	.7	23	LSW	
		21	1856	38.51	19	11.07	155	31.33	7.40	2.1	1.2	23	2	169	.18	7	.8	1.2	18	LSW	
		21	19 9	57.54	19	11.12	155	32.62	5.44	1.8	1.7	23	2	176	.11	9	.7	2.1	22	LSW	
		21	1913	22.30	19	10.48	155	30.17	3.64	1.7	1.7	24	1	106	.15	4	.9	2.3	21	LSW	
		21	1934	55.28	19	10.70	155	32.73	6.83	2.0	1.7	28	3	106	.15	9	.6	1.4	23	LSW	
		21	2031	37.79	19	9.20	155	31.22	8.00		1.4	18	1	135	.11	6	.8	1.2	15	LSW	
		21	2036	14.08	19	12.32	155	32.46	7.01	2.0	1.4	21	2	160	.16	7	.8	1.4	17	LSW	
		21	21 2	52.67	19	11.66	155	30.60	8.52	2.1	1.4	23	2	86	.15	6	.5	.9	20	LSW	
		21	2150	46.65	19	9.05	155	34.67	7.95	2.8	2.8	35	3	122	.17	12	.5	1.2	25	LSW	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	JAN	21	22 7	37.26	19	10.31	155	29.57	6.88	1.5	1.2	18	1	105	.14	3	.5	.9	9	LSW	
		21	2215	55.17	19	9.00	155	34.71	7.67	2.7	2.5	37	3	122	.14	12	.5	1.0	23	LSW	
		21	2217	16.38	19	8.92	155	34.64	7.29	2.6	2.3	29	4	123	.15	12	.5	1.2	20	LSW	
		21	2224	47.12	19	10.56	155	32.07	2.03	1.8	1.6	26	3	109	.13	8	.4	1.0	14	LSW	
		21	2243	40.47	19	12.80	155	31.62	9.48	1.5	1.0	27	2	78	.11	5	.5	.7	14	LSW	
		21	2255	54.52	19	9.73	155	30.47	7.36	2.7	2.6	41	3	126	.18	5	.6	1.1	30	LSW	
		21	23 6	.58	19	12.42	155	31.37	8.83	1.6	1.3	22	3	80	.13	5	.5	.9	11	LSW	
		21	2316	19.88	19	8.78	155	34.36	7.59	2.8	2.7	35	4	126	.14	11	.5	1.0	24	LSW	
		21	2348	13.84	19	11.16	155	31.34	8.11	1.9	1.2	12	2	98	.14	7	.7	1.5	10	LSW	
		22	029	57.54	19	12.57	155	32.72	8.99	1.8	1.2	31	3	129	.15	7	.5	.9	16	LSW	
		22	120	6.62	19	22.75	155	2.58	8.48	1.8	1.3	29	1	130	.14	4	.6	.9	22	SF5	
		22	127	21.92	19	11.83	155	30.72	8.37	1.5	1.5	21	2	84	.13	6	.5	.9	13	LSW	
		22	131	18.49	19	10.37	155	32.66	7.39	2.3	1.9	33	3	111	.15	9	.5	1.1	22	LSW	
		22	153	6.31	19	9.44	155	31.26	8.34	2.3	1.9	30	1	130	.13	6	.6	1.0	20	LSW	
		22	2 1	40.66	19	22.85	155	2.31	6.45	1.6	1.4	21	1	126	.13	5	.6	1.2	8	SF5	
		22	2 6	49.13	19	9.70	155	32.48	7.67	1.9	1.6	30	1	122	.18	8	.6	1.5	15	LSW	
		22	225	5.24	19	11.75	155	36.10	10.04	3.6	3.4	48	4	91	.20	6	.6	.7	35	LSW	
		22	238	38.77	19	22.19	155	29.41	5.74	1.3	.9	20	1	94	.09	3	.5	1.0	13	KAO	
		22	240	39.53	19	12.25	155	32.69	8.57	2.1	2.0	28	3	88	.17	7	.6	1.0	17	LSW	
		22	247	45.40	19	10.99	155	35.98	8.82	1.8	1.5	23	2	98	.21	8	.7	1.4	16	LSW	
		22	313	26.36	19	24.57	155	16.44	1.63	1.7	2.4	20	2	114	.11	1	.3	.2	15	SNC	
		22	356	.47	19	10.61	155	29.55	7.26	1.6	1.5	23	0	96	.22	4	.7	1.4	11	LSW	
		22	426	56.40	19	10.13	155	31.54	5.67	2.1	2.0	28	1	117	.13	7	.5	2.1	15	LSW	
		22	448	39.68	19	11.34	155	36.34	8.51	2.5	1.9	37	6	94	.21	7	.5	1.0	32	LSW	
		22	5 3	14.01	19	9.88	155	32.21	.84	2.0	1.0	19	3	119	.14	8	.4	.8	17	LSW	
		22	551	39.59	19	12.28	155	31.13	8.27	2.0	1.2	23	2	81	.13	6	.5	.9	20	LSW	
		22	638	44.87	19	11.82	155	32.70	5.59	2.3	2.0	28	3	92	.17	8	.5	2.1	24	LSW	
		22	7 0	48.92	19	24.58	155	31.02	13.91	2.0	1.3	10	0	152	.12	7	1.0	3.0	10	DML	
		22	7 9	5.69	19	24.69	155	24.83	9.09	1.5	1.3	26	5	39	.11	1	.4	.8	20	KAO	
		22	1118	55.23	19	19.49	155	15.52	7.89	2.9	3.2	46	7	89	.12	4	.4	.5	38	SF1	F
		22	1652	8.85	19	21.56	155	4.72	8.45	2.9	3.0	44	4	82	.09	4	.4	.5	33	SF5	
		22	1745	8.12	19	14.16	155	34.01	9.54	4.3	4.2	49	4	76	.14	6	.4	.6	46	LSW	F
		22	1939	49.10	19	10.40	155	29.94	5.82	2.4	2.6	34	2	106	.15	4	.5	1.3	30	LSW	
		22	2326	36.30	19	12.20	155	31.27	8.23	2.4	2.7	35	3	83	.15	6	.4	.8	28	LSW	
		23	449	24.14	19	10.53	155	29.74	3.22	1.6	1.3	22	2	101	.13	4	.7	1.5	19	LSW	
		23	516	8.94	19	11.36	155	32.66	9.39	2.1	2.0	31	3	97	.13	8	.5	.8	28	LSW	
		23	643	39.43	19	9.46	155	31.57	11.67	2.6	3.0	35	2	147	.14	11	.6	.5	28	LSW	
		23	648	54.90	19	9.23	155	31.40	8.00	1.7	1.5	27	1	133	.12	6	.6	1.1	17	LSW	
		23	736	4.95	19	9.73	155	32.41	4.75	1.8	1.6	24	1	122	.14	8	.6	6.5	16	LSW	
		23	8 7	33.30	19	20.24	155	13.04	7.20	1.5	1.1	25	2	67	.12	4	.5	1.0	17	SF2	
		23	823	51.57	19	23.69	155	16.71	2.69	1.8	2.1	25	4	43	.11	0	.3	.2	17	SSC	
		23	934	11.51	19	23.96	155	15.86	2.99	1.2	1.3	18	2	109	.08	1	.3	.3	12	SEC	
		23	1137	36.19	19	23.25	155	16.88	2.70	2.0	2.4	29	5	37	.09	0	.2	.2	21	SSC	
		23	1214	.22	19	23.30	155	17.14	2.79	1.3	1.8	24	4	58	.09	0	.2	.3	14	SSC	
		23	1253	29.08	19	19.39	155	12.96	5.65	2.2	2.5	42	6	79	.14	4	.4	1.1	35	SF2	
		23	14 6	45.70	19	9.42	155	34.25	9.09	3.0	3.0	41	5	119	.15	11	.5	.8	33	LSW	
		23	1439	6.99	19	12.34	155	30.87	10.05	1.7	1.5	28	3	79	.12	5	.5	.7	15	LSW	
		23	1619	16.29	19	12.17	155	32.49	5.07	1.6	1.7	30	4	87	.18	7	.5	2.8	18	LSW	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JAN	23	1652	6.02	19	24.30	155	16.02	1.16	1.6	2.1	23	4	113	.10	1	.2	.2	12	SEC
		23	1822	20.36	19	23.66	155	16.76	2.63	2.1	2.4	31	4	38	.11	1	.3	.2	24	SSC
		23	1844	21.40	19	19.38	155	11.31	7.40	1.8	1.3	31	3	99	.08	6	.4	.8	23	SF3
		23	1846	13.43	19	11.90	155	30.31	8.85	1.8	1.8	34	6	80	.12	6	.4	.8	29	LSW
		23	1945	54.16	19	8.17	155	35.14	9.52	1.9	1.5	27	2	129	.14	13	.6	1.3	22	LSW
		23	2215	15.89	19	19.85	155	6.39	8.48	2.4	2.6	38	4	123	.09	5	.4	.6	29	SF4
		23	2240	44.12	19	23.44	155	16.84	3.42	3.1	3.4	39	5	36	.10	0	.2	.2	30	SSC F
		23	2243	12.25	19	23.95	155	16.76	3.09	1.1	.7	17	6	85	.08	0	.4	.2	12	SSC
		24	028	34.39	19	18.43	155	13.25	8.94	1.9	1.9	37	3	87	.10	3	.4	.6	29	SF2
		24	4 0	23.75	19	20.33	155	11.92	9.67	2.0	1.8	34	3	76	.10	5	.5	.6	21	SF3
		24	629	34.81	19	20.65	155	6.89	7.85	1.9	1.7	30	1	97	.09	6	.4	1.0	23	SF4
		24	1630	52.27	19	24.70	155	.78	7.31	1.7		23	3	127	.10	4	.5	1.0	17	SF5
		24	1751	3.09	19	26.40	155	29.57	10.19	1.5	1.2	23	2	66	.08	8	.5	1.2	19	KAO
		24	1847	30.59	19	17.99	155	15.05	5.41	1.2	1.1	21	2	125	.11	3	.5	1.4	14	SF1
		24	1949	1.76	19	20.13	155	3.37	8.23	2.7	2.9	44	3	121	.10	1	.5	.5	38	SF5
		24	2012	34.97	19	12.79	155	33.99	7.83		1.2	23	3	83	.20	7	.6	1.2	20	LSW
		24	2216	1.65	19	12.33	155	31.46	9.21	2.2		27	3	152	.12	6	.5	.7	16	LSW
		24	2236	1.17	19	13.34	155	32.77	7.50	2.0	2.0	36	4	77	.16	6	.5	1.0	26	LSW
		25	148	16.61	19	10.01	155	31.83	3.96	1.8	1.5	23	4	118	.13	7	.5	3.4	15	LSW
		25	930	31.79	19	43.73	156	4.54	7.89	2.8	2.6	28	2	237	.14	25	1.3	1.0	20	HUA
		25	1341	13.30	19	20.36	155	13.22	8.94	1.5	1.4	20	2	63	.08	4	.5	.9	17	SF2
		25	17 3	51.09	19	11.89	155	35.46	8.58	3.4	3.2	47	6	91	.22	6	.6	.8	41	LSW F
		25	1725	10.65	19	11.30	155	35.41	1.07	2.3	1.4	24	2	95	.18	7	.6	1.3	20	LSW
		25	1946	4.69	19	20.22	155	8.04	7.32	1.4	1.2	33	4	85	.09	5	.5	.7	26	SF4
		25	2216	43.29	19	14.15	155	34.68	7.73	2.1	1.5	35	3	111	.17	4	.6	.9	21	LSW
		26	1 2	7.07	19	10.74	155	32.55	7.65	2.3	2.2	38	3	137	.17	9	.6	1.0	23	LSW
		26	234	29.04	19	11.70	155	32.65	7.18	2.3	2.0	30	1	94	.14	8	.5	.9	17	LSW
		26	337	39.04	19	18.79	155	15.40	7.15	1.3	1.2	24	2	109	.10	4	.5	.9	19	SF1
		26	515	7.18	19	12.01	155	32.61	5.00	2.2	2.0	35	2	89	.16	7	.5	3.2	27	LSW
		26	1110	12.75	19	20.20	155	10.68	9.28	2.0	1.5	29	1	83	.06	4	.4	.7	25	SF3
		26	1256	46.31	19	8.90	155	32.91	7.78	2.1	1.6	22	3	132	.16	9	.6	1.2	20	LSW
		26	1345	17.11	19	12.44	155	35.42	8.83	3.4	3.1	47	7	86	.23	5	.6	.9	38	LSW
		26	1615	39.13	19	23.30	155	16.86	3.01	1.8	1.8	24	6	56	.10	0	.3	.2	20	SSC
		26	1618	12.48	19	23.42	155	16.73	3.58	2.4	2.5	33	7	46	.11	0	.3	.2	28	SSC
		26	1838	17.79	19	19.65	155	8.19	7.54	1.4	1.1	27	4	88	.09	4	.5	.8	17	SF4
		26	1916	23.84	19	15.54	155	23.75	7.77	1.9	1.8	27	2	129	.11	2	.5	.9	20	SWR
		27	012	22.21	19	14.85	155	35.33	7.09	1.6	1.4	33	3	104	.20	3	.6	1.1	22	LSW
		27	4 0	14.77	19	26.29	155	37.24	2.70	3.3	2.6	36	2	112	.16	2	.5	.7	27	MLO
		27	634	54.30	19	10.10	155	32.41	8.52	2.3	2.0	31	2	145	.14	10	.6	1.1	23	LSW
		27	1546	29.62	19	12.76	155	32.40	8.82	2.2	1.5	31	3	130	.13	6	.6	.8	24	LSW
		27	16 2	26.53	19	12.83	155	32.31	7.09	2.2	1.6	31	4	80	.15	6	.5	1.1	17	LSW
		28	441	39.67	19	18.64	155	13.61	8.20	2.4	2.6	43	5	71	.11	3	.5	.5	35	SF2
		28	859	44.68	19	18.35	155	13.23	7.55	2.3	2.4	43	3	89	.13	2	.5	.6	28	SF2
		28	9 1	59.92	19	20.89	155	11.19	8.40	2.2	2.1	35	4	71	.11	3	.4	.5	30	SF3
		28	1015	55.76	19	19.21	155	15.00	6.86	1.6	1.3	31	3	95	.08	5	.4	.7	21	SF1
		28	1038	7.51	19	18.16	155	13.33	7.08	1.8	1.8	35	3	89	.12	2	.5	.8	25	SF2
		28	1442	6.41	19	43.39	155	2.28	.02	2.6	2.8	28	2	204	.29	3	1.5	.9	16	HIL B*
		28	1528	29.16	19	10.30	155	31.42	8.24	2.6	1.9	34	3	144	.15	9	.6	1.1	26	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JAN	28	1539	22.18	19	22.15	155	3.46	7.45	2.2	1.9	31	2	110	.16	4	.6	.8	19	SF5
		28	16 1	52.28	19	13.08	155	32.16	8.06	1.6	1.2	24	1	128	.16	5	.7	1.0	16	LSW
		28	1638	15.59	19	10.65	155	32.17	7.21	1.6	1.3	22	2	142	.16	9	.6	1.3	13	LSW
		28	2015	9.40	19	19.67	155	8.61	8.22	1.7	1.5	32	2	78	.09	4	.5	.9	26	SF4
		29	217	35.89	19	17.91	155	21.90	8.42	2.0	2.1	38	4	114	.10	5	.4	.6	25	SWR
		29	343	2.29	19	16.66	155	33.13	5.28	3.0	2.9	46	4	82	.15	6	.4	1.0	35	LSW
		29	719	19.17	19	23.48	155	16.89	2.93	1.5	1.4	22	3	37	.07	0	.3	.2	16	SSC
		29	739	22.22	19	23.89	155	16.98	2.93	1.0	1.0	11	2	74	.04	1	.4	.3	8	SSC
		29	8 7	42.56	19	23.70	155	16.75	2.66	1.8	1.6	18	2	77	.07	2	.3	.4	17	SSC
		29	818	39.39	19	23.92	155	16.71	2.27	1.4	1.3	16	2	86	.12	2	.4	.4	14	SSC
		29	1220	19.17	19	23.63	155	16.75	2.60	1.4	1.3	21	5	55	.13	1	.3	.2	15	SSC
		29	1713	25.94	19	55.25	155	35.73	12.78	3.6	3.6	46	3	136	.13	21	.7	.7	40	KOH F
		29	1716	49.38	19	54.90	155	36.24	10.89	3.0	2.6	40	3	132	.10	21	.5	.6	26	KEA
		29	18 3	34.38	19	55.04	155	35.15	8.96	2.4	2.5	25	1	136	.18	20	.7	.9	16	KOH F
		29	1950	32.77	19	23.43	155	16.81	2.77	.9	.8	17	5	64	.05	0	.3	.2	9	SSC
		29	2115	34.17	19	23.62	155	16.95	3.00	1.4	1.2	23	4	51	.09	0	.3	.2	16	SSC
		29	2122	12.51	19	23.53	155	16.78	3.06	1.3	1.0	21	5	47	.10	0	.3	.3	14	SSC
		29	23 9	8.95	19	23.28	155	16.77	2.86	1.9	2.4	25	3	44	.11	0	.3	.2	20	SSC
		30	021	43.10	19	10.81	155	42.44	.03	2.9	2.4	33	3	132	.23	12	.7	.8	28	LSW
		30	117	47.90	20	17.67	155	47.36	39.43	2.9	1.9	35	4	302	.13	19	1.7	1.0	23	KOH
		30	714	9.21	19	8.43	155	35.43	6.94	1.8	1.2	24	1	124	.17	12	.7	1.7	17	LSW
		30	18 2	15.61	19	18.18	155	13.35	7.40	1.3	1.3	29	1	87	.10	2	.5	1.0	17	SF2
		30	1940	39.30	19	21.50	155	15.40	26.64	3.0	2.9	49	4	64	.12	2	.6	.7	45	DEP
		30	2115	7.64	19	21.29	155	25.64	9.65	1.4	1.3	32	3	51	.09	4	.4	.7	24	KAO
		31	452	28.56	19	19.63	155	7.04	7.27	1.8	1.3	34	4	116	.10	5	.5	.9	26	SF4
		31	559	14.06	19	11.40	155	27.95	3.90	1.4	1.2	24	0	110	.13	4	.5	1.6	17	LSW
		31	1112	3.01	19	16.34	155	21.54	6.87	1.8	1.8	30	3	138	.08	6	.5	.7	21	SWR
		31	1211	8.39	19	19.51	155	16.14	7.93	2.2	1.9	41	4	94	.10	2	.4	.6	30	SF1
		31	1551	42.09	19	26.22	154	54.32	4.90	1.3	1.3	20	1	165	.14	6	.9	3.9	14	SLE
		31	1641	22.93	19	12.80	155	30.12	7.82	1.4	1.4	31	6	71	.12	4	.4	.9	21	LSW
		31	1856	33.28	19	12.70	155	30.52	8.85	2.4	2.2	38	3	72	.12	5	.4	.7	31	LSW F
		31	19 5	1.46	19	12.85	155	30.56	8.32	1.4	1.2	34	5	71	.15	4	.5	.8	26	LSW
		31	1921	19.99	19	17.50	155	21.03	5.39	1.0	1.2	23	3	126	.09	4	.5	1.5	19	SWR
		31	2055	37.31	19	12.52	155	30.20	9.07	1.5	1.4	29	2	72	.13	5	.5	.8	15	LSW
		31	2126	12.07	19	12.57	155	30.48	9.23	1.2	1.2	27	2	73	.15	5	.5	.8	16	LSW
		31	2257	50.72	19	12.66	155	30.34	8.66	1.3	1.2	25	2	71	.13	5	.5	.8	17	LSW
	FEB	1	039	3.26	19	10.21	155	35.18	9.29	2.1	1.9	32	3	107	.17	9	.5	.9	20	LSW
		1	239	16.64	19	19.20	155	15.37	7.32	1.8	1.8	36	4	91	.08	4	.4	.6	23	SF1
		1	351	27.43	19	12.88	155	30.30	8.10	2.2	1.5	28	0	136	.13	4	.6	.9	18	LSW F
		1	456	12.62	19	13.21	155	30.88	8.90	1.9	2.1	38	6	131	.13	4	.5	.7	23	LSW F
		1	613	.64	19	29.10	155	52.47	6.48	2.4	2.3	27	2	96	.14	5	.6	1.0	13	KON
		1	7 3	1.21	19	12.32	155	30.38	8.41	1.3	1.4	25	2	75	.13	5	.5	1.2	11	LSW
		1	854	33.11	19	24.02	155	15.82	3.20	1.6	2.2	24	4	111	.09	1	.3	.3	16	SEC
		1	1212	20.31	19	23.85	155	17.13	2.75	1.3	1.7	13	3	83	.07	1	.4	.3	6	SSC
		1	1242	33.53	19	10.75	155	35.53	8.12	2.1	1.6	30	3	101	.17	8	.7	1.1	18	LSW
		1	1638	43.12	19	23.31	155	16.94	2.98	1.6	1.8	22	4	46	.09	0	.3	.3	13	SSC
		1	1752	17.70	19	23.60	155	16.72	2.94	2.0	2.3	31	3	40	.10	1	.3	.2	24	SSC
		1	20 9	37.78	19	21.88	155	18.02	2.87	1.1	1.1	25	4	50	.10	3	.3	.5	12	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	FEB	1	2247	17.36	19	28.46	155	16.48	10.74	2.1	1.4	43	4	43	.14	6	.4	.8	33	GLN
		1	2353	39.25	19	24.71	155	24.13	11.27	2.2	2.1	40	5	40	.10	2	.4	.5	27	KAO
		2	120	55.27	19	26.07	155	28.01	8.19	2.2	1.5	35	2	61	.10	5	.3	1.0	27	KAO
		2	458	14.29	19	11.29	155	35.48	8.39	3.0	2.7	45	7	96	.25	7	.6	1.0	29	LSW F
		2	629	49.85	19	12.83	155	35.30	11.18	4.3	4.1	43	2	201	.15	5	.9	.5	37	LSW F
		2	811	33.90	19	18.65	155	14.85	7.17	1.6	1.1	7	0	228	.02	5	1.7	2.5	7	SF1
		2	1017	50.82	19	26.18	155	24.01	9.64	1.5	1.3	32	6	55	.10	3	.4	.7	15	KAO
		2	1247	36.80	19	11.91	155	32.72	7.22	1.6	1.4	27	2	91	.17	7	.7	1.1	9	LSW
		2	1254	17.55	19	23.69	155	15.79	3.09	2.6	2.9	36	3	35	.11	1	.3	.3	27	SEC F
		2	1916	34.99	20	.17	155	26.35	7.89	2.1	1.8	20	0	271	.13	16	2.8	.9	14	KEA
		2	2158	.96	19	20.63	155	12.85	9.26	2.9	2.9	46	4	65	.13	4	.4	.5	38	SF2 F
		3	120	36.86	19	18.86	155	14.76	5.95	1.9	1.6	33	0	87	.13	4	.5	1.0	24	SF1
		3	519	55.27	19	19.42	155	10.98	7.56	1.8	1.3	31	2	100	.09	5	.5	1.0	22	SF3
		3	826	50.34	19	18.72	155	13.77	8.60	2.3	2.2	43	4	91	.11	3	.4	.4	29	SF2
		3	1131	45.01	19	19.44	155	13.85	6.15	1.7	1.6	33	1	82	.11	5	.5	1.0	23	SF2
		3	1246	48.48	19	23.57	155	16.72	2.78	1.7	2.3	25	4	45	.10	1	.3	.2	20	SSC
		3	1725	46.09	19	17.73	155	12.87	5.36	1.1	1.3	27	5	125	.09	2	.4	.8	16	SF2
		3	2023	35.51	19	17.10	155	23.32	7.49	1.8	1.6	34	4	104	.11	5	.4	.8	21	SWR
		4	228	31.76	19	19.75	155	7.78	7.38	2.0	1.5	33	2	98	.10	4	.5	.8	24	SF4
		4	6 7	48.69	19	16.57	155	22.88	7.18	2.8	3.3	46	3	120	.15	5	.4	.7	38	SWR
		4	955	33.07	19	24.61	155	26.16	8.40	2.2	1.9	43	3	40	.12	2	.4	.7	35	KAO
		4	1047	18.49	19	21.43	155	6.02	8.37	2.4	2.3	46	6	88	.11	3	.4	.6	32	SF4
		4	2058	35.74	19	18.82	155	13.33	10.17	2.9	2.9	47	3	130	.11	7	.5	.4	39	SF2 F
		5	116	9.02	19	23.06	155	30.39	8.86	2.9	2.9	47	2	34	.11	5	.3	.6	39	KAO
		5	522	16.34	19	12.41	155	32.77	8.53	1.6	1.8	28	3	129	.14	7	.5	.8	14	LSW
		5	948	28.74	19	18.23	155	13.00	7.15	1.1	1.1	30	2	100	.08	2	.5	.9	16	SF2
		5	949	.38	19	18.15	155	12.93	6.93	1.3	1.1	28	2	106	.11	2	.5	1.0	21	SF2
		5	1419	24.22	19	20.75	155	13.00	8.23	2.1	2.1	35	2	62	.12	3	.4	.7	24	SF2
		5	1635	29.04	19	19.18	155	15.26	8.28	1.6	1.6	28	1	90	.09	4	.4	.7	16	SF1
		5	19 4	31.57	19	18.60	155	13.47	6.38	1.5	1.4	35	1	76	.12	3	.5	.8	20	SF2
		6	156	13.88	19	18.61	155	13.12	6.60	1.5	1.4	35	2	88	.13	3	.5	1.0	25	SF2
		6	323	1.29	19	27.42	155	14.66	32.29	3.1	2.9	45	2	51	.10	5	.6	1.1	39	DEP
		6	4 2	55.00	19	22.07	156	21.83	39.20	3.0	2.9	30	1	275	.09	49	3.7	1.9	23	DIS
		6	615	49.40	19	12.31	155	32.20	7.48	2.2	1.5	34	1	85	.17	6	.6	.9	24	LSW
		7	128	59.49	19	10.71	155	29.94	38.86	2.1		40	2	98	.14	4	.8	1.5	24	DLS T
		7	338	51.88	19	20.77	155	10.93	7.66	2.4	2.0	43	3	73	.13	3	.4	.6	30	SF3
		7	421	4.12	19	20.69	155	10.54	7.27	2.2	1.9	40	2	75	.14	3	.4	.7	27	SF3
		7	752	40.79	19	19.36	155	8.98	7.31	1.9	1.6	36	2	88	.12	4	.5	.9	23	SF4
		7	2316	53.09	19	21.53	155	30.48	9.96	2.6	2.5	35	0	36	.08	5	.3	.6	28	KAO
		8	144	15.11	19	11.87	155	32.55	8.32	2.2	2.2	32	2	91	.18	7	.6	1.2	21	LSW
		8	529	42.80	19	14.66	155	33.60	9.01	3.2	3.0	41	2	74	.17	6	.5	.7	31	LSW
		8	1748	50.94	19	20.30	155	12.80	8.06	1.6	1.6	31	2	69	.10	4	.5	.7	20	SF2
		9	043	18.73	19	11.28	155	35.99	9.44	3.0	2.5	42	4	95	.23	7	.6	.9	32	LSW
		9	240	35.03	19	11.51	155	30.85	7.92	2.3	2.3	35	1	141	.15	7	.6	1.0	20	LSW
		9	353	34.42	19	18.42	155	15.37	6.61	.9	1.2	23	3	117	.11	4	.5	1.0	17	SF1
		9	435	21.30	19	22.40	155	27.55	7.07	1.8	1.3	26	1	39	.10	0	.4	.9	19	KAO
		9	458	36.03	20	2.71	155	16.90	7.97	2.3	2.1	29	2	221	.11	18	1.0	.6	13	KEA
		9	542	22.92	19	20.24	155	7.05	8.94	3.8	3.7	47	4	103	.08	5	.3	.4	38	SF4 F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	FEB	9	1733	14.17	19	22.08	155	28.02	9.62	1.9	1.4	32	5	46	.11	1	.4	.8	22	KAO
		9	1827	28.07	19	16.00	155	22.46	6.85	1.4	1.4	24	2	158	.11	4	.6	1.4	16	SWR
		9	1842	13.31	19	19.06	155	12.92	6.74	1.5	1.1	31	3	85	.11	4	.5	1.0	22	SF2
		9	1853	12.53	19	57.21	155	26.98	33.77	2.2	1.5	31	3	182	.12	13	.9	1.2	19	KEA
		9	1957	50.57	19	23.59	154	59.64	6.33	1.6	1.3	24	3	157	.11	3	.6	.9	12	LER
		9	2224	2.27	19	22.84	155	29.87	9.69	1.8	1.3	36	4	44	.11	4	.4	.7	22	KAO
		10	325	21.75	19	21.32	155	8.01	8.28	1.2	1.1	23	1	74	.07	4	.5	1.0	21	SF4
		10	1614	11.08	19	10.72	155	33.06	8.85	1.9	1.8	30	0	184	.13	9	.7	.9	20	LSW
		10	1743	19.58	19	20.61	155	10.90	7.47	1.9	1.7	32	5	75	.11	3	.4	.7	25	SF3
		10	2348	12.56	19	11.46	155	32.35	5.26	2.2	2.2	31	2	96	.15	8	.6	1.7	20	LSW
		11	822	33.29	19	20.37	155	13.42	7.24		1.6	13	0	69	.08	4	.7	1.2	7	SF2
		11	854	52.28	19	19.21	155	10.01	7.76	2.2	2.2	24	3	104	.10	5	.4	.8	19	SF3
		11	10 6	45.78	19	22.07	155	14.96	27.78	1.8	2.0	33	1	57	.10	3	.7	1.2	28	DEP
		11	1432	52.51	19	18.46	155	15.63	5.42	2.2	1.8	26	2	109	.12	4	.5	1.1	15	SF1
		11	1457	15.77	19	1.57	155	27.55	41.41		2.3	26	0	207	.05	15	1.2	2.3	26	DLS
		12	653	42.44	19	21.81	155	1.48	7.23	2.2	2.0	17	0	166	.11	4	.7	1.5	15	SF5
		12	1354	26.09	19	19.12	155	15.05	5.00	2.1	1.7	27	2	88	.13	5	.4	1.3	21	SF1
		12	16 6	30.86	19	21.69	155	3.05	8.77	3.4	3.5	38	3	114	.10	3	.5	.5	29	SF5
		12	1632	42.87	19	21.70	155	2.66	8.15	1.6	1.4	26	2	135	.08	3	.7	.6	17	SF5
		12	2349	11.06	19	1.09	155	29.10	39.80	2.3	2.1	31	1	206	.07	19	1.3	2.0	27	DLS
		13	330	3.91	19	21.05	155	13.10	8.35	1.6	1.7	29	1	58	.11	3	.5	.7	20	SF2
		13	947	45.93	19	28.36	154	51.68	4.65	2.1	1.4	9	0	122	.05	2	3.2	4.4	6	SLE
		13	19 9	35.01	19	20.21	155	8.12	6.30	1.4	1.7	30	3	83	.12	5	.5	1.1	23	SF4
		13	2135	34.14	19	55.91	155	34.97	12.33	2.3	2.1	14	1	143	.09	21	.7	.6	6	KOH
		13	2222	31.62	19	26.94	154	54.12	5.56	1.4	1.3	22	3	150	.11	5	.7	2.3	16	LER
		13	23 1	38.22	19	16.71	155	22.12	6.04	1.8	1.9	26	0	131	.10	6	.5	1.3	20	SWR
		14	028	10.18	19	22.50	155	.81	4.77	1.5	1.4	30	2	157	.16	6	.7	1.9	21	SSF
		14	1624	28.38	19	21.40	155	2.82	7.98	3.3	3.4	39	5	124	.10	3	.5	.5	27	SF5
		15	318	40.73	19	19.14	155	9.65	7.91	1.7	1.0	20	1	158	.07	5	.7	1.2	13	SF3
		15	452	9.14	19	20.60	155	12.36	7.64	1.8	1.7	30	2	103	.12	4	.5	.8	19	SF2
		15	5 8	52.26	19	19.64	155	8.70	7.37	1.6	1.6	21	2	153	.08	5	.6	1.0	15	SF4
		15	8 7	11.51	19	23.14	155	25.48	10.36	2.5	1.8	39	5	38	.13	4	.4	.6	30	KAO
		15	1736	28.23	19	21.49	155	20.25	32.05	4.2	4.3	46	2	51	.11	4	.6	1.0	42	DEP F
		15	1928	31.17	19	20.09	155	7.04	6.61	1.6	1.2	25	1	106	.12	5	.6	1.3	20	SF4
		15	1957	45.91	19	31.73	155	52.66	6.35	2.6	1.4	16	2	194	.13	6	1.2	2.1	7	KON
		16	0 2	43.35	19	17.81	155	13.13	8.62	2.2	2.3	28	2	107	.13	2	.5	.7	20	SF2
		16	055	22.87	19	19.44	155	15.76	9.32	2.7	2.9	39	4	100	.12	3	.5	.5	27	SF1
		16	426	47.33	19	30.06	155	28.59	4.01	1.5	1.1	15	3	92	.06	4	.5	.9	8	MLO
		16	942	1.35	19	26.99	155	36.09	9.17	2.2	1.2	17	2	82	.19	1	.8	1.5	8	MLO
		16	1148	26.98	19	23.28	155	16.86	3.15	2.3	2.6	25	2	38	.10	1	.3	.4	17	SSC
		16	1427	35.53	19	20.78	155	9.28	7.29	1.6	1.3	19	3	67	.08	3	.5	1.0	12	SF3
		16	2010	27.90	19	23.83	155	27.39	12.35	2.5	2.4	34	3	44	.11	5	.4	.5	26	KAO
		17	037	55.88	19	16.62	155	21.50	6.58	1.4	1.5	24	2	164	.11	6	.6	1.0	15	SWR
		17	116	12.57	19	22.85	155	16.89	34.14	1.8	1.8	29	1	41	.10	2	.8	1.5	23	DEP
		17	127	45.51	19	24.78	155	16.90	8.83	1.6	1.1	16	1	105	.08	0	.6	.8	5	INT L
		17	317	17.52	19	18.94	155	15.09	7.09	1.4	1.1	24	1	102	.10	5	.5	1.0	17	SF1
		17	526	14.54	19	9.77	155	30.71	10.33	1.6	1.3	16	0	154	.11	10	.8	1.7	7	LSW
		17	549	54.75	19	20.83	155	2.98	6.04	2.2	2.1	27	2	118	.10	2	.5	.7	17	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	FEB	17	17 4	45.42	19	20.57	155	11.44	7.26	1.6	1.4	26	1	75	.11	5	.5	1.3	23	SF3	
		18	014	57.57	19	15.92	155	22.72	6.95	1.8	1.9	29	2	134	.11	4	.5	.9	20	SWR	
		18	038	58.73	19	20.60	155	11.50	8.35	2.6	3.1	41	2	74	.12	4	.4	.6	31	SF3	
		18	522	25.64	19	23.35	155	16.83	3.08	2.1	2.0	29	5	37	.09	1	.2	.3	18	SSC	
		18	6 3	50.49	19	23.89	155	15.30	3.35	1.6	1.7	21	4	100	.09	2	.3	.3	12	SEC	
		18	8 4	9.12	19	9.73	155	35.12	9.62	3.6		34	4	112	.16	10	.6	.8	27	LSW	
		18	811	58.20	19	16.85	155	21.22	8.01		1.3	11	0	156	.07	5	.8	1.6	8	SWR	
		18	1136	46.57	19	16.60	155	25.46	35.82	1.5	1.1	32	1	62	.09	5	.7	1.8	26	DLS	
		18	1152	21.56	19	19.02	155	13.54	7.22	1.7	1.2	30	2	70	.10	4	.5	1.0	22	SF2	
		18	1336	26.71	19	25.85	155	27.96	7.19	2.1	1.8	38	4	56	.13	6	.4	1.2	26	KAO	
		18	1641	.16	19	23.20	155	27.01	6.64	1.8	1.7	31	1	46	.12	2	.4	.8	23	KAO	
		18	1811	57.44	19	22.09	155	5.57	7.73	1.5	1.3	27	3	75	.11	2	.5	.8	18	SF4	
		18	1812	43.33	19	19.85	155	8.90	6.83	2.1	1.9	35	2	77	.09	4	.4	.8	26	SF4	
		18	2216	23.95	19	22.59	155	.63	7.50	1.5	1.3	23	4	168	.09	6	.5	.8	15	SF5	
		18	23 0	25.01	19	20.43	155	13.33	8.52	1.3	1.1	21	1	62	.05	4	.5	.9	16	SF2	
		19	1125	39.42	19	19.02	155	13.59	7.75	1.6	1.4	32	2	69	.10	4	.5	.8	25	SF2	
		19	2359	8.97	20	3.28	155	29.75	14.35	2.3	1.8	27	1	202	.11	24	1.0	.6	18	KEA	
		20	018	52.25	19	15.49	155	23.46	35.90	2.4	1.6	40	1	123	.09	2	.7	1.2	31	DEP	
		20	417	34.41	19	20.95	155	12.92	9.41	1.6	1.2	30	2	61	.09	3	.5	.7	23	SF2	
		20	1514	21.74	19	23.43	155	17.08	3.09	1.4	1.2	20	3	47	.09	0	.3	.3	13	SSC	
		20	1516	37.17	19	23.97	155	16.97	2.89	1.9	2.3	27	4	75	.10	1	.3	.2	16	SSC	
		20	1658	21.05	19	23.18	155	17.17	2.22	1.6	1.4	21	2	62	.12	1	.3	.3	11	SSC	
		20	1811	37.40	19	9.70	155	30.80	11.27	2.3	1.3	25	0	126	.12	5	.6	.7	17	LSW	
		21	256	48.18	19	11.73	155	35.57	2.48	3.1	2.9	35	2	92	.17	11	.5	2.0	23	LSW	
		21	427	32.10	19	24.05	155	16.12	3.24	1.1	1.0	14	2	113	.09	1	.4	.4	7	SEC	
		21	638	17.34	19	19.68	155	15.38	6.75	1.4	1.1	27	3	102	.10	4	.5	.9	17	SF1	
		21	643	13.43	19	20.42	155	11.92	9.40	1.5	1.3	35	2	75	.12	5	.5	.7	27	SF3	
		21	2058	34.38	19	20.82	155	10.12	8.10	1.7	1.3	29	3	71	.09	2	.5	.7	20	SF3	
		22	627	48.64	19	25.53	155	37.67	2.67	3.2	2.6	32	1	94	.11	4	.4	1.0	21	MLO	
		22	1727	29.80	19	11.35	155	36.18	6.82	2.3	1.6	40	6	93	.19	7	.5	1.1	32	LSW	
		22	2116	.71	19	24.16	155	27.46	10.00	2.3	1.8	41	1	44	.11	3	.4	.6	28	KAO	
		23	1050	48.99	19	18.58	155	14.95	9.72	2.2	2.1	42	2	134	.11	5	.5	.5	27	SF1	
		23	1237	55.27	19	23.62	155	16.68	2.87	1.8	1.8	25	4	49	.09	1	.3	.2	15	SSC	
		23	1516	15.08	19	31.37	155	39.83	6.98	2.7	2.4	40	3	83	.12	8	.4	.8	18	MLO	
		24	135	31.35	19	23.52	155	16.79	3.18	2.1	2.4	34	5	36	.09	0	.2	.2	22	SSC	
		24	139	37.16	19	13.60	155	20.14	31.01	2.5	2.2	48	3	161	.10	7	.7	.9	38	DEP	
		24	326	34.95	19	20.18	155	11.57	8.23	1.8	1.4	29	2	81	.07	5	.5	.8	18	SF3	
		24	334	37.15	19	17.99	155	23.40	3.02	.8	1.1	16	2	100	.08	4	.4	.8	12	SWR	
		24	352	18.76	19	19.90	155	7.35	6.94	1.4	1.2	27	3	104	.11	5	.5	1.1	15	SF4	
		24	740	14.84	19	23.22	155	16.79	3.07	1.8	2.1	23	4	43	.10	0	.3	.3	15	SSC	
		24	844	15.71	19	24.89	155	16.92	1.74	1.7	2.1	17	2	144	.09	0	.3	.2	10	SNC	F
		24	931	45.88	19	36.09	155	38.46	2.83	1.7	1.4	15	0	153	.12	13	1.4	41.7	8	KEA	*
		24	1840	9.30	19	24.99	155	17.06	1.56	2.7	3.5	34	2	39	.12	0	.2	.2	27	SNC	F
		24	1932	41.01	19	25.39	155	16.64	1.73	1.9	2.2	21	1	122	.11	1	.4	.3	14	SNC	
		25	528	31.87	19	24.74	155	17.10	1.19	1.3	1.6	9	0	79	.05	0	.3	.2	8	SNC	
		25	843	11.47	19	21.97	155	25.01	10.18	2.1	2.0	34	2	39	.11	4	.4	.8	22	SWR	
		25	935	13.69	19	23.88	155	15.79	3.58	1.7	1.8	23	3	108	.06	1	.3	.3	15	SEC	
		25	1049	32.09	19	25.97	155	37.56	2.61	2.9	2.3	24	1	93	.12	3	.5	.9	17	MLO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	FEB	25	1216	28.02	19	13.75	155	30.80	8.91	2.2	1.6	24	1	131	.14	3	.6	1.0	8	LSW	
		25	2024	16.41	19	23.38	155	23.55	10.93	1.8	1.8	36	3	36	.08	4	.4	.5	21	KAO	
		25	2236	14.94	19	19.35	155	11.26	6.80	1.6	1.2	32	4	100	.10	6	.4	.8	16	SF3	
		26	428	48.59	19	13.84	155	34.74	7.80	2.3	1.8	34	3	97	.20	5	.6	1.1	20	LSW	
		26	527	32.53	19	13.97	155	36.52	8.90	2.2	1.9	31	3	138	.21	2	.6	.9	23	LSW	
		26	626	11.43	19	20.81	155	7.52	8.63	2.4	2.4	39	4	86	.11	5	.4	.6	25	SF4	
		26	639	35.85	19	20.11	155	9.92	7.01	1.8	1.2	27	3	82	.09	4	.5	.9	18	SF3	
		26	828	11.62	19	23.77	155	16.81	2.66	1.3	1.3	11	1	77	.07	2	.4	.6	10	SSC	
		26	9 4	27.24	19	23.61	155	16.61	2.79	1.3	1.2	15	2	78	.12	1	.4	.3	9	SSC	
		26	1115	14.52	19	23.60	155	16.77	2.84	1.2	1.0	18	3	74	.09	1	.3	.2	8	SSC	
		26	1318	14.37	19	10.80	155	33.31	7.29	2.4	2.4	30	1	134	.15	10	.5	.9	21	LSW	
		26	1627	17.84	19	23.13	155	16.96	3.27	1.3	1.4	15	2	70	.12	0	.4	.4	8	SSC	
		26	1736	55.66	19	19.67	155	8.09	6.79	1.5	1.1	25	3	90	.11	4	.5	1.0	18	SF4	
		26	1821	47.21	19	23.84	155	15.73	3.50	1.3	1.4	16	4	105	.12	2	.4	.5	8	SEC	
		26	1947	51.62	19	23.72	155	16.72	2.61	1.8	1.7	23	4	73	.08	1	.3	.2	14	SSC	
		26	1950	31.68	19	23.60	155	16.82	3.07	1.9	2.2	27	4	68	.11	0	.2	.3	18	SSC	
		27	3 7	33.20	19	12.90	155	32.01	8.46	1.9	1.8	28	1	130	.13	5	.5	1.0	21	LSW	
		27	551	46.70	19	15.62	155	23.43	35.17	2.7	2.3	38	3	121	.10	3	.8	1.2	34	DEP	
		27	717	26.92	19	20.27	155	13.26	7.63	1.7	1.4	24	2	64	.08	4	.5	.8	15	SF2	
		27	2244	4.73	19	23.55	155	16.79	3.39	1.6	1.8	22	3	69	.09	0	.3	.3	12	SSC	
		28	129	5.99	19	23.69	155	16.67	2.88	1.4	1.3	19	3	79	.10	1	.3	.3	13	SSC	
		28	2 9	40.71	19	23.35	155	16.83	2.92	1.2		16	3	65	.09	0	.3	.3	11	SSC	
		28	214	38.54	19	23.54	155	16.85	2.83	1.4	1.3	21	4	66	.09	0	.3	.2	8	SSC	
		28	250	4.08	19	23.64	155	16.96	3.59	1.7	1.9	21	3	63	.10	1	.3	.4	12	SSC	
		28	344	30.17	19	23.89	155	16.57	2.73	2.1	2.3	29	4	83	.10	1	.2	.2	15	SSC	
		28	352	37.80	19	23.45	155	16.66	3.42	1.9	1.9	23	3	72	.12	1	.3	.4	16	SSC	
		28	356	50.51	19	23.63	155	17.71	3.84	1.0	1.0	11	3	125	.12	1	.7	.7	6	SSC	
		28	425	51.94	19	23.28	155	16.70	3.15	2.3	2.7	31	3	39	.11	0	.3	.3	23	SSC	
		28	439	3.99	19	23.41	155	16.77	3.01	1.7	2.1	24	4	68	.10	0	.3	.3	16	SSC	
		28	541	47.21	19	23.63	155	16.84	3.14	1.1	.9	15	3	72	.09	1	.4	.3	8	SSC	
		28	554	19.78	19	23.53	155	16.81	2.93	1.4	1.3	19	4	68	.09	0	.3	.3	12	SSC	
		28	747	40.99	19	20.15	155	11.50	7.85		1.5	13	0	193	.08	5	1.1	1.5	11	SF3	
		28	756	46.43	19	23.43	155	16.86	2.87	1.8	1.8	14	1	66	.07	3	.4	.5	12	SSC	
		28	1714	31.64	19	20.13	155	6.36	8.72	2.1	1.9	29	1	153	.08	5	.5	.6	21	SF4	
		28	2228	40.41	19	19.73	155	9.83	6.45	2.2	2.1	34	3	144	.11	4	.6	1.1	26	SF3	
	MAR	1	139	54.80	20	13.11	155	51.54	1.20	2.1	1.5	20	0	315	.08	64	14.1	18.4	15	KOH	
		1	612	55.24	19	17.68	155	23.12	3.04	1.1	1.1	13	1	101	.06	5	.4	.9	8	SWR	
		1	856	36.47	19	24.25	155	25.06	10.04	1.4	1.0	26	3	46	.09	6	.4	.8	18	KAO	
		1	18 7	16.51	19	21.68	155	6.00	8.13	1.6	1.6	31	3	83	.10	3	.4	.6	18	SF4	
		1	2129	3.38	19	20.61	155	12.76	7.89	1.7	1.1	29	2	66	.12	4	.5	.7	17	SF2	
		1	2135	18.06	18	30.28	154	4.37	35.21	2.9	2.4	39	3	324	.11	137	2.5	3.2	31	DIS	
		2	341	.98	19	53.89	155	23.16	30.93	2.2	1.7	34	3	238	.09	5	1.3	1.7	20	KEA	
		2	453	30.73	19	23.00	155	17.02	2.72	.9	.8	11	1	73	.04	1	.3	.4	6	SSC	
		2	1026	6.35	19	19.34	155	13.41	6.57	2.0	1.8	42	3	71	.17	4	.5	1.0	27	SF2	
		2	1614	42.02	19	20.38	155	13.44	8.61	1.5	1.3	32	3	61	.11	4	.5	.7	18	SF2	
		2	2041	29.91	19	20.60	155	11.43	8.52	1.7	1.4	33	4	75	.10	4	.4	.6	18	SF3	
		2	2124	36.58	19	20.50	155	12.80	8.46	1.5	1.5	31	4	67	.11	4	.5	.8	22	SF2	
		3	132	1.51	19	18.46	155	12.84	10.03	2.5	2.6	45	5	100	.12	3	.5	.5	31	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAR	3	231	55.04	19	16.14	155	22.23	9.01	2.0	2.1	37	2	136	.11	5	.4	.6	24	SWR
		3	3 9	12.63	19	10.11	155	16.81	48.72	2.3	2.4	31	2	232	.23	14	1.8	2.8	4	DEP L
		3	636	19.68	19	30.12	155	58.34	8.92	2.8	2.3	16	0	291	.09	22	6.6	2.3	13	KON
		3	735	37.98	19	23.87	155	16.77	2.66	1.6	1.6	14	1	81	.06	2	.3	.5	10	SSC
		3	943	13.50	19	23.55	155	16.70	3.34	1.3	1.2	19	3	74	.08	1	.3	.3	13	SSC
		3	10 9	6.34	19	23.64	155	16.71	2.92	1.8	1.8	26	4	77	.11	1	.3	.2	16	SSC F
		3	1020	27.80	19	23.72	155	16.83	3.15	2.7	3.0	38	4	35	.12	1	.3	.3	26	SSC F
		3	1045	24.94	19	23.36	155	16.77	2.99	2.6	3.0	39	5	38	.11	0	.2	.3	29	SSC F
		3	1049	8.19	19	23.75	155	16.85	2.92	1.1	.9	15	3	75	.06	1	.4	.3	7	SSC
		3	1248	54.34	19	23.59	155	16.93	3.08	1.1	.9	17	3	68	.08	0	.3	.3	9	SSC
		3	1313	36.37	19	24.02	155	17.13	2.58	1.1	1.2	18	5	69	.07	1	.3	.2	10	SSC
		3	1349	10.41	19	25.69	155	37.71	2.08	2.7	2.7	35	3	95	.13	4	.4	.8	23	MLO
		3	1425	27.30	19	25.05	155	17.37	1.70	1.8	1.9	16	3	121	.09	1	.4	.2	11	SNC
		3	1436	55.53	19	23.15	155	16.81	3.37	1.7	1.6	18	3	61	.08	1	.3	.4	12	SSC
		3	1447	54.16	19	23.32	155	16.77	3.05	1.2	1.0	17	4	66	.08	0	.3	.3	12	SSC
		3	15 1	57.32	19	23.35	155	17.03	2.62	1.3	1.1	17	3	62	.06	0	.3	.3	8	SSC
		3	1648	28.91	19	24.03	155	16.86	2.99	1.3	1.0	16	4	82	.07	1	.3	.3	10	SSC
		3	17 0	5.79	19	23.43	155	16.80	3.07	1.9	2.2	24	4	69	.09	0	.2	.3	16	SSC
		3	1729	12.52	19	23.38	155	16.84	3.33	1.8	2.1	28	4	65	.09	0	.2	.3	13	SSC
		3	1859	13.72	19	19.83	155	8.74	8.44	1.7	1.6	34	3	75	.07	5	.4	.6	21	SF4
		3	2245	9.73	19	26.63	155	30.50	14.38	2.1	2.2	24	0	69	.23	8	.9	1.4	2	DML L
		4	328	2.22	19	17.60	155	20.92	8.70	1.3	1.2	23	3	126	.11	4	.5	.8	11	SWR
		4	357	41.12	19	54.70	155	18.94	11.05	1.4	1.5	17	2	257	.10	4	2.1	.6	11	KEA
		4	1454	58.33	19	58.87	155	19.72	10.43	2.6	2.4	34	4	204	.11	10	.9	.6	17	KEA
		4	2039	16.96	19	15.86	155	22.73	6.19	2.0	2.1	40	2	135	.11	4	.4	.8	25	SWR
		5	034	17.89	19	19.76	155	9.75	6.61	1.7	1.6	27	3	89	.09	4	.4	.9	17	SF3
		5	254	53.09	19	23.89	155	16.67	2.78	1.4	1.7	23	3	79	.10	1	.3	.2	13	SSC
		5	453	20.78	19	25.43	155	29.59	10.84	2.5	2.3	45	3	36	.10	6	.3	.4	39	KAO
		5	850	45.29	19	13.86	155	34.45	8.32	2.6	1.9	36	1	113	.18	5	.5	.9	23	LSW
		5	1140	37.60	19	19.60	155	7.01	8.12	1.9	1.6	30	3	117	.09	4	.4	.7	22	SF4
		5	1227	19.09	19	26.58	155	50.97	9.98	2.6	1.8	24	3	118	.15	9	.6	.7	9	KON
		5	1444	2.50	19	17.44	155	13.19	6.74	1.8	1.7	30	3	122	.11	1	.5	.7	18	SF2
		6	042	44.59	19	21.74	155	30.12	8.84	1.5	1.2	25	1	74	.10	5	.4	1.0	18	KAO
		6	7 8	17.56	19	20.69	155	12.97	8.31	1.4	1.9	30	2	63	.11	4	.5	.7	18	SF2
		6	1015	41.61	19	23.42	155	16.94	3.15	1.2	1.2	17	4	65	.07	0	.3	.3	13	SSC
		6	1429	53.95	19	23.52	155	16.74	3.07	2.4	2.9	40	4	43	.10	0	.3	.3	29	SSC
		6	2035	25.01	19	20.76	155	3.21	4.95	2.0	1.8	27	0	103	.12	2	.5	1.0	20	SSF
		7	1116	26.72	19	17.26	155	14.70	7.17	1.6	1.3	29	1	162	.10	2	.6	.9	17	SF1
		7	1231	35.13	19	22.12	155	3.02	8.79	3.2	3.2	46	3	113	.10	4	.5	.4	40	SFS
		7	1311	57.27	19	20.16	155	11.36	8.06	1.9	1.8	38	5	82	.11	4	.4	.7	24	SF3
		7	1435	.33	19	23.90	155	16.76	2.96	1.5	1.4	19	5	83	.06	1	.3	.3	10	SSC
		7	1447	10.46	19	24.02	155	16.84	.86	1.0	1.2	9	2	113	.09	2	.3	.6	4	SEC
		7	1516	45.62	19	24.98	155	16.97	2.58	1.8	2.1	23	2	73	.08	0	.3	.2	12	SNC
		7	1622	8.89	19	24.02	155	17.13	2.94	1.2	1.1	16	4	68	.09	1	.4	.3	10	SSC
		7	1629	5.83	19	23.80	155	17.01	2.84	1.6	1.9	24	5	62	.07	1	.2	.2	14	SSC
		7	1648	34.55	19	24.51	155	16.16	1.78	1.9	2.3	21	3	114	.09	2	.3	.3	12	SEC
		7	2234	48.23	19	18.13	155	15.32	4.86	1.3	1.1	30	2	113	.13	4	.4	1.2	18	SSF
		8	036	7.44	19	20.25	155	8.78	8.28	1.5	1.3	20	3	102	.06	4	.5	.8	10	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAR	8	8 9	41.71	19	20.57	155	5.97	8.49	1.8	1.5	32	2	109	.09	5	.4	.6	20	SF4
		8	1256	54.50	19	23.13	155	.05	6.71	1.9	1.3	23	2	159	.14	4	.8	1.1	14	SFS
		8	2156	35.24	19	21.97	155	14.02	26.08	1.9	1.3	37	1	55	.08	2	.6	1.1	32	DEP
		9	124	1.47	19	23.54	155	16.95	3.12	1.2	1.2	15	3	66	.05	0	.3	.3	8	SSC
		9	130	45.30	19	23.84	155	16.72	2.82	2.0	2.2	30	4	68	.11	1	.3	.2	14	SSC
		9	259	46.44	19	27.25	155	28.30	8.93	2.0	1.3	36	1	54	.09	7	.3	.8	24	KAO
		9	311	13.94	19	20.04	155	7.39	7.40	2.0	1.3	38	5	101	.14	5	.3	.8	25	SF4
		9	324	21.01	19	23.22	155	16.77	2.96	1.2	1.2	14	3	64	.06	0	.3	.4	11	SSC
		9	337	17.77	19	23.33	155	16.98	3.10	1.4	1.2	16	3	46	.09	0	.4	.3	8	SSC
		9	4 6	5.79	19	24.11	155	15.93	3.24	1.2	1.2	13	3	119	.06	2	.3	.4	9	SEC
		9	5 1	19.70	19	23.43	155	16.71	2.89	2.2	2.9	34	4	38	.10	0	.2	.3	26	SSC
		9	648	29.96	19	23.26	155	16.95	2.80	1.0	.9	14	4	60	.25	0	.7	.5	9	SSC
		9	719	12.58	19	23.84	155	16.85	3.10	1.3	1.2	18	4	77	.09	1	.3	.2	11	SSC
		9	744	47.73	19	26.41	155	15.73	1.50	1.3	1.1	14	4	203	.04	4	.4	.6	7	SNC
		9	10 9	20.78	19	12.08	155	32.80	7.62	2.2	2.2	36	5	90	.17	7	.6	.9	28	LSW
		9	1014	39.23	19	23.69	155	17.07	3.14	1.3	1.2	18	3	62	.11	1	.3	.3	9	SSC
		9	11 6	17.65	19	20.93	155	13.05	8.98	2.0	2.0	38	4	61	.10	3	.4	.5	30	SF2
		9	1118	35.36	19	23.40	155	16.83	2.86	1.1	1.2	15	3	53	.05	0	.3	.2	8	SSC
		9	1155	50.47	19	23.68	155	16.74	2.69	2.3	2.4	34	3	35	.12	0	.3	.2	25	SSC
		9	1417	26.82	19	20.96	155	10.67	8.05	1.7	1.1	30	5	70	.08	2	.4	.7	16	SF3
		9	15 3	24.06	19	23.46	155	16.79	2.78	2.7	2.9	40	3	37	.12	0	.2	.2	34	SSC
		9	15 8	8.45	19	23.42	155	16.79	2.97	2.2	2.4	34	3	37	.10	0	.2	.2	24	SSC
		9	1952	13.44	19	21.61	155	15.15	8.80	2.2	1.9	46	6	63	.12	2	.4	.5	30	SF1
		9	2019	21.71	19	11.87	155	28.19	9.49	2.1	2.2	33	0	99	.13	4	.5	.7	27	LSW
		10	112	33.93	19	21.11	155	13.22	8.91	2.5	2.5	47	4	57	.12	3	.4	.5	38	SF2
		10	214	24.54	19	25.63	155	25.08	4.31	1.5	.9	32	3	50	.12	1	.3	.8	18	KAO
		10	214	46.73	19	25.49	155	25.08	4.43	1.8	1.8	32	3	49	.12	0	.3	.8	17	KAO
		10	1053	3.72	19	19.78	155	7.67	8.21	2.2	1.8	38	4	99	.10	5	.4	.7	27	SF4
		10	17 5	26.98	19	26.34	154	55.60	6.44	2.0	1.3	26	2	153	.13	6	.8	1.3	19	LER
		10	1952	33.22	19	21.16	155	1.81	6.34	1.8	1.4	25	4	171	.10	3	.6	1.0	17	SFS
		11	130	1.59	19	18.59	155	13.69	9.40	3.0	3.1	46	4	69	.10	3	.4	.4	36	SF2
		11	131	16.53	19	21.29	155	6.38	6.51	1.7	1.2	31	4	89	.14	3	.5	1.0	19	SF4
		11	233	19.74	19	11.11	155	32.66	9.05	2.1	1.3	28	0	176	.13	9	.8	.6	20	LSW
		11	1219	42.32	19	19.13	155	9.96	6.08	1.6	1.1	23	2	105	.09	5	.5	1.2	14	SF3
		11	1548	7.88	19	19.06	155	1.67	37.18	2.7	2.5	44	1	200	.10	3	1.0	1.4	41	DEP
		11	1925	18.62	19	18.24	155	15.84	9.20	2.7	2.7	45	2	137	.12	4	.5	.5	36	SF1
		11	2135	14.76	19	20.23	155	9.99	8.19	1.6	1.4	28	5	124	.08	5	.6	.7	18	SF3
		12	138	56.91	19	20.42	155	10.96	8.67	2.0	1.2	28	3	78	.08	4	.5	.7	17	SF3
		12	559	28.35	19	18.82	155	13.95	7.38	1.5	1.3	31	2	80	.11	3	.5	1.0	19	SF2
		12	939	34.81	19	19.46	155	9.92	7.83	2.5	2.6	32	1	97	.10	5	.4	.7	24	SF3
		12	10 9	22.76	19	19.27	155	9.70	8.60	1.8	1.1	29	3	99	.10	5	.5	.9	18	SF3
		13	0 7	54.08	19	11.64	155	36.55	8.54	2.1	1.2	27	1	92	.18	6	.6	1.1	20	LSW
		13	027	22.88	19	16.25	155	23.66	7.71	1.9	1.3	21	2	106	.12	4	.5	1.4	16	SWR
		13	045	41.74	19	21.95	155	1.90	8.49	2.3	1.9	31	1	153	.11	4	.7	.6	19	SFS
		13	132	7.84	19	18.45	155	15.54	8.05	2.3	1.8	39	2	135	.11	5	.5	.7	26	SF1
		13	726	3.76	19	19.27	155	15.42	7.98	1.6	1.4	32	1	99	.09	4	.5	.7	22	SF1
		13	10 0	5.91	19	24.53	155	13.62	2.01	1.8	1.2	16	2	118	.10	5	.6	1.1	10	SER
		13	1525	29.86	19	20.38	155	6.86	8.35	2.8	2.8	43	2	102	.10	5	.4	.5	31	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAR	13	1645	16.96	19	19.54	155	6.97	8.53	2.1	1.5	35	2	120	.09	4	.5	.6	25	SF4
		13	1731	58.00	19	23.98	155	16.74	2.98	2.2	2.4	28	3	68	.11	0	.3	.2	19	SSC
		13	2259	33.55	19	23.82	155	16.77	2.94	1.6	1.3	18	3	73	.07	0	.4	.2	13	SSC
		13	2322	42.34	19	23.74	155	16.70	2.66	1.9	2.0	29	5	45	.12	0	.3	.2	16	SSC
		14	253	8.75	19	23.40	155	16.84	2.55	2.2	2.1	23	1	45	.10	3	.3	.5	21	SSC
		14	438	27.47	19	23.31	155	16.73	4.03	1.6	1.2	15	1	67	.08	2	.4	.8	13	SSC
		14	517	15.77	19	22.61	155	16.90	2.74	1.6	1.3	18	1	51	.10	2	.3	.6	15	SSC
		14	712	28.48	19	23.31	155	16.85	2.89	2.5	2.4	23	1	45	.11	2	.3	.5	20	SSC
		14	1236	50.07	19	22.31	155	1.65	8.30	1.9	1.1	26	2	154	.09	5	.7	.4	23	SF5
		15	1313	55.68	19	23.42	155	17.25	2.28	1.5	1.3	13	1	56	.07	3	.3	.6	11	SSC
		15	1321	38.59	19	23.23	155	16.94	2.46	.9	1.0	12	1	60	.09	2	.4	.6	8	SSC
		15	1448	37.88	19	23.99	155	16.67	2.74	1.5	1.4	14	1	90	.06	2	.3	.4	12	SSC
		15	1630	58.73	19	23.40	155	16.85	3.12	1.6	1.4	14	1	66	.03	3	.3	.5	11	SSC
		15	2141	35.58	19	18.70	155	13.27	10.84	3.5	3.7	38	2	128	.11	7	.6	.5	32	SF2 F
		16	210	40.08	19	18.86	155	15.42	8.26	1.8	1.1	20	0	120	.11	4	.6	.7	20	SF1
		16	315	9.68	19	23.52	155	16.62	3.01	1.7	1.7	16	1	74	.07	2	.4	.5	15	SSC
		16	1056	19.92	19	23.59	155	16.86	2.55	1.4	1.0	13	1	70	.09	2	.3	.5	11	SSC
		16	1139	49.09	19	23.81	155	15.67	3.03	1.4	1.2	17	1	103	.10	3	.4	.5	13	SEC
		16	1355	45.12	19	18.95	155	13.79	7.53	1.7	1.5	25	0	88	.12	4	.6	.8	21	SF2
		16	1413	9.83	19	19.63	155	13.87	7.48	2.8	3.0	33	2	79	.10	5	.4	.6	30	SF2
		16	1546	19.05	19	23.46	155	16.82	2.87	.9	1.0	13	1	68	.08	3	.4	.6	9	SSC
		16	1826	19.06	19	23.35	155	16.77	3.29	2.2	2.3	19	1	67	.06	2	.3	.5	18	SSC
		16	19 6	55.80	19	23.58	155	16.76	2.63	1.1	.9	12	1	73	.06	3	.3	.5	11	SSC
		16	2211	10.52	19	23.15	155	16.67	3.30	1.4	1.2	13	2	65	.05	2	.4	.5	11	SSC
		17	1741	6.87	19	17.98	155	22.13	7.42	1.7	1.2	22	0	162	.11	5	.7	.9	16	SWR
		17	1856	12.95	19	23.97	155	15.80	2.86	1.5	1.6	12	0	113	.07	3	.4	.5	8	SEC
		17	2012	14.39	19	24.06	155	28.44	9.55	2.1	2.0	30	0	47	.12	3	.4	.7	24	KAO
		18	722	11.22	19	13.50	155	36.92	8.53	2.7	2.4	26	0	199	.21	3	1.3	1.0	22	LSW
		18	931	12.32	19	18.91	155	15.76	7.55		1.1	17	0	122	.08	4	.5	.8	12	SF1
		18	1017	48.50	19	20.72	155	12.72	8.51	1.5	1.8	24	1	65	.07	4	.5	.8	19	SF2
		18	1049	12.56	19	25.66	155	16.44	2.41	2.7	3.4	20	1	117	.11	2	.5	.3	15	SNC F
		18	1054	40.24	19	25.91	155	16.00	1.99	2.0	2.1	13	1	146	.05	3	.5	.5	10	SNC F
		18	1120	17.50	19	26.28	155	15.91	1.80	2.1	2.6	20	1	150	.10	3	.5	.7	14	SNC F
		18	1153	8.50	19	19.69	155	8.67	6.21		1.2	18	0	77	.08	5	.5	1.4	11	SF4
		18	1410	19.71	19	25.42	155	16.49	2.00	2.5	2.9	27	1	48	.08	1	.5	.2	15	SNC F
		18	15 7	8.65	19	25.50	155	16.39	1.92	2.8	3.4	34	1	38	.10	2	.3	.3	21	SNC F
		18	16 7	6.08	19	17.54	155	20.66	9.27	2.4	2.4	42	4	127	.11	4	.4	.5	23	SWR
		19	010	19.22	19	19.01	155	15.14	8.90	2.8	2.6	43	3	89	.13	4	.5	.6	24	SF1
		19	7 7	47.79	19	18.96	155	14.89	6.97	1.6	1.2	29	1	98	.11	4	.5	.8	18	SF1
		19	940	8.68	19	21.74	155	2.45	7.30	1.4	1.0	21	3	134	.11	4	.7	.9	12	SF5
		19	1714	.29	19	17.87	155	14.26	7.96	1.7	1.5	27	2	100	.10	2	.5	.8	18	SF2
		19	1912	15.24	19	10.93	155	33.30	7.58	2.6	2.6	32	2	134	.15	10	.5	1.0	22	LSW F
		19	2031	44.47	19	26.12	154	54.00	4.75	1.4	1.0	21	1	170	.12	5	1.0	4.4	12	SLE
		20	551	8.60	19	19.99	155	10.70	8.91	1.8	1.5	28	3	87	.08	4	.5	.8	19	SF3
		20	1310	22.30	19	20.53	155	16.84	36.16	3.9	4.3	45	2	77	.10	1	.6	1.1	42	DEP F
		20	1437	54.05	19	19.97	155	16.88	33.80	2.2	1.7	39	4	88	.09	1	.8	1.0	33	DEP
		20	1554	30.48	19	17.84	155	28.01	9.73	1.3	1.5	24	2	47	.11	6	.4	.9	15	LSW
		20	1947	55.28	19	20.83	155	13.33	9.00	1.6	1.8	28	2	58	.10	3	.5	.7	19	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAR	20	20 8	19.05	19	19.37	155	11.58	6.90	1.4	1.0	23	2	98	.07	5	.4	.9	16	SF3
		20	2223	5.52	19	19.38	155	16.26	7.54	1.7	1.7	28	2	105	.09	2	.4	.8	18	SF1
		21	359	47.15	19	42.53	155	45.78	15.80	2.3	2.1	30	2	104	.09	8	.4	.9	12	HUA
		21	425	59.74	19	19.20	155	13.80	7.94	1.4	1.2	31	3	84	.08	4	.4	.7	17	SF2
		21	855	34.36	19	20.06	155	11.45	9.17	1.8	1.6	30	3	84	.07	5	.4	.6	19	SF3
		21	1043	.63	19	19.46	155	10.06	8.52	1.8	1.8	30	3	98	.08	5	.5	.8	21	SF3
		21	2238	38.33	19	21.04	155	6.25	8.33	2.6	2.5	35	2	95	.09	4	.4	.5	23	SF4
		21	2348	55.70	19	18.57	155	14.01	5.98	1.6	1.6	27	2	85	.11	3	.4	1.0	16	SF2
		22	049	45.50	19	18.62	155	14.25	7.47	1.8	1.6	29	1	81	.12	3	.5	.9	15	SF2
		22	456	19.13	19	23.38	155	16.92	2.71	1.2	1.2	9	1	87	.07	3	.5	1.0	8	SSC
		22	7 8	.20	19	19.02	155	16.20	7.10	1.7	1.3	24	3	111	.10	3	.5	.9	13	SF1
		22	915	50.30	19	21.12	155	2.50	6.53	2.7	2.7	36	4	141	.11	2	.4	.6	23	SF5
		22	1026	1.68	19	23.60	155	16.99	3.54	1.6	1.3	12	2	83	.06	2	.5	.8	8	SSC
		22	1213	57.33	19	23.73	155	15.79	2.43	2.1	2.3	23	3	79	.10	3	.3	.5	19	SEC F
		22	1621	28.88	19	28.38	155	14.56	26.63	2.7	2.4	45	5	53	.11	7	.5	.9	37	DEP F
		22	1740	41.69	19	23.89	155	16.72	3.40	2.2	2.4	25	0	43	.10	2	.3	.6	20	SSC
		22	1911	1.62	19	18.88	155	15.12	6.65	1.8	1.3	25	2	94	.12	5	.5	1.0	17	SF1
		22	1916	9.60	19	21.30	155	18.50	2.74	2.1	2.6	21	2	47	.10	3	.3	.7	13	SWR
		22	1927	48.83	19	19.66	155	13.90	8.96	1.9	1.2	27	2	71	.08	5	.5	.8	15	SF2
		22	1942	38.19	19	13.16	155	33.82	8.11	2.4	1.6	28	1	121	.18	7	.7	.9	17	LSW
		22	1945	18.39	19	21.05	155	18.50	2.89	1.5	2.0	15	1	52	.09	3	.4	.7	7	SWR
		23	9 5	4.58	19	23.55	155	17.46	5.24	1.3	1.1	11	2	118	.07	3	.9	1.8	5	INT
		23	1139	44.91	19	23.12	155	16.95	2.94	1.2	1.0	17	3	63	.07	1	.4	.3	8	SSC
		23	12 0	3.64	19	23.09	155	16.96	2.86	1.0	1.0	14	3	64	.06	1	.4	.4	7	SSC
		23	12 8	7.21	19	23.10	155	17.20	2.46	.8	.9	13	3	65	.25	1	.6	.5	9	SSC
		23	1242	31.75	19	24.76	155	16.78	10.65	1.4	.9	18	2	140	.14	0	.8	1.2	8	INT
		23	15 9	9.61	19	23.04	155	16.84	2.95	1.5	1.2	21	4	47	.08	1	.5	.3	11	SSC
		23	1511	16.76	19	23.16	155	16.87	3.21	1.2	.8	17	3	55	.10	0	.4	.3	8	SSC
		23	1512	22.73	19	23.42	155	16.71	3.09	2.1	2.0	27	4	48	.07	0	.5	.2	16	SSC
		23	1514	2.85	19	23.08	155	16.79	3.10	1.2	1.0	18	3	46	.09	1	.4	.3	8	SSC
		23	1517	2.39	19	23.37	155	16.94	3.42	1.3	.5	15	2	55	.12	0	.4	.3	10	SSC
		23	1518	58.18	19	23.09	155	17.42	3.09	1.4	1.0	13	3	114	.07	1	.4	.3	6	SSC
		23	1520	5.07	19	23.18	155	16.95	3.08	1.3	1.0	15	3	78	.07	0	.4	.3	8	SSC
		23	1521	48.35	19	23.24	155	16.99	2.62	1.1	1.0	13	3	80	.06	1	.3	.4	7	SSC
		23	1522	27.45	19	23.09	155	16.95	2.94	1.7	1.2	18	3	47	.08	1	.3	.3	11	SSC
		23	1523	55.24	19	20.57	155	6.80	8.70	1.9	2.0	27	3	99	.11	5	.6	.8	18	SF4
		23	1527	2.31	19	23.07	155	16.77	2.95	1.6	1.0	13	2	66	.08	1	.4	.3	10	SSC
		23	1528	1.15	19	23.19	155	16.89	2.95	2.3	2.2	23	2	46	.09	0	.3	.3	12	SSC
		23	1534	31.08	19	23.13	155	16.81	2.86	2.1	1.7	29	4	39	.09	1	.3	.3	18	SSC
		23	1535	6.56	19	23.17	155	16.88	3.08	1.8	1.2	15	3	61	.05	0	.3	.3	11	SSC
		23	1537	23.63	19	23.37	155	16.89	3.06	1.2	.8	15	3	59	.06	0	.4	.3	7	SSC
		23	1537	58.78	19	23.25	155	16.68	3.15	2.6	2.4	30	2	40	.10	1	.3	.3	20	SSC
		23	1539	34.20	19	23.55	155	16.68	3.10	2.5	2.3	29	3	49	.12	1	.3	.2	18	SSC
		23	1545	40.57	19	23.61	155	16.81	2.90	1.8	1.9	23	4	42	.08	1	.3	.2	14	SSC
		23	1552	25.72	19	23.89	155	16.74	2.73	1.2	1.0	16	3	83	.09	0	.4	.3	10	SSC
		23	1554	32.02	19	23.98	155	17.16	2.98	1.1	1.0	14	3	81	.08	1	.5	.4	7	SSC
		23	1610	34.36	19	23.74	155	16.88	2.78	1.4	1.2	14	3	99	.06	1	.4	.3	8	SSC
		23	1823	57.91	19	19.14	155	28.51	9.23	1.9	2.0	34	1	40	.12	6	.4	.8	19	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAR	23	22 4	56.33	19	20.64	155	12.67	8.25	1.8	1.5	31	3	66	.09	4	.5	.7	22	SF2
		24	219	57.13	19	19.11	155	13.40	8.09	1.7	1.8	35	2	74	.12	4	.5	.8	22	SF2
		24	221	25.84	19	19.09	155	13.57	8.96	2.6	2.5	42	4	69	.12	4	.4	.4	30	SF2
		24	233	53.82	19	16.15	155	23.50	6.18	2.3	2.1	37	1	111	.12	4	.4	.8	27	SWR
		24	239	28.31	19	15.71	155	23.11	6.48	1.9	1.8	27	3	131	.10	3	.4	.8	19	SWR
		24	240	53.31	19	15.66	155	23.56	6.84	1.9	1.5	23	2	117	.11	3	.5	1.1	15	SWR
		24	241	42.59	19	19.04	155	13.22	7.40	1.7	1.5	32	2	79	.11	4	.5	.9	22	SF2
		24	1237	12.51	19	18.50	155	18.40	33.62	2.6	2.6	47	3	95	.10	1	.6	1.0	43	DEP
		24	1251	7.51	19	18.01	155	17.84	32.06	1.5	.9	26	0	135	.07	1	.9	1.3	19	DEP
		24	1440	37.14	19	58.58	155	35.45	44.03	2.8	2.0	40	2	159	.11	26	.9	2.0	32	KOH
		24	1754	53.57	19	23.82	155	16.84	2.85	1.4	1.4	16	4	77	.06	0	.4	.3	10	SSC
		24	2050	53.39	19	23.69	155	16.89	2.66	1.9	1.8	27	4	56	.11	1	.3	.2	16	SSC
		24	2059	33.03	19	23.65	155	16.88	2.72	1.2	1.0	14	3	58	.07	1	.4	.3	7	SSC
		25	050	30.78	19	23.43	155	16.76	2.69	.8	1.2	13	3	55	.08	0	.4	.3	8	SSC
		25	1033	34.58	19	24.28	155	16.25	3.26	1.2	1.2	13	3	125	.06	1	.5	.5	9	SEC
		25	1251	55.24	19	13.18	155	30.66	7.74	2.5	2.1	36	2	133	.17	4	.6	.9	21	LSW
		25	15 8	18.13	19	23.34	155	16.67	3.02	2.3	2.7	31	5	38	.09	0	.2	.2	22	SSC
		25	1621	58.66	19	18.33	155	18.27	33.43	2.0	1.6	40	2	118	.10	1	.7	1.0	33	DEP
		25	2020	50.99	19	21.03	155	7.48	8.80	2.6	2.8	43	5	84	.11	4	.4	.5	27	SF4
		25	2139	29.22	19	20.66	155	13.16	8.22	1.6	1.3	30	1	62	.10	4	.5	.7	17	SF2
		26	1 0	1.64	19	20.73	155	11.61	9.33	2.3	2.1	41	6	72	.09	4	.3	.5	24	SF3
		26	1 4	34.00	19	54.75	155	36.20	11.33	3.6	3.5	47	4	130	.13	21	.5	.6	28	KEA
		26	1122	45.56	19	25.83	155	37.25	3.25	2.8	2.9	34	2	78	.11	3	.4	1.0	26	MLO
		26	1314	46.88	20	15.08	156	35.09	.11	2.6	2.3	27	4	246	.12	67	2.5	.5	13	DIS
		26	1418	43.86	19	21.70	155	6.40	8.89	2.2	1.9	32	3	81	.08	2	.4	.8	21	SF4
		26	1426	57.49	19	19.23	155	15.42	7.52	1.4	1.0	24	3	100	.10	4	.5	1.0	14	SF1
		26	16 3	24.19	19	17.86	155	13.41	7.82	1.9	1.5	32	2	89	.11	2	.5	.8	20	SF2
		26	2029	8.23	19	20.55	155	12.72	9.53	1.8	1.8	33	2	67	.11	4	.4	.6	20	SF2
		27	358	8.44	19	25.64	155	37.66	2.03	2.2	1.8	22	1	94	.12	4	.4	1.1	13	MLO
		27	710	29.22	19	20.20	155	12.51	7.81	1.9	1.1	26	2	73	.10	5	.5	.9	19	SF2
		27	10 8	10.48	19	19.58	155	8.52	8.43	1.9	1.6	32	4	80	.08	4	.5	.7	18	SF4
		27	1332	12.59	19	20.74	155	12.84	8.29	2.1	1.9	36	3	63	.11	4	.4	.6	27	SF2
		27	15 8	20.07	19	18.30	155	18.32	33.12	2.4	1.8	41	1	117	.10	1	.7	1.1	36	DEP
		27	1555	6.66	19	22.38	155	1.50	8.14	2.1	1.8	33	3	147	.11	5	.5	.7	20	SF5
		28	045	6.37	19	22.22	155	5.92	8.14	1.8	1.1	24	4	73	.06	2	.4	.8	14	SF4
		28	656	20.22	19	19.65	155	6.48	8.22	1.8	1.1	24	3	127	.08	5	.5	1.0	13	SF4
		28	835	43.55	19	21.10	155	13.00	9.37	1.6	1.2	24	2	69	.06	3	.6	.8	18	SF2
		28	1039	47.28	19	19.73	155	11.43	9.94	2.9	2.8	41	3	91	.09	5	.4	.4	32	SF3
		28	1228	52.55	19	17.71	155	16.17	9.55	2.3	2.0	33	3	130	.08	4	.5	.6	21	SF1
		28	1358	19.94	19	17.24	155	12.60	7.64	1.5	1.1	22	2	168	.10	2	.7	1.2	10	SF2
		28	1557	40.87	19	11.66	155	35.80	8.17	2.3	1.2	25	2	92	.19	6	.6	1.2	11	LSW
		28	18 0	48.65	19	20.88	155	10.76	8.76	1.9	1.8	34	3	71	.10	3	.4	.6	23	SF3
		28	20 6	44.89	19	21.32	155	.85	3.84	1.4	1.3	25	1	187	.19	5	.9	2.1	10	SSF
		29	028	5.34	19	21.71	155	5.88	7.59	1.4	1.3	26	3	83	.12	3	.5	.6	15	SF4
		29	1430	8.55	19	20.18	155	8.40	7.40	1.8	1.3	31	4	79	.09	4	.4	.7	14	SF4
		30	1117	.37	19	58.79	155	20.30	13.15	1.9	1.3	18	3	203	.12	10	1.1	.6	9	KEA
		30	1125	39.02	19	18.77	155	13.20	6.01	1.4	1.1	25	1	83	.13	3	.6	1.5	20	SF2
		30	1214	50.92	19	15.70	155	27.97	9.30	1.4	1.1	20	2	68	.12	4	.5	.8	9	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAR	30	1339	24.33	19	17.76	155	14.98	8.46	1.7	1.5	36	4	120	.12	3	.5	.7	19	SF1
		30	1512	55.81	19	14.93	155	22.88	8.41	2.6	2.3	33	3	167	.11	2	.5	.6	21	SWR
		30	17 7	18.66	19	20.10	155	6.88	8.07	1.9	1.6	32	1	109	.11	5	.5	.9	19	SF4
		30	1818	52.58	19	20.29	155	12.68	9.48	1.7	1.6	32	4	70	.08	4	.5	.8	19	SF2
		31	0 1	22.69	19	15.39	155	22.84	6.30	2.2	1.9	23	1	166	.10	3	.8	1.5	15	SWR
		31	044	23.87	19	16.19	155	22.92	6.00	2.1	2.1	31	1	126	.14	4	.5	1.3	20	SWR
		31	757	27.29	19	59.73	155	24.91	11.63		1.5	10	2	215	.08	14	1.5	.8	7	KEA
		31	1717	1.33	19	18.15	155	13.29	8.09	2.0	2.0	41	6	91	.11	2	.4	.6	23	SF2
		31	1721	25.67	19	18.15	155	13.30	9.23	2.2	2.4	40	4	90	.11	2	.5	.4	24	SF2
		31	2324	32.39	19	20.72	155	11.47	9.80	2.0	1.6	35	4	73	.10	4	.4	.6	21	SF3
	APR	1	547	35.69	19	24.00	155	15.63	3.31	2.9	3.0	37	2	43	.09	2	.3	.3	27	SEC F
		1	1728	7.56	19	20.02	155	11.25	7.22	2.2	2.2	34	1	85	.14	5	.5	.8	27	SF3
		2	1858	5.00	19	22.00	155	26.33	12.30	2.2	2.1	40	4	43	.10	2	.5	.4	28	KAO
		2	2213	12.98	19	20.42	155	11.96	7.01	2.1	2.2	39	4	75	.13	5	.4	.7	22	SF3
		3	349	17.40	19	23.57	155	16.98	3.12	.8	1.0	11	2	119	.02	0	.4	.4	9	SSC
		3	1220	8.53	19	21.94	155	4.70	8.43	2.1	1.5	33	3	80	.11	3	.4	.6	23	SF5
		3	1229	45.40	19	21.69	155	29.84	8.92	2.0	1.4	33	1	39	.12	4	.4	.8	16	KAO
		3	21 8	14.64	19	23.44	155	16.69	3.06	1.9	2.2	26	3	50	.11	0	.5	.3	13	SSC
		3	2331	1.94	19	23.65	155	16.82	3.07	1.4	1.2	18	2	47	.07	1	.4	.2	10	SSC
		4	329	17.88	19	20.06	155	8.71	6.79	1.7	1.7	30	3	74	.09	4	.5	.9	16	SF4
		4	4 2	21.92	19	21.92	154	59.88	7.50	2.4	1.7	34	3	180	.12	6	.6	.7	22	LER
		4	421	22.95	19	15.83	155	22.98	5.63	2.1	2.1	37	2	132	.10	3	.4	.8	23	SWR
		4	548	41.45	19	21.65	155	15.22	9.27	2.0	1.8	32	4	62	.10	2	.4	.5	20	SF1
		4	726	50.70	19	19.87	155	8.46	7.79	1.8	1.1	31	4	80	.10	5	.5	.8	18	SF4
		4	1039	48.99	19	15.85	155	23.34	8.86	1.9	1.8	25	4	139	.09	3	.5	.7	15	SWR
		4	1658	.22	19	21.24	155	14.81	9.56	1.5	1.2	28	3	65	.08	3	.5	.7	16	SF1
		4	2357	44.27	19	24.60	155	16.14	3.54	1.6	1.3	14	1	118	.09	2	.4	.3	9	SNC
		5	419	6.32	19	19.94	155	7.26	8.85	3.0	3.1	43	4	105	.10	5	.4	.4	27	SF4
		5	551	8.19	19	20.64	155	12.62	8.34	1.8	1.4	33	3	67	.10	4	.4	.7	20	SF2
		5	1823	19.09	19	20.46	155	13.09	9.03	1.6	1.4	25	3	64	.08	4	.4	.8	18	SF2
		5	20 9	13.60	19	23.66	154	58.46	7.17	2.2	1.7	32	3	168	.15	3	.6	.6	18	LER
		5	2229	13.62	19	24.04	155	16.00	3.33	1.2	1.3	15	3	115	.09	1	.4	.4	8	SEC
		6	053	50.83	19	23.59	155	16.94	2.75	2.2	3.0	29	2	48	.09	1	.2	.3	20	SSC
		6	321	16.11	19	17.03	155	21.74	6.91	1.4	1.5	30	2	130	.11	6	.4	.9	21	SWR
		6	638	5.44	19	23.61	155	16.92	3.05	1.3	1.2	19	3	49	.06	0	.3	.3	11	SSC
		6	757	4.88	19	21.33	155	8.15	8.40	1.9	1.4	36	4	71	.09	3	.4	.6	21	SF4
		6	1058	58.93	19	20.98	155	6.17	9.07	3.0	3.1	40	2	97	.11	4	.5	.5	27	SF4 F
		6	1148	.44	18	53.50	155	12.34	36.13	2.3	1.6	31	0	260	.08	40	2.1	3.6	24	LOI
		6	2224	11.83	19	19.88	155	10.72	9.44	2.0	1.8	37	5	89	.09	4	.3	.5	23	SF3
		7	019	48.24	19	30.97	155	55.00	11.59	3.1	3.2	28	3	200	.08	3	1.2	.7	15	KON
		7	8 2	5.19	19	20.29	155	11.78	9.40	2.1	1.9	36	3	77	.08	5	.4	.6	29	SF3
		7	1054	55.06	19	21.93	155	15.03	9.52	3.0	3.2	44	4	58	.11	2	.4	.5	31	SF1
		7	1947	3.37	19	23.96	155	29.18	9.43	2.4	2.4	42	3	34	.10	4	.3	.6	28	KAO
		8	149	36.23	19	22.63	155	.64	8.32	2.3	1.6	37	3	158	.15	6	.6	.7	24	SF5
		8	6 6	18.47	19	46.05	156	2.95	8.45		1.8	15	1	239	.16	24	2.4	1.1	5	HUA
		8	836	17.48	20	.48	155	22.98	9.37	2.7	2.4	25	4	204	.12	27	.4	.6	10	KEA
		8	15 5	10.30	19	23.23	155	16.85	2.75	1.6	1.7	21	3	46	.09	0	.3	.2	11	SSC
		8	2345	8.01	19	20.16	155	8.11	7.47	1.4	1.0	26	2	200	.09	5	.7	1.0	18	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	APR	9	128	7.07	18	53.68	155	15.04	12.57	2.4	2.7	25	0	251	.11	37	2.5	1.0	4	LOI
		9	1046	16.06	19	23.52	155	16.84	3.00	1.5	1.3	23	3	48	.10	0	.3	.2	13	SSC
		9	1051	29.46	19	20.75	155	12.21	8.78	2.1	1.8	37	3	68	.11	4	.4	.6	27	SF3
		9	1552	13.37	19	23.63	155	16.72	2.86	1.5	1.6	22	3	44	.11	1	.3	.3	12	SSC
		9	16 2	55.20	19	21.75	155	4.89	7.40	2.2	2.1	33	2	80	.12	3	.5	.7	17	SF5
		9	1634	17.98	19	23.66	155	16.79	2.84	1.4	1.3	18	4	45	.07	1	.3	.2	11	SSC
		9	21 2	48.26	19	24.27	155	16.26	1.43	1.4	1.3	20	4	110	.11	1	.2	.2	10	SEC
		10	229	47.23	19	18.93	155	13.37	8.61	1.9	1.7	36	3	76	.11	4	.5	.7	20	SF2
		10	236	33.42	19	20.30	155	13.11	7.71	1.3	1.1	22	2	65	.06	4	.5	.8	14	SF2
		10	525	5.38	19	26.65	154	53.69	7.14	1.9	1.4	23	2	161	.13	3	.7	.8	16	LER
		10	550	29.70	19	23.62	155	17.07	1.66	1.2	1.6	14	3	65	.11	1	.2	.3	6	SSC
		10	559	49.60	19	23.56	155	16.94	2.61	3.1	3.1	41	3	39	.13	0	.2	.2	30	SSC F
		10	732	4.47	19	23.37	155	16.87	2.85	2.0	1.4	28	4	36	.09	0	.2	.2	19	SSC
		10	733	38.74	19	23.35	155	17.04	3.07	1.3	1.5	19	4	55	.08	0	.3	.3	12	SSC
		10	1050	32.22	19	19.86	155	5.04	5.93	1.3	1.3	20	1	140	.12	4	.6	1.3	8	SF5
		10	1523	29.89	19	22.90	155	17.09	2.91	.9	1.1	16	3	73	.06	1	.3	.4	11	SSC
		10	1551	22.35	19	22.79	155	4.78	8.11	2.9	3.1	41	3	78	.10	3	.4	.5	23	SF5
		10	2227	59.76	19	20.36	155	13.22	8.10	1.4	1.4	28	2	63	.09	4	.5	.8	18	SF2
		11	0 3	12.03	19	19.33	155	15.31	7.95	2.4	2.3	36	4	89	.12	4	.4	.7	21	SF1
		11	120	21.00	19	24.01	155	16.90	3.25	2.4	2.8	37	5	35	.12	1	.3	.2	23	SSC
		11	234	53.26	19	20.03	155	8.41	8.50	1.8	1.5	33	4	79	.10	5	.4	.7	18	SF4
		11	552	56.84	19	23.45	155	16.93	3.11	1.5	1.8	21	3	51	.08	0	.2	.2	13	SSC
		11	921	8.23	19	23.46	155	16.88	3.27	1.3	1.2	19	5	51	.06	0	.3	.3	13	SSC
		11	1255	30.52	19	22.82	155	17.04	2.89	1.5	1.3	14	3	77	.04	2	.3	.5	11	SSC
		11	16 4	2.40	19	19.82	155	6.69	9.18	4.2	4.2	45	3	118	.12	5	.5	.4	42	SF4 F
		11	16 8	21.93	19	19.76	155	6.65	8.45	2.3	2.1	38	3	121	.09	5	.4	.5	27	SF4
		11	1620	33.56	19	19.60	155	6.58	8.00	1.5	1.1	29	3	127	.09	5	.5	.9	21	SF4
		11	1635	54.60	19	20.41	155	6.68	8.27	1.9	1.3	32	4	105	.10	5	.5	.8	19	SF4
		11	1843	41.37	19	23.92	155	15.77	3.96	1.0	1.4	16	2	110	.10	1	.4	.4	11	SEC
		11	1916	59.05	19	23.99	155	15.61	1.54	2.2	2.5	34	3	42	.12	2	.2	.3	23	SEC F
		11	2254	35.33	19	23.37	155	16.85	3.07	1.4	1.0	17	3	53	.08	0	.3	.3	11	SSC
		12	1 2	29.11	19	19.19	155	15.70	8.28	2.4	2.2	42	3	94	.12	3	.4	.6	26	SF1
		12	5 9	42.41	19	19.59	155	6.24	8.47	1.4	1.2	29	3	134	.07	5	.5	.8	19	SF4
		12	623	32.90	19	21.94	155	18.24	2.69	1.0	1.2	18	2	55	.12	4	.3	.7	10	SWR
		12	644	13.29	19	23.97	155	16.92	2.95	1.3	1.4	19	4	77	.07	1	.3	.3	11	SSC
		12	715	22.46	19	21.93	155	5.16	8.29	1.5	1.4	23	1	77	.08	3	.5	.9	12	SF5
		12	956	53.01	19	20.59	155	6.79	7.97	2.2	2.3	35	3	99	.08	5	.4	.6	22	SF4
		12	1436	9.51	19	22.47	155	17.34	2.63	1.1	1.0	19	2	53	.08	2	.3	.4	13	SSC
		12	2225	8.51	19	12.69	155	19.49	39.52		1.6	22	0	183	.07	9	1.6	3.2	5	DEP L
		13	612	47.31	19	17.32	155	12.85	7.88	1.8	1.9	38	4	81	.12	1	.5	.6	22	SF2
		13	618	21.28	19	24.88	155	17.01	1.63	2.1	2.0	20	1	67	.06	0	.3	.2	15	SNC
		13	1337	39.74	19	23.67	155	16.97	2.85	.9	1.0	16	5	60	.05	1	.3	.3	11	SSC
		13	1349	1.26	19	23.62	155	16.79	2.83	1.3	1.5	16	5	56	.09	1	.4	.2	10	SSC
		13	2021	25.37	19	23.95	155	16.93	2.77	1.1	1.0	14	4	78	.09	1	.3	.3	9	SSC
		13	2044	51.83	19	24.19	155	16.69	3.08	1.8	2.0	26	4	85	.10	1	.3	.2	16	SSC
		13	2154	15.12	19	21.90	155	18.09	2.71	1.2	1.0	20	3	78	.08	3	.3	.6	12	SWR
		13	2316	49.18	19	17.64	155	20.86	8.24	1.7	1.2	26	3	129	.11	4	.4	.8	19	SWR
		14	139	25.14	19	23.43	155	16.87	2.87	2.7	3.1	38	4	36	.11	0	.2	.2	26	SSC F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	APR	14	217	58.66	19	17.62	155	12.83	6.81	2.0	1.8	30	2	133	.08	2	.5	.9	17	SF2
		14	341	52.84	20	5.85	155	47.41	26.85	2.7	2.1	38	4	186	.09	4	1.3	1.5	24	KOH
		14	422	16.30	19	17.82	155	12.86	7.71	2.0	1.9	34	4	121	.12	2	.5	.8	20	SF2
		14	430	28.94	19	14.59	155	24.66	36.56	2.8	2.6	45	2	99	.10	1	.7	1.1	39	DEP
		14	434	27.52	19	17.44	155	12.90	7.22	1.5	1.4	27	3	142	.10	1	.6	1.0	17	SF2
		14	957	3.70	19	19.07	155	14.98	8.45	2.0	1.7	32	1	98	.09	5	.5	.7	22	SF1
		14	1059	8.02	19	25.40	155	25.64	9.17	2.0	1.6	32	2	41	.09	1	.4	.8	19	KAO
		14	14 0	6.05	19	21.77	155	2.41	7.17	1.6	1.2	27	5	135	.12	4	.5	.8	14	SF5
		14	1438	45.72	19	22.93	155	17.10	2.61	1.0	1.0	16	4	71	.05	1	.3	.3	11	SSC
		14	1741	44.55	19	23.21	155	17.12	2.35	.8	1.0	9	2	97	.03	0	.3	.4	6	SSC
		14	1929	55.90	19	20.61	155	13.05	8.59	1.8	2.2	32	3	63	.09	4	.4	.6	24	SF2
		14	1938	12.92	19	24.64	155	31.07	15.47	1.9	2.3	16	1	67	.14	10	.7	1.0	1	DML
		14	1940	59.87	19	23.48	155	16.80	2.96	1.9	2.3	29	4	37	.09	0	.2	.2	18	SSC
		14	2038	16.72	19	12.13	155	32.07	7.31	2.2	1.6	24	0	91	.14	7	.6	1.2	16	LSW
		14	2319	41.37	19	18.61	155	14.75	6.57	1.1	1.3	23	0	102	.11	4	.6	1.1	15	SF1
		15	237	4.43	19	23.82	155	16.71	2.89	2.4	3.1	35	4	57	.11	0	.3	.2	26	SSC
		15	240	34.68	19	23.82	155	17.18	2.57	.8	2.0	13	3	79	.08	1	.3	.3	7	SSC
		15	452	37.61	19	20.32	155	12.66	8.93	1.3	1.5	23	2	70	.06	4	.5	.9	18	SF2
		15	920	49.25	19	17.67	155	22.59	7.78	2.1	2.1	32	2	109	.12	5	.4	.9	25	SWR
		15	1043	35.11	19	21.75	155	18.31	2.67	1.4	1.4	22	4	55	.07	3	.3	.6	13	SWR
		15	1240	2.55	19	23.13	155	16.82	2.88	1.8	1.9	26	5	41	.09	1	.3	.2	16	SSC
		15	1357	6.97	19	17.94	155	21.03	6.51	1.7	1.2	24	5	121	.10	4	.4	1.2	18	SWR
		15	1629	34.94	19	23.64	154	59.27	6.08	2.0	1.6	31	3	160	.16	3	.6	.9	17	LER
		15	1742	32.48	19	20.11	155	6.84	7.47	2.0	1.8	29	3	110	.11	5	.5	.8	19	SF4
		15	2014	55.33	19	23.38	155	16.82	2.84	.9	1.0	17	4	57	.05	0	.3	.2	10	SSC
		16	0 0	24.54	19	17.97	155	15.74	5.91	1.2	1.3	27	1	133	.11	4	.5	1.1	17	SF1
		16	435	24.91	19	23.64	155	16.76	2.89	1.8	1.6	24	3	40	.10	1	.3	.2	18	SSC
		16	436	4.16	19	23.82	155	16.75	2.83	1.9	2.2	27	3	73	.09	0	.3	.2	21	SSC
		16	5 0	23.22	20	2.16	155	20.64	6.83	3.6	3.6	46	3	215	.10	47	.7	.9	39	KEA F
		16	15 4	47.52	19	19.91	155	12.02	9.68	3.0	3.2	42	4	83	.09	5	.4	.4	29	SF3
		16	1515	40.70	19	20.21	155	11.72	10.22	3.7	3.7	45	4	80	.09	5	.4	.3	41	SF3 F
		16	1724	16.21	19	22.50	155	17.06	3.22	1.1	1.2	20	2	53	.08	2	.3	.4	15	SSC
		16	1921	2.75	19	25.93	155	37.42	1.61	2.0	2.1	28	1	92	.14	7	.4	1.6	17	MLO
		16	2359	40.17	19	24.39	155	17.59	16.18	2.0	1.3	36	3	45	.09	1	.3	.4	27	DFP
		17	120	50.73	19	25.11	155	17.14	1.40	3.9	3.9	40	0	64	.10	0	.2	.2	36	.C F
		17	150	30.74	19	24.91	155	17.51	1.64	1.3	1.2	15	3	98	.10	1	.4	.2	10	SNC
		17	226	2.46	19	25.36	155	16.74	1.85	2.2	2.6	31	1	47	.10	1	.3	.3	26	SNC
		17	5 6	.31	19	24.07	155	15.93	2.78	1.1	.9	13	2	118	.10	1	.4	.4	9	SEC
		17	535	42.73	19	25.87	155	16.72	1.51	1.5	1.5	14	1	182	.08	2	.5	.4	9	SNC
		17	6 9	58.90	19	21.00	155	6.11	7.96	2.2	2.1	38	2	97	.11	4	.4	.6	28	SF4
		17	923	45.64	19	25.04	155	17.37	1.27	1.4	1.8	20	2	126	.11	1	.4	.2	12	SNC
		17	1034	44.08	19	8.79	155	35.13	8.94	1.4	1.7	31	2	122	.13	12	.5	.9	18	LSW
		17	1329	33.61	19	20.64	155	10.74	7.93	2.0	1.8	39	3	75	.12	3	.4	.7	32	SF3
		17	1519	22.58	19	21.15	155	18.48	4.32	1.1	1.1	20	2	59	.10	3	.4	1.1	15	SWR
		17	18 7	14.66	19	19.64	155	7.53	7.79	1.8	1.7	35	4	105	.08	4	.5	.8	24	SF4
		17	1942	35.70	19	41.52	155	18.33	28.50	1.8	1.4	36	4	97	.10	19	.7	1.8	28	KEA
		17	2010	22.28	19	23.50	155	16.74	2.86	1.7	1.7	25	3	44	.10	0	.3	.2	15	SSC
		17	2116	50.41	19	23.39	155	16.87	3.00	1.1	.9	14	2	72	.04	0	.3	.3	8	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	APR	17	2317	27.89	19	20.61	155	12.98	8.86	1.8	1.3	31	2	64	.09	4	.4	.7	22	SF2
		18	322	35.11	19	19.91	155	10.91	8.29	1.7	1.1	29	1	89	.08	4	.5	.8	20	SF3
		18	4 8	39.19	19	24.31	155	16.01	4.47	.9	.8	14	3	141	.09	1	.5	.5	7	SEC
		18	751	27.68	19	19.83	155	9.61	6.87	1.6	1.1	25	3	86	.09	4	.5	1.0	14	SF3
		19	012	21.67	19	23.75	155	16.89	2.92	1.1	1.0	16	3	66	.08	1	.3	.3	11	SSC
		19	2 1	4.21	19	46.38	155	47.62	14.85	2.7	2.4	38	5	155	.09	11	.5	.8	29	HUA
		19	223	55.89	19	20.92	155	4.63	8.98	3.8	4.1	47	2	100	.11	4	.5	.4	42	SF5 F
		19	240	55.90	19	20.32	155	3.84	8.28	2.1	1.9	35	2	118	.10	2	.5	.5	23	SF5
		19	3 2	.66	19	20.63	155	3.82	8.97	3.9	4.0	44	2	101	.11	2	.5	.4	41	SF5 F
		19	3 7	47.93	19	23.65	155	16.85	2.77	1.8	1.8	27	5	50	.09	1	.3	.2	17	SSC
		19	312	7.33	19	20.56	155	3.40	8.33	1.8	1.3	29	0	93	.12	1	.7	.8	18	SF5
		19	314	4.11	19	20.49	155	3.63	8.11	2.2	2.1	35	1	102	.11	2	.6	.6	26	SF5 F
		19	4 4	39.34	19	20.24	155	7.09	6.73	2.0	1.4	33	3	102	.14	5	.5	1.0	22	SF4
		19	11 0	51.37	19	20.61	155	13.56	8.54	1.8	1.5	27	3	64	.07	4	.5	.7	23	SF2
		19	1918	26.61	19	25.44	155	16.15	3.80	1.3	1.3	16	3	176	.07	2	.6	.4	10	SNC
		19	2043	13.95	19	26.01	155	28.17	9.42	2.1	1.4	39	4	49	.12	5	.3	.7	30	KAO
		19	2056	31.89	19	9.10	155	40.04	6.54	2.7	2.6	34	1	122	.23	12	.8	1.4	24	LSW
		20	654	45.31	19	26.66	155	16.46	.23	1.6	2.3	17	1	189	.17	3	.4	1.1	8	SNC
		20	1325	37.79	19	20.50	155	13.11	8.74	1.5	1.1	26	2	64	.09	4	.5	.7	20	SF2
		20	1335	11.63	19	23.83	155	15.44	2.94	1.6	1.9	24	4	102	.08	2	.3	.3	13	SEC
		20	1757	20.36	19	21.76	155	6.91	7.29	1.3	1.3	28	5	77	.13	3	.5	.9	17	SF4
		20	1912	50.99	19	21.44	155	2.49	7.23	2.4	2.2	31	2	136	.11	3	.5	.6	20	SF5
		20	2042	42.66	19	20.32	155	7.41	8.97	2.5	2.5	38	1	95	.09	5	.4	.4	24	SF4
		21	146	53.56	19	54.73	155	34.54	31.88	2.6	2.0	47	5	136	.09	19	.6	1.4	36	KEA
		21	548	53.14	19	20.48	155	11.93	9.07	1.6	1.1	27	3	74	.07	4	.4	.6	19	SF3
		21	1120	30.03	19	21.96	155	52.59	6.78	2.3	2.1	28	4	166	.28	11	.9	1.8	10	KON
		21	1755	.94	19	20.41	155	12.46	8.38	1.3	1.1	25	2	71	.07	4	.5	.9	17	SF2
		21	20 0	59.84	19	23.06	155	16.93	2.72	1.6	2.0	21	4	40	.10	1	.3	.3	13	SSC
		21	2155	26.91	19	19.62	155	11.13	9.27	1.8	1.3	28	1	94	.06	5	.4	.8	21	SF3
		22	239	24.26	19	23.58	155	16.71	2.88	2.1	2.3	27	3	43	.10	1	.3	.2	19	SSC
		22	249	45.15	19	23.36	155	16.63	3.06	2.0	2.4	31	4	56	.11	1	.3	.2	20	SSC
		22	358	1.24	19	18.84	155	13.74	8.26	1.4	1.3	28	2	89	.07	3	.4	.8	21	SF2
		22	410	14.35	19	23.36	155	16.85	3.20	.9	1.0	16	3	54	.06	0	.3	.3	8	SSC
		22	825	31.07	19	18.96	155	13.43	9.24	2.6	2.5	30	2	78	.10	4	.4	.5	25	SF2
		22	913	11.21	19	23.29	155	16.64	2.95	1.3	1.0	21	5	53	.08	1	.3	.2	13	SSC
		22	913	42.33	19	23.16	155	16.80	2.86	1.4	1.2	18	3	46	.07	0	.3	.3	12	SSC
		22	12 7	45.78	19	20.94	155	13.23	9.11	2.8	2.8	43	3	59	.13	3	.4	.6	33	SF2
		22	1440	42.04	19	23.55	155	16.74	2.87	2.5	2.8	33	3	37	.11	0	.2	.2	26	SSC
		22	1445	56.02	19	23.45	155	16.76	2.89	2.9	3.2	38	2	37	.12	0	.2	.2	29	SSC
		22	1752	19.56	19	23.33	155	2.24	7.68	1.7	1.4	35	2	123	.17	4	.6	.8	21	SF5
		22	1822	17.99	19	27.02	155	26.75	8.22	2.1	1.1	31	3	51	.11	4	.4	.9	21	KAO
		22	1859	19.22	19	25.82	155	37.65	3.29	2.2	1.8	21	0	94	.12	4	.6	1.1	8	MLO
		22	2134	58.83	19	25.99	155	37.32	2.86	2.6	2.4	34	0	81	.15	3	.5	.9	21	MLO
		23	259	42.97	19	31.83	155	42.09	8.87	2.8	2.2	39	3	81	.13	7	.5	.8	31	MLO
		23	1025	40.45	19	21.47	155	15.10	9.23	3.4	3.4	42	3	64	.11	2	.4	.5	33	SF1
		23	1136	39.17	19	15.98	155	27.48	9.98	2.8	3.0	44	2	68	.13	5	.4	.5	29	LSW F
		23	2327	1.57	19	22.80	155	17.09	2.39	1.2	1.1	15	3	78	.08	1	.3	.4	9	SSC
		24	141	54.83	19	20.36	155	13.30	7.73	1.8	1.5	32	3	63	.11	4	.5	.8	21	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	APR	24	238	52.18	19	23.98	155	16.78	3.04	1.6	1.6	24	3	74	.07	0	.3	.2	15	SSC
		24	252	40.95	19	23.87	155	15.82	1.59	1.6	1.9	23	4	107	.08	1	.2	.2	11	SEC
		24	254	56.97	19	23.89	155	15.85	1.63	2.1	2.8	30	5	107	.10	1	.2	.2	18	SEC
		24	355	6.44	19	24.27	155	16.18	1.50	1.0		11	2	125	.07	1	.3	.4	7	SEC
		24	448	12.39	19	23.78	155	15.90	1.49	1.2	1.1	17	4	100	.10	1	.3	.3	9	SEC
		24	542	47.79	19	20.62	155	4.35	7.79	1.4	1.2	21	1	110	.09	3	.7	1.2	13	SF5
		24	9 9	52.50	19	18.93	155	13.46	5.98	1.5	1.2	32	3	95	.12	4	.5	1.0	14	SF2
		24	1213	31.86	19	54.36	155	36.34	8.66	2.9	2.6	24	0	129	.19	21	.8	1.0	11	KEA F
		24	2022	24.18	19	10.48	155	17.92	23.89	2.4	1.9	33	1	214	.08	13	.9	1.1	25	DEP
		25	918	32.55	19	19.48	155	16.14	7.26	2.3	1.9	40	3	96	.11	3	.4	.7	29	SF1
		25	2133	3.85	19	24.16	155	24.93	9.79	2.4	2.1	37	2	36	.11	2	.4	.5	28	KAO
		25	2217	29.29	19	21.01	155	5.79	8.42	1.5	1.3	27	1	98	.10	4	.5	.8	16	SF4
		26	053	2.11	19	19.82	155	7.88	8.95	1.8	1.4	34	4	94	.07	5	.4	.6	23	SF4
		26	135	17.77	19	16.16	155	22.82	6.22	1.9	1.8	36	5	128	.11	4	.4	.9	25	SWR
		26	557	9.86	19	19.79	155	8.39	8.08	1.6	1.1	26	5	82	.08	5	.5	.7	21	SF4
		26	1651	14.53	20	10.78	156	9.53	30.80	3.1	2.8	38	2	295	.13	40	2.1	2.1	30	KOH
		27	127	6.14	19	25.42	155	16.93	2.72	2.5	2.9	34	2	40	.11	1	.2	.3	25	SNC
		27	241	30.64	19	23.36	155	24.27	8.98	1.6	1.2	34	5	38	.07	4	.3	.6	28	KAO
		27	417	40.37	19	24.14	155	15.62	3.26	1.5	1.4	20	3	115	.08	2	.4	.3	11	SEC
		27	1313	54.16	19	18.13	155	13.77	6.39	2.0	1.6	29	3	74	.12	2	.5	.9	21	SF2
		27	2023	1.39	19	20.66	155	3.34	8.98	3.4	3.4	47	4	94	.10	2	.6	.4	40	SF5
		27	2356	31.36	19	19.25	155	15.24	6.81	1.3	1.3	25	1	98	.10	4	.5	1.0	19	SF1
		29	414	20.22	19	26.56	155	38.38	3.46	2.5	2.0	16	0	201	.12	4	1.0	1.0	8	MLO
		29	528	20.20	19	24.22	155	15.98	.96	1.7	2.3	24	3	112	.13	1	.3	.3	16	SEC
		29	1150	7.18	19	25.28	155	17.06	2.77	1.3	1.4	11	1	158	.05	1	.5	.4	7	SNC
		29	14 2	27.76	19	22.74	155	17.07	24.24	2.0	1.4	25	0	49	.08	1	.8	1.4	24	DEP
		29	14 5	35.15	19	25.00	155	37.82	.84	2.8	2.0	17	0	96	.12	5	.5	1.5	16	MLO
		29	1741	40.06	19	27.04	155	35.96	2.69	2.5	2.2	9	1	95	.10	1	.6	.3	8	MLO
		30	258	53.29	19	19.63	155	8.86	7.04		1.1	14	0	81	.05	5	.6	1.3	10	SF4
		30	833	32.95	19	20.82	155	4.54	6.77		1.1	21	0	103	.11	3	.6	.9	17	SF5
		30	848	52.76	19	21.38	155	4.89	8.87	3.4	3.1	34	1	88	.11	4	.5	.4	32	SF5
		30	854	37.72	19	24.83	155	16.80	1.99	1.3	.5	16	2	145	.10	0	.4	.3	10	SNC
		30	855	5.36	19	23.82	155	15.62	3.15	2.5	2.2	27	1	43	.12	2	.4	.4	21	SEC
		30	858	7.66	19	24.90	155	16.49	2.31		.9	15	3	151	.09	1	.4	.3	11	SNC
		30	9 1	43.34	19	24.27	155	16.24	1.43		1.6	16	2	125	.06	1	.2	.2	7	SEC
		30	9 2	37.15	19	24.18	155	16.96	3.01		1.7	25	2	66	.10	1	.3	.2	14	SSC
		30	9 4	19.20	19	24.97	155	16.50	2.37	1.1	.9	13	1	154	.08	1	.5	.3	8	SNC
		30	9 9	36.91	19	24.98	155	17.26	1.44	1.2	1.1	13	3	131	.06	1	.3	.2	10	SNC
		30	910	15.67	19	24.28	155	16.25	1.58	1.3	.9	13	3	125	.06	1	.3	.3	7	SEC
		30	910	51.07	19	24.32	155	16.31	1.42	1.6	1.4	18	4	111	.09	1	.2	.2	10	SEC
		30	911	30.22	19	24.91	155	16.32	2.33	1.4	1.4	14	3	152	.06	1	.3	.2	6	SNC
		30	916	6.34	19	23.33	155	16.84	2.85	2.6	2.3	35	2	37	.11	0	.2	.3	28	SSC
		30	918	2.11	19	23.87	155	17.15	2.73	1.3	.9	16	3	66	.05	1	.3	.2	9	SSC
		30	920	42.21	19	24.45	155	16.01	1.64	2.4	2.5	25	4	89	.08	1	.2	.3	14	SEC
		30	921	42.86	19	24.26	155	16.14	1.46	2.1	2.0	22	2	112	.09	1	.3	.2	15	SEC
		30	926	45.87	19	24.72	155	16.45	1.80	1.2	.9	11	0	145	.10	1	.5	.3	6	SNC
		30	929	55.59	19	25.00	155	17.20	1.35	1.7	1.4	15	2	137	.07	0	.4	.1	11	SNC
		30	934	46.58	19	23.87	155	17.05	2.78	1.8	1.6	23	3	61	.10	1	.3	.2	14	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	APR	30	935	50.70	19	24.13	155	16.19	1.44	1.9	1.7	15	1	106	.07	1	.3	.2	8	SEC
		30	939	38.63	19	24.62	155	16.35	1.79	2.1	2.0	31	3	45	.10	1	.2	.2	21	SNC
		30	947	23.73	19	24.91	155	16.05	1.87	1.8	1.5	17	2	136	.08	2	.4	.4	9	SNC
		30	949	11.75	19	24.19	155	15.82	1.35	2.1	2.0	22	1	112	.10	1	.2	.3	13	SEC
		30	956	19.35	19	25.07	155	16.16	2.38	1.3	.9	10	2	161	.06	2	.4	.3	6	SNC
		30	958	37.27	19	24.13	155	15.78	1.77	2.0	1.7	15	0	114	.09	2	.4	.3	4	SEC
		30	959	20.44	19	24.36	155	16.42	.90	1.7	1.2	14	3	125	.09	1	.2	.3	5	SEC
		30	10	0 17.40	19	24.75	155	16.70	1.85	1.3	.8	13	1	143	.08	1	.4	.2	8	SNC
		30	10	1 49.66	19	24.42	155	15.80	1.93	1.8	1.4	15	2	129	.09	2	.3	.4	6	SEC
		30	10	3 36.16	19	24.59	155	16.74	1.53	1.8	1.4	15	3	125	.11	1	.4	.3	10	SNC
		30	10	5 30.56	19	24.29	155	15.97	1.51	1.9	1.4	14	2	115	.11	1	.3	.4	5	SEC
		30	10	7 23.53	19	25.99	155	13.87	6.52	2.2	1.3	9	1	242	.08	3	1.6	2.2	2	GLN
		30	1010	5.51	19	26.20	155	16.76	1.41	1.8	1.4	10	1	253	.10	4	1.3	1.4	2	SNC
		30	1016	3.60	19	23.46	155	17.02	2.76	1.8	1.4	17	3	50	.10	0	.3	.3	9	SSC
		30	1021	54.41	19	24.66	155	16.10	1.76	1.3	.7	12	2	144	.05	2	.3	.3	4	SNC
		30	1024	4.55	19	23.35	155	16.76	2.13	1.6	.8	11	1	105	.26	0	.8	.6	3	SSC
		30	1027	25.91	19	24.77	155	16.04	1.90	1.6	1.0	19	3	121	.10	2	.3	.3	10	SNC
		30	1031	11.00	19	24.72	155	16.45	1.82	2.0	1.8	23	4	119	.12	1	.3	.2	16	SNC
		30	1033	36.63	19	24.24	155	16.19	1.54	1.6	1.4	18	2	111	.11	1	.3	.2	7	SEC
		30	1037	33.86	19	23.77	155	17.13	2.47	1.2	1.0	18	4	65	.08	1	.3	.2	10	SSC
		30	1043	24.99	19	24.43	155	16.59	1.78	2.1	2.0	22	4	103	.11	1	.3	.2	11	SSC
		30	1048	38.52	19	23.80	155	17.29	2.86	1.6	1.2	11	3	106	.07	1	.5	.3	6	SSC
		30	1051	16.74	19	24.77	155	15.85	1.18	1.5	1.0	14	1	146	.12	2	.4	.4	5	SNC
		30	1056	25.01	19	24.65	155	16.17	1.68	1.6	1.0	17	3	119	.08	2	.3	.3	6	SNC
		30	1110	18.69	19	24.10	155	15.62	.83	1.5	1.2	10	1	122	.08	2	.3	.6	4	SEC
		30	1112	36.86	19	23.49	155	17.03	3.01	.9	.8	13	3	86	.05	0	.4	.3	9	SSC
		30	1115	31.53	19	24.47	155	15.87	1.65	1.9	1.6	17	1	118	.08	2	.3	.2	5	SEC
		30	1125	51.69	19	24.76	155	16.41	1.47	1.2	1.1	11	2	167	.10	1	.4	.3	4	SNC
		30	1136	43.99	19	24.97	155	16.51	1.64	1.2	1.2	14	2	122	.11	2	.3	.5	7	SNC
		30	1141	17.92	19	24.37	155	15.71	1.40	3.2	3.7	41	3	44	.12	2	.2	.3	29	SEC
		30	1152	13.21	19	26.67	155	24.10	5.73	2.1	1.2	19	2	61	.11	3	.4	1.2	13	KAO
		30	1216	6.91	19	24.39	155	17.20	2.62	1.4	.9	7	0	189	.07	1	.7	.6	5	SSC
		30	1218	40.19	19	24.23	155	16.27	1.93	1.4	.9	12	1	121	.14	1	.5	.3	6	SEC
		30	1246	26.68	19	24.98	155	16.54	2.37	1.5	1.4	12	2	154	.09	1	.3	.4	4	SNC
		30	15	4 15.12	19	19.16	154	59.39	38.03	2.4	1.6	38	3	227	.08	6	1.5	1.8	32	LER
		30	1724	53.39	19	24.16	155	27.70	5.30	1.6	1.1	21	0	63	.13	3	.4	1.3	18	KAO
		30	2242	3.32	19	16.79	155	21.69	4.19	1.3	1.1	19	2	131	.10	6	.4	1.9	12	SWR
	MAY	1	050	49.68	19	19.69	155	11.58	8.65	1.6	1.1	28	2	90	.07	5	.5	.9	17	SF3
		1	359	53.19	19	23.80	155	15.43	1.65	1.3	1.3	14	2	100	.09	2	.3	.4	8	SEC
		1	1743	58.99	19	23.95	155	15.53	1.50	.8	1.1	10	1	149	.04	2	.3	.4	7	SEC
		2	0	9 41.57	19	19.35	155	15.61	7.90	1.2	1.1	29	3	100	.10	3	.4	.8	18	SF1
		2	513	28.57	19	20.44	155	11.49	8.91	2.1	1.8	39	4	77	.11	4	.4	.6	24	SF3
		2	740	23.72	19	33.56	155	41.52	9.11	2.8	2.3	43	4	91	.12	9	.4	.6	30	MLO
		2	850	39.38	19	23.99	155	15.62	3.06	1.0	1.0	15	4	112	.07	2	.3	.5	9	SEC
		2	928	25.96	19	25.47	155	16.22	3.53	1.2	1.3	10	1	176	.03	2	.6	.3	7	SNC
		2	929	59.56	19	19.83	155	18.61	5.41	2.1	2.3	40	4	62	.12	2	.4	.7	27	SWR
		2	1019	51.84	19	10.66	155	35.56	6.15	2.3	1.6	28	2	102	.22	8	.6	1.7	19	LSW
		2	1138	.36	19	19.66	155	18.77	4.06	2.2	2.1	35	2	58	.12	3	.4	.8	26	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAY	2	1141	3.00	19	23.62	155	15.11	.37	.9	1.0	10	2	95	.08	2	.2	.5	5	SEC
		2	1143	53.32	19	19.01	154	59.92	36.43	2.3	1.8	37	2	224	.08	6	1.1	1.4	30	LER
		2	1435	3.59	19	15.90	155	22.95	6.86	1.9	1.5	25	3	151	.07	3	.5	1.1	20	SWR
		2	1925	53.75	19	22.43	155	29.67	8.88	1.9	1.3	34	4	42	.10	4	.3	.8	26	KAO
		2	2234	2.03	19	20.35	155	12.61	8.21	1.5	1.3	34	4	70	.11	4	.5	.7	21	SF2
		3	433	30.92	19	19.84	155	10.68	8.72	1.7	1.2	29	4	91	.07	4	.5	.8	20	SF3
		3	640	2.12	19	18.12	155	22.50	6.84	.8	1.1	20	3	104	.06	4	.4	1.1	15	SWR
		3	652	9.76	19	23.84	155	15.50	3.34	1.1	1.0	15	4	104	.05	2	.3	.4	10	SEC
		3	914	.80	19	24.66	155	15.98	3.02	1.1	1.0	15	2	127	.08	2	.4	.3	11	SNC
		3	956	1.99	19	19.20	154	59.19	38.46	2.4	1.6	42	2	209	.08	7	1.3	1.5	34	LER
		3	1457	15.17	19	20.40	155	12.80	8.74	1.6	1.5	36	2	68	.11	4	.4	.6	24	SF2
		3	2217	43.08	19	19.25	155	14.07	6.97	1.6	1.2	31	3	78	.09	4	.5	.9	21	SF2
		4	125	10.19	19	19.90	155	8.90	6.97	1.8	1.2	25	4	77	.07	4	.4	.9	15	SF4
		4	155	41.67	19	23.67	155	16.77	3.08	1.4	1.7	25	4	44	.10	1	.5	.2	15	SSC
		4	729	42.61	19	18.85	155	13.26	10.08	3.6	3.5	47	5	81	.11	3	.5	.3	36	SF2 F
		4	732	7.37	19	19.33	155	13.17	7.84	2.0	1.5	36	3	76	.11	4	.5	.8	26	SF2
		4	738	55.15	19	20.53	155	9.64	7.92	2.1	1.8	32	2	73	.08	3	.4	.6	19	SF3
		4	912	7.09	19	18.92	155	12.78	6.94	1.3	1.1	22	1	91	.08	4	.5	1.3	16	SF2
		4	1238	48.32	19	13.42	155	20.25	30.77	2.4	2.0	42	3	162	.09	7	.8	1.0	35	DEP
		4	1320	12.55	19	12.89	155	15.26	42.63	1.6	1.4	31	0	221	.07	8	1.7	2.0	22	DEP
		4	1515	43.34	19	19.43	155	7.79	7.61	2.3	2.1	35	3	102	.10	4	.4	.7	23	SF4
		4	1517	6.02	19	18.73	155	11.94	31.58	2.2	2.1	45	2	111	.09	4	.7	.9	39	DEP
		4	1612	29.51	19	23.93	155	16.93	2.58	1.3	1.2	19	6	76	.07	1	.3	.2	10	SSC
		4	1815	16.98	19	20.16	155	45.99	9.99	2.6	1.6	31	1	125	.14	11	.6	.6	18	KON
		4	1946	45.44	19	19.22	154	59.31	38.07	2.4	1.6	44	3	208	.08	6	.9	1.3	34	LER
		4	2125	17.46	19	53.11	155	32.32	16.99	1.9	1.4	27	2	130	.09	14	.7	1.8	22	KEA
		4	2313	54.36	19	23.97	155	16.85	2.55	1.4	1.3	23	5	71	.08	0	.3	.2	13	SSC
		5	521	48.42	19	23.35	155	17.03	2.82	.9	1.0	19	5	47	.08	0	.3	.3	14	SSC
		5	754	21.20	19	19.69	155	7.87	8.56	2.7	2.6	38	3	96	.10	4	.4	.5	28	SF4
		5	1555	51.75	19	19.36	155	12.18	7.38	2.0	2.0	40	2	92	.12	5	.4	.6	25	SF3
		5	20	3 31.39	19	23.73	155	16.83	2.98	2.1	2.6	28	3	60	.08	1	.3	.2	19	SSC
		5	2010	22.30	19	18.49	155	15.66	7.08	1.7	1.5	33	3	119	.12	4	.5	.9	21	SF1
		5	2034	59.26	19	23.34	155	16.95	2.80	1.2	1.4	18	3	60	.09	0	.3	.3	11	SSC
		6	6	4 3.33	19	20.26	155	12.58	8.67	1.6	1.2	28	3	72	.09	4	.5	.8	17	SF2
		6	812	22.65	19	27.60	155	2.91	45.47	2.5	2.3	19	2	157	.08	9	1.7	1.6	19	DEP
		6	1018	31.35	19	23.66	155	16.92	3.26	1.4	1.2	24	5	55	.08	1	.3	.2	12	SSC
		6	1018	43.09	19	23.63	155	17.01	2.63	1.6	1.9	16	4	76	.06	0	.3	.3	11	SSC
		6	15	5 38.07	19	23.98	155	16.83	2.68	1.2	1.2	19	5	83	.09	0	.3	.2	12	SSC
		6	2142	58.25	19	19.57	155	7.57	7.80	1.9	1.1	30	3	105	.09	4	.5	.8	23	SF4
		6	2143	28.26	19	19.74	155	7.56	6.73	1.3	1.2	23	2	102	.09	4	.5	1.2	16	SF4
		6	2321	36.78	19	23.29	155	16.83	2.72	2.4	2.9	35	4	37	.09	0	.2	.2	23	SSC
		7	428	19.53	19	27.74	154	53.09	7.45	2.3	1.6	29	3	129	.14	3	.7	.5	17	LER
		7	1023	47.40	19	24.25	155	16.96	6.19	1.2	1.3	9	2	100	.08	1	1.1	1.4	6	INT
		7	14	5 10.88	19	20.40	155	7.07	7.22	1.2	1.8	23	1	100	.10	5	.6	1.0	18	SF4
		7	18	9 3.22	19	28.42	155	16.00	24.22	2.3	1.7	38	4	151	.08	6	.8	.9	33	DEP
		7	19	0 43.66	19	23.47	155	16.85	2.94	.9	1.0	15	4	58	.06	0	.3	.3	10	SSC
		8	545	27.34	19	23.72	155	17.03	2.67	1.2	1.2	15	3	65	.07	1	.3	.3	12	SSC
		8	632	35.39	19	23.96	155	16.89	2.92	1.6	2.0	27	5	69	.10	1	.3	.2	17	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAY	8	1016	40.55	19	23.52	155	16.85	2.83	.9	1.0	18	6	57	.07	0	.3	.2	13	SSC
		8	1512	19.06	19	20.21	155	13.43	7.58	1.3	1.3	22	2	63	.08	5	.5	1.0	18	SF2
		8	1846	31.86	19	23.96	155	16.70	3.36	2.2	2.6	32	4	78	.11	0	.3	.3	22	SSC
		8	2243	53.15	19	19.62	155	7.88	6.41	2.0	2.1	37	4	96	.14	4	.5	1.0	25	SF4
		9	138	37.55	19	20.09	155	11.17	8.45	2.7		42	3	84	.12	4	.4	.6	33	SF3
		9	139	44.31	19	19.75	155	11.13	8.20	2.3	2.0	29	2	92	.07	5	.4	.5	21	SF3
		9	6	9 19.11	19	18.71	154	58.60	40.15	2.5	2.0	39	2	225	.11	8	1.6	1.9	32	LER
		9	7	3 40.90	19	18.83	155	12.61	7.94	1.6	1.6	27	2	97	.09	4	.5	1.0	18	SF2
		9	931	43.19	19	23.72	155	16.82	2.51	2.4	2.3	25	3	57	.09	1	.3	.2	15	SSC
		9	1229	28.86	19	23.41	155	16.69	2.93	2.1	2.2	32	5	51	.09	0	.2	.2	20	SSC
		9	1240	49.30	19	23.50	155	16.72	2.87	2.8	3.2	37	2	37	.10	0	.2	.2	25	SSC
		9	15	3 27.23	19	20.82	155	13.16	7.69	1.6	1.3	27	2	90	.11	3	.5	.8	19	SF2
		9	17	5 34.66	19	20.07	155	9.53	9.32	1.8	1.6	31	2	80	.08	4	.4	.6	22	SF3
		9	1854	9.37	19	23.54	155	16.81	2.81	2.5	2.9	39	4	36	.11	0	.2	.2	27	SSC
		9	1945	26.25	19	20.75	155	13.36	8.78	2.0	2.0	38	3	59	.11	4	.4	.5	26	SF2
		9	2046	52.75	19	30.11	155	42.57	6.01		1.1	20	3	144	.14	6	.8	1.4	13	MLO
		10	311	54.18	19	23.30	155	16.66	3.11	2.4	2.5	33	4	39	.11	1	.2	.2	23	SSC
		10	8	6 43.56	19	21.42	155	1.33	7.75	1.8	1.3	26	3	169	.13	4	.7	.9	17	SF5
		10	937	21.00	19	19.73	155	6.65	8.20	2.1	1.5	31	3	122	.10	5	.5	.7	21	SF4
		10	1047	27.23	19	10.59	155	36.01	10.37	3.9	3.9	47	4	101	.18	8	.5	.5	42	LSW F
		10	12	8 48.00	19	20.35	155	6.68	8.91	3.0	3.0	47	6	107	.09	5	.4	.4	32	SF4
		10	1223	52.61	19	23.98	155	16.56	3.32	2.2	2.5	32	4	69	.12	0	.3	.2	20	SSC
		10	16	1 19.91	19	23.94	155	16.77	3.13	2.3	2.7	30	3	68	.10	0	.3	.2	21	SSC
		10	1944	47.40	19	23.99	155	15.79	2.93	1.8	2.2	28	5	86	.11	1	.3	.3	16	SEC
		10	22	8 59.50	19	20.59	155	4.30	7.03	1.3	1.4	31	2	110	.11	3	.5	.8	18	SF5
		11	1042	43.28	19	23.72	155	16.94	2.77	1.5	1.4	19	3	62	.07	1	.3	.2	13	SSC
		11	1335	41.90	19	23.65	155	16.95	3.23	1.1	1.1	21	5	55	.07	1	.3	.3	12	SSC
		11	1945	32.21	19	19.66	155	10.98	8.73	1.9	1.1	31	2	94	.09	5	.5	.8	22	SF3
		11	1948	17.17	19	17.26	155	20.98	8.61	1.4	1.3	34	5	129	.10	4	.4	.7	19	SWR
		12	147	.01	19	16.72	155	13.28	9.73	2.3	2.4	37	4	161	.11	9	.6	.6	24	SF2
		12	152	21.59	19	16.90	155	13.18	6.77	2.3	2.3	38	3	158	.13	1	.5	1.0	30	SF2
		12	157	29.18	19	17.30	155	13.30	5.88	1.7	1.1	29	3	121	.11	1	.5	.9	20	SF2
		12	157	53.99	19	17.57	155	13.23	10.18	2.4	2.6	36	2	161	.10	9	.6	.7	24	SF2
		12	951	4.96	19	21.26	155	25.68	9.46	1.4	1.2	27	3	51	.11	4	.4	.8	21	KAO
		12	1622	41.91	19	27.01	155	34.68	38.39	2.7	3.2	30	1	45	.18	3	1.0	1.9	10	DML L
		12	1659	33.28	19	19.21	155	15.35	8.83	2.4	2.5	42	3	100	.11	4	.5	.6	30	SF1
		12	17	1 7.37	19	19.62	155	6.11	8.22	2.1	1.4	26	3	134	.11	5	.5	.8	17	SF4
		12	2327	32.78	19	22.65	155	1.96	7.34	1.4	1.4	28	2	147	.16	5	.7	.7	13	SF5
		12	2357	19.33	19	23.54	155	16.84	3.07	1.8	2.2	29	4	38	.09	0	.3	.2	20	SSC
		13	1	3 9.90	19	23.48	155	16.89	3.62	1.0	1.4	18	4	50	.10	0	.4	.4	10	SSC
		13	252	34.95	19	17.21	155	13.01	4.74	1.3	1.3	32	3	154	.09	1	.4	.7	21	SSF
		13	543	8.43	19	21.98	155	28.16	10.01	2.1	1.1	38	2	42	.11	1	.4	.7	27	KAO
		13	9	1 11.39	19	23.34	155	49.54	12.06	2.0	1.8	31	4	119	.14	14	.5	.5	21	KON
		13	1140	34.21	20	4.28	156	36.57	.03	3.2	2.1	33	3	305	.17	87	8.1	1.7	22	DIS *
		13	1512	17.80	19	3.96	155	32.47	45.52	2.2	1.8	31	4	182	.06	13	.9	1.4	23	DLS
		13	1728	31.53	19	17.35	155	20.92	8.54	1.7	1.6	34	7	133	.12	4	.4	.6	15	SWR
		13	1758	3.44	19	20.49	155	6.78	8.29	2.2	1.7	34	5	102	.08	5	.5	.6	25	SF4
		13	2028	59.62	19	17.93	155	21.97	7.54	1.7	1.6	31	3	113	.11	5	.4	.7	21	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAY	14	039	45.95	19	20.18	155	8.80	8.94	2.3	2.1	40	4	72	.09	4	.3	.5	26	SF4
		14	237	2.63	19	19.83	155	7.58	7.38	1.4	1.3	24	2	101	.07	5	.5	1.1	18	SF4
		14	626	31.75	20	.07	155	51.82	19.88	4.8	4.5	47	3	205	.11	17	1.4	3.8	44	KOH F
		14	631	29.14	20	.41	155	52.19	21.37	3.1	2.7	43	7	209	.12	16	1.0	2.3	30	KOH
		14	1233	52.85	19	19.34	155	9.69	6.66	1.6	1.0	28	4	98	.10	5	.5	.9	22	SF3
		14	1235	41.34	19	20.09	155	9.93	7.90	1.9	2.1	38	5	83	.09	4	.5	.7	22	SF3
		14	14	3 38.40	19	17.11	155	21.29	7.87	1.8	2.1	36	1	130	.12	5	.4	.6	28	SAR
		14	14	6 27.97	19	20.66	155	13.01	8.92	2.6	2.6	43	5	63	.10	4	.3	.4	30	SF2
		14	1428	35.58	19	22.50	155	6.00	7.77	2.4	2.5	38	3	69	.10	1	.4	.7	22	SF4
		14	1655	10.74	19	50.73	155	36.20	22.92	2.6	2.3	45	7	109	.08	17	.5	1.5	33	KFA
		14	1711	47.26	19	18.33	155	14.03	3.79	1.6	1.3	20	0	91	.11	3	.4	1.1	14	SSF
		14	2140	53.36	19	19.16	155	14.72	6.77	1.6	1.4	30	3	92	.15	5	.5	1.0	20	SF1
		15	233	53.57	19	22.88	155	2.68	7.23	1.6	1.8	30	4	196	.14	4	1.0	.7	17	SF5
		15	258	18.65	19	23.57	155	16.62	2.48	1.6	2.1	23	5	59	.12	1	.3	.2	10	SSC
		15	342	12.13	19	19.45	155	8.84	9.02	2.0	2.3	28	4	215	.07	5	.9	.7	19	SF4
		15	422	4.49	19	25.92	154	55.38	8.50	2.3	2.3	27	1	186	.11	3	1.0	.6	19	LER
		15	5	9 46.16	19	17.66	155	14.21	10.74	3.1	3.1	44	5	156	.11	7	.5	.4	32	SF2 F
		15	914	58.06	19	23.84	155	16.79	2.89	1.2	.9	20	4	80	.07	0	.3	.2	14	SSC
		15	915	32.55	19	23.91	155	16.70	2.53	1.2	1.0	18	5	86	.08	0	.3	.2	12	SSC
		15	1111	46.00	19	17.47	155	13.95	6.51	1.9	1.8	33	2	106	.13	1	.5	.9	24	SF2
		15	1426	32.93	19	22.51	155	17.05	2.86	1.5	1.4	21	3	53	.07	2	.3	.4	15	SSC
		15	2324	10.49	19	18.07	155	17.76	33.95	1.9	1.2	37	1	134	.09	2	.7	1.1	25	DEP
		15	2357	21.15	19	5.94	155	25.15	51.40	2.0	1.6	19	0	200	.10	8	2.4	6.2	12	DLS L
		16	354	11.98	19	58.70	155	20.31	9.15	2.0	1.8	22	2	203	.10	25	1.0	.9	8	KEA
		16	829	33.50	19	23.75	155	17.02	2.83	1.9	2.3	31	3	62	.10	1	.3	.2	21	SSC
		16	1326	39.44	19	20.18	155	7.35	7.62	2.0	1.7	35	4	99	.11	5	.4	.7	22	SF4
		16	1355	50.94	19	58.35	155	21.47	11.46	2.1	1.8	23	4	199	.10	9	1.0	.5	12	KEA
		16	1434	54.33	19	19.39	155	15.54	8.61	1.9	2.2	43	4	90	.10	4	.4	.5	29	SF1
		16	17	0 14.06	19	20.24	155	12.64	7.92	1.5	1.1	28	4	71	.08	4	.4	.7	20	SF2
		16	1955	54.82	19	20.80	155	13.45	9.42	2.6	2.5	45	5	58	.11	3	.4	.4	38	SF2
		16	2014	51.68	19	17.62	155	14.23	7.07	1.6	1.3	30	3	133	.10	2	.5	.8	20	SF2
		16	2129	36.08	19	17.18	155	22.15	7.99	1.8	1.6	36	4	121	.11	6	.4	.7	23	SWR
		17	421	1.31	19	23.63	155	16.78	3.22	1.3	1.4	22	4	42	.08	1	.3	.2	14	SSC
		17	615	50.24	19	23.98	155	16.98	2.55	2.0	2.2	31	5	64	.12	1	.3	.2	21	SSC
		17	623	46.12	19	23.81	155	17.14	2.70	1.0	.8	18	5	64	.07	1	.3	.2	12	SSC
		17	1213	10.10	19	23.17	155	16.97	3.03	1.3	1.7	22	6	47	.10	0	.3	.3	17	SSC
		17	1258	56.52	19	20.67	155	11.65	8.91	2.6	2.7	44	5	73	.12	4	.4	.5	29	SF3
		17	1511	19.75	19	23.69	155	16.90	2.89	1.1	1.0	17	4	57	.07	1	.3	.3	12	SSC
		17	1721	58.86	19	23.20	155	16.87	2.96	2.5	3.1	39	4	38	.11	0	.2	.3	30	SSC
		17	19	1 25.12	19	18.29	155	13.08	6.10	1.3	1.0	31	4	97	.11	2	.5	1.0	24	SF2
		17	21	5 22.92	19	11.29	155	30.29	8.04	2.1	2.3	35	1	144	.14	7	.6	.9	22	LSW
		17	2111	51.30	19	23.94	155	16.89	2.88	1.1	1.0	15	4	79	.06	1	.2	.3	11	SSC
		17	2225	32.17	19	18.55	155	13.21	8.25	1.4	1.5	28	2	86	.09	3	.5	.8	19	SF2
		18	131	18.27	19	18.98	155	15.56	7.10	1.1	1.0	26	4	106	.10	4	.5	.9	16	SF1
		18	6	6 25.33	19	24.70	155	22.76	9.17	1.7	1.6	35	4	39	.11	4	.4	.6	28	KAO
		18	11	7 35.10	19	23.65	155	16.85	2.83	.9	1.0	18	4	49	.10	1	.3	.2	14	SSC
		18	1131	53.95	19	23.37	155	16.97	3.02	1.2	1.2	20	5	69	.10	0	.3	.2	13	SSC
		18	1410	32.00	19	54.42	156	21.51	.34	3.4	3.0	47	4	283	.12	60	2.0	.5	40	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAY	18	1412	24.76	19	23.06	155	17.08	2.34	.9	1.0	19	5	62	.08	1	.3	.3	10	SSC
		18	17 8	9.49	19	19.87	155	8.66	8.51	2.3	2.3	41	5	76	.11	5	.4	.6	23	SF4
		18	1736	19.80	19	57.25	156	26.16	1.36	4.8	4.5	49	3	229	.11	69	1.3	.7	45	DIS F
		18	2124	57.99	19	22.19	155	3.89	8.24	2.1	1.8	37	5	92	.12	4	.5	.6	24	SF5
		18	2136	12.73	19	19.82	155	11.23	7.94	1.8	1.1	30	2	90	.08	5	.5	.7	18	SF3
		18	2353	16.29	19	23.58	155	16.84	2.72	2.7	3.0	37	5	36	.10	0	.2	.2	29	SSC
		19	0 5	51.54	19	23.65	155	16.84	2.85	3.0	3.3	42	5	43	.13	1	.2	.2	30	SSC
		19	021	55.45	19	23.84	155	16.89	2.86	1.6	1.7	24	3	67	.11	1	.3	.2	12	SSC
		19	739	56.60	19	19.87	155	11.75	7.67	2.1	1.7	34	2	85	.12	5	.5	.6	26	SF3
		19	1547	30.71	19	10.40	155	37.32	5.56	1.4	1.4	24	2	99	.17	8	.5	2.9	17	LSW
		19	1747	20.49	19	10.01	155	37.46	8.48	1.6	1.4	25	2	102	.13	9	.5	1.0	16	LSW
		20	338	54.17	19	26.74	155	33.93	39.18	2.7	3.5	38	3	39	.22	4	.9	1.9	2	DML L
		20	443	54.19	19	28.09	155	25.70	10.30	1.9	1.3	34	3	46	.11	5	.4	.7	20	KAO
		20	611	14.74	19	22.99	155	16.75	2.83	1.8	2.1	26	3	45	.08	1	.2	.2	19	SSC
		20	1114	3.34	19	23.24	155	16.92	2.78	1.9	1.7	28	6	40	.10	1	.2	.3	19	SSC
		20	1114	30.35	19	19.91	155	8.48	5.48	1.6	1.2	27	3	80	.11	5	.5	1.4	16	SF4
		21	121	46.46	19	19.65	155	10.47	7.49	1.3	1.1	25	3	94	.08	5	.5	1.0	19	SF3
		21	1342	40.61	19	22.70	155	.88	8.91	3.0	3.0	42	3	153	.10	6	.6	.4	26	SF5
		21	1454	56.48	19	23.71	155	16.82	2.71	1.5	1.3	23	4	55	.08	1	.3	.2	15	SSC
		21	1744	5.15	19	19.46	155	10.34	8.71	2.0	1.6	35	5	99	.09	5	.4	.6	20	SF3
		21	1757	7.86	19	19.90	155	7.81	7.83	1.5	.8	24	2	95	.11	5	.5	.8	12	SF4
		21	19 5	10.02	19	26.41	155	37.65	3.65	1.4	1.3	20	2	94	.12	3	.5	.8	7	MLO
		21	2232	30.30	19	20.86	155	7.68	7.59	2.1	1.8	39	4	84	.11	4	.4	.7	29	SF4
		21	2325	58.82	19	20.93	155	13.11	8.96	1.7	1.3	27	2	59	.08	3	.5	.8	20	SF2
		22	23A	26.36	19	21.15	155	13.44	8.48	2.0	2.1	37	3	55	.12	3	.4	.5	27	SF2
		22	3 4	45.16	19	42.68	156	6.43	35.18	2.4	1.8	32	2	243	.11	28	1.3	2.3	22	HUA
		22	71A	35.83	19	23.89	155	15.35	4.14	1.0	.7	11	2	108	.10	2	.4	.8	7	SEC
		22	832	51.09	19	20.90	155	10.80	8.61	2.0	1.9	40	5	72	.09	3	.4	.5	25	SF3
		22	850	44.83	19	20.09	155	12.49	8.35	1.5	1.0	26	2	75	.08	5	.5	.8	20	SF2
		22	1215	53.27	19	20.45	155	10.73	7.98	1.6	1.2	29	4	79	.10	3	.5	.7	20	SF3
		22	14 9	49.90	19	18.72	155	15.06	9.10	2.3	2.1	44	4	95	.11	4	.4	.5	26	SF1
		22	1916	39.84	19	54.70	156	20.44	1.44		2.0	34	3	282	.11	58	1.8	1.2	18	DIS
		22	2145	.57	19	24.83	155	36.79	.00		1.6	9	0	81	.09	5	.4	2.0	7	MLO
		23	015	24.54	19	23.18	155	16.89	3.19	1.3	1.4	22	4	59	.10	0	.3	.3	12	SSC
		23	34A	.86	19	26.15	155	37.02	3.00	2.8	3.1	35	1	79	.12	2	.4	.7	27	MLO
		23	421	13.84	19	25.81	155	37.41	2.69	2.2	2.2	29	3	80	.13	3	.4	.8	17	MLO
		23	8 4	8.07	19	24.57	155	22.93	9.45	1.7	1.6	34	4	39	.08	4	.3	.6	26	KAO
		23	9 6	56.56	19	24.16	155	16.83	3.36	1.5	1.6	20	4	75	.09	1	.4	.3	12	SSC
		23	1058	9.05	19	25.17	155	26.48	6.63	2.4	1.9	43	7	41	.13	2	.3	.8	31	KAO
		23	1238	16.26	19	23.75	155	16.93	2.47	1.4	1.4	25	4	65	.10	1	.3	.2	13	SSC
		23	1252	7.65	19	21.63	155	15.10	9.12	1.9	1.8	34	5	62	.08	2	.4	.5	26	SF1
		23	1343	50.78	19	20.51	155	12.89	7.77		1.1	18	0	65	.10	4	.6	1.1	15	SF2
		23	148A	35.03	19	23.29	155	17.02	3.11	1.2	1.3	19	5	61	.08	0	.3	.3	12	SSC
		23	1655	30.06	19	24.04	155	17.01	2.68	1.2	1.2	17	4	75	.09	1	.3	.2	12	SSC
		23	1822	34.65	19	19.05	155	15.34	8.12	1.6	1.7	34	4	103	.12	4	.5	.7	23	SF1
		23	1852	54.86	19	24.42	155	15.91	1.48	1.3	1.7	12	1	137	.05	2	.3	.4	7	SEC
		24	0 5	56.74	20	1.48	155	25.24	12.19	2.2	2.0	23	1	203	.08	17	1.3	.7	14	KEA
		24	0 8	53.81	19	20.15	155	13.25	6.20	1.6	1.1	28	2	65	.12	5	.5	1.1	20	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAY	24	042	23.95	19	23.41	155	16.76	3.22	2.0	2.2	26	3	45	.08	0	.3	.2	20	SSC
		24	241	49.18	19	18.91	155	15.14	8.23	1.1	1.1	26	4	103	.09	5	.5	.9	17	SF1
		24	416	27.38	19	21.84	155	2.07	8.12	1.4	1.3	25	2	143	.12	4	.7	1.0	19	SF5
		24	531	15.40	19	19.72	155	8.20	8.10	1.5	1.3	28	4	87	.07	4	.5	.7	19	SF4
		24	933	17.95	19	24.06	155	29.56	7.94	2.4	1.6	43	4	49	.10	4	.5	.8	31	KAO
		24	1051	20.14	19	23.77	155	26.67	10.43	2.5	2.4	47	7	41	.11	3	.4	.5	30	KAO
		24	1855	45.81	19	23.08	155	16.94	2.72	1.3	1.3	18	5	65	.09	1	.5	.3	14	SSC
		24	1935	2.54	19	20.24	155	4.06	6.00	1.4	1.5	29	2	125	.10	2	.5	.9	17	SF5
		24	20 0	44.97	19	23.70	155	16.84	2.96	1.1	1.3	20	4	56	.08	1	.3	.3	13	SSC
		24	21 8	2.80	19	20.42	155	12.98	7.90	1.4	1.3	27	2	66	.08	4	.5	.8	20	SF2
		25	1 9	56.70	19	23.65	155	16.95	3.05	.8	1.1	15	4	60	.05	1	.3	.2	9	SSC
		25	133	57.77	19	22.42	155	29.15	10.54	2.6	2.4	41	1	35	.11	3	.3	.5	31	KAO
		25	747	43.88	19	19.49	155	6.62	8.52	1.6	1.3	31	2	129	.10	5	.5	.8	22	SF4
		25	1021	45.58	19	22.76	155	24.37	9.41	1.5	1.2	27	3	41	.07	5	.4	.8	22	KAO
		25	2028	53.42	19	20.48	155	8.94	9.15	1.8	1.6	31	2	69	.07	3	.4	.7	22	SF4
		25	22 6	36.26	19	29.07	155	42.79	7.32	1.4	1.3	29	3	69	.11	6	.5	1.1	17	MLO
		25	23 8	33.42	19	18.44	155	13.30	7.51	1.4	1.4	33	3	85	.10	3	.5	.8	21	SF2
		26	1 4	21.07	19	25.48	155	29.64	8.25	1.8	1.1	34	3	59	.12	7	.4	1.0	16	KAO
		26	253	51.13	19	17.34	155	20.94	7.62	1.1	1.1	22	2	133	.08	4	.5	1.0	15	SWR
		26	551	21.09	19	21.95	155	1.94	8.24	1.6	1.4	25	1	152	.10	4	.8	.7	17	SF5
		26	1452	59.98	19	21.87	155	18.07	3.25	1.6	1.7	24	3	49	.10	3	.3	.6	17	SWR
		26	19 9	36.28	19	23.04	155	2.98	8.32	2.1	1.7	29	6	117	.10	4	.5	.4	20	SF5
		27	528	32.38	19	21.72	155	5.90	8.97	2.0	1.8	29	3	83	.11	2	.5	.7	23	SF4
		27	916	47.10	19	23.85	155	16.83	2.94	1.9	1.9	27	5	70	.09	0	.3	.2	15	SSC
		27	952	32.55	19	23.66	155	17.05	2.89	1.1	1.1	20	5	58	.06	1	.3	.2	14	SSC
		27	1018	26.76	19	20.84	155	12.45	9.13	1.6	1.3	26	3	66	.08	3	.6	.8	20	SF2
		27	1044	1.38	19	23.50	155	16.73	3.80	2.1	2.4	30	4	44	.10	0	.3	.3	24	SSC
		27	1232	37.40	19	20.78	155	10.57	8.92	2.0	1.9	39	6	73	.07	3	.4	.5	24	SF3
		27	1528	9.58	19	21.17	155	13.36	8.87	3.0	3.1	43	5	56	.11	3	.4	.5	33	SF2
		27	1551	58.31	19	19.83	155	8.29	8.60	1.3	1.1	25	3	84	.07	5	.6	.9	16	SF4
		27	1555	52.40	19	20.55	155	10.14	7.02	1.4	1.1	25	4	75	.08	3	.5	.9	15	SF3
		27	1626	36.62	19	23.24	155	16.95	3.33	1.5	1.4	19	4	58	.08	0	.3	.3	14	SSC
		27	2145	24.81	19	24.10	155	15.77	3.31	1.2	1.0	13	2	121	.06	2	.4	.4	7	SEC
		27	2154	57.59	19	24.75	155	25.86	9.82	2.0	1.6	38	3	40	.11	2	.4	.6	23	KAO
		27	2220	58.97	19	8.78	155	37.43	9.73	1.4	1.8	26	1	109	.18	11	.6	1.0	11	LSW
		28	156	.36	19	19.27	155	12.94	8.54	1.9	1.9	40	2	81	.10	4	.4	.6	31	SF2
		28	721	20.22	19	21.55	155	.99	5.94	1.9	1.9	30	2	172	.11	5	.7	.7	16	SF5
		28	820	9.44	19	12.62	155	33.80	6.57	2.4	1.9	24	1	124	.14	20	.6	1.4	19	LSW
		28	1327	57.69	19	21.85	155	25.49	9.20	1.8	1.5	34	4	44	.12	4	.4	.6	26	KAO
		28	1333	37.57	19	24.15	155	16.84	3.11	1.3	1.4	20	6	88	.09	1	.4	.2	14	SSC
		28	1843	7.91	19	23.38	155	17.06	2.67	.9	1.0	15	5	69	.08	0	.2	.3	9	SSC
		28	1957	5.14	19	22.66	155	17.03	2.68	1.3	1.2	16	4	85	.05	1	.2	.3	11	SSC
		28	2012	45.28	19	21.94	155	6.74	7.55	1.1	1.1	24	1	76	.09	2	.5	.8	14	SF4
		28	2154	35.50	19	24.04	155	16.98	2.89	1.4	1.4	16	4	76	.04	1	.3	.2	10	SSC
		28	2358	43.70	19	26.61	155	29.12	6.88	1.7	1.4	28	3	59	.11	7	.4	1.3	16	KAO
		29	0 5	8.06	19	26.90	155	29.35	11.10	2.7	2.3	41	3	70	.10	8	.3	.5	29	KAO
		29	022	34.36	19	24.14	155	16.19	3.02	.9	1.1	13	3	118	.07	1	.4	.5	7	SEC
		29	632	36.58	19	21.38	155	2.79	6.75	1.8	1.3	29	1	133	.14	3	.6	.8	18	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAY	29	1235	17.45	19	23.85	155	16.98	2.88	1.3	1.2	19	6	72	.07	1	.3	.3	12	SSC
		29	14 9	1.77	19	22.79	155	16.65	3.21	1.3	1.4	20	3	47	.12	1	.3	.3	12	SSC
		29	1529	47.21	19	23.94	155	17.00	2.87	1.1	1.4	19	4	63	.07	1	.3	.2	9	SSC
		29	1743	58.14	19	23.54	155	16.79	3.03	2.9	3.2	33	3	47	.11	0	.3	.2	20	SSC F
		29	1756	48.77	19	23.28	155	16.82	2.78	1.0	1.2	16	5	55	.05	0	.3	.2	11	SSC
		29	1853	9.88	19	24.17	155	25.97	8.04	2.1	1.6	42	2	40	.13	3	.3	.8	29	KAO
		29	19 4	23.66	19	41.17	155	1.14	38.80	2.5	1.9	48	4	167	.12	2	.8	1.5	39	MIL
		29	1932	53.78	19	18.83	155	13.23	9.50	2.0	2.0	40	2	131	.09	7	.5	.5	27	SF2
		29	2042	49.82	19	23.76	155	16.90	2.72	1.1	1.0	17	4	68	.06	1	.3	.3	12	SSC
		29	2210	22.95	19	23.72	155	16.96	2.88	2.9	3.3	36	2	30	.12	1	.2	.2	30	SSC F
		29	2255	33.43	19	23.96	155	16.90	3.14	1.6	1.9	26	5	68	.09	1	.3	.2	14	SSC
		29	23 1	20.47	19	24.86	155	16.02	3.17	1.6	1.6	19	2	123	.10	2	.4	.3	14	SNC
		29	2348	32.84	19	25.49	155	28.99	8.33	1.9	1.3	31	2	60	.09	6	.3	.9	21	KAO
		30	11 7	34.83	19	17.11	155	14.93	6.52	1.3	1.3	29	4	189	.09	3	.5	.8	18	SF1
		30	1334	6.06	19	20.82	155	13.01	8.86	2.0	1.9	37	3	62	.11	3	.4	.5	27	SF2
		30	1354	19.42	19	23.88	155	1.95	7.96	1.7	1.6	28	2	127	.14	4	.6	.9	17	SF5
		30	1528	52.20	19	19.40	155	10.51	8.08	1.4	1.3	30	2	100	.09	5	.5	.8	15	SF3
		30	1535	49.46	19	25.19	155	15.94	2.99	1.8	1.9	24	3	74	.11	2	.3	.3	15	SNC
		30	1738	48.47	19	25.07	155	16.12	2.90	1.5	1.7	25	3	93	.12	2	.3	.3	11	SNC
		30	21 6	48.88	19	23.16	155	14.88	3.20	1.5	1.7	23	4	67	.07	2	.3	.3	15	SEC
		31	11 4	36.76	19	21.15	155	7.91	8.67	1.3	1.1	30	2	77	.08	4	.5	.7	17	SF4
	JUN	1	552	19.70	19	19.03	155	11.43	8.60	1.5	1.2	26	2	107	.08	5	.5	1.0	15	SF3
		1	821	33.39	19	21.41	155	7.26	7.76	1.6	1.3	26	1	80	.10	3	.5	.8	17	SF4
		1	828	39.25	19	16.90	155	.93	46.60	2.3	2.0	30	0	218	.11	7	2.1	2.7	23	DEP
		1	924	33.98	19	20.10	155	6.89	8.15	1.4	1.1	23	1	109	.09	5	.5	1.1	14	SF4
		1	1641	29.37	19	20.87	155	13.12	8.37	1.8	1.8	40	3	60	.13	3	.4	.6	25	SF2
		1	2110	30.65	19	21.61	155	28.54	9.54	2.7	2.6	44	4	38	.11	2	.3	.6	37	KAO
		1	2121	35.92	19	31.73	155	25.53	7.51	1.9	1.1	38	5	46	.13	4	.3	.6	23	MLO
		1	2234	29.98	19	21.20	155	3.85	8.26	2.9	3.1	43	2	84	.10	3	.5	.4	34	SF5
		1	2242	40.86	19	20.45	155	13.24	8.25	1.4	1.3	28	2	63	.07	4	.4	.7	19	SF2
		2	215	43.05	19	24.32	155	16.48	14.85	1.5	1.3	39	3	70	.11	1	.5	.4	27	DEP
		2	3 0	35.95	19	23.01	155	16.79	2.90	2.2	2.4	33	1	40	.10	1	.2	.3	27	SSC
		2	813	35.53	19	23.30	155	16.79	2.85	2.2	2.3	33	4	38	.12	0	.2	.2	20	SSC
		2	831	15.68	19	23.19	155	17.06	2.72	1.3	1.2	17	5	71	.07	0	.2	.3	11	SSC
		2	852	16.98	19	23.15	155	16.94	2.87	1.3	1.0	10	1	75	.05	2	.4	.7	9	SSC
		2	856	29.08	19	23.17	155	16.75	3.26	2.1	2.0	12	1	66	.04	2	.4	.6	11	SSC
		2	857	39.52	19	22.87	155	16.28	2.47	1.1	1.0	9	1	68	.12	1	.4	.6	8	SEC
		2	911	39.70	19	23.49	155	16.66	3.12	2.1	2.4	19	1	73	.06	2	.3	.5	18	SSC
		2	918	49.68	19	23.56	155	16.85	2.33	1.1	1.0	12	1	70	.10	3	.4	.5	8	SSC
		2	929	3.97	19	23.17	155	16.68	2.57	.9	1.0	8	1	124	.08	2	.5	.7	6	SSC
		2	1034	57.08	19	26.96	155	28.69	11.38	3.2	3.2	45	4	37	.11	7	.3	.5	38	KAO
		2	1153	25.48	19	22.43	155	27.50	9.52	1.5	1.3	24	1	70	.11	0	.4	.8	17	KAO
		2	1436	3.42	19	18.40	155	15.12	4.73	.9	1.1	22	2	114	.12	4	.5	1.7	19	SSF
		2	1746	37.53	19	13.56	155	15.57	43.15	1.5	1.6	20	0	214	.04	7	2.1	4.4	14	DEP L
		2	1841	50.76	19	22.53	155	17.29	2.82	1.0	1.0	18	4	88	.09	2	.3	.4	10	SSC
		3	127	51.86	19	23.36	155	16.84	2.80	1.4	1.7	24	4	38	.10	0	.3	.2	15	SSC
		3	135	34.01	19	20.21	155	13.28	6.95	1.2	1.0	23	2	65	.10	5	.5	1.0	20	SF2
		3	258	11.19	20	1.53	155	50.31	27.98	3.3	3.0	46	4	200	.10	13	1.1	1.7	40	KOH

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	3	435	11.05	19	25.42	155	24.83	6.85	1.5	1.3	24	2	47	.10	1	.4	1.0	17	KAO
		3	752	56.44	19	25.44	155	15.97	3.28	1.1	1.0	15	1	179	.08	2	.7	.5	10	SNC
		3	941	20.74	19	19.13	155	13.15	4.16	1.3	1.3	30	1	80	.13	4	.4	1.4	20	SSF
		3	1812	3.92	19	13.52	155	37.57	8.16	2.1	1.6	35	5	92	.18	3	.5	.8	21	LSW
		3	1920	3.86	19	21.96	155	5.11	8.79	1.5	1.3	31	3	77	.10	3	.4	.5	19	SF5
		3	1921	39.03	19	10.49	155	33.34	8.03	2.3	2.2	33	3	139	.16	10	.6	1.0	18	LSW
		3	21 6	36.69	19	24.45	155	27.04	9.44	1.9	1.5	34	3	51	.13	4	.4	.7	23	KAO
		3	2240	15.24	19	18.91	155	50.25	9.45	2.8	2.9	34	3	123	.14	6	.5	.5	20	KON
		3	2254	46.86	19	18.65	155	15.48	7.97	1.4	1.3	28	2	112	.11	4	.5	.9	14	SF1
		4	248	36.53	19	20.42	155	9.73	8.01	1.3	1.1	26	1	76	.07	3	.5	.9	16	SF3
		4	639	56.56	19	18.72	155	15.09	7.35	1.4	1.7	27	2	106	.09	4	.4	.7	20	SF1
		4	11 1	23.23	19	19.33	155	15.45	8.22	1.9	1.9	34	2	91	.10	4	.4	.6	22	SF1
		4	1722	46.79	19	26.35	155	27.22	8.57	2.2	1.5	39	1	45	.13	7	.4	.9	24	KAO
		4	1955	49.27	19	23.50	155	16.64	3.41	2.1	2.4	30	4	55	.10	1	.3	.3	24	SSC
		4	1957	20.97	19	23.65	155	16.81	2.71	1.8	1.6	24	3	46	.09	1	.3	.2	19	SSC
		4	20 1	28.94	19	20.33	155	11.94	7.84	1.4	1.3	26	1	76	.08	5	.5	.7	18	SF3
		4	21 0	31.36	19	23.62	155	16.90	2.90	1.6	2.0	22	3	49	.07	0	.3	.2	14	SSC
		5	050	58.67	19	24.29	155	16.83	3.14	1.3	1.4	21	3	94	.09	1	.4	.3	13	SSC
		5	123	28.41	19	21.96	155	4.82	7.39	1.8	1.3	34	4	77	.14	3	.4	.8	22	SF5
		5	126	51.56	19	23.61	155	17.30	3.22	.9	1.3	12	3	159	.06	1	.5	.3	8	SSC
		5	143	36.18	19	23.49	155	16.92	3.35	1.4	1.7	22	4	68	.09	0	.3	.3	12	SSC
		5	147	6.23	19	23.35	155	16.95	2.90	1.7	2.0	27	4	54	.08	0	.2	.2	18	SSC
		5	212	52.12	19	18.21	155	20.23	7.07	1.2	1.2	22	1	120	.09	3	.5	1.3	17	SWR
		5	958	2.45	19	22.91	155	17.02	2.35	1.0	1.3	17	5	72	.06	1	.3	.3	9	SSC
		5	1114	3.26	19	25.14	155	24.29	8.89	2.6	2.1	42	3	43	.13	2	.4	.6	35	KAO
		5	1133	34.00	19	11.09	155	40.70	5.33	2.4	2.2	35	3	119	.18	10	.6	1.5	25	LSW
		5	1136	48.42	19	23.29	155	17.17	3.05	1.2	1.2	16	3	71	.10	0	.3	.4	9	SSC
		5	1250	24.73	19	22.71	155	17.11	2.70	.9	1.1	16	4	103	.06	1	.3	.3	11	SSC
		5	1317	8.06	19	17.66	155	13.24	6.84	1.6	1.6	25	1	106	.11	1	.6	1.0	16	SF2
		5	1346	41.81	19	23.39	155	37.04	9.95	2.2	1.3	28	4	49	.11	6	.4	1.0	13	MLO
		5	1531	55.13	19	19.90	155	7.91	8.32	2.0	2.0	35	4	92	.08	5	.4	.6	24	SF4
		5	16 1	49.56	19	19.45	155	8.51	7.35	1.8	1.8	30	4	82	.07	4	.4	.7	17	SF4
		5	2027	6.22	19	19.26	155	16.17	8.53	2.3	2.2	42	4	107	.10	3	.4	.5	23	SF1
		6	416	48.45	19	20.29	155	11.76	8.09	2.3	2.4	43	3	78	.12	5	.4	.6	32	SF3
		6	839	30.95	20	9.06	155	47.20	26.62	3.0	3.2	46	3	157	.11	3	.7	1.0	36	KOH F
		6	9 9	48.07	19	20.36	155	6.79	6.18	2.0	1.4	27	3	105	.12	5	.6	1.2	22	SF4
		6	1422	37.64	19	25.05	155	15.97	3.37	1.9	1.8	26	3	120	.09	2	.4	.3	20	SNC
		6	1943	16.69	19	19.13	155	13.61	8.97	2.9	2.8	47	5	68	.12	4	.4	.5	30	SF2
		6	20 3	30.96	19	19.21	155	13.78	7.24	1.3	1.0	29	3	72	.10	4	.4	.9	20	SF2
		7	1152	49.33	19	21.12	155	24.56	10.73	1.3	1.3	28	1	50	.09	3	.4	.8	21	SWR
		7	1417	19.58	19	20.67	155	8.62	7.64	2.2	2.4	41	1	134	.11	3	.4	.5	28	SF4
		7	1458	16.64	19	11.72	155	37.72	8.77	2.4	2.0	36	2	98	.21	6	.7	1.0	22	LSW
		7	2354	15.43	19	20.44	155	7.30	7.81	1.9	1.9	32	1	95	.11	5	.5	.6	20	SF4
		8	1516	59.05	19	18.49	155	12.84	9.36	1.7	1.8	41	5	135	.12	8	.5	.6	20	SF2
		8	1529	41.50	19	20.03	155	9.10	7.96	1.8	1.3	31	3	76	.08	4	.5	.7	20	SF4
		8	1530	43.32	19	23.79	155	16.86	2.96	1.2	1.4	22	6	72	.08	1	.3	.2	11	SSC
		8	1612	28.81	19	23.91	155	16.73	2.78	2.1	2.2	33	4	43	.10	0	.3	.2	24	SSC
		8	18 6	5.16	19	23.37	155	16.58	3.01	2.1	2.3	25	5	52	.12	2	.3	.5	15	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	8	1930	30.80	19	23.53	155	16.86	2.92	2.4	3.1	30	3	39	.10	0	.3	.2	13	SSC
		8	2013	43.56	19	23.30	155	16.79	2.99	2.4	2.7	43	5	38	.10	0	.2	.2	26	SSC
		8	2014	52.89	19	23.77	155	17.01	2.44	1.6	1.7	12	3	83	.06	1	.4	.4	7	SSC
		8	2040	45.38	19	22.91	155	16.97	2.58	.9	1.0	14	4	79	.06	1	.3	.3	10	SSC
		8	2155	27.48	19	23.14	155	16.92	2.84	1.0	1.4	17	4	59	.08	0	.3	.3	10	SSC
		8	2214	48.34	19	22.75	155	17.16	2.44	.9	1.2	14	4	92	.05	1	.3	.3	10	SSC
		8	2258	29.66	19	22.94	155	16.73	2.92	1.8	2.4	25	4	45	.11	1	.3	.3	18	SSC
		8	23	6 59.07	19	24.05	155	16.82	2.70	1.2	1.2	18	5	84	.08	1	.3	.2	11	SSC
		9	041	20.43	19	22.77	155	17.10	2.71	.9	1.0	14	2	79	.08	1	.3	.4	11	SSC
		9	136	35.85	19	24.04	155	15.94	3.20	1.4	1.8	21	3	109	.08	1	.3	.3	12	SEC
		9	140	45.50	19	22.90	155	17.15	2.44	1.2	1.2	20	6	62	.07	1	.2	.3	12	SSC
		9	225	52.92	19	18.23	155	27.52	10.15	1.4	1.3	22	2	80	.09	7	.5	.9	16	LSW
		9	322	14.80	19	27.78	155	20.90	7.62	1.8	1.1	25	5	81	.11	1	.5	.7	16	KAO
		9	338	5.52	19	23.91	155	17.10	3.37	1.2	1.0	14	2	78	.10	1	.4	.4	9	SSC
		9	727	50.39	19	23.34	155	16.75	3.20	2.5	2.3	37	3	39	.11	0	.2	.2	26	SSC F
		9	728	33.59	19	22.95	155	16.91	2.69	2.1	2.3	25	3	40	.09	1	.2	.3	20	SSC
		9	745	50.78	19	23.38	155	16.75	2.97	1.5	1.8	22	3	45	.09	0	.3	.2	15	SSC
		9	837	16.96	19	17.82	155	12.90	5.85	1.5	1.4	30	3	120	.11	2	.5	1.0	17	SF2
		9	1251	32.65	19	18.38	155	15.19	7.66	1.9	1.9	34	2	105	.11	4	.4	.6	25	SF1
		9	1455	2.89	19	21.85	155	18.08	2.82	1.1	1.0	14	1	64	.08	3	.3	.7	11	SWR
		9	1746	51.05	19	23.57	155	16.99	3.21	1.1	1.2	18	5	71	.09	0	.3	.3	12	SSC
		9	18	6 1.46	19	23.46	155	16.67	3.25	1.6	1.9	26	3	53	.10	1	.3	.3	19	SSC
		9	1857	35.34	19	19.38	155	11.10	9.03	1.6	1.7	26	0	100	.07	5	.5	1.0	24	SF3
		9	1922	29.22	19	22.59	155	17.10	2.96	1.3	1.2	19	3	88	.06	2	.3	.3	11	SSC
		9	2250	19.18	19	22.84	155	16.98	2.65	1.5	1.6	22	4	76	.08	1	.2	.3	13	SSC
		9	23	4 36.54	19	22.68	155	17.12	2.40	.9	1.0	15	4	96	.08	1	.3	.4	10	SSC
		10	039	50.20	19	21.96	155	17.94	3.11	1.4	1.1	23	3	50	.09	3	.3	.5	16	SWR
		10	050	18.51	19	20.29	155	11.16	9.86	1.5	1.1	23	1	80	.06	4	.5	.8	19	SF3
		10	052	48.43	19	23.62	155	16.91	3.00	1.3	1.1	21	4	49	.06	0	.3	.2	13	SSC
		10	216	55.68	19	20.55	155	12.83	10.24	3.1	3.1	46	4	66	.10	4	.4	.3	36	SF2 F
		10	227	3.82	19	23.59	155	16.69	3.03	1.5	1.2	16	3	48	.12	1	.4	.3	8	SSC
		10	231	8.81	19	20.29	155	13.20	7.49	1.5	1.3	29	3	65	.09	4	.5	.8	22	SF2
		10	251	22.46	19	20.40	155	13.10	8.83	1.4	1.2	25	2	64	.07	4	.5	.9	18	SF2
		10	4	2 58.16	20	1.94	155	42.61	9.89	1.7	1.4	20	1	146	.09	13	1.7	1.6	14	KOH
		10	519	7.96	19	24.02	155	16.68	3.12	2.0	2.1	28	5	80	.10	0	.3	.2	17	SSC
		10	946	46.82	19	23.20	155	16.90	2.95	.9	1.0	16	4	83	.07	0	.3	.3	9	SSC
		10	1016	43.54	19	22.84	155	16.93	2.89	1.0	1.2	19	4	70	.09	1	.3	.3	12	SSC
		10	1226	48.46	19	21.04	155	13.78	8.21	2.0	1.8	37	4	61	.12	3	.4	.6	28	SF2
		10	1332	17.00	19	22.92	155	16.84	2.75	1.3	1.2	14	3	88	.05	1	.2	.3	10	SSC
		10	1337	42.76	19	20.59	155	3.08	6.78	1.9	1.9	32	2	111	.13	1	.5	.7	19	SF5
		10	14	0 35.01	19	19.96	155	10.11	7.59	1.6	1.3	28	3	86	.09	4	.5	.8	20	SF3
		10	1416	38.97	19	20.02	155	12.89	8.51	1.5	1.5	31	3	72	.09	5	.5	.7	21	SF2
		10	1524	54.01	19	23.82	155	16.87	2.91	1.8	1.9	21	4	76	.11	1	.4	.2	14	SSC
		10	1835	27.93	19	21.58	155	18.45	1.37	.5	1.2	12	1	94	.07	3	.3	.8	11	SWR
		10	1946	52.38	20	1.26	155	41.96	11.00	2.1	1.6	24	2	146	.12	15	.8	.8	17	KOH
		10	1953	1.41	19	23.92	155	28.33	9.41	1.9	1.8	36	1	60	.10	3	.4	.7	28	KAD
		10	2041	17.45	19	23.28	155	17.17	2.10	1.2	1.2	14	2	85	.09	0	.2	.3	11	SSC
		10	2149	15.86	19	24.66	156	8.64	40.79	3.2	3.7	47	5	252	.09	25	1.1	.9	38	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	10	2150	38.01	19	21.51	155	18.59	1.68	1.2	1.0	12	2	81	.07	3	.3	.7	9	SWR
		11	011	46.34	19	21.45	154	59.89	4.76	1.3	1.1	23	3	197	.13	6	.9	3.1	11	SLE
		11	020	51.26	19	22.50	155	2.78	6.75	1.5	1.3	30	2	128	.12	5	.5	.7	17	SF5
		11	047	13.80	19	20.97	155	8.35	7.65	2.5	2.6	39	2	130	.11	3	.5	.7	27	SF4
		11	055	11.53	19	23.64	155	16.77	3.00	1.2	1.2	21	5	44	.09	1	.3	.2	16	SSC
		11	1	4 14.05	19	23.18	155	16.85	2.78	1.4	1.4	18	3	69	.08	0	.3	.2	13	SSC
		11	115	47.81	19	23.06	155	14.29	1.43	1.2	1.7	11	0	81	.06	2	.4	.5	10	SEC
		11	2	3 38.11	19	19.87	155	10.39	8.15	1.6	1.3	26	1	89	.07	4	.5	.8	18	SF3
		11	812	3.91	19	23.63	155	16.78	3.00	1.4	1.7	22	2	54	.07	1	.3	.3	13	SSC
		11	1120	31.17	19	23.64	155	16.91	3.08	1.2	1.4	18	3	50	.08	1	.3	.3	12	SSC
		11	12	2 34.77	19	22.98	155	17.04	2.41	1.0	1.1	13	2	89	.04	1	.3	.3	8	SSC
		11	1247	49.68	19	23.01	155	16.82	3.13	1.0	1.3	18	2	47	.06	1	.3	.3	10	SSC
		11	1353	35.93	19	23.76	155	15.57	4.13	1.0	1.1	17	3	107	.12	2	.4	.5	7	SEC
		11	1552	36.66	19	21.49	155	18.15	3.69	1.5	1.5	25	4	50	.21	3	.5	1.0	14	SWR
		11	1812	52.87	19	22.35	155	5.86	6.25	1.1	1.3	27	2	71	.14	1	.5	.9	14	SF4
		11	1814	4.16	19	23.94	155	17.16	2.71	.7	.9	15	4	65	.06	1	.3	.3	10	SSC
		11	1841	54.01	19	23.71	155	16.84	2.60	1.6	1.8	22	4	56	.10	1	.3	.2	15	SSC
		11	1951	59.03	19	23.91	155	15.81	2.68	.8		15	1	109	.09	1	.4	.3	5	SEC
		11	21	3 36.55	19	15.79	155	22.97	7.61	2.0	2.6	40	3	132	.12	3	.5	.7	21	SWR
		11	2229	33.22	19	23.09	155	17.04	2.64	.9	1.1	15	3	65	.06	1	.5	.3	10	SSC
		11	2250	33.76	19	23.76	155	16.86	2.78	1.5	1.7	24	3	66	.08	1	.3	.2	16	SSC
		12	2 3	9.07	19	20.18	155	9.51	7.50	1.4	1.1	27	1	78	.11	4	.5	.7	19	SF3
		12	236	8.06	19	24.57	155	.40	8.02	1.7	1.6	30	2	137	.14	3	.5	.7	10	SF5
		12	5	4 59.02	19	19.69	155	8.14	8.26	2.1	2.3	39	4	88	.11	4	.4	.6	23	SF4
		12	611	25.08	19	21.72	155	18.24	1.48	1.1	1.5	15	2	67	.12	3	.3	.7	8	SWR
		12	811	3.17	19	23.64	155	16.99	3.13	2.3	3.0	31	1	45	.11	1	.3	.3	22	SSC
		12	947	33.84	19	23.59	155	16.83	3.01	1.6	1.9	25	3	41	.10	0	.3	.2	15	SSC
		12	1028	33.43	19	23.38	155	16.78	3.01	1.3	1.6	19	3	51	.08	0	.3	.3	14	SSC
		12	1130	31.58	19	23.69	155	16.78	2.83	1.4	1.6	21	3	47	.08	1	.3	.2	11	SSC
		12	15	3 50.10	19	23.47	155	16.94	2.68	1.1	1.5	21	4	42	.10	0	.3	.3	11	SSC
		12	1735	51.84	19	20.67	155	13.54	9.06	2.8	2.5	43	3	56	.12	4	.4	.5	29	SF2
		12	19	8 47.20	19	22.11	155	.40	8.55	2.3	2.2	39	3	170	.12	6	.8	.5	25	SF5
		12	2018	46.48	19	21.20	155	13.00	8.83	1.8	2.0	34	3	58	.09	3	.4	.6	25	SF2
		12	2222	20.84	19	19.30	155	11.19	5.83	1.3	1.1	24	2	102	.09	6	.5	1.4	12	SF3
		13	4	8 7.53	19	23.73	155	16.67	2.80	1.6	1.7	21	4	43	.10	0	.3	.2	14	SSC
		13	8	3 57.51	19	19.08	155	13.58	9.24	2.0	1.5	15	0	191	.09	7	.8	1.0	14	SF2
		13	1351	26.53	19	26.32	155	28.13	7.86	2.5	2.1	38	3	56	.12	6	.4	1.0	29	KAD
		13	1538	9.26	20	1.90	155	42.91	11.99	2.6	2.1	37	4	144	.13	13	.7	.7	29	KOH
		13	16	6 9.78	19	20.77	155	10.97	8.26	2.5	2.4	42	2	73	.12	3	.4	.6	32	SF3
		13	1632	46.05	19	23.27	155	16.72	3.12	2.1	1.7	32	4	64	.08	0	.2	.3	22	SSC
		13	1634	36.95	19	23.54	155	16.86	2.87	1.9	2.0	24	4	66	.09	0	.2	.3	18	SSC
		13	1959	29.51	19	21.77	155	6.36	6.92	1.4	1.1	30	4	80	.12	2	.5	.8	19	SF4
		13	2122	52.04	19	.16	155	30.95	39.37	2.3	2.0	37	4	217	.07	16	.8	1.3	33	DLS
		13	2235	36.53	19	18.55	155	13.31	7.23	1.4	1.2	27	1	83	.09	3	.5	1.0	15	SF2
		13	2256	22.19	19	19.99	155	8.97	6.29	1.5	1.2	33	5	77	.12	4	.5	.9	25	SF4
		14	148	23.16	19	19.78	155	8.08	7.98	1.7	1.7	24	3	89	.09	5	.5	.8	15	SF4
		14	349	8.88	19	19.36	155	28.52	8.32	1.3	1.2	25	2	61	.11	6	.5	.9	20	KAD
		14	533	7.70	19	20.47	155	13.73	6.44	1.1	1.1	25	2	67	.13	4	.5	1.0	15	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	14	727	13.76	19	15.24	155	25.53	6.29	1.2	1.3	21	2	98	.10	3	.5	1.1	11	LSW
		14	815	38.83	19	18.86	155	13.32	10.19	3.5		45	4	151	.11	7	.5	.5	36	SF2
		14	817	42.93	19	18.33	155	13.15	8.34	1.4	1.1	23	2	148	.09	8	.6	1.1	16	SF2
		14	820	2.02	19	18.07	155	13.21	6.13	1.0	1.1	24	3	95	.12	2	.6	1.2	17	SF2
		14	11 7	49.27	19	23.05	155	16.74	2.87	1.5	2.1	20	2	61	.11	1	.3	.3	13	SSC
		14	1455	16.02	19	20.04	155	13.42	7.28	1.3	1.1	25	1	67	.10	5	.5	.9	16	SF2
		14	1517	33.57	19	16.55	155	22.11	6.96	.9		17	1	134	.09	5	.6	1.4	8	SWR
		14	1855	12.12	19	44.87	155	17.26	41.02	1.8	2.1	35	1	120	.10	17	.8	1.8	27	KEA
		14	1856	59.32	19	20.12	155	6.61	7.77	2.1	1.5	34	3	112	.10	5	.4	.8	25	SF4
		14	1955	51.92	19	1.10	155	28.95	41.23	2.0	1.9	34	1	209	.07	20	1.0	1.9	31	DLS
		15	016	3.90	19	47.55	155	35.30	15.52	2.5	2.7	38	4	95	.09	14	.5	.8	24	KEA
		15	540	56.53	19	23.82	155	17.03	2.76	1.8	1.8	24	3	61	.11	1	.3	.3	16	SSC
		15	555	52.32	19	20.01	155	7.55	6.99	1.4	1.8	28	2	98	.10	5	.4	.7	13	SF4
		15	630	40.92	19	29.16	155	46.13	8.32	1.5	1.2	17	1	199	.14	3	1.2	1.2	10	KON
		15	1115	31.81	19	23.55	155	16.82	2.31	2.3	2.5	28	1	43	.11	0	.2	.3	18	SSC
		15	1117	47.66	19	23.39	155	16.96	2.58	.8	1.0	12	3	63	.09	0	.3	.4	6	SSC
		15	1225	23.40	19	23.47	155	16.78	2.68	2.1	2.5	29	4	43	.13	0	.3	.3	18	SSC
		15	1357	25.89	19	22.87	155	17.18	2.24	1.2	1.6	17	3	74	.08	1	.3	.3	8	SSC
		15	1646	53.74	19	13.08	155	14.75	32.43	1.7	1.5	27	1	200	.08	8	1.1	1.8	21	DEP
		15	17 4	21.20	19	24.09	155	17.60	2.52	1.3	1.2	15	2	50	.06	2	.3	.3	9	SSC
		15	1734	38.34	19	23.90	155	16.78	2.91	1.0	1.2	16	4	116	.07	1	.4	.3	10	SSC
		15	1810	25.36	19	24.00	155	16.89	2.91	1.1	1.2	17	4	80	.07	1	.3	.2	8	SSC
		15	1949	56.80	19	21.10	155	4.66	8.05	1.6	1.6	33	2	94	.13	4	.5	.6	17	SF5
		15	1951	46.13	19	23.31	155	16.91	2.90	1.6	1.6	20	4	63	.10	0	.3	.3	14	SSC
		15	2027	16.36	19	22.56	155	17.00	2.68	1.4	1.2	20	5	91	.08	2	.3	.3	13	SSC
		16	153	32.45	19	23.18	155	17.00	2.57	1.3	1.2	17	5	62	.06	0	.3	.3	12	SSC
		16	253	22.02	19	26.12	155	22.86	8.22	1.9	1.5	35	3	40	.12	4	.4	.7	24	KAO
		16	7 1	46.64	18	53.96	155	12.68	48.00	2.3	1.8	34	2	251	.10	39	1.8	2.3	29	LOI
		16	722	43.60	19	16.56	155	21.73	6.28	2.3	2.5	45	4	134	.13	6	.4	.8	35	SWR
		16	1348	46.21	19	19.00	155	15.01	7.76	1.9	1.8	36	1	89	.13	5	.5	.7	25	SF1
		16	16 9	2.24	19	19.93	155	6.83	7.80	2.1	1.9	29	2	113	.11	5	.5	.8	23	SF4
		16	2247	41.10	19	19.78	155	10.64	8.43	2.0	2.1	37	1	92	.11	4	.4	.6	29	SF3
		16	2329	50.15	19	17.75	155	23.01	9.37	.9	1.1	21	2	102	.09	5	.5	.8	16	SWR
		17	427	6.48	19	55.79	155	13.27	41.71	2.6	2.4	46	3	209	.11	13	.8	1.5	40	KEA
		17	7 7	44.67	19	10.81	155	39.63	9.07	2.8	2.7	41	3	112	.18	9	.5	.8	26	LSW
		17	1111	14.98	19	23.14	155	16.81	2.94	1.0	1.4	17	4	61	.09	1	.3	.3	8	SSC
		17	1213	47.53	19	20.96	155	8.66	6.72	2.4	2.6	38	3	162	.12	3	.5	.7	30	SF4
		17	1244	50.99	19	15.98	155	23.51	6.12	1.1	1.5	33	3	113	.13	3	.4	.9	17	SWR
		17	14 4	14.69	19	31.65	155	38.33	7.02	2.3	1.9	12	0	195	.06	6	1.1	1.6	8	MLO
		17	1710	36.82	19	23.33	155	16.82	2.88	.9	1.0	13	4	88	.06	0	.3	.3	10	SSC
		17	2210	3.45	19	16.16	155	22.53	3.68	1.1	1.5	22	1	134	.08	4	.5	1.4	16	SWR
		18	6 3	23.15	19	23.56	155	16.89	2.81	2.1	2.4	30	5	35	.11	0	.2	.3	21	SSC
		18	618	36.86	19	18.22	155	13.02	4.37	1.7	1.5	32	2	100	.12	2	.4	1.2	24	SSF
		18	621	3.03	19	23.62	155	16.84	3.10	1.3	1.4	19	4	71	.08	0	.3	.3	13	SSC
		18	717	22.92	19	23.63	155	16.82	3.03	.8	1.0	13	4	113	.04	1	.4	.3	8	SSC
		18	854	.36	19	23.40	155	16.69	2.36	.9	1.0	16	5	74	.12	0	.3	.3	9	SSC
		18	947	5.83	19	22.81	155	17.00	2.66	1.3	1.6	14	3	77	.10	1	.3	.4	8	SSC
		18	1035	20.59	19	18.94	155	18.53	4.88	1.0	1.1	22	5	75	.07	2	.4	.8	16	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	18	13 6	29.24	19	20.72	155	7.71	6.84	1.0	1.1	23	0	85	.12	5	.6	1.1	17	SF4
		18	14 5	8.93	19	22.70	155	17.18	2.47	1.3	1.6	20	5	50	.07	1	.2	.3	14	SSC
		18	2020	35.82	19	19.18	155	13.87	6.19	1.6	1.5	35	4	65	.12	4	.4	.8	25	SF2
		18	2212	30.18	19	22.86	155	27.79	8.14	1.8	1.1	27	1	58	.11	1	.4	.8	19	KAO
		18	2341	13.85	19	22.89	155	16.80	2.84	1.6	2.0	30	4	41	.12	1	.3	.3	17	SSC
		19	0 7	39.28	19	23.02	155	17.02	2.48	.9	1.4	15	3	71	.07	1	.3	.3	9	SSC
		19	028	11.12	19	22.88	155	17.16	2.33	1.0	1.0	13	3	73	.04	1	.3	.3	9	SSC
		19	444	35.69	19	22.67	155	1.18	8.12	1.5	1.2	24	4	159	.14	6	.7	.9	18	SF5
		19	5 0	4.27	19	22.93	155	17.18	2.40	1.0	1.2	14	2	72	.06	1	.3	.4	10	SSC
		19	539	39.28	19	26.51	155	29.90	7.45	1.8	2.0	38	3	58	.12	8	.4	1.1	23	KAO
		19	624	4.08	19	17.76	155	15.38	8.28	.9	1.1	18	3	164	.07	4	.6	1.1	13	SF1
		19	630	58.51	20	6.86	155	44.15	22.80	2.1	1.9	27	3	192	.08	5	1.7	1.8	19	KOH
		19	852	48.20	19	20.48	155	10.89	6.71	1.5	1.1	26	4	78	.11	3	.5	.9	16	SF3
		19	853	27.13	19	20.18	155	8.80	7.11	1.3	1.1	22	1	72	.10	4	.6	1.2	18	SF4
		19	854	14.53	19	20.12	155	8.64	7.52	1.1	1.1	21	1	74	.09	4	.5	1.2	16	SF4
		19	858	55.38	19	20.73	155	11.28	8.12	2.2	1.8	31	3	73	.10	4	.4	.7	20	SF3
		19	1029	52.80	19	23.08	155	17.15	2.73	1.2	1.2	17	5	65	.09	1	.3	.3	9	SSC
		19	1047	35.41	19	22.68	155	17.20	2.47	1.2	1.2	13	3	83	.06	1	.3	.4	9	SSC
		19	1123	58.32	19	21.01	155	7.97	8.55	1.3	1.3	27	3	77	.09	4	.5	.9	16	SF4
		19	1158	24.66	19	20.06	155	12.17	8.48	1.5	1.5	24	2	78	.08	5	.5	.8	17	SF3
		19	1323	27.53	19	20.56	155	12.87	8.77	2.0	2.0	34	4	66	.11	4	.4	.6	27	SF2
		19	1540	5.40	19	18.85	155	13.94	7.19	1.3	1.5	27	1	80	.11	3	.5	1.0	18	SF2
		19	1734	55.24	19	20.91	155	13.12	7.76	1.9	2.0	37	4	59	.13	3	.5	.6	22	SF2
		19	2212	33.14	19	20.70	155	13.84	7.70	1.1	1.1	19	2	65	.08	4	.5	1.1	13	SF2
		20	014	24.59	19	13.92	155	32.50	7.33	1.6	1.3	24	1	120	.17	5	.6	1.1	15	LSW
		20	1 4	52.18	19	21.98	155	4.94	6.92	1.1	1.1	21	3	76	.15	3	.7	.9	14	SF5
		20	118	34.88	19	17.41	155	15.36	6.13	1.0	1.1	22	3	149	.11	3	.6	1.1	16	SF1
		20	3 7	48.12	20	7.73	155	46.85	24.43	2.8	2.9	37	5	288	.10	0	1.3	1.2	24	KOH
		20	722	11.20	19	22.23	155	17.48	2.88	1.3	1.4	22	4	55	.08	2	.3	.4	14	SSC
		20	723	3.37	19	20.72	155	12.13	8.58	1.9	1.7	34	3	69	.11	4	.4	.5	23	SF3
		20	730	13.51	19	19.92	155	7.02	8.65	3.0	3.0	44	4	111	.08	5	.4	.4	33	SF4
		20	855	36.83	19	19.09	155	16.34	6.78	1.2	1.2	28	5	110	.11	3	.4	.8	16	SF1
		20	1334	53.64	19	19.19	155	15.58	7.24	1.2	1.4	24	4	103	.09	4	.4	.8	19	SF1
		20	17 9	43.24	19	19.70	155	16.07	35.64	2.3	2.2	43	1	91	.12	2	.6	1.3	36	DEP
		20	1840	30.64	19	21.87	155	18.08	2.65	1.5	1.6	25	4	49	.11	3	.3	.6	15	SWR
		21	050	45.63	19	21.14	155	13.28	8.06	1.8	1.6	34	3	57	.13	3	.5	.6	25	SF2
		21	327	27.19	19	22.04	155	4.56	7.03	2.0	1.8	26	2	84	.12	3	.5	.8	19	SF5
		21	443	47.42	19	25.19	154	57.51	5.78	1.6	1.6	28	3	156	.14	2	.6	.9	16	LER
		21	6 4	14.82	19	21.42	155	15.10	9.83	3.4	3.5	41	4	65	.11	2	.4	.3	33	SF1 F
		21	1032	27.09	19	26.36	155	38.38	3.96	2.5	2.7	23	1	125	.08	4	.6	1.1	12	MLO
		21	1049	53.36	19	20.87	155	6.58	6.48	1.5	1.3	28	1	96	.13	4	.5	1.1	16	SF4
		21	1158	37.09	19	19.42	155	8.80	6.16	1.8	1.5	29	3	83	.10	4	.5	1.2	15	SF4
		21	1245	51.66	19	20.56	155	13.45	8.02	1.2	1.6	22	1	62	.08	4	.5	.9	16	SF2
		22	257	2.21	19	19.89	155	18.58	7.42	1.2	1.3	18	1	62	.09	2	.5	1.1	13	SWR
		22	311	43.78	19	20.36	155	18.54	7.63	1.7	1.9	38	4	96	.12	2	.4	.6	26	SWR
		22	7 4	8.42	19	20.12	155	20.28	1.90	1.4	1.3	13	1	130	.11	5	.4	1.2	8	SWR
		22	713	24.09	19	20.17	155	20.28	1.46	1.9	2.2	15	1	68	.11	5	.4	.9	12	SWR
		22	738	46.32	19	19.91	155	19.54	7.69	1.5	1.5	24	5	63	.08	4	.4	.9	15	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	22	816	47.56	19	19.39	155	19.19	7.85	1.6	1.1	19	2	64	.08	3	.5	1.0	13	SWR
		22	849	30.87	19	19.81	155	19.46	7.34	.9	1.0	17	1	63	.06	4	.5	1.0	16	SWR
		22	858	18.98	19	20.43	155	19.34	7.68	1.4	1.5	26	4	52	.11	3	.4	.8	22	SWR
		22	953	44.64	19	21.31	155	18.92	1.70	1.3	1.7	16	3	81	.10	3	.3	.7	12	SWR
		22	955	4.65	19	21.37	155	18.85	2.44	.5	.8	10	0	79	.07	3	.4	1.2	7	SWR
		22	1051	26.09	19	18.76	155	19.68	5.72	.5	.6	16	1	95	.11	2	.6	1.4	14	SWR
		22	1139	12.97	19	19.42	155	19.27	7.27	1.5	1.1	24	6	66	.07	3	.4	.9	16	SWR
		22	1141	31.84	19	20.30	155	19.93	7.85	2.0	2.3	35	5	62	.10	4	.4	.6	25	SWR
		22	1145	13.25	19	19.29	155	18.99	7.45	1.6	1.1	25	5	92	.07	3	.5	.9	17	SWR
		22	12 2	31.83	19	20.13	155	19.38	7.56	2.2	2.7	47	7	57	.12	3	.4	.5	32	SWR
		22	12 9	55.11	19	18.80	155	19.96	7.08	.9	.9	20	2	99	.08	3	.5	1.3	13	SWR
		22	1232	24.39	19	19.78	155	19.19	8.03	1.5	1.3	26	6	57	.10	3	.4	.9	18	SWR
		22	13 9	22.74	19	19.89	155	19.08	7.08	.8	.6	22	2	53	.08	3	.5	1.0	17	SWR
		22	1311	50.84	19	19.71	155	19.11	8.73	1.6	1.5	25	5	89	.10	3	.5	.8	15	SWR
		22	1312	39.39	19	19.84	155	19.33	7.49	1.5	1.5	28	6	59	.08	3	.4	.7	19	SWR
		22	1315	1.54	19	20.14	155	19.93	7.83	.9	1.1	19	2	64	.06	4	.5	1.2	11	SWR
		22	1332	29.08	19	22.33	155	.61	6.90	1.9	1.4	28	2	172	.15	6	.7	.8	17	SFS
		22	1347	21.56	19	19.86	155	19.35	7.40	.9	.6	21	4	77	.08	3	.4	.9	14	SWR
		22	1348	29.46	19	19.94	155	19.11	9.31	2.2	2.5	48	8	53	.12	3	.4	.4	32	SWR
		22	1358	6.30	19	20.00	155	19.14	9.56	3.1	3.8	50	5	53	.12	3	.4	.4	40	SWR
		22	1413	2.46	19	20.46	155	19.72	7.67		.9	16	3	109	.06	4	.6	1.4	13	SWR
		22	15 0	5.26	19	19.82	155	20.06	7.89	.8	.9	20	5	135	.09	4	.5	1.0	15	SWR
		22	15 7	35.00	19	20.07	155	19.83	7.85	1.2	.9	23	5	64	.06	4	.4	.9	18	SWR
		22	1513	23.11	19	20.40	155	20.05	7.59	1.6	1.5	33	6	62	.11	5	.4	.6	16	SWR
		22	1517	43.50	19	16.40	155	22.52	1.54	1.2	1.1	17	3	130	.13	5	.5	1.1	13	SWR
		22	1522	22.40	19	19.66	155	19.31	7.46	1.8	1.9	27	3	62	.09	3	.4	.9	19	SWR
		22	1535	26.66	19	20.20	155	19.87	2.34	.4	1.0	14	2	62	.15	4	.4	1.3	11	SWR
		22	1610	.03	19	19.85	155	20.07	8.96	1.6	1.3	21	3	72	.07	4	.5	1.1	14	SWR
		22	1624	38.87	19	20.15	155	19.99	7.95	1.5	1.5	26	5	65	.09	5	.4	.9	18	SWR
		22	1631	17.29	19	20.30	155	19.88	7.83	1.9	2.5	36	5	62	.09	4	.3	.6	24	SWR
		22	1640	27.63	19	18.36	155	20.44	7.51	.8	.9	23	5	119	.09	3	.5	.9	17	SWR
		22	1650	52.76	19	19.77	155	19.16	8.22	1.7	2.1	36	4	58	.10	3	.4	.6	19	SWR
		22	1652	11.08	19	19.59	155	19.61	3.88	1.5	1.3	15	1	106	.11	3	.7	1.4	9	SWR
		22	17 4	14.61	19	19.68	155	18.98	4.32	.8	.8	20	4	108	.12	3	.4	1.1	14	SWR
		22	17 4	54.44	19	20.46	155	19.84	8.31	2.4	2.8	43	5	59	.14	4	.4	.6	28	SWR
		22	1713	25.83	19	20.01	155	19.97	8.28	1.7	1.9	30	7	126	.09	4	.4	.8	19	SWR
		22	1717	34.03	19	20.44	155	19.01	8.10	1.5	1.5	30	7	48	.08	3	.4	.7	25	SWR
		22	1719	9.94	19	19.31	155	19.24	7.79	.8	.6	19	5	128	.09	3	.5	.9	15	SWR
		22	1727	31.57	19	18.45	155	15.11	6.41	1.3	1.3	26	5	112	.10	4	.4	.9	22	SF1
		22	1734	49.02	19	20.51	155	19.75	7.20	1.0	.6	19	6	109	.06	4	.4	1.0	15	SWR
		22	1740	47.92	19	20.32	155	19.31	8.44	1.6	1.8	36	9	53	.09	3	.3	.6	24	SWR
		22	1745	14.03	19	20.30	155	19.95	7.67	1.7	2.1	39	8	62	.11	5	.3	.6	27	SWR
		22	1747	59.43	19	20.15	155	19.78	7.26	1.2	1.1	25	7	62	.09	4	.4	.8	18	SWR
		22	1754	47.73	19	19.65	155	19.06	7.38	1.0	.9	20	4	110	.08	3	.5	1.0	17	SWR
		22	18 7	1.47	19	19.53	155	19.44	7.23	1.6	1.8	36	9	67	.09	3	.3	.6	22	SWR
		22	18 8	25.74	19	19.65	155	19.03	6.86	1.2	1.1	24	8	56	.08	3	.4	.7	14	SWR
		22	1819	3.58	19	19.41	155	19.37	7.17	1.4	1.3	29	8	94	.10	3	.4	.9	22	SWR
		22	1825	41.05	19	20.24	155	20.23	7.21	1.2	1.5	25	5	66	.06	5	.4	.9	21	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	22	1828	18.99	19	19.85	155	19.36	7.61	.8	1.1	22	5	60	.10	3	.5	1.0	19	SWR
		22	1840	7.39	19	20.61	155	19.85	8.11	1.6	1.5	24	7	108	.07	4	.4	.9	17	SWR
		22	1842	58.55	19	20.02	155	20.01	7.96	1.5	1.3	27	5	67	.07	5	.4	.8	13	SWR
		22	1844	49.00	19	20.84	155	19.68	7.27	1.4	1.1	21	4	80	.07	4	.4	.9	16	SWR
		22	1853	33.56	19	18.99	155	19.48	6.18	.8	1.1	15	3	82	.07	2	.5	1.1	11	SWR
		22	1859	37.38	19	20.49	155	20.18	6.47	.7	.6	19	2	62	.06	5	.4	1.3	18	SWR
		22	1916	50.42	19	20.55	155	19.85	7.50	1.0	1.1	18	2	86	.04	4	.5	1.1	11	SWR
		22	1921	19.38	19	20.87	155	19.67	6.44	.8	.9	17	2	99	.05	4	.5	1.4	12	SWR
		22	1928	18.15	19	19.04	155	19.57	7.73	.8	1.1	15	1	83	.07	3	.6	1.3	12	SWR
		22	1930	10.49	19	20.64	155	19.43	6.89	.4	.3	18	6	101	.09	4	.4	1.0	11	SWR
		22	1936	18.18	19	20.50	155	20.14	7.07	.6	.3	23	6	61	.06	5	.4	.8	19	SWR
		22	2016	3.13	19	19.94	155	17.11	7.58	1.1		20	5	86	.11	1	.5	.8	15	SWR
		22	21 3	19.56	19	20.14	155	19.83	8.42	1.5	1.3	23	4	63	.07	4	.4	.9	20	SWR
		22	2126	24.50	19	19.90	155	18.92	7.81	1.6	1.5	28	4	52	.09	3	.4	.8	17	SWR
		22	2142	9.22	19	18.74	155	20.93	6.87	1.7	1.9	34	5	105	.11	4	.4	.9	24	SWR
		22	2148	18.02	19	20.38	155	20.14	6.52	.9	.9	17	2	76	.06	5	.5	1.4	14	SWR
		22	2227	45.24	19	20.77	155	19.82	7.36	1.5	1.5	33	5	55	.12	4	.4	.9	24	SWR
		22	2230	14.26	19	20.54	155	19.79	6.79	.8	.3	19	2	57	.09	4	.5	1.5	11	SWR
		22	2232	49.12	19	20.45	155	19.97	7.39	1.5	.6	21	3	61	.07	5	.4	1.1	17	SWR
		22	2236	16.09	19	20.46	155	19.57	8.68	.8	.6	19	3	55	.07	4	.5	1.1	13	SWR
		22	2249	36.89	19	20.01	155	17.48	8.28	1.5	1.3	13	2	123	.06	0	.7	1.5	10	SWR
		22	2250	28.00	19	20.01	155	17.30	8.52	.8	.6	12	1	83	.05	0	.7	1.6	10	SWR
		22	2255	25.87	19	20.42	155	20.18	8.37	.8	.9	19	3	63	.08	5	.5	1.1	14	SWR
		22	23 1	20.17	19	18.34	155	20.02	7.72	.9	.9	22	4	119	.09	3	.5	.9	15	SWR
		22	2322	21.33	19	20.42	155	17.32	8.74	1.8	1.8	28	2	62	.08	1	.4	.7	22	SWR
		22	2334	7.90	19	20.40	155	19.17	9.41	2.9	3.1	46	6	51	.12	3	.4	.4	36	SWR
		22	2336	31.52	19	20.53	155	20.26	7.92	1.5	1.3	26	6	62	.08	5	.4	.9	11	SWR
		22	2350	46.27	19	20.27	155	20.21	8.17	.8	.3	19	3	66	.08	5	.4	1.2	16	SWR
		22	2354	45.80	19	20.96	155	18.77	7.62	1.4	1.1	19	3	84	.07	3	.4	1.1	12	SWR
		22	2358	17.23	19	21.04	155	18.81	7.39	1.4	1.1	15	3	83	.05	3	.5	1.3	9	SWR
		23	0 5	30.86	19	19.71	155	19.16	7.70	1.6	1.8	32	6	58	.10	3	.4	.7	22	SWR
		23	0 8	50.74	19	20.54	155	20.32	7.52	1.5	1.1	20	2	63	.06	5	.5	1.0	14	SWR
		23	013	29.98	19	20.17	155	18.41	7.01	1.5	.9	15	3	85	.11	2	.5	1.1	11	SWR
		23	018	19.64	19	21.19	155	18.85	5.89	1.3	.9	19	5	81	.09	3	.4	1.1	15	SWR
		23	029	23.59	19	21.38	155	18.74	6.74	1.4	.9	16	4	77	.06	3	.5	1.1	12	SWR
		23	034	10.31	19	21.20	155	18.80	6.76	1.4	.9	20	4	81	.06	3	.4	.9	15	SWR
		23	038	37.92	19	20.55	155	19.92	8.12	1.5	1.1	27	6	58	.09	5	.4	.8	20	SWR
		23	041	20.72	19	20.46	155	20.23	8.23	1.5	.9	26	7	63	.09	5	.3	.8	16	SWR
		23	042	15.31	19	21.20	155	18.74	7.10	1.4	.9	17	3	80	.09	3	.5	1.2	10	SWR
		23	043	39.94	19	20.78	155	19.55	7.01	1.4	1.3	22	3	52	.07	4	.4	1.0	21	SWR
		23	059	57.21	19	20.92	155	18.82	4.09	1.3	1.1	22	4	49	.13	3	.4	1.0	15	SWR
		23	1 7	36.63	19	21.41	155	18.75	6.12	1.3	1.1	21	5	63	.08	3	.4	1.0	17	SWR
		23	110	18.90	19	21.04	155	19.03	8.28	1.5	.9	28	6	45	.10	3	.4	.8	24	SWR
		23	121	8.60	19	20.50	155	20.03	6.88	.8	.6	17	2	60	.06	5	.5	1.2	12	SWR
		23	127	19.44	19	21.09	155	18.34	8.27	1.4	.9	21	5	75	.07	2	.4	.9	16	SWR
		23	132	46.61	19	20.56	155	19.54	6.80	1.2	.9	26	6	54	.08	4	.3	.8	23	SWR
		23	145	10.30	19	20.41	155	19.85	7.54	1.5	1.9	32	5	59	.10	4	.4	.8	24	SWR
		23	2 2	5.70	19	19.99	155	20.27	9.04	.6	.3	19	3	101	.05	5	.5	1.0	12	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	23	2 4	35.94	19	20.55	155	17.21	8.59	1.7	1.8	28	4	69	.07	1	.5	.7	14	SWR
		23	214	43.59	19	20.57	155	19.80	7.74		.9	30	7	57	.10	4	.4	.8	19	SWR
		23	215	12.73	19	18.65	155	20.68	8.12	1.4		26	5	108	.08	4	.4	.8	19	SWR
		23	217	27.46	19	19.86	155	18.98	7.99	1.0	.9	21	3	54	.08	3	.5	1.1	10	SWR
		23	219	17.47	19	19.22	155	16.83	6.11	1.5	1.5	21	3	110	.13	2	.6	1.4	14	SF1
		23	223	15.37	19	20.70	155	19.79	7.74	1.5	1.1	27	6	56	.09	4	.4	.8	23	SWR
		23	223	52.96	19	20.27	155	17.64	8.79	1.0	1.3	18	4	73	.06	1	.5	.9	15	SWR
		23	230	30.08	19	16.18	155	20.97	2.24	1.9	1.4	24	3	155	.15	5	.6	1.2	10	SWR
		23	237	38.07	19	20.10	155	17.46	8.61	1.1	.9	16	0	80	.07	0	.6	1.3	13	SWR
		23	241	33.82	19	21.30	155	18.66	7.19	1.4	.9	20	4	55	.07	3	.4	1.1	15	SWR
		23	242	42.16	19	20.03	155	11.01	8.99	1.5	.9	21	3	86	.06	4	.6	1.0	16	SF3
		23	245	36.83	19	20.46	155	20.33	6.64	1.5	1.5	24	3	64	.07	5	.4	1.0	19	SWR
		23	248	19.61	19	20.43	155	20.30	7.16	.8	.6	19	3	63	.10	5	.5	1.5	14	SWR
		23	249	52.51	19	18.81	155	21.15	7.91	1.0	.6	16	1	103	.09	5	.5	1.2	12	SWR
		23	254	58.24	19	20.46	155	20.03	7.32	1.5	.9	22	3	61	.07	5	.4	1.1	18	SWR
		23	3 3	9.91	19	20.48	155	19.84	7.28	1.5	.6	21	4	58	.09	4	.4	1.0	15	SWR
		23	3 6	30.49	19	20.50	155	17.34	8.26	2.3	2.7	45	5	55	.10	1	.3	.4	30	SWR
		23	3 9	2.70	19	20.14	155	17.40	7.66	.7	.6	10	1	71	.06	0	.6	1.2	8	SWR
		23	314	45.29	19	20.07	155	17.62	7.55	.8	.9	12	1	78	.09	0	.7	1.2	11	SWR
		23	332	34.81	19	18.72	155	19.71	7.68	1.1	1.1	21	2	98	.11	2	.5	1.3	18	SWR
		23	338	4.68	19	20.17	155	17.42	8.84	1.3	.9	19	3	71	.07	0	.5	1.0	14	SWR
		23	348	38.98	19	20.32	155	20.26	7.40	1.5	1.1	28	6	65	.09	5	.4	.8	18	SWR
		23	349	48.50	19	19.84	155	18.92	7.20	1.6		24	5	53	.09	3	.4	.9	21	SWR
		23	350	27.10	19	19.02	155	19.39	6.38	.9	.9	13	1	144	.05	2	.6	1.4	11	SWR
		23	353	23.35	19	19.01	155	19.69	7.28	.8	.6	17	3	87	.09	3	.6	1.1	10	SWR
		23	4 0	.51	19	18.90	155	18.53	7.21	1.0	.9	20	4	75	.08	2	.5	1.1	17	SWR
		23	4 2	19.79	19	19.99	155	20.09	8.86	.8	.6	20	3	69	.08	5	.5	.9	12	SWR
		23	4 5	28.50	19	24.09	155	15.86	3.17	1.5	2.0	17	3	112	.07	1	.4	.4	11	SEC
		23	411	29.27	19	20.53	155	19.75	8.17	1.5		32	7	57	.09	4	.4	.7	27	SWR
		23	420	9.30	19	20.19	155	19.80	7.11	1.1	.9	23	6	62	.08	4	.4	.9	19	SWR
		23	430	43.81	19	20.62	155	17.95	6.85	.7	.9	20	5	72	.08	1	.4	.9	17	SWR
		23	433	32.20	19	19.61	155	19.19	7.36	.9	.9	24	6	60	.08	3	.4	.8	22	SWR
		23	443	52.20	19	20.60	155	20.16	7.46	.7	.6	22	6	61	.09	5	.4	.9	19	SWR
		23	447	35.40	19	19.54	155	19.19	7.47	1.5	1.3	26	7	115	.07	3	.4	.7	22	SWR
		23	448	34.70	19	17.88	155	19.05	6.29	.9	.9	24	5	134	.06	1	.4	.7	18	SWR
		23	452	16.06	19	20.39	155	20.20	7.54	.8	.6	24	6	63	.08	5	.4	.9	22	SWR
		23	454	40.33	19	20.60	155	19.85	8.04	1.4	.9	30	7	57	.09	4	.4	.7	26	SWR
		23	516	48.62	19	19.30	155	19.18	7.26	.9	.6	21	5	65	.08	3	.5	.8	17	SWR
		23	521	12.55	19	20.29	155	19.53	7.35	.5	.3	20	7	110	.06	4	.4	.9	16	SWR
		23	521	58.33	19	18.69	155	20.60	7.27	.8	.9	21	4	107	.09	4	.5	1.0	19	SWR
		23	532	52.83	19	19.98	155	19.03	7.25	1.3	1.1	27	8	54	.09	3	.4	.8	20	SWR
		23	549	28.64	19	20.43	155	19.67	7.95	.8	.6	24	6	110	.07	4	.4	.8	21	SWR
		23	551	53.82	19	19.79	155	19.13	6.84	1.2	.9	22	5	110	.09	3	.4	.8	20	SWR
		23	554	27.33	19	20.28	155	17.59	7.18	1.0	.3	22	6	72	.08	0	.4	.8	18	SWR
		23	555	34.94	19	18.90	155	19.74	8.60	2.0	2.1	50	12	89	.11	3	.3	.5	37	SWR
		23	556	29.70	19	17.84	155	23.12	3.45	1.3	1.5	22	4	99	.11	4	.4	1.0	21	SWR
		23	559	3.45	19	20.23	155	19.69	6.64	1.3	.9	25	7	60	.08	4	.3	.8	23	SWR
		23	6 3	18.35	19	20.22	155	17.53	7.42	1.0	1.3	22	7	76	.07	0	.4	.7	19	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	23	6 7	29.75	19	38.33	155	59.13	.20	2.6	2.2	36	5	218	.15	16	.9	.4	24	KON
		23	613	14.91	19	20.58	155	19.72	7.98	1.4	1.5	29	7	56	.08	4	.4	.7	25	SWR
		23	616	12.56	19	19.63	155	19.15	6.64	1.0	.9	22	6	113	.09	3	.4	.9	19	SWR
		23	619	8.80	19	19.82	155	19.23	6.97	1.1	.6	21	6	113	.06	3	.4	.8	19	SWR
		23	621	30.90	19	20.61	155	19.51	7.64	.7	.6	23	7	102	.07	4	.4	.8	20	SWR
		23	625	23.69	19	20.92	155	17.46	8.07	2.1	2.6	42	5	40	.11	2	.4	.5	26	SWR
		23	635	4.04	19	15.05	155	20.55	3.71	1.1	.9	21	2	159	.11	6	.7	1.9	13	SWR
		23	636	45.82	19	20.22	155	20.26	7.78	1.5	.6	25	6	67	.10	5	.4	.9	12	SWR
		23	637	33.27	19	20.60	155	19.69	7.43	1.5	1.3	26	7	56	.06	4	.3	.8	20	SWR
		23	645	42.84	19	20.43	155	17.24	7.36	.8	.6	18	4	73	.11	1	.6	.9	11	SWR
		23	650	17.36	19	20.50	155	20.37	6.25	.8	.6	20	5	64	.09	5	.4	1.3	14	SWR
		23	650	56.96	19	18.77	155	19.85	7.69	.9	.6	19	2	98	.08	3	.5	1.2	16	SWR
		23	651	13.41	19	18.87	155	19.73	7.17	1.6	1.1	24	4	92	.09	3	.5	1.1	14	SWR
		23	7 7	56.62	19	19.72	155	16.61	6.22	1.2	1.3	31	2	96	.13	2	.5	.8	21	SF1
		23	711	5.51	19	18.97	155	9.91	8.97	1.5	1.5	28	2	110	.07	5	.5	.9	19	SF3
		23	712	38.79	19	19.74	155	19.12	6.52	1.5	.9	23	5	57	.07	3	.4	1.0	13	SWR
		23	725	51.25	19	19.19	155	20.67	7.32	.8	.6	20	5	93	.06	4	.4	.9	15	SWR
		23	730	7.77	19	17.90	155	15.69	7.03	.9	.9	23	2	134	.09	4	.5	1.1	17	SF1
		23	731	45.63	19	19.19	155	19.33	6.29	1.7	2.0	36	5	69	.11	3	.4	.7	25	SWR
		23	733	24.37	19	19.96	155	17.38	8.68	1.5		17	3	83	.05	0	.5	1.1	10	SWR
		23	733	48.00	19	19.06	155	19.90	7.89	1.0	.9	25	5	89	.08	3	.5	1.0	21	SWR
		23	734	42.63	19	20.27	155	17.23	8.17	1.7	1.8	33	4	78	.10	0	.4	.6	21	SWR
		23	736	42.23	19	18.39	155	15.75	6.76	1.0	1.3	17	0	122	.09	4	.6	1.3	14	SF1
		23	738	6.28	19	20.31	155	18.47	8.81	1.5	1.4	26	7	85	.08	2	.4	.7	21	SWR
		23	738	27.28	19	19.76	155	19.27	8.05	2.9	3.1	49	7	60	.14	3	.4	.6	34	SWR
		23	741	.77	19	20.24	155	16.93	7.56	1.0	1.1	17	2	82	.09	1	.5	.9	11	SF1
		23	745	43.23	19	18.52	155	20.47	7.59	1.1	1.3	23	3	112	.07	3	.4	.9	13	SWR
		23	756	15.98	19	20.64	155	19.28	7.80	1.5	1.1	23	6	50	.07	3	.4	.9	13	SWR
		23	757	16.79	19	20.00	155	17.35	7.26	.8	.3	16	1	83	.08	0	.5	1.1	10	SWR
		23	758	7.63	19	20.73	155	19.51	7.39	.8	.6	20	5	100	.08	4	.5	1.0	13	SWR
		23	832	58.77	19	14.59	155	20.40	9.16	1.8	1.5	36	2	158	.17	6	.7	.8	25	SWR
		23	833	40.27	19	14.93	155	20.44	7.04	1.9	1.8	35	1	156	.12	6	.5	1.0	25	SWR
		23	844	2.59	19	20.62	155	17.49	7.61	1.8	1.8	33	4	37	.10	1	.4	.7	21	SWR
		23	853	52.86	19	20.14	155	17.51	8.41	2.1	1.9	45	8	77	.08	0	.3	.4	31	SWR
		23	859	55.07	19	20.17	155	17.67	7.57	1.1	.6	21	6	75	.07	1	.4	.8	18	SWR
		23	9 3	30.70	19	20.12	155	17.34	8.27	.9	.9	17	4	80	.09	0	.5	.9	15	SWR
		23	9 6	27.99	19	20.00	155	17.55	7.98	1.3	1.1	31	8	80	.09	0	.4	.6	21	SWR
		23	9 8	7.52	19	19.50	155	19.19	7.51	1.6	1.6	31	8	62	.08	3	.4	.7	24	SWR
		23	912	34.08	19	19.33	155	19.45	6.80	1.4	1.3	24	5	72	.09	3	.4	1.0	16	SWR
		23	915	7.70	19	20.31	155	17.30	7.61	1.3	1.3	32	9	73	.08	0	.3	.6	21	SWR
		23	916	21.90	19	20.66	155	19.71	8.17	1.5	1.5	32	8	54	.09	4	.4	.7	28	SWR
		23	918	53.32	19	19.93	155	17.20	7.99	1.0	.6	26	8	86	.09	1	.4	.6	20	SWR
		23	921	20.87	19	20.43	155	19.99	7.69	1.0	.9	29	7	60	.08	5	.4	.8	22	SWR
		23	924	21.76	19	20.25	155	17.34	7.39	1.3	.9	27	8	74	.07	0	.3	.6	21	SWR
		23	925	56.98	19	20.42	155	18.78	8.22	.7	.3	20	6	92	.06	3	.5	.8	17	SWR
		23	938	38.38	19	20.29	155	20.18	7.39	.7	.9	24	7	65	.07	5	.4	.8	19	SWR
		23	948	13.28	19	20.63	155	19.81	7.93	1.3	.6	28	6	56	.08	4	.4	.8	20	SWR
		23	957	7.88	19	20.90	155	19.64	7.41	.5	.6	22	6	98	.10	4	.5	.9	19	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	23	10 2	38.05	19	20.35	155	20.44	7.09	.7	.6	20	7	66	.12	5	.4	1.0	14	SWR
		23	1012	10.56	19	19.10	155	20.30	7.32	1.4	1.1	30	8	122	.08	4	.4	.7	22	SWR
		23	1034	.80	19	19.60	155	19.11	8.26	1.4	1.1	25	6	83	.11	3	.5	.8	22	SWR
		23	1038	9.89	19	20.21	155	19.71	7.83	1.8	1.9	37	7	60	.09	4	.3	.6	29	SWR
		23	1040	2.51	19	19.23	155	20.65	7.33	1.4	1.1	25	5	90	.08	4	.4	.8	19	SWR
		23	1050	9.88	19	18.84	155	20.71	6.59	.8	.7	20	4	102	.09	4	.4	1.1	15	SWR
		23	1119	18.21	19	18.53	155	20.59	7.78	2.3	2.3	46	10	112	.09	4	.3	.6	34	SWR
		23	1159	38.31	19	20.51	155	19.78	8.45	1.4	1.3	31	7	57	.08	4	.4	.7	25	SWR
		23	12 3	2.62	19	20.44	155	17.45	7.30	1.3	1.1	24	8	63	.08	1	.4	.7	21	SWR
		23	12 9	14.89	19	20.10	155	17.50	8.59	.7	.6	19	4	79	.05	0	.5	.8	16	SWR
		23	1210	5.03	19	20.39	155	20.13	7.89	1.3	1.1	25	6	63	.07	5	.4	.8	23	SWR
		23	1216	2.21	19	20.54	155	17.44	8.04	2.1	2.2	47	9	42	.10	1	.3	.4	31	SWR
		23	1219	50.48	19	20.01	155	17.38	7.95	1.4	1.1	24	8	82	.06	0	.4	.7	20	SWR
		23	1222	50.16	19	18.86	155	18.80	7.05	.7	1.1	25	6	60	.08	2	.4	.7	19	SWR
		23	1247	31.89	19	14.19	155	19.93	2.40	1.9	1.1	21	2	175	.07	7	.5	1.1	10	SWR
		23	1251	14.18	19	20.65	155	20.07	7.16	1.5	1.3	29	8	59	.09	5	.3	.8	21	SWR
		23	1254	9.14	19	18.66	155	20.84	8.26	1.7	1.3	29	6	108	.10	4	.4	.8	19	SWR
		23	13 0	55.06	19	23.99	155	15.75	3.06	2.1	2.5	33	5	72	.10	2	.3	.3	23	SEC
		23	13 4	53.99	19	18.89	155	20.60	8.03	1.6	1.7	29	4	101	.10	4	.4	.8	20	SWR
		23	1319	10.37	19	20.22	155	16.77	6.16	.9	.6	9	0	83	.10	1	.7	1.2	7	SF1
		23	1335	10.54	19	19.17	155	20.21	8.68	1.2	.9	23	4	89	.08	4	.5	.9	16	SWR
		23	1344	40.08	19	20.72	155	18.61	9.54	1.5	.9	21	4	64	.10	2	.5	1.0	11	SWR
		23	1351	56.86	19	19.90	155	19.11	7.62	2.0	2.2	38	5	53	.10	3	.3	.6	25	SWR
		23	1355	47.56	19	20.46	155	20.04	7.63	1.5	1.1	23	4	90	.08	5	.5	1.0	18	SWR
		23	14 8	10.02	19	19.97	155	20.53	8.31	.8	.3	17	4	74	.08	5	.5	.9	10	SWR
		23	1419	51.94	19	20.02	155	20.67	8.05	1.0	.9	21	6	74	.06	5	.4	1.0	17	SWR
		23	1448	36.45	19	19.96	155	20.03	7.33	1.1	1.3	21	4	68	.07	4	.4	1.1	17	SWR
		23	1449	17.24	19	20.15	155	19.94	8.16	.8	.6	21	5	122	.08	4	.5	.9	15	SWR
		23	1451	27.46	19	19.53	155	11.52	5.89	1.4	1.1	28	3	95	.12	6	.4	1.2	18	SF3
		23	1453	50.08	19	19.38	155	19.87	6.78	1.1	1.3	14	2	79	.12	3	.5	1.6	11	SWR
		23	1454	25.30	19	18.64	155	20.87	8.12	1.0		20	5	108	.07	4	.5	.9	15	SWR
		23	1454	39.37	19	20.30	155	20.15	7.50	.9	1.1	23	7	64	.10	5	.4	.9	17	SWR
		23	1456	15.65	19	20.07	155	20.05	8.20	1.3	1.5	24	6	67	.09	5	.4	.9	16	SWR
		23	15 2	10.18	19	19.12	155	21.74	7.07	1.8	1.9	39	6	94	.12	3	.4	.6	29	SWR
		23	15 6	35.84	19	18.91	155	13.03	8.14	1.6	1.5	33	2	86	.10	4	.5	.7	26	SF2
		23	1521	51.78	19	19.92	155	20.40	7.88	.8	.6	24	7	73	.10	5	.4	.9	18	SWR
		23	1527	56.57	19	20.28	155	19.95	7.81	1.0	.9	21	7	118	.11	4	.5	1.0	15	SWR
		23	1532	15.08	19	20.24	155	18.01	7.48	.7	1.1	18	5	90	.12	1	.6	1.0	13	SWR
		23	1533	9.56	19	20.17	155	20.14	7.57	.7	1.1	24	7	67	.07	5	.4	.8	16	SWR
		23	1535	4.72	19	19.94	155	17.33	8.70	1.3		25	8	84	.08	0	.4	.7	18	SWR
		23	1535	18.98	19	20.12	155	20.38	6.97	1.4	1.5	23	8	69	.09	5	.4	.9	19	SWR
		23	1539	16.97	19	16.28	155	21.10	6.46	1.5	1.8	35	6	141	.10	5	.4	.9	27	SWR
		23	1539	56.57	19	19.92	155	17.36	7.52	.7	.9	15	4	84	.09	0	.5	.9	13	SWR
		23	1543	41.25	19	20.25	155	20.81	10.01	.8	.7	19	4	133	.09	4	.6	1.2	17	SWR
		23	1544	51.01	19	19.77	155	16.56	5.76	.5	.6	16	4	96	.15	2	.6	1.0	14	SF1
		23	1548	27.32	19	19.67	155	20.40	7.21	.7	.6	20	6	109	.10	4	.5	1.0	18	SWR
		23	1550	2.11	19	19.57	155	20.15	7.45	.9	.6	23	6	78	.07	4	.4	.9	19	SWR
		23	1552	1.48	19	20.27	155	20.39	6.45	.6	.6	22	6	68	.08	5	.4	1.1	18	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	23	1556	43.15	19	19.66	155	20.13	8.76	1.1	1.1	23	5	75	.08	4	.4	.8	19	SWR
		23	16 1	23.05	19	20.04	155	20.38	7.32	.8	.3	24	7	71	.07	5	.4	.9	20	SWR
		23	16 8	16.33	19	19.85	155	20.69	7.20	.6	.6	23	6	77	.10	5	.4	1.0	18	SWR
		23	16 9	44.25	19	19.99	155	20.32	8.11	1.0	.9	29	8	71	.07	5	.3	.7	21	SWR
		23	1612	57.31	19	20.50	155	17.04	7.66	.7	.6	14	3	76	.07	1	.5	.8	13	SWR
		23	1622	47.13	19	18.55	155	20.52	7.84	1.2	1.3	26	7	112	.07	4	.4	.8	20	SWR
		23	1627	24.36	19	20.11	155	20.36	7.42	.9	.9	25	7	69	.06	5	.4	.8	21	SWR
		23	1628	23.50	19	20.40	155	20.03	7.63	1.4	1.8	34	8	61	.10	5	.3	.7	26	SWR
		23	1637	27.23	19	20.40	155	20.47	8.13	.8	.6	23	7	65	.09	5	.4	.9	19	SWR
		23	1638	55.25	19	19.52	155	19.74	8.83	1.8	1.9	40	8	73	.12	3	.4	.6	27	SWR
		23	1647	28.26	19	20.50	155	20.20	7.23	.8	1.1	24	6	62	.09	5	.4	.9	15	SWR
		23	1647	52.07	19	20.42	155	20.23	7.60	1.5	1.3	23	4	63	.09	5	.4	1.0	17	SWR
		23	1657	18.37	19	18.75	155	21.18	7.49	.9	.9	21	3	105	.09	5	.4	1.0	18	SWR
		23	1658	1.88	19	20.07	155	19.94	8.96	1.9	2.3	46	7	65	.12	4	.4	.5	28	SWR
		23	17 7	7.68	19	18.38	155	19.88	7.69	1.0	1.3	25	4	113	.10	2	.5	1.0	19	SWR
		23	1711	33.51	19	17.88	155	21.19	6.78	1.0	.9	17	3	122	.07	5	.5	1.2	12	SWR
		23	1714	10.57	19	20.15	155	20.60	8.17	.9	1.1	20	3	96	.07	5	.5	1.0	18	SWR
		23	1717	55.64	19	19.35	155	20.27	8.12	1.6	1.5	23	4	85	.08	4	.4	.9	18	SWR
		23	1719	43.92	19	20.07	155	20.59	6.95	.8	1.5	18	3	136	.07	5	.5	1.1	11	SWR
		23	1727	.40	19	20.23	155	20.14	7.22	.7	.6	20	6	123	.07	5	.5	1.0	14	SWR
		23	1727	31.27	19	20.23	155	20.28	8.08	.9	1.3	25	6	66	.11	5	.4	.9	18	SWR
		23	1732	6.86	19	20.04	155	20.44	8.06	.9	.9	21	5	71	.08	5	.4	1.0	17	SWR
		23	1733	3.68	19	20.29	155	17.61	6.68	1.4	1.5	28	4	74	.11	1	.4	.7	18	SWR
		23	1751	59.06	19	18.87	155	20.60	9.30	1.7	1.7	27	6	101	.07	4	.4	.8	18	SWR
		23	1755	43.76	19	17.56	155	23.15	2.26	.9	1.3	17	1	102	.09	5	.4	1.0	11	SWR
		23	18 1	33.57	19	22.62	155	23.76	10.40	1.8	1.5	36	4	43	.11	5	.3	.5	26	KAO
		23	18 6	52.15	19	16.87	155	23.27	4.42	1.8	2.2	16	0	108	.13	5	.7	2.5	12	SWR
		23	1812	53.88	19	17.33	155	21.24	7.35	2.4	3.1	44	6	127	.12	5	.4	.7	30	SWR
		23	1816	4.01	19	20.16	155	19.93	8.26	1.5	1.3	28	4	64	.06	4	.4	.8	20	SWR
		23	1821	10.73	19	20.18	155	20.48	7.67	.8	.3	21	4	69	.09	5	.4	1.0	14	SWR
		23	1829	8.17	19	12.27	155	19.70	1.24	1.2	.8	13	0	201	.11	9	1.3	7.8	10	SWR
		23	1830	41.62	19	18.76	155	19.57	6.26	.8	.9	16	1	93	.09	2	.5	1.3	10	SWR
		23	1838	52.09	19	12.57	155	20.22	6.57	2.6	2.8	40	2	176	.11	7	.6	.8	28	SWR
		23	1843	10.97	19	18.57	155	20.72	7.63	1.6	1.5	26	4	111	.07	4	.4	.9	21	SWR
		23	1855	52.21	19	18.25	155	21.37	6.41	1.0	.3	16	4	114	.10	5	.5	1.2	11	SWR
		23	19 1	43.57	19	18.01	155	23.19	3.84	.7	.9	18	4	96	.09	4	.4	.8	16	SWR
		23	19 7	22.88	19	19.92	155	20.57	7.72	1.3	1.5	27	7	106	.09	5	.4	.8	20	SWR
		23	1911	46.66	19	20.24	155	19.36	7.59	1.0	.9	27	7	55	.08	3	.4	.8	23	SWR
		23	1918	53.65	19	19.29	155	20.31	7.38	.8	1.3	23	7	87	.06	4	.4	.8	20	SWR
		23	1921	54.15	19	19.49	155	19.88	7.73	1.7	2.2	41	10	77	.10	4	.3	.6	33	SWR
		23	1927	26.97	19	19.20	155	20.27	8.31	1.5	1.8	36	11	89	.09	4	.3	.5	24	SWR
		23	1929	4.75	19	16.42	155	21.23	7.81	1.3	1.3	29	6	138	.10	5	.4	.8	25	SWR
		23	1930	13.24	19	20.32	155	20.31	6.86	.8	.9	25	7	66	.08	5	.3	.8	19	SWR
		23	1931	7.09	19	17.09	155	21.73	6.02	1.4	1.5	22	5	129	.11	6	.4	1.3	18	SWR
		23	1933	54.36	19	20.17	155	20.45	7.28	.9	.6	24	6	70	.06	5	.4	.9	20	SWR
		23	1937	39.19	19	18.98	155	18.68	7.68	.8	.9	21	5	65	.08	2	.5	.8	19	SWR
		23	1948	7.56	19	17.53	155	23.06	3.35	.9	.9	19	5	103	.08	5	.3	1.0	18	SWR
		23	1950	40.48	19	18.31	155	21.05	7.81	.9	1.3	20	5	116	.13	4	.5	.9	17	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	23	1954	25.10	19	17.25	155	20.80	6.56	1.4		26	4	130	.10	4	.4	.9	24	SWR
		23	1954	50.02	19	18.51	155	21.45	7.09	2.2	2.5	45	9	110	.11	5	.3	.5	35	SWR
		23	1958	40.00	19	16.17	155	22.12	6.68	.6	.6	15	4	137	.10	5	.6	1.3	14	SWR
		23	20	1 12.09	19	19.36	155	20.21	7.45	.9		20	4	84	.07	4	.4	.9	14	SWR
		23	20	1 30.93	19	17.17	155	20.28	6.86	1.3	1.9	24	7	141	.09	3	.5	.9	21	SWR
		23	20	3 30.77	19	19.30	155	20.13	6.93	.7	1.1	20	5	85	.06	4	.4	.9	17	SWR
		23	20	6 25.57	19	17.12	155	21.06	6.84	1.3	1.1	23	5	131	.10	5	.5	1.1	20	SWR
		23	2013	41.62	19	17.27	155	21.49	7.32	1.0	.6	18	5	129	.08	5	.5	1.0	16	SWR
		23	2016	51.18	19	16.24	155	21.18	5.77	1.2	1.3	19	5	141	.07	6	.5	1.3	16	SWR
		23	2020	41.13	19	17.06	155	21.11	5.89	2.1	2.7	39	7	131	.10	5	.3	.8	29	SWR
		23	2021	52.64	19	19.21	155	20.59	7.73	.8	1.3	21	4	91	.07	4	.4	.8	14	SWR
		23	2023	38.57	19	18.72	155	20.84	8.98	1.0		24	5	106	.09	4	.4	.8	17	SWR
		23	2023	53.35	19	17.19	155	20.65	6.66	1.0	1.7	17	2	131	.11	4	.6	1.3	10	SWR
		23	2025	41.82	19	16.87	155	20.91	6.78	2.1	2.4	34	3	134	.12	5	.5	1.1	23	SWR
		23	2036	6.71	19	15.40	155	21.44	7.52	.9	.9	20	4	200	.09	5	.7	1.3	13	SWR
		23	2038	12.14	19	18.02	155	23.30	3.36	1.7	1.9	29	2	95	.10	4	.4	1.0	20	SWR
		23	2040	21.18	19	15.93	155	22.23	3.17	.8	1.1	19	1	138	.09	4	.5	1.3	15	SWR
		23	2042	26.87	19	18.12	155	14.88	6.00	.9	.9	14	2	119	.09	3	.5	1.5	11	SF1
		23	2043	25.86	19	18.73	155	21.69	8.29	1.7	1.5	28	4	103	.11	4	.4	1.0	20	SWR
		23	2047	1.95	19	14.73	155	20.11	.93	.9	.8	16	1	166	.08	7	.8	1.6	14	SWR
		23	21	0 1.27	19	19.64	155	20.75	8.14	.8	.6	20	3	82	.07	5	.4	.9	14	SWR
		23	2124	38.64	19	18.68	155	21.85	8.31	.9	.9	22	3	104	.10	4	.5	1.0	18	SWR
		23	2125	36.41	19	20.37	155	20.44	6.46	1.5	.9	13	2	104	.07	5	.6	1.5	8	SWR
		23	2130	37.41	19	17.14	155	21.45	4.50	.8	1.1	13	4	131	.07	5	.5	2.4	11	SWR
		23	2132	30.32	19	19.33	155	20.17	8.51	1.6	1.9	31	3	85	.08	4	.4	.7	22	SWR
		23	2141	36.47	19	18.82	155	20.97	8.78	.8	.9	21	4	103	.06	4	.5	.8	16	SWR
		23	2142	12.75	19	13.61	155	19.39	1.60	.9	1.1	16	1	221	.11	8	.9	1.5	9	SWR
		23	2151	15.89	19	19.45	155	20.54	8.28	1.9	1.9	33	5	85	.10	4	.4	.7	21	SWR
		23	2158	57.32	19	19.53	155	20.32	8.51	.9	.9	23	4	80	.08	4	.4	.8	15	SWR
		23	22	1 2.48	19	20.02	155	20.42	8.27	.9	.3	22	5	71	.08	5	.4	1.0	14	SWR
		23	22	3 51.24	19	18.99	155	21.52	8.18	1.7	2.0	37	4	97	.12	4	.4	.6	25	SWR
		23	22	4 54.26	19	19.67	155	20.27	8.54	.9	.9	20	3	107	.07	4	.5	.9	14	SWR
		23	22	5 35.55	19	20.31	155	20.07	6.97	.8	.6	20	5	120	.08	5	.5	1.1	19	SWR
		23	22	6 46.62	19	17.35	155	20.76	6.50	.8	.9	20	4	129	.11	4	.5	1.4	9	SWR
		23	2214	28.01	19	18.37	155	21.71	8.17	1.7	1.7	27	5	110	.11	4	.4	.9	19	SWR
		23	2228	6.55	19	19.04	155	21.38	6.05	1.6	1.3	27	4	96	.13	4	.4	1.4	15	SWR
		23	2231	24.69	19	18.11	155	23.23	3.42	.8	.6	17	3	96	.08	4	.4	.9	11	SWR
		23	2232	43.47	19	18.08	155	21.70	8.21	1.0	.7	21	4	114	.10	5	.5	.9	15	SWR
		23	2236	19.11	19	20.41	155	20.16	8.02	.8	.3	23	5	62	.07	5	.4	.8	21	SWR
		23	2238	32.69	19	24.07	155	15.65	3.21	.9	1.0	11	4	117	.03	2	.4	.8	7	SEC
		23	2249	33.40	19	17.99	155	21.59	6.30	.9	1.1	15	3	116	.08	5	.5	1.4	13	SWR
		23	2251	30.97	19	18.04	155	22.71	7.50	1.5	.9	10	2	216	.08	4	.8	.8	7	SWR
		23	2256	30.54	19	16.11	155	21.17	7.62	2.1	2.3	33	3	140	.09	6	.4	.7	25	SWR
		23	23	5 9.16	19	17.37	155	23.28	2.13	1.7	1.1	11	2	101	.07	5	.4	1.0	6	SWR
		23	23	6 56.39	19	18.80	155	21.15	8.85	1.1	.9	24	4	104	.08	5	.5	.8	19	SWR
		23	2313	38.56	19	18.10	155	21.89	8.58	.9	.9	25	6	112	.12	5	.4	.9	16	SWR
		23	2325	18.72	19	17.60	155	20.97	6.48	.8	1.1	15	3	128	.08	4	.7	1.4	11	SWR
		23	2326	39.09	19	17.41	155	20.79	5.54	.7		16	2	132	.08	4	.6	1.6	9	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	23	2327	56.08	19	15.61	155	20.14	6.66	1.7	1.7	23	1	154	.11	5	.6	1.2	20	SWR
		23	2330	7.71	19	19.57	155	20.22	7.37	.8	.9	20	4	140	.08	4	.6	1.1	13	SWR
		23	2336	39.25	19	14.51	155	20.34	9.20	2.5	2.7	43	1	159	.13	6	.5	.6	35	SWR
		23	2342	22.86	19	15.55	155	20.79	2.90	1.8	1.8	26	1	147	.14	6	.6	1.7	24	SWR
		23	2343	8.28	19	14.70	155	20.15	6.85	1.9	2.0	28	1	166	.12	7	.7	1.1	21	SWR
		23	2347	41.10	19	18.93	155	20.55	8.04	1.6		26	4	99	.11	4	.5	1.0	17	SWR
		23	2347	49.88	19	16.25	155	22.22	3.94	2.0	2.3	17	1	135	.16	5	.7	2.2	13	SWR
		23	2351	32.02	19	19.38	155	20.45	7.38	.8	.9	19	3	85	.09	4	.5	1.2	14	SWR
		23	2353	6.87	19	18.70	155	21.61	7.87	.8	.3	20	5	104	.08	4	.5	.9	16	SWR
		23	2357	13.50	19	15.63	155	21.33	5.85	1.8	1.7	21	1	165	.09	5	.6	1.6	17	SWR
		24	0	6 51.56	19	18.19	155	23.37	3.89	2.2	2.7	32	2	94	.12	4	.4	1.2	26	SWR
		24	013	9.04	19	18.55	155	21.86	9.38	2.4	2.5	47	7	106	.11	4	.4	.5	25	SWR
		24	018	33.55	19	20.34	155	22.84	9.17	1.1	.4	19	2	113	.07	8	.5	1.3	14	SWR
		24	020	.66	19	20.34	155	20.13	7.88	.8	.3	22	3	64	.07	5	.5	1.0	17	SWR
		24	022	8.97	19	16.15	155	21.12	7.33	1.1	1.1	22	4	142	.09	6	.6	1.1	17	SWR
		24	022	56.79	19	16.37	155	21.31	6.37	1.0		14	1	139	.09	6	.6	1.5	8	SWR
		24	023	16.11	19	17.28	155	20.81	6.41	1.1	1.1	21	2	129	.08	4	.5	1.3	16	SWR
		24	032	27.75	19	19.48	155	20.52	7.23	.8	.6	20	3	84	.10	4	.5	1.1	17	SWR
		24	033	32.35	19	18.66	155	20.82	7.57	2.2	2.8	34	4	107	.09	4	.4	.7	24	SWR
		24	035	5.75	19	16.46	155	21.49	7.07	1.1	.9	19	4	136	.09	6	.5	1.2	16	SWR
		24	037	53.66	19	18.42	155	21.00	6.78	.8	.9	12	2	114	.09	4	.5	1.2	9	SWR
		24	039	27.09	19	18.10	155	23.26	3.45	2.0	2.1	24	2	95	.08	4	.4	1.0	14	SWR
		24	041	58.07	19	20.26	155	22.84	8.52	1.7	.9	24	3	72	.10	1	.4	.8	18	SWR
		24	042	23.24	19	19.38	155	24.58	4.14	1.1	1.1	13	1	128	.14	3	.7	1.0	11	SWR
		24	043	12.09	19	16.73	155	21.76	6.42	1.8	1.9	23	2	135	.10	6	.5	1.6	20	SWR
		24	045	45.96	19	18.76	155	21.23	7.98	1.7		20	1	104	.08	5	.4	1.0	14	SWR
		24	046	38.38	19	21.83	155	24.28	10.13	2.1		21	2	65	.09	3	.5	.8	18	SWR
		24	047	23.41	19	21.75	155	24.36	10.73	2.1	1.7	24	2	60	.09	3	.4	.6	19	SWR
		24	049	11.27	19	17.91	155	20.72	6.83	1.6	1.1	15	1	125	.07	4	.6	1.3	12	SWR
		24	051	47.86	19	18.78	155	20.77	3.70	1.3	.6	6	1	168	.06	4	1.4	1.1	4	SWR
		24	052	25.24	19	17.98	155	23.26	3.04	1.6	.9	9	1	103	.03	4	.4	.9	6	SWR
		24	056	53.66	19	17.85	155	23.13	3.55	1.8	2.0	26	3	99	.12	4	.4	1.1	17	SWR
		24	1	4 36.49	19	17.57	155	20.73	5.81	1.6	1.5	27	2	126	.10	4	.4	1.2	21	SWR
		24	112	2.96	19	19.29	155	22.01	8.88	1.0	.6	22	3	89	.09	3	.4	.9	13	SWR
		24	123	56.38	19	18.65	155	21.56	8.23	1.3	.6	26	5	106	.10	4	.4	.9	14	SWR
		24	140	54.38	19	20.27	155	11.56	8.65	2.3	2.0	39	5	80	.10	4	.4	.7	28	SF3
		24	158	52.24	19	18.97	155	21.08	8.03	.9	.9	24	5	98	.08	5	.5	.8	19	SWR
		24	2	2 6.37	19	15.71	155	21.38	7.93	2.3	2.1	43	4	146	.11	5	.4	.6	35	SWR
		24	2	2 58.05	19	17.34	155	21.98	5.81	1.3	.9	30	5	121	.12	6	.4	1.3	24	SWR
		24	2	3 25.94	19	18.93	155	21.00	8.15	1.6	1.2	27	4	100	.09	5	.5	.9	23	SWR
		24	2	4 7.84	19	20.50	155	22.82	8.80	1.6	.9	29	5	69	.09	1	.4	.9	18	SWR
		24	2	7 6.78	19	16.98	155	22.07	7.47	1.3	1.1	25	4	126	.09	6	.4	1.0	19	SWR
		24	2	7 48.62	19	16.30	155	22.23	2.46	.8	.8	22	3	135	.09	5	.4	1.0	16	SWR
		24	212	45.67	19	21.07	155	24.73	7.36	2.4	2.3	41	4	53	.12	3	.4	.7	27	SWR
		24	218	39.61	19	17.91	155	20.88	6.20	1.0	.9	21	4	123	.10	4	.5	1.3	18	SWR
		24	220	17.30	19	17.42	155	20.68	6.55	1.7	1.3	30	4	128	.10	4	.4	.9	24	SWR
		24	231	2.48	19	16.04	155	22.92	6.05	1.9	1.8	32	2	129	.11	4	.5	1.0	24	SWR
		24	234	13.28	19	20.04	155	20.31	8.12	.9	.9	20	2	70	.11	5	.5	1.2	14	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	24	240	14.76	19	17.53	155	21.10	4.00	1.1		21	5	126	.12	4	.5	1.4	15	SWR
		24	241	23.78	19	18.65	155	21.46	9.54	2.8	2.5	44	4	106	.13	4	.4	.5	32	SWR
		24	242	16.00	19	17.16	155	21.41	5.27	2.2	2.2	26	1	129	.09	5	.4	1.6	19	SWR
		24	245	52.72	19	16.13	155	22.52	6.18	1.1	.8	21	2	155	.10	4	.5	1.6	16	SWR
		24	251	51.79	19	18.82	155	21.76	7.68	1.7	.9	14	0	101	.07	4	.5	1.3	11	SWR
		24	255	4.52	19	17.32	155	21.79	6.38		.9	10	2	139	.03	6	.5	2.0	7	SWR
		24	257	57.48	19	20.67	155	22.79	8.09	1.6	.9	18	1	67	.10	1	.5	1.1	13	SWR
		24	3	0 8.98	19	17.57	155	21.42	5.03	1.7	2.2	21	2	124	.12	5	.5	2.0	15	SWR
		24	3	1 31.78	19	18.92	155	21.79	7.56		.6	13	2	197	.05	4	1.0	1.2	9	SWR
		24	3	2 14.01	19	16.98	155	21.27	3.96		.9	11	1	136	.06	5	.6	1.5	4	SWR
		24	3	2 56.00	19	16.67	155	21.80	6.59		.6	9	0	172	.09	6	1.0	2.4	7	SWR
		24	313	48.08	19	16.60	155	21.32	7.62		.3	12	0	136	.07	5	.7	1.8	6	SWR
		24	317	58.08	19	19.92	155	20.05	7.73		1.1	17	1	69	.06	4	.4	1.2	14	SWR
		24	320	3.09	19	16.96	155	21.54	6.89	2.5	3.1	32	2	130	.12	5	.5	1.2	28	SWR
		24	321	33.07	19	16.09	155	21.47	6.57		.9	9	0	152	.06	6	.7	2.3	6	SWR
		24	322	55.06	19	18.89	155	20.50	4.97	1.6	1.5	13	1	161	.12	4	.8	1.6	8	SWR
		24	329	.23	19	16.87	155	21.48	5.33		1.3	16	1	136	.06	5	.5	2.1	11	SWR
		24	330	28.44	19	23.97	155	16.03	3.00	1.9	2.4	24	3	71	.10	1	.3	.3	18	SEC
		24	337	34.03	19	17.62	155	21.02	5.86	1.7	1.6	26	3	125	.10	4	.4	1.4	20	SWR
		24	339	44.14	19	17.23	155	20.62	7.07	1.1		24	4	137	.08	4	.5	.9	20	SWR
		24	339	59.01	19	17.16	155	20.71	8.16	1.3		19	3	139	.09	4	.6	1.5	15	SWR
		24	342	41.51	19	16.83	155	21.46	5.59	.9		19	3	137	.08	5	.5	1.6	13	SWR
		24	342	50.12	19	17.28	155	20.69	6.43	1.6	1.9	32	2	130	.12	4	.5	.9	21	SWR
		24	345	25.05	19	18.60	155	21.76	8.34	1.7	1.7	27	5	146	.11	4	.5	.9	19	SWR
		24	346	23.86	19	24.10	155	15.85	2.72	1.4	1.6	18	3	119	.07	1	.3	.3	10	SEC
		24	347	58.02	19	17.27	155	20.97	7.09	2.4	3.1	46	4	129	.12	4	.4	.7	30	SWR
		24	352	19.36	19	16.56	155	21.23	6.19	1.0		15	2	159	.11	5	.6	1.3	12	SWR
		24	354	53.88	19	18.38	155	21.58	7.97	1.8		33	5	111	.14	5	.4	.7	18	SWR
		24	355	31.80	19	17.20	155	22.11	6.63	1.9	1.8	28	3	122	.12	6	.4	.9	24	SWR
		24	356	24.27	19	17.40	155	22.23	6.75	.9	.6	17	3	117	.11	6	.5	1.7	6	SWR
		24	358	23.75	19	18.77	155	20.74	7.00	.8	.3	19	2	104	.10	4	.5	1.3	17	SWR
		24	4	1 1.62	19	17.03	155	20.45	6.30	1.7	2.2	35	5	134	.11	4	.4	.9	24	SWR
		24	4	3 54.37	19	18.44	155	21.57	7.10	.9	.6	21	4	180	.12	4	.7	1.2	16	SWR
		24	4	8 29.79	19	19.32	155	20.26	8.51	1.4	1.7	31	4	86	.10	4	.4	.8	19	SWR
		24	414	33.51	19	15.76	155	22.18	6.54	1.0	.9	23	4	175	.08	4	.5	1.2	18	SWR
		24	415	30.24	19	19.28	155	20.45	7.74	1.0	.9	20	1	89	.08	4	.5	1.2	14	SWR
		24	423	13.41	19	19.31	155	20.39	9.23	1.7	1.8	33	4	87	.10	4	.4	.6	20	SWR
		24	428	21.10	19	17.34	155	23.17	6.43	2.1	2.5	33	2	104	.12	5	.4	.9	19	SWR
		24	430	22.31	19	20.51	155	20.29	3.16	1.4	1.4	23	4	62	.07	5	.3	.9	19	SWR
		24	439	34.57	19	19.80	155	19.45	8.24	1.4	1.7	34	7	62	.07	4	.3	.6	26	SWR
		24	441	51.51	19	19.22	155	20.03	9.21	2.4	2.8	51	12	86	.10	3	.3	.4	36	SWR
		24	448	18.36	19	18.93	155	21.58	7.68	1.1	1.3	26	6	99	.08	4	.4	.8	20	SWR
		24	452	31.47	19	19.66	155	20.08	8.64	1.7	1.5	40	7	75	.09	4	.3	.5	29	SWR
		24	453	54.71	19	20.40	155	23.29	8.60	1.0	.7	20	4	67	.05	0	.4	.8	19	SWR
		24	5	4 8.59	19	20.35	155	23.26	9.32	1.7	1.5	28	4	69	.09	0	.3	.6	22	SWR
		24	5	6 46.58	19	17.10	155	21.77	6.28	1.5	1.8	28	5	128	.09	6	.4	1.0	25	SWR
		24	517	.99	19	18.07	155	21.13	5.85	1.3	1.3	22	5	119	.06	4	.4	1.0	19	SWR
		24	521	6.25	19	17.20	155	21.84	4.96	.9	.3	24	6	125	.11	6	.4	1.8	18	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	24	533	32.89	19	17.76	155	21.51	6.36	.8	.6	24	6	120	.07	5	.4	.9	19	SWR
		24	544	2.78	19	17.45	155	20.81	1.85	1.4	1.6	19	3	127	.10	4	.4	.8	18	SWR
		24	553	19.35	19	18.76	155	20.67	8.07	1.9	1.8	39	10	104	.09	4	.3	.6	31	SWR
		24	556	33.53	19	19.32	155	20.52	8.12	1.5	1.3	28	6	88	.09	4	.4	.8	22	SWR
		24	557	46.73	19	20.06	155	18.12	8.22	1.0	.9	26	6	79	.06	1	.4	.7	19	SWR
		24	6	3 .95	19	18.53	155	21.21	8.12	1.4	1.5	30	6	111	.07	5	.3	.6	23	SWR
		24	611	38.28	19	19.43	155	20.23	7.62	1.2	1.1	26	5	83	.08	4	.4	.8	20	SWR
		24	619	59.75	19	21.03	155	25.03	8.13	2.3	2.1	41	5	55	.12	3	.3	.6	34	KAD
		24	620	59.37	19	17.63	155	23.13	2.40	1.1	1.4	26	6	102	.07	5	.3	.6	22	SWR
		24	622	24.88	19	17.50	155	20.86	6.30	1.2	1.3	23	5	127	.10	4	.4	.9	20	SWR
		24	624	10.86	19	17.32	155	20.86	6.11	1.1	1.3	22	6	129	.10	4	.4	1.0	18	SWR
		24	624	40.54	19	18.86	155	21.52	7.60	.9	1.1	24	5	101	.09	4	.4	.9	19	SWR
		24	632	13.55	19	18.51	155	21.45	7.33	.6	.9	24	6	110	.08	5	.5	.8	16	SWR
		24	634	26.06	19	16.19	155	21.63	5.41	1.2	1.3	25	4	139	.11	5	.5	1.7	20	SWR
		24	649	43.34	19	18.65	155	21.73	8.78	1.7	1.6	24	3	105	.11	4	.5	.9	16	SWR
		24	651	37.68	19	20.37	155	23.39	9.67	2.3	1.9	39	5	45	.12	0	.4	.5	29	SWR
		24	653	56.00	19	18.57	155	21.64	8.23	1.7	1.3	28	5	107	.10	4	.4	.9	18	SWR
		24	723	53.58	19	17.86	155	23.28	3.79	1.7	1.4	20	2	97	.07	4	.4	1.2	15	SWR
		24	726	5.62	19	18.49	155	21.74	8.28	1.7	1.6	31	4	108	.10	4	.4	.6	21	SWR
		24	729	24.26	19	15.70	155	19.99	5.83	.9	.6	18	1	154	.09	5	.7	1.7	12	SWR
		24	730	30.98	19	18.00	155	20.65	5.99	.8	.6	18	2	124	.10	4	.6	1.5	15	SWR
		24	730	57.58	19	18.17	155	22.47	8.76	1.8	1.8	26	3	104	.08	4	.5	.8	19	SWR
		24	734	36.24	19	17.24	155	21.94	5.18	1.0	.9	24	4	124	.13	6	.4	2.1	17	SWR
		24	735	41.95	19	17.62	155	21.22	8.12	1.5	1.1	26	6	124	.10	5	.4	1.0	16	SWR
		24	739	35.41	19	17.94	155	23.23	2.92	.9	1.1	19	2	97	.09	4	.4	.9	12	SWR
		24	747	29.27	19	18.68	155	20.50	8.27	1.9	1.9	37	4	107	.10	4	.4	.6	23	SWR
		24	826	15.50	19	17.51	155	22.38	8.45	1.0	.9	25	4	114	.11	5	.4	.8	16	SWR
		24	9	0 23.98	19	19.03	155	21.84	8.55	1.3	1.1	22	3	95	.09	3	.5	1.1	15	SWR
		24	9	4 46.72	19	17.62	155	15.49	8.41	.6	.6	10	1	171	.04	4	1.0	1.6	9	SF1
		24	9	5 52.43	19	16.05	155	21.34	6.13	.7	.9	17	2	154	.10	6	.6	1.8	11	SWR
		24	9	6 42.76	19	17.95	155	23.24	2.91	1.7		22	2	97	.09	4	.4	.9	14	SWR
		24	912	59.82	19	14.04	155	20.83	13.47	.9	1.0	11	1	210	.11	6	1.4	3.1	8	DEP
		24	919	33.43	19	20.33	155	22.52	8.05	.6	1.1	15	2	118	.11	1	.6	1.1	11	SWR
		24	922	44.60	19	17.99	155	23.42	7.58	3.7	4.0	46	2	94	.14	4	.4	.6	40	SWR F
		24	947	42.23	19	20.04	155	17.55	8.32	1.0	.6	20	4	80	.08	0	.5	.8	16	SWR
		24	952	21.68	19	16.81	155	15.10	8.95	.8	.5	13	1	209	.04	3	1.1	1.3	11	SF1
		24	955	9.97	19	18.39	155	21.75	7.77	.6	.6	16	4	109	.10	4	.6	1.1	15	SWR
		24	957	24.81	19	20.36	155	23.04	8.80	1.4	.7	25	2	70	.09	1	.4	.9	21	SWR
		24	958	40.07	19	18.65	155	20.50	.83	1.4	1.4	17	5	190	.08	4	.6	.6	16	SWR
		24	10	0 25.30	19	19.52	155	20.43	7.07	1.1	1.1	26	5	82	.10	4	.4	.9	19	SWR
		24	1021	1.26	19	23.92	155	15.72	2.98	1.5	1.7	22	3	109	.10	2	.3	.3	14	SEC
		24	1028	18.17	19	17.16	155	21.19	5.02	1.3	1.3	25	5	130	.10	5	.4	1.5	20	SWR
		24	1029	18.05	19	17.01	155	21.18	4.81	1.5	1.6	29	5	132	.10	5	.4	1.5	24	SWR
		24	1033	36.95	19	17.26	155	21.26	5.93	.6	.3	16	5	131	.09	5	.5	1.3	15	SWR
		24	1050	49.13	19	17.16	155	21.49	6.87	2.5	2.9	47	6	129	.14	5	.4	.8	45	SWR
		24	1055	22.84	19	18.41	155	20.68	7.30	.9	.5	17	5	116	.07	4	.5	1.0	15	SWR
		24	11	0 22.91	19	17.59	155	20.78	5.97	1.5	1.8	32	7	126	.09	4	.4	.9	26	SWR
		24	11	2 44.50	19	17.22	155	20.98	5.65	1.6	2.2	32	7	130	.11	4	.4	1.1	24	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	24	1115	28.94	19	17.03	155	21.80	6.61	1.0	1.1	24	6	129	.10	6	.4	.8	20	SWR
		24	1124	6.18	19	15.97	155	22.07	5.80	.9	1.1	23	5	163	.12	5	.5	1.3	19	SWR
		24	1125	40.33	19	19.80	155	21.23	4.98	.5	.9	13	3	80	.10	4	.5	1.1	11	SWR
		24	1128	54.28	19	18.77	155	19.63	6.87	.5	.8	19	5	121	.08	2	.5	.8	16	SWR
		24	1139	2.23	19	15.92	155	22.43	6.39	1.2	1.3	25	5	159	.08	4	.5	.9	21	SWR
		24	12 3	23.19	19	18.10	155	21.95	7.84	.7	.6	20	4	111	.16	5	.5	.9	16	SWR
		24	12 3	39.40	19	16.36	155	22.85	3.24	1.4	1.1	12	3	124	.11	4	.5	1.6	11	SWR
		24	12 5	45.40	19	24.13	155	25.36	7.11	1.1	.9	25	6	54	.12	2	.4	.9	20	KAO
		24	1223	51.58	19	17.62	155	21.08	6.15	.8	.9	20	1	125	.09	4	.6	1.5	16	SWR
		24	1240	39.84	19	18.33	155	21.74	8.17	.8	.9	23	5	110	.07	4	.4	.9	16	SWR
		24	1241	24.48	19	16.31	155	21.58	3.70	.5	.6	14	2	146	.09	6	.5	1.7	12	SWR
		24	1253	22.17	19	18.59	155	20.70	7.08	.7	.6	15	3	110	.10	4	.6	1.5	12	SWR
		24	1256	32.47	19	17.71	155	21.64	5.10	.8	1.1	23	2	120	.09	5	.5	1.9	14	SWR
		24	13 5	10.63	19	20.36	155	22.77	8.25	1.0	.6	23	3	71	.10	1	.5	.9	18	SWR
		24	13 9	37.59	19	17.13	155	21.98	5.28	.9	.8	18	4	125	.08	6	.4	2.1	14	SWR
		24	1332	50.04	19	17.04	155	22.12	6.85	1.0	1.1	19	4	125	.10	6	.5	1.1	14	SWR
		24	1336	5.24	19	17.68	155	22.11	7.42	.8	.6	23	6	115	.09	5	.4	1.0	19	SWR
		24	1413	20.40	19	19.57	155	20.25	8.10	1.0	.9	22	5	79	.08	4	.5	.9	19	SWR
		24	1416	10.11	19	19.38	155	20.42	7.27	.8	.9	25	4	85	.07	4	.4	.8	14	SWR
		24	1416	33.60	19	20.49	155	23.28	9.36	1.5	1.2	25	5	66	.09	1	.4	.8	18	SWR
		24	1420	35.36	19	19.18	155	18.88	7.79	1.6	1.5	28	5	58	.11	2	.5	.9	16	SWR
		24	1428	18.17	19	18.76	155	19.87	6.30	.8	.7	23	4	127	.08	3	.5	.9	14	SWR
		24	1437	53.86	19	14.48	155	22.97	8.41	2.7	3.0	43	2	149	.14	2	.5	.6	34	SWR
		24	1441	22.30	19	17.51	155	22.27	6.30	1.7	1.8	35	3	115	.13	5	.4	1.1	25	SWR
		24	1455	58.50	19	16.40	155	22.76	8.96	1.2	1.5	18	2	207	.09	7	.8	1.3	13	SWR
		24	1456	37.45	19	18.35	155	21.83	7.25	.8	.9	21	4	109	.12	4	.5	1.1	14	SWR
		24	1456	56.44	19	19.34	155	18.15	7.25	.6	.3	13	2	82	.07	2	.6	1.3	11	SWR
		24	1513	24.44	19	18.84	155	21.68	7.14	.6	.6	17	1	101	.08	4	.5	1.0	14	SWR
		24	1528	48.97	19	17.16	155	21.18	6.32	.9	1.1	23	3	130	.10	5	.5	1.4	19	SWR
		24	1538	25.26	19	18.64	155	20.07	6.92	.8	1.1	23	4	106	.07	3	.4	.8	17	SWR
		24	1540	23.31	19	19.32	155	20.25	7.79	.8	.6	17	4	86	.09	4	.5	1.1	14	SWR
		24	1552	51.68	19	17.47	155	21.60	5.67	.7	.6	15	1	124	.11	5	.6	1.7	13	SWR
		24	1558	59.77	19	18.72	155	22.43	7.62	.9	1.1	16	2	98	.10	3	.6	1.0	11	SWR
		24	16 0	9.11	19	18.62	155	21.89	7.58			14	4	105	.07	4	.6	.8	13	SWR
		24	16 3	2.49	19	19.13	155	20.57	6.62	.5	.3	17	4	93	.06	4	.5	.8	15	SWR
		24	16 3	40.90	19	16.77	155	22.05	6.07	.7	1.1	21	4	130	.11	6	.4	1.2	20	SWR
		24	16 4	28.17	19	14.65	155	22.53	4.25	1.6	1.3	28	6	151	.12	3	.5	.8	24	SWR
		24	16 5	4.48	19	15.97	155	21.79	3.84		.6	20	5	140	.10	5	.5	1.7	18	SWR
		24	1614	3.52	19	19.28	155	21.89	7.41	.4	.9	16	4	98	.09	3	.5	.7	14	SWR
		24	1630	49.85	19	19.21	155	20.25	8.57	1.4	1.5	26	4	89	.07	4	.4	.8	24	SWR
		24	1638	41.20	19	17.61	155	21.53	6.26	1.6	1.8	35	8	122	.11	5	.3	.7	25	SWR
		24	1641	6.27	19	19.17	155	18.88	7.30	.4	.3	17	4	117	.08	2	.6	.7	15	SWR
		24	1650	20.58	19	18.86	155	18.82	6.57	.7	.3	20	6	120	.10	2	.6	.7	16	SWR
		24	1650	45.67	19	20.54	155	11.67	8.61	1.2	.6	18	2	79	.07	4	.6	1.0	14	SF3
		24	1719	.68	19	20.75	155	19.55	7.62	.3	.3	15	5	100	.07	4	.5	1.0	13	SWR
		24	1719	9.06	19	17.97	155	21.36	6.14	.8	1.1	21	5	118	.07	5	.4	.8	17	SWR
		24	1746	51.19	19	19.39	155	20.66	7.86	.8	.9	21	4	87	.06	4	.5	.9	17	SWR
		24	1811	27.75	19	19.49	155	20.51	8.42	.8	.6	18	4	83	.10	4	.5	.8	17	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	24	1831	20.55	19	17.29	155	21.57	6.30	2.2	2.5	41	2	127	.16	5	.4	.9	31	SWR
		24	1841	21.13	19	17.49	155	23.34	2.78	.8	1.1	13	1	100	.09	5	.4	1.1	11	SWR
		24	1842	9.69	19	18.79	155	20.78	6.45	.9	.9	22	2	104	.09	4	.5	1.3	15	SWR
		24	1847	38.91	19	18.85	155	21.80	8.30	.7	1.1	22	3	99	.08	4	.5	1.0	16	SWR
		24	1850	27.07	19	16.82	155	23.35	3.64	1.1	1.1	21	2	107	.11	5	.4	1.5	16	SWR
		24	19 9	2.26	19	16.81	155	21.84	6.31	.8	.9	19	3	132	.08	6	.5	1.4	16	SWR
		24	1925	48.55	19	19.99	155	20.41	7.92	.6	.6	15	1	136	.08	5	.6	1.6	10	SWR
		24	1938	42.13	19	14.87	155	22.68	5.58	1.9	1.7	27	1	148	.12	3	.6	1.4	20	SWR
		24	20 8	27.10	19	17.71	155	20.44	5.28	.8	.9	13	1	131	.06	3	.6	1.6	11	SWR
		24	2021	51.74	19	14.85	155	22.72	4.53	1.8	1.8	24	0	148	.10	2	.6	1.1	18	SWR
		24	2033	13.19	19	17.94	155	20.96	6.94	1.1	1.1	28	2	121	.11	4	.5	1.1	23	SWR
		24	2051	4.57	19	19.23	155	20.23	7.72	1.0	1.1	26	3	88	.10	4	.4	1.0	16	SWR
		24	2052	33.35	19	18.67	155	21.80	8.30	1.1	1.3	26	4	104	.11	4	.4	1.0	16	SWR
		24	2059	31.83	19	16.96	155	21.68	6.98	2.9	3.4	50	8	130	.16	6	.4	.7	40	SWR
		24	21 6	17.86	19	22.27	155	25.27	7.74	.9	.7	21	3	71	.09	4	.4	.8	18	KAO
		24	2130	27.12	19	17.10	155	21.16	7.11	.9	1.1	25	6	156	.08	5	.4	.7	21	SWR
		24	2135	50.21	19	16.85	155	21.36	8.30	2.0	2.4	47	8	132	.11	5	.3	.5	33	SWR
		24	2212	50.90	19	24.43	155	.55	8.15	2.0	2.1	36	3	136	.13	3	.5	.8	29	SFS
		24	2215	27.22	19	17.34	155	21.94	3.25	1.5	.6	27	7	122	.10	6	.3	.9	20	SWR
		24	2233	13.76	19	16.52	155	21.27	5.92	.7	.7	23	6	144	.10	5	.4	.9	16	SWR
		24	2257	12.33	19	22.68	155	24.15	3.07	.9	.6	15	3	74	.12	5	.4	1.1	14	KAO
		24	2314	11.63	19	18.06	155	20.69	4.19	1.2	1.1	24	6	121	.10	4	.3	.8	19	SWR
		24	2315	32.54	19	20.13	155	8.19	8.58	1.2	1.3	21	2	83	.06	5	.6	1.2	19	SF4
		24	2333	32.90	19	18.34	155	21.75	8.08	.8	.9	27	7	110	.09	4	.4	.6	22	SWR
		24	2335	30.05	19	20.69	155	6.65	7.79	1.0	1.5	17	1	99	.09	4	.6	1.3	15	SF4
		25	015	41.70	19	19.04	155	20.23	7.39	.7	.9	24	5	94	.08	3	.4	.7	19	SWR
		25	115	44.84	19	20.58	155	18.43	8.32	1.4	1.3	35	9	57	.08	2	.3	.6	26	SWR
		25	148	35.99	19	19.31	155	11.83	8.77	1.3	1.1	19	2	97	.08	5	.6	1.0	15	SF3
		25	2 6	39.44	19	18.57	155	22.15	8.30	.9	1.1	24	4	103	.09	4	.4	1.0	16	SWR
		25	236	15.08	19	22.55	155	24.24	9.17	1.1	.7	20	4	72	.07	5	.4	1.0	16	KAO
		25	251	32.18	19	17.38	155	20.47	5.88	.8	.3	17	2	136	.07	3	.5	1.4	11	SWR
		25	259	30.51	19	17.26	155	21.42	5.12	.8	.9	18	2	128	.08	5	.5	2.0	17	SWR
		25	3 1	4.14	19	20.40	155	20.12	8.04	.8	.6	16	3	63	.06	5	.4	.9	14	SWR
		25	316	2.97	19	18.23	155	21.87	8.44	1.0	.7	22	4	110	.10	4	.5	1.0	14	SWR
		25	336	45.60	19	19.32	155	20.30	7.26	1.0	1.1	22	2	86	.08	4	.4	1.2	16	SWR
		25	341	9.36	19	17.59	155	20.63	6.17	1.0	1.3	22	2	131	.08	4	.5	1.3	16	SWR
		25	345	33.05	19	18.74	155	15.09	7.47	.9	.6	18	0	106	.11	4	.6	1.4	16	SF1
		25	418	43.76	19	20.03	155	19.98	7.98	1.0	1.1	23	4	67	.08	5	.4	1.0	17	SWR
		25	433	39.46	19	15.15	155	23.92	7.68	1.0	.9	25	3	108	.10	2	.6	.8	19	SWR
		25	434	6.26	19	18.80	155	21.67	8.07	.8	.6	17	4	140	.11	4	.6	1.0	10	SWR
		25	448	27.38	19	19.31	155	18.76	7.11	.7	1.1	18	1	60	.10	3	.5	1.2	13	SWR
		25	5 0	47.57	19	21.13	155	23.71	9.03	.9	.9	19	3	51	.09	2	.5	.9	13	SWR
		25	557	12.85	19	18.00	155	21.08	7.19	1.0	1.5	27	4	121	.10	4	.4	.9	17	SWR
		25	6 1	38.13	19	19.59	155	20.28	8.45	1.4	1.7	30	3	79	.09	4	.4	.8	22	SWR
		25	648	1.63	19	18.90	155	21.34	7.50	1.6	1.3	25	4	101	.08	4	.4	.8	19	SWR
		25	7 1	48.96	19	17.18	155	20.74	6.07	.8	1.1	19	2	137	.07	4	.5	1.5	17	SWR
		25	712	34.32	19	19.42	155	20.56	6.33	.8	1.1	19	3	85	.09	4	.5	1.3	15	SWR
		25	8 6	38.00	19	19.18	155	18.52	8.23	2.0	2.2	46	4	71	.11	2	.4	.6	31	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	25	832	26.92	19	21.40	155	2.92	6.94		1.1	14	0	128	.08	3	.7	1.2	8	SF5
		25	833	51.78	19	20.25	155	18.23	7.68		.6	12	1	80	.03	2	.6	1.2	11	SWR
		25	9	9 57.18	19	22.20	155	23.75	6.72	1.0	.8	19	4	65	.09	4	.4	1.1	16	KAO
		25	915	9.83	19	19.94	155	20.32	7.31	.9	.9	21	3	72	.07	5	.4	1.0	17	SWR
		25	927	37.08	19	16.52	155	21.97	2.40	.9	1.0	20	2	133	.12	5	.4	1.2	15	SWR
		25	932	19.87	19	16.45	155	22.06	2.68	.3	.6	15	2	134	.09	5	.5	1.3	9	SWR
		25	949	32.34	19	19.29	155	20.89	5.40	.8	.6	20	3	90	.10	5	.5	1.5	15	SWR
		25	1029	46.03	19	18.84	155	20.63	8.67	2.3	2.4	41	2	102	.14	4	.4	.6	27	SWR
		25	11	3 9.93	19	20.65	155	11.21	6.79	1.1	.6	18	2	74	.10	4	.6	1.0	9	SF3
		25	11	5 54.39	19	21.20	155	23.84	9.55	1.3	.9	25	3	46	.10	2	.5	.9	20	SWR
		25	1114	52.70	19	19.22	155	20.23	7.91	.9	1.3	23	3	88	.08	4	.4	1.1	18	SWR
		25	1143	29.70	19	17.37	155	21.55	5.86	2.2	2.7	39	1	126	.13	5	.4	.9	25	SWR
		25	12	0 8.65	19	16.88	155	21.29	4.03	.8	.6	17	1	133	.12	5	.6	2.0	14	SWR
		25	1215	23.36	19	18.45	155	21.34	7.62	1.1	1.3	23	4	112	.11	5	.5	1.0	16	SWR
		25	13	2 9.35	19	17.16	155	21.94	7.21	1.4	1.6	25	4	125	.12	6	.4	1.2	18	SWR
		25	13	3 30.47	19	18.54	155	21.80	7.32	.8	.6	18	1	107	.09	4	.5	1.3	14	SWR
		25	1316	10.33	19	20.31	155	13.15	8.15	.9	.6	15	1	82	.06	4	.6	1.3	12	SF2
		25	1323	47.51	19	19.31	155	20.48	7.04	.8	.6	19	2	87	.06	4	.4	1.2	14	SWR
		25	1335	42.36	19	17.40	155	14.48	5.83	.7	.6	14	0	169	.08	2	.8	1.5	8	SF2
		25	1359	22.83	19	20.04	155	17.71	8.51	.8	.6	16	2	77	.08	1	.6	1.1	15	SWR
		25	1430	52.06	19	15.15	155	19.14	6.57	1.0	.9	18	0	166	.08	5	.7	1.4	7	SWR
		25	1454	.32	19	19.14	155	20.65	8.50	1.3	1.5	27	4	93	.08	4	.4	.7	20	SWR
		25	15	1 37.43	19	17.04	155	21.56	3.79	.8	1.3	20	2	129	.10	5	.4	1.5	16	SWR
		25	15	4 42.51	19	18.77	155	15.40	7.73	1.1	1.1	25	4	123	.08	4	.5	.9	16	SF1
		25	1520	3.22	19	19.39	155	19.08	6.96	.7	.6	14	1	120	.10	3	.7	1.3	12	SWR
		25	1522	43.30	19	15.92	155	22.44	5.15	1.8	1.9	21	0	137	.13	4	.6	2.0	19	SWR
		25	1636	40.96	19	21.08	155	13.31	7.05	1.3	1.5	22	2	164	.15	3	.8	.9	14	SF2
		25	1716	52.70	19	16.50	155	21.53	5.85	1.1	1.5	22	4	169	.07	6	.5	1.5	15	SWR
		25	1834	22.83	19	26.75	155	28.57	9.69	1.9	1.1	24	2	56	.11	7	.5	1.2	14	KAO
		25	1857	51.05	19	17.65	155	21.07	6.91	1.7	1.6	31	5	152	.09	6	.4	.7	20	SWR
		25	19	1 41.18	19	19.49	155	15.56	8.09	1.9	1.9	30	2	166	.09	3	.5	.6	22	SF1
		25	1913	52.53	19	16.57	155	21.63	6.33	1.1	1.5	24	5	167	.09	6	.5	1.2	15	SWR
		25	2056	18.14	19	16.73	155	21.24	3.28	.8	1.3	23	4	158	.07	7	.4	1.7	16	SWR
		25	2142	50.99	20	9.28	156	10.24	36.82	2.9	2.8	34	2	192	.14	41	1.0	1.8	29	KOH
		25	2225	12.43	19	19.04	155	21.72	8.28	1.7	1.6	26	4	130	.11	4	.5	.8	16	SWR
		25	2336	7.89	19	18.73	155	20.73	8.45	1.0	1.5	23	5	150	.08	5	.5	.9	19	SWR
		26	030	38.77	19	19.45	155	20.52	8.42	1.6	1.6	25	4	136	.09	5	.5	.9	21	SWR
		26	050	3.21	19	19.92	155	20.32	8.54	1.6	1.8	31	4	127	.11	5	.4	.6	23	SWR
		26	112	10.71	19	18.43	155	16.58	9.62	2.8	2.9	43	3	163	.13	3	.5	.5	34	SF1
		26	156	19.10	19	18.65	155	15.89	6.94	.8	1.1	15	0	213	.09	4	1.0	1.2	9	SF1
		26	249	4.16	19	20.65	155	10.48	6.75	1.1	1.1	19	2	207	.11	3	1.4	1.0	11	SF3
		26	328	10.31	18	55.86	155	15.81	17.70	2.6	3.4	15	0	266	.10	33	4.0	24.1	2	LOI L*
		26	347	34.38	19	20.50	155	17.46	7.73	.8	.3	17	3	108	.10	1	.7	1.0	11	SWR
		26	410	42.61	19	18.01	155	15.34	8.89	.8	.6	15	0	228	.05	5	1.4	1.5	11	SF1
		26	539	3.29	19	17.91	155	19.36	8.27	.7	.3	15	2	180	.07	5	.8	1.4	12	SWR
		26	643	35.46	19	17.33	155	13.35	10.13	1.0	.7	13	1	205	.09	9	1.1	1.5	6	SF2
		26	7	6 37.74	19	19.06	155	19.02	8.47	1.6	1.7	28	2	155	.08	3	.5	.6	20	SWR
		26	738	37.76	19	18.35	155	20.41	6.12	1.1	1.5	24	3	118	.10	6	.5	1.5	16	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	26	8	0 23.62	19	18.78	155	15.66	8.09	1.8	2.1	28	0	103	.11	4	.5	.7	23	SF1
		26	8	3 45.48	19	18.64	155	21.70	7.40		1.0	26	5	163	.11	4	.5	.5	21	SWR
		26	853	58.79	19	18.50	155	21.59	9.51	2.0	2.2	31	2	109	.11	4	.5	.7	24	SWR
		26	9	1 20.79	19	18.47	155	15.66	7.37	2.6	2.3	37	2	109	.14	4	.5	.7	28	SF1
		26	9	2 25.90	19	17.94	155	20.68	6.34	.9	1.3	21	2	122	.09	4	.5	1.3	15	SWR
		26	1022	13.24	19	17.17	155	21.10	3.92	1.0	1.1	21	5	129	.10	5	.4	1.4	16	SWR
		26	1031	.67	19	18.36	155	16.47	7.95	.8	.6	13	0	146	.03	4	.7	1.5	10	SF1
		26	1127	5.66	19	16.02	155	20.78	.97	1.0	1.3	17	3	179	.05	5	.5	.8	13	SWR
		26	1156	43.15	19	18.79	155	21.35	8.18	1.0	1.2	25	5	176	.10	4	.6	.9	18	SWR
		26	1259	25.83	19	18.31	155	20.77	8.39	.7	.6	15	3	158	.07	6	.7	.8	14	SWR
		26	1321	59.01	19	18.56	155	21.82	9.05	1.0	1.5	23	6	228	.07	4	.8	.5	17	SWR
		26	1325	3.77	19	22.91	155	22.14	1.05	.8	.5	8	3	165	.09	5	.5	.7	7	KAO
		26	1330	18.65	19	17.93	155	20.70	6.88	.8	1.1	22	5	163	.08	6	.5	.8	19	SWR
		26	1412	38.67	19	17.75	155	20.64	7.70	1.3	1.5	25	6	165	.06	7	.5	.9	19	SWR
		26	1430	22.29	19	18.01	155	21.09	6.61	.8	.9	21	6	159	.07	6	.7	.9	14	SWR
		26	1447	39.34	19	18.37	155	21.74	6.84	.6	.9	18	5	143	.07	4	.5	1.0	15	SWR
		26	1525	20.15	19	19.20	155	21.75	3.81	.6	.7	15	3	127	.07	3	.6	.7	11	SWR
		26	1535	51.03	19	17.88	155	20.72	7.85	.7	.6	18	5	163	.09	6	.6	1.0	11	SWR
		26	1550	8.83	19	17.38	155	22.23	8.92	.3	.6	14	3	151	.08	6	.6	.9	13	SWR
		26	16	1 59.07	19	17.14	155	21.91	6.52	.6	.6	11	3	161	.07	6	.6	1.2	8	SWR
		26	1622	12.68	19	18.93	155	21.46	8.51	1.1	1.8	29	5	134	.09	4	.4	.7	22	SWR
		26	1627	23.71	19	16.57	155	21.43	6.18	.5	.6	17	4	176	.08	6	.6	1.3	15	SWR
		26	1650	37.18	19	17.06	155	20.27	9.03	.9	.6	16	2	183	.06	8	.7	1.1	15	SWR
		26	1651	13.84	19	22.81	155	24.82	7.82	1.7	1.9	37	7	39	.12	5	.5	.7	27	KAO
		26	1659	46.25	19	18.45	155	21.45	7.60	.5	.9	18	4	145	.07	5	.5	1.0	13	SWR
		26	17	6 48.08	19	19.47	155	16.63	8.23	.7	.8	16	4	231	.05	2	1.2	.7	12	SF1
		26	17	8 57.34	19	18.69	155	21.28	8.12	1.1	1.5	28	6	143	.10	5	.4	.8	21	SWR
		26	1836	56.75	19	18.43	155	21.49	7.94	.7	1.1	20	5	145	.07	5	.4	.8	16	SWR
		26	1851	24.24	19	21.10	155	14.11	3.09	.5	.6	17	3	177	.15	3	.8	.8	13	KOA
		26	19	2 18.50	19	17.36	155	20.65	8.61	1.6	1.9	31	5	153	.09	4	.4	.6	23	SWR
		26	1918	21.88	19	17.79	155	15.12	4.84	.7	1.0	19	1	199	.12	6	.7	1.9	14	SSF
		26	1922	32.97	19	19.86	155	21.13	3.63	.4	.8	14	4	195	.10	4	.8	.8	13	SWR
		26	1937	57.23	19	16.19	155	21.61	2.92	.7	1.2	22	4	171	.05	5	.5	1.3	19	SWR
		26	1946	20.39	19	16.10	155	22.12	6.05	1.9	2.6	36	3	153	.12	5	.4	.9	27	SWR
		26	20	5 21.97	19	19.05	155	15.16	6.91	1.9	1.8	32	1	167	.11	4	.6	.7	21	SF1
		26	20	7 32.67	19	16.22	155	22.35	8.03	.7	.8	19	1	165	.16	5	.7	1.7	8	SWR
		26	2016	31.31	19	18.36	155	20.55	9.14	2.4	2.8	44	7	149	.12	6	.4	.5	28	SWR
		26	2129	56.38	19	18.42	155	13.44	6.11	1.2	1.1	18	3	226	.07	8	.9	1.8	12	SF2
		26	2145	43.59	19	18.75	155	22.03	7.48	2.2	2.4	39	4	130	.13	4	.4	.6	24	SWR
		26	2149	19.32	19	19.73	155	7.40	7.23	1.9	2.1	28	0	201	.12	6	1.2	1.0	20	SF4
		26	2152	21.01	19	18.70	155	21.67	7.56	1.2	1.5	25	5	137	.10	4	.5	.8	17	SWR
		26	22	1 22.67	19	18.35	155	22.10	7.68	.8	.9	19	3	136	.11	4	.5	1.4	13	SWR
		26	2215	28.69	19	17.51	155	21.11	5.76	.8	1.1	14	3	168	.08	6	.6	1.7	8	SWR
		26	23	2 22.86	19	18.68	155	14.81	6.86	1.1	1.4	21	0	198	.07	5	.8	1.0	16	SF1
		26	2311	51.98	19	15.69	155	22.66	4.87	.6	.9	13	2	176	.08	3	.8	2.2	8	SWR
		27	0	8 47.26	19	18.97	155	21.56	8.22	1.1	1.9	28	6	134	.10	4	.4	.8	19	SWR
		27	0	14 51.07	19	20.05	155	7.87	6.90	1.0	1.1	20	3	213	.09	5	1.4	.9	8	SF4
		27	026	14.88	19	14.49	155	22.45	4.83	.9	.9	13	0	179	.08	3	.8	1.3	8	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	27	1 1	54.07	19	20.38	155	18.10	8.62	1.2	1.3	19	2	158	.07	1	.7	.9	15	SWR
		27	123	24.42	19	18.66	155	21.36	9.55	2.7	3.1	45	7	138	.12	4	.4	.4	27	SWR
		27	132	13.41	19	17.94	155	12.90	6.41	1.4	1.4	23	2	227	.10	9	1.0	1.5	17	SF2
		27	139	27.89	19	16.83	155	20.70	7.25	2.2	2.5	41	4	155	.13	7	.4	.7	29	SWR
		27	2 7	11.38	19	18.70	155	22.25	6.91	.3	.8	13	2	129	.13	3	.7	1.1	9	SWR
		27	210	40.85	19	27.88	155	37.85	.43	2.2	2.3	8	1	140	.06	3	.4	.7	5	MLO
		27	217	16.26	19	20.63	155	11.53	8.10	2.3	2.3	38	5	173	.11	4	.5	.5	23	SF3
		27	224	25.45	19	17.41	155	20.86	7.73	.3	.7	7	1	175	.11	7	1.1	3.6	4	SWR
		27	231	38.56	19	16.86	155	21.74	5.10	.8	1.0	16	4	170	.10	6	.6	2.6	12	SWR
		27	234	31.70	19	19.82	155	11.04	7.19	1.6	1.3	29	5	184	.12	5	.7	.7	18	SF3
		27	327	51.23	19	17.64	155	20.54	5.68	.7	.7	18	3	171	.07	7	.7	2.1	12	SWR
		27	338	26.10	19	18.58	155	22.10	7.67	.7	1.1	20	4	134	.07	4	.4	.8	14	SWR
		27	352	33.83	19	17.70	155	23.28	3.50	.7	1.0	18	4	126	.08	5	.4	.9	15	SWR
		27	4 6	27.74	19	17.95	155	23.17	3.03	.9	1.8	19	2	125	.10	4	.4	.9	17	SWR
		27	414	46.08	19	18.01	155	22.99	3.28	.8	1.0	16	3	127	.09	4	.4	.8	11	SWR
		27	439	47.98	19	16.64	155	21.37	5.10	1.6	1.7	29	7	158	.07	6	.4	1.3	22	SWR
		27	452	11.39	19	17.70	155	23.09	3.23	.4	1.0	15	3	130	.07	5	.4	.9	14	SWR
		27	457	14.29	19	58.10	155	35.59	15.44	1.6	1.5	21	4	156	.07	25	.6	1.0	15	KOH
		27	459	38.67	19	17.57	155	23.23	3.51	.7	1.0	19	4	128	.08	5	.4	.9	16	SWR
		27	5 6	43.03	19	16.27	155	21.62	5.44	.7	.6	19	4	179	.05	6	.6	2.2	18	SWR
		27	5 7	10.89	19	17.37	155	23.25	2.86	.7	.9	19	4	131	.12	5	.5	1.1	16	SWR
		27	5 8	37.94	19	56.11	155	35.85	13.06	1.9	1.7	21	4	141	.09	23	.5	.6	17	KOH
		27	522	47.70	19	18.01	155	20.55	8.42	.8	1.2	21	6	166	.11	6	.6	.9	17	SWR
		27	616	59.36	19	24.25	155	24.69	9.89	2.1	2.1	41	6	32	.11	2	.3	.4	30	KAO
		27	7 3	9.47	19	17.54	155	23.36	2.70	.8	1.2	14	2	126	.10	5	.5	1.0	12	SWR
		27	711	41.85	19	17.67	155	20.27	5.86	2.1	2.4	39	4	144	.12	3	.5	.7	29	SWR
		27	734	1.26	19	15.36	155	22.51	7.53	2.0	2.4	31	2	158	.11	9	.6	.9	21	SWR
		27	742	59.62	19	29.72	155	39.21	8.18		1.2	18	4	97	.09	6	.6	1.0	13	MLO
		27	749	22.29	19	17.60	155	22.11	8.48	1.4	2.0	25	4	199	.09	5	.8	.6	13	SWR
		27	854	52.61	19	17.50	155	23.51	2.96		1.9	16	0	175	.07	5	.6	1.4	14	SWR
		27	933	53.45	19	17.56	155	23.21	3.10	1.7	1.9	31	5	101	.10	5	.3	1.0	23	SWR
		27	944	20.51	19	17.85	155	13.02	7.29	1.7	1.8	36	4	112	.12	2	.5	.8	18	SF2
		27	949	.68	19	17.08	155	12.28	7.53	1.4	1.1	23	3	196	.08	2	.6	.9	11	SF3
		27	10 9	42.17	19	17.11	155	22.00	6.39	1.7	2.4	32	3	125	.11	6	.4	1.0	18	SWR
		27	1038	36.43	19	17.52	155	20.51	6.40	1.1	1.3	22	3	133	.08	3	.5	1.0	18	SWR
		27	1058	55.82	19	17.54	155	21.56	6.35	1.7	1.9	34	5	123	.13	5	.4	.8	26	SWR
		27	13 8	11.16	19	21.19	155	24.94	8.06	2.3	2.3	39	4	51	.10	3	.4	.6	28	SWR
		27	1326	58.52	19	19.24	155	11.03	9.40	2.7	3.2	41	5	104	.09	6	.4	.4	30	SF3
		27	1442	26.22	18	8.43	155	47.46	15.04	2.6	2.5	29	1	322	.12	95	16.9	29.7	18	DIS
		27	1538	13.16	19	19.47	155	20.43	8.54	1.4	1.7	27	2	83	.08	4	.4	.9	18	SWR
		27	19 6	47.27	19	20.18	155	19.64	7.77	1.5	1.9	34	7	125	.13	4	.4	.6	26	SWR
		27	2122	32.34	19	17.61	155	23.11	3.17	1.7	1.7	19	2	130	.07	5	.4	1.0	14	SWR
		28	020	1.93	19	19.70	155	18.98	7.16	1.2	1.1	25	5	148	.10	3	.5	.9	21	SWR
		28	217	58.73	19	18.64	155	21.36	7.98	1.3	1.7	29	6	142	.08	4	.4	.7	24	SWR
		28	258	40.39	19	17.84	155	16.13	9.35	1.5	1.9	29	2	175	.08	4	.5	.6	25	SF1
		28	435	3.59	19	16.48	155	21.57	5.70	1.9	2.3	38	6	155	.09	6	.4	1.0	30	SWR
		28	443	19.32	19	17.22	155	20.70	5.73	2.0	2.9	40	7	156	.09	7	.4	1.0	31	SWR
		28	530	4.42	19	17.58	155	22.86	3.30	.7	1.0	19	4	136	.08	5	.4	.9	17	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUN	28	657	9.57	19	20.05	155	9.18	8.30	1.8	1.5	18	2	115	.06	4	1.1	1.0	16	SF3
		28	17 4	34.69	19	20.17	155	17.99	8.79	1.1	1.1	29	7	70	.07	1	.4	.7	21	SWR
		28	22 6	42.52	19	18.83	155	20.64	7.69	1.4	1.7	35	7	102	.08	4	.5	.6	28	SWR
		28	2258	6.40	19	17.71	155	21.05	8.26	1.0	1.4	26	4	124	.11	4	.5	.9	22	SWR
		28	2357	14.80	19	17.30	155	23.27	2.61	.9	1.5	28	6	103	.07	5	.5	.8	25	SWR
		29	125	11.64	19	21.24	155	16.27	31.79	1.9	1.7	27	4	68	.05	2	1.0	1.3	20	DEP
		29	331	35.05	19	18.61	155	21.72	9.53	2.4	2.9	49	7	105	.11	4	.5	.5	37	SWR
		29	5 5	34.79	19	17.42	155	19.79	5.80	.9	1.1	23	4	131	.11	2	.5	1.2	19	SWR
		29	510	3.64	19	16.75	155	20.28	7.93	1.2	1.5	25	5	175	.08	4	.5	.8	22	SWR
		29	550	21.77	19	16.09	155	7.35	42.86	2.4	2.1	40	4	193	.10	3	.9	1.2	36	DEP
		29	6 3	43.32	19	18.22	155	14.62	6.96	.9	1.1	20	2	131	.09	3	.5	1.0	14	SF1
		29	634	5.55	19	1.01	155	17.66	7.84	2.6	3.6	16	0	229	.12	24	1.3	2.1	3	LOI L
		29	836	21.27	19	16.85	155	20.92	8.22	1.0	1.0	26	4	134	.09	5	.5	1.0	18	SWR
		29	1146	40.77	19	17.55	155	20.75	9.28	2.0	2.1	38	8	130	.10	4	.4	.5	29	SWR
		29	1247	21.49	19	17.52	155	23.34	2.69	.9	1.5	20	2	108	.08	5	.4	.9	11	SWR
		29	1251	17.73	19	18.08	155	21.86	7.51	1.3	1.4	26	5	112	.10	5	.5	1.0	16	SWR
		29	1329	42.36	19	19.87	155	19.11	8.64	2.3	2.4	45	6	53	.12	3	.5	.5	28	SWR
		29	1550	49.71	19	18.84	155	22.85	4.63	.8	1.1	21	2	92	.08	3	.5	.9	16	SWR
		29	16 5	5.98	19	20.00	155	7.71	8.75	2.5	2.5	40	2	96	.08	5	.4	.5	30	SF4
		29	1649	59.25	19	17.61	155	23.42	3.50	.9	1.1	18	2	97	.08	5	.4	1.0	12	SWR
		29	1925	44.52	19	20.30	155	15.75	5.47	.9	1.0	28	5	84	.13	3	.4	1.0	20	SF1
		29	1945	19.85	19	17.71	155	23.31	2.82	.7	1.0	16	4	106	.06	5	.5	.8	14	SWR
		29	2017	28.82	19	19.18	155	18.94	7.21	1.2	1.2	27	4	60	.09	2	.4	.9	20	SWR
		29	2033	39.11	19	17.32	155	21.95	5.57	.9	1.1	29	4	122	.09	6	.4	1.4	20	SWR
		29	2116	4.99	19	17.36	155	23.43	2.72	.7	1.0	17	3	109	.05	5	.4	.9	13	SWR
		29	2250	30.23	19	19.32	155	18.77	7.44	1.2	1.1	25	3	60	.09	3	.4	.9	19	SWR
		29	2251	46.95	19	21.48	155	1.95	7.91	2.2	2.2	34	4	161	.10	3	.5	.5	24	SF5
		29	2328	50.58	19	17.34	155	22.82	3.97	1.7	1.8	25	3	110	.08	5	.4	1.5	20	SWR
		30	058	32.11	19	20.55	155	10.95	7.14	1.3	1.1	26	4	121	.10	3	.5	.9	17	SF3
		30	2 2	12.47	19	18.47	155	21.09	7.56	1.3	1.1	26	2	113	.09	4	.4	.9	19	SWR
		30	3 2	1.13	19	18.13	155	20.33	6.37	1.2	1.3	22	2	121	.11	3	.5	1.3	18	SWR
		30	542	24.70	19	17.28	155	21.10	6.69	1.1	1.2	22	4	133	.08	5	.5	1.2	20	SWR
		30	546	26.16	19	18.98	155	13.53	7.62	2.4	2.5	43	5	70	.12	4	.4	.6	33	SF2
		30	720	27.96	19	17.69	155	23.67	3.15	.8	1.1	16	3	93	.09	5	.4	1.0	9	SWR
		30	1056	30.61	19	16.96	155	21.77	6.40	.9	1.1	18	3	130	.10	6	.6	2.2	14	SWR
		30	1310	32.10	19	17.20	155	20.56	5.59	1.4	1.5	27	1	131	.12	4	.5	1.5	22	SWR
		30	1347	7.63	19	26.07	155	28.22	8.62	2.5	2.4	40	3	46	.10	6	.3	.7	27	KAO
		30	1621	4.39	19	15.95	155	21.85	7.82	2.7	2.9	39	4	150	.11	5	.5	.6	24	SWR
		30	1641	12.45	19	17.90	155	23.34	2.98	1.0	1.6	23	4	96	.09	4	.4	.9	17	SWR
		30	1715	54.85	19	12.15	155	27.03	7.11	2.1	2.0	36	1	124	.15	5	.5	.9	27	LSW
		30	18 7	5.67	19	17.58	155	23.59	2.42	1.7	1.6	25	1	95	.10	5	.4	1.0	17	SWR
		30	1830	26.17	19	18.21	155	14.10	4.27	1.0	1.1	25	2	85	.11	2	.4	1.0	17	SSF
		30	1943	54.59	19	17.45	155	23.14	3.33	1.7	1.8	22	3	103	.11	5	.4	1.2	13	SWR
		30	1955	19.24	19	26.71	154	55.69	6.40	1.7	1.6	24	3	161	.13	2	.8	.7	14	LER
		30	2156	8.29	19	18.26	155	12.82	9.20	2.4	2.3	46	6	106	.12	3	.5	.6	33	SF2
		30	2229	58.01	19	19.55	155	18.88	6.58	1.0	1.3	28	5	55	.10	3	.4	.9	23	SWR
		30	2235	19.95	19	18.87	155	22.80	5.27	1.7	1.4	24	3	93	.11	3	.4	1.0	20	SWR
		30	2329	40.30	19	21.05	155	24.40	7.99	1.6	1.5	27	3	48	.12	3	.4	.8	18	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	1	031	41.26	19	19.43	155	15.40	8.87	2.2	2.4	42	3	88	.10	4	.4	.5	25	SF1
		1	032	54.08	19	19.18	155	16.47	6.57	1.9	1.9	34	2	109	.14	2	.5	.7	25	SF1
		1	4 1	58.66	19	17.91	155	20.87	7.45	2.1	2.3	43	7	122	.11	4	.4	.7	26	SWR
		1	442	46.98	19	16.33	155	21.45	7.52	1.2	1.5	24	2	138	.10	6	.5	1.1	19	SWR
		1	449	52.89	19	27.57	154	52.96	6.33	1.8	1.5	27	2	136	.13	3	.7	1.0	17	LER
		1	456	16.82	19	19.46	155	14.06	6.50	1.8	1.8	37	3	67	.12	5	.4	.8	25	SF2
		1	512	5.18	19	17.07	155	21.84	6.88	.9	1.1	22	2	127	.11	6	.5	1.5	18	SWR
		1	633	31.60	19	17.64	155	20.86	5.64	1.3	1.5	24	5	129	.08	4	.4	.9	14	SWR
		1	650	58.54	19	19.55	155	12.30	5.47	1.3	1.1	18	3	86	.09	5	.4	.9	11	SF3
		1	7 3	45.69	19	17.61	155	20.70	7.06	1.7	1.6	33	8	126	.09	4	.4	.8	24	SWR
		1	920	28.44	19	20.92	155	.69	6.12	1.4	1.3	18	0	199	.11	4	1.0	1.6	14	SF5
		1	930	43.40	19	18.66	155	23.08	4.58	1.5	1.4	24	4	120	.07	3	.4	.9	19	SWR
		1	937	37.38	19	52.58	155	23.05	27.28	1.4	1.5	25	0	126	.13	5	.9	1.8	16	KEA
		1	942	25.71	19	17.26	155	21.16	5.09	1.7	1.8	35	2	129	.12	5	.4	1.3	26	SWR
		1	10 8	15.32	19	16.85	155	21.92	7.12	1.8	1.6	28	4	131	.11	6	.4	.8	20	SWR
		1	1138	27.99	19	18.47	155	20.49	7.20	1.9	1.9	36	5	113	.11	3	.4	.7	24	SWR
		1	1327	31.14	19	11.58	155	36.39	9.95	3.6	3.3	46	6	92	.21	6	.6	.8	38	LSW
		1	1335	41.87	19	16.98	155	21.85	3.06	2.0	2.0	38	5	129	.13	6	.3	1.1	28	SWR
		1	1433	31.65	19	18.24	155	23.15	4.54	2.5	3.2	43	2	95	.13	4	.4	1.5	33	SWR
		1	16 5	43.78	19	17.70	155	23.45	3.35	2.0	2.1	31	4	104	.14	5	.4	1.2	19	SWR
		1	1613	56.66	19	3.43	155	24.99	42.89		1.9	31	2	211	.07	12	1.0	2.0	27	LOI
		1	1627	39.20	19	25.36	154	58.52	4.88	2.1	1.8	27	1	145	.14	1	.8	.6	15	SLE
		1	1739	28.73	19	16.42	155	22.67	4.91	2.1	2.1	33	2	127	.14	5	.5	1.6	21	SWR
		1	2147	55.72	19	20.90	155	12.78	8.55	2.0	2.1	38	3	63	.09	3	.4	.5	25	SF2
		1	2224	9.87	19	17.75	155	21.73	7.64	1.7	1.1	26	2	118	.11	5	.4	1.1	15	SWR
		1	2228	50.05	19	20.93	155	13.10	8.55	1.5	1.3	27	3	59	.07	3	.5	.7	19	SF2
		1	2240	33.26	19	17.56	155	23.33	2.87	1.7	1.7	16	2	99	.08	5	.4	.9	9	SWR
		2	0 1	42.73	19	16.53	155	21.67	6.30	1.1	1.3	23	4	134	.07	6	.5	1.2	19	SWR
		2	122	54.08	19	19.46	155	13.45	5.36	1.0	1.1	26	4	69	.13	5	.4	1.5	20	SF2
		2	252	16.04	19	20.75	155	12.81	8.82	2.3	2.4	43	3	64	.12	4	.4	.5	35	SF2
		2	355	55.65	19	20.18	155	6.93	6.67	1.2	1.1	25	2	107	.11	5	.6	1.3	16	SF4
		2	414	19.97	19	18.94	155	15.41	7.40	1.3	1.3	27	2	106	.10	4	.5	.8	19	SF1
		2	625	24.25	19	55.76	155	21.11	11.62	2.6	1.7	17	1	293	.10	5	3.3	.5	10	KEA
		2	627	24.25	19	22.05	155	6.56	7.55	2.1	2.0	35	3	75	.10	2	.4	.6	24	SF4
		2	831	50.94	19	17.16	155	23.42	2.75		2.0	11	2	182	.03	6	.6	1.4	11	SWR
		2	1127	25.59	19	20.89	155	3.31	5.88	2.0	1.5	27	0	100	.13	2	.6	1.2	20	SF5
		2	1352	34.25	19	22.92	155	24.09	8.94	1.6	1.2	31	3	38	.10	5	.4	.7	25	KAO
		2	1550	30.82	19	18.75	155	20.51	8.02	1.9	2.1	37	5	104	.10	4	.4	.7	24	SWR
		2	1832	58.67	19	18.83	155	16.41	6.47	1.2	1.3	30	3	116	.11	3	.4	.7	17	SF1
		2	1944	17.45	19	18.38	155	16.04	7.04	1.1	1.3	28	2	124	.11	4	.5	.8	20	SF1
		2	2346	45.43	19	22.30	155	.00	7.20	1.6	1.6	21	0	179	.10	6	.9	1.3	15	SF5
		3	115	47.91	19	19.20	155	18.71	7.77	1.9	1.9	36	4	62	.11	2	.4	.7	22	SWR
		3	547	39.86	19	20.23	155	6.67	6.36	1.6	1.3	31	5	108	.13	5	.5	.9	20	SF4
		3	11 5	12.98	19	19.01	155	15.45	7.16	1.3	1.1	31	4	105	.11	4	.4	.9	20	SF1
		3	19 5	45.50	19	17.33	155	20.90	5.94	.9	1.2	25	4	129	.10	4	.5	1.3	16	SWR
		3	2217	16.33	18	54.83	155	14.37	12.31	2.6	2.5	28	1	257	.13	36	2.1	.9	11	LOI L
		3	2251	5.81	19	17.53	155	23.14	3.16	1.8	2.1	26	4	102	.10	5	.4	1.0	19	SWR
		3	2351	25.04	19	17.30	155	23.58	3.12	1.0	1.2	23	2	97	.08	5	.4	1.2	19	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	4	456	58.73	19	21.15	155	2.24	7.78	2.1	2.1	30	2	151	.12	3	.7	.6	22	SF5
		4	525	28.33	19	18.60	155	22.88	5.14	1.7	1.4	24	3	96	.10	3	.4	.9	20	SWR
		4	558	52.44	19	18.61	155	15.31	7.18	1.1	1.1	22	3	128	.07	4	.4	.9	16	SF1
		4	737	8.71	19	20.74	155	7.01	7.93	2.3	2.0	33	0	93	.08	4	.5	.6	27	SF4
		4	813	32.78	19	17.63	155	21.52	8.28	1.7	1.3	26	2	122	.09	5	.4	1.0	17	SWR
		4	1144	9.51	19	20.26	155	18.19	8.46	1.5	1.1	27	7	66	.08	1	.4	.8	19	SWR
		4	14 8	52.61	19	17.91	155	21.00	6.89	1.7	1.1	20	2	123	.10	4	.5	1.3	17	SWR
		4	1429	33.57	19	16.22	155	22.25	7.54	1.4	1.3	24	2	156	.10	5	.5	1.2	19	SWR
		4	1435	19.36	19	16.41	155	22.44	6.79	2.1	2.5	39	3	131	.13	5	.4	.8	26	SWR
		4	19 0	8.86	19	17.18	155	23.37	6.00	1.8	1.3	18	1	103	.13	5	.5	1.8	9	SWR
		4	19 6	27.55	19	17.84	155	21.59	8.49	1.7	1.3	29	7	119	.10	5	.4	.8	22	SWR
		4	1941	45.97	19	17.38	155	23.38	2.43	1.8	1.4	23	2	100	.10	5	.4	.9	17	SWR
		4	2045	40.35	19	16.30	155	22.59	6.60	1.0	1.3	27	4	130	.10	4	.5	1.1	23	SWR
		4	21 5	37.45	19	24.79	155	24.98	7.12	1.6	1.1	24	2	47	.09	1	.4	.9	16	KAO
		4	2122	15.18	19	16.53	155	22.59	5.97	1.8	1.5	30	3	126	.11	5	.5	1.1	25	SWR
		4	2123	3.24	19	16.75	155	22.71	4.48	1.8	1.4	31	1	120	.13	5	.4	2.0	24	SWR
		4	2150	.63	19	17.33	155	23.55	2.45	.7	1.0	18	2	107	.06	5	.4	1.0	12	SWR
		4	2159	27.62	19	17.81	155	23.21	3.31	1.7	1.2	23	2	99	.10	4	.4	1.0	12	SWR
		4	2254	36.45	19	17.46	155	23.33	2.55	.7	1.0	19	4	100	.08	5	.4	.8	12	SWR
		4	2314	47.02	19	17.07	155	23.63	6.54	2.4	2.5	39	4	98	.12	5	.4	.8	27	SWR
		4	2328	21.16	19	17.68	155	23.20	3.81	1.1	1.0	20	2	100	.11	5	.4	1.2	9	SWR
		4	2343	1.90	19	16.97	155	23.84	5.38	1.4	1.7	22	1	95	.10	5	.4	1.8	13	SWR
		4	2346	1.34	19	17.72	155	23.19	3.09	1.7	1.2	24	2	100	.09	5	.4	1.0	16	SWR
		5	051	6.91	19	18.73	155	13.29	6.84	1.1	1.1	28	3	81	.10	3	.5	1.0	19	SF2
		5	114	7.55	19	17.63	155	23.28	2.87	.8	1.2	17	2	99	.09	5	.4	.9	12	SWR
		5	412	56.06	19	17.49	155	23.38	3.47	1.7	2.1	26	3	99	.10	5	.3	1.1	11	SWR
		5	644	44.21	19	16.24	155	23.09	7.07	1.1	1.1	23	4	121	.11	4	.4	1.0	16	SWR
		5	744	42.34	19	18.51	155	13.02	10.47	2.6	2.9	44	5	93	.11	3	.5	.5	30	SF2
		5	916	27.04	19	17.81	155	23.31	3.59	1.2	1.7	20	1	97	.10	4	.4	1.1	13	SWR
		5	1621	24.08	19	17.63	155	23.18	3.61	.9	1.6	27	5	101	.08	5	.3	1.0	18	SWR
		5	1735	56.28	19	17.80	155	23.21	3.04	2.1	2.5	27	3	99	.10	5	.4	1.0	20	SWR
		5	1759	8.73	19	20.86	155	3.33	8.62	1.6	1.4	22	3	110	.05	2	.5	.7	12	SF5
		5	2042	33.47	19	17.74	155	23.38	2.99	.9	1.2	22	3	97	.09	5	.4	.9	16	SWR
		5	2059	10.52	19	22.83	155	27.34	6.47	1.8	1.6	29	1	45	.11	1	.4	.8	20	KAO
		5	2119	2.42	19	17.43	155	23.29	6.37	3.2	3.8	46	5	101	.16	5	.4	.8	38	SWR
		5	22 3	29.37	19	31.87	155	42.04	7.61	2.4	1.5	34	4	81	.12	7	.5	1.1	25	MLO
		5	22 8	29.11	19	17.32	155	23.62	3.67	1.8	1.6	28	2	97	.12	5	.4	1.3	15	SWR
		6	150	33.55	19	17.34	155	23.69	3.08	.8	1.2	24	5	95	.10	5	.3	1.0	16	SWR
		6	622	34.89	19	17.58	155	13.09	8.20	1.9	2.1	35	3	121	.11	1	.6	.8	19	SF2
		6	638	54.03	19	15.05	155	20.04	5.91	1.1	1.1	18	1	162	.08	6	.6	1.6	9	SWR
		6	9 6	53.25	19	19.02	155	13.79	6.73	1.8	1.6	30	0	65	.11	4	.5	1.0	25	SF2
		6	944	48.18	19	11.60	155	35.58	9.44	2.4	1.9	37	4	93	.22	7	.6	.9	21	LSW
		6	1243	57.63	19	17.32	155	23.58	2.72	.9	1.2	23	3	97	.09	5	.3	.9	13	SWR
		6	1418	10.92	19	16.32	155	23.32	5.69	1.2	1.1	25	3	114	.11	4	.4	1.3	16	SWR
		6	1451	54.67	19	18.11	155	13.15	6.69	1.3	1.1	25	4	98	.09	2	.6	1.0	16	SF2
		6	1524	59.23	19	17.44	155	23.44	3.14	1.0	1.0	17	3	107	.08	5	.4	1.0	14	SWR
		6	1647	21.42	19	13.31	155	27.82	2.31	2.1	1.8	34	4	104	.13	5	.3	1.2	24	LSW
		6	18 9	32.92	19	16.07	155	22.37	7.30	1.8	1.9	26	5	161	.09	4	.4	.9	20	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	6	1816	38.01	19	16.51	155	22.81	7.45	2.4	3.0	42	3	122	.15	5	.5	.7	29	SWR
		6	2158	6.16	19	16.66	155	22.64	5.16	1.8	2.4	35	3	123	.14	5	.4	1.2	28	SWR
		6	23 9	58.23	18	57.11	155	15.06	12.85	2.5	.8	21	0	249	.14	32	2.8	.9	8	LOI L
		7	411	14.67	19	17.68	155	23.71	2.97	1.8	1.9	35	4	93	.11	5	.3	1.0	22	SWR
		7	413	59.39	19	18.76	155	14.89	6.86	1.3	1.3	31	4	92	.11	4	.5	.9	17	SF1
		7	5 3	27.29	19	17.37	155	23.73	2.55	.7	1.0	17	2	104	.07	5	.4	1.0	10	SWR
		7	748	9.18	19	17.85	155	23.18	3.52	.8	1.1	20	2	98	.07	4	.4	.9	12	SWR
		7	834	36.43	19	18.72	155	22.88	5.33		2.4	17	0	120	.08	3	.5	1.0	16	SWR
		7	853	2.80	19	21.86	155	4.63	8.55	1.1	1.2	24	5	81	.11	4	.5	.9	14	SF5
		7	943	14.19	19	22.53	155	2.58	9.05	1.3	1.4	18	2	132	.08	5	.6	.7	9	SF5
		7	958	48.16	19	16.34	155	22.59	6.40	2.1	2.2	35	3	130	.11	4	.4	.9	27	SWR
		7	1128	34.90	19	16.21	155	22.19	6.46	1.2	1.5	24	2	138	.09	5	.5	1.1	19	SWR
		7	1250	.46	19	22.92	155	17.31	25.62	2.3	1.7	38	2	34	.09	1	.6	.9	31	DEP
		7	1436	16.04	19	19.00	155	15.58	7.21	1.2	1.3	23	1	106	.08	4	.5	1.0	17	SF1
		7	1534	4.08	19	18.25	155	16.41	4.79	1.1	1.1	14	2	150	.06	4	.5	1.2	11	SSF
		7	1621	38.67	19	21.69	155	1.96	8.12	2.1	2.5	32	3	148	.11	4	.7	.5	20	SF5
		7	1625	5.34	19	15.70	155	22.92	6.02	2.0	2.5	40	3	135	.12	3	.4	.9	24	SWR
		7	1649	31.34	19	19.90	155	7.87	8.19	2.7	2.9	43	4	93	.12	5	.4	.6	29	SF4
		7	17 6	57.72	19	19.43	155	7.92	7.85	2.0	2.6	37	4	97	.11	4	.4	.6	28	SF4
		7	1721	9.09	19	17.50	155	20.40	6.01	.9	1.3	25	2	129	.10	3	.4	.9	20	SWR
		7	1733	37.36	19	17.93	155	23.18	3.40	1.8	2.4	31	3	98	.12	4	.4	1.1	20	SWR
		7	18 4	35.87	19	17.73	155	23.15	3.18	1.0	1.6	22	3	100	.07	5	.4	1.0	17	SWR
		7	19 5	50.44	19	19.75	155	7.95	6.98	1.4	1.5	31	2	94	.09	4	.4	.9	24	SF4
		7	1945	56.11	19	21.90	155	24.94	10.05	1.4	1.2	25	2	53	.08	4	.4	.9	22	SWR
		7	2046	42.30	19	17.47	155	23.45	3.78	1.2	1.8	31	5	98	.07	5	.3	.9	26	SWR
		7	2311	52.90	19	20.35	155	13.86	8.86	1.8	2.2	37	4	58	.11	4	.4	.6	23	SF2
		8	159	.58	19	17.82	155	23.07	2.72	1.5	2.0	26	5	101	.08	4	.3	.8	24	SWR
		8	329	36.93	19	17.38	155	22.12	5.91	1.5	2.1	33	7	119	.13	6	.4	.9	26	SWR
		8	652	38.21	19	17.63	155	21.57	8.43	.8	1.3	26	7	124	.10	5	.4	.8	21	SWR
		8	955	8.38	19	17.79	155	23.54	2.42	1.7	2.1	26	5	94	.11	5	.3	.7	15	SWR
		8	1416	46.26	19	19.43	155	15.48	7.46	1.8	1.6	32	4	89	.10	4	.4	.7	23	SF1
		8	15 7	12.46	19	16.66	155	7.27	40.30	2.0	1.8	30	2	208	.06	2	1.4	2.1	25	DEP
		8	1635	43.61	19	18.43	155	22.06	8.43	1.1	1.3	26	6	106	.11	4	.5	.8	21	SWR
		8	1937	23.76	19	19.79	155	7.88	7.18	1.9		33	3	94	.09	5	.4	.8	22	SF4
		8	1938	24.46	19	19.69	155	7.57	7.49	2.4	3.0	40	4	102	.10	4	.4	.6	30	SF4
		8	2235	25.25	19	19.64	155	7.42	8.20	2.7	2.7	43	5	107	.09	4	.4	.5	29	SF4
		8	2259	44.37	19	23.31	155	3.36	5.24	1.3	1.1	26	4	103	.22	3	.7	1.5	18	SF5
		8	2318	41.34	19	16.70	155	22.07	3.13	.8	1.0	23	3	131	.11	6	.4	1.4	17	SWR
		8	2355	3.74	19	17.71	155	21.61	8.14	.8	1.1	23	3	119	.10	5	.5	1.0	19	SWR
		9	0 0	53.40	19	17.21	155	23.43	4.45	1.8	1.9	26	4	100	.11	5	.3	1.9	20	SWR
		9	839	50.21	19	17.57	155	23.47	2.90	.9	1.4	20	2	97	.10	5	.3	1.0	11	SWR
		9	922	16.99	19	19.64	155	11.45	7.85	1.9	1.6	30	3	93	.10	5	.5	.9	25	SF3
		9	10 0	29.93	19	17.37	155	21.27	2.97	1.1	1.1	22	5	127	.11	5	.4	1.0	17	SWR
		9	1248	25.76	19	19.84	155	7.93	7.76	1.6	1.2	25	4	92	.08	5	.5	1.0	20	SF4
		9	1613	12.03	19	17.45	155	23.50	3.58	2.0	2.4	31	4	97	.10	5	.3	1.2	22	SWR
		9	1928	39.32	19	16.36	155	22.75	5.72	1.8	2.4	36	2	126	.13	4	.4	1.0	29	SWR
		9	1930	50.98	19	15.83	155	22.50	7.51	1.3	1.6	24	2	157	.09	4	.5	1.0	17	SWR
		9	2137	59.79	19	16.58	155	23.66	3.59	.9	1.3	22	4	102	.11	4	.4	1.1	15	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	9	23 7	34.27	19	17.39	155	23.47	2.68	.7	1.0	14	2	108	.06	5	.4	.9	8	SWR
		10	1 2	27.26	19	17.46	155	23.38	2.58	.8	1.0	15	2	99	.07	5	.4	1.0	10	SWR
		10	246	47.41	19	22.43	155	24.39	9.26	1.8	1.4	32	5	50	.10	5	.4	.6	24	KAO
		10	5 1	3.44	19	17.79	155	23.40	3.38	1.7	1.6	24	4	96	.07	5	.3	.9	18	SWR
		10	612	43.25	19	17.91	155	23.28	3.52	1.9	2.5	33	6	97	.09	4	.3	.8	30	SWR
		10	627	32.99	19	17.28	155	23.37	2.91	1.3	1.6	30	4	101	.09	5	.3	.9	27	SWR
		10	820	25.46	19	17.62	155	23.34	2.84	1.5	1.7	32	5	99	.11	5	.3	.8	24	SWR
		10	10 5	7.86	19	17.27	155	23.58	3.45	1.3	1.6	30	5	98	.08	6	.3	1.0	27	SWR
		10	1017	54.99	19	17.49	155	23.16	3.16	.8	1.2	21	5	112	.07	5	.3	.9	19	SWR
		10	1035	9.03	19	17.82	155	20.34	8.08	1.8	1.9	41	10	129	.09	3	.3	.6	28	SWR
		10	1211	15.86	19	20.97	155	7.59	7.51	1.1	1.1	27	2	83	.10	4	.4	.8	18	SF4
		10	1329	51.94	19	20.83	155	12.83	8.90	2.0	2.0	36	4	62	.08	3	.4	.6	30	SF2
		10	1534	22.89	19	19.28	155	18.82	8.09	1.6	1.8	36	9	58	.08	2	.3	.6	25	SWR
		10	1659	1.61	19	17.78	155	23.09	5.43	1.2	1.4	27	5	101	.09	5	.4	.9	24	SWR
		10	17 1	6.30	19	18.99	155	13.16	8.43	1.7	1.6	34	3	81	.10	4	.4	.7	27	SF2
		10	1724	34.17	19	11.16	155	28.74	33.99	1.9	1.5	38	8	86	.07	3	.7	1.1	34	DLS
		10	1921	.94	19	16.64	155	20.34	7.59	.9	1.5	27	5	139	.10	4	.5	.9	24	SWR
		10	2326	59.57	19	17.63	155	23.23	3.02	.5	1.3	22	6	100	.08	5	.3	.8	20	SWR
		10	2349	8.87	19	19.83	155	10.23	7.59	1.7	1.4	23	3	89	.05	4	.5	.9	19	SF3
		11	036	27.60	19	19.16	155	13.62	8.17	1.6	1.8	37	5	67	.10	4	.4	.7	29	SF2
		11	211	23.98	19	17.46	155	23.62	2.29	1.0	.9	21	5	95	.07	5	.3	.8	18	SWR
		11	314	50.02	19	21.54	155	25.73	10.11	2.1	2.3	41	5	48	.12	4	.4	.6	34	KAO
		11	320	22.45	19	21.60	155	3.44	6.78		1.1	25	1	109	.15	3	.6	1.0	22	SF5
		11	345	27.04	19	17.34	155	23.40	3.02	.6	1.0	22	5	100	.09	5	.4	.9	21	SWR
		11	447	52.80	19	17.52	155	23.42	3.35	1.2	1.3	22	5	99	.08	5	.3	1.0	20	SWR
		11	10 0	15.10	19	17.20	155	23.51	3.05	1.0	1.3	25	5	100	.09	5	.3	1.0	22	SWR
		11	1011	45.74	19	11.70	155	37.64	8.66	2.6	2.4	41	6	98	.18	6	.5	.7	36	LSW
		11	12 5	52.67	19	17.80	155	20.44	8.16	1.5	1.3	30	7	125	.11	3	.4	.8	26	SWR
		11	1410	50.46	19	17.32	155	23.71	2.91	.9	1.0	25	4	95	.08	5	.3	.9	23	SWR
		11	1452	12.65	19	17.15	155	20.91	7.42	1.9	2.1	43	8	131	.11	4	.4	.7	35	SWR
		11	1454	53.45	19	17.10	155	20.69	6.86	1.1	1.1	28	5	132	.09	4	.4	.9	17	SWR
		11	16 0	24.68	19	16.98	155	15.01	7.85	1.4	1.1	23	3	200	.08	3	.6	.9	13	SF1
		11	1818	37.01	19	16.30	155	7.07	40.89	1.8	1.6	28	0	211	.08	3	1.9	2.8	22	DEP
		12	141	24.80	19	17.72	155	21.78	6.78	1.4	1.3	28	5	118	.11	5	.4	1.0	16	SWR
		12	222	50.86	19	20.41	155	7.17	5.42	1.5	1.1	30	4	98	.14	5	.5	1.3	17	SF4
		12	259	48.06	19	16.84	155	21.75	8.16	3.1	3.7	47	6	131	.14	6	.4	.6	36	SWR
		12	3 2	5.73	19	16.46	155	21.67	6.32	1.1	1.3	25	4	142	.09	6	.5	1.1	20	SWR
		12	3 8	36.04	19	16.56	155	21.79	6.09	1.8	2.2	29	3	134	.11	6	.5	.8	22	SWR
		12	311	36.46	19	16.57	155	22.02	5.41	1.8	2.3	38	5	133	.12	5	.4	1.2	30	SWR
		12	315	7.64	19	16.28	155	22.97	2.74	1.8	1.4	26	2	122	.12	4	.4	1.0	18	SWR
		12	328	29.97	19	16.62	155	21.91	3.71	1.2	1.4	28	4	132	.11	6	.4	1.4	18	SWR
		12	421	35.50	19	16.48	155	23.79	6.16	2.5	3.1	37	4	100	.13	4	.4	.9	27	SWR
		12	517	13.24	19	20.08	155	7.68	7.11	1.3	1.3	28	5	94	.09	5	.4	.8	18	SF4
		12	518	50.45	19	20.19	155	7.67	6.89	1.4	1.3	30	5	93	.10	5	.5	.9	22	SF4
		12	1038	23.74	19	17.54	155	14.10	6.60	1.1	1.3	23	3	147	.09	1	.5	1.0	10	SF2
		12	1044	44.09	19	21.68	155	6.78	8.12	1.8	1.9	30	4	80	.10	3	.4	.8	21	SF4
		12	1138	53.52	19	17.54	155	21.54	7.86	1.7	1.5	25	5	124	.10	5	.4	1.0	16	SWR
		12	1216	41.95	19	17.08	155	23.30	3.07	.9	1.3	22	4	116	.09	5	.4	1.0	17	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	12	1545	39.26	19	16.31	155	23.49	7.76	2.5	3.0	43	6	110	.12	4	.4	.6	29	SWR
		12	1641	26.19	19	17.70	155	23.28	3.15	2.3	3.1	40	5	98	.11	5	.3	.9	27	SWR
		12	1730	39.10	19	19.49	155	10.41	8.07	1.9	2.3	37	4	98	.10	5	.4	.7	25	SF3
		12	2314	22.22	19	18.48	155	20.60	9.95	2.7	3.2	44	5	114	.13	4	.4	.4	33	SWR
		12	2334	17.99	19	17.80	155	23.49	2.60	.9	1.3	20	4	95	.07	5	.3	.8	14	SWR
		13	013	32.34	19	16.57	155	22.51	6.93	2.5	3.1	42	3	127	.17	5	.5	.8	37	SWR
		13	028	.08	19	16.75	155	21.70	6.42	1.8	1.8	32	3	132	.10	6	.4	.9	24	SWR
		13	129	47.44	19	29.03	155	24.13	13.60	2.2	1.6	30	3	41	.14	2	.4	.6	17	DML
		13	932	2.59	19	21.68	155	2.12	8.41	2.9	3.4	27	1	152	.08	4	.7	.5	19	SF5
		13	1221	17.07	19	20.31	155	7.81	6.15	2.3	2.4	30	3	89	.11	5	.5	1.2	24	SF4
		13	1424	57.78	19	19.44	155	18.95	6.69	1.5	1.6	25	3	56	.10	3	.4	.9	18	SWR
		13	1758	58.01	19	17.69	155	23.17	2.93	1.7	1.6	20	2	108	.08	5	.4	.9	11	SWR
		13	21 5	21.76	19	17.25	155	21.70	7.78	2.6	3.3	43	2	126	.15	6	.4	.7	36	SWR
		13	21 8	43.38	19	16.98	155	21.65	8.24	2.9	3.6	42	3	130	.14	6	.4	.6	34	SWR
		13	2212	40.38	19	21.57	155	2.58	8.99	1.3	1.3	19	3	139	.14	3	.6	1.4	11	SSF
		14	240	27.58	19	17.40	155	21.42	5.02	1.7	1.4	22	2	126	.12	5	.4	1.8	18	SWR
		14	354	14.23	19	19.33	155	10.00	8.66	1.8	1.7	33	3	100	.07	5	.4	.6	25	SF3
		14	534	48.77	19	18.79	155	13.58	7.55	1.7	1.6	36	2	71	.13	3	.5	.8	25	SF2
		14	636	23.28	19	17.24	155	23.23	2.48	1.8	1.6	18	2	104	.10	6	.4	1.1	13	SWR
		14	744	52.20	19	17.99	155	20.79	7.01	1.8	1.6	28	3	122	.11	4	.4	1.1	19	SWR
		14	931	49.91	19	19.08	155	15.28	7.52	1.4	1.5	26	4	102	.10	4	.4	.8	19	SF1
		14	1052	58.17	19	17.77	155	23.00	3.25	1.7	2.1	25	5	102	.10	5	.3	.8	18	SWR
		14	12 7	38.03	19	10.49	155	37.02	9.26	2.9	3.0	33	1	98	.15	8	.6	.8	23	LSW
		14	1344	46.46	19	22.36	155	25.14	8.74	2.2	2.3	38	4	41	.11	4	.4	.5	22	KAO
		14	1449	10.39	19	19.45	155	7.58	8.18	1.6	1.7	23	1	103	.08	4	.5	.8	17	SF4
		14	1551	4.67	19	17.58	155	21.03	7.27	1.1	1.1	23	6	128	.09	4	.4	1.0	16	SWR
		14	2145	18.55	19	16.59	155	15.31	5.93	1.4	1.1	18	2	172	.10	3	.7	1.2	8	SF1
		14	2315	25.71	19	20.58	155	7.26	7.42	1.7	1.5	31	4	93	.11	5	.5	.9	16	SF4
		15	154	25.58	19	27.40	154	53.47	4.59	1.9	1.2	21	4	139	.13	5	.9	4.3	11	SLE
		15	2 5	36.45	19	19.46	155	7.49	8.06	1.6	1.1	21	4	109	.08	4	.5	1.1	12	SF4
		15	339	52.14	19	18.08	155	15.45	7.57	1.5	1.6	27	2	116	.10	4	.5	.8	17	SF1
		15	340	33.16	19	17.79	155	15.28	6.60	1.0	1.3	23	1	123	.11	3	.5	1.0	13	SF1
		15	1352	9.13	19	23.95	155	25.42	9.21	1.7	1.3	24	2	38	.09	2	.4	.8	20	KAO
		15	16 7	51.09	19	19.85	155	9.81	7.56	1.9	1.6	32	3	87	.09	4	.5	.8	24	SF3
		15	16 9	46.97	19	16.88	155	22.04	7.50	1.8	1.7	22	2	129	.09	6	.6	1.5	19	SWR
		15	1754	18.59	19	23.95	155	17.22	2.70	1.0	1.2	14	4	81	.06	1	.3	.3	10	SSC
		15	1812	27.87	19	19.41	155	11.51	7.49	1.1	1.0	22	2	97	.08	6	.6	1.1	18	SF3
		15	1917	33.93	19	18.14	155	23.51	3.73	1.2	1.1	22	3	94	.09	4	.4	.9	14	SWR
		15	2122	11.53	19	18.10	155	20.76	6.75	1.7	1.5	24	2	122	.09	4	.5	1.2	16	SWR
		15	2256	22.05	19	19.08	155	15.55	8.07	1.6	1.5	27	3	104	.10	4	.5	.8	18	SF1
		16	214	15.52	19	18.53	155	14.93	7.41	1.1	1.3	28	2	98	.07	4	.4	.8	24	SF1
		16	3 0	20.05	19	18.88	155	16.20	7.84	1.6	1.3	34	6	114	.11	3	.4	.6	26	SF1
		16	438	52.84	19	17.58	155	20.92	7.18	1.3	1.5	33	7	126	.08	4	.3	.7	27	SWR
		16	510	55.54	19	17.44	155	23.55	2.66	1.0	1.4	28	3	97	.06	5	.3	.8	25	SWR
		16	633	15.59	19	26.97	155	27.13	10.32	1.9	1.6	40	7	45	.12	5	.4	.8	34	KAO
		16	7 6	20.96	19	16.01	155	23.30	1.20	.6	1.1	22	4	131	.10	8	.4	.8	20	SWR
		16	822	55.80	19	17.10	155	21.64	6.55	1.4	1.3	27	5	128	.11	6	.4	.8	25	SWR
		16	828	27.73	19	20.11	155	11.76	8.48	1.6	1.3	28	2	81	.09	5	.5	.8	26	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	16	834	35.35	19	15.65	155	23.02	5.98	1.3	1.5	28	5	156	.08	5	.4	.8	25	SWR
		16	853	9.73	19	15.90	155	23.25	6.41	2.2	2.6	44	7	121	.12	3	.3	.7	36	SWR
		16	1318	33.92	19	15.89	155	23.01	6.47	2.0	2.4	40	7	128	.11	3	.3	.7	34	SWR
		16	1642	14.50	19	17.37	155	23.38	3.10	1.7	1.9	29	5	100	.07	5	.3	.9	25	SWR
		16	1840	11.83	19	17.92	155	21.33	6.77	1.3	1.3	24	4	120	.14	5	.4	.8	22	SWR
		16	2133	32.06	19	17.83	155	23.11	3.81	1.5	1.6	27	4	100	.09	4	.3	.9	25	SWR
		16	22 0	30.96	19	17.50	155	23.48	6.51	2.4	2.8	42	6	98	.11	5	.3	.7	38	SWR
		16	22 2	37.44	19	17.50	155	23.28	2.93	1.6	1.4	24	6	101	.08	5	.3	.9	21	SWR
		16	2358	45.13	19	17.65	155	23.10	3.46	2.1	2.7	41	8	102	.10	5	.3	.7	33	SWR
		17	0 3	55.82	19	17.90	155	23.34	5.44	2.4	2.6	36	4	96	.12	4	.4	1.0	24	SWR
		17	011	13.19	19	17.76	155	23.18	2.97	1.7	1.9	23	5	99	.07	5	.4	.8	18	SWR
		17	013	51.30	19	17.74	155	23.40	2.81	1.7	1.4	23	4	96	.09	5	.4	.9	18	SWR
		17	212	39.44	19	17.61	155	23.38	2.53	.8	1.3	22	3	98	.09	5	.5	.9	14	SWR
		17	233	32.41	19	21.26	155	6.93	7.30	1.3	1.1	25	3	85	.10	3	.5	.9	17	SF4
		17	459	31.38	19	18.07	155	23.22	4.01	2.0	2.7	30	3	96	.12	4	.4	1.3	22	SWR
		17	5 1	19.50	19	17.95	155	23.17	2.97	1.4	1.4	21	4	98	.12	4	.4	.8	18	SWR
		17	951	56.09	19	23.92	155	15.46	2.23	.9	.9	13	4	110	.06	2	.3	.4	10	SEC
		17	1142	38.05	19	17.63	155	20.83	8.41	2.2	2.5	37	5	126	.12	4	.4	.6	25	SWR
		17	1736	14.22	19	15.73	155	7.20	42.47	2.4	2.0	38	0	190	.08	3	1.0	1.6	32	DEP
		17	1813	42.76	19	17.54	155	23.46	2.56	1.7	1.6	23	4	97	.06	5	.3	.7	18	SWR
		17	19 4	3.53	19	24.39	155	29.78	9.01	1.9	1.3	21	1	57	.08	5	.4	.9	13	KAO
		18	034	25.97	19	25.17	155	30.74	8.50	2.0	1.2	21	1	63	.09	7	.4	1.5	13	KAO
		18	330	11.07	19	7.25	155	31.29	13.05	3.0	3.4	42	1	160	.12	7	.8	.5	31	DLS
		18	652	49.01	19	19.78	155	8.24	7.79	1.8	1.5	30	3	85	.09	5	.4	.8	20	SF4
		18	1217	35.11	18	56.22	155	14.35	13.48	3.0	3.4	30	1	288	.11	34	2.5	1.0	13	LOI L
		18	1853	39.12	19	27.37	154	53.41	5.89	1.7	1.2	22	2	142	.10	4	.8	1.8	10	LER
		18	2147	25.32	19	20.47	155	10.83	7.26	1.8	1.3	25	5	78	.08	3	.5	.8	17	SF3
		18	22 5	2.52	19	20.54	155	12.89	8.22	1.4	1.1	25	2	65	.10	4	.6	.9	18	SF2
		18	2250	11.77	19	18.15	155	23.34	3.90	.9	1.3	22	3	94	.09	4	.4	.9	17	SWR
		19	229	31.61	19	17.37	155	23.42	2.92	1.6	2.4	32	7	100	.09	5	.3	.9	28	SWR
		19	425	53.00	19	18.83	155	15.41	7.69	1.1	1.1	28	5	98	.08	4	.4	.7	22	SF1
		19	5 5	24.52	19	16.73	155	21.99	3.03	1.1	1.0	25	6	131	.11	6	.4	1.2	23	SWR
		19	5 7	16.04	19	20.06	155	12.98	8.14	1.3	1.1	24	3	70	.08	5	.5	.8	20	SF2
		19	7 6	42.62	19	17.29	155	23.32	3.24	2.2	2.5	38	8	102	.10	5	.3	.8	32	SWR
		19	947	9.46	19	23.19	155	17.27	26.02	2.3	2.4	52	10	34	.10	1	.5	.6	43	DEP
		19	1046	44.47	19	19.78	155	7.26	7.97	1.3	1.1	26	2	108	.10	5	.5	1.0	22	SF4
		19	11 6	9.77	19	22.46	155	1.48	8.19	2.1	2.4	37	5	147	.14	5	.6	.7	33	SF5
		19	1122	28.95	19	25.35	155	15.84	15.60	1.9	1.4	38	7	75	.09	2	.5	.4	30	DEP
		19	1210	26.34	19	19.38	155	13.97	6.83	1.1	1.3	24	3	75	.09	4	.4	.8	23	SF2
		19	18 1	5.12	19	15.76	155	22.15	7.20	1.4	1.3	24	4	165	.09	4	.5	1.0	22	SWR
		19	1837	13.67	19	18.30	155	20.68	6.98	1.0	1.3	28	7	119	.12	4	.4	.9	24	SWR
		19	2128	51.42	19	18.69	155	21.28	7.93	1.0	1.1	26	6	106	.08	5	.4	.8	23	SWR
		19	2258	24.06	19	26.41	155	49.26	8.36	2.5	1.6	28	4	102	.12	10	.5	.7	22	KON
		20	048	22.97	19	15.73	155	22.16	7.43	2.1	2.8	39	8	156	.11	4	.4	.7	33	SWR
		20	051	21.99	19	15.83	155	22.16	6.04	2.0	2.6	38	7	156	.11	4	.4	.7	32	SWR
		20	056	34.34	19	15.66	155	22.16	6.99	1.5	1.6	27	6	142	.08	4	.5	.9	22	SWR
		20	849	7.37	19	19.01	155	18.78	8.56	1.4	1.3	34	7	60	.08	2	.4	.6	22	SWR
		20	854	9.51	19	17.56	155	20.59	7.43	1.4	1.4	26	5	132	.08	4	.4	.8	21	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	20	1534	48.55	19	18.57	155	15.28	7.56	1.7	1.4	32	6	112	.12	4	.4	.7	27	SF1
		20	1617	31.31	19	18.90	155	13.15	6.14	1.3	1.1	27	2	83	.11	4	.5	1.1	24	SF2
		20	1856	13.26	19	16.17	155	22.39	8.05	.9	1.1	23	5	134	.07	4	.5	.8	18	SWR
		20	19	9 36.67	19	19.28	155	16.01	9.42	2.4	2.4	44	6	95	.09	3	.3	.4	35	SF1
		20	2226	29.42	19	19.39	155	15.47	8.17	1.9	1.9	41	5	89	.09	4	.3	.6	32	SF1
		21	057	27.54	19	17.22	155	7.55	39.07	2.3	1.9	31	2	202	.07	1	1.1	1.5	27	DEP
		21	136	48.96	19	16.68	155	22.31	3.01	.9	1.4	24	2	128	.12	5	.4	1.3	16	SWR
		21	242	50.21	19	17.50	155	20.51	7.09	1.7	1.5	25	6	134	.10	3	.5	1.0	19	SWR
		21	4	0 25.48	19	20.71	155	12.68	8.24	1.4	1.1	29	4	66	.09	4	.5	.7	21	SF2
		21	4	1 33.56	19	20.08	155	8.39	8.43	2.0	2.2	36	3	80	.09	5	.4	.6	26	SF4
		21	449	54.99	19	16.23	155	22.30	4.95	.9	1.1	23	4	135	.09	5	.5	1.7	19	SWR
		21	7	6 15.10	19	15.91	155	21.91	7.19	1.8	1.1	23	3	170	.09	5	.5	1.3	19	SWR
		21	1131	14.07	19	14.64	155	21.77	7.94	1.2	1.3	25	2	156	.11	4	.5	.9	16	SWR
		21	1635	34.68	19	24.22	155	17.56	16.88	1.7	1.6	40	4	38	.09	2	.4	.5	31	DEP
		21	2137	2.05	19	18.78	155	14.94	7.19	1.1	1.3	22	2	102	.09	4	.5	.9	17	SF1
		21	2257	4.56	19	22.55	155	.89	7.54	2.3	2.1	26	3	156	.13	6	.5	.9	17	SF5
		22	441	3.72	19	17.18	155	21.79	6.22	1.7	2.1	29	1	126	.11	6	.4	.9	20	SWR
		22	517	48.46	19	21.87	155	1.49	6.26	1.4	1.1	20	3	156	.12	4	.7	1.2	14	SF5
		22	7	3 37.80	19	17.43	155	23.48	2.74	2.1	2.5	24	4	98	.09	5	.3	.9	19	SWR
		22	942	4.97	19	23.33	155	26.29	8.23	2.3	1.9	18	0	94	.07	3	.5	1.1	13	KAO
		22	1155	9.44	19	19.14	155	13.90	8.29	2.3	2.5	37	2	66	.11	4	.5	.6	22	SF2
		22	13	0 35.76	19	18.61	155	13.51	8.29	1.3	1.1	19	1	85	.05	3	.5	.8	14	SF2
		22	15	2 1.59	19	16.99	155	21.06	5.50	1.7	1.6	30	5	132	.11	5	.4	1.0	22	SWR
		22	1535	51.65	19	20.67	155	17.57	34.65	2.6	2.8	43	4	50	.09	1	.6	.9	36	DEP
		22	2017	55.67	19	21.69	155	24.86	10.07	1.4	1.3	28	4	44	.10	4	.4	.9	20	SWR
		22	2322	20.86	19	17.50	155	7.31	40.22	2.4	2.1	33	1	198	.10	1	1.1	2.1	27	DEP
		23	014	39.93	19	16.75	155	23.06	5.97	.9	1.3	15	3	113	.10	5	.5	1.5	9	SWR
		23	040	59.69	19	16.63	155	23.52	7.71	2.4	3.0	32	2	110	.12	4	.4	.9	19	SWR
		23	1	1 19.90	19	16.62	155	23.58	5.12	1.2	1.6	22	3	108	.12	4	.4	1.3	15	SWR
		23	451	45.04	19	17.33	155	23.26	3.14	.9	1.1	19	3	103	.07	5	.3	1.0	15	SWR
		23	738	3.72	19	10.60	155	37.35	6.77	2.4	1.6	27	1	99	.19	8	.6	1.4	18	LSW
		23	922	54.35	19	18.02	155	23.54	3.39	2.3	3.3	37	7	93	.14	4	.3	.9	33	SWR
		23	1020	11.68	19	20.43	155	11.95	9.49	1.6	1.5	29	4	74	.08	5	.5	.7	23	SF3
		23	1021	40.87	19	17.54	155	23.45	5.98	.8	1.3	21	6	97	.10	5	.4	1.0	19	SWR
		23	1755	34.16	19	18.27	155	15.42	6.47	.7	1.1	27	6	111	.12	4	.5	.9	23	SF1
		23	1922	28.53	19	15.90	155	23.04	6.69	2.1	2.6	39	6	129	.10	3	.3	.7	32	SWR
		23	2148	55.37	19	17.97	155	23.02	4.16	1.9	2.4	31	3	100	.09	4	.4	1.0	27	SWR
		24	110	54.81	19	19.00	155	15.33	7.91	1.8	2.2	37	6	104	.12	4	.4	.6	33	SF1
		24	141	23.59	19	14.29	155	3.59	46.54	2.2	2.1	41	5	218	.09	10	1.2	.9	36	DEP
		24	229	53.77	19	18.31	155	23.15	6.24	2.7	3.5	40	6	95	.14	4	.3	.7	35	SWR
		24	247	38.54	19	17.22	155	23.71	2.76	.8	1.4	24	5	95	.10	5	.3	1.0	22	SWR
		24	249	31.12	19	17.15	155	23.76	3.17	.8	1.4	28	5	95	.08	5	.3	.9	23	SWR
		24	252	54.37	19	17.34	155	23.19	9.37	2.0	2.4	42	7	104	.12	5	.3	.5	36	SWR
		24	325	50.21	19	20.43	155	8.20	7.08	1.8	2.2	38	6	80	.11	4	.4	.7	30	SF4
		24	818	39.13	19	18.01	155	20.93	8.39	2.6	3.0	21	4	128	.11	4	.6	.8	20	SWR
		24	1532	55.02	19	18.94	155	13.48	8.82	1.6	1.2	27	2	80	.09	4	.5	.8	15	SF2
		24	1613	53.20	19	19.49	155	7.63	8.51	1.9	1.5	32	3	105	.08	4	.4	.8	25	SF4
		24	1716	31.82	19	23.16	155	26.89	6.81	1.7	1.6	31	6	45	.11	2	.4	.7	23	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	24	1741	43.78	19	17.72	155	23.23	2.65	.9	1.2	19	5	99	.09	5	.3	.8	16	SWR
		24	1847	28.36	19	19.51	155	15.87	7.90	2.2	2.4	37	3	91	.11	3	.4	.5	29	SF1
		24	1959	30.62	19	16.84	155	22.72	7.97	1.0	1.1	17	3	119	.09	5	.5	1.0	14	SWR
		24	2134	17.39	19	24.02	155	16.99	14.17	1.4	1.1	27	1	63	.09	1	.6	.7	24	DEP
		24	2144	57.12	19	22.91	155	.29	6.60	1.6	1.2	22	2	158	.13	5	.7	1.2	15	SFS
		24	22	6 31.16	19	18.17	155	21.85	6.72	1.7	1.3	27	3	111	.13	5	.4	1.0	19	SWR
		25	016	48.55	19	16.13	155	22.15	6.54	1.0	1.1	20	3	142	.10	5	.5	1.2	18	SWR
		25	151	1.71	19	18.41	155	15.93	6.79	1.0	1.1	26	1	122	.10	4	.5	.9	18	SF1
		25	238	23.83	19	17.34	155	21.23	8.79	1.8	1.4	28	3	127	.10	5	.5	.8	21	SWR
		25	329	15.73	19	20.39	155	11.07	8.72	1.7	1.1	27	3	79	.09	4	.4	.8	19	SF3
		25	740	30.63	19	17.19	155	7.16	41.54	2.4	1.9	32	0	205	.09	1	1.5	2.3	29	DEP
		25	927	12.76	19	21.43	155	3.67	7.01	1.0	1.3	17	1	92	.13	3	.6	1.1	11	SFS
		25	932	1.09	19	18.05	155	14.77	7.06	1.0	1.3	23	2	107	.09	3	.5	.9	18	SF1
		25	941	15.75	19	19.02	155	18.92	8.30	1.2	1.3	23	4	62	.10	2	.5	.9	18	SWR
		25	1027	14.38	19	13.81	155	31.04	7.49	2.2	1.7	25	2	125	.15	3	.6	.9	12	LSW
		25	11	7 51.78	19	19.30	155	13.11	9.51	1.6	1.7	26	3	78	.09	4	.5	.8	15	SF2
		25	13	7 4.78	19	19.85	155	17.86	9.41	1.1	1.1	19	4	128	.06	1	.8	1.1	12	SWR
		25	1537	1.23	19	20.13	155	11.32	9.28	2.1	2.4	35	3	83	.10	4	.4	.6	23	SF3
		25	1632	40.07	19	18.90	155	20.74	7.74	1.8	2.2	23	2	101	.08	4	.4	1.2	20	SWR
		25	2226	56.97	19	24.36	155	16.11	11.67	1.6	2.3	14	1	130	.05	1	1.0	1.2	5	INT L
		26	055	40.64	19	18.98	155	13.62	8.74	1.6	1.8	27	2	69	.08	4	.5	.8	17	SF2
		26	241	47.76	19	14.21	155	35.01	7.61	2.7	2.4	32	1	108	.21	4	.7	1.1	22	LSW
		26	5	1 29.37	19	17.26	155	21.72	4.54	.9	1.3	24	2	126	.14	6	.5	2.8	19	SWR
		26	7	8 16.34	19	19.13	155	13.61	5.59	1.1	1.3	22	2	68	.11	4	.5	1.2	19	SF2
		26	1949	16.04	19	21.00	155	6.25	8.21	2.7	3.1	28	1	95	.07	4	.4	.7	19	SF4
		27	033	22.48	19	16.58	155	6.97	43.60	2.6	2.1	25	0	202	.09	2	2.5	3.6	21	DEP
		27	7	5 28.11	19	18.55	155	13.22	8.22	1.7	1.8	24	0	86	.09	5	.4	.6	17	SF2
		27	942	18.25	19	15.40	155	32.63	6.13		1.6	17	0	179	.10	8	.7	2.6	15	LSW
		27	1053	33.66	19	9.20	155	30.87	11.17	2.4	2.6	26	1	137	.13	5	.6	.7	17	LSW
		27	11	5 10.81	19	26.77	155	29.66	8.54	1.8	1.4	29	3	56	.08	9	.3	.9	21	KAO
		27	1219	44.50	19	17.43	155	23.76	2.55	.9	1.4	25	4	93	.12	5	.4	.9	15	SWR
		27	14	3 38.46	19	18.08	155	13.80	6.60	1.1	1.3	24	4	98	.09	2	.5	1.0	18	SF2
		27	1555	34.44	19	20.35	155	10.83	7.56	1.3	1.1	25	4	116	.08	4	.6	.8	14	SF3
		27	1625	1.61	19	20.92	155	47.01	11.42	2.5	1.8	24	1	92	.13	12	.6	.6	18	KON
		27	18	4 2.02	19	17.85	155	20.82	7.73	1.7	1.6	30	4	123	.10	4	.4	.8	20	SWR
		27	2036	26.25	19	22.65	155	5.89	7.18	1.9	1.5	29	4	67	.13	1	.4	.7	17	SF4
		28	320	20.81	19	15.94	155	22.37	7.98	1.1	1.3	26	4	137	.10	4	.4	.7	21	SWR
		28	933	34.56	19	17.76	155	23.14	3.30	.9	1.0	18	4	100	.08	5	.4	.9	14	SWR
		28	1311	25.81	19	18.05	155	21.68	6.70	1.7	1.6	26	1	114	.10	5	.4	1.2	15	SWR
		28	1330	3.72	19	23.14	154	57.42	5.20	1.6	1.3	23	3	186	.16	4	.8	1.3	11	LER
		28	1345	48.89	19	19.64	155	14.05	7.49	2.4	3.0	43	5	66	.13	5	.4	.7	33	SF2
		28	1930	31.44	19	17.73	155	21.75	8.49	1.6	1.7	25	2	118	.10	5	.4	.8	19	SWR
		28	2340	19.39	19	17.76	155	20.88	7.19	1.7	2.5	35	7	126	.08	4	.4	.6	26	SWR
		29	044	53.78	19	18.19	155	23.27	3.52	2.1	3.4	34	5	94	.12	4	.3	.9	24	SWR
		29	319	55.05	19	19.75	155	15.01	6.35	1.4	1.5	29	3	79	.13	4	.4	1.1	20	SF1
		29	340	53.47	19	19.43	155	15.43	9.17	2.4	2.8	41	3	96	.10	4	.4	.5	30	SF1
		29	714	37.43	19	21.17	155	11.28	9.05	2.6	3.1	40	5	67	.10	3	.4	.6	30	SF3
		29	10	5 43.51	19	23.85	155	2.32	6.90	1.3	1.3	15	2	120	.12	4	.7	1.2	10	SFS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	JUL	29	1128	51.80	19	18.70	155	15.11	7.96	1.1	1.1	23	2	120	.08	4	.5	.9	16	SF1	
		29	1137	24.93	19	20.13	155	10.40	7.83	1.7	1.5	36	4	84	.12	4	.4	.8	27	SF3	
		29	1152	55.43	19	21.26	155	13.41	9.48	2.8	3.1	43	4	55	.10	3	.3	.4	34	SF2	
		29	1538	28.63	19	15.59	155	22.75	6.49	1.9	2.1	31	3	137	.10	3	.4	.9	23	SWR	
		29	1550	48.75	19	17.41	155	29.02	5.87	2.0	1.6	37	3	49	.19	5	.4	1.4	31	LSW	
		29	2047	1.24	19	19.41	155	18.87	7.32	.9	1.1	27	3	56	.09	3	.4	1.0	22	SWR	
		30	056	43.64	19	17.39	155	23.12	2.93	1.7	1.8	19	1	104	.06	5	.4	1.0	14	SWR	
		30	1	4 49.39	19	16.39	155	21.52	8.14	1.8	1.6	26	3	167	.08	6	.5	.9	22	SWR	
		30	137	10.74	19	26.60	157	11.21	20.03	3.4	3.9	15	1	315	.15	144	4.5	24.7	6	DIS	*
		30	146	13.36	19	15.79	155	22.38	6.22	.9	1.2	22	4	169	.09	4	.5	1.3	17	SWR	
		30	351	43.33	19	19.24	155	7.37	9.13	2.1	2.2	35	3	117	.08	4	.4	.5	27	SF4	
		30	410	12.24	19	20.88	155	13.01	7.91	1.8	1.7	31	3	61	.10	3	.4	.7	21	SF2	
		30	429	56.19	19	26.54	155	29.25	7.69	2.1	1.2	35	4	53	.11	8	.4	1.0	26	KAO	
		30	459	10.31	19	11.10	155	33.41	8.79	2.3	1.7	28	1	138	.17	9	.7	1.1	14	LSW	
		30	5	5 6.38	19	16.21	155	22.77	2.48	1.8	1.6	33	2	128	.12	4	.4	1.0	22	SWR	
		30	546	45.39	19	15.72	155	22.70	8.26	1.3	1.3	27	3	159	.08	3	.5	1.0	18	SWR	
		30	749	21.04	19	17.66	155	21.86	8.22	1.7	1.5	33	4	118	.10	5	.4	.7	24	SWR	
		30	1510	16.35	19	17.64	155	20.88	5.79	1.0	1.2	22	4	126	.10	4	.5	1.1	17	SWR	
		30	17	9 12.68	19	19.49	155	15.87	7.32	2.2	2.2	35	3	100	.12	3	.4	.7	25	SF1	
		30	1759	37.47	19	17.05	155	7.21	40.81	2.4	2.3	33	3	206	.08	1	.9	1.6	29	DEP	
		30	2228	41.58	19	20.27	155	13.20	7.14	1.3	1.3	24	2	65	.10	4	.5	1.0	19	SF2	
		31	4	2 58.25	19	18.92	155	15.30	7.00	2.4	2.4	38	5	95	.12	4	.4	.7	29	SF1	
		31	843	42.47	19	19.54	155	11.37	7.43	1.5	1.2	28	4	95	.09	5	.5	.8	21	SF3	
		31	1654	5.48	19	19.91	155	8.82	6.94	1.6	1.1	27	3	75	.08	4	.5	.9	21	SF4	
		31	23	5 38.25	19	19.54	155	15.05	7.79	1.8	1.8	30	3	90	.11	4	.5	.7	21	SF1	
		31	2350	18.58	19	19.39	155	9.84	8.14	1.9	1.8	26	2	98	.07	5	.5	.8	21	SF3	
	AUG	1	151	41.01	19	25.88	155	37.57	3.16	3.4	2.7	27	1	93	.12	3	.5	1.1	23	MLO	
		1	1148	41.92	19	16.27	155	21.47	7.50	1.1	1.3	23	3	169	.06	6	.5	1.1	18	SWR	
		1	1432	43.13	19	15.34	155	23.53	6.01		1.1	17	2	126	.10	2	.5	1.2	7	SWR	
		1	1544	15.22	19	20.81	155	10.78	8.48	2.1	2.0	23	2	72	.07	3	.4	.7	16	SF3	
		1	1652	40.75	19	17.13	155	21.34	6.40		1.1	21	4	129	.12	5	.5	1.2	16	SWR	
		1	1730	.12	19	20.73	155	13.57	8.03		1.3	21	2	62	.11	4	.6	1.0	16	SF2	
		1	2019	54.56	19	17.22	155	23.00	5.13	1.2	1.5	13	2	108	.10	6	.6	2.0	10	SWR	
		1	2247	56.80	19	22.25	155	2.38	8.20	2.1	2.1	29	4	130	.13	4	.6	.5	21	SF5	
		2	413	8.75	19	19.59	155	7.43	8.75	1.9	1.8	24	1	108	.11	4	.7	.7	18	SF4	
		2	435	51.34	19	24.14	155	25.00	11.51	1.7	1.5	27	2	37	.10	2	.4	.5	18	KAO	
		2	6	4 3.35	19	21.03	155	5.89	7.45	1.9	1.8	19	0	98	.12	6	.6	.9	16	SF4	
		2	1046	19.02	19	18.63	155	13.59	8.05	1.7	1.8	33	2	72	.12	3	.5	.7	22	SF2	
		2	1316	37.66	19	25.74	155	37.69	2.25	2.9	3.4	34	1	94	.13	4	.4	.9	25	MLO	
		2	15	3 50.04	19	15.88	155	27.14	8.60	2.0	1.7	33	2	70	.14	5	.4	.7	21	LSW	
		2	1745	.31	19	19.29	155	15.49	8.88	2.1	2.5	42	3	100	.09	4	.4	.4	27	SF1	
		3	133	4.06	19	19.34	155	18.83	6.97	.9	1.0	26	2	57	.10	3	.4	1.0	20	SWR	
		3	345	28.99	19	24.68	155	24.57	9.15	1.6	1.3	35	3	37	.11	1	.4	.7	23	KAO	
		3	417	52.61	19	19.47	155	6.56	8.92	2.2	2.1	40	4	131	.08	5	.5	.4	26	SF4	
		3	5	0 3.35	19	17.96	155	23.25	3.40	.9	1.2	16	3	97	.06	4	.4	.9	12	SWR	
		3	654	5.58	19	19.86	155	7.95	7.42	1.3	1.1	25	4	92	.08	5	.5	.9	21	SF4	
		3	741	6.47	19	17.76	155	20.75	8.27	1.7	1.6	32	3	125	.11	4	.4	.8	18	SWR	
		3	944	36.35	19	25.16	155	24.87	8.54	2.2	2.4	38	3	35	.14	1	.4	.8	27	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	AUG	3	10 9	35.39	19	27.70	155	45.34	9.55	3.2	3.4	37	2	140	.11	5	.5	.5	27	KON	
		3	1151	6.21	19	24.21	154	58.87	6.57	1.6	1.4	25	2	177	.15	2	.8	.8	16	LER	
		3	1212	31.10	19	20.02	155	11.83	10.08	2.9	3.4	41	4	82	.09	5	.3	.3	32	SF3	
		3	2212	47.38	19	21.80	155	15.04	10.07	2.1	2.4	34	2	60	.09	2	.4	.5	25	SF1	
		4	1	5 43.75	19	17.64	155	23.48	2.49	1.7	2.2	31	5	96	.11	5	.3	.8	24	SWR	
		4	3	8 31.64	19	18.86	155	15.27	7.31	1.6	1.6	28	1	106	.11	4	.4	.9	20	SF1	
		4	649	59.56	19	21.39	155	2.81	7.86	2.2	2.4	35	4	124	.08	3	.4	.6	20	SF5	
		4	729	41.25	19	19.92	155	9.42	7.44	1.6	1.5	30	4	82	.08	4	.5	.9	21	SF3	
		4	734	.72	19	19.93	155	13.60	7.48	1.3	1.3	23	3	87	.08	5	.5	.9	19	SF2	
		4	850	44.25	19	20.13	155	13.49	9.03	1.3	1.3	20	2	68	.05	5	.5	.9	15	SF2	
		4	1751	7.78	19	23.51	155	26.24	8.33	1.4	1.3	32	3	46	.10	3	.4	.8	22	KAO	
		4	23	8 45.08	19	21.40	155	4.90	8.53	1.9	2.3	30	1	88	.09	4	.6	.6	23	SF5	
		5	3	2 20.18	19	20.56	155	13.09	9.55	1.5	1.7	27	2	63	.07	4	.5	.7	21	SF2	
		5	437	29.83	20	3.12	155	26.74	8.04	2.7	2.9	32	2	207	.13	21	1.0	.9	14	KEA	
		5	1827	26.59	19	17.79	155	20.50	7.40	1.7	1.5	28	5	128	.10	3	.5	.9	20	SWR	
		5	1946	42.22	19	20.63	155	10.90	8.33	2.4	2.7	42	3	75	.12	3	.4	.6	31	SF3	
		5	2059	58.89	19	17.66	155	20.86	7.95	1.7	1.4	27	3	127	.09	4	.4	.9	25	SWR	
		6	724	5.34	19	21.81	155	18.53	35.95	2.2	1.8	39	0	43	.11	4	.7	1.3	37	DEP	
		6	1317	2.96	19	28.96	155	52.70	7.01	2.6	1.7	17	3	152	.12	4	1.1	1.7	13	KON	
		6	1324	40.86	19	17.88	155	12.73	6.65	1.5	1.5	25	3	170	.08	2	.5	.9	16	SF2	
		6	1627	33.99	19	17.14	155	15.36	7.56	2.1	2.5	34	1	150	.13	6	.5	.8	20	SF1	
		6	2316	34.62	19	43.83	155	46.33	41.61		1.9	18	1	124	.07	8	.9	2.1	13	HUA	
		7	1	1 45.98	19	20.24	155	9.23	7.36	1.5	1.1	22	1	75	.07	4	.5	1.0	19	SF3	
		7	130	3.40	19	17.97	155	21.03	7.31	1.8	1.9	34	3	121	.11	4	.4	.7	26	SWR	
		7	136	3.08	19	21.70	155	8.06	8.31	2.5	3.1	38	2	68	.11	3	.4	.6	28	SF4	
		7	210	2.10	19	.98	155	25.28	42.92	2.3	1.9	33	0	218	.06	16	1.7	2.5	32	DLS	
		7	215	24.25	19	18.68	155	15.67	7.70	2.1	2.3	35	2	104	.11	4	.4	.7	23	SF1	
		7	312	39.19	19	19.89	155	10.25	6.87	1.6	1.6	24	3	89	.08	4	.5	1.1	18	SF3	
		7	412	12.41	19	18.53	155	13.12	6.71	1.7	1.8	34	4	90	.11	3	.5	.8	20	SF2	
		7	11	3 3.92	19	21.24	155	6.03	8.15	3.2	3.4	45	4	92	.12	3	.4	.5	36	SF4	
		7	1223	29.24	19	19.77	155	11.80	7.81	2.0	2.0	29	3	87	.10	5	.4	.8	17	SF3	
		7	14	2 26.83	19	19.71	155	11.46	9.73	3.4	3.8	43	3	91	.11	5	.4	.4	36	SF3	F
		7	14	5 41.40	19	16.37	155	15.21	2.93	1.8	2.1	27	0	169	.12	3	.6	.9	15	SSF	
		7	2332	19.35	19	19.11	155	15.59	7.49	2.0	1.3	26	1	105	.11	4	.5	.9	14	SF1	
		8	15	3 7.16	19	21.36	155	6.03	8.55	3.3	3.4	48	6	89	.09	3	.3	.5	32	SF4	
		8	15	5 36.10	19	21.15	155	5.73	7.69	1.9	1.5	30	5	94	.12	4	.4	.9	16	SF4	
		8	15	6 34.81	19	21.05	155	5.71	6.60	2.0	1.7	28	1	97	.14	4	.5	1.1	15	SF4	
		8	15	7 42.20	19	21.47	155	5.88	6.94	1.7	1.3	30	4	87	.11	3	.4	.8	20	SF4	
		8	1517	51.28	19	21.36	155	5.66	6.37	1.9	1.7	34	5	90	.11	3	.4	.6	23	SF4	
		8	1619	58.23	19	18.09	155	13.00	5.42	2.2	2.1	36	2	105	.12	2	.4	1.1	28	SF2	
		8	2054	45.94	19	18.30	155	16.16	8.63	2.1	2.0	35	3	146	.08	4	.5	.5	27	SF1	
		9	322	2.21	19	13.39	155	21.79	33.51	2.2	2.3	38	1	157	.10	4	.7	1.3	35	DEP	
		9	545	52.19	19	18.53	155	13.23	6.85	1.8	1.8	32	2	86	.13	5	.5	.9	21	SF2	
		9	612	39.08	19	18.71	155	14.41	7.54	1.4	1.6	30	2	106	.11	4	.5	.9	23	SF2	
		9	952	39.66	19	17.91	155	20.89	7.66	1.9	1.8	37	6	122	.11	4	.4	.6	26	SWR	
		9	1232	50.53	19	21.78	155	22.93	32.15	2.6	2.6	46	4	55	.11	3	.6	1.0	38	DEP	
		9	1655	9.52	19	23.07	155	4.41	7.62	3.1	3.0	41	3	86	.12	3	.4	.6	29	SF5	
		9	1755	49.09	19	18.98	155	16.03	8.02	1.4	1.3	24	4	111	.07	3	.4	.8	18	SF1	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	AUG	10	037	34.26	19	20.73	155	8.40	7.17	1.8	1.7	28	1	74	.08	4	.5	.9	24	SF4
		10	121	54.15	19	18.03	155	13.25	9.80	3.6	3.8	43	3	95	.12	2	.4	.4	37	SF2 F
		10	125	49.18	19	18.29	155	13.49	8.42	2.1	2.2	38	4	81	.11	2	.5	.5	26	SF2
		10	133	50.05	19	18.45	155	13.32	7.38	1.7	1.8	35	3	84	.11	3	.4	.6	22	SF2
		10	137	39.83	19	18.43	155	13.64	7.71	1.7		32	3	71	.10	3	.5	.7	24	SF2
		10	137	51.40	19	18.49	155	13.41	8.54	3.4	3.8	40	5	80	.13	3	.5	.6	31	SF2 F
		10	310	35.28	19	18.39	155	13.69	7.90	2.2	2.1	37	2	70	.10	3	.5	.6	27	SF2
		10	418	2.83	19	28.81	155	13.59	26.78	2.1	1.8	38	1	115	.09	8	.6	1.2	35	DEP
		10	442	14.88	19	18.04	155	12.88	7.06	2.0	2.0	29	3	111	.11	2	.6	.9	18	SF2
		10	1512	25.75	19	17.88	155	13.58	5.45	1.7		31	4	77	.10	2	.4	.8	24	SF2
		10	1514	42.86	19	17.80	155	13.30	7.39	1.7	1.6	27	1	97	.13	1	.5	.8	21	SF2
		10	1539	4.91	19	19.36	155	8.56	6.04	1.5	1.3	23	3	81	.09	4	.5	1.3	19	SF4
		10	1825	52.15	19	19.11	155	13.12	5.59	1.6	1.5	33	3	80	.13	4	.5	1.0	20	SF2
		10	2027	12.25	19	20.06	155	11.18	8.26	2.0	1.8	35	2	85	.11	4	.5	.7	26	SF3
		11	145	52.54	19	19.00	155	14.25	7.77	1.3	1.6	28	1	85	.11	4	.5	1.0	22	SF2
		11	3 1	20.89	19	18.93	155	19.28	8.61	1.6	1.6	17	1	149	.10	2	.7	.7	13	SWR
		11	13 4	58.78	19	22.93	154	59.82	6.56	2.0	1.6	28	3	174	.13	5	.6	1.1	23	LER
		11	20 5	21.02	19	20.85	155	11.21	8.43	2.1	2.1	34	3	72	.10	3	.4	.7	23	SF3
		11	2054	4.45	19	22.14	155	17.37	31.21	2.0	1.6	30	1	37	.11	2	.8	1.4	23	DEP
		12	043	35.76	19	24.90	155	16.09	16.17	4.0	4.3	41	1	46	.09	2	.4	.3	40	DEP F
		12	1 0	11.72	19	24.62	155	16.28	15.96	1.3	1.4	32	0	78	.09	1	.5	.4	25	DEP
		12	1 8	14.96	19	25.12	155	16.07	16.14	2.1	2.3	42	2	46	.11	2	.4	.4	38	DEP
		12	224	3.37	19	24.77	155	16.14	16.08	1.7	1.6	38	1	72	.12	2	.5	.4	29	DEP
		12	238	32.24	19	24.97	155	16.17	16.06	2.3	1.6	37	1	73	.11	1	.5	.4	31	DEP
		12	244	4.46	19	24.91	155	16.17	16.20	3.3	3.6	46	2	46	.11	1	.4	.3	44	DEP F
		12	412	25.10	19	18.87	155	13.58	9.42	2.4	2.9	42	4	84	.11	3	.4	.4	25	SF2
		12	530	57.30	19	20.09	155	12.74	8.03	1.6	1.3	27	2	72	.09	5	.5	.9	17	SF2
		12	744	26.00	19	25.08	155	16.06	17.73	2.5	2.4	45	6	37	.11	2	.4	.6	37	DEP
		12	758	19.23	19	25.02	155	16.18	17.49	1.8	1.6	38	2	73	.11	1	.5	.7	28	DEP
		12	1717	25.45	19	24.11	155	16.09	16.92	2.0	2.2	41	4	74	.11	2	.4	.5	36	DEP
		12	1812	55.83	19	27.42	155	20.93	7.74	1.8	1.1	19	5	70	.10	1	.5	.9	15	KAO
		13	1 7	19.74	19	18.86	155	13.56	8.41	1.9	2.0	29	1	80	.10	3	.5	.8	21	SF2
		13	126	48.32	19	16.35	155	22.56	2.11	1.8	1.6	24	3	130	.13	5	.4	1.0	18	SWR
		13	349	51.90	19	18.81	155	15.20	7.89	2.1	1.8	35	1	96	.09	5	.4	.6	22	SF1
		13	5 7	52.09	19	20.19	155	11.59	8.13	1.9	1.5	30	3	81	.09	5	.5	.8	25	SF3
		13	729	33.20	19	36.12	156	9.68	25.61	2.7	2.6	17	3	252	.12	28	1.7	2.3	13	KON
		13	1451	37.35	19	16.13	155	15.07	6.58	1.1	1.1	22	1	224	.08	3	1.1	1.0	14	SF1
		13	1843	38.04	19	18.94	155	17.24	32.90	2.6	2.8	46	2	110	.11	2	.7	1.0	41	DEP
		13	2027	2.69	19	18.93	155	19.86	7.52	.9	1.1	23	3	92	.10	3	.4	1.0	16	SWR
		14	0 3	18.64	19	19.39	155	15.42	7.34	1.7	1.5	26	0	98	.09	4	.5	.9	19	SF1
		14	018	45.08	19	16.49	155	23.47	1.69	2.3	2.7	35	3	108	.12	4	.3	.9	23	SWR
		14	815	53.01	19	58.46	155	20.75	9.68	2.2	2.0	24	3	201	.10	25	.8	.8	11	KEA
		14	9 8	19.74	19	24.44	155	25.97	9.48	1.5	1.3	32	4	48	.11	2	.4	.8	22	KAO
		14	1053	57.53	19	17.59	155	21.98	7.19	1.2	1.3	28	4	118	.10	5	.4	.9	19	SWR
		15	131	29.32	19	19.83	155	8.01	5.15	1.4	1.5	28	2	90	.13	5	.5	1.4	18	SF4
		15	3 0	16.12	19	16.76	155	23.43	5.09	1.2	1.6	28	4	105	.11	5	.4	1.8	17	SWR
		15	539	58.99	19	19.38	155	18.99	7.08	1.1	1.2	30	5	59	.11	3	.4	.8	21	SWR
		15	7 1	43.99	19	19.99	155	7.97	9.16	3.4	3.9	40	2	89	.10	5	.5	.4	33	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	AUG	15	836	45.99	19	17.71	155	20.91	5.98	1.0	1.5	26	3	124	.11	4	.4	1.1	19	SWR
		15	921	37.89	19	17.33	155	21.17	7.63	1.7	1.6	29	4	130	.10	5	.5	.8	22	SWR
		15	927	41.99	19	20.27	155	7.35	7.95	1.2	1.4	24	1	98	.06	5	.4	1.0	14	SF4
		15	1241	24.10	19	18.64	155	13.38	8.35	1.9		37	2	79	.10	3	.4	.5	21	SF2
		15	1714	14.29	19	20.16	155	24.83	9.63	1.7	1.4	28	4	62	.08	3	.4	.7	17	SWR
		15	2053	18.78	19	20.43	155	11.43	8.24	1.4	1.1	27	2	77	.07	4	.5	.9	16	SF3
		15	2212	38.41	19	20.30	155	12.67	9.24	2.5	2.9	39	2	70	.09	4	.4	.5	24	SF2
		16	246	35.00	19	18.97	155	13.54	8.00	1.7	1.9	31	0	70	.10	4	.4	.8	22	SF2
		16	3 6	47.19	19	18.80	155	14.95	4.73	.8	1.1	23	1	102	.13	4	.5	1.8	19	SSF
		16	4 1	46.70	19	18.97	155	13.64	9.27	2.8	3.4	43	1	83	.11	4	.4	.4	37	SF2
		16	647	3.37	19	19.82	155	10.15	7.53	1.8		28	2	90	.09	4	.5	.9	23	SF3
		16	737	10.62	19	19.75	155	8.26	8.31	1.5	1.3	28	2	85	.09	4	.5	.9	21	SF4
		16	919	8.05	19	19.20	155	18.80	8.03	1.6	1.4	26	1	58	.09	2	.4	.8	20	SWR
		16	10 2	9.19	19	18.75	155	19.79	7.93	1.1	1.1	23	0	99	.07	3	.5	1.0	18	SWR
		16	1239	53.63	19	7.37	155	31.73	12.99	2.2	2.3	32	2	157	.12	8	.7	.5	25	LSW
		16	1442	4.42	19	42.24	155	3.66	2.03	1.9	2.0	18	0	219	.13	31	1.6	92.7	6	HIL B*
		16	1912	2.41	19	21.03	155	1.47	7.89	1.2	1.3	22	2	184	.10	3	.9	.7	13	SF5
		16	1949	32.49	18	53.73	155	14.47	11.71	1.8	1.6	14	0	269	.08	38	3.1	1.0	7	LOI
		16	1955	19.51	18	51.72	155	13.90	8.41	1.8	1.8	11	0	317	.11	41	12.7	3.7	7	LOI
		16	2119	22.47	19	19.49	155	9.22	6.06	1.4	1.3	27	4	89	.10	5	.4	1.1	15	SF3
		17	055	29.21	19	4.02	155	11.54	26.48	2.6	2.4	42	2	223	.10	24	1.2	1.7	38	LOI
		17	321	59.47	19	10.31	155	32.06	8.54	1.5	1.7	23	1	145	.14	10	.7	1.4	15	LSW
		17	339	4.87	19	50.37	155	42.36	40.29		1.8	21	1	127	.08	22	.9	2.7	18	KEA
		17	548	59.85	19	27.30	155	51.75	13.65	2.4	2.0	12	0	172	.09	7	1.2	.5	7	KON
		17	857	39.61	18	54.31	155	16.34	13.73	3.9	4.2	39	0	248	.08	35	1.6	1.2	28	LOI
		17	13 7	48.75	19	19.78	155	8.40	8.34	1.8	1.8	28	0	82	.06	5	.5	.8	22	SF4
		17	1544	30.84	19	20.28	155	13.07	10.16	1.4	1.3	22	2	66	.06	4	.6	1.0	18	SF2
		17	2136	38.96	19	22.14	155	5.12	8.40	1.9	1.7	26	1	73	.09	3	.5	.9	15	SF5
		17	2355	9.09	19	16.55	155	22.10	8.17	2.7	3.3	40	3	132	.14	5	.5	.6	34	SWR
		17	2358	22.05	19	18.08	155	16.52	6.20	1.0	1.3	24	2	134	.10	4	.5	1.0	16	SF1
		18	135	32.77	19	19.74	155	11.20	8.11	1.5	1.3	24	1	92	.08	5	.5	1.0	18	SF3
		18	247	5.09	19	25.75	155	28.65	8.68	1.9	1.1	27	2	60	.09	6	.4	1.0	21	KAO
		18	340	56.40	19	16.87	155	22.00	7.70	1.8	1.6	29	2	129	.10	6	.4	1.0	17	SWR
		18	452	2.07	19	18.07	155	13.10	4.73	1.2	1.2	24	4	101	.08	2	.5	1.0	14	SSF
		18	456	34.03	19	10.67	155	7.10	51.69	2.1	1.8	36	0	212	.08	13	1.2	2.3	29	DEP
		18	537	.79	19	17.12	155	15.26	4.40	.8	1.1	20	1	160	.08	3	.6	1.3	14	SSF
		18	10 7	32.84	19	20.73	155	11.11	9.34	1.7	1.7	28	1	74	.09	3	.5	.9	18	SF3
		18	1137	37.48	19	12.39	155	27.03	6.73	2.2	2.4	33	0	122	.14	6	.5	1.0	22	LSW
		18	1415	40.34	19	16.87	155	29.39	6.21	1.5	1.6	31	2	52	.20	4	.5	1.4	18	LSW
		18	1626	8.97	19	19.42	155	9.90	7.89	1.6	1.8	28	4	97	.06	5	.4	.7	23	SF3
		18	2116	32.48	19	19.01	155	13.17	9.12	1.4	1.3	26	1	81	.09	4	.6	1.0	18	SF2
		18	2220	43.77	19	18.31	155	19.94	5.26	.8	1.2	21	3	121	.11	2	.5	1.2	14	SWR
		19	210	17.58	19	19.31	155	15.45	7.78	1.7	1.6	25	0	99	.10	4	.5	1.0	18	SF1
		19	1053	6.12	19	15.77	155	21.65	8.06	1.0	1.4	22	2	177	.09	5	.6	1.3	11	SWR
		19	13 6	22.35	19	20.57	155	3.87	5.74	1.5	1.3	21	2	105	.13	2	.6	1.1	14	SF5
		19	1415	54.31	19	20.57	155	13.37	9.02	1.8	1.8	26	1	61	.08	4	.5	.8	20	SF2
		19	1432	18.06	19	18.57	155	13.42	6.68	1.5	1.3	24	2	79	.07	3	.4	.9	16	SF2
		19	2022	4.03	19	18.64	155	20.52	7.14	.9	1.1	22	2	108	.10	4	.5	1.0	16	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	AUG	19	2251	20.53	19	44.94	156	1.88	8.07	3.6	3.8	43	1	229	.12	21	1.2	.7	33	HUA F
		19	2259	59.10	19	44.91	156	.54	7.60	3.0	3.3	39	2	225	.13	19	1.1	.7	25	HUA F
		20	231	10.71	19	21.66	155	48.58	9.75	1.6	1.3	26	1	110	.14	12	.7	.7	13	KON
		20	5 7	58.67	19	20.60	155	7.88	7.48	1.2	1.3	22	1	84	.08	4	.5	1.1	15	SF4
		20	11 3	22.75	19	18.51	155	14.88	6.34	1.1	1.1	26	1	108	.09	4	.5	1.0	20	SF1
		20	13 7	45.39	19	20.78	155	8.94	8.23	2.4	2.8	40	2	131	.13	3	.5	.6	30	SF4
		20	2026	35.65	19	17.18	155	22.09	3.75	1.1	1.2	18	2	123	.07	6	.4	1.4	13	SWR
		20	22 8	37.16	19	16.93	155	21.98	3.48	1.1	1.6	28	3	128	.13	6	.4	1.6	20	SWR
		21	752	7.11	19	16.77	155	19.91	8.19	1.9	1.9	34	2	140	.08	3	.4	.6	20	SWR
		21	1250	50.76	19	19.36	155	11.73	7.60	1.6	1.3	29	0	97	.09	5	.5	.9	21	SF3
		21	1334	15.08	19	24.02	155	27.42	9.65	1.6	1.4	32	1	48	.11	3	.4	.7	23	KAO
		21	1633	2.60	19	19.13	155	16.02	7.40	1.6	1.3	27	3	108	.10	3	.4	.7	17	SF1
		21	2235	12.42	19	19.29	155	15.58	8.68	2.1	2.1	36	2	92	.10	4	.4	.5	26	SF1
		21	2325	22.92	19	18.84	155	15.09	8.62	2.6	2.6	45	4	94	.12	4	.4	.5	28	SF1
		22	024	37.75	19	25.21	155	16.06	15.90	1.7	1.4	39	3	74	.09	2	.5	.3	29	DEP
		22	451	51.35	19	17.10	155	22.04	2.79	.8	1.2	18	3	125	.11	6	.4	1.1	13	SWR
		22	625	10.87	19	23.80	155	17.14	2.60	1.8	2.0	16	1	65	.10	1	.4	.3	9	SSC
		22	1026	47.06	19	20.26	155	4.23	7.79	1.5	1.4	26	5	126	.08	2	.5	.9	16	SF5
		22	14 4	55.48	19	22.21	155	9.42	3.93	1.5	1.3	26	1	85	.09	1	.5	.6	17	SER
		22	1451	54.11	19	17.16	155	23.26	1.89	1.3	1.3	20	3	105	.11	5	.4	1.0	17	SWR
		22	1946	46.34	19	23.59	155	25.68	9.60	1.8	1.3	36	4	38	.10	3	.3	.6	23	KAO
		23	426	49.42	19	18.65	155	14.60	9.17	2.2	1.9	35	1	88	.12	4	.5	.6	22	SF1
		23	743	48.56	19	26.20	155	14.40	24.17	1.8	1.4	37	1	98	.09	3	.6	1.0	27	DEP
		23	1059	2.68	19	15.79	155	13.13	7.04	1.1	1.1	21	0	196	.12	2	.9	1.2	13	SF2
		23	1157	3.88	19	21.03	155	14.79	9.79	1.6	1.5	23	3	68	.07	3	.5	.8	14	SF1
		23	1835	16.17	19	21.64	155	4.74	7.03	1.2	1.1	23	4	81	.12	4	.6	.8	15	SF5
		23	1959	15.23	19	11.34	155	37.88	9.58	2.4	1.8	28	2	100	.19	7	.5	1.0	15	LSW
		23	2123	53.63	19	17.86	155	21.06	6.79	.9	1.2	23	3	123	.10	4	.5	1.1	15	SWR
		23	2312	17.18	19	18.80	155	13.63	8.37	1.3	1.6	24	1	72	.07	3	.6	.9	17	SF2
		24	824	26.14	19	18.87	155	13.42	8.96	1.9	2.1	24	1	78	.10	3	.5	.9	18	SF2
		24	916	49.01	19	18.68	155	13.94	8.05	1.9	2.3	31	2	72	.11	3	.5	.7	17	SF2
		24	1130	9.63	19	21.81	155	6.89	8.39	1.2	1.1	26	4	77	.07	2	.5	.8	16	SF4
		24	1527	38.14	19	15.73	155	23.58	8.57	2.5	3.1	34	2	115	.11	3	.5	.6	25	SWR
		24	1530	38.50	19	17.09	155	22.35	8.83	2.3	2.9	34	1	120	.13	6	.4	.6	24	SWR
		25	2 3	46.41	19	17.29	155	21.81	6.47	.9	1.1	19	2	125	.10	6	.5	1.6	14	SWR
		25	334	39.40	19	20.17	155	13.27	7.00	1.1	1.1	23	2	65	.11	5	.5	1.0	17	SF2
		25	653	34.36	19	17.67	155	13.16	7.46	1.4	1.1	20	2	112	.10	1	.6	1.1	13	SF2
		25	1220	19.78	19	21.32	155	26.04	9.76	2.3	2.4	36	2	49	.12	4	.4	.6	28	KAO
		25	2024	53.91	19	19.98	155	10.51	8.93	1.9	1.8	33	1	87	.09	4	.5	.8	25	SF3
		25	2221	53.14	19	17.59	155	21.07	7.98	1.7	1.5	23	4	125	.11	4	.4	1.0	14	SWR
		26	125	6.83	19	21.18	154	59.54	1.52	2.2	2.5	20	1	202	.10	6	.9	1.5	9	SLE
		26	126	41.68	19	20.94	154	59.51	.01	2.5	3.0	23	2	203	.10	6	.8	.5	11	SLE
		26	251	58.91	19	20.39	155	6.88	7.99	1.3	1.5	25	1	102	.08	5	.5	.9	21	SF4
		26	735	7.21	19	21.74	154	59.99	.01	1.1	1.9	14	0	182	.20	6	1.2	2.6	7	SLE F*
		26	1331	2.75	19	20.48	155	12.78	7.95	1.6	1.3	26	3	75	.10	4	.5	.8	16	SF2
		26	1458	55.09	19	21.10	155	24.65	8.39	2.0	1.8	29	2	56	.10	6	.5	.9	22	SWR
		26	1528	26.08	19	15.66	155	22.07	7.97	1.2	1.3	24	1	173	.09	4	.6	1.4	16	SWR
		26	1539	44.43	19	21.63	155	7.10	7.45	2.0	1.8	30	2	78	.10	3	.5	.8	21	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	AUG	27	148	30.73	20	12.23	155	38.33	9.98	3.8	3.6	43	3	178	.10	47	.9	.8	38	KOH F
		27	3 9	56.66	19	18.56	155	13.81	4.56	1.0	1.4	29	1	69	.14	3	.4	1.5	21	SSF
		27	521	2.79	19	18.28	155	13.64	7.42	1.1	1.0	22	2	118	.08	2	.6	1.0	19	SF2
		27	535	37.07	19	18.96	155	22.57	4.32	1.1	1.1	19	2	93	.08	3	.4	.9	16	SWR
		27	6 2	54.05	19	20.34	155	7.18	5.61	1.5	1.1	22	1	98	.13	5	.6	1.7	16	SF4
		27	813	13.37	19	20.74	155	13.45	8.59	1.6	1.3	14	0	60	.05	4	.6	1.1	12	SF2
		27	939	53.75	19	23.46	155	.80	4.27	1.5	1.3	24	1	176	.16	5	.9	1.8	17	SSF
		27	1351	2.39	19	17.78	155	23.24	1.79	1.7	1.5	18	3	105	.09	5	.4	.9	15	SWR
		28	027	36.95	19	20.42	155	8.56	7.40	1.4	1.4	30	4	74	.09	4	.5	.8	24	SF4
		28	445	38.68	19	21.39	154	59.55	.75	2.7	3.2	32	4	194	.12	7	.6	.6	17	SLE
		28	520	10.65	19	21.56	154	59.68	.37	2.4	2.8	29	3	189	.11	6	.7	.5	16	SLE
		28	1555	23.31	19	23.34	155	24.18	11.32	3.0	3.3	43	2	30	.11	4	.4	.5	35	KAO
		28	1719	7.85	19	19.59	155	12.17	7.34		1.3	22	0	87	.10	5	.5	1.0	19	SF3
		28	19 4	52.24	19	20.54	155	12.65	7.74	1.6	1.5	23	0	68	.09	4	.5	.8	18	SF2
		29	143	57.14	19	12.63	155	29.16	8.07	2.3	2.0	30	0	130	.13	5	.6	.8	19	LSW
		29	6 8	39.56	19	6.73	155	27.67	31.30	1.5	1.8	23	0	176	.08	5	.9	1.8	16	DLS
		29	611	53.55	19	11.54	155	30.27	7.81	2.2	1.7	25	0	85	.13	6	.6	1.3	13	LSW
		29	1333	45.78	19	16.43	155	23.07	6.33	1.8	2.3	28	1	118	.11	4	.5	1.5	18	SWR
		29	1741	37.31	19	20.99	154	59.66	.00	2.2	2.6	21	1	200	.11	6	.8	.9	15	SLE *
		29	21 3	52.34	19	21.86	155	5.08	7.51	2.0	1.8	34	3	79	.16	3	.6	.9	25	SF5
		29	2134	23.41	19	21.87	155	2.38	7.63	2.1	1.8	32	3	133	.15	4	.7	.6	23	SF5
		29	22 7	26.37	19	22.12	155	3.09	8.49	1.8	1.6	30	2	120	.11	4	.6	.6	21	SF5
		29	2257	14.43	19	18.49	155	13.15	7.57	1.4	1.1	28	2	90	.09	3	.5	.8	20	SF2
		29	2316	39.27	19	19.20	155	13.16	7.61	2.1	1.8	38	4	78	.09	4	.5	.6	28	SF2
		30	2016	10.46	19	20.15	155	9.09	6.85	1.6	1.2	26	2	74	.10	4	.5	1.0	16	SF4
		30	2258	15.77	19	19.71	155	7.92	6.56	1.3	1.1	19	0	94	.09	4	.5	1.4	15	SF4
		31	141	45.29	19	21.77	155	15.08	9.13	1.9	1.9	32	2	60	.08	2	.4	.6	24	SF1
		31	638	47.08	19	20.33	155	11.64	8.63	2.4	2.7	42	3	78	.12	4	.5	.6	31	SF3 F
		31	722	29.88	19	17.56	155	20.93	7.42	1.0	1.4	20	3	129	.11	4	.5	1.2	10	SWR
		31	1016	21.55	19	18.84	155	15.27	8.12	1.3	1.4	25	1	119	.07	4	.5	.8	21	SF1
		31	1132	25.35	19	18.48	155	13.36	10.98	3.5	3.6	49	6	131	.10	8	.5	.4	41	SF2 F
		31	1352	39.84	19	25.18	155	26.02	5.45	1.3	1.1	23	1	52	.10	2	.4	1.1	15	KAO
		31	15 0	44.11	19	18.28	155	13.66	8.44	2.2	2.5	38	3	91	.12	2	.5	.6	27	SF2
		31	1717	58.55	19	17.37	155	12.95	6.48	1.2	1.1	24	2	146	.10	1	.6	1.1	15	SF2
		31	1845	1.20	19	16.48	155	22.69	3.13	1.9	2.4	31	3	125	.12	5	.4	1.2	23	SWR
		31	2348	58.78	19	19.25	155	13.36	9.49	1.8	1.4	27	2	73	.09	4	.5	.8	19	SF2
		31	2350	58.90	19	24.91	155	24.12	9.30	1.9	1.3	31	3	43	.11	2	.4	.8	25	KAO
		31	2357	42.19	19	23.40	155	26.47	8.64	2.1	1.8	34	2	46	.11	3	.4	.8	26	KAO
	SEP	1	044	18.02	19	18.10	155	16.52	8.99	2.4	2.0	39	0	122	.12	4	.4	.5	34	SF1
		1	217	21.30	19	20.42	155	6.85	7.99	2.5	2.5	36	3	102	.11	5	.4	.6	26	SF4
		1	733	7.75	19	22.17	155	29.86	8.50	2.0	1.8	31	1	44	.11	4	.4	.8	25	KAO
		1	939	59.70	19	21.02	155	26.18	10.03	1.3	1.3	27	3	59	.10	4	.4	.9	21	KAO
		1	1634	53.23	19	18.17	155	15.12	8.37	1.4	1.7	26	0	139	.11	5	.5	.7	20	SF1
		2	519	35.75	19	20.86	155	10.44	7.12	1.3	1.1	24	2	71	.09	2	.6	.9	18	SF3
		2	6 9	54.22	21	23.65	155	15.35	2.30	3.1	2.9	25	1	292	.10125		5.9	3.9	18	DIS
		2	8 0	29.68	19	18.33	155	14.83	5.64	1.0	1.1	23	2	112	.08	3	.4	1.1	20	SF1
		2	13 3	22.30	19	17.62	155	22.99	4.73	2.1	2.4	30	2	104	.11	5	.4	1.4	24	SWR
		2	1353	14.07	19	17.70	155	12.96	6.44	1.5	1.4	23	2	122	.11	2	.6	1.1	15	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	2	1624	23.86	19	20.98	155	11.06	8.80	1.7	1.1	27	2	69	.07	3	.5	.7	19	SF3
		2	1951	23.40	19	24.75	155	25.28	5.58	1.6	1.3	25	1	48	.10	1	.4	1.0	20	KAO
		2	2019	10.33	19	20.44	155	12.90	8.84	1.4	1.3	25	1	66	.07	4	.5	.7	16	SF2
		2	21	2 6.30	19	23.19	155	2.21	7.20	1.3	1.2	28	0	125	.17	4	.6	1.0	20	SF5
		3	722	45.52	19	19.46	155	15.88	7.85	1.6	1.6	27	2	93	.10	3	.5	.7	16	SF1
		3	1057	24.07	18	57.46	155	3.18	48.48	2.7	3.0	43	2	253	.11	38	1.8	2.3	40	LOI
		3	1910	46.53	19	21.26	155	1.91	5.77	1.4	1.4	26	2	166	.13	3	.7	.8	15	SF5
		3	2019	33.05	19	20.87	155	3.01	8.16	2.6	3.4	42	3	124	.10	2	.5	.4	29	SF5
		3	2347	48.80	19	16.77	155	22.57	2.77	1.1	1.0	18	2	122	.10	5	.4	1.2	15	SWR
		4	729	35.86	19	22.78	155	24.87	10.20	2.7	2.9	48	3	36	.13	5	.4	.5	36	KAO
		4	1041	59.98	19	20.08	155	8.59	7.63	2.0	2.5	40	5	76	.10	4	.4	.6	27	SF4
		4	1219	37.18	19	20.45	155	7.67	4.80	1.3	1.3	23	2	90	.12	5	.5	1.4	11	SSF
		4	1230	32.94	19	19.43	155	10.92	7.88	1.7	1.7	27	4	99	.11	5	.5	.9	20	SF3
		4	21	8 24.24	19	16.04	155	22.36	6.52	1.0	1.1	21	2	158	.07	4	.5	1.3	17	SWR
		4	23	6 21.12	19	18.92	155	22.75	4.35	1.6	1.4	21	3	92	.09	3	.4	1.1	18	SWR
		5	143	6.65	19	20.60	155	7.99	8.11	1.3	1.5	23	0	81	.07	4	.4	.9	20	SF4
		5	457	20.53	19	19.83	155	9.89	7.68	1.8	1.5	20	2	88	.07	4	.6	1.1	18	SF3
		5	557	15.83	19	20.47	155	13.00	8.48	1.9	1.9	35	3	65	.10	4	.4	.6	26	SF2
		5	653	27.78	19	23.97	155	17.10	2.77	1.1	1.7	16	3	69	.10	1	.4	.3	11	SSC
		5	833	50.53	19	18.03	155	13.04	4.60	1.7	1.5	30	2	105	.10	2	.4	1.1	19	SSF
		5	946	49.00	19	24.66	155	24.64	8.21	1.6	1.7	27	2	37	.10	1	.4	.9	18	KAO
		5	1513	46.24	19	17.68	155	20.16	5.43	1.7	1.5	20	3	133	.07	3	.4	1.1	16	SWR
		5	1545	28.82	18	54.75	155	20.12	44.23	2.1	1.7	37	0	245	.07	31	2.0	2.2	28	LOI
		5	1752	12.72	19	26.78	154	55.53	5.96	1.5	1.9	21	2	161	.11	1	.6	.7	9	LER
		6	028	58.77	19	22.15	155	5.02	7.63	2.0	2.2	30	1	75	.11	3	.4	.6	24	SF5
		6	423	4.63	19	40.27	155	27.49	1.10	2.2	1.5	9	2	159	.17	12	1.4	1.1	7	KEA
		6	824	38.70	19	34.23	155	5.14	17.29	1.7	1.3	26	2	161	.07	8	.8	1.2	18	HIL
		6	1127	50.48	19	18.87	155	13.45	8.47	1.7	1.8	37	3	76	.10	3	.4	.6	25	SF2
		6	13	6 55.05	19	17.09	155	21.62	6.53	1.1	1.1	24	4	128	.10	6	.5	1.3	20	SWR
		6	1818	13.54	19	16.86	155	21.81	6.32	1.7	1.8	36	2	130	.12	6	.5	.9	25	SWR
		6	2220	57.67	19	21.37	155	4.59	7.32	1.6	1.6	33	2	87	.12	4	.4	.7	20	SF5
		6	23	1 2.78	19	19.73	155	10.63	8.50	1.6	1.1	30	4	92	.07	5	.5	.7	24	SF3
		7	443	27.93	19	19.20	155	9.99	7.51	1.9	1.8	37	5	104	.10	5	.4	.7	21	SF3
		7	5	1 37.15	19	18.96	155	11.35	7.59	1.9	1.8	34	1	111	.09	5	.4	.7	24	SF3
		7	620	38.72	19	18.07	155	23.21	3.43	1.7	1.4	25	2	96	.10	4	.4	1.0	16	SWR
		7	1530	1.10	19	24.31	155	50.13	10.91	2.6	1.5	24	2	123	.16	13	.6	.6	15	KON
		7	1645	17.18	19	17.25	155	23.49	2.50	.9	1.1	17	2	99	.09	5	.4	1.1	10	SWR
		7	1945	19.02	19	19.32	155	15.45	8.63	2.0	2.2	35	3	99	.09	4	.4	.6	22	SF1
		8	157	1.93	19	16.73	155	22.49	3.20	1.0	1.4	15	2	125	.11	5	.5	1.5	12	SWR
		8	2	7 38.79	19	18.78	155	15.89	8.85	1.9	1.5	31	4	113	.10	4	.4	.6	20	SF1
		8	242	47.66	19	21.69	155	25.80	9.63	2.4	2.6	44	3	46	.13	4	.4	.5	34	KAO
		8	439	19.56	19	22.10	155	17.08	32.54	1.8	1.5	28	0	55	.10	2	.9	2.0	21	DEP
		8	446	33.96	19	20.46	155	10.88	7.27	1.7	1.6	27	4	78	.09	3	.5	.8	20	SF3
		8	6	4 20.52	19	18.23	155	13.71	8.32	2.2	2.3	41	4	94	.11	2	.5	.6	27	SF2
		8	8	8 28.04	19	20.26	155	13.20	9.01	1.6	1.4	26	2	65	.07	4	.5	.8	17	SF2
		8	1036	17.39	19	18.10	155	13.18	7.64	1.7	1.7	26	1	97	.11	2	.6	1.0	19	SF2
		8	1048	4.07	19	19.02	155	14.99	7.40	1.9	1.9	33	3	89	.12	5	.4	.8	26	SF1
		8	1129	39.61	19	53.54	155	32.83	14.05		1.2	17	0	216	.07	21	1.5	1.0	12	KEA F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	8	1631	2.21	19	21.42	155	18.85	3.27	1.2	1.0	20	3	79	.09	4	.3	.8	13	SWR
		8	1953	35.05	19	22.25	155	24.71	5.36	1.6	1.2	20	2	92	.10	5	.5	1.3	17	KAO
		8	2017	51.25	19	23.93	155	17.15	2.76	1.5	1.4	21	4	55	.08	1	.3	.2	11	SSC
		8	2045	20.64	19	20.15	155	7.76	6.31	1.6	1.2	25	2	92	.11	5	.5	1.0	20	SF4
		8	2142	44.44	19	10.66	155	33.19	7.37	2.4	1.9	33	2	135	.13	10	.5	1.0	18	LSW
		9	1	8 42.92	19	23.90	155	17.24	2.66	1.1	1.4	17	3	62	.08	1	.3	.3	10	SSC
		9	656	19.29	19	20.64	155	3.52	7.30	1.6	1.4	27	1	90	.13	2	.6	1.0	19	SF5
		10	340	3.98	19	12.16	155	15.60	46.05	2.5	2.1	40	0	184	.07	10	1.0	1.6	37	DEP
		10	1736	52.98	19	18.14	155	19.58	7.86	1.7	1.5	26	4	128	.07	2	.4	.8	19	SWR
		10	19	3 44.66	19	23.53	155	25.07	10.71	3.4	3.6	49	5	37	.13	3	.3	.4	40	KAO F
		10	20	3 41.21	19	14.37	155	32.86	6.76	2.2	1.6	20	1	114	.16	5	.7	1.2	8	LSW
		10	2130	10.09	19	46.04	156	7.16	25.81	2.9	2.0	26	3	247	.13	31	1.8	2.2	17	HUA
		10	2341	12.63	19	58.27	155	22.13	11.88	1.9	1.6	11	3	230	.05	9	1.2	.4	7	KEA
		11	024	49.09	19	29.68	155	38.96	7.27	2.9	3.1	39	2	49	.13	5	.4	.8	25	MLO
		11	2	1 17.80	19	29.44	155	39.13	4.96	2.3	1.4	23	3	94	.19	6	.7	2.6	15	MLO
		11	654	42.62	19	20.04	155	14.89	7.69	2.2	2.3	40	1	75	.11	4	.4	.6	29	SF1
		11	14	9 4.14	19	29.52	155	38.90	7.16	2.1	2.4	27	1	95	.12	5	.5	1.1	13	MLO
		11	2058	49.15	20	7.16	155	37.63	26.01	2.4	1.9	14	3	214	.10	16	2.4	2.7	9	KOH
		11	2229	25.47	19	20.59	155	11.04	8.72	2.0	2.1	31	1	76	.08	3	.4	.6	20	SF3
		12	6	4 23.65	19	29.22	155	38.95	8.78	2.3	1.2	14	1	93	.14	5	.7	1.5	9	MLO
		12	618	34.62	19	21.60	155	.18	9.25	3.1	3.1	44	4	183	.09	6	.7	.5	34	SF5 F
		12	619	26.25	19	21.99	155	.12	7.35	2.5	2.9	34	2	176	.14	6	.6	.8	23	SF5
		12	758	56.70	19	17.70	155	21.53	7.24	1.3	1.5	24	2	123	.14	5	.6	1.1	17	SWR
		12	847	26.28	19	19.42	155	16.20	8.45	2.3	2.5	44	3	96	.11	2	.4	.5	25	SF1
		12	953	.37	19	20.22	155	13.29	6.98	1.3	1.3	26	3	64	.13	4	.5	.8	15	SF2
		12	1846	5.60	19	18.02	155	20.19	7.45	1.7	1.3	29	3	123	.10	3	.4	.9	19	SWR
		12	2033	29.32	19	20.80	155	12.92	9.39	1.8	1.9	37	3	62	.10	3	.4	.6	26	SF2
		12	2346	15.50	19	22.66	155	4.47	7.93	2.2	2.0	32	3	87	.13	3	.5	.6	25	SF5
		13	2	7 29.98	19	20.44	155	8.46	8.23	2.5	2.7	43	4	76	.11	4	.4	.5	27	SF4
		13	249	56.29	19	29.11	155	39.19	4.98	2.4	2.0	34	4	92	.14	6	.5	1.1	19	MLO
		13	259	35.50	19	29.06	155	39.51	6.59	2.2	1.8	21	3	125	.15	6	.7	1.1	12	MLO
		13	336	22.01	19	19.69	155	7.93	7.62	1.4	1.1	25	1	94	.09	4	.5	1.1	18	SF4
		13	417	48.87	19	18.21	155	13.11	6.73	1.4	1.5	29	3	97	.10	2	.5	.9	20	SF2
		13	513	32.04	19	20.75	155	13.02	7.85	2.0	1.9	36	4	62	.12	3	.4	.6	23	SF2
		13	14	2 3.37	19	26.67	155	22.96	9.09	1.8	1.4	34	4	48	.10	4	.4	.7	24	KAO
		13	1441	36.86	19	20.23	155	6.57	8.30	2.1	2.0	36	3	110	.09	5	.4	.6	27	SF4
		13	1558	25.73	19	19.33	155	13.80	8.08	1.3	1.1	28	2	71	.09	4	.5	.8	17	SF2
		13	1612	55.32	19	21.83	155	1.14	6.86	2.3	2.0	38	3	163	.13	5	.5	.7	30	SF5
		13	18	8 31.66	19	21.63	155	48.09	11.69	2.5	1.8	25	1	105	.14	13	.7	.5	17	KON
		13	2125	44.25	19	22.09	155	5.09	7.08	1.5	1.3	31	3	74	.17	3	.5	.8	23	SF5
		14	217	30.70	19	32.35	155	37.81	9.01	2.5	1.8	39	3	85	.15	7	.5	.7	27	MLO
		14	333	15.74	19	18.92	155	15.74	6.76	2.0	1.6	42	4	100	.13	4	.4	.7	32	SF1
		14	649	41.95	19	19.81	155	11.36	10.09	3.0	3.1	44	4	89	.08	5	.4	.3	32	SF3
		14	831	39.05	19	19.62	155	10.55	8.96	2.8	3.1	29	1	95	.11	5	.5	.7	21	SF3
		14	917	32.65	19	11.00	155	36.26	9.88	3.6	3.4	42	1	96	.19	7	.7	.7	36	LSW F
		14	1037	8.83	19	17.99	155	24.32	8.53	1.8	1.7	30	2	80	.13	5	.4	.7	20	SWR
		14	13	5 19.92	19	10.77	155	8.96	36.15	2.6	2.2	44	1	203	.11	12	1.0	1.3	41	DEP
		14	1349	36.73	19	18.61	155	15.55	6.54	1.0	1.6	22	0	104	.10	4	.5	1.1	18	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	14	1350	22.47	19	42.12	155	1.79	1.27	2.3	2.4	11	0	285	.15	22	5.6	31.4	8	HIL B*
		14	1453	19.47	19	17.70	155	20.63	5.82	1.4	1.1	19	2	129	.10	4	.5	1.3	11	SWR
		14	1630	30.55	19	18.52	155	20.81	7.08	1.6	1.3	26	3	112	.10	4	.4	1.1	19	SWR
		14	1634	49.36	19	18.62	155	20.77	9.03	2.3	2.5	42	3	109	.12	4	.4	.6	30	SWR
		14	1850	26.34	19	20.78	155	11.48	8.50	2.0	1.8	32	3	72	.11	4	.4	.7	22	SF3
		14	2022	47.51	19	20.26	155	8.24	7.77	1.3	1.1	27	3	81	.10	4	.5	.8	15	SF4
		15	110	50.26	19	20.48	155	9.50	8.60	1.8	1.7	26	1	74	.06	3	.5	.8	20	SF3
		15	348	57.07	19	19.51	155	7.91	7.86	2.0	2.2	32	2	98	.08	4	.5	.7	23	SF4
		15	1618	44.56	19	19.69	155	9.08	7.45	1.8	1.3	33	4	83	.09	5	.4	.7	18	SF4
		15	2032	11.01	19	19.73	155	8.62	8.03	2.2	2.1	40	4	78	.10	5	.4	.6	25	SF4
		15	21 8	49.58	19	17.79	155	22.79	3.21	.7	.8	16	2	112	.06	5	.4	.9	10	SWR
		15	2229	20.95	19	14.89	155	22.98	6.55	1.2	1.2	22	3	188	.08	2	.6	1.2	18	SWR
		15	2244	8.17	19	15.15	155	22.95	6.81	1.1	1.4	20	2	165	.11	2	.6	1.4	13	SWR
		16	0 4	30.35	19	15.75	155	23.05	3.79	.9	1.1	17	1	152	.08	3	.5	1.2	10	SWR
		16	0 5	14.52	19	15.33	155	22.95	6.46	1.2	1.2	18	1	169	.08	3	.7	1.5	13	SWR
		16	028	2.97	19	15.05	155	22.84	6.98	1.5	1.4	21	3	185	.09	2	.6	1.2	15	SWR
		16	211	17.52	19	19.13	155	15.56	9.17	2.3	2.1	42	4	93	.11	4	.4	.5	28	SF1
		16	453	19.88	19	15.94	155	24.99	9.87	1.2	1.3	18	2	111	.10	3	.5	.7	14	SWR
		16	9 5	16.72	19	20.40	155	10.56	8.52	1.8	1.4	31	5	79	.08	3	.4	.6	22	SF3
		16	913	28.40	19	27.55	155	38.39	4.98	2.4	1.7	29	5	92	.09	4	.4	.8	19	MLO
		16	13 7	22.55	19	19.35	155	10.44	8.22	2.2	1.3	31	2	102	.09	5	.4	.9	20	SF3
		16	1313	36.17	19	10.63	155	35.36	9.10	1.4	1.4	23	2	103	.18	9	.7	1.2	14	LSW
		16	1719	3.53	19	21.17	155	15.23	8.80	1.3	1.0	21	2	69	.07	3	.5	.7	15	SF1
		16	1811	32.99	19	21.92	155	2.97	6.58	1.8	1.6	30	3	124	.13	4	.5	.8	18	SF5
		16	1856	4.37	19	18.78	155	13.46	8.49	2.4	2.1	37	3	77	.11	3	.4	.6	26	SF2
		16	1930	4.13	19	27.78	155	38.45	6.17	2.4	1.6	27	4	96	.10	4	.5	.6	17	MLO
		16	1944	13.57	19	21.12	155	24.79	9.41	1.6	1.3	26	3	52	.10	3	.4	.8	21	SWR
		17	759	38.04	19	21.94	155	4.61	7.79	1.9	1.3	28	3	76	.14	4	.5	.7	16	SF5
		17	1332	29.31	19	18.74	155	13.05	9.83	2.8	2.8	43	4	87	.10	3	.4	.3	31	SF2
		17	1514	5.08	19	15.87	155	23.06	1.62	1.9	2.0	33	2	134	.11	8	.4	1.2	26	SWR
		17	2117	17.42	19	15.79	155	27.00	8.05	1.9	1.6	23	2	71	.15	6	.5	1.2	15	LSW
		17	2158	3.65	19	13.60	155	24.84	6.55	2.1	1.5	15	2	149	.09	2	.6	.7	10	SWR
		17	2158	35.04	19	16.26	155	22.68	2.82	1.9	1.8	16	1	130	.09	4	.5	1.2	11	SWR
		17	22 8	6.20	19	19.25	155	13.71	7.42	1.5	1.0	26	3	71	.11	4	.5	.9	16	SF2
		17	2211	50.18	19	15.67	155	22.67	4.93	1.3	1.1	17	0	138	.08	3	.8	2.0	13	SWR
		18	258	33.09	19	29.57	155	39.06	6.68	2.5	2.1	34	3	74	.14	5	.4	.9	26	MLO
		18	8 2	4.42	19	18.77	155	22.84	4.42	.8	1.0	23	3	94	.08	3	.4	.8	13	SWR
		18	8 5	54.54	19	17.83	155	19.76	7.30	1.2	1.3	26	4	126	.08	2	.4	.9	18	SWR
		18	1011	1.13	19	28.83	154	49.96	6.59	1.9	1.3	13	1	244	.13	2	2.1	1.0	6	LER
		18	1656	44.76	19	21.91	155	13.80	26.48	2.3	2.0	40	1	51	.10	2	.7	.9	36	DEP
		18	1827	33.95	19	24.07	155	16.51	2.55	1.7	1.9	22	4	102	.07	0	.3	.2	14	SSC
		18	2235	3.81	19	23.09	155	14.90	3.04	1.2	1.4	21	4	65	.07	2	.3	.3	10	SEC
		18	23 3	5.88	19	22.90	155	14.89	3.18	1.7	1.7	23	4	67	.10	2	.3	.4	15	SEC
		19	221	46.64	19	20.83	155	12.06	9.10	1.8	1.5	32	3	69	.09	4	.4	.7	23	SF3
		19	419	22.62	19	20.95	155	12.99	8.83	2.3	2.4	43	4	60	.12	3	.4	.5	35	SF2
		19	438	7.65	19	20.62	155	12.95	9.10	1.5	1.6	31	2	64	.08	4	.4	.5	20	SF2
		19	715	28.27	19	17.47	155	13.05	8.40	2.6	2.4	41	4	131	.10	1	.5	.6	25	SF2
		19	727	48.92	19	19.80	155	8.72	7.13	1.9	1.8	36	3	76	.10	5	.4	.7	20	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	19	728	3.19	19	20.01	155	8.56	6.13	2.6	2.8	35	5	77	.10	4	.4	.9	20	SF4
		19	732	27.13	19	26.98	155	49.63	7.96	2.1	1.8	25	1	109	.13	9	.6	.9	15	KON
		19	747	28.45	19	16.62	155	12.37	3.82	1.8	1.1	32	2	166	.11	2	.5	.8	22	SSF
		19	752	57.34	19	18.02	155	12.98	6.23	1.6	1.5	25	0	108	.09	2	.5	1.0	24	SF2
		19	1017	46.92	19	17.67	155	12.93	7.19	2.0	2.2	35	4	126	.12	2	.5	.8	27	SF2
		19	13 3	36.86	19	19.91	155	10.78	9.46	2.8	2.9	46	4	89	.10	4	.4	.4	34	SF3
		19	1327	31.57	19	21.28	155	3.18	5.53	1.4	1.1	27	0	109	.13	3	.5	.9	15	SF5
		19	1420	3.32	19	18.21	155	12.83	10.14	2.7	2.9	44	4	139	.12	8	.5	.5	30	SF2
		19	21 3	49.23	19	20.38	155	10.71	7.41	2.0	2.1	35	4	79	.11	3	.5	.8	23	SF3
		19	2336	40.75	19	12.36	155	31.17	9.73	2.2	1.6	28	1	80	.12	5	.5	.8	17	LSW
		20	040	24.86	19	19.81	155	6.88	7.89	1.3	1.3	23	2	115	.08	5	.5	.9	13	SF4
		20	228	17.04	19	20.12	155	7.30	5.54	1.4	1.1	30	2	101	.12	5	.5	1.5	18	SF4
		20	429	25.02	19	17.23	155	22.97	2.70	.8	1.2	19	4	108	.08	6	.4	.9	15	SWR
		20	1037	28.59	19	17.99	155	16.15	5.99	1.6	1.3	28	3	123	.10	4	.4	.9	19	SF1
		20	1237	18.52	19	18.74	155	15.47	6.56	1.1	1.2	24	3	111	.10	4	.5	.9	16	SF1
		20	1352	57.85	19	20.87	155	25.26	9.38	1.4	1.3	29	4	55	.10	4	.4	.8	23	KAO
		20	1614	13.61	19	21.20	155	15.25	8.87	1.5	1.1	29	4	68	.08	3	.4	.6	22	SF1
		20	2048	53.23	19	23.41	155	2.52	8.07	1.3	1.2	24	1	118	.13	4	.6	1.1	13	SF5
		20	2057	46.57	19	21.37	155	14.95	9.09	1.5	1.3	26	4	65	.07	3	4	.6	18	SF1
		20	22 3	8.30	19	21.22	155	14.89	9.59	1.5	1.3	24	2	66	.09	3	.6	.8	14	SF1
		20	22 5	23.69	19	16.23	155	23.78	4.69	1.8	1.8	30	2	102	.09	4	.4	1.5	18	SWR
		20	2317	50.48	19	17.64	155	12.98	5.62	1.2	1.3	21	2	124	.07	1	.5	1.1	15	SF2
		21	127	24.60	19	16.53	155	23.63	3.25	1.0	1.2	18	2	104	.08	4	.4	1.2	13	SWR
		21	155	54.60	19	20.13	155	7.86	7.64	1.3	1.1	26	2	90	.08	5	.5	1.0	15	SF4
		21	258	6.83	19	24.12	155	25.21	9.21	1.6	1.2	22	2	47	.09	2	.4	.8	14	KAO
		21	559	9.74	19	20.87	155	12.79	6.87	1.8	1.8	39	3	63	.14	3	.4	.7	22	SF2
		21	6 1	10.84	19	11.62	155	35.72	8.34	1.4	1.2	17	1	93	.16	7	.6	1.1	9	LSW
		21	637	14.07	19	16.51	155	22.86	2.77	1.2	1.0	18	2	121	.09	5	.4	.9	10	SWR
		21	1031	44.83	19	22.83	155	3.41	6.84	1.9	1.5	30	2	103	.14	4	.5	.9	15	SF5
		21	1239	59.90	19	21.73	155	25.23	8.79	1.7	1.2	27	4	44	.09	4	.4	.8	18	KAO
		21	1334	13.32	19	16.42	155	22.97	2.47	1.8	1.5	24	1	120	.10	4	.4	1.0	18	SWR
		21	1535	27.83	19	20.21	155	6.84	9.43	3.7	4.0	43	3	107	.10	5	.5	.4	38	SF4 F
		21	1655	35.24	19	19.17	155	18.92	7.93	1.6	1.8	29	4	95	.09	2	.4	.6	18	SWR
		21	1726	57.21	19	17.67	155	13.16	4.71	1.7	1.1	27	2	112	.08	1	.4	.9	17	SSF
		22	119	33.13	19	19.32	155	18.89	8.15	1.7	1.7	37	6	56	.11	3	.4	.6	26	SWR
		22	2 8	.40	19	16.78	155	15.25	4.85	1.3	1.1	24	2	169	.12	3	.6	1.3	15	SSF
		22	354	23.56	19	20.75	155	12.96	7.10	1.5	1.3	31	4	63	.12	4	.5	.8	24	SF2
		22	4 3	34.27	19	25.58	155	38.42	2.89	2.3	2.0	19	2	191	.10	5	.7	1.2	11	MLO
		22	521	20.58	19	18.73	155	15.57	5.94	1.3	1.1	22	1	112	.09	4	.5	1.3	15	SF1
		22	552	37.88	19	19.96	155	11.30	8.06	1.5	1.3	26	3	86	.08	5	.5	.7	16	SF3
		22	6 9	5.15	19	17.72	155	20.82	6.51	.9	1.1	22	3	127	.09	4	.4	1.3	15	SWR
		22	917	6.05	19	20.65	155	12.87	8.89		1.1	25	3	64	.08	4	.5	.8	18	SF2
		22	1136	3.00	19	20.11	155	13.35	6.65	1.3	1.1	25	2	65	.11	5	.5	.9	17	SF2
		22	1343	37.32	19	19.21	155	9.12	7.50	1.4	1.1	27	3	109	.07	4	.5	.9	16	SF4
		22	1840	24.48	19	26.95	155	50.12	10.37	2.6	1.5	23	1	110	.15	10	.7	.7	14	KON
		22	2244	55.83	19	20.03	155	10.08	8.05	2.2	2.1	42	3	84	.11	4	.4	.6	29	SF3
		22	2356	5.08	19	19.80	155	13.15	7.11	1.1	1.1	22	2	71	.08	5	.5	.9	17	SF2
		23	555	23.83	19	21.94	155	3.42	7.71	1.6	1.4	30	1	111	.11	4	.5	.8	19	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	23	6 3	53.81	19	20.50	155	11.75	8.70	2.2	2.1	38	3	74	.12	4	.4	.5	28	SF3
		23	1021	25.70	19	19.09	155	13.59	6.89	1.3	1.3	27	3	69	.11	4	.5	1.1	17	SF2
		23	1030	54.90	19	7.43	155	28.46	30.14	2.5	2.3	38	3	229	.08	4	.8	1.1	31	DLS
		23	1053	3.72	19	19.05	155	11.35	7.51	1.7	1.5	28	2	108	.10	5	.5	.9	24	SF3
		23	1323	39.96	19	19.69	155	7.16	7.37	1.6	1.3	28	3	112	.10	5	.5	1.0	20	SF4
		23	1423	37.55	19	23.30	155	24.17	10.98	3.2	3.2	43	2	41	.12	4	.3	.4	37	KAO F
		24	122	30.58	19	20.86	155	5.90	7.77	2.2	2.0	32	2	102	.09	4	.4	.7	23	SF4
		24	134	29.82	19	19.71	155	16.91	8.36	1.5	1.1	20	2	94	.10	1	.5	.9	14	SF1
		24	2 7	11.45	19	20.36	155	12.91	8.61	1.4	1.3	21	1	67	.05	4	.5	.7	18	SF2
		24	426	15.08	19	19.40	155	10.38	8.86	1.6	1.3	27	4	100	.08	5	.5	.8	16	SF3
		24	1359	8.63	19	19.23	155	11.85	7.25	1.4	1.5	25	1	99	.09	5	.5	1.1	18	SF3
		24	2055	14.89	19	17.74	155	21.28	8.56	1.6	1.5	27	2	123	.09	5	.4	.9	20	SWR
		25	822	57.84	19	16.05	155	22.68	3.89	.9	1.1	12	1	154	.04	4	.6	1.6	7	SWR
		25	837	21.21	19	16.25	155	23.06	4.14	1.0	1.1	13	2	121	.12	4	.5	1.6	11	SWR
		25	1651	50.05	19	23.90	155	17.02	2.75	.6	.2	6	1	95	.01	1	.7	.4	5	SSC
		25	1652	4.60	19	23.68	155	17.52	2.09	.5	.5	7	2	142	.10	1	.4	.7	3	SSC
		25	1652	21.03	19	23.76	155	17.78	3.28	.8	1.0	10	3	141	.08	2	.5	.6	6	SSC
		25	1653	14.30	19	23.70	155	17.22	2.42	1.5		9	2	99	.06	1	.4	.5	2	SSC
		25	1653	33.45	19	24.12	155	17.25	3.47	2.2	.9	20	4	62	.13	1	.4	.3	11	SSC
		25	1654	6.56	19	23.81	155	17.29	3.50			8	1	126	.10	1	.9	.8	3	SSC
		25	1655	6.24	19	23.47	155	16.90	2.39		.6	19	3	44	.13	0	.4	.3	11	SSC
		25	1655	34.43	19	23.43	155	16.61	3.36		2.1	25	3	59	.13	1	.3	.4	10	SSC
		25	1656	32.11	19	23.62	155	16.52	2.91		2.1	28	4	50	.14	3	.3	.4	17	SSC
		25	1657	34.93	19	23.66	155	17.09	3.20	2.6	1.8	21	3	59	.13	1	.4	.4	7	SSC
		25	1658	21.87	19	23.65	155	17.06	1.01	2.6	2.6	30	1	43	.10	2	.3	.6	18	SSC
		25	1659	52.36	19	23.33	155	16.78	2.79	2.5		20	3	45	.10	2	.4	.5	9	SSC
		25	17 0	59.38	19	23.58	155	17.42	1.95		.3	7	1	110	.10	3	.5	.8	3	SSC
		25	17 1	37.10	19	22.10	155	16.12	3.57			8	1	142	.04	9	.8	3.8	4	SEC
		25	17 2	15.07	19	23.59	155	17.17	5.47	3.3	3.3	27	0	44	.15	7	.4	2.1	18	INT
		25	17 5	15.73	19	23.40	155	16.63	1.98	2.5	1.9	14	2	72	.16	2	.4	.8	2	SSC
		25	17 6	32.92	19	23.18	155	16.90	3.10			11	2	84	.08	0	.4	.3	5	SSC
		25	17 6	52.53	19	23.71	155	17.13	2.42	2.4	1.8	26	4	63	.14	1	.3	.3	13	SSC
		25	17 9	5.28	19	23.69	155	17.08	2.58			15	3	62	.07	1	.3	.3	11	SSC
		25	17 9	23.81	19	23.30	155	16.96	3.23	2.3	1.3	17	4	66	.09	3	.4	.4	9	SSC
		25	1710	6.36	19	23.06	155	17.14	2.48			17	2	44	.08	1	.3	.4	9	SSC
		25	1710	13.07	19	23.37	155	17.10	3.28	2.5	2.2	21	3	47	.12	3	.3	.5	16	SSC
		25	1712	5.91	19	23.13	155	17.08	2.70		1.5	24	5	48	.07	1	.2	.2	19	SSC
		25	1714	5.68	19	23.43	155	16.82	3.19		1.3	26	6	45	.07	0	.3	.2	19	SSC
		25	1714	49.24	19	23.38	155	17.12	2.74			21	5	55	.10	0	.3	.3	16	SSC
		25	1715	40.42	19	23.37	155	17.03	2.95	1.8	1.5	27	5	46	.08	0	.3	.2	20	SSC
		25	1716	46.09	19	23.66	155	16.72	3.54	1.3	1.1	24	5	42	.09	1	.3	.2	20	SSC
		25	1717	19.23	19	23.99	155	16.83	1.60	2.1	1.8	19	4	87	.07	0	.2	.2	15	SSC
		25	1718	11.51	19	23.54	155	16.79	3.52	1.5	1.7	20	3	44	.07	1	.3	.3	17	SSC
		25	1719	28.33	19	23.65	155	16.86	3.43	1.7	.3	23	5	50	.08	1	.3	.2	18	SSC
		25	1719	48.84	19	23.86	155	16.01	2.73	1.6		17	4	103	.09	1	.3	.2	13	SEC
		25	1720	24.36	19	23.24	155	17.15	2.77	1.7	.6	21	6	48	.11	0	.2	.2	17	SSC
		25	1721	47.18	19	23.43	155	16.74	3.47	2.3	1.5	27	5	45	.10	0	.3	.3	22	SSC
		25	1722	25.86	19	23.28	155	17.11	2.46	2.3	2.0	34	4	45	.09	0	.2	.2	23	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	25	1723	42.13	19	23.47	155	17.01	3.10			21	3	46	.08	0	.3	.2	18	SSC
		25	1724	2.21	19	23.74	155	16.80	2.12	2.0	1.8	19	3	47	.14	0	.3	.2	15	SSC
		25	1727	56.01	19	23.59	155	17.31	2.45	1.3		21	6	58	.06	1	.3	.2	16	SSC
		25	1729	43.62	19	24.08	155	15.68	3.23	2.2	1.3	22	4	114	.07	2	.3	.2	18	SEC
		25	1730	37.51	19	23.99	155	16.92	3.92	1.4		20	5	78	.09	1	.4	.3	15	SSC
		25	1731	34.64	19	22.96	155	17.17	2.56	2.2	2.2	29	7	49	.10	1	.2	.2	24	SSC
		25	1735	29.65	19	24.55	155	16.20	3.27	1.2		12	3	150	.08	1	.5	.3	10	SNC
		25	1736	.47	19	24.73	155	15.71	2.07			14	5	161	.13	2	.4	.4	9	SNC
		25	1737	24.76	19	24.25	155	16.17	1.34			11	4	126	.05	1	.2	.3	8	SEC
		25	1737	58.75	19	24.16	155	16.66	1.76			18	3	131	.13	1	.5	.2	16	SSC
		25	1738	50.86	19	23.29	155	16.94	3.32	2.5	1.9	28	6	38	.10	0	.3	.2	24	SSC
		25	1739	48.60	19	23.11	155	16.11	2.20	2.2		11	1	125	.11	1	.6	1.6	7	SEC
		25	1741	52.12	19	23.83	155	16.50	1.48	2.6	2.0	31	2	47	.12	0	.2	.2	22	SEC
		25	1742	43.19	19	24.75	155	15.96	1.27	2.5	2.3	18	3	121	.10	2	.3	.3	13	SNC
		25	1744	14.83	19	24.35	155	15.80	.78	1.6	1.3	21	2	114	.12	2	.3	.4	8	SEC
		25	1745	40.40	19	23.86	155	16.56	1.17			17	4	89	.09	0	.3	.2	9	SSC
		25	1746	18.22	19	23.04	155	17.17	3.72	2.8	2.5	14	1	47	.11	10	.4	4.3	8	SSC
		25	1748	50.37	19	23.86	155	15.92	2.32	2.4	1.6	22	1	76	.13	3	.3	.5	9	SEC
		25	1750	33.76	19	23.77	155	16.57	1.17	2.5	2.6	28	2	46	.12	0	.3	.2	17	SSC
		25	1752	23.55	19	23.87	155	16.51	1.26	2.2	2.3	25	4	86	.14	0	.3	.2	16	SSC
		25	1753	21.29	19	23.45	155	16.67	1.81	2.2	2.3	17	1	102	.14	1	.5	.2	10	SSC
		25	1754	47.18	19	30.95	155	19.33	4.49		.4	5	0	333	.25	12	54.8	82.5	0	MLO *
		25	1755	41.45	19	24.49	155	16.42	3.16	1.9	1.5	10	1	137	.07	1	.8	.4	3	SEC
		25	1756	38.40	19	23.60	155	16.48	1.75	2.4	2.6	31	4	49	.13	1	.3	.2	18	SEC
		25	1759	16.66	19	24.38	155	16.23	1.67	2.1	.9	21	3	113	.11	1	.3	.2	14	SEC
		25	18 3	16.40	19	24.31	155	15.91	.85	2.4		16	1	78	.13	1	.3	.5	7	SEC
		25	18 5	20.43	19	23.02	155	17.18	2.28	1.6	1.1	22	1	49	.12	1	.3	.4	12	SSC
		25	18 6	5.13	19	23.96	155	16.55	1.45	2.8		19	0	86	.12	0	.3	.2	9	SSC
		25	18 8	3.23	19	23.15	155	17.08	3.01	2.5		22	5	48	.11	1	.3	.3	18	SSC
		25	18 9	57.40	19	24.18	155	16.28	1.76			13	4	117	.07	1	.3	.3	10	SEC
		25	1811	33.36	19	23.86	155	15.46	1.14		1.5	18	4	106	.08	2	.2	.3	15	SEC
		25	1812	45.99	19	23.17	155	17.08	2.76			24	5	48	.09	0	.3	.2	20	SSC
		25	1813	12.92	19	23.21	155	17.00	2.33			14	4	75	.04	0	.3	.2	11	SSC
		25	1813	31.65	19	23.75	155	17.14	1.27		1.1	18	3	67	.13	1	.4	.4	14	SSC
		25	1814	28.12	19	23.22	155	16.89	2.91	2.1	1.8	29	6	46	.09	0	.2	.2	21	SSC
		25	1817	.73	19	23.10	155	17.14	2.63	2.1	2.2	28	6	48	.12	1	.3	.2	22	SSC
		25	1819	3.69	19	24.04	155	15.67	1.73	2.5	2.7	28	5	78	.10	2	.2	.3	24	SEC
		25	1820	47.55	19	23.58	155	16.79	3.60		1.3	24	4	39	.11	0	.3	.3	19	SSC
		25	1821	51.86	19	22.70	155	14.74	3.11	2.4	1.3	24	3	63	.12	2	.3	.4	21	SEC
		25	1822	52.42	19	23.59	155	16.60	1.89		1.9	13	4	122	.09	1	.3	.2	10	SSC
		25	1824	5.17	19	24.09	155	15.95	.76	2.2	2.3	20	4	111	.10	1	.2	.3	17	SEC
		25	1825	15.54	19	23.93	155	16.19	1.24	2.6	2.5	21	3	66	.14	1	.2	.2	17	SEC
		25	1826	43.01	19	23.41	155	16.76	3.53	2.1	2.2	27	6	45	.11	0	.3	.2	20	SSC
		25	1829	23.87	19	23.13	155	17.06	2.63	1.7	3.1	24	5	41	.09	1	.3	.2	18	SSC
		25	1831	20.23	19	24.11	155	15.99	1.26			14	4	120	.10	1	.3	.3	11	SEC
		25	1831	34.19	19	23.88	155	16.57	1.51	1.6	1.5	28	5	49	.12	0	.3	.1	21	SSC
		25	1833	5.37	19	24.07	155	16.30	3.19	1.5	.3	21	5	100	.10	1	.3	.2	18	SEC
		25	1833	38.09	19	23.64	155	15.89	1.21	.8		10	3	150	.12	1	.3	.4	7	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	25	1834	41.25	19	24.14	155	16.00	1.86	.8		12	4	122	.09	1	.3	.4	9	SEC
		25	1835	10.65	19	22.99	155	17.09	2.62	1.3	.6	15	3	69	.03	1	.3	.3	12	SSC
		25	1835	42.19	19	24.07	155	16.29	1.49		1.6	18	4	153	.11	1	.4	.2	15	SEC
		25	1836	37.04	19	24.18	155	16.02	1.56		.6	18	4	138	.08	1	.3	.2	11	SEC
		25	1837	6.51	19	23.96	155	16.53	1.43		.6	17	4	95	.13	0	.3	.2	14	SSC
		25	1838	25.85	19	24.50	155	16.00	.77	.9		12	4	150	.13	2	.3	.5	8	SEC
		25	1838	38.80	19	23.38	155	17.27	2.84			24	6	47	.10	1	.3	.2	20	SSC
		25	1838	47.33	19	23.74	155	15.35	.57	3.3	3.5	30	4	79	.13	2	.2	.3	11	SEC
		25	1842	7.17	19	24.57	155	15.93	1.30			15	1	137	.12	2	.5	.3	6	SNC
		25	1842	33.52	19	23.78	155	15.52	1.22		.6	16	2	131	.10	2	.3	.4	10	SEC
		25	1843	2.86	19	23.95	155	15.99	.94	2.7	2.9	35	4	45	.14	1	.2	.3	20	SEC
		25	1845	4.07	19	22.95	155	16.94	2.84		1.1	21	1	48	.09	1	.3	.3	12	SSC
		25	1846	11.13	19	24.27	155	15.43	1.89	1.9	1.5	22	3	79	.10	2	.3	.4	12	SEC
		25	1848	30.47	19	23.67	155	15.52	3.32	1.9	.6	24	3	74	.08	2	.3	.3	16	SEC
		25	1849	39.31	19	23.84	155	15.29	1.69		1.5	9	1	103	.06	2	.4	.6	6	SEC
		25	1850	34.48	19	24.25	155	16.31	2.99	1.4		13	2	122	.16	2	.5	.6	6	SEC
		25	1853	14.02	19	24.09	155	16.01	1.87		.6	17	3	118	.10	2	.3	.4	12	SEC
		25	1853	58.97	19	23.78	155	15.63	3.24	1.5		24	5	101	.09	2	.3	.3	13	SEC
		25	1855	28.97	19	23.49	155	15.32	4.81	2.3	2.1	26	3	52	.13	2	.4	.8	17	SEC
		25	1857	25.59	19	23.18	155	15.34	3.05			7	1	114	.27	2	1.1	1.0	5	SEC
		25	1857	42.16	19	23.06	155	15.03	1.87		1.6	12	0	71	.10	2	.3	.3	6	SEC
		25	1859	24.76	19	24.09	155	15.93	1.10	2.9	3.1	35	2	43	.13	1	.2	.3	18	SEC
		25	19	3 55.73	19	22.62	155	24.79	8.77	1.4	1.3	27	1	41	.12	5	.4	.8	20	KAO
		25	19	5 38.67	19	23.90	155	15.55	1.05			7	1	148	.02	3	.3	.6	4	SEC
		25	19	7 3.00	19	24.16	155	15.79	1.36			10	2	126	.09	3	.7	.9	5	SEC
		25	19	9 39.42	19	22.79	155	25.11	9.25		.9	11	1	81	.08	4	.8	1.2	9	KAO
		25	1910	36.81	19	24.20	155	15.89	1.51	2.2	2.3	20	3	123	.08	2	.3	.4	13	SEC
		25	1912	56.77	19	23.71	155	15.64	.82			9	1	99	.06	2	.3	.6	5	SEC
		25	1913	31.92	19	24.71	155	15.29	2.43	1.4	.3	14	2	123	.08	2	.5	.4	5	SNC
		25	1915	58.29	19	23.86	155	15.53	1.86	1.9	1.8	14	1	104	.12	3	.4	.5	8	SEC
		25	1918	41.41	19	24.10	155	15.82	1.80		1.3	11	2	121	.06	3	.3	.5	5	SEC
		25	1921	52.18	19	24.29	155	15.60	1.89	2.2	2.2	28	4	45	.09	2	.3	.3	20	SEC
		25	1924	34.19	19	24.22	155	15.69	3.49			17	2	122	.10	2	.4	.4	9	SEC
		25	1925	7.59	19	24.18	155	15.56	2.45			13	1	120	.07	2	.4	.3	3	SEC
		25	1930	41.38	19	23.94	155	15.37	1.89			8	0	111	.08	2	.4	.6	6	SEC
		25	1935	23.59	19	24.03	155	15.55	1.60	2.3	2.3	29	4	43	.11	2	.3	.4	16	SEC
		25	1937	24.84	19	23.95	155	15.17	1.67		.9	18	3	108	.09	2	.2	.3	16	SEC
		25	1938	41.32	19	24.05	155	15.75	1.17		1.4	18	3	114	.12	2	.3	.3	14	SEC
		25	1944	25.76	19	24.22	155	15.63	1.58	2.3	1.5	26	5	79	.13	2	.3	.3	21	SEC
		25	1946	4.67	19	24.09	155	15.68	2.18	2.2	2.4	28	4	78	.10	2	.2	.2	25	SEC
		25	1948	30.24	19	23.81	155	15.50	4.00		.6	13	4	104	.12	3	.5	.7	11	SEC
		25	1956	4.22	19	24.20	155	15.58	1.83	2.2	1.6	23	5	79	.12	2	.3	.3	20	SEC
		25	1959	39.65	19	23.10	155	14.86	3.19			12	4	110	.10	2	.3	.5	9	SEC
		25	20	0 36.06	19	23.04	155	14.56	1.83		.8	15	3	117	.13	3	.3	.4	11	SEC
		25	20	1 10.98	19	24.15	155	15.54	1.88		.3	17	3	117	.08	2	.2	.3	13	SEC
		25	20	1 50.85	19	24.18	155	15.84	3.26	2.1	1.8	34	7	78	.08	1	.3	.2	26	SEC
		25	20	4 .56	19	23.54	155	17.22	2.91		.6	22	5	50	.12	1	.4	.2	19	SSC
		25	20	8 59.46	19	24.23	155	15.36	1.92			10	4	131	.07	2	.3	.5	8	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	25	2012	36.52	19	25.56	155	14.47	3.59			10	3	260	.11	2	1.8	.6	9	SNC
		25	2014	8.60	19	24.07	155	15.50	1.60	2.5	2.4	28	4	78	.12	2	.3	.3	21	SEC
		25	2024	.22	19	23.21	155	17.17	2.16			12	2	60	.07	3	.4	.5	8	SSC
		25	2024	33.86	19	23.70	155	15.43	1.57	.7		11	4	97	.07	3	.2	.5	9	SEC
		25	2025	6.75	19	23.83	155	15.50	2.02	2.1	1.1	23	6	104	.07	2	.2	.3	20	SEC
		25	2026	47.21	19	24.10	155	16.09	1.81	2.2	2.5	26	4	75	.10	1	.2	.2	23	SEC
		25	2031	32.61	19	6.97	155	28.34	29.92	1.9	.8	22	3	180	.07	5	1.0	1.2	20	DLS
		25	2031	59.91	19	24.32	155	15.52	1.78	1.9	.9	21	3	114	.08	2	.3	.3	17	SEC
		25	2034	4.84	19	24.27	155	15.73	1.48	2.1	1.1	22	4	114	.07	3	.2	.3	15	SEC
		25	2040	1.45	19	23.75	155	15.20	3.14			19	6	92	.10	2	.3	.3	15	SEC
		25	2040	25.58	19	24.15	155	15.50	2.62	2.3	2.2	21	3	113	.10	2	.3	.2	18	SEC
		25	2044	30.10	19	23.75	155	15.04	2.16			17	2	88	.16	2	.3	.5	15	SEC
		25	2048	3.62	19	23.81	155	15.28	1.52		.8	17	6	102	.12	2	.3	.4	14	SEC
		25	2052	45.91	19	24.02	155	15.40	1.52	2.1	1.5	19	2	78	.09	2	.2	.4	14	SEC
		25	2057	17.32	19	23.55	155	15.03	1.73			10	4	98	.12	2	.3	.6	7	SEC
		25	21	0 23.10	19	23.25	155	14.57	1.44		1.6	13	3	93	.10	3	.3	.4	11	SEC
		25	21	3 21.70	19	22.25	155	14.40	1.62		.8	14	4	132	.18	2	.4	.5	11	SEC
		25	21	4 7.99	19	24.14	155	15.45	1.94	2.3	2.2	24	4	78	.08	2	.2	.3	18	SEC
		25	21	6 29.95	19	24.35	155	15.33	1.53	2.0	.9	16	3	114	.07	2	.3	.3	8	SEC
		25	2131	8.92	19	23.72	155	15.30	3.18	1.9	1.3	18	3	136	.14	3	.4	.5	6	SEC
		25	2134	39.22	19	23.79	155	15.26	2.29		.6	11	2	99	.14	2	.4	.6	7	SEC
		25	2136	59.00	19	24.22	155	15.16	2.43		.6	15	1	112	.12	2	.4	.4	6	SEC
		25	2139	14.74	19	23.87	155	15.85	2.46		.3	15	2	106	.12	3	.4	.4	8	SEC
		25	2144	21.53	19	23.88	155	15.19	2.73			9	3	104	.05	2	.3	.6	4	SEC
		25	22	8 54.66	19	24.13	155	15.51	1.55	2.0		19	1	78	.12	2	.3	.4	6	SEC
		25	2218	29.15	19	23.05	155	14.79	2.87	2.1	1.1	20	1	66	.10	2	.3	.4	17	SEC
		25	2228	28.87	19	24.47	155	15.51	1.90	2.2	1.3	19	3	119	.09	2	.3	.3	12	SEC
		25	2230	11.78	19	24.05	155	15.79	3.51			13	3	115	.09	3	.4	.5	3	SEC
		25	2232	20.42	19	23.93	155	15.31	1.57			9	1	105	.09	2	.3	.4	3	SEC
		25	2242	8.60	19	24.05	155	15.40	1.30	1.6	.9	17	2	110	.07	2	.3	.4	7	SEC
		25	2256	46.39	19	23.58	155	.94	5.66		1.5	14	2	192	.14	5	1.1	1.5	7	SFS
		25	2258	7.65	19	23.66	155	15.34	1.32			11	2	94	.28	3	.6	.8	4	SEC
		25	2258	46.24	19	23.54	155	16.11	1.86	1.8	1.8	16	4	87	.07	2	.3	.3	5	SEC
		25	2333	43.11	19	24.91	155	18.42	8.38			7	1	195	.16	3	1.7	1.8	3	INT
		25	2344	29.96	19	24.01	155	15.89	2.80			8	2	114	.06	3	.4	.7	5	SEC
		25	2355	18.45	19	23.86	155	16.17	.04	1.5	.8	13	3	100	.26	2	.4	.9	5	SEC *
		25	2356	8.46	19	24.43	155	16.01	3.37			11	2	144	.13	2	.5	.6	4	SEC
		26	012	27.95	19	24.63	155	16.10	2.82	1.7	1.5	14	3	140	.13	3	.4	.5	7	SNC
		26	022	28.62	19	23.10	155	14.86	2.99	1.8	1.7	23	3	65	.09	2	.3	.4	12	SEC
		26	031	17.47	19	23.84	155	15.50	1.94	1.3	1.0	12	4	106	.09	3	.3	.4	9	SEC
		26	141	49.94	19	20.40	155	12.18	6.14	1.5	1.0	13	2	75	.14	4	.6	1.5	10	SF3
		26	158	5.15	19	23.78	155	15.75	2.71	1.6	1.4	22	5	102	.12	2	.3	.3	19	SEC
		26	2	2 31.92	19	24.25	155	15.42	1.99	1.5	1.6	12	4	133	.08	2	.3	.4	9	SEC
		26	254	58.80	19	24.12	155	15.73	2.42		.5	12	5	123	.06	2	.3	.4	9	SEC
		26	3	9 15.08	19	19.35	155	8.81	7.72		.6	15	2	85	.10	4	.7	1.6	14	SF4
		26	321	55.08	19	23.22	155	17.06	2.93		.2	15	4	77	.07	2	.3	.4	12	SSC
		26	425	57.76	19	23.99	155	15.92	2.88	1.3	1.3	21	5	112	.08	1	.3	.2	17	SEC
		26	6	3 48.60	19	17.48	155	20.56	7.97		1.3	9	2	153	.04	4	.7	1.4	7	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	26	6 9	51.08	19	19.93	155	13.99	6.94	2.2	2.4	41	4	62	.14	5	.4	.7	36	SF2
		26	622	57.09	19	23.95	155	15.64	2.77		1.0	15	5	112	.08	2	.3	.4	11	SEC
		26	624	9.07	19	23.96	155	15.61	3.33	1.0	.8	13	5	113	.05	2	.3	.5	9	SEC
		26	626	40.10	19	24.17	155	15.83	3.14	.9	.9	13	4	126	.05	1	.4	.4	9	SEC
		26	631	35.01	19	24.17	155	15.85	2.90	1.0	.7	11	4	125	.06	1	.3	.5	7	SEC
		26	639	25.68	19	23.18	155	17.13	2.60	1.4	1.4	19	4	62	.07	2	.3	.4	15	SSC
		26	652	6.81	19	24.21	155	16.25	3.26	.7	.6	9	3	121	.04	1	.4	.4	7	SEC
		26	658	56.60	19	23.40	155	17.22	2.54	1.0	.8	11	3	90	.07	1	.3	.5	8	SSC
		26	7 2	33.93	19	23.46	155	16.94	3.09	.9	.6	16	5	59	.10	1	.3	.4	10	SSC
		26	712	5.34	19	23.75	155	16.69	1.32	1.3	1.2	13	2	52	.07	0	.2	.2	10	SSC
		26	722	36.53	19	22.99	155	17.19	2.78	1.1	.6	13	4	78	.04	2	.3	.5	10	SSC
		26	758	26.07	19	23.81	155	15.49	2.78	1.5	1.8	13	2	101	.07	3	.3	.4	11	SEC
		26	8 4	13.76	19	23.66	155	15.43	1.95	1.4		12	2	94	.09	3	.3	.5	10	SEC
		26	8 4	49.46	19	23.88	155	15.77	1.09		1.0	7	1	109	.08	3	.3	.7	7	SEC
		26	815	28.36	19	24.18	155	15.85	3.16	1.4	1.7	22	5	121	.07	1	.3	.2	18	SEC
		26	819	6.13	19	24.07	155	16.15	2.78	.5		9	3	113	.03	1	.4	.4	7	SEC
		26	827	35.32	19	23.17	155	14.78	3.13	1.0		10	4	110	.05	2	.4	.7	7	SEC
		26	844	38.83	19	23.88	155	15.19	2.85	1.1	1.4	14	5	104	.05	2	.3	.4	11	SEC
		26	850	34.02	19	23.95	155	16.05	2.90	.8		10	3	108	.06	1	.4	.4	8	SEC
		26	853	56.42	19	23.89	155	15.56	2.56	.7		10	4	138	.12	2	.4	.6	8	SEC
		26	854	37.97	19	23.20	155	14.86	3.43	1.5	1.6	15	4	68	.08	2	.3	.4	10	SEC
		26	857	29.09	19	24.05	155	15.88	1.98	.5	.2	11	3	117	.06	1	.3	.4	7	SEC
		26	857	34.67	19	23.95	155	15.68	1.95	.8		9	3	128	.13	2	.3	.5	8	SEC
		26	857	54.66	19	24.19	155	15.77	2.14	.6	.8	10	4	128	.07	2	.3	.5	7	SEC
		26	858	28.82	19	24.12	155	15.82	2.39	.9	1.4	10	3	122	.08	1	.4	.5	8	SEC
		26	9 0	33.02	19	24.15	155	15.78	3.33	1.0		11	4	124	.05	2	.4	.5	9	SEC
		26	9 0	50.43	19	24.15	155	15.73	3.06	.9		11	4	125	.05	2	.3	.4	8	SEC
		26	9 2	17.25	19	24.15	155	15.68	3.14	1.1	1.0	12	5	126	.03	2	.3	.4	9	SEC
		26	9 3	.10	19	24.06	155	15.70	2.98	1.0		15	4	119	.06	2	.3	.4	9	SEC
		26	9 3	32.61	19	23.95	155	15.64	3.07	1.3		17	5	109	.06	2	.3	.3	8	SEC
		26	9 4	58.94	19	24.20	155	15.65	3.26	1.0		16	3	121	.12	2	.4	.4	7	SEC
		26	9 5	43.49	19	23.98	155	15.76	2.59	.9		14	3	112	.06	2	.3	.3	6	SEC
		26	9 6	4.41	19	24.02	155	15.82	2.40			8	2	118	.05	1	.4	.5	6	SEC
		26	9 7	6.85	19	24.16	155	15.96	3.86	.8		7	2	123	.06	2	.5	.9	3	SEC
		26	9 7	28.84	19	24.06	155	15.72	2.58		.5	7	2	121	.03	3	.3	.6	4	SEC
		26	9 8	25.95	19	24.11	155	15.85	2.97	2.2	2.6	33	5	77	.09	1	.3	.3	18	SEC
		26	910	25.77	19	24.11	155	15.80	2.15	.8	1.2	6	1	123	.08	3	.5	.9	3	SEC
		26	911	48.54	19	24.06	155	15.67	3.38	.8	.2	9	3	124	.04	2	.5	.6	6	SEC
		26	913	19.73	19	24.24	155	15.97	3.43	.9		14	4	126	.06	1	.4	.3	9	SEC
		26	913	30.17	19	24.10	155	15.68	2.73	.9	1.4	11	4	122	.07	2	.3	.5	7	SEC
		26	916	10.80	19	24.07	155	15.67	3.02	1.3		20	4	115	.04	2	.3	.2	10	SEC
		26	916	34.24	19	24.10	155	15.53	3.37	1.2	1.9	14	3	123	.08	2	.3	.4	5	SEC
		26	917	33.50	19	23.93	155	15.80	2.96	1.7	2.2	26	4	84	.09	1	.3	.2	17	SEC
		26	919	14.46	19	24.12	155	15.59	2.81	1.0	1.4	14	5	124	.05	2	.3	.4	7	SEC
		26	920	24.01	19	24.16	155	16.01	3.30	.9	1.4	16	5	121	.05	1	.3	.4	10	SEC
		26	925	27.67	19	23.99	155	15.98	3.13	.7	.2	8	2	112	.04	1	.4	.6	8	SEC
		26	928	55.46	19	24.03	155	16.01	3.04	.9	1.4	17	4	113	.08	1	.3	.3	12	SEC
		26	931	14.80	19	24.08	155	15.93	3.06	.7	.2	10	3	118	.03	1	.3	.5	7	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	8EP	26	931	57.55	19	24.10	155	15.99	3.07		.5	11	4	119	.03	1	.4	.4	8	SEC
		26	934	21.42	19	24.08	155	16.11	3.87	.8	.2	9	4	115	.03	1	.5	1.0	6	SEC
		26	936	5.09	19	22.44	155	13.94	2.34	1.2	1.2	11	4	140	.06	2	.3	.4	6	SER
		26	937	40.62	19	23.99	155	16.04	2.95	.8	.5	13	5	111	.06	1	.3	.3	10	SEC
		26	937	58.45	19	24.18	155	16.13	2.68	.8		10	3	121	.05	1	.4	.4	8	SEC
		26	938	21.71	19	24.14	155	16.16	3.11	.9	1.0	13	4	118	.04	1	.4	.3	10	SEC
		26	939	11.24	19	24.24	155	16.08	2.72	.7	.5	10	4	127	.05	1	.3	.4	8	SEC
		26	939	32.48	19	24.12	155	16.07	3.42	1.0	1.2	14	5	119	.06	1	.4	.4	11	SEC
		26	940	4.28	19	24.26	155	15.97	2.68	.6	.5	10	3	130	.04	1	.4	.4	7	SEC
		26	940	58.60	19	24.13	155	16.08	2.87	.7	.2	11	4	119	.03	1	.3	.4	9	SEC
		26	941	15.26	19	24.31	155	16.14	2.87	.4	.2	10	4	131	.10	1	.4	.5	8	SEC
		26	941	43.83	19	24.07	155	16.07	3.32	.9	.2	13	5	115	.07	1	.4	.4	10	SEC
		26	942	18.33	19	24.16	155	16.26	3.05	.9	.5	11	4	117	.05	1	.3	.4	9	SEC
		26	942	29.16	19	24.10	155	16.05	3.57	1.0	1.0	14	6	117	.08	1	.3	.4	10	SEC
		26	943	48.42	19	24.15	155	16.17	3.17	.5	.2	8	2	119	.09	1	.5	.6	6	SEC
		26	944	10.49	19	24.32	155	15.84	3.34	.9	.2	10	4	138	.09	2	.4	.5	8	SEC
		26	944	34.72	19	24.31	155	16.00	2.93	.5	.2	11	4	135	.04	1	.3	.4	9	SEC
		26	945	47.37	19	24.21	155	16.19	2.84	.8	1.0	14	6	122	.07	1	.3	.3	9	SEC
		26	946	36.32	19	23.14	155	14.87	3.41	2.1	2.3	24	6	66	.05	2	.3	.3	20	SEC
		26	948	8.41	19	23.87	155	15.66	2.71	.9	.2	10	3	107	.07	2	.4	.5	8	SEC
		26	949	31.81	19	24.15	155	15.89	2.95	1.0	1.4	16	6	122	.09	1	.3	.4	11	SEC
		26	953	3.50	19	23.83	155	15.22	2.95	1.0	1.2	14	5	102	.07	2	.3	.4	10	SEC
		26	957	42.33	19	24.16	155	16.20	2.78	.8	.5	11	4	118	.06	1	.3	.4	9	SEC
		26	958	15.05	19	24.39	155	16.12	2.28	.4	.2	10	4	138	.14	1	.4	.4	8	SEC
		26	958	21.43	19	23.85	155	15.19	2.75	1.1	1.0	13	5	102	.05	2	.3	.5	10	SEC
		26	959	45.18	19	23.41	155	15.05	3.31	1.0	.5	12	5	101	.08	2	.4	.6	9	SEC
		26	10 0	48.65	19	23.86	155	15.50	2.28	.9	.8	14	5	106	.10	2	.3	.4	9	SEC
		26	10 3	36.40	19	23.68	155	15.19	3.25	1.6	1.9	21	6	91	.05	2	.2	.3	16	SEC
		26	10 5	51.68	19	23.71	155	15.17	2.29	.9	.8	12	5	94	.06	2	.3	.5	8	SEC
		26	10 6	28.63	19	24.13	155	15.73	2.93		.5	12	5	124	.02	2	.3	.4	9	SEC
		26	10 6	51.35	19	24.02	155	15.50	2.59	.9	1.4	14	4	117	.07	2	.3	.4	11	SEC
		26	1011	41.91	19	23.97	155	15.31	2.51	.8	.2	12	5	111	.07	2	.3	.5	9	SEC
		26	1012	23.12	19	24.19	155	16.23	3.36	.9	.6	11	4	119	.07	1	.4	.5	9	SEC
		26	1013	56.75	19	24.05	155	15.86	3.55	.8	.6	11	4	117	.06	1	.4	.5	9	SEC
		26	1022	35.66	19	23.74	155	15.25	3.92	1.0	.6	12	5	97	.04	2	.4	.7	8	SEC
		26	1022	46.85	19	24.21	155	15.81	2.81	.9	.5	10	4	129	.07	2	.3	.5	8	SEC
		26	1024	5.26	19	23.65	155	15.30	3.08	1.7	1.7	22	5	91	.11	2	.3	.3	17	SEC
		26	1027	50.97	19	23.75	155	15.22	2.98	1.4	1.6	16	6	95	.07	2	.3	.4	12	SEC
		26	1033	42.32	19	24.19	155	15.96	3.13	.8	1.2	16	6	123	.07	1	.3	.3	12	SEC
		26	1035	29.66	19	23.30	155	15.03	2.64	.9	1.0	13	5	106	.06	2	.3	.5	10	SEC
		26	1046	52.36	19	24.19	155	15.79	2.99	.8	.2	10	4	128	.04	2	.3	.5	8	SEC
		26	1134	55.14	19	23.78	155	15.41	1.75	1.2	1.7	15	6	100	.06	2	.2	.4	10	SEC
		26	1139	.37	19	23.85	155	15.36	1.27	.6	1.2	11	4	104	.05	2	.2	.5	9	SEC
		26	1143	31.26	19	23.91	155	16.80	2.13	.6	.5	11	4	84	.05	0	.3	.3	9	SSC
		26	1158	36.17	19	24.16	155	16.23	3.44	.8	1.0	11	3	117	.06	1	.5	.4	9	SEC
		26	12 0	39.80	19	24.05	155	15.55	2.56	1.2	1.4	15	5	115	.10	2	.3	.3	11	SEC
		26	1229	17.03	19	24.02	155	16.19	2.81	1.1	1.4	14	4	109	.07	1	.3	.3	8	SEC
		26	1232	21.55	19	23.91	155	15.12	1.76	1.7	2.6	17	2	98	.06	2	.2	.3	10	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	26	1317	26.10	19	18.74	155	14.98	7.05	1.4	1.1	21	1	104	.08	4	.5	1.0	16	SF1
		26	1324	37.88	19	23.50	155	16.97	2.66	.9	.5	8	2	88	.05	1	.4	.6	7	SSC
		26	1351	15.31	19	25.52	155	12.10	2.79		.8	5	1	295	.12	4	3.0	1.3	2	SER
		26	1447	27.15	19	23.32	155	16.98	2.67	2.2	2.7	32	5	39	.11	0	.3	.2	21	SSC
		26	1448	36.77	19	23.47	155	16.95	2.57	.8	.5	9	3	102	.04	0	.4	.3	7	SSC
		26	1519	39.65	19	5.69	156	12.27	33.42	2.3	2.2	34	3	279	.10	40	1.7	1.5	29	KON
		26	1534	27.73	19	23.35	155	16.83	2.97	1.8	2.1	26	5	41	.10	0	.3	.3	17	SSC
		26	1537	56.30	19	23.14	155	14.93	3.21	1.1	1.2	14	4	108	.09	2	.4	.5	8	SEC
		26	1617	4.50	19	23.76	155	15.13	2.47		.8	12	4	96	.04	2	.3	.6	7	SEC
		26	1634	24.09	19	23.11	155	14.39	1.17	1.3	2.0	18	4	60	.11	2	.3	.4	10	SEC
		26	17 0	29.92	19	23.66	155	16.93	3.08	.9	1.2	15	4	70	.04	1	.3	.3	9	SSC
		26	1717	56.76	19	23.00	155	17.07	2.29	1.0	1.2	18	6	127	.08	1	.3	.2	11	SSC
		26	1941	8.05	19	16.15	155	22.26	6.32	1.4	1.5	22	1	156	.07	5	.5	1.5	16	SWR
		26	2031	58.95	19	23.66	155	15.25	2.40	1.4	1.8	17	4	91	.10	2	.3	.4	10	SEC
		26	2138	13.63	19	24.13	155	15.81	3.19	.8	.5	11	4	123	.04	1	.4	.7	7	SEC
		26	22 3	29.94	19	23.85	155	15.11	2.84	.8	.5	10	3	100	.05	2	.4	.7	9	SEC
		26	2222	57.19	19	22.79	155	17.17	2.40	1.6	2.0	24	4	88	.10	1	.3	.3	15	SSC
		26	2233	6.59	19	18.91	155	22.67	4.20	.8	1.1	21	2	93	.09	3	.4	.8	17	SWR
		26	23 6	55.05	19	18.76	155	22.74	4.27	.8	.8	16	2	114	.06	3	.6	.8	10	SWR
		27	026	5.78	19	23.89	155	15.86	2.96	1.9	2.2	26	4	82	.09	1	.3	.2	20	SEC
		27	051	32.04	19	23.30	155	17.02	2.53	1.2	1.0	16	4	66	.12	0	.4	.3	11	SSC
		27	1 2	17.20	19	24.01	155	16.08	3.24	1.2	1.2	15	4	112	.07	1	.3	.4	10	SEC
		27	1 4	54.50	19	23.23	155	14.89	2.48	.5	.5	8	2	120	.05	2	.4	1.3	2	SEC
		27	131	40.86	19	22.93	155	17.26	2.00	1.8	2.1	23	6	50	.10	1	.2	.3	15	SSC
		27	238	1.26	19	23.49	155	17.12	2.51	1.1	.6	10	2	108	.09	0	.4	.4	7	SSC
		27	3 8	16.32	19	26.50	155	27.36	8.43	1.6	.9	26	2	46	.12	5	.4	1.0	17	KAO
		27	420	50.46	19	23.67	155	15.18	2.38	1.1	1.0	13	4	92	.08	2	.3	.5	10	SEC
		27	521	59.05	19	23.64	155	15.22	2.95	1.4	1.4	18	4	89	.06	2	.3	.3	8	SEC
		27	535	45.75	19	23.74	155	15.11	2.85	1.0		11	4	94	.03	2	.4	.8	7	SEC
		27	548	8.19	19	23.28	155	15.03	3.09	1.2	1.4	17	4	79	.07	2	.4	.4	9	SEC
		27	627	46.65	19	23.19	155	14.90	3.09	1.2	1.6	12	3	83	.03	2	.4	.4	6	SEC
		27	649	44.03	19	18.30	155	15.96	2.40	1.7	2.0	29	3	114	.14	5	.4	.9	22	SSF
		27	710	27.30	19	19.74	155	13.51	5.55	1.2	1.1	19	2	71	.12	5	.6	1.8	15	SF2
		27	713	41.40	19	16.58	155	22.34	5.47	1.2	1.1	19	2	130	.10	5	.5	2.0	17	SWR
		27	716	50.56	19	16.86	155	22.26	5.20	1.6	1.6	24	1	126	.11	6	.5	2.2	21	SWR
		27	723	49.98	19	19.22	155	13.98	6.87	1.3	1.3	24	2	76	.11	4	.5	1.0	18	SF2
		27	810	53.95	19	16.37	155	22.26	6.20	2.3	2.4	41	5	133	.12	5	.4	.8	31	SWR
		27	812	13.44	19	23.34	155	15.03	3.06	1.1	1.0	15	5	85	.07	2	.3	.5	11	SEC
		27	818	.09	19	16.13	155	21.92	7.40	1.3	1.8	21	1	162	.08	5	.6	1.3	18	SWR
		27	837	.49	19	16.63	155	23.04	6.47	1.1		13	1	116	.08	5	.5	1.8	8	SWR
		27	937	44.07	19	20.94	155	6.88	5.64	1.9	1.1	13	0	91	.12	6	.7	2.6	6	SF4
		27	941	5.77	19	18.43	155	14.94	8.21	1.0	.3	10	1	129	.04	4	.8	1.6	7	SF1
		27	1131	13.23	19	18.35	155	13.40	8.14	1.3	.6	10	0	141	.04	2	1.1	2.9	6	SF2
		27	1133	35.53	19	26.66	155	27.16	8.41	1.2	.3	18	2	62	.10	4	.5	1.3	11	KAO
		27	1157	13.81	19	19.76	155	10.34	4.25	1.0	.6	10	1	125	.14	4	1.3	3.9	8	SSF
		27	1217	4.69	19	22.80	155	15.82	6.81	1.3	.6	9	2	98	.14	1	1.1	1.6	7	INT
		27	1351	47.19	19	23.85	155	15.16	4.22		.6	9	2	101	.06	2	.7	1.2	5	SEC
		27	14 8	25.81	19	22.41	155	5.10	5.07	1.0	.6	15	0	75	.11	6	.8	4.9	8	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	SEP	27	1415	23.78	19	20.38	155	12.36	5.33	1.1	.9	17	3	72	.09	4	.5	1.5	10	SF2
		27	1512	9.32	19	19.97	155	8.79	6.89	1.6	1.1	25	3	74	.12	4	.6	1.1	16	SF4
		27	1522	53.92	19	24.28	155	25.99	8.62	1.3	.9	23	3	49	.09	2	.4	.9	17	KAO
		27	1536	59.73	19	21.39	155	6.47	5.30	1.0	.7	16	0	87	.11	6	.6	2.9	11	SF4
		27	17 1	55.91	19	20.30	155	14.18	4.17	.7	.8	6	1	280	.04	5	3.1	1.9	2	SSF
		27	1714	17.05	19	20.30	155	14.74	31.45	1.9	.9	25	0	77	.06	4	1.0	2.0	23	DEP
		27	1714	37.20	19	16.98	155	23.25	5.10		.8	8	2	107	.06	5	.5	2.3	4	SWR
		27	1835	57.72	19	23.05	155	17.34	3.05	.9	.5	9	2	172	.05	1	.8	.5	5	SSC
		27	1923	10.49	19	22.26	155	7.55	7.91	2.2	2.3	34	4	67	.13	4	.5	.9	23	SF4
		27	1930	12.03	19	23.20	155	28.10	9.77	.9	.7	8	1	216	.07	2	1.9	1.7	4	KAO
		27	1938	23.13	19	21.74	155	6.59	8.64	2.6	2.4	38	4	80	.09	6	.4	.6	25	SF4
		27	1956	34.83	19	23.77	155	14.97	3.20		.8	10	4	93	.05	2	.4	1.2	8	SEC
		27	2025	45.93	19	19.80	155	11.17	7.14	1.5	1.0	23	2	91	.10	5	.5	1.0	13	SF3
		27	2123	21.22	19	20.25	155	8.42	6.83	1.2	.6	17	2	78	.12	4	.5	1.2	7	SF4
		27	22 0	41.73	19	16.33	155	23.41	3.11	.8	.7	10	2	112	.10	4	.5	1.2	7	SWR
		27	2223	57.20	19	18.18	155	14.64	8.06	1.0	.9	17	1	132	.08	3	.5	1.2	11	SF1
		27	2234	8.83	19	24.46	155	16.32	15.79	2.8	2.9	43	3	44	.10	1	.4	.3	38	DEP F
		27	2249	14.42	19	20.41	155	13.74	7.62	1.0	1.0	20	1	68	.07	4	.5	.9	11	SF2
		27	2253	29.09	19	22.14	155	13.96	1.51	.6	1.0	9	1	187	.12	2	.7	.5	4	SER
		27	2255	17.01	19	20.23	155	12.76	6.09	.9	.6	13	2	70	.11	4	.7	1.5	9	SF2
		28	113	43.69	19	22.68	155	14.18	1.62	.7	1.2	9	2	163	.05	2	.4	.5	3	SEC
		28	117	35.82	19	20.70	155	13.29	8.91	1.8	1.8	32	3	60	.10	4	.4	.6	20	SF2
		28	249	58.41	19	21.11	155	3.12	6.05	1.9	1.5	26	2	118	.11	2	.6	1.3	17	SF5
		28	310	.73	19	21.64	155	2.49	4.29	1.2	1.1	22	2	141	.11	3	.9	1.8	9	SSF
		28	614	35.28	19	19.85	155	14.42	32.35	2.0	1.4	36	5	69	.09	5	.8	1.0	29	DEP
		28	659	34.72	19	23.70	155	17.02	2.69	.8	.8	12	4	99	.04	1	.4	.3	10	SSC
		28	7 9	17.13	19	26.64	155	38.62	2.11	2.0	2.1	24	7	105	.11	4	.4	.6	19	MLO
		28	729	28.48	19	20.36	155	12.05	8.06	1.3	.6	12	1	77	.06	5	.6	1.5	10	SF3
		28	915	46.46	19	22.92	155	14.10	1.81	.9	1.8	14	1	67	.09	2	.3	.4	11	SEC
		28	921	38.15	19	23.02	155	14.15	1.32		2.7	17	3	108	.10	2	.3	.4	12	SEC
		28	1026	31.75	19	24.03	155	15.64	3.12	1.0	1.0	14	5	118	.05	2	.3	.4	11	SEC
		28	1041	1.38	19	24.03	155	15.11	3.25	1.0	1.0	15	6	112	.09	2	.3	.5	12	SEC
		28	11 5	2.14	19	18.78	155	13.71	7.44	1.6	1.1	17	2	89	.07	3	.5	1.1	14	SF2
		28	1247	11.36	19	24.27	155	16.20	2.96	.8	1.0	12	5	125	.03	1	.4	.4	10	SEC
		28	1340	35.21	19	16.32	155	23.75	3.13	1.5	1.6	28	6	103	.13	4	.4	1.0	24	SWR
		28	14 4	34.97	19	20.00	155	10.05	7.81	1.8	1.3	20	2	85	.07	4	.6	1.0	17	SF3
		28	14 9	5.71	19	23.21	155	17.31	2.72	1.2	1.4	20	7	72	.12	1	.3	.3	15	SSC
		28	1451	5.85	19	16.66	155	15.61	9.21	1.2		18	0	211	.08	4	.8	1.2	10	SF1
		28	1451	34.95	19	18.16	155	15.86	3.78	.8	1.3	15	1	117	.11	5	.6	1.7	12	SSF
		28	1522	6.84	19	23.73	155	15.05	3.38	1.8	2.1	24	5	87	.08	2	.3	.3	20	SEC
		28	2023	20.32	19	17.98	155	15.35	7.53	1.1	1.3	19	4	153	.04	4	.5	.9	17	SF1
		28	2319	1.07	19	23.12	155	14.99	3.28	1.1	1.0	17	6	109	.09	2	.3	.4	14	SEC
		28	2348	22.96	19	23.19	155	14.89	3.49	1.7		20	6	84	.08	2	.3	.4	16	SEC
		28	2350	42.58	19	23.38	155	15.04	3.05	2.3	2.9	27	7	76	.08	2	.3	.2	22	SEC
		29	010	7.70	19	23.27	155	14.91	3.44	2.0	2.5	22	6	83	.07	2	.3	.3	17	SEC
		29	212	50.54	19	25.31	155	17.05	8.37	1.7	2.1	9	1	182	.11	1	1.6	1.8	6	INT L
		29	620	52.07	19	22.29	155	11.06	32.28	3.4	3.6	48	5	55	.11	2	.6	.9	43	DEP F
		29	635	51.42	19	24.68	155	37.97	.09	2.3	2.7	18	3	74	.15	6	.4	.6	12	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	SEP	29	730	53.56	19	21.08	155	6.96	6.69	2.9	3.1	41	6	89	.13	5	.4	.9	35	SF4 F	
		29	1017	11.04	19	23.75	155	15.24	2.81	1.4	1.6	20	7	96	.09	2	.3	.3	16	SEC	
		29	1019	54.16	19	15.46	155	22.63	8.43	1.8	2.3	38	9	155	.10	3	.4	.6	29	SWR	
		29	1120	48.82	19	23.05	155	17.12	2.58	1.0	1.2	18	5	77	.07	1	.3	.3	10	SSC	
		29	1354	40.57	19	19.97	155	6.95	7.22	2.1	2.1	28	0	111	.10	5	.5	1.0	18	SF4	
		29	15	5 45.89	19	24.20	155	16.01	3.00	.8	1.0	9	2	125	.01	1	.4	.6	4	SEC	
		29	16	0 7.31	19	23.63	155	15.28	2.16	.9	1.2	8	1	91	.09	3	.4	.7	5	SEC	
		29	1638	41.31	19	22.71	155	17.16	2.21	1.0	1.2	15	5	185	.08	1	.4	.3	9	SSC	
		29	17	4 51.19	19	23.79	155	15.31	3.00		1.2	5	0	103	.01	2	.6	1.2	4	SEC	
		29	17	5 21.05	19	15.59	155	7.32	43.22		1.8	25	1	195	.07	3	1.1	1.7	18	DEP	
		29	1913	41.45	19	18.63	155	14.06	4.86	1.5	1.5	30	2	76	.12	3	.4	1.4	14	SSF	
		29	2059	13.94	19	20.43	155	12.49	7.96	1.4	1.1	21	2	71	.09	4	.6	1.0	15	SF2	
		30	028	41.26	19	23.43	155	16.82	2.76	1.2	1.4	17	4	104	.08	0	.3	.2	11	SSC	
		30	1	2 16.47	19	23.49	155	17.04	2.70	.8	.8	13	4	102	.05	0	.3	.3	8	SSC	
		30	136	12.42	19	23.33	155	16.90	2.99	1.6	2.0	18	4	55	.07	0	.3	.3	13	SSC	
		30	152	50.49	19	23.14	155	17.09	2.81	.9	.9	12	4	121	.08	1	.4	.3	7	SSC	
		30	257	38.42	19	16.66	155	22.81	5.95	.8	.9	12	1	120	.10	5	.6	2.2	6	SWR	
		30	312	51.60	19	19.65	155	7.15	7.27	1.3	1.1	22	2	113	.12	4	.7	1.5	16	SF4	
		30	417	7.10	19	17.87	155	14.51	7.14	1.0	1.1	17	3	142	.07	2	.7	1.2	11	SF2	
		30	434	57.09	19	23.77	155	15.09	2.86	.7	.5	11	4	96	.05	2	.4	.7	6	SEC	
		30	444	56.45	19	23.19	155	14.86	3.14	.7	.8	9	2	124	.03	2	.4	1.1	6	SEC	
		30	451	17.92	19	22.95	155	17.18	2.27	.9	.6	12	4	174	.04	1	.4	.3	8	SSC	
		30	5	7 45.73	19	27.42	154	53.54	5.40	2.2	1.9	28	1	140	.11	3	.5	.8	22	LER	
		30	643	8.50	19	24.88	155	36.04	.08	3.0	3.0	34	3	51	.11	4	.3	.5	21	MLO	
		30	646	27.65	19	24.52	155	35.41	1.02	2.4	1.9	18	0	83	.10	14	.5	16.8	8	MLO	*
		30	731	31.95	19	23.81	155	15.13	2.48	.8	.8	11	4	99	.04	2	.3	.7	9	SEC	
		30	1116	26.79	19	20.12	155	12.01	8.64	1.7	1.3	17	4	79	.07	5	.6	1.0	13	SF3	
		30	1344	55.37	19	23.95	155	16.05	.04	.9	.8	13	4	109	.19	1	.2	.4	10	SEC	
		30	1346	36.56	19	23.62	155	16.79	3.61	1.3	1.3	18	6	56	.08	1	.3	.3	13	SSC	
		30	1356	28.92	19	20.32	155	8.55	7.76		1.0	11	0	75	.06	4	.7	1.4	10	SF4	
		30	1433	53.96	19	23.77	155	15.08	2.90	1.3	1.4	13	6	93	.06	2	.3	.6	8	SEC	
		30	1536	2.23	19	13.08	155	16.00	45.93	1.7	1.4	16	2	278	.12	9	3.5	2.6	13	DEP	L
		30	1544	49.33	19	23.86	155	15.09	2.52		.8	9	1	101	.06	2	.4	.7	5	SEC	
		30	1642	26.65	19	19.25	155	9.15	7.40	1.9	1.8	35	5	93	.11	4	.4	.7	30	SF3	
		30	1714	49.32	19	21.38	155	14.53	25.03	1.6	1.1	17	3	132	.04	3	1.6	1.0	15	DEP	
		30	1751	51.45	19	23.27	155	14.91	2.92	1.1	.8	13	4	118	.07	2	.3	.6	6	SEC	
		30	1828	29.32	19	28.91	154	52.03	2.69		1.2	10	0	101	.07	3	.7	1.2	5	SLE	
		30	1845	30.57	19	22.95	155	17.06	8.52		.9	8	1	174	.14	1	1.9	2.5	5	INT	
		30	1925	36.60	19	22.92	155	17.05	2.63	1.8	1.8	20	4	72	.06	1	.2	.3	12	SSC	
		30	2030	20.81	19	20.79	155	12.72	9.01	2.5	2.7	40	5	64	.12	3	.4	.5	28	SF2	
		30	2036	32.38	19	25.90	155	28.34	8.56	1.6	1.1	30	6	60	.10	6	.4	.9	26	KAO	
		30	2051	29.57	19	23.08	155	14.87	3.99	1.2	1.4	17	5	85	.10	2	.4	.6	12	SEC	
		30	2125	8.76	19	23.40	155	16.99	3.35	1.8	2.2	24	5	46	.07	0	.3	.2	21	SSC	
		30	2143	7.72	19	22.08	155	15.78	6.53	1.6	1.3	13	3	124	.13	1	.6	1.1	10	INT	
		30	2148	56.83	19	23.77	155	15.09	2.62	1.0	1.0	14	6	95	.07	2	.3	.5	11	SEC	
		30	2158	.45	19	22.82	155	17.18	2.82	1.0	1.0	17	7	92	.07	1	.3	.3	12	SSC	
		30	2241	46.66	19	23.17	155	14.78	3.43	1.0	.8	15	6	106	.06	2	.3	.5	12	SEC	
		30	2357	35.66	19	23.48	155	14.95	3.24	1.0	.8	13	6	104	.06	3	.4	.8	9	SEC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	OCT	1	0	9 53.40	19	23.31	155	16.99	2.84	2.4	2.8	26	8	46	.09	0	.2	.2	22	SSC	
		1	035	20.88	19	23.52	155	17.09	2.59	1.0	1.0	16	6	107	.07	0	.3	.3	11	SSC	
		1	131	29.62	19	23.01	155	15.01	3.31	1.2	1.2	17	5	113	.08	2	.3	.3	13	SEC	
		1	140	56.56	19	22.15	155	15.16	5.73	1.3	1.1	12	4	137	.12	1	.8	1.3	8	INT	
		1	234	57.88	19	19.37	155	11.63	4.89	1.4	.9	17	2	173	.13	6	.8	3.6	15	SSF	*
		1	237	2.13	19	23.31	155	16.75	3.10	2.5	2.9	29	6	45	.09	0	.3	.2	23	SSC	
		1	240	7.22	19	19.41	155	13.89	7.70	1.3	.8	18	3	83	.07	4	.5	1.0	14	SF2	
		1	3	6 4.94	19	18.08	155	12.91	9.21	1.0	.7	10	1	234	.07	8	1.5	2.2	9	SF2	
		1	912	11.75	19	21.92	155	19.23	31.64	2.2	1.9	38	1	40	.10	3	.6	1.1	25	DEP	
		1	943	46.49	19	29.62	155	36.56	3.68	2.2	1.8	8	0	204	.13	1	1.4	.6	4	MLO	
		1	11	0 53.91	19	19.95	155	12.68	7.19	1.6	1.5	25	2	75	.09	5	.5	.9	17	SF2	
		1	1118	24.02	19	18.25	155	29.86	6.41	2.4	1.9	36	2	42	.14	6	.4	1.2	28	LSW	
		1	1143	5.83	19	21.86	155	4.35	6.03	2.4	2.2	35	2	80	.12	4	.5	1.2	21	SFS	
		1	1146	11.96	19	23.31	155	14.92	3.06	1.1	1.2	12	5	106	.06	2	.4	.7	7	SEC	
		1	1215	15.60	19	19.66	155	11.07	11.06	1.7	.9	17	1	196	.06	5	1.3	2.1	12	SF3	
		1	1312	31.36	19	19.57	155	15.06	7.27	1.6	1.5	27	1	90	.13	4	.5	.9	20	SF1	
		1	1343	52.99	19	19.56	155	15.11	6.67	1.3	1.3	24	2	91	.08	4	.5	1.0	15	SF1	
		1	1517	52.61	19	23.25	155	14.22	6.45		1.1	12	2	123	.14	2	1.2	1.9	12	INT	
		1	1542	47.66	19	18.67	155	13.64	7.35	1.6	1.5	21	2	127	.08	3	.6	1.1	17	SF2	
		1	1712	50.65	19	23.06	155	14.80	2.92	2.4	2.5	34	5	48	.10	2	.3	.3	21	SEC	
		1	1851	52.24	20	19.31	155	25.89	2.80		1.8	11	0	302	.07	49	9.0	11.7	5	KEA	*
		1	1912	1.03	19	24.55	155	28.83	9.61	2.5	2.1	40	3	49	.12	4	.3	.6	32	KAO	
		1	20	5 5.35	19	22.42	154	58.08	4.21	1.6	1.2	18	3	190	.11	5	.7	1.7	15	SLE	
		1	2010	39.08	19	23.04	155	14.87	4.15	1.0	.8	14	5	112	.09	2	.4	.8	11	SEC	
		1	2025	34.75	19	23.32	155	14.91	3.31	1.9	2.1	24	6	82	.08	2	.2	.3	19	SEC	
		1	21	4 57.61	19	25.17	155	37.65	2.34	3.0	3.1	41	5	93	.12	5	.4	.9	36	MLO	
		1	2325	9.24	19	23.19	155	14.79	3.19	1.4	1.6	19	6	106	.11	2	.3	.4	15	SEC	
		2	147	57.10	19	18.45	155	14.98	8.23	1.2	.9	18	3	129	.05	4	.5	1.1	15	SF1	
		2	3	1 23.94	19	23.25	155	15.07	3.09	1.2	.8	19	7	105	.11	2	.3	.4	14	SEC	
		2	312	58.91	19	20.51	155	12.50	9.14	1.3	.6	19	2	72	.09	4	.7	1.1	17	SF2	
		2	328	31.90	19	19.54	155	12.48	7.24	1.3	.9	20	3	84	.08	5	.5	1.2	18	SF2	
		2	4	8 17.41	19	23.45	155	15.00	2.68	1.0	.8	15	7	101	.06	3	.3	.5	10	SEC	
		2	437	59.29	19	18.57	155	14.53	9.92	1.3	1.1	18	2	116	.09	3	.7	1.3	14	SF1	
		2	5	9 34.03	19	23.20	155	14.81	3.07	1.0	.8	14	6	110	.04	2	.4	.6	10	SEC	
		2	528	6.77	19	20.71	155	10.71	9.37	2.7	2.8	46	6	74	.12	3	.4	.5	33	SF3	
		2	529	47.63	19	22.82	155	14.82	3.48	1.2	1.6	17	4	118	.06	2	.3	.4	12	SEC	
		2	537	45.29	19	20.04	155	10.28	8.95	1.6	.9	21	5	109	.09	4	.5	.9	18	SF3	
		2	539	37.30	19	23.25	155	14.79	2.57	.9	.8	12	5	120	.07	3	.3	.8	9	SEC	
		2	749	28.27	19	18.79	155	13.46	7.02	1.3	.9	18	3	82	.06	3	.5	1.2	17	SF2	
		2	9	9 10.79	19	17.32	155	20.66	4.61	1.2	1.1	25	4	130	.11	4	.4	1.2	23	SWR	
		2	913	10.09	19	30.14	155	23.25	13.32	1.8	1.4	27	6	47	.10	1	.5	.7	20	DML	
		2	952	46.06	19	22.62	155	27.77	8.61	1.4	1.2	19	4	170	.11	0	.7	.9	14	KAO	
		2	1033	50.66	19	23.26	155	52.34	6.29	1.9	1.3	27	4	158	.18	12	.7	1.6	24	KON	
		2	11	3 17.40	19	23.78	155	15.14	3.07	1.1	1.2	12	5	94	.03	2	.4	.6	8	SEC	
		2	1332	40.97	19	23.63	155	15.11	2.84	1.7	1.7	16	4	86	.09	2	.4	.5	9	SEC	
		2	1834	38.93	19	23.08	155	14.70	3.15	1.1	1.2	13	3	90	.07	2	.5	.5	7	SEC	
		2	1856	28.25	19	23.17	155	14.74	2.90	1.8	1.8	20	5	89	.10	3	.3	.3	12	SEC	
		2	1928	17.52	19	24.10	155	15.71	3.09		.8	9	2	122	.04	2	.5	.6	7	SEC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	OCT	2	2010	31.54	19	22.99	155	14.89	2.97	1.6	2.0	26	4	63	.09	2	.3	.3	13	SEC	
		2	2028	24.36	19	23.15	155	14.76	3.77	1.5	1.7	18	5	88	.10	2	.4	.5	9	SEC	
		2	2031	38.98	18	55.24	155	17.73	28.76	2.6	2.4	16	1	270	.21	32	4.1	7.0	2	LOI	
		2	2038	21.63	19	23.58	155	15.00	3.10	1.4	1.2	14	4	95	.05	2	.3	.5	8	SEC	
		2	2047	28.99	19	23.40	155	14.89	2.54	.7	.8	12	4	99	.04	3	.3	.6	8	SEC	
		2	2210	51.86	19	23.69	155	15.01	3.07	.9	.8	11	5	93	.04	2	.4	1.0	8	SEC	
		2	2246	39.84	19	17.73	155	14.27	6.05	1.1	1.1	20	1	143	.09	2	.5	1.1	8	SF2	
		2	23	3 48.74	19	19.44	155	15.51	7.33	1.9	2.0	32	2	89	.10	6	.4	.7	23	SF1	
		2	2343	6.82	19	20.77	155	7.99	8.34	1.5	1.1	25	4	79	.08	4	.4	1.1	16	SF4	
		3	011	23.73	19	18.88	155	13.81	4.63	1.4	1.3	19	4	76	.12	3	.4	1.4	12	SSF	
		3	1	6 2.08	19	18.32	155	14.14	3.86	1.1	.8	18	1	94	.09	3	.5	1.1	9	SSF	
		3	1	9 11.85	19	23.96	155	15.98	2.26	1.2	1.6	19	3	110	.12	2	.3	.3	10	SEC	
		3	110	27.21	19	19.19	155	9.81	5.28	1.4	.9	23	2	109	.11	5	.6	1.9	14	SF3	
		3	329	5.14	18	53.44	155	15.86	17.75	2.8	3.1	28	0	260	.09	37	3.0	22.8	10	LOI	*
		3	343	48.59	19	22.99	155	14.94	2.92	1.9	2.1	27	5	65	.11	2	.3	.4	15	SEC	
		3	347	24.88	19	22.29	155	15.12	5.94	.9	.8	9	2	145	.11	1	.8	1.4	5	INT	
		3	427	.40	19	22.99	155	17.03	2.31	.9	1.0	14	3	126	.04	1	.3	.3	8	SSC	
		3	755	31.55	19	24.57	155	25.75	9.24	1.3	1.2	18	1	51	.09	2	.5	.9	10	KAO	
		3	834	16.63	19	23.92	155	15.62	3.24	1.9	2.2	12	1	108	.07	3	.4	.5	10	SEC	F
		3	1110	33.02	19	21.40	155	30.11	9.82	2.4	2.4	33	1	45	.08	5	.3	.8	25	KAO	
		3	1441	10.72	19	19.68	155	12.05	7.76	1.5	1.1	28	3	86	.09	6	.5	.8	13	SF3	
		3	2045	9.76	19	20.26	155	13.24	7.03	1.4	1.5	25	2	64	.12	4	.5	1.0	16	SF2	
		3	2137	12.77	19	17.91	155	23.22	2.67	1.7	1.6	17	2	98	.07	4	.3	.7	12	SWR	
		3	2256	1.85	19	22.84	155	14.73	3.07	1.4	1.9	17	4	87	.10	2	.4	.4	12	SEC	
		4	010	35.07	19	19.71	155	18.84	10.69	2.0	2.1	34	2	56	.10	3	.4	.5	23	SWR	
		4	238	20.02	19	22.94	155	16.74	10.66		.9	11	0	144	.08	1	1.4	1.3	1	INT	L
		4	341	50.39	19	23.96	155	16.74	9.41	1.3	.6	15	1	86	.09	0	.9	1.2	6	INT	L
		4	417	33.84	19	22.10	155	15.04	6.93	1.3	1.1	8	1	155	.09	2	1.0	2.9	7	INT	
		4	440	50.65	19	20.96	155	14.36	26.35	1.7	1.5	28	1	153	.08	4	.7	.8	23	DEP	
		4	8	7 24.30	19	18.19	155	13.84	2.45	1.3	1.2	19	2	234	.07	8	1.0	1.7	11	SSF	
		4	957	9.10	19	43.93	155	59.88	9.67	2.8	3.0	16	0	299	.12	17	4.8	.9	14	HUA	
		4	12	6 2.54	19	23.27	155	14.87	3.55	1.1	1.4	16	6	103	.06	2	.4	.5	13	SEC	
		4	1534	28.91	19	21.68	155	24.80	9.63	1.5	1.2	27	6	52	.10	4	.4	.8	23	SWR	
		4	16	9 22.82	19	23.41	155	14.95	3.34	1.6	1.7	21	7	81	.10	3	.3	.4	16	SEC	
		4	1617	39.92	19	23.14	155	14.96	4.04	1.1	1.2	15	6	108	.06	2	.5	.6	12	SEC	
		4	19	1 44.20	19	23.42	155	14.89	2.42	.9	1.0	14	6	101	.09	3	.3	.6	11	SEC	
		4	2048	2.25	19	20.40	155	13.33	8.61	1.7	1.8	33	3	63	.11	4	.5	.7	23	SF2	
		5	058	44.71	19	22.23	155	15.33	5.43	1.3	1.1	13	4	132	.13	1	.7	1.2	9	INT	
		5	150	.67	19	23.21	155	14.76	3.20	1.2	1.4	19	6	105	.08	3	.3	.4	13	SEC	
		5	153	6.10	19	23.24	155	14.75	3.58	1.0	1.0	15	5	104	.08	3	.4	.5	12	SEC	
		5	2	6 14.24	19	23.32	155	14.84	3.51	1.1	1.6	16	5	102	.08	3	.3	.5	12	SEC	
		5	3	7 44.96	19	20.14	155	13.20	9.24	1.4	1.1	19	2	66	.08	5	.6	1.3	17	SF2	
		5	4	5 16.32	19	23.68	155	15.08	3.32	2.3	2.5	24	4	76	.07	2	.3	.3	21	SEC	
		5	4	9 9.95	19	23.86	155	15.23	3.21	1.0	1.2	15	6	104	.06	2	.4	.5	11	SEC	
		5	412	36.03	19	25.93	155	17.34	3.29	1.2	1.1	11	3	248	.11	1	.9	.4	8	SNC	
		5	421	5.45	19	23.21	155	14.70	3.25	1.4	1.7	22	6	91	.07	3	.3	.3	15	SEC	
		5	436	7.70	19	23.38	155	14.83	3.08	1.0	1.0	13	5	112	.06	3	.4	.6	8	SEC	
		5	545	16.44	19	18.90	155	11.43	7.60	1.8	1.8	22	3	111	.08	5	.5	.9	18	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	OCT	5	546	17.43	19	23.42	155	14.90	3.22	2.1	2.3	27	7	74	.08	3	.2	.3	21	SEC	
		5	621	42.79	19	23.12	155	14.96	3.34	1.1	1.0	15	5	109	.07	2	.3	.5	12	SEC	
		5	622	13.24	19	23.31	155	14.80	2.61	1.1	1.0	15	5	103	.08	3	.3	.6	10	SEC	
		5	727	25.41	19	23.61	155	15.04	3.78	1.1	1.2	14	4	93	.06	2	.4	.6	10	SEC	
		5	732	27.37	19	22.97	155	14.74	4.05	1.1	1.0	12	2	115	.04	2	.4	.6	9	SEC	
		5	856	27.34	19	23.01	155	14.88	3.52	1.1	1.0	13	4	113	.06	2	.4	.5	8	SEC	
		5	9	4 43.92	19	23.11	155	14.74	3.36	1.2	1.7	19	4	88	.06	2	.3	.3	9	SEC	
		5	918	32.81	19	20.65	155	10.85	8.78	1.7	2.1	31	2	75	.09	3	.4	.6	18	SF3	
		5	920	46.45	19	23.14	155	14.86	3.03	2.8	3.1	38	2	48	.11	2	.3	.4	20	SEC	F
		5	939	9.34	19	21.92	155	14.92	5.65	1.3	1.3	10	2	165	.11	2	.8	1.4	7	SF1	
		5	1026	57.91	19	23.04	155	14.79	3.26	1.6	2.2	24	5	64	.06	2	.3	.3	12	SEC	
		5	1032	57.81	19	23.18	155	14.93	3.31	1.3	1.7	17	4	82	.07	2	.4	.4	9	SEC	
		5	1139	36.83	18	54.48	155	15.61	16.71	3.9	4.1	37	1	247	.08	35	1.7	36.0	25	LOI	*
		5	1210	48.39	19	19.15	155	14.92	7.33	1.6	1.5	25	2	95	.11	5	.5	1.0	19	SF1	
		5	1518	45.15	19	20.38	155	6.56	8.21	2.2	2.4	32	0	107	.11	5	.5	.6	19	SF4	
		5	1541	47.67	19	16.94	155	21.36	6.25	1.4	1.3	24	4	131	.10	5	.5	1.4	20	SWR	
		5	1624	3.41	19	23.78	155	15.22	2.43	.9		11	3	99	.05	2	.3	.5	8	SEC	
		5	1930	30.43	19	29.84	155	4.12	45.66	2.4	2.5	42	0	49	.11	1	.9	2.2	34	DEP	
		5	2038	27.78	19	19.07	155	13.27	7.41	1.3	1.3	19	1	78	.08	4	.6	1.4	14	SF2	
		5	2137	46.09	19	23.03	155	14.98	2.79	1.8	2.0	25	6	65	.12	2	.3	.3	17	SEC	
		6	211	34.65	19	22.88	155	14.55	3.33	1.6	2.0	21	4	94	.07	3	.4	.3	13	SEC	
		6	518	11.33	19	23.16	155	14.89	3.20	1.6	1.9	16	4	84	.10	2	.4	.5	9	SEC	
		6	656	9.21	19	22.60	155	16.44	7.69		1.1	10	3	129	.15	1	1.4	1.9	7	INT	
		6	728	37.64	19	20.69	155	12.07	9.38	1.9	1.3	23	1	70	.08	4	.6	.9	17	SF3	
		6	751	45.78	19	23.23	155	17.12	2.40	.9		9	3	156	.03	0	.5	.3	4	SSC	
		6	752	7.30	19	23.10	155	17.13	2.33	.8	1.0	9	3	163	.04	1	.4	.4	7	SSC	
		6	838	27.17	19	18.80	155	13.81	7.79	1.4	1.1	20	3	91	.07	3	.5	1.0	16	SF2	
		6	857	59.13	19	23.30	155	14.84	3.39	1.1	1.2	16	6	102	.06	3	.3	.5	12	SEC	
		6	1024	29.81	19	23.24	155	14.92	3.22	2.6	3.0	32	2	47	.11	2	.3	.4	22	SEC	F
		6	1135	47.36	19	20.13	155	7.22	8.35	2.0	1.7	35	5	102	.11	5	.4	.6	28	SF4	
		6	1241	48.55	19	23.45	155	14.97	2.29	.9	1.0	15	6	100	.08	3	.3	.5	12	SEC	
		6	13	1 2.38	19	22.92	155	17.14	2.71	1.6	1.6	24	9	72	.07	1	.2	.3	19	SSC	
		6	13	7 27.54	19	17.68	155	20.70	7.21	1.3	1.1	25	5	125	.09	4	.5	1.0	20	SWR	
		6	1312	58.09	19	23.24	155	14.91	3.40	1.2	1.6	19	7	105	.06	2	.3	.4	15	SEC	
		6	1735	28.62	19	26.04	155	37.65	3.14	3.4	3.7	35	1	94	.13	3	.4	.9	28	MLO	
		6	1741	21.68	19	18.92	155	16.05	8.18	1.4	1.3	21	4	122	.05	3	.4	.9	19	SF1	
		6	1825	23.91	19	18.97	155	15.75	7.62	1.8	1.3	23	4	100	.10	4	.5	.9	19	SF1	
		6	1858	26.60	19	16.00	155	21.69	6.74	1.2	1.1	19	2	167	.08	5	.6	1.4	17	SWR	
		6	2148	47.74	19	22.06	155	25.21	9.36	1.7	1.4	27	3	43	.12	4	.5	1.0	22	KAO	
		6	2341	53.86	19	20.68	155	13.31	8.78	1.8	2.1	35	1	60	.09	4	.4	.6	26	SF2	
		6	2351	29.43	19	22.82	155	12.26	2.35	.7	1.0	7	1	154	.04	2	.6	.4	4	SER	
		7	259	58.38	19	23.17	155	15.23	3.69	1.1	1.0	16	5	107	.09	2	.3	.5	12	SEC	
		7	438	42.61	19	19.67	155	7.89	8.24	1.4	1.1	20	3	96	.07	4	.6	.9	16	SF4	
		7	444	1.43	19	20.41	155	10.28	9.05	1.3	1.1	20	3	78	.08	3	.6	.9	13	SF3	
		7	957	55.10	19	23.33	155	14.96	2.03	1.0	1.2	17	7	102	.09	2	.3	.4	12	SEC	
		7	12	9 54.36	19	20.72	155	12.84	8.95	1.4	1.1	18	3	70	.06	4	.6	1.0	16	SF2	
		7	1330	32.53	19	19.73	155	7.99	7.59	1.7	1.1	15	3	124	.06	4	.6	.9	11	SF4	
		7	1725	18.51	19	24.47	155	26.13	9.37	1.5	1.2	30	5	49	.10	2	.4	.7	22	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	OCT	7	1727	3.41	19	19.47	155	10.56	8.66	1.6	1.3	24	4	99	.09	5	.6	.9	21	SF3
		7	1826	36.03	19	30.72	155	11.80	10.26	1.6	1.0	34	8	53	.10	12	.4	1.4	22	GLN
		7	20 6	48.03	19	19.82	155	11.35	8.59	1.6	.9	23	4	89	.06	5	.5	.9	20	SF3
		7	2015	51.58	19	23.32	155	14.82	4.56	1.2	1.1	17	6	101	.11	3	.5	.8	12	SEC
		7	2049	36.69	19	22.94	155	14.32	1.44	1.0	1.4	16	3	80	.10	2	.3	.4	12	SEC
		7	2211	54.59	19	27.07	155	28.54	10.55	1.8	1.0	23	4	84	.07	7	.4	1.0	19	KAO
		7	2242	23.41	19	23.13	155	14.80	3.33	.9	.5	14	6	109	.05	2	.3	.6	11	SEC
		7	2346	33.27	19	23.56	155	15.05	2.97	.9	.5	15	6	97	.05	2	.3	.5	10	SEC
		8	053	44.80	19	23.18	155	14.77	2.84	.8	.5	12	5	111	.03	2	.3	.7	9	SEC
		8	120	15.02	19	23.39	155	14.92	3.06	.7	.4	13	6	103	.04	3	.3	.7	10	SEC
		8	120	33.06	19	23.38	155	14.81	3.24	.7	.5	13	6	102	.05	3	.3	.7	10	SEC
		8	121	9.04	19	23.25	155	14.82	3.34	1.2	1.2	14	2	104	.08	2	.4	.6	11	SEC
		8	121	44.77	19	23.36	155	14.93	3.73	1.0	1.0	16	6	100	.05	2	.3	.5	12	SEC
		8	135	53.41	19	23.02	155	14.69	4.05	1.5	1.7	22	6	113	.08	2	.4	.5	17	SEC
		8	147	44.61	19	19.24	155	13.68	7.58	1.6	1.5	33	3	65	.11	4	.5	.9	20	SF2
		8	151	31.60	19	23.08	155	14.70	3.08	1.2	1.4	19	3	110	.08	2	.4	.4	9	SEC
		8	553	33.27	19	23.42	155	15.13	3.05	1.6	1.7	18	4	80	.08	2	.3	.4	10	SEC
		8	554	22.54	19	10.34	155	33.43	8.28	2.6	2.4	34	2	136	.17	11	.6	1.0	19	LSW
		8	632	55.88	19	23.57	155	16.98	2.81	1.7	1.7	24	3	48	.09	0	.3	.3	15	SSC
		8	9 3	34.88	19	23.59	155	15.02	3.27	1.3	1.4	13	2	91	.06	2	.4	.5	12	SEC
		8	1029	48.21	19	17.90	155	20.96	6.50	1.7	1.5	24	2	122	.09	4	.5	1.2	18	SWR
		8	1332	13.94	19	23.36	155	14.87	3.25	2.1	2.5	19	2	101	.10	3	.4	.5	15	SEC
		8	1347	20.83	19	23.02	155	14.76	3.33	1.8		22	2	63	.12	2	.4	.5	19	SEC
		8	1347	47.36	19	23.13	155	14.84	3.28	1.9	2.3	19	2	109	.06	2	.3	.3	14	SEC
		8	1349	41.78	19	23.21	155	14.86	3.29	1.5	1.6	15	4	109	.06	2	.4	.5	8	SEC
		8	1743	56.66	19	23.35	155	15.02	2.71	1.0	1.0	12	3	104	.04	2	.4	.5	9	SEC
		8	1952	33.97	19	23.42	155	14.89	3.34	2.3	2.7	36	4	45	.11	3	.3	.4	24	SEC
		8	1955	27.16	19	23.43	155	14.84	3.25	1.4	1.6	17	4	73	.09	3	.3	.5	10	SEC
		8	2054	9.28	19	20.74	155	10.93	7.58	1.9	1.9	39	4	73	.13	3	.5	.8	28	SF3
		8	2127	45.08	19	23.12	155	14.73	2.93	1.1	1.0	14	4	113	.06	2	.3	.5	9	SEC
		9	046	57.13	19	21.30	155	2.93	6.60	1.9	1.5	25	1	128	.14	3	.5	.8	12	SF5
		9	445	15.62	19	29.09	155	42.34	8.08	2.4	1.8	22	1	69	.11	7	.5	1.4	15	MLO
		9	1038	44.74	19	18.44	155	15.03	6.77	1.5	1.5	27	2	112	.10	4	.5	.9	20	SF1
		9	1254	47.43	19	20.34	155	12.92	7.82	1.6	1.3	29	3	67	.08	4	.4	.7	25	SF2
		9	13 6	22.62	19	6.56	155	28.67	29.67	2.2	1.7	42	8	174	.09	6	.6	.8	37	DLS
		9	14 7	31.32	19	16.95	155	20.96	6.50	1.2	1.1	19	3	163	.08	5	.5	1.1	17	SWR
		9	1753	24.87	19	23.20	155	14.79	3.29	2.3	2.7	31	4	61	.10	2	.3	.4	23	SEC
		9	2351	45.84	19	20.68	155	11.28	9.25	2.0	2.0	34	5	74	.08	4	.4	.6	30	SF3
		10	156	51.17	19	25.01	155	24.39	8.32	1.7	1.3	27	2	45	.11	1	.4	1.0	21	KAO
		10	253	45.17	19	32.91	155	23.05	13.63	1.5	1.4	26	3	92	.08	6	.6	.8	23	DML
		10	1054	24.96	19	23.09	155	14.72	3.23	2.6	2.9	36	2	48	.08	2	.3	.3	23	SEC
		10	1120	5.15	19	23.31	155	14.74	3.40	1.0	1.2	17	6	102	.06	3	.3	.4	13	SEC
		10	1126	2.79	19	19.54	155	9.55	9.66	2.0	2.0	37	5	91	.12	5	.5	.7	30	SF3
		10	1210	49.87	19	24.26	155	16.12	3.15	.9	1.0	14	6	127	.07	1	.3	.4	11	SEC
		10	1228	50.63	19	23.39	155	15.08	3.11	1.1	1.6	18	6	100	.08	2	.3	.4	15	SEC
		10	1233	50.94	19	16.35	155	22.32	7.56	1.7	2.2	35	6	133	.13	5	.4	.9	26	SWR
		10	1558	5.20	19	17.36	155	12.73	6.81	1.5	1.1	18	2	197	.07	1	.7	1.1	16	SF2
		10	1634	59.09	19	23.45	155	14.49	1.94	1.1	1.4	17	6	95	.07	2	.3	.4	13	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	OCT	10	1717	26.12	19	21.67	155	25.01	10.22	1.9	1.9	41	8	41	.11	4	.3	.5	33	SWR
		10	2014	53.52	19	23.82	155	15.12	3.39	1.4	1.4	22	7	96	.05	2	.3	.3	17	SEC
		10	2151	23.27	19	22.87	155	17.19	2.10	1.2	1.4	19	7	74	.05	1	.2	.2	15	SSC
		11	019	26.51	19	21.66	155	13.39	2.94	1.3	1.2	19	4	98	.08	2	.3	.5	15	SER
		11	118	23.71	19	22.84	155	14.05	1.00	2.5	3.3	19	3	69	.10	2	.3	.4	9	SEC F
		11	233	17.94	20	27.07	155	39.81	28.62	2.7	2.6	24	2	302	.11	38	2.6	2.0	21	DIS
		11	3 8	54.65	19	23.21	155	14.94	3.28	1.1	1.0	16	6	106	.07	2	.3	.5	11	SEC
		11	350	49.92	19	23.26	155	14.96	3.91	1.5	1.6	21	7	105	.07	2	.3	.4	17	SEC
		11	425	50.41	19	23.30	155	14.68	3.24	1.1	.8	10	2	105	.06	3	.4	.7	9	SEC
		11	425	59.82	19	22.94	155	14.62	2.53	.9	1.0	9	2	121	.06	2	.4	.7	4	SEC
		11	430	37.74	19	25.00	155	24.97	7.19	2.1	2.1	42	4	27	.13	1	.4	.8	32	KAO
		11	714	30.80	19	23.47	155	14.88	3.36	2.1	2.6	30	4	69	.09	2	.3	.4	21	SEC
		11	752	22.00	19	23.46	155	15.05	3.29	1.0	1.0	7	0	98	.03	2	.5	.7	7	SEC
		11	819	49.34	19	23.21	155	14.96	2.94	1.9	1.8	26	4	70	.10	2	.3	.3	20	SEC
		11	821	59.68	19	23.23	155	15.02	2.34	.8	.5	13	5	108	.14	2	.4	.7	10	SEC
		11	856	8.34	19	23.74	155	15.24	2.54	1.5	1.8	18	2	95	.08	2	.4	.4	13	SEC
		11	857	41.67	19	23.29	155	14.91	2.02	1.0	1.0	10	0	103	.06	2	.3	.5	7	SEC
		11	859	53.48	19	23.23	155	15.10	3.31	3.1	3.2	41	1	47	.12	2	.3	.4	35	SEC F
		11	9 7	19.06	19	23.05	155	14.40	1.39	.7	.8	13	3	116	.07	2	.3	.5	6	SEC
		11	920	14.34	19	23.11	155	14.82	2.79	1.9	1.7	24	2	64	.10	2	.3	.4	18	SEC
		11	920	53.60	19	23.32	155	14.94	3.15	1.5	1.4	13	2	92	.06	2	.3	.3	7	SEC
		11	924	29.69	19	19.57	155	11.38	7.44	1.9	1.7	35	5	94	.10	5	.5	.8	25	SF3 F
		11	927	42.76	19	23.17	155	14.76	3.43	.7	.8	11	3	111	.05	2	.4	.8	7	SEC
		11	933	25.37	19	23.22	155	14.78	3.46	2.4	2.5	35	3	47	.09	3	.3	.4	27	SEC F
		11	958	2.78	19	23.24	155	14.91	2.99	.8	.8	11	3	108	.04	2	.4	.6	8	SEC
		11	1030	54.62	19	23.36	155	14.97	3.01	1.0	1.0	15	3	80	.05	2	.3	.4	8	SEC
		11	1036	17.61	19	23.27	155	14.78	2.95	.7	.8	10	2	108	.04	3	.4	.7	7	SEC
		11	1036	36.39	19	23.26	155	14.97	3.06	1.0	1.1	15	4	105	.06	2	.3	.4	11	SEC
		11	2011	23.96	19	20.17	155	12.72	8.72	1.6	1.1	21	2	77	.06	5	.6	.9	15	SF2
		12	2 6	12.17	19	18.35	155	15.96	9.18	2.4	2.2	41	2	135	.11	4	.5	.5	30	SF1
		12	3 2	41.01	19	17.20	155	48.64	9.90	1.9	1.3	28	3	140	.14	7	.7	.7	13	KON
		12	547	42.02	19	23.22	155	14.83	3.03	1.5	1.6	21	4	68	.08	2	.3	.4	15	SEC
		12	616	46.78	19	16.81	155	15.63	8.06	1.2	1.1	20	1	180	.07	4	.7	.9	13	SF1
		12	623	5.39	19	22.12	155	17.20	31.94	1.8	1.4	31	1	55	.11	2	.7	1.3	23	DEP
		12	653	.72	19	20.37	155	12.99	7.47	1.3	1.1	27	2	66	.09	4	.5	.8	18	SF2
		12	730	32.35	19	23.41	155	14.97	2.87	1.0	1.2	14	4	99	.04	3	.3	.4	10	SEC
		12	842	45.89	19	20.47	155	12.55	9.29		1.1	13	0	122	.05	4	.7	1.2	12	SF2
		12	1323	6.86	19	23.97	155	16.98	14.90	1.8	1.6	32	2	64	.11	1	.6	.5	27	DEP
		12	1434	24.11	19	23.06	155	14.37	1.42	1.3	2.0	13	3	137	.09	2	.4	.4	8	SEC
		12	1614	11.55	19	20.60	155	12.94	7.90	1.8	1.6	27	2	64	.10	4	.4	.8	21	SF2
		12	1827	25.54	19	23.23	155	14.93	3.29	1.1	1.4	17	4	69	.05	2	.4	.4	10	SEC
		12	1940	28.83	19	22.24	155	26.07	9.48	1.6	1.2	32	2	43	.11	3	.4	.7	24	KAO
		13	324	19.06	19	23.14	155	2.33	7.98	2.2	2.0	34	2	124	.14	4	.6	.7	19	SF5
		13	1032	37.89	19	22.32	155	49.16	9.34	2.5	1.6	21	1	117	.13	13	.6	1.1	11	KON
		13	1112	3.69	19	27.10	155	29.54	10.48	3.0	3.2	50	4	35	.10	8	.3	.5	37	KAO
		13	1248	7.89	19	23.12	155	14.73	2.95	1.2	1.2	16	3	109	.09	2	.4	.5	12	SEC
		13	1439	21.70	19	23.01	155	14.75	3.39	1.6	2.1	21	4	68	.08	2	.3	.4	13	SEC
		13	15 2	14.53	19	19.44	155	13.81	7.24	1.9	1.9	38	1	71	.13	5	.5	.8	25	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	OCT	13	1747	31.84	19	22.98	155	17.08	2.41	.9	.8	16	4	70	.11	1	.3	.3	10	SSC	
		13	1955	53.98	19	20.54	155	9.54	5.94	1.6	1.4	23	3	73	.11	3	.6	1.1	13	SF3	
		13	20 0	50.07	19	23.01	155	4.05	7.29	1.3	1.2	21	1	100	.12	3	.5	.8	14	SF5	
		13	2017	16.61	19	23.23	155	14.86	2.87	1.1	1.0	14	4	105	.08	2	.4	.5	10	SEC	
		13	2052	14.74	19	17.22	155	21.59	5.63	1.7	1.8	36	2	127	.13	5	.4	1.1	26	SWR	
		13	2054	44.64	19	30.59	154	52.53	38.18	3.3	3.2	47	3	149	.09	3	.9	1.4	41	LER	
		13	2145	5.34	19	19.56	155	9.13	8.62	1.6	1.5	27	4	86	.08	5	.6	.8	16	SF3	
		13	2313	26.33	19	22.94	155	14.23	1.86	1.1	1.3	11	3	133	.07	2	.4	.3	8	SEC	
		13	2314	55.97	19	22.98	155	14.27	1.76	.7	1.2	9	1	124	.08	3	.4	.8	5	SEC	
		14	330	57.35	19	19.04	155	13.67	8.80	1.7	2.1	30	0	84	.09	4	.4	.5	26	SF2	
		14	4 3	41.53	19	18.98	155	15.26	5.24	.9	1.1	18	0	103	.10	4	.6	1.7	14	SF1	
		14	456	45.99	19	24.13	155	26.48	8.00	1.7	1.2	30	3	45	.11	3	.4	.8	21	KAO	
		14	5 4	6.59	19	16.49	155	23.43	7.37	.8	1.3	13	1	125	.11	7	.7	2.4	10	SWR	
		14	5 6	56.76	19	15.51	155	23.00	6.97	1.9	1.4	23	1	159	.09	3	.5	1.3	15	SWR	
		14	527	37.68	19	22.17	155	13.30	3.57	2.1	2.6	28	3	49	.06	1	.3	.4	23	SER	
		14	544	29.19	19	16.07	155	23.13	5.08	1.8	1.9	30	3	123	.13	4	.4	1.2	21	SWR	
		14	615	37.29	19	23.57	155	14.96	2.75	.9	1.0	10	2	96	.04	2	.4	.7	8	SEC	
		14	1059	47.07	19	20.02	155	9.02	7.38	1.5	1.0	22	2	76	.09	4	.5	1.1	14	SF4	
		14	13 5	39.72	19	23.55	155	14.80	2.80	1.4	1.7	22	3	73	.10	2	.3	.3	12	SEC	
		14	1353	38.29	19	15.92	155	22.28	6.47	1.2	1.1	19	3	168	.06	4	.5	1.3	13	SWR	
		14	14 8	21.14	19	16.00	155	22.26	5.93	1.1	1.1	20	2	160	.09	4	.5	1.5	14	SWR	
		14	1414	24.52	19	22.82	155	14.29	1.74	.8	1.0	10	3	128	.09	2	.4	.5	7	SEC	
		14	1443	57.97	19	20.68	155	8.47	8.07	2.7	2.8	42	3	73	.12	4	.4	.6	29	SF4	F
		14	1535	18.40	19	20.39	155	11.70	8.95	1.8	1.8	36	1	77	.09	4	.4	.6	24	SF3	
		14	1537	32.23	19	24.74	155	26.00	10.36	2.0	1.8	37	3	50	.12	2	.4	.6	25	KAO	
		14	1830	26.54	19	26.03	155	25.86	10.25	3.5	3.1	47	4	36	.14	2	.4	.5	39	KAO	
		14	2117	48.27	19	17.48	155	22.45	5.70	.9	1.1	23	2	114	.13	5	.4	1.6	9	SWR	
		14	23 4	39.58	19	20.50	155	11.53	9.38	2.6	2.6	41	2	76	.12	4	.4	.6	31	SF3	
		15	037	44.30	19	22.07	155	5.82	6.57	1.8	1.5	28	2	76	.12	2	.5	.9	21	SF4	
		15	3 2	55.23	19	20.86	155	8.48	7.49	2.4	2.4	37	2	163	.12	3	.5	.6	24	SF4	
		15	749	49.65	19	20.34	155	12.58	8.38	1.8	1.6	31	3	71	.10	4	.5	.8	17	SF2	
		15	842	9.81	19	25.33	155	25.18	8.58	1.8	.8	17	0	64	.09	7	.6	1.7	16	KAO	
		15	1030	22.37	19	21.79	155	6.68	8.12	1.6	1.3	11	0	79	.04	2	.6	1.3	11	SF4	
		15	1049	24.35	19	21.82	155	12.53	2.67	1.4	1.2	7	0	166	.06	2	1.1	.5	6	SER	
		15	1319	51.75	19	23.13	155	14.78	3.06	1.1	1.0	10	0	109	.03	2	.4	.7	10	SEC	
		15	1855	40.29	19	22.96	155	15.16	1.56	1.8	2.6	21	1	65	.06	2	.2	.3	20	SEC	
		15	21 8	54.84	19	23.01	155	14.86	2.93	1.6	2.2	22	1	64	.07	2	.3	.4	21	SEC	
		15	2154	58.31	19	20.66	155	9.78	7.18		1.1	24	0	72	.08	3	.4	.7	24	SF3	
		16	153	8.42	19	19.80	155	7.76	8.18	2.0	2.1	27	0	97	.06	5	.4	.7	26	SF4	
		16	638	36.84	19	17.65	155	12.92	6.41	2.4	2.4	38	1	127	.12	1	.4	.8	37	SF2	
		16	911	26.13	19	18.42	155	15.36	8.08	1.9	1.6	29	0	117	.09	4	.4	.7	28	SF1	
		16	1130	23.56	19	17.72	155	13.20	5.52	1.7	1.8	24	0	106	.09	1	.4	.9	24	SF2	
		16	1246	40.99	19	20.28	155	11.81	6.75	1.9	1.3	20	0	144	.07	5	.5	1.0	20	SF3	
		16	2149	15.01	19	33.09	155	37.14	7.06	2.3	.7	17	1	168	.11	7	.7	1.4	16	MLO	
		16	2310	22.89	19	17.85	155	23.18	3.64	1.7	1.5	16	0	105	.04	4	.4	.9	16	SWR	
		17	248	13.29	19	22.97	155	14.51	2.55	1.1	1.4	14	1	114	.11	3	.4	.5	13	SEC	
		17	447	40.63	19	23.02	155	14.68	2.82	1.6	2.6	17	1	65	.05	2	.4	.6	16	SEC	
		17	5 9	34.15	19	12.92	155	37.65	8.29	3.1	3.1	35	1	202	.16	4	.9	.7	34	LSW	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	OCT	17	546	30.56	19	21.63	155	12.72	2.61	1.4	1.6	14	0	109	.07	2	.4	.5	14	SER	
		17	1037	34.61	19	10.77	155	30.07	6.17	2.6	3.0	24	1	99	.14	5	.5	1.1	19	LSW	
		17	1249	58.62	19	23.22	155	14.83	3.18	1.1		8	0	110	.03	2	.5	.9	8	SEC	
		17	1250	28.76	19	22.97	155	14.89	2.71	2.4	2.7	22	2	66	.09	3	.3	.6	19	SEC	
		17	1548	15.98	19	22.93	155	14.64	3.45	2.4	2.7	28	1	68	.08	2	.3	.4	27	SEC	
		17	1656	50.43	19	23.24	155	14.92	2.87	1.1	1.2	6	0	119	.01	2	.5	.9	6	SEC	
		17	18 4	.55	19	23.17	155	14.78	2.23	1.1	1.0	9	0	107	.06	2	.4	.7	9	SEC	
		17	1930	38.72	19	23.31	155	14.84	3.18	1.5	1.7	13	1	102	.07	3	.4	.6	12	SEC	
		17	1931	26.97	19	23.10	155	14.70	3.10	1.2	1.4	10	0	71	.11	2	.6	.7	10	SEC	
		18	026	35.43	19	20.35	155	15.90	6.55	1.5	1.1	14	0	83	.09	4	.5	1.6	14	SF1	
		18	115	1.81	19	18.41	155	13.17	9.39	2.4	2.6	37	0	131	.07	8	.5	.5	35	SF2	
		18	129	54.96	19	21.40	155	3.04	7.98	2.8	3.0	41	0	115	.10	3	.5	.4	41	SF5	
		18	217	37.26	19	22.87	155	14.46	1.47	1.1	2.0	10	0	126	.04	2	.5	.4	10	SEC	
		18	315	20.59	19	23.00	155	14.21	2.35	1.2	1.0	9	0	111	.06	2	.4	.6	9	SEC	
		18	350	49.81	19	23.01	155	14.32	2.65	2.0	2.3	22	1	64	.05	2	.3	.3	20	SEC	
		18	559	40.03	19	23.35	155	14.94	3.00	1.2	1.0	11	0	89	.03	2	.4	.6	11	SEC	
		18	718	16.57	19	22.03	155	2.89	7.52	2.0	1.4	30	0	127	.11	4	.5	.5	30	SF5	
		18	821	43.83	19	23.02	155	17.07	2.40	1.0	1.2	12	1	89	.03	1	.3	.3	10	SSC	
		18	1138	32.90	19	18.75	155	15.15	7.71	2.3	2.1	36	1	97	.11	4	.4	.7	35	SF1	
		18	1150	54.90	19	18.39	155	15.32	6.88		1.0	20	0	117	.09	4	.5	1.0	20	SF1	
		18	1330	22.93	19	23.09	155	26.23	6.25	1.7	1.3	14	0	80	.09	3	.5	1.0	14	KAO	
		18	1518	36.63	19	19.91	155	16.64	6.32	1.3	1.0	26	2	92	.10	1	.4	.8	18	SF1	
		18	1529	10.90	19	20.60	155	13.45	7.37	1.5	1.3	27	2	61	.10	4	.5	.8	18	SF2	
		18	1632	49.44	19	32.89	155	35.91	9.86	1.3	1.3	13	1	207	.09	7	1.3	1.2	7	MLO	
		18	1726	39.53	19	23.42	155	15.19	2.92	1.0	1.0	19	6	81	.08	2	.3	.4	11	SEC	
		18	1750	3.71	19	17.17	155	21.86	6.52	1.1	1.1	18	2	126	.09	6	.4	1.4	15	SWR	
		18	1826	14.62	19	20.49	155	3.84	5.04	1.4	1.1	21	1	109	.14	2	.7	1.4	10	SF5	
		18	1855	55.83	19	23.64	155	15.13	3.26	2.0	2.4	30	3	87	.08	2	.3	.3	20	SEC	
		18	19 3	36.11	19	23.75	155	15.15	2.97	1.0	.8	14	5	96	.05	2	.3	.5	9	SEC	
		18	2013	2.53	19	23.26	155	14.81	2.87	1.2	1.2	14	2	104	.10	3	.4	.5	8	SEC	
		18	2254	53.12	19	17.78	155	13.28	7.09	1.6	1.4	29	1	99	.10	1	.6	1.0	21	SF2	
		18	2356	22.18	19	20.64	155	12.88	8.87	1.5	1.3	27	1	68	.08	4	.5	.7	16	SF2	
		19	111	19.97	19	25.81	155	36.50	3.78	2.5	2.1	15	0	103	.11	3	.5	1.0	7	MLO	
		19	244	35.36	19	16.65	155	22.39	2.61	1.8	1.9	26	3	127	.09	5	.4	1.1	18	SWR	
		19	724	27.24	19	20.74	155	5.94	8.46	2.4	2.2	34	2	104	.11	4	.5	.7	23	SF4	
		19	9 1	48.21	19	20.64	155	14.89	10.07	1.5	1.5	22	6	86	.06	4	.5	.8	18	SF1	
		19	1119	9.97	19	21.60	155	1.18	3.86	1.3	1.1	22	3	167	.13	4	.5	1.4	17	SSF	
		19	1333	47.95	19	23.65	155	15.13	2.31	1.1	1.2	18	7	94	.11	2	.3	.4	13	SEC	
		19	1350	21.46	19	19.37	155	6.92	9.19	1.4	1.2	26	5	125	.09	4	.5	.7	25	SF4	
		19	1440	17.88	19	41.85	155	2.86	.11	2.4	3.1	27	1	237	.14	22	1.4	1.2	21	HIL	B*
		19	1614	52.40	20	24.32	155	57.60	33.23	3.1	3.3	54	7	164	.13	36	1.0	1.4	45	KOH	
		19	1725	1.87	19	22.12	155	3.26	7.89	2.1	2.8	32	2	107	.14	4	.5	.9	26	SF5	
		19	1754	4.33	19	16.58	155	22.12	5.96	1.2	1.2	21	2	132	.10	5	.5	1.6	19	SWR	
		19	21 7	11.38	19	17.66	155	14.36	6.98	1.6	2.0	30	2	112	.10	2	.5	.8	24	SF2	
		19	2310	49.59	19	19.80	155	8.35	7.47	1.3	1.1	23	3	83	.09	5	.5	.9	17	SF4	
		20	1 5	40.31	19	13.54	155	20.74	12.57	1.5	1.2	25	4	177	.09	6	.7	1.0	20	SWR	
		20	121	31.71	19	19.76	155	14.12	29.84	1.8	1.3	34	4	63	.09	5	.9	1.0	29	DEP	
		20	137	43.57	19	19.61	155	7.96	5.53	1.2	1.0	22	2	95	.12	4	.5	1.6	20	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	OCT	20	151	10.13	19	27.59	154	53.51	5.35	1.2	1.1	19	3	135	.12	3	.7	.9	17	LER
		20	159	43.51	19	22.91	155	14.49	3.76	1.5	2.1	24	7	75	.07	3	.3	.4	20	SEC
		20	234	5.56	19	34.91	155	24.29	12.06	1.3	1.2	20	4	137	.11	8	.7	1.0	14	MLO
		20	351	52.13	19	19.76	155	12.97	6.57	1.1	.9	22	2	74	.07	5	.4	1.1	14	SF2
		20	444	45.63	19	20.22	155	12.54	6.94	1.1	1.0	22	1	73	.09	5	.5	.9	16	SF2
		20	511	59.71	19	18.66	155	13.22	7.86	1.3	1.2	21	2	84	.07	3	.5	.9	15	SF2
		20	630	11.97	19	21.02	155	15.18	8.74	1.0	1.0	17	2	79	.03	3	.5	.9	12	SF1
		20	1033	49.39	19	19.76	155	6.17	8.32	2.0	1.5	25	1	129	.09	5	.6	1.0	22	SF4
		20	16	3 20.75	19	19.82	155	11.56	7.94	2.0	1.8	35	2	88	.11	5	.5	.8	26	SF3
		20	1829	39.38	19	21.51	155	24.94	10.20	1.3	1.2	23	2	45	.08	4	.4	.9	14	SWR
		20	2136	25.66	19	20.25	155	12.87	7.16	1.4	1.1	28	2	69	.09	4	.5	.9	18	SF2
		20	2152	17.56	19	19.78	155	15.55	34.83	2.2	1.5	37	0	84	.08	3	.8	1.3	29	DEP
		21	055	33.34	19	20.66	155	11.31	9.07	2.0	1.8	39	4	74	.09	4	.4	.7	24	SF3
		21	414	53.79	19	18.04	155	14.92	9.12	1.6	1.5	27	2	143	.07	3	.5	.6	14	SF1
		21	1153	8.58	19	13.63	155	23.99	36.05	1.9	1.5	36	1	150	.08	1	.7	1.5	29	DEP
		21	1216	6.48	19	23.34	155	14.73	2.77	1.1	1.2	17	3	69	.09	3	.4	.4	7	SEC
		21	1239	2.59	19	20.70	155	5.89	6.62	1.7	1.8	32	2	106	.11	4	.5	1.0	22	SF4
		21	1341	20.97	19	22.03	155	25.27	9.46	1.7	1.1	29	3	43	.10	4	.4	.8	16	KAO
		21	1344	8.18	19	18.99	155	15.34	6.72	1.9	1.6	37	1	95	.11	4	.4	.8	23	SF1
		21	1529	35.30	19	21.85	155	12.85	3.04	.8	1.0	17	3	102	.05	2	.4	.4	10	SER
		21	1618	27.41	19	16.73	155	23.63	7.53	1.4	1.3	25	3	101	.12	5	.5	1.1	15	SWR
		21	1721	54.47	19	20.66	155	10.55	7.28	1.5	1.7	40	4	75	.11	3	.4	.6	26	SF3
		21	1739	5.08	19	23.08	155	14.78	3.21	1.1	1.0	17	4	66	.07	2	.3	.4	9	SEC
		21	1758	27.98	19	14.55	155	33.13	7.45	2.3	1.8	37	2	112	.18	5	.6	1.0	21	LSW
		21	19	7 12.49	19	17.15	155	15.05	4.08	1.4	1.2	26	0	158	.12	3	.6	1.1	13	SSF
		21	1915	34.29	19	18.87	155	19.97	33.00	2.7	2.4	46	3	95	.10	3	.6	.9	41	DEP
		21	2053	13.98	19	17.12	155	34.31	6.81	2.2	1.6	31	2	56	.18	6	.5	1.8	18	LSW
		21	2056	36.66	19	18.26	155	13.34	5.76	1.4	1.1	33	2	86	.10	2	.5	1.1	21	SF2
		21	2135	41.92	19	20.78	155	12.95	8.47	2.0	2.1	39	2	63	.11	3	.4	.5	26	SF2
		21	23	9 36.17	19	18.84	155	13.44	9.32	2.6	2.6	42	2	76	.10	3	.4	.5	36	SF2
		22	313	29.03	19	19.96	155	11.49	10.17	3.3	3.5	45	3	86	.09	5	.4	.3	37	SF3
		22	510	51.38	19	19.43	155	16.40	8.51	2.3	2.2	42	0	98	.12	2	.4	.5	25	SF1
		22	621	7.86	19	20.43	155	12.42	9.00	1.9	1.8	38	3	71	.13	4	.4	.5	26	SF2
		22	713	16.67	19	18.02	155	15.17	8.31	1.5	1.3	29	2	114	.08	4	.5	.7	20	SF1
		22	810	49.84	19	17.25	155	20.67	5.84	1.8		31	2	131	.10	4	.5	1.0	18	SWR
		22	1845	33.45	19	18.51	155	15.18	5.25	1.3	1.1	28	3	112	.11	4	.4	1.3	19	SF1
		22	19	4 19.44	19	17.73	155	23.29	3.06	1.7	1.7	28	2	98	.10	5	.4	1.1	22	SWR
		22	1929	20.34	19	19.82	155	7.62	6.12	1.9	1.4	36	2	100	.10	5	.4	.9	23	SF4
		22	1941	55.09	19	20.48	155	13.06	7.01	1.3	1.1	28	2	65	.10	4	.5	.9	21	SF2
		22	2050	38.79	19	17.95	155	20.67	7.60	1.7	1.1	31	4	122	.10	4	.4	1.0	20	SWR
		22	2142	56.38	19	21.07	155	13.36	9.38	3.0	3.1	45	2	56	.11	3	.3	.5	37	SF2 F
		22	23	3 27.82	19	23.82	155	1.09	6.58	1.5	1.1	27	1	181	.16	5	.8	1.1	16	SF5
		23	012	57.84	19	18.81	155	15.68	6.58	1.6	1.3	33	2	111	.13	4	.5	.9	19	SF1
		23	014	9.88	19	19.47	155	11.06	9.79	2.8	2.9	43	3	98	.11	5	.4	.4	34	SF3
		23	148	13.51	19	23.05	155	14.84	3.38	1.4	1.2	20	4	63	.12	2	.4	.5	8	SEC
		23	159	40.17	19	22.09	155	10.45	2.86	.9	1.0	16	1	91	.10	1	.7	.5	7	SER
		23	318	16.62	19	18.11	155	13.12	5.41	1.3	1.1	23	2	99	.09	2	.5	1.4	14	SF2
		23	956	46.33	19	20.83	155	13.14	9.75	2.6	2.8	45	5	60	.10	3	.4	.4	37	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	OCT	23	1047	18.85	19	20.32	155	13.11	8.09	1.4	1.0	21	2	65	.08	4	.5	.9	18	SF2
		23	1132	39.47	19	19.62	155	7.22	8.88	2.1	1.8	34	2	113	.08	4	.4	.6	27	SF4
		23	1243	18.09	19	19.74	155	7.76	8.51	1.5	1.1	28	4	98	.09	4	.5	.8	21	SF4
		23	1349	56.38	19	26.39	155	24.17	10.27	2.5	2.2	46	4	40	.11	3	.3	.6	33	KAO
		23	1545	51.93	20	6.78	155	57.22	17.65	2.4	1.8	19	3	279	.14	18	2.2	3.0	14	KOH
		23	1549	54.11	19	23.54	155	27.39	10.65	2.0	1.9	38	2	47	.10	2	.4	.7	33	KAO
		23	1746	19.46	19	20.20	155	12.83	9.48	1.8	1.3	33	3	70	.10	5	.4	.7	25	SF2
		23	2256	54.87	19	31.21	155	35.06	12.62	1.9		27	6	102	.11	4	.6	.8	23	MLO
		24	1	1 47.38	19	19.42	155	15.47	9.08	2.4	2.4	43	5	88	.10	4	.4	.5	36	SF1
		24	657	38.48	19	16.62	155	15.67	6.88	.9	1.1	21	3	186	.10	4	.6	1.0	19	SF1
		24	913	1.51	19	18.84	155	13.54	7.28	1.7	1.1	29	2	72	.09	3	.5	.9	17	SF2
		24	10	5 27.60	19	22.27	155	10.86	3.08	1.5	1.1	16	2	104	.07	2	.6	.5	10	SER
		24	1416	23.49	19	19.76	155	11.21	8.68	1.7	1.1	30	2	90	.08	5	.5	.7	17	SF3
		24	17	4 7.65	19	21.02	155	6.00	8.91	1.2	1.4	22	3	97	.08	4	.5	.8	13	SF4
		24	20	5 15.16	19	19.32	155	9.95	8.72	1.8	1.7	40	4	100	.07	5	.4	.7	26	SF3
		24	2112	49.55	19	21.02	155	12.64	8.10	1.9	2.1	41	4	62	.11	3	.4	.6	22	SF2
		25	240	2.02	19	19.71	155	7.99	7.82	1.8	1.5	37	5	92	.09	4	.4	.7	22	SF4
		25	316	7.68	19	17.94	155	23.26	3.59	1.7	2.0	30	3	97	.13	4	.3	1.0	18	SWR
		25	358	37.62	19	22.16	155	11.47	2.91	1.5	1.0	17	1	96	.08	3	.5	.4	11	SER
		25	619	30.62	19	19.63	155	11.50	9.89	3.2	3.5	43	1	92	.09	5	.4	.3	37	SF3 F
		25	13	3 14.08	19	20.97	155	11.24	8.60	2.1	1.9	40	5	70	.09	3	.4	.5	25	SF3
		25	1533	7.49	19	18.93	155	14.72	6.15	1.1	1.1	27	0	96	.10	4	.5	1.2	19	SF1
		25	1730	54.48	19	23.40	155	14.64	3.20	1.5	1.9	23	4	59	.08	2	.3	.4	14	SEC
		25	1834	47.48	19	23.15	155	14.76	3.45	1.7	2.2	26	4	48	.08	2	.3	.4	14	SEC
		25	1914	35.09	19	19.17	155	15.49	7.70	1.5	1.5	30	1	103	.08	4	.4	.7	18	SF1
		25	20	7 31.98	19	23.25	155	14.66	3.01	1.1	1.2	15	4	92	.06	3	.3	.5	11	SEC
		25	2057	.37	19	13.18	155	32.20	5.88	1.5	1.1	25	3	77	.20	5	.6	1.6	13	LSW
		25	2315	6.69	19	26.22	155	24.18	4.92	1.5	1.1	23	2	62	.11	2	.4	1.2	13	KAO
		26	654	47.62	19	19.69	155	8.10	8.56	2.9	2.9	46	5	89	.09	4	.4	.5	35	SF4
		26	656	59.93	19	20.02	155	8.18	8.52	2.5	2.4	43	5	84	.11	5	.4	.5	32	SF4
		26	658	39.27	19	19.99	155	8.23	9.00	2.9	3.0	44	3	84	.11	5	.4	.5	33	SF4
		26	1217	44.46	19	19.41	155	9.44	7.47	1.6	1.1	25	2	94	.10	5	.6	1.0	17	SF3
		26	1430	12.16	19	16.55	155	22.90	7.60	2.4	2.8	36	3	120	.14	5	.5	.8	25	SWR
		26	15	3 54.00	19	19.23	155	18.90	6.58	1.1	1.1	24	3	58	.09	2	.4	.9	15	SWR
		26	1523	22.37	19	21.83	155	9.15	3.33	1.7	1.3	17	1	90	.07	1	.5	.4	12	SER
		26	1532	39.11	19	21.83	155	9.98	3.41	1.6		25	2	76	.08	0	.4	.4	14	SER
		26	1538	58.41	19	22.00	155	11.10	2.92	1.5	1.3	15	1	116	.06	2	.5	.4	8	SER
		26	1728	38.74	19	25.15	155	16.15	14.49	1.5	1.2	34	1	74	.10	2	.5	.3	23	DEP
		26	1740	47.16	19	21.89	155	11.19	2.93	2.1	2.3	24	1	85	.08	2	.4	.5	16	SER
		26	20	1 46.20	19	21.87	155	10.97	2.67	1.5	1.4	17	1	102	.08	2	.6	.5	13	SER
		26	2212	1.97	19	20.83	155	12.61	7.08	1.5	1.5	28	2	64	.09	3	.4	.7	17	SF2
		27	423	1.96	19	25.54	155	25.13	9.74	1.6	1.4	33	2	49	.10	1	.4	.7	23	KAO
		27	5	9 21.13	19	17.21	155	13.85	2.15	1.8	1.9	35	0	126	.11	1	.7	.3	28	SSF
		27	7	8 22.62	19	20.46	155	10.90	7.69	1.9	1.8	34	4	78	.08	3	.4	.6	23	SF3
		27	910	47.99	19	21.76	155	9.13	3.35	1.7	1.4	19	1	116	.05	1	.4	.4	12	SER
		27	1043	25.97	19	19.77	155	16.60	7.42	1.5	1.5	32	1	95	.11	2	.4	.7	16	SF1
		27	1054	6.91	19	19.28	155	7.19	8.13	2.1	2.1	32	2	120	.09	4	.6	.8	23	SF4
		27	1456	20.97	19	18.59	155	13.44	6.65	1.1	1.1	29	2	78	.13	3	.5	.9	15	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	OCT	27	1757	51.20	19	20.15	155	9.77	7.61	1.5	1.1	27	3	81	.08	4	.5	1.0	20	SF3
		27	2353	25.88	19	26.04	155	28.19	7.66	2.0	1.4	35	3	49	.09	6	.3	.8	22	KAO
		28	137	2.96	19	19.46	155	15.43	7.77	1.9	1.6	33	2	96	.10	4	.4	.7	20	SF1
		28	5	5 46.09	19	19.30	155	9.81	7.80	1.9	1.8	34	2	99	.08	5	.4	.7	25	SF3
		28	610	47.82	19	19.56	155	7.83	6.73	1.5	1.1	26	2	99	.09	4	.5	1.0	15	SF4
		28	817	47.46	19	17.24	155	21.14	7.45	1.4	1.8	26	2	133	.11	5	.5	.8	12	SWR
		28	950	11.93	19	16.68	155	23.10	5.32	1.7	1.8	28	0	114	.14	5	.5	1.5	15	SWR
		28	1034	48.05	19	18.21	155	21.79	6.69	1.7	1.2	27	3	111	.12	5	.4	1.2	17	SWR
		28	1050	5.05	19	23.66	155	30.35	8.68		1.2	30	1	50	.08	5	.4	.9	16	KAO
		28	1347	31.92	19	23.21	155	14.90	3.26	1.9	1.9	25	4	69	.07	2	.3	.3	16	SEC
		28	16	0 3.85	19	21.74	155	10.31	2.97	.9	1.1	16	1	88	.09	1	.6	.4	5	SER
		28	1634	37.20	19	23.15	155	14.87	3.20	1.2	1.2	14	3	108	.08	2	.4	.5	9	SEC
		28	1728	5.44	19	18.92	155	15.53	7.05	1.2	1.1	26	1	107	.08	4	.5	.8	15	SF1
		28	1844	10.34	19	22.39	155	27.80	5.03	1.8	1.3	28	2	43	.11	0	.4	.7	16	KAO
		28	2230	16.59	19	19.07	155	15.90	8.34	2.2	2.1	38	3	108	.13	3	.4	.6	21	SF1
		29	014	39.74	19	21.72	155	4.96	8.49	2.8	2.6	43	4	81	.08	3	.5	.4	32	SF5
		29	1	3 50.48	19	23.14	155	14.84	3.42	1.1	1.0	13	3	66	.04	2	.4	.5	7	SEC
		29	2	1 23.64	19	23.05	155	14.94	3.42	1.6	1.7	22	4	65	.08	2	.3	.4	13	SEC
		29	339	32.16	19	22.41	155	10.73	1.92	.9	1.0	13	0	96	.15	2	.7	.5	3	SER
		29	420	35.69	19	19.36	155	13.53	7.18	2.0	1.8	39	1	68	.12	4	.4	.8	25	SF2
		29	657	46.19	19	20.60	155	13.10	8.11	1.8	1.8	39	4	63	.11	4	.4	.6	23	SF2
		29	725	30.26	19	19.52	155	8.69	6.95	1.8	1.3	22	0	80	.07	4	.6	1.3	19	SF4
		29	8	8 29.81	19	20.82	155	7.15	6.05	1.3	1.1	27	3	91	.11	4	.5	1.3	16	SF4
		29	1111	35.31	19	20.29	155	13.16	7.09	1.5	1.6	31	2	65	.11	4	.4	.7	21	SF2
		29	1150	5.23	19	16.18	155	23.47	7.85	2.6	2.9	46	4	111	.17	4	.5	.6	38	SWR
		29	1154	36.72	19	16.20	155	23.43	6.20	1.8	1.9	31	1	113	.13	4	.4	1.3	19	SWR
		29	2019	27.93	19	18.40	155	6.84	3.46	1.2	1.1	22	0	159	.11	3	.8	1.0	11	SSF
		29	22	7 7.59	19	24.95	155	14.25	6.95	1.3	1.1	11	2	195	.14	1	1.5	1.3	8	INT
		30	0	6 .68	19	20.71	155	6.32	6.49	1.7	1.3	30	2	102	.10	4	.5	1.0	19	SF4
		30	123	30.41	19	20.63	155	10.61	6.88	1.4	1.2	23	0	75	.12	3	.6	1.2	19	SF3
		30	344	27.81	19	18.03	155	13.00	8.21	1.6	1.5	27	3	106	.10	2	.4	.7	13	SF2
		30	436	58.40	19	18.50	155	13.28	10.30	2.9	3.1	44	5	131	.10	8	.5	.4	32	SF2
		30	519	12.20	19	19.63	155	12.27	4.39	1.3	1.1	21	1	85	.09	5	.5	2.1	13	SSF
		30	653	36.84	19	16.97	155	15.68	28.08	1.8	1.4	30	0	164	.10	4	1.2	1.5	20	DEP
		30	812	36.88	19	22.25	155	17.25	32.33	2.1	2.5	35	1	43	.09	2	.7	1.1	30	DEP
		30	935	45.67	19	18.53	155	7.09	9.50	2.9	3.1	39	1	187	.11	8	.7	.5	29	SF4
		30	1056	22.14	19	22.10	155	9.16	3.47	1.7	1.1	18	0	92	.06	1	.6	.5	12	SER
		30	15	4 14.15	19	18.35	155	6.92	3.53	1.2	1.3	23	0	158	.10	3	.8	1.0	15	SSF
		30	1631	8.03	19	21.96	155	10.75	3.23	1.6	1.4	13	1	125	.10	2	.7	.6	7	SER
		30	1717	9.95	19	19.99	155	6.67	7.21	1.2	1.3	26	2	114	.10	5	.5	1.1	12	SF4
		30	2016	17.25	19	21.89	155	11.20	3.03	.7	1.1	13	1	86	.08	2	.5	.4	5	SER
		30	2017	55.31	19	19.13	155	17.51	4.13	1.0	1.1	16	2	156	.12	2	.7	.5	7	SWR
		30	2040	18.53	19	18.57	155	6.93	3.27	1.2	1.1	23	1	149	.12	3	.6	.9	8	SSF
		30	2040	33.28	19	17.90	155	6.68	3.92	1.4	1.5	14	1	186	.10	2	1.0	1.1	12	SSF
		31	124	29.75	19	21.72	155	9.15	3.67	1.3	1.3	18	0	82	.05	1	.5	.6	10	SER
		31	616	27.36	19	22.63	155	9.23	3.81	1.4	1.5	20	1	102	.09	2	.5	.6	12	SER
		31	649	48.97	19	21.82	155	10.26	3.13	1.6	1.9	20	1	89	.08	1	.4	.4	13	SER
		31	710	56.68	19	17.55	155	16.28	7.35	2.0	2.0	33	0	147	.12	4	.5	.8	23	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	OCT	31	756	8.90	19	20.64	155	13.74	9.18	2.6	2.4	43	4	62	.13	4	.4	.5	36	SF2
		31	1312	59.70	19	18.36	155	13.02	6.97	1.3	1.1	32	3	97	.12	3	.5	.9	23	SF2
		31	1333	47.33	19	21.63	155	6.26	7.89	1.3	1.1	27	0	83	.12	3	.5	.8	19	SF4
		31	1624	45.73	19	20.20	155	7.12	8.30	3.0	3.3	43	3	102	.09	5	.4	.5	31	SF4
	NOV	1	027	5.34	19	19.43	155	7.77	7.69	2.5	2.6	36	1	102	.09	4	.5	.6	21	SF4
		1	029	28.83	19	19.67	155	7.66	8.70	2.9	3.0	40	2	101	.09	4	.5	.4	26	SF4
		1	612	20.49	19	21.27	155	15.03	9.39	1.6	1.7	26	1	66	.07	3	.4	.6	19	SF1
		1	714	28.84	19	19.58	155	15.22	9.94	2.4	2.5	37	2	122	.10	4	.5	.6	28	SF1
		1	735	31.91	18	54.11	155	15.23	11.93	2.3	3.6	27	0	292	.13	36	5.8	1.5	14	LOI L
		1	1215	21.99	18	59.06	155	13.31	13.60	2.8	3.1	39	0	259	.12	32	2.1	.7	25	LOI
		1	2034	.53	19	22.21	155	10.27	3.33	.8	1.1	16	1	94	.08	1	.6	.5	6	SER
		2	132	40.88	19	6.81	155	28.78	30.87	2.0	1.3	27	0	239	.06	5	1.6	2.0	23	DLS
		2	215	9.37	19	21.00	155	26.09	10.74	1.2	1.0	23	2	59	.09	4	.5	.9	13	KAO
		2	421	3.51	19	18.78	155	5.53	39.41	2.5	2.0	44	1	175	.10	5	1.0	1.5	42	DEP
		2	427	43.93	19	16.40	155	15.11	7.99	2.5	2.3	39	1	160	.12	3	.6	.9	28	SF1
		2	542	9.03	19	19.81	155	7.99	8.79	2.5	2.4	41	3	91	.09	5	.4	.5	30	SF4
		2	543	20.24	19	23.14	155	14.10	5.87	1.3		12	3	108	.11	2	.8	1.4	10	INT
		2	544	16.97	19	22.97	155	14.66	4.06	.8	.8	12	4	114	.09	2	.5	.9	9	SEC
		2	1052	35.08	18	53.17	155	14.48	11.61	2.6	2.9	22	0	262	.12	38	3.0	1.1	8	LOI L
		2	1353	19.90	19	23.41	155	14.93	3.03	1.2	1.4	15	4	99	.06	3	.3	.5	9	SEC
		2	1413	33.48	19	21.72	155	11.34	2.66	1.5	1.0	12	1	110	.05	3	.6	.4	4	SER
		2	1811	19.23	19	21.77	155	9.17	3.49	1.7	1.3	21	1	77	.09	1	.4	.5	11	SER
		2	2013	48.10	19	17.94	155	12.97	6.36	1.6	1.5	31	3	111	.11	2	.5	1.0	18	SF2
		3	030	36.87	19	19.48	155	19.10	6.39	1.1	1.1	24	4	85	.12	3	.5	1.0	20	SWR
		3	741	19.88	19	23.29	155	14.84	3.24	1.1	1.0	13	3	103	.04	3	.3	.5	9	SEC
		3	9	9 4.75	19	21.60	155	11.15	2.64	1.3	1.6	19	2	82	.12	2	.4	.5	11	SER
		3	1053	14.96	19	20.40	155	7.74	7.21	2.0	1.8	34	2	88	.11	5	.5	.9	25	SF4
		3	2023	41.21	19	17.17	155	23.37	3.91	2.1	2.6	33	2	103	.12	5	.4	1.5	21	SWR
		4	028	46.05	19	19.06	155	13.62	8.37	1.7	1.3	35	3	70	.10	4	.5	.7	24	SF2
		4	030	37.51	19	19.01	155	13.68	8.13	1.9	1.7	39	3	72	.12	4	.5	.7	24	SF2
		4	221	58.57	19	24.91	155	25.84	8.70	2.0	1.7	39	4	50	.11	1	.3	.6	27	KAO
		4	339	35.18	19	21.97	155	9.15	3.46	1.8	1.8	24	0	78	.07	1	.5	.5	17	SER
		4	5	4 7.43	19	23.30	154	57.78	7.92	1.8	1.7	35	2	195	.18	4	1.0	.7	22	LER
		4	711	20.06	19	22.65	155	8.27	3.69	.9	1.1	14	2	109	.11	3	.7	.6	8	SER
		4	743	51.14	19	24.27	154	58.44	5.46	1.6	1.2	26	0	178	.14	2	.9	1.0	15	LER
		4	830	46.29	19	24.09	154	58.07	5.76	1.6	1.2	22	0	183	.15	2	1.0	1.3	15	LER
		4	14	9 48.48	19	16.19	155	33.60	5.62	1.2	1.0	28	3	60	.18	6	.5	1.9	12	LSW
		4	1510	14.71	19	21.82	155	8.92	3.40	1.7	1.2	21	1	90	.06	2	.4	.5	16	SER
		4	1525	20.71	19	17.46	155	21.61	4.84	1.8	1.7	34	2	124	.13	5	.4	1.5	21	SWR
		4	1658	2.14	19	20.96	155	49.29	10.14	1.4	1.3	19	0	168	.12	11	.8	.7	11	KON
		4	2212	21.71	19	22.03	155	9.14	3.58	.9	1.1	15	0	92	.07	1	.7	.6	11	SER
		5	026	28.42	19	21.81	155	10.36	3.07	.9	1.1	17	1	88	.08	1	.5	.4	13	SER
		5	148	55.48	19	15.28	155	22.87	6.89	1.1	1.1	17	1	175	.10	3	.7	1.3	10	SWR
		5	157	28.97	19	22.70	155	4.12	7.73	2.0	1.8	36	5	90	.11	3	.4	.6	16	SF5
		5	232	.21	19	23.76	155	15.25	2.41	.9	1.0	13	3	98	.05	2	.3	.4	8	SEC
		5	236	23.87	19	21.94	155	9.41	3.45	1.7	1.8	20	1	91	.07	1	.5	.5	17	SER
		5	246	15.36	19	22.11	155	9.29	3.52	1.1	1.1	18	1	145	.08	1	.9	.5	11	SER
		5	646	49.65	19	19.75	155	12.19	8.26	2.6	2.4	42	5	84	.09	6	.4	.4	28	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	NOV	5	9 6	45.16	19	20.59	155	12.82	8.81	2.3	2.4	43	3	65	.11	4	.4	.5	33	SF2
		5	947	24.73	19	21.49	155	10.83	2.95	1.6	1.3	15	1	140	.09	2	.6	.4	6	SER
		5	1110	17.09	19	16.56	155	22.62	5.49	1.0	1.1	21	1	125	.12	5	.5	1.9	17	SWR
		5	1135	38.16	20	1.55	155	22.68	8.78	2.9	2.5	40	1	208	.12	29	1.0	.7	30	KEA F
		5	1434	10.82	19	21.85	155	15.19	8.93	1.9	1.8	38	3	59	.11	2	.4	.5	25	SF1
		5	15 1	48.15	19	25.47	155	28.81	7.77	2.4	2.0	43	3	59	.11	6	.3	.9	36	KAO
		5	1633	51.76	19	22.15	155	9.24	3.38	1.7	1.3	15	0	94	.06	1	.5	.5	12	SER
		5	17 7	33.52	19	21.26	155	3.08	8.30	2.0	2.0	30	2	113	.13	3	.7	.6	19	SF5
		5	1954	59.09	19	19.87	155	14.07	7.33	2.2	2.4	48	5	64	.13	5	.4	.6	36	SF2
		6	047	16.46	19	20.86	155	12.42	9.33	2.1	1.8	38	4	66	.09	3	.3	.5	22	SF2
		6	057	30.64	19	22.47	155	25.24	10.13	2.1	2.0	36	2	42	.12	4	.4	.6	30	KAO
		6	445	29.69	19	21.08	155	10.34	9.28	2.0	1.8	35	2	69	.09	2	.4	.6	25	SF3
		6	833	53.46	19	13.10	155	15.99	32.64	2.5	2.8	48	2	177	.09	9	.7	1.0	41	DEP
		6	1151	20.74	19	20.28	155	13.35	7.02	1.3	1.3	26	2	64	.10	4	.5	.9	18	SF2
		6	1254	48.47	19	20.79	155	5.85	7.95	2.0	2.3	36	1	104	.12	4	.5	.6	23	SF4
		6	15 8	17.69	19	26.38	155	32.84	21.38	2.2	2.6	9	0	68	.09	5	1.1	3.4	2	DML
		6	1752	35.82	19	24.84	155	24.72	9.04	1.6	1.2	28	3	39	.09	1	.4	.8	22	KAO
		6	2113	.98	19	19.61	155	15.60	8.10	2.4	3.0	44	4	87	.12	3	.4	.6	28	SF1
		6	2115	17.96	19	18.84	155	15.38	6.65	.9	.9	24	1	108	.09	4	.5	1.0	14	SF1
		6	2252	2.46	19	20.00	155	6.77	7.74	1.1	.9	23	2	112	.08	5	.5	1.0	14	SF4
		6	2252	23.48	19	18.11	155	14.84	7.20	.8	.9	16	1	118	.07	3	.7	1.4	12	SF1
		6	2329	42.97	19	30.36	155	54.26	15.45	1.5	1.8	14	3	162	.09	2	1.1	.6	10	KON
		6	2347	41.55	19	21.67	155	10.14	3.13	1.5	2.2	23	1	61	.08	1	.4	.4	14	SER
		7	012	5.99	19	16.49	155	23.38	3.65	.8	1.1	18	1	110	.10	4	.5	1.6	12	SWR
		7	543	23.88	19	21.53	155	14.33	27.39	1.5	1.3	24	0	58	.10	3	1.0	1.5	21	DEP
		7	823	48.99	20	6.82	155	26.00	1.12	2.3	1.8	24	1	275	.12	27	2.0	1.4	14	KEA
		7	947	36.92	19	17.90	155	16.72	8.69	2.6	2.8	46	4	127	.13	3	.5	.6	30	SF1
		7	1619	43.75	19	22.06	155	9.29	3.40	1.7	1.3	19	0	91	.07	1	.5	.5	13	SER
		7	1820	32.45	19	14.51	155	34.65	7.98	2.3	2.0	40	2	78	.20	4	.6	1.1	25	LSW
		7	1952	25.05	19	20.07	155	7.19	7.87	2.1	1.8	34	1	103	.10	5	.5	.7	26	SF4
		7	2133	27.97	19	21.06	155	6.15	7.21	2.0	1.5	31	1	95	.10	4	.5	.7	20	SF4
		8	0 6	12.21	19	20.51	155	10.83	8.43	1.7	1.5	35	2	77	.09	3	.4	.7	18	SF3
		8	537	8.89	19	19.85	155	7.41	7.62	1.4	1.1	26	3	103	.10	5	.5	.9	14	SF4
		8	538	46.87	19	19.20	155	11.61	9.08	2.2	2.1	40	2	101	.10	5	.4	.5	28	SF3
		8	8 5	23.42	19	19.82	155	7.78	8.48	2.0	2.0	35	2	96	.10	5	.5	.7	24	SF4
		8	8 9	34.87	19	22.19	155	5.94	6.83	1.3	1.3	25	1	74	.12	2	.6	1.0	13	SF4
		8	935	38.78	19	25.68	154	56.20	5.81	2.1	2.2	35	3	159	.14	4	.8	.6	18	LER
		8	1035	30.34	19	22.83	155	2.28	6.32	1.8	1.7	32	3	136	.14	5	.5	.9	13	SF5
		8	13 9	1.66	19	21.12	155	13.05	9.26	2.3	2.5	42	3	58	.11	3	.4	.5	32	SF2
		8	1314	17.61	19	20.34	155	12.01	7.44	1.4	1.3	28	3	76	.08	5	.5	.8	19	SF3
		8	1346	15.19	19	20.81	155	13.27	7.03	1.9		32	2	59	.13	3	.5	.7	22	SF2
		8	1346	53.21	19	21.53	155	15.08	9.27	2.4	2.2	39	3	63	.11	2	.4	.5	26	SF1
		8	1643	39.22	19	25.73	155	24.60	9.85	2.2	2.1	36	2	47	.11	8	.4	.9	28	KAO
		8	19 3	22.32	19	20.71	155	13.03	7.91	1.8	1.9	43	4	63	.13	4	.4	.5	29	SF2
		8	2013	19.66	19	10.48	155	33.16	7.48	1.3	1.2	22	2	139	.15	10	.6	1.5	9	LSW
		8	22 1	37.95	19	20.64	155	10.78	8.81	2.4	2.4	37	4	75	.11	3	.4	.5	22	SF3
		8	22 6	21.38	19	20.45	155	10.62	6.93	1.6	1.1	28	4	79	.08	3	.5	.7	22	SF3
		9	246	51.40	19	20.94	155	12.56	7.83	1.5	1.1	26	3	64	.10	3	.5	.6	10	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	NOV	9	945	53.44	19	19.39	155	15.48	6.14	1.4	1.5	29	0	98	.11	4	.4	1.0	18	SF1
		9	1153	29.19	19	19.28	155	15.59	7.18	1.9	1.6	34	3	101	.10	4	.4	.7	21	SF1
		9	1428	3.21	19	18.00	155	14.66	7.11	1.2	1.1	23	2	140	.09	3	.6	1.0	15	SF1
		9	23 4	32.68	19	19.99	155	11.75	10.10	3.2	3.6	44	3	83	.10	5	.3	.3	37	SF3 F
		10	1 7	3.08	19	21.46	155	16.05	34.58	2.2	2.0	42	1	64	.09	2	.7	1.2	36	DEP
		10	248	13.51	19	20.81	155	5.91	8.18	2.3	2.2	40	4	103	.10	4	.4	.5	31	SF4
		10	755	59.35	19	18.89	155	13.67	8.10	1.8		29	2	86	.09	3	.5	.8	20	SF2
		10	756	26.41	19	18.85	155	14.91	6.63	1.2	1.1	26	3	101	.10	4	.5	.9	17	SF1
		10	956	22.88	19	18.90	155	15.89	7.01	1.3	1.1	25	2	111	.08	3	.5	.9	17	SF1
		10	1013	13.77	19	20.34	155	10.20	1.86	.8	1.0	12	1	169	.13	3	.6	.9	7	SSF
		10	14 2	27.28	19	21.71	155	11.44	3.26	.7	1.0	13	2	82	.08	3	.5	.6	6	SER
		10	15 4	48.16	19	26.98	155	24.21	8.11	2.0	1.8	43	5	46	.12	4	.3	.6	26	KAO
		10	16 7	37.65	19	18.72	155	15.14	6.78	1.1	1.1	18	1	110	.09	4	.7	1.5	12	SF1
		10	1940	3.85	19	18.89	155	15.36	5.95	1.0	1.0	23	3	106	.10	4	.4	1.1	14	SF1
		10	2239	.39	19	17.92	155	14.52	6.64	1.0	1.0	23	2	140	.08	2	.6	1.0	17	SF1
		11	1656	7.69	20	25.56	155	29.76	.25	2.6	1.9	19	0	285	.19	44	11.2	8.7	13	DIS *
		11	1812	56.07	19	19.22	155	15.64	8.12	1.9	1.8	34	0	103	.10	4	.4	.7	23	SF1
		11	19 2	41.06	19	24.68	154	59.24	8.26	1.8	1.5	23	2	159	.15	1	1.0	.7	8	LER
		11	2013	.48	19	14.61	155	15.79	30.69	2.1	1.9	41	2	177	.09	6	.7	1.2	37	DEP
		11	22 4	20.99	19	19.58	155	6.69	8.00	2.6	2.8	38	2	125	.09	5	.5	.5	30	SF4
		12	247	35.97	19	18.23	155	13.39	6.87	1.0	.8	26	3	85	.10	2	.5	.9	14	SF2
		12	4 0	4.33	19	19.06	155	13.68	6.20	1.5	1.3	35	4	71	.12	4	.4	.9	19	SF2
		12	644	19.64	19	24.45	155	25.65	9.95	1.7	1.3	29	2	39	.10	2	.4	.6	21	KAO
		12	910	35.73	19	23.47	155	2.88	6.56	1.4	1.1	23	1	114	.17	3	.5	.9	12	SF5
		12	13 6	11.73	19	19.73	155	10.51	6.54	1.7	1.6	35	2	92	.11	4	.5	.9	26	SF3
		12	1345	29.30	19	20.57	155	9.17	7.60	2.1	2.2	36	2	69	.11	3	.4	.8	23	SF3
		12	1410	56.22	19	19.83	155	8.58	7.36	1.9	1.9	35	3	77	.10	5	.5	.8	18	SF4
		12	1553	2.15	20	40.11	155	29.94	4.16	2.7	1.9	22	1	306	.06	67	9.7	10.5	10	DIS *
		12	1618	58.25	19	27.32	155	26.47	14.93	4.1	4.1	50	4	38	.12	4	.4	.3	42	DML F
		12	1628	29.00	19	27.48	155	26.22	14.53	3.3	3.2	47	2	39	.13	5	.4	.3	41	DML F
		12	1920	18.14	19	17.72	155	13.09	7.21	2.0	1.8	31	0	114	.13	1	.6	1.0	25	SF2
		12	1921	54.63	19	17.56	155	12.90	7.35	1.6	1.4	25	0	134	.11	1	.6	.9	14	SF2
		12	2016	17.40	19	21.74	155	6.02	7.08	1.2	1.0	19	1	82	.10	2	.5	1.0	10	SF4
		12	2147	51.92	19	27.28	155	26.65	14.06	2.0	1.9	33	3	53	.10	5	.5	.5	24	DML
		12	22 7	6.71	19	24.84	155	24.97	6.69	1.1	1.1	17	1	47	.10	1	.5	1.1	11	KAO
		12	22 8	4.94	19	19.25	155	15.05	7.08	1.1	1.1	19	1	175	.09	4	.7	1.0	12	SF1
		13	1 1	27.38	20	45.82	155	30.47	15.33	3.0	3.3	38	2	242	.11	76	1.3	4.8	27	DIS
		13	220	23.85	19	18.65	155	10.06	.90	1.4	1.2	9	0	144	.14	4	1.7	4.0	5	SSF *
		13	440	4.01	19	21.96	155	5.85	6.01	1.1	1.1	18	1	78	.14	2	.7	1.3	11	SF4
		13	534	31.21	19	18.09	155	12.84	6.79	1.6	1.1	25	1	111	.10	2	.5	1.1	18	SF2
		13	735	25.26	19	18.15	155	15.13	9.72	2.4	2.4	43	4	150	.09	5	.5	.4	25	SF1
		13	941	40.69	19	17.49	155	21.30	3.88	1.7	1.4	25	4	125	.11	5	.4	1.2	18	SWR
		13	1312	12.94	19	18.85	155	11.30	8.75	3.0	2.9	42	4	114	.11	5	.4	.5	31	SF3
		13	14 9	1.99	19	16.94	155	21.40	7.04	1.9	1.8	35	3	135	.12	5	.5	.7	21	SWR
		13	1419	49.69	19	11.15	155	31.66	7.52	1.6	1.6	21	0	209	.12	7	.9	1.0	11	LSW
		13	1541	20.80	19	18.71	155	13.90	8.13	1.5	1.3	29	2	81	.09	3	.5	.9	20	SF2
		13	1813	43.88	19	20.27	155	11.67	9.67	2.6	2.8	42	3	79	.12	5	.4	.5	29	SF3
		13	2259	57.48	19	21.83	155	7.02	8.14	2.0	1.6	29	0	76	.11	3	.4	.8	21	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	NOV	14	628	54.04	19	19.72	155	10.29	7.20	1.6	1.0	23	2	92	.08	4	.6	1.0	19	SF3
		14	933	35.20	19	20.92	155	12.88	7.84	1.9	1.8	37	4	61	.13	3	.5	.7	28	SF2
		14	1325	31.05	19	19.68	155	13.76	6.45	1.9	1.8	41	4	69	.11	5	.4	.7	29	SF2
		14	1911	11.55	19	23.73	155	29.43	8.57	1.6	1.4	27	1	73	.12	4	.5	.9	19	KAO
		14	2316	12.87	19	21.12	155	7.13	7.45	1.8	1.5	25	0	86	.12	4	.5	.9	19	SF4
		14	2331	40.09	19	21.44	155	4.29	7.15	1.3	1.2	23	4	127	.13	4	.6	.8	16	SF5
		14	2341	51.83	19	19.11	155	13.90	7.24	1.5	1.3	29	2	76	.11	4	.5	.9	15	SF2
		15	017	46.69	19	26.95	155	27.94	6.30	1.8	1.1	26	1	49	.11	6	.4	1.4	15	KAO
		15	021	5.10	19	27.02	155	27.94	6.52	2.4	2.0	43	4	49	.13	6	.4	.9	29	KAO
		15	031	54.75	19	27.25	155	26.67	13.90	2.8	2.9	43	3	43	.10	5	.3	.3	34	DML
		15	310	44.36	19	26.97	155	26.52	12.88	1.8	1.2	30	2	51	.09	4	.5	.7	24	KAO
		15	534	51.36	19	20.59	155	6.17	7.51	1.9	1.3	28	1	106	.12	4	.5	1.0	21	SF4
		15	7 1	33.24	19	22.83	155	.82	6.42	2.2	1.7	29	2	162	.16	6	.6	1.0	15	SF5
		15	726	10.34	19	21.76	155	.97	7.33	2.1	1.9	35	5	168	.19	5	.7	.7	15	SF5
		15	820	31.59	19	19.11	155	13.51	6.51	2.0	1.8	33	1	70	.13	4	.4	.8	20	SF2
		15	1018	8.29	19	19.97	155	10.32	8.53	1.9	1.7	33	3	87	.10	4	.4	.7	23	SF3
		15	1055	48.43	19	20.23	155	13.19	7.06	1.6	1.3	27	2	118	.11	4	.6	.8	21	SF2
		15	1212	37.23	19	20.76	155	14.49	31.23	2.3	2.1	45	2	63	.09	4	.6	.9	42	DEP
		15	13 8	31.85	19	19.93	155	9.90	6.99	1.5	1.1	25	2	86	.12	4	.6	1.2	20	SF3
		15	17 3	4.73	19	18.37	155	15.48	6.68	1.7	1.5	28	1	119	.11	4	.5	.9	23	SF1
		15	1849	27.32	19	16.78	155	23.83	2.53	1.0	1.0	13	2	97	.07	5	.4	1.1	6	SWR
		15	1919	44.83	19	25.76	155	28.74	7.59	2.5	2.1	41	5	51	.12	6	.3	1.0	30	KAO
		15	2252	38.29	19	19.89	155	8.36	7.50	1.9	1.8	35	3	82	.11	5	.4	.6	23	SF4
		16	344	41.87	19	20.47	155	11.75	7.37	2.3	2.4	43	4	75	.13	4	.4	.6	33	SF3
		16	4 4	52.68	19	25.64	155	36.96	2.07	2.2	1.7	12	1	86	.20	3	.8	1.3	11	MLO
		16	510	42.89	19	16.83	155	22.50	4.92	1.1	1.6	23	2	122	.13	5	.5	2.5	18	SWR
		16	536	46.92	19	26.83	155	24.64	4.51	1.5	1.1	20	3	65	.11	6	.4	3.4	10	KAO
		16	1150	5.14	19	21.10	155	13.08	8.67	2.6	2.9	42	4	59	.13	3	.4	.5	30	SF2
		16	1832	29.85	19	20.19	155	9.58	7.13	1.8	1.5	28	3	79	.08	4	.5	.8	21	SF3
		16	1851	12.72	19	25.86	155	28.86	8.37	1.9	1.6	29	2	61	.10	7	.4	1.0	19	KAO
		16	2253	15.34	19	20.15	155	13.28	6.75	1.2	1.1	25	2	65	.11	5	.5	1.0	16	SF2
		16	2328	43.37	19	21.21	155	19.99	31.87	3.3	3.6	47	1	51	.11	5	.6	1.0	43	DEP
		17	155	30.95	19	17.42	155	23.50	6.29	2.1	2.7	36	3	98	.13	5	.4	1.0	26	SWR
		17	429	58.52	19	23.79	155	.61	8.66	2.1	1.7	33	2	143	.14	4	.6	.5	24	SF5
		17	516	35.57	19	20.31	155	12.53	7.11	1.6	1.3	26	2	71	.11	4	.5	.9	18	SF2
		17	529	28.98	19	19.93	155	7.59	7.69	1.8	1.3	33	4	98	.10	5	.5	.7	24	SF4
		17	533	6.95	19	20.48	155	6.08	7.82	1.8	1.3	31	2	110	.10	5	.4	.6	17	SF4
		17	539	49.46	19	20.07	155	10.61	8.39	2.3	2.5	44	5	85	.11	4	.4	.5	31	SF3
		17	540	31.91	19	19.60	155	10.56	6.32	1.7	1.3	22	1	95	.11	5	.6	1.4	20	SF3
		17	847	17.98	19	19.02	155	12.18	5.56	1.1	1.1	23	4	100	.11	4	.5	1.2	15	SF3
		17	9 4	51.04	19	20.19	155	12.86	7.81	1.4	1.1	24	5	70	.08	5	.5	.8	17	SF2
		17	1314	14.29	19	20.42	155	11.00	7.07	1.3	1.1	28	5	79	.10	4	.5	.8	17	SF3
		17	2124	44.13	19	20.35	155	7.34	8.35	3.0	3.1	42	3	97	.08	5	.4	.5	31	SF4
		17	22 7	36.34	19	17.34	155	15.38	5.10	1.3	1.2	27	4	151	.09	3	.4	1.0	16	SF1
		17	2324	50.78	19	19.32	155	11.56	6.22	1.3	1.1	23	2	99	.09	5	.5	1.1	16	SF3
		18	430	52.89	19	19.26	155	13.28	6.05	1.1	1.1	30	4	75	.12	4	.4	1.1	21	SF2
		18	637	10.17	19	18.95	155	13.69	6.18	1.3	1.0	30	3	72	.12	4	.5	1.1	23	SF2
		18	650	22.40	19	25.55	155	23.70	3.84	1.4	1.1	25	2	48	.12	3	.4	.9	17	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	NOV	18	7 9	12.86	19	20.27	155	6.95	9.06	2.4	2.3	38	3	104	.13	5	.4	.7	26	SF4
		18	1849	13.93	19	19.45	155	9.12	8.51	2.8	3.1	42	3	88	.10	4	.4	.6	34	SF4
		18	1918	22.56	19	39.48	155	22.79	46.29	2.2	1.9	38	1	81	.09	13	.8	1.9	28	KEA
		18	2120	24.78	19	20.78	155	16.23	41.62	2.1	2.3	44	0	74	.11	2	.8	1.4	38	DEP
		19	236	37.76	19	16.73	155	21.69	2.99	.9	1.1	15	2	136	.06	6	.4	1.3	12	SWR
		19	925	48.11	19	21.48	155	24.88	9.52	1.7	1.2	32	3	45	.10	4	.4	.7	21	SWR
		19	936	19.74	19	11.66	155	12.22	45.38	2.6	2.5	44	2	194	.11	10	.9	1.5	32	DEP
		19	1859	29.06	19	21.85	155	4.80	7.82	1.1	1.2	22	1	77	.14	3	.6	.9	18	SF5
		19	1921	17.72	19	45.13	155	3.79	39.75	2.7	2.5	49	3	200	.11	5	.8	1.5	43	HIL
		19	1952	30.52	19	20.95	155	18.13	29.87	1.9	1.4	35	2	49	.09	2	.8	1.2	23	DEP
		19	2037	30.36	19	24.64	154	56.88	6.25	1.6	1.4	26	2	169	.11	3	.7	.8	15	LER
		20	244	49.92	19	20.35	155	11.64	7.53	1.5	1.6	30	2	78	.11	4	.5	.9	23	SF3
		20	458	27.28	19	20.35	155	13.60	7.00	1.6	1.3	29	1	62	.10	4	.5	.9	20	SF2
		20	621	31.77	19	19.89	155	8.60	8.48	2.1	2.3	40	3	77	.09	5	.4	.7	24	SF4
		20	815	30.58	19	25.63	154	55.42	8.19	2.5	2.9	39	2	167	.14	3	.8	.5	29	LER
		20	824	7.20	19	19.31	155	10.17	6.65	1.5	1.2	30	4	101	.10	5	.5	1.1	20	SF3
		20	1053	19.40	19	30.44	155	39.27	8.38	1.3	1.1	12	2	132	.08	6	.7	1.0	8	MLO
		20	1549	47.11	18	48.25	155	18.83	26.72	2.7	2.7	28	1	267	.11	42	2.0	4.8	9	LOI
		20	1815	4.74	19	30.50	155	39.11	8.95	1.5	1.2	12	3	130	.12	6	.6	1.2	8	MLO
		20	22 1	1.13	19	20.06	155	7.63	8.66	2.8	3.3	44	4	96	.11	5	.4	.5	33	SF4
		20	2257	37.09	19	20.05	155	6.57	7.73	2.1	2.6	36	2	114	.10	6	.5	.6	30	SF4
		20	2334	32.32	19	19.50	155	13.88	6.03	1.8	1.6	39	6	72	.11	5	.4	.9	29	SF2
		21	259	3.28	19	17.24	155	20.60	6.74	1.4	1.3	28	4	134	.10	4	.4	.8	18	SWR
		21	645	30.84	19	18.27	155	15.34	8.62	1.2	.9	20	4	141	.07	4	.5	.9	14	SF1
		21	759	9.68	19	17.25	155	23.42	2.69	1.8	2.2	31	5	101	.11	6	.3	1.0	21	SWR
		21	1743	39.26	19	20.18	155	7.20	8.22	2.4	2.4	39	3	102	.11	5	.4	.6	25	SF4
		21	1811	16.24	19	19.46	155	10.64	5.84	1.6	1.3	38	4	99	.13	5	.5	1.2	26	SF3
		22	412	36.06	19	9.17	155	36.18	.23	2.4	1.3	23	0	113	.14	11	.6	2.3	17	LSW
		22	11 4	27.65	19	19.81	155	10.06	6.48	1.7	1.5	34	2	89	.12	4	.5	1.1	22	SF3
		22	1252	45.48	19	21.66	155	11.31	3.31	1.5	1.2	20	3	82	.07	3	.4	.5	13	SER
		22	1345	38.32	19	19.35	155	11.96	5.55	1.1	1.1	20	1	95	.12	5	.5	1.7	13	SF3
		22	1356	16.87	19	19.33	155	11.44	5.52	1.1	1.1	23	3	100	.09	6	.4	1.4	13	SF3
		22	15 1	34.10	19	20.73	155	10.41	7.47	1.4	1.1	28	5	86	.10	3	.5	.7	15	SF3
		22	1730	33.45	19	22.02	155	8.73	3.45	.8	1.1	13	0	155	.09	2	1.0	.7	9	SER
		22	2315	18.74	19	23.18	155	27.83	8.69	1.3	1.1	25	1	56	.09	1	.3	.6	17	KAO
		22	2334	18.41	19	8.92	155	35.08	2.38	.8	1.1	12	1	130	.08	12	.6	2.2	8	LSW
		23	2 1	56.57	19	19.61	155	8.71	7.49	1.9	1.9	37	2	79	.11	4	.4	.7	25	SF4
		23	2 7	.09	19	19.67	155	8.96	7.18	1.7	1.4	37	5	82	.11	5	.5	.7	26	SF4
		23	6 0	57.85	19	20.57	155	11.51	9.26	2.7	2.8	43	3	75	.11	4	.4	.5	32	SF3
		23	2111	34.89	19	18.07	155	23.31	2.84	1.3	1.4	16	3	95	.08	4	.4	.8	12	SWR
		24	024	8.97	19	15.70	155	14.27	7.34	1.3	1.1	21	0	222	.09	3	1.2	.8	13	SF2
		24	715	23.29	19	21.72	155	30.33	9.31	2.0	1.4	30	2	83	.08	5	.5	1.0	20	KAO
		24	720	24.55	19	20.71	155	10.58	9.25	1.7	1.5	27	3	83	.07	3	.4	.5	18	SF3
		24	728	14.43	19	19.80	155	13.65	5.63	1.1	1.1	23	3	73	.11	5	.4	1.4	18	SF2
		24	1118	31.64	19	23.28	155	17.10	2.71	1.4	1.7	19	1	59	.11	0	.3	.3	16	SSC
		24	1129	26.85	19	18.90	155	13.23	5.71	1.4	1.5	26	1	80	.11	3	.5	1.3	19	SF2
		24	1546	34.23	19	23.59	155	15.14	3.42		1.0	11	3	95	.06	2	.4	.6	9	SEC
		24	1844	10.66	19	20.05	155	20.84	31.43	2.2	1.8	37	1	74	.09	4	.6	1.3	29	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	NOV	25	4 1	.98	19	11.53	155	36.18	8.07	3.0	2.7	38	2	92	.22	7	.6	1.1	30	LSW
		25	9 3	36.26	19	21.92	155	15.18	9.80	3.0	3.1	43	1	59	.12	2	.4	.4	32	SF1
		25	9 8	2.49	19	19.46	155	19.18	7.70	2.0	2.1	39	3	62	.13	3	.4	.8	24	SWR
		25	910	37.28	19	21.64	155	17.76	34.97	3.6	3.6	47	2	29	.10	3	.6	1.0	45	DEP F
		25	1044	51.51	19	23.36	155	15.28	2.59	2.2	2.6	31	4	47	.11	2	.3	.3	20	SEC
		25	1139	36.69	19	21.70	155	17.73	31.26	1.7	1.3	33	2	32	.09	3	.7	1.3	26	DEP
		25	1257	20.61	19	19.81	155	12.94	5.30	1.0	1.1	21	1	73	.10	5	.5	1.6	16	SF2
		25	17 3	58.85	19	19.28	155	8.77	8.30	1.8	1.3	28	3	120	.09	4	.5	.6	20	SF4
		25	2150	17.62	19	20.09	155	9.04	7.70	1.8	1.8	34	3	75	.08	4	.4	.7	23	SF4
		25	2152	54.89	19	19.96	155	6.73	7.36	1.3	1.6	29	4	115	.12	5	.6	.9	18	SF4
		25	2222	52.95	19	16.87	155	20.58	6.69	.9	1.1	19	2	136	.10	4	.6	1.3	12	SWR
		25	2319	43.38	19	23.84	155	15.18	3.09	1.0	1.2	10	3	102	.02	2	.4	.7	7	SEC
		26	115	26.12	19	24.13	155	15.80	2.64	.8	1.0	11	3	123	.06	1	.4	.5	8	SEC
		26	444	47.38	19	19.96	155	10.85	6.85	1.7	1.4	29	1	88	.10	4	.5	1.1	23	SF3
		26	639	13.51	19	21.90	155	8.53	7.72	1.6	1.1	31	3	63	.16	2	.5	.8	21	SF4
		26	639	42.46	19	22.24	155	13.48	26.53	1.6	1.2	27	0	96	.08	1	.9	1.2	23	DEP
		26	13 1	22.11	19	19.40	155	15.30	6.56	1.9	1.9	35	1	96	.12	5	.4	.9	25	SF1
		26	1544	4.24	19	20.86	155	13.07	7.79	1.8	1.6	33	2	61	.12	3	.4	.7	28	SF2
		26	2121	39.57	19	19.77	155	13.24	7.80	1.5	1.6	34	3	70	.11	5	.5	.8	25	SF2
		26	23 4	2.26	19	19.62	155	25.21	10.39	1.8	1.2	27	3	63	.11	4	.4	.8	16	KAO
		27	945	30.60	19	16.88	155	22.42	7.76	2.9	3.6	45	2	123	.16	6	.5	.7	37	SWR
		27	951	40.20	19	16.83	155	22.15	3.21	1.7	1.9	29	2	128	.10	6	.4	1.2	18	SWR
		27	1011	57.40	19	58.47	155	27.98	39.50	3.2	3.0	48	2	185	.11	16	.8	1.9	40	KEA
		27	1146	34.19	19	23.34	155	17.03	2.88	1.1	1.6	19	4	65	.08	0	.3	.3	11	SSC
		27	1226	45.13	19	25.62	155	25.20	7.60	1.8	1.5	34	4	50	.12	1	.4	.9	26	KAO
		27	1543	48.07	19	20.40	155	8.01	7.39	2.0	2.5	38	4	84	.12	4	.4	.8	28	SF4
		27	16 1	25.52	19	17.23	155	30.44	9.30	3.8	3.9	42	1	47	.13	4	.4	.6	40	LSW F
		27	2221	57.20	19	19.89	155	10.35	8.00	1.9	1.5	29	2	88	.10	4	.5	.9	16	SF3
		28	1 5	19.85	19	20.35	155	8.99	7.66	2.1	2.6	39	1	71	.14	4	.6	.8	25	SF4
		28	319	12.85	19	19.60	155	11.40	6.80	1.4	1.3	25	1	94	.09	5	.5	1.0	18	SF3
		28	4 5	38.21	19	20.30	155	6.58	5.14	1.3	1.3	27	3	108	.13	5	.6	1.6	17	SF4
		28	713	27.02	19	19.92	155	7.22	7.92	2.5	2.9	41	5	107	.09	5	.4	.6	28	SF4
		28	1131	49.41	19	19.10	155	13.82	6.08	1.5	1.5	32	3	74	.12	4	.4	.9	17	SF2
		28	1342	42.44	19	22.12	155	4.85	7.18	1.3	1.3	26	4	78	.11	3	.5	.8	17	SF5
		28	16 5	48.02	19	18.89	155	13.74	6.76	1.6	1.5	26	3	88	.10	3	.5	1.0	21	SF2
		28	1947	36.41	19	15.68	155	22.76	6.43	1.0	1.3	20	1	163	.08	3	.5	1.4	12	SWR
		28	1953	52.44	19	16.64	155	22.93	2.90	1.0	1.3	21	2	118	.12	5	.4	1.2	15	SWR
		28	1958	15.70	19	16.35	155	22.88	3.28	1.9	2.1	37	3	124	.14	4	.4	1.2	25	SWR
		28	1959	28.65	19	16.22	155	22.97	7.02	2.6	3.1	48	4	123	.17	4	.5	.8	37	SWR F
		28	2014	19.00	19	16.45	155	22.91	6.12	2.5	3.1	47	3	121	.17	4	.4	1.0	34	SWR
		28	2022	52.39	19	15.39	155	22.57	8.23	1.9	1.7	26	2	152	.08	3	.5	.9	15	SWR
		28	2058	1.81	19	16.97	155	23.24	.57	1.1	1.0	26	2	107	.12	5	.4	.7	13	SWR
		28	2136	13.73	19	16.47	155	22.68	5.09	1.4	1.8	27	2	143	.13	5	.5	1.7	18	SWR
		28	2211	54.19	19	16.64	155	22.71	2.45	1.0	1.3	22	2	122	.11	5	.5	1.1	16	SWR
		29	1333	40.70	19	22.26	155	3.05	7.36	1.6	1.2	23	2	121	.12	4	.5	.8	15	SF5
		29	1440	36.60	19	18.83	155	13.11	6.98	1.7	1.6	28	1	85	.11	3	.5	1.0	16	SF2
		29	1450	38.05	19	21.12	155	20.03	31.99	4.0	4.4	47	0	54	.10	5	.6	1.0	47	DEP F
		29	1523	58.63	19	20.31	155	7.00	6.57	1.4	1.1	26	4	103	.09	5	.4	.8	14	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	NOV	29	16 8	1.48	19	19.77	155	8.18	7.66	1.5	1.1	29	3	87	.08	5	.5	1.0	23	SF4
		29	18 1	4.75	19	18.37	155	13.70	9.26	3.1	3.4	44	2	70	.12	3	.5	.5	36	SF2
		29	1924	57.10	19	18.91	155	15.36	8.32	2.5	2.4	37	3	105	.13	4	.5	.7	27	SF1
		29	2022	35.54	19	22.93	155	17.09	2.39	.9	1.0	15	3	71	.06	1	.3	.3	10	SSC
		29	2039	16.09	19	22.42	155	17.31	2.46	1.0	1.0	14	3	92	.13	2	.4	.6	10	SSC
		29	22 2	46.75	19	18.25	155	13.05	6.03	1.5	1.5	24	0	98	.11	2	.6	1.4	17	SF2
		29	2245	51.59	19	19.47	155	9.27	6.35	1.4	1.1	24	4	106	.08	5	.5	1.0	14	SF3
		30	439	55.47	19	20.46	155	10.98	9.70	1.8	1.5	26	1	115	.07	4	.6	.8	18	SF3
		30	632	.04	19	21.25	155	15.33	8.92	2.1	1.9	34	3	67	.11	2	.5	.6	22	SF1
		30	711	57.62	19	23.44	155	16.86	2.96	1.7	2.2	28	3	36	.09	0	.3	.2	16	SSC
		30	726	43.45	19	19.90	155	9.68	6.75	1.6	1.1	27	3	100	.08	4	.5	1.0	15	SF3
		30	1315	.41	19	21.43	155	15.27	9.69	3.0	3.1	42	2	65	.11	2	.4	.4	31	SF1
		30	1430	31.51	19	19.29	155	7.27	7.95	1.6	1.3	26	2	145	.06	4	.5	.8	18	SF4
		30	1456	39.17	19	47.68	155	35.13	15.56	2.6	2.3	33	4	95	.10	13	.5	.9	19	KEA
		30	1549	7.96	19	22.50	155	28.28	9.88	2.4	1.9	33	2	47	.12	1	.4	.6	17	KAO
		30	1833	3.45	19	47.43	155	50.44	31.10	2.0	2.0	26	1	244	.08	11	1.3	2.0	21	HUA
		30	2136	2.87	19	19.35	155	11.46	6.03	1.5	1.0	24	3	99	.10	6	.5	1.1	12	SF3
		30	2335	19.03	19	20.47	155	12.97	8.01	1.3	1.1	27	4	65	.08	4	.5	.7	19	SF2
	DEC	1	533	7.84	19	20.61	155	10.81	8.02	2.0	1.7	40	2	75	.12	3	.4	.7	29	SF3
		1	654	35.09	19	21.52	155	1.26	5.83	1.9	1.4	30	3	167	.13	4	.6	.9	21	SF5
		1	1025	18.60	19	19.68	155	15.70	8.07	2.2	2.3	41	3	95	.11	3	.4	.6	29	SF1
		1	1028	8.90	19	19.56	155	15.56	8.30	1.9	1.9	36	2	96	.10	3	.4	.6	20	SF1
		1	1225	52.98	19	19.94	155	13.10	7.60	1.3	1.1	21	2	70	.10	5	.6	1.1	14	SF2
		1	1646	54.35	19	26.56	155	38.09	4.31	2.5	2.1	19	0	196	.10	3	.8	1.4	16	MLO
		1	17 0	4.84	19	15.89	155	22.52	8.19	1.1	1.2	20	2	160	.08	4	.6	1.1	16	SWR
		1	18 9	54.46	19	20.07	155	10.49	7.37	1.6	1.3	31	5	85	.09	4	.5	.8	23	SF3
		1	2257	13.62	19	20.38	155	11.57	8.86	1.8	1.1	30	4	78	.08	4	.5	.7	18	SF3
		2	451	26.75	19	7.83	155	28.37	29.99	2.1	2.0	37	2	168	.10	3	.8	1.5	31	DLS
		2	10 5	11.01	19	19.27	155	11.30	7.05	2.3	2.2	43	5	102	.12	6	.4	.7	29	SF3
		2	1125	37.67	19	31.87	155	41.71	2.78	2.6	2.1	36	4	81	.13	8	.5	1.7	26	MLO
		3	2 3	9.73	19	21.42	155	28.32	8.72	1.5	1.2	31	4	46	.11	2	.4	.7	18	KAO
		3	411	.60	19	19.97	155	11.10	7.53	2.1	2.2	38	4	87	.09	4	.4	.6	22	SF3
		3	853	32.36	19	19.37	155	11.04	9.78	1.6	1.4	18	0	174	.09	5	.7	1.1	18	SF3
		3	1238	13.65	19	19.41	155	10.44	7.79	1.8	1.5	26	3	100	.08	5	.5	1.1	14	SF3
		3	14 2	2.32	19	19.59	155	50.77	7.87	1.6	1.5	19	3	180	.15	7	1.2	2.7	7	KON
		3	1753	36.14	19	18.98	155	15.54	8.01	1.6	1.6	31	3	106	.10	4	.4	.7	17	SF1
		3	1945	44.18	19	19.19	155	15.86	7.16	1.7	1.8	33	2	105	.12	3	.5	.8	18	SF1
		3	2130	55.97	19	24.80	155	25.94	9.22	1.6	1.5	37	5	50	.12	2	.4	.7	25	KAO
		3	2350	15.30	19	16.48	155	23.71	6.53	1.8	2.4	34	3	102	.14	4	.4	1.1	23	SWR
		4	152	38.53	19	31.73	155	41.07	3.19	1.6	1.2	14	1	171	.13	9	.9	4.2	10	MLO
		4	235	7.26	19	16.23	155	24.05	8.26	1.3	1.3	18	2	111	.13	4	.7	1.2	8	SWR
		4	236	29.25	19	19.19	155	15.98	6.71	1.1	1.1	24	3	106	.09	3	.4	.8	15	SF1
		4	354	42.05	19	30.28	155	42.83	7.61	.9	1.0	18	3	149	.14	5	.8	1.4	12	MLO
		4	630	2.76	19	22.29	155	17.55	2.87	1.0	1.1	14	2	90	.06	2	.3	.5	5	SSC
		4	915	20.26	19	22.41	155	24.58	8.58	1.7	1.3	28	4	40	.11	5	.4	.8	18	KAO
		4	10 3	13.21	19	23.06	155	17.16	2.19	.9	1.0	16	4	89	.06	1	.2	.3	8	SSC
		4	1011	5.01	19	24.76	154	49.87	40.95	2.2	1.5	21	1	253	.11	5	2.1	2.0	12	LER
		4	1235	10.79	19	23.56	155	15.16	2.96	1.0	.9	15	4	87	.09	3	.4	.5	8	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	DEC	4	1239	41.91	19	29.49	155	39.03	7.14	1.1	1.1	13	3	95	.12	5	.7	1.2	5	HLO	
		4	1248	35.25	19	23.42	155	15.20	2.93	1.7	2.2	28	5	81	.11	2	.3	.4	18	SEC	
		4	1313	54.18	19	8.45	156	10.39	9.02		1.6	8	1	298	.09	56	12.0	14.8	6	KON	*
		4	1639	38.76	19	18.18	155	17.87	33.20	2.5	2.9	42	1	123	.10	1	.7	1.0	35	DEP	
		4	2329	51.19	19	19.65	155	8.81	4.77	1.3	1.1	25	4	96	.11	5	.4	1.5	13	SSF	
		5	037	16.33	19	20.03	155	6.35	5.32	1.3	1.2	27	3	156	.11	6	.6	1.5	15	SF4	
		5	142	32.87	19	20.74	155	10.79	7.71	1.7	1.3	33	5	79	.10	3	.5	.7	21	SF3	
		5	313	42.72	19	23.86	155	24.56	10.83	1.2	1.1	31	3	42	.12	3	.4	.8	19	KAO	
		5	321	9.91	19	19.99	155	7.50	7.65	1.9	1.3	34	4	100	.08	5	.4	.8	23	SF4	
		5	5 6	6.36	19	21.06	155	19.15	27.70	1.6	1.4	28	2	45	.08	5	.8	1.2	17	DEP	
		5	526	12.98	19	23.69	155	2.30	7.80	1.1	1.1	16	3	171	.08	4	.9	.6	9	SF5	
		5	537	37.72	19	48.36	156	9.59	38.47	3.8	4.0	45	4	254	.10	44	1.0	1.6	41	HUA	F
		5	6 6	57.81	19	19.74	155	11.97	6.00	1.3	1.0	21	0	86	.10	6	.5	1.6	14	SF3	
		5	723	32.87	19	19.49	155	13.95	4.42	1.4	1.3	34	5	73	.13	5	.4	1.6	22	SSF	
		5	840	20.55	19	17.15	155	21.89	6.59	1.8	1.8	32	3	126	.13	6	.4	1.0	23	SWR	
		5	945	38.60	19	22.52	155	14.50	31.75	1.9	1.4	37	1	52	.09	2	.8	1.2	31	DEP	
		5	946	38.53	19	22.74	155	17.25	2.48	1.0	1.6	21	4	51	.09	1	.2	.3	10	SSC	
		5	1124	14.41	19	22.85	155	17.18	2.47	1.0	1.4	22	5	50	.09	1	.3	.3	10	SSC	
		5	1552	49.62	19	25.95	154	57.90	5.96	1.8	1.6	29	2	146	.19	2	.9	1.0	17	LER	
		5	1817	57.65	19	17.94	155	20.73	7.34	1.3	1.1	24	2	124	.08	4	.5	1.0	17	SWR	
		5	22 5	33.04	19	26.10	155	23.25	9.69	2.8	2.7	47	5	39	.11	4	.3	.5	30	KAO	
		6	039	44.62	19	12.11	155	29.20	30.71	1.6		10	0	138	.10	5	3.7	7.4	10	DLS	T
		6	045	22.00	19	8.88	155	28.01	40.39	1.9		10	0	254	.03	1	4.9	9.6	10	DLS	T
		6	119	19.90	19	13.17	155	32.96	43.16	1.7		9	0	146	.09	11	2.1	6.0	7	DLS	T
		6	129	2.70	19	13.82	155	32.10	38.28	1.7		24	0	179	.12	4	2.0	3.7	8	DLS	T
		6	142	10.40	19	8.76	155	26.94	43.34	1.7		26	0	176	.07	2	1.1	2.6	13	DLS	T
		6	712	43.86	19	19.12	155	13.43	6.64	1.6	1.6	35	2	73	.12	4	.5	.9	23	SF2	
		6	11 7	46.39	19	21.88	155	18.15	2.51	1.4	1.4	23	4	56	.10	4	.3	.6	13	SWR	
		6	1912	31.17	19	21.04	155	2.51	6.78	2.1	1.5	31	4	184	.14	7	.8	1.3	21	SF5	
		6	1943	37.10	19	23.33	155	16.93	3.05	2.4	3.3	36	4	36	.10	0	.2	.2	30	SSC	
		7	036	56.58	19	20.43	155	13.05	8.22	1.5	1.5	27	3	65	.09	4	.4	.7	20	SF2	
		7	1136	7.17	19	23.21	155	24.75	12.11	1.8	1.6	36	3	43	.09	4	.4	.6	28	KAO	
		7	1556	49.82	19	17.87	155	15.54	8.99	2.7	2.9	40	3	141	.10	5	.4	.5	33	SF1	
		7	1651	55.67	19	16.76	155	15.15	5.93	1.3	1.1	23	3	174	.10	3	.6	1.0	11	SF1	
		7	1720	37.45	19	22.76	155	17.14	2.32	.9	1.0	14	2	79	.07	1	.3	.3	9	SSC	
		7	1735	56.20	19	20.52	155	6.77	8.00	2.0	1.8	31	1	142	.08	5	.5	.6	25	SF4	
		7	18 6	57.32	19	18.90	155	14.68	7.09	1.4	1.1	31	2	95	.10	4	.5	.9	17	SF1	
		7	2037	5.03	19	17.16	155	15.51	7.05	2.0	1.9	34	4	158	.10	4	.5	.8	22	SF1	
		7	2059	59.52	19	22.87	155	4.56	7.51	2.3	2.0	36	5	144	.11	3	.4	.6	20	SF5	
		8	147	52.63	19	23.48	155	16.86	2.91	.8	1.0	13	4	80	.04	0	.3	.3	8	SSC	
		8	3 8	33.07	19	21.61	155	2.13	6.06	2.1	1.7	33	3	195	.13	7	.8	.9	22	SF5	
		8	321	15.36	19	22.86	155	17.11	2.85	1.5	1.7	26	4	49	.08	1	.2	.3	15	SSC	
		8	441	20.97	19	19.20	155	13.00	5.06	1.4	1.1	33	3	81	.12	4	.4	1.5	22	SF2	
		8	9 9	.36	19	23.09	155	16.95	2.47	1.2	1.0	14	2	65	.08	1	.3	.3	11	SSC	
		8	919	26.23	19	17.66	155	22.90	2.67	1.1	1.4	19	1	105	.06	5	.4	1.0	15	SWR	
		8	1035	17.60	19	27.36	154	54.13	5.83	1.9	1.6	27	2	190	.13	2	1.2	.6	10	LER	
		8	1221	37.56	19	21.50	155	4.73	8.82	3.3	3.6	42	2	160	.08	4	.6	.4	34	SF5	
		8	14 2	14.17	19	20.94	155	4.69	7.02	1.3	1.1	20	1	100	.11	4	.5	1.0	10	SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	DEC	8	14 2	55.74	19	17.81	155	20.62	6.22	1.0	1.0	21	2	127	.10	4	.6	1.4	16	SWR	
		8	1722	49.91	18	48.56	157	15.16	49.12	2.6	2.6	21	0	340	.13	154	95.6	3.2	11	DIS	*
		8	2139	15.49	19	21.24	155	18.86	3.16	1.2	1.4	27	6	82	.10	3	.3	.6	18	SWR	
		8	2258	55.41	19	16.59	155	22.45	2.83	1.0	1.0	21	2	128	.09	5	.4	1.2	13	SWR	
		9	237	29.63	19	19.75	155	7.14	6.56	1.4	1.1	27	2	111	.11	5	.5	1.1	22	SF4	
		9	245	20.81	19	20.21	155	11.81	7.33	1.4	.9	28	3	79	.09	5	.5	.9	20	SF3	
		9	342	57.44	19	33.80	155	27.36	21.48	1.6	1.4	30	1	86	.09	3	.5	1.1	18	DML	
		9	558	13.92	19	19.56	155	12.27	5.53	1.5	1.1	25	3	86	.10	5	.4	1.2	15	SF3	
		9	925	48.77	19	22.98	155	16.89	2.66	1.5	1.8	24	4	69	.09	1	.3	.3	11	SSC	
		9	1027	42.92	19	20.32	155	7.11	7.07	1.7	1.5	28	2	101	.11	5	.6	.8	21	SF4	
		9	1348	19.33	19	23.56	155	16.84	2.64	1.7	2.0	27	4	40	.11	0	.3	.2	15	SSC	
		9	14 0	31.71	19	22.66	155	16.95	2.57	1.3	1.7	20	3	86	.09	1	.3	.3	11	SSC	
		9	14 3	55.11	19	22.84	155	17.04	2.41	.9	1.0	14	3	90	.08	1	.3	.3	10	SSC	
		9	1517	17.42	19	26.33	155	29.80	9.55	1.6	1.0	24	1	66	.09	8	.4	1.2	18	KAO	
		9	1543	53.15	19	23.46	155	16.84	2.89	.8	.9	11	3	79	.03	0	.4	.4	7	SSC	
		9	1629	53.74	19	23.57	155	16.97	2.65	.9	1.0	16	4	54	.09	0	.3	.3	8	SSC	
		9	1746	28.11	19	24.08	155	15.81	3.11	.9	.8	11	3	119	.05	1	.4	.6	6	SEC	
		9	1749	55.97	19	24.16	155	16.37	2.80	1.0	1.2	13	3	112	.08	1	.5	.3	9	SEC	
		9	1753	3.46	19	23.95	155	15.68	2.73	1.0	1.2	17	4	110	.09	2	.3	.3	9	SEC	
		9	1755	52.59	19	23.93	155	15.76	3.17	1.7	2.2	24	2	110	.09	1	.4	.3	14	SEC	
		9	1756	35.09	19	23.94	155	15.33	2.55	1.3	1.6	15	1	104	.07	2	.3	.3	7	SEC	
		9	18 1	8.13	19	23.84	155	15.10	3.15	1.1	1.3	18	4	95	.05	2	.3	.4	8	SEC	
		9	18 1	54.11	19	24.05	155	15.70	2.87	.9	1.0	16	2	116	.05	2	.3	.3	6	SEC	
		9	18 2	32.20	19	23.98	155	15.62	3.06	1.7	2.1	28	2	105	.08	2	.3	.3	19	SEC	
		9	18 3	21.31	19	22.94	155	14.57	2.58	1.1	1.0	15	2	116	.23	3	.6	.7	6	SEC	
		9	18 6	16.66	19	24.02	155	14.02	6.08	1.3	1.0	12	1	90	.13	1	.8	1.2	8	INT	
		9	18 9	27.06	19	23.15	155	14.90	2.77	2.5	3.0	29	1	64	.09	2	.3	.3	15	SEC	
		9	1812	54.44	19	23.09	155	14.77	3.12	1.5	1.6	23	3	64	.09	2	.3	.4	15	SEC	
		9	1814	14.68	19	23.69	155	15.01	3.09	1.6	2.0	26	4	84	.10	2	.3	.2	15	SEC	
		9	1814	48.08	19	23.29	155	14.69	2.90	1.5	1.6	16	3	65	.06	3	.3	.4	8	SEC	
		9	1815	29.23	19	24.14	155	16.12	3.02	.9	1.0	14	3	109	.06	1	.4	.3	9	SEC	
		9	1815	59.60	19	23.11	155	14.53	3.54	1.6	1.9	13	1	114	.08	3	.6	.5	9	SEC	
		9	1817	44.91	19	24.27	155	15.86	3.48	1.3	1.2	15	3	115	.11	1	.4	.4	6	SEC	
		9	1819	5.90	19	23.32	155	14.91	1.73	1.4	1.0	16	4	102	.10	2	.3	.4	8	SEC	
		9	1820	23.51	19	23.01	155	14.77	2.93	2.0	2.1	28	3	62	.10	2	.3	.4	16	SEC	
		9	1821	19.32	19	22.96	155	14.80	2.96	1.7	1.8	26	3	62	.09	2	.3	.3	15	SEC	
		9	1822	13.52	19	23.03	155	14.75	2.78	2.1	2.4	24	2	61	.11	2	.3	.4	17	SEC	
		9	1825	28.73	19	24.16	155	15.71	3.54	.9	.8	12	2	126	.07	2	.5	.5	9	SEC	
		9	1830	32.74	19	23.02	155	14.71	4.14	1.2	1.0	13	4	89	.07	2	.3	.6	7	SEC	
		9	1832	53.98	19	23.44	155	14.86	2.88	1.1	.8	11	3	101	.03	3	.4	.6	9	SEC	
		9	1838	39.01	19	24.40	155	16.29	3.35	1.1	.8	15	3	116	.08	1	.5	.4	8	SEC	
		9	1839	38.05	19	24.14	155	16.33	3.04	1.1	1.6	11	1	113	.07	1	.4	.4	7	SEC	
		9	1840	53.01	19	24.12	155	16.45	3.01	1.2	1.4	15	2	107	.09	1	.4	.3	10	SEC	
		9	1842	33.35	19	24.44	155	16.26	3.41	1.4	1.2	15	3	119	.12	1	.5	.4	11	SEC	
		9	1843	25.01	19	24.16	155	16.40	2.90	1.3	1.4	15	3	99	.07	1	.3	.2	11	SEC	
		9	1844	56.32	19	23.81	155	15.14	2.85	1.1		13	3	99	.04	2	.3	.4	9	SEC	
		9	1850	22.43	19	23.78	155	15.41	3.10	1.4	1.2	15	1	101	.05	2	.4	.3	11	SEC	
		9	1853	6.79	19	23.89	155	15.33	2.66	.9	1.2	12	3	107	.05	2	.3	.5	8	SEC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	DEC	9	1853	19.02	19	23.11	155	14.99	3.26	2.8	3.0	33	1	48	.11	2	.3	.5	30	SEC	
		9	1854	59.71	19	23.60	155	15.20	2.34	1.6	1.7	18	3	89	.11	3	.3	.3	7	SEC	
		9	19	0 59.68	19	23.54	155	15.28	2.60	1.6	1.7	17	3	87	.11	2	.3	.4	10	SEC	
		9	19	2 32.95	19	23.61	155	14.89	2.46		1.0	12	4	95	.07	2	.3	.6	8	SEC	
		9	19	3 44.00	19	23.57	155	15.14	3.53	1.8	1.7	28	4	84	.10	3	.4	.4	17	SEC	
		9	19	4 16.94	19	23.76	155	15.25	2.60	1.5	1.2	13	4	98	.07	2	.4	.5	9	SEC	
		9	19	5 14.73	19	23.26	155	15.09	3.23	2.5	2.9	32	3	72	.09	2	.3	.3	22	SEC	
		9	19	6 49.23	19	23.47	155	15.08	2.89	2.3	2.1	29	3	75	.09	2	.3	.3	21	SEC	
		9	19	9 18.76	19	23.69	155	15.12	2.95	1.6	1.2	19	3	91	.08	2	.3	.3	11	SEC	
		9	19	9 39.07	19	23.30	155	14.90	2.57	1.0	1.0	13	5	106	.05	2	.3	.5	9	SEC	
		9	1910	20.47	19	23.72	155	15.10	3.13	1.1	1.2	18	5	93	.08	2	.3	.4	11	SEC	
		9	1916	38.26	19	23.68	155	15.00	3.06	1.9	2.1	23	1	83	.07	2	.3	.3	13	SEC	
		9	1918	7.80	19	23.60	155	15.05	2.90		.5	10	3	97	.04	2	.4	.8	7	SEC	
		9	1918	27.50	19	23.68	155	14.93	3.46	1.6	1.7	17	3	87	.09	2	.4	.5	8	SEC	
		9	1922	32.22	19	23.57	155	14.99	3.24	2.1	1.7	29	4	70	.11	2	.3	.4	22	SEC	
		9	1922	57.48	19	23.30	155	14.96	2.52	2.1	2.0	22	2	73	.08	2	.3	.3	14	SEC	
		9	1924	20.86	19	23.55	155	14.91	3.43	2.6	2.7	33	1	45	.10	2	.4	.4	25	SEC	
		9	1925	31.01	19	23.80	155	15.25	2.66	1.0	1.2	17	4	101	.10	2	.4	.5	9	SEC	
		9	1925	49.20	19	23.28	155	14.91	2.24	1.1	1.4	12	2	104	.14	2	.4	.6	8	SEC	
		9	1926	23.48	19	23.88	155	15.17	2.52	1.5	1.6	8	1	104	.05	2	.4	.8	5	SEC	
		9	1927	2.58	19	23.16	155	14.79	3.10	1.8	1.4	14	3	107	.08	2	.4	.5	8	SEC	
		9	1929	11.67	19	23.49	155	14.38	2.44	1.2	1.0	16	3	62	.12	2	.4	.4	8	SEC	
		9	1930	56.31	19	23.15	155	14.69	3.22	1.6	1.9	23	3	62	.08	3	.3	.4	11	SEC	
		9	1931	31.62	19	23.68	155	15.05	3.01	1.6	1.7	19	3	85	.06	2	.4	.4	13	SEC	
		9	1932	17.27	19	23.08	155	14.59	3.18	1.6	1.4	24	3	62	.09	3	.4	.3	10	SEC	
		9	1932	53.27	19	23.59	155	15.02	2.93	2.0	2.0	30	3	71	.12	2	.3	.3	16	SEC	
		9	1934	20.44	19	23.91	155	14.99	2.87	1.1	1.6	11	2	101	.04	2	.4	.5	9	SEC	
		9	1935	38.71	19	23.80	155	15.01	2.72	1.3	1.2	16	3	95	.09	2	.3	.4	8	SEC	
		9	1937	13.72	19	23.59	155	15.31	.01	1.3	1.4	11	1	90	.16	2	.3	.6	9	SEC	*
		9	1937	34.13	19	23.85	155	15.05	2.46	2.0	1.4	13	3	99	.04	2	.3	.4	9	SEC	
		9	1938	3.85	19	23.40	155	14.94	2.80	1.3	1.6	18	4	76	.08	3	.3	.4	9	SEC	
		9	1938	11.71	19	23.73	155	14.86	3.21	3.1	3.3	38	1	44	.10	2	.3	.4	29	SEC	
		9	1940	34.53	19	23.82	155	15.34	2.11	1.4	1.2	17	3	103	.09	2	.3	.4	10	SEC	
		9	1940	57.43	19	23.81	155	15.08	2.37	1.0	1.0	11	2	97	.05	2	.3	.5	9	SEC	
		9	1943	27.32	19	22.99	155	14.69	2.82	2.3	2.6	30	2	59	.11	2	.3	.4	17	SEC	
		9	1945	11.77	19	23.11	155	14.94	.02	1.6	1.4	12	0	67	.12	3	.3	.8	7	SEC	*
		9	1945	33.33	19	23.23	155	14.91	2.91	1.6	1.8	19	2	70	.08	2	.3	.4	12	SEC	
		9	1946	22.63	19	23.81	155	15.07	2.55		1.0	10	3	97	.04	2	.3	.6	6	SEC	
		9	1946	53.94	19	23.97	155	14.94	3.60	1.1	1.0	12	2	103	.09	2	.4	.6	7	SEC	
		9	1947	29.88	19	24.27	155	15.49	1.75	2.9	3.6	27	3	72	.09	2	.2	.3	20	SEC	
		9	1949	31.84	19	23.48	155	14.84	3.03	1.6	1.6	20	1	77	.12	2	.4	.4	10	SEC	
		9	1951	15.77	19	22.79	155	14.61	3.24	2.2	1.9	33	3	53	.12	2	.4	.4	24	SEC	
		9	1952	.72	19	23.45	155	14.58	3.17	1.6	1.6	15	3	68	.21	2	.7	.7	9	SEC	
		9	1952	23.50	19	23.89	155	14.93	2.62	1.1	1.4	15	4	97	.07	2	.3	.4	8	SEC	
		9	1953	58.33	19	23.14	155	15.08	3.02	1.5	1.6	21	5	77	.12	2	.4	.4	16	SEC	
		9	1959	2.74	19	23.79	155	15.40	3.22	1.0	1.2	17	0	102	.08	2	.4	.4	16	SEC	
		9	0	51.65	19	23.35	155	14.63	3.94	3.1	3.4	41	6	46	.09	3	.3	.3	37	SEC	
		9	20	3 48.66	19	23.69	155	15.36	1.71	2.4	2.2	26	2	94	.08	2	.2	.3	20	SEC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	DEC	9	20	5 28.80	19	23.52	155	15.05	3.59	1.4	1.2	18	6	97	.09	3	.3	.4	16	SEC	
		9	20	5 44.27	19	23.76	155	14.99	2.34	1.0	1.0	13	6	92	.06	2	.3	.6	10	SEC	
		9	20	6 10.01	19	23.94	155	15.07	2.41	1.0	1.0	14	6	105	.07	2	.3	.5	11	SEC	
		9	20	6 58.65	19	23.96	155	15.20	.82	1.3	1.2	16	5	109	.11	2	.2	.4	12	SEC	
		9	20	7 38.84	19	19.28	155	19.05	8.29	1.6	1.1	26	4	62	.11	3	.5	1.0	15	SWR	
		9	20	7 59.65	19	23.70	155	14.98	2.88	1.1	1.0	14	3	92	.06	2	.4	.5	8	SEC	
		9	2011	39.72	19	24.14	155	15.74	1.70	1.3	1.4	15	3	121	.06	2	.3	.4	7	SEC	
		9	2012	9.37	19	23.85	155	15.15	1.45	1.6	2.2	22	3	95	.08	2	.3	.3	16	SEC	
		9	2017	15.79	19	23.87	155	15.34	1.59	1.2	1.2	18	4	105	.07	2	.2	.3	10	SEC	
		9	2018	13.81	19	23.34	155	15.03	3.11	2.5	2.7	33	2	73	.10	2	.3	.4	23	SEC	
		9	2022	55.19	19	24.04	155	15.47	1.80	.9	1.2	18	3	118	.09	2	.2	.3	10	SEC	
		9	2024	24.22	19	24.39	155	15.29	1.46	1.5	1.7	21	4	115	.08	2	.3	.3	11	SEC	
		9	2026	50.54	19	23.38	155	14.89	2.74	.9	.7	10	3	103	.03	3	.3	.8	7	SEC	
		9	2031	38.31	19	23.41	155	14.85	2.80	1.0	1.0	13	3	102	.05	3	.4	.5	8	SEC	
		9	2034	52.41	19	23.82	155	15.29	1.26	.9	1.2	14	4	103	.09	2	.3	.4	10	SEC	
		9	2038	48.74	19	22.86	155	14.57	3.15	.6	1.0	11	3	92	.03	2	.4	.6	7	SEC	
		9	2039	52.46	19	23.25	155	14.73	2.35	.8	1.0	12	3	104	.05	3	.3	.6	6	SEC	
		9	2040	4.99	19	23.36	155	14.75	1.19	1.0	1.0	15	2	103	.08	3	.3	.4	8	SEC	
		9	2044	29.57	19	23.93	155	15.63	2.54	.9	1.4	16	3	110	.10	2	.3	.3	11	SEC	
		9	2045	36.29	19	24.12	155	15.52	1.57	1.8	2.3	27	1	44	.10	2	.3	.3	20	SEC	
		9	2051	24.85	19	19.25	155	15.40	6.36	1.0	1.1	28	2	99	.11	4	.4	.9	21	SF1	
		9	2051	37.37	19	23.82	155	15.32	2.01	1.0	1.2	12	4	102	.07	2	.3	.5	8	SEC	
		9	2055	1.75	19	22.65	155	15.16	5.08	1.2	.8	14	3	67	.13	1	.7	.9	7	INT	
		9	2055	44.67	19	23.41	155	14.79	1.49	.8	1.0	11	2	101	.05	3	.3	.6	7	SEC	
		9	2058	48.71	19	23.19	155	15.21	.86	.5	1.0	8	0	109	.08	2	.3	.7	4	SEC	
		9	21	3 14.49	19	22.85	155	14.24	2.85	1.2	1.0	18	4	70	.08	2	.3	.4	11	SEC	
		9	21	4 31.45	19	22.89	155	14.15	2.56	1.6		15	3	84	.05	2	.3	.3	9	SEC	
		9	21	8 6.52	19	23.41	155	15.01	3.13	1.9	2.1	28	4	54	.08	2	.3	.3	15	SEC	
		9	2111	13.71	19	23.69	155	14.97	3.36	1.0	.8	13	4	93	.04	2	.4	.7	9	SEC	
		9	2113	36.51	19	20.26	155	11.63	8.99	1.3	.9	17	2	80	.05	5	.5	1.1	13	SF3	
		9	2113	45.86	19	23.79	155	14.96	3.23	1.1	1.0	14	6	94	.07	2	.3	.6	11	SEC	
		9	2122	41.37	19	23.26	155	14.79	3.49	.9	.6	14	6	104	.04	3	.3	.6	10	SEC	
		9	2122	56.64	19	23.16	155	14.70	2.66	.9	.8	12	5	111	.05	3	.3	.6	9	SEC	
		9	2129	25.59	19	23.47	155	14.91	2.79	1.0	1.0	13	6	99	.04	2	.3	.6	10	SEC	
		9	2132	22.84	19	23.99	155	15.52	2.06	.9	1.4	15	5	115	.07	2	.2	.4	12	SEC	
		9	2137	46.73	19	24.05	155	15.47	3.42	1.0	1.0	16	6	119	.05	2	.3	.4	13	SEC	
		9	2139	15.12	19	22.92	155	14.26	2.71	1.2	.6	10	0	81	.06	2	.4	.5	9	SEC	
		9	2144	23.15	19	23.94	155	15.50	1.78	.9	1.4	16	6	111	.08	2	.2	.4	13	SEC	
		9	2145	51.56	19	23.33	155	14.72	3.87	1.6	1.9	20	6	68	.06	3	.3	.4	17	SEC	
		9	2147	34.12	19	23.31	155	14.78	3.55	1.1	.8	15	6	102	.06	3	.3	.6	12	SEC	
		9	2151	9.71	19	23.29	155	14.71	2.11	1.1	1.4	17	5	102	.07	3	.3	.4	13	SEC	
		9	22	1 57.48	19	22.92	155	14.28	1.57	1.9	2.5	18	1	68	.11	2	.2	.4	16	SEC	
		9	22	4 59.98	19	25.88	155	13.30	2.83	1.2	1.2	11	3	281	.09	3	1.4	.6	9	SER	
		9	2227	12.38	19	23.26	155	14.82	3.68	1.1	1.0	16	6	104	.04	2	.3	.5	13	SEC	
		9	2245	46.98	19	23.84	155	15.33	1.76	1.0	1.4	17	6	103	.07	2	.2	.4	11	SEC	
		9	2255	48.36	19	23.57	155	15.00	3.43	1.1	1.4	18	6	95	.05	2	.3	.4	14	SEC	
		9	2311	18.19	19	22.96	155	14.43	1.35	1.0	1.4	15	3	77	.11	2	.3	.4	10	SEC	
		9	2324	3.09	19	23.21	155	14.29	1.59	.7	1.0	14	3	107	.06	2	.3	.4	10	SEC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	DEC	9	2325	35.28	19	24.23	155	15.80	3.13	.8	.8	12	5	131	.07	2	.4	.5	10	SEC
		9	2325	51.68	19	22.91	155	14.28	1.56	2.1	2.6	23	4	67	.09	2	.3	.3	20	SEC
		9	2331	53.18	19	23.10	155	14.27	1.64	1.6	2.0	21	4	59	.09	2	.3	.4	17	SEC
		9	2342	22.95	19	23.22	155	14.30	1.39	1.1	1.5	15	3	82	.09	2	.3	.4	12	SEC
		9	2355	30.82	19	23.21	155	14.80	3.40	1.5	1.8	24	6	67	.07	2	.2	.3	21	SEC
		9	2356	10.25	19	23.36	155	14.83	2.77	1.1	1.0	14	5	103	.06	3	.3	.5	10	SEC
		9	2359	45.57	19	24.16	155	15.73	3.12	1.0	1.0	14	6	126	.08	2	.3	.4	11	SEC
		10	0	0 27.88	19	23.27	155	14.82	2.92	1.0	.9	13	5	107	.04	3	.3	.5	9	SEC
		10	016	34.40	19	23.82	155	15.04	1.15	.9	1.0	11	2	97	.18	2	.4	.8	10	SEC
		10	030	58.31	19	23.60	155	15.01	3.39	1.1	1.7	23	6	82	.08	2	.3	.3	16	SEC
		10	041	17.50	19	23.20	155	14.77	3.43	1.0	1.0	15	6	110	.05	2	.4	.5	12	SEC
		10	058	58.78	19	23.10	155	14.73	3.85	1.2	1.4	18	5	68	.13	2	.4	.5	14	SEC
		10	112	59.74	19	24.25	155	14.77	1.96	.9	1.0	14	5	116	.07	1	.3	.4	11	SEC
		10	113	24.92	19	21.37	155	17.13	33.03	1.7	.9	20	2	76	.07	2	1.0	1.9	16	DEP
		10	136	54.97	19	23.06	155	14.74	3.29	1.1	1.2	18	4	63	.05	2	.3	.4	14	SEC
		10	143	9.06	19	19.72	155	13.05	7.69	1.1	1.1	18	1	73	.08	5	.5	1.2	16	SF2
		10	158	33.35	19	23.36	155	14.94	3.07	1.2	.9	13	0	81	.08	2	.4	.5	13	SEC
		10	236	56.99	19	54.82	155	20.08	10.14	1.5	1.7	25	2	241	.10	3	1.4	.4	22	KEA
		10	253	10.12	19	23.39	155	14.86	3.67	1.0	1.0	13	5	103	.08	3	.4	.7	10	SEC
		10	3	6 59.81	19	23.92	155	15.20	1.50	1.0	1.4	16	6	107	.08	2	.2	.4	13	SEC
		10	312	20.15	19	23.40	155	14.80	4.02	1.0	1.0	14	5	102	.06	3	.4	.8	10	SEC
		10	326	20.87	19	23.16	155	14.55	.44		1.0	11	2	111	.11	3	.3	.7	5	SEC
		10	338	18.16	19	23.42	155	15.19	4.92	1.2	1.7	9	1	103	.07	2	.7	1.1	3	SEC
		10	4	4 33.33	19	22.99	155	14.59	3.32	1.1	.8	9	0	93	.07	3	.5	.7	9	SEC
		10	417	41.57	19	23.36	155	14.88	3.28	1.8	2.2	19	4	73	.06	3	.3	.4	10	SEC
		10	418	50.65	19	23.43	155	14.84	3.24	1.1	1.0	15	3	98	.05	3	.4	.5	9	SEC
		10	435	50.81	19	23.40	155	14.89	2.83	1.1	1.1	18	5	75	.08	3	.3	.4	10	SEC
		10	456	15.83	19	23.73	155	14.98	2.88	1.0	.8	12	5	93	.03	2	.3	.7	8	SEC
		10	520	48.21	19	23.74	155	15.00	2.76	1.0	1.2	15	4	92	.05	2	.3	.4	8	SEC
		10	6	3 4.16	19	23.01	155	14.55	3.69	1.2	.6	10	0	95	.05	3	.4	.7	9	SEC
		10	6	9 35.20	19	23.18	155	14.77	3.02	1.4	1.6	16	0	67	.08	2	.3	.5	14	SEC
		10	610	35.18	19	22.97	155	14.77	2.68		1.2	9	0	115	.13	2	.6	.7	8	SEC
		10	615	3.53	19	23.65	155	15.06	2.76	1.0	.3	10	0	85	.05	2	.4	.5	8	SEC
		10	643	5.95	19	23.08	155	14.63	3.25	1.1	.6	11	0	92	.05	3	.5	.6	10	SEC
		10	7	0 13.00	19	23.45	155	14.92	3.37	.9	1.0	8	2	107	.03	3	.5	1.5	7	SEC
		10	715	34.68	19	23.83	155	15.25	1.35	.9	.8	8	0	103	.05	2	.3	.5	8	SEC
		10	728	46.45	19	23.24	155	14.84	3.42	1.1	.9	13	0	105	.07	2	.4	.5	12	SEC
		10	734	56.71	19	23.05	155	14.61	3.40	2.4	2.4	26	0	49	.07	3	.3	.4	25	SEC
		10	738	30.85	19	23.12	155	14.67	3.48	2.3	2.4	25	0	56	.07	3	.4	.4	25	SEC
		10	811	46.51	19	23.22	155	14.83	2.85		.1	8	0	110	.01	2	.5	1.0	8	SEC
		10	910	15.14	19	23.13	155	14.92	2.99	1.4	1.7	21	4	67	.08	2	.3	.3	10	SEC
		10	932	45.74	19	23.30	155	15.01	3.31	1.8	2.1	27	4	56	.08	2	.3	.4	17	SEC
		10	1121	12.06	19	13.72	155	20.18	32.09	3.0	3.2	47	2	160	.11	7	.7	1.1	45	DEP
		10	1141	43.87	19	22.45	155	27.86	4.85	2.8	2.8	36	2	44	.12	0	.4	.9	27	KAO
		10	1250	42.78	19	22.87	155	15.67	27.44	2.1	1.3	31	1	66	.09	1	.8	1.2	20	DEP
		10	1327	43.44	19	23.23	155	14.82	2.87	.9	.8	11	3	109	.02	2	.4	.6	7	SEC
		10	1343	4.85	19	23.44	155	25.67	6.74	1.7	1.3	28	2	44	.11	4	.4	1.0	20	KAO
		10	1358	12.39	19	23.30	155	14.51	1.73	.8	1.2	13	3	105	.09	3	.3	.5	8	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	DEC	10	1552	12.53	19	23.48	155	14.90	3.13	1.1	1.2	14	3	78	.04	2	.4	.5	8	SEC
		10	1624	15.83	19	23.09	155	14.96	2.88	1.6	2.1	30	5	49	.10	2	.3	.3	14	SEC
		10	1641	17.00	19	19.94	155	8.47	7.56	1.8	1.9	30	3	79	.09	5	.5	.9	20	SF4
		10	1740	45.05	19	23.57	155	14.85	1.00		.8	8	0	96	.06	2	.3	.7	8	SEC
		10	18	4 36.12	19	23.78	155	14.87	3.29	1.0	1.0	13	4	90	.07	2	.4	.5	7	SEC
		10	1820	14.72	19	23.14	155	14.48	3.95	3.0	3.2	38	1	47	.11	3	.3	.5	30	SEC
		10	1825	54.82	19	23.31	155	14.83	2.96	1.6	2.1	27	3	46	.08	3	.3	.3	15	SEC
		10	1834	34.43	19	23.32	155	14.77	3.32	1.2	1.2	17	3	70	.08	3	.4	.4	10	SEC
		10	1834	46.52	19	23.39	155	14.94	2.79	1.1	1.4	14	5	103	.05	3	.3	.5	11	SEC
		10	1839	51.16	19	23.32	155	14.79	3.24	1.1	1.0	14	6	105	.05	3	.4	.6	11	SEC
		10	1852	11.88	19	19.73	155	13.49	8.64	1.5	1.1	27	2	65	.09	5	.5	.8	25	SF2
		10	1852	46.53	19	20.40	155	14.06	8.01	1.1	1.3	18	2	103	.07	4	.5	1.0	16	SF2
		10	19	6 26.86	19	23.36	155	14.84	3.33	1.0	.8	12	5	114	.03	3	.4	.7	9	SEC
		10	1934	34.43	19	18.81	155	13.13	7.50	1.6	1.3	21	3	84	.10	3	.5	1.1	18	SF2
		10	1937	22.69	19	19.84	155	10.01	7.58	1.6	1.0	22	2	88	.07	4	.5	1.1	19	SF3
		10	1945	17.48	19	22.89	155	14.63	3.26	1.3	1.4	23	6	69	.19	2	.5	.5	17	SEC
		10	20	9 59.98	19	23.33	155	14.81	3.12	1.1	1.2	16	6	101	.05	3	.3	.4	13	SEC
		10	2037	12.75	19	23.51	155	15.09	3.38	1.0	1.2	17	5	97	.05	3	.3	.4	13	SEC
		10	2113	10.99	19	23.28	155	14.92	2.93	1.1	1.2	16	6	107	.05	2	.3	.4	13	SEC
		10	2118	44.61	19	23.41	155	14.99	3.11	1.2	1.4	16	6	100	.07	2	.3	.5	12	SEC
		10	2118	52.65	19	23.18	155	14.91	2.96	2.7	3.0	43	7	47	.09	2	.2	.3	34	SEC F
		10	2244	44.44	19	23.35	155	14.80	3.29	1.1	1.2	18	5	100	.10	3	.3	.4	15	SEC
		10	2247	36.69	19	23.27	155	14.60	3.15	1.1	1.0	15	6	106	.08	3	.4	.5	12	SEC
		10	2257	47.71	19	20.38	155	12.56	8.41	1.6	1.1	27	2	71	.09	4	.5	.8	23	SF2
		10	23	7 59.74	19	23.37	155	14.90	3.07	.9	.9	14	5	103	.07	3	.3	.6	11	SEC
		10	23	8 33.13	19	23.52	155	14.96	2.93	.9	1.0	14	6	99	.06	2	.3	.5	11	SEC
		10	2315	33.65	19	23.46	155	14.98	2.94	1.0	1.0	15	6	100	.04	3	.3	.5	12	SEC
		10	2325	43.66	19	22.75	155	1.57	8.49	1.9	1.9	29	1	150	.14	6	.8	.8	23	SF5
		11	021	39.90	19	23.19	155	14.77	3.59	1.1	1.0	16	6	106	.05	2	.3	.5	13	SEC
		11	035	25.80	19	23.68	155	14.99	3.18	1.0	1.1	12	4	93	.05	2	.3	.5	10	SEC
		11	054	35.24	19	23.27	155	14.61	3.78	.8	.8	14	6	106	.06	3	.4	.7	10	SEC
		11	056	40.23	19	18.87	155	15.29	6.74	1.1	1.1	23	2	106	.09	4	.5	1.0	16	SF1
		11	2	3 23.79	19	23.42	155	14.87	3.58	1.2	1.2	21	5	74	.08	3	.4	.4	10	SEC
		11	214	43.64	19	21.72	155	4.89	7.89	2.4	2.4	34	2	80	.12	3	.4	.6	15	SF5
		11	223	44.97	19	23.23	155	14.75	3.54	2.4	2.6	33	2	65	.08	3	.3	.4	20	SEC
		11	227	16.70	19	24.12	155	15.88	3.30	1.0	1.0	13	3	122	.04	1	.3	.3	9	SEC
		11	233	54.83	19	23.42	155	14.86	3.33	1.6	1.7	24	4	73	.06	3	.3	.3	15	SEC
		11	328	22.74	19	23.06	155	14.27	1.26	2.0	2.6	23	4	61	.10	2	.3	.4	14	SEC
		11	5	4 10.63	19	19.67	155	12.59	7.81	1.3	1.1	19	2	81	.07	5	.5	1.0	12	SF2
		11	614	31.85	19	23.15	155	14.82	2.95	1.2	1.2	17	3	66	.11	2	.4	.5	10	SEC
		11	615	9.50	19	4.93	155	29.01	31.48	1.8	1.5	28	0	190	.08	9	1.0	2.0	21	DLS
		11	620	7.13	19	18.45	155	14.84	6.42	1.0	1.1	26	2	108	.12	4	.5	1.1	15	SF1
		11	9	6 9.02	19	20.89	155	7.70	8.14		1.1	26	2	83	.10	4	.5	.9	25	SF4
		11	917	28.06	19	22.95	155	14.72	3.36	1.5	1.9	29	7	66	.09	2	.3	.4	23	SEC
		11	919	1.48	19	23.09	155	14.73	3.66	1.9	2.1	33	7	62	.09	2	.3	.4	27	SEC
		11	949	19.66	19	18.22	155	23.56	3.50	2.7	3.2	43	3	90	.14	4	.4	1.0	30	SWR
		11	955	13.95	19	17.92	155	23.06	3.81	1.4	1.4	26	4	100	.10	4	.3	.9	24	SWR
		11	10	0 5.88	19	22.68	154	59.59	8.00	2.2	2.3	31	4	180	.11	5	.7	.5	26	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	DEC	11	1054	57.94	19	22.98	155	14.47	1.80	2.2	2.4	18	2	65	.08	3	.3	.3	16	SEC
		11	1059	9.45	19	19.90	155	6.75	8.00	1.8	1.9	31	1	116	.10	5	.5	.9	28	SF4
		11	13 6	9.17	19	17.85	155	23.44	3.01	1.7	1.6	18	1	95	.11	4	.4	1.0	12	SWR
		11	1318	12.89	19	17.84	155	23.36	3.51	.9	1.3	15	3	97	.06	4	.4	.9	11	SWR
		11	1851	16.29	19	20.10	155	12.97	8.21	1.1	1.0	15	2	206	.05	5	1.0	1.1	10	SF2
		11	1859	59.87	20	3.80	154	56.78	8.65	1.3	1.8	5	0	285	.05	46	8.8	2.4	4	KEA
		11	2259	16.85	19	23.46	155	26.33	7.69	1.6	1.5	29	3	92	.10	3	.4	.9	19	KAO
		12	0 2	1.29	19	19.00	155	8.62	5.67	1.6	1.3	17	2	240	.10	6	1.4	2.7	12	SF4
		12	227	2.31	19	20.75	155	3.17	6.57	1.4	1.5	18	0	217	.14	7	1.3	1.5	12	SF5
		12	255	44.97	19	19.16	155	13.36	6.11	1.7	1.6	26	1	213	.12	6	.8	1.3	24	SF2
		12	317	39.13	19	19.12	155	8.26	7.07	1.9	1.8	21	1	241	.09	6	1.4	1.1	18	SF4
		12	630	33.22	19	19.62	155	14.73	9.01	2.4	2.5	37	3	86	.10	5	.6	.5	34	SF1
		12	631	30.17	19	25.09	155	29.48	8.62	1.6	1.1	21	2	105	.11	6	.6	1.2	19	KAO
		12	751	38.05	19	21.44	155	4.55	8.17	1.8	1.4	15	0	209	.07	4	1.5	1.0	13	SF5
		12	947	15.54	19	20.40	155	13.43	8.07	1.6	1.9	25	2	164	.12	4	.6	.8	19	SF2
		12	1045	12.20	19	23.49	155	14.79	3.41	1.1	1.0	13	5	99	.03	2	.4	.6	10	SEC
		12	1123	56.28	19	24.83	155	24.77	8.48	2.0	2.0	30	4	67	.09	1	.4	.8	25	KAO
		12	1246	56.36	19	23.35	155	14.89	3.36	2.5	3.3	30	4	104	.09	3	.3	.3	19	SEC
		12	1249	50.03	19	23.51	155	14.93	3.12	1.6	2.0	19	5	99	.06	2	.3	.4	15	SEC
		12	13 9	11.28	19	23.51	155	14.81	3.36	2.8	3.0	30	2	109	.10	2	.4	.4	23	SEC
		12	1335	36.50	19	23.68	155	15.05	3.03	1.2	1.7	18	7	93	.09	2	.3	.4	14	SEC
		12	1440	32.71	19	23.12	155	14.70	3.07	1.0	1.0	13	5	113	.06	3	.4	.6	10	SEC
		12	1519	54.34	19	22.30	155	1.24	7.96	1.6	1.6	22	4	213	.13	7	1.0	.8	19	SF5
		12	1521	16.41	19	22.19	155	1.60	6.93	2.2	2.1	28	3	210	.18	6	1.0	1.1	25	SF5
		12	1622	34.62	19	20.20	155	13.12	7.74	1.4	1.1	21	2	211	.10	4	1.0	1.1	18	SF2
		12	2014	4.25	19	23.13	155	14.76	2.99	2.3	2.7	31	8	113	.09	2	.3	.2	26	SEC
		12	2149	12.69	19	10.00	155	17.10	12.27	2.2	2.7	25	0	219	.12	19	1.4	.6	25	LOI
		12	2151	9.83	19	16.47	155	22.21	8.47	1.5	1.5	21	1	152	.13	7	.8	1.5	20	SWR
		13	2 0	17.87	19	22.84	155	17.30	2.60	2.9	3.5	28	2	74	.10	1	.3	.3	24	SSC
		13	2027	25.53	19	23.14	155	14.63	3.62	2.1	2.0	30	6	48	.09	3	.3	.3	23	SEC
		13	2134	.23	19	23.71	155	16.04	1.06	.9	1.2	12	2	96	.13	1	.3	.4	9	SEC
		13	2248	39.07	19	23.33	155	14.78	3.02	1.0	1.0	14	6	104	.04	3	.3	.5	11	SEC
		13	2258	56.95	19	23.25	155	14.67	3.43	2.9	3.2	40	4	47	.07	3	.3	.4	27	SEC
		13	2324	51.94	19	20.09	155	6.70	7.28	1.7	1.5	29	3	112	.09	5	.5	.9	25	SF4
		14	2 7	9.83	19	19.25	155	11.33	5.63	1.5	1.5	31	3	103	.13	6	.6	1.5	22	SF3
		14	234	50.42	19	23.46	155	14.93	3.48	2.1	2.6	32	3	46	.10	3	.3	.4	22	SEC
		14	332	19.60	19	23.01	155	14.90	2.59	1.2	1.2	22	5	65	.13	2	.3	.4	12	SEC
		14	6 4	48.14	19	19.86	155	7.86	6.85	1.9	1.8	36	4	94	.11	5	.5	.8	24	SF4
		14	721	1.00	19	23.69	155	14.89	3.82	1.1	1.0	14	2	86	.09	2	.4	.5	9	SEC
		14	1330	38.90	19	22.76	155	14.10	1.67	1.2	1.8	17	4	85	.08	2	.3	.3	9	SEC
		14	14 9	24.17	19	20.18	155	12.82	7.24	1.4	1.3	28	3	70	.11	5	.5	.8	16	SF2
		14	1525	39.14	19	23.37	155	14.84	3.11	1.4	1.6	18	4	100	.10	3	.4	.5	9	SEC
		14	2039	59.30	19	23.37	155	14.55	3.35	2.7	3.3	36	3	82	.12	2	.3	.4	25	SEC
		14	2045	13.56	19	22.88	155	14.62	3.44	2.2	2.5	36	5	87	.10	2	.3	.4	22	SEC
		14	22 3	5.73	19	23.07	155	14.89	2.90	2.3	2.9	35	3	84	.10	2	.3	.4	25	SEC
		14	2241	36.98	19	21.57	155	1.34	5.35	1.4	1.1	25	1	173	.16	4	.8	1.6	10	SF5
		14	2338	15.45	19	29.45	155	47.05	8.94	2.1	1.7	30	3	145	.12	3	.6	.4	15	KON
		15	1 2	23.25	19	20.33	155	7.13	7.07	1.8	1.5	31	3	100	.12	5	.5	.8	15	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	DEC	15	522	42.39	19	20.07	155	7.69	8.07	2.4	2.3	39	3	95	.12	5	.5	.7	27	SF4
		15	823	50.46	19	19.96	155	8.09	7.20	1.4	1.3	19	0	87	.07	5	.6	1.2	14	SF4
		15	937	42.81	19	19.37	155	11.25	6.23	1.6	1.1	27	4	126	.09	6	.5	1.1	16	SF3
		15	1039	4.74	19	23.17	155	14.93	3.20	1.8	2.1	25	4	107	.08	2	.3	.4	17	SEC
		15	1140	34.08	19	23.35	155	14.88	2.54	.9	1.0	10	3	113	.03	3	.4	.7	6	SEC
		15	1410	6.31	19	23.01	155	14.82	3.12	2.0	2.5	25	3	85	.07	2	.3	.3	14	SEC
		15	1414	40.05	19	22.79	155	14.41	3.57	1.9	2.0	31	4	116	.10	2	.3	.4	15	SEC
		15	1553	53.70	19	23.34	155	14.80	2.93		1.0	11	2	105	.04	3	.4	.5	8	SEC
		15	1613	26.56	19	20.02	155	10.13	6.68	1.5	1.1	23	3	85	.09	4	.5	1.1	19	SF3
		15	1622	53.88	19	23.03	155	14.76	2.85	1.9	2.0	31	3	85	.11	2	.3	.4	19	SEC
		15	1824	14.32	19	20.69	155	6.32	8.36	1.6	1.6	25	2	102	.11	4	.5	.9	18	SF4
		15	1827	.85	19	23.94	154	58.67	7.24	1.9	1.6	32	3	175	.19	2	1.0	.7	19	LER
		15	2246	11.15	19	22.93	155	14.57	3.47	1.7	2.1	22	4	67	.05	3	.4	.4	12	SEC
		16	0 5	16.23	19	23.10	155	14.74	3.07	1.4	1.7	20	5	63	.08	2	.3	.4	13	SEC
		16	014	34.82	19	23.37	155	14.58	3.55	1.6	1.9	22	2	61	.09	2	.4	.4	9	SEC
		16	054	5.07	19	23.47	155	14.98	2.44	1.1	1.2	12	3	100	.04	3	.3	.5	8	SEC
		16	257	32.36	19	23.39	155	14.88	2.76	.9	1.0	10	2	102	.03	3	.4	.6	7	SEC
		16	514	44.82	19	20.39	155	11.96	7.81	1.5	1.3	23	2	75	.07	5	.5	1.0	13	SF3
		16	1852	37.21	19	16.68	155	22.06	3.60	1.0	1.1	16	1	132	.09	6	.5	2.0	15	SWR
		16	2251	30.26	19	23.52	155	14.99	2.52	1.1	1.0	12	4	98	.05	2	.4	.6	8	SEC
		16	2349	.34	19	22.34	155	25.09	9.74	1.9	1.8	37	3	42	.12	4	.4	.7	24	KAO
		17	0 0	8.69	19	19.28	155	15.49	6.75	1.9	1.8	35	2	100	.11	4	.4	.8	24	SF1
		17	126	47.88	19	23.32	155	16.99	2.59	1.5	1.8	22	4	46	.09	0	.2	.2	11	SSC
		17	614	40.91	19	16.27	155	22.31	7.35	1.8	1.6	29	1	136	.10	5	.5	1.1	17	SWR
		17	615	46.64	19	23.29	155	14.84	2.81	1.2	1.0	13	2	102	.04	3	.4	.5	8	SEC
		17	627	6.45	19	23.52	154	58.07	4.88	2.0	1.6	31	4	185	.23	3	1.0	1.5	17	SLE
		17	631	38.60	19	23.56	155	15.00	2.79	1.4	1.4	21	5	81	.08	2	.3	.3	12	SEC
		17	637	55.75	19	16.38	155	23.42	4.73	1.9	2.4	35	0	110	.16	4	.5	1.6	22	SWR
		17	716	51.52	19	23.43	155	15.03	2.42	1.4	1.2	18	4	101	.07	2	.3	.4	10	SEC
		17	11 7	1.65	19	21.34	155	24.83	11.27	2.3	2.4	38	3	46	.12	3	.4	.6	26	SWR
		17	16 3	7.98	19	23.17	155	14.67	2.74	1.1	1.0	12	2	91	.05	3	.4	.5	7	SEC
		17	1952	56.95	19	23.46	155	15.01	2.41	1.4	1.2	16	3	78	.08	3	.3	.4	12	SEC
		18	234	59.57	19	19.44	155	12.20	8.51	1.4	1.1	17	1	90	.05	5	.6	1.3	15	SF3
		18	241	4.01	19	20.45	155	12.92	8.73	1.5	1.7	33	2	66	.11	4	.5	.7	21	SF2
		18	614	31.94	19	18.37	155	15.68	7.26	1.6	1.6	35	3	121	.10	4	.4	.7	18	SF1
		18	1110	9.47	19	17.64	155	13.16	9.34	1.9		34	1	147	.11	9	.6	.8	21	SF2
		18	1253	27.06	19	19.86	155	8.24	7.65	1.8	1.5	33	4	84	.11	5	.5	.9	21	SF4
		18	2359	12.57	19	22.94	155	17.11	2.48	1.2	1.0	18	5	82	.09	1	.3	.3	12	SSC
		19	043	48.60	19	16.88	155	13.16	5.70	1.3	1.1	17	1	199	.10	1	.9	.8	11	SF2
		19	244	4.12	19	23.37	155	15.00	2.93	1.6	1.8	24	3	76	.09	2	.3	.4	12	SEC
		19	256	52.40	19	53.33	155	28.68	27.21	3.1	3.1	45	5	209	.10	12	.8	1.4	32	KEA
		19	3 5	11.95	19	23.11	155	14.82	2.81	1.8	2.1	23	4	64	.11	2	.3	.4	15	SEC
		19	621	10.81	19	23.45	155	14.95	2.92	1.3	1.4	14	4	100	.05	3	.4	.5	10	SEC
		19	821	11.71	19	22.82	155	17.02	2.49	1.3	1.2	18	3	77	.07	1	.3	.3	11	SSC
		19	839	53.25	19	19.29	155	15.46	6.75		1.1	21	0	99	.11	4	.5	1.3	19	SF1
		19	957	27.17	19	23.55	155	14.95	3.44	1.1	1.0	12	4	95	.06	2	.4	.8	5	SEC
		19	1317	18.05	19	22.12	155	13.32	2.91	1.3	1.2	14	3	152	.04	1	.6	.3	5	SER
		19	1451	20.14	19	20.30	155	6.63	7.37	2.4	2.3	37	4	108	.10	5	.4	.7	32	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	DEC	19	2048	32.83	19	17.40	155	13.06	8.59	2.5	2.7	38	3	136	.10	1	.5	.6	26	SF2
		19	2123	35.51	19	18.85	155	13.35	8.15	1.5	1.3	31	3	78	.09	3	.5	.8	23	SF2
		19	2145	15.75	19	20.39	155	6.21	8.85	2.7	2.7	37	3	111	.09	5	.4	.6	26	SF4
		19	2310	53.35	19	17.53	155	12.98	7.07	1.6	1.7	25	1	131	.12	1	.7	1.0	10	SF2
		20	126	49.96	19	23.33	155	14.90	3.45	1.5	1.6	17	4	105	.09	2	.4	.5	10	SEC
		20	545	57.71	19	19.72	155	8.90	6.51	1.6	1.5	25	3	213	.09	5	1.2	1.0	10	SF4
		20	915	19.73	19	20.46	155	7.25	7.53	1.6		24	3	209	.10	5	.9	.8	17	SF4
		20	14	5 30.82	20	6.23	155	26.66	1.25	2.2	1.7	16	0	273	.12	26	2.9	4.8	5	KEA
		20	1844	45.44	19	23.48	155	14.62	1.20	1.0	1.4	12	1	98	.05	2	.3	.5	9	SEC
		20	2029	34.55	19	21.50	155	5.87	7.28	2.0	1.8	37	6	87	.12	3	.4	.6	20	SF4
		20	2257	51.59	19	22.02	155	13.25	2.97	1.4	1.2	11	2	94	.06	1	.5	.5	7	SER
		21	215	43.02	19	19.15	155	16.27	9.00	2.3	2.2	42	3	109	.13	3	.4	.5	24	SF1
		21	448	26.89	19	20.16	155	9.65	9.07	1.5	1.1	21	2	80	.07	4	.6	1.3	19	SF3
		21	744	51.62	19	19.40	155	11.31	5.68	1.9	1.5	31	0	99	.12	6	.5	1.0	27	SF3
		21	11	3 46.09	19	19.43	155	15.53	8.03	2.9	3.0	42	2	89	.10	4	.4	.6	37	SF1
		21	11	7 8.37	19	21.41	155	1.67	8.38	2.5	2.7	41	4	169	.10	4	.7	.4	25	SF5
		21	1212	59.01	19	20.35	155	11.61	8.98	3.2	3.4	45	6	78	.11	4	.4	.4	31	SF3
		21	1214	46.96	19	20.44	155	11.35	6.50	2.0	1.6	33	3	78	.12	4	.5	.9	21	SF3
		21	1243	6.86	19	20.27	155	11.67	7.41	1.8	1.6	34	4	79	.10	5	.5	.7	19	SF3
		21	14	6 27.19	19	23.05	155	14.57	3.41	1.3	1.2	17	2	110	.06	3	.4	.5	15	SEC
		21	1444	57.09	19	20.78	155	2.18	6.71	2.5	2.5	30	2	171	.11	2	.6	.6	21	SF5
		21	1535	22.79	19	23.03	155	14.48	2.35	1.2	1.6	22	5	63	.09	3	.3	.4	17	SEC
		21	1543	51.35	19	22.83	155	14.41	3.39	1.8	2.1	32	4	66	.08	2	.3	.4	18	SEC
		21	1612	11.69	19	22.89	155	14.57	3.33	1.5	2.0	26	4	69	.08	3	.3	.4	20	SEC
		21	1751	59.27	19	23.06	155	14.71	3.12	1.6	1.9	32	5	48	.09	2	.3	.4	19	SEC
		21	1756	16.58	19	23.21	155	14.50	4.06	3.1	3.5	39	1	47	.11	3	.3	.5	31	SEC
		21	1757	54.07	19	22.90	155	14.61	2.97	1.5	1.8	24	5	117	.13	2	.4	.4	14	SEC
		21	18	1 14.87	19	23.15	155	14.77	3.26	2.9	3.2	41	3	48	.11	2	.3	.4	33	SEC
		21	1853	52.87	19	23.13	155	14.47	3.24	1.2	1.6	22	5	60	.12	3	.4	.5	14	SEC
		21	2030	32.80	19	23.21	155	14.87	3.12	2.6	3.2	30	3	48	.09	2	.3	.4	24	SEC
		21	2117	31.04	19	21.58	155	12.84	2.73	1.4	1.4	21	4	56	.09	2	.3	.4	17	SER
		21	22	2 41.69	19	20.66	155	13.77	8.03	1.8	1.6	30	1	65	.13	4	.5	.8	24	SF2
		21	2342	17.44	19	22.38	155	13.46	2.91	1.3	1.0	12	2	86	.08	1	.5	.4	8	SER
		22	456	23.12	19	18.03	155	13.13	6.35	1.7	1.6	34	4	101	.12	2	.5	.9	17	SF2
		22	724	34.04	19	18.57	155	14.91	6.92	1.6	1.2	24	2	106	.08	4	.4	.9	19	SF1
		22	915	50.36	19	23.49	155	17.05	2.71	1.1	1.2	18	5	49	.10	0	.3	.3	12	SSC
		22	1252	9.07	19	18.15	155	13.21	6.76	1.6	1.6	31	2	93	.10	2	.5	.9	17	SF2
		22	1345	42.20	19	21.81	155	13.07	2.71	1.6	1.7	19	2	71	.06	2	.4	.4	14	SER
		22	16	9 11.02	19	19.42	155	11.48	6.31	1.7	1.1	23	2	98	.06	6	.5	1.0	15	SF3
		22	1625	24.73	19	20.21	155	12.79	8.24	1.6	1.3	26	2	70	.09	5	.5	.7	18	SF2
		22	1639	13.88	19	22.87	155	14.35	2.39	1.3	1.1	21	5	70	.09	2	.3	.4	11	SEC
		22	1947	20.88	19	23.59	155	14.85	3.32		1.0	8	0	95	.05	2	.5	.9	8	SEC
		22	2327	3.56	19	22.00	155	13.13	3.19	1.9	2.4	26	3	51	.08	1	.3	.4	21	SER
		23	016	21.12	19	21.90	155	13.27	2.63	1.4	1.0	15	2	96	.08	1	.4	.4	9	SER
		23	020	28.14	19	27.84	155	14.63	32.63	1.9	1.4	38	1	52	.11	6	.6	1.3	31	DEP
		23	1	2 38.61	19	19.48	155	12.08	4.61	1.3	1.1	21	3	91	.12	5	.5	2.0	14	SSF
		23	1	6 57.51	19	21.78	155	13.40	2.46	1.1	1.4	20	2	52	.10	2	.4	.5	11	SER
		23	4	2 25.04	19	18.86	155	8.54	6.47	1.6	1.3	27	3	90	.09	3	.5	1.2	19	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	DEC	23	653	13.45	19	21.75	155	12.10	2.90	1.3	1.4	21	2	77	.05	2	.4	.4	15	SER
		23	713	14.88	19	22.77	155	14.60	1.27	1.6	2.3	27	4	65	.09	2	.3	.4	17	SEC
		23	747	30.96	19	21.49	155	12.07	2.40	1.5		18	2	100	.06	3	.4	.5	12	SER
		23	1053	48.76	19	21.93	155	4.73	7.02	1.1	1.1	22	1	79	.15	3	.6	.9	15	SF5
		23	1212	27.41	19	22.42	155	2.44	6.93	1.3	1.2	23	2	136	.12	5	.5	1.0	19	SF5
		23	13	5 57.21	19	18.75	155	13.69	6.79	1.6	1.6	30	3	89	.10	3	.5	.8	16	SF2
		23	16	3 47.18	19	51.07	155	20.14	1.82		1.3	11	2	126	.08	4	.6	1.3	7	KEA
		23	1623	50.93	19	22.85	155	14.32	1.55	1.9	2.3	20	4	79	.10	2	.3	.4	9	SEC
		23	17	6 25.29	19	23.08	155	14.44	1.24	.7	1.2	12	3	115	.06	3	.3	.5	6	SEC
		23	17	7 41.80	19	22.13	155	13.23	2.76	1.3	1.0	15	5	92	.09	1	.3	.3	10	SER
		23	1749	28.32	19	20.95	155	11.13	7.89	2.0	1.8	34	2	70	.09	3	.4	.6	21	SF3
		23	18	5 14.09	19	21.71	155	13.11	3.13	1.4	1.6	21	3	54	.09	2	.4	.5	16	SER
		23	1957	8.92	19	20.00	155	11.67	6.60	1.5	1.2	24	1	84	.08	5	.5	.9	17	SF3
		23	2050	42.41	19	22.68	155	14.66	1.18	2.6	3.2	33	2	51	.10	2	.3	.4	20	SEC
		23	2230	37.76	19	23.10	155	14.35	1.06	1.1	1.7	15	3	114	.09	2	.3	.4	8	SEC
		23	2352	15.46	19	19.60	155	12.10	6.90	2.3	2.3	40	6	88	.11	5	.4	.7	32	SF3
		23	2356	42.04	19	22.71	155	14.59	1.76	1.1	1.6	19	2	71	.08	2	.3	.4	13	SEC
		24	313	2.54	19	22.32	155	13.59	2.74	.8	1.0	17	3	84	.11	1	.4	.4	10	SER
		24	652	8.33	19	17.90	155	14.53	7.01	1.1	1.1	25	4	142	.07	2	.5	.8	17	SF1
		24	1151	24.31	19	19.23	155	13.22	4.57	1.6	1.6	29	2	76	.12	4	.4	1.8	15	SSF
		24	1325	48.77	19	11.61	155	35.97	8.17	1.6	1.7	24	2	92	.22	6	.7	1.7	17	LSW
		24	1530	28.69	19	23.35	155	17.04	2.81	2.0	2.4	30	3	36	.10	0	.3	.3	23	SSC
		24	1549	53.70	19	23.25	155	16.98	2.88	1.4	1.4	19	3	59	.10	0	.3	.3	14	SSC
		24	1710	52.40	19	6.62	155	28.81	30.53	2.0	1.9	32	1	173	.09	6	.9	1.7	27	DLS
		24	2014	38.69	19	18.66	155	13.59	7.97	1.7		21	2	87	.07	3	.6	.9	10	SF2
		24	2039	47.04	19	18.39	155	13.32	8.40	2.4	2.4	40	2	85	.12	3	.5	.6	28	SF2
		24	2042	59.50	19	18.26	155	13.15	6.21	1.4	1.3	28	3	94	.08	2	.5	1.0	19	SF2
		24	2114	11.87	19	23.04	155	14.68	3.18	1.5	1.7	28	4	49	.08	2	.3	.4	15	SEC
		25	045	18.20	19	19.59	155	13.55	6.94		1.1	26	2	66	.14	5	.5	1.3	15	SF2
		25	255	25.96	19	23.09	155	14.61	2.97	1.1	1.6	17	3	115	.10	3	.4	.9	9	SEC
		25	336	56.16	19	23.86	155	14.96	3.12	1.0	1.0	14	4	97	.06	2	.3	.4	9	SEC
		25	439	5.30	19	18.49	155	.55	35.79	2.0	1.3	34	2	216	.08	5	1.2	1.4	29	DEP
		25	534	33.51	19	17.95	155	14.82	9.53	2.4	2.4	40	4	134	.07	3	.5	.4	23	SF1
		25	547	50.52	19	22.21	155	11.31	1.84	1.5	1.4	14	0	89	.10	3	.6	.5	10	SER
		25	1124	16.67	19	15.16	155	16.66	.50	1.1	1.1	24	0	189	.15	6	.7	2.3	13	SSF
		25	1244	47.80	19	19.66	155	10.54	9.05	2.9	3.0	42	2	94	.11	5	.4	.4	35	SF3 F
		25	1246	28.76	19	19.53	155	10.42	7.11	1.6	1.1	24	2	96	.08	5	.5	1.1	17	SF3
		25	13	4 1.15	19	19.48	155	9.41	8.30	2.1	2.4	36	2	91	.09	5	.4	.5	25	SF3
		25	1314	47.96	19	19.48	155	9.42	6.11	1.5	1.5	32	4	92	.10	5	.5	1.0	24	SF3
		25	1329	42.09	19	40.32	156	2.25	40.90	2.9	2.8	40	4	273	.09	24	1.2	1.0	33	HUA
		25	14	8 59.99	19	19.92	155	9.09	6.19	1.3	1.1	22	2	79	.11	4	.6	1.3	20	SF4
		25	1446	2.94	19	22.88	155	14.75	3.12	1.6	1.9	28	5	64	.10	2	.3	.4	17	SEC
		25	1524	51.93	19	24.58	155	15.02	38.76	2.1	2.6	34	3	45	.10	1	.7	1.4	7	DEP L
		25	1556	3.40	19	9.77	155	41.15	5.04	1.6	1.4	26	1	128	.11	12	.7	1.4	17	LSW
		25	1644	29.21	19	19.81	155	9.49	7.23	2.0	2.3	37	2	85	.11	4	.4	.7	28	SF3
		25	1646	6.83	19	19.65	155	9.56	6.91	1.4	1.0	28	1	89	.11	5	.5	1.0	18	SF3
		25	1958	50.88	19	22.93	155	14.52	3.23	1.6	1.6	29	4	65	.12	3	.4	.4	17	SEC
		25	2022	1.90	19	19.74	155	7.27	7.30	2.0	1.9	36	2	109	.10	5	.4	.7	22	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	DEC	25	2057	28.73	19	23.21	155	14.70	3.20	2.2	2.7	34	2	47	.09	3	.3	.4	25	SEC	
		25	2115	9.34	19	18.25	155	13.08	5.81	1.4	1.1	23	2	97	.08	2	.5	1.3	17	SF2	
		25	2153	3.36	19	19.63	155	12.06	6.76	1.1	1.0	22	2	87	.08	5	.5	1.0	15	SF3	
		25	2318	24.49	19	18.99	155	15.01	6.50	1.9	1.6	35	1	99	.11	5	.5	.8	23	SF1	
		26	0	1 8.01	19	20.86	155	6.53	8.94	2.2	2.2	38	5	97	.09	4	.4	.7	29	SF4	
		26	026	50.62	19	16.72	155	22.20	2.62		1.1	10	0	129	.07	5	.5	1.5	9	SWR	
		26	316	41.10	19	21.93	155	13.15	2.97	.8	1.0	12	3	97	.07	1	.4	.5	9	SER	
		26	335	52.90	19	25.08	155	16.82	15.39	1.1	1.2	23	1	119	.12	0	.8	1.0	18	DEP	
		26	520	38.14	20	28.80	156	1.73	7.62	2.9	2.4	48	5	164	.10	39	1.0	2.9	40	DIS	
		26	528	19.07	19	22.97	155	14.64	2.90	1.1	1.2	15	3	114	.08	2	.4	.5	8	SEC	
		26	8	4 48.09	19	18.70	155	14.93	6.40	1.7	1.5	31	2	105	.09	4	.4	.9	20	SF1	
		26	8	7 51.21	19	19.46	155	11.60	5.64	1.4	1.5	23	2	95	.10	6	.5	1.5	15	SF3	
		26	2026	20.00	19	17.53	155	14.07	6.05	1.4	1.3	26	3	122	.08	1	.4	.8	19	SF2	
		26	2037	41.12	19	18.13	155	15.11	5.52	1.1	1.3	25	3	121	.11	4	.5	1.1	15	SF1	
		27	755	17.68	19	18.79	155	14.87	6.04	1.1	1.1	25	1	101	.12	4	.5	1.2	18	SF1	
		27	8	7 3.85	19	18.68	155	14.81	6.27	1.1	1.1	23	1	102	.10	4	.5	1.1	19	SF1	
		27	13	8 22.03	19	21.22	155	2.14	6.41	1.8	1.8	29	0	152	.15	3	.5	.9	17	SF5	
		27	1536	35.53	19	20.15	155	11.40	9.28	2.5	2.6	41	3	83	.13	4	.4	.5	34	SF3	
		27	1557	11.49	19	19.60	155	11.09	4.77	1.4	1.1	18	3	95	.08	5	.5	1.9	14	SSF	
		27	2041	55.92	19	21.74	155	12.16	2.71	1.5	1.2	14	2	86	.07	2	.5	.5	9	SER	
		27	2335	1.86	19	20.38	155	6.68	9.23	3.2	3.2	46	3	105	.09	5	.5	.3	36	SF4	
		28	244	33.15	19	19.51	155	9.34	6.52	1.3	1.1	25	2	90	.07	5	.4	.9	18	SF3	
		28	354	51.19	19	21.73	155	13.00	3.01	1.8	1.8	29	4	54	.08	2	.3	.4	18	SER	
		28	444	44.09	19	20.50	155	3.80	7.34	2.1	2.4	34	0	107	.12	2	.5	.7	26	SF5	
		28	446	8.57	19	20.92	155	3.95	6.77	1.5	1.1	34	0	91	.12	3	.5	.8	18	SF5	
		28	5	6 53.04	19	20.57	155	3.80	8.19	2.3	2.6	39	1	103	.11	2	.6	.5	29	SF5	
		28	620	.97	19	20.13	155	11.28	8.56	1.9	1.8	30	1	83	.09	4	.5	.9	23	SF3	
		28	717	55.88	19	22.04	155	13.43	2.99	1.3	1.4	16	1	50	.10	1	.4	.5	11	SER	
		28	819	37.48	19	24.36	155	29.29	8.74	1.7	1.2	21	1	64	.10	5	.4	1.1	17	KAO	
		28	833	3.90	19	24.87	155	15.20	30.15	2.5	2.5	44	2	46	.09	2	.6	.9	37	DEP	
		28	944	39.87	19	21.71	155	13.49	2.57	1.7	1.6	21	3	54	.10	2	.4	.5	14	SER	
		28	1446	42.54	19	19.67	155	10.22	6.06	1.4	1.1	25	2	93	.11	4	.6	1.4	21	SF3	
		28	18	1 22.67	19	22.25	155	6.07	7.85	1.4	1.3	25	1	72	.12	1	.5	.9	12	SF4	
		29	059	31.00	19	20.45	155	6.78	6.70	1.3	1.1	23	0	102	.10	5	.6	1.2	15	SF4	
		29	432	37.18	20	18.50	155	45.26	30.43	2.9	3.0	44	3	176	.10	63	1.1	3.0	35	KOH	
		29	747	1.03	19	19.22	155	13.16	5.14	1.5	1.6	34	4	78	.12	4	.4	1.3	21	SF2	
		29	1137	4.61	19	13.23	155	23.44	36.92	1.9	1.5	27	0	154	.08	2	.9	2.0	21	DEP	
		29	1350	6.49	19	22.07	155	13.29	2.80	.9	1.0	14	2	54	.07	1	.5	.4	7	SER	
		29	1948	37.39	19	17.65	155	23.15	2.76	.7	1.1	11	1	101	.06	5	.4	.9	5	SWR	
		29	20	8 2.56	19	28.73	154	52.62	2.42	1.5	1.2	12	1	93	.07	3	.5	.9	8	SLE	
		29	21	0 1.65	19	26.87	155	49.43	6.96	1.8	1.2	15	1	107	.11	9	.7	1.7	8	KON	
		29	23	3 26.89	19	21.33	155	17.99	31.28	2.4	2.7	43	1	36	.10	2	.6	1.0	36	DEP	
		29	2320	21.64	19	29.06	154	52.00	2.41	1.8	1.2	11	1	101	.09	3	.8	1.2	8	SLE	
		30	011	2.62	19	19.86	155	12.65	6.38	1.4	1.3	25	4	77	.11	5	.5	1.0	19	SF2	
		30	122	35.02	19	20.62	155	12.89	7.14	1.0	1.1	17	2	65	.07	4	.5	1.0	11	SF2	
		30	136	23.98	19	21.70	155	11.22	.01	.5	1.3	11	2	131	.17	2	.5	.8	7	SER	*
		30	241	10.51	19	13.44	155	21.26	36.68		1.4	31	0	159	.08	5	.9	1.9	26	DEP	
		30	439	28.95	19	20.68	155	12.95	7.46	2.1	2.2	38	1	63	.12	4	.4	.7	30	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	DEC	30	442	8.58	19	21.63	155	11.32	2.35	1.1	1.2	15	1	108	.08	3	.4	.5	8	SER	
		30	612	47.58	19	21.89	155	11.29	2.97	.7	1.0	12	2	121	.07	3	.6	.4	6	SER	
		30	654	20.39	19	22.12	155	10.73	3.20	1.7	1.7	19	1	90	.06	2	.5	.5	13	SER	
		30	856	2.44	19	21.82	155	11.22	2.42	1.9	2.0	24	3	84	.08	2	.3	.4	14	SER	
		30	957	38.01	19	21.93	155	10.98	2.29	1.2	1.4	17	2	87	.09	4	.5	.9	8	SER	
		30	1046	54.43	19	22.00	155	14.00	.60	.7	1.4	9	2	194	.13	2	.6	.8	6	KOA	
		30	1457	25.67	19	22.05	155	11.08	2.37	1.5	1.4	18	0	116	.10	4	.6	1.0	16	SER	
		30	1622	4.85	19	22.83	155	14.31	2.56	2.6	3.0	30	1	50	.10	2	.3	.4	29	SEC	
		30	1648	13.63	19	23.29	155	14.82	1.44	.4	1.0	10	2	106	.11	3	.4	.7	6	SEC	
		30	1720	56.99	19	20.10	155	9.77	6.86	1.4	1.1	28	2	81	.10	4	.4	1.0	21	SF3	
		30	1721	57.21	19	18.51	155	14.18	10.06	2.9	3.2	42	2	131	.11	6	.5	.6	36	SF2	F
		30	1732	39.73	19	18.15	155	14.20	6.25	1.7	1.6	29	0	101	.11	2	.6	1.2	23	SF2	
		30	1739	47.75	19	21.88	155	9.31	3.47	2.1	2.3	27	2	56	.07	1	.4	.5	18	SER	
		30	18	1 50.48	19	21.65	155	9.27	3.23	1.4	1.1	15	0	115	.08	1	.8	.6	12	SER	
		30	2025	.57	19	22.02	155	10.74	2.84	1.6	1.4	20	4	89	.08	2	.5	.4	11	SER	
		30	2124	45.93	19	17.66	155	14.12	5.34	1.7	1.5	23	1	127	.09	2	.5	.9	17	SF2	
		30	2148	23.92	19	22.81	155	14.22	1.21	1.2	1.7	17	3	72	.09	2	.3	.4	9	SEC	
		30	2154	45.57	19	16.89	155	21.87	6.47	1.8	1.9	30	1	130	.11	6	.5	1.1	20	SWR	
		30	2328	19.92	19	17.83	155	12.96	5.27		1.3	28	3	116	.12	2	.5	1.2	17	SF2	
		30	2336	39.60	19	22.57	155	13.91	1.70	1.2	2.0	5	0	168	.03	1	.7	.6	1	SER	
		30	2355	53.67	19	22.75	155	14.23	.53	1.2	2.4	14	2	73	.10	2	.3	.4	8	SEC	
		31	0	5 7.32	19	18.08	155	15.08	7.68	1.3	1.1	23	3	123	.08	3	.5	.8	21	SF1	
		31	150	17.25	19	20.53	155	10.86	7.99	1.2	1.1	19	2	77	.04	3	.6	1.0	17	SF3	
		31	355	9.96	19	22.89	155	14.40	1.03	3.4	3.9	34	2	48	.13	2	.3	.4	28	SEC	F
		31	4	8 22.03	19	16.92	155	13.92	6.96	1.4	1.3	25	3	196	.10	1	.6	.8	22	SF2	
		31	414	29.03	19	23.20	155	14.36	1.32	1.5	2.2	21	3	57	.08	3	.3	.3	16	SEC	
		31	425	34.51	19	22.70	155	14.46	1.52	.6	1.0	11	2	130	.09	2	.4	.5	9	SEC	
		31	430	12.11	19	23.03	155	14.45	.84	.5	1.4	9	2	117	.05	3	.3	.7	7	SEC	
		31	456	30.17	19	23.23	155	14.24	1.59	.5	1.0	12	2	105	.06	2	.3	.4	5	SEC	
		31	524	51.59	19	17.29	155	13.95	6.36	1.1	1.1	19	0	161	.07	1	.6	1.1	15	SF2	
		31	854	28.74	19	29.53	155	39.32	3.02	2.1	1.6	14	0	96	.13	15	.6	58.1	10	MLO	*
		31	1035	5.98	19	21.82	155	9.12	3.30	1.8	2.1	26	2	89	.07	1	.4	.5	22	SER	
		31	1050	31.76	19	19.72	155	13.39	6.73	1.6	1.8	31	2	68	.12	5	.5	1.0	21	SF2	
		31	11	8 46.95	19	22.14	155	9.90	3.05	1.6	1.3	21	2	93	.07	0	.6	.4	13	SER	
		31	1350	7.52	19	21.57	155	11.37	2.19	1.9	2.2	11	1	107	.06	3	.4	.6	5	SER	
		31	1418	50.64	19	18.35	155	13.76	5.96	1.7	2.0	34	3	70	.11	3	.5	1.0	22	SF2	
		31	1443	32.55	19	21.79	155	10.19	3.03	2.1	2.4	33	2	60	.10	1	.4	.4	16	SER	
		31	1450	44.37	19	22.92	155	14.54	1.00	1.1	2.2	12	2	116	.11	3	.3	.6	5	SEC	
		31	1525	44.74	19	20.67	155	9.44	8.68	1.8	2.2	31	3	70	.07	3	.4	.7	21	SF3	
		31	1558	29.73	19	20.07	155	3.84	6.09	1.6	2.3	30	3	137	.11	2	.5	.7	18	SF5	
		31	1831	22.89	19	27.02	155	36.01	3.44	2.2	2.0	9	0	172	.13	4	1.0	1.8	4	MLO	
		31	1835	17.17	19	21.09	155	10.77	8.02	1.7	1.3	28	4	69	.09	2	.5	.8	21	SF3	
		31	1926	1.63	19	20.99	155	10.66	8.05	1.4	1.3	27	2	70	.08	2	.5	.8	21	SF3	
		31	1946	6.89	19	18.88	155	13.82	7.96	1.1	1.3	21	1	90	.06	3	.5	.8	12	SF2	
		31	2015	16.32	19	21.76	155	10.91	2.77	1.6	2.0	18	1	85	.09	2	.4	.4	12	SER	
		31	2025	50.90	19	25.66	154	56.01	6.16	1.8	1.4	27	2	161	.14	4	.7	.9	18	LER	
		31	2337	21.11	19	18.93	155	13.56	8.63	1.5	1.2	28	1	70	.10	4	.5	.9	18	SF2	

Table 6.

HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JAN	4	1114	40.27	19	18.48	155	13.26	9.99	2.9	3.0	39	3	171	.09	8	.6	.5	30	SF2
		9	432	7.29	19	9.80	155	32.58	34.14	3.1	3.2	33	1	120	.08	8	.7	1.6	32	DLS
		9	1324	59.53	20	14.94	155	39.28	42.95	3.6	3.3	47	3	267	.11	19	1.4	1.5	40	KOH F
		15	0 7	52.65	20	5.02	155	50.61	27.78	3.6	3.8	50	5	226	.11	8	1.1	1.4	44	KOH F
		15	1 4	42.07	19	18.59	155	13.67	9.55	3.7	3.8	47	3	70	.12	3	.5	.5	40	SF2 F
		16	337	36.72	19	23.27	155	16.65	3.07	2.6	3.1	43	2	39	.11	1	.2	.3	32	SSC
		16	957	9.95	19	21.52	155	15.21	9.87	3.1	3.4	46	2	64	.11	2	.4	.4	39	SF1 F
		20	111	14.15	19	10.91	155	33.38	6.62	2.7	3.0	37	2	134	.14	10	.5	1.1	30	LSW
		21	2 6	30.20	19	20.01	155	10.77	9.48	2.9	3.1	31	2	87	.09	4	.5	.4	24	SF3
		21	1152	41.17	19	13.91	155	35.53	10.32	5.4	5.6	41	0	218	.12	3	.9	.5	40	LSW F
		21	1229	13.88	19	13.11	155	33.10	13.73	5.4	5.4	36	1	126	.12	8	.6	.5	33	DLS F
		21	1242	5.91	19	10.28	155	31.52	8.31	3.0	2.9	31	1	143	.16	9	.7	1.1	20	LSW
		21	1245	12.69	19	11.58	155	33.45	7.26	3.0	2.5	34	3	130	.17	9	.6	1.2	22	LSW
		21	1248	9.58	19	13.82	155	32.58	11.71	3.4	3.3	44	4	119	.17	5	.5	.6	35	LSW
		21	1251	56.43	19	9.45	155	31.82	12.28	3.0	2.7	37	3	147	.15	11	.5	.5	27	LSW
		21	13 1	9.69	19	12.16	155	32.48	10.44	4.1	4.0	44	1	87	.17	7	.6	.6	41	LSW F
		21	1335	10.86	19	11.01	155	30.96	6.43	3.1	3.0	41	2	99	.20	6	.6	1.1	33	LSW
		21	1337	17.41	19	13.79	155	33.31	12.23	4.2	4.3	41	2	117	.14	6	.5	.6	39	LSW
		21	1519	41.00	19	12.82	155	31.59	8.05	3.1	3.0	41	4	132	.15	5	.5	.8	33	LSW
		21	1535	12.49	19	12.02	155	31.15	8.85	3.2	3.1	39	2	85	.16	6	.5	.8	29	LSW
		21	1623	36.02	19	9.87	155	31.65	11.88	3.1	3.1	40	3	145	.15	10	.6	.7	32	LSW
		22	225	5.24	19	11.75	155	36.10	10.04	3.6	3.4	48	4	91	.20	6	.6	.7	35	LSW
		22	1118	55.23	19	19.49	155	15.52	7.89	2.9	3.2	46	7	89	.12	4	.4	.5	38	SF1 F
		22	1652	8.85	19	21.56	155	4.72	8.45	2.9	3.0	44	4	82	.09	4	.4	.5	33	SF5
		22	1745	8.12	19	14.16	155	34.01	9.54	4.3	4.2	49	4	76	.14	6	.4	.6	46	LSW F
		23	643	39.43	19	9.46	155	31.57	11.67	2.6	3.0	35	2	147	.14	11	.6	.5	28	LSW
		23	14 6	45.70	19	9.42	155	34.25	9.09	3.0	3.0	41	5	119	.15	11	.5	.8	33	LSW
		23	2240	44.12	19	23.44	155	16.84	3.42	3.1	3.4	39	5	36	.10	0	.2	.2	30	SSC F
		25	17 3	51.09	19	11.89	155	35.46	8.58	3.4	3.2	47	6	91	.22	6	.6	.8	41	LSW F
		26	1345	17.11	19	12.44	155	35.42	8.83	3.6	3.1	47	7	86	.23	5	.6	.9	38	LSW
		27	4 0	14.77	19	26.29	155	37.24	2.70	3.3	2.6	36	2	112	.16	2	.5	.7	27	MLO
		29	343	2.29	19	16.66	155	33.13	5.28	3.0	2.9	46	4	82	.15	6	.4	1.0	35	LSW
		29	1713	25.94	19	55.25	155	35.73	12.78	3.6	3.6	46	3	136	.13	21	.7	.7	40	KOH F
		29	1716	49.38	19	54.90	155	36.24	10.89	3.0	2.6	40	3	132	.10	21	.5	.6	26	KEA
		30	1940	39.30	19	21.50	155	15.40	26.64	3.0	2.9	49	4	64	.12	2	.6	.7	45	DEP
	FEB	2	458	14.29	19	11.29	155	35.48	8.39	3.0	2.7	45	7	96	.25	7	.6	1.0	29	LSW F
		2	629	49.85	19	12.83	155	35.30	11.18	4.3	4.1	43	2	201	.15	5	.9	.5	37	LSW F
		4	6 7	48.69	19	16.57	155	22.88	7.18	2.8	3.3	46	3	120	.15	5	.4	.7	38	SWR
		6	323	1.29	19	27.42	155	14.66	32.29	3.1	2.9	45	2	51	.10	5	.6	1.1	39	DEP
		6	4 2	55.00	19	22.07	156	21.83	39.20	3.0	2.9	30	1	275	.09	49	3.7	1.9	23	DIS
		8	529	42.80	19	14.66	155	33.60	9.01	3.2	3.0	41	2	74	.17	6	.5	.7	31	LSW
		9	043	18.73	19	11.28	155	35.99	9.44	3.0	2.5	42	4	95	.23	7	.6	.9	32	LSW
		9	542	22.92	19	20.24	155	7.05	8.94	3.8	3.7	47	4	103	.08	5	.3	.4	38	SF4 F
		12	16 6	30.86	19	21.69	155	3.05	8.77	3.4	3.5	38	3	114	.10	3	.5	.5	29	SF5
		14	1624	28.38	19	21.40	155	2.82	7.98	3.3	3.4	39	5	124	.10	3	.5	.5	27	SF5
		15	1736	28.23	19	21.49	155	20.25	32.05	4.2	4.3	46	2	51	.11	4	.6	1.0	42	DEP F
		18	038	58.73	19	20.60	155	11.50	8.35	2.6	3.1	41	2	74	.12	4	.4	.6	31	SF3
		18	8 4	9.12	19	9.73	155	35.12	9.62	3.6		34	4	112	.16	10	.6	.8	27	LSW
1982	FEB	21	256	48.18	19	11.73	155	35.57	2.48	3.1	2.9	35	2	92	.17	11	.5	2.0	23	LSW
		22	627	48.64	19	25.53	155	37.67	2.67	3.2	2.6	32	1	94	.11	4	.4	1.0	21	MLO
		24	1840	9.30	19	24.99	155	17.06	1.56	2.7	3.5	34	2	39	.12	0	.2	.2	27	SNC F
	MAR	3	1020	27.80	19	23.72	155	16.83	3.15	2.7	3.0	38	4	35	.12	1	.3	.3	26	SSC F
		3	1045	24.94	19	23.36	155	16.77	2.99	2.6	3.0	39	5	38	.11	0	.2	.3	29	SSC F
		7	1231	36.13	19	22.12	155	3.02	8.79	3.2	3.2	46	3	113	.10	4	.5	.4	40	SF5
		11	130	1.59	19	18.59	155	13.69	9.40	3.0	3.1	46	4	69	.10	3	.4	.4	36	SF2
		15	2141	35.58	19	18.70	155	13.27	10.84	3.5	3.7	38	2	128	.11	7	.6	.5	32	SF2 F
		16	1413	9.83	19	19.63	155	13.87	7.48	2.8	3.0	33	2	79	.10	5	.4	.6	30	SF2
		18	1049	12.56	19	25.66	155	16.44	2.41	2.7	3.4	20	1	117	.11	2	.5	.3	15	SNC F
		18	15 7	8.65	19	25.50	155	16.39	1.92	2.8	3.4	34	1	38	.10	2	.3	.3	21	SNC F
		20	1310	22.30	19	20.53	155	16.84	36.16	3.9	4.3	45	2	77	.10	1	.6	1.1	42	DEP F
		26	1 4	34.00	19	54.75	155	36.20	11.33	3.6	3.5	47	4	130	.13	21	.5	.6	28	KEA
	APR	1	547	35.69	19	24.00	155	15.63	3.31	2.9	3.0	37	2	43	.09	2	.3	.3	27	SEC F
		5	419	6.32	19	19.94	155	7.26	8.85	3.0	3.1	43	4	105	.10	5	.4	.4	27	SF4
		6	053	50.83	19	23.59	155	16.94	2.75	2.2	3.0	29	2	48	.09	1	.2	.3	20	SSC
		6	1058	58.93	19	20.98	155	6.17	9.07	3.0	3.1	40	2	97	.11	4	.5	.5	27	SF4 F
		7	019	48.24	19	30.97	155	55.00	11.59	3.1	3.2	28	3	200	.08	3	1.2	.7	15	KON
		7	1054	55.06	19	21.93	155	15.03	9.52	3.0	3.2	44	4	58	.11	2	.4	.5	31	SF1
		10	559	49.60	19	23.56	155	16.94	2.61	3.1	3.1	41	3	39	.13	0	.2	.2	30	SSC F
		10	1551	22.35	19	22.79	155	4.78	8.11	2.9	3.1	41	3	78	.10	3	.4	.5	23	SF5
		11	16 4	2.40	19	19.82	155	6.69	9.18	4.2	4.2	45	3	118	.12	5	.5	.4	42	SF4 F
		14	139	25.14	19	23.43	155	16.87	2.87	2.7	3.1	38	4	36	.11	0	.2	.2	2[illegible]	SC F
		15	237	4.43	19	23.82	155	16.71	2.89	2.4	3.1	35	4	57	.11	0	.3	.2	26	SSC
		16	5 0	23.22	20	2.16	155	20.64	6.83	3.6	3.6	46	3	215	.10	47	.7	.9	39	KEA F
		16	15 4	47.52	19	19.91	155	12.02	9.68	3.0	3.2	42	4	83	.09	5	.4	.4	29	SF3
		16	1515	40.70	19	20.21	155	11.72	10.22	3.7	3.7	45	4	80	.09	5	.4	.3	41	SF3 F
		17	120	50.73	19	25.11	155	17.14	1.40	3.9	3.9	40	0	64	.10	0	.2	.2	36	SNC F
		19	223	55.89	19	20.92	155	4.63	8.98	3.8	4.1	47	2	100	.11	4	.5	.4	42	SF5 F
		19	3 2	.66	19	20.63	155	3.82	8.97	3.9	4.0	44	2	101	.11	2	.5	.6	41	SF5 F
		22	1445	56.02	19	23.45	155	16.76	2.89	2.9	3.2	38	2	37	.12	0	.2	.2	29	SSC
		23	1025	40.45	19	21.47	155	15.10	9.23	3.4	3.4	42	3	64	.11	2	.4	.5	33	SF1
		23	1136	39.17	19	15.98	155	27.48	9.98	2.8	3.0	44	2	68	.13	5	.4	.5	29	LSW F
		26	1651	14.53	20	10.78	156	9.53	30.80	3.1	2.8	38	2	295	.13	40	2.1	2.1	30	KOH
		27	2023	1.39	19	20.66	155	3.34	8.98	3.4	3.4	47	4	94	.10	2	.6	.4	40	SF5
		30	848	52.76	19	21.38	155	4.89	8.87	3.4	3.1	34	1	88	.11	4	.5	.4	32	SF5
		30	1141	17.92	19	24.37	155	15.71	1.30	3.2	3.7	41	3	44	.12	2	.2	.3	29	SEC
	MAY	4	729	42.61	19	18.85	155	13.26	10.08	3.6	3.5	47	5	81	.11	3	.3	.3	36	SF2 F
		9	1240	49.30	19	23.50	155	16.72	2.87	2.8	3.2	37	2	37	.10	0	.2	.2	25	SSC
		10	1047	27.23	19	10.59	155	36.01	10.37	3.9	3.9	47	4	101	.18	8	.5	.5	42	LSW F
		10	12 8	48.00	19	20.35	155	6.68	8.91	3.0	3.0	47	6	107	.09	5	.4	.4	32	SF4
		12	1622	41.91	19	27.01	155	34.68	38.39	2.7	3.2	30	1	45	.18	3	1.0	1.9	10	DML L
		13	1140	34.21	20	4.28	156	36.57	.03	3.2	2.1	33	3	305	.17	87	8.1	1.7	22	DIS *
		14	626	31.75	20	.07	155	51.82	19.88	4.8	4.5	47	3	205	.11	17	1.4	3.8	44	KOH F
		14	631	29.14	20	.41	155	52.19	21.37	3.1	2.7	43	7	209	.12	16	1.0	2.3	30	KOH
		15	5 9	46.16	19	17.66	155	14.21	10.74	3.1	3.1	44	5	156	.11	7	.5	.4	32	SF2 F
		17	1721	58.86	19	23.20	155	16.87	2.96	2.5	3.1	39	4	38	.11	0	.2	.3	30	SSC
		18	1410	32.00	19	54.42	156	21.51	.34	3.4	3.0	47	4	283	.12	60	2.0	.5	40	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	MAY	18	1736	19.80	19	57.25	156	26.16	1.36	4.8	4.5	49	3	229	.11	69	1.3	.7	45	DIS F
		18	2353	16.29	19	23.58	155	16.84	2.72	2.7	3.0	37	5	36	.10	0	.2	.2	29	SSC
		19	0	5 51.54	19	23.65	155	16.84	2.85	3.0	3.3	42	5	43	.13	1	.2	.2	30	SSC
		20	338	54.17	19	26.74	155	33.93	39.18	2.7	3.5	38	3	39	.22	4	.9	1.9	2	DML L
		21	1342	40.61	19	22.70	155	.88	8.91	3.0	3.0	42	3	153	.10	6	.6	.4	26	SF5
		23	348	.86	19	26.15	155	37.02	3.00	2.8	3.1	35	1	79	.12	2	.4	.7	27	MLO
		27	1528	9.58	19	21.17	155	13.36	8.87	3.0	3.1	43	5	56	.11	3	.4	.5	33	SF2
		29	1743	58.14	19	23.54	155	16.79	3.03	2.9	3.2	33	3	47	.11	0	.3	.2	20	SSC F
		29	2210	22.95	19	23.72	155	16.96	2.88	2.9	3.3	36	2	30	.12	1	.2	.2	30	SSC F
	JUN	1	2234	29.98	19	21.20	155	3.85	8.26	2.9	3.1	43	2	84	.10	3	.5	.4	34	SF5
		2	1034	57.08	19	26.96	155	28.69	11.38	3.2	3.2	45	4	37	.11	7	.3	.5	38	KAO
		3	258	11.19	20	1.53	155	50.31	27.98	3.3	3.0	46	4	200	.10	13	1.1	1.7	40	KOH
		6	839	30.95	20	9.06	155	47.20	26.62	3.0	3.2	46	3	157	.11	3	.7	1.0	36	KOH F
		8	1930	30.80	19	23.53	155	16.86	2.92	2.4	3.1	30	3	39	.10	0	.3	.2	13	SSC
		10	216	55.68	19	20.55	155	12.83	10.24	3.1	3.1	46	4	66	.10	4	.4	.3	36	SF2 F
		10	2149	15.86	19	24.66	156	8.64	40.79	3.2	3.7	47	5	252	.09	25	1.1	.9	38	KON
		12	811	3.17	19	23.64	155	16.99	3.13	2.3	3.0	31	1	45	.11	1	.3	.3	22	SSC
		14	815	38.83	19	18.86	155	13.32	10.19	3.5		45	4	151	.11	7	.5	.5	36	SF2
		20	730	13.51	19	19.92	155	7.02	8.65	3.0	3.0	44	4	111	.08	5	.4	.4	33	SF4
		21	6	4 14.82	19	21.42	155	15.10	9.83	3.4	3.5	41	4	65	.11	2	.4	.3	33	SF1 F
		22	1358	6.30	19	20.00	155	19.14	9.56	3.1	3.8	50	5	53	.12	3	.4	.4	40	SWR
		22	2334	7.90	19	20.40	155	19.17	9.41	2.9	3.1	46	6	51	.12	3	.4	.4	36	SWR
		23	738	27.28	19	19.76	155	19.27	8.05	2.9	3.1	49	7	60	.14	3	.4	.6	34	SWR
		23	1812	53.88	19	17.33	155	21.24	7.35	2.4	3.1	44	6	127	.12	5	.4	.7	30	SWR
		24	320	3.09	19	16.96	155	21.54	6.89	2.5	3.1	32	2	130	.12	5	.5	1.2	28	SWR
		24	347	58.02	19	17.27	155	20.97	7.09	2.4	3.1	46	4	129	.12	4	.4	.7	30	SWR
		24	922	44.60	19	17.99	155	23.42	7.58	3.7	4.0	46	2	94	.14	4	.4	.6	40	SWR F
		24	1437	53.86	19	14.48	155	22.97	8.41	2.7	3.0	43	2	149	.14	2	.5	.6	34	SWR
		24	2059	31.83	19	16.96	155	21.68	6.98	2.9	3.4	50	8	130	.16	6	.4	.7	40	SWR
		26	328	10.31	18	55.86	155	15.81	17.70	2.6	3.4	15	0	266	.10	33	4.0	24.1	2	LOI L*
		27	123	24.42	19	18.66	155	21.36	9.55	2.7	3.1	45	7	138	.12	4	.4	.4	27	SWR
		27	1326	58.52	19	19.24	155	11.03	9.60	2.7	3.2	41	5	104	.09	6	.4	.4	30	SF3
		29	634	5.55	19	1.01	155	17.66	7.84	2.6	3.6	16	0	229	.12	24	1.3	2.1	3	LOI L
	JUL	1	1327	31.14	19	11.58	155	36.39	9.95	3.6	3.3	46	6	92	.21	6	.6	.8	38	LSW
		1	1433	31.65	19	18.24	155	23.15	4.54	2.5	3.2	43	2	95	.13	4	.4	1.5	33	SWR
		5	2119	2.42	19	17.43	155	23.29	6.37	3.2	3.8	46	5	101	.16	5	.4	.8	38	SWR
		6	1816	38.01	19	16.51	155	22.81	7.45	2.4	3.0	42	3	122	.15	5	.5	.7	29	SWR
		8	1938	24.46	19	19.69	155	7.57	7.49	2.6	3.0	40	4	102	.10	4	.4	.6	30	SF4
		12	259	48.06	19	16.84	155	21.75	8.16	3.1	3.7	47	6	131	.14	6	.4	.6	36	SWR
		12	421	35.50	19	16.48	155	23.79	6.16	2.5	3.1	37	4	100	.13	4	.4	.9	27	SWR
		12	1545	39.26	19	16.31	155	23.49	7.76	2.5	3.0	43	6	110	.12	4	.4	.6	29	SWR
		12	1641	26.14	19	17.70	155	23.28	3.15	2.3	3.1	40	5	98	.11	5	.3	.9	27	SWR
		12	2314	22.22	19	18.48	155	20.60	9.95	2.7	3.2	44	5	114	.13	4	.4	.4	33	SWR
		13	013	32.34	19	16.57	155	22.51	6.93	2.5	3.1	42	3	127	.17	5	.5	.8	37	SWR
		13	932	2.59	19	21.68	155	2.12	8.61	2.9	3.4	27	1	152	.08	4	.7	.5	19	SF5
		13	21	5 21.76	19	17.25	155	21.70	7.78	2.6	3.3	43	2	126	.15	6	.4	.7	36	SWR
		13	21	8 43.38	19	16.96	155	21.65	8.24	2.9	3.6	42	3	130	.14	6	.4	.6	34	SWR
		14	12	7 38.03	19	10.49	155	37.02	9.26	2.9	3.0	33	1	98	.15	8	.6	.8	23	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1982	JUL	18	330	11.07	19	7.25	155	31.29	13.05	3.0	3.4	32	1	160	.12	7	.8	.5	31	DLS
		18	1217	35.11	18	56.22	155	14.35	13.48	3.0	3.4	30	1	288	.11	34	2.5	1.0	13	LOI L
		23	040	59.69	19	16.63	155	23.32	7.71	2.4	3.0	32	2	110	.12	4	.4	.9	19	SWR
		23	922	54.35	19	18.02	155	23.54	3.39	2.3	3.3	37	7	93	.14	4	.3	.9	33	SWR
		24	229	53.77	19	18.31	155	23.15	6.24	2.7	3.5	40	6	95	.14	4	.3	.7	35	SWR
		24	818	39.13	19	18.01	155	20.93	8.39	2.6	3.0	21	4	128	.11	4	.6	.8	20	SWR
		26	1949	16.04	19	21.00	155	6.25	8.21	2.7	3.1	28	1	95	.07	4	.4	.7	19	SF4
		28	1345	48.89	19	19.64	155	14.05	7.49	2.4	3.0	43	5	66	.13	5	.4	.7	33	SF2
		29	044	53.78	19	18.19	155	23.27	3.52	2.1	3.4	34	5	94	.12	4	.3	.9	24	SWR
		29	714	37.43	19	21.17	155	11.28	9.05	2.6	3.1	40	5	67	.10	3	.4	.6	30	SF3
		29	1152	55.43	19	21.26	155	13.41	9.48	2.8	3.1	43	4	55	.10	3	.3	.4	34	SF2
		30	137	10.74	19	26.60	157	11.21	20.03	3.4	3.9	15	1	315	.15	144	4.5	24.7	6	DIS *
	AUG	1	151	41.01	19	25.88	155	37.57	3.16	3.4	2.7	27	1	93	.12	3	.5	1.1	23	MLO
		2	1316	37.66	19	25.74	155	37.69	2.25	2.9	3.4	34	1	94	.13	4	.4	.9	25	MLO
		3	10	9 35.39	19	27.70	155	45.34	9.55	3.2	3.4	37	2	140	.11	5	.5	.5	27	KON
		3	1212	31.10	19	20.02	155	11.83	10.08	2.9	3.4	41	4	82	.09	5	.3	.3	32	SF3
		7	136	3.08	19	21.70	155	8.06	8.31	2.5	3.1	38	2	68	.11	3	.4	.6	28	SF4
		7	11	3 3.92	19	21.24	155	6.03	8.15	3.2	3.4	45	4	92	.12	3	.4	.5	36	SF4
		7	14	2 26.83	19	19.71	155	11.46	9.73	3.4	3.8	43	3	91	.11	5	.4	.4	36	SF3 F
		8	15	3 7.16	19	21.36	155	6.03	8.55	3.3	3.4	48	6	89	.09	3	.3	.5	32	SF4
		9	1655	9.52	19	23.07	155	4.41	7.62	3.1	3.0	41	3	86	.12	3	.4	.6	29	SF5
		10	121	54.15	19	18.03	155	13.25	9.80	3.6	3.8	43	3	95	.12	2	.4	.4	37	SF2 F
		10	137	51.40	19	18.49	155	13.41	8.34	3.4	3.8	40	5	80	.13	3	.5	.6	31	SF2 F
		12	043	35.76	19	24.90	155	16.09	16.17	4.0	4.3	41	1	46	.09	2	.4	.3	40	DEP F
		12	244	4.46	19	24.91	155	16.17	16.20	3.3	3.6	46	2	46	.11	1	.4	.3	44	DEP F
		15	7	1 43.99	19	19.99	155	7.97	9.16	3.4	3.9	40	2	89	.10	5	.5	.4	33	SF4
		16	4	1 46.70	19	18.97	155	13.64	9.27	2.8	3.4	43	1	83	.11	4	.4	.4	37	SF2
		17	857	39.61	18	54.31	155	16.34	13.73	3.9	4.2	39	0	248	.08	35	1.6	1.2	28	LOI
		17	2355	9.09	19	16.55	155	22.10	8.17	2.7	3.3	40	3	132	.14	5	.5	.6	34	SWR
		19	2251	20.53	19	44.94	156	1.88	8.07	3.6	3.8	43	1	229	.12	21	1.2	.7	33	HUA F
		19	2259	59.10	19	44.91	156	.54	7.60	3.0	3.3	39	2	225	.13	19	1.1	.7	25	HUA F
		24	1527	38.14	19	15.73	155	23.58	8.57	2.5	3.1	34	2	115	.11	3	.5	.6	25	SWR
		26	126	41.68	19	20.94	154	59.51	.01	2.5	3.0	23	2	203	.10	6	.8	.5	11	SLE
		27	148	30.73	20	12.23	155	38.33	9.98	3.8	3.6	43	3	178	.10	47	.9	.8	38	KOH F
		28	445	38.68	19	21.39	154	59.55	.75	2.7	3.2	32	4	194	.12	7	.6	.6	17	SLE
		28	1555	23.31	19	23.34	155	24.18	11.32	3.0	3.3	43	2	30	.11	4	.4	.5	35	KAO
		31	1132	25.35	19	18.48	155	13.36	10.98	3.5	3.6	49	6	131	.10	8	.5	.4	41	SF2 F
	SEP	2	6	9 54.22	21	23.65	155	15.35	2.30	3.1	2.9	25	1	292	.10	125	5.9	3.9	18	DIS
		3	1057	24.07	18	57.46	155	3.18	48.48	2.7	3.0	43	2	253	.11	38	1.8	2.3	40	LOI
		3	2019	33.05	19	20.87	155	3.01	8.16	2.6	3.4	42	3	124	.10	2	.5	.4	29	SF5
		10	19	3 44.66	19	23.53	155	25.07	10.71	3.4	3.6	49	5	37	.13	3	.3	.4	40	KAO F
		11	024	49.09	19	29.68	155	38.96	7.27	2.9	3.1	39	2	49	.13	5	.4	.8	25	MLO
		12	618	34.62	19	21.60	155	.18	9.25	3.1	3.1	44	4	183	.09	6	.7	.5	34	SF5 F
		14	649	41.95	19	19.81	155	11.36	10.09	3.0	3.1	44	4	89	.08	5	.4	.3	32	SF3
		14	831	39.05	19	19.62	155	10.55	8.96	2.8	3.1	29	1	95	.11	5	.5	.7	21	SF3
		14	917	32.65	19	11.00	155	36.26	9.88	3.6	3.4	42	1	96	.19	7	.7	.7	36	LSW F
		21	1535	27.83	19	20.21	155	6.84	9.43	3.7	4.0	43	3	107	.10	5	.5	.4	38	SF4 F
		23	1423	37.55	19	23.30	155	24.17	10.98	3.2	3.2	43	2	41	.12	4	.3	.4	37	KAO F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	SEP	25	17 2	15.07	19	23.59	155	17.17	5.47	3.3	3.3	27	0	44	.15	7	.4	2.1	18	INT	
		25	1829	23.87	19	23.13	155	17.06	2.63	1.7	3.1	24	5	41	.09	1	.3	.2	18	SSC	
		25	1838	47.33	19	23.74	155	15.35	.57	3.3	3.5	30	4	79	.13	2	.2	.3	11	SEC	
		25	1859	24.76	19	24.09	155	15.93	1.10	2.9	3.1	35	2	43	.13	1	.2	.3	18	SEC	
		29	620	52.07	19	22.29	155	11.06	32.28	3.4	3.6	48	5	55	.11	2	.6	.9	43	DEP	F
		29	730	53.56	19	21.08	155	6.96	6.69	2.9	3.1	41	6	89	.13	5	.4	.9	35	SF4	F
		30	643	8.50	19	24.88	155	36.04	.08	3.0	3.0	34	3	51	.11	4	.3	.5	21	MLO	
	OCT	1	21 4	57.61	19	25.17	155	37.65	2.34	3.0	3.1	41	5	93	.12	5	.4	.9	36	MLO	
		3	329	5.14	18	53.44	155	15.86	17.75	2.8	3.1	28	0	260	.09	37	3.0	22.8	10	LOI	*
		4	957	9.10	19	43.93	155	59.88	9.67	2.8	3.0	16	0	299	.12	17	4.8	.9	14	HUA	
		5	920	46.45	19	23.14	155	14.86	3.03	2.8	3.1	38	2	48	.11	2	.3	.4	20	SEC	F
		5	1139	36.83	18	54.48	155	15.61	16.71	3.9	4.1	37	1	247	.08	35	1.7	36.0	25	LOI	*
		6	1024	29.81	19	23.24	155	14.92	3.22	2.6	3.0	32	2	47	.11	2	.3	.4	22	SEC	F
		6	1735	28.62	19	26.04	155	37.65	3.14	3.4	3.7	35	1	94	.13	3	.4	.9	28	MLO	
		11	118	23.71	19	22.84	155	14.05	1.00	2.5	3.3	19	3	69	.10	2	.3	.4	9	SEC	F
		11	859	53.48	19	23.23	155	15.10	3.31	3.1	3.2	41	1	47	.12	2	.3	.4	35	SEC	F
		13	1112	3.69	19	27.10	155	29.54	10.48	3.0	3.2	50	4	35	.10	8	.3	.5	37	KAO	
		13	2054	44.64	19	30.59	154	52.53	38.18	3.3	3.2	47	3	149	.09	3	.9	1.4	41	LER	
		14	1830	26.54	19	26.03	155	25.86	10.25	3.5	3.1	47	4	36	.14	2	.4	.5	39	KAO	
		17	5 9	34.15	19	12.92	155	37.65	8.29	3.1	3.1	35	1	202	.16	4	.9	.7	34	LSW	
		17	1037	34.61	19	10.77	155	30.07	6.17	2.6	3.0	24	1	99	.14	5	.5	1.1	19	LSW	
		18	129	54.96	19	21.40	155	3.04	7.98	2.8	3.0	41	0	115	.10	3	.5	.4	41	SF5	
		19	1440	17.88	19	41.85	155	2.86	.11	2.4	3.1	27	1	237	.14	22	1.4	1.2	21	HIL	B*
		19	1614	52.40	20	24.32	155	57.60	33.23	3.1	3.3	54	7	164	.13	36	1.0	1.4	45	KOH	
		22	313	29.03	19	19.96	155	11.49	10.17	3.3	3.5	45	3	86	.09	5	.4	.3	37	SF3	
		22	2142	56.38	19	21.07	155	13.36	9.38	3.0	3.1	45	2	56	.11	3	.3	.5	37	SF2	F
		25	619	30.62	19	19.63	155	11.50	9.89	3.2	3.5	43	1	92	.09	5	.4	.3	37	SF3	F
		26	658	39.27	19	19.99	155	8.23	9.00	2.9	3.0	44	3	84	.11	5	.4	.5	33	SF4	
		30	436	58.40	19	18.50	155	13.28	10.30	2.9	3.1	44	5	131	.10	8	.5	.4	32	SF2	
		30	935	45.67	19	18.53	155	7.09	9.50	2.9	3.1	39	1	187	.11	8	.7	.5	29	SF4	
		31	1624	45.73	19	20.20	155	7.12	8.30	3.0	3.3	43	3	102	.09	5	.4	.5	31	SF4	
	NOV	1	029	28.83	19	19.67	155	7.66	8.70	2.9	3.0	40	2	101	.09	4	.5	.4	26	SF4	
		1	735	31.91	18	54.11	155	15.23	11.93	2.3	3.6	27	0	292	.13	36	5.8	1.5	14	LOI	L
		1	1215	21.99	18	59.06	155	13.31	13.60	2.8	3.1	39	0	259	.12	32	2.1	.7	25	LOI	
		6	2113	.98	19	19.61	155	15.60	8.10	2.4	3.0	44	4	87	.12	3	.4	.6	28	SF1	
		9	23 4	32.68	19	19.99	155	11.75	10.10	3.2	3.6	44	3	83	.10	5	.3	.3	37	SF3	F
		12	1618	58.25	19	27.32	155	26.47	14.93	4.1	4.1	50	4	38	.12	4	.4	.3	42	DML	F
		12	1628	29.00	19	27.48	155	26.22	14.53	3.3	3.2	47	2	39	.13	5	.4	.3	41	DML	F
		13	1 1	27.38	20	45.82	155	30.47	15.33	3.0	3.3	38	2	242	.11	76	1.3	4.8	27	DIS	
		13	1312	12.94	19	18.85	155	11.30	8.75	3.0	2.9	42	4	114	.11	5	.4	.5	31	SF3	
		16	2328	43.37	19	21.21	155	19.99	31.87	3.3	3.6	47	1	51	.11	5	.6	1.0	43	DEP	
		17	2124	44.13	19	20.35	155	7.34	8.35	3.0	3.1	42	3	97	.08	5	.4	.5	31	SF4	
		18	1849	13.93	19	19.45	155	9.12	8.51	2.8	3.1	42	3	88	.10	4	.4	.6	34	SF4	
		20	22 1	1.13	19	20.06	155	7.63	8.66	2.8	3.3	44	4	96	.11	5	.4	.5	33	SF4	
		25	4 1	.98	19	11.53	155	36.18	8.07	3.0	2.7	38	2	92	.22	7	.6	1.1	30	LSW	
		25	9 3	36.26	19	21.92	155	15.18	9.80	3.0	3.1	43	1	59	.12	2	.4	.4	32	SF1	
		25	910	37.28	19	21.64	155	17.76	34.97	3.6	3.6	47	2	29	.10	3	.6	1.0	45	DEP	F
		27	945	30.60	19	16.88	155	22.42	7.76	2.9	3.6	45	2	123	.16	6	.5	.7	37	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1982	NOV	27	1011	57.40	19	58.47	155	27.98	39.50	3.2	3.0	48	2	185	.11	16	.8	1.9	40	KEA	
		27	16 1	25.52	19	17.23	155	30.44	9.30	3.8	3.9	42	1	47	.13	4	.4	.6	40	LSW	F
		28	1959	28.65	19	16.22	155	22.97	7.02	2.6	3.1	48	4	123	.17	4	.5	.8	37	SWR	F
		28	2014	19.00	19	16.45	155	22.91	6.12	2.5	3.1	47	3	121	.17	4	.4	1.0	34	SWR	
		29	1450	38.05	19	21.12	155	20.03	31.99	4.0	4.4	47	0	54	.10	5	.6	1.0	47	DEP	F
		29	18 1	4.75	19	18.37	155	13.70	9.26	3.1	3.4	44	2	70	.12	3	.5	.5	36	SF2	
		30	1315	.41	19	21.43	155	15.27	9.69	3.0	3.1	42	2	65	.11	2	.4	.4	31	SF1	
	DEC	5	537	37.72	19	48.36	156	9.59	38.47	3.8	4.0	45	4	254	.10	44	1.0	1.6	41	HUA	F
		6	1943	37.10	19	23.33	155	16.93	3.05	2.4	3.3	36	4	36	.10	0	.2	.2	30	SSC	
		8	1221	37.56	19	21.50	155	4.73	8.82	3.3	3.6	42	2	160	.08	4	.6	.4	34	SF5	
		9	18 9	27.06	19	23.15	155	14.90	2.77	2.5	3.0	29	1	64	.09	2	.3	.3	15	SEC	
		9	1853	19.02	19	23.11	155	14.99	3.26	2.8	3.0	33	1	48	.11	2	.3	.5	30	SEC	
		9	1938	11.71	19	23.73	155	14.86	3.21	3.1	3.3	38	1	44	.10	2	.3	.4	29	SEC	
		9	1947	29.88	19	24.27	155	15.49	1.75	2.9	3.6	27	3	72	.09	2	.2	.3	20	SEC	
		9	20 0	51.65	19	23.35	155	14.63	3.94	3.1	3.4	41	6	46	.09	3	.3	.3	37	SEC	
		10	1121	12.06	19	13.72	155	20.18	32.09	3.0	3.2	47	2	160	.11	7	.7	1.1	45	DEP	
		10	1820	14.72	19	23.14	155	14.48	3.95	3.0	3.2	38	1	47	.11	3	.3	.5	30	SEC	
		10	2118	52.65	19	23.18	155	14.91	2.96	2.7	3.0	43	7	47	.09	2	.2	.3	34	SEC	F
		11	949	19.66	19	18.22	155	23.56	3.50	2.7	3.2	43	3	90	.14	4	.4	1.0	30	SWR	
		12	1246	56.36	19	23.35	155	14.89	3.36	2.5	3.3	30	4	104	.09	3	.3	.3	19	SEC	
		12	13 9	11.28	19	23.51	155	14.81	3.36	2.8	3.0	30	2	109	.10	2	.4	.4	23	SEC	
		13	2 0	17.87	19	22.84	155	17.30	2.60	2.9	3.5	28	2	74	.10	1	.3	.3	24	SSC	
		13	2258	56.95	19	23.25	155	14.67	3.43	2.9	3.2	40	4	47	.07	3	.3	.4	27	SEC	
		14	2039	59.30	19	23.37	155	14.55	3.35	2.7	3.3	36	3	82	.12	2	.3	.4	25	SEC	
		19	256	52.40	19	53.33	155	28.68	27.21	3.1	3.1	45	5	209	.10	12	.8	1.4	32	KEA	
		21	11 3	46.09	19	19.43	155	15.53	8.03	2.9	3.0	42	2	89	.10	4	.4	.6	37	SF1	
		21	1212	59.01	19	20.35	155	11.61	8.98	3.2	3.4	45	6	78	.11	4	.4	.4	31	SF3	
		21	1756	16.58	19	23.21	155	14.50	4.06	3.1	3.5	39	1	47	.11	3	.3	.5	31	SEC	
		21	18 1	14.87	19	23.15	155	14.77	3.26	2.9	3.2	41	3	48	.11	2	.3	.4	33	SEC	
		21	2030	32.80	19	23.21	155	14.87	3.12	2.6	3.2	30	3	48	.09	2	.3	.4	24	SEC	
		23	2050	42.41	19	22.68	155	14.66	1.18	2.6	3.2	33	2	51	.10	2	.3	.4	20	SEC	
		25	1244	47.80	19	19.66	155	10.54	9.05	2.9	3.0	42	2	94	.11	5	.4	.4	35	SF3	F
		27	2335	1.86	19	20.38	155	6.68	9.23	3.2	3.2	46	3	105	.09	5	.5	.3	36	SF4	
		29	432	37.18	20	18.50	155	45.26	30.43	2.9	3.0	44	3	176	.10	63	1.1	3.0	35	KOH	
		30	1622	4.85	19	22.83	155	14.31	2.56	2.6	3.0	30	1	50	.10	2	.3	.4	29	SEC	
		30	1721	57.21	19	18.51	155	14.18	10.06	2.9	3.2	42	2	131	.11	6	.5	.6	36	SF2	F
		31	355	9.96	19	22.89	155	14.40	1.03	3.4	3.9	34	2	48	.13	2	.3	.4	28	SEC	F

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Hawaiian Volcano Observatory
1983 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 83
Seismic Data, January to December 1983
By Jennifer S. Nakata, Alvin H. Tomori,
Robert Y. Koyanagi, and Wilfred R. Tanigawa

Chronological Summary
By Robert W. Decker

Open-File Report 2007-1343
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
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U.S. Geological Survey
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U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY
SUMMARY 83
SEISMIC DATA, JANUARY TO DECEMBER 1983

This report (map) is preliminary and has not been reviewed for conformity with U.S.Geological Survey editorial standards (and stratigraphic nomenclature). Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S.G.S.

Menlo Park, California
1984

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 83

SEISMIC DATA, JANUARY TO DECEMBER 1983

BY

JENNIFER S. NAKATA, ALVIN H. TOMORI, ROBERT Y. KOYANAGI, WILFRED R. TANIGAWA

CHRONOLOGICAL SUMMARY

BY

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summary presents data gathered during the year together with a chronological narrative describing the volcanic events and significant observatory related activities. The seismic summary is offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries will be published separately.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS open file report ("Hawaiian Volcano Observatory Seismic Network History 1950-79," U.S.G.S. open file report 80-302, 1980). It is designed as a reference for users of seismograms and phase data, and so includes and expands the information in the station table in this summary.

CHRONOLOGICAL SUMMARY - 1983

by

Robert W. Decker

1983 was a busy year for both Hawaiian volcanic and seismic activity. The middle-east-rift eruption of Kilauea which began on January 3 continued intermittently throughout the year with 12 major phases of high-volume lava emission. Mauna Loa showed signs of unrest in terms of increased seismic activity and changing patterns of surface deformation, and the Observatory was rocked and damaged by intensity VIII to IX shaking from the magnitude 6.6 Kaoiki earthquake 12 kilometers beneath the southeast flank of Mauna Loa on November 16.

The middle-east-rift eruption of Kilauea was preceded by 24 hours of high seismicity, harmonic tremor and rapid summit deflation as the feeding dike of the eventual eruption was emplaced beneath a 10 km segment of the east rift zone from about 1 km west of Makaopuhi Crater to the vicinity of Pu'u Kamoamoa. Over the next 4 to 5 days the dike extended another 6 km downrift to about 2 km east of Kalalua. The eruptive outbreak occurred on the north rim of Napau Crater and moved eastward along a line of fissures for 8 kilometers. The volume of lava erupted in the first phase was approximately 11 million m^3, but the amount of summit deflation (60 to 70 million m^3 from leveling data) indicates that at least 50 million m^3 of magma moved from the summit into the newly formed dike system.

Subsequent phases of the eruption occurred from the same dike system without new seismic swarms, indicating that the continuing eruption was using portions of the same conduit system established during the first phase. Phases 2 through 12 were remarkably similar in period, volume and summit tilt changes, suggesting a repetitive process controlled by some interaction of summit magma reservoir pressure and the gas content and pressure head of the lava column in the erupting dike. The major lava emission of phases 2 through 12 ocurred on the following dates: (2) February 25-March 4; (3) March 28-April 9; (4) June 13-17; (5) June 29-July 3; (6) July 22-25; (7) August 15-17; (8) September 6-7; (9) September 15-17; (10) October 5-7; (11) November 6-7; and (12) November 30-December 1. The average time period between the main onsets of the major phases was 30 days; the shortest was 9 days, and the longest was 77 days. In general, the phases were of shorter duration as the eruption progressed. However, the volumes of the phases, with one exception, were remarkably similar; the average was 11.9 x $10^6 m^3$, the largest (phase 3) was 25.6 x $10^6 m^3$, and the smallest (phase 8) was 7.6 x $10^6 m^3$. This combination of shorter eruption duration but similar eruption volume indicates that later phases (excluding phase 1) were erupted at higher eruption rates. This conclusion is supported by field estimates of eruption rates, and by the general increase in the rate of summit subsidence and harmonic tremor measured during each subsequent phase.

Table I. The middle-east-rift eruption of Kilauea, 1983 (Ed Wolfe).

Phase	Total Area Covered ($\times 10^6$ m^2)	Total Volume of Lava ($\times 10^6 m^3$)	Duration and Average Production Rate (total volume/duration)
1	4.8	11.0	96 hours; 104,000 m^3/hour
2	2.7	11.5	lava shield: 360 hrs; 1400 m^3/hour cone: 181 hrs; 60,000 m^3/hr
3	7.9	25.6	288 hours; 90,000 m^3/hour
4	2.2	10.9	100 hours; 110,000 m^3/hour
5	3.4	12.9	90 hours; 143,000 m^3/hour
6	2.8	9.4	73 hours; 120,000 m^3/hour
7	3.7	10.3	57 hours; 180,000 m^3/hour
8	2.0	7.6	24 hours; 315,000 m^3/hour
9	2.1	8.6	50 hours; 173,000 m^3/hour
10	2.7	14.0	60 hours; 232,000 m^3/hour
11	4.3	12.1	43 hours; 281,000 m^3/hour
12	3.0	8.1	35 hours; 231,000 m^3/hour
TOTALS-1983	26.0	141.8	1457 hours = 61 days

All 12 phases of the 1983 eruption have a total volume of about 140 x 10^6 m^3 and covered about 26 km^2 of land surface. (In Table I, the total area covered is less than the sum of the areas covered in each phase -- 41.6 km^2; this difference represents later phases resurfacing areas covered in earlier phases.) Most of the area covered by the new flows was dense ohia-fern forest, but some was barren flows from eruptions during the 1960's, and some was in a relatively undeveloped land subdivision called Royal Gardens. Phases 2 through 5 produced flows that entered Royal Gardens, destroying about 15 dwellings and covering about 330 empty house lots and their access roads. Flows from phases 6 through 12 came from the same vent area as phases 4 and 5; however, the main lava channel in these later phases developed on the northeast rather than the southeast side of the growing cinder and spatter cone. For this reason most of the flow volume in phases 6-12 stayed on the north side of the rift zone in the ohia-fern jungle. Phases 2 and 3 built a small lava shield capped by an 80 m high spatter and cinder cone at their principle vent area just south of Pu'u Kahauale'a. Phases 4 through 12 built another 80 m-high spatter and cinder cone just inside the National Park boundary about 1.5 km uprift from Pu'u Kahauale'a.

The erupted lavas before phase 5 were relatively low in magnesium content and the associated magmatic gases were low in carbon dioxide and high in sulfur dioxide. These data and the generally low eruption temperatures (1120°-1130°C) indicate that much of the erupted magma prior to July 1983 was stored at shallow levels in the summit or middle east rift zone for months to years prior to eruption. Even after phase 5 the C/S ratio of the gas remained low. Nevertheless, the total gas content was great enough to produce lava fountains during all of the major eruptive phases, reaching a maximum height of 300 m *in phases* 3 and 10.

Mauna Loa began to show signs of increasing unrest with a swarm of microearthquakes beneath its summit region in early March 1983. Earthquake counts increased to a maximum of 400 to 500 per day compared to a former background of 2 to 20 events per day. Deformation measurements indicated that the summit was continuing to inflate and that the center of the uplift had shifted to the east. Small earthquake swarms in June and July were followed by a major swarm in September that peaked at about 700 events per day. Following that swarm the number of microearthquakes per day beneath Mauna Loa decreased back to almost average levels by the end of 1983. The general similarity in the pattern of Mauna Loa earthquakes and deformation in 1983 compared to 1974 -- the year prior to the last eruption of Mauna Loa in July 1975 -- prompted HVO to issue a statement indicating a higher-than-average probability of an eruption of Mauna Loa during 1984.

During 1983 there were 35 earthquakes beneath the Hawaii region that equalled or exceeded magnitude 4, two that exceeded magnitude 5, and one that exceeded magnitude 6. The magnitude 5.1 earthquake occurred 9 km beneath the south flank of Kilauea on September 9. It was apparently another one of the larger earthquakes associated with the seaward displacement of the south flank of Kilauea.

On November 16, 1983, at 06:13 (HST) a magnitude 6.6 earthquake occurred at 12 km depth in the Kaoiki seismic zone beneath the southeast flank of Mauna Loa. The epicenter was slightly south of the mid-point of a line drawn between the summit calderas of Kilauea and Mauna Loa. The summit area of Kilauea was subjected to intensity VIII to IX shaking which did considerable damage but fortunately caused only a few minor injuries. Sectors of the crater rim road near Waldron Ledge fell into the caldera, and heavy damage was caused to roads where they cross or closely parallel the outer caldera escarpments of Kilauea. Considerable structural damage also occurred in Hilo. The total damage estimate was about $7,000,000.

First-motion studies indicate a source mechanism of nearly east-west compression and north-south extension. A northeast-southwest, right-lateral strike-slip fault is the apparent fracture direction from both surface breaks on the Mauna Loa strip road and aftershock sequences of smaller Kaoiki earthquakes. The initial location of hundreds of aftershocks from this magnitude 6.6 earthquake suggest multiple fractures on conjugate slip planes allowing east-west contraction and north-south extension. The stress field that caused this large earthquake is interpreted to originate from the summit dilation of Mauna Loa and Kilauea as magma accumulates in their subsurface reservoir systems. Thus, although the earthquakes is a tectonic earthquake in the sense that it represents shear failure from major compressive stresses, it can also be considered volcanic in origin because the stresses are generated by magmatic

pressures. As in much research, sharp distinctions between classes and types of phenomena become more blurred as investigations progress.

The automatic earthquake location microprocessor designed by Rex Allen and Jim Ellis of the USGS in Menlo Park, CA, did a creditable job of locating in nearly real time the earthquake swarm that preceded and accompanied phase 1 of the 1983 Kilauea eruption. This allowed field observers to be in the remote area near Napau Crater at the time and location the eruption began.

Deformation studies again provided some interesting new results. The emplacement of the dike that initiated the 1983 eruption was associated with a nearly simultaneous increase in earthquakes and strain within the south flank of Kilauea. The coastline moved about 1 meter seaward in response to a 2 to 3 meter dilation of the rift zone. The difference between these displacements represents compression of the south flank of Kilauea between the middle east rift and the seacoast. The increase in south flank earthquakes apparently resulted from this increase in compressive stress from the injection of a new dike 12 km long reaching from a 3 km depth to the suface. Recording tiltmeters along the track of the intruding dike indicated a downrift migration rate of 1.9 km/hr in comparison to the downrift migration rate of the earthquakes of 0.7 km/hr. This suggests that the dike broke upward from a pre-existing molten core along the rift zone below 3 km following the injection of a pulse of new magma into the middle-east-rift pipeline.

The amount of summit subsidence and elevation of the eruption vents of Kilauea's east-rift-zone eruptions show a strong correlation indicating magmastatic pressure control of the volume of magma that moves from the summit into the rift zone. Calculations of the relationship between radial summit tilt measured at HVO (Uwekahuna), and the change in elevation of the apex of the summit bulge of Kilauea, the volume change of the surface bulge, and change in the pressure in the shallow magma reservoir beneath the summit are approximately: 1 microradian of S 60 E tilt (deflation) = 5.5 mm subsidence = 330,000 m^3 decrease in volume = 0.9 bars pressure decrease.

Sulfur dioxide gas from Halemaumau has increased in volume from about 150 tons per day in 1982 to about 300 tons per day in 1983. The ratio of carbon to surfur measured at Halemaumau is 17; the ratio at the 1983 eruption site on the middle east rift is 0.2. This dramatic loss of carbon dioxide appears to take place as magma moves into and is stored within the shallow magma reservoir system beneath the summit of Kilauea.

Self-potential (S-P) anomalies measured along the east rift of Kilauea have added some interesting insights into the 1983 eruption. An increase in S-P at Kalalua, downrift from the eruptive vents, supports seismic data which indicate that the intrusive dike on January 7, 1983, moved farther downrift than the eruptive vents. In addition, S-P increases at Escape Road near Mauna Ulu between October and November, 1982, suggest that new magma was moving into the upper east rift 2 months prior to the beginning of the 1983 eruption.

The apparent presence of iridium in fume from the 1983 eruption reported by W. H. Zoller et al in Science (December 9, 1983, p. 1118-1121) has added fuel to the hot debate about interpretation of the iridium anomaly at the Cretaceous-Tertiary boundary.

The observatory staff consists of 8 scientist and 16 support personnel. In addition 18 students and volunteers helped HVO during 1983. The staff monitored 48 seismic stations, 1204 electronic distance measurement lines, 275 km of level lines, 99 tilt stations, 15 recording tiltmeters, 13 strain gauges, 130 gravity stations, 12 self-potential lines, 1 controlled-source electromagnetic induction loop with 4 receiver stations, 21 gas-sampling and temperature sites, and many special devices to monitor the long-lasting eruption such as time-lapse cameras, video camera, trip wires, and portable tremor-monitoring seismometers. Many of HVO's monitors record continuously; others are observed at various intervals. The remote location of the eruption site required over 500 hours of helicopter support which posed serious problems of safety, expense, communication and logistics. The data reduction, graphics, and data storage of the overall monitoring program are largely handled by HVO's computer system.

Four USGS geologists continued their mapping projects on Hawaii. Their close affiliation with HVO has been essential during the 12 vigorous eruption phases that required 24 hour per day surveillance.

Four members of the combined HVO staff and geological affiliates were involved in investigations of Indonesian volcanoes, Pagan Volcano in the Marianas, Rabaul Volcano in Papua New Guinea, and of Mount St. Helens and Yellowstone.

HVO cooperated with 60 guest investigators during the year for time periods up to 2 months. Staff members and guest investigators presented 26 papers at scientific meetings and published 34 papers and 4 open-file reports. HVO also issued weekly, monthly and annual reports, as well as daily updates during the major eruptive phases.

Hawaii Volcanoes National Park estimated they had 2,800,000 visitors in 1983. About 50% of these visitors stopped at HVO to view Kilauea Caldera and to look in HVO's windows at the seismographs and the eruption chronology board. About 1600 visitors including 22 student groups, 4 professional-meeting groups and George Ariyoshi, Governor of Hawaii, toured the inner workings of the observatory. A new record to TV and news photographers was established with an estimated 300 visiting the observatory. Many of these were multiple visits throughout the year by the same news teams.

It was exhausting, but a great year at HVO.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory maintains an extensive telemetering seismometer network on the island of Hawaii. In 1983 the seismometer network consisted of 51 stations; two are low-gain multicomponent stations (optical), nine are three-component, and 40 are vertical only. The coverage is most complete on and around Kilauea Volcano. With the exception of self-contained systems at Uwekahuna and Hilo stations, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, Figure 2 shows the seismic stations which were operated on the Island of Hawaii during the year, and Figure 3 indicates the telemetry scheme for the respective seismic stations. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1983. Listed are station names, three- and four-letter codes, coordinates in degrees and minutes, elevation in meters, and other data described below. In addition to seismometers listed in Table 1, a horizontal seismometer of Type 3 or H1 and a long-period, three-component set of Press-Ewing seismometers are operated in the Uwekahuna vault, all recorded on photographic paper.

Instrumentation and recording. Each telemetering station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or radio. These telemetering stations are now all of Type 1, the OEVE standard system used in USGS seismic networks (see Table 2 for details). After discrimination, the analog signals from 36 stations are recorded on two Develocorders using 16mm microfilm. FM signals from the telemetering network are also recorded directly on one-inch magnetic tape. Selected larger events are copied onto condensed FM library tapes which are currently archived in Menlo Park and archived in digital form at HVO as part of the routine location processing. The type of recording used for each station (in addition to magnetic tape for the telemetered stations) is coded in Table 1 as follows: D - Develocorder film, S - smoked paper drum, P - photographic paper, H - Helicorder paper.

In addition to the standard stations, optical seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Honolulu station operated by the Pacific Tsunami Warning Center). The less sensitive optical records are used primarily for amplitude measurements for magnitude calculations to supplement readings from the high-gain stations. The paper (optical) records as well as the 16mm Develocorder microfilm are archived at HVO.

In late August, 1982, Rex Allen and Jim Ellis from the U.S. Geological Survey's Office of Earthquake Studies came to HVO to install their seismic monitoring system uniquely designed to automate picking of P-phase onset times, measuring coda lengths, and determinining preliminary epicenters for adequately recorded earthquakes. The Hawaii picker is configured to monitor a maximum of 80 stations, but is currently wired to 45 stations. Attached to the picker are a Datasouth Printer and an Apple II microcomputer. The picker output is logged on a disk and printed out on chart paper within three minutes after the earthquake occurs. The data collected on disk is tranferred to the Eclipse, the main computer system, on a daily basis using a second Apple II. The earthquake records are filtered and run through our standard location program (HYPOINVERSE). Summary listings and epicenter plots are prepared on chart paper, and the phase data are archived on tape. The picker output is routinely

compared with readings from our standard format. Modifications are being made to adapt the automated system to better accommodate seismic monitoring needs around Hawaii's active volcanoes.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 3. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard OEVE system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL, Table 1) to get the response for an individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20X Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited. CAL factors range from about 1 to 8, averaging about 4. A detailed history of CAL factors and other data is given in F.W. Klein and R.Y. Koyanagi, Hawaiian Volcano Observatory Seismic Network History 1950-79, U.S. Geological Survey Open File Report 80-302, 1980.

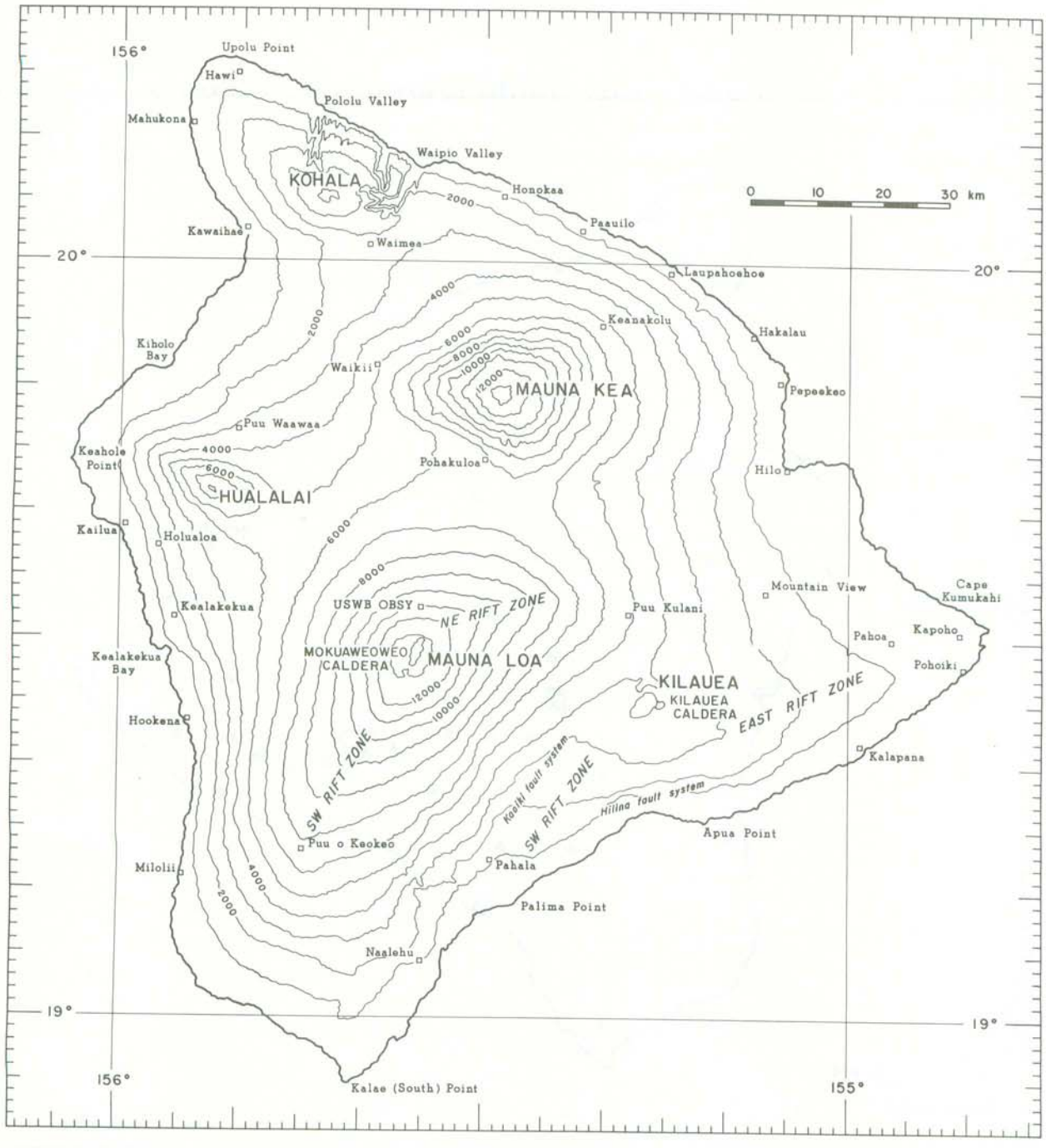

Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

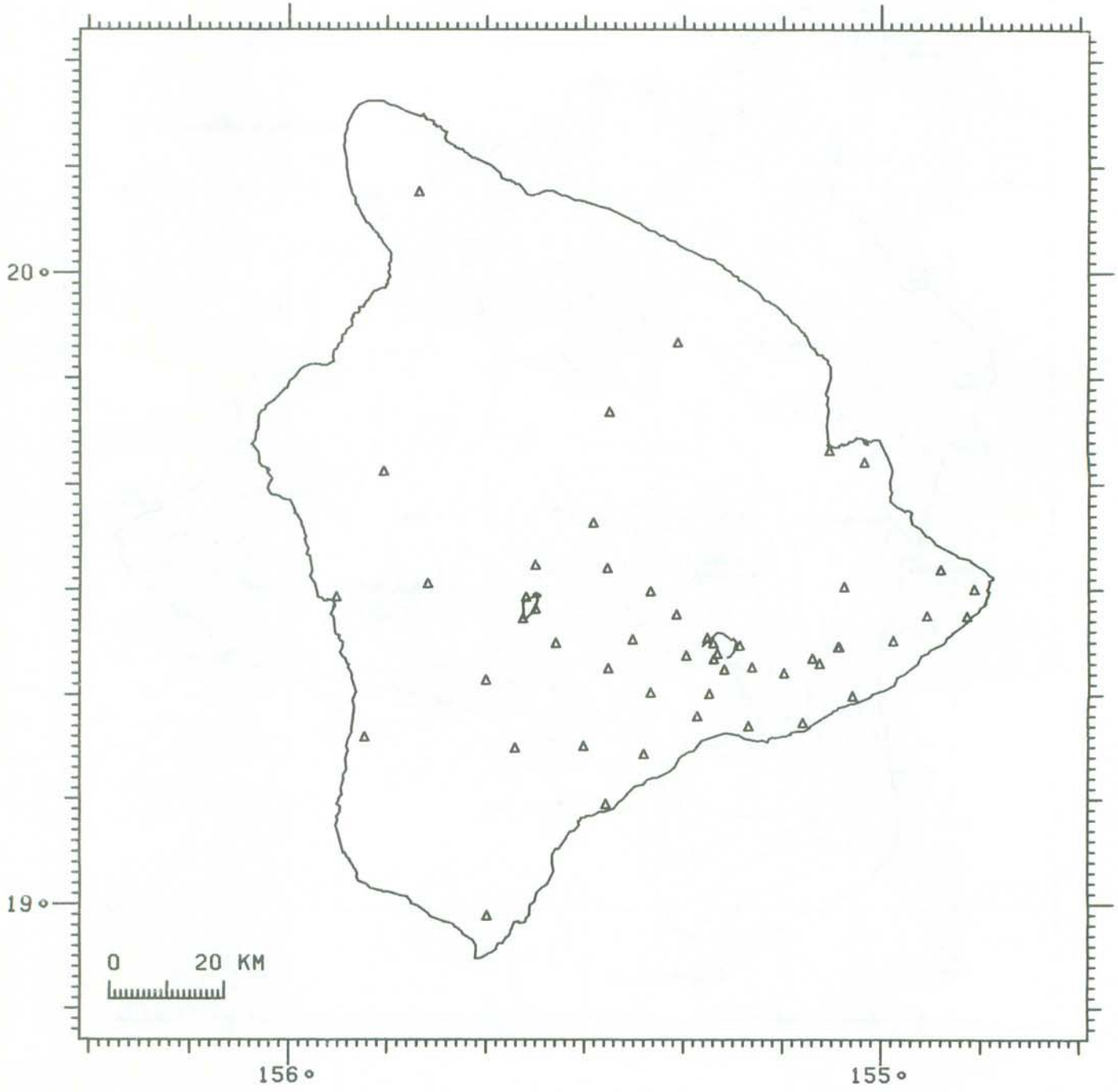

Figure 2. Map of the island of Hawaii showing seismic stations operational during 1983.

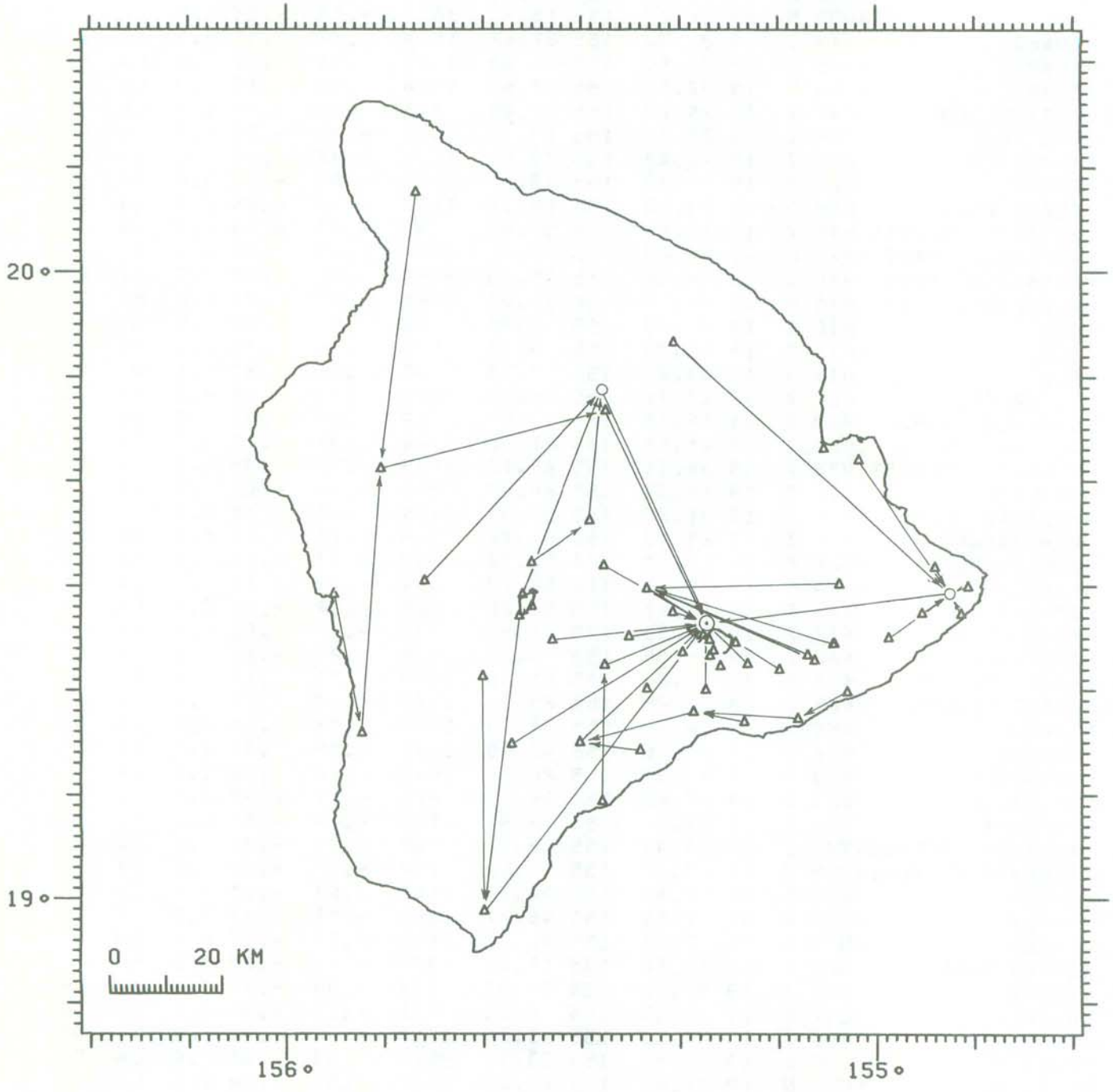

Figure 3. Map of the island of Hawaii showing the telemetry scheme for the Hawaiian Volcano Observatory seismic network.

Legend △ Seismometer location
○ Repeater Station

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1983.

STATION NAME	CODE		--LAT--- D	M	---LON--- D	M	ELEV (M)	DELAY 1	DELAY 2	CAL	SEIS TYPE	OPTIC RECORD
AHUA	AHU	Z	19	22.40	155	15.90	1070	-.10	-.13	2.1	E4	SD
AHUA	AHUE	E	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AHUA	AHUN	N	19	22.40	155	15.90	1070	-.10	-.13	.0	E4	
AINAPO	AIN	Z	19	22.50	155	27.62	1524	.13	.17	5.5	L4	D
AINAPO	AINE	E	19	22.50	155	27.62	1524	.13	.17	.0	L4	
AINAPO	AINN	N	19	22.50	155	27.62	1524	.13	.17	.0	L4	
CAPTAIN COOK	CAC	Z	19	29.29	155	55.09	323	.00	-.16	1.1	L4	D
CONE PEAK	CPK	Z	19	23.70	155	19.70	1038	-.26	-.07	6.0	L4	D
DANDELION	DAN	Z	19	21.42	155	40.04	3003	-.27	.03	7.0	L4	D
DESERT	DES	Z	19	20.20	155	23.30	815	-.29	-.13	3.0	E4	SD
ESCAPE ROAD	ESR	Z	19	24.68	155	14.33	1177	-.17	-.19	2.0	L4	D
HAWAIIAN BEACHES	HAB	Z	19	31.89	154	53.89	92	-.09	-.24	1.0	L4	
HALEAKALA, MAUI	HAE	E	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HALEAKALA, MAUI	HAL	Z	20	46.00	156	15.00	2090	.00	.00	.7	H1	P
HALEAKALA, MAUI	HAN	N	20	46.00	156	15.00	2090	.00	.00	1.0	W	P
HILO	HIE	E	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILO	HIL	Z	19	43.20	155	5.30	20	.54	.30	1.0	H1	P
HILO	HIN	N	19	43.20	155	5.30	20	.54	.30	1.0	W	P
HILINA PALI	HLP	Z	19	17.96	155	18.63	707	.02	.07	2.2	L4	D
HONOLULU, OAHU	HON	Z	21	19.30	158	.50	2	.00	.00	.0	H1	P
HALE POHAKU	HPU	Z	19	46.85	155	27.50	3396	.31	.17	3.7	L4	D
HUMUULA SHEEP ST	HSS	Z	19	36.31	155	29.13	2445	.20	.35	5.3	L4	D
HOT CAVES	HTC	Z	19	14.33	155	24.02	361	-.16	-.07	.0	E4	
HUALALAI	HUA	Z	19	41.25	155	50.32	2189	.67	.38	3.6	L4	D
HEIHEIAHULU	HUL	Z	19	25.13	154	58.72	369	-.17	-.16	1.6	E4	DS
HEIHEIAHULU	HULE	E	19	25.13	154	58.72	369	-.17	-.16	.0	E4	
HEIHEIAHULU	HULN	N	19	25.13	154	58.72	369	-.17	-.16	.0	L4	
KAAPUNA	KAA	Z	19	15.98	155	52.28	524	-.12	-.01	2.8	L4	
KAENA POINT	KAE	Z	19	17.35	155	7.95	37	-.01	.06	1.4	L4	D
KAHAUALEA	KAH	Z	19	24.58	155	4.36	625	-.25	-.30	.0	L4	D
KAOIKI FAULTS	KFA	Z	19	25.26	155	25.14	1579	.13	.17	.0	E	H
KAOIKI FAULTS	KFB	Z	19	25.26	155	25.14	1579	.13	.17	.0	TE	$
KAHUKU	KHU	Z	19	14.90	155	37.10	1939	.03	-.03	2.7	E4	D
KANEKII	KII	Z	19	30.56	155	45.90	1841	.15	.37	2.9	L4	D
KEANAKOLU	KKU	Z	19	53.39	155	20.58	1863	.68	.24	1.2	L4	D
PUU KALIU	KLU	Z	19	27.48	154	55.26	271	-.17	-.30	2.9	L4	D
KAMOAMOA	KMM	Z	19	23.47	155	6.98	750	-.25	-.30	2.4	L4	D
KAMOAMOA EAST-WEK	MME	E	19	23.47	155	6.98	750	-.25	-.30	.0	L4	
KAMOAMOA NORTH-SK	MMN	N	19	23.47	155	6.98	750	-.25	-.30	.0	L4	
KOHALA	KOH	Z	20	7.69	155	46.77	1166	-.03	-.17	1.5	L4	D
KOHALA	KOHE	E	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KOHALA	KOHN	N	20	7.69	155	46.77	1166	-.03	-.17	2.2	L4	
KIPUKA NENE	KPN	Z	19	20.10	155	17.40	924	-.11	-.08	3.5	E4	D
KAPOHO	KPO	Z	19	30.02	154	50.51	134	-.09	-.24	.0	L4	DH
KALALUA	LUA	Z	19	24.55	155	4.25	622	-.25	-.30	2.5	L4	DH
MAUNA LOA	MLO	Z	19	29.80	155	23.30	2010	.03	.08	5.8	L4	SD
MAUNA LOA	MLOE	E	19	29.80	155	23.30	2010	.03	.08	.0	L4	D
MAUNA LOA	MLON	N	19	29.80	155	23.30	2010	.03	.08	1.5	L4	
MAUNA LOA X	MLX	Z	19	27.60	155	20.70	1475	.06	.15	3.0	L4	
MOKUAWEOWEO	MOK	Z	19	29.28	155	35.98	4104	.15	.16	5.5	L4	DH
MAKAOPUHI	MPR	Z	19	22.07	155	9.85	881	-.17	-.20	2.4	L4	D
MOUNTAIN VIEW	MTV	Z	19	30.25	155	3.75	409	-.02	.01	5.0	E4	D
NATIONAL GUARD	NAG	Z	19	42.12	155	1.72	18	.54	.30	4.5	E4	D
NORTH PIT	NPT	Z	19	24.90	155	17.00	1115	-.30	-.18	3.0	E4	SD
NORTH PIT	NPTE	E	19	24.90	155	17.00	1115	-.30	-.18	.0	E4	
NORTH PIT	NPTN	N	19	24.90	155	17.00	1115	-.30	-.18	.0	E4	
OUTLET	OTL	Z	19	23.38	155	16.94	1038	-.19	-.18	4.9	L4	
PAUAHI	PAU	Z	19	22.62	155	13.10	994	-.21	-.24	2.4	L4	SD
PAUAHI	PAUE	E	19	22.62	155	13.10	994	-.21	-.24	.0	L4	

Table 1 (continued)

PAUAHI	PAUN	N	19 22.62	155 13.10	994	-.21	-.24	.0	L4	
PUU ULAULA	PLA	Z	19 32.00	155 27.67	2992	-.03	.13	5.4	L	D
POHOIKI	POI	Z	19 27.42	154 51.22	16	-.09	-.24	.0	L4	
POLIOKEAWE PALI	POL	Z	19 17.02	155 13.47	169	-.02	.03	2.8	E4	D
PUU PILI	PPL	Z	19 9.50	155 27.87	35	-.15	-.15	1.4	E4	D
PUU KAMOAMOA	PUK	Z	19 23.00	155 6.25	704	-.25	-.30	.9	L4	D
RIM	RIM	Z	19 23.90	155 16.60	1128	-.21	-.13	.0	L4	
SOUTH POINT	SPT	Z	18 58.91	155 39.92	244	-.17	-.22	2.8	L4	D
SOUTH POINT	SPTE	E	18 58.91	155 39.92	244	-.17	-.22	.0	L4	
SOUTH POINT	SPTN	N	18 58.91	155 39.92	244	-.17	-.22	.0	L4	
SOUTHWEST RIFT	SWR	Z	19 27.26	155 36.30	4048	.01	.04	5.6	E4	D
TRAIL	TRA	Z	19 24.91	155 32.96	3207	.00	.00	.0	L4	0
UWEKAHUNA	UEE	E	19 25.40	155 17.60	1240	-.21	.00	1.5	E	
UWEKAHUNA	UEN	N	19 25.40	155 17.60	1240	-.21	.00	1.5	E	
UWEKAHUNA	UEZ	Z	19 25.40	155 17.60	1240	-.21	.00	1.5	E	
UWEKAHUNA	USE	E	19 25.40	155 17.60	1240	-.21	.00	1.0	S	P
UWEKAHUNA	USZ	Z	19 25.40	155 17.60	1240	-.21	.00	1.0	S	P
WAHAULA	WHA	Z	19 19.90	155 2.92	29	-.10	-.04	1.5	E4	D
WILKES CAMP	WIL	Z	19 28.15	155 35.02	4037	.22	.17	2.6	E4	D
WEATHER OBSERVAT	WOB	Z	19 32.31	155 35.01	3396	.00	.00	.0	E4	
WOOD VALLEY	WOO	Z	19 15.08	155 30.12	909	-.15	-.06	4.6	E4	D

Table 2. Seismic Instrumentation Types

The codes in parentheses refer to the seismometer types listed in Table 1.

Type 1. (Codes E, L, and 4) Consists of:

a) Geophone - Electrotech EV-17 (E) or Mark Products L4C (L) 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - USGS/OEVE Model J302 or J402 (4) voltage controlled oscillator. Three db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 3. (Code H1) Consists of:
Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. (Code S) Consists of:
Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Type 2 instruments have been discontinued.

Code (W) is a Wood-Anderson torsion seismograph.

Codes (TE) and (S5) are experimental seismometers.

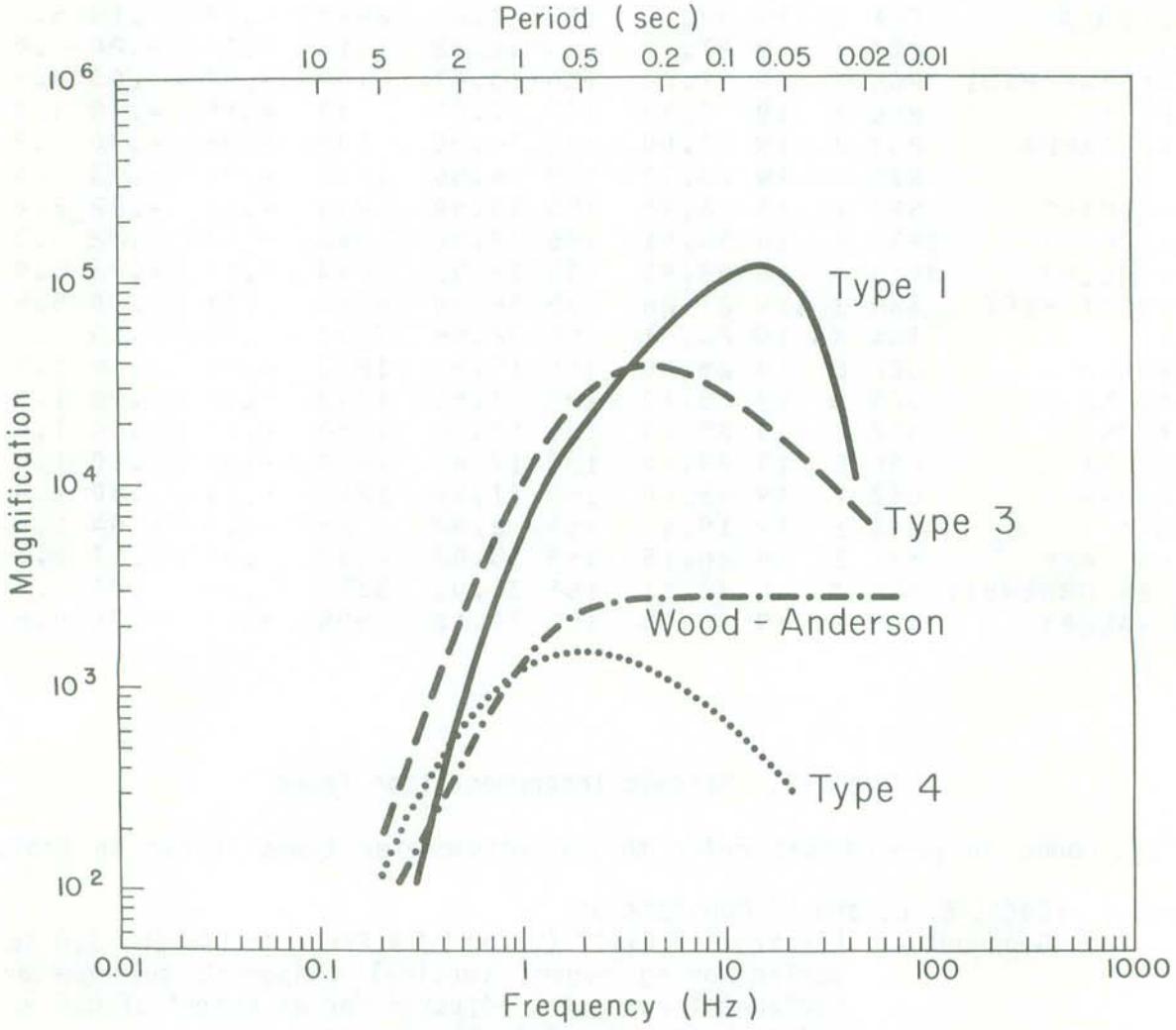

Figure 4. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard OEVE seismometer recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL), to get the reponse for an individual station.

SEISMIC DATA PROCESSING

Develocorder films are scanned on a daily basis for earthquakes, and coda durations are measured for magnitude determination. Events are digitized, timed, and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, F.W., Hypocenter location program HYPOINVERSE, U.S.G.S. Open file report 78-694, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival time and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are in fact separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations, and signal or coda duration on selected short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, OTL, PPL, KHU, or WIL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed nearly to the noise level. A bilinear relation is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

The equations used in magnitude determination are:

$$\text{duration } <210 \text{ sec} \quad M = -5.2 + 3.89 \log (F-P) + .013\, Z + .0037\, D$$
$$\text{duration } >210 \text{ sec} \quad M = -.905 + 2.026 \log (F-P) + .013\, Z + .0037\, D$$

where Z and D are the depth and epicentral distance in km, respectively.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south half of the island of Hawaii. Hundreds of earthquakes too small to locate are counted daily, and the set of located earthquakes in the Kilauea region is nearly complete above magnitude about 2.0. Many smaller events are located also. Substantial effort is made to locate earthquakes elsewhere on the island and within about 150 km of the island. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 3.0 to 3.5 are located.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located epicenters are given in Figures 8-13. The epicenter maps are on different scales, and show both all located earthquakes and large events only.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and depth. Figures 4-7 are maps of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figures 4-7. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 or larger. It is felt that this list is a more objective measure of large earthquakes than a list of felt earthquakes.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea.

Earthquake categories are:

1) Kilauea summit, short period caldera: shallow earthquakes beneath the caldera.
2) Kilauea summit, long period caldera: earthquakes characterized by low frequency signatures, often originating 5-10 km below the caldera.
3) Kilauea summit 30 km: deep earthquakes about 30 km beneath the summit region.
4) Kaoiki and southwest rift: earthquakes beneath the southwest rift of Kilauea, western parts of the Koae faults and adjacent Kaoiki fault system.
5) Upper east rift: earthquakes in the upper and middle east rift zone, the adjacent parts of the south flank, and eastern parts of the Koae faults.
6) Lower east rift: earthquakes in the lower east rift zone and adjacent parts of the south flank.
7) Offshore PPL: earthquakes from offshore areas south of the Puu Pili station, including Loihi seamount.
8) Mauna Loa long period: low frequency events near Mauna Loa summit.
9) Mauna Loa short period: shallow earthquakes in the Mauna Loa caldera region.

Tremor is separated into four categories: shallow, intermediate and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs.

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1983	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA SHAL.	KILAUEA INT.	KILAUEA DEEP	MAUNA LOA
JAN 1	29	1		23	1963	2			2	480			
2	73	1		30	5977	7				1440			
3	11			38	1348	4			2	1440			
4	10		3	40	2709					1440			
5	326	23		39	1345	2			1	1440			
6	129			29	1598	4			2	1440			
7	88		1	20	639	2		1	1	1440			
8	3		1	27	266	2			1	1440			
9	14	18	3	24	186	32			4	1440			
10	5			30	137	2		1	5	1440			
11				24	184	3		1	3	1440			
12	4		2	44	221	2		2	3	1440		35	
13		2		30	203	3			5	1440		40	
14			2	30	102	2			10	1440		4	
15	1	4	1	41	147	2		1	5	1440			
16	3			35	206	7			14	1440			
17	3	6		30	189	10			17	1440			
18	2		1	25	232	5		1	4	1440			
19	1		1	17	298	6			3	1440			
20	3	2		33	177	4			1	1440			
21	4		3	20	216	25			1	1440			
22	8	1	2	27	189	14				1440			
23	10	2		24	227					1440			
24	7	1		33	194	8				1440	2	4	
25	13	8		34	203	1			1	1440			
26	14	26		35	166	1			1	1440			
27	12	1	2	35	158			1	12	1440		5	
28	13	10		26	187	3			1	1440			
29	7	8	1	34	185	1			2	1440		28	
30	16	11	1	40	228	4			1	1440			
31	9	2	1	9	163	1				1440			
FEB 1	12			20	149	20			4	1440			
2	13			39	162	6			2	1440			
3	19		1	29	102	6			5	1440			
4	15	4		19	97	8	3	2	5	1440			
5	9	3		19	123	1			6	1440			
6	18	2	1	28	101	1			15	1440		19	
7	16	1	10	17	97			1	9	1440			
8	18	69		34	146	4			17	1440			
9	19	4	2	34	140	5			3	1440			
10	17	1		17	89	5			10	1440			
11	10	3	2	51	96	18				1440			
12	5	4	2	71	83	8			1	1440			
13	16		2	37	110	4		1	1	1440		30	
14	15	8		29	114	2			8	1440		2	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1983	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA SHAL.	INT. DEEP	MAUNA LOA
FEB 15	18			30	118	4			1	1440		
16	14	1	5	34	122	9			4	1440		
17	14	1		35	57	12			1	1440		
18	12		1	25	112	5			5	1440		
19	34	1		36	105	6		1	7	1440		6
20	26		1	23	92	8		1	2	1440		
21	28	1	1	25	96	5			4	1440		2
22	23	16		28	85	13			9	1440		
23	18		1	30	75	17		1	6	1440		
24	30			31	87	29			16	1440		
25	12			67	59	18		1	11	1440		
26	9			74	58	16			2	1440		
27	19	1	1	20	70	5			9	1440		
28	13			19	76	8		1	471	1440		
MAR 1	21	3	3	30	72	7			404	1440		
2	20	2	1	27	62	9		2	478	1440		4
3	5	2		19	69	22			129	1440		
4	5		2	45	111	6			91	1440		
5	18			23	105	15		1	66	1440		
6	11	8	2	18	111	1			41	1440		
7	14	3	1	32	87	14		1	28	1440		15
8	28	8	1	31	123	18			31	1440		
9	24	6		27	115	21			33	1440	29	
10	14			40	105	5			34	1440	4	
11	19	4		29	106	3		3	10	1440	41	
12	29	11		43	118	3		1	15	1440	6	
13	23	3	5	35	103	1			23	1440		
14	17	1		22	100	20			32	1440		
15	33	8		28	65	16			24	1440	5	
16	23	6		26	94	17		9	25	1440		6
17	13	2	3	22	75	2		7	26	1440	10	
18	18	7	3	51	90	16		2	12	1440		
19	22	14	1	20	93	28		2	25	1440		
20	21	10	2	74	397			1	15	1440		3
21	29	3	3	55	167	21		1	20	1440		
22	21	1		37	172	16		1	18	1440		
23	24	2		30	175	21			30	1440		3
24	62	14	1	39	101	2		6	6	1440		
25	28	6		35	115	1			53	1440		
26	20		1	20	140	5		1	12	1440		
27	13	1	1	32	93	5			7	1440	7	
28	12	3	1	27	72	4		3	13	1440	52	
29	14			30	61	1			13	1440		
30	8			25	61				6	1440		
31	15	1	1	32	55	1			7	1440		

	KILAUEA SUMMIT			KILAUEA FLANK			MAUNA LOA		TREMOR (MINUTES)		
DATE 1983	SHORT PER.	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA DEEP
APR 1	12	2	1	27	51				12	1440		
2	32		5	34	45	4			10	1440		
3	14	6		19	52	7		1	13	1440		
4	37	13	1	23	42	8		6	25	1440		
5	53	13		27	40	11			33	1440	17	3 15
6	42	10		26	51	2			28	1440		
7	48	3	1	34	28			1	18	1440		
8	40			15	69	10			21	1440		
9	10	104	1	34	114	10			27	1440		
10	12	32	2	20	110	10		6	21	1440	20	
11	11	13	2	27	198	16			40	1440	2	
12	23	10		39	285	12		1	47	1440		4
13	17			20	296	4		11	12	1440		
14	13	8		39	222	5		5		1440	5	
15	17	7		17	250	10		4	12	1440		
16	12	2		34	240	9		2	3	1440		
17	14	1		20	409	14			8	1440		
18	16	3	1	21	396	10		2	8	1440		4
19	27	2	2	35	325	14		1	15	1440		
20	17	1	1	27	195	6		2	9	1440		
21	15	7	2	35	312	4			3	1440	4	
22	16		1	20	448	4			8	1440		
23	15			21	432	6		2	2	1440	23	
24	35	2		29	260	7		4	11	1440		
25	15			20	269	11			7	1440	3	
26	23			21	271	13			7	1440		
27	17	2		13	309	9		1	8	1440		
28	13	3		34	110	4				1440		2
29	23	2		37	221	1		1	5	1440		
30	22	2	1	36	214	7		2	26	1440		
MAY 1	28	3		30	149	7		1	46	1440		
2	20		2	25	165	5			5	1440		5
3	5	3	2	27	134				13	1440	27	
4	37	4		23	202	9			34	1440		3
5	34	3	2	20	149	6			9	1440	5	
6	34	1		20	264	12			12	1440		
7	30	1	1	30	258	11			4	1440		
8	30	4	1	29	164	4			7	1440		
9	36	3		12	126	5			4	1440		4
10	48	1	1	23	196	9			12	1440		16
11	36	2	1	23	247	13			11	1440		
12	34	3	1	34	139	1		1	4	1440	6	
13	42		2	31	231	10		2	13	1440		
14	34			26	242	7			11	1440	28	
15	39	4		17	144	6			6	1440	4	

	KILAUEA SUMMIT				KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1983	SHORT PER.	LONG PER.	30 CALDERA	KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA SHAL.	KILAUEA INT.	KILAUEA DEEP	MAUNA LOA
MAY16	46		3		42	228	9			22	T1440			
17	42		3	2	29	149	6		2	22	T1440		4	
18	59		3		29	210	16			57	T1440		3	
19	45				31	175	5			23	T1440		10	
20	39		1	1	40	217	9		1	45	T1440			
21	35				23	234	11		3	40	T1440			43
22	38		1	1	22	129	5			13	T1440		7	
23	65				21	189	10		1	23	T1440			
24	71		5		17	222	13			35	T1440			
25	59		2		24	208	12			7	T1440			
26	103		37	2	11	150	2			9	T1440			
27	58		2	2	23	156	8			2	T1440		5	
28	34			1	25	192	10			8	T1440			
29	26		1	2	24	181	8			6	T1440	4		
30	39			1	27	243	14		3	10	T1440		7	
31	37		1		27	203	2		1	14	T1440			
JUN 1	51		3		35	184	17		1	10	T1440		6	
2	45		1	3	33	127	4		1	7	T1440			
3	73		2		32	176	6		1	36	T1440		9	
4	119		5		25	197	14		10	54	T1440			
5	56			2	26	132	6		3	88	T1440		3	
6	41		1	3	24	136	5		1	29	T1440			
7	47			1	19	184	6		2	37	T1440			
8	35		1	1	20	159	7		2	44	T1440			
9	31		11	1	7	131	2	1	5	88	T1440			
10	63		2		19	164	14		1	101	T1440			
11	110		1		27	168	11		1	99	T1440			
12	52			3	25	141	5			60	T1440			
13	48				27	40	11		1	52	T1440			
14	25		1		25	36	12		2	47	T1440		4	
15	30				24	48	8			56	T1440			
16	16				16	23	12		1	65	T1440		7	
17	15		2	2	50	92	3		2	21	T1440			
18	15				33	171	6			21	T1440			
19	27				21	201	9		1	24	T1440		16	3
20	21		2		20	262	4		3	15	T1440			
21	26			1	16	257	11			27	T1440			
22	34		3		14	353	2			22	T1440			
23	42		2		15	302	5		1	10	T1440			
24	50		1	1	21	315	10		3	12	T1440			
25	75		2	1	21	379	13			10	T1440		15	
26	67		3	2	33	277	7		5	12	T1440			
27	97				18	394	10		2	23	T1440			
28	72				22	448	6		6	65	T1440			2
29	29		1	1	32	69	2		2	48	T1440			

	KILAUEA SUMMIT				KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1983	SHORT PER. CALDERA	LONG PER.		30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA SHAL.	KILAUEA INT.	KILAUEA DEEP	MAUNA LOA
JUN30	26				24	16	7		7	114	1440			
JUL 1	27				15	21	6		9	164	1440			
2	41				23	23	4		2	99	1440			
3	16	1	1		35	563	5			13	1440			
4	17				27	557	8		5	38	1440			
5	15				11	980	2			46	1440			
6	22	2			22	1286	7			34	1440			
7	21	1			21	785	4			75	1440			
8	24	5	2		21	1226	7			31	1440			
9	30	7			18	1564	10			23	1440			
10	40	1	1		29	1058	7			14	1440			
11	37	4	1		19	1320	6		5	26	1440			11
12	59	4			15	1825	8			15	1440			
13	49	5	1		14	1754	6		12	11	1440		19	
14	50				27	966	6		34	21	1440			
15	63	9			13	1750	4		2		1440			
16	98				17	1920	2		5	22	1440			
17	67	1	4		18	1259	5		19	14	1440			
18	88	1			17	1169	8		16	15	1440			
19	94	2			36	1183	18			16	1440			
20	101	11			24	1071	15		3	8	1440		6	
21	76		1		14	606	9		4	10	1440			
22	84				22	111	4			17	1440	4		
23	50	3			11	37			1	14	1440			39
24	83	3			19	23	6		4	3	1440			
25	39	162			17	458	6		3	12	1440		5	
26	25	8			31	756	4			7	1440			
27	22				15	757	9			11	1440			
28	18				32	606	9		4	15	1440			
29	21				20	697	13		4	9	1440		34	
30	19	4	1		19	638	5		1	17	1440		28	
31	27	6	2		28	552	10		1	13	1440			
AUG 1	34	4			17	636	9		1	26	1440			
2	36	8	1		16	581	8		1	57	1440			
3	53	3			14	608	9		1	81	1440			
4	34	2			8	338	8		1	23	1440			
5	51	7			16	410	7		1	45	1440			
6	75	8			18	415	4		1	17	1440			
7	88	6			40	343	11		4	22	1440			
8	119	9	2		20	385	13			22	1440			
9	94	8			31	424	17			31	1440		16	
10	81	5	2		25	395	14		4	19	1440		27	
11	54	10			50	255	8	2	2	36	1440			
12	87	4	1		18	195	11		1	17	1440			
13	149	1	1		19	258	14		1	38	1440			

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1983	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.		KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
AUG14	104	1		17	214	7			25	1440			
15	44	26		12	69	4	3		42	1440			
16	95	5		17	45				64	1440		6	
17	49	2		14	343	8			83	1440			
18	18	1		15	394	10		2	69	1440			
19	17	1	1	16	518	13		1	89	1440			
20	24	4	2	21	573	4		1	90	1440		16	
21	29	2	1	24	680	10			39	1440			
22	27	14		23	781	11			61	1440			
23	43	5		21	734	13		5	64	1440		6	
24	32	3		18	733	12			37	1440			
25	29		2	32	621	5			52	1440			
26	50	3	1	6	428	9		3	66	1440		10	
27	47	1		11	324	8		2	56	1440			
28	55	2	3	41	540	6		9	50	1440			
29	76	2		21	712	13		1	66	1440		10	
30	80	2	4	18	720	8		3	44	1440			
31	83	3		21	790	14			71	1440			
SEP 1	103		3	19	366	9		7	62	1440			
2	85	1	1	26	490	14		12	119	1440			
3	11	1		19	433	2		11	226	1440			
4	121	3		17	306	9		3	156	1440			
5	129	4		28	463	9		4	100	1440			
6	41	1429	2	15	38			2	145	1440			
7	15	1837		16	444	8			40	1440			
8	32		1	26	503	7		1	74	1440		5	
9	19	4	1	12	716	10		2	119	1440			
10	36	1		20	524	6		4	94	1440		10	
11	30		1	37	398	6		9	238	1440			
12	49	1		15	334	11		4	339	1440		8	
13	60	2		514	5			10	682	1440			
14	71		1	11	353	4		15	613	1440			
15	35	1		27	97	6		13	355	1440			
16	86	1		23	33	14		17	454	1440			
17	45	354	1	17	401	23		2	222	1440			
18	38	1	1	17	772	10		10	220	1440			
19	26	2	1	16	498	3		6	195	1440			
20	23	4		29	644	16		11	220	1440			
21	23			12	458	16		3	196	1440			
22	39	2		17	344	9		10	134	1440		28	
23	49	1	1	13	453	9		4	115	1440			
24	58	2		20	380	14		2	135	1440			
25	57	2	1	15	342	7			86	1440			
26	79	5		21	457	8			94	1440			
27	77	3	1	12	359	12			123	1440		4	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1983	SHORT PER. CALDERA	LONG PER. 30 KM		KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
SEP28	92	1		12	310	7		3	115	1440		
29	82		3	23	228				125	1440		
30	97	3	2	12	289	6		1	213	1440	22	
OCT 1	97		1	22	288	3		5	178	1440		
2	124	1		23	317	6		2	126	1440		
3	154	5		10	223	16		4	96	1440	23	
4	123	2		19	153	3		8	48	1440		
5	47	38	32	36	34					1440		
6	64			15	23	1		10	134	1440		
7	60	331	1	20	117	4		15	71	1440		
8	23	13		10	241	6		23	54	1440	32	
9	18	5		21	241	8		13	42	1440		
10	24	2		24	330	5		6	23	1440		
11	30	4		15	364	8		6	65	1440		
12	35	5	1	19	372	4		25	98	1440	22	
13	43	5	3	10	359	12		11	183	1440	14	
14	34	5		15	300	5		8	89	1440		
15	39	4	1	18	183	7		6	43	1440		
16	67	8	1	32	243	5		7		1440	1	
17	79	5	2	16	291	7		7	35	1440	2	
18	90	1	2	22	346	13		13	24	1440		
19	111	1		27	315	19		14	48	1440	23	
20	71		1	45	443	18		9	49	1440		
21	100	2	1	9	249	11		12	32	1440		
22	66		2	15	157	6		1	7	1440	10	
23	130		3	17	232	12			14	1440	34	
24	186		2	16	253	6		1	52	1440	6	
25	101			11	150	12		8	151	1440		
26	160	21	2	158	10			1	31	1440		
27	198			41	239	11		5	17	1440		
28	141	1		15	219	14		26	117	1440		
29	142	2		11	163	8		13	55	1440		
30	131			39	221	6		6	35	1440		
31	103		2	12	151	16		4	37	1440		
NOV 1	113	1		17	305	5		5	35	1440	4	
2	133	2	1	18	323	18		45	43	1440		
3	170	1	1	20	390	8		15	40	1440		
4	196	4	1	15	290	9		10	34	1440	12 3	
5	128	1	1	13	155	10		10	23	1440		
6	174	67		24	33	11		9	52	1440		
7	16	283		13	57	17			52	1440		
8	30	897	1	18	772	6		1	31	1440		
9	29	185		15	402	6			33	1440		
10	28	174	1	16	388	17		5	44	1440		
11	24	12		20	161	10			28	1440		

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA TREMOR (MINUTES)					
DATE 1983	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.		KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA DEEP
NOV12	29	9	3	24	225	19		3	39	T1440			
13	27	1	4	21	274	4			44	T1440			
14	30	5	2	17	301	5			31	T1440		29	
15	38		1	15	243	11			56	T1440			
16		1		2191	252	28			26	T1440			
17	70		28	1357	220	2			42	T1440			3
18	56		67	1144	145			8	48	T1440			
19	86	3	22	958	149				31	T1440		4	
20	113	2	103	1178	344	9		2	30	T1440			
21	60	1	27	641	282	1		1	22	T1440			
22	43	7	64	831	265	6		3	18	T1440		3	
23	17	8	78	781	267	6		4	9	T1440			
24	457		14	608	267	1			96	T1440		41	
25	52	3	10	587	227	5			33	T1440		36	
26	38		23	603	235	6		1	33	T1440			11
27	27	2	65	755	202	13		1	13	T1440			
28	35	1	78	524	125	10		1	5	T1440		6	
29	21		67	450	132	22			2	T1440			
30	20	220	26	415	18	10			6	T1440			
DEC 1	9	10	3	267	521	5		5	16	T1440			2
2	4		31	411	558	6		2	6	T1440	1440		
3	17	697	51	450	607	5		2	8	T1440			
4	8	198	35	299	377	8		1	10	T1440			
5	24	10	64	405	407	7		4	14	T1440		18	
6	20	4	30	348	383	2			45	T1440		4	
7	16	3	35	355	393	9		5	8	T1440			
8	18	1	20	279	317	6		3	20	T1440			
9	26	6	27	363	198	20		9	20	T1440			
10	15	3	42	374	298	16		8	8	T1440		40	
11	18	2	44	392	382	12		2	13	T1440			
12	20	8	35	319	377	7		1	17	T1440			
13	28	12	37	275	345	6		4	26	T1440		13	
14	20	10	3	222	339			1	32	T1440	4		
15	19	3	3	199	421	3		2	41	T1440		36	
16	27	1	7	181	407	4		3	11	T1440			
17	23	1	5	263	435	7		1	36	T1440		21	
18	40	3	152	261	398	4		2	10	T1440			
19	33	3	26	191	366	9				T1440			
20	48	2	17	166	395	6		2	8	T1440			
21	23	2	23	164	386	3		1	4	T1440			
22	52	1	10	176	509	5		1	32	T1440			
23	48	3	25	155	261	12		3	36	T1440			
24	61		31	153	203	9		3	11	T1440			
25	169	6	16	130	171	3			5	T1440		10	
26	93	3	26	173	292	6			12	T1440		7	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)			
DATE 1985	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL	LONG PER.	SHORT PER.	KILAUEA SHAL.	KILAUEA INT.	KILAUEA DEEP	MAUNA LOA
DEC27	56		19	157	403	11		6	18	1440			
28	50	4	19	178	460	11		5	13	1440			
29	55	25		141	418	7		3	47	1440			
30	48		7	164	308	6		16	26	1440			
31	54	36		166	1440	15		16	44	1440		35	10

Table 4. Coordinates of named earthquake regions.

--All earthquakes are in one of the following groups.
--Identified by a numerical class or 3-letter code:

--Shallow:
1 SNC - Shallow north caldera (0-5 km)
2 SSC - Shallow south caldera (0-5 km)
3 SEC - Shallow east caldera (0-5 km)
4 SER - Shallow east rift (0-5 km)
5 SME - Shallow middle east rift (0-5 km)
6 KOA - Koae fault zone (0-5 km)
7 SSF - Shallow south flank (0-5 km)
8 SLF - Shallow lower east rift (0-5 km)

--Intermediate depth:
9 SF1 - Kilauea south flank (5-13 km) (west end)
10 SF2 - Kilauea south flank (5-13 km)
11 SF3 - Kilauea south flank (5-13 km)
12 SF4 - Kilauea south flank (5-13 km)
13 SF5 - Kilauea south flank (5-13 km) (east end)
14 LER - Lower east rift (5-99 km)
15 MLO - Mauna Loa (0-13 km)
16 LSW - Lower SW rifts of Kilauea & Mauna Loa (0-13 km)
17 GLN - Glenwood (0-13 km)
18 SWR - SW rift (0-13 km)
19 INT - Intermediate caldera (5-13 km)
20 KAO - Kaoiki (0-13 km)

--Deep:
21 DEP - Deep Kilauea (>13 km) (below regions 1-13, 17-19)
22 DLS - Deep lower SW rift (>13 km) (below region 14)
23 DML - Deep Mauna Loa (>13 km) (below regions 15, 20)

--Outer regions, all depths:
24 LOI - Loihi (all depths)
25 KON - South Kona (all depths)
26 HUA - Hualalai (all depths)
27 KOH - Kohala (all depths)
28 KEA - Mauna Kea (all depths)
29 HIL - Hilo (all depths)
30 DIS - Distant, everywhere else

Table 4 (continued)

--The latitude and longitude limits of the regions are given below.
--When the coordinates imply an overlap, precedence is given as in the maps.

No.	Code	N.Lat.	S.Lat.	W.Lon.	E.Lon.
1	SNC	19 28	19 24.5	155 19	155 14
2	SSC	19 24.5	19 22	155 19	155 16.5
3	SEC	19 24.5	19 22	155 16.5	155 14
4	SER	19 26	19 20.5	155 14	155 07.2
5	SME	19 26	-----	155 07.2	155 00
6	KOA	19 22	19 20.5	155 17	155 14
7	SSF	-----	19 10	155 17	155 00
8	SLE	19 32	19 16	155 00	154 40
9	SF1	19 22	19 10	155 17	155 14.5
10	SF2	19 26	19 10	155 14.5	155 12.3
11	SF3	19 26	19 10	155 12.3	155 09.1
12	SF4	19 26	19 10	155 09.1	155 05.3
13	SF5	19 26	19 10	155 05.3	155 00
14	LER	19 32	19 16	155 00	154 40
15	MLO	19 43	19 19	155 35	155 19
16	LSW	19 19	18 40	155 43	155 25
17	GLN	19 43	19 26	155 19	155 00
18	SWR	19 22	19 10	155 25	155 17
19	INT	19 28	19 22	155 19	155 14
20	KAO	19 30	19 19	155 32	155 19
21	DEP	19 43	19 10	155 25	155 00
22	DLS	19 19	18 40	155 43	155 25
23	DML	19 43	19 19	155 35	155 19
24	LOI	19 10	18 40	155 25	155 00
25	KON	19 39	19 00	156 20	155 43
26	HUA	19 55	19 39	156 20	155 43
27	KOH	20 25	19 55	156 20	155 34
28	KEA	20 25	19 43	155 43	154 40
29	HIL	19 47	19 32	155 09	154 40

Figure 5. Earthquake classification, shallow 0-5 km deep Kilauea and east flank Mauna Loa.

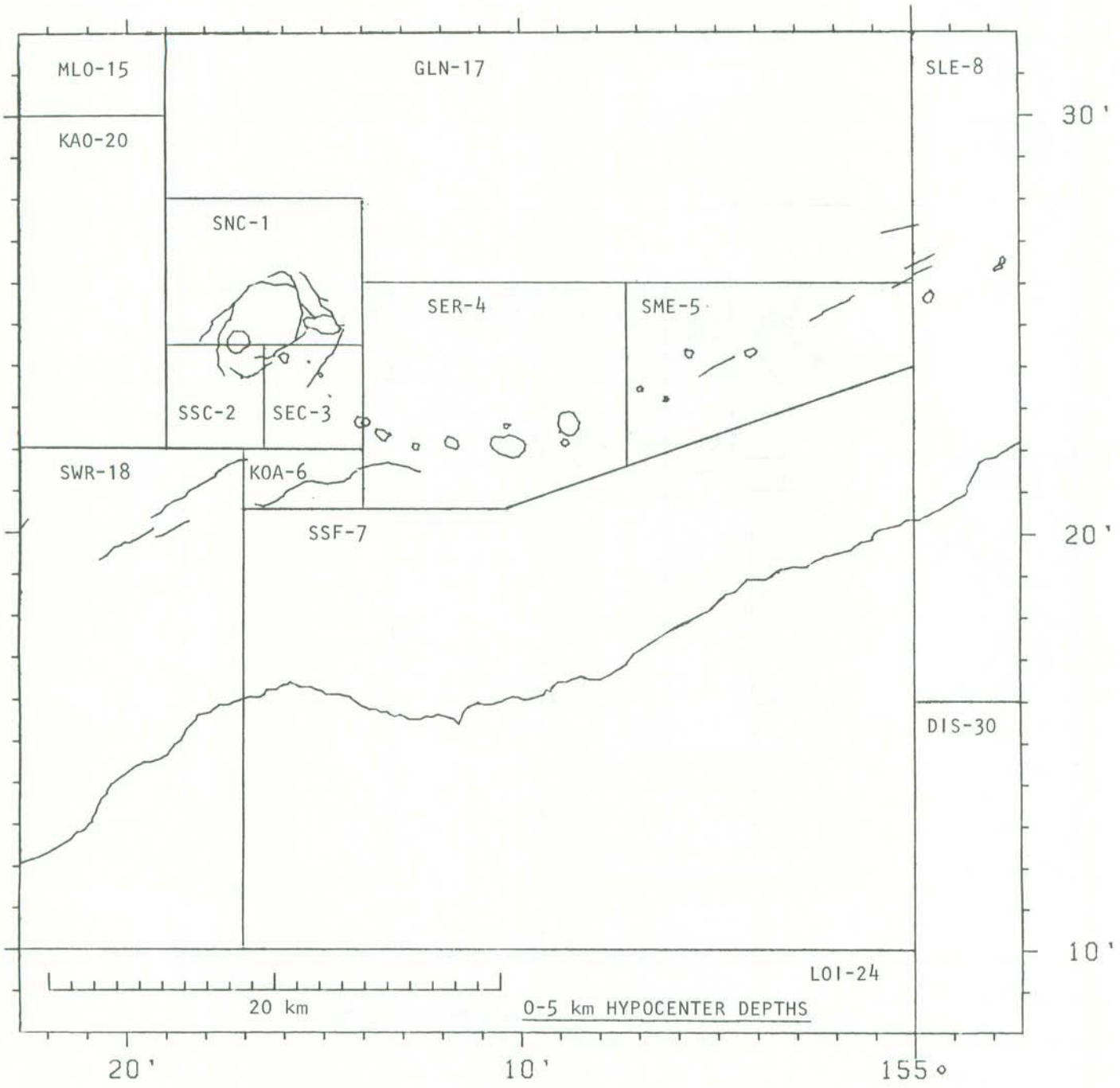

Figure 6. Earthquake classification, intermediate 5-13 km Kilauea and east flank Mauna Loa.

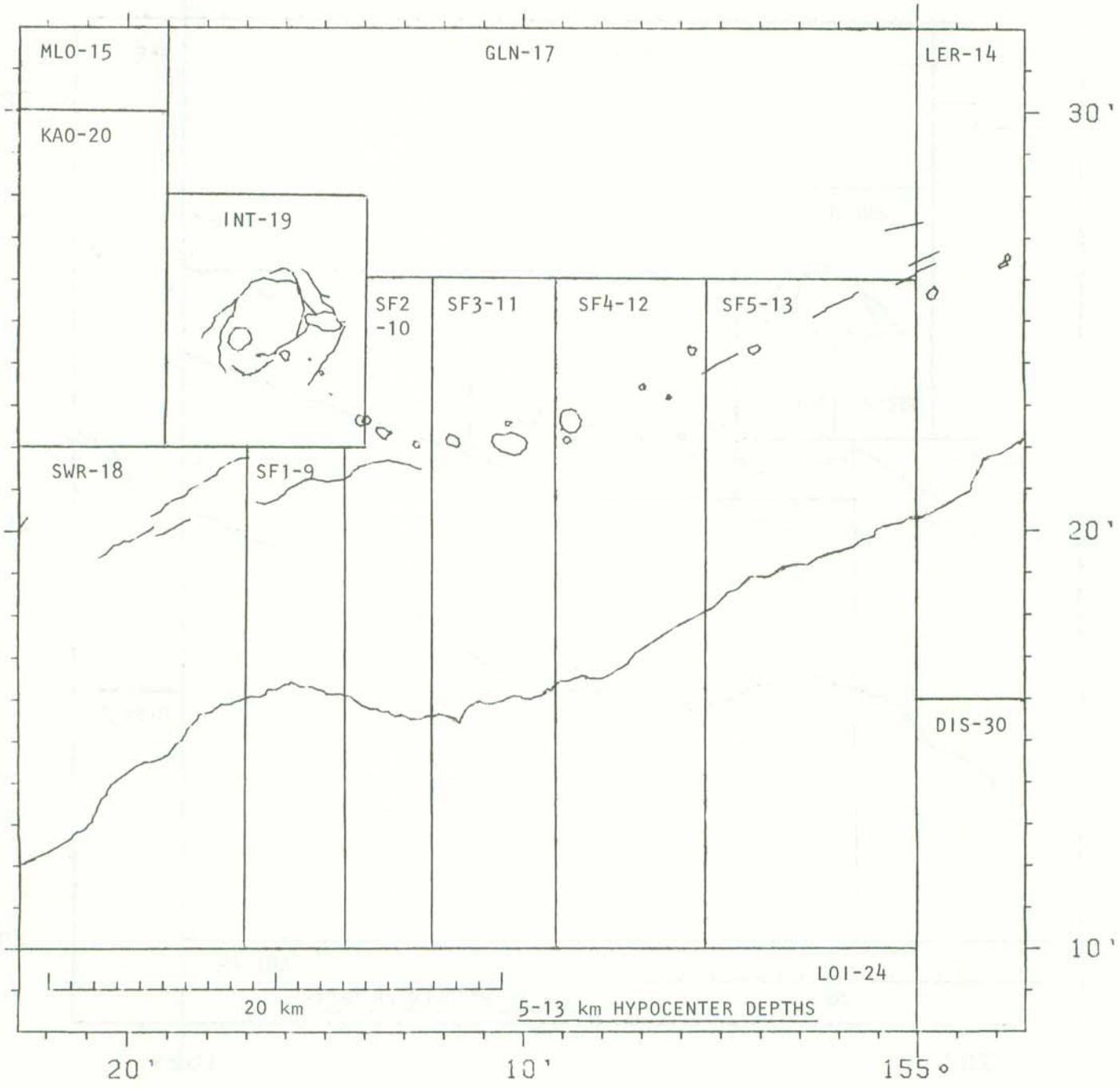

Figure 7. Earthquake classification, crustal 0-13 km deep island of Hawaii.

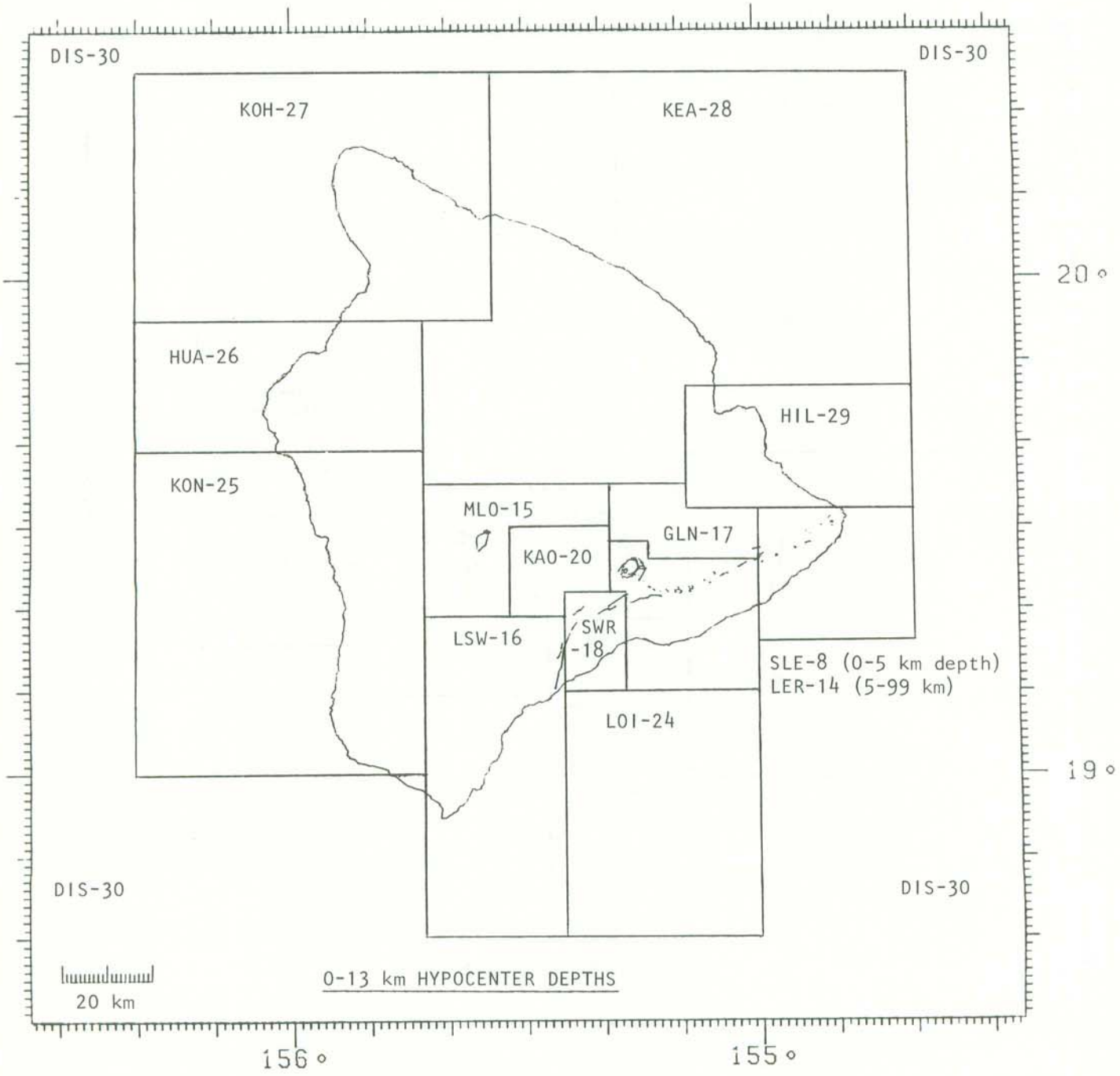

Figure 8. Earthquake classification, mantle greater than 13 km deep island of Hawaii.

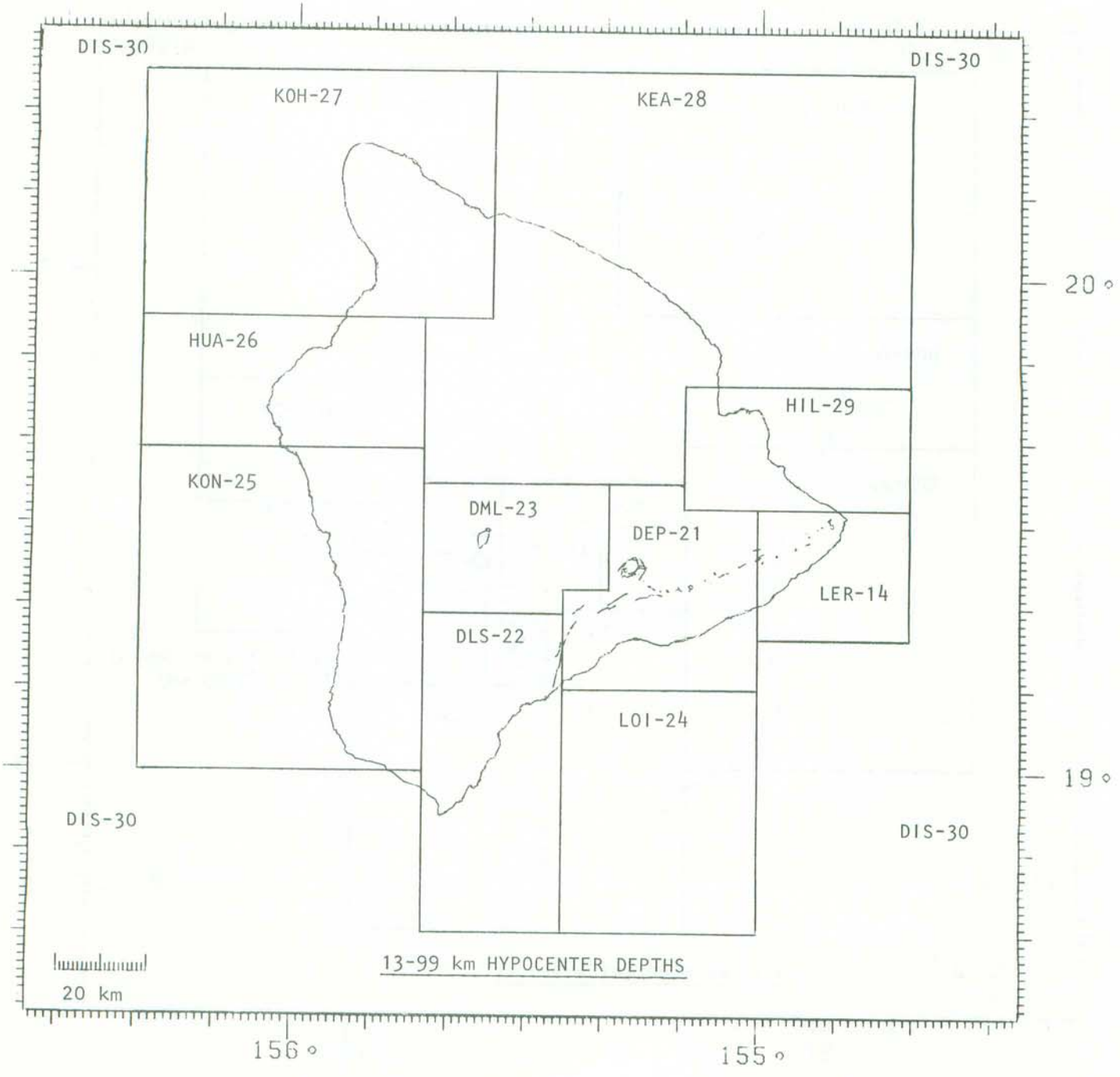

Figure 9

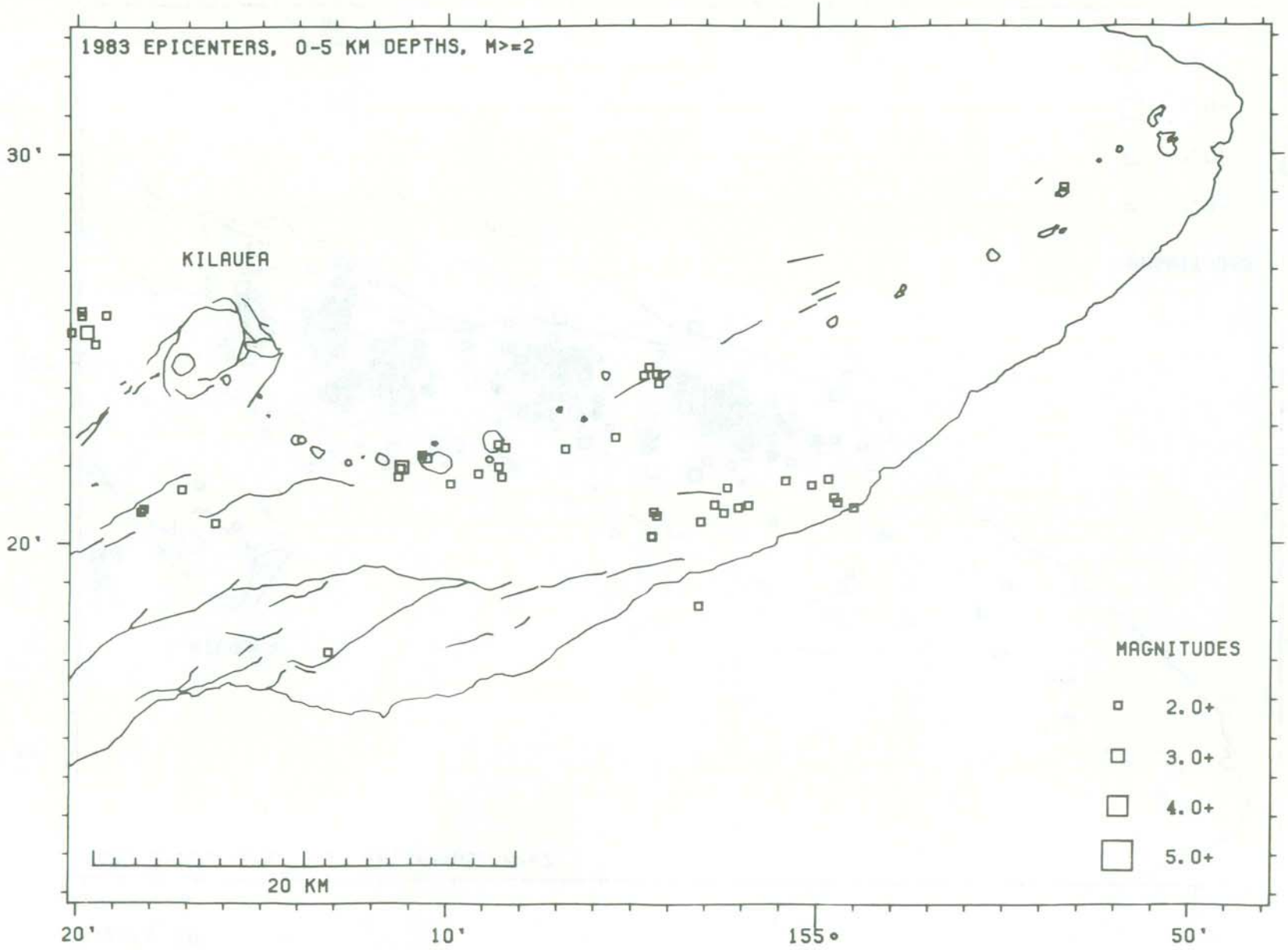
1983 EPICENTERS, 0-5 KM DEPTHS, M>=2
KILAUEA
30'
20'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20'
10'
155°
50'

Figure 10

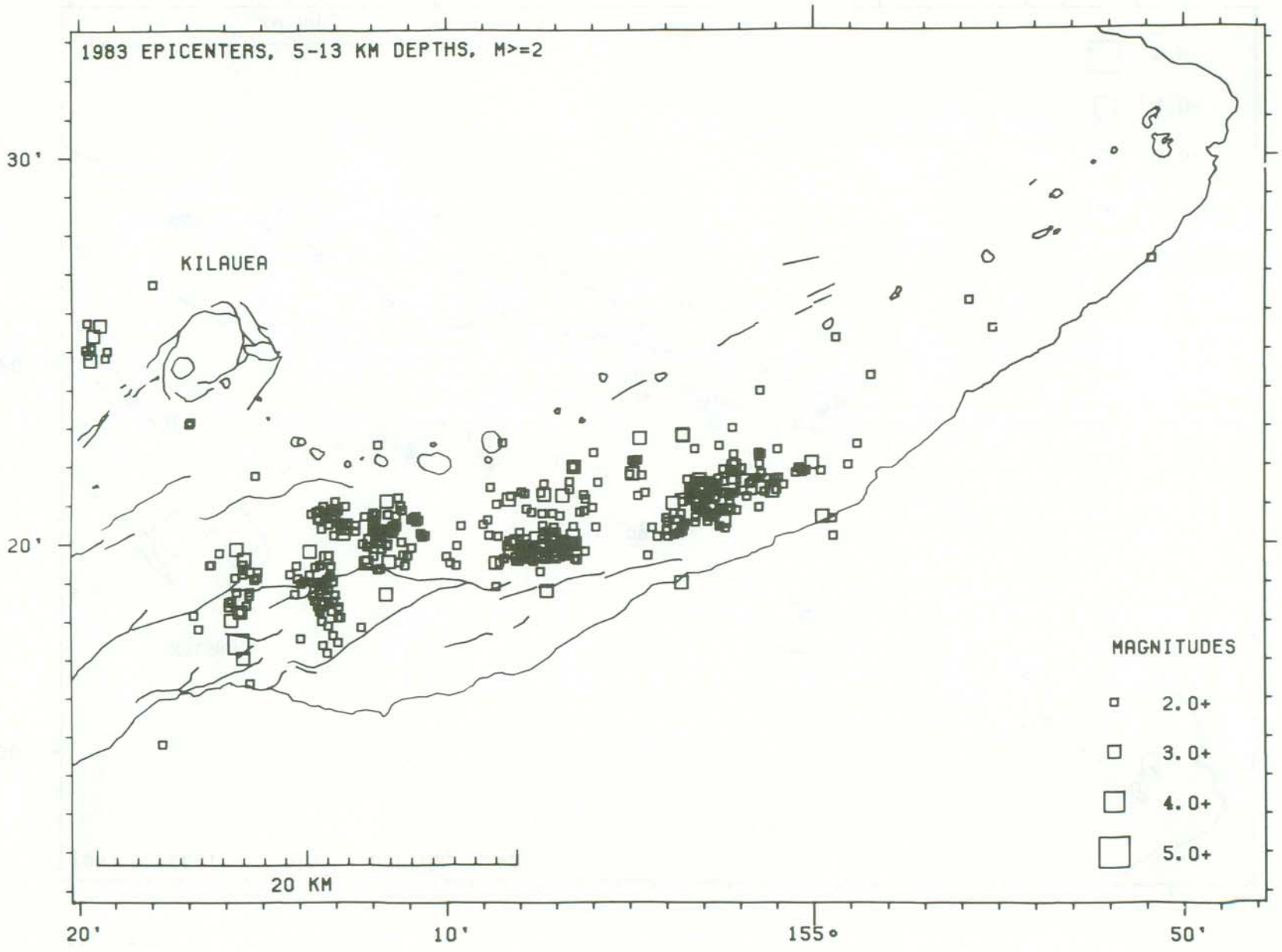
1983 EPICENTERS, 5-13 KM DEPTHS, M>=2
KILAUEA
30'
20'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
20'
10'
155°
50'

Figure 11

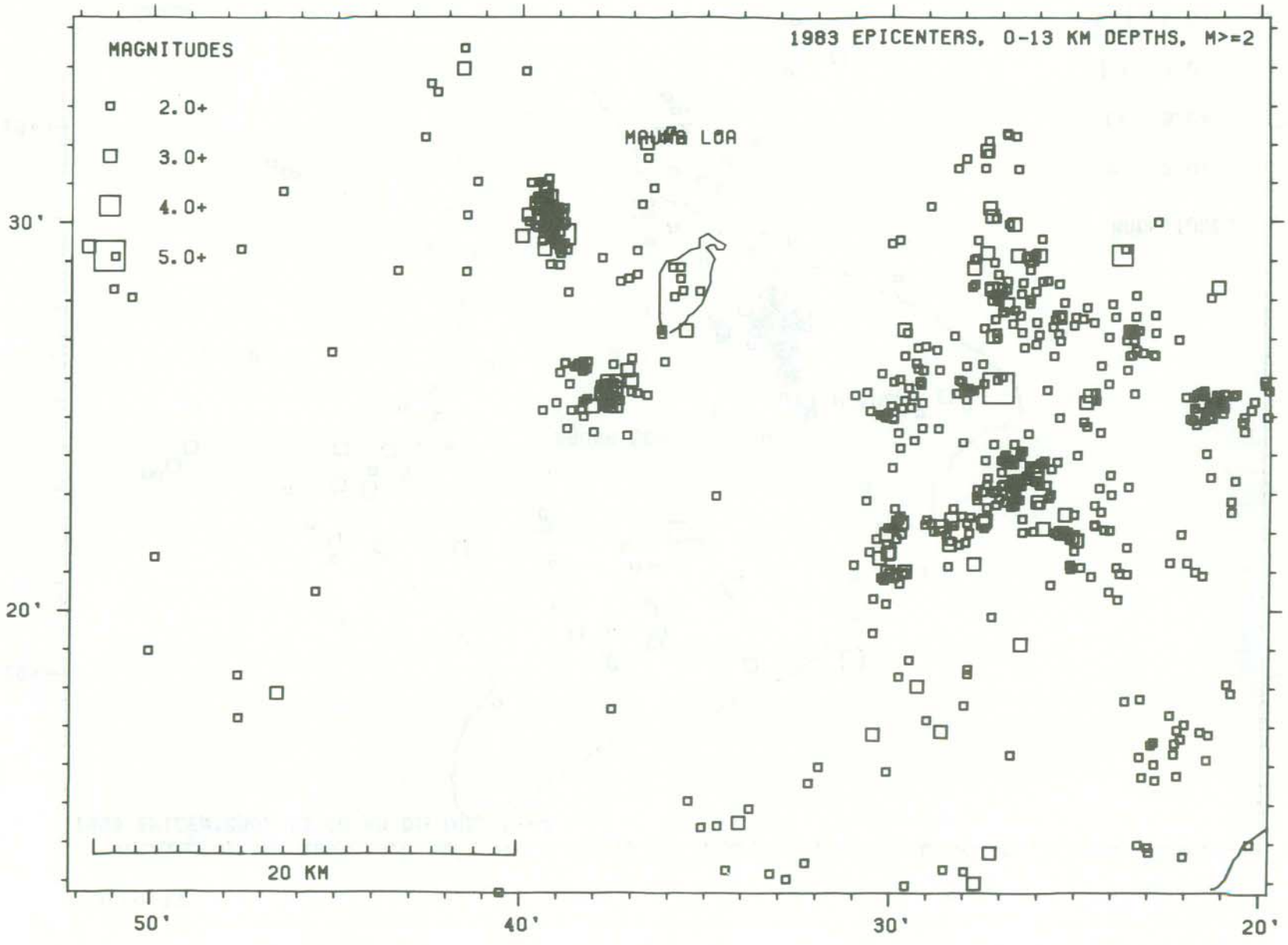
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
1983 EPICENTERS, 0-13 KM DEPTHS, M>=2
MAUNA LOA
30'
20'
20 KM
50'
40'
30'
20'

Figure 12

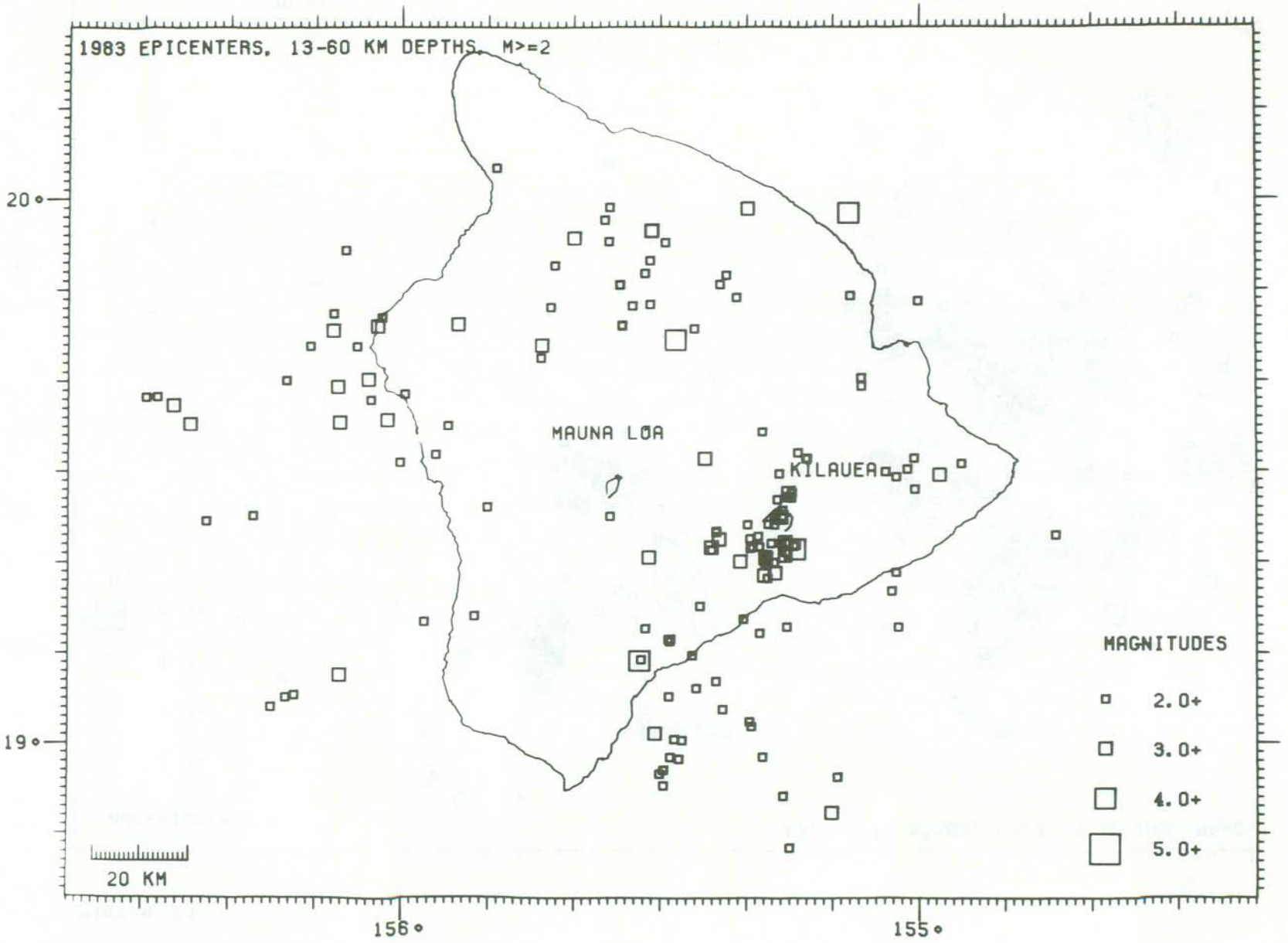
1983 EPICENTERS, 13-60 KM DEPTHS, M>=2
20°
19°
156°
155°
MAUNA LOA
KILAUEA
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+

Figure 13

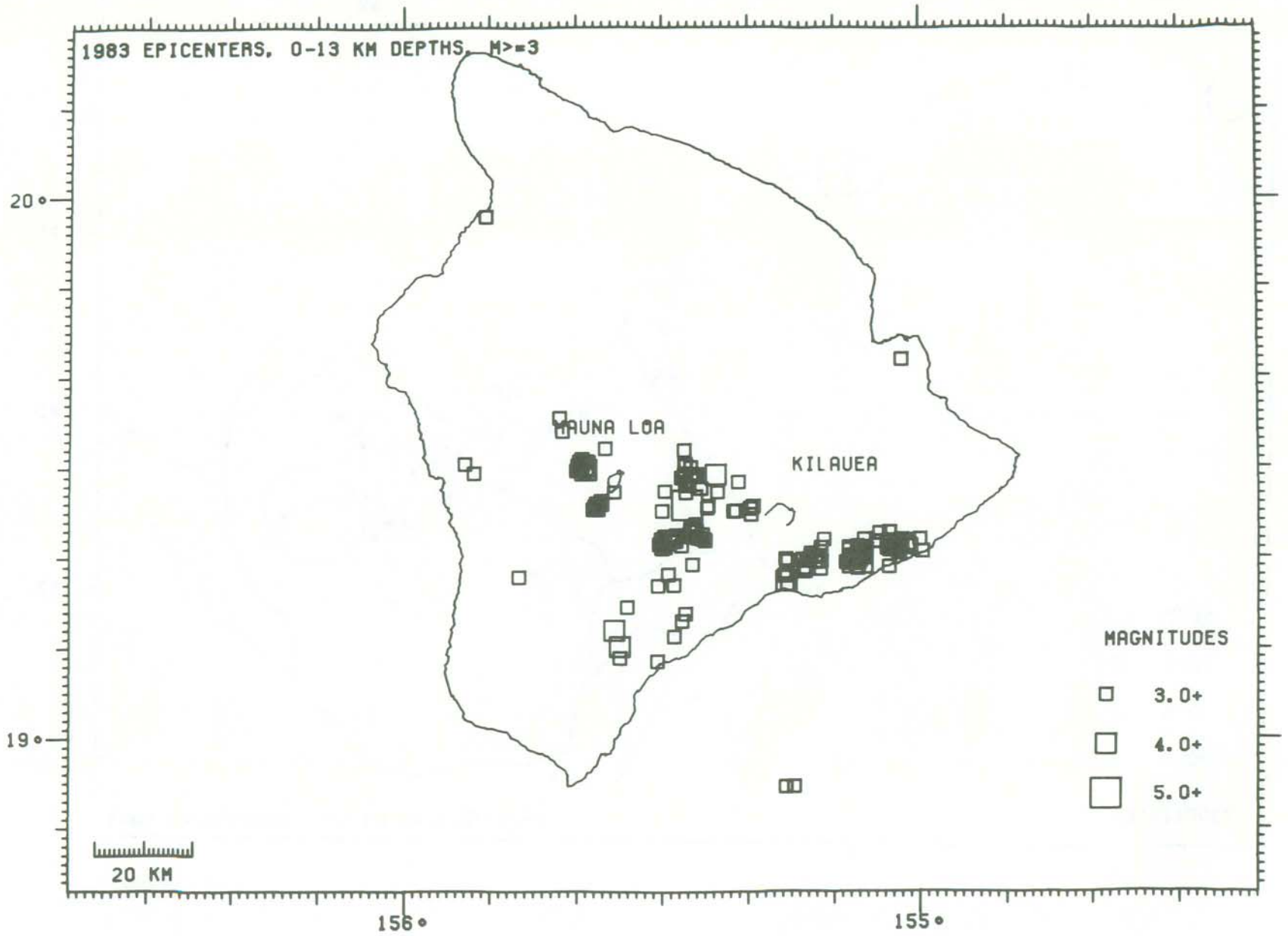
1983 EPICENTERS, 0-13 KM DEPTHS, M>=3
20°
19°
156°
155°
MAUNA LOA
KILAUEA
MAGNITUDES
3.0+
4.0+
5.0+
20 KM

Figure 14

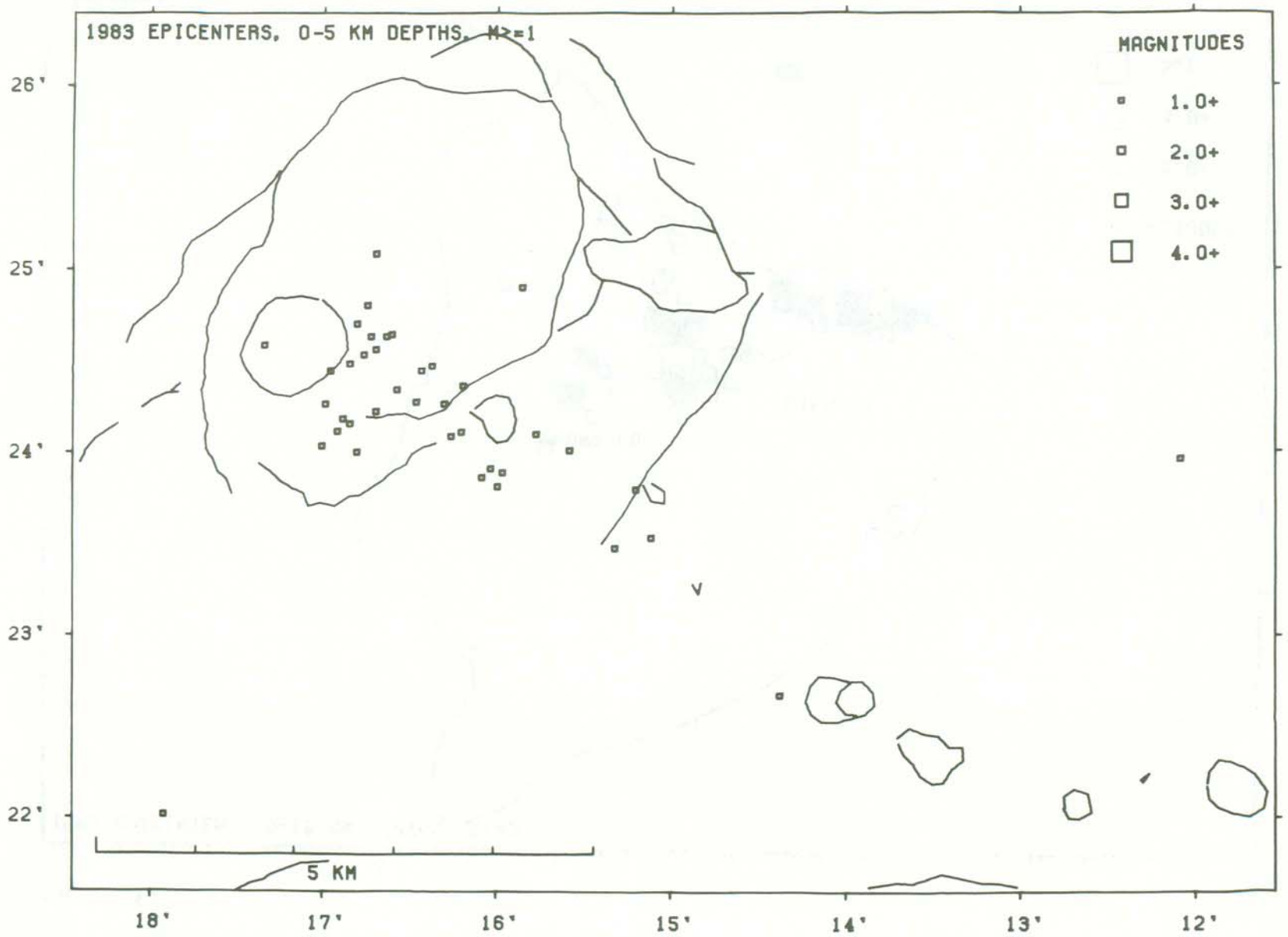
1983 EPICENTERS, 0-5 KM DEPTHS, M>=1
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
26'
25'
24'
23'
22'
5 KM
18'
17'
16'
15'
14'
13'
12'

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = (\Sigma R_i^2/NR)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figure 2 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

* - the location program had a convergence problem, which usually means that the depth may be unreliable.

Table 5 lists all events located during 1983. Table 6 lists only events of magnitude 3.0 or larger.

Table 5.

HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	1	452	14.66	19	20.97	155	11.26	8.56	1.9	2.4	35	4	69	.09	3	.4	.5	25	SF3
		1	542	43.65	19	21.93	155	11.28	3.08	2.3	2.9	36	4	58	.08	3	.3	.5	24	SER
		1	551	16.12	19	21.72	155	11.34	3.27	2.0	2.6	30	3	61	.08	3	.4	.5	22	SFR
		1	953	52.17	19	20.03	155	13.43	8.78		1.3	13	0	67	.07	5	.7	1.4	10	SF2
		1	1015	15.87	19	21.56	155	11.27	2.93	.8	1.2	14	2	81	.08	3	.4	.5	8	SER
		1	11 6	49.30	19	21.41	155	9.88	2.71	.8	1.1	14	0	63	.12	1	.6	.4	7	SER
		1	1144	8.76	19	7.94	155	19.42	4.45	1.6	1.1	4	0	320	.00	28	19.5	52.9	4	LOI *
		1	14 3	5.14	19	23.69	155	10.79	.09	1.2	1.0	14	1	118	.09	3	.3	.9	9	SER
		1	14 3	55.19	19	22.04	155	11.24	2.65	1.5	1.2	14	1	106	.09	2	.6	.5	9	SER
		1	1455	40.58	19	30.68	155	23.69	6.69	1.6	1.3	24	3	54	.09	2	.4	.8	18	MLD
		1	1612	54.16	19	21.83	155	11.30	2.56	1.5	1.6	16	1	112	.10	3	.5	.5	7	SER
		1	1647	44.66	19	21.32	155	10.99	2.08	1.4	1.0	12	1	98	.09	2	.4	.6	6	SER
		1	1910	1.76	19	21.60	155	11.47	2.53	1.5	1.3	16	3	107	.09	3	.5	.6	10	SER
		1	2046	18.18	19	19.59	155	8.10	7.13	1.3	1.3	20	1	90	.09	4	.5	1.3	15	SF4
		1	2148	41.71	19	21.44	155	8.84	6.19	2.6	3.2	36	4	63	.12	5	.5	1.2	24	SF4
		1	2236	35.48	19	21.89	155	10.98	2.53	1.5	1.0	15	2	102	.11	2	.6	.4	10	SER
		1	2257	23.90	19	21.50	155	10.84	3.23	1.6	1.2	10	1	140	.12	2	.6	.4	7	SER
		1	23 6	55.11	19	20.43	155	9.80	6.53	1.5	1.3	22	2	76	.09	3	.5	1.1	15	SF3
		2	0 7	2.59	19	17.09	155	22.03	4.74	2.2		41	2	125	.14	6	.4	1.4	33	SWR
		2	023	11.44	19	21.62	155	11.48	2.12	.5	.6	7	1	129	.08	3	.5	.6	5	SER
		2	025	38.16	19	22.00	155	11.37	2.36	1.5	1.0	13	1	87	.10	3	.5	.5	11	SER
		2	032	23.91	19	21.69	155	11.18	2.78	.8	.6	13	2	83	.13	2	.5	.5	8	SER
		2	034	53.44	19	22.17	155	11.23	2.57	1.5	1.0	14	1	90	.12	2	.6	.5	8	SER
		2	038	9.13	19	21.69	155	11.18	2.74	1.9	1.4	23	2	61	.12	2	.4	.6	20	SER
		2	1 8	.71	19	22.19	155	10.56	2.36	2.7	2.7	38	3	55	.12	1	.4	.4	33	SER
		2	113	40.44	19	22.11	155	10.36	2.70	1.7	1.5	26	5	92	.09	1	.5	.3	21	SER
		2	114	53.84	19	22.23	155	9.99	3.60	1.4	1.1	21	4	95	.10	0	.6	.5	18	SER
		2	117	29.39	19	22.08	155	10.00	3.38	.9	.6	20	4	106	.07	0	.7	.4	18	SER
		2	119	39.49	19	22.02	155	9.63	3.20	.8	.6	17	1	91	.11	0	.6	.5	15	SER
		2	129	18.07	19	23.35	155	10.43	2.00	.5	.2	12	2	112	.12	3	.9	1.2	10	SER
		2	137	53.27	19	22.17	155	10.20	2.78	.8	.3	14	3	145	.18	1	1.3	.5	12	SER
		2	148	44.87	19	21.54	155	9.93	1.87	2.5	3.4	32	4	61	.13	1	.4	.2	22	SER
		2	150	28.63	19	22.93	155	10.66	1.39	.7		9	2	138	.14	2	.7	.7	8	SER
		2	159	41.25	19	22.08	155	10.17	3.57	1.4	.8	17	2	105	.09	1	.7	.4	14	SER
		2	2 9	4.08	19	22.27	155	9.54	2.97	1.1	.8	19	2	95	.10	1	.7	.4	13	SER
		2	214	58.50	19	22.05	155	10.01	3.53	.8	.6	13	3	165	.08	0	1.3	.4	11	SER
		2	216	5.10	19	22.18	155	9.85	3.82	1.4	1.3	21	3	94	.08	0	.5	.5	17	SER
		2	216	38.39	19	21.92	155	11.32	2.13	.7		11	3	132	.09	3	.6	.4	10	SER
		2	218	49.97	19	22.31	155	9.90	3.97	1.3	1.1	20	2	96	.06	1	.4	.4	18	SER
		2	219	45.73	19	22.26	155	10.42	3.37	.9	.8	14	3	99	.09	1	.6	.4	13	SER
		2	220	14.87	19	22.11	155	9.61	3.88	1.3	.8	20	2	93	.06	0	.5	.5	19	SER
		2	226	18.45	19	22.22	155	9.84	4.22	1.3	1.1	19	2	94	.10	0	.7	.5	16	SER
		2	228	5.41	19	22.17	155	9.74	3.78	1.2	1.1	20	2	93	.06	0	.5	.4	19	SER
		2	236	30.28	19	22.07	155	10.98	3.25	.7	.6	13	3	118	.08	2	.8	.4	12	SER
		2	238	9.22	19	22.16	155	10.16	3.47	1.3	1.3	18	2	93	.09	1	.6	.4	16	SER
		2	240	39.51	19	22.61	155	9.94	3.53	.8	.6	17	2	100	.08	1	.6	.4	16	SER
		2	244	7.31	19	22.60	155	9.78	3.66	.8	.8	16	2	100	.06	1	.7	.4	14	SER
		2	246	15.49	19	22.14	155	9.32	3.54	.8	.6	17	1	93	.10	1	.6	.5	15	SER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	2	247	22.11	19	22.13	155	9.62	3.60		.6	15	2	94	.08	0	.6	.5	13	SER
		2	248	1.38	19	22.67	155	10.06	3.23	.8	.6	13	2	101	.10	1	.9	.4	10	SER
		2	252	25.76	19	22.40	155	9.82	3.39	.6	.6	11	2	97	.10	1	1.2	.5	10	SER
		2	254	19.26	19	22.61	155	9.82	3.43	.7	.8	12	2	100	.10	1	1.1	.5	10	SER
		2	256	5.25	19	22.46	155	9.58	3.79	1.3	.8	15	2	102	.11	1	1.0	.5	14	SER
		2	257	27.19	19	22.16	155	9.74	3.51	1.3	.8	17	2	93	.11	0	.8	.5	16	SER
		2	258	9.07	19	22.23	155	9.87	3.60	1.4	.6	20	2	94	.10	0	.7	.5	17	SER
		2	259	29.30	19	22.38	155	9.64	3.37	1.3	.8	18	2	97	.09	1	.6	.4	17	SER
		2	3 1	4.47	19	22.20	155	9.31	5.47	1.4	.9	19	1	95	.09	1	.6	.9	17	SF3
		2	3 3	23.06	19	22.30	155	9.72	3.53	1.2	.6	19	1	96	.08	1	.5	.4	19	SER
		2	319	15.10	19	22.92	155	10.47	4.60		.9	8	2	119	.09	2	1.8	1.8	5	SER
		2	329	6.39	19	22.41	155	9.96	3.44	.8	.8	15	2	97	.09	1	.9	.4	13	SER
		2	333	46.52	19	22.25	155	9.41	3.84	1.7	1.3	25	3	92	.06	1	.4	.3	22	SER
		2	336	14.41	19	23.54	155	10.87	2.23		1.0	10	2	115	.09	3	.8	1.2	9	SER
		2	338	11.67	19	22.27	155	9.51	3.81	1.4	.6	20	2	96	.07	1	.5	.5	18	SER
		2	339	.43	19	22.57	155	9.44	3.58	1.6	1.1	14	2	105	.10	1	.9	.4	13	SER
		2	340	34.57	19	22.28	155	9.42	3.51	1.1	.8	18	2	95	.08	1	.6	.4	16	SER
		2	341	44.45	19	22.07	155	9.20	3.58	1.5	1.3	24	3	91	.09	1	.5	.5	19	SER
		2	342	19.21	19	22.18	155	9.26	3.99	1.5	.9	20	2	94	.07	1	.4	.4	17	SER
		2	344	50.69	19	22.32	155	10.04	3.43	1.6	.8	14	1	95	.09	1	.6	.5	12	SER
		2	347	37.79	19	22.45	155	9.65	3.57	1.6	.6	19	1	96	.09	1	.6	.5	15	SER
		2	347	54.90	19	21.96	155	9.40	3.46	1.7	.6	16	1	91	.09	1	.6	.5	14	SER
		2	350	23.42	19	22.61	155	9.40	3.48	1.0	.6	17	0	129	.09	1	.7	.5	10	SER
		2	352	47.11	19	22.33	155	9.99	3.47	1.6	1.1	17	2	96	.10	1	.7	.5	10	SER
		2	356	.44	19	22.53	155	9.20	3.39	1.7	1.1	19	1	99	.10	1	.5	.5	14	SER
		2	357	35.89	19	22.23	155	9.88	3.09	1.6	1.1	17	1	94	.10	0	.6	.5	12	SER
		2	4 0	14.05	19	22.47	155	10.17	2.66	.6	.8	13	1	97	.10	1	.6	.4	9	SER
		2	4 3	57.75	19	21.44	155	9.24	3.30	1.1	.8	16	0	119	.12	2	.7	.5	10	SER
		2	4 6	45.98	19	22.39	155	9.80	3.10	.8	.8	17	2	96	.11	1	.6	.5	13	SER
		2	4 8	23.04	19	22.25	155	9.42	3.53	.7	.6	14	1	126	.08	1	.9	.5	8	SER
		2	412	21.18	19	21.72	155	8.97	4.11	1.1	.6	16	2	116	.10	2	.5	.6	13	SER
		2	415	49.21	19	22.20	155	10.05	3.88	1.2	1.1	19	2	97	.09	0	.7	.5	17	SER
		2	417	14.85	19	21.93	155	9.32	3.39	.8	.6	12	2	167	.10	1	1.1	.5	11	SER
		2	437	4.11	19	22.26	155	9.07	3.62	1.7	1.5	24	4	95	.09	1	.5	.4	20	SER
		2	437	56.77	19	22.11	155	9.19	4.26	1.0	.6	18	2	109	.10	1	.7	.6	17	SER
		2	438	25.03	19	22.53	155	9.20	3.92	1.8	2.0	34	5	54	.07	1	.3	.5	30	SER
		2	439	25.31	19	22.42	155	8.97	3.76	1.5	1.1	20	3	97	.09	2	.5	.4	19	SER
		2	440	55.39	19	22.17	155	8.94	3.86	1.5	1.5	21	4	94	.10	2	.5	.5	18	SER
		2	442	17.82	19	22.20	155	8.74	3.32	1.9	1.9	31	4	59	.09	2	.3	.4	24	SER
		2	443	18.66	19	22.12	155	9.65	3.93	1.0	.8	19	3	93	.11	0	.6	.6	18	SER
		2	446	17.62	19	22.15	155	9.73	3.33	1.5	1.3	19	0	93	.11	0	.5	.4	18	SER
		2	450	17.93	19	22.22	155	9.60	3.49	1.0	.8	15	0	106	.10	1	.8	.6	11	SER
		2	450	54.53	19	21.96	155	9.57	1.57	.7	.8	12	2	91	.07	1	.5	.2	9	SER
		2	458	25.01	19	22.14	155	9.28	3.67	1.2	.8	18	2	93	.11	1	.6	.5	11	SER
		2	459	47.56	19	21.98	155	10.50	4.07	.5	1.1	7	1	201	.04	1	1.4	.5	5	SER
		2	5 0	21.56	19	22.82	155	10.24	2.92	.8	.6	16	3	103	.10	2	.5	.4	10	SER
		2	516	15.00	19	22.32	155	10.25	3.10	1.6	1.4	17	1	112	.06	1	.5	.5	10	SER
		2	518	27.05	19	20.33	155	9.58	2.86	1.7	.8	16	2	136	.11	3	.5	.8	9	SSF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	2	522	21.47	19	22.64	155	10.06	3.05	.8	.8	11	1	101	.08	1	.7	.3	8	SER
		2	524	20.74	19	22.20	155	9.38	3.49	1.6	.8	16	1	107	.12	1	.8	.6	14	SER
		2	525	56.20	19	22.11	155	9.82	3.24	1.6	.8	17	1	93	.13	0	.7	.5	15	SER
		2	531	17.74	19	22.32	155	9.21	3.22	1.2	.8	18	2	106	.10	1	.8	.4	12	SER
		2	531	55.00	19	22.51	155	8.47	2.78	1.7	1.1	14	0	108	.11	3	.6	.6	10	SER
		2	537	30.87	19	22.01	155	9.72	3.47	1.0	1.1	13	1	108	.13	0	.8	.5	5	SER
		2	551	6.07	19	22.81	155	8.72	2.42	1.3	1.1	15	1	102	.11	2	.7	.4	12	SER
		2	553	31.40	19	22.47	155	8.44	2.68	2.4	2.2	39	4	58	.11	5	.3	.5	27	SER
		2	555	55.83	19	22.56	155	8.37	3.04	1.8	1.1	17	0	98	.09	3	.5	.6	14	SER
		2	556	49.99	19	22.64	155	8.52	3.48	1.9	1.8	26	1	57	.13	4	.5	1.4	18	SER
		2	558	59.80	19	22.46	155	8.67	2.82	1.7	.6	17	2	97	.11	2	.6	.5	11	SER
		2	559	12.60	19	22.49	155	8.48	2.75	2.0	1.6	23	3	76	.11	3	.4	.4	22	SER
		2	6	8 1.75	19	22.77	155	9.33	4.18	1.5	1.1	16	3	102	.11	2	.6	.6	14	SER
		2	614	43.84	19	22.51	155	8.66	3.43	1.9	1.6	23	3	97	.11	2	.6	.5	22	SER
		2	619	10.36	19	22.18	155	9.28	4.05	1.7	1.5	23	3	94	.08	1	.5	.5	21	SER
		2	622	16.35	19	22.15	155	9.56	2.69	1.5	1.4	21	4	124	.10	1	.6	.4	18	SER
		2	627	25.73	19	21.72	155	8.53	2.50	2.0	2.5	22	3	88	.13	2	.4	.4	19	SER
		2	628	52.42	19	22.15	155	8.57	3.26	1.6	1.9	23	3	93	.14	2	.5	.5	22	SER
		2	648	34.37	19	21.98	155	8.30	.50	1.7	1.4	10	2	161	.08	3	.7	.5	10	SER
		2	651	33.84	19	21.77	155	9.22	2.99	1.6	1.1	21	3	117	.13	1	.6	.4	18	SER
		2	656	32.99	19	21.84	155	8.58	5.21	1.9	2.0	26	4	70	.11	2	.5	.9	20	SF4
		2	7	2 4.85	19	22.52	155	8.95	2.34	1.5	1.1	21	3	98	.11	2	.5	.3	19	SER
		2	7	4 49.42	19	21.80	155	9.17	3.36	1.9	2.2	27	4	68	.08	1	.4	.4	22	SER
		2	7	6 2.69	19	22.78	155	8.82	2.76	1.8	1.4	14	2	117	.14	2	.9	.5	13	SER
		2	710	12.07	19	22.23	155	9.04	3.94	1.2	.9	17	2	94	.14	1	.7	.6	13	SER
		2	723	52.64	19	22.50	155	8.90	3.40	1.8	1.3	22	3	75	.14	2	.6	.5	20	SER
		2	726	15.28	19	22.18	155	9.22	3.56	1.4	1.6	25	4	71	.09	1	.4	.4	24	SER
		2	728	36.70	19	22.44	155	8.69	2.55	1.9	1.7	23	3	75	.09	2	.4	.3	20	SER
		2	733	48.80	19	21.98	155	8.62	1.73	1.8	2.3	19	3	86	.14	2	.5	.4	17	SER
		2	734	39.25	19	24.45	155	10.73	.46	1.5	2.0	20	3	133	.17	5	.4	.9	19	SER
		2	741	37.37	19	21.40	155	6.74	2.15	1.7	1.3	18	4	84	.11	3	.4	.7	15	SSF
		2	810	3.91	19	22.12	155	10.42	3.51	1.4	.8	19	3	92	.09	1	.5	.4	18	SER
		2	816	38.12	19	21.85	155	9.20	1.92	1.7	1.7	23	3	90	.07	1	.5	.3	21	SER
		2	828	52.68	19	22.77	155	9.13	3.23	1.5	1.3	17	3	102	.11	2	.6	.4	15	SER
		2	9	5 43.31	19	22.73	155	5.45	2.36	2.3	2.9	20	3	101	.09	2	.6	.3	19	SME
		2	914	56.16	19	22.57	155	10.14	3.57	1.4	1.1	18	2	99	.08	1	.5	.4	17	SER
		2	917	55.64	19	22.48	155	8.56	2.90	1.4	.8	17	4	97	.11	2	.6	.4	16	SER
		2	918	17.24	19	23.45	155	7.73	3.55	1.7	1.3	16	3	106	.14	3	.5	.8	15	SER
		2	925	51.33	19	22.43	155	6.81	2.06	2.3	3.1	22	2	92	.09	1	.4	.3	21	SME
		2	929	5.34	19	22.65	155	5.43	1.44	1.9	1.1	12	0	109	.15	2	.6	.5	11	SME
		2	941	16.43	19	22.68	155	8.62	2.57	1.4	1.1	19	1	77	.10	2	.5	.6	14	SER
		2	946	41.18	19	18.76	155	6.73	3.36	1.4	.9	20	0	149	.14	3	.9	1.5	14	SSF
		2	948	51.32	19	21.97	155	11.25	2.52	2.9	3.1	30	2	71	.12	3	.4	.8	22	SER
		2	951	25.21	19	21.83	155	9.29	.94	1.6	.8	14	0	119	.10	1	.6	.3	9	SER
		2	10	1 9.82	19	21.80	155	9.15	3.20	1.7	.8	7	0	175	.03	1	1.5	.4	5	SER
		2	1025	19.95	19	22.30	155	8.50	2.36	1.6	1.1	16	0	108	.12	2	.9	.7	8	SER
		2	1031	5.47	19	22.33	155	10.28	3.20	1.4	1.6	16	1	95	.08	1	.6	.5	13	SER
		2	1112	1.90	19	19.75	155	12.77	7.83	1.5	.9	15	1	77	.07	5	.6	1.4	14	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	2	1117	25.22	19	20.51	155	3.55	8.23	2.7	2.5	42	3	98	.11	2	.5	.4	31	SF5
		2	1138	54.53	19	22.37	155	10.20	3.33	1.3	1.1	10	0	96	.03	1	.7	.5	10	SER
		2	1141	43.54	19	20.05	155	10.84	8.74	1.7	1.3	25	2	86	.09	4	.6	1.1	17	SF3
		2	1146	46.62	19	21.59	155	11.21	.68	1.5	.8	17	1	108	.13	3	.4	.7	11	SER
		2	1147	51.86	19	22.34	155	10.43	2.36	1.6	1.4	14	0	95	.09	1	.6	.4	9	SER
		2	1148	46.23	19	22.27	155	8.98	3.26	1.8	1.1	16	0	95	.09	2	.6	.5	14	SER
		2	1212	26.18	19	23.30	155	6.50	2.75	1.4	1.1	13	1	99	.09	1	.6	.3	11	SME
		2	1235	35.80	19	18.85	155	9.02	7.31	1.0	.6	6	0	277	.06	6	8.8	2.7	5	SF4
		2	1240	28.37	19	16.99	155	5.98	3.43	1.5	1.1	20	0	227	.07	4	1.4	.9	14	SSF
		2	1253	5.96	19	22.92	155	9.46	2.47	1.4	1.1	9	3	156	.12	2	.8	.5	8	SER
		2	1257	3.24	19	21.88	155	10.90	2.94	1.3	.6	16	3	103	.08	2	.5	.4	15	SER
		2	1259	26.61	19	19.34	155	4.28	7.19	1.8	1.4	35	9	176	.10	3	.5	.7	30	SF5
		2	1320	13.80	19	21.94	155	11.42	2.81	1.0	.8	21	2	85	.10	3	.4	.4	18	SER
		2	1321	13.44	19	22.85	155	8.64	3.60	1.3	.9	19	3	102	.11	3	.6	.5	17	SER
		2	1330	58.75	19	22.47	155	8.92	3.20	1.6	1.3	21	4	98	.07	2	.5	.4	19	SER
		2	1338	38.72	19	23.37	155	7.28	4.21	1.4	1.1	19	2	103	.10	2	.5	.7	17	SER
		2	1339	39.69	19	22.19	155	10.28	3.25	1.4	1.1	23	4	93	.06	1	.5	.4	21	SER
		2	1343	4.46	19	23.26	155	9.77	2.81	.8	.6	15	3	147	.17	2	.8	.7	14	SER
		2	1352	27.47	19	22.31	155	9.40	3.97	1.6	.6	22	3	95	.11	1	.6	.5	19	SER
		2	1356	.38	19	18.88	155	15.53	8.76	1.9	1.3	21	4	120	.08	4	.5	.8	19	SF1
		2	14	1 32.68	19	21.96	155	10.62	3.38	1.3	.6	15	2	103	.11	1	.7	.5	10	SER
		2	14	9 47.92	19	22.41	155	10.67	3.67	1.8	1.6	23	3	95	.10	2	.5	.4	21	SER
		2	1424	42.75	19	22.72	155	8.98	3.41	1.2	.8	15	2	116	.08	2	.9	.5	13	SER
		2	1448	59.02	19	22.24	155	8.97	3.73	1.4	.8	18	3	95	.13	2	.7	.6	16	SER
		2	1451	59.01	19	22.48	155	8.33	2.66	1.3	1.3	14	2	138	.16	3	1.1	.6	13	SER
		2	1454	46.73	19	22.77	155	7.92	4.23	1.5	1.3	17	3	128	.09	3	.6	.7	16	SER
		2	1458	9.37	19	22.00	155	9.07	3.75	1.8	1.5	18	3	92	.11	1	.4	.4	17	SER
		2	15	4 23.09	19	22.02	155	10.85	4.08	1.4	1.1	14	2	102	.12	2	.7	.6	13	SER
		2	1513	53.24	19	22.28	155	10.85	3.68	1.1	1.1	15	2	93	.09	2	.6	.6	13	SER
		2	1524	33.03	19	23.06	155	7.51	3.76	1.4	1.1	21	3	139	.08	2	.5	.6	21	SER
		2	1525	15.27	19	22.73	155	7.69	4.72	1.6	1.3	22	3	98	.10	3	.6	.9	20	SER
		2	1532	40.01	19	23.96	155	12.09	.00	1.1	1.4	14	3	122	.13	3	.5	.8	13	SER *
		2	1540	58.92	19	22.94	155	9.11	3.50	1.2	.6	16	3	104	.09	2	.6	.5	15	SER
		2	1541	43.42	19	20.06	155	9.22	8.52	1.5	.9	17	3	211	.08	4	1.2	.8	15	SF3
		2	1550	11.22	19	22.86	155	7.52	4.02	1.9	1.5	26	4	69	.09	2	.5	.7	25	SER
		2	16	9 31.51	19	23.17	155	7.58	3.72	1.1	.6	18	3	103	.12	2	.5	.6	17	SER
		2	1611	55.90	19	23.00	155	8.82	3.20	1.2	1.1	14	3	108	.10	3	.8	.6	13	SER
		2	1626	53.09	19	23.11	155	7.20	4.15	1.9	1.5	24	4	81	.11	2	.5	.7	23	SME
		2	1642	59.84	19	21.86	155	10.81	2.76	1.7	1.2	19	2	104	.09	2	.6	.5	15	SER
		2	1649	54.74	19	22.91	155	8.41	2.75	1.2	.6	13	2	118	.11	3	.9	.6	10	SER
		2	1653	.47	19	22.55	155	8.64	3.50	2.2	2.2	29	1	70	.10	2	.4	.6	23	SER
		2	17	0 10.66	19	20.69	154	59.80	9.18	3.3	3.4	44	2	197	.12	6	.8	.5	37	LER
		2	1712	30.89	19	23.44	155	7.40	3.34	1.2	.6	11	0	105	.09	2	.5	.6	7	SER
		2	1719	53.90	19	22.71	155	8.77	3.41	1.7	.8	13	2	101	.07	2	.4	.5	11	SER
		2	1724	39.51	19	22.72	155	8.81	3.20	1.4	.6	15	1	101	.07	2	.5	.4	8	SER
		2	1726	51.16	19	22.73	155	8.67	3.27	1.4	.8	17	1	100	.20	2	.7	.7	9	SER
		2	1733	29.60	19	23.10	155	7.55	3.11	1.3	1.1	16	0	102	.10	2	.5	.6	5	SER
		2	18	0 49.60	19	22.29	155	9.99	2.37	1.5	1.1	15	0	95	.18	1	.8	.5	9	SER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JAN	2	18 3	29.65	19	23.46	155	6.99	2.34	1.4	.8	10	0	103	.09	2	.6	.3	6	SME	
		2	18 5	5.13	19	22.81	155	7.77	3.59	1.6	1.1	18	0	90	.09	3	.6	.7	15	SER	
		2	18 8	46.22	19	22.05	155	10.64	2.86	1.8	1.3	19	1	90	.12	1	.7	.5	10	SER	
		2	18 9	48.06	19	22.37	155	7.92	4.70	1.1	.6	14	1	157	.11	3	1.2	1.6	7	SER	
		2	1811	19.60	19	22.20	155	10.74	2.45	1.6	1.0	14	1	92	.11	2	.6	.5	6	SER	
		2	1826	43.77	19	22.59	155	9.79	2.93	1.2	.6	7	0	132	.09	1	1.0	.5	7	SER	
		2	1837	32.14	19	22.75	155	8.76	3.03	1.3	.8	17	1	101	.10	2	.6	.5	11	SER	
		2	1842	30.58	19	22.82	155	7.46	3.07	2.1	1.3	19	0	78	.10	2	.5	.6	14	SER	
		2	1855	31.89	19	22.96	155	10.22	2.49	.9	.6	9	0	104	.23	2	1.0	.8	5	SER	
		2	1859	39.28	19	22.42	155	8.58	2.93	2.0	1.8	25	3	91	.11	2	.5	.5	18	SER	
		2	19 2	15.18	19	22.59	155	8.83	3.02	1.9	1.6	24	2	94	.07	2	.4	.4	19	SER	
		2	19 5	33.52	19	22.63	155	8.90	2.69	1.8	1.4	20	1	94	.09	2	.5	.7	14	SER	
		2	1928	13.50	19	22.68	155	10.76	2.68	.8	.6	14	2	122	.09	2	.8	.4	13	SER	
		2	1939	52.51	19	18.79	155	7.29	9.52	3.3	3.0	49	9	130	.10	3	.5	.3	42	SF4	
		2	1944	14.90	19	18.14	155	6.96	7.49	2.0	1.3	23	1	167	.11	2	1.0	1.2	22	SF4	
		2	1945	1.66	19	22.27	155	10.71	2.28	2.3	2.2	30	4	77	.10	2	.4	.3	25	SER	
		2	1946	.47	19	23.20	155	7.43	3.99	1.3	.9	13	2	103	.10	2	.6	.5	12	SER	
		2	1953	29.00	19	23.08	155	8.06	3.95	1.6	1.5	23	2	93	.09	3	.5	.8	22	SER	
		2	1959	41.21	19	24.06	155	11.75	3.50	1.3	.6	13	3	125	.24	4	.9	1.5	11	SER	
		2	20 1	39.47	19	22.59	155	8.51	5.26	2.4	2.5	29	3	62	.10	4	.4	1.3	26	SF4	
		2	20 3	34.57	19	21.70	155	10.98	2.88	1.5	1.3	17	2	117	.11	2	.7	.6	16	SER	
		2	20 6	34.99	19	22.87	155	8.12	2.62	1.2	1.1	11	1	123	.11	3	.7	.6	11	SER	*
		2	2010	12.64	19	18.40	155	15.04	8.12	1.9	1.3	22	3	131	.07	4	.6	.8	20	SF1	
		2	2011	14.53	19	21.82	155	10.68	2.97	.9	.6	13	0	115	.15	2	.8	.6	13	SER	
		2	2012	5.01	19	23.27	155	7.46	3.91	1.4	.6	20	3	103	.09	2	.5	.6	19	SER	
		2	2033	46.21	19	22.65	155	8.75	3.29	1.9	1.6	25	4	93	.08	2	.4	.4	23	SER	
		2	2038	2.62	19	22.54	155	8.70	3.93	1.8	1.5	23	4	76	.07	2	.4	.5	21	SER	
		2	2041	52.84	19	22.73	155	8.93	1.14	2.1	.6	11	2	117	.08	2	.8	.6	10	SER	
		2	2042	20.32	19	22.46	155	8.53	2.39	1.4	1.1	15	2	138	.15	2	1.0	.5	15	SER	
		2	2043	16.95	19	22.78	155	8.85	2.98	1.8	1.4	19	3	101	.07	2	.5	.3	17	SER	
		2	2044	45.10	19	22.39	155	9.48	3.88	1.2	.8	14	2	129	.07	1	.8	.5	13	SER	
		2	2053	22.72	19	23.10	155	9.05	3.32	1.7	.8	17	3	106	.08	2	.7	.6	16	SER	
		2	2054	56.05	19	21.37	155	6.65	7.56	2.0	1.1	24	3	86	.09	3	.5	.8	22	SF4	
		2	2056	22.46	19	22.55	155	8.63	3.12	1.7	1.3	22	3	98	.10	2	.5	.4	20	SER	
		2	2057	25.31	19	22.60	155	8.57	3.19	1.5	.8	13	3	131	.10	2	.9	.5	11	SER	
		2	2058	17.60	19	22.68	155	8.60	3.41	1.4	1.1	13	0	100	.06	3	.5	.4	5	SER	
		2	21 1	35.39	19	22.63	155	8.63	3.26	2.0	1.1	18	0	93	.05	2	.4	.5	14	SER	
		2	21 4	30.45	19	22.91	155	8.73	2.90	1.5	1.1	19	1	103	.08	3	.5	.5	14	SER	
		2	21 9	11.47	19	17.60	155	12.62	4.77	1.5	.6	18	0	142	.08	2	.6	1.1	9	SSF	
		2	21 9	46.06	19	22.47	155	8.41	3.32	1.3	.8	15	0	106	.09	3	.7	.6	9	SER	
		2	2113	7.36	19	24.77	155	8.97	.03	1.0	.8	8	0	132	.37	6	1.7	8.1	5	SER	*
		2	2118	48.02	19	23.04	155	7.41	3.41	1.6	1.3	21	0	80	.10	2	.5	.6	18	SER	
		2	2120	1.31	19	22.61	155	8.83	3.57	1.3	.6	12	2	104	.12	2	.9	.6	8	SER	
		2	2140	21.69	19	22.82	155	7.66	2.75	1.2	.8	12	2	101	.08	2	.7	.5	8	SER	
		2	2148	10.78	19	22.66	155	8.76	3.08	1.3	1.1	16	0	99	.10	2	.5	.4	10	SER	
		2	2150	58.44	19	22.99	155	7.28	3.45	1.4	1.1	17	0	99	.09	2	.6	.6	11	SER	
		2	22 9	42.81	19	23.10	155	7.48	3.30	1.4	1.3	14	1	102	.07	2	.5	.6	11	SER	
		2	2226	5.47	19	22.72	155	7.81	3.59	1.6	1.3	20	1	90	.06	3	.5	.6	14	SER	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JAN	2	2230	13.99	19	22.88	155	8.48	2.71	1.6	1.1	15	2	102	.12	3	.5	.6	8	SER	
		2	2239	13.99	19	22.88	155	8.48	2.71	1.3	1.1	15	2	102	.12	3	.5	.6	8	SER	
		2	2243	34.40	19	23.71	155	10.38	.10		.5	5	0	118	.05	3	.8	2.2	4	SER	*
		2	2257	29.42	19	26.30	155	27.97	8.08	2.6	2.3	45	4	37	.13	5	.3	.7	31	KAO	
		2	2259	51.41	19	26.41	155	27.38	8.74	1.7	1.1	19	2	61	.13	4	.5	1.2	13	KAO	
		2	2316	44.02	19	23.24	155	7.68	3.42	1.9	1.9	22	2	92	.09	3	.4	.6	19	SER	
		2	2327	16.02	19	23.47	155	6.95	2.78	1.4	1.3	15	4	103	.10	2	.5	.3	14	SME	
		2	2333	3.51	19	23.56	155	6.89	3.13	1.2	.9	14	4	103	.10	2	.5	.4	13	SME	
		2	2337	16.91	19	19.13	155	13.72	7.71	2.2	1.6	28	5	84	.11	4	.5	.9	24	SF2	
		2	2345	15.41	19	22.71	155	8.71	3.21	1.2	.8	14	3	102	.13	2	.8	.5	13	SER	
		2	2352	22.72	19	19.53	155	8.28	6.85	1.4	.9	19	2	86	.09	4	.6	1.3	17	SF4	
		3	0 1	16.77	19	23.14	155	6.64	3.33	1.4	.9	14	4	119	.11	1	.7	.4	12	SME	
		3	0 1	36.46	19	19.36	155	8.32	12.23	1.6	1.4	20	1	87	.11	4	.8	1.3	20	SF4	
		3	017	8.68	19	22.85	155	8.97	3.55	1.1	.8	16	3	103	.07	2	.6	.5	15	SER	
		3	020	17.37	19	23.37	155	7.84	2.98	1.4	.6	17	3	106	.11	3	.5	.6	11	SER	
		3	1 5	41.75	19	24.44	155	16.44	3.16	1.0	1.0	12	2	131	.07	1	.6	.3	10	SEC	
		3	110	25.46	19	22.76	155	8.33	2.81	1.3	.8	15	2	102	.10	3	.7	.5	11	SER	
		3	131	39.52	19	22.48	155	8.59	4.67	1.5	1.1	15	1	106	.10	2	.8	1.2	10	SER	
		3	143	6.62	19	19.11	155	8.49	6.67	1.6	.9	19	2	83	.07	3	.6	1.6	10	SF4	
		3	145	36.99	19	24.58	155	17.34	1.41	1.7	1.4	11	1	65	.16	1	.5	.3	5	SNC	
		3	159	13.17	19	23.64	155	7.05	2.50	1.3	.8	11	1	106	.09	2	.6	.5	6	SME	
		3	214	27.75	19	23.23	155	6.87	3.41	1.6	.9	13	0	100	.15	1	.6	.6	8	SME	
		3	227	33.07	19	17.14	155	11.75	1.94	1.4	1.3	22	1	171	.12	3	.8	.6	13	SSF	
		3	231	4.06	19	21.91	155	.36	9.97	2.4	2.3	32	1	181	.11	7	.8	.6	23	SF5	
		3	315	.95	19	22.81	155	7.74	3.46	1.8	1.3	20	0	90	.09	3	.6	.8	19	SER	
		3	319	22.82	19	24.53	155	16.35	2.30	.7	.8	8	1	144	.04	1	.4	.5	3	SEC	
		3	334	39.20	19	22.87	155	9.01	7.10	1.8	1.3	16	1	103	.12	5	.8	1.6	10	SF4	
		3	359	19.76	19	22.82	155	7.87	3.09	1.4	.8	14	2	100	.10	3	.6	.5	7	SER	
		3	4 6	29.66	19	24.27	155	17.19	1.85	1.1	.8	10	2	119	.12	1	.4	.3	8	SSC	
		3	437	21.30	19	23.01	155	7.21	3.66	1.6	.6	14	0	81	.11	2	.6	.8	5	SER	
		3	512	14.30	19	24.15	155	16.85	4.57	1.5	1.1	9	3	89	.11	1	.6	.7	8	SSC	
		3	557	36.04	19	27.27	154	53.66	4.34	1.5	.7	19	3	144	.11	4	1.0	3.0	18	SLE	
		3	558	52.92	19	24.51	155	16.27	2.36	.8	.5	9	1	144	.05	1	.4	.3	8	SEC	
		3	559	20.14	19	24.27	155	16.47	1.29	1.1	1.0	14	4	116	.11	1	.3	.2	10	SEC	
		3	6 8	11.06	19	20.33	155	2.77	4.86	1.4	.9	14	3	164	.09	1	.9	.9	12	SSF	
		3	627	10.47	19	22.59	155	9.00	3.63	1.3	.5	7	1	122	.06	2	.9	.6	4	SER	
		3	628	22.34	19	20.32	155	5.01	3.01	2.3	.8	7	0	123	.05	4	.9	1.8	7	SSF	
		3	633	42.84	19	23.21	155	6.74	3.15	1.6	.9	12	1	99	.09	1	.5	.6	8	SME	
		3	647	36.48	19	21.15	155	13.25	15.90	1.6	1.0	7	0	200	.08	3	3.0	4.1	5	DEP	
		3	735	8.08	19	22.87	154	59.69	6.57	1.4	.7	16	0	213	.13	5	1.9	2.9	11	LER	
		3	745	44.77	19	22.99	155	2.27	6.58	1.6	.7	16	1	135	.12	5	.7	1.6	9	SF5	
		3	837	10.06	19	19.71	155	8.50	7.41	2.0	1.3	20	1	80	.08	4	.6	1.2	17	SF4	
		3	840	.90	19	24.11	155	16.92	2.55	1.6	1.6	17	3	82	.12	1	.4	.2	12	SSC	
		3	910	5.44	19	24.46	155	16.78	2.32	.9	.8	12	4	108	.06	1	.3	.3	8	SSC	
		3	10 8	22.64	19	23.61	155	4.34	4.91	1.7	1.1	7	0	156	.09	2	.8	1.5	6	SME	
		3	1133	33.52	19	23.42	155	5.87	3.07	1.5	1.3	15	0	97	.12	4	.6	1.3	13	SME	
		3	1151	58.38	19	15.62	155	10.57	7.92	2.0	1.5	19	0	211	.10	6	1.5	2.8	14	SF3	
		3	1155	4.02	19	21.03	155	3.86	7.97	3.8	4.0	44	2	85	.11	3	.4	.5	38	SF5	F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	3	12 5	57.64	19	20.80	155	3.93	7.92	2.2	1.5	19	0	95	.08	2	.8	1.4	17	SF5
		3	12 8	54.74	19	21.64	155	3.71	5.29	1.9	1.5	28	2	100	.10	3	.5	1.4	20	SF5
		3	1212	37.62	19	20.76	155	3.65	8.04	2.7	2.6	38	1	90	.10	2	.6	.6	32	SF5
		3	1224	25.03	19	20.89	155	3.56	6.73	1.9	1.1	8	0	101	.01	2	1.2	2.3	8	SF5
		3	1244	1.71	19	20.67	155	3.25	5.31	2.5	2.7	35	3	99	.13	2	.5	.9	18	SF5
		3	13 0	1.98	19	20.56	155	3.50	6.20	1.6	.9	28	3	93	.12	2	.6	.7	18	SF5
		3	13 9	43.44	19	21.69	155	4.19	4.42	1.8	.9	19	4	90	.09	4	.4	1.5	15	SSF
		3	1335	54.88	19	20.83	155	3.36	8.11	2.1	1.5	26	3	96	.11	2	.6	.9	23	SF5
		3	1418	32.86	19	16.82	155	11.67	2.03	1.1	.6	15	2	197	.11	3	1.0	.6	14	SSF
		3	15 5	27.43	19	20.31	155	6.99	8.66	2.0	1.8	25	2	103	.10	5	.6	1.2	23	SF4
		3	1542	6.63	19	21.53	155	1.84	6.32	1.3	.7	16	2	162	.12	4	.8	1.2	14	SF5
		3	16 6	1.98	19	20.89	155	6.66	6.75	1.3	.6	17	4	95	.08	6	.6	1.2	15	SF4
		3	1615	53.16	19	24.31	155	4.69	3.19	2.0	2.2	21	1	78	.08	1	.4	.5	21	SME
		3	1623	22.75	19	21.48	155	2.55	6.77	1.6	1.2	21	2	133	.12	3	.7	1.1	19	SF5
		3	1639	25.73	19	20.14	155	2.51	6.17	1.7	1.8	19	4	187	.11	1	.7	.7	16	SF5
		3	1655	13.69	19	27.86	155	51.45	7.22		1.3	20	3	109	.10	7	.6	1.0	17	KON
		3	1730	28.82	19	24.22	155	6.55	3.74	1.6	1.1	17	2	109	.11	2	.5	.7	16	SME
		3	1747	37.04	19	22.33	155	6.01	9.15	2.8	3.0	41	4	72	.09	1	.4	.5	35	SF4
		3	18 2	20.93	19	21.29	155	2.58	7.53	2.0	1.9	37	4	134	.13	3	.5	.6	32	SF5
		3	18 4	3.06	19	20.79	155	7.71	8.58	2.1	2.3	36	6	84	.10	4	.4	.5	32	SF4
		3	1817	46.77	19	23.52	155	5.85	3.79	1.3	.9	14	2	97	.08	1	.5	.4	14	SME
		3	1832	38.88	19	26.81	155	29.79	7.87	2.2	1.7	36	3	56	.13	9	.4	1.1	25	KAO
		3	1834	38.91	19	23.68	155	4.93	3.76	1.4	1.1	23	1	77	.11	2	.5	.5	15	SME
		3	1852	43.04	19	24.27	155	4.72	3.60	1.3	.9	15	0	95	.10	1	.5	.5	10	SME
		3	20 0	54.76	19	23.69	155	6.05	3.37	1.3	1.1	14	1	100	.12	1	.7	.4	13	SME
		3	2046	3.58	19	21.17	155	18.37	1.88	.7	1.4	13	1	74	.10	3	.3	.7	7	SWR
		3	2056	52.41	19	19.59	155	13.81	7.13	.9	.6	13	0	79	.07	5	.6	1.8	9	SF2
		3	21 0	2.27	19	23.23	155	6.92	3.12	1.8	1.1	17	1	101	.09	1	.5	.4	11	SME
		3	2112	52.73	19	19.96	155	4.66	3.67	1.3	.9	17	2	140	.07	3	.5	1.1	9	SSF
		3	2128	47.57	19	24.04	155	4.81	3.07	1.3	1.1	14	2	94	.08	1	.5	.3	12	SME
		3	2132	35.00	19	23.85	155	5.10	3.75	1.3	1.1	16	1	95	.07	2	.5	.6	12	SME
		3	2137	51.94	19	24.70	155	5.37	4.51	1.4	1.1	13	0	139	.09	4	.8	1.8	12	SME
		3	2148	2.17	19	20.62	155	6.64	8.61	1.3	.7	18	1	100	.08	4	.6	1.3	14	SF4
		3	2158	31.26	19	20.18	155	3.99	5.08	2.0	2.2	23	1	130	.11	2	.5	1.0	19	SF5
		3	2234	13.27	19	16.38	155	11.96	2.01	1.1	.6	18	0	193	.10	3	.9	.6	13	SSF
		3	2241	7.48	19	21.88	155	2.31	5.07	1.9	2.2	26	0	168	.13	6	.8	1.3	16	SF5
		3	2249	35.75	19	19.67	155	6.89	6.83	1.5	.9	19	2	118	.11	5	.6	1.5	14	SF4
		3	2334	56.90	19	23.91	155	5.14	3.04	1.7	1.1	15	1	95	.09	2	.6	.4	12	SME
		4	035	2.21	19	27.31	154	55.96	10.34	1.7	1.0	29	3	134	.11	1	.5	.7	20	LER
		4	041	54.64	19	19.38	155	6.21	5.71	1.2	.6	19	0	140	.11	5	.8	2.2	11	SF4
		4	046	31.81	19	19.06	155	10.30	5.62	1.8	1.3	23	3	109	.09	5	.5	1.7	14	SF3
		4	128	15.44	19	20.06	155	7.73	8.74	1.3	.7	21	1	94	.08	5	.6	1.1	13	SF4
		4	144	6.89	19	20.91	155	2.12	3.92	2.0	2.3	26	1	161	.10	2	.6	.9	17	SSF
		4	213	24.58	19	23.06	155	6.79	3.56	1.7	2.0	21	2	80	.10	1	.4	.3	21	SME
		4	216	16.98	19	19.19	154	59.87	7.97		1.0	13	3	218	.12	6	1.3	1.1	11	LER
		4	245	31.23	19	28.14	154	56.60	10.02	1.2	.9	14	2	97	.10	3	.8	1.0	12	LER
		4	253	23.38	19	28.03	154	53.57	6.78	1.3	.8	17	2	123	.13	3	.7	1.0	15	LER
		4	259	55.30	19	23.10	155	7.45	3.54	1.5	1.3	21	3	101	.06	2	.4	.5	19	SER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	4	328	.66	19	19.55	155	8.53	6.11	1.8	1.4	28	3	80	.10	4	.4	1.0	21	SF4
		4	418	18.71	19	13.07	155	28.64	8.44	1.1	1.3	18	2	116	.12	5	.5	.9	16	LSW
		4	443	6.93	19	19.42	155	13.54	7.45	1.6	1.6	36	4	67	.10	4	.4	.7	31	SF2
		4	610	21.38	19	23.71	155	6.13	3.71	1.3	1.1	14	2	100	.08	1	.5	.4	13	SME
		4	718	37.74	19	23.85	155	5.18	6.56	1.1	.7	14	1	95	.11	2	.6	1.0	14	SF5
		4	8 7	31.91	19	16.39	155	23.59	6.80	1.6	1.6	26	5	106	.12	4	.4	1.1	23	SWR
		4	810	54.49	19	16.53	155	23.53	6.44	1.5	1.5	19	3	106	.10	4	.5	1.3	18	SWR
		4	815	50.98	19	23.20	155	6.58	3.40	1.0	.9	13	2	117	.09	1	.7	.4	13	SME
		4	846	46.57	19	20.57	155	2.98	4.87	1.5	1.1	23	2	118	.20	1	.8	1.2	22	SSF
		4	849	28.97	19	23.38	155	7.17	3.21	1.0	.6	12	3	113	.07	2	.7	.5	12	SME
		4	9 1	7.27	19	24.66	155	3.88	6.10	1.2	.3	13	2	173	.09	1	.8	.7	12	SF5
		4	911	4.20	19	23.17	155	6.74	3.52	1.0	.6	15	3	137	.11	1	.8	.5	13	SME
		4	1057	50.34	19	20.73	155	3.10	9.46	1.4	.4	10	0	126	.05	2	1.2	2.0	9	SF5
		4	11 1	23.72	19	18.73	155	15.43	8.96	1.9	1.8	35	6	110	.08	4	.4	.5	31	SF1
		4	11 8	45.89	19	23.70	155	5.11	4.05	1.2	.9	16	2	93	.10	2	.6	.6	15	SME
		4	1137	50.85	19	20.77	155	2.52	3.68	2.0	2.1	31	6	147	.11	2	.5	.6	26	SSF
		4	1156	19.51	19	20.39	155	3.12	4.16	1.4	.9	14	3	108	.06	1	.6	.6	14	SSF
		4	1218	32.20	19	23.29	155	6.27	3.83	1.0		12	2	135	.09	1	.8	.5	12	SME
		4	1234	3.11	19	21.51	155	3.43	6.75	1.2		11	1	165	.09	3	.9	1.5	11	SF5
		4	13 1	41.62	19	22.96	155	7.56	3.66	1.0	.6	10	1	137	.07	2	1.1	.7	10	SER
		4	1318	27.95	19	19.26	155	13.86	9.19	1.1	.6	16	2	85	.09	4	.7	1.4	14	SF2
		4	1339	39.60	19	23.42	155	6.08	4.32	1.1	.3	13	2	97	.08	1	.5	.6	13	SME
		4	1349	50.15	19	21.44	155	13.15	14.52	1.3	.7	13	1	106	.09	2	1.1	1.4	12	DEP
		4	1350	16.93	19	21.51	155	13.81	12.63	1.1	.7	13	2	94	.06	2	.9	1.4	11	SF2
		4	1352	18.34	19	21.91	155	1.41	.22	1.4	1.3	17	1	156	.13	5	.5	.7	12	SSF
		4	1419	56.83	19	23.00	155	6.87	3.09	1.8	1.3	15	0	90	.10	1	.5	.4	13	SME
		4	1427	33.68	19	23.63	155	6.06	3.91	1.8	1.1	12	1	100	.04	1	.6	.4	10	SME
		4	15 6	1.57	19	21.12	155	14.10	10.78	1.1	.7	16	2	95	.06	3	.7	1.0	14	SF2
		4	1538	2.61	19	23.13	155	6.44	3.37	1.1	.6	10	1	133	.11	0	.9	.4	7	SME
		4	1559	44.37	19	21.54	155	.74	5.49	1.3	.9	22	1	185	.13	5	.8	1.6	15	SF5
		4	1627	51.42	19	21.43	155	2.42	2.98	2.1	2.2	21	0	191	.14	7	.6	2.6	18	SSF
		4	1637	8.49	19	19.25	155	7.35	3.90	1.2	.6	9	1	117	.04	4	.6	1.4	7	SSF
		4	1646	7.97	19	23.54	155	6.04	3.86	1.1	.6	14	2	98	.05	1	.4	.3	12	SME
		4	1647	56.46	19	20.05	155	13.49	8.98	1.5	1.1	17	1	68	.07	5	.6	1.1	12	SF2
		4	1652	18.30	19	16.84	155	7.53	8.74	1.3	1.2	19	0	219	.10	1	1.1	.7	17	SF4
		4	1724	18.92	19	21.88	154	58.35	7.97	1.6	1.4	18	0	202	.13	6	1.3	1.2	10	LER
		4	1728	45.58	19	23.10	155	6.91	3.43	1.3	1.3	14	1	99	.08	1	.5	.5	8	SME
		4	1738	32.63	19	22.75	155	7.87	3.41	1.2	.9	21	2	99	.10	3	.5	.5	15	SER
		4	1740	20.34	19	22.67	155	7.09	2.94	1.5	.9	15	1	102	.12	2	.9	.6	8	SME
		4	1741	3.31	19	19.63	155	13.74	7.36	1.6		18	2	77	.08	5	.6	1.2	16	SF2
		4	1741	16.83	19	20.05	155	13.73	7.77	1.5	1.1	14	2	71	.07	5	.6	1.3	11	SF2
		4	1744	30.71	19	23.11	155	6.83	3.60	1.0	.3	9	1	136	.07	1	.8	.5	5	SME
		4	1747	28.62	19	19.30	154	52.90	11.43	1.6	1.1	12	0	306	.12	15	5.5	.9	4	LER
		4	1759	59.21	19	19.21	155	7.27	7.30	1.3	.3	16	0	120	.06	4	.6	1.5	14	SF4
		4	18 9	25.48	19	32.22	155	.20	40.12	2.1	1.6	29	1	111	.09	7	.9	2.5	25	HIL
		4	1827	44.16	19	23.28	155	6.81	3.07	1.0		10	2	140	.07	1	.7	.4	7	SME
		4	1844	15.40	19	22.28	155	2.21	8.15	2.3	2.1	39	4	134	.12	5	.5	.5	31	SF5
		4	19 0	11.52	19	21.69	154	58.54	8.38	2.0	1.6	31	0	202	.12	6	1.0	.8	26	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DIR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	4	19 8	50.04	19	19.39	155	5.68	6.96	1.4	.7	21	1	149	.08	5	.6	1.3	9	SF4
		4	1946	12.02	19	18.90	155	9.32	6.50	1.1	.3	18	2	105	.08	4	.5	1.4	10	SF3
		4	1948	47.23	19	23.52	155	6.09	3.63	1.0	.6	15	2	99	.07	1	.5	.3	13	SME
		4	2112	45.31	19	18.18	155	11.63	5.55	1.2	.9	17	0	134	.08	4	.6	1.8	10	SF3
		4	2134	47.61	19	23.80	155	4.95	3.77	1.1		15	1	93	.10	2	.5	.5	10	SME
		4	2215	27.27	19	23.45	155	5.91	3.82	1.1	.6	13	1	97	.05	1	.5	.4	12	SME
		4	2218	31.36	19	23.50	155	6.63	2.20	1.6	1.3	14	1	101	.12	1	.6	.4	12	SME
		4	2258	19.78	19	21.65	155	6.60	5.65	1.7	1.5	19	4	119	.15	3	.8	1.3	10	SF4
		4	2312	51.15	19	23.06	155	7.28	3.57	1.5	1.3	20	2	72	.10	2	.5	.6	19	SER
		4	2326	57.07	19	22.96	155	7.10	3.79	1.1	.9	14	1	98	.09	2	.7	.6	14	SME
		5	011	.91	19	23.82	155	6.65	3.72	1.0	.3	15	2	106	.06	2	.5	.5	14	SME
		5	023	6.11	19	23.01	155	5.98	4.27	1.0		13	2	119	.10	1	.9	.6	11	SME
		5	043	12.29	19	22.99	155	6.63	3.91	1.1	.3	13	3	123	.10	1	.7	.5	13	SME
		5	1 0	21.81	19	20.28	155	2.93	7.88	1.6	1.2	24	1	125	.11	1	.6	.9	23	SF5
		5	148	7.23	19	23.23	155	7.06	3.48	.9	.6	16	4	101	.08	1	.5	.4	13	SME
		5	227	15.88	19	20.14	155	13.18	7.93	.9	.3	13	2	66	.06	5	.6	1.4	11	SF2
		5	246	33.41	19	22.89	155	6.64	3.24	1.6	.9	17	4	96	.13	1	.6	.5	16	SME
		5	322	34.34	19	23.22	155	7.60	3.43	1.1	.9	15	2	104	.12	2	.5	.6	15	SER
		5	329	33.43	19	23.17	155	7.48	3.70	1.1	.9	19	3	102	.08	2	.4	.5	18	SER
		5	341	3.31	19	23.02	155	7.84	3.68	1.2	.6	18	2	102	.07	3	.6	.5	17	SER
		5	353	38.25	19	22.92	155	7.56	3.47	1.1	.6	16	3	100	.08	2	.6	.4	15	SER
		5	4 2	11.54	19	22.99	155	6.85	3.45	1.4	1.1	15	2	97	.10	1	.6	.5	15	SME
		5	413	56.63	19	23.79	155	7.96	3.73	.9	.3	13	2	112	.16	3	.9	1.4	13	SER
		5	418	35.22	19	23.41	155	6.88	3.12	1.1	.6	11	3	112	.09	1	.7	.5	11	SME
		5	435	58.90	19	22.98	155	7.52	3.45	1.2	.6	15	3	123	.11	2	.8	.5	15	SER
		5	443	44.58	19	25.58	155	24.88	7.46	1.6	.9	26	3	70	.13	1	.5	.9	24	KAO
		5	451	37.23	19	19.70	155	11.54	8.95	1.3	.3	16	1	91	.05	5	.6	1.4	15	SF3
		5	454	13.03	19	18.77	155	13.54	9.91	3.4	3.7	43	2	80	.13	3	.5	.4	41	SF2 F
		5	5 6	35.62	19	19.04	155	13.56	8.08	1.8	1.5	34	1	70	.11	4	.5	.8	30	SF2
		5	510	32.98	19	23.14	155	7.77	3.55	.8	.3	10	1	143	.08	3	1.1	.7	10	SER
		5	512	40.93	19	23.15	155	6.91	3.20	1.6	1.3	15	3	119	.06	1	.7	.4	15	SME
		5	515	43.37	19	23.19	155	7.54	3.67	1.2	1.1	12	2	137	.08	2	.6	.6	12	SER
		5	516	8.60	19	18.96	155	13.59	8.22	1.7	1.3	21	1	83	.10	4	.6	1.1	20	SF2
		5	524	39.77	19	23.18	155	8.01	3.74	1.0	.9	13	2	114	.10	3	.8	.8	12	SER
		5	541	41.63	19	22.98	155	7.40	3.65	1.0	.9	10	1	123	.12	2	.8	.5	10	SER
		5	545	26.94	19	23.47	155	7.51	3.85	1.5	1.3	19	3	106	.10	2	.5	.7	19	SER
		5	556	12.86	19	23.22	155	7.68	3.40	1.2	.9	16	4	115	.10	3	.7	.5	15	SER
		5	557	.96	19	22.94	155	7.17	3.68	1.1	.9	13	2	99	.10	2	.7	.5	13	SME
		5	6 6	2.49	19	23.38	155	7.05	3.30	1.2	.9	16	3	103	.08	2	.6	.4	16	SME
		5	613	55.92	19	22.74	155	7.84	3.52	1.2	.9	17	2	130	.06	3	.7	.5	17	SER
		5	616	59.27	19	23.00	155	7.34	3.52	1.1	.9	14	2	99	.13	2	.8	.6	14	SER
		5	620	12.99	19	23.02	155	7.03	3.26	1.1	.9	15	1	99	.11	1	.5	.5	14	SME
		5	641	9.77	19	22.83	155	7.74	3.28	1.6	1.6	22	1	94	.08	3	.5	.7	19	SER
		5	642	10.59	19	22.85	155	7.54	3.26	1.6	1.3	16	2	99	.09	2	.6	.6	13	SER
		5	647	21.23	19	23.90	155	5.12	2.99	2.0	1.8	22	2	78	.07	2	.4	.3	14	SME
		5	655	10.31	19	23.37	155	7.85	4.01	1.7	1.1	12	1	106	.13	3	.6	.9	7	SER
		5	7 4	57.85	19	23.03	155	7.36	3.49	1.3	1.1	12	1	100	.12	2	.6	.5	6	SER
		5	711	19.64	19	22.80	155	7.59	3.12	1.9	1.9	20	3	88	.09	2	.4	.4	11	SER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DIR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	5	729	33.75	19	20.80	155	2.97	5.56	2.5	2.3	31	1	119	.13	2	.5	.9	26	SF5
		5	759	24.41	19	22.66	155	7.92	3.30	1.3	1.3	16	1	98	.08	3	.6	.5	14	SER
		5	818	32.17	19	22.58	155	7.36	3.39	1.3	1.1	7	0	180	.06	2	2.9	1.0	7	SER
		5	821	27.13	19	21.37	155	6.31	.31			5	0	220	.02	3	2.3	3.3	5	SSF
		5	828	59.70	19	23.14	155	7.58	2.64	1.9	1.4	9	0	152	.03	2	1.7	.7	9	SER
		5	843	23.99	19	23.38	155	8.17	5.12	1.1	.3	9	1	108	.20	3	1.1	2.1	6	SF4
		5	845	5.39	19	22.22	155	23.99	8.94	1.4	.7	25	3	39	.11	4	.4	.9	15	KAO
		5	851	23.07	19	22.97	155	8.66	3.26	1.1	.3	9	2	161	.10	3	1.3	.6	9	SER
		5	855	58.96	19	23.28	155	7.41	3.21	1.2	.3	16	3	103	.11	2	.5	.5	16	SER
		5	920	13.40	19	22.29	155	6.37	9.80	1.2	.4	11	2	140	.16	1	1.0	1.3	10	SF4
		5	926	27.07	19	12.89	155	2.51	19.77	2.4	1.7	18	1	297	.16	20	4.7	3.2	18	DEP
		5	945	12.74	19	19.65	155	13.66	7.04	1.4	1.1	18	3	76	.07	5	.5	1.1	15	SF2
		5	1024	52.63	19	23.26	155	6.84	3.41	1.5	1.3	16	3	100	.12	1	.6	.4	16	SME
		5	1025	17.25	19	20.63	155	12.68	5.66	1.1	.6	8	0	136	.09	4	.9	2.5	8	SF2
		5	1037	42.70	19	23.54	155	6.69	2.97		.6	12	3	103	.09	1	.6	.3	12	SME
		5	1052	43.30	19	22.82	155	7.84	3.27	1.5	1.3	22	3	100	.08	3	.4	.5	22	SER
		5	1053	26.90	19	18.69	155	13.30	8.40	1.6	1.3	20	3	82	.07	3	.5	1.0	19	SF2
		5	1056	40.92	19	22.33	155	8.34	2.78	1.3	.8	16	2	95	.09	3	.5	.5	16	SER
		5	1056	53.38	19	13.08	155	32.78	6.26	2.5	1.7	27	0	79	.21	6	.8	1.7	18	LSW
		5	11 2	.40	19	24.27	155	15.83	2.82	.6	.5	8	2	133	.03	2	.4	.6	7	SEC
		5	11 6	43.67	19	22.80	155	7.26	2.85	1.3	.6	12	2	97	.10	2	.6	.5	8	SER
		5	1124	52.93	19	23.41	155	6.96	3.05	1.5	.9	13	2	102	.06	1	.5	.4	11	SME
		5	1130	35.74	19	19.41	155	13.16	8.08	2.2	2.1	31	2	75	.12	4	.5	.7	25	SF2
		5	1138	55.05	19	18.73	155	13.50	7.59	1.1	.9	14	0	99	.05	3	.6	1.4	12	SF2
		5	1144	2.67	19	23.95	155	6.89	2.02	1.3	.3	11	1	109	.18	2	.7	.9	9	SME
		5	1144	45.72	19	24.36	155	16.20	2.55	1.0	1.0	9	2	133	.09	1	.5	.6	6	SEC
		5	1145	45.96	19	18.82	155	13.75	7.60	1.4	1.1	20	1	89	.09	3	.6	1.2	13	SF2
		5	12 0	50.21	19	24.26	155	16.31	.63	.9	1.2	13	4	122	.20	2	.3	.5	7	SEC
		5	1213	40.27	19	25.08	155	16.70	2.44	1.1	1.2	11	2	169	.11	1	.6	.4	5	SNC
		5	1217	27.89	19	24.09	155	15.83	2.39	.8	1.0	11	3	120	.08	1	.4	.4	8	SEC
		5	1323	36.05	19	24.26	155	16.99	1.99	1.4	1.2	17	4	80	.07	1	.3	.2	10	SSC
		5	1337	30.10	19	20.38	155	2.44	6.08	2.9	2.7	34	2	170	.11	1	.5	.6	27	SFS
		5	1340	51.17	19	25.53	155	19.96	3.43	1.2		9	1	186	.10	4	1.6	1.3	3	KAO
		5	1342	22.63	19	24.11	155	16.21	2.46	1.3	.8	10	2	115	.08	1	.3	.3	6	SEC
		5	1347	38.58	19	20.16	155	4.46	4.04	2.4	1.9	25	0	131	.11	3	.5	1.1	15	SSF
		5	1354	38.00	19	23.67	155	7.28	4.91	1.3		10	0	107	.13	2	.9	1.6	4	SER
		5	1421	41.88	19	21.49	155	3.01	1.51	1.5		13	0	123	.09	3	.4	.9	7	SSF
		5	1427	7.68	19	20.32	155	4.26	5.33	1.9	.6	21	1	123	.14	2	.7	1.4	17	SFS
		5	1444	57.67	19	24.55	155	16.72	2.48	.9	.2	11	1	123	.06	1	.4	.3	9	SNC
		5	1446	46.10	19	24.56	155	16.79	2.46	1.2	.8	17	6	117	.07	1	.3	.2	13	SNC
		5	1456	31.81	19	22.62	155	7.92	3.56	1.3	.3	12	2	144	.07	3	.8	.6	12	SER
		5	15 1	8.84	19	21.34	155	2.37	3.27	1.5	.6	16	2	141	.10	3	.5	.8	13	SSF
		5	1516	26.24	19	22.03	155	1.50	5.83	2.3	2.2	22	2	152	.07	5	.5	1.0	21	SFS
		5	1525	56.78	19	20.25	155	4.59	4.00	1.7	.9	19	2	126	.09	3	.6	1.2	14	SSF
		5	1526	39.69	19	20.19	155	4.48	4.67	2.6	2.3	33	0	130	.12	3	.6	1.2	27	SSF
		5	1616	2.17	19	23.48	155	15.33	2.54	1.5	1.2	18	3	85	.17	2	.4	.5	12	SEC
		5	1656	.24	19	24.22	155	16.70	1.67	1.4	.8	13	3	100	.12	1	.4	.3	7	SSC
		5	1658	25.25	19	22.95	155	8.41	2.68	1.2		9	0	103	.05	3	.7	.5	8	SER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	5	1731	6.69	19	24.46	155	16.57	1.64	1.1	.2	16	4	126	.10	1	.3	.3	12	SSC
		5	1742	58.66	19	23.36	155	6.98	3.00	1.6	.6	14	0	102	.07	1	.5	.6	8	SME
		5	1819	55.18	19	18.97	155	13.97	8.24	2.3	1.9	33	0	92	.12	4	.5	.6	27	SF2
		5	1850	52.00	19	24.03	155	17.01	.41	1.1	1.0	16	4	75	.13	1	.2	.2	9	SSC
		5	19	3 14.24	19	24.55	155	16.72	2.37	.9		12	3	122	.08	1	.4	.2	9	SNC
		5	1915	25.91	19	20.25	155	2.72	4.39	2.0	.9	16	1	156	.10	1	1.1	.8	12	SSF
		5	1949	54.09	19	20.79	155	18.29	1.97	2.1	2.2	22	4	59	.11	2	.3	.6	16	SWR
		5	2032	10.26	19	22.70	155	8.83	3.06	1.2	.6	15	2	101	.12	2	.6	.4	9	SER
		5	2032	49.02	19	25.08	155	16.53	1.78	.9	.2	11	2	172	.10	1	.4	.3	6	SNC
		5	2045	27.23	19	20.87	155	18.21	1.71	2.1	2.9	29	4	60	.13	2	.3	.6	22	SWR
		5	2047	44.19	19	20.86	155	18.21	1.89	.9	1.2	12	0	75	.08	2	.4	.7	11	SWR
		5	2114	58.73	19	23.81	155	16.76	2.57	1.0	.2	15	4	70	.08	0	.4	.2	11	SSC
		5	2144	52.56	19	24.48	155	16.85	2.50	1.4	1.2	13	2	103	.05	1	.4	.2	9	SSC
		5	2259	15.27	19	24.64	155	16.61	2.17	1.3	.8	17	3	138	.10	1	.4	.3	9	SNC
		5	23	5 4.19	19	24.36	155	16.63	.98	.9	.8	14	2	114	.10	1	.3	.3	7	SSC
		5	2317	16.82	19	24.18	155	16.89	2.14	1.5	1.0	17	3	85	.12	1	.4	.2	10	SSC
		5	2333	2.87	19	23.32	155	6.98	2.91	1.4		10	0	101	.07	1	.7	.4	8	SME
		6	0	3 19.93	19	19.59	155	10.17	8.15	1.7	1.1	21	2	95	.05	5	.5	1.1	18	SF3
		6	050	39.56	19	20.96	155	17.94	2.15	.8	1.0	11	1	69	.09	2	.3	.5	6	SWR
		6	141	18.72	19	22.96	155	8.81	3.57	1.4	.3	13	0	104	.11	2	.6	.7	8	SER
		6	158	32.06	19	22.53	155	8.96	3.69	1.3	.3	13	0	93	.08	2	.5	.6	6	SER
		6	318	6.54	19	24.33	155	14.21	10.08	1.5	.3	8	0	136	.15	1	2.2	4.5	5	INT
		6	329	48.54	19	23.17	155	6.79	2.65	1.4	.3	13	0	100	.10	1	.6	.5	8	SME
		6	447	18.76	19	25.61	155	28.42	8.93	1.8	1.3	26	1	49	.09	6	.4	.9	19	KAO
		6	518	40.66	19	20.82	155	3.02	6.09	1.7	1.1	30	1	116	.14	2	.6	1.0	18	SF5
		6	523	36.52	19	22.82	155	8.66	3.15	1.4	1.3	13	0	101	.10	3	.5	.7	8	SER
		6	6	9 1.68	19	34.05	155	28.10	4.39	1.7	1.1	7	0	122	.08	5	1.4	5.5	7	MLO
		6	636	30.65	19	23.88	155	4.37	2.19		1.3	11	1	90	.08	1	.5	.3	6	SME
		6	721	27.15	19	23.24	155	7.04	3.02	1.4	1.0	13	0	101	.09	1	.5	.5	12	SME
		6	835	19.38	19	22.99	155	8.81	2.80		.6	9	0	108	.06	3	.6	.5	8	SER
		6	931	34.69	19	22.75	155	8.71	2.68	1.2	.6	11	1	102	.08	2	.8	.4	7	SER
		6	951	53.23	19	21.03	155	3.52	3.65	1.4	.6	9	0	106	.08	2	.7	1.0	5	SSF
		6	1039	.44	19	23.32	155	6.89	3.03	1.4		10	0	102	.09	1	.7	.5	5	SME
		6	1048	59.94	19	23.08	155	8.37	2.92	1.3	.3	10	0	105	.11	3	.5	.7	6	SER
		6	1055	53.60	19	19.05	155	13.69	7.37	1.3	.6	18	1	85	.09	4	.6	1.3	16	SF2
		6	1124	13.02	19	22.54	154	58.86	8.61	2.3	1.9	32	1	183	.14	5	.9	.7	24	LER
		6	1127	27.96	19	18.53	155	13.60	8.68	2.4	2.2	32	4	87	.11	3	.4	.5	23	SF2
		6	1132	27.20	19	22.05	155	1.21	.01	1.5	.6	10	1	181	.17	5	.7	.7	7	SSF *
		6	1143	30.61	19	22.08	155	9.11	3.17	1.3		9	2	133	.09	1	1.0	.5	5	SER
		6	13	7 20.13	19	23.53	155	5.70	3.22	1.4	.3	11	1	96	.08	1	.5	.5	7	SME
		6	1317	26.52	19	22.49	155	8.65	3.14	1.5	1.3	21	3	97	.08	2	.4	.4	15	SER
		6	1356	29.00	19	22.43	155	8.63	3.00	1.3		6	1	142	.03	2	1.5	.5	5	SER
		6	1358	53.99	19	23.42	155	6.97	3.10	1.5	.6	13	1	102	.14	1	.6	.8	11	SME
		6	1359	17.10	19	22.34	155	8.41	3.16	1.3	.6	12	1	96	.10	3	.7	.5	7	SER
		6	1819	47.24	19	21.93	155	.44	9.08	2.4	1.9	33	1	173	.12	6	.9	.6	27	SF5
		6	2055	35.11	19	21.10	155	18.29	2.09	.8	.8	8	0	94	.09	2	.8	1.2	3	SWR
		6	2244	27.76	19	20.18	154	59.51	6.33	2.8	2.3	28	0	209	.13	9	1.0	1.3	23	LER
		6	2254	49.68	19	22.01	155	3.11	1.92	1.4	1.1	7	2	122	.11	4	.7	1.4	4	SSF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	6	2355	1.53	19	24.01	155	15.59	3.81		1.2	16	1	111	.13	2	.6	.5	11	SEC
		7	0	7 39.44	19	24.42	155	4.43	3.39	1.7	.9	10	1	106	.08	0	.6	.5	5	SME
		7	013	11.69	19	24.46	155	4.36	3.07	1.6	.6	11	1	100	.12	0	.6	.4	7	SME
		7	035	38.68	19	23.88	155	5.28	3.91	1.6	1.1	14	0	96	.07	2	.5	.5	8	SME
		7	052	33.27	19	24.68	155	3.93	2.94	1.5	.3	11	0	91	.10	1	.6	.4	7	SME
		7	1	1 40.89	19	24.24	155	4.26	3.21	1.7	1.8	17	1	83	.09	1	.5	.3	13	SME
		7	119	50.35	19	24.63	155	16.64	1.79	1.4	1.4	13	3	137	.10	1	.4	.3	9	SNC
		7	121	13.60	19	24.70	155	16.81	1.96	1.3	1.7	14	2	131	.09	1	.4	.2	9	SNC
		7	145	22.92	19	24.34	155	4.27	3.27	1.5	.9	14	1	95	.08	0	.5	.4	7	SME
		7	158	55.74	19	24.47	155	4.57	3.12	1.5	1.1	12	0	78	.12	1	.5	.4	4	SME
		7	218	3.63	19	24.25	155	4.40	2.99	1.5	.6	13	0	91	.11	1	.5	.4	9	SME
		7	219	15.72	19	19.53	155	7.35	6.59	1.4	.3	15	1	111	.12	4	.7	1.7	10	SF4
		7	220	40.06	19	24.67	155	17.13	1.81	.9	.5	13	3	61	.06	0	.4	.2	9	SNC
		7	224	43.51	19	24.05	155	4.42	4.77	1.4	.9	17	2	83	.12	4	.5	1.7	11	SME
		7	227	47.71	19	24.02	155	4.70	3.80	1.4	.9	13	2	93	.12	3	.6	1.4	8	SME
		7	236	38.07	19	21.23	155	4.44	7.65	1.6	.9	14	2	89	.11	4	.6	1.2	7	SF5
		7	243	14.88	19	24.21	155	4.24	2.97	2.0	1.9	24	1	84	.09	1	.5	.4	15	SME
		7	3	4 36.83	19	23.96	155	5.23	4.98	1.3	.6	11	0	97	.10	2	.7	1.7	6	SME
		7	3	7 36.49	19	21.81	155	2.20	6.80	2.1	2.0	16	0	187	.07	7	.9	1.8	12	SF5
		7	310	38.66	19	21.47	155	1.63	1.54	1.4	.9	8	1	183	.04	4	.7	.9	4	SSF
		7	315	30.74	19	23.89	155	5.22	3.79	1.7	1.8	10	0	96	.04	2	.5	.6	9	SME
		7	316	4.63	19	21.49	154	59.85	11.15	1.8	.4	6	0	226	.07	6	2.3	1.1	2	LER
		7	319	49.65	19	24.52	155	3.53	3.08	1.5	.6	12	1	91	.07	1	.5	.4	9	SME
		7	326	52.71	19	24.33	155	4.46	3.29	1.4	.3	12	1	93	.09	1	.6	.4	9	SME
		7	331	9.27	19	24.60	155	3.51	3.35	1.6	.9	12	1	90	.07	1	.6	.7	7	SME
		7	333	36.41	19	24.57	155	3.40	4.12	1.4	.9	11	1	92	.06	2	.5	.9	7	SME
		7	338	11.34	19	26.68	155	18.00	5.40	2.4	2.1	17	0	162	.15	4	.8	1.7	12	INT
		7	349	18.57	19	24.65	155	3.64	4.76	1.4	.9	12	0	88	.05	1	.6	.9	11	SME
		7	352	14.63	19	24.59	155	3.54	2.09	1.4	.6	10	2	92	.09	1	.5	.3	9	SME
		7	4	0 31.02	19	24.70	155	3.77	7.49	1.4	.7	13	2	101	.14	1	.8	1.1	12	SF5
		7	4	0 59.68	19	24.59	155	3.72	4.97	1.4	.9	13	2	95	.09	1	.6	.7	11	SME
		7	4	3 32.35	19	24.46	155	3.38	6.29	1.6	.9	12	2	93	.10	2	.6	.9	11	SF5
		7	4	4 58.44	19	24.68	155	3.35	3.19	1.4	.6	10	2	95	.05	2	.4	.5	9	SME
		7	4	5 53.14	19	24.47	155	16.38	2.53	1.4	.8	17	4	133	.11	1	.4	.2	15	SEC
		7	4	6 30.27	19	24.80	155	16.75	2.12	1.5	1.4	18	4	142	.08	0	.4	.2	16	SNC
		7	4	7 20.06	19	24.34	155	3.43	5.29	1.8	.9	15	2	94	.10	2	.6	.9	14	SF5
		7	4	8 52.10	19	24.60	155	3.41	7.98	1.6	.9	9	1	91	.07	2	.6	1.2	8	SF5
		7	412	34.35	19	24.52	155	3.42	6.18	1.4	.7	10	2	92	.08	1	.7	1.0	9	SF5
		7	415	2.68	19	24.11	155	3.65	4.04	1.6	1.1	12	2	93	.12	1	.5	.6	11	SME
		7	416	59.71	19	23.43	155	2.11	.01	1.5	1.1	9	2	131	.12	4	.4	.9	8	SME *
		7	417	21.54	19	24.57	155	3.70	7.22	1.4	.9	12	2	93	.08	1	.7	.9	11	SF5
		7	419	12.06	19	24.98	155	4.35	6.66	1.8	.7	17	2	97	.12	1	.6	.9	17	SF5
		7	424	7.95	19	24.57	155	3.46	6.82	1.6	.7	17	1	90	.07	1	.5	.9	15	SF5
		7	426	2.67	19	20.20	155	2.51	3.27	2.1	1.7	24	2	180	.12	1	.7	.4	22	SSF
		7	427	5.48	19	24.55	155	5.06	5.03	1.6	.6	13	2	101	.11	1	.6	.9	12	SF5
		7	432	55.87	19	24.35	155	2.98	8.00	1.5	.9	9	1	100	.10	2	.8	1.2	9	SF5
		7	435	24.55	19	24.42	155	2.91	3.20	1.4	.3	12	0	102	.12	2	.6	.7	12	SME
		7	446	17.76	19	24.34	155	16.58	3.10	1.3	.8	13	2	121	.10	1	.3	.3	12	SSC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	ND FM	REMK	
1983	JAN	7	453	33.87	19	23.89	155	15.97	3.08	1.9	1.4	20	4	106	.12	1	.4	.3	18	SEC	
		7	459	6.92	19	24.69	155	16.70	2.22	.9	.8	9	2	143	.07	1	.4	.3	9	SNC	
		7	5 4	6.39	19	24.74	155	4.03	3.81	1.4	.6	7	1	105	.08	1	.7	.7	4	SME	
		7	5 5	43.07	19	24.00	155	16.81	2.76	1.3	.8	13	2	83	.07	0	.4	.3	9	SSC	
		7	5 9	20.93	19	25.39	155	3.94	3.58	1.7	.3	8	0	96	.11	2	.7	.8	4	SME	
		7	511	52.81	19	25.57	155	3.07	.43	1.5	.3	7	0	132	.07	3	.5	1.0	3	SME	
		7	512	41.20	19	24.35	155	5.58	4.67	1.3	.3	7	0	103	.25	2	1.3	2.3	6	SME	
		7	522	17.24	19	24.25	155	5.97	8.08	1.6	.4	6	0	105	.10	2	.9	2.2	5	SF4	
		7	524	14.05	19	24.79	155	3.41	3.48	1.5	.3	7	0	98	.04	2	.6	.6	5	SME	
		7	524	58.96	19	24.73	155	3.67	3.43	1.4	.3	8	1	101	.07	1	.5	.4	5	SME	
		7	527	14.89	19	24.74	155	3.06	2.79	1.4	.3	9	0	94	.10	2	.6	.5	5	SME	
		7	530	16.72	19	24.74	155	3.24	2.18	1.4		8	1	92	.09	2	.5	.5	4	SME	
		7	537	13.80	19	24.66	155	4.00	4.76	1.5		5	0	103	.06	9	1.3	42.1	3	SME	*
		7	541	.49	19	25.14	155	9.60	4.38	1.9	.9	11	0	139	.13	9	1.1	38.6	8	SER	*
		7	543	9.21	19	24.70	155	3.09	5.58	1.7		5	0	94	.14	8	3.2	23.7	3	SF5	*
		7	548	40.70	19	24.61	155	3.84	3.61	1.5		7	1	100	.07	1	.6	.6	4	SME	
		7	549	10.54	19	24.84	155	3.24	3.25	1.6	.3	9	1	97	.05	2	.5	.5	6	SME	
		7	6 2	19.93	19	24.74	155	3.43	2.66	1.8		7	0	98	.07	2	.6	.6	4	SME	
		7	6 2	41.69	19	20.71	155	3.92	4.36	1.5		7	0	99	.08	2	.9	1.5	3	SSF	
		7	617	30.30	19	24.48	155	3.77	3.35	1.4		5	0	164	.00	1	.9	.6	3	SME	
		7	621	53.50	19	24.58	155	4.10	3.00	1.5		6	0	106	.08	0	.5	.4	3	SME	
		7	631	33.97	19	24.79	155	3.10	3.55	1.6		9	0	93	.09	2	.6	.8	2	SME	
		7	634	57.67	19	24.10	155	4.29	2.79	2.3	2.2	30	2	84	.12	1	.4	.4	23	SME	
		7	635	54.67	19	24.28	155	4.32	3.28	1.5	.9	12	0	92	.06	1	.6	.6	10	SME	
		7	642	41.03	19	24.78	155	16.53	1.85	1.1	.5	19	5	143	.12	1	.4	.3	15	SNC	
		7	653	34.37	19	24.46	155	4.36	3.18	1.6		13	2	93	.07	0	.5	.4	11	SME	
		7	7 7	7.73	19	24.66	155	3.89	3.39	1.5		15	3	102	.08	1	.6	.4	14	SME	
		7	720	14.18	19	24.44	155	16.96	2.53	1.5	1.2	18	5	88	.11	1	.4	.2	15	SSC	
		7	742	24.57	19	24.28	155	4.31	3.02			12	3	91	.04	1	.5	.3	10	SME	
		7	750	46.16	19	24.46	155	4.39	3.35	1.6	.3	16	3	93	.07	0	.5	.3	13	SME	
		7	758	3.18	19	24.64	155	4.81	3.60	1.8	1.3	16	4	99	.10	1	.5	.4	14	SME	
		7	827	44.99	19	24.51	155	4.53	4.18	1.4	.9	15	3	95	.10	1	.4	.5	14	SME	
		7	829	8.21	19	23.53	155	4.01	2.42	1.8	.6	13	3	92	.10	2	.4	.4	11	SME	
		7	834	51.92	19	24.63	155	16.73	2.84	1.5	1.7	13	4	131	.05	1	.4	.3	11	SNC	
		7	846	11.90	19	24.05	155	3.74	8.08	1.6		14	3	92	.13	1	.7	1.0	11	SF5	
		7	849	47.97	19	24.48	155	3.51	2.43	1.5	.3	14	3	91	.11	1	.5	.4	13	SME	
		7	850	41.27	19	24.47	155	4.51	3.28	1.7	.3	14	3	94	.06	0	.5	.4	13	SME	
		7	9 4	30.39	19	24.53	155	16.77	3.18	1.4	1.2	18	5	116	.10	1	.4	.2	15	SSC	
		7	911	18.13	19	24.74	155	3.52	5.42	1.4		11	2	93	.03	1	.5	.9	10	SF5	
		7	920	5.81	19	21.33	155	4.02	9.69	1.4		14	1	81	.09	3	.7	1.4	11	SF5	
		7	923	49.25	19	24.52	155	4.53	3.43	1.5		13	3	96	.08	1	.5	.3	11	SME	
		7	925	23.99	19	24.33	155	4.35	3.24	2.4	2.0	28	3	82	.08	0	.4	.3	26	SME	
		7	926	46.93	19	24.32	155	4.20	3.13	1.4		14	3	83	.08	0	.6	.4	13	SME	
		7	927	3.24	19	24.70	155	3.16	4.36	1.6	.3	11	1	93	.10	2	.6	.7	10	SME	
		7	10 9	2.26	19	24.45	155	4.32	3.29	2.0	1.3	18	3	93	.06	0	.5	.3	17	SME	
		7	1010	28.33	19	24.37	155	4.61	3.68	1.4	.6	15	3	95	.06	1	.5	.4	14	SME	
		7	1014	40.68	19	20.48	155	3.45	13.00	1.6	.1	8	1	96	.11	1	1.3	3.0	7	SF5	
		7	1017	37.41	19	25.39	155	3.12	.61	1.5		10	3	110	.06	3	.4	.4	9	SME	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	ND FM	REMK
1983	JAN	7	1020	54.07	19	19.08	155	12.07	7.25	1.6	1.1	21	3	100	.09	5	.5	1.2	19	SF3
		7	1025	3.51	19	24.54	155	17.01	2.08	.8		10	2	85	.08	1	.4	.3	8	SSC
		7	1026	43.43	19	20.32	155	11.99	9.58	1.4		17	1	76	.07	5	.7	1.2	16	SF3
		7	1037	44.36	19	24.57	155	4.07	2.77	1.4	.3	15	3	91	.09	0	.5	.3	14	SME
		7	1047	51.28	19	23.84	155	5.00	4.66	1.3	.3	14	2	94	.07	2	.6	.6	14	SME
		7	1051	22.20	19	22.49	154	58.68	6.54	1.4	.4	20	1	183	.11	5	.9	1.4	19	LER
		7	1053	20.32	19	23.81	155	4.27	3.66	1.5		5	1	177	.02	1	1.0	.6	2	SME
		7	1055	45.21	19	21.87	155	1.07	8.03	1.4	1.0	23	1	164	.10	5	.7	1.0	14	SF5
		7	1058	4.58	19	24.18	155	3.49	3.34	1.5		7	1	95	.10	2	.7	.8	3	SME
		7	1058	52.74	19	24.40	155	4.33	3.65	1.7	.6	12	2	105	.07	0	.5	.4	4	SME
		7	1311	32.79	19	18.40	155	3.20	2.65	2.1	2.3	23	0	206	.12	3	1.2	.7	14	SSF
		7	1356	11.95	19	24.56	155	16.70	1.86	1.3	.8	15	3	125	.11	1	.4	.3	8	SNC
		7	1437	43.67	19	24.71	155	17.15	2.17	.8	.8	16	5	67	.09	0	.4	.2	9	SNC
		7	1458	42.71	19	22.18	155	.96	3.41	1.6		16	2	185	.13	5	1.5	2.5	5	SSF
		7	1534	38.85	19	21.22	155	3.36	4.30	1.6	.6	19	2	109	.21	3	1.0	1.9	7	SSF
		7	1621	25.79	19	22.51	155	1.73	1.47	1.4		13	1	141	.10	5	.7	2.1	7	SSF
		7	1631	58.17	19	24.37	155	4.43	3.08	1.5	.3	11	2	94	.11	0	.6	.4	4	SME
		7	17 0	20.54	19	24.36	155	4.19	3.61	1.5		9	1	84	.08	0	.6	.6	5	SME
		7	1737	46.40	19	19.25	155	7.29	7.82	1.6	.3	19	0	119	.10	4	.7	1.6	14	SF4
		7	1740	49.18	19	24.69	155	16.45	2.71	.6		10	2	157	.05	1	.5	.4	5	SNC
		7	1912	2.95	19	23.33	155	2.65	7.43	1.6		6	0	156	.01	6	1.0	2.3	4	SF5
		7	1919	2.79	19	20.41	155	6.73	7.27	1.3	.3	15	0	104	.09	6	.6	1.7	8	SF4
		7	1930	53.67	19	24.56	155	4.34	3.33	1.4		12	1	94	.08	0	.5	.5	5	SME
		7	1934	46.22	19	24.54	155	4.50	3.37	1.6		12	3	95	.07	0	.6	.4	11	SME
		7	2020	23.07	19	20.56	155	13.59	7.91	.9		13	1	64	.08	4	.6	1.7	12	SF2
		7	2026	36.43	19	24.28	155	4.70	3.56	1.6	.9	19	4	95	.08	1	.5	.4	17	SME
		7	2029	25.42	19	23.49	155	4.07	.95	1.5	.3	10	2	94	.06	2	.3	.5	10	SME
		7	21 2	40.30	19	20.91	155	4.93	4.42	1.5	.3	12	2	102	.08	4	.5	1.1	11	SSF
		7	2124	50.42	19	20.92	155	1.52	7.14	2.6	2.4	40	6	178	.11	3	.4	.5	34	SF5
		7	2133	9.91	19	24.50	155	4.56	2.96	2.4	2.2	30	4	78	.09	1	.4	.3	29	SME
		7	2141	47.96	19	20.89	155	18.05	2.33	.8	1.6	13	1	72	.11	2	.4	.7	12	SWR
		7	2324	9.88	19	24.90	155	15.86	2.90	1.5	1.0	18	5	152	.07	2	.3	.3	14	SNC
		7	2340	35.86	19	19.79	155	6.24	8.90	2.5	2.3	39	8	127	.11	5	.4	.6	32	SF4
		7	2354	44.76	19	19.37	155	8.65	7.16	1.8	1.1	25	4	81	.10	4	.5	1.2	22	SF4
		8	043	.34	19	24.10	155	15.78	2.89	1.3		20	5	118	.10	2	.4	.2	18	SEC
		8	1 5	5.54	19	24.74	155	17.48	1.92	1.2	.8	19	5	77	.11	1	.4	.2	16	SNC
		8	154	40.89	19	18.77	155	15.37	8.39	1.0	.3	14	0	123	.03	4	.7	1.5	13	SF1
		8	219	20.58	19	21.30	155	2.67	4.12	1.3		15	4	139	.09	3	.5	.9	12	SSF
		8	219	58.13	19	21.64	155	2.18	6.30	1.8	.7	24	5	143	.14	3	.5	.9	22	SF5
		8	221	47.21	19	22.29	155	2.35	4.08	1.5	.3	20	2	130	.16	5	.5	1.5	18	SSF
		8	326	11.53	19	22.44	155	30.25	9.39	1.6	.7	28	2	47	.10	5	.4	1.0	23	KAD
		8	345	17.84	19	21.32	155	2.69	3.33	1.4	.9	19	4	130	.13	3	.4	.8	18	SSF
		8	425	34.22	19	23.85	155	4.86	5.37	1.3		12	1	93	.08	2	.6	.8	12	SF5
		8	426	31.62	19	21.06	155	2.84	6.84	2.0	.7	17	3	133	.10	2	.5	.8	16	SF5
		8	437	29.11	19	23.58	155	5.60	3.65			12	2	96	.11	2	.6	.5	12	SME
		8	5 3	13.04	19	21.13	155	18.03	2.04	.9	.8	14	1	70	.10	2	.3	.7	13	SWR
		8	622	17.77	19	23.61	155	1.77	6.42	1.6	.4	20	3	128	.13	5	.6	.9	18	SF5
		8	632	4.44	19	21.33	155	2.37	5.31	1.6	.7	24	3	141	.15	3	.6	1.1	22	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	8	928	38.46	19	20.11	154	54.15	6.18			16	3	239	.09	12	.8	3.6	15	LER
		8	940	24.86	19	20.80	155	2.21	7.86	1.4		13	1	161	.11	2	.7	1.0	12	SFS
		8	947	44.19	19	22.14	155	1.03	3.87	1.7	.6	20	2	168	.16	5	.7	2.1	12	SSF
		8	1033	16.63	19	20.68	155	2.07	4.23	1.4	.3	17	2	179	.24	2	1.5	1.5	8	SSF
		8	1037	39.48	19	19.16	155	8.73	5.34	1.3		10	1	102	.09	4	.7	1.8	7	SF4
		8	1138	8.43	19	18.83	155	13.20	5.62	1.0		17	1	82	.07	3	.5	1.4	15	SF2
		8	1245	54.82	19	20.75	155	3.06	7.63	1.6	.9	19	1	113	.08	2	.5	.9	9	SF5
		8	1424	35.33	19	18.91	155	13.48	8.82	1.6	1.1	19	0	81	.07	4	.6	1.1	16	SF2
		8	1450	15.20	19	22.22	155	15.59	33.58	3.1	3.0	48	2	56	.10	1	.6	1.0	45	DEP
		8	1728	30.54	19	21.90	155	1.98	1.25	1.5	.3	14	3	152	.11	4	.4	.8	8	SSF
		8	1755	55.50	19	19.71	155	2.73	5.58	2.0	.7	18	3	191	.08	1	.5	.8	8	SF5
		8	1828	.88	19	19.83	155	8.46	3.12	.9		12	0	136	.12	5	.6	1.3	10	SSF
		8	1853	4.83	19	22.32	155	2.96	1.73	1.6	.3	17	2	114	.16	4	.5	1.4	7	SSF
		8	20 8	53.73	19	21.08	155	17.48	1.94	1.7	1.7	18	1	67	.12	2	.3	.6	14	SWR
		8	2148	7.53	19	19.15	155	9.88	7.07	1.5	.3	18	1	104	.06	5	.6	1.1	17	SF3
		8	2321	28.01	19	19.92	155	12.21	8.64	1.5	.6	17	2	81	.06	5	.6	1.1	14	SF3
		8	2344	44.61	19	19.24	155	11.29	3.41	1.0		16	4	103	.10	6	.4	1.4	9	SSF
		8	2349	48.06	19	20.21	155	.81	3.13	1.5		10	0	204	.11	4	1.6	.9	4	SSF
		9	017	17.21	19	21.96	155	18.12	3.11	.6		12	2	77	.08	3	.4	.8	9	SWR
		9	242	24.51	19	20.26	155	12.63	7.12	.8		12	1	75	.05	4	.6	1.5	9	SF2
		9	440	12.28	19	21.70	155	6.30	7.54	.7		15	0	104	.07	6	.6	1.7	9	SF4
		9	5 3	31.47	19	11.59	155	34.56	4.62	2.6	1.6	34	1	125	.16	10	.6	2.2	23	LSW
		9	551	46.74	19	20.05	155	10.08	8.43	1.3		12	0	138	.03	4	1.2	2.5	10	SF3
		9	556	39.51	19	22.48	155	8.63	2.76	1.4	.8	18	0	92	.15	2	.7	.6	13	SER
		9	653	.18	19	20.36	155	6.80	6.39	1.1		17	1	104	.08	6	.6	1.6	15	SF4
		9	659	40.54	19	21.80	155	1.79	4.89	2.0	1.1	26	5	150	.13	4	.5	1.4	14	SSF
		9	7 1	4.73	19	21.56	155	1.62	5.51	2.0	1.5	24	3	159	.14	4	.7	1.4	16	SF5
		9	742	10.92	19	23.43	155	1.44	6.45	1.6	.9	15	0	195	.08	5	.7	1.4	15	SF5
		9	754	20.67	19	24.50	155	.93	4.60	1.2	1.1	14	0	176	.10	4	.8	1.7	10	SME
		9	10 1	5.97	19	22.23	155	17.38	25.64		1.5	37	1	37	.12	2	.7	1.0	27	DEP
		9	1120	29.08	19	22.32	154	59.66	8.40	1.7	1.4	28	0	181	.12	5	.9	1.1	20	LER
		9	1210	19.08	19	23.23	155	7.17	3.57		.3	5	0	120	.02	2	.6	.7	3	SME
		9	1233	25.38	19	20.13	155	4.32	5.28	1.8	1.5	14	0	133	.07	2	.6	1.6	9	SF5
		9	1236	28.45	19	22.14	155	1.96	7.17	1.4	.9	12	3	150	.10	4	.6	.8	5	SF5
		9	13 5	42.64	19	19.63	155	8.59	6.14	1.3	.6	12	0	79	.10	4	.6	1.7	8	SF4
		9	1331	31.40	19	21.09	155	1.32	.91		.6	5	0	185	.06	4	2.1	2.9	5	SSF
		9	1447	33.84	19	21.16	155	3.01	8.47	2.3	2.3	20	1	123	.08	2	.6	.9	16	SF5
		9	1622	48.49	19	18.78	155	13.17	6.15	1.3	.5	23	1	83	.09	3	.5	1.2	14	SF2
		9	1758	7.56	19	24.73	155	17.03	2.44	.9	.2	6	0	146	.01	0	1.1	.5	5	SNC
		9	1913	27.20	19	20.96	155	4.19	5.18	1.5	.8	21	1	94	.14	3	.6	1.4	13	SF5
		9	1918	43.83	19	21.46	155	16.65	25.62	1.9	1.1	34	0	63	.09	2	.7	1.0	29	DEP
		9	20 7	45.08	19	22.74	155	2.65	5.99	1.4		17	1	129	.14	4	.7	1.4	11	SF5
		9	2044	25.15	19	18.77	155	15.50	7.74	1.0		14	0	124	.07	4	.6	1.5	13	SF1
		10	216	17.20	19	18.73	155	15.34	5.39	.8		20	1	109	.13	4	.5	1.8	18	SF1
		10	237	24.16	19	22.49	155	1.69	3.79	1.6		19	3	142	.15	5	.6	1.6	11	SSF
		10	422	51.33	19	20.87	155	3.29	5.13	1.5		25	3	101	.16	2	.5	1.0	16	SF5
		10	453	19.71	19	20.36	155	3.37	8.31	1.6		18	0	99	.09	1	.6	1.0	9	SF5
		10	529	43.50	19	22.28	155	1.71	.95	1.4		14	2	163	.12	5	.5	.8	6	SSF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	10	721	5.93	19	22.50	155	2.60	7.98	2.2	2.0	17	1	160	.10	5	1.0	1.3	12	SF5
		10	730	15.32	19	21.62	155	1.37	.04		.8	10	0	172	.08	4	.8	1.3	5	SSF
		10	754	2.53	19	21.42	155	30.37	9.66	1.5		22	1	48	.09	5	.4	1.0	16	KAO
		10	946	19.69	19	21.20	155	2.75	4.65	1.5		20	3	137	.20	2	1.0	1.6	7	SSF
		10	1233	16.82	19	18.61	155	13.30	8.08	1.5	1.1	16	1	83	.08	3	.7	1.4	13	SF2
		10	1550	37.76	19	26.66	155	45.15	5.14	2.6	2.7	32	3	73	.12	7	.5	2.6	22	KON
		10	2123	30.59	19	19.30	155	8.81	7.21	1.5	.9	19	0	86	.08	4	.6	1.4	17	SF4
		10	2251	1.49	19	13.17	155	30.22	9.16	1.4		24	0	70	.13	4	.5	1.0	15	LSW
		11	051	57.18	19	19.90	155	13.01	7.92	1.5	1.1	19	1	71	.07	5	.6	1.1	15	SF2
		11	136	.92	19	20.17	155	12.93	8.35	1.6	1.3	21	2	70	.08	5	.6	1.0	17	SF2
		11	329	54.92	19	19.84	155	6.96	4.60	1.0	.3	13	0	139	.09	5	.7	3.2	9	SSF
		11	342	17.29	19	19.29	155	10.40	6.58	1.0	.3	10	0	119	.03	5	.9	3.0	9	SF3
		11	810	.61	19	32.84	155	37.63	6.74	1.7	1.2	28	2	120	.19	7	.7	1.7	22	MLO
		11	917	59.50	19	18.75	155	14.18	7.22	1.6	1.3	20	1	102	.10	3	.6	1.1	17	SF2
		11	1355	52.22	19	18.37	155	12.77	7.20	1.6	.9	18	1	105	.08	3	.6	1.3	12	SF2
		11	1417	49.99	19	40.51	155	3.70	11.15	2.8	2.3	26	0	204	.15	28	1.0	1.1	19	HIL L
		11	1449	55.56	19	20.23	155	3.96	4.15	1.4	1.1	16	0	126	.08	2	.6	.9	10	SSF
		11	1523	49.83	19	21.24	155	.56	2.16	1.7	.6	24	2	185	.16	5	.8	1.4	15	SSF
		11	1546	58.96	19	19.87	155	7.37	6.52	1.4	.9	18	1	104	.10	5	.9	2.7	15	SF4
		11	1722	28.48	19	21.12	155	2.61	3.39	1.6	1.6	17	1	136	.08	2	.5	.7	13	SSF
		11	1737	51.52	19	19.84	155	13.55	7.35	1.1	.3	17	1	71	.06	5	.5	1.2	12	SF2
		11	18 2	23.49	19	20.73	155	6.20	6.82	1.5	.3	20	2	103	.10	4	.5	1.0	12	SF4
		11	1932	13.03	19	19.56	155	7.35	7.23	1.5	.9	23	3	110	.09	4	.6	1.3	17	SF4
		11	1949	46.95	19	22.86	155	7.48	2.97	1.2	.8	13	1	101	.07	2	.7	.5	9	SER
		11	21 6	8.15	19	19.37	155	11.18	8.87	2.1	1.1	23	1	100	.06	6	.5	1.0	22	SF3
		11	23 4	24.19	19	22.79	155	26.87	9.79	1.6	.9	26	2	44	.09	1	.4	.8	16	KAO
		12	311	37.53	19	19.75	155	12.65	7.52	1.5	.9	18	1	78	.07	5	.6	1.1	14	SF2
		12	5 9	9.79	19	20.45	155	6.69	9.85	1.4	.7	22	1	104	.08	5	.6	1.2	15	SF4
		12	755	11.83	19	21.98	155	1.38	6.41	1.6	.3	24	2	156	.14	5	.7	1.1	13	SF5
		12	1032	57.88	19	20.61	155	3.29	6.20	1.2	.3	11	1	102	.05	1	.6	1.1	9	SF5
		12	1328	21.40	19	20.13	155	12.06	8.27	1.6	1.1	21	3	79	.06	5	.5	.9	16	SF3
		12	1347	39.40	19	19.90	155	26.21	29.07	2.0	1.2	35	1	55	.10	5	.7	1.5	30	DML
		12	1417	48.58	19	22.45	155	24.72	10.33	1.7	1.2	31	1	51	.10	5	.4	.7	24	KAO
		12	1743	43.65	19	18.18	155	16.38	5.06	1.4	1.1	23	3	120	.10	4	.5	1.2	14	SF1
		12	1843	28.87	19	23.32	155	1.65	3.23	1.5	1.1	14	0	174	.11	5	.8	1.4	6	SSF
		12	21 0	25.33	19	22.50	155	1.79	1.80	1.3	1.1	19	2	166	.13	6	.6	1.1	8	SSF
		13	129	38.13	19	25.70	155	24.50	8.26	1.8	.9	31	3	47	.11	1	.4	.9	23	KAO
		13	137	9.18	19	19.42	155	13.68	8.09	1.3	.3	16	1	78	.08	4	.6	1.3	12	SF2
		13	151	22.79	19	26.28	155	28.34	8.54	1.6	.4	25	2	63	.09	6	.4	1.1	16	KAO
		13	413	16.70	19	16.31	155	14.75	8.71	1.5	.7	17	0	236	.06	3	1.4	1.4	9	SF1
		13	450	53.48	19	24.40	155	.33	5.95	1.3		14	1	180	.11	3	.8	1.1	8	SF5
		13	5 3	8.46	19	21.38	155	2.78	6.54	1.3	.3	22	1	133	.13	3	.7	1.0	9	SF5
		13	536	1.05	19	21.99	155	2.59	7.51	1.3	.4	18	2	141	.14	4	.6	.9	6	SF5
		13	6 2	31.01	19	19.72	155	8.07	8.26	1.3	.6	17	0	90	.08	4	.6	1.5	10	SF4
		13	640	8.82	19	20.79	155	3.74	6.16	1.2		18	0	91	.10	2	.6	1.2	9	SF5
		13	838	19.09	19	16.70	155	15.45	3.90	1.1	.6	18	1	210	.12	4	.8	1.1	15	SSF
		13	852	35.02	19	17.03	155	15.53	11.12	3.0	3.0	29	0	151	.10	6	.7	.5	22	SF1
		13	9 9	16.75	19	19.63	155	8.03	6.30	1.3	.9	21	3	92	.07	4	.6	1.3	14	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JAN	13	1141	44.46	19	20.13	155	9.40	7.02	1.4	1.1	22	3	79	.09	4	.6	1.0	17	SF3	
		13	1443	.57	19	19.68	155	10.95	9.06	1.4	.3	18	1	93	.08	5	.7	1.3	12	SF3	
		13	1655	21.66	19	20.22	155	13.11	7.49	.9		13	1	66	.05	4	.5	1.5	12	SF2	
		13	1948	25.31	19	17.64	155	20.85	7.79	1.4	1.3	28	2	129	.12	4	.5	1.2	17	SWR	
		13	22 8	14.39	19	20.76	155	7.95	9.39	1.5	1.4	22	1	81	.05	4	.6	1.1	19	SF4	
		13	2226	43.38	19	20.88	155	3.02	8.54	1.8	.9	18	1	116	.08	2	.7	1.0	11	SF5	
		14	038	25.90	19	9.50	155	24.56	43.00	2.0	1.2	37	2	221	.08	9	1.1	1.3	30	LOI	
		14	135	59.76	19	20.43	155	9.60	7.28	1.1		17	3	102	.06	3	.6	1.0	8	SF3	
		14	2 5	31.96	19	25.91	155	25.15	6.91	1.1	.6	15	1	74	.09	1	.5	1.2	12	KAO	
		14	310	34.90	19	21.36	155	17.19	1.53	2.5	3.2	31	2	50	.13	2	.3	.4	19	SWR	
		14	522	57.68	19	18.87	155	13.73	7.02	1.3	.6	18	2	88	.10	3	.6	1.2	13	SF2	
		14	548	11.06	19	21.93	155	1.14	4.46	1.9	1.1	24	1	162	.14	5	.6	2.6	18	SSF	
		14	6 9	1.30	19	20.17	155	3.93	4.81	1.5	.9	16	2	130	.06	2	.5	1.1	12	SSF	
		14	6 9	28.92	19	21.66	155	3.47	1.80	1.3	.3	13	2	100	.12	3	.4	.9	8	SSF	
		14	617	59.61	19	20.55	155	9.18	11.43	1.5	.7	25	3	69	.06	3	.6	1.0	18	SF3	
		14	646	22.34	19	19.06	155	9.69	3.40	1.0	.3	18	1	105	.08	4	.4	1.3	14	SSF	
		14	7 9	52.21	19	19.02	155	8.94	8.03	1.9	1.8	35	1	96	.09	4	.5	.7	25	SF4	
		14	747	59.72	19	20.07	155	6.46	6.63	1.1	.9	17	0	116	.07	5	.5	1.3	9	SF4	
		14	759	44.07	19	20.81	155	7.97	8.11	1.6	1.1	21	2	79	.06	4	.6	1.1	15	SF4	
		14	1032	35.63	19	22.13	155	15.44	33.37	2.3	2.1	38	0	57	.08	1	.8	1.2	34	DEP	
		14	15 0	46.94	19	19.56	155	6.76	6.77	1.6	1.5	21	0	124	.09	5	.6	1.6	18	SF4	
		14	1522	39.87	19	20.96	155	2.28	2.73	1.0	.6	6	1	173	.04	2	1.8	2.3	6	SSF	
		14	1910	46.74	19	19.85	155	11.77	6.35	1.8	2.3	26	1	86	.09	5	.5	1.0	21	SF3	
		14	2028	27.08	19	20.02	155	8.22	8.62	2.1	2.5	37	2	83	.07	5	.4	.6	26	SF4	
		14	2313	20.78	19	22.99	155	2.17	3.32	1.3	1.1	16	2	193	.09	5	.7	1.1	9	SSF	
		15	029	35.81	19	37.28	156	26.60	13.70	3.2	3.0	44	3	238	.13	64	1.8	3.5	32	DIS	
		15	036	3.78	19	3.96	155	20.96	31.14	2.0	1.5	32	0	209	.07	16	1.0	1.9	28	LOI	
		15	111	32.51	19	20.13	155	8.14	6.55	1.1	.6	14	1	84	.11	5	.7	1.2	6	SF4	
		15	210	53.70	19	24.85	155	51.37	8.05	1.7	1.3	19	2	136	.12	10	.7	1.5	8	KON	
		15	3 8	2.52	19	20.64	155	9.02	11.03	1.0	.4	18	2	68	.10	3	.7	1.2	12	SF4	
		15	420	42.04	19	20.56	155	7.40	7.87	1.5	1.3	25	4	92	.10	5	.6	1.0	18	SF4	
		15	549	29.03	19	20.23	155	13.25	7.44	1.0	.9	18	2	65	.05	4	.5	1.1	14	SF2	
		15	840	7.43	19	18.19	155	13.27	5.75	1.4	1.1	20	2	90	.11	2	.6	1.6	16	SF2	
		15	855	6.48	19	17.93	155	12.91	6.50	1.4	1.2	21	4	115	.09	2	.5	1.1	14	SF2	
		15	9 5	5.82	19	20.80	155	13.17	8.30	1.1	.6	16	3	76	.07	3	.6	1.0	9	SF2	
		15	917	18.77	19	18.93	155	8.85	5.80	1.4	1.0	17	1	96	.06	3	.5	1.6	11	SF4	
		15	1122	37.66	19	21.72	155	1.89	6.91	1.8	1.5	24	4	157	.13	4	.6	.9	12	SF5	
		15	1236	26.95	19	21.97	155	2.02	5.31	1.5	1.1	20	2	143	.13	4	.6	1.5	8	SF5	
		15	2256	58.27	19	18.60	155	14.02	6.36	1.4	1.3	21	0	101	.13	3	.6	1.3	18	SF2	
		15	2346	54.67	19	20.62	154	59.53	7.63	2.3	2.5	38	3	199	.18	6	.9	.7	23	LER	
		16	2 8	5.04	19	20.58	155	3.74	8.07	2.7	3.2	42	4	101	.11	2	.6	.4	35	SF5	
		16	357	54.17	19	19.40	155	15.35	7.05	.9	.6	17	1	104	.06	4	.5	1.1	12	SF1	
		16	4 9	42.00	19	19.99	155	3.34	8.40	1.4	.7	11	0	186	.08	1	1.4	1.4	6	SF5	
		16	425	32.02	19	27.46	155	26.48	14.23	1.9		26	1	63	.11	5	.4	.6	19	DML	
		16	436	53.06	19	19.80	155	13.28	7.21	1.6	1.1	20	2	69	.09	5	.6	1.1	17	SF2	
		16	514	43.81	19	21.49	155	.15	.01	1.9	2.3	27	2	186	.28	6	1.2	.8	13	SSF	*
		16	558	5.45	19	21.52	155	3.00	5.62	1.3	.9	16	2	129	.15	3	.9	1.7	9	SF5	
		16	627	3.76	19	19.19	155	8.96	5.94	1.3	.6	16	0	92	.05	4	.6	1.6	12	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JAN	16	655	58.74	19	19.48	155	9.02	6.22	1.6	1.5	31	3	86	.11	4	.5	1.2	22	SF4	
		16	733	53.65	19	21.23	155	7.36	9.24	3.9	3.9	48	4	82	.11	4	.4	.3	44	SF4	F
		16	747	8.77	19	20.74	155	7.41	8.22	2.3	2.3	42	3	88	.08	5	.4	.6	29	SF4	
		16	812	8.57	19	22.59	155	23.91	6.15	1.5	1.1	21	3	50	.10	5	.5	1.2	18	KAO	
		16	813	59.88	19	19.24	155	11.77	9.30	1.7	1.5	26	5	99	.08	5	.5	.8	23	SF3	
		16	1158	23.10	19	19.76	155	4.45	5.05	1.3	1.1	19	5	152	.08	3	.5	.9	15	SF5	
		16	1243	12.73	19	19.64	155	5.97	6.81	1.3	1.3	20	3	136	.11	5	.5	1.1	14	SF4	
		16	1356	7.22	19	21.87	155	30.36	10.04	1.9	1.5	30	1	45	.09	5	.5	1.0	29	KAO	
		16	1422	33.73	19	20.30	155	3.77	6.85		.3	22	3	119	.12	2	.5	.7	17	SF5	
		16	1711	1.29	19	30.63	155	39.16	8.18	2.0	1.6	26	5	103	.13	6	.5	.9	24	MLO	
		16	1826	39.85	19	19.42	155	14.09	8.52	2.1	2.1	38	1	77	.09	5	.4	.6	34	SF2	
		16	1950	19.45	19	19.81	155	12.54	7.96	.9		15	2	164	.05	5	.7	1.4	10	SF2	
		16	20 5	31.89	19	17.89	155	13.88	6.26	.9		15	1	117	.07	2	.6	1.4	13	SF2	
		17	131	11.90	19	20.05	155	10.48	6.90	1.6	.9	20	3	86	.11	4	.6	1.3	11	SF3	
		17	2 3	38.20	19	26.04	154	55.66	5.60	1.8	1.6	29	2	157	.13	3	.8	1.1	20	LER	
		17	313	37.63	19	20.48	155	13.15	8.01	1.2	.6	19	1	63	.08	4	.6	1.1	14	SF2	
		17	351	35.32	19	19.57	155	8.67	6.90	1.6	.9	21	3	78	.08	4	.6	1.1	11	SF4	
		17	5 2	17.40	19	18.00	155	14.83	7.43	.8		13	0	144	.04	3	.8	1.6	10	SF1	
		17	653	10.09	19	20.14	155	13.46	5.31	.8		17	2	68	.13	5	.5	1.8	11	SF2	
		17	718	23.88	19	25.66	154	54.28	7.06	1.5	1.0	17	1	177	.13	6	1.0	1.5	8	LER	
		17	758	57.55	19	24.91	155	25.52	7.11	1.2	.9	28	4	50	.12	1	.4	.8	17	KAO	
		17	8 5	50.11	19	26.25	155	38.24	4.05	2.6	2.2	23	1	195	.12	4	.8	1.5	16	MLO	
		17	13 0	53.31	19	13.64	155	27.82	5.49	2.1	1.7	33	2	102	.15	5	.5	1.3	21	LSW	
		17	14 3	45.01	19	20.50	155	3.40	6.10	1.1	.3	11	1	132	.07	1	.7	.9	7	SF5	
		17	1422	49.01	19	19.79	155	7.77	6.52	2.0	1.8	36	4	97	.11	5	.5	1.0	30	SF4	
		17	1728	59.67	19	21.21	155	4.80	8.42	2.8	3.1	39	1	92	.07	4	.5	.4	32	SF5	
		17	1758	24.81	19	16.22	155	22.82	3.06	1.0	.8	16	1	127	.07	4	.5	1.2	11	SWR	
		17	1937	13.58	19	19.60	155	10.13	7.22	1.6	.9	19	2	94	.13	5	.7	1.6	11	SF3	
		17	1955	30.91	19	19.54	155	12.39	4.49	.8		13	0	86	.10	5	.5	2.5	9	SSF	
		17	2325	8.17	19	18.85	155	15.16	8.39	.4		9	0	118	.06	5	.9	2.1	7	SF1	
		17	2325	50.82	19	18.58	155	15.12	8.48	1.0	.6	14	2	126	.03	4	.7	1.7	13	SF1	
		18	219	2.55	19	40.11	155	59.05	1.58	2.6	1.8	25	3	222	.20	15	1.5	1.0	15	HUA	
		18	3 5	47.46	19	22.08	155	1.68	5.20	1.6	.9	25	2	157	.14	5	.7	1.9	18	SF5	
		18	5 8	51.06	19	18.60	155	13.42	7.14	1.1	.3	14	1	81	.07	3	.6	1.3	10	SF2	
		18	934	6.52	19	20.34	155	11.81	8.35	1.3		18	2	77	.08	5	.6	1.0	14	SF3	
		18	948	48.31	19	20.62	155	12.80	8.90	1.6	1.1	23	3	65	.06	4	.5	.8	16	SF2	
		18	11 0	41.45	19	18.70	155	12.94	5.99	1.0	.3	16	1	92	.10	3	.6	1.7	13	SF2	
		18	1218	44.37	19	19.85	155	11.39	8.50	1.8	1.5	25	4	88	.06	5	.5	.9	19	SF3	
		18	1238	39.00	19	21.65	154	59.71	.24	1.8	2.3	21	0	187	.22	7	1.2	2.8	17	SLE	F*
		18	1249	54.86	19	23.99	155	25.23	9.95	1.4	.9	26	1	46	.10	2	.4	1.0	20	KAO	
		18	15 8	48.93	19	16.51	155	13.10	6.45	1.7	1.8	27	2	185	.12	1	.8	.7	20	SF2	
		18	1646	14.89	19	22.44	155	1.88	1.24	1.2	.6	15	2	166	.11	6	.5	.9	7	SSF	
		18	1653	35.50	19	18.95	155	13.19	7.91	1.5	1.1	22	2	81	.07	4	.5	1.0	18	SF2	
		18	17 0	56.22	19	19.64	155	8.15	8.00	2.5	2.4	45	4	89	.10	4	.4	.6	35	SF4	
		18	1822	46.64	19	19.05	155	11.60	7.69	1.2	.6	16	0	106	.05	5	.6	1.4	15	SF3	
		18	2041	11.65	19	20.87	155	2.31	7.11	2.4	2.3	35	2	155	.12	2	.5	.5	27	SF5	
		18	2050	51.73	19	23.91	155	28.57	9.09	1.5	.3	23	2	68	.06	3	.4	.9	18	KAO	
		18	2159	21.57	19	20.71	155	3.13	5.53	1.7	.9	19	3	116	.12	2	.5	1.1	14	SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JAN	19	1 3	48.99	19	22.22	155	.85	6.64	1.9	1.3	24	2	161	.13	6	.7	1.1	18	SF5	
		19	233	16.33	19	19.97	155	10.50	7.92	1.6	.9	23	4	87	.10	4	.6	.9	19	SF3	
		19	234	2.14	19	19.79	155	10.30	6.78	1.4	1.1	22	3	91	.08	4	.5	1.1	16	SF3	
		19	242	25.66	19	21.17	154	59.56	.04	2.5	3.1	38	1	194	.24	6	.9	.8	21	SLE	*
		19	424	55.22	19	23.40	155	25.66	6.78	1.4	.9	22	2	47	.09	4	.4	.9	17	KAD	
		19	437	31.30	19	24.74	155	16.78	15.86	2.3	2.3	49	5	37	.15	1	.4	.4	41	DEP	
		19	642	29.78	19	16.71	155	22.13	7.14	1.9	2.5	47	3	130	.14	6	.5	.7	32	SWR	
		19	820	50.46	19	21.04	154	59.46	.02	2.4	2.8	32	2	196	.18	6	.9	.6	11	SLE	*
		19	1033	11.32	19	19.90	155	8.10	8.87	1.8	1.5	22	1	87	.07	5	.6	1.2	19	SF4	
		19	11 1	39.15	19	20.27	155	7.04	8.51	2.1	2.1	37	1	102	.14	5	.5	.7	25	SF4	
		19	1143	1.06	19	21.28	155	2.43	6.94	2.4	2.5	39	4	141	.12	3	.5	.6	27	SF5	
		19	1415	52.18	19	21.13	155	3.20	4.69	1.3		17	0	115	.15	2	.8	1.6	10	SSF	
		19	1449	32.77	19	15.38	155	20.29	5.80	1.0	.6	11	1	241	.04	10	1.7	7.2	9	SWR	
		19	1514	7.69	19	19.33	155	10.06	6.26	1.4	1.1	29	1	101	.10	5	.5	1.1	26	SF3	
		19	17 4	34.41	19	17.56	155	12.90	5.04	1.3	.3	20	3	134	.08	1	.6	.9	9	SF2	
		19	1717	41.00	19	18.42	155	13.47	8.71	1.1		18	2	86	.08	3	.6	1.1	13	SF2	
		19	1718	26.46	19	19.05	155	13.78	8.48	1.5	1.1	22	2	86	.06	4	.5	.9	16	SF2	
		19	1727	14.14	19	18.68	155	13.60	8.14	1.0		16	2	87	.06	3	.6	1.2	12	SF2	
		19	1815	31.13	19	19.49	155	9.94	8.06	2.2	2.3	41	3	96	.10	5	.4	.6	30	SF3	
		19	1859	11.47	19	21.62	155	4.90	11.11	1.4	.7	26	4	83	.08	4	.5	.7	14	SF5	
		19	19 3	38.42	19	21.76	155	5.04	12.84	1.3		18	0	118	.08	3	1.0	1.7	13	SF5	
		19	2024	20.86	19	17.72	155	12.89	7.21	1.9	1.9	35	2	125	.12	2	.5	.9	28	SF2	
		19	2237	48.09	19	17.55	155	12.79	5.37	1.5	.6	14	0	139	.09	2	.7	1.5	10	SF2	
		19	2332	31.45	19	21.77	155	2.40	6.44	1.6		18	1	147	.12	4	.7	1.3	10	SF5	
		20	010	12.04	19	18.10	155	12.99	6.52	2.0	1.9	38	2	105	.14	2	.5	1.0	31	SF2	
		20	215	49.27	19	20.74	155	12.44	9.36	1.2		15	1	78	.07	4	.8	1.2	8	SF2	
		20	435	41.61	19	26.98	155	13.80	32.95	1.6	.3	22	0	127	.07	4	1.1	2.7	14	DEP	
		20	1140	30.88	19	21.13	155	24.89	9.00	2.0	2.3	25	3	53	.11	3	.4	.8	25	SWR	
		20	1244	29.53	19	21.15	155	24.97	9.37	1.7	1.5	20	3	53	.10	3	.5	1.0	18	SWR	
		20	1329	49.94	19	19.95	155	7.92	7.56	2.5	2.6	32	2	117	.13	5	.6	.8	30	SF4	
		20	1341	15.59	19	19.18	155	8.35	6.33		1.3	25	4	87	.09	3	.5	.9	28	SF4	
		20	1358	24.69	19	18.51	155	27.91	.03	1.9	2.2	13	0	112	.12	7	.6	3.2	13	LSW	B*
		20	1629	.32	19	19.79	155	13.73	8.43	2.8	3.2	38	2	119	.11	5	.4	.6	36	SF2	
		20	1727	42.93	19	21.09	155	12.46	10.92		1.0	17	1	88	.11	3	.7	1.1	15	SF2	
		20	1750	40.35	19	20.99	155	2.63	5.40		1.1	24	2	145	.14	2	.7	1.3	23	SF5	
		20	2038	32.81	19	20.94	155	12.95	8.90	1.6	1.2	23	0	60	.09	3	.6	1.0	22	SF2	
		20	2123	38.91	19	19.78	155	7.59	6.80	1.8	1.8	32	2	101	.09	5	.6	.9	32	SF4	
		21	046	4.01	19	21.51	155	7.36	7.02	2.5	3.1	40	2	78	.12	3	.4	.8	38	SF4	
		21	122	36.12	19	25.65	155	37.83	1.22	2.8	3.2	31	0	96	.11	4	.5	1.3	31	MLO	
		21	422	35.06	19	17.88	155	20.77	7.37	2.3	2.6	37	2	125	.10	4	.4	.8	34	SWR	
		21	520	24.01	19	17.33	155	32.71	.09		1.2	22	2	108	.13	6	.5	.9	20	LSW	*
		21	548	49.58	19	46.56	155	59.97	7.07		1.6	19	1	245	.13	20	2.2	1.0	18	HUA	
		21	646	36.61	19	22.49	155	.43	3.94	1.6	.9	22	2	172	.21	6	1.1	3.2	22	SSF	
		21	647	33.35	19	20.55	155	3.15	4.42	2.0	2.5	28	1	104	.11	1	.6	1.1	26	SSF	
		21	859	42.36	19	20.91	154	59.03	.01	2.3	3.1	31	2	200	.22	7	1.0	.8	19	SLE	*
		21	921	50.14	19	16.46	155	21.29	6.93	1.8	2.0	41	4	137	.13	5	.5	.7	25	SWR	
		21	956	10.87	19	19.86	155	6.98	7.53	1.2	1.0	19	1	112	.11	5	.6	1.4	10	SF4	
		21	1232	4.69	19	19.89	155	5.19	5.35	1.4	1.1	17	3	137	.07	4	.5	1.9	8	SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JAN	21	1844	54.84	19	19.47	155	7.99	6.15	1.1	.6	19	3	95	.08	4	.5	1.4	8	SF4	
		21	1958	56.99	19	19.57	155	15.24	7.58	1.0	.9	18	1	92	.06	4	.5	1.1	13	SF1	
		21	2136	38.24	19	19.86	155	10.19	7.48	1.3	.6	19	3	89	.07	4	.5	1.0	11	SF3	
		21	22 9	16.24	19	22.96	155	2.23	6.95	2.4	2.5	34	2	127	.18	5	.5	.8	17	SF5	F
		21	2213	49.54	19	21.86	154	59.17	3.86	1.9	1.5	22	1	189	.18	6	1.0	3.2	16	SLE	
		22	059	22.03	19	25.17	154	55.83	4.84	1.7	1.2	18	0	170	.13	5	.9	2.3	9	SLE	
		22	1044	1.52	19	21.15	155	3.24	6.88	1.3	1.2	17	2	164	.18	2	.9	1.1	11	SF5	
		22	1225	7.66	19	20.99	155	12.81	26.74	1.6	1.4	28	0	61	.08	3	1.0	1.5	26	DEP	
		22	2017	41.36	19	23.04	154	59.42	4.99	1.9	1.2	24	2	177	.19	4	1.0	2.0	16	SLE	
		22	2246	23.56	19	16.73	155	24.05	4.73	1.3	1.3	16	2	91	.13	4	.5	2.5	10	SWR	
		23	246	33.13	19	23.32	155	25.09	9.86	1.7	1.8	32	1	37	.11	4	.4	.7	23	KAD	
		23	442	11.03	19	16.48	155	22.63	2.34		1.0	14	1	126	.08	5	.4	1.1	10	SWR	
		23	719	7.04	19	18.99	155	13.53	8.72	2.0	2.5	41	3	138	.11	7	.5	.5	25	SF2	
		23	741	6.14	19	20.25	155	11.05	8.34	1.5	1.1	20	2	82	.05	4	.6	1.1	16	SF3	
		23	1011	18.35	19	22.06	155	3.38	11.05	1.8	1.7	26	5	104	.08	4	.5	.6	23	SF5	
		23	1013	39.86	19	22.76	155	3.58	12.04	3.3	3.5	46	6	99	.12	4	.5	.3	39	SF5	
		23	1044	23.45	19	22.33	155	3.50	10.90	1.9	1.6	25	4	101	.09	4	.5	.6	20	SF5	
		23	1046	46.62	19	22.78	155	3.60	12.02	3.5	3.9	48	5	99	.09	3	.4	.3	41	SF5	F
		23	1048	9.86	19	22.41	155	3.27	10.34	2.2	2.5	24	2	106	.07	4	.6	.8	20	SF5	
		23	1050	36.41	19	22.33	155	3.66	12.51	1.3	1.2	22	4	98	.08	4	.7	.6	18	SF5	
		23	11 6	42.98	19	22.13	155	3.32	11.21	1.4	1.5	27	6	105	.07	4	.5	.4	24	SF5	
		23	1240	30.72	19	22.27	155	3.45	11.91	1.5	1.4	28	5	102	.08	4	.5	.5	24	SF5	
		23	15 0	11.49	19	25.02	155	28.67	9.09	2.1	1.8	28	3	64	.12	5	.4	.9	26	KAD	
		23	1612	35.29	19	20.95	155	4.48	3.70	1.6	1.1	12	3	98	.17	3	.6	1.3	9	SSF	
		23	1721	48.07	19	19.65	155	7.02	6.48	1.2	1.2	21	4	117	.09	5	.5	1.3	18	SF4	
		23	1755	20.52	19	21.86	155	1.63	6.73	1.4	1.2	26	3	153	.12	4	.6	1.0	23	SF5	
		23	18 0	24.92	19	21.49	155	1.85	9.53	4.3	4.3	47	2	155	.11	4	.7	.4	45	SF5	F
		23	18 9	23.82	19	21.11	155	1.59	8.96	1.2	.9	23	4	170	.10	3	.5	.6	18	SF5	
		23	2014	57.40	19	19.04	155	13.52	5.57	1.6	1.2	22	2	80	.14	4	.5	1.4	21	SF2	
		23	23 4	45.66	19	20.01	155	6.55	9.20	1.4	1.2	20	1	116	.07	6	.6	1.3	18	SF4	
		24	057	1.42	19	18.95	155	13.76	7.66	1.1	1.0	18	3	88	.07	4	.5	1.1	17	SF2	
		24	143	32.85	19	23.70	155	26.93	10.25		1.1	21	3	51	.09	3	.5	.7	18	KAD	
		24	349	31.80	20	3.31	155	49.11	27.59		2.0	31	4	202	.11	9	.9	1.4	29	KOH	
		24	637	57.74	19	19.90	155	6.91	8.68	1.0	.7	15	2	113	.08	5	.6	1.3	14	SF4	
		24	659	33.66	19	21.46	155	1.99	9.63	1.5	1.2	25	5	152	.06	3	.5	.5	22	SF5	
		24	725	37.96	19	22.03	155	2.33	7.88	1.1	.9	20	5	146	.13	4	.6	.8	18	SF5	
		24	1055	.96	19	19.32	155	15.36	10.12	1.0	.7	13	2	108	.05	4	.7	1.5	11	SF1	
		24	1145	50.82	19	19.85	155	13.15	8.83	1.0	.3	13	2	115	.08	5	.6	1.4	11	SF2	
		24	12 5	37.36	19	20.21	155	11.52	8.37	1.2	.3	13	2	90	.05	5	.6	1.6	11	SF3	
		24	1647	13.99	19	20.44	155	4.06	6.30	1.2	.3	18	1	114	.11	2	.6	1.2	17	SF5	
		24	1849	4.48	19	18.79	155	13.91	7.96	1.0	.9	15	2	94	.06	3	.6	1.3	13	SF2	
		24	2258	58.68	19	12.59	155	27.53	7.20	2.0	1.6	26	3	115	.15	6	.6	1.5	23	LSW	
		24	23 6	52.06	19	18.22	155	15.13	7.87	1.0	.3	14	3	140	.04	4	.6	1.2	13	SF1	
		24	23 8	28.23	19	13.77	155	27.28	9.72	3.3	3.5	45	2	140	.15	6	.6	.7	42	LSW	
		24	2317	36.35	19	25.99	155	27.69	7.11	2.1	1.7	27	4	87	.11	5	.4	1.0	25	KAD	
		24	2324	16.50	19	21.86	155	29.94	7.99	1.9	1.7	30	1	44	.13	4	.4	1.0	17	KAD	
		25	057	3.79	19	19.73	155	6.52	8.85	1.9	1.5	22	1	124	.08	5	.7	1.2	18	SF4	
		25	136	37.36	19	20.30	155	12.21	8.08	1.0	.3	15	1	74	.07	5	.6	1.2	7	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	25	554	44.30	19	21.82	155	1.82	6.73	1.6	1.3	24	1	150	.13	4	.6	1.2	13	SF5
		25	942	32.83	19	19.67	155	6.64	7.90	1.7	1.1	18	1	124	.07	5	.6	1.4	13	SF4
		25	952	21.37	19	21.51	155	6.81	7.83	1.3	1.1	11	1	157	.04	3	.6	1.2	9	SF4
		25	1054	37.73	19	20.84	155	11.22	7.53	2.1	1.9	37	3	72	.15	3	.5	.9	27	SF3
		25	1151	26.57	19	20.00	155	6.57	7.51	2.5	2.4	37	5	116	.11	5	.4	.7	29	SF4
		25	15	0 45.49	19	20.69	155	13.28	8.57	2.1	2.3	28	1	60	.08	4	.4	.5	23	SF2
		25	15	3 9.91	19	20.10	155	13.23	6.59		1.1	20	2	67	.12	5	.6	1.1	16	SF2
		25	1517	32.49	19	21.89	155	2.49	8.76	2.1	2.1	30	1	131	.08	4	.5	.7	26	SF5
		25	1526	27.11	19	21.82	155	2.32	6.94	1.3	.3	17	1	149	.08	4	.5	1.2	12	SF5
		25	18	7 17.64	19	19.68	155	6.86	5.92	1.2	.9	23	2	119	.10	5	.6	1.3	23	SF4
		25	23	6 25.35	19	23.95	155	27.72	8.75	1.8	1.3	31	2	57	.12	3	.4	.8	20	KAO
		26	913	53.29	19	21.08	155	3.50	3.83		.6	16	1	107	.27	2	1.1	1.8	9	SSF
		26	1052	37.04	19	19.10	155	12.33	6.48			18	1	96	.08	4	.6	1.4	13	SF2
		26	1338	34.35	19	8.54	155	30.54	11.47	3.1	3.1	36	0	155	.15	5	.7	.6	28	LSW F
		26	1450	46.85	19	22.35	155	1.28	3.99		.6	16	1	161	.09	5	.6	2.0	10	SSF
		26	1557	58.06	19	22.47	155	25.31	10.49	3.2	3.2	48	4	32	.14	4	.4	.5	42	KAO
		26	1739	26.78	19	16.82	155	21.38	5.37	1.9	2.2	32	5	132	.10	5	.3	1.4	28	SWR
		26	1929	32.55	19	19.51	155	4.21	7.59		1.1	19	8	168	.08	2	.5	.8	17	SF5
		26	2027	28.90	19	8.86	155	30.52	10.30		1.2	23	1	147	.13	5	.7	1.0	22	LSW
		26	2043	29.08	19	19.82	155	6.76	7.46		.9	16	3	117	.06	5	.5	1.1	14	SF4
		26	2226	20.10	19	11.03	155	42.21	3.00	2.5	1.5	22	3	181	.27	12	1.3	3.0	19	LSW
		26	2347	33.77	19	19.19	155	12.05	6.08		.3	14	3	97	.08	5	.4	1.4	13	SF3
		27	2	4 14.73	19	22.19	155	24.50	6.75	2.4	2.5	32	4	41	.13	4	.5	.8	26	KAO
		27	626	39.75	19	20.25	155	3.68	5.53	1.9	2.1	34	5	120	.10	1	.4	.7	31	SF5
		27	636	25.48	19	21.15	155	2.09	8.49	1.6	.9	19	4	156	.06	3	.5	.7	16	SF5
		27	1039	9.74	19	24.08	155	26.62	8.67	1.8	1.1	29	4	49	.12	3	.4	.8	27	KAO
		27	1130	18.81	19	26.53	155	37.16	3.12	2.3	1.5	14	3	182	.10	2	.7	.5	13	MLO
		27	1130	53.25	19	26.40	155	38.84	2.36	2.6	2.5	18	4	209	.11	5	.6	.8	16	MLO
		27	13	8 35.42	19	23.54	155	15.12	1.51	1.4	2.4	11	1	96	.07	3	.3	.5	9	SEC
		27	1553	16.70	19	23.80	155	15.21	1.74	1.2	2.2	6	0	99	.06	2	.4	.7	6	SEC
		27	1649	55.19	19	22.08	155	2.11	7.84		1.3	20	5	138	.12	4	.5	.7	14	SF5
		27	1911	30.14	19	11.46	155	11.90	47.19		1.8	36	0	195	.09	11	1.1	2.0	31	DEP
		27	1927	34.79	19	19.02	155	11.35	5.91		1.5	26	2	109	.10	5	.5	1.2	16	SF3
		27	2341	45.69	19	22.02	155	25.59	9.87	1.9	2.3	32	3	43	.12	4	.4	.8	27	KAO
		27	2347	53.62	19	17.93	155	13.14	6.56		1.5	18	1	103	.07	2	.5	1.2	15	SF2
		28	033	16.05	19	23.48	155	26.36	10.95	2.3	2.6	38	3	46	.11	3	.4	.6	34	KAO
		28	322	56.42	19	20.15	155	11.78	9.09	2.3	2.8	36	0	81	.12	5	.5	.7	32	SF3
		28	1032	9.11	19	22.13	155	4.80	7.46	2.0	2.1	30	2	74	.14	3	.5	.8	26	SF5
		28	1526	11.06	19	19.83	155	10.58	7.41		.6	11	0	91	.03	4	.7	1.8	10	SF3
		28	16	4 23.08	19	19.82	155	12.68	9.55		1.1	19	1	77	.07	5	.7	1.1	17	SF2
		28	2024	44.18	19	19.99	155	13.04	7.94		.3	12	1	70	.06	5	.6	1.6	11	SF2
		29	334	54.47	19	19.17	155	11.73	4.27		.6	14	2	101	.08	5	.4	1.9	13	SSF
		29	515	53.28	19	19.07	155	11.25	8.19		.3	15	1	108	.06	5	.6	1.3	14	SF3
		29	517	37.59	19	19.16	155	10.17	6.87		.6	16	1	106	.05	5	.5	1.3	15	SF3
		29	849	22.89	19	19.44	155	10.96	8.32		.9	17	3	105	.07	5	.5	1.0	16	SF3
		29	1134	16.57	19	19.35	155	10.56	8.62	1.4	1.7	18	1	101	.06	5	.6	1.2	17	SF3
		29	1241	5.91	19	19.01	155	9.27	6.52		.3	17	1	101	.07	4	.5	1.5	15	SF3
		29	1246	17.43	19	19.09	155	13.98	7.96		.3	17	2	90	.06	4	.5	1.2	16	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JAN	29	14	0 20.34	19	21.99	155	6.19	7.86		.6	15	2	89	.07	2	.5	.8	14	SF4
		29	1437	2.25	19	19.73	155	12.84	8.57		.9	16	1	76	.05	5	.5	1.2	15	SF2
		29	1856	10.54	19	19.07	155	9.93	6.32	1.4	1.3	23	1	107	.08	5	.4	1.0	20	SF3
		29	1925	6.03	19	20.34	155	12.83	8.77		.6	14	1	69	.05	4	.5	1.3	13	SF2
		29	2110	47.08	19	20.58	155	12.86	8.93		.3	9	1	88	.05	4	.7	1.2	8	SF2
		29	22	0 16.20	19	20.62	155	13.05	6.95		.3	14	1	64	.06	4	.4	1.4	13	SF2
		30	144	32.54	19	10.97	155	36.38	7.42	2.8	2.7	40	5	96	.19	7	.6	.8	37	LSW
		30	214	56.39	19	15.88	155	26.99	8.81	1.5	1.7	25	1	70	.17	6	.4	.7	11	LSW
		30	519	6.93	19	19.28	155	11.87	7.17		.3	13	1	97	.04	5	.5	1.5	12	SF3
		30	542	11.30	19	24.58	155	3.07	3.23		.6	10	1	96	.05	2	.5	.5	9	SME
		30	645	18.49	19	37.17	155	17.23	45.93		.9	26	0	199	.07	17	1.4	3.8	21	KEA
		30	7	9 56.85	19	20.60	155	9.36	7.93		.9	20	1	71	.06	3	.5	.9	14	SF3
		30	959	55.80	19	20.24	155	3.64	5.67		.9	25	4	120	.16	1	.6	1.0	14	SF5
		30	1151	20.85	19	19.39	155	10.39	7.33		.3	16	0	100	.05	5	.6	1.5	12	SF3
		30	1152	40.87	19	21.06	155	3.38	4.91	1.3	.9	21	2	106	.20	2	.7	1.6	11	SSF
		30	1236	35.41	19	19.49	155	11.68	7.84		.6	17	2	94	.08	6	.6	1.2	12	SF3
		30	1650	1.01	19	19.34	155	11.59	7.11	1.4	1.3	22	0	99	.11	5	.5	.9	19	SF3
		30	2238	25.66	19	19.30	155	11.61	7.48		1.3	13	0	99	.06	5	.7	1.9	11	SF3
		30	2258	23.45	19	21.19	155	1.94	5.91	1.9	1.8	21	0	159	.11	3	.5	.7	12	SF5
		31	041	29.53	19	18.29	155	13.44	6.55		.6	13	0	96	.07	2	.6	1.4	10	SF2
		31	248	39.32	19	19.55	155	6.98	7.65		.6	17	0	119	.08	4	.7	1.5	11	SF4
		31	7	0 11.18	19	19.08	155	8.61	6.68	1.4	1.5	22	0	86	.09	3	.6	1.3	18	SF4
		31	836	52.35	19	20.69	155	3.34	8.29	1.4	1.2	19	0	101	.11	2	.6	.9	10	SF5
		31	944	20.74	19	24.75	155	24.83	6.33	1.6	.9	20	1	100	.13	1	.5	1.2	15	KAO
		31	1038	51.12	19	21.09	155	3.41	6.79	2.1		31	1	106	.11	2	.5	.8	20	SF5
		31	1143	46.02	19	19.19	155	14.77	8.78		.6	11	0	102	.03	5	.7	1.5	8	SF1
		31	1241	27.40	19	19.88	155	6.12	8.11		.7	16	0	126	.07	6	.7	1.5	13	SF4
		31	1616	42.19	19	18.81	155	16.60	7.16	1.6	1.6	26	0	118	.15	3	.6	1.0	18	SF1
		31	1632	27.77	19	26.95	155	16.47	24.26	2.5	2.7	46	1	40	.20	3	.6	1.3	42	DEP
		31	1652	46.12	19	19.80	155	7.04	6.86	1.4	1.5	24	0	112	.11	5	.6	1.4	16	SF4
		31	1740	57.39	19	19.16	155	11.62	7.85		.9	14	0	103	.08	5	.7	1.6	9	SF3
		31	1914	21.04	19	19.66	155	10.32	5.75		.6	15	0	94	.09	6	.5	2.3	9	SF3
		31	1916	55.85	19	20.16	155	9.73	7.06		1.1	20	2	80	.09	4	.5	1.0	14	SF3
		31	20	0 19.32	19	20.64	155	13.26	8.45		.3	13	1	61	.07	4	.6	1.5	10	SF2
	FEB	1	649	44.57	19	27.96	155	27.10	10.48	2.7	2.9	44	3	57	.12	6	.4	.5	35	KAO
		1	9	9 35.32	19	25.96	154	55.02	5.08	1.7	1.5	20	2	183	.11	3	.9	1.3	18	LER
		1	1110	1.01	19	16.68	155	21.14	6.76	1.8	1.3	19	1	143	.10	5	.6	1.6	15	SWR
		1	1137	23.37	19	18.90	155	10.08	6.74		.3	12	0	113	.04	5	.6	1.7	9	SF3
		1	1138	39.05	19	18.95	155	10.17	6.63		.9	16	0	112	.08	5	.6	1.6	13	SF3
		1	1326	16.73	19	16.56	155	22.27	4.58		1.4	17	1	131	.11	5	.5	3.4	13	SWR
		1	1438	35.63	19	18.41	155	27.92	.06	2.2	2.6	20	0	76	.12	7	.4	2.5	16	LSW R*
		1	1611	42.20	19	21.28	155	6.82	5.34		.9	22	0	86	.11	3	.5	1.3	22	SF4
		1	1835	2.10	19	20.66	155	2.92	6.21	2.9	3.0	39	3	124	.09	1	.4	.6	30	SF5
		1	1849	35.05	19	21.62	155	1.33	3.91	1.6	1.1	21	2	164	.13	4	.6	1.6	12	SSF
		1	19	1 20.00	19	20.34	155	8.40	6.56	1.9	1.8	28	1	78	.11	4	.4	.8	25	SF4
		1	1953	22.77	20	31.81	155	32.94	.90		1.9	28	1	313	.14	51	20.0	7.2	23	DIS *
		1	20	9 41.36	19	21.69	155	1.77	5.43	1.3	.6	22	3	152	.13	4	.7	1.5	13	SF5
		1	2245	43.03	19	20.62	155	4.00	5.87	1.7	1.5	17	1	105	.12	2	.7	1.2	11	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	FEB	2	1 1	58.85	19	19.12	155	13.86	7.58	1.6	1.5	32	1	75	.11	4	.5	.9	24	SF2
		2	221	48.91	19	18.99	155	11.47	3.94		.3	19	1	108	.14	5	.6	2.3	17	SSF
		2	238	10.20	19	27.12	155	36.23	2.12	2.6		28	0	97	.20	0	.6	.4	17	MLO
		2	520	23.18	19	26.38	155	38.48	2.77	2.2		17	0	202	.12	4	.9	1.0	15	MLO
		2	6 7	42.17	19	19.85	155	11.75	7.11		.6	20	2	86	.09	5	.6	1.1	16	SF3
		2	18 9	16.72	19	19.36	155	11.23	6.98		.3	15	1	101	.06	6	.5	1.2	14	SF3
		2	1946	22.66	19	19.98	155	6.53	9.88	3.3	3.4	44	2	117	.11	5	.6	.4	41	SF4
		2	2352	35.76	19	21.47	155	3.31	8.13	1.6	1.4	24	4	105	.08	3	.4	.6	16	SF5
		3	041	7.76	19	22.42	155	28.37	3.92	1.9	1.6	18	1	49	.12	1	.4	.6	16	KAO
		3	636	47.00	19	20.73	155	9.97	8.17		.3	18	1	72	.08	2	.5	1.0	15	SF3
		3	644	31.43	19	15.77	155	22.23	8.49	2.2	2.4	35	3	149	.15	4	.5	.9	23	SWR
		3	822	36.43	19	15.91	155	22.26	7.91		1.3	23	5	145	.12	4	.5	1.0	20	SWR
		3	1817	9.12	19	20.06	155	12.95	8.73		1.2	16	1	70	.06	5	.6	1.2	15	SF2
		3	1859	37.53	19	19.82	155	11.71	7.59	1.4	1.1	17	1	87	.09	5	.5	1.2	15	SF3
		3	2138	7.68	19	.36	155	27.55	39.38	2.6	1.8	31	1	212	.09	17	1.1	2.1	29	DLS
		3	2140	21.14	19	.65	155	27.39	40.70		1.6	26	1	224	.06	16	1.1	2.2	23	DLS
		3	2157	24.88	19	22.84	155	30.69	8.35	2.4	2.7	38	2	43	.12	5	.4	.7	34	KAO
		3	2215	23.97	19	23.00	155	30.69	8.00	2.0	1.1	24	1	76	.13	5	.5	1.1	15	KAO
		3	2330	28.21	19	19.10	155	13.64	4.28	1.5	1.1	27	1	70	.15	4	.4	1.5	13	SSF
		4	6 6	23.73	19	24.53	155	37.15	.01	2.2	1.8	10	0	85	.19	5	.7	3.1	7	MLO *
		4	622	18.71	19	52.60	155	42.28	17.30	2.7	2.2	40	2	137	.10	28	.6	13.0	37	KEA
		4	729	15.95	19	29.65	155	27.20	10.60	1.9	1.3	24	1	77	.11	4	.5	.8	17	KAO
		4	1347	50.52	19	18.87	155	20.52	7.79	1.6	1.8	35	5	101	.13	4	.4	.6	21	SWR
		4	1350	17.60	19	18.36	155	15.48	8.12		.9	15	0	139	.05	4	.6	1.3	12	SF1
		4	1624	.45	19	19.31	155	15.54	8.51	2.0	2.1	38	2	100	.11	4	.4	.6	27	SF1
		4	1717	19.52	19	21.60	155	3.64	6.51		.4	20	2	95	.14	3	.6	1.2	11	SF5
		4	1840	41.38	19	20.38	155	13.04	8.60	1.4	1.1	20	2	65	.06	4	.5	.9	15	SF2
		4	2245	11.60	19	18.18	155	15.63	6.87	1.5	.8	17	1	147	.09	4	.6	1.3	15	SF1
		5	2 5	3.26	19	14.54	155	32.56	6.87	1.4	1.3	29	0	113	.19	4	.7	1.3	20	LSW
		5	1046	59.85	19	25.69	155	37.67	2.66	2.3	2.4	25	2	95	.13	4	.4	.9	20	MLO
		5	18 9	33.42	19	19.99	155	3.93	7.39		1.6	27	3	142	.10	2	.6	.9	21	SF5
		5	2332	44.32	19	19.27	155	10.26	5.32	1.4	.9	30	2	103	.12	5	.6	1.6	23	SF3
		6	033	51.50	19	25.13	155	25.39	8.11	1.4	.8	26	2	50	.10	1	.4	.9	17	KAO
		6	358	12.50	19	37.35	155	22.26	12.51		.9	24	1	72	.11	12	.5	1.1	16	KEA
		6	510	22.21	19	20.43	155	3.56	8.71	2.1	2.0	34	3	104	.09	1	.5	.6	26	SF5
		6	1821	12.56	19	16.81	155	30.47	8.41	3.1	3.1	43	3	49	.18	3	.4	.8	32	LSW F
		6	1831	25.49	19	22.22	155	1.51	8.02	2.4	2.5	36	3	150	.13	5	.7	.4	23	SF5
		6	1931	39.59	19	14.28	155	36.07	7.06	2.3	1.5	28	1	83	.19	2	.6	.9	21	LSW
		6	2255	46.28	19	19.20	155	15.53	8.39	1.9	2.4	37	3	102	.10	4	.4	.7	30	SF1
		6	2330	23.20	19	20.08	155	10.21	8.95		1.1	19	1	84	.05	4	.5	.9	17	SF3
		7	132	22.33	19	26.11	155	28.22	8.98		1.3	27	2	62	.11	6	.4	1.0	24	KAO
		7	2 8	34.21	20	10.74	155	31.95	45.09		1.7	27	4	238	.06	26	1.4	1.0	25	KEA
		7	353	55.96	19	28.40	155	37.23	1.54	2.2	1.6	16	1	101	.12	3	.4	.5	14	MLO
		7	441	7.31	19	45.94	155	27.76	24.76		1.4	18	5	112	.09	2	.7	1.2	15	KEA
		7	754	57.36	19	19.50	155	8.57	7.53	2.8	3.1	36	1	79	.11	4	.5	.7	27	SF4
		7	1048	40.26	19	18.55	155	15.09	7.74		1.3	20	3	127	.07	4	.5	.9	18	SF1
		7	16 2	45.49	19	21.47	155	14.44	28.01	4.1	4.2	44	0	59	.10	3	.6	.9	44	DEP F
		7	1610	7.78	19	21.91	155	14.30	26.75	2.3	1.9	42	6	57	.09	3	.6	.7	36	DEP

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	FEB	7	1611	18.81	19	20.84	155	2.55	7.87	2.3	2.3	33	2	144	.12	2	.6	.4	31	SF5
		7	1636	56.72	19	21.86	155	14.34	27.24	2.1	1.7	38	5	57	.09	3	.6	.8	35	DEP
		7	1749	50.70	19	20.05	155	12.91	8.08		1.1	15	1	71	.05	5	.5	1.3	14	SF2
		7	18 8	31.31	19	20.75	155	2.68	7.59	2.1	2.1	32	3	139	.15	2	.5	.6	26	SF5
		7	1923	14.59	19	21.80	155	14.58	27.76	2.6	2.7	44	4	58	.11	3	.6	.8	40	DEP
		7	2153	43.53	19	19.41	155	7.70	7.14		.6	17	1	104	.10	4	.6	1.3	13	SF4
		8	358	41.12	19	23.69	155	24.73	12.01	1.7	1.2	32	2	44	.10	3	.4	.6	23	KAO
		8	458	15.49	19	12.11	155	27.44	7.16	2.1	1.5	27	0	115	.17	5	.6	1.2	22	LSW
		8	1246	5.20	19	25.65	155	37.04	2.15	2.3	2.1	16	2	120	.25	3	.9	1.4	12	MLO
		8	1254	49.31	19	25.27	155	37.81	1.14	2.6	2.2	23	0	96	.17	5	.6	1.7	17	MLO
		8	1431	40.55	19	17.17	155	16.38	6.31	1.8	1.5	31	2	157	.14	4	.6	1.1	20	SF1
		8	1938	56.54	19	20.77	155	3.01	6.95	1.7	1.3	21	4	116	.10	2	.5	.8	15	SF5
		8	2349	23.01	19	21.81	155	1.69	7.95	1.6	.9	23	2	160	.12	4	.6	1.0	13	SF5
		9	0 5	13.46	19	19.15	155	15.56	7.97		1.1	19	3	112	.07	4	.5	1.0	17	SF1
		9	512	50.72	19	19.63	155	10.28	7.26		.9	20	2	94	.11	5	.6	1.2	17	SF3
		9	553	18.20	19	18.67	155	13.60	5.67	1.4	1.3	24	3	87	.11	3	.5	1.3	18	SF2
		9	9 3	11.36	19	19.51	155	11.44	7.63		1.1	21	2	95	.05	6	.5	1.0	15	SF3
		9	1336	13.67	19	20.16	155	7.46	6.93		1.1	18	2	97	.07	5	.5	.9	13	SF4
		9	1728	5.27	19	22.72	155	24.51	10.53	2.7	2.7	40	3	41	.14	5	.4	.5	32	KAO
		9	2137	42.16	19	.45	155	28.46	40.86	2.6	2.0	33	0	279	.07	17	3.0	2.4	29	DLS
		9	2332	54.25	19	21.94	155	18.10	25.61	2.1	1.5	37	1	29	.11	4	.7	1.0	34	DEP
		10	021	28.63	19	19.92	155	6.93	7.58	2.0	1.5	27	1	111	.09	5	.4	.8	20	SF4
		10	039	25.31	19	20.39	155	6.24	7.83	2.0	1.3	22	1	111	.09	5	.5	1.2	19	SF4
		10	053	57.63	19	18.66	155	13.70	7.63		.6	17	0	91	.10	3	.6	1.4	13	SF2
		10	125	21.76	19	20.46	155	6.79	6.99	1.7	.9	22	2	102	.09	5	.5	1.1	19	SF4
		10	254	32.48	19	48.04	155	42.75	20.56	2.9	3.0	38	0	245	.11	32	1.8	5.0	35	KEA
		10	1034	32.97	19	20.10	155	12.72	7.93		.9	20	2	72	.07	5	.5	1.0	16	SF2
		10	1439	37.95	19	21.05	155	3.59	7.02	2.5	2.4	33	2	101	.10	2	.5	.8	26	SF5
		10	1449	24.53	19	21.00	155	3.69	6.96	2.1	1.8	29	2	92	.12	2	.5	.9	16	SF5
		10	20 9	2.56	19	20.09	155	8.51	7.25	1.4	1.1	23	3	78	.09	4	.5	1.1	17	SF4
		11	838	30.38	19	20.41	155	12.81	7.92	1.6	1.6	23	0	68	.10	4	.6	.8	22	SF2
		11	927	21.50	19	16.61	155	22.29	6.95	2.3	2.6	40	2	129	.16	5	.5	1.0	33	SWR
		11	928	40.67	19	16.95	155	22.22	6.16	1.6	2.4	35	4	125	.21	6	.5	1.3	29	SWR
		11	1510	8.20	19	21.56	155	3.16	8.01	2.0	1.7	32	3	118	.14	3	.5	.8	20	SF5
		11	1528	21.28	19	21.88	155	1.99	7.36	1.6	1.3	26	1	144	.11	4	.5	.8	12	SF5
		11	1910	23.49	19	21.49	155	.83	6.18	1.9	2.4	28	1	176	.11	5	.6	.8	18	SF5
		11	2025	52.94	19	16.89	155	21.97	6.71		1.5	26	3	130	.10	6	.4	1.0	18	SWR
		11	21 2	23.23	19	20.88	155	2.27	7.04	2.3	2.4	37	1	157	.15	2	.6	.6	22	SF5
		12	058	38.13	19	31.02	156	.17	29.44	2.3	1.8	29	0	290	.09	25	5.3	2.8	27	KON
		12	721	48.18	19	15.45	155	23.00	6.31	1.2	1.5	22	2	145	.11	3	.6	1.4	12	SWR
		12	724	14.31	19	16.18	155	23.08	3.00	.9	1.0	14	1	122	.09	4	.5	1.4	11	SWR
		12	727	55.24	19	15.51	155	22.79	5.22	1.0	1.2	16	1	168	.08	3	.7	2.0	11	SWR
		12	729	43.02	19	16.53	155	23.34	2.10	.9	1.2	20	2	111	.13	4	.4	1.2	13	SWR
		12	730	55.59	19	15.74	155	22.89	4.56		.9	14	2	137	.07	3	.8	2.0	11	SWR
		12	733	.24	19	15.63	155	22.93	5.52	1.3	1.5	21	1	136	.08	3	.5	1.6	15	SWR
		12	8 9	49.31	19	16.79	155	23.54	3.37	1.8	1.9	26	0	133	.16	9	.7	8.4	18	SWR
		12	1237	45.73	19	16.33	155	22.32	7.06	1.8	2.3	30	2	134	.13	5	.5	1.3	20	SWR
		12	1327	29.36	19	18.28	155	13.43	6.10	1.7	1.6	28	2	85	.10	2	.5	1.0	18	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	FEB	12	2328	16.98	19	19.37	155	7.09	3.79	1.9	1.3	23	3	121	.11	4	.4	1.3	11	SSF
		13	333	19.04	19	19.98	155	11.78	7.90	1.5	1.3	23	2	83	.07	5	.5	1.0	19	SF3
		13	647	34.22	19	19.69	155	6.81	7.42	1.9	1.9	31	2	120	.11	5	.5	1.0	16	SF4
		13	854	9.08	19	54.09	155	19.10	10.66	2.3	1.5	23	1	243	.08	3	1.5	.5	17	KEA
		13	1649	45.33	19	17.81	155	20.81	6.99	1.0	1.1	20	0	126	.08	4	.5	1.4	14	SWR
		14	0	3 52.76	19	18.59	155	14.88	7.66	1.2	1.1	28	2	105	.09	4	.5	.8	14	SF1
		14	713	6.30	19	24.15	155	.86	5.96		1.1	20	2	170	.12	4	.8	1.2	10	SF5
		14	11	1 11.30	19	23.76	154	58.86	6.02		1.4	22	3	163	.14	3	.8	1.0	14	LER
		14	1825	52.69	19	24.43	155	27.19	10.01	1.8	1.3	27	2	60	.11	4	.5	.9	14	KAO
		14	2311	54.02	19	20.17	155	6.56	8.86	3.4	3.4	43	4	112	.09	5	.4	.5	36	SF4
		15	043	19.69	19	21.22	155	2.46	7.84	1.3	1.2	20	2	141	.10	3	.6	1.0	10	SF5
		15	047	4.85	19	19.36	155	11.24	5.03	1.4	1.4	24	2	101	.08	6	.4	1.8	13	SF3
		15	225	5.66	19	23.16	155	24.39	10.99	2.5	2.7	41	3	41	.12	4	.3	.4	33	KAO
		15	337	55.67	19	21.30	155	2.35	6.93	1.3	1.1	17	1	150	.10	3	.6	1.1	10	SF5
		15	954	31.17	19	19.60	155	8.45	7.53	2.4	2.4	38	3	82	.10	4	.5	.8	23	SF4
		15	1259	40.20	19	20.60	155	12.99	7.37	1.2	1.3	27	2	64	.11	4	.5	.8	20	SF2
		15	19	6 20.42	19	19.65	155	7.53	8.70	2.8	2.9	38	3	105	.08	4	.4	.5	32	SF4
		15	19	9 9.07	19	19.58	155	7.30	8.18	2.2	2.5	36	3	111	.08	4	.5	.7	26	SF4
		16	7	0 57.23	19	19.80	155	7.65	7.37	1.3	1.5	29	3	99	.10	5	.5	.9	17	SF4
		16	1117	46.32	19	19.39	155	8.67	7.81	1.3	1.1	20	1	82	.08	4	.6	1.5	16	SF4
		16	1339	8.08	19	22.22	155	5.11	7.94	1.2	1.1	18	2	71	.10	2	.5	.7	12	SF5
		16	1540	27.70	19	19.85	155	6.87	7.23	1.2		21	2	115	.09	5	.6	1.5	17	SF4
		16	1858	3.87	19	19.81	155	7.72	7.87	1.4	1.1	23	2	98	.10	5	.6	1.2	16	SF4
		16	1947	35.33	19	31.17	155	41.10	7.47	2.2	1.4	29	3	105	.13	8	.6	1.3	20	MLO
		16	2033	6.53	19	23.88	155	27.78	10.17	1.7	1.4	32	1	45	.08	3	.4	.7	26	KAO
		16	2034	51.90	19	19.94	155	9.82	7.90	1.4		20	2	85	.08	4	.6	1.1	13	SF3
		17	043	48.59	19	19.33	155	11.77	7.21	1.4	1.1	20	1	97	.07	5	.6	1.3	14	SF3
		17	116	56.03	19	20.90	155	6.02	6.67	2.0	2.2	36	2	100	.11	4	.5	.8	20	SF4
		17	211	22.49	19	19.40	155	10.33	7.74	1.3	1.1	22	2	100	.06	5	.6	1.0	19	SF3
		17	222	32.06	19	19.71	155	11.11	32.78	1.6	1.2	33	0	92	.09	5	.8	1.4	26	DEP
		17	226	3.75	19	18.25	155	13.11	8.94	2.1	2.1	44	5	96	.11	2	.5	.4	33	SF2
		17	11	3 55.82	19	17.31	155	20.89	4.28	.8	1.1	20	3	133	.09	4	.5	1.5	13	SWR
		17	1721	23.52	19	19.96	155	7.13	7.53	1.3	1.3	21	0	107	.08	5	.7	1.5	18	SF4
		17	1956	28.39	19	25.18	155	39.43	3.68	2.2	2.5	21	2	209	.08	7	.8	2.5	16	MLO
		17	2337	48.47	19	18.47	155	15.12	5.18	1.6	1.6	28	3	112	.15	4	.6	1.8	17	SF1
		18	818	58.54	19	22.26	155	4.99	7.08		1.3	19	0	76	.13	3	.6	1.1	15	SF5
		18	1911	1.12	19	18.82	155	13.14	5.07	1.0	1.1	20	3	84	.07	3	.4	1.4	16	SF2
		18	2211	51.09	19	21.65	155	1.06	7.97	2.4	2.3	35	3	168	.10	5	.6	.5	23	SF5
		18	2217	51.24	19	19.84	155	16.78	6.75	1.5	1.1	28	3	92	.11	1	.4	.7	19	SF1
		18	2241	3.17	19	21.30	155	7.98	9.20	2.1	2.4	40	4	73	.09	4	.4	.5	32	SF4
		19	0	2 53.61	19	14.65	155	32.88	6.84	2.2	1.3	25	0	111	.15	5	.6	1.3	16	LSW
		19	121	53.75	19	26.02	155	28.49	7.71	1.6	1.1	31	2	62	.12	6	.4	1.1	23	KAO
		19	638	43.34	19	20.68	155	13.02	8.58	2.0	1.9	41	5	63	.12	4	.4	.6	28	SF2
		19	7	1 41.80	19	14.97	155	22.71	7.19	1.1	1.3	21	1	191	.09	3	.7	1.2	12	SWR
		19	1237	28.39	19	25.34	155	37.66	2.03	2.5	2.1	22	1	94	.12	4	.4	1.2	14	MLO
		19	1334	34.74	19	19.63	155	7.27	7.91	1.3	1.1	22	2	112	.07	4	.6	1.2	15	SF4
		19	1436	37.15	19	24.41	155	24.23	12.87	1.6	1.6	31	2	39	.10	2	.4	.6	24	KAO
		19	18	5 12.07	19	19.93	155	7.32	8.62	3.4	3.8	47	4	104	.09	5	.5	.4	35	SF4 F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	FEB	19	1935	33.05	19	20.07	155	8.67	6.40	1.6	1.6	37	1	75	.13	4	.5	1.0	25	SF4
		20	324	18.74	20	12.25	156	41.22	36.17	2.7	3.2	35	1	255	.12	77	2.0	2.3	19	DIS
		20	5	1 46.90	19	27.05	155	24.12	7.06	2.8	2.8	46	2	31	.14	4	.4	.8	30	KAO
		20	554	9.12	19	20.37	155	8.75	8.42	1.1	1.1	21	2	72	.06	4	.6	1.1	12	SF4
		20	1549	40.75	19	19.08	155	13.40	6.49	1.2	1.1	17	2	76	.07	4	.5	1.4	15	SF2
		21	3	2 2.47	19	20.72	155	3.12	6.40	1.6	1.8	34	2	108	.11	2	.5	.6	21	SF5
		21	529	6.10	19	18.18	155	13.41	6.34	1.2	1.3	32	4	84	.11	2	.4	.8	16	SF2
		21	1016	20.17	19	19.70	155	7.54	4.33	1.4	1.1	31	2	103	.11	4	.5	1.7	17	SSF
		21	1240	40.02	20	2.59	155	59.26	10.87	2.9	3.0	23	2	253	.14	24	1.8	.8	20	KOH
		21	14	4 11.38	19	25.37	155	26.21	8.95	1.6	1.1	28	3	52	.10	2	.4	.9	21	KAO
		21	1535	41.90	19	19.14	155	11.57	7.18	1.3	1.1	23	2	104	.08	5	.5	1.1	18	SF3
		22	813	37.43	19	20.19	155	10.67	8.02	1.9	2.2	44	4	83	.11	4	.4	.6	35	SF3
		22	923	57.47	19	21.35	155	.06	6.05	1.9	2.0	29	1	188	.11	6	.8	.7	26	SF5
		22	11	8 1.37	19	1.25	155	16.20	5.20	2.4	2.5	26	0	274	.16	26	3.0	2.4	18	LOI L
		22	1934	30.24	19	14.45	155	34.66	4.38	2.2	1.9	33	2	108	.15	8	.5	2.9	21	LSW
		22	2114	15.35	19	23.93	155	1.46	8.52	2.1	2.1	34	3	135	.13	5	.6	.4	22	SF5
		22	22	6 36.59	19	21.13	155	30.18	7.51	2.0	1.5	35	1	48	.16	5	.5	1.3	26	KAO
		23	938	3.04	19	25.11	155	15.81	15.19	1.6	1.2	35	2	91	.08	2	.5	.4	26	DEP
		23	1943	45.62	19	26.51	155	37.03	3.38	2.5	2.3	21	2	119	.15	2	.6	.6	13	MLO
		23	2024	11.42	19	20.53	155	12.91	9.03	2.4	2.6	45	3	65	.12	4	.4	.5	37	SF2
		24	911	58.45	19	20.26	155	3.97	6.26	1.3	1.1	31	3	124	.14	2	.6	1.0	19	SF5
		24	1319	54.68	19	21.37	155	2.70	8.48	1.8	1.3	31	2	129	.07	3	.6	.5	19	SF5
		24	14	7 56.42	19	17.21	155	13.19	4.83	1.8	2.3	35	1	149	.12	1	.5	1.0	25	SSF
		24	1721	15.03	19	17.18	155	13.23	5.25	2.1	2.4	39	4	149	.12	1	.5	1.0	34	SF2
		24	1849	46.08	19	25.28	155	38.09	1.86	3.7	3.6	34	2	100	.13	5	.4	1.0	25	MLO
		24	22	3 21.00	19	19.40	155	12.31	4.69	1.5	1.3	28	2	89	.13	5	.4	1.8	16	SSF
		24	22	8 16.63	19	20.35	155	7.10	6.29	1.4	1.2	31	3	100	.12	5	.5	1.0	18	SF4
		25	239	55.60	19	18.69	155	15.97	8.52	1.3	1.3	29	4	117	.07	4	.4	.6	19	SF1
		25	527	22.77	19	20.46	155	11.20	7.43	1.9	1.4	20	1	77	.05	4	.4	.9	13	SF3
		25	529	31.20	19	20.45	155	11.34	5.29	1.5	1.3	14	0	94	.10	4	.6	1.9	10	SF3
		25	1238	47.29	19	18.27	155	15.55	6.30	1.0	1.1	30	2	113	.11	4	.5	1.0	18	SF1
		25	1751	34.57	19	20.24	155	11.33	7.44	1.6	1.1	31	3	81	.11	4	.5	.9	26	SF3
		25	1959	23.11	19	20.82	155	11.73	7.45	1.4	1.9	37	4	70	.10	4	.4	.6	25	SF3
		25	20	4 13.60	19	20.29	155	11.36	7.35	1.7	1.1	30	3	80	.09	4	.4	.8	22	SF3
		26	0	2 15.88	19	26.34	155	24.61	4.43	1.5	1.1	17	2	117	.10	2	.5	1.1	13	KAO
		26	357	44.23	19	20.47	155	2.92	4.73	1.4	1.1	12	0	132	.06	1	.6	.9	10	SSF
		26	1116	26.58	19	18.47	155	15.45	6.68	1.4	1.5	29	3	106	.10	4	.5	.8	23	SF1
		27	513	4.92	19	19.50	155	11.28	9.56	2.6	3.0	43	1	96	.10	5	.4	.4	36	SF3
		27	6	7 51.79	19	26.48	155	28.93	5.67	1.7	1.1	22	2	66	.09	8	.4	2.2	16	KAO
		27	621	24.31	19	45.02	156	27.12	3.51	2.9	1.9	43	1	284	.13	63	3.1	2.4	35	DIS
		27	747	42.52	19	21.13	155	13.11	8.15	1.9	1.8	43	4	58	.12	3	.4	.5	32	SF2
		27	8	6 53.76	19	20.44	155	12.80	10.16	2.0	2.2	25	1	67	.10	4	.5	.7	22	SF2
		27	1031	30.81	19	18.51	155	15.89	5.95	1.5	1.3	25	1	110	.12	4	.5	1.0	16	SF1
		27	2313	49.57	19	19.51	155	8.53	7.37	1.4	1.1	17	1	80	.10	4	.6	1.0	11	SF4
		28	5	0 49.71	19	11.04	155	28.13	7.15	2.3	2.4	33	2	113	.14	3	.5	.8	21	LSW
		28	616	51.29	19	20.14	155	7.10	8.69	2.6	2.5	40	4	104	.08	5	.4	.5	32	SF4
		28	1638	56.35	19	18.46	155	15.08	4.99	.4	1.1	27	2	102	.11	4	.4	1.3	16	SSF
MAR		1	010	26.32	19	19.66	155	8.50	6.50	1.4	1.1	29	1	80	.10	4	.5	1.2	19	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	MAR	1	437	36.84	19	25.37	155	39.07	2.81	2.7	2.0	21	2	202	.10	6	.8	1.6	13	MLO	
		1	633	42.87	19	19.81	155	11.09	8.95	1.5	1.1	29	3	90	.09	5	.5	.8	19	SF3	
		1	1054	3.60	19	19.76	155	13.08	7.47	1.2	1.1	27	2	72	.10	5	.5	1.0	14	SF2	
		1	1416	55.84	19	40.18	155	3.34	.25	2.9	2.7	32	1	203	.18	18	1.0	1.9	12	HIL	*
		1	1552	16.74	19	29.26	155	36.90	3.22	2.5	2.3	19	0	205	.11	2	.9	.5	13	MLO	
		1	1647	17.81	19	29.75	155	16.25	37.24	1.4	2.7	34	0	56	.12	9	.7	1.9	19	DEP	
		1	1654	34.21	19	20.03	155	11.78	7.69	1.7	1.6	31	3	82	.09	5	.5	.7	23	SF3	
		1	1719	43.46	19	26.33	155	38.51	3.30	2.5	2.2	18	1	202	.08	4	.8	1.1	14	MLO	
		1	1752	26.22	19	19.43	155	16.38	8.24	1.9	2.2	41	2	98	.13	2	.5	.6	27	SF1	
		1	2012	59.76	19	31.46	155	.72	50.95	2.3	1.9	30	0	196	.09	6	2.2	4.2	24	DEP	
		2	220	11.01	19	28.24	155	35.66	.26	2.6	2.5	16	2	97	.09	1	.2	.2	8	MLO	
		2	229	51.18	19	19.99	155	8.40	4.96	1.1	1.1	22	2	81	.12	5	.6	1.6	12	SSF	
		2	338	48.64	19	25.49	155	37.71	1.53	3.1	3.1	33	2	95	.11	4	.4	.9	28	MLO	
		2	434	7.86	19	22.27	155	.25	7.28	2.1	1.4	19	1	179	.09	6	.7	1.0	9	SFS	
		2	444	14.82	19	26.16	155	38.97	4.18	2.6	2.1	22	2	209	.10	5	.9	2.0	17	MLO	
		2	1359	31.39	19	43.78	156	5.23	25.88	2.9	2.2	24	2	240	.11	26	1.6	2.1	22	HUA	
		2	1728	50.78	19	26.20	155	38.35	2.82	2.8	2.9	25	1	187	.10	4	.7	1.0	13	MLO	
		2	2130	15.57	19	19.92	155	10.87	6.26	1.9	1.5	30	4	88	.09	4	.4	.9	16	SF3	
		3	035	9.83	19	21.28	155	1.54	4.41	1.4	1.1	30	3	168	.22	4	.7	1.6	18	SSF	
		3	7	4 52.03	19	22.77	155	17.47	25.68	2.0	1.4	37	0	32	.09	1	.6	1.0	30	DEP	
		3	947	52.03	19	22.45	155	29.76	8.64	2.3	2.2	40	2	33	.11	4	.3	.8	34	KAO	
		3	1227	24.76	19	21.62	155	2.72	8.02	2.0	1.6	29	1	127	.13	3	.6	.7	22	SF5	
		3	1242	56.70	19	19.74	155	7.90	6.48	1.3	1.2	28	3	95	.10	4	.5	1.1	19	SF4	
		3	14	0 58.04	19	18.39	155	13.36	7.81	1.7	1.7	36	5	83	.08	3	.4	.6	23	SF2	
		3	1654	52.70	19	26.45	155	27.64	8.63	1.7	1.3	33	3	54	.11	5	.4	.9	23	KAO	
		3	1713	59.29	19	20.47	155	6.76	7.12	1.3	1.4	30	2	102	.10	5	.5	.8	19	SF4	
		4	321	45.65	19	20.63	155	13.05	7.98	1.6	1.2	33	2	63	.11	4	.5	.7	20	SF2	
		4	6	8 16.73	19	19.11	155	15.73	8.44	2.1	2.3	40	3	106	.11	3	.4	.6	27	SF1	
		4	912	33.95	19	24.52	155	25.80	9.05	1.5	1.1	30	4	40	.11	2	.4	.7	20	KAO	
		4	1313	53.22	19	19.90	155	4.63	4.72	1.4	1.5	24	2	143	.10	3	.5	1.3	11	SSF	
		4	1315	1.46	19	19.69	155	4.52	5.25	2.1	2.3	25	1	154	.12	3	.5	.9	12	SF5	
		4	16	3 41.91	19	20.80	155	30.65	6.38	2.0	1.5	29	1	52	.16	6	.5	1.6	17	KAO	
		4	1615	13.95	19	20.77	155	30.45	10.03	2.0	1.4	30	1	52	.09	6	.4	.8	17	KAO	
		4	1640	3.95	19	18.81	155	13.20	5.96	2.0	2.3	41	2	82	.12	3	.4	.8	23	SF2	
		4	1648	26.64	19	19.60	155	8.06	7.36	1.4	1.5	34	3	91	.10	4	.4	.8	17	SF4	
		4	1650	25.12	19	16.48	155	15.11	6.66	1.8	1.5	28	3	174	.09	3	.6	.9	18	SF1	
		4	17	8 41.93	19	21.27	155	2.46	7.91	2.5	2.5	42	6	140	.11	3	.5	.5	24	SF5	
		4	2220	10.30	19	24.01	155	24.99	8.35	2.6	2.7	42	4	37	.13	2	.4	.7	32	KAO	
		4	2327	23.85	19	21.62	155	3.12	8.40	3.4	3.6	46	1	112	.12	3	.5	.4	42	SF5	F
		4	2335	42.70	19	21.04	155	2.74	8.08	1.8	1.5	31	3	131	.11	2	.6	.8	15	SF5	
		5	011	1.21	19	32.20	155	42.66	7.79	2.4	1.8	33	2	82	.12	6	.5	1.3	25	MLO	
		5	217	55.79	18	55.32	155	29.72	37.30	2.5	2.7	39	0	243	.07	19	1.7	2.2	35	DLS	
		5	223	59.31	19	19.92	155	8.36	9.19	2.5	2.6	43	3	81	.11	5	.4	.4	36	SF4	
		5	440	52.98	19	22.22	155	2.15	6.38	1.6	1.1	28	2	135	.18	5	.6	1.0	17	SF5	
		5	751	14.17	19	21.32	155	2.55	6.24	1.6	1.3	27	2	135	.12	3	.6	1.0	17	SF5	
		5	1610	2.45	19	45.51	156	8.05	40.37	3.5	3.4	45	3	249	.12	32	1.2	1.6	40	HUA	
		5	2127	43.49	19	18.67	155	15.16	7.11	1.0	1.1	28	2	98	.12	4	.5	1.0	18	SF1	
		5	2228	52.57	19	20.07	155	8.11	6.63	2.0	1.6	35	3	86	.11	5	.4	1.0	22	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	MAR	6	151	28.40	19	26.32	155	38.58	3.12	2.2	2.2	22	2	203	.11	4	.7	.9	16	MLO	
		6	242	16.45	19	20.01	155	6.68	8.46	1.4	1.3	29	1	114	.09	5	.5	.8	24	SF4	
		6	917	11.41	19	21.45	155	1.85	5.06	1.3	1.1	28	2	163	.16	3	.7	1.2	14	SF5	
		6	934	25.14	19	30.18	155	41.50	6.79	2.6	2.4	41	4	74	.14	8	.5	1.1	34	MLO	
		6	1029	54.00	19	22.61	155	27.61	6.21	1.3	1.1	22	1	44	.10	0	.4	.8	15	KAO	
		6	1047	26.30	19	34.92	155	8.02	19.43	2.1	1.3	34	1	67	.11	16	.5	2.0	25	HIL	
		6	2341	49.66	19	21.38	155	3.40	7.86	2.3	2.3	41	4	101	.10	3	.4	.5	26	SF5	
		7	640	32.61	19	21.58	155	1.54	6.23	1.9	1.7	33	3	160	.14	4	.6	.8	23	SF5	
		7	2017	43.73	19	22.62	155	.60	7.37	1.6		30	2	168	.16	6	.7	.8	19	SF5	
		7	2135	19.02	19	26.28	155	24.92	8.35	1.6	1.1	31	4	34	.13	2	.4	.8	18	KAO	
		7	2240	9.61	19	20.13	155	3.92	7.09	1.5	1.5	26	3	133	.12	2	.6	1.0	15	SF5	
		8	641	3.40	19	11.97	155	35.58	11.49	4.5	4.3	39	1	207	.14	6	.9	.5	38	LSW	F
		8	735	54.82	19	19.47	155	8.71	6.91	1.4	1.3	30	3	81	.09	4	.5	1.0	19	SF4	
		8	1713	56.56	19	27.93	154	52.62	4.07	1.6	1.4	25	1	120	.12	3	.7	1.3	16	SLE	
		8	1918	52.00	19	20.02	155	12.62	8.65	1.4	1.1	28	2	74	.11	5	.5	.8	18	SF2	
		8	2245	41.81	19	17.15	155	23.18	6.02	1.8	1.5	24	2	106	.09	5	.4	1.0	16	SWR	
		9	6	3 14.89	19	19.97	155	17.63	34.42	2.4	2.0	41	1	80	.09	1	.7	1.1	36	DEP	
		9	931	28.50	19	19.65	155	12.04	5.07	1.5		30	3	88	.11	5	.4	1.4	19	SF3	
		9	15	2 38.45	19	21.42	155	1.70	5.43	1.9	1.5	27	3	160	.14	4	.5	1.1	17	SF5	
		9	1537	55.64	19	20.38	155	12.23	9.98	1.5	1.1	25	1	74	.08	4	.6	.9	18	SF3	
		9	1749	53.05	19	22.44	155	27.47	8.91	1.8	1.7	32	3	42	.09	0	.4	.7	22	KAO	
		9	1855	45.46	19	37.91	156	3.64	32.53	2.6	2.4	33	2	235	.10	22	1.2	1.6	30	KON	
		9	1920	56.31	19	21.43	155	13.29	9.02	1.7	1.8	36	4	54	.09	2	.4	.6	23	SF2	
		9	2040	50.33	19	7.63	155	24.76	44.18	2.2	1.4	23	1	181	.08	6	1.5	2.6	13	LOI	L
		9	2126	56.86	19	13.67	155	57.36	40.49	2.6	2.4	42	0	236	.08	10	1.8	2.3	39	KON	
		9	22	1 30.54	19	16.23	155	23.54	3.81		1.3	20	3	109	.11	4	.5	1.4	17	SWR	
		10	011	23.55	19	20.37	155	13.56	8.61	1.6	1.8	32	4	61	.11	4	.4	.6	23	SF2	
		10	227	16.04	19	19.01	155	15.33	8.15	1.7	1.5	32	3	94	.11	4	.4	.7	23	SF1	
		10	642	53.23	19	20.08	155	8.46	6.96	1.2	1.1	21	2	79	.11	4	.5	1.1	13	SF4	
		10	2027	6.02	19	23.74	155	26.00	8.62	1.7	1.7	35	2	46	.13	3	.4	.8	29	KAO	
		11	056	35.55	19	17.68	155	16.00	7.57	.8	1.3	25	2	143	.11	5	.6	1.0	15	SF1	
		11	246	2.94	19	26.99	154	52.27	4.87	1.3	1.2	15	0	168	.11	2	.9	1.3	12	SLE	
		11	331	34.03	19	20.48	155	9.02	6.72	2.0	2.2	45	5	69	.13	3	.5	.8	32	SF4	
		11	419	21.77	19	21.46	155	3.25	5.75	1.6	1.2	23	3	115	.15	3	.5	1.1	15	SF5	
		11	429	28.62	19	25.53	155	37.62	1.17	2.7	3.2	31	0	93	.12	4	.4	1.2	20	MLO	
		11	12	0 1.55	19	16.76	155	15.67	6.02		1.2	21	1	168	.11	4	.7	1.1	15	SF1	
		11	22	5 58.61	19	20.60	155	10.96	8.22	2.0	2.2	38	1	76	.13	3	.5	.8	30	SF3	
		12	1344	34.32	19	20.52	155	12.67	8.55	2.6	2.7	47	4	67	.12	4	.4	.5	34	SF2	
		12	1659	2.28	19	19.74	155	6.87	8.96	2.5	2.9	42	5	117	.10	5	.5	.4	32	SF4	
		12	2243	4.93	19	58.92	155	19.98	13.53	3.0	3.1	45	2	204	.11	10	.9	.6	30	KEA	F
		13	0	5 19.78	19	14.10	155	29.87	11.75	2.1	1.4	31	2	119	.12	2	.6	.4	27	LSW	
		13	431	15.86	19	14.55	155	29.83	11.22	2.1	1.2	29	2	115	.13	1	.5	.6	20	LSW	
		13	1745	29.30	19	48.45	155	31.27	27.47	2.6	1.7	43	2	100	.10	7	.5	1.3	34	KEA	
		14	036	14.44	19	7.98	155	35.07	10.98	2.3	1.6	28	1	130	.13	13	.5	.7	15	LSW	
		14	122	14.40	19	8.11	155	35.07	9.79	2.6	2.7	34	2	129	.14	13	.5	.9	24	LSW	
		14	124	43.69	19	8.22	155	35.32	10.13	2.1	1.8	28	2	127	.13	13	.5	1.0	16	LSW	
		14	1228	42.43	19	21.84	155	.55	4.48	2.1	1.7	29	2	173	.16	6	.8	2.2	16	SSF	
		15	015	25.09	19	18.16	155	13.22	5.53	1.3	1.1	27	4	93	.08	2	.5	1.1	20	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	MAR	15	652	29.50	19	35.24	156	24.69	34.92	3.1	3.1	37	0	237	.10	53	2.0	2.3	33	DIS	
		15	1217	19.84	19	21.00	155	13.04	7.73	1.6	1.5	37	3	67	.13	3	.5	.7	29	SF2	
		15	1336	.07	19	19.18	155	13.19	6.19	1.6	1.3	29	2	77	.11	4	.4	1.1	18	SF2	
		15	1356	13.64	19	18.65	155	13.26	6.34	1.7	1.3	27	2	83	.11	3	.5	1.0	21	SF2	
		15	15	6 25.21	19	16.57	155	22.95	4.83	1.9	2.2	39	2	118	.15	5	.4	1.5	32	SWR	
		15	16	4 27.85	19	19.45	155	15.53	8.12	2.0	2.1	36	2	97	.11	4	.4	.6	29	SF1	
		15	1934	36.03	19	21.50	155	.86	8.10	1.6	1.2	24	1	191	.11	5	1.2	.6	14	SF5	
		16	219	44.72	19	20.21	155	7.14	6.47	1.4	1.1	26	2	102	.11	5	.5	1.2	10	SF4	
		16	320	35.49	19	20.36	155	3.62	7.33	1.9	1.5	31	2	110	.11	1	.7	.5	16	SF5	
		16	934	28.13	19	9.02	155	35.07	4.66	2.4	1.5	26	0	120	.14	12	.5	3.8	21	LSW	
		16	1218	33.20	19	21.17	155	2.69	8.39	2.1	1.7	31	3	139	.11	2	.8	.5	23	SF5	
		16	1333	28.02	19	21.52	155	1.86	6.49	1.4	1.5	30	2	154	.18	4	.7	.8	18	SF5	
		16	1610	7.13	18	27.17	154	16.71	39.46	4.3	5.0	42	0	318	.11	127	13.6	2.9	42	DIS	
		16	2124	15.49	19	21.08	155	7.99	8.20	.9	1.1	24	2	76	.08	4	.5	.8	18	SF4	
		16	2314	25.24	19	17.85	155	13.05	6.69	1.6	1.3	27	2	111	.10	2	.5	.9	16	SF2	
		16	2352	11.50	19	25.02	155	38.32	.02	2.4	2.1	25	1	103	.21	5	.6	1.4	13	MLO	*
		17	059	39.46	19	17.72	155	13.17	7.53	1.9	1.7	32	3	108	.11	1	.6	.8	21	SF2	
		17	1835	42.74	19	20.10	155	11.82	10.20	3.1	3.2	41	1	81	.08	5	.4	.3	34	SF3	
		18	331	57.81	19	20.20	155	12.52	7.12	1.8	1.6	33	3	73	.10	5	.4	.7	22	SF2	
		18	651	23.76	19	19.11	155	15.45	7.14	1.3	1.2	26	1	103	.10	4	.5	1.0	21	SF1	
		18	1020	49.21	19	18.89	155	15.08	8.16	1.9	1.5	31	1	93	.11	4	.5	.7	23	SF1	
		18	1845	30.05	19	23.29	155	26.56	10.03	3.5	3.8	48	3	31	.13	2	.4	.5	43	KAO	F
		18	20	9 41.93	19	20.59	155	13.48	7.55	1.6	1.6	30	1	59	.11	4	.5	.8	22	SF2	
		19	1	9 11.26	19	20.26	155	13.22	8.01	1.5	1.5	35	4	65	.11	4	.5	.7	22	SF2	
		19	2	0 59.08	19	18.20	155	15.10	5.47	1.3	1.1	25	2	120	.10	4	.5	1.3	15	SF1	
		19	655	20.27	19	21.47	155	24.75	8.56	2.0	1.8	33	4	45	.11	3	.4	.6	23	SWR	
		19	720	37.49	19	16.19	155	21.43	7.50	1.9	2.4	40	5	140	.12	6	.4	.8	28	SWR	
		19	745	46.06	19	16.07	155	21.08	7.03	1.7	2.1	37	4	143	.11	6	.4	.7	25	SWR	
		19	1543	15.67	19	22.01	154	59.09	8.76	2.2	2.2	34	3	196	.15	6	1.1	.5	20	LER	
		19	2038	11.31	19	24.21	155	17.56	16.38	2.4	2.3	44	4	37	.10	2	.4	.4	35	DEP	
		20	3	8 21.55	19	11.99	155	37.98	8.95	2.5	2.3	39	3	99	.19	6	.6	.8	30	LSW	
		20	553	26.55	19	20.51	155	3.57	4.12	1.4	1.1	20	2	99	.22	2	1.0	1.5	13	SSF	
		20	6	5 21.83	19	14.10	155	39.63	8.63	2.1	1.7	29	1	234	.15	5	1.3	.8	17	LSW	
		20	713	12.21	19	20.99	155	8.65	7.66	1.9	2.1	37	2	68	.12	3	.4	.7	30	SF4	
		20	838	26.70	19	19.71	155	6.96	8.95	2.8	3.2	36	2	116	.10	5	.6	.4	33	SF4	
		20	935	39.26	19	24.18	155	19.97	15.52	2.8	2.6	44	2	36	.11	1	.5	.3	37	DML	
		20	1317	58.01	19	17.97	155	14.99	7.19	1.2	1.4	28	0	114	.12	3	.6	1.0	23	SF1	
		20	1652	45.13	19	33.23	155	43.37	7.38	1.9	1.2	20	1	116	.14	7	.6	1.6	14	KON	
		20	1718	39.21	19	21.43	155	2.99	6.88	4.8	5.0	45	1	169	.11	6	.7	.6	43	SF5	F
		20	1744	12.12	19	20.46	155	4.15	2.50	1.2	1.3	15	3	115	.08	2	.4	.5	8	SSF	
		20	1753	23.48	19	20.60	155	3.33	5.55	1.4	1.5	26	2	99	.12	1	.6	.9	17	SF5	
		20	1759	43.07	19	19.09	155	13.09	4.99	1.3	1.1	30	3	81	.12	4	.4	1.4	22	SSF	
		20	1845	2.15	19	20.97	155	1.85	3.05	2.1	2.5	32	2	168	.12	3	.5	.7	24	SSF	
		20	2047	56.17	19	20.34	155	2.60	6.94	1.3	1.3	23	2	174	.13	1	.8	.8	11	SF5	
		20	2140	36.16	19	20.31	155	2.80	5.27	1.5	1.5	20	2	142	.14	1	.6	1.1	10	SF5	
		20	23	2 21.41	19	21.91	155	25.12	11.27	3.9	4.0	49	4	38	.12	5	.3	.4	44	KAO	F
		20	23	7 .47	19	21.42	155	25.63	9.62	1.6	1.1	32	4	49	.10	4	.4	.7	26	KAO	
		20	2356	50.98	19	20.83	155	13.27	7.37	1.8	1.5	37	3	59	.14	3	.5	.8	29	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	MAR	20	2357	14.84	19	20.84	155	13.46	8.11	2.3	2.5	39	3	57	.13	3	.4	.6	32	SF2	
		21	037	28.88	19	22.01	155	25.42	11.32	3.4	3.6	46	3	39	.13	4	.4	.4	41	KAO	
		21	128	41.37	19	21.86	155	25.12	8.73	1.4	1.1	20	3	54	.10	4	.5	.9	19	KAO	
		21	130	.70	19	21.67	155	25.42	10.20	1.4	1.1	25	3	46	.11	4	.5	.8	17	KAO	
		21	243	39.60	19	20.18	155	4.21	3.25	1.1	1.5	21	2	130	.10	2	.4	.7	12	SSF	
		21	3	7 33.80	19	21.81	155	2.06	2.40	1.4	1.5	20	2	152	.12	4	.4	.9	13	SSF	
		21	4	0 7.36	19	20.49	155	2.82	7.13	1.3	1.1	18	2	142	.10	1	.7	1.0	11	SF5	
		21	839	6.79	19	20.33	155	2.37	5.23	1.5	1.4	26	1	177	.17	1	.8	1.0	17	SF5	
		21	1312	.94	19	21.06	155	2.35	5.13	1.9	1.7	27	3	148	.12	2	.5	.9	13	SF5	
		21	1454	57.76	19	19.21	155	12.11	3.87	1.6	1.3	23	4	96	.12	5	.4	1.4	16	SSF	
		21	2136	23.05	19	21.22	155	27.76	11.16	3.3	3.3	47	4	42	.13	2	.4	.5	36	KAO	
		21	2146	41.06	19	20.87	155	2.08	5.30	1.7	1.7	26	1	164	.11	2	.6	.8	14	SF5	
		22	135	56.94	19	21.57	155	1.68	6.65	2.5	2.3	39	5	157	.12	4	.4	.6	22	SF5	
		22	251	42.84	19	8.07	155	35.31	8.51	2.4	2.2	32	1	128	.15	13	.5	1.0	22	LSW	
		22	851	22.20	19	20.56	155	4.42	5.76	2.0	1.9	19	1	113	.06	3	.5	.9	12	SF5	
		22	944	50.64	19	22.59	155	24.49	9.44	1.8	1.3	37	5	40	.12	5	.4	.5	29	KAO	
		22	1037	.69	19	21.72	155	3.06	1.17	1.3	1.1	18	3	125	.13	3	.3	.8	14	SSF	
		22	1345	4.42	19	21.04	155	2.16	3.97	1.5	1.1	22	2	156	.16	3	.7	1.1	13	SSF	
		22	1948	53.38	19	19.25	155	13.39	7.20	1.4	1.3	32	3	72	.11	4	.5	.9	24	SF2	
		22	2043	7.04	19	21.82	155	.32	7.55	2.3	2.1	41	3	177	.18	6	.8	.6	27	SF5	
		23	223	21.16	19	24.52	155	29.22	8.28	1.9	1.3	36	1	49	.09	5	.4	.8	30	KAO	
		23	224	24.29	19	22.14	155	24.56	9.86	1.8	1.8	40	4	41	.13	4	.4	.6	31	KAO	
		23	316	53.16	19	20.81	155	3.44	4.44	1.3	1.5	28	2	92	.14	2	.5	1.2	15	SSF	
		23	318	1.52	19	20.68	155	2.85	5.22	1.3	1.1	17	2	136	.14	1	.6	1.2	14	SF5	
		23	1058	47.30	19	20.53	155	3.23	6.19	2.0	2.1	31	2	97	.09	1	.5	.7	22	SF5	
		23	1925	16.23	19	17.24	155	27.66	10.35	1.8	1.5	27	1	52	.13	6	.4	.8	16	LSW	
		23	2255	20.58	19	20.47	155	12.14	8.55	1.3	1.1	29	1	72	.10	4	.5	.8	17	SF3	
		24	259	33.25	19	25.60	155	28.25	10.94	3.0	2.5	47	2	34	.11	6	.3	.4	40	KAO	
		24	348	1.74	19	24.89	154	57.32	5.73	2.0	1.2	32	3	161	.15	3	.7	.9	20	LER	
		24	456	25.70	19	22.11	155	.79	7.72	2.0	1.5	31	5	179	.13	6	.7	.5	19	SF5	
		24	633	14.73	19	24.77	155	25.62	7.30	1.6	1.1	30	3	50	.10	1	.4	.8	22	KAO	
		24	943	13.80	19	19.40	155	8.71	5.97	1.1	1.1	28	4	83	.11	4	.5	1.3	18	SF4	
		24	1026	53.78	19	19.54	155	11.46	6.61	1.3	1.2	26	2	94	.09	5	.5	1.1	22	SF3	
		24	1922	42.73	19	19.79	155	10.14	6.09	1.3	1.0	27	3	90	.11	4	.6	1.3	21	SF3	
		25	147	46.66	19	19.46	155	8.70	5.75	1.3	1.0	24	4	81	.08	4	.4	1.3	17	SF4	
		25	2	0 21.53	19	23.86	155	25.88	8.73	2.3	2.7	46	4	39	.13	3	.4	.6	35	KAO	
		25	441	23.04	19	20.24	155	13.53	6.63	.8	1.0	20	1	67	.08	5	.5	1.2	17	SF2	
		25	7	3 2.26	19	20.11	155	11.58	7.95	1.4	1.2	29	3	83	.07	5	.4	.8	20	SF3	
		25	858	12.40	19	24.57	155	26.30	8.68	2.4	2.8	43	3	41	.14	2	.4	.8	33	KAO	
		25	952	28.26	19	19.49	155	8.58	5.13	1.4	1.1	28	3	79	.12	4	.5	1.1	20	SF4	
		25	14	1 55.41	19	30.56	155	37.54	5.38	1.2	1.2	19	3	152	.21	4	.9	1.5	11	MLO	
		25	2227	11.22	19	20.69	155	2.90	4.84	1.5	1.5	20	1	125	.11	1	.6	1.2	14	SSF	
		26	031	49.67	19	28.66	155	38.88	5.95	1.7	1.4	27	3	108	.12	5	.5	.7	15	MLO	
		26	424	.82	19	20.08	155	6.78	8.47	2.2	2.5	35	2	111	.07	5	.4	.6	24	SF4	
		26	16	4 35.97	19	16.31	155	14.92	6.07	1.1	1.1	24	2	178	.19	3	.9	1.5	16	SF1	
		26	20	9 39.58	19	20.42	155	6.54	8.54	2.4	2.5	44	5	106	.09	5	.4	.5	31	SF4	
		26	21	5 31.63	19	20.62	155	26.21	9.81	1.4	1.3	28	3	53	.11	4	.4	.7	19	KAO	
		26	2130	25.95	19	21.16	155	6.81	8.25	1.2	1.3	28	3	88	.09	4	.5	.9	13	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	MAR	26	2135	3.68	19	19.78	155	13.63	7.63	1.6	1.3	37	4	65	.11	5	.4	.7	28	SF2
		26	2146	42.89	19	19.56	155	13.57	7.39	1.3	1.0	30	2	65	.08	5	.4	.8	18	SF2
		27	033	57.73	19	23.69	155	29.57	9.82	1.9	1.2	24	1	74	.09	4	.5	.9	16	KAO
		27	055	49.83	19	19.41	155	11.65	6.88	1.3	1.1	24	2	96	.08	5	.5	.9	20	SF3
		27	056	21.69	19	19.50	155	11.71	5.72	1.3	1.5	26	2	93	.12	6	.5	1.5	19	SF3
		27	155	39.98	19	20.93	155	6.99	6.51	1.6	1.5	31	2	91	.10	4	.4	.9	22	SF4
		27	449	48.45	19	20.99	155	3.25	7.05	1.8	1.3	29	2	115	.14	2	.6	1.1	16	SF5
		27	451	55.07	19	17.03	155	25.78	9.01	.9	1.3	20	2	97	.15	6	.6	.8	11	LSW
		27	827	57.93	19	18.96	155	11.56	4.77	1.2	1.0	28	4	109	.11	5	.5	1.9	18	SSF
		27	1844	44.95	19	20.74	155	6.75	8.83	1.1	1.1	23	3	97	.09	4	.6	1.0	14	SF4
		29	031	12.45	19	12.46	155	29.92	7.11	2.2	1.1	31	1	70	.21	5	.6	1.2	16	LSW
		29	257	23.02	19	20.69	155	2.44	5.93	1.3	.9	19	3	155	.10	2	.5	.9	10	SF5
		29	322	27.18	19	20.36	155	6.64	8.56	1.8	1.1	23	0	106	.11	5	.6	1.4	19	SF4
		29	354	39.92	19	20.14	155	20.83	31.50	3.2	3.4	48	2	72	.10	4	.6	.9	45	DEP
		29	9	1 25.89	19	22.44	155	30.16	10.29	2.0	1.2	23	0	85	.08	4	.5	1.3	17	KAO
		29	1848	57.04	19	19.94	155	8.23	8.44	1.9	1.7	37	3	84	.09	5	.4	.7	24	SF4
		30	236	50.72	19	18.97	155	13.81	7.53	1.5	1.3	30	2	75	.11	4	.5	.9	18	SF2
		30	1023	38.44	19	20.31	155	11.77	8.20	2.1	1.9	41	5	77	.11	5	.4	.6	26	SF3
		31	157	19.29	19	29.43	155	2.77	45.28	2.3	2.0	41	0	69	.13	2	1.0	2.6	38	DEP
		31	341	12.51	19	18.51	155	11.45	5.95	1.5	1.1	28	3	124	.12	4	.5	1.1	20	SF3
		31	533	49.41	19	23.34	155	26.52	8.25	1.6	1.1	26	1	46	.09	3	.4	.9	19	KAO
		31	11	2 36.41	19	17.73	155	23.19	4.03	1.7	2.2	28	2	99	.10	5	.4	1.5	24	SWR
		31	11	3 37.19	19	17.75	155	23.24	5.75	2.0	2.5	32	1	99	.13	5	.5	1.3	26	SWR
		31	2314	35.27	20	16.40	156	49.68	9.31	2.6	1.6	36	2	268	.12	81	3.3	5.6	24	DIS
		31	2324	16.04	19	20.27	155	8.01	7.25	1.9	2.2	34	2	85	.09	5	.4	.8	19	SF4
	APR	1	2	2 59.68	19	45.33	155	50.23	15.36	1.9	1.7	26	2	187	.21	8	2.1	1.3	17	HUA
		1	8	0 50.66	19	29.18	155	39.26	6.23	1.6	1.1	18	4	115	.09	6	.5	1.0	15	MLO
		1	1337	24.17	19	18.14	155	16.85	9.24	2.6	2.8	42	3	123	.13	3	.5	.5	33	SF1
		1	1518	29.78	19	18.95	155	13.81	7.41	1.7	1.3	23	0	86	.08	4	.5	1.1	18	SF2
		1	1540	37.23	19	20.50	155	12.00	7.78	1.6	1.3	28	3	73	.11	4	.6	.9	20	SF3
		1	2055	5.89	19	26.94	155	27.39	8.06	2.1	1.3	33	2	53	.11	8	.4	1.1	20	KAO
		2	054	43.69	19	20.41	155	12.07	8.72	1.5	1.5	30	1	74	.09	4	.5	.7	23	SF3
		2	5	5 37.13	19	20.40	155	2.68	1.90	1.6	1.1	28	2	182	.18	11	1.0	1.6	10	SSF
		2	510	46.60	19	18.75	155	15.34	8.45	2.3	2.3	44	5	99	.13	4	.5	.5	28	SF1
		2	7	0 42.33	19	19.41	155	8.81	6.50	1.6	1.5	29	2	84	.10	4	.5	1.2	19	SF4
		2	1322	26.81	19	30.22	155	15.14	6.11	1.5	1.3	36	4	58	.14	10	.4	1.8	27	GLN
		2	1519	58.62	19	11.49	155	37.83	8.21	2.8	2.5	38	2	100	.20	7	.6	1.2	29	LSW
		2	1548	48.58	19	22.60	155	19.68	30.72	2.6	2.4	46	3	40	.14	2	.6	1.0	40	DML
		3	221	59.72	19	20.82	155	17.61	34.77	2.4	2.3	46	3	35	.12	1	.7	1.0	41	DEP
		3	420	16.36	19	20.17	155	4.26	6.31	2.5	2.6	39	4	131	.10	2	.4	.7	23	SF5
		3	1356	13.97	19	20.48	155	2.47	4.99	1.4	1.1	17	0	182	.17	1	1.5	1.6	7	SSF
		3	1628	44.51	19	20.20	155	7.35	7.76	1.4	1.3	28	1	99	.11	5	.5	.9	16	SF4
		3	2149	19.68	19	21.28	155	2.17	6.74	1.9	1.4	29	3	158	.15	3	.6	.8	18	SF5
		4	243	44.14	19	19.90	155	7.62	8.84	2.2	2.3	39	3	99	.09	5	.4	.5	23	SF4
		4	1144	47.60	19	25.82	155	37.59	2.96	2.9	3.2	31	2	94	.12	4	.4	.9	27	MLO
		4	1232	48.04	19	19.17	155	13.09	6.35		1.3	21	0	80	.11	4	.5	1.2	18	SF2
		4	1340	58.56	19	24.64	154	57.30	7.89	1.9	1.2	22	2	171	.15	3	.7	.9	15	LER
		4	1525	53.89	19	17.71	155	20.34	7.56	1.7	1.5	24	2	126	.13	7	.5	1.6	16	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	APR	5	1815	.24	19	11.51	155	40.79	4.67	2.2	1.7	33	1	117	.23	9	1.0	2.7	21	LSW
		6	1113	47.13	19	25.86	155	38.71	3.43	2.5	2.7	25	1	201	.09	5	.7	1.5	16	MLO
		6	1514	25.05	19	20.75	155	1.92	5.21	1.9	1.2	16	1	174	.12	2	.8	1.5	10	SF5
		6	1758	10.38	19	19.31	155	13.62	7.58	1.9	1.9	39	3	68	.12	4	.4	.7	29	SF2
		6	1822	39.47	19	38.95	155	9.53	14.75	1.5	1.3	22	0	180	.07	19	.8	.6	15	KEA
		6	1912	25.07	19	23.91	155	16.04	2.48	1.6	2.0	19	3	106	.13	1	.4	.3	13	SEC
		6	23	4 24.97	19	24.87	155	25.57	7.64	1.5	1.1	29	4	49	.11	1	.3	.8	19	KAO
		7	311	9.96	19	20.93	155	3.22	7.15	2.1	2.0	33	2	105	.10	2	.6	.7	20	SF5
		7	333	22.17	19	17.35	155	21.21	8.87	1.4	1.1	27	3	130	.08	5	.4	.8	20	SWR
		7	550	54.94	19	23.55	155	3.30	6.14	1.3	1.1	31	2	104	.15	5	.5	1.3	20	SF5
		7	1017	12.51	19	20.61	155	3.61	5.60	1.6	1.2	26	2	95	.14	2	.6	1.0	20	SF5
		7	11	0 33.48	19	16.88	155	28.62	8.93	3.3	3.7	50	5	54	.15	4	.4	.6	44	LSW F
		7	1236	52.48	19	18.23	155	29.56	6.39		1.5	32	1	43	.18	6	.4	1.5	22	LSW
		7	1950	33.12	19	28.30	155	36.06	1.73	1.3	1.1	10	1	81	.10	2	.4	.3	6	MLO
		7	21	1 5.48	19	7.86	155	31.58	39.25	2.2	1.6	27	2	161	.11	14	.9	1.9	21	DLS
		8	1	7 42.02	19	21.34	155	2.79	7.75	2.4	2.5	31	3	126	.11	3	.5	.6	19	SF5
		8	624	24.09	19	20.16	155	10.77	7.09	1.5	1.5	34	2	84	.11	4	.5	.9	21	SF3
		8	1335	2.27	19	19.33	155	10.21	6.16	1.8	1.3	31	2	102	.11	5	.5	1.0	19	SF3
		8	1514	34.97	19	21.09	155	7.98	8.45	1.1	1.1	24	2	76	.09	4	.5	.8	19	SF4
		8	18	5 53.84	19	15.13	155	29.54	10.29	1.3	1.2	30	2	66	.14	1	.5	.7	18	LSW
		9	1629	21.29	19	22.11	155	1.34	5.39	1.5	1.1	22	3	169	.13	5	.7	1.5	18	SF5
		9	2045	42.77	19	21.35	155	1.93	7.86	2.2	2.3	36	6	155	.10	3	.5	.5	21	SF5
		9	2110	59.95	19	20.44	155	12.43	7.80	1.3	1.1	28	3	70	.09	4	.5	.7	17	SF2
		9	2314	3.66	19	13.49	155	29.69	6.77	1.8	1.7	34	3	75	.22	3	.5	1.1	17	LSW
		10	031	9.01	19	21.37	155	15.81	26.20	1.8	1.5	38	2	66	.09	2	.6	1.0	34	DEP
		10	113	29.23	19	26.43	155	38.21	3.29	2.6	2.8	21	2	196	.11	4	.7	.9	13	MLO
		10	944	19.67	19	21.06	155	4.23	2.71	2.1	1.8	10	1	96	.06	3	.4	.6	6	SSF
		10	1034	20.74	19	22.32	155	25.36	10.67	1.7	1.8	34	3	41	.11	4	.4	.6	24	KAO
		10	1324	30.10	19	35.25	155	41.51	7.77	1.4	1.2	21	1	101	.15	12	.6	2.5	11	KEA
		10	1359	6.63	19	21.66	155	1.56	7.53	2.5	2.3	36	3	158	.10	4	.5	.6	23	SF5
		10	1547	8.16	19	20.15	155	7.99	6.63	1.3	1.0	26	3	87	.09	5	.5	1.1	14	SF4
		11	145	25.71	19	22.44	155	28.09	6.63	2.6	2.6	42	4	43	.13	1	.3	.7	32	KAO
		11	716	56.53	19	20.47	155	11.44	8.13	1.6	1.2	32	3	77	.09	4	.5	.7	22	SF3
		11	734	7.87	19	53.29	155	57.39	43.11	1.8	1.9	31	3	220	.11	26	1.4	1.9	22	HUA
		11	1053	48.73	19	18.12	155	20.88	6.94	2.0	2.3	34	4	120	.12	4	.4	.8	21	SWR
		11	1214	39.75	19	19.45	155	15.52	5.98	1.0	1.3	29	2	97	.11	4	.4	1.0	20	SF1
		11	1548	4.87	19	26.43	155	38.33	2.84	2.5	2.7	19	3	200	.09	4	.6	.7	14	MLO
		11	1712	39.44	19	20.91	155	3.17	6.97	2.6	2.7	38	4	107	.11	2	.5	.6	26	SF5
		12	049	26.90	19	29.63	155	40.00	7.08	3.6	3.8	40	4	140	.12	7	.5	.7	32	MLO F
		12	514	15.44	19	21.75	155	24.92	9.11	1.5	1.1	26	2	44	.11	4	.4	.7	21	SWR
		12	7	1 48.12	19	19.48	155	6.91	7.71	1.7	1.5	31	5	123	.10	4	.5	.9	20	SF4
		12	7	4 50.84	19	20.09	155	6.82	8.63	2.7	2.7	41	2	110	.10	5	.4	.5	30	SF4
		12	7	8 10.79	19	19.88	155	7.18	7.83	2.1	2.1	36	1	108	.10	5	.5	.7	27	SF4
		12	835	22.93	19	21.21	155	27.79	9.18	1.9	1.3	15	0	125	.07	2	.6	1.5	9	KAO
		12	912	57.81	19	21.45	155	1.61	6.72	2.1	1.8	28	3	162	.10	4	.5	.6	19	SF5
		12	922	24.51	19	21.68	155	.96	8.83	2.3	2.5	36	2	169	.09	5	.7	.4	28	SF5
		12	1312	51.56	19	27.43	154	52.98	7.99	2.3	1.6	31	2	141	.13	3	.7	.5	19	LER
		12	1647	11.70	19	20.44	155	7.38	7.13	2.1	1.9	35	3	94	.13	5	.5	.9	23	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	APR	12	1838	59.92	19	18.74	155	15.06	6.83	1.7	1.5	33	1	95	.11	4	.5	.7	22	SF1
		13	233	56.15	19	18.77	155	29.50	9.10	2.3	2.5	35	2	52	.12	7	.4	.8	28	LSW
		13	326	5.78	19	23.50	155	24.08	8.27	2.3	2.6	39	3	33	.12	4	.4	.6	33	KAO
		13	638	31.59	19	20.67	155	2.75	4.33	1.3	1.1	19	1	144	.20	1	1.1	1.4	11	SSF
		13	1114	57.34	19	21.42	155	3.43	6.26	1.4	1.1	25	2	108	.13	3	.5	1.0	15	SF5
		13	1230	7.39	19	19.58	155	7.87	8.69	1.3	1.1	30	2	98	.08	4	.5	.7	19	SF4
		13	14 3	20.18	19	26.43	154	54.94	5.82	1.6	1.4	26	1	156	.10	2	.6	.8	18	LER
		14	350	58.69	19	20.52	155	11.83	8.61	1.7	1.8	32	2	74	.09	4	.4	.5	24	SF3
		14	517	25.90	19	25.83	155	29.86	8.30	1.6	1.1	25	2	64	.10	7	.4	1.1	18	KAO F
		14	1058	24.31	19	20.22	155	6.19	8.19	1.8	1.7	29	1	116	.08	5	.5	.9	22	SF4
		14	1142	22.99	19	19.68	155	11.96	6.65	2.4	2.5	42	1	88	.13	6	.5	.7	34	SF3
		14	12 9	43.57	19	20.37	155	13.10	7.53	1.6	1.5	26	2	65	.10	4	.5	.9	19	SF2
		14	1749	34.95	19	18.52	155	15.83	8.36	2.1	2.2	40	3	119	.12	4	.5	.5	26	SF1
		15	056	28.00	19	18.35	155	13.32	6.81	1.3	1.5	37	4	85	.10	2	.4	.8	29	SF2
		15	446	36.24	19	17.88	155	13.06	6.58	1.2	1.4	26	4	109	.08	2	.5	1.0	23	SF2
		15	614	50.51	19	19.21	155	11.18	6.60	1.3	1.0	28	2	104	.11	6	.6	1.2	23	SF3
		15	1337	2.28	19	20.00	155	7.33	7.77	2.0	1.8	36	2	102	.09	5	.4	.6	27	SF4
		15	14 3	44.85	19	17.90	155	12.36	7.61	1.2	.7	28	3	183	.12	3	.7	.9	17	SF2
		15	1451	14.46	19	20.09	155	11.85	9.23	3.1	2.9	38	2	81	.09	5	.4	.6	32	SF3 F
		15	2035	41.12	19	29.47	155	23.77	8.26	1.9	1.6	40	2	47	.13	1	.4	.7	31	KAO
		15	2339	25.36	19	21.85	155	25.11	9.31	1.7	1.4	39	5	43	.12	4	.4	.5	30	KAO
		16	428	28.69	19	32.17	155	35.94	14.79	1.4	1.0	21	3	90	.10	5	.7	.6	13	OML
		16	640	51.85	19	19.76	155	7.03	8.74	2.2	2.3	35	1	113	.07	5	.5	.5	28	SF4
		16	850	10.38	19	18.89	155	13.37	8.28	1.6	1.5	36	3	77	.12	3	.5	.6	23	SF2
		16	2327	56.36	19	25.49	155	25.83	10.48	1.6	1.5	34	3	40	.10	1	.4	.6	24	KAO
		16	2343	49.90	19	18.90	155	2.78	41.59	2.5	2.4	38	0	203	.09	2	1.3	2.0	30	DEP
		17	230	16.36	19	23.08	155	2.50	7.55	1.5	1.1	25	1	128	.15	6	.7	1.2	14	SF5
		17	6 9	35.25	19	10.24	155	22.11	37.08	2.0	1.6	38	2	176	.10	8	.8	1.4	27	DEP
		17	1236	59.72	19	21.01	155	8.10	7.87	1.4	1.7	32	2	75	.09	4	.4	.8	22	SF4
		18	425	29.25	19	20.06	155	8.33	7.49	1.8	2.1	41	4	81	.12	5	.4	.6	25	SF4
		18	844	41.75	19	19.58	155	9.07	5.80		1.3	20	0	85	.11	5	.6	1.4	18	SF4
		18	1525	9.76	19	20.84	155	2.11	5.89	2.0	2.1	26	2	164	.11	2	.6	.6	14	SF5
		18	20 6	59.24	19	20.40	155	12.94	7.10	1.5	1.3	31	2	67	.10	4	.5	.7	21	SF2
		19	140	37.74	19	20.11	155	3.89	6.48	1.8	1.7	26	0	133	.11	2	.7	.9	23	SF5
		19	1013	13.87	19	22.82	155	26.55	6.64	1.6	1.5	28	1	43	.11	2	.4	.8	22	KAO
		19	1046	23.40	19	4.10	155	8.89	20.39	1.7	1.4	24	0	268	.08	25	2.4	3.3	18	LOI
		19	1520	16.01	19	18.86	155	15.59	7.17	1.0	1.1	30	3	109	.11	4	.5	.8	18	SF1
		19	1633	50.77	19	26.11	155	28.23	8.36	1.8	1.1	33	3	62	.09	6	.3	.9	25	KAO
		20	050	59.60	19	22.12	155	25.47	8.55	1.7	1.1	30	2	43	.12	4	.4	.9	25	KAO
		20	731	19.91	19	26.51	155	30.26	9.61	2.0	1.4	29	2	68	.11	9	.4	1.1	18	KAO
		20	1235	29.76	19	15.33	155	22.00	8.48	1.9	1.5	25	2	184	.09	4	.6	1.0	19	SWR
		20	1641	26.57	19	6.56	155	28.69	30.33	1.8	1.5	30	0	240	.08	6	1.9	2.2	25	DLS
		20	2240	55.01	19	20.86	155	18.11	34.63	2.3	2.0	41	1	52	.10	2	.6	1.2	35	DEP
		20	2244	33.75	19	19.79	155	10.00	6.64	1.4	1.1	24	2	89	.11	4	.5	1.2	16	SF3
		21	629	52.40	19	21.03	155	2.29	6.60	2.4	2.3	33	3	152	.09	2	.5	.7	20	SF5
		21	12 3	6.32	19	20.42	155	6.85	4.84	1.9	1.5	25	0	102	.15	5	.6	1.9	18	SSF
		21	1519	44.94	19	20.21	155	13.00	6.69	1.6	1.5	31	3	68	.10	4	.5	.8	23	SF2
		21	2214	50.26	19	20.23	155	9.13	8.19	1.3	1.2	24	2	75	.08	4	.6	1.0	19	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	APR	21	2255	32.53	19	19.64	155	8.90	5.98	1.7		27	2	81	.10	5	.6	1.3	17	SF4
		22	631	28.98	19	27.07	155	14.84	31.91	2.6	2.6	39	0	84	.09	5	.7	1.3	39	DEP
		22	922	33.23	19	20.14	155	8.22	7.50	1.8	1.7	38	3	82	.09	5	.4	.6	26	SF4
		22	10 8	11.72	19	21.94	155	25.17	9.16	2.2	2.4	46	5	41	.13	4	.4	.5	35	KAO
		22	1514	13.65	19	20.47	155	12.85	7.35	1.3	1.1	26	3	67	.10	4	.5	.9	19	SF2
		22	2020	8.22	19	20.35	155	12.66	7.13	1.6	1.8	34	3	69	.10	4	.4	.6	26	SF2
		22	2043	41.88	19	19.99	155	8.23	9.21	3.0	3.3	43	2	84	.09	5	.4	.3	36	SF4
		22	2137	49.57	19	21.56	155	25.06	9.27	2.4	2.7	46	5	44	.14	4	.4	.5	34	KAO
		23	619	34.99	19	20.94	155	2.94	5.52	1.4	1.1	24	1	120	.11	2	.5	.9	16	SF5
		23	649	25.28	19	19.53	155	10.03	5.30	1.2	1.1	23	0	96	.10	5	.5	1.6	17	SF3
		23	715	31.71	19	20.35	155	8.42	7.49	2.0	1.9	36	0	77	.13	4	.5	.8	27	SF4
		23	814	50.44	19	24.24	155	26.30	9.37	1.7	1.3	32	3	49	.11	3	.4	.8	26	KAO
		23	1257	36.69	19	12.74	155	31.77	42.98	2.5		32	0	79	.12	5	.8	2.0	13	DLS
		24	0 4	26.02	19	19.43	155	8.60	7.37	1.8	1.7	30	1	80	.10	4	.5	.8	23	SF4
		24	1 9	17.77	19	21.08	155	11.61	8.68	2.9	3.2	48	5	67	.10	4	.3	.4	36	SF3
		24	224	31.47	19	26.48	155	22.58	6.83	1.6	1.7	22	3	76	.10	4	.4	1.1	17	KAO
		24	1157	31.76	19	32.75	155	28.51	12.73	1.4	1.3	27	3	88	.12	2	.4	.5	18	MLO
		24	2126	27.28	19	15.85	155	30.11	6.73	2.2	2.3	35	2	57	.20	1	.5	1.1	22	LSW
		24	2148	11.53	19	47.66	155	46.40	13.36	1.7	1.6	18	0	226	.07	14	1.4	.6	9	HUA
		25	145	7.94	19	20.48	155	3.69	5.48	1.7	1.1	26	2	105	.15	2	.6	1.0	19	SF5
		25	250	26.80	19	20.41	155	3.87	5.54	2.0	1.3	30	4	114	.14	2	.5	1.0	19	SF5
		25	8 9	7.16	19	20.41	155	8.35	5.51	1.4	1.1	13	0	78	.09	4	.6	1.6	13	SF4
		25	1142	59.45	19	25.60	155	28.22	9.75	2.5	2.5	44	4	33	.12	5	.4	.7	34	KAO
		25	1523	1.29	19	20.66	155	3.12	6.98	1.9	1.5	27	2	115	.17	1	.8	1.0	15	SF5
		25	1942	22.88	19	19.68	155	6.69	8.20	2.1	2.0	40	4	122	.10	5	.4	.5	26	SF4
		25	2058	54.00	19	20.82	155	3.44	7.13	1.9	1.7	30	3	100	.13	2	.6	.7	16	SF5
		25	22 2	51.59	19	21.31	155	3.14	7.49	2.9	3.2	42	3	111	.10	3	.5	.4	37	SF5 F
		26	336	42.01	19	19.99	155	6.82	7.19	1.3	1.3	30	0	112	.12	5	.5	1.1	25	SF4
		26	622	7.32	19	20.70	155	13.02	7.71	2.0	2.2	42	3	63	.13	4	.4	.6	32	SF2
		26	630	49.80	19	17.80	155	22.75	8.19	1.8		32	2	106	.19	5	.5	.8	19	SWR
		26	1431	29.76	19	20.09	155	7.18	7.15	2.1	1.8	36	4	104	.10	5	.4	.8	26	SF4
		26	1518	37.53	19	19.13	155	12.92	6.22	1.6	1.1	31	3	84	.11	4	.5	1.0	25	SF2
		26	2026	6.68	19	24.89	155	25.56	7.98	1.8	1.1	35	3	49	.12	1	.4	.8	28	KAO
		27	030	35.06	19	20.03	155	11.05	7.34	1.9	1.8	37	2	86	.12	4	.5	.7	27	SF3
		27	142	23.51	19	20.31	155	12.78	7.06	1.6	1.6	36	2	70	.11	4	.5	.7	25	SF2
		27	934	4.03	20	23.70	156	17.98	25.61	3.3	3.4	38	4	207	.13	42	.8	3.0	32	KOH
		27	1254	43.36	19	20.20	155	8.86	7.00	1.9	2.2	39	3	71	.10	4	.4	.7	27	SF4
		27	1510	22.29	19	23.32	155	26.64	7.86	1.7	1.1	29	3	45	.08	2	.3	.7	18	KAO
		27	2334	32.86	19	19.79	155	7.55	8.40	4.0	4.1	45	3	102	.09	5	.4	.3	38	SF4 F
		27	2339	54.31	19	19.96	155	8.34	7.35	1.3	1.3	30	4	82	.08	5	.5	.8	21	SF4
		27	2346	1.59	19	20.12	155	8.25	6.87	1.2	1.1	22	2	82	.11	5	.5	.9	13	SF4
		28	515	59.72	19	19.16	155	9.74	6.19	1.2	1.1	27	3	103	.10	5	.5	1.1	18	SF3
		28	1315	30.37	19	35.71	156	1.69	40.10	3.0	3.0	46	3	228	.09	17	1.0	1.4	42	KON
		28	1945	48.97	19	26.30	155	27.64	8.29	2.0	1.7	38	3	55	.12	5	.4	.8	23	KAO
		28	2250	27.60	19	20.40	155	7.07	8.11	2.1	2.1	36	1	99	.09	5	.5	.7	30	SF4
		29	559	59.63	19	19.70	155	18.60	4.02	1.4	1.1	23	3	63	.10	2	.4	.7	14	SWR
		29	619	32.38	19	21.28	155	2.51	6.01	1.6	1.5	28	2	137	.13	3	.6	.9	22	SF5
		29	1316	50.33	19	22.17	155	.51	.01	1.4	1.1	23	2	176	.24	6	.8	.7	13	SSF *

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	APR	29	1835	35.95	19	13.29	155	27.98	7.23	2.5	2.4	43	3	101	.19	5	.5	.9	30	LSW F
		29	2323	56.78	19	21.52	155	6.91	6.66	1.4	.9	34	3	81	.11	3	.5	.9	23	SF4
		30	356	59.64	19	21.92	155	5.06	6.63	1.1	.8	21	0	77	.14	3	.6	1.1	14	SF5
		30	18	4 47.60	19	20.60	155	8.89	7.88	2.0	2.0	40	1	135	.12	3	.5	.6	32	SF4
		30	1824	41.11	19	23.70	155	28.63	9.39	1.7	1.5	36	2	47	.10	3	.4	.7	28	KAO
		30	1919	6.00	19	20.32	155	7.13	7.81	1.6	1.7	33	3	100	.11	5	.4	.6	23	SF4
	MAY	1	737	44.87	19	19.36	155	15.27	7.30	1.4	.6	32	2	96	.10	4	.4	.7	23	SF1
		1	1852	23.24	19	20.90	155	1.99	6.20	2.1	1.8	23	1	166	.09	2	.5	.8	15	SF5
		1	2242	59.14	19	17.15	155	20.83	6.91	1.7	1.6	38	4	138	.12	4	.5	.8	26	SWR
		1	2253	14.45	19	19.82	155	10.69	7.95	1.6	1.3	31	4	91	.08	4	.5	.7	23	SF3
		2	026	10.56	19	17.86	155	21.64	8.35	1.7	1.3	36	5	117	.11	5	.4	.6	22	SWR
		2	1018	25.84	19	24.13	155	16.74	14.91	1.6	1.2	38	4	87	.09	1	.5	.3	26	DEP
		2	1335	7.18	19	17.56	155	23.43	5.52	1.8	1.6	26	4	97	.12	5	.4	1.6	18	SWR
		2	14	8 46.10	19	20.02	155	12.73	6.10	1.3	1.3	29	4	73	.11	5	.4	.8	20	SF2
		2	1719	37.92	19	55.66	155	40.02	22.95	3.0	3.1	48	4	124	.10	25	.6	2.5	42	KOH
		2	22	2 47.36	19	21.06	155	1.58	5.67	2.1	1.1	22	3	180	.13	3	.7	1.2	14	SF5
		3	318	6.29	19	19.83	155	17.89	35.32	2.2	1.9	46	2	78	.10	1	.6	1.1	38	DEP
		3	329	13.56	19	31.04	155	41.22	8.99	2.6	1.6	28	2	78	.10	10	.4	.9	19	MLO
		3	1017	48.01	19	28.91	155	39.25	4.33	2.4	1.6	26	4	92	.11	6	.4	1.3	16	MLO
		3	1029	12.61	19	29.80	155	39.65	6.02	2.3	1.6	24	3	148	.12	7	.7	1.5	11	MLO
		3	1752	19.27	19	20.73	155	12.91	6.64	1.6	1.3	31	3	63	.12	4	.5	.7	22	SF2
		3	1837	18.64	19	20.54	155	3.91	5.13	1.9	1.3	25	3	107	.12	2	.5	1.0	13	SF5
		3	2023	18.29	19	29.90	155	39.66	4.56	2.6	2.7	40	6	51	.15	7	.5	2.4	27	MLO
		4	749	4.30	19	22.29	155	1.43	8.24	2.3	2.6	38	2	150	.13	5	.6	.5	26	SF5
		4	824	30.70	19	19.10	155	14.04	7.28	2.5	2.5	35	1	91	.10	4	.4	.7	26	SF2
		4	1648	32.97	19	20.30	155	13.22	7.69	1.8	1.5	35	5	64	.11	4	.4	.6	24	SF2
		5	630	.51	19	28.84	155	39.69	4.12	2.6	1.2	11	0	120	.08	7	.7	3.3	8	MLO
		5	635	1.00	19	29.43	155	39.05	6.50	2.6	1.6	13	0	94	.13	5	.8	1.6	9	MLO
		5	8	4 47.20	19	29.21	155	39.51	5.98	1.5	1.9	26	5	94	.14	6	.6	1.2	18	MLO
		5	944	34.02	18	25.32	156	6.65	37.38	2.5	3.2	26	0	323	.24	106	39.9	4.7	5	DIS L*
		5	1628	50.17	19	16.65	155	13.29	5.91	1.2	1.1	28	3	162	.10	1	.6	.8	17	SF2
		5	1638	30.75	19	16.21	155	13.24	6.93	1.4	1.5	30	3	191	.11	2	.7	.9	17	SF2
		5	17	8 4.86	19	16.95	155	13.22	5.97	1.2	1.1	27	2	171	.11	0	.5	.8	19	SF2
		5	1716	1.17	19	16.80	155	13.43	5.49	1.1	1.1	26	2	174	.11	0	.6	.9	18	SF2
		5	1826	26.69	19	19.73	155	9.46	8.05	1.5	1.2	29	5	86	.07	4	.5	.8	21	SF3
		5	2128	55.92	19	20.19	155	10.59	8.25	2.1	2.1	42	3	83	.10	4	.4	.5	32	SF3
		5	2245	26.50	19	24.20	155	29.78	12.06	2.8	2.8	47	5	32	.11	5	.4	.4	36	KAO
		5	2332	24.34	19	6.93	155	23.64	42.26		2.0	44	1	187	.09	9	.8	1.6	36	LOI
		5	2337	33.02	19	25.62	155	38.69	2.69	1.3	1.2	11	1	198	.06	5	1.0	1.5	8	MLO
		6	116	52.18	19	11.68	155	19.97	46.27	1.9	1.6	34	0	173	.09	9	.9	1.8	26	DEP
		6	244	7.34	19	18.03	155	52.50	12.29	1.8	1.4	16	1	237	.15	4	1.8	.5	12	KON
		6	1631	54.47	19	18.15	155	13.21	7.32	1.7	1.5	31	3	94	.10	2	.5	.8	23	SF2
		6	1922	19.90	19	21.17	155	11.31	8.37	2.1	1.9	41	4	67	.12	3	.4	.6	31	SF3
		6	20	4 12.26	19	22.51	155	30.17	8.61	2.1	1.5	37	2	42	.10	4	.4	.8	29	KAO
		6	20	9 58.39	19	20.71	155	2.85	7.48	2.1	1.5	34	3	136	.12	1	.6	.6	18	SF5
		6	2015	27.46	19	18.45	155	14.89	6.87	1.3	1.1	28	2	109	.12	4	.5	1.0	21	SF1
		6	2122	47.49	19	18.58	155	15.13	6.57	.9	1.1	23	2	110	.08	4	.4	1.0	16	SF1
		7	847	10.39	19	18.08	155	29.28	9.02	3.0	3.3	45	3	45	.13	6	.4	.6	41	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	MAY	8	633	5.61	19	18.86	155	11.52	3.87	1.7	1.4	26	3	112	.11	5	.4	1.6	15	SSF
		8	954	29.09	19	20.54	155	12.59	7.44	1.6	2.0	36	4	68	.11	4	.5	.6	24	SF2
		8	1617	56.38	19	24.23	155	24.97	8.43	1.9	1.8	38	4	46	.11	2	.3	.7	31	KAO
		9	018	48.33	19	9.98	155	36.09	8.46	2.6	2.6	35	2	106	.20	9	.6	1.0	24	LSW
		9	337	45.85	19	19.92	155	6.76	7.56	2.2	2.4	37	2	114	.10	5	.4	.7	27	SF4
		9	616	52.33	20	39.15	155	55.25	31.30	3.0	3.3	30	3	207	.09	37	1.0	1.2	21	DIS F
		9	741	19.06	19	28.12	155	28.64	8.58	2.0	1.5	26	2	87	.12	7	.5	1.1	20	KAO
		9	1118	55.95	19	21.64	155	1.00	2.15		1.2	25	2	169	.14	5	.6	1.1	14	SSF
		9	14	6 1.19	19	20.43	155	2.58	7.53	2.2	2.1	29	2	165	.11	1	.6	.4	20	SF5
		10	251	44.22	19	20.27	155	13.77	6.26		1.2	20	0	70	.12	5	.6	1.0	19	SF2
		10	1118	1.13	19	20.87	155	2.99	7.16	2.4	2.6	28	0	125	.11	2	.6	.5	25	SF5
		10	1457	12.03	19	41.81	155	2.17	.13	3.1		28	0	109	.20	1	1.4	1.6	22	HIL *
		10	1457	58.99	19	19.21	155	14.24	7.36	2.4	2.6	44	4	72	.12	4	.5	.6	32	SF2
		10	1513	58.13	19	20.15	155	10.00	7.17	1.4	1.3	27	3	82	.10	4	.5	1.0	18	SF3
		10	17	0 45.80	19	20.95	155	12.74	8.79	2.4	2.7	45	4	62	.12	3	.4	.5	33	SF2
		10	1724	55.71	19	20.50	155	12.78	7.25	1.6	1.6	30	3	67	.10	4	.5	.7	19	SF2
		10	2310	48.65	19	19.66	155	10.02	8.36	2.3	2.5	40	3	93	.09	4	.4	.6	34	SF3
		11	210	5.59	19	19.98	155	13.32	5.30	1.0	1.1	30	1	66	.14	5	.5	1.4	23	SF2
		11	422	49.03	19	22.42	155	27.86	7.72	2.8	3.1	44	3	44	.12	0	.3	.7	38	KAO
		11	753	25.00	19	19.63	155	7.59	7.15	1.8	1.3	29	3	103	.09	4	.5	1.0	17	SF4
		11	817	7.06	19	19.74	155	7.37	7.12	1.3	1.1	24	2	107	.08	5	.5	1.1	18	SF4
		11	1122	54.35	19	26.31	154	53.96	7.10	2.0	1.2	29	3	166	.11	3	.6	.7	23	LER
		11	14	8 58.46	19	20.10	155	7.39	8.85	2.8	2.9	43	3	100	.10	5	.5	.4	37	SF4
		12	159	56.00	19	21.15	155	2.27	4.58	1.5	1.1	28	2	148	.16	3	.6	1.4	19	SSF
		12	233	33.98	19	21.27	155	3.68	5.82	2.0	1.7	34	1	90	.13	3	.5	.9	28	SF5
		12	629	9.57	19	46.06	155	34.48	17.53	2.5	2.6	43	3	205	.08	12	.9	2.0	35	KEA
		12	18	2 34.82	19	24.48	156	22.80	30.18	2.2	2.9	14	0	314	.09	49	11.8	3.8	14	DIS
		12	1952	27.24	19	20.18	155	7.97	7.95	1.4	1.4	37	4	86	.09	5	.5	.7	28	SF4
		12	1953	18.24	19	20.37	155	7.80	7.73	1.8	1.7	37	3	88	.10	5	.5	.7	29	SF4
		12	2152	28.07	19	24.93	155	15.65	38.74	1.4	1.9	27	0	91	.08	2	1.0	2.5	18	DEP L
		12	22	9 42.56	19	21.60	155	.85	4.61	2.2	2.6	37	1	173	.11	5	.6	1.4	21	SSF F
		13	025	50.89	19	24.70	155	15.70	39.22	2.2	1.5	33	2	89	.08	2	1.0	1.3	18	DEP L
		13	030	7.96	19	10.24	155	34.95	9.40	4.4	4.1	48	4	107	.20	9	.6	.8	43	LSW F
		13	1259	17.04	19	21.63	155	3.45	8.84	2.4	2.7	37	4	109	.09	3	.6	.4	27	SF5
		13	1444	33.22	19	19.94	155	12.75	7.12	1.8	1.3	29	2	74	.10	5	.5	.9	23	SF2
		14	418	18.17	19	21.67	155	2.18	8.14	3.3	3.7	44	4	142	.10	4	.6	.4	37	SF5
		14	5	1 9.20	19	26.06	155	24.82	7.39	1.8	1.1	29	5	48	.10	2	.3	.8	24	KAO
		14	627	36.30	19	19.58	155	8.78	6.79	1.6	1.3	35	5	81	.09	4	.4	.7	21	SF4
		14	1258	57.02	18	58.43	155	28.91	38.07	2.3	1.8	33	0	225	.07	19	1.5	2.1	29	DLS
		14	1938	38.41	19	19.68	155	8.98	6.17	1.7	1.6	35	3	81	.12	5	.5	.9	22	SF4
		15	4	6 38.89	19	24.59	155	29.83	7.85	2.4	2.2	39	3	53	.11	5	.3	.8	28	KAO
		15	417	14.96	19	21.45	155	1.86	6.97	1.6	1.3	27	2	163	.13	3	.6	.8	17	SF5
		15	6	1 1.47	19	23.17	155	2.25	7.43	2.0	1.8	35	2	125	.13	5	.5	.6	23	SF5
		15	1149	12.78	19	20.95	155	13.35	8.47	2.5	2.5	47	4	57	.13	3	.4	.5	39	SF2
		15	1151	48.08	19	20.48	155	13.36	7.74	1.9	1.9	41	2	118	.13	4	.5	.6	29	SF2
		15	1215	11.58	19	19.46	155	11.64	6.96	1.8	1.2	33	2	95	.10	6	.5	.9	28	SF3
		15	1217	56.15	19	19.50	155	11.79	6.73	1.5	1.3	32	3	93	.10	5	.5	.9	26	SF3
		15	1219	46.13	19	17.45	155	12.93	7.65	2.0	2.2	36	3	140	.11	1	.5	.6	25	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	MAY	15	1343	30.94	19	20.77	155	11.98	8.31	2.8	3.0	46	3	70	.14	4	.4	.6	42	SF3	
		15	1714	14.15	19	17.63	155	13.07	7.89	1.8	2.2	37	4	119	.11	1	.6	.7	25	SF2	
		15	21 4	24.43	19	21.76	155	5.01	8.17	2.5	2.7	44	4	80	.09	3	.4	.5	29	SF5	
		16	218	49.06	19	19.74	155	8.95	6.66	1.1	1.2	29	4	80	.12	5	.5	1.0	22	SF4	
		16	258	1.63	19	18.44	155	13.11	4.12	1.3	1.1	31	3	92	.13	3	.5	1.0	18	SSF	
		16	743	17.75	19	19.40	155	11.49	8.76	1.6	1.5	32	2	98	.12	6	.5	.8	25	SF3	
		16	1051	31.37	19	18.78	155	30.51	3.97	2.0	1.3	32	2	65	.15	7	.4	2.7	23	LSW	
		16	1548	56.82	19	23.43	155	25.96	9.34	2.1	1.8	41	4	39	.13	3	.4	.6	33	KAO	
		16	1920	59.27	19	6.56	155	23.52	44.01	2.3	1.6	38	1	189	.08	9	.9	2.0	28	LOI	
		17	134	56.89	19	17.68	155	53.03	42.50	1.9	1.5	29	1	279	.07	24	1.9	1.9	24	KON	
		17	411	53.83	19	19.39	155	9.94	6.23	1.2	1.1	26	2	98	.09	5	.5	1.2	15	SF3	
		17	427	10.08	19	24.06	155	26.05	7.70	1.6	1.1	31	4	47	.10	3	.4	.8	26	KAO	
		17	730	49.21	19	21.60	155	30.17	8.69	2.0	1.3	31	2	46	.10	5	.4	.8	20	KAO	
		17	731	46.25	19	18.50	155	15.16	5.77	.8	1.1	26	4	112	.10	4	.4	1.1	19	SF1	
		17	751	36.00	19	21.52	155	30.06	9.30	2.9	3.1	41	3	45	.13	5	.4	.6	34	KAO	
		17	1614	2.15	19	20.96	155	30.06	8.23	1.7	1.3	29	1	47	.13	5	.5	1.2	22	KAO	
		17	1623	29.57	19	20.82	155	30.20	9.38	2.2	2.2	31	1	49	.07	6	.4	.9	28	KAO	
		17	1643	26.16	19	22.06	155	25.14	9.38	1.4	1.2	28	4	53	.11	4	.4	.7	23	KAO	
		17	2012	6.97	19	29.29	155	39.40	6.26	2.9	3.2	34	2	211	.12	6	.9	1.1	25	MLO	
		17	2154	25.43	19	20.12	155	12.63	7.34	1.4	1.5	23	1	73	.08	5	.5	.9	18	SF2	
		18	346	54.66	19	10.24	155	32.49	31.46	2.0	1.7	34	3	113	.09	8	.7	1.5	30	DLS	
		18	526	16.29	19	29.99	155	39.98	5.87	2.1	1.6	19	3	237	.10	7	1.1	1.7	16	MLO	
		18	549	13.34	19	43.88	155	43.77	40.88	3.2	3.3	43	3	237	.08	25	1.1	1.5	37	HUA	
		18	1321	19.20	19	20.11	155	12.21	6.89	1.3	1.1	31	3	78	.10	5	.5	.9	21	SF3	
		18	1650	30.19	19	36.31	155	41.86	1.62	2.4	2.1	27	1	88	.13	13	.5	3.1	14	KEA	
		18	2031	24.72	19	25.10	155	25.27	8.21	2.1	1.5	36	4	49	.11	0	.4	.7	25	KAO	
		18	2057	53.60	19	22.96	155	24.49	9.30	2.0	1.8	36	3	38	.11	4	.4	.6	30	KAO	
		18	21 6	19.13	18	57.83	155	16.91	11.72	2.8	2.8	35	0	234	.17	29	1.8	.7	11	LOI	
		19	429	9.37	19	20.04	155	6.56	7.81	2.4	2.4	40	2	115	.11	6	.5	.5	31	SF4	
		19	715	25.46	19	20.64	155	10.90	8.36	2.7	2.4	41	4	75	.09	3	.3	.5	32	SF3	
		19	717	55.05	19	20.42	155	11.00	7.30	1.2	1.1	28	1	79	.08	4	.5	.9	17	SF3	
		19	1049	9.06	19	20.80	155	13.00	7.74	2.3	2.5	43	3	62	.13	3	.4	.5	37	SF2	
		19	1052	20.63	19	19.73	155	14.45	8.14	2.1	1.8	41	2	121	.11	5	.5	.6	36	SF2	
		19	1146	37.28	19	33.96	155	41.62	1.64	3.3	3.1	38	4	82	.14	10	.5	1.1	27	MLO	
		19	1155	36.24	19	20.45	155	13.14	7.73	1.8	1.6	31	1	64	.11	4	.5	.7	24	SF2	
		19	1534	22.36	19	19.60	155	26.50	7.71	1.4	1.2	29	2	61	.15	6	.4	1.1	23	KAO	
		19	17 6	57.41	19	35.67	155	41.74	1.14	2.4	2.3	22	2	141	.10	12	.7	1.0	17	KEA	
		19	2313	12.18	19	19.71	155	7.40	7.09	2.0	1.8	36	2	106	.09	4	.5	.7	27	SF4	
		20	259	49.34	19	35.54	155	41.65	7.88		1.9	17	0	104	.12	12	.6	2.9	14	KEA	
		20	535	17.85	19	19.80	155	8.85	6.17	1.5	1.5	33	1	77	.10	5	.5	1.1	22	SF4	
		20	6 7	52.21	19	18.92	155	15.47	8.52	1.6	2.3	36	1	130	.12	4	.5	.7	23	SF1	
		20	7 6	18.76	19	17.33	155	22.43	6.90	1.8	2.3	34	2	116	.13	6	.4	.8	16	SWR	
		20	11 2	29.61	19	20.98	155	2.93	6.39	2.0	1.8	35	4	122	.14	2	.5	.7	20	SF5	
		20	1213	19.16	19	19.99	155	7.35	7.49	1.4	1.3	33	4	102	.09	5	.5	.8	21	SF4	
		20	1342	11.42	19	19.62	155	15.57	7.62	1.2	1.3	31	2	95	.10	3	.4	.7	18	SF1	
		20	1355	54.25	19	19.07	155	13.24	7.99	2.0	2.1	41	2	78	.12	4	.4	.6	32	SF2	
		20	20 1	46.40	19	11.60	155	37.58	7.99	2.9	2.9	45	4	98	.22	6	.6	.9	34	LSW	
		21	243	4.76	19	35.45	155	41.94	.01	3.1	3.1	36	3	89	.13	11	.4	.6	23	KEA	*

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	MAY	21	3 0	45.21	19	35.47	155	41.73	2.22	2.3	1.9	27	1	102	.11	12	.5	1.9	14	KEA	
		21	337	51.73	19	35.35	155	41.88	.77	2.8	2.9	36	2	88	.12	11	.4	.8	27	KEA	
		21	5 5	59.75	19	34.48	155	41.58	.83	2.5	2.6	35	3	83	.13	10	.4	.7	22	MLO	
		21	1057	53.85	19	21.52	155	25.84	8.99	1.4	1.1	29	4	57	.11	4	.4	.7	24	KAO	
		21	1923	27.71	19	19.96	155	7.49	7.07	1.4	1.1	29	2	100	.08	5	.5	1.0	17	SF4	
		21	2149	58.06	19	22.04	155	25.28	9.69	2.2	2.3	45	5	43	.14	4	.4	.5	38	KAO	
		22	949	49.69	19	29.85	155	39.28	6.09	1.9	1.6	26	5	75	.12	6	.4	1.1	16	MLO	
		22	1217	4.62	19	26.23	155	28.82	5.39	2.0	1.1	33	2	59	.11	7	.4	2.0	21	KAO	
		22	20 4	23.39	19	24.46	155	27.18	9.00	1.5	1.1	31	3	44	.12	4	.4	.8	23	KAO	
		23	040	48.35	19	28.62	155	39.09	5.73	1.2	1.3	21	4	69	.10	6	.4	1.0	13	MLO	
		23	115	13.29	19	17.55	155	21.86	8.29	1.6	1.7	36	5	120	.11	6	.3	.5	24	SWR	
		23	156	33.29	19	19.90	155	5.98	6.08	1.1	1.3	16	0	128	.09	5	.6	1.6	8	SF4	
		23	1812	2.53	19	19.77	155	7.53	7.38	1.6	1.3	35	3	102	.11	5	.5	.8	21	SF4	
		23	1818	15.98	19	21.11	155	7.43	8.66	1.3	1.3	26	2	83	.10	4	.5	.8	23	SF4	
		23	1837	55.85	19	25.30	155	26.95	10.91	1.9	2.0	37	2	52	.08	3	.4	.6	31	KAO	
		24	141	29.52	19	21.12	155	3.19	6.63	2.0	1.5	36	4	108	.17	2	.6	.8	20	SF5	
		24	3 1	31.28	19	19.43	155	16.42	8.03	2.0	2.1	41	3	105	.13	2	.4	.6	30	SF1	
		24	449	8.82	19	20.60	155	7.38	7.78	1.9	1.7	28	0	91	.14	5	.5	.8	20	SF4	
		24	749	17.85	19	19.49	155	8.67	9.52	3.1	3.3	44	2	77	.11	4	.5	.4	36	SF4	
		24	1637	9.38	19	20.96	155	1.97	7.11	1.6	1.5	27	3	165	.10	3	.5	.5	17	SF5	
		24	22 1	12.93	19	16.79	155	28.84	8.15	1.4	1.3	36	2	54	.18	4	.5	1.2	26	LSW	
		25	3 3	53.90	19	21.05	155	13.31	7.04	1.8	1.9	47	5	57	.14	3	.4	.6	36	SF2	
		25	11 7	20.31	19	12.91	155	15.39	46.42	2.5	2.7	38	2	180	.10	8	1.0	1.5	15	DEP	L
		25	1322	24.56	19	20.94	155	6.52	6.46	1.8	1.3	33	2	95	.14	4	.5	1.0	19	SF4	
		25	2042	38.85	19	16.89	155	3.28	46.61	2.5	2.3	46	1	196	.13	6	1.0	1.7	40	DEP	
		25	21 7	48.93	19	21.11	155	25.15	8.96	2.1	2.2	45	7	55	.13	4	.4	.5	33	KAO	
		25	23 6	9.30	19	21.29	155	4.59	8.21	2.3	2.4	39	2	88	.11	4	.5	.5	28	SF5	
		25	23 9	37.05	19	20.56	155	2.45	6.60	3.1	3.1	42	3	159	.12	1	.6	.5	34	SF5	
		26	051	54.43	19	20.09	155	6.77	7.81	1.9	1.3	30	2	111	.09	5	.4	.9	17	SF4	
		26	913	5.24	20	10.08	155	6.31	10.08		2.4	11	0	269	.09	40	5.6	3.7	5	KEA	
		27	245	36.98	19	49.20	155	21.29	16.79	3.0	2.3	43	3	115	.13	8	.8	2.2	37	KEA	
		27	613	8.91	19	20.62	155	8.36	5.20	1.5	1.4	20	3	76	.06	4	.5	1.3	13	SF4	
		27	1728	9.70	19	20.46	155	12.46	8.66	2.2	2.5	45	3	70	.14	4	.4	.5	36	SF2	
		27	1847	56.45	19	21.33	155	1.13	7.60	2.9	3.3	43	4	174	.10	4	.6	.4	30	SF5	
		27	1919	46.88	19	11.44	155	29.08	33.23	2.4	1.5	40	1	75	.08	4	.6	1.5	34	DLS	
		27	2040	45.32	19	38.23	156	28.52	24.89	2.3	2.7	16	0	283	.12	61	5.0	8.0	10	DIS	
		27	22 9	13.26	19	12.47	155	32.47	8.17	1.4	1.5	30	2	84	.15	6	.5	.8	22	LSW	
		28	0 3	40.93	19	12.07	155	31.67	6.19	1.4	2.2	26	1	89	.16	6	.6	1.9	13	LSW	
		28	012	33.72	19	46.01	156	2.84	40.10	3.0	3.3	49	4	189	.11	24	.8	1.3	41	HUA	
		28	542	10.30	19	20.41	155	12.65	7.32	1.5	1.4	30	2	69	.10	4	.5	.9	22	SF2	
		28	548	11.94	19	21.15	155	6.02	4.80	1.9	1.3	26	0	93	.12	6	.5	3.0	18	SSF	
		28	1234	18.91	19	35.93	155	43.31	1.02	2.4	2.4	15	1	115	.12	11	.6	1.5	10	KON	
		28	17 7	4.77	19	23.57	155	26.14	8.18	1.7	1.3	36	2	46	.11	3	.4	.8	29	KAO	
		28	1717	13.65	19	30.24	155	54.87	11.03	2.7	2.0	20	2	189	.13	2	1.1	.5	14	KON	
		28	1755	56.64	19	20.91	155	12.45	8.77	1.6	1.6	31	3	83	.09	3	.5	.6	27	SF2	
		28	1929	18.64	19	11.39	155	29.09	33.59	2.0	1.4	35	1	79	.08	4	.7	1.6	30	DLS	
		28	21 5	14.91	19	21.20	155	2.30	6.30	2.1	2.3	32	2	147	.15	3	.5	.7	24	SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	MAY	29	434	23.30	19	19.45	155	9.81	6.47	1.4	1.1	31	2	96	.11	5	.5	.9	26	SF3	
		29	14 9	32.74	19	11.35	155	28.94	34.00	2.4	1.7	36	0	77	.08	4	.7	1.7	31	DLS	
		29	1432	7.88	19	20.79	155	12.71	8.92	1.5	1.4	35	3	64	.09	3	.5	.6	22	SF2	
		29	1710	39.46	19	31.47	155	42.67	6.01	1.1	1.2	27	4	78	.13	6	.5	1.7	20	MLO	
		30	310	9.30	19	19.66	154	47.52	47.78	1.9	1.6	36	0	277	.12	16	4.3	4.4	31	LER	
		30	1045	32.94	19	19.48	155	10.38	6.55	1.7	1.5	36	4	98	.12	5	.5	.8	30	SF3	
		30	1232	31.78	19	22.00	155	2.95	7.81	1.8	1.3	30	5	116	.13	4	.5	.6	20	SF5	
		30	2030	55.46	19	22.05	155	2.17	8.72	2.8	3.1	46	5	137	.09	4	.5	.4	36	SF5	
		30	2145	58.49	19	25.35	155	28.61	7.99	2.0	1.5	34	3	50	.11	6	.4	.9	27	KAO	
		30	2329	38.08	19	21.81	155	1.81	2.61	1.4	1.3	23	2	158	.12	4	.5	1.0	16	SSF	
		31	211	44.32	19	19.53	155	8.03	8.35	2.0	2.1	37	2	93	.08	4	.4	.5	25	SF4	
		31	359	3.40	19	20.56	155	31.37	23.74	3.4	3.6	51	5	34	.09	7	.5	.9	46	DML	F
		31	1053	30.37	19	20.67	155	10.58	8.02	1.5	1.1	30	3	74	.08	3	.4	.6	25	SF3	
		31	1154	30.06	19	20.88	155	2.37	7.33	2.1	1.5	31	3	152	.12	2	.6	.6	17	SF5	
		31	12 4	15.65	19	20.90	155	10.49	6.93	1.6	1.6	33	3	71	.11	2	.5	.8	27	SF3	
		31	2040	5.58	19	26.89	155	29.50	7.86	1.9	1.7	38	3	55	.13	8	.4	1.1	27	KAO	
	JUN	1	1 9	31.85	19	20.76	155	2.90	6.67	1.5	1.1	26	1	125	.13	2	.6	1.0	14	SF5	
		1	430	53.74	19	24.41	155	27.99	9.81	1.4	1.2	22	2	63	.08	4	.4	.8	17	KAO	
		1	915	46.51	19	15.02	155	34.60	7.10	1.9	1.2	31	2	105	.18	4	.6	1.2	23	LSW	
		1	942	21.61	19	20.33	155	6.06	7.65	1.3	1.3	18	1	115	.11	5	.6	1.2	12	SF4	
		1	13 6	16.47	19	22.06	155	25.49	8.85	1.8	1.3	22	3	106	.08	4	.5	.8	19	KAO	
		1	1329	6.25	19	20.23	155	11.82	7.57	1.4	1.1	28	2	78	.09	5	.5	.8	21	SF3	
		1	15 1	12.94	19	19.91	155	4.97	4.44	1.3	1.3	19	1	139	.12	4	.6	1.7	13	SSF	
		1	1543	47.12	19	18.57	155	14.87	6.02	1.1	1.1	23	1	105	.09	4	.5	1.1	22	SF1	
		1	1740	46.68	19	20.89	155	13.02	8.24	2.1	2.2	40	4	61	.11	3	.4	.5	35	SF2	
		1	1853	32.45	19	11.53	155	29.06	33.33	2.2	2.0	42	2	77	.07	4	.7	1.2	40	DLS	
		1	2049	11.92	19	19.58	155	11.72	5.18	1.1	1.3	28	1	91	.13	6	.5	1.7	19	SF3	
		2	141	43.99	19	18.53	155	13.91	5.83	1.2	1.1	30	1	94	.11	3	.5	1.1	26	SF2	
		2	239	40.88	19	26.52	155	29.21	8.02	1.8	1.3	33	2	59	.12	8	.4	1.1	25	KAO	
		2	759	14.42	19	21.69	155	25.36	9.44	1.7	1.3	33	3	54	.12	4	.4	.7	25	KAO	
		2	1028	54.42	19	21.44	155	2.63	6.56	1.4	1.2	28	1	131	.13	3	.6	1.0	19	SF5	
		2	1151	13.80	19	22.35	155	30.11	8.70	2.0	1.3	33	2	46	.12	4	.4	.9	21	KAO	
		2	1632	48.07	19	21.64	155	24.97	9.00	1.7	1.3	31	3	41	.11	4	.4	.7	22	SWR	
		3	8 2	10.23	18	57.04	155	29.67	37.06	2.0	2.0	29	1	244	.07	18	2.4	2.4	27	DLS	
		3	1139	22.20	19	20.63	155	13.47	8.57	2.0	2.2	40	2	59	.10	4	.4	.5	32	SF2	
		3	1746	1.08	19	19.65	155	4.97	4.92	1.1	1.1	16	1	149	.23	4	1.2	3.6	12	SSF	
		3	1947	38.39	19	21.39	155	3.65	2.54		1.1	11	1	104	.07	3	.4	.7	10	SSF	
		3	2247	38.34	19	19.84	155	15.70	8.56	3.3	3.5	44	2	87	.12	3	.4	.6	41	SF1	F
		3	23 8	19.46	19	19.93	155	11.30	7.96	1.3	1.1	27	1	87	.10	5	.5	.9	19	SF3	
		4	746	7.89	19	13.77	155	20.41	31.55	2.4	2.4	20	1	178	.07	8	1.1	1.5	19	DEP	
		4	1133	10.38	19	20.43	155	13.04	7.35	1.2	1.1	31	2	65	.10	4	.5	.7	20	SF2	
		4	2355	52.17	19	29.61	154	57.74	43.94	3.5	3.7	36	0	102	.11	6	1.6	2.8	33	LER	
		5	8 0	10.90	19	14.23	155	51.60	16.84	2.9	2.9	31	1	204	.17	29	2.5	60.0	30	KON	*
		5	1217	50.44	20	1.70	155	44.96	12.48	2.8	2.8	35	2	148	.13	12	.9	.9	29	KOH	
		5	1631	49.91	19	19.69	155	8.01	6.27	1.7	1.4	40	4	91	.11	4	.4	.7	27	SF4	
		5	1731	21.36	19	27.46	155	26.57	8.79	1.8	1.3	32	2	63	.10	5	.4	.8	22	KAO	
		5	1854	31.04	19	9.17	155	32.44	33.11	4.1	4.4	49	3	130	.08	8	.6	1.2	46	DLS	F
		5	19 7	26.70	19	27.20	155	25.02	8.31	1.7	1.2	26	2	52	.10	4	.4	.9	15	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JUN	5	2042	43.11	19	9.30	155	32.27	33.35	2.5	1.6	36	2	128	.07	8	.7	1.4	33	DLS	
		5	2318	34.88	19	23.69	155	1.27	8.39	1.9	1.3	31	2	144	.14	5	.7	.6	23	SF5	
		6	343	1.49	19	11.45	155	29.03	33.93	2.1	1.4	33	1	81	.07	4	.7	1.5	30	DLS	
		6	350	22.37	19	20.64	155	13.25	8.26	2.0	2.0	39	3	61	.10	4	.4	.6	27	SF2	
		6	629	9.17	19	19.93	155	6.50	8.15	2.2	2.3	38	3	119	.10	5	.5	.6	28	SF4	
		6	940	54.76	19	25.57	155	36.61	2.54	2.5	2.4	16	2	100	.12	3	.6	.9	12	MLO	
		6	20 8	9.89	19	26.22	155	38.32	2.82	2.3	2.7	19	1	197	.11	4	.7	1.0	15	MLO	
		7	221	19.90	18	57.57	155	13.65	39.31	2.0	1.7	35	0	241	.09	33	2.1	2.6	28	LOI	
		7	346	37.79	19	25.61	155	37.84	2.71	3.0	3.2	34	3	97	.12	4	.4	.8	26	MLO	
		7	430	13.31	19	19.72	155	12.29	4.98	1.5	1.4	35	4	83	.13	5	.4	1.3	23	SSF	
		7	838	45.16	19	19.81	155	3.83	6.14	1.3	1.1	16	3	156	.07	2	.6	1.1	12	SF5	
		7	857	.13	19	20.70	155	7.03	7.02	2.0	1.7	34	0	94	.11	4	.5	.9	25	SF4	
		7	11 6	22.26	19	22.83	155	18.70	29.33	2.2	2.2	27	1	35	.09	5	.6	1.5	14	DEP	
		7	12 1	40.84	19	30.38	155	52.82	10.79	2.8	3.3	33	2	125	.13	4	.7	.4	27	KON	F
		7	1426	42.05	19	25.18	155	24.97	8.76	1.4	1.1	25	2	43	.11	0	.4	.9	18	KAO	
		7	1512	27.44	19	19.83	155	7.53	8.61	1.4	1.7	30	4	102	.09	5	.5	.7	22	SF4	
		7	1759	17.10	19	25.46	155	24.64	10.80	1.1	.9	17	0	78	.08	8	.6	1.6	15	KAO	
		7	19 8	9.01	19	19.53	155	7.64	7.85	2.1	2.4	37	2	104	.10	4	.4	.7	31	SF4	
		8	939	38.99	19	17.22	155	25.12	6.64	.9	1.5	20	2	86	.12	6	.4	1.2	16	LSW	
		8	12 3	6.28	19	20.04	155	8.10	9.34	2.9	3.2	49	6	86	.09	5	.4	.4	37	SF4	
		9	017	33.89	19	22.90	155	2.72	8.43	1.7	1.2	32	1	117	.13	4	.5	.6	20	SF5	
		9	140	15.57	19	18.69	155	14.65	6.89	1.1	1.1	28	2	115	.10	4	.5	.8	24	SF1	
		9	528	.73	19	20.68	155	2.76	6.97	2.4	2.5	39	3	135	.14	1	.5	.5	22	SF5	
		9	551	9.74	19	19.57	155	6.44	8.03	2.1	2.0	36	1	129	.11	5	.6	.6	29	SF4	
		9	1110	4.92	19	9.66	155	32.20	31.73	1.8	1.4	24	2	124	.10	8	.8	1.8	21	DLS	
		9	1322	57.16	19	20.09	155	7.44	7.10	1.5	1.7	31	0	99	.10	5	.5	.9	24	SF4	
		9	22 8	3.47	19	21.57	155	4.60	7.58	1.9	1.5	34	1	81	.14	4	.4	.6	20	SF5	
		9	23 1	14.27	19	13.78	155	33.22	6.50	1.8	1.5	37	1	74	.22	6	.7	1.5	26	LSW	
		10	8 2	33.57	19	12.63	155	42.70	4.46	1.7	1.7	32	2	122	.23	11	.9	2.7	26	LSW	
		10	924	40.52	19	19.04	155	15.63	7.21	1.7	1.1	25	2	106	.11	4	.5	.9	21	SF1	
		10	1458	52.25	19	22.02	155	17.92	3.14	1.7	1.6	27	3	50	.11	3	.3	.6	22	SSC	
		10	1715	13.31	19	19.79	155	16.07	7.27	1.8	1.9	37	1	90	.12	2	.4	.7	30	SF1	
		10	2059	28.36	19	20.42	155	11.36	8.30	2.2	2.5	40	3	78	.13	4	.5	.7	31	SF3	
		10	23 7	8.11	19	19.74	155	11.45	6.95	1.3	1.3	27	1	131	.10	5	.6	1.0	21	SF3	
		10	2359	9.13	19	26.42	154	54.92	5.64	1.8	1.6	33	3	156	.14	2	.5	.7	18	LER	
		11	2 7	31.84	19	20.24	155	13.01	6.99	1.3	1.1	29	2	67	.11	4	.5	.9	23	SF2	
		11	210	47.86	19	15.97	155	19.63	7.33	1.3	1.3	22	0	152	.10	4	.6	1.2	17	SWR	
		11	1420	6.48	19	10.29	155	28.78	7.97	2.2	1.2	19	1	154	.12	2	1.2	1.2	15	LSW	
		11	21 7	49.06	19	24.50	155	24.91	9.72	1.6	1.3	29	2	46	.09	1	.4	.9	23	KAO	
		11	23 3	.88	19	18.61	155	14.69	6.30	1.1	1.1	28	2	102	.11	4	.5	1.0	22	SF1	
		12	0 6	10.38	19	19.52	155	13.12	8.08	1.5	1.5	36	3	75	.11	5	.5	.7	26	SF2	
		12	3 6	14.92	19	18.24	155	12.94	4.55	1.0	1.1	20	2	103	.10	2	.6	1.1	10	SSF	
		12	456	21.99	18	56.59	155	30.17	14.85	2.7	3.1	39	2	237	.10	18	1.4	.7	32	DLS	
		12	8 2	6.52	19	20.56	155	13.08	8.18	1.4	1.3	28	2	63	.09	4	.5	.8	19	SF2	
		12	1018	29.26	19	19.76	155	6.78	7.70	2.2	2.1	40	4	118	.13	5	.5	.6	29	SF4	
		12	1024	8.73	19	27.62	155	14.79	32.56	2.8	2.9	50	3	40	.11	6	.5	1.0	45	DEP	
		12	1057	55.13	19	26.95	155	35.98	2.66	2.2	1.6	11	1	173	.10	1	.6	.4	7	MLO	
		12	1138	12.45	19	25.66	155	16.23	16.32	1.7	1.9	32	3	116	.08	2	.6	.5	28	DEP	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JUN	12	2012	55.79	19	20.75	155	13.67	9.01	2.1	2.0	41	3	61	.12	4	.4	.5	28	SF2	
		12	2127	47.49	19	26.39	155	38.83	.28	2.3	2.2	14	1	209	.11	5	.8	.6	8	MLO	
		13	219	59.05	19	20.83	155	12.47	7.67	1.8	1.3	31	2	181	.12	4	.8	.7	22	SF2	
		13	235	46.16	19	20.88	155	30.27	9.41	1.9	2.2	30	1	50	.11	6	.4	1.0	24	KAO	
		13	922	8.57	19	20.87	155	6.07	7.86	1.6	1.1	19	0	100	.08	4	.5	1.0	12	SF4	
		13	1245	27.19	19	26.67	155	24.34	3.70			19	2	113	.10	3	.4	.9	14	KAO	
		13	15 2	3.92	19	19.92	155	12.13	9.69	2.4	2.5	43	4	81	.13	5	.4	.5	36	SF3	
		13	1532	8.28	19	24.87	155	23.42	8.98	1.4	1.0	23	4	46	.11	3	.4	.9	16	KAO	
		14	722	8.06	19	21.64	155	1.63	6.87	1.6	.9	28	2	157	.13	4	.6	.8	13	SF5	
		14	730	.95	19	24.31	155	14.12	30.79	2.1	1.8	42	3	60	.09	1	.6	1.0	36	DEP	
		14	1540	12.88	19	12.92	155	29.57	8.06	2.3	2.1	37	2	125	.19	4	.6	.9	23	LSW	
		14	1732	26.48	18	58.22	155	27.92	39.37	2.7	1.8	34	0	227	.07	21	1.8	2.3	33	DLS	
		14	1830	6.44	19	19.37	155	11.63	7.10	1.2	1.1	27	2	97	.09	5	.5	.9	18	SF3	
		14	1956	27.37	19	19.95	155	3.87	7.30	1.4	1.3	25	1	145	.10	2	.8	.5	10	SF5	
		14	2228	30.80	19	19.74	155	11.80	6.11	1.6	1.5	32	2	88	.10	5	.4	.9	23	SF3	
		14	2353	23.77	19	21.21	155	4.68	8.30	1.9	1.5	35	4	91	.12	4	.4	.4	20	SF5	
		15	630	46.29	19	18.45	155	13.46	7.80	1.9	1.7	35	3	84	.10	3	.5	.7	21	SF2	
		15	633	54.28	19	18.61	155	13.65	7.25	1.5	1.9	33	2	74	.12	3	.5	.9	19	SF2	
		15	1132	53.08	19	19.25	155	12.29	4.47	1.1	1.1	23	3	93	.10	5	.4	1.9	14	SSF	
		15	1137	26.20	19	18.30	155	13.43	10.03	2.6	2.8	45	4	82	.12	2	.5	.5	37	SF2	
		15	1150	55.20	19	18.58	155	13.43	7.25	1.2	1.1	22	1	78	.10	3	.5	1.2	16	SF2	
		15	1218	21.66	19	20.41	155	13.09	6.51	1.5	1.3	26	2	64	.10	4	.5	.8	16	SF2	
		15	13 5	59.54	19	21.95	155	6.55	8.05	2.4	2.3	41	4	77	.09	2	.4	.6	32	SF4	
		15	1448	40.39	19	19.83	155	13.52	5.44	1.0	1.1	25	2	72	.14	5	.5	1.4	17	SF2	
		15	19 3	55.23	19	25.40	155	25.52	4.04	1.6	1.1	15	1	128	.10	1	.5	.8	9	KAO	
		16	0 1	8.73	19	20.74	155	13.22	7.52	1.2	1.1	30	2	60	.10	4	.5	.7	19	SF2	
		16	519	34.59	19	18.89	155	12.97	7.28	1.9	1.9	42	2	67	.11	4	.5	.7	29	SF2	
		16	10 1	26.13	19	19.26	155	7.45	7.98	2.1	2.3	35	3	114	.09	4	.5	.7	30	SF4	
		16	1338	33.21	19	20.18	155	11.57	6.61	1.5	1.1	30	2	81	.12	5	.5	1.0	23	SF3	
		16	23 9	3.44	19	55.15	155	29.55	23.49	2.5	2.0	36	6	153	.10	16	.7	1.2	27	KEA	
		17	152	55.27	19	18.99	155	3.62	7.22	2.8	3.3	39	3	194	.09	9	.7	.6	29	SF5	
		17	156	47.53	19	26.83	155	29.05	8.53	1.6	1.2	21	2	69	.09	7	.4	1.2	17	KAO	
		17	3 4	17.70	19	25.03	155	24.16	9.68	1.4	1.3	26	3	44	.10	2	.4	.8	21	KAO	
		17	10 1	39.51	19	20.26	155	12.62	8.07	1.5	1.1	25	1	71	.09	4	.5	.8	19	SF2	
		17	1046	37.15	19	53.18	155	31.28	18.34	2.8	2.9	46	5	133	.11	14	.5	1.7	39	KEA	
		17	1248	41.96	19	20.77	155	13.28	7.55	2.0	2.3	44	6	59	.15	3	.4	.6	29	SF2	
		17	1643	58.30	19	13.33	155	28.53	.00	2.6	2.8	45	5	92	.15	7	.3	.4	23	LSW	*
		17	1726	50.47	19	17.92	155	20.99	7.28	1.1	1.3	31	4	122	.09	4	.4	.7	22	SWR	
		17	22 0	10.41	19	19.38	155	11.35	5.27	1.2	1.1	28	5	99	.11	6	.4	1.4	17	SF3	
		18	148	57.29	19	23.35	155	29.61	9.62	1.9	1.3	36	4	47	.07	4	.3	.7	22	KAO	
		18	151	23.81	19	24.97	155	16.01	15.22	1.4	1.2	38	4	73	.11	2	.5	.3	27	DEP	
		18	731	54.99	19	20.04	155	7.04	8.31	1.9	1.5	33	2	107	.08	5	.5	.6	21	SF4	
		18	1643	20.07	19	22.08	155	28.94	13.54	2.0	1.6	35	2	42	.09	2	.5	.5	26	DML	
		18	1717	15.96	19	25.61	155	36.89	1.61	2.2	2.0	18	3	85	.19	3	.5	1.1	12	MLO	
		18	1747	33.76	19	18.90	155	46.82	1.28	1.3	1.4	23	1	235	.14	13	1.4	1.5	19	KON	
		19	142	26.42	19	16.26	155	23.26	6.83	2.2	2.5	38	2	116	.15	4	.5	.8	33	SWR	
		19	748	41.95	19	20.28	155	7.29	8.30	2.5	2.5	34	2	98	.12	5	.4	.6	30	SF4	
		19	1335	48.97	19	16.08	155	21.98	7.07	1.7	1.9	38	4	144	.12	5	.4	.7	24	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JUN	19	1711	16.71	19	13.41	155	31.39	5.54	2.2	1.1	27	2	71	.23	4	.7	1.6	17	LSW	
		20	229	15.62	19	4.17	155	14.66	27.15	2.4	1.5	33	1	220	.08	24	1.2	1.9	29	LOI	
		20	355	41.65	19	17.91	155	22.07	7.26	1.2	1.1	29	2	112	.13	6	.4	1.0	15	SWR	
		20	1055	21.74	19	56.79	155	21.32	10.01	2.7	2.5	32	2	193	.12	21	.8	.6	24	KEA	
		20	1446	15.52	19	23.90	155	15.68	14.35	1.5	1.2	27	2	105	.07	2	.4	.5	25	DEP	
		20	16 0	42.49	19	11.32	155	28.89	33.56	2.1	1.7	32	2	83	.07	4	.7	1.5	27	DLS	
		20	1825	39.77	19	23.03	155	1.51	8.11	2.0	1.5	34	2	148	.15	6	.7	.6	20	SF5	
		20	1920	35.36	19	21.02	155	2.39	6.81	1.7	1.5	27	2	155	.14	2	.5	.7	18	SF5	
		21	5 5	36.80	19	20.66	155	13.15	7.54	2.0	1.9	43	5	62	.12	4	.4	.5	34	SF2	
		21	652	38.72	19	24.52	155	29.87	8.86	1.6	1.3	33	1	52	.11	5	.4	.9	20	KAO	
		21	754	47.69	19	28.48	155	37.35	1.01	2.4	2.4	28	2	101	.17	3	.4	.5	17	MLO	
		21	858	42.95	19	29.13	154	53.37	.04	2.2	1.8	23	0	95	.18	5	.5	1.3	13	SLE	*
		21	16 1	19.46	19	16.59	155	22.03	5.53	1.3	1.1	27	2	134	.12	5	.5	1.4	19	SWR	
		21	1755	15.74	19	14.53	155	34.07	8.92	3.8	3.8	46	2	75	.14	5	.5	.6	43	LSW	F
		21	2237	22.92	19	19.73	155	11.35	6.95	1.2	1.3	28	2	91	.10	5	.5	1.1	17	SF3	
		22	1251	13.49	19	29.36	155	51.77	10.77	3.3	3.0	34	2	97	.13	6	.6	.4	27	KON	
		22	1252	51.19	19	29.10	155	51.04	6.84	2.6	1.5	22	2	148	.14	7	1.0	1.1	15	KON	
		22	1531	54.32	19	28.27	155	51.08	7.57	2.8	2.4	28	2	122	.13	7	.7	.5	18	KON	
		22	1642	20.89	19	21.05	155	2.17	6.14	1.5	1.1	28	4	163	.12	3	.5	.7	16	SF5	
		23	958	53.49	19	10.72	155	39.80	2.79	2.4	2.0	22	1	199	.22	9	1.3	4.2	17	LSW	
		23	1910	14.93	19	6.86	155	23.52	43.13	2.0	1.8	32	0	187	.08	9	1.0	2.4	32	LOI	
		23	2221	22.64	19	19.91	155	8.68	5.11	2.1	1.8	39	2	76	.13	5	.5	1.1	28	SF4	
		23	2235	32.20	19	20.16	155	7.41	6.72	1.9	1.5	23	0	98	.12	5	.6	1.2	20	SF4	
		24	013	56.17	19	25.30	155	30.98	9.78	2.0	1.5	26	2	71	.10	8	.4	1.1	22	KAO	
		24	234	6.53	19	20.70	155	12.88	7.31	1.6	1.5	34	4	64	.12	4	.5	.6	24	SF2	
		24	3 5	4.85	19	17.04	155	26.82	8.82	1.4	1.5	27	3	53	.12	7	.4	.7	19	LSW	
		24	538	58.19	19	18.41	155	13.06	6.10	1.2	1.1	25	2	94	.10	3	.5	1.2	20	SF2	
		24	832	41.53	19	21.65	155	2.61	6.40	2.0	2.1	29	2	130	.16	3	.6	1.0	23	SF5	
		24	1353	18.12	19	2.34	155	22.30	32.94	2.0	1.5	37	1	213	.08	17	1.0	1.7	31	LOI	
		24	1457	30.99	19	19.86	155	11.84	4.81	.9		16	1	85	.09	5	.5	2.0	14	SSF	
		24	1457	35.48	19	20.18	155	11.85	6.29	3.0	2.8	39	2	79	.12	5	.4	.7	35	SF3	
		24	1853	20.69	19	27.29	154	52.58	6.76	1.8	1.2	16	1	148	.08	2	.8	1.1	12	LER	
		24	1946	44.60	19	24.22	155	16.97	14.21	1.6	1.2	32	4	66	.10	1	.4	.3	26	DEP	
		25	252	11.46	19	22.75	155	26.74	7.16	2.2	2.0	35	2	44	.12	2	.4	.8	29	KAO	
		25	621	10.23	19	21.23	155	6.26	7.86	2.1	1.9	38	3	91	.13	3	.5	.8	29	SF4	
		25	659	9.26	19	17.46	155	37.54	.25	2.1	2.0	19	0	159	.11	5	1.0	3.1	15	LSW	*
		25	1820	7.48	19	10.18	155	33.06	6.22	2.7	2.7	35	2	113	.14	9	.5	.9	25	LSW	
		25	2242	42.58	19	20.14	155	11.82	7.68		1.1	14	0	80	.11	5	.8	1.3	11	SF3	
		26	324	58.61	19	11.73	155	29.03	33.21	2.1	1.7	22	0	83	.05	5	.7	1.9	19	DLS	
		26	832	47.38	19	20.00	155	10.15	6.50	1.3	.9	31	3	86	.10	4	.5	.8	22	SF3	
		26	1034	45.84	19	11.41	155	29.00	34.03	1.8	1.4	30	0	77	.07	4	.7	2.0	24	DLS	
		26	1658	48.67	19	21.78	155	4.93	9.18	3.7	3.9	48	3	79	.11	3	.5	.3	44	SF5	F
		27	0 5	59.48	19	17.28	155	22.01	5.88	1.7	1.9	37	2	122	.15	6	.4	1.0	29	SWR	
		27	741	59.26	19	25.50	155	25.20	7.25	1.4	1.5	21	1	50	.10	9	.5	1.9	14	KAO	
		27	757	11.61	19	18.57	155	15.07	6.86	1.6	1.1	24	2	109	.11	4	.5	.9	16	SF1	
		27	1131	2.09	19	19.23	155	9.99	7.04	1.4	1.3	28	2	103	.09	5	.5	1.1	19	SF3	
		27	1644	58.71	19	20.63	155	13.01	7.00	1.5	1.8	37	4	63	.12	4	.5	.7	26	SF2	
		28	025	27.46	19	20.96	155	1.38	5.91	1.3	1.3	28	1	179	.15	3	.8	.8	19	SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JUN	28	511	56.26	19	21.57	155	1.72	5.39	1.9	1.7	32	2	156	.14	4	.6	.9	25	SF5	
		28	2033	51.18	19	20.07	155	7.99	8.14	2.0	1.8	37	3	88	.11	5	.4	.5	22	SF4	
		29	159	27.63	19	19.23	155	13.41	6.01	1.2	1.3	28	2	73	.12	4	.5	1.2	16	SF2	
		29	359	3.64	19	32.12	155	35.71	6.99	2.2		19	1	112	.13	5	.6	1.5	16	MLO	
		29	359	13.21	19	30.45	155	36.76	9.54	2.8	2.5	37	4	115	.13	3	.6	.5	30	MLO	
		29	4	3 52.81	19	32.04	155	36.64	10.62	3.1		42	2	84	.14	5	.5	.5	37	MLO	
		29	4	5 8.81	19	30.87	155	36.45	9.08	2.3		27	1	122	.10	3	.6	.5	26	MLO	
		29	4	5 50.72	19	31.01	155	36.10	8.99	2.1	1.7	33	2	134	.10	3	.6	.4	25	MLO	
		29	1053	24.64	19	17.61	155	25.44	37.61	2.0	1.6	27	0	65	.09	6	.7	2.0	22	DLS	
		29	1544	46.70	19	20.55	155	10.83	7.79	2.1	2.0	42	3	77	.12	3	.4	.6	34	SF3	
		29	2047	45.40	19	20.15	155	10.67	7.76	2.4	2.7	43	3	84	.12	4	.4	.7	32	SF3	
		29	21	4 47.94	19	46.82	155	20.19	24.46	2.0	1.5	33	0	106	.11	12	.8	2.4	28	KEA	
		30	010	56.80	19	1.14	155	30.67	38.31	3.4	3.8	51	5	202	.09	16	.8	1.2	46	DLS	
		30	132	28.09	19	25.51	155	37.59	.56	2.5	2.5	25	0	93	.13	4	.4	1.1	17	MLO	
		30	134	50.88	19	20.51	155	12.86	7.64	2.1	2.3	43	3	66	.13	4	.5	.6	33	SF2	
		30	136	9.80	19	20.69	155	6.91	8.64	2.7	3.0	44	3	96	.10	4	.4	.4	32	SF4	
		30	215	12.37	19	43.66	156	1.47	7.57	2.7	2.9	34	1	227	.12	20	1.3	.7	20	HUA	
		30	1250	4.01	19	28.10	155	35.89	2.03	2.4	2.6	28	1	84	.15	2	.5	.3	22	MLO	
		30	1822	8.40	19	17.53	155	30.49	8.55	1.2	1.2	29	2	77	.14	5	.4	1.0	19	LSW	
		30	1948	23.46	19	32.20	155	42.04	3.35	1.2	1.4	32	5	83	.13	7	.5	2.2	24	MLO	
		30	2011	18.61	19	23.09	155	26.71	10.24	3.4	3.3	51	5	32	.13	2	.3	.4	46	KAO	F
		30	2158	21.48	19	22.99	155	26.96	10.01	1.7	1.5	33	1	42	.10	2	.4	.7	25	KAO	
		30	2213	20.04	19	16.88	155	21.87	5.53	1.8	1.5	34	1	130	.14	6	.5	1.5	26	SWR	
	JUL	1	4	0 57.68	19	17.70	155	13.12	6.65	1.2	1.1	27	3	112	.09	1	.5	.8	20	SF2	
		1	11	0 16.56	19	18.83	155	16.70	32.61	3.1	3.1	46	1	108	.10	3	.6	1.0	44	DEP	
		1	1329	51.21	19	19.44	155	11.50	7.75	1.8	1.2	28	1	97	.09	6	.5	1.0	22	SF3	
		1	1759	41.33	19	20.17	155	3.90	5.18	2.0	1.4	27	3	129	.12	2	.5	.9	19	SF5	
		1	20	6 55.34	19	21.17	155	2.60	7.14	2.1	1.7	34	3	143	.14	2	.7	.7	25	SF5	
		1	2238	53.50	19	25.44	155	36.96	.01	1.2	1.3	9	1	108	.18	4	.8	1.5	8	MLO	*
		1	2332	47.94	19	25.78	155	26.62	6.88	2.1	1.6	35	2	56	.11	3	.3	.9	29	KAO	
		2	217	42.55	19	19.87	155	3.03	5.02	2.2	1.4	29	3	183	.12	0	.6	.8	18	SF5	
		2	8	8 53.37	19	19.88	155	10.95	9.36	2.6	2.8	34	1	89	.09	4	.4	.4	29	SF3	
		2	856	59.62	19	22.90	155	27.08	10.42	2.5	2.5	43	3	42	.12	1	.4	.6	30	KAO	
		2	959	.54	19	25.76	155	37.46	.21	3.1	3.2	39	2	92	.11	6	.4	.6	33	MLO	
		2	18	9 49.93	19	20.58	155	10.77	8.50	2.4	2.5	38	2	76	.10	3	.4	.5	30	SF3	
		2	2016	30.96	19	29.56	155	38.39	7.13	1.4	1.2	18	2	73	.14	4	.5	1.5	12	MLO	
		2	2047	7.76	19	29.54	155	38.33	6.73	1.5	1.2	21	3	95	.14	4	.6	1.1	13	MLO	
		2	2252	18.48	19	19.43	155	9.94	7.63	1.4	1.2	32	3	98	.09	5	.5	.8	27	SF3	
		2	2325	33.93	19	23.78	155	37.47	2.19	1.0	1.1	9	2	114	.10	6	.6	1.8	6	MLO	
		2	2337	23.05	19	29.34	155	38.59	6.88	1.5	1.2	18	3	94	.15	5	.6	1.1	12	MLO	
		3	129	3.06	19	27.05	155	50.68	6.18	2.2	1.5	29	5	111	.11	9	.5	1.1	24	KON	
		3	437	25.30	19	19.02	155	13.85	7.69	1.9	2.3	40	3	75	.13	4	.5	.6	32	SF2	
		3	1119	7.22	19	19.26	155	15.12	8.90	2.2	2.1	38	3	96	.10	4	.4	.5	32	SF1	
		3	22	7 51.75	19	25.44	155	37.35	1.66	2.5	2.6	29	1	75	.20	8	.6	2.2	21	MLO	
		4	932	38.67	19	20.30	155	13.39	6.67	1.8	1.3	33	3	63	.13	4	.5	.9	28	SF2	
		4	1414	4.43	19	24.24	154	58.83	7.02	2.1	1.8	35	2	166	.13	2	.7	.7	24	LER	
		4	1837	51.04	19	21.13	155	15.44	26.63	2.3	1.9	45	4	69	.10	3	.6	.8	39	DEP	
		4	2032	31.79	19	19.36	155	13.22	6.84	2.0	1.5	39	3	75	.10	4	.4	.7	29	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JUL	4	2037	53.50	19	11.76	155	37.49	8.24	1.9	1.9	26	2	96	.21	6	.6	1.3	20	LSW	
		5	0	6 31.90	19	17.54	155	14.77	6.19	1.2	1.3	32	1	126	.11	2	.5	.8	21	SF1	
		5	432	19.61	19	21.20	155	25.17	9.56	2.1	2.2	32	4	52	.14	4	.4	.8	28	KAO	
		5	649	15.43	19	20.29	155	4.03	6.79		1.7	25	0	122	.10	2	.6	.7	22	SF5	
		5	1751	4.10	19	20.11	155	3.12	7.16	1.4	1.1	27	1	100	.11	1	.7	.7	18	SF5	
		5	1937	10.44	19	25.62	155	24.49	10.53	2.6	2.7	48	5	37	.13	1	.4	.4	35	KAO	
		5	21	6 8.49	19	18.99	155	15.20	7.68	1.3	1.3	26	3	102	.09	4	.4	.8	21	SF1	
		6	231	33.32	19	19.43	155	11.12	8.15	2.2	2.4	38	2	99	.10	5	.4	.6	27	SF3	
		6	1657	54.20	19	20.61	155	12.17	7.58	1.6	1.5	35	3	70	.14	4	.5	.7	20	SF3	
		6	2029	37.35	19	25.66	155	28.03	8.83	2.4	2.3	38	2	48	.12	6	.3	.8	27	KAO	
		6	2211	6.16	19	20.49	155	13.04	7.19	1.5	1.5	32	3	64	.10	4	.4	.6	27	SF2	
		7	2	5 17.29	19	23.08	155	36.38	35.76	3.7	3.4	46	5	312	.09	67	1.6	2.5	42	DIS	
		7	918	43.99	19	32.23	155	56.62	9.23	3.1	2.5	35	5	209	.20	6	1.1	.6	21	KON	
		7	1140	59.48	19	27.24	155	36.23	2.94	2.6	2.3	16	0	153	.18	4	.9	1.8	11	MLO	
		7	1157	3.63	19	28.73	155	41.51	6.84	2.6	1.6	29	4	90	.19	8	.6	1.7	26	MLO	
		7	1947	53.53	19	21.36	155	1.01	5.72	2.1	2.3	38	3	176	.21	4	.8	1.1	23	SF5	
		7	23	5 12.21	19	15.15	155	25.47	35.52	2.1	2.2	35	1	82	.10	3	.7	1.5	31	DLS	
		8	311	51.20	19	19.31	155	9.77	7.57	1.8	1.8	31	2	99	.08	5	.4	.7	26	SF3	
		8	841	59.65	19	24.35	155	28.06	9.64	2.2	2.3	24	0	52	.11	4	.5	1.0	15	KAO	
		8	1620	10.32	19	26.78	155	29.29	8.67	2.4	1.8	40	4	53	.11	8	.3	.7	29	KAO	
		8	18	9 30.04	19	24.70	155	25.95	9.64	1.7	1.3	36	3	50	.13	2	.4	.7	25	KAO	
		9	0	7 38.49	19	31.37	155	13.13	13.76	2.4	1.8	39	2	62	.11	13	.5	.4	32	DEP	
		9	057	16.09	19	31.44	155	13.02	14.50	2.2	1.8	38	3	61	.11	13	.5	.5	30	DEP	
		9	654	57.11	19	19.33	155	9.73	6.23	1.2	1.3	27	2	98	.12	5	.6	1.4	24	SF3	
		9	1130	32.42	18	54.75	155	15.68	11.13	2.9	3.3	36	1	248	.12	35	1.5	.6	15	LOI	
		10	634	38.35	19	23.06	155	3.47	7.99	1.4	1.1	22	1	105	.11	3	.5	.7	16	SF5	
		10	2310	14.85	19	3.77	155	22.86	36.08	2.8	2.7	39	1	203	.07	14	.9	1.4	36	LOI	
		11	317	5.86	19	19.74	155	7.97	6.53	1.3	1.6	29	1	92	.12	4	.5	1.2	21	SF4	
		11	456	23.98	19	20.59	155	12.21	8.80	1.6	1.5	29	2	71	.08	4	.5	.7	24	SF3	
		11	1049	39.07	19	25.81	155	37.74	1.97	2.5	2.1	12	0	95	.13	4	.6	1.2	5	MLO	
		11	1111	12.38	19	18.67	155	13.62	9.41	2.8	1.5	41	1	84	.12	3	.5	.5	38	SF2	
		11	1417	26.36	19	20.51	155	12.83	7.52	1.6	1.8	36	2	66	.11	4	.5	.7	25	SF2	
		11	1929	47.35	18	48.53	155	15.07	20.35	2.7	2.8	20	0	305	.14	45	10.2	20.3	2	LOI	L*
		11	23	5 51.42	19	23.08	155	27.52	7.67	2.2	2.1	43	3	56	.11	1	.4	.6	32	KAO	
		12	025	1.90	19	17.44	155	21.19	4.64	1.7	2.0	32	3	126	.11	5	.4	1.8	19	SWR	
		13	844	14.10	19	21.37	155	6.65	5.94	2.4	2.4	22	0	86	.13	3	.5	1.1	13	SF4	
		13	9	1 43.12	19	19.95	155	16.88	33.56	2.3	2.0	40	1	88	.11	1	.7	1.2	35	DEP	
		13	1045	30.53	19	16.01	155	22.87	6.04	1.8	1.6	33	1	130	.13	4	.5	1.1	23	SWR	
		13	1058	31.88	19	20.28	155	8.87	6.72	1.6	1.3	34	2	71	.10	4	.5	.9	24	SF4	
		13	1150	46.95	19	20.58	155	12.78	7.25	1.6	1.5	32	2	68	.11	4	.5	.7	21	SF2	
		13	1235	13.75	19	24.80	155	15.94	37.16	2.3	1.3	24	1	90	.10	2	1.3	3.4	10	DEP	L
		13	1242	13.49	19	51.58	155	22.51	31.49	2.8	1.8	43	3	99	.10	5	.7	1.5	32	KEA	
		14	036	8.37	19	26.19	155	24.61	8.05	1.8	1.5	28	1	47	.11	2	.4	.9	24	KAO	
		14	140	34.95	19	18.74	155	15.69	8.24	2.2	1.9	41	1	104	.12	4	.4	.6	34	SF1	
		15	133	46.17	19	33.37	155	42.32	.39	2.5	1.7	20	2	89	.10	8	.5	.6	11	MLO	
		15	10	8 51.61	19	20.75	155	11.90	8.34	3.0	2.9	48	4	70	.13	4	.4	.6	42	SF3	
		15	1545	59.99	19	18.44	155	13.39	8.17	2.2	2.5	44	2	82	.12	3	.4	.5	36	SF2	
		15	16	1 38.97	19	18.45	155	13.33	7.46	2.2	2.4	48	4	84	.13	3	.5	.6	35	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JUL	15	19 5	16.57	19	32.35	155	35.78	6.88	2.3	1.2	28	5	113	.13	6	.5	1.2	19	MLO
		16	040	29.09	19	21.42	155	1.39	7.04	3.1	3.2	43	1	167	.13	4	.6	.4	34	SFS
		16	053	34.85	19	19.56	155	12.55	5.04	.9	1.1	28	1	83	.12	5	.5	1.9	21	SF2
		16	544	36.13	19	19.11	155	15.14	7.69	2.0	2.3	42	1	90	.12	4	.5	.7	39	SF1
		16	1258	12.09	19	19.56	155	13.95	6.10	1.6	1.1	29	2	73	.10	5	.5	1.0	23	SF2
		16	2322	32.90	19	21.07	155	13.02	7.80	2.7	2.7	45	3	158	.14	3	.5	.6	40	SF2
		17	1 6	25.95	19	19.68	155	10.49	7.33	1.9	1.6	37	1	93	.10	5	.4	.6	27	SF3
		17	241	28.63	19	21.35	155	2.06	6.08	2.0	1.3	29	1	176	.17	7	1.2	1.7	23	SF5
		17	635	59.48	19	16.57	155	24.00	3.89	1.3	1.3	25	2	94	.11	4	.4	1.6	17	SWR
		17	817	4.47	19	24.12	155	.66	7.75	1.8	1.2	29	2	171	.19	4	.8	.7	23	SF5
		17	1041	25.18	19	32.36	155	36.00	7.19	2.5	1.9	34	3	90	.11	6	.5	1.0	25	MLO
		17	1538	45.69	19	16.77	155	33.91	6.75	1.6	1.4	33	1	83	.16	7	.5	1.7	24	LSW
		17	1657	29.49	19	20.57	155	6.93	8.50	2.1	1.8	36	1	98	.11	5	.5	.6	27	SF4
		17	17 0	54.87	19	20.23	155	13.14	6.14	1.6	1.1	31	3	66	.12	4	.5	1.2	25	SF2
		17	2217	37.53	19	19.91	155	6.60	7.88	2.3	2.6	33	0	153	.09	5	.6	.6	27	SF4
		17	2253	46.24	19	21.21	155	1.77	6.61	2.0	1.7	36	2	179	.11	8	.7	.7	29	SF5
		17	2257	44.65	19	21.57	155	14.24	25.99	1.8	1.3	37	2	57	.10	3	.6	.8	33	DEP
		18	452	27.31	19	25.18	155	25.08	8.93		1.2	20	0	61	.11	7	.5	1.5	19	KAO
		18	7 1	22.49	19	22.22	155	2.15	7.01	2.0	1.5	24	0	144	.15	5	.7	.8	22	SF5
		18	738	55.82	19	20.20	155	4.18	5.52		1.3	18	0	129	.10	2	.7	1.4	17	SF5
		18	1532	15.82	19	19.59	155	6.50	8.12	2.4	2.4	39	2	159	.10	5	.6	.4	29	SF4
		18	1624	37.25	19	20.42	155	7.04	7.09	1.9	1.6	32	0	137	.13	5	.6	1.1	26	SF4
		18	2035	33.96	20	12.33	157	40.18	28.70	3.1	3.6	22	1	330	.18	198	4.5	4.6	13	DIS
		19	7 5	2.57	19	21.20	155	2.37	4.19	2.1	1.5	33	2	175	.16	7	.9	4.0	24	SSF
		19	1138	8.86	19	19.19	155	12.08	8.37		1.3	23	0	97	.10	5	.6	.7	18	SF3
		19	1442	55.27	19	20.33	155	12.08	7.83	1.4	1.3	30	2	75	.11	5	.5	.7	24	SF3
		19	1742	34.63	19	24.89	155	24.81	9.53	2.7	2.9	51	5	35	.15	1	.4	.5	39	KAO
		19	1920	43.25	19	19.18	155	16.26	6.84	1.5	1.1	34	2	109	.09	3	.4	.7	26	SF1
		19	1934	50.90	19	50.58	155	23.22	26.44	2.5	2.1	41	4	151	.10	7	.7	1.4	35	KEA
		19	2035	10.43	19	21.28	155	6.12	7.47	1.1	1.1	32	0	90	.12	3	.4	.7	20	SF4
		19	2324	30.80	19	20.25	155	12.53	7.80	1.3	1.3	32	3	73	.10	5	.5	.8	21	SF2
		20	955	39.48	19	28.76	155	43.37	8.15	2.4	1.6	35	4	66	.13	6	.5	1.0	25	KON
		20	18 6	11.80	19	20.09	155	7.57	7.01	1.9	1.7	33	4	130	.09	5	.5	.7	19	SF4
		20	1858	27.99	19	19.84	155	12.36	6.71	1.3	1.1	28	3	81	.11	5	.5	1.0	20	SF2
		20	20 8	50.87	19	20.82	155	6.25	7.83	2.3	2.3	39	3	140	.11	4	.5	.7	28	SF4
		21	655	18.47	19	18.89	155	11.60	5.08	1.3	1.1	31	4	111	.10	5	.4	1.4	17	SF3
		21	1238	15.04	19	14.53	155	30.03	1.14	1.4	1.9	18	0	117	.16	1	.6	.3	13	LSW
		21	1455	55.64	19	18.59	155	14.48	6.70	1.9	1.9	43	3	87	.11	3	.4	.8	31	SF2
		21	2047	7.08	19	29.33	155	39.07	7.59	1.2	1.0	18	2	95	.12	5	.5	.9	13	MLO
		22	211	35.12	19	20.80	155	13.54	8.63	2.1	2.3	40	3	59	.11	3	.4	.6	28	SF2
		22	629	36.74	19	19.01	155	13.79	7.38	1.4	1.2	30	0	75	.10	4	.5	.9	23	SF2
		22	2127	27.06	19	20.11	155	10.12	7.11	2.0	1.6	35	2	83	.12	4	.5	.8	26	SF3
		22	2326	56.59	19	19.37	155	11.74	6.87	1.6	1.5	28	2	96	.11	5	.5	1.0	22	SF3
		23	259	20.12	19	20.67	155	2.80	7.21	2.3	2.2	39	2	178	.11	7	.7	.6	32	SF5
		23	6 8	45.22	19	22.75	155	30.18	7.79	1.9	1.3	32	2	74	.10	5	.4	.8	25	KAO
		24	0 5	12.89	19	21.78	155	25.03	9.49	1.6	1.3	29	3	44	.12	4	.4	.8	20	KAO
		24	524	45.17	19	14.42	155	35.09	7.80	2.4	2.1	37	2	88	.21	4	.6	1.1	27	LSW
		25	146	40.32	19	25.33	155	25.24	4.31	1.6	1.6	32	2	40	.11	0	.4	.8	24	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JUL	25	415	24.40	19	23.20	155	28.08	9.83	1.9	1.2	28	1	36	.12	2	.4	.8	15	KAO
		25	610	51.44	19	21.87	155	2.10	6.30	1.3	1.4	29	1	170	.14	6	.8	1.0	19	SF5
		25	937	33.37	19	21.85	155	24.97	9.41	1.7	1.3	30	2	93	.11	4	.4	.7	25	SWR
		25	16 4	59.03	19	21.53	155	2.79	6.81	1.7	1.2	35	2	169	.20	6	.9	1.0	25	SF5
		25	2117	48.73	19	24.75	155	24.72	9.74	2.4	2.5	47	5	36	.13	1	.4	.5	39	KAO
		26	2 8	47.16	19	33.59	155	42.50	2.52	2.9	2.2	27	1	90	.11	8	.5	2.6	20	MLO
		26	533	28.65	19	19.83	155	7.35	7.54	2.1	1.5	33	1	137	.09	5	.6	.7	24	SF4
		26	741	46.66	19	45.76	155	26.18	27.48	2.4	1.7	39	2	75	.11	3	.6	1.4	33	KEA
		26	941	26.62	18	56.51	155	33.53	38.49	2.1	1.7	35	2	248	.11	12	2.3	1.6	31	DLS
		26	1021	29.73	19	25.57	155	24.64	9.26	3.6	3.9	48	2	36	.12	1	.4	.5	46	KAO F
		26	1445	32.70	19	20.43	155	11.36	8.45	2.2	2.3	40	3	78	.12	4	.4	.6	29	SF3
		26	1634	38.04	19	25.58	155	28.93	5.73	1.8	1.3	25	2	60	.12	6	.4	1.6	18	KAO
		27	449	37.94	19	21.11	155	7.69	6.92	1.3	1.1	29	1	120	.10	4	.5	.8	21	SF4
		27	916	56.20	19	18.92	155	26.37	8.41		1.3	27	1	75	.18	6	.6	.9	15	LSW
		27	1216	41.97	19	20.00	155	4.64	5.84	1.4	1.7	25	3	171	.09	6	.6	1.2	15	SF5
		28	458	42.05	19	21.32	155	24.16	8.09	1.7	1.1	29	4	80	.12	3	.5	.8	19	SWR
		29	219	32.50	19	20.75	155	7.12	7.44	2.4	2.5	38	4	133	.11	4	.5	.7	29	SF4
		29	4 5	18.10	19	15.96	155	31.94	6.44	2.8	3.1	43	4	55	.22	4	.5	1.1	29	LSW
		29	1625	33.04	19	20.55	155	13.24	7.68	1.1	1.1	29	2	62	.13	4	.6	.8	21	SF2
		29	1924	46.23	19	21.37	155	2.21	7.41	1.9	1.5	33	1	155	.14	3	.8	.5	18	SF5
		30	052	22.51	19	24.08	155	16.27	1.55	1.8	2.0	24	2	102	.10	1	.2	.2	15	SEC
		30	2 1	6.76	19	21.95	155	6.54	8.10	3.0	3.0	47	4	77	.11	2	.4	.6	39	SF4
		30	325	8.15	19	6.13	155	25.92	49.15	2.4		34	0	185	.11	7	1.3	3.5	24	DLS
		30	749	56.08	19	25.37	155	24.75	9.84	3.3	3.4	46	3	72	.13	1	.4	.6	41	KAO
		30	9 3	56.89	19	22.98	155	23.82	9.78	1.8	2.1	42	3	35	.12	5	.4	.5	31	KAO
		30	950	43.75	19	21.73	155	15.21	8.92	3.0	2.9	46	3	61	.13	2	.4	.5	39	SF1
		30	1652	21.85	19	21.90	155	.65	6.92	1.9	1.4	32	2	170	.14	5	.7	.5	21	SF5
		30	1834	34.56	19	22.77	155	24.98	9.43	1.6	1.1	34	2	43	.13	5	.4	.7	24	KAO
		30	1954	17.68	19	19.06	155	15.21	8.95	2.3	2.5	40	3	101	.11	4	.5	.6	31	SF1
		31	343	55.23	19	21.11	155	8.31	7.55	2.8	3.2	41	3	71	.10	3	.4	.6	33	SF4 F
		31	4 0	26.06	19	19.19	155	11.91	6.36	1.2	1.1	31	3	99	.09	5	.4	1.0	26	SF3
		31	539	16.34	19	19.70	155	7.44	8.73	3.8	3.9	44	3	105	.09	4	.5	.4	36	SF4
		31	1329	13.63	19	18.23	155	15.60	8.33	2.5	2.7	43	2	138	.11	5	.4	.5	33	SF1
		31	1616	57.97	19	18.23	155	15.60	10.80	3.5	3.6	46	3	138	.11	5	.4	.4	42	SF1 F
		31	2359	3.99	19	21.07	155	2.71	7.49	1.9	1.3	32	0	132	.14	2	.6	.7	23	SF5
	AUG	1	228	20.48	19	19.68	155	10.19	7.46	1.5	1.3	29	1	93	.11	4	.5	1.0	25	SF3
		1	10 7	20.57	19	18.68	155	13.28	7.70	1.7	1.6	31	2	82	.09	3	.4	.7	21	SF2
		1	1030	31.55	19	20.03	155	12.68	7.69	1.5	1.8	36	3	74	.12	5	.5	.8	26	SF2
		1	1221	50.43	19	21.66	155	2.36	5.11	2.1	1.5	35	2	137	.16	3	.6	1.1	26	SF5
		2	053	38.80	19	24.13	155	16.83	16.48	2.2	2.4	48	6	44	.11	1	.4	.4	41	DEP
		2	3 3	12.38	19	24.54	155	27.22	10.83	1.8	1.5	39	2	35	.11	4	.4	.6	30	KAO
		2	739	20.18	19	28.27	155	28.27	8.81	2.3	1.5	38	6	63	.14	7	.5	1.0	25	KAO
		2	12 3	7.83	19	19.14	155	10.91	6.03	1.4	1.1	29	3	107	.10	6	.5	1.2	21	SF3
		2	1237	26.85	19	22.90	155	4.03	6.62	1.4	1.1	19	0	155	.10	3	.6	.9	14	SF5
		2	1330	55.38	19	16.31	155	15.65	8.32	1.8	1.8	29	2	187	.11	4	.7	.6	22	SF1
		2	1347	23.70	19	42.14	155	2.26	.03	2.4	2.3	28	1	148	.21	1	1.5	1.3	15	HIL B*
		2	2324	42.48	19	23.12	155	16.97	12.73	2.3	2.2	48	2	37	.13	1	.4	.3	41	INT
		3	040	55.66	19	54.88	156	22.71	2.75	2.2	2.4	35	2	285	.12	62	5.4	3.1	28	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	AUG	3	1 5	38.66	19	22.12	155	4.93	8.20	2.1	2.0	27	1	77	.10	3	.4	.6	20	SF5	
		3	1239	11.79	19	19.25	155	16.01	6.84	1.5	1.6	33	3	105	.11	3	.4	.7	25	SF1	
		3	14 1	42.94	19	28.20	155	38.75	4.59	2.4	1.7	31	5	79	.15	5	.5	1.6	21	MLO	
		4	032	49.82	19	19.95	155	8.46	6.41	1.4	1.1	26	1	79	.11	5	.5	1.0	23	SF4	
		4	2 2	12.50	19	20.73	155	11.85	8.04	1.8	1.9	43	5	71	.12	4	.4	.5	36	SF3	
		4	433	31.28	19	25.63	155	37.70	1.90	2.7	2.8	34	2	95	.12	4	.4	.8	27	MLO	
		4	628	10.89	19	19.72	155	8.54	5.11	1.6	1.1	24	1	79	.12	5	.5	1.6	20	SF4	
		4	1059	59.94	19	28.83	155	35.73	2.33	2.2	1.9	17	2	136	.09	1	.6	.2	12	MLO	
		4	1747	20.37	19	25.52	154	55.16	6.35	2.3	2.4	32	1	170	.15	4	.9	.6	21	LER	
		5	836	59.68	19	19.84	155	8.23	8.57	1.6	2.2	39	4	85	.10	5	.5	.5	28	SF4	
		5	1810	50.58	19	9.85	155	36.37	4.61	2.8	2.2	36	3	106	.19	10	.5	2.8	18	LSW	
		5	2343	23.45	19	20.28	155	12.80	8.48	1.5	1.0	28	2	69	.06	4	.4	.7	18	SF2	
		6	252	21.55	19	22.19	155	1.47	7.41	1.8	1.2	36	4	160	.15	5	.7	.5	23	SF5	
		6	1158	30.96	19	29.29	155	24.62	9.86	2.0	1.6	35	3	59	.12	3	.4	.7	25	KAO	
		6	12 7	41.27	19	25.74	155	36.96	2.37	1.2	1.5	14	3	105	.13	3	.5	.7	8	MLO	
		6	1933	21.13	19	19.91	155	6.62	8.14	2.4	2.4	39	3	118	.11	5	.6	.6	30	SF4	
		6	1941	50.54	19	31.89	155	56.13	13.46	2.7	1.8	24	2	257	.12	20	1.8	.6	15	KON	
		6	2042	47.02	19	20.23	155	3.56	6.11	2.0	1.5	28	1	119	.13	1	.6	.8	15	SF5	
		7	1041	26.27	19	27.29	154	50.86	8.37	2.9	3.0	40	4	232	.15	1	1.2	.4	32	LER	
		7	23 7	8.42	19	23.00	155	24.06	10.64	2.3	2.5	42	3	31	.10	5	.4	.5	34	KAO	
		8	444	6.21	19	16.66	155	23.80	3.38	1.8	1.9	30	3	99	.14	4	.4	1.2	14	SWR	
		8	1139	51.38	19	20.06	155	12.05	8.75	3.1	3.2	44	4	79	.09	5	.4	.5	32	SF3	
		8	1454	16.63	19	18.85	155	15.64	5.52	1.0	1.1	24	1	110	.10	5	.5	1.5	14	SF1	
		8	1657	2.12	19	22.08	155	4.69	6.54	1.2	1.1	27	1	81	.16	3	.6	1.0	19	SF5	
		8	2338	52.59	19	21.91	155	17.13	32.22	1.7	1.4	38	2	56	.11	2	.7	1.1	28	DEP	
		9	032	16.53	19	20.93	155	1.49	7.88	2.6	2.6	41	6	178	.18	3	.8	.5	29	SF5	
		9	858	42.37	19	20.51	155	45.56	9.89	2.8	2.1	31	2	224	.13	10	1.1	.7	21	KON	
		9	915	52.81	19	20.50	155	11.05	7.86	1.6	1.6	36	4	99	.11	4	.5	.7	28	SF3	
		9	1046	46.55	19	20.04	155	12.80	5.54	1.4	1.1	24	1	72	.12	5	.5	1.5	17	SF2	
		9	1132	8.23	19	20.16	155	9.57	7.58	1.8	1.5	31	2	79	.10	4	.5	.8	20	SF3	
		9	1533	21.26	19	17.72	155	20.64	5.07	1.1	1.1	24	2	125	.09	4	.4	1.3	20	SWR	
		9	2134	31.41	19	20.14	155	11.61	7.52	1.8	1.5	39	4	82	.11	5	.4	.6	29	SF3	
		10	036	24.54	19	21.22	155	6.68	7.79	2.0	1.5	39	3	88	.13	3	.4	.7	28	SF4	
		10	250	9.88	19	19.64	155	7.65	8.48	2.3	2.4	40	6	102	.10	4	.5	.5	31	SF4	
		10	1247	50.28	19	19.90	155	11.81	6.91	1.3	1.1	28	2	85	.10	5	.6	1.1	21	SF3	
		10	2132	18.01	20	54.22	154	51.17	2.35	2.5	2.6	20	0	332	.12	135	49.0	29.0	12	DIS	*
		10	23 2	25.80	19	35.11	155	54.69	27.30	2.8	2.9	47	6	188	.10	11	.7	1.2	33	KON	F
		11	5 2	36.22	19	19.49	155	11.39	6.35	1.2	1.1	31	2	96	.10	5	.5	1.1	20	SF3	
		11	510	55.30	19	20.19	155	4.11	5.18	1.3	1.1	18	2	129	.10	2	.6	1.1	10	SF5	
		11	613	18.96	19	20.52	155	11.91	7.93	2.5	2.8	48	4	73	.13	4	.5	.6	39	SF3	
		11	1318	28.32	19	20.27	155	13.49	6.63	1.1	.8	27	1	66	.12	4	.6	1.1	24	SF2	
		12	214	47.93	19	19.87	155	7.02	7.71	2.2	2.3	34	2	111	.10	5	.5	.7	29	SF4	
		12	552	27.75	19	19.41	155	13.91	6.32	1.2	.8	35	2	65	.12	4	.4	.9	29	SF2	
		12	622	24.63	20	19.32	155	6.61	15.05		2.5	15	0	294	.13	54	8.3	99.0	8	KEA	*
		12	1546	56.80	19	22.09	155	5.88	9.68	1.3	1.2	23	1	76	.11	2	.5	.8	16	SF4	
		13	021	33.47	19	25.93	155	37.69	1.56	2.9	3.2	33	2	94	.14	3	.5	.8	25	MLO	
		13	134	27.17	19	20.42	155	12.00	8.18	2.2	2.4	48	6	75	.13	5	.5	.5	34	SF3	
		13	648	50.03	19	14.88	155	33.79	6.67	2.7	2.7	41	2	71	.19	6	.5	1.3	33	LSW	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	AUG	13	1429	54.73	19	20.00	155	13.43	6.56	1.8	1.5	31	1	64	.13	5	.5	.8	25	SF2	
		13	1714	18.67	19	19.81	155	6.95	9.34	3.6	3.7	51	5	114	.10	5	.5	.4	43	SF4	F
		13	2041	58.86	19	23.95	155	13.49	31.04	2.1	1.8	42	1	67	.10	2	.6	1.0	38	DEP	
		14	225	58.89	19	20.38	155	12.79	7.72	1.2	1.1	27	1	68	.09	4	.5	.9	19	SF2	
		14	4 0	56.69	19	19.26	155	13.57	7.60	1.6	1.5	32	1	68	.11	4	.5	.7	23	SF2	
		14	511	20.04	19	21.37	155	49.93	12.42	2.9	2.5	37	0	126	.13	11	.6	.3	24	KON	
		14	615	37.18	19	20.75	155	6.98	7.74	1.9	1.7	31	1	94	.09	4	.4	.7	23	SF4	
		14	7 3	55.02	19	19.87	155	7.86	8.34	1.7	1.3	31	1	94	.09	5	.5	.6	18	SF4	
		14	1013	36.45	19	19.96	155	11.67	6.67	1.4	1.1	30	1	85	.10	5	.5	.9	23	SF3	
		14	13 6	8.07	19	23.18	155	24.30	12.83	1.6	1.5	36	2	40	.11	4	.5	.6	32	KAO	
		14	2049	10.33	19	19.88	155	6.57	6.96	1.8	1.3	24	0	119	.10	5	.5	1.2	18	SF4	
		15	413	45.74	19	21.51	155	2.01	6.25	1.4	1.2	20	1	158	.11	3	.5	.9	13	SF5	
		15	932	13.03	19	19.95	155	6.34	8.08	1.6	1.4	35	1	121	.12	6	.6	.6	26	SF4	
		15	1414	47.32	19	16.39	155	15.33	7.04	2.1	1.9	33	1	158	.12	4	.6	1.0	29	SF1	
		15	2030	1.49	19	21.85	155	7.22	6.17	1.9	.9	34	3	74	.13	5	.5	1.3	23	SF4	
		15	2251	.57	19	19.63	155	13.78	5.20	1.3	1.1	33	3	69	.13	5	.5	1.5	27	SF2	
		15	23 8	2.86	19	25.91	155	28.10	10.45	2.6	2.5	46	4	40	.13	6	.3	.5	36	KAO	
		15	2332	14.17	19	18.60	155	13.12	4.40	1.4	1.0	31	1	88	.10	3	.4	1.2	23	SSF	
		15	2334	40.73	19	18.31	155	13.01	6.13	1.3	.6	29	2	98	.09	3	.5	1.0	21	SF2	
		15	2335	21.47	19	19.01	155	13.07	9.70	3.0	2.7	46	4	128	.14	7	.5	.5	35	SF2	F
		15	2357	3.65	19	19.14	155	13.16	9.37	2.6	2.4	42	4	127	.12	6	.5	.6	34	SF2	F
		16	010	44.63	19	57.73	155	50.38	7.16	3.7	3.8	44	5	189	.11	19	.9	.9	37	KOH	F
		16	034	5.51	19	19.49	155	13.31	6.28	1.1	.6	25	1	72	.09	5	.5	1.3	20	SF2	
		16	712	8.22	19	18.09	155	12.87	9.27	2.7	2.4	39	1	141	.08	8	.5	.6	32	SF2	
		16	720	24.29	19	17.86	155	12.71	5.72	1.4	1.2	30	3	125	.10	2	.5	.9	25	SF2	
		16	842	18.13	19	18.36	155	12.92	9.57	2.8	2.4	38	1	136	.09	8	.5	.6	37	SF2	
		16	859	28.69	19	17.50	155	12.66	6.77	1.7	1.1	27	1	148	.11	2	.5	.9	22	SF2	
		16	9 0	19.88	19	18.67	155	13.02	10.35	2.7	2.9	44	4	155	.11	7	.4	.4	32	SF2	F
		16	9 5	25.67	19	18.52	155	12.96	8.66	1.9	1.3	33	1	135	.11	8	.5	.8	24	SF2	
		16	924	34.43	19	18.42	155	13.05	7.65	1.7	1.3	34	3	94	.09	3	.5	.7	23	SF2	
		16	10 2	58.13	19	18.38	155	13.40	7.15	1.8	1.8	36	2	82	.10	3	.5	.8	26	SF2	
		16	1034	1.84	19	17.52	155	12.82	5.76	1.6	1.6	28	2	140	.08	1	.6	1.0	17	SF2	
		16	1114	5.61	19	18.09	155	12.93	5.87	2.1	2.0	37	2	108	.11	2	.5	.9	28	SF2	
		16	1928	6.31	19	20.03	155	12.38	8.01	1.2	1.1	25	3	77	.08	5	.5	.7	19	SF2	
		16	2145	15.01	19	18.40	155	15.72	7.30	1.1	1.1	23	1	121	.11	4	.6	1.3	18	SF1	
		16	2155	45.10	19	23.86	155	16.09	3.25	1.6	1.4	18	3	102	.13	1	.5	.3	14	SEC	
		16	2249	40.77	19	17.84	155	12.30	10.38	2.1	2.1	35	2	145	.13	8	.6	.7	26	SF3	
		17	855	40.15	19	20.58	155	12.56	7.53	1.4	1.6	33	5	68	.09	4	.4	.6	27	SF2	
		17	1558	11.12	19	18.56	155	13.01	7.95	1.8		34	0	134	.11	8	.5	.9	28	SF2	
		17	1558	53.79	19	20.83	155	7.99	8.05	1.8	1.7	26	0	79	.10	4	.5	1.1	22	SF4	
		17	1744	30.96	19	19.34	155	11.78	8.69	1.8	2.2	37	3	97	.09	5	.4	.5	28	SF3	
		17	18 2	2.37	19	13.50	155	32.28	6.91	2.4	2.2	32	3	81	.16	5	.5	.9	21	LSW	
		17	2027	49.24	19	17.52	155	13.05	6.21	1.6	1.3	28	2	128	.10	1	.6	1.0	25	SF2	
		18	543	59.52	19	58.49	155	8.24	31.30	4.0	4.2	46	4	262	.10	23	1.1	1.9	41	KEA	F
		18	921	46.81	19	19.43	155	9.75	8.17	2.0	2.2	38	4	96	.08	5	.4	.6	26	SF3	
		18	1823	21.68	19	19.38	155	11.96	5.42	1.4	1.1	25	1	94	.11	5	.5	1.6	21	SF3	
		18	1914	51.69	19	25.40	155	38.33	2.16	2.2	1.9	20	3	181	.10	5	.6	1.0	11	MLO	
		18	2342	11.16	19	21.16	155	1.87	6.70	1.8	1.1	31	2	162	.15	3	.5	.8	24	SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	AUG	19	355	44.00	19	57.51	155	38.75	9.63	2.5	2.3	20	3	139	.06	23	.6	.6	14	KOH	
		19	511	51.76	19	16.84	155	28.20	6.63	1.2	1.2	28	3	55	.19	5	.5	1.1	19	LSW	
		19	2036	56.01	19	19.60	155	11.40	7.10	1.5	1.3	34	3	94	.11	5	.5	.9	26	SF3	
		19	2246	17.03	19	20.40	155	5.93	7.97	2.4	2.4	41	2	114	.10	5	.5	.5	33	SF4	
		19	2252	50.86	19	25.95	155	37.04	2.70	3.1	3.5	46	4	63	.14	3	.4	.7	35	MLO	
		20	740	30.00	19	19.74	155	9.60	7.69	1.7	1.3	18	1	88	.05	4	.5	.9	17	SF3	
		20	1856	27.27	19	19.82	155	12.56	6.76	1.3	1.1	33	3	79	.11	5	.5	.9	22	SF2	
		20	2213	10.10	19	24.63	155	29.40	7.76	1.8	1.1	31	1	64	.12	5	.4	.9	21	KAO	
		20	2217	40.06	19	24.64	155	29.19	8.31	1.8	1.5	36	3	63	.11	5	.4	.8	23	KAO	
		21	1744	8.96	19	21.44	155	2.31	8.19	2.1	1.8	36	3	142	.13	3	.7	.4	27	SF5	
		21	2147	29.50	19	20.23	155	12.00	29.77	1.6	1.4	38	1	78	.09	5	.7	1.2	31	DEP	
		21	2353	39.77	19	19.77	155	7.22	7.93	2.5	2.7	40	2	110	.10	5	.5	.5	31	SF4	
		22	353	38.08	19	21.21	155	6.84	8.06	2.9	3.1	45	2	87	.12	3	.4	.6	37	SF4	
		22	620	7.72	19	25.82	155	30.34	10.67	1.4	1.2	16	1	67	.10	8	.6	1.5	10	KAO	
		22	1241	19.81	19	25.75	155	37.73	2.18	1.5	1.8	22	1	95	.12	4	.5	1.1	19	MLO	
		22	1258	15.46	19	20.23	155	12.77	7.69	1.5	1.1	31	2	70	.07	4	.5	.7	20	SF2	
		22	1639	35.92	19	20.31	155	3.42	5.94	1.6	1.3	28	1	178	.14	7	.8	1.2	17	SF5	
		22	1657	7.56	19	40.64	155	4.52	1.01	.9	1.2	13	0	202	.13	29	1.3	16.4	5	HIL	*
		22	1857	45.30	19	23.16	155	2.85	8.17	1.4	1.2	28	1	152	.14	4	.7	.6	17	SF5	
		22	23	9 25.31	19	21.59	155	.75	7.49	2.0	1.5	31	0	193	.14	7	1.0	.8	26	SF5	
		22	2348	41.79	19	24.85	155	28.80	7.56	1.6	1.3	28	0	46	.09	5	.4	1.1	21	KAO	
		23	141	58.73	19	23.17	155	26.40	7.18	1.4	1.1	21	0	49	.12	2	.5	1.0	15	KAO	
		23	150	26.06	19	19.72	155	4.50	5.47	1.2	1.2	16	0	153	.06	5	.6	1.2	11	SF5	
		23	348	35.10	19	20.25	155	12.79	9.69	3.7	4.1	44	1	70	.10	4	.4	.3	40	SF2	F
		23	840	18.84	19	20.61	155	7.94	6.96	1.4	1.5	28	2	83	.09	4	.5	.9	24	SF4	
		23	1617	44.47	19	24.22	155	26.33	8.65	1.7	1.3	31	1	56	.11	3	.4	1.0	23	KAO	
		23	1713	47.24	19	19.79	155	10.50	6.86	1.5	1.3	29	1	91	.10	4	.5	.9	21	SF3	
		24	952	30.01	19	20.33	155	7.96	8.34	1.9	1.7	30	0	86	.06	5	.4	.7	23	SF4	
		24	1433	49.85	19	20.26	155	12.69	8.31	1.6	1.1	25	1	71	.11	4	.6	.8	16	SF2	
		24	15	7 42.87	19	24.43	155	25.12	8.23	1.8	1.7	39	2	34	.12	2	.4	.9	29	KAO	
		24	1531	29.01	19	20.00	155	11.83	7.36	1.8	2.2	40	1	83	.14	5	.5	.8	31	SF3	
		24	1634	16.77	19	20.43	155	12.98	7.18	1.6	1.5	31	1	66	.12	4	.5	.8	27	SF2	
		24	2238	51.03	19	21.83	155	24.99	10.03	2.8	3.2	44	4	39	.13	4	.4	.5	33	SWR	
		25	2	5 52.58	19	23.91	154	57.89	5.98	1.7	1.4	25	0	175	.14	3	.9	.9	13	LER	
		25	842	39.83	19	21.77	155	18.62	31.30	2.5	1.7	41	1	36	.11	4	.7	1.1	37	DEP	
		25	1755	38.86	19	20.38	155	8.94	6.34	1.2	1.2	28	0	99	.12	4	.6	1.2	25	SF4	
		25	1810	10.84	19	19.69	155	7.68	8.36	2.5	2.2	41	3	130	.10	4	.5	.5	33	SF4	
		25	1833	1.11	19	19.98	155	8.10	6.35	1.8	1.5	30	0	112	.11	5	.6	1.1	24	SF4	
		25	1835	21.61	19	19.52	155	7.46	7.68	1.9	1.8	33	1	137	.08	4	.6	.6	28	SF4	
		26	042	2.08	19	19.45	155	8.88	5.50	1.8	1.5	18	0	123	.08	4	.8	2.1	17	SF4	
		26	351	12.53	19	25.28	155	38.21	2.12	2.2	1.4	14	2	178	.11	5	.7	1.2	11	MLO	
		26	531	18.74	19	15.95	155	19.63	39.87	1.9	1.7	38	0	150	.10	4	.9	1.5	34	DEP	
		26	623	52.10	19	25.29	155	37.45	1.35	3.4	3.1	36	2	74	.14	4	.4	1.0	30	MLO	
		26	722	58.90	19	25.34	155	29.26	6.88	2.0	1.4	30	1	62	.11	6	.4	1.5	24	KAO	
		26	1813	42.53	19	23.19	155	2.28	8.08	2.0	1.7	32	1	163	.15	4	.8	.5	22	SF5	
		26	2357	10.43	19	21.95	155	25.72	11.28	1.5	1.3	32	1	44	.10	3	.4	.8	24	KAO	
		27	111	38.69	19	19.58	155	11.89	6.78	1.4	1.1	31	1	91	.10	5	.5	.9	20	SF3	
		27	4	7 34.42	19	20.11	155	8.69	7.80	1.5	1.7	36	0	73	.10	4	.5	.7	26	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	AUG	27	1759	59.74	19	19.90	155	7.89	5.43	1.4	1.1	22	0	124	.13	5	.6	1.6	16	SF4	
		27	1846	12.94	19	21.07	155	7.72	5.56	1.3	1.1	22	1	120	.19	4	.9	1.7	18	SF4	
		27	1955	33.28	19	45.38	155	6.12	41.81	2.1	1.7	39	2	187	.12	10	.8	2.0	35	HIL	
		27	2331	32.70	19	22.66	155	25.04	9.53	1.8	1.7	36	2	40	.10	5	.4	.7	30	KAO	
		27	2352	44.18	19	20.22	155	11.30	6.08	1.7	1.6	36	1	81	.13	4	.5	.9	30	SF3	
		28	020	23.12	19	20.40	155	10.64	6.52	1.4	1.3	20	2	83	.11	3	.6	1.2	15	SF3	
		28	341	40.43	19	20.49	155	10.65	8.29	1.2	1.1	15	1	82	.03	3	.6	1.3	14	SF3	
		28	342	52.77	19	20.50	155	10.58	9.01	1.6	1.3	20	2	83	.04	3	.6	.9	17	SF3	
		28	734	.63	19	18.62	155	18.01	32.55	3.1	3.1	43	1	112	.10	2	.7	1.1	41	DEP	
		28	828	51.50	19	20.03	155	11.80	7.24	1.4	1.3	29	0	82	.11	5	.5	1.0	22	SF3	
		28	1546	17.34	19	22.66	155	1.12	8.23	2.0	1.2	30	1	178	.15	6	1.1	.7	19	SF5	
		28	1642	25.80	19	20.12	155	3.85	5.86	1.4	1.1	21	1	184	.11	7	1.0	1.8	11	SF5	
		28	18	0 53.04	19	19.66	155	11.60	7.26	1.3	1.1	27	1	91	.10	5	.5	1.0	19	SF3	
		28	1918	35.27	19	17.41	155	21.36	5.73	1.7	1.8	33	0	126	.14	5	.4	1.1	30	SWR	
		29	921	37.98	19	18.98	155	50.08	5.74	2.6	1.8	28	1	145	.19	7	.8	1.4	16	KON	
		29	1212	12.81	19	19.50	155	11.80	5.40	1.4	1.1	27	1	93	.13	5	.5	1.3	23	SF3	
		30	738	5.95	19	16.64	155	22.86	5.28	1.9	2.1	35	3	119	.13	5	.4	1.2	29	SWR	
		30	2248	3.43	19	18.28	155	17.63	33.23	2.6	2.4	46	1	121	.10	2	.7	1.0	44	DEP	
		31	145	35.76	18	54.78	155	14.68	11.69	3.1	3.8	35	0	248	.11	36	2.0	.8	22	LOI	L
		31	150	23.14	18	52.97	155	15.37	10.79	2.4	2.5	25	0	252	.14	38	2.7	.9	13	LOI	L
		31	2	2 12.80	18	54.22	155	15.76	13.10	2.6	2.7	23	0	257	.13	35	2.9	1.2	10	LOI	L
		31	2	8 58.40	18	56.01	155	16.57	12.37	2.3	2.9	27	0	246	.12	32	2.1	.7	11	LOI	L
		31	211	41.56	18	54.16	155	15.20	11.38	2.6	2.4	16	0	266	.11	36	3.2	.9	9	LOI	L
		31	250	2.66	18	52.31	155	14.85	9.77	2.5	2.9	30	0	255	.14	39	2.7	.9	10	LOI	L
		31	652	19.00	19	19.97	155	11.59	6.73	2.1	2.0	42	2	85	.13	5	.5	.7	35	SF3	
		31	654	21.50	19	19.35	155	11.64	6.43	1.1	1.1	23	1	98	.10	5	.6	1.4	19	SF3	
		31	912	40.56	19	22.13	155	.75	3.43	1.9	1.3	22	1	165	.17	6	.7	2.0	15	SSF	
		31	1348	48.85	19	23.35	155	27.78	6.71	1.8	1.5	26	1	47	.12	2	.4	1.1	23	KAO	
		31	1434	18.95	19	21.74	155	25.34	9.51	1.7	1.5	32	2	45	.13	4	.4	.8	27	KAO	
		31	1739	5.97	19	19.15	155	13.86	4.95	.9	1.1	30	2	65	.14	4	.4	1.5	21	SSF	
SEP		1	110	34.79	19	19.57	155	12.16	5.41	1.6	1.5	40	2	87	.12	5	.4	1.0	31	SF3	
		1	250	3.55	19	59.01	155	35.94	42.09	2.3	1.8	43	2	166	.09	25	.8	2.1	40	KOH	
		1	917	21.65	18	50.78	155	17.30	12.84	1.9	1.7	22	0	267	.12	39	3.2	2.0	18	LOI	
		1	1758	3.18	19	26.67	155	50.49	8.55	1.6	1.5	24	1	113	.15	9	.6	.9	18	KON	
		1	2033	53.19	19	20.76	155	18.44	32.24	2.1	1.8	45	1	56	.10	2	.7	1.0	39	DEP	
		1	2135	11.75	19	21.29	155	6.53	6.82	1.9	1.5	32	0	88	.13	3	.6	1.0	22	SF4	
		1	2145	26.78	19	20.44	155	11.46	8.28	2.4	2.5	44	2	77	.12	4	.4	.6	32	SF3	
		1	2156	33.83	19	17.89	155	12.99	6.39		1.2	26	1	112	.10	2	.6	1.1	22	SF2	
		1	2235	55.88	19	17.14	155	20.81	6.88	1.6	2.2	43	5	132	.14	4	.5	.8	32	SWR	
		1	2250	20.67	19	24.71	155	38.77	.02	2.3	2.1	20	1	110	.22	6	.7	1.2	13	MLO	*
		2	11	2 9.59	19	22.29	155	27.96	7.77	1.7	1.6	28	0	42	.12	1	.4	1.0	24	KAO	
		2	1225	14.55	19	17.41	155	15.21	6.65	1.2	1.1	24	1	148	.09	3	.6	1.0	20	SF1	
		2	1236	10.57	19	19.77	155	12.42	6.28	1.1	1.1	29	1	81	.11	5	.5	1.0	21	SF2	
		2	1657	11.05	19	16.69	155	21.69	7.14	1.8	1.5	31	1	133	.13	6	.5	1.1	27	SWR	
		2	1910	46.92	19	30.27	155	39.23	6.83	2.3	1.6	35	4	80	.13	6	.5	.9	25	MLO	
		2	2047	39.39	19	29.89	155	39.27	7.04	1.6	1.2	22	2	98	.10	6	.5	.8	17	MLO	
		3	044	13.36	19	30.24	155	39.20	8.40	2.3	1.6	30	1	80	.13	6	.5	.8	21	MLO	
		3	140	33.35	19	39.38	156	7.48	41.46	3.2	3.0	44	1	246	.10	29	1.1	1.8	41	HUA	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	SEP	3	4 1	8.75	19	28.82	155	35.94	2.59	2.6	2.6	31	0	78	.09	1	.4	.3	20	MLO
		3	1223	11.68	19	30.28	155	39.63	8.42	2.8	2.6	34	1	84	.12	7	.5	.7	25	MLO
		3	1416	50.58	19	16.95	155	21.01	5.26	1.0	1.3	24	3	139	.09	5	.4	1.3	17	SWR
		3	17 4	47.00	19	29.73	155	38.98	7.02	2.7	2.7	35	4	78	.14	5	.6	.9	29	MLO
		3	1841	21.74	19	30.35	155	39.44	6.99	1.6	1.1	26	2	77	.13	6	.5	1.1	18	MLO
		3	1843	43.33	19	30.35	155	39.21	7.98	1.3	1.1	21	3	100	.12	6	.6	1.0	19	MLO
		3	1921	47.06	19	30.86	155	39.40	7.15	2.8	2.8	42	2	52	.15	7	.4	.8	30	MLO
		3	1933	41.51	19	30.48	155	39.54	6.69	1.6	1.2	27	3	77	.13	7	.5	.9	22	MLO
		3	1955	17.58	19	30.02	155	39.24	5.90	2.4	1.9	33	3	78	.14	6	.5	.9	25	MLO
		3	2123	7.30	19	30.28	155	39.58	8.11	2.7	2.8	35	3	76	.12	7	.4	.7	23	MLO
		4	336	51.21	19	21.32	155	2.80	5.91	1.9	1.5	33	2	126	.18	3	.6	1.0	25	SFS
		4	339	35.95	19	21.43	155	2.68	5.72	1.5	1.1	24	1	137	.14	3	.7	1.2	21	SFS
		4	1214	5.10	19	19.93	155	6.81	5.75	1.3	1.1	25	0	113	.11	5	.6	1.5	19	SF4
		4	1235	9.55	19	19.34	155	11.66	6.30	1.2	1.1	25	1	98	.09	5	.5	1.2	22	SF3
		4	13 2	28.75	19	30.44	155	39.29	8.30	2.7	2.7	32	5	77	.14	6	.4	.8	20	MLO
		4	14 7	35.13	19	26.44	155	36.15	3.22	2.6	2.4	26	1	59	.11	2	.4	.5	16	MLO
		4	1617	38.33	19	18.82	155	28.88	8.28	1.3	1.1	22	0	64	.14	7	.5	1.4	16	LSW
		5	047	30.88	19	22.84	155	27.06	7.63	1.4	1.1	32	2	40	.12	1	.4	.9	23	KAO
		5	058	20.53	19	30.55	155	38.70	9.51	1.5	1.2	22	3	102	.15	5	.6	.9	15	MLO
		5	650	10.34	19	22.88	155	24.08	9.50	1.6	1.4	39	4	38	.13	5	.4	.7	33	KAO
		5	748	58.99	19	30.33	155	39.38	7.59	2.3	1.6	30	2	77	.13	6	.5	.9	21	MLO
		5	1256	43.77	19	21.67	155	24.73	9.21	1.7	1.1	30	2	44	.11	4	.4	.6	24	SWR
		5	13 0	4.38	19	20.26	155	7.32	7.16	1.3	1.3	32	2	98	.10	5	.5	.8	27	SF4
		5	1624	22.39	19	20.55	155	3.99	5.23	2.4	2.5	38	5	108	.13	2	.5	1.0	30	SFS
		5	1642	26.37	19	24.51	155	24.91	9.72	1.9	1.5	39	3	36	.11	1	.4	.6	31	KAO
		5	2227	44.70	19	20.39	155	12.75	10.44	3.5	3.7	45	2	69	.10	4	.5	.4	43	SF2 F
		5	2358	41.71	19	19.46	155	11.58	6.52	1.1	1.1	33	1	96	.11	6	.5	1.0	24	SF3
		6	356	41.02	19	30.38	155	39.24	7.67	3.3	3.4	42	1	96	.12	6	.5	.6	37	MLO
		6	544	18.62	19	20.51	155	12.54	6.88	1.6	1.5	30	1	69	.13	4	.5	.9	24	SF2
		6	1055	23.03	19	41.12	155	4.01	5.90	2.4	2.5	22	0	189	.16	31	1.1	3.0	9	HIL B
		6	16 0	18.51	19	21.50	155	1.10	6.70	1.9	1.1	31	3	179	.19	4	.8	.9	21	SFS
		7	5 9	10.02	19	20.45	155	17.86	39.29	3.5	4.3	50	5	68	.11	1	.6	1.0	45	DEP F
		7	529	25.43	19	20.37	155	12.86	7.09	2.0	1.9	24	2	67	.11	4	.5	1.1	22	SF2
		7	1039	29.15	19	19.43	155	13.43	7.78	1.9	2.1	40	0	70	.11	4	.5	.7	31	SF2
		7	1244	.79	19	19.65	155	11.56	7.95	1.4	1.1	26	1	92	.10	5	.6	1.1	22	SF3
		7	1711	17.38	19	23.87	155	23.80	10.61	1.8	1.5	36	3	33	.10	4	.4	.6	26	KAO
		7	2025	26.11	19	23.59	155	25.28	7.68	1.9	1.6	37	1	37	.11	3	.4	1.0	27	KAO
		7	2141	34.36	19	19.29	155	8.80	5.66	1.3	1.1	26	2	86	.10	4	.5	1.4	17	SF4
		8	027	9.42	19	30.37	155	39.04	8.36	2.3	2.2	25	4	77	.14	6	.5	.8	19	MLO
		8	1723	9.26	19	29.99	155	39.88	6.77	1.1	.7	16	4	104	.08	7	.5	1.1	12	MLO
		8	1731	59.21	19	30.44	155	39.46	8.60	1.4	1.1	19	3	101	.13	7	.6	1.1	16	MLO
		8	1820	52.27	19	27.00	154	53.38	5.10	1.4	1.0	16	2	153	.12	3	.9	1.0	13	LER
		8	2026	34.88	19	19.62	155	7.39	8.44	2.1	1.8	44	5	109	.10	4	.4	.5	26	SF4
		8	2250	51.20	19	30.60	155	39.30	6.93	2.6	2.0	30	7	78	.16	6	.4	1.1	21	MLO
		8	2323	56.08	19	30.82	155	39.21	8.75	1.3	1.0	17	5	105	.13	6	.6	1.0	13	MLO
		8	2332	17.81	19	29.96	155	39.81	5.90	1.4	1.2	18	4	103	.07	7	.5	1.3	13	MLO
		9	018	6.06	19	19.41	155	10.71	8.11	1.8	1.1	26	0	100	.09	5	.6	1.0	26	SF3
		9	042	57.53	19	30.51	155	39.02	9.57	1.2	1.0	15	2	102	.14	6	.8	1.2	9	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	SEP	9	134	14.06	19	19.27	155	9.58	5.44	1.4	1.2	28	2	98	.11	5	.5	1.4	24	SF3
		9	226	50.26	19	30.70	155	39.06	10.05	1.1	.9	10	2	277	.10	6	2.3	1.0	7	MLO
		9	630	55.35	19	19.89	155	7.32	9.02	5.4	5.2	46	1	105	.10	5	.5	.4	45	SF4 F
		9	637	44.00	19	21.56	155	6.66	7.37	2.6	2.6	36	4	82	.12	3	.4	.6	27	SF4
		9	644	59.02	19	19.86	155	9.28	5.21	1.8	1.1	24	3	82	.11	4	.5	1.4	19	SF3
		9	726	20.73	19	18.00	155	6.87	3.77	1.4	1.0	15	1	176	.09	2	1.2	.8	12	SSF
		9	739	9.55	19	20.99	155	10.76	8.70	1.7	1.1	20	2	70	.09	3	.5	.7	12	SF3
		9	757	37.76	19	19.95	155	7.81	6.34	2.1	1.7	31	3	94	.11	5	.5	1.1	20	SF4
		9	847	40.63	19	19.98	155	8.41	6.52	1.6	1.1	21	3	80	.11	5	.5	1.1	15	SF4
		9	9 3	1.68	19	21.14	155	7.01	7.37	1.9	1.7	35	3	87	.12	4	.4	.7	27	SF4
		9	914	29.63	19	19.77	155	6.03	3.96	2.0	1.6	34	1	131	.17	5	.6	2.1	20	SSF
		9	925	49.02	19	19.42	155	13.69	6.83	2.0	1.8	43	5	64	.11	4	.4	.7	35	SF2
		9	1027	33.74	19	20.29	155	3.58	8.19	2.8	3.0	44	4	114	.10	1	.6	.5	35	SFS
		9	1116	12.50	19	20.64	155	4.03	7.49	2.6	2.9	49	5	105	.12	2	.5	.4	36	SFS
		9	1143	27.31	19	20.52	155	11.45	7.28	1.7	1.2	34	2	76	.11	4	.5	.7	25	SF3
		9	1348	27.69	19	20.08	155	7.65	7.78	2.0	1.9	35	2	95	.10	5	.5	.6	27	SF4
		9	14 9	17.02	19	19.91	155	8.68	7.77	1.3	1.1	27	2	76	.10	5	.6	1.0	18	SF4
		9	15 1	44.11	19	27.10	155	28.30	9.30	2.7	2.6	45	4	46	.11	7	.3	.6	37	KAO
		9	1744	4.92	19	30.48	155	39.62	6.46	3.1	3.0	39	3	102	.13	7	.5	1.0	24	MLO
		9	19 4	56.78	19	20.08	155	7.35	7.91	1.7	1.5	30	1	100	.08	5	.5	.7	23	SF4
		9	2028	12.23	19	10.03	155	37.86	8.52	2.6	2.2	33	3	115	.13	9	.4	.8	21	LSW
		9	23 2	43.70	19	21.36	155	6.45	5.62	1.3	1.3	26	1	87	.16	3	.6	1.4	17	SF4
		10	229	19.53	19	20.69	155	12.94	7.79	1.1	1.3	30	2	63	.11	4	.5	.8	24	SF2
		10	549	44.90	19	23.02	155	2.44	6.55	1.2	1.1	24	1	130	.10	4	.5	.8	14	SFS
		10	7 2	28.31	19	20.40	155	12.85	6.28	1.6	1.5	36	2	67	.14	4	.5	.8	29	SF2
		10	810	49.07	19	17.93	155	13.28	6.71	1.4	1.3	30	3	95	.09	2	.5	.8	19	SF2
		10	840	25.93	19	20.83	155	3.32	6.48	1.6	1.1	29	2	98	.11	2	.5	.9	15	SFS
		10	13 9	1.75	19	19.86	155	12.20	7.24	1.3	1.1	21	1	81	.10	5	.6	1.1	16	SF3
		10	1614	24.57	19	27.69	155	26.63	10.77	1.8	1.2	35	2	49	.11	5	.4	.7	24	KAO
		10	1927	41.33	19	19.71	155	3.34	4.96	2.0	1.7	28	2	181	.13	1	.6	.8	18	SSF
		10	2056	24.52	19	20.48	155	12.86	7.83	1.6	1.6	35	2	66	.11	4	.5	.6	23	SF2
		10	2117	42.72	19	20.50	155	12.82	7.88	1.6	1.5	31	2	66	.11	4	.5	.6	22	SF2
		10	2146	13.23	19	30.58	155	39.50	7.96	2.3	1.9	33	2	97	.11	7	.5	.8	24	MLO
		10	2235	14.70	19	20.05	155	13.06	6.33		1.1	29	1	69	.14	5	.5	1.2	26	SF2
		11	14 1	39.02	19	19.76	155	11.30	5.15	1.7	1.5	33	1	90	.11	6	.4	1.3	26	SF3
		11	1513	14.77	19	31.12	155	39.28	6.55	2.9	2.8	38	6	80	.17	7	.4	.9	21	MLO
		11	1931	21.62	19	20.57	155	12.79	7.40	1.6	1.1	26	1	66	.11	4	.5	.9	19	SF2
		11	2020	2.96	19	30.66	155	43.21	.71	1.1	1.1	14	1	74	.18	5	.7	1.8	12	KON
		11	2145	51.48	19	25.61	155	37.26	2.65	2.2	1.3	13	3	89	.15	4	.8	.9	11	MLO
		11	2214	23.25	19	19.97	155	12.16	6.98	1.6	1.4	34	2	80	.11	5	.5	.7	25	SF3
		11	23 2	28.57	19	30.17	155	39.23	8.70	1.3	1.0	19	3	100	.16	6	.7	1.1	12	MLO
		11	23 3	19.07	19	30.06	155	39.12	9.22	1.5	1.1	17	3	99	.15	6	.6	1.2	11	MLO
		11	23 6	40.80	19	30.10	155	39.01	8.31	1.5	1.2	17	3	99	.13	6	.6	1.1	14	MLO
		12	019	54.37	19	19.45	155	6.60	7.67	1.9	1.8	34	1	130	.09	5	.5	.6	22	SF4
		12	020	53.06	19	22.06	155	23.96	7.53	1.3	1.1	19	1	39	.10	4	.5	1.2	16	KAO
		12	332	15.30	19	19.37	155	13.05	4.99	1.2	1.3	30	1	78	.12	4	.5	1.7	25	SSF
		12	351	59.17	19	30.23	155	38.81	9.87	1.2	1.0	12	3	128	.08	5	.7	1.2	12	MLO
		12	5 1	14.54	19	29.86	155	39.58	6.12	2.4	1.9	30	5	78	.12	6	.4	1.0	21	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	SEP	12	551	55.91	19	30.48	155	39.50	7.24	2.3	1.6	22	4	102	.13	7	.5	1.1	16	MLO
		12	639	18.11	19	20.82	155	24.40	10.79	1.3	1.1	29	2	57	.14	2	.5	.9	20	SWR
		12	727	51.11	19	20.16	155	9.24	6.97	1.2	1.3	23	2	76	.11	4	.6	1.1	18	SF3
		12	8	8 .34	19	30.01	155	39.81	5.46	2.6	1.6	26	5	78	.12	7	.4	1.4	16	MLO
		12	9	0 18.85	19	30.39	155	39.36	6.04	2.3	1.3	28	4	77	.17	6	.5	1.3	17	MLO
		12	1513	.94	19	19.88	155	6.58	7.77	1.4	1.3	30	2	119	.11	5	.6	.8	26	SF4
		12	1552	52.84	19	19.66	155	7.85	7.83	2.0	1.8	37	2	97	.10	4	.4	.7	22	SF4
		12	16	4 59.42	19	20.86	155	7.83	8.25	2.1	2.4	39	4	81	.10	4	.4	.6	30	SF4
		12	1612	58.71	19	21.19	155	8.27	8.10	2.1	2.4	35	4	71	.11	3	.4	.7	23	SF4
		12	1859	37.16	19	30.18	155	39.83	7.75	3.3	3.4	43	4	99	.11	7	.4	.6	30	MLO
		12	2130	50.18	19	23.64	155	27.99	5.73	1.5	1.4	20	1	54	.11	2	.5	1.2	18	KAO
		13	152	42.69	19	30.11	155	39.14	7.96	2.2		22	2	99	.13	6	.5	1.0	16	MLO
		13	153	38.43	19	30.19	155	39.18	7.55	2.5	1.9	36	4	76	.15	6	.4	.8	23	MLO
		13	3	3 49.03	19	29.81	155	39.63	5.42	1.3	1.0	21	4	97	.15	7	.5	1.3	16	MLO
		13	340	45.21	19	55.30	155	36.04	13.14	2.5	2.4	29	2	136	.14	22	.8	.8	20	KOH
		13	548	57.63	19	30.28	155	38.79	7.52	2.1	1.6	30	4	94	.18	5	.6	1.0	23	MLO
		13	725	8.99	19	29.20	155	38.29	.37	2.2	1.4	11	0	213	.08	4	1.0	1.6	6	MLO
		13	739	31.74	19	30.26	155	39.15	7.46	2.3	1.6	27	4	96	.12	6	.5	.8	19	MLO
		13	754	23.62	19	17.21	155	47.65	8.66	2.5	1.6	30	0	97	.18	8	.7	1.0	20	KON
		13	924	7.63	19	18.46	155	29.12	12.15	2.0	1.2	34	0	42	.11	7	.4	.7	30	LSW
		13	1215	42.22	19	19.85	155	9.99	6.60	1.5	1.3	27	3	116	.11	4	.6	1.1	18	SF3
		13	1537	20.03	19	29.71	155	39.44	6.04	2.5		34	4	97	.12	6	.4	.9	23	MLO
		13	1636	59.96	19	30.42	155	39.27	8.38	2.3	2.2	29	1	96	.13	6	.6	.9	21	MLO
		13	1748	39.72	19	20.34	155	4.01	6.19	2.3	2.6	41	4	120	.11	2	.4	.6	27	SF5
		13	19	3 56.26	19	20.35	155	12.28	7.64	1.9	1.9	43	3	73	.13	4	.4	.6	34	SF3
		13	1939	57.53	19	21.25	155	3.14	8.89	4.0	4.0	50	1	110	.11	3	.6	.4	48	SF5 F
		13	1943	43.11	19	21.09	155	3.21	6.24	2.2	2.4	43	2	107	.13	2	.5	.7	33	SF5
		13	2222	8.86	19	29.88	155	39.11	6.53	2.6	2.1	32	4	96	.14	6	.5	.9	17	MLO
		13	23	3 22.82	19	20.87	155	13.13	7.27	1.9	2.3	43	2	60	.15	3	.5	.6	38	SF2
		13	2333	31.72	19	29.51	155	39.46	6.54	2.6	2.9	33	3	97	.13	6	.5	.8	24	MLO
		14	049	25.86	19	30.34	155	38.86	6.79	2.5	2.5	38	3	94	.13	5	.5	.8	26	MLO
		14	2	6 57.18	19	29.45	155	38.96	7.21	2.3	2.3	35	2	94	.12	5	.4	.7	26	MLO
		14	216	51.74	19	29.60	155	39.25	5.83	1.9	1.6	31	4	96	.13	6	.5	.9	25	MLO
		14	227	18.70	19	29.85	155	39.49	6.14	1.9	1.6	31	4	97	.12	6	.4	.8	24	MLO
		14	254	59.83	19	30.58	155	39.58	5.02	2.7	3.0	43	4	97	.17	7	.5	1.5	32	MLO
		14	515	59.32	19	17.96	155	13.29	6.21	1.4	1.1	34	2	95	.10	2	.5	.9	28	SF2
		14	523	2.39	19	21.13	155	1.35	6.60	1.8	1.7	34	4	176	.14	4	.6	.5	21	SF5
		14	557	18.28	19	46.17	155	34.48	16.86	2.3	2.3	41	5	89	.09	12	.5	1.4	40	KEA
		14	6	6 17.44	19	16.90	155	26.72	8.94	1.3	1.3	29	1	54	.13	7	.4	.8	21	LSW
		14	643	43.50	19	30.26	155	39.32	8.05	3.5	3.6	46	3	96	.13	6	.4	.5	37	MLO F
		14	656	22.89	19	29.64	155	39.06	6.24	2.2	1.7	34	3	95	.12	5	.5	.8	26	MLO
		14	710	36.58	19	29.93	155	39.23	6.54	2.4	1.7	34	3	98	.13	6	.5	.9	23	MLO
		14	720	23.56	19	29.91	155	39.19	6.40	1.9	1.4	34	2	98	.14	6	.5	.8	26	MLO
		14	854	23.82	19	30.11	155	39.28	5.99	2.2	1.6	30	1	76	.13	6	.4	1.1	27	MLO
		14	855	58.36	19	30.65	155	39.24	7.70	3.0	3.5	42	2	51	.12	6	.4	.6	32	MLO
		14	921	18.93	19	30.23	155	39.17	6.57	2.3	1.6	27	3	80	.13	6	.5	1.0	23	MLO
		14	955	24.11	19	30.12	155	39.11	5.31	2.3	2.1	38	5	76	.13	6	.4	1.3	32	MLO
		14	10	7 55.96	19	30.26	155	39.28	6.12	2.4	2.5	34	3	80	.13	6	.5	1.1	30	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	SEP	14	1016	41.32	19	29.64	155	39.13	6.57	2.5	2.6	39	5	74	.15	6	.5	.8	30	MLO
		14	1045	.48	19	30.19	155	39.27	6.44	2.3	1.4	25	2	80	.14	6	.5	1.1	22	MLO
		14	1048	32.26	19	18.17	155	13.28	8.09	1.5	1.5	31	3	90	.07	2	.5	.7	29	SF2
		14	1129	14.75	19	19.88	155	7.72	8.26	2.1	2.3	39	2	97	.09	5	.4	.7	35	SF4
		14	1258	17.08	19	31.02	155	39.51	7.03	2.1	2.3	30	6	129	.13	7	.5	1.1	29	MLO
		14	13	0 15.20	19	21.43	155	3.03	8.41	3.6	3.7	49	4	115	.10	3	.5	.4	43	SF5 F
		14	1312	48.23	19	20.55	155	2.90	8.00	2.3	2.3	42	5	126	.12	1	.5	.4	37	SF5
		14	1337	17.09	19	30.46	155	39.48	7.78	3.7	4.1	44	3	51	.13	7	.4	.6	41	MLO
		14	1346	50.34	19	29.97	155	39.01	6.97	1.9	2.0	24	6	95	.14	6	.5	.8	23	MLO
		14	1415	39.25	19	29.46	155	39.17	6.15	2.0	1.6	31	6	96	.14	6	.6	.8	30	MLO
		14	1444	3.66	19	29.88	155	39.29	6.45	2.3	2.0	39	6	75	.14	6	.4	.7	36	MLO
		14	15	8 57.41	19	30.15	155	39.09	6.62	1.9	1.6	29	4	95	.13	6	.4	.8	20	MLO
		14	1554	12.11	19	29.82	155	38.96	6.91	2.1	1.6	31	1	94	.14	5	.5	.9	21	MLO
		14	17	2 48.76	19	29.72	155	39.25	6.94	2.1	1.5	23	2	96	.14	6	.5	1.6	18	MLO
		14	1727	44.33	19	30.03	155	39.40	5.12	2.3	2.1	38	4	75	.14	6	.4	1.2	29	MLO
		14	2014	35.17	19	24.69	155	34.02	4.91	1.0	1.1	10	1	83	.14	2	.7	1.2	6	MLO
		14	2239	31.17	19	20.30	155	12.00	8.63	2.4	3.0	43	2	76	.13	5	.4	.5	35	SF3
		14	2356	35.59	19	29.93	155	39.30	6.17	2.3	1.7	35	3	96	.14	6	.4	.8	25	MLO
		15	124	15.89	19	19.46	155	6.84	3.84	1.4	1.3	22	0	125	.13	4	.6	1.8	17	SSF
		15	221	39.95	19	11.85	155	27.80	7.12	1.9	1.8	34	0	109	.14	4	.5	.9	28	LSW
		15	338	30.48	19	30.31	155	38.97	6.13	2.3	1.4	26	4	94	.19	6	.5	1.4	21	MLO
		15	342	.71	19	22.54	155	1.87	5.16	2.0	1.5	35	4	137	.20	5	.6	1.6	22	SF5
		15	6	9 52.95	19	30.12	155	38.61	8.74	1.5	1.2	21	1	99	.14	5	.6	1.1	16	MLO
		15	7	4 28.19	19	30.52	155	37.88	8.76	1.4	1.4	14	1	158	.11	4	.8	1.0	12	MLO
		15	923	43.38	19	26.38	155	27.53	7.53	2.2	1.8	40	4	41	.12	5	.3	.8	33	KAO
		15	1659	22.88	19	18.70	155	8.49	6.63	1.7	1.3	38	3	92	.10	3	.5	.9	26	SF4
		15	1819	20.17	19	11.92	155	28.38	8.16	2.2	1.4	30	1	113	.14	5	.5	.9	23	LSW
		15	1838	20.80	19	23.95	155	29.85	9.03	1.6	1.1	23	0	59	.08	5	.4	1.2	19	KAO
		15	1858	28.27	19	30.46	155	39.33	8.51	2.3	1.4	23	4	77	.14	6	.5	1.1	20	MLO
		15	22	3 39.51	19	18.94	155	13.74	6.60	1.5	1.1	34	3	74	.12	4	.4	.7	25	SF2
		15	2222	20.56	19	29.61	155	39.17	5.43	2.3	1.9	36	5	74	.15	6	.4	.8	29	MLO
		15	2315	36.69	19	29.98	155	38.83	6.51	2.3	1.7	33	3	75	.17	5	.5	1.1	25	MLO
		15	2319	21.74	19	29.92	155	38.97	6.93	1.4	1.2	19	1	75	.12	5	.5	1.0	14	MLO
		15	2322	39.52	19	29.33	155	38.94	6.02	2.4	1.4	32	3	92	.13	5	.5	.9	25	MLO
		15	2323	9.34	19	19.15	155	13.27	7.80	1.9	1.5	31	1	76	.11	4	.5	.6	23	SF2
		16	138	4.88	19	29.78	155	38.98	6.62	2.2	1.5	34	3	78	.14	5	.4	.9	24	MLO
		16	459	52.63	19	20.53	155	11.59	7.09	2.0	1.9	40	1	75	.12	4	.4	.7	32	SF3
		16	7	0 56.46	19	29.80	155	39.33	6.43	2.5	2.6	29	2	78	.13	6	.5	1.0	22	MLO
		16	922	12.22	19	30.19	155	39.19	7.68	4.0	4.1	46	2	50	.12	6	.4	.6	43	MLO F
		16	937	21.05	19	29.50	155	39.01	6.63	2.1	1.6	30	1	95	.11	5	.5	.8	25	MLO
		16	958	.49	19	29.41	155	39.03	7.98	2.7	2.5	35	2	76	.11	5	.4	.6	26	MLO
		16	959	42.56	19	19.45	155	11.09	6.59	1.4	1.3	31	1	98	.10	5	.5	1.0	23	SF3
		16	1024	3.88	19	29.78	155	39.14	6.03	2.5	2.2	33	3	78	.14	6	.5	.9	25	MLO
		16	1026	33.02	19	18.25	155	13.44	8.08	2.3	2.4	43	2	82	.11	2	.4	.5	35	SF2
		16	13	0 9.47	19	20.63	155	9.72	7.22	1.2	1.1	30	2	72	.10	3	.5	.8	17	SF3
		16	1323	18.68	19	17.47	155	13.91	6.33	1.8	1.5	27	1	117	.09	1	.6	.8	16	SF2
		16	15	9 53.21	19	30.08	155	39.06	8.23	4.2	4.2	45	1	50	.13	6	.4	.5	44	MLO F
		16	1512	22.82	19	29.34	155	38.92	6.08	2.3	2.1	33	4	93	.13	5	.5	.9	27	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	SEP	16	16 9	50.18	19	22.57	155	24.33	10.02	2.6	2.6	48	3	27	.14	5	.3	.5	42	KAO
		16	1658	9.04	19	20.59	155	8.26	7.00	1.9	1.6	31	3	77	.09	4	.4	.9	21	SF4
		17	322	3.55	19	20.28	155	12.69	7.69	1.6	1.5	33	1	70	.11	4	.4	.7	24	SF2
		17	6 3	39.57	19	29.46	155	38.99	6.01	2.1	1.6	30	3	95	.15	5	.5	.9	24	MLO
		17	11 7	35.04	19	20.40	155	11.13	7.36	1.3	1.5	27	2	79	.11	4	.6	.9	22	SF3
		17	1828	9.01	19	30.02	155	38.68	8.77	2.3	1.4	22	1	76	.14	5	.5	1.0	16	MLO
		17	2053	17.99	19	19.22	155	8.88	6.35	1.4	1.3	29	1	89	.13	4	.6	1.2	21	SF4
		17	2131	5.10	19	29.19	155	38.96	6.46	2.4	2.1	31	4	91	.13	5	.5	.7	22	MLO
		17	2242	27.90	19	29.29	155	38.99	5.72	2.3	1.9	32	3	92	.14	5	.5	1.0	24	MLO
		17	2328	29.07	19	22.05	155	.07	6.38	3.5	4.0	46	3	175	.12	6	.6	.5	41	SF5
		18	247	41.46	19	22.01	154	59.51	4.40	1.8	1.7	27	0	183	.16	6	.9	2.3	19	SLE
		18	429	31.69	19	29.38	155	38.82	5.78	2.3	1.6	28	5	94	.11	5	.5	.8	25	MLO
		18	436	39.96	19	26.51	155	27.38	8.58	2.2	1.7	45	4	42	.12	5	.4	.7	36	KAO
		18	6 5	32.92	19	21.93	155	4.94	7.22	1.9	1.7	38	2	76	.14	3	.5	.6	26	SF5
		18	1122	6.31	19	29.79	155	39.12	6.29	1.6	1.2	33	3	74	.15	6	.4	.9	22	MLO
		18	13 5	18.21	19	21.82	155	28.40	5.93	2.4	2.3	39	3	43	.12	2	.4	1.0	31	KAO
		18	1429	5.62	19	23.06	155	17.00	12.82	2.4	2.5	50	3	38	.12	1	.4	.3	42	INT
		18	1840	52.63	19	11.61	155	29.09	32.89	2.5	1.9	39	0	77	.08	4	.7	1.5	35	DLS
		19	2 4	9.27	19	30.65	155	39.18	8.10	1.6	1.2	19	2	95	.13	6	.5	1.1	13	MLO
		19	231	25.32	19	19.36	155	11.98	6.88	1.7	1.4	40	3	95	.11	5	.4	.7	24	SF3
		19	4 8	30.66	19	21.84	154	59.82	5.05	2.0	2.1	33	1	182	.12	6	.7	.8	23	LER
		19	722	57.67	19	21.93	154	59.68	3.53	1.7	1.6	22	0	182	.15	6	.9	2.3	17	SLE
		19	1029	19.00	19	19.94	155	8.86	7.99	1.6	1.3	31	2	76	.09	4	.5	.8	23	SF4
		19	1523	43.53	19	21.51	155	1.62	5.19	1.7	1.1	25	1	168	.14	4	.6	1.1	19	SF5
		19	1542	51.43	19	22.00	155	4.60	6.97	2.0	1.9	38	3	77	.11	3	.5	.7	29	SF5
		19	2228	22.67	19	56.31	155	22.97	11.88	1.6	1.6	15	3	188	.10	7	.8	.5	10	KEA
		19	23 8	21.61	19	19.32	155	11.86	9.25	2.7	2.7	45	2	96	.12	5	.5	.4	37	SF3
		20	330	54.65	19	26.96	155	25.44	11.77	2.8	2.9	46	2	42	.12	3	.3	.4	41	KAO
		20	427	45.54	19	25.75	155	37.81	1.85	2.5	2.6	32	5	97	.16	4	.5	.8	28	MLO
		20	1138	1.58	18	56.35	155	9.48	43.56	2.7	2.3	40	1	267	.10	39	1.8	2.1	35	LOI
		20	1139	42.28	19	19.02	155	13.68	4.96	1.6	1.4	36	3	71	.14	4	.4	1.3	32	SSF
		20	1228	40.42	19	20.73	155	11.59	8.75	2.2	2.4	42	4	72	.10	4	.4	.5	37	SF3
		20	1629	18.44	19	18.18	155	13.07	7.24	1.8	1.9	38	2	99	.12	2	.5	.7	27	SF2
		20	1735	18.46	19	20.32	155	11.72	8.61	2.3	2.7	49	3	78	.12	5	.4	.6	46	SF3
		20	1741	29.76	19	17.99	155	13.14	7.20	1.7	1.8	35	2	101	.10	2	.5	.8	29	SF2
		20	1843	40.21	19	25.19	155	38.65	1.47	2.4	2.7	32	6	185	.11	6	.4	.6	27	MLO
		21	0 0	4.38	19	28.98	155	38.97	7.33	2.1	1.4	33	7	89	.20	5	.6	.9	30	MLO
		21	547	.49	19	26.58	155	25.61	10.97	2.2	2.4	46	4	43	.12	3	.3	.5	39	KAO
		21	834	49.35	19	19.18	155	26.48	11.24	3.1	3.5	51	5	55	.13	6	.3	.5	46	KAO
		21	922	36.66	19	30.04	155	38.89	8.43	1.6	1.4	26	4	98	.12	5	.6	.7	23	MLO
		21	1345	50.33	19	41.57	155	2.85	3.78	2.4	2.8	25	0	188	.15	21	1.0	20.9	25	HIL B*
		21	1738	46.34	19	29.27	155	39.21	8.93	1.7	1.4	25	5	93	.14	6	.5	.8	23	MLO
		21	2118	48.57	19	29.05	155	39.35	7.10	2.1	1.6	34	5	91	.11	6	.5	.7	32	MLO
		21	2222	47.85	19	19.63	155	12.51	7.61	1.4	1.6	38	3	83	.09	5	.4	.7	31	SF2
		22	328	8.55	19	19.24	155	13.04	7.54	1.3	1.1	29	3	80	.08	4	.4	.8	23	SF2
		22	747	57.54	19	20.99	155	52.42	8.22	2.3	1.5	20	2	214	.18	9	1.1	.8	15	KON
		22	11 4	57.89	19	20.68	155	12.22	7.61	2.3	2.0	47	6	69	.13	4	.4	.6	36	SF3
		22	1126	56.04	19	21.65	155	1.28	6.80	2.1	2.2	37	3	165	.21	4	.9	.6	24	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	SEP	22	1736	59.43	19	20.83	155	11.15	7.64	2.1	1.7	38	4	71	.11	3	.4	.6	28	SF3
		22	2129	45.80	19	28.23	155	35.20	.57	2.4	2.6	12	0	56	.15	0	.4	.2	9	MLO
		22	2250	55.69	19	25.30	155	37.60	.14	2.9	3.1	34	1	75	.14	4	.5	.7	22	MLO
		22	23 7	29.61	19	21.18	155	1.83	7.37	2.2	1.8	35	3	162	.11	3	.6	.5	27	SF5
		23	221	49.08	19	20.67	155	10.66	7.68	1.5	1.1	24	2	75	.08	3	.5	.7	16	SF3
		23	658	5.73	19	29.84	155	39.07	6.78	1.5	1.2	21	2	97	.16	6	.6	1.2	16	MLO
		23	721	5.17	19	43.82	156	10.70	39.42	3.0	2.1	37	2	255	.10	38	1.4	1.1	26	HUA
		23	9 1	6.16	19	21.29	155	3.24	7.47	2.2	2.5	42	1	107	.13	3	.6	.5	34	SF5 F
		23	2340	9.51	19	27.23	155	35.57	9.48	2.6	3.4	18	1	48	.13	1	.5	.9	8	MLO L
		24	016	25.07	19	1.88	155	19.49	36.56	2.8	2.4	51	5	216	.11	20	1.1	1.5	43	LOI
		24	230	21.89	19	24.47	155	27.22	10.74	1.7	1.2	31	0	35	.12	4	.5	.8	24	KAO
		24	337	49.93	19	29.76	155	39.21	5.88	1.4	1.6	33	5	74	.14	6	.5	1.0	25	MLO
		24	6 1	56.97	19	29.26	155	39.14	6.46	1.6	1.4	24	4	93	.11	6	.5	.9	20	MLO
		24	8 7	54.88	19	20.44	155	11.10	7.63	1.7	1.5	37	1	78	.11	4	.4	.7	29	SF3
		24	956	31.59	19	28.65	155	36.89	2.77	2.8	2.7	29	1	183	.13	2	.8	.4	20	MLO
		24	1519	16.54	19	27.99	155	.66	43.83	2.5	2.5	46	3	105	.09	6	.9	1.3	40	DEP
		24	1648	19.23	19	22.76	155	1.82	5.53	1.4	1.1	31	1	146	.12	6	.6	1.1	23	SF5
		24	1724	4.81	19	21.91	155	25.48	9.15	1.7	1.1	34	2	44	.10	4	.4	.7	27	KAO
		25	5 1	17.31	19	25.84	155	37.87	1.50	2.2	1.8	18	3	177	.11	4	.6	.7	15	MLO
		25	1112	58.40	19	22.42	155	3.31	8.45	2.0	1.7	31	2	114	.12	4	.5	.5	17	SF5
		26	2 2	22.47	19	17.87	155	46.59	10.63	3.0	3.0	40	0	90	.12	11	.5	.4	35	KON
		26	2 4	17.00	19	17.18	155	28.91	6.77	2.0	1.5	34	0	51	.18	4	.5	1.5	26	LSW
		26	1042	35.40	19	18.34	155	47.67	10.88	2.5	2.1	34	3	127	.12	9	.5	.4	32	KON
		26	1930	30.17	19	19.41	155	8.80	6.28	1.4	1.5	35	2	84	.13	4	.5	1.0	25	SF4
		26	2112	24.19	19	20.17	155	8.61	8.24	2.0	2.1	37	2	75	.10	4	.4	.8	26	SF4
		26	2255	44.32	19	19.90	155	4.10	6.17	1.3	1.1	15	2	147	.08	2	.6	1.1	11	SF5
		27	011	58.34	18	57.67	155	28.82	38.28		1.6	34	1	230	.08	20	1.8	1.8	26	DLS
		27	355	16.44	19	20.11	155	8.33	7.81	2.0	1.9	34	3	80	.10	5	.4	.6	26	SF4
		27	1056	28.64	19	19.85	155	10.25	6.13	1.4	1.1	24	2	89	.07	4	.5	1.1	17	SF3
		27	1132	39.39	19	22.04	155	25.23	9.21	2.3	1.8	45	5	43	.14	4	.4	.6	40	KAO
		27	1153	29.07	19	46.96	156	2.38	14.78	2.9	2.4	35	2	278	.12	24	2.3	1.0	29	HUA
		27	1934	54.84	19	19.71	155	11.09	5.28	1.0	1.1	26	2	92	.13	5	.6	1.6	23	SF3
		27	1944	32.79	19	19.78	155	8.27	9.37	3.2	3.5	45	3	85	.10	5	.5	.4	38	SF4 F
		28	238	40.07	19	28.56	155	37.12	1.42	2.3	2.4	22	0	105	.11	2	.5	.5	18	MLO
		28	334	49.61	19	21.32	155	2.55	6.40	2.0	1.7	36	4	143	.23	3	.8	.9	27	SF5
		28	457	33.16	19	20.07	155	10.49	7.45	1.3	1.1	24	2	85	.09	4	.6	1.0	18	SF3
		28	1553	19.16	19	24.59	155	1.71	5.99	1.8	1.3	32	2	166	.13	5	.6	.8	19	SF5
		29	856	19.88	19	24.94	155	28.11	9.60	1.8	2.0	38	3	37	.09	5	.3	.7	31	KAO
		29	1021	43.36	19	11.41	155	29.05	32.45	2.9	2.7	32	2	80	.09	4	.6	1.5	29	DLS
		29	1716	39.10	19	29.11	155	39.13	6.51	2.3	1.6	25	5	90	.14	6	.5	1.1	19	MLO
		30	226	28.58	19	20.84	155	12.94	7.65	2.1	1.9	40	4	62	.12	3	.4	.6	36	SF2
		30	247	13.24	19	21.29	155	7.03	6.74	1.5	1.1	29	2	84	.12	3	.6	.9	21	SF4
		30	527	57.23	19	3.40	155	40.47	3.62	2.7	2.7	28	2	146	.21	8	.8	3.4	15	LSW
		30	1019	57.80	19	31.17	155	54.11	9.45	2.8	2.5	38	2	173	.24	4	1.1	.6	25	KON
		30	1143	12.90	19	22.96	154	44.26	48.29	2.7	2.6	51	7	291	.12	15	1.1	1.1	43	LER
OCT		1	017	25.80	19	30.87	155	39.36	6.87	2.9	3.3	40	3	78	.15	7	.5	.9	28	MLO
		2	138	27.61	19	19.49	155	12.17	9.99	3.4	3.6	43	1	89	.10	5	.4	.3	42	SF3 F
		2	6 0	49.95	19	21.26	155	7.88	9.30	2.5	2.8	45	5	76	.11	4	.4	.5	35	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	OCT	2	1137	50.95	19	19.81	155	9.92	7.15	1.8	1.3	26	2	88	.10	4	.6	1.1	19	SF3
		2	2341	3.83	19	38.59	155	59.71	37.80		2.0	40	2	266	.09	17	1.9	1.9	34	KON
		3	1521	2.77	19	30.01	155	39.29	7.23	2.3	1.9	26	4	96	.13	6	.5	.9	20	MLO
		3	1549	12.98	19	20.24	155	11.57	8.52	1.6	1.1	28	2	80	.09	5	.5	.8	17	SF3
		3	1855	29.09	19	20.18	155	10.50	8.14	1.8	1.9	36	0	83	.11	4	.4	.7	31	SF3
		3	2020	23.62	19	19.44	155	11.39	6.62	1.4	1.1	26	0	98	.11	6	.5	1.2	19	SF3
		3	2145	38.51	19	20.71	155	4.56	6.27	2.0	1.8	32	2	107	.13	3	.5	.8	26	SF5
		4	812	33.23	19	19.73	155	7.91	5.22		1.6	26	0	95	.11	4	.6	1.6	26	SF4
		4	10 7	23.79	19	22.11	155	25.97	9.47	1.8	1.3	32	2	44	.12	3	.4	.8	23	KAO
		4	1315	28.49	19	19.30	155	11.77	5.27	1.7	1.3	31	3	98	.12	5	.5	1.6	20	SF3
		4	1428	16.53	19	19.44	155	8.50	5.16	1.7	1.1	27	2	82	.10	4	.5	1.5	23	SF4
		4	1611	50.82	19	22.53	155	25.15	7.78	1.3	1.1	26	1	41	.13	4	.4	.9	21	KAO
		4	1646	25.41	19	20.01	155	11.42	5.70	1.8	1.5	26	2	84	.14	5	.5	1.3	19	SF3
		4	1945	53.52	19	22.13	155	25.90	10.71	3.1	3.4	48	2	40	.15	3	.4	.5	43	KAO
		4	21 2	52.18	19	15.08	155	37.69	7.29	2.3	1.2	34	2	86	.21	1	.6	1.0	22	LSW
		5	147	17.29	19	13.36	155	36.87	9.06	2.3	1.4	20	0	89	.16	3	.7	1.0	16	LSW
		5	12 6	.78	19	21.74	155	4.68	8.43	2.4	2.9	40	1	79	.14	4	.5	.5	26	SF5
		5	1713	10.17	19	19.68	155	13.19	7.98	1.9	2.2	40	1	71	.13	5	.5	.6	35	SF2
		5	1738	34.81	19	20.50	155	9.49	6.78	1.6	1.1	27	2	73	.11	3	.6	1.1	24	SF3
		5	1842	15.42	19	18.65	155	15.35	8.79	2.6	2.7	49	3	101	.14	4	.5	.5	44	SF1
		5	1853	30.47	19	30.52	155	39.47	6.58	3.2	3.4	41	3	77	.14	7	.4	.9	29	MLO
		5	2325	28.76	19	30.17	155	39.19	8.72	1.9	1.6	26	4	80	.12	6	.5	.9	16	MLO
		6	153	15.56	19	25.69	155	27.85	7.96	2.8	2.6	48	4	45	.11	5	.3	.6	41	KAO
		6	254	20.38	19	17.58	155	29.69	6.72	1.4	1.1	30	1	60	.21	5	.5	1.7	24	LSW
		6	339	50.82	19	20.37	155	13.39	8.00	2.5	2.8	45	2	62	.13	4	.4	.5	39	SF2
		6	21 5	59.62	19	30.34	155	39.84	5.68	2.3	1.6	27	4	77	.15	7	.4	1.3	23	MLO
		7	134	21.95	19	19.72	155	7.59	8.85	2.9	3.2	48	6	102	.09	4	.4	.4	39	SF4
		7	552	1.59	19	21.20	155	3.12	6.22	1.8	1.2	32	3	123	.19	2	.7	1.1	16	SF5
		7	1135	20.20	19	30.45	155	39.56	7.89	1.5	1.6	23	3	128	.13	7	.5	1.1	17	MLO
		7	1721	36.29	19	44.52	155	28.38	15.84	3.9	4.2	53	6	118	.10	5	.4	.7	45	KEA F
		7	2039	41.97	19	10.26	155	30.50	7.21	1.6	1.8	31	0	113	.16	5	.7	1.1	22	LSW
		7	2152	58.72	19	34.37	155	54.04	23.66	1.8	1.9	39	2	196	.11	10	1.2	1.3	35	KON
		8	429	35.55	19	20.79	155	6.37	6.99	2.4	2.7	36	2	99	.12	4	.5	.8	31	SF4
		8	612	5.97	19	32.06	155	14.13	24.92	2.4	2.3	48	4	105	.10	14	.6	1.0	41	DEP
		8	1621	34.90	19	19.52	155	11.55	8.56	3.4	3.5	44	0	95	.09	6	.4	.3	41	SF3 F
		8	2117	49.77	19	57.65	155	36.54	48.48	2.5	1.9	34	3	148	.10	26	.7	1.6	24	KOH
		9	156	44.38	19	21.87	155	2.03	4.83	1.7	1.3	34	5	143	.17	4	.6	1.5	21	SSF
		9	556	27.27	19	20.42	155	6.53	7.72	1.6	1.5	31	1	106	.10	5	.5	.8	25	SF4
		9	1157	22.10	19	19.71	155	11.12	7.21	1.7	1.5	32	2	92	.10	5	.5	.8	22	SF3
		9	1314	44.24	19	21.52	154	59.79	4.83	1.8	1.3	33	4	189	.13	6	.7	1.4	21	SLE
		9	1445	39.19	19	29.98	155	39.06	6.24	2.6	2.4	19	2	99	.16	6	.6	1.3	13	MLO
		10	2056	47.21	19	19.46	155	11.57	6.75	1.7	1.2	26	2	96	.08	6	.5	1.0	22	SF3
		11	157	14.25	19	22.03	155	28.58	10.36	1.9	.9	26	0	43	.11	2	.4	1.1	26	KAO
		11	417	41.59	19	21.05	155	10.86	7.75	2.3	1.3	38	1	69	.12	3	.4	.7	37	SF3
		11	729	38.88	19	22.39	155	28.05	9.06	1.9	.9	33	0	38	.13	9	.4	1.1	33	KAO
		11	835	20.05	19	19.52	155	10.48	5.35	1.7	.8	30	0	97	.12	5	.5	1.3	30	SF3
		11	16 7	40.54	19	26.82	155	28.50	9.72	2.0	1.2	38	3	45	.11	7	.4	.9	28	KAO
		11	1816	14.63	19	19.22	155	15.31	6.18	1.3	1.1	35	3	99	.10	4	.4	.9	24	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	OCT	11	19 1	39.54	20	9.96	155	52.98	25.94		1.9	31	1	288	.12	12	2.8	1.6	22	KOH
		11	2232	2.40	19	28.34	155	27.81	8.06	2.3	2.3	43	3	56	.13	7	.4	.7	36	KAO
		12	142	34.92	19	19.57	155	12.17	7.26	2.6	2.6	47	3	87	.13	5	.4	.6	42	SF3
		12	232	42.29	19	17.57	155	14.52	8.11	1.5	1.1	16	3	160	.09	2	.6	1.1	13	SF1
		12	1327	28.74	19	20.23	155	12.01	7.62	1.8	1.5	37	3	78	.10	5	.5	.7	26	SF3
		12	22 2	7.74	19	26.28	155	24.42	7.62	1.8	1.5	36	3	53	.12	2	.4	.8	26	KAO
		12	22 3	54.11	19	16.27	155	23.50	3.66	1.2	1.4	33	4	110	.15	4	.4	1.3	27	SWR
		13	1850	.49	19	20.68	155	10.84	7.95	2.1	2.1	43	4	75	.11	3	.4	.6	37	SF3
		13	19 6	25.05	19	30.27	155	1.50	39.72	2.4	2.0	44	3	152	.10	4	1.0	1.5	40	DEP
		13	2249	44.33	19	28.91	155	38.98	5.48	2.4	2.1	45	7	71	.16	5	.5	.9	28	MLO
		14	426	44.19	19	30.84	155	39.49	7.82	1.5	1.4	20	5	79	.13	7	.5	1.2	16	MLO
		14	1018	22.68	19	28.78	155	39.05	7.54	2.3	1.2	23	5	182	.12	5	.7	.8	15	MLO
		14	1615	25.58	19	20.56	155	10.82	7.50	1.9	1.6	28	3	77	.11	3	.4	.8	20	SF3
		14	2215	42.37	19	19.42	155	15.29	7.96	1.4	1.5	34	1	95	.11	4	.4	.6	22	SF1
		15	213	.58	19	22.53	155	11.86	12.23	2.3	2.4	46	4	52	.11	2	.4	.4	40	SF3
		15	5 6	14.23	19	21.35	155	14.92	7.86	1.8	1.8	42	2	65	.13	3	.4	.5	29	SF1
		15	510	5.95	19	21.47	155	14.65	8.06	1.4	1.1	33	3	62	.11	3	.5	.7	26	SF1
		15	8 3	20.22	19	19.36	155	10.15	8.01		1.1	17	0	100	.06	5	.5	1.3	16	SF3
		15	943	26.34	19	48.28	155	33.31	23.30	2.6	2.0	44	5	113	.09	11	.5	1.4	36	KEA
		16	3 5	10.65	19	20.38	155	10.61	7.49	1.8	1.3	33	2	79	.11	3	.5	.8	24	SF3
		16	639	11.75	19	20.25	155	12.65	8.02		1.1	33	3	71	.11	4	.5	.7	22	SF2
		16	17 1	16.23	19	24.66	155	25.94	8.52	2.1	1.5	38	3	34	.14	2	.4	.8	31	KAO
		16	1932	59.29	19	26.52	155	29.39	8.54	1.6	1.2	29	3	43	.11	7	.4	.9	23	KAO
		16	2018	2.49	19	28.75	155	38.55	6.41	1.1	1.2	23	5	84	.13	5	.5	.9	18	MLO
		16	2353	.13	19	21.80	155	.49	8.46	2.3	2.1	42	3	174	.11	6	.7	.5	32	SF5
		17	124	9.74	19	23.15	155	26.43	8.45	2.1	1.7	37	2	31	.12	2	.4	.7	31	KAO
		17	957	30.59	19	20.21	155	12.42	7.74	2.0	1.3	31	2	74	.11	5	.5	.7	26	SF2
		17	1254	19.35	19	25.66	155	37.77	1.55	2.7	3.2	36	4	96	.12	4	.4	.7	31	MLO
		17	1922	1.46	19	20.34	155	4.77	4.08	2.1	1.5	36	5	123	.17	3	.6	1.4	26	SSF
		17	2134	5.84	19	20.52	155	7.71	5.95	1.7	1.1	34	4	88	.16	5	.5	1.0	23	SF4
		17	2339	53.57	19	18.89	155	8.66	7.24	2.1	2.4	37	1	87	.09	3	.4	.6	26	SF4
		18	236	59.67	19	26.79	155	28.01	8.81	1.8	1.3	40	3	44	.11	6	.3	.8	31	KAO
		18	1020	15.93	19	19.10	155	12.36	5.45	1.4	1.1	26	1	95	.10	4	.5	1.3	19	SF2
		18	1522	28.62	19	20.69	155	25.69	8.71	2.1	2.1	46	6	54	.12	4	.4	.6	39	KAO
		18	1722	8.03	19	24.71	155	29.18	9.11	2.2	2.1	40	2	38	.10	5	.3	.7	28	KAO
		18	18 6	51.69	19	24.44	155	29.14	9.29	1.6	1.2	29	2	68	.09	5	.4	.9	23	KAO
		19	334	48.27	19	21.13	155	6.21	7.94	2.6	2.6	42	2	93	.11	3	.4	.6	34	SF4
		19	954	37.49	19	20.24	155	10.71	6.84	1.9	2.4	39	0	83	.12	4	.5	.8	33	SF3
		19	10 5	26.86	19	23.98	155	26.52	8.48	2.3	2.5	42	3	35	.12	3	.4	.7	33	KAO
		19	1535	19.81	19	20.65	155	12.76	7.80	1.6	1.5	34	4	65	.10	4	.4	.6	26	SF2
		19	1547	55.89	19	33.51	155	36.45	5.44	1.9	1.9	18	0	135	.16	3	.9	1.7	15	MLO
		19	1947	36.21	19	20.56	155	13.48	8.35	1.8	1.8	46	4	59	.13	4	.4	.5	35	SF2
		19	2050	26.13	19	24.73	155	15.76	9.34	1.3	.6	16	2	150	.09	2	.8	1.1	13	INT L
		19	2052	13.67	19	23.33	155	15.56	10.75	1.5	1.3	14	2	94	.11	2	.9	1.8	8	INT L
		20	236	49.10	19	22.73	155	27.17	8.14	2.4	2.3	43	3	36	.14	1	.4	.8	32	KAO
		20	1251	22.44	19	15.14	155	22.50	7.12	1.4	1.7	27	1	166	.11	3	.6	.9	19	SWR
		20	1423	37.41	19	15.79	155	22.81	7.03	1.4	1.4	29	1	135	.10	3	.5	.9	18	SWR
		20	2029	22.85	19	20.33	155	11.36	7.12	1.9	1.6	42	3	80	.13	4	.5	.7	31	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	OCT	20	2149	59.92	19	38.21	156	29.81	32.65	2.4	1.7	23	1	319	.16	63	2.4	3.6	14	DIS
		20	2254	22.04	19	30.42	155	40.74	2.71	1.2	1.6	21	3	76	.22	9	.7	2.7	15	MLO
		21	310	57.23	19	19.36	155	11.98	6.83	1.6	1.3	32	3	94	.11	5	.5	.9	18	SF3
		21	1354	1.09	19	16.72	155	22.47	3.71	1.4	1.1	36	3	125	.14	5	.4	1.5	22	SWR
		21	1712	39.44	19	20.83	155	9.79	8.20	1.8	1.1	32	3	70	.09	2	.4	.7	24	SF3
		21	1827	33.56	19	17.79	155	16.72	8.99	2.8	2.7	48	4	141	.12	3	.5	.5	39	SF1
		21	2342	15.29	19	40.18	156	3.91	34.45	3.3	3.4	51	5	235	.11	25	.8	1.3	46	HUA
		22	141	41.31	19	20.31	155	12.46	7.71	2.1	2.3	47	4	118	.13	4	.5	.5	41	SF2
		22	311	51.12	19	20.09	155	12.93	6.46	1.5	1.1	31	4	70	.14	5	.5	.9	23	SF2
		22	438	55.05	19	22.23	155	24.51	10.51	2.8	3.1	48	1	27	.13	4	.3	.4	44	KAO
		22	557	48.96	19	8.59	155	38.52	9.05	2.1	2.3	32	3	112	.19	12	.6	1.1	20	LSW
		22	6 6	45.33	19	25.49	155	25.20	5.83	1.6	1.1	21	1	50	.11	0	.4	1.1	15	KAO
		22	1633	52.62	19	42.58	155	43.89	13.51	2.6	2.4	32	2	96	.17	11	.7	.5	22	HUA
		22	1721	35.52	19	22.49	155	25.07	10.89	2.6	2.8	49	3	30	.12	4	.4	.5	43	KAO
		22	2123	39.63	19	12.73	155	40.53	6.28	2.7	2.7	39	2	182	.22	7	1.0	1.4	30	LSW
		22	2339	29.42	19	19.70	155	9.86	6.22	1.4	1.1	37	3	90	.13	4	.4	.9	25	SF3
		23	415	42.39	19	25.27	155	26.72	6.08	1.7	1.3	35	3	37	.13	3	.3	1.0	25	KAO
		23	547	31.16	19	20.37	155	11.67	7.09	2.2	2.6	41	2	77	.13	4	.4	.7	36	SF3
		23	816	44.79	19	34.45	155	18.26	30.20	2.4	1.8	50	6	131	.10	12	.7	1.0	39	DEP
		23	1035	44.66	19	20.53	155	11.57	29.85	2.0	1.3	34	1	76	.10	4	.9	1.3	31	DEP
		24	114	58.17	19	21.12	155	17.96	28.45	2.1	1.5	43	1	40	.11	2	.6	1.0	39	DEP
		24	233	45.52	19	22.10	155	4.88	8.42	2.5	2.7	44	3	73	.12	3	.5	.4	37	SF5
		24	237	30.80	19	20.42	155	3.61	8.02	2.3	2.2	43	3	106	.12	2	.7	.5	32	SF5
		24	249	32.57	19	20.76	155	3.81	8.10	2.9	3.0	44	2	94	.11	2	.6	.4	38	SF5
		24	340	40.25	19	19.93	155	13.21	6.58	1.8	1.6	42	3	68	.13	5	.4	.7	33	SF2
		24	1335	54.04	19	24.20	155	16.41	9.05	1.3	1.1	15	2	101	.06	1	.7	.6	11	INT L
		24	19 5	26.25	18	52.50	155	10.15	43.57	3.4	3.3	50	3	256	.10	44	1.7	2.2	47	LOI
		24	2040	28.81	19	57.31	155	20.29	10.60	2.7	2.6	39	3	250	.10	7	1.6	.5	27	KEA
		24	21 9	42.27	19	29.57	155	38.79	7.44	2.3	1.5	23	4	94	.12	5	.5	.9	20	MLO
		25	050	.76	19	28.16	154	51.06	8.31	2.1	1.5	30	2	176	.14	1	1.2	.4	28	LER
		25	1 6	7.82	19	24.32	154	58.47	8.30	2.2	1.9	33	3	178	.16	2	1.0	.6	28	LER
		25	632	9.86	19	22.22	155	5.72	7.65	2.0	1.8	36	4	104	.10	2	.5	.5	26	SF4
		25	747	57.26	19	33.89	155	39.90	3.31	2.6	2.4	24	1	183	.10	9	.7	3.6	19	MLO
		25	756	45.33	19	33.27	155	38.25	5.14	2.3	1.3	18	1	174	.14	6	.9	3.1	16	MLO
		25	921	21.35	19	20.33	155	13.34	6.54		1.1	28	3	63	.12	4	.5	.9	23	SF2
		25	1029	21.74	19	29.46	155	38.86	6.33	2.3	2.1	32	5	121	.13	5	.5	.7	26	MLO
		25	11 2	35.36	19	29.69	155	38.85	8.21	4.0	4.1	45	2	80	.11	5	.5	.4	43	MLO F
		25	1313	.65	19	20.72	155	27.93	9.96	1.4	1.2	23	1	42	.13	3	.5	.9	17	KAO
		25	1338	16.11	19	42.32	155	2.77	4.79	2.5	3.1	30	0	192	.18	25	1.4	3.3	24	HIL L
		25	1454	11.84	19	20.41	155	8.63	6.76	1.8	1.3	35	3	73	.10	4	.5	.7	26	SF4
		25	1624	19.38	19	9.74	155	26.38	31.45	2.4	1.8	36	2	164	.08	3	.8	1.4	32	DLS
		25	2016	53.97	19	29.29	155	38.78	7.98	2.2	1.9	31	4	91	.13	5	.5	.7	21	MLO
		25	2255	19.64	19	29.76	155	38.68	8.00	2.3	1.6	26	6	74	.12	5	.4	.8	22	MLO
		25	2351	15.73	19	20.37	155	3.01	5.18	1.5	1.1	28	5	126	.20	1	.7	1.2	14	SF5
		26	624	57.03	19	19.82	155	9.72	6.22	1.7	1.1	27	3	87	.12	4	.5	1.2	19	SF3
		26	755	35.74	19	29.48	155	38.68	7.69	1.4	1.4	25	6	94	.12	5	.5	.7	21	MLO
		26	1049	35.40	19	17.34	155	26.96	7.18	1.1	1.1	26	2	97	.14	7	.5	1.1	18	LSW
		26	1157	34.88	19	19.62	155	11.04	6.89	2.0	1.8	39	4	95	.12	5	.4	.7	28	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	OCT	26	1321	12.82	19	20.45	155	9.63	7.79	2.1	2.1	35	3	75	.09	3	.4	.6	26	SF3
		26	1949	52.12	19	21.73	155	25.42	10.60	1.8	1.1	19	1	77	.12	4	.6	1.2	16	KAO
		26	21 9	47.90	19	22.45	155	2.42	6.07	1.6	1.1	28	1	135	.14	5	.6	.9	20	SF5
		26	2241	40.42	19	20.70	155	17.67	34.15	2.2	2.3	48	3	43	.11	1	.6	1.1	42	DEP
		27	18 3	35.35	19	19.65	155	7.80	9.25	3.4	3.5	49	5	98	.10	4	.5	.4	42	SF4
		27	1853	13.76	19	19.65	155	7.76	9.09	3.2	3.3	46	3	99	.10	4	.5	.4	42	SF4 F
		27	2022	10.15	19	20.22	155	30.13	7.72	2.7	2.4	44	3	44	.12	6	.4	.9	36	KAO
		27	2332	17.38	19	19.99	155	12.26	7.72	2.2	2.0	45	3	79	.13	5	.5	.6	38	SF3
		28	417	19.93	19	25.06	155	35.88	40.23	2.5	2.1	19	1	61	.12	4	1.2	2.0	5	DML L
		28	1356	36.60	19	20.18	155	4.00	6.59	1.9	1.7	38	4	129	.12	2	.5	.6	23	SF5
		28	1554	42.40	19	18.73	155	13.73	7.24	1.7	1.5	39	3	67	.11	3	.4	.7	25	SF2
		29	0 1	35.26	19	18.53	155	12.96	6.48	1.5	1.1	33	3	95	.12	3	.5	1.0	23	SF2
		29	421	28.84	19	19.09	155	14.77	6.29	1.4	1.1	30	3	94	.12	4	.4	.8	19	SF1
		29	447	59.50	19	17.57	155	22.96	2.66	.8	1.0	16	3	114	.08	5	.4	.9	11	SWR
		29	459	30.23	19	26.27	155	35.69	1.47	2.1	1.8	25	3	120	.21	2	.5	.8	20	MLO
		29	5 5	1.04	19	25.87	155	37.72	2.29	2.6	2.5	26	3	95	.14	4	.6	1.0	20	MLO
		29	627	29.19	19	20.61	155	13.50	8.21	1.9	2.2	39	3	59	.12	4	.4	.5	30	SF2
		29	17 3	56.03	19	20.41	155	11.49	7.79	1.7	1.3	37	5	77	.11	4	.4	.6	29	SF3
		29	1926	9.09	19	20.87	155	2.84	8.82	3.2	3.4	51	4	127	.13	2	.6	.4	42	SF5
		30	1 9	48.94	19	11.50	155	30.53	3.34	1.3	1.3	25	1	88	.16	6	.5	2.3	18	LSW
		30	5 4	11.35	19	20.33	155	11.63	6.75	1.6	1.3	35	3	78	.11	4	.5	.9	27	SF3
		30	935	15.02	19	20.97	155	13.98	8.62	1.9	1.3	39	3	64	.12	3	.4	.6	26	SF2
		30	1549	14.52	19	27.07	155	27.25	9.73	3.9	4.0	51	4	52	.13	5	.4	.5	46	KAO F
		30	1732	5.95	19	19.57	155	7.71	6.54	1.6	1.3	30	3	101	.09	4	.5	1.0	24	SF4
		30	1853	58.79	19	26.98	155	27.28	7.48	1.9	1.4	36	5	53	.13	5	.4	1.0	28	KAO
		30	1946	50.55	19	21.24	155	3.33	6.77	2.0		41	4	103	.16	3	.5	.7	25	SF5
		30	2027	43.34	19	19.57	155	12.21	4.03	1.5	1.1	28	2	87	.14	5	.5	1.8	20	SSF
		30	2226	30.80	19	25.00	155	26.71	9.99	1.7	1.4	35	2	35	.12	3	.4	.7	22	KAO
		31	832	38.27	19	27.08	155	27.32	6.68	1.8	1.3	23	2	61	.13	5	.5	1.3	16	KAO
		31	1636	43.47	19	24.19	155	16.82	14.77	1.6	1.2	37	2	76	.10	1	.5	.3	31	DEP
	NOV	1	1020	11.19	19	21.06	155	7.21	7.25	1.5	1.3	37	4	86	.11	4	.5	.7	25	SF4
		1	1547	12.94	19	17.36	155	20.91	4.29	1.1	1.1	24	5	146	.13	4	.4	1.5	17	SWR
		1	1755	47.51	19	19.25	155	15.33	7.56	1.6	1.3	35	4	99	.10	4	.4	.7	27	SF1
		1	21 4	15.87	19	24.54	155	26.05	9.18		1.1	37	2	35	.15	2	.4	.8	29	KAO
		2	255	47.80	19	20.54	155	11.99	7.51	2.6	2.7	46	4	73	.12	4	.4	.5	40	SF3
		2	2248	56.83	19	24.95	155	24.90	10.23	1.6	1.1	37	4	39	.12	1	.4	.6	26	KAO
		3	250	51.69	19	12.22	155	18.54	54.56	2.2	2.6	28	2	233	.10	13	1.5	1.1	7	DEP L
		3	433	38.86	19	20.35	155	30.37	7.69	2.0	1.5	38	1	53	.13	6	.4	1.0	31	KAO
		3	2237	55.10	19	27.03	155	27.14	7.15	2.4	1.8	33	1	56	.11	5	.4	1.1	31	KAO
		4	538	44.84	19	25.95	155	25.51	7.39	1.9	1.0	37	4	39	.11	1	.3	.9	30	KAO
		4	1011	44.47	19	18.77	155	14.86	6.12	1.3		28	3	101	.11	4	.5	1.0	24	SF1
		4	1710	49.03	19	18.18	155	14.02	6.41	1.8	1.5	33	2	82	.12	2	.5	.9	29	SF2
		4	1724	13.93	19	18.70	155	14.11	7.48	2.0	2.7	44	3	76	.13	3	.5	.7	32	SF2
		4	2251	12.07	19	16.59	155	22.80	2.84	1.1	1.0	16	1	121	.09	5	.4	1.2	13	SWR
		5	230	19.56	19	21.10	155	3.38	6.62	1.8	1.5	32	2	107	.15	2	.6	.8	24	SF5
		5	259	53.36	19	28.06	155	50.58	8.94	2.9	2.3	36	2	99	.20	8	.8	.7	30	KON
		5	546	23.32	19	48.76	155	23.75	24.87	2.3	1.5	45	5	80	.11	7	.6	1.3	34	KEA
		5	837	24.33	19	39.43	155	6.81	15.26	2.6	2.4	30	0	190	.06	18	.8	1.1	30	HIL

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	5	1222	41.61	19	40.35	155	6.83	14.39	2.6	2.6	43	5	97	.11	6	.4	.5	32	HIL
		5	1411	32.74	19	19.24	155	9.09	6.40	1.9	1.8	36	3	92	.13	4	.5	.9	24	SF4
		5	1445	41.36	19	20.91	155	24.59	9.68	2.2	2.4	48	8	56	.13	3	.4	.5	39	SWR
		5	1526	33.70	19	24.28	155	24.64	9.40	1.6	1.1	38	3	35	.11	2	.4	.6	26	KAO
		5	1745	3.58	19	19.06	155	13.09	5.59	1.5	1.1	32	2	81	.13	4	.5	1.1	23	SF2
		6	825	54.46	19	19.20	155	13.71	8.54	2.3	2.7	44	2	127	.12	6	.4	.4	34	SF2
		6	14 3	22.95	19	49.36	155	8.07	41.10	2.3	1.7	29	1	210	.11	12	1.2	2.0	23	KEA
		6	2335	28.15	19	20.44	155	11.92	8.59	2.5	2.6	46	5	75	.13	5	.4	.5	37	SF3
		7	722	34.08	19	25.69	155	25.80	3.65	2.6	2.4	44	4	36	.13	1	.3	.7	32	KAO
		7	828	25.15	19	25.19	155	38.38	2.13	2.5	2.5	23	0	181	.10	5	.7	1.4	19	MLO
		7	1233	30.33	19	21.25	155	3.21	6.11		1.3	30	4	108	.13	3	.5	1.0	20	SF5
		7	1323	56.99	19	22.86	155	16.55	8.26	1.8	1.9	6	0	128	.09	1	2.4	3.1	3	INT L
		7	1437	52.61	19	20.26	155	12.51	8.23	1.6	1.5	33	2	72	.09	5	.4	.6	20	SF2
		7	1456	34.15	19	21.16	155	3.69	6.47	1.4	1.1	27	1	88	.12	3	.5	1.0	20	SF5
		7	15 3	30.65	19	22.67	155	14.38	4.24	1.6	1.2	5	0	139	.09	2	1.6	2.6	1	SEC L
		7	18 3	17.03	19	23.81	155	16.00	3.07	1.4	1.7	17	3	101	.10	1	.4	.3	11	SEC
		8	855	54.88	19	20.63	155	12.11	7.93	2.2	1.3	31	1	71	.11	4	.5	.8	22	SF3
		8	9 7	.29	19	19.27	155	15.33	8.54	2.0	2.1	38	2	90	.11	4	.4	.6	27	SF1
		8	1834	50.17	19	20.39	155	12.84	8.08	2.0	2.2	40	2	67	.12	4	.5	.6	31	SF2
		9	217	24.89	19	21.37	155	7.16	4.20	1.1	1.1	11	0	93	.13	5	.7	2.5	10	SSF
		9	419	49.34	19	16.90	155	21.60	7.42	2.2	2.7	42	5	131	.12	6	.4	.6	32	SWR
		9	447	34.50	19	22.31	155	17.38	31.18	2.1	1.8	47	5	37	.11	2	.6	.9	36	DEP
		9	454	20.40	19	19.07	155	16.02	6.85	1.6	1.1	25	0	108	.09	3	.4	.9	25	SF1
		9	1013	55.07	19	20.01	155	12.78	5.81	1.5	1.2	31	1	73	.14	5	.5	1.0	24	SF2
		9	1333	4.19	18	58.50	155	18.20	27.82	2.2	1.9	41	2	231	.10	27	1.3	2.3	36	LOI
		10	6 6	45.76	19	20.99	155	13.16	7.31	2.1	1.1	30	2	64	.12	3	.5	.8	21	SF2
		10	17 4	25.49	19	19.85	155	12.92	6.72	1.5	1.1	27	2	74	.13	5	.6	1.1	24	SF2
		11	755	43.73	19	25.94	155	37.43	2.54	3.3	3.1	31	1	92	.12	3	.4	.8	30	MLO
		11	914	3.75	19	23.66	155	24.33	10.17	1.5	1.3	31	2	38	.10	3	.4	.7	25	KAO
		11	1045	6.25	19	21.17	155	2.64	6.44	1.9	1.8	34	3	134	.13	2	.5	.7	29	SF5
		11	1459	33.13	19	19.66	155	15.19	6.95	1.9	1.9	38	3	90	.11	4	.4	.6	32	SF1
		11	1711	24.53	19	20.70	155	11.36	9.14	2.7	2.7	45	4	73	.12	4	.4	.5	37	SF3
		11	2030	25.79	19	18.28	155	13.90	6.85	1.3	1.1	21	1	149	.12	7	.7	1.6	18	SF2
		11	22 5	38.32	19	24.90	155	16.05	15.51	3.6	4.0	52	3	36	.11	2	.4	.2	47	DEP
		11	22 9	13.87	19	24.96	155	15.86	15.05	2.1	1.9	49	8	36	.10	2	.5	.2	38	DEP
		11	2229	33.21	19	24.99	155	15.96	15.10	1.5	1.2	36	2	112	.10	2	.6	.4	32	DEP
		11	2356	17.72	19	21.99	155	1.71	5.53	1.6	1.5	39	5	149	.20	4	.6	1.0	20	SF5
		12	6 1	50.76	19	21.94	155	4.09	4.40	1.1	1.1	23	2	97	.21	4	.8	2.1	19	SSF
		12	657	26.14	19	17.04	155	21.32	5.51	1.7	1.8	32	3	130	.13	5	.5	1.2	22	SWR
		12	1252	14.51	19	20.48	155	12.86	8.55	2.2	2.5	45	5	66	.13	4	.4	.5	37	SF2
		12	1425	51.26	19	18.70	155	12.71	6.38	1.3	1.1	28	2	98	.09	3	.5	1.1	20	SF2
		12	1627	56.55	19	19.80	155	11.54	7.43	1.9	1.5	29	1	89	.09	5	.5	.9	24	SF3
		12	1716	19.50	19	19.87	155	12.88	7.05	1.4	1.1	29	2	73	.10	5	.5	.9	21	SF2
		12	1832	53.69	19	16.19	155	22.52	5.90	1.0	1.3	24	1	134	.08	4	.5	1.6	17	SWR
		12	1936	26.44	19	22.41	155	27.72	6.46	1.8	1.1	23	1	81	.10	0	.4	.8	18	KAO
		12	20 5	17.61	19	19.52	155	10.83	7.36	1.7	1.6	38	6	98	.11	5	.4	.8	28	SF3
		12	2112	37.85	19	22.02	155	.65	3.59	1.5	1.1	24	0	176	.17	6	.8	2.3	15	SSF
		13	047	12.46	19	20.98	155	3.38	4.69	1.4	1.1	24	3	105	.16	2	.6	1.5	13	SSF

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	NOV	13	123	57.03	19	21.80	155	3.83	6.51	1.5	1.1	33	3	91	.13	4	.5	1.0	22	SF5	
		13	6 9	58.29	19	20.32	155	13.02	6.61	1.2	1.1	25	3	67	.11	4	.5	.9	21	SF2	
		13	644	36.16	19	24.92	155	15.89	14.89	1.6	1.4	37	4	73	.09	2	.5	.3	24	DEP	
		13	1222	41.94	19	26.49	155	29.05	9.60	2.4	1.5	45	4	44	.12	7	.4	.7	31	KAO	
		13	1445	.32	19	21.22	155	2.36	5.91	1.7	1.4	27	2	144	.15	3	.7	1.1	16	SF5	
		13	1647	2.16	19	24.48	155	25.53	8.18	1.6	1.0	30	3	34	.11	2	.4	.8	23	KAO	
		13	20 3	15.50	19	25.05	156	17.32	33.89		2.2	31	0	268	.11	40	3.1	2.0	22	KON	
		13	23 0	37.43	19	19.79	155	13.05	6.39	1.7	1.1	31	3	72	.13	5	.5	.9	20	SF2	
		14	323	32.59	19	20.36	155	9.35	6.98	1.8	1.2	34	3	74	.12	3	.5	.9	23	SF3	
		14	448	20.43	19	27.13	157	.54	34.12		2.9	19	3	318	.09	114	2.4	4.1	15	DIS	
		14	716	49.42	19	26.22	155	37.14	2.07	3.5	3.3	44	2	63	.14	2	.4	.6	39	MLO	
		14	812	43.61	19	25.48	155	38.23	2.34	2.5	2.2	24	3	181	.10	5	.6	.8	18	MLO	
		14	1233	9.53	19	24.37	155	16.81	1.62	1.0	.9	13	2	100	.08	1	.4	.3	10	SSC	
		14	18 6	2.06	19	19.74	155	16.16	7.53	2.1	2.1	43	3	92	.13	2	.4	.7	32	SF1	
		14	23 6	28.25	19	20.48	155	13.19	7.78	2.0	2.0	41	6	63	.11	4	.4	.6	30	SF2	
		14	2343	34.48	19	21.50	155	28.31	9.19	1.9	1.5	35	3	45	.12	2	.4	.7	28	KAO	
		15	014	12.54	19	21.61	155	28.55	8.84	1.5	1.4	34	2	42	.12	2	.4	.7	27	KAO	
		15	231	8.98	19	18.53	155	15.42	6.20	1.8	1.5	31	3	105	.13	4	.5	1.0	23	SF1	
		15	1340	3.79	19	30.64	155	39.59	8.45	2.4	1.9	27	3	81	.12	7	.5	1.1	22	MLO	
		15	1356	16.26	19	31.00	155	39.76	8.03	2.4	2.6	30	5	80	.13	7	.4	1.0	24	MLO	
		15	14 3	48.42	19	30.16	155	39.58	6.04	1.5	1.4	25	5	100	.10	7	.5	1.2	18	MLO	
		15	2044	42.53	19	23.34	155	25.09	8.16	2.0	1.8	39	4	37	.11	4	.3	.7	32	KAO	
		16	113	12.21	19	22.30	155	5.17	7.26	2.0	1.5	39	3	71	.15	4	.5	.6	27	SF5	
		16	545	28.21	19	59.62	155	35.35	14.59	1.9	1.7	20	2	167	.08	25	1.6	1.3	15	KOH	
		16	613	.15	19	25.76	155	27.11	10.92	4.5	4.7	36	0	56	.12	4	.4	.9	36	KAO	
		16	936	55.98	19	25.56	155	21.33	6.86		1.5	4	0	267	.02	10	5.3	22.5	3	KAO	*
		16	948	14.10	19	24.30	155	27.23	9.75	2.8	2.7	14	0	188	.08	10	1.2	.9	6	KAO	
		16	953	48.70	19	24.88	155	19.77	7.51	2.6	2.7	11	1	120	.07	8	.8	2.8	9	KAO	
		16	10 1	.82	19	27.60	155	26.51	7.00	2.6	2.5	19	0	105	.12	5	.6	1.2	19	KAO	
		16	10 2	6.36	19	13.68	155	22.05	5.83	2.2	2.4	23	0	159	.12	4	.8	1.2	18	SWR	
		16	10 2	51.01	19	23.19	155	29.96	2.12	1.9	1.6	17	1	80	.08	13	.6	3.8	13	KAO	
		16	10 5	59.28	19	25.88	155	29.14	10.28	2.0	1.9	31	1	75	.13	7	.5	.8	27	KAO	
		16	10 9	10.12	19	25.05	155	30.32	12.06	2.0	2.5	30	1	55	.09	5	.4	.7	27	KAO	
		16	1016	16.69	19	24.84	155	26.73	12.24		1.6	7	0	306	.04	11	11.6	9.3	5	KAO	*
		16	1016	46.12	19	15.11	155	30.99	8.02	1.9	1.1	16	0	185	.14	11	1.0	3.3	13	LSW	
		16	1020	2.26	19	25.28	155	21.15	9.50	1.7	1.7	30	2	37	.13	4	.4	.8	24	KAO	
		16	1022	58.61	19	20.50	155	16.28	1.30	2.4	3.3	21	1	80	.11	2	.3	.6	17	SSF	
		16	1030	6.98	19	28.52	155	24.55	1.36	1.6	1.7	19	3	96	.17	6	.5	1.2	15	KAO	
		16	1036	49.91	19	15.66	155	22.82	6.00		2.8	26	3	140	.14	3	.6	1.2	23	SWR	
		16	1045	50.41	19	25.36	155	19.62	6.16	2.9	3.2	35	2	46	.14	3	.4	.8	34	KAO	
		16	1048	4.30	19	23.17	155	26.00	11.97		1.5	21	0	61	.12	4	.6	1.1	21	KAO	
		16	1048	42.21	19	25.06	155	15.80	14.91	2.4	2.2	35	2	79	.10	3	.5	.3	33	DEP	
		16	1054	12.63	19	17.58	155	28.01	9.59	2.8	2.5	39	4	82	.14	6	.4	.7	36	LSW	
		16	1058	44.37	19	26.31	155	24.34	9.57	2.5	2.4	41	7	54	.15	2	.4	.6	37	KAO	
		16	1059	35.10	19	25.22	155	21.80	12.66	2.6	1.7	23	0	51	.10	5	.5	.6	19	KAO	
		16	11 0	4.26	19	17.88	155	13.21	7.13	2.3	2.5	31	3	101	.13	2	.5	.8	28	SF2	
		16	11 1	19.83	19	21.88	155	21.39	9.12		1.5	14	1	83	.12	5	.7	1.3	13	SWR	
		16	11 2	45.34	19	23.05	155	22.28	10.49	1.5	1.5	15	1	70	.06	5	.7	1.2	13	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	16	11 6	6.59	19	23.18	155	29.28	11.73	1.7	1.4	24	1	91	.11	8	.6	1.0	24	KAO
		16	11 8	38.61	19	25.32	155	27.69	9.21	1.8	1.1	20	0	91	.11	4	.5	1.5	19	KAO
		16	1113	20.84	19	26.15	155	21.81	11.63	1.5	1.6	25	2	39	.10	3	.5	.7	19	KAO
		16	1119	57.45	19	28.08	155	26.14	9.82	1.7	1.4	29	2	47	.13	6	.6	1.1	27	KAO
		16	1120	20.26	19	22.69	155	25.04	13.47		1.4	17	2	94	.14	5	.8	1.4	15	DML
		16	1122	4.31	19	27.15	155	27.16	1.91	2.8	3.0	21	1	85	.12	5	.4	1.4	21	KAO
		16	1124	50.00	19	23.12	155	26.90	11.09	2.1	1.7	27	2	41	.11	5	.5	1.1	26	KAO
		16	1128	6.54	19	24.61	155	21.45	10.43	1.7	1.1	25	3	61	.11	4	.5	.7	24	KAO
		16	1129	6.70	19	25.77	155	27.73	16.92	2.0	1.0	20	0	120	.14	5	1.0	1.6	20	DML
		16	1131	7.53	19	22.78	155	25.94	11.06		1.5	25	2	41	.11	5	.6	1.3	25	KAO
		16	1133	22.72	19	20.86	155	23.10	11.22	1.8	1.3	12	0	72	.12	1	.8	1.3	9	SWR
		16	1135	48.02	19	25.39	155	20.19	2.75	1.9	2.2	23	1	56	.16	3	.4	.8	23	KAO
		16	1139	37.14	19	25.94	155	27.19	9.76	1.8	1.5	31	1	62	.13	4	.5	1.0	26	KAO
		16	1141	28.33	19	19.45	155	29.77	8.51	1.8	1.5	26	2	52	.10	6	.4	1.6	20	KAO
		16	1142	22.68	19	25.41	155	29.88	9.62	1.8	1.2	29	2	74	.11	5	.4	.8	25	KAO
		16	1148	19.90	19	20.54	155	24.41	12.98	1.5	2.1	10	0	161	.28	10	1.5	1.7	7	SWR
		16	1152	57.95	19	27.91	155	26.27	7.21	2.1	2.1	33	0	47	.13	5	.4	1.1	28	KAO
		16	1155	8.79	19	25.64	155	30.68	11.27	2.8	2.4	34	0	38	.10	9	.4	.6	32	KAO
		16	12 0	15.60	19	27.52	155	24.83	9.76	2.4	2.1	26	2	80	.14	4	.5	1.0	25	KAO
		16	12 1	51.86	19	25.45	155	27.98	11.54	2.2	2.5	28	0	42	.08	9	.4	.9	26	KAO
		16	12 3	20.84	19	22.02	155	25.68	12.47		1.5	26	1	44	.11	5	.5	.8	24	KAO
		16	1215	33.71	19	23.58	155	30.97	12.01		1.7	24	0	53	.08	11	.5	1.0	23	KAO
		16	1224	11.17	19	14.66	155	22.69	3.43	1.2	1.1	16	1	177	.08	2	.9	.9	16	SWR
		16	1224	59.00	19	27.27	155	24.00	11.36	1.7	1.6	24	2	47	.12	4	.5	.8	22	KAO
		16	1230	34.45	19	20.86	155	2.43	8.93	2.6	2.3	14	1	150	.06	2	1.0	1.2	13	SFS
		16	1231	35.08	19	19.92	155	25.65	10.20	1.9	1.8	27	2	58	.14	4	.5	.9	27	KAO
		16	1241	44.24	19	28.95	155	27.22	11.29	2.2	2.1	33	1	47	.11	6	.4	.6	31	KAO
		16	1244	45.23	19	28.47	155	25.92	9.72	2.6	2.1	36	2	45	.12	6	.4	.8	32	KAO
		16	1256	11.78	19	24.53	155	21.85	11.44	1.8	1.2	21	3	60	.10	4	.5	.7	19	KAO
		16	13 4	49.31	19	31.62	155	27.98	7.04	2.6	2.3	30	2	72	.13	1	.4	.9	27	MLO
		16	1311	14.23	19	27.60	155	24.28	11.40	1.9	1.6	28	1	48	.11	5	.6	1.0	27	KAO
		16	1314	31.90	19	27.62	155	22.86	3.53	2.1	2.0	25	2	49	.18	4	.5	1.0	24	KAO
		16	1318	7.10	19	22.98	155	30.28	10.65	1.9	1.9	27	2	56	.08	13	.4	1.3	27	KAO
		16	1322	51.64	19	23.46	155	25.20	10.41		1.5	25	1	47	.12	3	.5	1.0	22	KAO
		16	1324	15.94	19	28.05	155	26.34	10.25	1.8	1.2	25	2	111	.09	6	.5	1.1	23	KAO
		16	1324	45.70	19	26.59	155	22.87	9.68	2.5	2.7	42	6	40	.13	4	.4	.5	40	KAO
		16	1328	5.31	19	19.46	155	30.49	9.93	1.9	2.1	30	1	59	.10	8	.4	.9	25	KAO
		16	1330	47.55	19	29.14	155	23.77	11.75		4.2	45	4	44	.11	6	.3	.4	43	KAO F
		16	1334	35.70	19	22.84	155	26.68	10.39	1.9	1.1	27	1	40	.12	2	.5	.9	26	KAO
		16	1336	17.10	19	24.05	155	21.49	11.25	2.8	2.3	41	4	49	.12	3	.3	.4	38	KAO
		16	1343	3.69	19	19.50	155	26.98	11.38	1.8	1.2	30	3	51	.12	6	.4	.5	21	KAO
		16	1343	48.61	19	24.21	155	25.59	10.42	1.8	1.1	28	2	65	.12	2	.4	.7	20	KAO
		16	1352	8.64	19	22.37	155	22.09	10.21	1.9	1.8	31	5	50	.10	5	.4	.5	16	KAO
		16	1354	21.92	19	23.33	155	26.11	10.13	1.9	2.1	33	1	38	.14	3	.4	.6	30	KAO
		16	1358	3.52	19	28.00	155	22.17	1.79	1.8	1.3	17	1	119	.12	3	.4	.7	14	KAO
		16	14 6	13.19	19	27.42	155	24.53	1.27	2.0	2.2	33	1	40	.15	4	.3	1.0	26	KAO
		16	14 7	2.74	19	13.50	155	23.38	6.55	1.7	2.1	21	0	156	.09	2	.6	.8	15	SWR
		16	14 8	38.15	19	13.22	155	33.22	7.41	2.0	2.2	30	3	91	.21	6	.6	1.4	23	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	16	1410	6.94	19	26.77	155	26.41	3.04	2.6	2.0	34	3	51	.15	4	.4	.9	31	KAO
		16	1413	3.18	19	20.74	155	21.94	8.37	1.5	.9	16	2	68	.11	3	.6	1.1	15	SWR
		16	1413	56.03	19	20.17	155	30.33	7.14	1.8	1.1	20	1	54	.12	6	.5	1.5	18	KAO
		16	1422	54.09	19	28.59	155	22.04	5.35	1.8	1.3	28	4	94	.14	3	.5	1.1	27	KAO
		16	1423	43.43	19	23.61	155	26.08	11.12	3.3	3.5	42	6	31	.11	3	.3	.4	38	KAO
		16	1427	38.40	19	21.73	155	28.06	8.78	2.0	1.3	32	5	40	.13	2	.4	.7	27	KAO
		16	1439	14.29	19	25.69	155	20.46	8.51	1.7	.6	21	2	53	.11	4	.4	.8	21	KAO
		16	1452	11.09	19	27.21	155	23.30	8.34	2.4	2.2	37	4	41	.13	5	.3	.7	33	KAO
		16	1457	42.92	19	27.19	155	23.54	9.08	3.1	3.4	43	5	41	.14	5	.4	.6	39	KAO
		16	15 3	14.82	19	23.04	155	26.66	9.86	2.0	1.1	26	2	39	.10	2	.5	.7	23	KAO
		16	15 4	41.92	19	16.01	155	21.52	6.53	1.8	1.8	17	0	141	.08	5	.6	.9	13	SWR
		16	15 5	36.15	19	25.75	155	27.93	4.80	1.8	1.1	24	1	73	.13	5	.5	2.2	20	KAO
		16	1511	8.71	19	25.37	155	21.32	3.82	2.0	2.2	21	0	45	.18	4	.6	1.4	17	KAO
		16	1514	44.75	19	25.97	155	29.79	10.14	2.5	2.1	41	3	40	.12	7	.4	.5	35	KAO
		16	1516	41.66	19	25.21	155	19.65	3.52		1.5	19	1	51	.14	3	.5	.8	14	KAO
		16	1518	58.87	19	32.22	155	27.76	2.60	2.0	1.9	22	3	72	.20	0	.5	.4	16	MLO
		16	1520	44.44	19	25.11	155	28.78	8.30	1.6	.9	24	1	41	.10	5	.4	.8	20	KAO
		16	1533	12.06	19	20.52	155	24.11	12.49	2.1	2.3	26	4	63	.10	2	.5	.4	16	SWR
		16	1534	55.37	19	23.78	155	26.70	11.02	2.4	2.4	40	3	36	.11	3.	.3	.4	34	KAO
		16	1541	41.56	19	20.32	155	23.87	12.58		2.1	22	2	67	.11	1	.7	.8	18	SWR
		16	1559	4.75	19	25.03	155	19.69	5.22	2.8	3.1	38	0	37	.12	2	.4	1.1	33	KAO
		16	16 1	29.77	19	25.09	155	19.53	4.57	2.6	2.9	29	0	37	.13	3	.4	1.2	26	KAO
		16	16 4	18.25	19	26.95	155	23.19	1.33		1.0	23	3	83	.14	5	.4	.7	19	KAO
		16	16 6	37.33	19	26.41	155	29.59	9.30		1.2	27	2	64	.10	8	.4	1.0	19	KAO
		16	16 8	28.83	19	25.62	155	19.43	6.40	3.5	3.7	38	1	39	.15	4	.4	.9	36	KAO
		16	1615	53.64	19	24.62	155	21.64	11.09	2.1	1.4	36	4	37	.11	4	.3	.4	24	KAO
		16	1618	42.01	19	28.03	155	27.15	8.07	3.0	2.7	40	3	54	.12	6	.3	.7	32	KAO
		16	1621	56.37	19	24.44	155	28.15	8.43		1.1	28	2	58	.10	4	.4	.8	20	KAO
		16	1625	6.99	19	31.34	155	26.57	3.10	1.9	2.3	11	0	153	.10	2	.6	.8	9	MLO
		16	1628	36.94	19	18.47	155	13.35	5.58	1.2	.9	18	2	82	.10	3	.5	1.4	13	SF2
		16	1632	46.91	19	22.22	155	28.30	6.90	2.5	2.4	31	0	38	.12	8	.4	1.1	25	KAO
		16	1640	19.84	19	29.55	155	25.94	2.53	2.8	2.5	25	0	98	.12	5	.4	2.3	25	KAO
		16	1648	52.30	19	14.97	155	15.82	6.97		.9	14	0	219	.13	6	1.4	1.1	9	SF1
		16	1651	45.98	19	27.64	155	25.00	8.73	1.6	.9	28	1	47	.13	4	.5	1.2	19	KAO
		16	1657	40.77	19	22.38	155	26.46	10.18	2.0	2.0	35	2	39	.12	2	.4	.6	30	KAO
		16	1658	47.59	19	17.40	155	15.22	4.26	1.6	1.6	22	2	135	.11	3	.5	1.2	20	SSF
		16	17 1	2.39	19	29.29	155	27.28	7.02	2.0	1.5	42	3	61	.14	5	.4	.9	30	KAO
		16	17 4	42.04	19	17.54	155	15.30	4.43	1.2	.9	19	1	143	.10	3	.5	1.4	14	SSF
		16	17 5	26.54	19	27.21	155	23.50	11.05	2.2	2.2	41	6	47	.12	5	.4	.6	26	KAO
		16	1711	24.45	19	18.03	155	13.06	4.16	1.6	1.8	21	1	104	.08	2	.5	.9	18	SSF
		16	1714	2.44	19	25.88	155	19.66	3.12	2.1	1.3	19	4	102	.10	4	.4	.9	14	KAO
		16	1716	29.61	19	25.50	155	19.51	3.62	2.0	1.4	26	2	84	.13	3	.4	1.0	18	KAO
		16	1718	10.02	19	27.52	155	26.07	6.86	1.6	.6	33	2	49	.15	5	.5	1.1	22	KAO
		16	1725	5.10	19	22.83	155	27.00	7.82	2.0	1.9	31	2	35	.13	1	.4	.9	22	KAO
		16	1733	.24	19	21.73	155	28.42	10.57		3.4	46	4	38	.12	2	.3	.4	41	KAO
		16	1740	31.50	19	29.95	155	29.62	3.17	1.9	1.8	30	2	100	.13	5	.4	1.4	22	KAO
		16	1750	9.90	19	27.57	155	26.18	6.94		1.9	42	1	41	.14	5	.4	.8	36	KAO
		16	1754	17.49	19	27.90	155	24.03	4.19		2.0	35	2	36	.12	4	.3	1.0	24	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	16	1815	19.85	19	17.27	155	13.57	4.64	1.8	1.3	28	0	86	.11	0	.5	.9	24	SSF
		16	1816	17.03	19	17.38	155	13.36	5.36	1.8	2.3	27	0	106	.10	1	.5	1.0	23	SF2
		16	1819	47.50	19	27.58	155	25.77	9.36	2.1	1.2	32	3	47	.12	4	.4	.8	23	KAO
		16	1822	42.32	19	21.35	155	22.19	10.44	1.5	.9	29	2	60	.12	3	.5	.7	19	SWR
		16	1823	24.51	19	22.85	155	24.74	8.76	2.1	1.8	40	4	36	.13	5	.4	.6	28	KAO
		16	1834	54.74	19	28.30	155	28.49	8.79	1.5	.9	28	2	52	.09	7	.4	.8	17	KAO
		16	1839	18.23	19	25.05	155	19.68	4.62	1.9	.9	15	1	92	.10	3	.6	1.3	12	KAO
		16	1840	47.18	19	26.02	155	28.10	10.27	1.9	1.7	37	2	68	.11	5	.4	.7	26	KAO
		16	1842	17.24	19	12.36	155	22.10	1.67	1.3	1.1	14	1	183	.10	5	.7	1.1	8	SWR
		16	1848	1.92	19	24.28	155	29.57	8.91	1.8	1.1	12	1	108	.25	5	1.6	1.8	11	KAO
		16	1858	10.63	19	17.02	155	13.11	4.82	1.8	1.6	23	0	156	.09	1	.6	.9	17	SSF
		16	19	9 17.38	19	27.48	155	24.07	7.95	1.8	1.1	38	4	38	.11	5	.3	.6	28	KAO
		16	1913	11.44	19	27.73	155	25.50	7.88	1.9	1.5	39	3	37	.12	5	.4	.6	29	KAO
		16	1917	28.21	19	23.28	155	27.51	9.80	1.9	1.1	36	1	38	.11	1	.4	.7	29	KAO
		16	1918	11.60	19	21.48	155	22.10	9.70	1.8	1.3	34	3	59	.13	3	.4	.6	27	SWR
		16	1922	19.20	19	20.10	155	7.86	6.88	2.3	2.3	25	4	90	.10	5	.4	.9	15	SF4
		16	1924	13.93	19	17.96	155	13.16	6.71	1.4	1.3	30	3	100	.08	2	.5	.8	20	SF2
		16	1934	42.14	19	19.78	155	33.03	29.16	2.0	1.6	12	0	247	.21	10	7.0	7.8	11	DML
		16	1941	4.16	19	21.84	155	21.63	9.81	1.5	.6	22	2	54	.08	4	.5	1.0	21	SWR
		16	1942	42.42	19	26.91	155	23.31	10.20	1.8		35	5	69	.12	4	.4	.7	32	KAO
		16	1946	30.06	19	22.91	155	26.01	10.72	1.7	1.5	34	4	40	.11	3	.4	.7	32	KAO
		16	1950	28.16	19	29.99	155	22.79	7.91	2.3	2.2	38	3	48	.15	1	.4	.8	34	KAO
		16	1952	40.88	19	26.09	155	21.08	5.72	2.1	1.6	31	5	47	.11	3	.4	.9	25	KAO
		16	1956	10.73	19	25.25	155	19.67	8.16	1.5	1.3	28	5	46	.12	3	.4	.8	23	KAO
		16	20	1 22.75	19	26.56	155	23.97	9.88	1.8	1.2	26	3	42	.14	3	.4	.8	17	KAO
		16	20	7 17.05	19	28.14	155	25.10	9.36	1.6	.7	24	3	69	.11	4	.5	.9	16	KAO
		16	2018	27.06	19	28.06	155	21.35	.85	2.4	2.8	34	1	43	.24	1	.5	.6	22	KAO
		16	2026	54.90	19	22.30	155	24.11	11.73	1.8	1.1	26	3	43	.10	4	.4	.6	20	KAO
		16	2030	37.28	19	28.42	155	26.19	9.53	2.0	1.5	44	4	43	.13	6	.4	.7	30	KAO
		16	2042	3.42	19	23.46	155	27.24	10.72	1.8	.9	33	1	37	.10	2	.4	.6	21	KAO
		16	2047	34.62	19	21.20	155	31.02	8.64	2.3	2.2	34	1	51	.11	6	.4	.7	22	KAO
		16	2059	35.28	19	23.94	155	30.10	7.70	1.9	1.5	33	1	44	.11	5	.4	.9	22	KAO
		16	21	2 32.07	19	21.46	155	21.80	9.28	1.8	1.5	25	1	90	.10	3	.5	.7	16	SWR
		16	2111	51.30	19	27.49	155	25.58	7.07	2.1	2.1	37	4	44	.12	4	.3	1.0	25	KAO
		16	2116	26.28	19	23.17	155	29.52	10.13	1.6	.9	33	2	47	.07	4	.4	.7	21	KAO
		16	2117	23.43	19	30.07	155	27.18	3.43	3.0	2.9	41	2	58	.14	4	.3	1.0	36	MLO
		16	2121	23.51	19	12.09	155	22.49	7.59	2.1	2.6	35	0	185	.14	11	.7	.9	25	SWR
		16	2124	48.94	19	18.93	155	29.97	7.82	1.5	.9	32	2	57	.11	7	.4	.8	21	LSW
		16	2125	4.35	19	25.24	155	29.73	8.45	2.5	1.8	37	2	37	.11	6	.4	.9	35	KAO
		16	2126	52.79	19	26.83	155	24.01	11.97	1.8	1.2	25	5	40	.11	4	.5	.7	22	KAO
		16	2129	44.28	19	27.83	155	27.12	7.30	1.4	.9	20	3	68	.11	6	.4	1.3	18	KAO
		16	2134	30.90	19	25.00	155	25.53	10.16	1.7	.9	28	2	38	.11	1	.5	.9	26	KAO
		16	2136	34.45	19	25.59	155	28.46	9.15	2.2	1.5	35	1	39	.09	6	.3	.8	34	KAO
		16	2144	1.74	19	29.53	155	29.79	2.24	2.8	2.9	36	2	65	.14	6	.3	1.7	30	KAO
		16	2155	45.98	19	28.53	155	26.36	2.11	1.4	1.1	17	3	84	.11	6	.4	1.2	15	KAO
		16	2158	7.77	19	14.05	155	21.27	6.04	1.0	1.1	14	1	210	.09	5	1.0	1.8	14	SWR
		16	22	2 43.81	19	18.64	155	15.47	6.70	1.7	1.1	38	4	112	.12	4	.4	.8	34	SF1
		16	22	4 6.77	19	25.01	155	19.30	4.05	2.0	1.9	37	3	72	.12	3	.3	.8	34	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	16	22	5 16.01	19	25.51	155	20.08	8.43	1.8	.9	27	4	52	.09	3	.4	.8	25	KAO
		16	22	5 44.28	19	8.35	155	35.02	8.17		1.2	28	1	127	.14	13	.6	1.9	27	LSW
		16	22	7 7.73	19	22.98	155	34.74	9.24	2.1	2.2	32	5	53	.08	5	.3	.8	29	MLO
		16	2212	46.03	19	18.01	155	15.85	9.76	3.1	3.3	43	1	140	.12	5	.5	.5	42	SF1
		16	2221	50.51	19	22.83	155	28.40	1.97	1.8	1.7	27	0	53	.10	2	.4	.4	27	KAO
		16	2223	25.27	19	26.57	155	22.86	6.82	1.9	1.7	34	4	40	.12	4	.3	.8	30	KAO
		16	2233	58.85	19	15.39	155	26.30	3.71		.8	20	3	101	.12	4	.4	1.2	17	LSW
		16	2234	6.64	19	21.14	155	23.91	10.35	2.6	2.5	49	8	44	.13	2	.3	.4	44	SWR
		16	2239	5.02	19	28.98	155	25.20	2.85	1.9	1.5	28	4	58	.13	4	.3	.8	26	KAO
		16	2239	32.98	19	28.09	155	25.68	7.95	2.2	1.5	38	5	45	.12	5	.3	.7	36	KAO
		16	2245	25.01	19	28.57	155	25.47	6.00	1.6	1.1	23	2	82	.12	4	.5	1.3	20	KAO
		16	2246	41.47	19	25.21	155	19.39	4.99	1.4	1.1	18	2	122	.08	3	.4	.9	17	KAO
		16	2248	40.04	19	31.37	155	27.47	4.02	2.2	2.6	21	2	92	.15	1	.4	.6	18	MLO
		16	2251	.67	19	24.40	155	21.43	11.33	1.5	.9	29	5	58	.08	3	.4	.7	24	KAO
		16	2252	24.53	19	24.96	155	29.96	10.55	2.1	2.1	41	2	34	.09	6	.3	.5	33	KAO
		16	2255	2.25	19	23.07	155	27.21	10.16	2.6	2.5	32	3	38	.13	1	.4	.6	26	KAO
		16	2311	7.77	19	25.69	155	19.83	4.23		.6	9	0	138	.08	10	.9	99.0	9	KAO
		16	2316	19.28	19	24.62	155	21.54	10.96	1.9	1.5	40	6	56	.10	4	.5	.4	31	KAO
		16	2323	37.77	19	22.60	155	21.54	8.48	1.6	1.7	18	1	70	.11	4	.6	1.0	10	KAO
		16	2330	7.96	19	27.60	155	27.34	5.51	2.0	1.3	38	3	51	.15	6	.4	1.4	24	KAO
		16	2353	2.39	19	21.55	155	22.31	10.48	1.8	1.7	35	4	58	.14	3	.4	.5	26	SWR
		17	014	14.99	19	25.33	155	27.63	9.27	1.9	1.5	35	1	56	.12	4	.4	.8	24	KAO
		17	017	7.78	19	24.93	155	29.54	10.47	1.8	1.5	20	1	69	.17	6	.7	1.1	17	KAO
		17	018	8.04	19	27.45	155	25.50	8.42	1.8	1.8	42	2	35	.15	4	.4	.8	30	KAO
		17	023	26.90	19	13.41	155	21.41	5.60	1.8	2.0	35	1	159	.14	5	.6	1.0	25	SWR
		17	026	48.17	19	22.03	155	26.24	10.55	1.7	1.3	31	3	44	.10	3	.4	.6	22	KAO
		17	052	42.50	19	21.59	155	2.97	8.33	1.9	1.5	22	2	116	.08	3	.5	.6	15	SFS
		17	054	45.37	19	28.17	155	26.85	4.19	1.7	1.1	38	3	47	.15	6	.3	2.6	28	KAO
		17	114	37.05	19	21.57	155	28.29	8.65	1.8	1.3	34	3	39	.11	2	.4	.7	22	KAO
		17	128	.59	19	28.91	155	24.62	2.67	1.8	1.8	29	2	46	.21	3	.4	.9	22	KAO
		17	130	32.78	19	27.67	155	26.15	7.02	2.0	1.5	43	3	41	.12	5	.3	.8	30	KAO
		17	139	43.76	19	23.10	155	25.98	9.66	1.8	1.1	39	4	39	.12	3	.4	.6	27	KAO
		17	2	2 15.83	19	25.64	155	21.63	11.26	2.0	2.0	37	2	38	.11	4	.4	.6	25	KAO
		17	2	6 39.48	19	25.15	155	20.62	8.32	1.9	1.3	35	4	46	.11	3	.4	.6	25	KAO
		17	212	21.28	19	28.94	155	24.19	9.14	2.0	1.5	41	4	39	.14	2	.4	.6	30	KAO
		17	224	51.78	19	20.19	155	13.06	8.57	2.3	2.7	46	4	67	.15	5	.4	.6	37	SF2
		17	229	58.75	19	23.00	155	27.81	9.69	1.7	1.1	35	3	36	.11	1	.4	.6	24	KAO
		17	234	27.87	19	28.07	155	25.61	6.31	2.0	1.5	47	4	41	.16	5	.4	1.0	36	KAO
		17	251	7.40	19	26.03	155	27.00	9.84	2.2	1.8	21	0	58	.09	7	.4	1.0	16	KAO
		17	3	0 50.38	19	26.87	155	26.10	4.18	2.6	2.8	40	2	49	.16	3	.4	1.4	33	KAO
		17	3	7 1.28	19	28.27	155	27.33	2.73	1.9	1.1	33	3	49	.15	7	.3	1.6	21	KAO
		17	3	8 31.59	19	25.37	155	29.18	10.15	2.7	2.0	44	2	35	.11	6	.3	.6	41	KAO
		17	312	58.15	19	22.62	155	25.92	10.20		1.7	37	2	41	.13	3	.4	.7	33	KAO
		17	315	43.02	19	20.88	155	2.34	7.38	2.4	2.1	37	5	153	.12	2	.5	.4	32	SF5
		17	316	22.10	19	21.04	155	22.47	9.84	1.4	1.5	19	2	74	.10	2	.6	.9	18	SWR
		17	317	27.90	19	25.14	155	29.09	6.29		.6	26	1	65	.10	6	.4	1.4	25	KAO
		17	320	2.41	19	25.17	155	29.23	10.53	2.1	1.5	33	1	38	.10	6	.4	.7	28	KAO
		17	330	2.45	19	22.02	155	27.89	10.88	2.6	2.5	40	3	40	.11	1	.3	.5	37	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	17	335	7.67	19	31.94	155	27.37	4.42	1.9	1.5	25	2	88	.12	1	.5	.6	22	MLO
		17	339	15.72	19	26.73	155	25.75	2.68		1.1	23	2	46	.13	7	.4	2.4	21	KAO
		17	343	3.16	19	23.64	155	27.12	10.08	1.9	.9	30	1	45	.11	2	.4	.7	22	KAO
		17	349	27.76	19	21.65	155	19.36	31.20	2.6	2.7	45	1	43	.12	4	.6	1.0	43	DEP
		17	353	10.08	19	22.14	155	27.81	8.51	1.8	.9	32	2	43	.13	1	.5	.8	22	KAO
		17	4	5 23.87	19	21.86	155	21.85	10.88	1.8	1.1	23	1	59	.09	4	.5	.5	16	SWR
		17	4	9 40.75	19	14.54	155	17.58	8.62	1.7	1.5	33	1	171	.11	9	.7	.8	19	SWR
		17	416	20.31	19	27.27	155	25.89	8.41	1.7	1.1	31	1	47	.12	4	.4	.7	21	KAO
		17	417	8.64	19	21.57	155	19.63	31.97	2.7	3.1	47	3	45	.12	4	.6	1.0	44	DEP
		17	426	41.00	19	26.83	155	29.72	8.67	1.5	.7	22	3	63	.11	9	.5	1.4	14	KAO
		17	431	22.24	19	30.16	155	27.52	5.33	1.5	1.5	19	2	80	.08	3	.4	1.4	14	MLO
		17	437	22.19	19	26.12	155	30.27	8.45	2.5	1.5	36	2	41	.11	8	.3	.9	29	KAO
		17	439	2.18	19	25.07	155	19.16	3.87		1.1	18	2	123	.11	3	.5	.8	14	KAO
		17	439	38.73	19	27.23	155	24.43	9.23	1.3	1.2	29	2	59	.11	4	.5	.8	21	KAO
		17	441	53.42	19	27.89	155	25.32	8.29	2.2	1.6	35	2	43	.12	5	.4	.7	29	KAO
		17	443	25.00	19	20.88	155	2.56	7.21	2.9	2.5	43	4	143	.12	2	.5	.4	32	SFS
		17	445	51.66	19	20.80	155	4.43	4.72	1.8	2.5	23	1	103	.19	3	.7	2.1	20	SSF
		17	455	8.33	19	27.83	155	26.67	5.58	1.5	.9	28	2	49	.14	5	.4	1.2	21	KAO
		17	458	42.36	19	22.39	155	26.74	10.34	1.5	.9	34	1	42	.12	2	.4	.6	20	KAO
		17	5	0 16.50	19	11.31	155	21.08	5.77	2.1	2.3	39	0	173	.18	8	.7	1.0	28	SWR
		17	5	1 39.22	19	27.38	155	23.33	9.31	1.2	.9	26	3	53	.11	5	.4	.8	24	KAO
		17	5	2 42.73	19	13.66	155	20.48	.01	.8	.8	12	2	177	.08	6	.9	.4	11	SWR
		17	5	4 18.36	19	31.99	155	26.33	2.08	1.5	1.5	16	1	149	.14	2	.8	.7	15	MLO
		17	5	6 21.18	19	29.84	155	27.10	8.24	1.2	.7	13	3	103	.08	4	.4	1.2	11	KAO
		17	5	6 38.96	19	26.93	155	26.17	9.32	1.6	.9	28	3	55	.12	4	.4	1.0	25	KAO
		17	521	44.88	19	32.92	155	25.55	.01	1.3	1.4	12	1	183	.13	4	.6	1.3	10	MLO
		17	523	42.08	19	27.20	155	23.34	11.84	1.9	1.2	18	2	75	.10	5	.6	1.1	17	KAO
		17	527	35.87	19	29.31	155	23.96	9.68	1.5	.7	25	3	45	.11	2	.5	.7	22	KAO
		17	558	53.62	19	22.80	155	26.92	10.99	2.4	1.8	42	3	40	.11	1	.4	.5	38	KAO
		17	559	47.80	19	13.17	155	20.45	1.53	1.1	1.1	18	1	184	.09	7	.7	1.2	15	SWR
		17	6	4 44.64	19	26.81	155	28.07	8.53	1.6	.7	26	2	100	.10	8	.5	1.3	24	KAO
		17	6	9 9.96	19	25.85	155	25.15	8.35	1.4	.6	14	2	63	.08	8	.5	.9	6	KAO
		17	611	56.39	19	25.56	155	21.36	9.54	1.6	.9	31	3	33	.13	4	.4	.8	29	KAO
		17	614	8.69	19	20.20	155	20.43	30.50	2.1	1.4	36	3	69	.12	5	.8	1.4	33	DEP
		17	621	43.43	19	27.50	155	29.47	10.47	2.1	1.6	23	0	49	.12	8	.6	1.5	22	KAO
		17	624	13.78	19	27.59	155	26.01	8.05	1.8	.9	31	2	76	.13	5	.4	.9	28	KAO
		17	629	4.20	19	20.87	155	29.99	5.74	1.6	1.3	21	1	53	.10	5	.4	1.6	20	KAO
		17	640	58.78	19	22.47	155	26.47	10.99	1.8	.9	31	3	38	.10	2	.4	.7	29	KAO
		17	650	8.45	19	23.97	155	27.21	10.32	1.9	.9	31	3	61	.11	3	.4	.9	28	KAO
		17	654	1.10	19	28.23	155	27.05	7.30	1.6	1.1	28	2	49	.12	6	.4	1.1	26	KAO
		17	654	42.00	19	25.62	155	21.00	9.24	1.5	.3	24	3	51	.10	4	.5	1.0	19	KAO
		17	659	23.69	19	24.99	155	21.62	13.54	1.3	.7	17	2	74	.05	4	.6	1.7	14	DML
		17	712	26.80	19	24.86	155	28.05	8.98	1.8	.9	30	1	62	.11	4	.4	.9	27	KAO
		17	722	25.88	19	24.95	155	29.67	8.55	1.8	.9	27	1	40	.13	6	.4	1.0	20	KAO
		17	728	40.79	19	23.36	155	26.02	9.69	1.8	1.5	36	3	31	.11	3	.4	.6	27	KAO
		17	730	41.15	19	22.95	155	26.64	11.21	2.7	2.7	45	4	40	.13	2	.3	.4	37	KAO
		17	735	14.27	19	24.96	155	29.92	8.83	2.1	1.5	40	3	36	.11	6	.3	.8	30	KAO
		17	741	8.65	19	21.07	155	28.56	8.76	1.6	.9	25	2	41	.11	3	.4	.7	16	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	17	745	27.69	19	26.31	155	21.97	9.18	1.4	.9	25	2	53	.14	3	.5	.9	18	KAO
		17	746	15.93	19	32.04	155	27.42	3.03	1.7	1.5	21	2	67	.17	0	.4	.5	13	MLO
		17	750	31.70	19	27.19	155	26.17	3.49	1.7	.9	18	0	116	.10	16	1.0	19.4	12	KAO
		17	754	22.15	19	28.46	155	25.38	4.30	1.7	.9	31	2	46	.14	4	.3	1.5	21	KAO
		17	754	46.54	19	25.17	155	19.81	4.79	1.4	1.1	19	2	98	.11	3	.4	1.1	14	KAO
		17	755	9.77	19	24.91	155	20.31	8.04	1.6	1.1	23	3	92	.08	3	.4	.8	18	KAO
		17	829	6.24	19	25.52	155	27.75	7.94	1.6	1.3	31	3	55	.15	5	.5	.9	20	KAO
		17	833	2.19	19	22.53	155	25.88	9.71	2.1	1.7	42	4	82	.13	3	.4	.5	35	KAO
		17	833	42.35	19	15.14	155	20.04	8.56	1.6	2.0	15	0	160	.11	6	.8	.9	15	SWR
		17	840	4.54	19	26.70	155	27.40	5.12	1.6	.9	35	3	53	.12	5	.4	1.5	24	KAO
		17	849	47.51	19	13.91	155	23.01	8.06	2.3	2.5	42	3	155	.15	11	.5	.7	29	SWR
		17	925	27.43	19	22.70	155	20.59	8.93	1.8	1.3	38	4	44	.12	2	.3	.6	24	KAO
		17	927	53.06	19	28.09	155	26.60	7.46	1.7	1.1	25	3	75	.12	6	.5	1.1	19	KAO
		17	933	15.26	19	26.97	155	23.68	11.95	1.8	1.4	36	5	70	.12	4	.4	.6	28	KAO
		17	937	22.27	19	28.92	155	27.16	1.98	1.8	1.1	26	3	63	.11	6	.3	1.0	16	KAO
		17	941	20.57	19	26.12	155	22.10	7.58	2.2	1.5	32	4	58	.13	4	.4	.9	27	KAO
		17	957	57.05	19	28.20	155	26.16	9.48	1.7	.9	31	3	49	.11	6	.4	.7	22	KAO
		17	10	5 26.32	19	23.07	155	26.64	9.24	2.3	2.1	41	3	33	.11	2	.3	.6	31	KAO
		17	1010	8.25	19	28.33	155	24.38	3.69	1.6	1.5	27	3	56	.14	3	.3	.9	20	KAO
		17	1017	58.02	19	21.83	155	21.21	8.75	1.6	1.1	30	3	84	.10	4	.5	.8	18	SWR
		17	1022	37.13	19	27.84	155	23.86	8.95	1.7	1.2	22	1	72	.15	4	.5	1.2	15	KAO
		17	1027	34.25	19	22.05	155	28.85	3.93	2.7	2.9	42	3	38	.12	2	.3	.7	34	KAO
		17	1029	46.22	19	27.70	155	25.38	9.28	1.8	.9	32	2	43	.12	5	.4	.8	25	KAO
		17	1048	46.96	19	30.37	155	28.95	5.13	2.1	2.2	41	3	47	.12	4	.5	1.1	29	MLO
		17	11	5 4.17	19	23.68	155	26.09	6.71	2.1	1.9	40	2	36	.14	3	.4	.8	32	KAO
		17	11	6 40.55	19	25.54	155	28.54	6.78	2.0	1.9	32	2	59	.12	6	.4	1.2	23	KAO
		17	11	7 44.00	19	23.08	155	25.05	9.06	1.8	1.1	39	4	32	.12	4	.3	.6	30	KAO
		17	1114	47.67	19	27.74	155	26.92	6.03	1.8	.6	36	4	50	.13	6	.4	1.1	27	KAO
		17	1115	36.92	19	21.93	155	26.46	9.17	1.7	1.5	39	4	44	.15	2	.4	.7	29	KAO
		17	1126	10.81	19	25.11	155	21.22	9.02	1.4	.6	25	3	45	.09	4	.5	.9	19	KAO
		17	1143	30.66	19	23.98	155	27.17	10.29	1.8	1.5	36	2	33	.11	3	.4	.7	29	KAO
		17	1150	28.71	19	28.71	155	38.17	5.10	1.5	2.1	25	3	81	.11	4	.5	1.0	18	MLO
		17	12	9 3.44	19	21.24	155	29.44	5.25	1.7	1.5	35	2	43	.12	4	.3	1.1	24	KAO
		17	1212	47.50	19	22.19	155	28.65	8.69	3.7	3.9	48	4	37	.12	8	.3	.7	38	KAO
		17	1215	1.96	19	24.99	155	19.84	5.48	2.6	2.8	41	1	45	.13	2	.3	.9	32	KAO
		17	1216	7.12	19	25.83	155	19.24	3.53	1.9	2.2	25	3	126	.12	4	.4	1.0	21	KAO
		17	1224	36.40	19	24.98	155	16.15	15.20	1.0	.8	34	5	91	.10	2	.5	.3	30	DEP
		17	1225	45.62	19	25.67	155	19.48	7.70	1.8	1.3	29	3	103	.12	4	.5	.8	27	KAO
		17	1234	27.19	19	26.22	155	29.35	8.96	1.6	.7	29	2	61	.11	8	.5	1.1	26	KAO
		17	1242	56.59	19	25.41	155	28.43	9.64		1.5	35	1	38	.10	6	.4	.8	29	KAO
		17	1247	37.07	19	25.01	155	19.21	5.73	1.6	1.1	19	0	136	.11	3	.5	1.2	18	KAO
		17	1251	19.66	19	25.86	155	29.26	9.30	1.9	1.2	34	2	40	.12	7	.5	1.0	31	KAO
		17	1322	42.55	19	25.36	155	30.37	10.48	1.7	1.0	32	2	42	.11	7	.4	1.0	27	KAO
		17	1323	23.51	19	28.32	155	23.33	1.52	1.7	1.4	25	2	108	.14	3	.4	.7	18	KAO
		17	1324	5.54	19	23.04	155	26.84	8.55	1.8	1.1	38	2	33	.14	2	.4	.8	28	KAO
		17	1330	41.98	19	23.47	155	25.85	11.27	1.7	1.4	36	2	34	.12	4	.4	.6	26	KAO
		17	1340	25.36	19	22.42	155	25.97	9.53	1.6	1.1	34	2	42	.11	3	.4	.8	23	KAO
		17	1344	43.91	19	28.04	155	25.68	5.82	1.7	.9	30	3	67	.11	5	.4	1.0	18	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	17	1353	57.65	19	28.05	155	26.35	7.39	1.9	2.0	43	3	47	.13	6	.4	.9	35	KAO
		17	14 4	7.27	19	23.98	155	26.34	10.28	2.1	1.7	39	3	32	.11	3	.4	.6	31	KAO
		17	1412	29.20	19	23.62	155	26.91	9.26	1.8	1.5	38	3	37	.12	2	.4	.7	28	KAO
		17	1423	33.76	19	28.46	155	28.03	4.56	1.9	1.5	39	4	56	.14	7	.4	3.3	28	KAO
		17	1425	7.15	19	21.79	155	22.88	7.73	1.6	1.1	11	0	143	.15	3	1.2	2.3	7	SWR
		17	1457	20.66	19	23.08	155	26.38	8.81	1.6	.9	35	2	54	.13	2	.4	.7	29	KAO
		17	15 4	13.46	19	26.86	155	29.09	8.55	1.6	1.2	34	3	58	.11	8	.4	.9	20	KAO
		17	1526	49.75	19	26.80	155	22.71	8.89	1.4	1.1	33	4	62	.10	4	.4	.6	23	KAO
		17	1548	40.59	19	23.22	155	26.58	11.44	1.8	1.4	34	1	31	.11	2	.5	.8	30	KAO
		17	16 9	47.42	19	32.26	155	26.88	3.31	2.2	2.6	26	2	78	.15	1	.6	.5	23	MLO
		17	1625	23.33	19	18.50	155	13.00	8.44	2.5	2.4	44	5	94	.13	3	.4	.6	39	SF2
		17	1632	36.15	19	27.87	155	28.06	7.56	1.7	1.3	36	4	52	.11	7	.4	1.0	30	KAO
		17	1633	6.18	19	23.29	155	27.56	10.90	2.1	1.7	37	1	34	.12	1	.4	.7	35	KAO
		17	1635	32.39	19	20.80	155	23.08	9.18	1.6	1.5	25	4	65	.10	1	.5	.6	20	SWR
		17	1643	57.41	19	22.74	155	20.43	9.57	1.3	.6	21	2	58	.10	2	.6	1.0	20	KAO
		17	1646	23.25	19	21.82	155	23.05	10.21	1.6	1.1	34	3	55	.09	3	.4	.7	24	SWR
		17	1649	17.26	19	25.65	155	28.00	5.13	1.7	1.5	41	2	57	.14	5	.4	1.6	31	KAO
		17	1650	51.50	19	23.80	155	26.84	9.60	2.0	2.0	44	4	33	.12	3	.3	.5	32	KAO
		17	17 4	12.96	19	24.92	155	28.25	8.75	1.7	.9	26	1	58	.13	5	.5	1.1	23	KAO
		17	1724	38.83	19	15.43	155	22.76	7.62	1.2	1.2	17	1	138	.12	3	.7	1.4	12	SWR
		17	1727	58.28	19	21.30	155	21.94	10.91	1.6	1.1	34	5	60	.11	3	.4	.6	25	SWR
		17	1755	49.79	19	13.99	155	20.27	7.97	1.9	2.1	41	2	161	.16	7	.6	.9	34	SWR
		17	1757	9.69	19	21.14	155	24.86	12.62	2.0	1.8	41	5	52	.13	3	.4	.3	29	SWR
		17	1758	49.60	19	23.08	155	30.17	10.41	1.5	1.2	32	2	49	.09	5	.5	.9	25	KAO
		17	18 1	53.84	19	28.25	155	27.19	5.05	1.5	1.1	35	5	49	.13	7	.3	1.7	26	KAO
		17	18 6	59.25	19	24.56	155	20.18	6.94	1.4	1.1	30	3	52	.11	2	.4	.7	23	KAO
		17	18 9	40.66	19	26.42	155	27.64	5.07	2.0	1.8	41	2	54	.12	5	.3	1.5	35	KAO
		17	1820	25.58	19	25.16	155	19.53	3.43	1.2	1.3	20	3	118	.10	3	.4	.7	16	KAO
		17	1827	4.71	19	25.24	155	29.33	9.86	2.0	1.5	38	2	38	.11	6	.4	.8	31	KAO
		17	1844	24.86	19	17.55	155	13.97	6.67	2.2	2.4	37	4	103	.11	1	.5	.8	32	SF2
		17	1848	2.42	19	24.86	155	20.73	9.47	1.6	1.1	37	5	45	.10	3	.4	.5	22	KAO
		17	1853	9.50	19	25.87	155	27.98	6.38	1.6	1.1	34	2	40	.13	5	.4	1.2	29	KAO
		17	1914	47.44	19	27.21	155	23.71	7.91		1.8	46	4	46	.12	4	.3	.6	35	KAO
		17	1931	29.22	19	25.83	155	25.80	8.57	1.7	1.3	34	3	41	.13	2	.4	.9	27	KAO
		17	1932	48.63	19	24.62	155	21.83	9.44	1.6	1.5	40	5	37	.12	4	.4	.6	34	KAO
		17	1938	50.96	19	25.23	155	29.13	8.78	1.6		29	1	38	.08	6	.4	.8	24	KAO
		17	1939	40.90	19	27.45	155	25.54	9.76	1.6	.7	32	4	45	.11	4	.4	.9	27	KAO
		17	1950	38.48	19	13.10	155	22.39	3.34	1.3	1.1	20	0	166	.15	4	.7	1.1	16	SWR
		17	1951	42.84	19	22.70	155	26.67	10.09	1.9	2.2	47	5	36	.14	2	.4	.6	40	KAO
		17	1956	31.16	19	13.18	155	22.67	3.45	1.3	1.3	24	1	163	.09	3	.5	.7	22	SWR
		17	1959	.88	19	21.31	155	23.38	11.18	1.5	1.1	30	5	48	.10	2	.4	.7	25	SWR
		17	2012	24.70	19	15.53	155	21.00	7.47	1.2	1.7	29	0	147	.13	6	.6	1.1	27	SWR
		17	2017	4.63	19	21.64	155	23.63	9.69	2.2	2.3	41	4	40	.15	3	.4	.7	35	SWR
		17	2018	35.72	19	27.73	155	24.49	2.16	1.5	1.9	27	5	64	.12	4	.3	.7	24	KAO
		17	2039	57.81	19	24.82	155	19.15	4.88	1.0	1.1	18	0	100	.10	2	.4	1.0	18	KAO
		17	2040	38.63	19	28.79	155	22.79	3.15	1.3	1.5	21	2	142	.14	2	.7	.6	19	KAO
		17	2044	15.20	19	19.26	155	13.17	8.06	1.3	.9	18	2	77	.07	4	.5	1.1	14	SF2
		17	21 7	1.53	19	24.31	155	24.14	8.80	1.5	.6	28	3	52	.13	3	.5	.9	20	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	17	2110	.09	19	20.97	155	23.82	9.74	2.0	2.3	46	4	36	.14	2	.4	.5	35	SWR
		17	2116	4.72	19	28.20	155	23.67	.50	1.4	1.4	18	2	90	.14	3	.3	.7	13	KAO
		17	2119	19.35	19	27.76	155	26.74	6.48	1.6	1.1	31	2	49	.15	5	.4	1.3	23	KAO
		17	2125	40.72	19	21.27	155	2.19	6.14	2.2	2.5	39	3	149	.13	3	.5	.7	29	SF5
		17	2132	40.55	19	27.90	155	26.63	2.31	1.6	1.1	30	3	53	.14	6	.3	1.1	19	KAO
		17	2135	11.38	19	25.50	155	22.03	11.60		2.5	48	4	34	.12	5	.3	.4	39	KAO
		17	2147	.74	19	24.86	155	20.20	7.59	1.2	.6	16	1	100	.07	2	.5	1.3	12	KAO
		17	22 1	47.63	19	27.11	155	26.02	5.47	2.0	2.3	38	2	47	.14	4	.3	1.1	29	KAO
		17	2211	21.10	19	22.21	155	26.37	9.74	1.7	1.5	35	2	40	.11	2	.4	.7	26	KAO
		17	2232	43.03	19	10.61	155	21.82	.02	1.4	1.2	12	0	210	.07	8	.9	5.1	10	SWR
		17	2239	35.99	19	20.56	155	24.15	13.01	1.8	1.2	32	4	62	.11	2	.6	.7	26	DEP
		17	2242	20.00	19	25.35	155	30.12	10.95	1.9	1.4	38	1	37	.12	7	.4	.7	29	KAO
		17	2312	45.52	19	21.56	155	22.03	10.29	1.8	1.4	36	5	58	.11	3	.4	.6	23	SWR
		17	2320	30.92	19	24.98	155	20.15	7.11	1.4	1.1	28	2	79	.13	3	.4	.8	22	KAO
		17	2325	2.32	19	27.78	155	24.64	8.70	1.4	1.1	33	3	42	.12	4	.4	.9	29	KAO
		17	2325	30.64	19	28.13	155	25.16	.62	1.6	1.4	22	2	70	.12	5	.4	.7	19	KAO
		17	2326	25.12	19	28.43	155	26.12	9.95	1.4	.7	32	5	51	.11	6	.4	.8	25	KAO
		17	2328	1.95	19	27.89	155	26.18	8.05	1.7	1.1	38	3	47	.12	5	.4	.8	36	KAO
		17	2330	39.61	19	28.32	155	21.15	1.99		3.7	39	3	115	.14	2	.4	.3	36	KAO
		17	2339	59.79	19	26.75	155	27.56	8.55	1.9	1.5	33	3	43	.11	5	.4	1.0	27	KAO
		17	2343	11.29	19	18.64	155	13.19	5.38	1.4	1.1	29	2	86	.12	3	.4	1.2	26	SF2
		17	2348	18.79	19	26.99	155	29.10	9.71	1.9	.9	35	3	57	.11	8	.4	.9	31	KAO
		18	011	26.50	19	26.74	155	24.63	9.46	1.8	1.3	32	4	54	.13	3	.4	.8	29	KAO
		18	012	40.37	19	27.90	155	26.28	7.36	1.3	.6	36	4	50	.14	5	.4	1.0	31	KAO
		18	014	43.39	19	20.41	155	24.07	13.66	1.6	1.2	33	4	64	.10	1	.5	.4	30	DEP
		18	022	50.75	19	23.18	155	25.43	10.71	1.8	1.4	33	3	38	.10	4	.4	.7	29	KAO
		18	046	5.01	19	22.21	155	26.43	10.76	1.9	1.9	41	3	40	.12	2	.4	.7	36	KAO
		18	049	54.35	19	24.11	155	26.51	10.70	2.4	2.3	44	3	33	.13	3	.4	.6	39	KAO
		18	059	42.17	19	19.00	155	13.41	8.11		2.2	47	4	75	.13	4	.4	.6	40	SF2
		18	123	13.06	19	25.24	155	20.43	8.19	1.6	1.5	28	2	82	.12	3	.5	.9	24	KAO
		18	128	16.94	19	28.21	155	26.10	11.17	2.1	2.2	47	5	62	.13	6	.4	.5	37	KAO
		18	130	44.70	19	26.93	155	23.58	8.56	1.7	2.0	37	2	47	.10	4	.3	.7	24	KAO
		18	133	35.41	19	21.04	155	29.63	6.23		3.0	41	3	45	.12	4	.3	.8	31	KAO
		18	148	25.62	19	22.49	155	26.03	9.99	1.3	.9	25	1	59	.13	3	.5	.7	17	KAO
		18	156	23.83	19	24.84	155	19.93	5.71	1.3	.6	21	2	89	.09	2	.4	1.0	16	KAO
		18	212	34.44	19	24.82	155	19.94	5.55	1.9	1.5	33	5	45	.10	2	.3	.9	26	KAO
		18	220	13.35	19	21.98	155	22.14	10.35		2.6	49	5	54	.11	4	.3	.4	38	SWR
		18	231	1.61	19	23.44	155	21.36	10.20	2.1	2.2	46	3	42	.16	3	.4	.6	36	KAO
		18	235	29.54	19	27.11	155	28.88	9.66	1.6	.9	31	2	47	.09	7	.4	.8	18	KAO
		18	246	22.28	19	24.86	155	21.52	11.57	1.4	.9	22	2	75	.06	4	.5	1.0	15	KAO
		18	3 1	54.99	19	25.40	155	19.76	3.84		3.2	43	3	46	.13	3	.3	.9	35	KAO
		18	311	59.22	19	24.98	155	19.61	3.16	1.7	1.6	18	1	92	.09	2	.4	.6	13	KAO
		18	315	12.06	19	19.11	155	15.60	7.31	1.1	.9	21	2	105	.10	4	.5	1.0	16	SF1
		18	318	38.63	19	27.25	155	25.83	8.73		.7	24	2	51	.10	4	.4	1.0	20	KAO
		18	326	34.17	19	20.42	155	24.18	13.02	1.5	1.2	33	3	64	.11	2	.5	.6	23	DEP
		18	418	33.91	19	27.06	155	24.16	7.89	1.4	1.1	29	4	71	.15	4	.4	1.0	17	KAO
		18	424	28.83	19	25.29	155	30.01	8.45		.9	32	2	41	.09	7	.4	1.0	24	KAO
		18	432	38.21	19	25.45	155	19.90	7.31	1.7	1.5	39	3	46	.12	3	.4	.7	31	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	NOV	18	439	1.64	19	26.74	155	23.75	10.43	1.5	1.2	26	4	65	.13	4	.4	.7	17	KAO	
		18	442	24.89	19	25.15	155	20.51	8.58	1.8	1.3	38	6	80	.13	3	.4	.6	24	KAO	
		18	450	47.76	19	24.72	155	20.19	8.12		1.0	20	1	46	.10	6	.4	1.0	19	KAO	
		18	456	12.45	19	23.10	155	20.48	7.72		1.1	25	1	64	.11	2	.5	.9	20	KAO	
		18	526	17.44	19	27.02	155	25.96	2.09	1.5	.8	19	2	48	.15	4	.4	.9	12	KAO	
		18	529	6.64	19	22.20	155	24.08	12.55	2.1	1.8	49	6	34	.11	4	.3	.3	36	KAO	
		18	535	31.22	19	24.65	155	30.29	10.76	1.6	1.4	34	1	46	.07	6	.4	.8	23	KAO	
		18	539	27.74	19	27.53	155	24.30	8.41	1.1	.7	28	3	66	.09	4	.4	.8	17	KAO	
		18	549	57.53	19	28.42	155	27.20	3.22	1.5	1.1	30	4	60	.11	7	.3	1.4	22	KAO	
		18	610	43.65	19	25.06	155	28.91	12.78		.8	28	1	62	.20	5	.7	1.0	21	KAO	
		18	613	36.23	19	23.16	155	26.26	9.72	1.4	1.3	37	3	45	.11	3	.4	.6	31	KAO	
		18	619	39.99	19	50.56	155	34.74	15.40	2.6	1.9	33	2	111	.11	14	.6	.9	24	KEA	
		18	651	4.78	19	24.95	155	21.92	11.04	2.5	3.3	49	6	36	.11	5	.5	.4	38	KAO	
		18	7 4	14.22	19	25.10	155	21.05	8.61	1.4	.6	28	5	85	.12	4	.5	.7	22	KAO	
		18	7 4	45.14	19	28.15	155	25.21	7.63	1.9	1.3	38	3	43	.13	5	.4	.8	27	KAO	
		18	7 5	24.88	19	23.24	155	25.82	9.81	2.1	2.0	40	2	30	.12	3	.4	.7	34	KAO	
		18	7 7	6.45	19	27.60	155	25.04	8.29	1.5	.4	26	3	45	.11	4	.4	1.0	22	KAO	
		18	734	16.32	19	22.57	155	27.87	10.17	1.5	1.1	40	3	38	.13	0	.4	.7	33	KAO	
		18	742	30.87	19	50.56	155	34.70	16.01	2.9	3.0	42	3	111	.09	14	.6	1.3	28	KEA	
		18	818	46.99	19	24.97	155	19.35	4.42		1.3	23	5	120	.13	2	.5	.8	18	KAO	
		18	832	48.87	19	24.74	155	20.16	7.69	1.5	1.1	33	5	44	.13	2	.4	.7	27	KAO	
		18	850	35.49	19	26.02	155	29.73	8.45	1.8	1.3	36	3	41	.10	8	.4	.9	26	KAO	
		18	9 0	56.85	19	25.87	155	19.72	6.59	1.1	1.1	24	5	102	.11	4	.4	.8	12	KAO	
		18	931	20.16	19	9.88	155	20.43	4.69	2.1	2.5	37	0	214	.16	10	1.0	1.8	22	LOI	
		18	951	33.50	19	23.23	155	27.02	9.87	2.2	2.4	44	5	32	.12	2	.4	.5	38	KAO	
		18	954	38.15	19	25.93	155	19.91	3.83	2.2	2.6	32	1	47	.13	4	.4	1.3	23	KAO	
		18	958	6.04	19	22.03	155	26.45	11.11	2.4	2.1	44	4	42	.14	2	.4	.6	36	KAO	
		18	958	32.20	19	22.06	155	26.15	9.29	2.5	2.6	37	3	41	.13	3	.4	.7	29	KAO	
		18	1023	.17	19	13.97	155	23.29	6.05	2.1	2.7	40	0	153	.16	1	.5	1.0	28	SWR	
		18	1036	45.79	19	13.78	155	22.98	6.21	2.0	2.5	35	0	156	.14	2	.6	.9	24	SWR	
		18	1052	7.23	19	18.05	155	23.77	8.18	1.7	1.9	33	2	89	.14	4	.5	.9	21	SWR	
		18	1059	46.07	19	29.20	155	24.84	1.42	1.7	2.0	23	4	88	.15	3	.3	.8	20	KAO	
		18	11 5	41.49	19	24.86	155	20.51	7.41	2.1	2.1	38	3	45	.12	3	.4	.7	31	KAO	
		18	1127	6.72	19	28.44	155	24.94	.02	1.8	2.1	32	3	43	.14	4	.3	.6	22	KAO	*
		18	12 7	43.93	19	11.65	155	27.57	9.40	1.8	1.6	23	0	209	.11	8	.9	1.1	18	LSW	
		18	1220	23.89	19	25.93	155	21.71	10.62	1.8	1.4	43	6	32	.12	4	.4	.5	30	KAO	
		18	1232	8.65	19	19.69	155	26.99	10.12	1.6	1.3	31	2	50	.13	7	.4	.7	23	KAO	
		18	1245	11.48	19	28.53	155	28.60	3.52	2.1	1.3	30	2	74	.16	7	.5	2.4	24	KAO	
		18	1326	.72	19	27.43	155	27.45	7.43	1.8	1.3	31	2	52	.14	6	.4	1.1	23	KAO	
		18	1359	42.20	19	31.78	155	36.90	10.27	1.7	1.4	21	3	111	.18	3	.7	.9	16	MLO	
		18	1432	33.67	19	26.82	155	23.41	10.45	1.8	1.6	38	5	48	.10	4	.4	.6	28	KAO	
		18	1443	27.99	19	20.04	155	24.53	10.94		.8	29	4	65	.09	2	.4	.8	20	SWR	
		18	15 2	16.60	19	28.72	155	25.52	6.46	1.5	1.0	33	3	49	.14	4	.4	1.0	24	KAO	
		18	1515	47.02	19	28.76	155	26.26	4.80	2.1	2.1	41	5	44	.16	6	.4	2.6	30	KAO	
		18	1529	35.20	19	29.07	155	25.36	5.17	1.7	1.3	32	2	59	.13	4	.4	1.2	25	KAO	
		18	1533	26.13	19	22.91	155	25.84	9.47	1.5	1.0	35	4	40	.12	5	.4	.7	27	KAO	
		18	1541	52.19	19	30.55	155	28.60	4.82	1.3	.9	28	3	71	.12	3	.4	1.3	22	MLO	
		18	16 7	45.98	19	26.11	155	28.97	8.33	1.6	.9	36	5	42	.11	7	.4	.9	27	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	NOV	18	1624	21.56	19	29.92	155	26.68	1.93	2.9	3.2	41	2	49	.14	4	.3	1.2	29	KAO	
		18	1630	6.44	19	28.16	155	26.49	10.02	2.8	2.5	44	2	55	.12	6	.4	.7	38	KAO	
		18	1635	43.01	19	27.15	155	27.39	7.49	1.9	1.3	38	4	52	.12	5	.4	1.0	31	KAO	
		18	1643	2.57	19	26.87	155	25.99	8.56	2.2	1.5	45	3	40	.13	5	.4	.7	34	KAO	
		18	1711	7.46	19	23.01	155	25.70	9.46	2.1	2.2	46	4	39	.11	4	.3	.5	39	KAO	
		18	1720	7.67	19	27.62	155	26.21	7.78	2.0	1.4	44	4	48	.14	5	.4	.7	33	KAO	
		18	18 0	29.53	19	22.29	155	27.33	9.60	2.0	1.3	36	2	40	.12	1	.4	.7	26	KAO	
		18	18 1	39.87	19	24.75	155	20.27	8.17	1.9	1.4	38	4	45	.12	2	.4	.7	31	KAO	
		18	1813	34.44	19	31.37	155	28.20	2.88	1.8	2.2	32	2	55	.15	2	.4	.6	18	MLO	
		18	1817	33.14	19	27.75	155	29.90	8.59	1.6	.9	31	3	50	.15	9	.5	1.2	24	KAO	
		18	1842	14.41	19	12.83	155	20.56	.00	1.6	1.2	30	3	188	.09	7	.7	.5	22	SWR	*
		18	1919	24.51	19	26.73	155	28.74	8.58	2.3	1.3	43	4	44	.15	7	.4	1.0	34	KAO	
		18	1938	15.25	19	27.96	155	26.78	5.53	1.7	1.1	39	5	49	.13	6	.3	1.1	30	KAO	
		18	1949	9.67	19	23.45	155	26.32	10.34	1.5	.8	31	1	38	.11	3	.4	.9	25	KAO	
		18	1958	10.17	19	20.02	155	28.73	10.15	1.8	1.5	22	2	104	.12	5	.6	1.1	20	KAO	
		18	2024	15.37	19	27.56	155	28.01	9.35	1.6	1.2	24	3	78	.10	7	.5	1.1	20	KAO	
		18	2025	24.86	19	26.75	155	27.38	8.67	1.7	1.1	31	3	81	.11	5	.4	.9	25	KAO	
		18	2029	43.35	19	22.60	155	23.93	12.38	1.9	1.8	40	2	37	.10	5	.4	.7	36	KAO	
		18	2038	6.06	19	24.74	155	19.70	7.54	1.5	.6	24	3	87	.09	2	.4	1.0	21	KAO	
		18	2047	13.91	19	24.19	155	25.63	10.61	1.7	1.4	33	2	32	.12	2	.4	.8	30	KAO	
		18	2114	24.63	19	13.10	155	22.17	1.79	1.3	1.4	17	3	173	.09	4	.5	.7	15	SWR	
		18	2117	11.61	19	25.59	155	21.53	12.32	1.8	.7	33	4	38	.09	4	.4	.6	25	KAO	
		18	2118	45.22	19	14.77	155	17.72	8.85	2.3	2.4	40	0	168	.11	10	.6	.8	36	SWR	
		18	2119	53.88	19	25.22	155	30.95	9.53	1.8	1.2	36	2	36	.11	8	.4	.9	30	KAO	
		18	2130	8.92	19	26.30	155	29.53	8.66	1.3	.7	24	2	62	.07	8	.4	1.0	20	KAO	
		18	2153	40.88	19	27.35	155	25.07	10.02	1.5	.9	30	3	40	.10	4	.4	.8	22	KAO	
		18	22 4	40.65	19	24.14	155	27.27	9.72	1.6	.9	35	2	54	.12	3	.4	.7	23	KAO	
		18	22 9	.63	19	21.18	155	28.46	9.49	1.9	2.2	46	5	39	.11	3	.4	.5	34	KAO	
		18	2216	45.69	19	25.29	155	30.02	9.61	2.1	2.1	40	1	57	.10	7	.4	.7	36	KAO	
		18	2217	41.19	19	26.95	155	29.34	8.89	1.9	1.4	36	4	46	.11	8	.4	.9	29	KAO	
		18	2226	38.01	19	26.13	155	27.76	10.01	1.6	1.0	30	1	64	.12	5	.4	.8	23	KAO	
		18	2228	11.76	19	26.35	155	23.75	10.06	1.3	.8	24	3	120	.11	3	.4	.7	19	KAO	
		18	2231	45.39	19	25.27	155	21.03	8.42	1.4	1.1	28	3	87	.11	4	.4	.8	22	KAO	
		18	2242	10.90	19	15.44	155	17.85	6.58	1.6	1.5	36	0	160	.13	5	.6	1.1	19	SWR	
		18	2246	22.45	19	11.57	155	22.54	7.36	2.3	2.7	40	0	187	.12	10	.7	.8	33	SWR	
		18	2250	16.91	19	27.05	155	27.21	9.15	2.1	1.5	35	3	44	.10	5	.4	.8	28	KAO	
		18	2251	15.09	19	27.45	155	27.20	8.33	1.5	.7	27	2	83	.12	5	.5	1.1	25	KAO	
		18	2256	6.45	19	21.38	155	21.90	10.76	1.6	1.3	29	2	59	.09	3	.4	.9	24	SWR	
		18	2315	42.95	19	21.64	155	22.02	10.51	1.6	1.3	32	5	57	.09	3	.4	.7	24	SWR	
		18	2331	35.29	19	25.19	155	20.41	8.41	1.6	1.1	35	5	72	.10	3	.4	.7	30	KAO	
		18	2353	47.72	19	18.06	155	15.69	7.13	1.8	1.8	40	1	119	.11	4	.4	.7	33	SF1	
		19	0 3	46.64	19	32.31	155	27.06	4.07	1.5	1.5	25	3	106	.12	1	.5	.7	21	MLO	
		19	025	1.89	19	24.97	155	21.28	12.29	1.8	1.0	23	2	60	.06	4	.5	1.0	20	KAO	
		19	042	22.40	19	25.03	155	21.49	10.86	1.7	.9	32	2	35	.09	4	.4	.8	27	KAO	
		19	058	46.14	19	26.13	155	22.02	7.91	1.5	1.1	27	2	38	.09	4	.3	.7	22	KAO	
		19	1 2	22.64	19	27.86	155	25.66	9.07	1.5	.9	27	4	48	.13	5	.5	1.1	21	KAO	
		19	1 4	15.35	19	27.70	155	26.99	6.88	2.3	2.2	41	2	50	.13	6	.3	.8	37	KAO	
		19	112	3.29	19	22.52	155	24.63	13.83	1.9	1.0	37	4	40	.11	5	.5	.6	32	DML	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	19	116	59.05	19	25.08	155	21.53	11.01	1.3	.7	29	5	41	.09	4	.4	.8	24	KAO
		19	135	7.19	19	26.84	155	26.73	8.32	1.7	.7	30	4	51	.10	4	.4	.8	25	KAO
		19	137	6.82	19	32.07	155	37.41	10.36		.8	28	4	161	.17	4	1.0	.7	26	MLO
		19	137	51.72	19	17.40	155	15.65	10.49	4.1	4.1	49	3	146	.13	5	.5	.5	47	SF1 F
		19	148	5.74	19	24.94	155	20.11	8.30	1.7	1.1	36	5	45	.12	2	.4	.8	31	KAO
		19	148	56.25	19	22.79	155	25.77	10.19	1.7	1.0	35	3	31	.12	3	.4	.8	31	KAO
		19	158	50.02	19	22.64	155	26.50	10.48	1.6	1.3	33	3	43	.11	2	.4	.7	27	KAO
		19	2 1	29.50	19	23.12	155	27.02	11.18	1.8	1.1	33	1	33	.11	2	.4	.8	29	KAO
		19	211	23.17	19	28.14	155	27.31	4.85	1.9	1.2	44	5	49	.14	7	.3	2.1	31	KAO
		19	213	44.63	19	20.62	155	3.08	5.37	2.0	1.3	30	4	110	.12	1	.5	1.0	20	SF5
		19	215	35.51	19	23.65	155	26.31	9.99	1.6	1.0	29	1	32	.09	3	.4	.7	23	KAO
		19	227	34.55	19	27.57	155	23.94	8.50	2.4	2.5	49	5	33	.15	4	.4	.6	42	KAO
		19	234	35.24	19	25.10	155	30.11	8.05	2.4	2.0	43	4	36	.10	7	.3	.8	33	KAO
		19	329	36.86	19	18.34	155	15.92	8.42	2.4	2.1	40	2	135	.10	4	.5	.6	37	SF1
		19	332	21.61	19	29.15	155	23.70	9.77	1.4	1.2	36	4	68	.12	1	.4	.6	26	KAO
		19	354	9.39	19	18.05	155	15.86	6.16	1.8	1.5	35	0	132	.12	5	.5	.9	30	SF1
		19	420	13.60	19	23.42	155	26.02	10.89	1.6	1.2	33	2	37	.09	3	.4	.5	26	KAO
		19	430	1.08	19	22.59	155	21.60	10.59		1.3	34	3	49	.10	4	.4	.6	25	KAO
		19	5 1	3.29	19	25.29	155	19.97	8.05	1.0	.9	21	3	130	.09	3	.5	1.1	16	KAO
		19	514	19.61	19	25.02	155	20.00	6.73		.9	20	3	124	.08	3	.5	1.2	15	KAO
		19	538	50.58	19	18.46	155	15.91	8.68	2.2	2.0	44	3	134	.11	4	.5	.5	34	SF1
		19	613	22.04	19	23.30	155	25.85	9.85	1.6	1.8	38	4	38	.12	3	.4	.6	32	KAO
		19	622	.21	19	28.49	155	25.79	7.09	2.9	2.9	50	6	63	.15	5	.4	.8	41	KAO
		19	632	37.13	19	29.13	155	26.00	9.27	3.0	3.1	51	5	43	.14	5	.4	.6	44	KAO
		19	636	20.08	19	22.77	155	30.03	9.39	2.1	1.5	37	0	80	.09	4	.4	.7	33	KAO
		19	657	52.91	19	27.09	155	26.56	5.35	1.9	1.1	33	4	50	.14	4	.4	1.3	24	KAO
		19	7 4	16.03	19	23.05	155	25.57	9.20	1.8	1.3	34	3	64	.11	4	.4	.7	29	KAO
		19	722	49.20	19	25.15	155	20.04	6.96		.6	20	2	107	.10	3	.5	1.0	16	KAO
		19	728	23.07	19	25.95	155	28.18	6.32	2.8	2.4	40	3	46	.11	5	.3	1.0	32	KAO
		19	742	25.81	19	26.61	155	22.90	8.94		2.7	49	4	48	.13	5	.4	.6	40	KAO
		19	837	17.22	19	25.51	155	20.74	10.75	1.4	.9	29	3	50	.09	4	.5	.9	25	KAO
		19	845	6.10	19	32.23	155	26.87	3.22	2.0	2.3	25	3	124	.12	1	.5	.6	22	MLO
		19	9 8	10.69	19	32.08	155	27.37	4.13	2.1	2.5	32	4	67	.13	1	.4	.5	25	MLO
		19	917	9.57	19	25.70	155	21.31	10.54	1.7	.9	29	2	47	.10	5	.4	.8	26	KAO
		19	918	34.62	19	25.07	155	30.02	10.28	3.2	3.2	49	5	35	.12	6	.3	.5	42	KAO
		19	922	4.92	19	26.30	155	29.61	9.84	1.8	1.4	28	2	67	.08	8	.5	1.1	26	KAO
		19	930	44.55	19	15.01	155	17.72	2.81	1.5	1.5	25	0	166	.10	6	.5	1.7	23	SWR
		19	935	24.97	19	27.25	155	29.67	10.66	3.0	3.2	50	5	34	.12	9	.3	.5	43	KAO
		19	947	7.52	19	27.36	155	25.07	9.61	2.2	2.2	44	5	40	.12	4	.4	.6	38	KAO
		19	951	21.25	19	22.61	155	20.76	11.01	1.8	1.2	30	3	45	.09	3	.4	.8	27	KAO
		19	1121	12.34	19	28.05	155	26.91	3.51	1.8	1.4	35	4	63	.13	6	.4	1.5	30	KAO
		19	1126	54.32	19	24.59	155	28.92	9.09	1.9	1.5	31	2	38	.08	5	.4	.8	27	KAO
		19	1130	32.21	19	25.08	155	21.44	11.98	3.0	3.2	46	5	34	.10	4	.5	.4	40	KAO
		19	1251	50.17	19	26.15	155	17.15	16.11	1.9	1.4	39	4	87	.10	2	.5	.4	35	DEP
		19	1343	40.32	19	27.58	155	25.43	9.84	1.9	2.1	42	4	47	.12	4	.3	.7	38	KAO
		19	1349	18.38	19	27.77	155	26.60	4.62	1.6	1.3	32	4	49	.14	5	.4	2.5	28	KAO
		19	1358	.31	19	27.32	155	25.64	6.25	1.9	2.5	35	3	44	.11	4	.5	1.0	32	KAO
		19	14 1	19.62	19	25.98	155	21.51	10.26	1.8	1.2	31	4	51	.10	3	.4	.8	26	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	19	14 7	58.92	19	26.82	155	29.09	10.85	2.2	2.4	39	2	45	.08	8	.3	.7	35	KAO
		19	1413	57.06	19	23.59	155	26.59	11.18		1.5	29	1	37	.11	3	.4	.9	28	KAO
		19	1459	23.59	19	25.60	155	21.05	10.13	1.7	1.2	34	4	47	.13	4	.5	.8	30	KAO
		19	1510	33.17	19	22.00	155	26.54	9.37	1.9	1.7	37	4	42	.11	2	.4	.7	33	KAO
		19	1533	42.40	19	27.17	155	29.58	10.23	2.3	1.9	43	4	46	.12	7	.4	.6	35	KAO
		19	1534	22.39	19	23.84	155	25.53	10.38	2.2	2.3	41	4	32	.11	3	.4	.6	34	KAO
		19	1540	16.62	19	20.47	155	24.31	11.34	1.6	.9	29	3	63	.12	2	.5	.9	23	SWR
		19	1616	28.28	19	27.56	155	24.44	8.49	1.4	.9	33	4	59	.12	4	.4	.8	23	KAO
		19	1629	16.23	19	27.58	155	23.39	1.61	2.2	2.4	43	5	42	.14	4	.3	.7	34	KAO
		19	1657	18.33	19	24.66	155	26.80	11.83	1.6	.9	22	2	75	.16	3	.9	1.3	19	KAO
		19	17 9	23.10	19	25.82	155	21.31	8.90	1.7	1.2	30	3	51	.11	5	.4	.7	24	KAO
		19	1817	.09	19	27.29	155	25.71	9.06	1.7	1.2	32	2	45	.14	4	.4	.9	28	KAO
		19	1827	24.16	19	23.27	155	26.60	10.04	2.1	2.2	40	3	39	.11	2	.3	.5	36	KAO
		19	1851	31.82	19	26.89	155	23.57	9.53	1.5	1.2	36	2	48	.11	4	.4	.6	26	KAO
		19	1951	19.62	19	26.39	155	29.34	10.42	2.2	2.2	46	3	36	.10	8	.3	.5	33	KAO
		19	2025	16.04	19	23.95	155	29.62	9.14	1.6	1.3	35	2	33	.10	4	.4	.8	24	KAO
		19	2026	14.87	19	22.01	155	28.62	5.15	1.7	1.5	33	3	42	.10	2	.3	.8	24	KAO
		19	2027	42.62	19	16.60	155	27.74	8.63	1.8	2.0	41	1	59	.14	5	.4	.8	28	LSW
		19	2034	18.94	19	27.81	155	24.72	7.57	2.2	2.1	40	2	38	.14	4	.4	.8	33	KAO
		19	2121	44.14	19	24.71	155	28.74	8.31	2.6	2.6	46	1	30	.12	5	.3	.7	40	KAO
		19	2133	6.54	19	24.90	155	19.02	6.20	1.2	1.2	27	5	120	.12	3	.4	1.0	19	KAO
		19	2138	33.29	19	28.00	155	26.25	9.37	2.4	2.1	45	6	70	.11	5	.3	.6	35	KAO
		19	2146	53.15	19	25.75	155	21.73	5.31	1.4	1.3	24	2	79	.11	4	.3	1.2	17	KAO
		19	2328	24.69	19	22.71	155	20.82	9.22		1.9	43	5	44	.12	3	.4	.5	36	KAO
		20	033	35.01	19	25.81	155	29.56	9.75	1.9	1.5	40	3	40	.12	7	.4	.7	29	KAO
		20	215	35.78	19	24.87	155	21.74	9.71	1.7	1.3	41	4	42	.12	4	.4	.6	33	KAO
		20	242	59.12	19	26.57	155	23.06	9.12	1.8	1.5	36	3	40	.14	4	.4	.8	25	KAO
		20	3 1	51.63	19	19.94	155	11.10	6.72	1.8	1.5	37	1	87	.13	5	.5	.8	25	SF3
		20	315	42.42	19	22.03	155	24.48	12.19	1.9	1.6	36	4	59	.12	4	.4	.6	30	KAO
		20	330	23.57	19	22.09	155	28.63	5.79	2.6	2.6	22	1	130	.11	2	.5	1.0	18	KAO
		20	355	59.09	19	22.57	155	20.96	10.39	1.4	1.7	24	1	91	.09	6	.4	.5	22	KAO
		20	356	43.30	19	22.38	155	28.37	6.90	3.2	3.5	25	0	63	.14	1	.5	1.0	16	KAO
		20	414	30.60	19	22.38	155	21.24	9.88	1.7	2.0	24	1	96	.11	5	.5	.7	17	KAO
		20	422	43.86	19	2.47	155	19.73	35.01	2.2	1.9	29	3	249	.08	19	1.5	1.3	25	LOI
		20	432	29.01	19	23.99	155	26.77	10.38	1.8	1.7	22	1	71	.10	3	.5	.9	17	KAO
		20	433	17.04	19	19.36	155	11.10	9.07	1.7	1.2	13	0	100	.04	5	.6	1.4	9	SF3
		20	443	19.33	19	26.28	155	29.36	9.75	1.8	1.3	23	0	65	.10	8	.5	1.1	15	KAO
		20	5 6	29.73	19	21.43	155	3.36	6.40	1.6	1.4	21	0	111	.12	3	.7	1.2	12	SFS
		20	5 8	19.97	19	20.03	155	17.42	4.58		1.1	9	0	118	.14	0	1.0	1.1	7	SWR
		20	548	1.72	19	27.38	155	26.72	5.20	2.6	2.2	27	0	65	.13	8	.4	1.8	16	KAO
		20	6 3	4.40	19	22.82	155	26.04	10.53	2.9	3.2	32	1	75	.11	3	.4	.4	19	KAO
		20	614	2.88	19	21.26	155	22.44	10.94		2.1	16	2	102	.07	2	.5	.8	16	SWR
		20	630	4.57	19	27.55	155	25.03	9.36	2.4	2.1	26	1	42	.12	5	.5	1.0	24	KAO
		20	633	37.92	19	25.06	155	21.59	11.24	1.6	.7	14	2	61	.04	8	.6	1.1	13	KAO
		20	714	53.97	19	27.89	155	27.06	8.87	1.8	1.2	17	2	62	.09	8	.5	1.2	15	KAO
		20	746	7.91	19	28.47	155	26.86	7.31	2.8	3.0	16	0	80	.09	7	.6	1.2	12	KAO
		20	835	50.57	19	24.46	155	20.23	7.56	1.7	1.5	37	5	44	.11	2	.4	.6	27	KAO
		20	853	17.08	19	26.23	155	29.67	9.36	1.8	1.4	37	3	41	.09	8	.4	.8	27	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	20	9 1	51.30	19	24.83	155	21.58	10.08	1.9	1.5	45	5	46	.13	4	.3	.5	34	KAO
		20	933	36.15	19	12.60	155	22.92	2.45	1.5	1.9	27	2	174	.10	4	.5	.8	19	SWR
		20	934	46.94	19	22.19	155	30.07	7.66	1.8	1.9	36	3	45	.12	4	.4	.9	30	KAO
		20	10 8	28.41	19	22.65	155	28.32	9.18	2.6	3.1	49	5	36	.12	1	.3	.5	43	KAO
		20	1019	29.73	19	22.96	155	26.58	10.16	1.6	1.3	34	4	51	.10	2	.4	.6	24	KAO
		20	1030	48.08	19	25.66	155	20.00	8.78	1.7	1.1	30	4	118	.10	4	.4	.7	21	KAO
		20	1132	36.89	19	28.28	155	26.74	8.35	1.7	1.5	36	3	61	.13	6	.4	1.0	27	KAO
		20	1133	54.43	19	21.96	155	1.83	7.22	2.1	1.8	35	5	147	.14	4	.5	.6	25	SF5
		20	1159	47.63	19	17.81	155	20.86	7.95	1.6	1.9	36	4	123	.11	4	.4	.7	24	SWR
		20	1217	42.28	19	25.39	155	19.88	7.78	1.8	1.3	33	5	60	.10	3	.3	.7	26	KAO
		20	1233	12.50	19	21.18	155	22.34	9.53	1.5	1.3	18	2	91	.10	2	.8	1.0	12	SWR
		20	13 0	24.17	19	24.65	155	25.12	7.79	1.7	1.3	40	5	34	.12	1	.3	.8	31	KAO
		20	1325	42.85	19	24.14	155	27.29	9.52	2.0	1.8	39	1	29	.11	3	.4	.7	30	KAO
		20	1338	45.69	19	16.78	155	15.33	5.03	1.6	1.6	30	1	169	.10	3	.6	1.1	21	SF1
		20	1342	22.64	19	18.51	155	13.91	5.47	1.2	.9	25	2	83	.11	3	.5	1.2	21	SF2
		20	1412	4.79	19	25.76	155	29.35	9.26	2.1	1.7	41	4	40	.11	7	.4	.8	31	KAO
		20	1432	32.79	19	27.43	155	27.01	5.41	1.8	1.3	33	3	51	.11	5	.3	1.1	23	KAO
		20	1441	12.98	19	25.15	155	29.90	8.58	2.0	1.3	37	3	41	.10	6	.3	.9	29	KAO
		20	1544	41.54	19	21.42	155	2.69	7.05	1.9	1.7	33	1	137	.14	3	.6	.6	26	SF5
		20	1614	34.97	19	24.04	155	25.79	10.61	1.9	1.5	37	2	32	.10	3	.4	.6	26	KAO
		20	1626	23.32	19	25.42	155	21.20	8.71	1.5	.9	29	6	84	.10	4	.4	.6	23	KAO
		20	1631	30.65	19	27.22	155	29.40	9.76		1.5	35	3	47	.11	8	.4	.9	23	KAO
		20	1636	24.92	19	25.18	155	22.32	10.59	2.0	1.4	37	3	42	.11	5	.4	.5	26	KAO
		20	1723	51.56	19	31.73	155	26.58	24.31	1.8	1.6	38	4	90	.10	2	.6	.9	28	DML
		20	1725	35.29	19	27.06	155	27.16	6.05	1.5	1.3	28	3	51	.11	5	.4	1.3	21	KAO
		20	1740	50.12	19	25.25	155	19.29	5.59	1.3	.9	22	3	125	.11	3	.5	1.2	17	KAO
		20	1919	15.48	19	23.95	155	27.62	10.00	1.8	1.5	35	1	33	.11	3	.4	.6	24	KAO
		20	1926	20.01	19	22.64	155	30.00	8.72	1.6	1.3	34	2	47	.11	4	.4	.9	26	KAO
		20	1948	47.06	19	19.07	155	13.01	5.07	1.7	1.4	39	2	83	.12	4	.4	1.3	31	SF2
		20	1951	45.26	19	22.92	155	25.74	10.46	2.6	3.0	48	4	39	.13	3	.3	.4	40	KAO
		20	1956	23.24	19	24.65	155	21.42	10.46	1.7	1.4	39	4	36	.12	4	.4	.5	29	KAO
		20	20 3	56.23	19	23.38	155	26.66	9.68	1.7	1.7	40	3	31	.11	2	.4	.6	32	KAO
		20	2012	53.95	19	22.65	155	2.23	6.69	1.3	1.1	29	4	141	.15	5	.6	.8	14	SF5
		20	2017	8.12	19	27.71	155	23.78	8.88	1.9	1.8	43	4	36	.13	4	.3	.6	30	KAO
		20	2018	21.85	19	22.30	155	1.51	6.70	2.1	2.2	40	6	148	.14	5	.5	.7	25	SF5
		20	2021	32.18	19	22.70	155	20.71	8.44	1.4	.7	27	5	44	.10	3	.4	.9	23	KAO
		20	2033	18.92	19	51.79	155	31.88	15.51	2.1	1.9	30	3	122	.12	12	.7	.9	16	KEA
		20	2036	36.09	19	28.62	155	38.23	4.61	1.2	1.2	26	3	81	.13	4	.5	1.2	20	MLO
		20	2055	23.48	19	24.76	155	21.58	10.40	1.5	.7	34	4	43	.11	4	.4	.5	26	KAO
		20	21 2	52.71	19	23.08	155	26.25	10.24	1.8	1.5	42	4	39	.11	3	.4	.5	36	KAO
		20	2125	2.56	19	27.36	155	23.49	10.35	1.9	1.7	46	7	41	.12	5	.5	.5	35	KAO
		20	2131	31.54	19	22.40	155	30.09	8.70	1.6	1.1	34	1	42	.10	4	.4	.8	24	KAO
		20	2144	29.55	19	23.28	155	26.31	10.06	1.6	1.3	33	1	32	.10	3	.4	.6	26	KAO
		20	2228	16.65	19	22.03	155	20.93	8.14	1.4	.6	27	6	80	.12	4	.4	.8	18	KAO
		20	2232	46.20	19	23.39	155	26.35	10.19	1.8	1.7	38	2	38	.11	3	.4	.5	33	KAO
		20	2312	22.77	19	21.62	155	2.82	7.99	1.8	1.5	29	3	130	.13	3	.6	.6	17	SF5
		20	2358	8.49	19	19.12	155	13.11	4.38	1.8	1.4	36	2	81	.15	4	.4	1.6	31	SSF
		21	0 8	26.28	19	27.86	155	25.63	7.62	1.9	1.3	43	4	38	.13	5	.4	.7	35	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	21	018	12.45	19	25.34	155	19.93	7.54	1.1	.6	24	2	114	.10	3	.5	1.1	19	KAO
		21	121	17.70	19	23.20	155	23.59	9.77	1.9	2.7	17	2	65	.13	5	.5	1.1	14	KAO
		21	255	26.50	19	27.75	155	25.20	8.73	1.6	1.1	37	4	42	.13	5	.4	.6	24	KAO
		21	334	.09	19	25.23	155	21.53	9.41	2.2	1.5	42	4	34	.13	4	.4	.5	34	KAO
		21	348	53.79	19	21.46	155	22.11	11.62	1.6	1.6	32	3	59	.10	3	.4	.6	22	SWR
		21	411	33.94	19	24.78	155	28.47	8.34	2.0	1.5	34	1	36	.10	5	.4	.8	30	KAO
		21	440	48.15	19	28.08	155	26.45	8.84	1.8	1.5	36	3	48	.12	6	.4	.9	29	KAO
		21	450	30.80	19	20.31	155	11.43	8.02	2.5	2.6	45	3	80	.13	4	.4	.6	35	SF3
		21	5 5	20.56	19	27.40	155	25.85	5.58	1.6	1.3	34	3	47	.12	4	.3	1.1	22	KAO
		21	534	10.24	19	26.12	155	28.99	9.16	1.7	1.2	31	3	44	.10	7	.4	.9	23	KAO
		21	629	21.31	19	15.08	155	22.63	7.15	1.3	1.5	29	1	163	.10	3	.5	1.0	21	SWR
		21	653	23.50	19	25.31	155	21.25	8.89	1.6		37	6	40	.13	4	.4	.7	28	KAO
		21	653	34.22	19	20.70	155	4.34	4.27	2.4	2.5	40	6	106	.22	3	.6	1.8	31	SSF
		21	7 7	22.24	19	22.87	155	27.68	9.87	2.2	2.2	37	4	48	.12	1	.4	.7	30	KAO
		21	818	54.04	19	22.73	155	20.74	8.79	1.7	1.7	44	6	44	.13	3	.4	.5	32	KAO
		21	10 9	29.30	19	21.11	155	28.68	8.84		1.7	30	1	47	.13	3	.5	.9	26	KAO
		21	13 3	32.01	19	24.04	155	26.42	10.20	1.8	2.1	37	3	36	.11	3	.4	.7	30	KAO
		21	13 4	54.51	19	27.16	155	22.84	9.72	2.8	2.8	47	4	41	.12	4	.4	.6	39	KAO
		21	1328	30.30	19	25.54	155	21.12	10.41	2.7	2.6	46	3	32	.12	4	.3	.5	39	KAO
		21	1359	10.49	19	21.57	155	2.44	7.42	2.1	2.6	39	3	135	.12	3	.5	.4	29	SF5
		21	14 2	8.73	19	27.48	155	26.88	5.18	1.6	1.1	30	5	65	.13	5	.3	1.4	24	KAO
		21	1448	45.74	19	22.15	155	29.93	8.83	2.6	3.1	46	2	33	.11	4	.3	.6	42	KAO
		21	1524	41.84	19	28.01	155	26.37	9.68	1.8	1.5	39	5	48	.12	6	.4	.8	30	KAO
		21	16 4	3.35	19	21.21	155	29.51	6.06	1.8	1.9	32	3	44	.12	4	.4	1.1	28	KAO
		21	1640	8.12	19	25.81	155	27.28	4.98	1.8	1.1	32	3	45	.11	4	.3	1.4	24	KAO
		21	1642	3.20	19	25.98	155	29.65	8.81	1.8	1.6	44	4	40	.11	7	.4	.8	36	KAO
		21	1645	3.85	19	27.87	155	27.11	5.53	1.4	1.1	30	5	66	.12	6	.3	1.0	19	KAO
		21	1718	30.20	19	24.92	155	19.14	5.56	1.1	1.1	23	4	99	.10	2	.4	1.0	18	KAO
		21	1720	57.60	19	24.78	155	19.29	6.87	2.5	2.7	39	3	37	.12	2	.4	.6	34	KAO
		21	1723	15.61	19	27.35	155	24.87	7.41	1.4	1.3	35	2	50	.14	4	.4	.8	25	KAO
		21	18 4	59.50	19	23.70	155	26.41	9.74	1.4	.9	27	3	37	.12	3	.5	.9	22	KAO
		21	1835	14.66	19	18.18	155	13.15	4.09		1.3	29	2	96	.09	2	.4	.8	21	SSF
		21	1849	19.41	19	26.48	155	22.80	7.38	1.9	1.6	44	5	40	.12	4	.3	.7	31	KAO
		21	1854	45.29	19	23.71	155	26.09	10.52	1.7	1.2	39	3	36	.12	3	.4	.6	31	KAO
		21	19 8	33.20	19	21.00	155	22.23	9.21	1.3	1.1	31	4	64	.11	2	.4	.8	20	SWR
		21	1928	7.98	19	27.17	155	26.48	6.51	2.3	2.2	46	6	50	.14	4	.3	.8	36	KAO
		21	2035	47.39	19	26.89	155	26.26	3.62	1.5	1.3	30	3	49	.15	4	.4	1.2	22	KAO
		21	2048	20.30	19	22.76	155	25.91	9.27	1.4	.9	34	3	47	.12	3	.4	.7	26	KAO
		21	2110	44.00	19	23.86	155	26.80	9.76	1.9	1.5	43	3	33	.12	3	.4	.6	34	KAO
		21	2136	3.05	19	27.97	155	27.29	8.49	2.1	2.0	45	6	57	.14	6	.4	.7	30	KAO
		21	2220	32.72	19	21.91	155	28.77	4.56	1.8	1.5	27	2	49	.11	2	.4	.9	21	KAO
		21	2250	34.74	19	20.22	155	23.12	8.81	1.1	1.0	17	3	92	.09	0	.6	.7	11	SWR
		21	2253	33.10	19	22.92	155	26.68	9.63		1.0	25	2	42	.13	2	.5	.9	18	KAO
		21	23 0	18.07	19	22.67	155	26.70	10.09	1.5	.9	37	5	41	.11	2	.4	.6	23	KAO
		21	2341	55.16	19	25.56	155	31.01	9.76	2.3	2.1	43	3	36	.10	8	.3	.7	36	KAO
		22	010	17.91	19	23.15	155	26.68	10.13	2.6	2.6	46	6	38	.13	2	.3	.5	41	KAO
		22	037	43.25	19	29.06	155	27.04	4.05	1.7	1.5	34	4	73	.12	6	.3	1.9	22	KAO
		22	124	45.12	19	26.85	155	19.79	8.26	1.1	.7	22	5	131	.10	2	.6	.9	15	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	22	344	54.72	19	22.45	155	30.03	8.87	1.7	1.1	36	3	45	.11	4	.4	.9	29	KAO
		22	410	3.08	19	54.37	156	6.59	42.89	2.1	2.1	29	6	254	.11	37	1.2	1.9	23	HUA
		22	439	15.73	19	18.86	155	13.38	9.30	3.1	3.1	50	6	77	.11	3	.4	.4	40	SF2 F
		22	512	8.21	19	22.23	155	2.36	7.16	2.1	1.3	37	3	139	.15	4	.6	.7	33	SFS
		22	520	20.26	19	8.65	155	35.30	8.72		1.6	25	1	123	.14	12	.7	1.1	17	LSW
		22	550	39.01	19	26.21	155	23.62	7.48	2.4	2.4	41	2	40	.13	3	.4	.9	34	KAO
		22	553	11.34	19	56.49	155	31.11	34.18	3.2	3.8	52	6	159	.12	19	.7	1.7	45	KEA F
		22	749	6.88	19	9.72	155	27.75	7.31	2.4	2.8	39	1	141	.13	0	.8	.6	31	LSW
		22	830	8.80	19	56.54	155	31.07	35.42	3.6	3.9	51	4	159	.10	19	.7	1.5	45	KEA
		22	1019	32.83	19	23.41	155	26.65	9.83	2.1	2.1	40	2	31	.12	2	.4	.6	31	KAO
		22	1032	37.57	19	18.99	155	13.31	6.23		1.1	21	1	78	.08	4	.5	1.3	14	SF2
		22	1039	26.11	19	24.43	155	30.11	9.09	1.9	1.8	40	3	34	.10	6	.3	.8	27	KAO
		22	1128	36.01	19	25.42	155	29.61	8.54	1.6	.9	33	3	39	.10	6	.4	1.0	22	KAO
		22	1237	12.03	19	27.78	155	25.39	4.79		1.3	24	4	48	.16	5	.5	2.7	17	KAO
		22	1327	25.18	19	13.62	155	22.63	3.35		1.3	23	2	163	.12	3	.6	.7	13	SWR
		22	16	0 59.42	19	25.49	155	29.60	7.71		1.3	39	4	38	.13	7	.4	1.1	32	KAO
		22	17	9 47.84	19	22.66	155	28.04	9.88		1.7	35	3	40	.11	1	.4	.6	27	KAO
		22	1726	13.05	19	25.10	155	27.82	8.34		1.5	32	2	56	.09	5	.4	.8	26	KAO
		22	1753	50.21	19	20.84	155	10.98	7.73		1.9	39	3	72	.13	3	.4	.7	33	SF3
		22	2026	41.30	19	25.19	155	21.11	8.93	1.7	1.4	40	6	38	.12	4	.4	.6	31	KAO
		22	2032	30.04	19	31.50	155	24.93	23.97	3.6	4.2	51	3	47	.12	4	.5	.9	47	DML F
		22	21	1 57.68	19	20.67	155	2.62	6.81		1.1	19	2	145	.09	2	.6	.9	13	SFS
		22	2155	4.31	19	28.39	155	27.75	2.64	2.5	2.4	48	6	54	.13	7	.3	1.1	40	KAO
		22	2233	33.72	19	25.99	155	21.42	10.78	1.8	1.2	27	3	76	.09	3	.5	.6	21	KAO
		22	2336	58.13	19	24.55	155	21.62	9.39	1.2	.6	27	3	62	.10	4	.5	.6	16	KAO
		22	2337	51.44	19	26.90	155	28.59	9.36	1.6	1.2	31	3	45	.11	7	.4	1.0	25	KAO
		23	0	4 1.79	19	25.29	155	21.13	8.84	1.3	.7	29	3	78	.10	4	.4	.7	23	KAO
		23	034	48.64	19	25.47	155	29.38	9.09	1.8	1.8	40	4	38	.11	6	.4	.8	28	KAO
		23	038	45.93	19	27.88	155	26.87	8.57	3.1	3.0	52	6	54	.12	6	.3	.6	42	KAO
		23	2	4 36.99	19	27.61	155	24.79	9.81	1.6	1.2	35	3	49	.12	4	.4	.7	21	KAO
		23	220	52.10	19	27.80	155	27.28	5.90	1.5	.9	39	6	50	.15	6	.4	1.4	22	KAO
		23	233	40.58	19	23.55	155	26.08	11.17	3.8	3.7	49	4	27	.12	3	.3	.4	45	KAO F
		23	250	17.85	19	25.74	155	23.31	9.50	2.1	1.7	40	7	39	.12	6	.3	.7	30	KAO
		23	3	4 17.03	19	18.85	155	13.16	5.61	1.3	1.1	18	2	83	.10	3	.5	1.4	16	SF2
		23	311	23.22	19	23.14	155	27.17	9.62	1.6	1.3	33	3	39	.12	1	.4	.8	26	KAO
		23	334	23.76	19	25.25	155	21.36	9.17	2.1	2.1	47	7	33	.14	4	.4	.5	34	KAO
		23	347	50.09	19	27.78	155	23.83	9.01	1.6	1.2	36	4	38	.11	4	.4	.7	27	KAO
		23	356	16.98	19	24.84	155	20.13	5.14	1.6	.9	27	4	45	.10	2	.3	.9	19	KAO
		23	515	23.23	19	25.59	155	21.73	9.78	2.0	2.1	44	5	33	.13	4	.4	.6	35	KAO
		23	622	41.19	19	24.85	155	20.47	7.63	2.3	2.7	42	5	37	.10	3	.3	.6	30	KAO
		23	741	37.22	19	25.68	155	21.54	10.43	2.3	2.4	44	6	32	.11	4	.4	.6	34	KAO
		23	1121	31.21	19	31.76	155	27.38	4.99	2.2	2.3	31	2	50	.13	1	.4	1.0	24	MLO
		23	1139	36.25	19	23.60	155	26.34	9.90	1.6	1.7	32	2	37	.10	3	.4	.7	27	KAO
		23	1143	33.09	19	21.44	155	22.11	11.36		1.3	29	1	59	.09	3	.4	.6	20	SWR
		23	12	5 14.33	19	22.73	155	30.22	8.09	1.6	1.5	31	2	46	.11	5	.4	.9	28	KAO
		23	1217	8.09	19	13.49	155	26.67	7.78	1.6	2.3	26	1	119	.13	5	.5	.8	17	LSW
		23	1224	10.84	19	32.20	155	26.62	2.80	2.0	2.3	19	1	125	.11	2	.4	.5	14	MLO
		23	1325	32.36	19	25.12	155	21.18	9.58	1.7	1.8	36	5	37	.11	5	.4	.6	28	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	23	14	4 59.29	19	25.36	155	19.89	8.80	1.6	1.1	26	4	107	.12	3	.4	.9	19	KAO
		23	14	8 9.26	19	25.25	155	20.99	10.08	2.2	2.2	44	6	33	.12	4	.4	.5	39	KAO
		23	1641	29.54	19	26.26	155	29.29	10.60	2.4	2.5	42	4	60	.11	8	.4	.8	37	KAO
		23	17	9 59.66	19	19.55	155	13.60	7.51	1.8	1.9	41	2	65	.11	5	.4	.7	35	SF2
		23	18	5 28.61	19	21.16	155	2.69	7.87	2.3	2.6	44	4	131	.13	2	.5	.5	38	SFS
		23	19	5 14.29	19	22.25	155	29.08	10.17	2.5	2.9	44	3	35	.11	3	.5	.6	41	KAO
		23	1910	27.70	19	27.42	155	28.10	8.48	1.8	1.2	31	4	55	.11	7	.4	1.0	20	KAO
		23	2020	34.47	19	25.31	155	21.11	8.90	1.7	1.3	36	6	41	.11	4	.4	.5	29	KAO
		23	2024	29.80	19	46.35	155	2.95	37.37	2.2	1.7	38	1	211	.11	7	1.1	2.2	34	HIL
		23	2032	45.11	19	27.81	155	27.42	2.82	2.1	1.1	38	5	56	.15	6	.4	1.1	27	KAO
		23	2038	57.36	19	25.25	155	19.83	4.02	1.5	1.1	21	4	103	.11	3	.4	.8	17	KAO
		23	21	0 55.19	19	24.61	155	24.36	9.16	2.0	2.0	43	6	38	.13	2	.4	.6	31	KAO
		23	2144	59.98	19	22.61	155	26.56	10.14	1.9	1.3	43	4	36	.12	2	.4	.6	34	KAO
		23	2159	23.84	19	22.70	155	24.86	13.21	1.8	1.4	38	5	40	.12	5	.5	.6	30	DML
		23	22	0 30.07	19	18.27	155	13.65	7.11	1.3	.6	16	2	96	.06	2	.6	1.2	14	SF2
		23	23	9 37.63	19	22.76	155	26.46	9.47	1.8	1.5	36	5	41	.12	2	.4	.6	26	KAO
		23	2317	54.03	19	22.70	155	29.97	7.96	1.9	1.5	33	2	55	.13	4	.4	1.0	21	KAO
		23	2337	31.79	19	27.29	155	25.53	8.19	2.1	1.5	41	5	43	.13	4	.5	.7	29	KAO
		23	2338	38.58	19	27.32	155	25.56	7.15	2.0	1.5	42	5	44	.15	4	.4	.8	31	KAO
		23	2344	19.38	19	27.28	155	27.49	6.14	2.3	1.8	41	4	53	.12	6	.3	.9	28	KAO
		23	2353	37.14	19	25.62	155	19.90	1.83	2.2	2.8	35	3	39	.14	4	.3	.6	26	KAO
		24	0	2 41.48	19	22.73	155	26.72	10.18	2.1	2.0	45	3	40	.12	2	.4	.5	36	KAO
		24	011	24.80	19	25.22	155	21.56	9.42	1.6	.9	36	4	39	.11	4	.4	.6	26	KAO
		24	011	57.40	19	24.78	155	21.86	10.92	1.8	1.5	34	3	51	.09	4	.4	.5	24	KAO
		24	2	8 2.36	19	28.20	155	26.28	6.48	1.7	1.1	34	4	48	.12	6	.4	.9	24	KAO
		24	229	19.85	19	27.37	155	25.72	4.91	1.9	1.5	41	4	45	.14	4	.3	1.5	32	KAO
		24	242	16.21	19	26.02	155	29.51	8.57	2.1	1.8	41	4	41	.14	7	.4	1.0	30	KAO
		24	250	15.23	19	21.54	155	30.59	8.46	2.8	2.8	44	2	32	.12	6	.4	.8	40	KAO
		24	334	40.16	19	22.59	155	30.07	8.05	1.9	1.5	35	2	45	.12	4	.4	.9	28	KAO
		24	345	25.55	19	14.35	155	32.85	7.33	1.9	1.5	39	2	114	.15	5	.5	.9	29	LSW
		24	357	31.39	19	23.24	155	26.88	9.06	1.9	1.5	36	3	41	.11	2	.4	.7	27	KAO
		24	447	14.97	19	29.29	155	23.68	9.05	2.7	2.1	49	7	42	.13	1	.3	.5	38	KAO F
		24	533	10.79	19	27.93	155	25.34	8.62	2.6	2.0	48	5	69	.14	5	.4	.6	38	KAO
		24	619	32.43	19	25.56	155	28.96	7.01	2.0	1.3	35	3	40	.13	6	.4	1.2	30	KAO
		24	633	45.91	19	27.32	155	25.57	9.23	1.7	1.4	33	3	45	.12	4	.4	.9	22	KAO
		24	740	56.46	19	24.83	155	25.67	9.56	1.6	1.3	38	3	34	.12	1	.4	.7	30	KAO
		24	838	15.38	19	21.44	155	29.84	9.75	2.1	1.6	27	0	44	.07	4	.4	1.0	27	KAO
		24	9	2 6.67	19	17.71	155	13.14	6.00	1.6	1.0	36	3	111	.09	1	.5	.9	24	SF2
		24	912	36.19	19	27.68	155	26.96	6.81	2.6	2.1	50	6	45	.12	6	.3	.6	41	KAO
		24	921	13.61	19	27.25	155	23.60	7.70	2.8	3.1	54	6	41	.16	5	.4	.7	44	KAO
		24	10	2 12.41	19	58.91	155	18.30	11.40	2.4	1.9	20	4	208	.11	11	1.0	.5	15	KEA
		24	1022	33.27	19	22.07	155	26.62	10.23	2.0	1.4	35	4	42	.11	2	.4	.7	28	KAO
		24	1032	36.53	19	22.51	155	26.99	9.13	1.9	1.8	34	1	41	.13	1	.4	.7	30	KAO
		24	1152	32.37	19	20.08	155	30.74	7.60	1.6	1.3	30	2	57	.11	7	.4	1.0	24	KAO
		24	1445	25.52	19	22.28	155	27.95	7.06	2.1	1.9	42	4	38	.13	1	.3	.7	36	KAO
		24	1456	15.63	19	27.28	155	28.44	8.85	1.8	1.0	32	2	54	.13	7	.4	1.0	19	KAO
		24	1528	30.25	19	28.69	155	26.14	9.38	1.8	1.0	39	3	55	.12	5	.4	.7	28	KAO
		24	1622	29.75	19	28.99	155	22.40	12.29	1.7	1.3	38	6	81	.11	2	.4	.5	28	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	24	1624	14.74	19	28.54	155	26.24	6.01	2.0	1.2	37	4	46	.12	6	.3	1.0	26	KAO
		24	1642	5.48	19	24.94	155	30.08	10.44	1.6	1.3	38	3	42	.10	6	.4	.7	26	KAO
		24	1643	39.46	19	23.94	155	25.42	9.80	2.0	1.7	21	3	59	.09	5	.4	.8	17	KAO
		24	1725	38.32	19	32.16	155	36.19	9.70	2.7	1.9	39	3	84	.14	2	.4	.6	30	MLO
		24	1730	14.14	19	30.49	155	37.02	9.19	1.6	1.2	30	2	95	.12	3	.7	.7	14	MLO
		24	1847	43.48	19	31.65	155	36.62	9.47	2.8	1.8	40	5	87	.15	3	.5	.5	27	MLO
		24	19	5 12.87	19	21.64	155	22.18	8.58	1.8	1.3	42	6	57	.14	3	.4	.6	28	SWR
		24	1929	31.48	19	25.54	155	21.58	9.56	2.1	1.7	50	7	33	.13	4	.3	.5	35	KAO
		24	1949	57.57	19	24.12	155	26.46	9.60	2.0	2.1	44	4	36	.13	5	.4	.6	33	KAO
		24	2048	53.66	19	23.99	155	26.44	9.40	1.8	1.3	38	2	33	.10	5	.4	.6	23	KAO
		24	2123	27.87	19	26.99	155	22.22	7.31	2.2	1.8	45	5	48	.14	3	.4	.8	35	KAO
		24	2150	27.47	19	20.12	155	24.76	11.95	1.8	1.2	41	7	63	.12	3	.4	.5	29	SWR
		24	2226	17.41	19	25.03	155	31.14	8.45	1.9	1.2	36	2	36	.10	8	.4	1.0	31	KAO
		24	2255	7.58	19	22.15	155	26.53	9.86	2.1	1.8	33	2	47	.12	2	.4	.6	27	KAO
		24	2257	28.85	19	21.91	155	21.63	11.78	1.4	.5	31	2	53	.09	4	.4	.6	23	SWR
		24	23	9 44.80	19	25.89	155	29.21	7.96	2.3	1.8	42	2	40	.12	7	.3	1.0	30	KAO
		25	035	57.36	19	31.97	155	36.93	8.18	1.7	1.2	32	4	112	.17	3	.6	1.0	27	MLO
		25	1	8 25.91	19	25.52	155	21.83	11.31	2.5	2.3	51	8	33	.11	4	.3	.4	40	KAO
		25	143	52.86	19	26.23	155	21.22	11.07	1.6	1.0	31	4	75	.10	3	.5	.7	26	KAO
		25	246	29.11	19	29.53	155	27.67	1.18	2.3	2.1	32	2	57	.14	8	.4	1.0	29	KAO
		25	259	43.12	19	29.06	155	27.70	5.86	2.6	2.4	44	5	56	.12	8	.3	1.3	39	KAO
		25	3	3 58.89	19	25.75	155	27.93	7.62	2.3	1.9	43	4	39	.13	5	.3	.9	33	KAO
		25	322	52.24	19	29.09	155	27.56	5.00	2.2	1.7	36	4	54	.11	8	.4	2.2	28	KAO
		25	457	23.56	19	26.35	155	23.36	10.38		.6	13	3	89	.09	5	.6	1.3	11	KAO
		25	529	3.30	19	28.42	155	25.08	9.26	2.0	1.3	16	2	64	.14	4	.6	1.2	7	KAO
		25	627	48.74	19	25.40	155	21.14	10.31	1.5	1.2	17	3	86	.09	4	.6	1.3	10	KAO
		25	714	5.70	19	25.68	155	19.80	8.12	2.3	2.2	24	3	115	.10	4	.5	.8	19	KAO
		25	729	12.77	19	23.92	155	17.66	21.52		.5	6	0	174	.01	4	3.6	6.9	4	DEP
		25	755	23.99	19	24.04	155	26.82	10.17		.9	24	0	52	.10	4	.6	1.2	24	KAO
		25	9	9 55.65	19	29.34	155	23.44	8.49	1.8	1.4	40	2	43	.12	1	.3	.6	33	KAO
		25	935	8.53	19	20.26	155	28.33	7.99	1.6	1.1	30	2	42	.14	4	.4	.9	19	KAO
		25	1045	59.10	19	22.26	155	27.52	9.80	2.1	1.8	36	4	42	.13	0	.4	.7	28	KAO
		25	1049	19.69	19	25.15	155	20.30	5.49	2.1	1.6	36	3	45	.12	3	.4	.9	24	KAO
		25	1314	28.78	19	20.07	155	28.45	9.70	1.8	1.5	34	2	41	.11	5	.3	.7	25	KAO
		25	1332	4.91	19	23.30	155	27.32	10.52	1.8	1.4	33	2	32	.10	2	.4	.7	22	KAO
		25	1343	51.47	19	27.51	155	25.87	8.67	2.1	1.1	44	6	47	.11	4	.3	.6	30	KAO
		25	1344	13.45	19	25.06	155	19.61	3.95	1.8	1.3	25	5	65	.12	3	.4	.7	19	KAO
		25	1513	7.86	19	21.52	155	1.76	7.17	2.2	2.0	44	4	156	.14	4	.6	.4	33	SF5
		25	1530	44.97	19	20.65	155	28.44	9.52	1.7	1.7	35	1	40	.11	4	.4	.7	26	KAO
		25	1730	4.20	19	25.26	155	20.66	7.21	2.0	1.3	30	3	46	.10	3	.4	.8	21	KAO
		25	1732	7.82	19	23.25	155	26.73	10.22	1.4	1.1	34	2	39	.11	2	.4	.8	24	KAO
		25	18	8 29.19	19	27.98	155	26.80	5.51	1.9	1.1	42	6	49	.13	6	.3	1.1	30	KAO
		25	1817	32.98	19	8.95	155	34.93	11.11	3.7	3.9	50	2	121	.17	12	.6	.6	41	LSW F
		25	2130	58.92	19	27.76	155	25.67	9.05	1.9	1.2	35	4	46	.11	5	.4	.8	28	KAO
		25	2143	43.87	19	28.12	155	27.49	6.47	1.9	1.1	37	5	50	.13	7	.4	1.4	28	KAO
		25	2213	31.64	19	22.83	155	20.63	10.54	1.9	1.4	33	4	43	.09	2	.4	.8	26	KAO
		26	1	8 3.39	19	18.92	155	13.45	10.07	2.1	2.4	42	6	130	.12	7	.5	.6	34	SF2
		26	114	18.34	19	28.74	155	26.63	7.60	2.1	1.1	36	5	48	.13	6	.4	1.0	29	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	26	129	12.44	19	21.91	155	1.97	8.42	2.4	1.7	38	3	144	.11	4	.6	.5	33	SF5
		26	252	19.94	19	27.41	155	26.78	8.60	1.8	1.1	27	4	64	.11	5	.4	1.0	22	KAO
		26	341	25.73	19	22.25	155	30.26	10.27	1.7	1.3	26	1	47	.06	5	.4	.9	25	KAO
		26	458	39.05	19	23.62	155	27.53	10.16	1.7	1.2	27	3	64	.08	2	.4	.8	24	KAO
		26	516	55.05	19	23.27	155	21.16	10.63	2.0	1.1	38	3	42	.10	5	.4	.7	33	KAO
		26	525	21.37	19	24.00	155	26.83	10.96	1.6	1.2	30	2	49	.10	3	.4	.8	26	KAO
		26	545	55.07	19	23.39	155	26.29	10.94	1.5	1.2	28	2	49	.11	3	.5	.9	25	KAO
		26	614	1.55	19	22.70	155	26.76	11.04	2.2	1.8	46	5	41	.12	2	.4	.5	39	KAO
		26	619	59.99	19	23.17	155	26.69	10.66	1.6	1.2	32	3	48	.11	2	.4	.8	26	KAO
		26	627	18.75	19	30.91	154	55.19	27.78	2.7	2.3	48	5	79	.10	3	.8	1.2	42	LER
		26	730	3.27	19	25.35	155	19.89	8.69	1.8	1.4	28	5	89	.10	3	.4	.9	23	KAO
		26	9	7 .72	19	27.00	155	26.56	8.91	1.9	1.1	35	2	51	.10	4	.4	.8	29	KAO
		26	934	55.23	19	21.91	155	30.31	9.84	1.9	1.4	29	2	45	.07	5	.4	.9	23	KAO
		26	1023	28.20	19	22.03	155	5.54	7.20	1.8	1.5	33	4	77	.13	4	.5	1.0	29	SF4
		26	1347	21.73	19	26.00	155	29.08	10.04	2.0	1.4	36	3	41	.09	7	.4	.9	30	KAO
		26	15	2 58.31	19	28.50	155	38.60	3.11	2.1	1.5	29	4	81	.19	5	.6	1.1	26	MLO
		26	16	3 8.99	19	23.36	155	20.51	9.94	1.7	1.1	32	4	53	.10	2	.4	.7	25	KAO
		26	1617	46.25	19	23.43	155	27.40	11.42	2.2	2.1	44	3	31	.12	2	.4	.6	37	KAO
		26	17	8 52.55	19	28.29	155	27.29	9.14	3.0	3.2	50	5	40	.12	7	.3	.7	44	KAO F
		26	1841	45.55	19	25.81	155	19.89	8.04	1.5	1.1	29	5	101	.11	4	.4	.9	23	KAO
		26	20	6 21.23	19	23.58	155	27.02	11.49	2.3	2.4	45	3	29	.12	2	.4	.6	39	KAO
		26	2059	13.53	19	17.70	155	23.65	9.52	2.0	2.3	42	4	93	.14	5	.4	.6	34	SWR
		26	2144	38.04	19	18.36	155	13.40	7.14	1.7	1.3	37	4	82	.10	2	.4	.8	29	SF2
		26	22	2 37.43	19	26.48	155	29.71	10.37	1.9	1.2	33	4	43	.09	6	.4	1.0	27	KAO
		26	2317	44.24	19	29.44	155	30.00	2.86	2.7	2.7	45	3	36	.11	6	.3	1.3	35	KAO
		26	2356	44.63	19	21.61	155	27.95	8.97	1.6	1.2	29	1	43	.11	2	.4	.7	19	KAO
		27	037	1.88	19	23.57	155	25.67	10.46	1.4	1.0	38	3	35	.12	3	.4	.6	28	KAO
		27	051	25.08	19	21.64	155	28.56	8.52	1.9	1.7	41	3	38	.13	2	.4	.8	33	KAO
		27	255	15.93	19	24.86	155	21.65	10.85	1.9	1.4	40	3	35	.10	4	.4	.5	30	KAO
		27	330	8.44	19	24.58	155	21.57	10.74	1.7	1.2	42	7	44	.12	4	.4	.6	35	KAO
		27	342	26.81	19	25.23	155	21.83	10.22	1.6	1.2	42	4	39	.11	5	.4	.5	27	KAO
		27	424	3.27	19	26.47	155	29.41	8.50	1.8	1.3	38	3	43	.10	8	.4	.9	31	KAO
		27	433	14.71	19	25.07	155	20.09	5.21	1.4	1.1	19	4	91	.10	3	.4	1.0	13	KAO
		27	434	34.71	19	24.60	155	29.77	7.57	1.6	1.1	29	1	35	.11	5	.4	1.1	25	KAO
		27	436	42.81	19	22.76	155	26.02	9.71	1.7	1.2	39	4	40	.13	3	.4	.6	26	KAO
		27	610	44.68	19	23.96	155	17.15	15.74	1.8	1.4	44	7	55	.09	1	.4	.3	31	DEP
		27	722	18.43	19	22.88	155	27.16	9.24	1.4	.9	32	2	40	.14	1	.4	.7	23	KAO
		27	927	31.66	19	21.48	155	2.99	8.87	3.9	4.0	52	4	117	.11	3	.5	.4	46	SF5
		27	946	27.14	19	21.18	155	2.85	7.40	2.4	2.3	41	3	124	.13	2	.6	.5	32	SF5
		27	1023	5.14	19	21.42	155	2.71	7.89	1.5	1.2	19	0	128	.12	3	.6	1.2	13	SF5
		27	1047	18.22	19	21.79	155	2.83	6.09	1.8	1.1	24	2	122	.13	3	.5	1.3	17	SF5
		27	1055	54.45	19	23.11	155	27.14	9.59	2.1	2.0	42	3	33	.11	1	.4	.6	33	KAO
		27	13	1 12.79	19	21.68	155	24.15	13.74	3.2	3.4	47	6	42	.11	3	.4	.3	41	DEP
		27	14	6 28.15	19	22.09	155	24.10	11.57	2.1	2.1	42	6	29	.12	4	.4	.5	30	KAO
		27	1520	41.98	19	22.34	155	27.46	10.80	3.5	3.5	50	3	39	.13	0	.3	.4	47	KAO
		27	1524	19.71	19	22.46	155	20.95	10.42	1.7	2.2	48	7	47	.11	3	.4	.4	33	KAO
		27	1539	18.48	19	22.29	155	27.50	9.69	3.1	2.9	50	6	40	.11	0	.3	.4	42	KAO
		27	1750	12.20	19	21.98	155	28.50	4.13	2.3	2.3	35	3	42	.11	2	.3	.6	26	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	27	19 2	49.10	19	19.91	155	13.29	6.88	1.3	1.1	24	1	68	.11	5	.6	1.0	20	SF2
		27	1911	17.71	19	22.58	155	21.00	9.50	1.7	1.1	30	6	47	.08	3	.4	.7	22	KAO
		27	1931	59.18	19	11.22	155	27.81	7.59	2.2	1.8	32	3	111	.13	3	.5	.9	22	LSW
		27	1933	28.13	19	29.20	155	27.41	7.11	3.7	3.7	49	4	42	.13	5	.4	.7	45	KAO
		27	2127	54.11	19	30.65	155	26.87	3.75	1.8	1.6	26	3	93	.13	3	.4	.9	21	MLO
		27	2129	29.76	19	21.39	155	30.32	9.50	3.3	3.4	49	4	32	.12	5	.3	.5	42	KAO
		27	22 5	51.93	19	4.19	156	15.06	34.92	2.9	3.0	45	1	283	.09	46	2.2	1.8	38	KON
		28	220	49.77	19	25.57	155	21.63	9.73	1.6	1.5	37	3	33	.13	4	.4	.6	28	KAO
		28	229	43.38	19	25.40	155	21.08	8.61	1.6	1.5	43	5	38	.13	4	.4	.6	29	KAO
		28	252	45.53	19	25.85	155	19.70	7.66	1.5	1.1	21	2	129	.09	4	.5	1.0	17	KAO
		28	314	4.78	19	23.74	155	26.27	10.72	2.4	2.5	45	3	26	.13	3	.4	.6	37	KAO
		28	411	33.69	19	21.31	155	21.88	10.36	1.4	1.3	28	3	60	.10	3	.5	.7	18	SWR
		28	526	50.50	19	21.91	155	28.16	8.89	1.6	1.1	34	1	39	.13	1	.4	.7	25	KAO
		28	712	7.57	19	20.16	155	11.43	8.59	1.7	1.8	38	2	82	.11	4	.4	.5	23	SF3
		28	722	28.91	19	25.31	155	21.29	8.62	1.7	1.3	42	6	33	.14	4	.4	.6	37	KAO
		28	734	21.47	19	25.94	155	20.87	9.76	1.6	.9	25	4	93	.09	3	.5	.9	18	KAO
		28	748	26.22	19	26.72	155	23.37	11.18	2.1	1.9	40	4	65	.11	4	.4	.5	23	KAO
		28	8 0	34.09	19	24.67	155	20.36	7.13	1.5	1.3	33	4	45	.12	2	.4	.8	25	KAO
		28	8 6	6.38	19	18.95	155	13.56	5.12	1.3	1.1	28	2	71	.13	4	.5	1.5	20	SF2
		28	8 7	44.04	19	21.96	155	2.18	7.35	2.9	3.1	42	4	138	.13	4	.5	.5	32	SFS F
		28	822	20.29	19	25.75	155	29.55	7.96	2.3	1.8	43	4	40	.13	7	.4	1.0	32	KAO
		28	1056	42.74	19	25.83	155	29.21	9.38	2.3	1.7	39	3	40	.11	7	.4	.9	24	KAO
		28	1113	.19	19	26.58	155	23.55	11.21	2.3	2.3	36	6	63	.11	4	.4	.6	26	KAO
		28	1510	56.46	19	26.24	154	55.80	5.31	2.2	2.2	32	1	152	.12	2	.6	.8	25	LER
		28	1627	10.41	19	19.38	155	15.31	6.44	1.7	1.6	36	3	88	.11	4	.4	.8	26	SF1
		28	1729	56.69	19	15.54	155	32.21	6.36	2.3	2.4	41	3	102	.18	4	.5	1.2	33	LSW
		28	1745	2.39	19	23.80	155	25.97	7.08	2.2	2.3	43	3	32	.13	3	.3	.8	32	KAO
		28	2119	24.00	19	24.03	155	25.59	7.49	1.8	1.6	38	3	35	.14	2	.4	.9	29	KAO
		28	2352	9.59	19	22.56	155	26.90	10.06	1.9	1.8	41	5	42	.12	1	.4	.6	32	KAO
		29	0 9	27.93	19	25.49	155	30.92	9.94	2.2	1.7	39	2	37	.10	8	.4	.7	31	KAO
		29	151	58.01	19	17.47	155	12.94	5.81	1.8	1.8	24	2	138	.12	1	.6	1.1	16	SF2
		29	233	4.76	19	24.87	155	21.59	10.45	1.7	1.7	39	5	36	.11	4	.4	.5	27	KAO
		29	321	17.28	19	25.74	155	21.75	10.38	1.7	1.4	38	5	32	.11	4	.4	.5	21	KAO
		29	339	52.58	19	25.31	155	19.64	2.95	1.6	1.7	27	6	110	.14	3	.3	.6	17	KAO
		29	6 0	20.54	19	21.44	155	2.51	7.01	1.3	1.3	20	1	144	.14	3	.7	1.3	11	SF5
		29	830	26.30	19	25.85	155	27.50	7.21	2.2	1.9	34	1	39	.12	4	.4	1.1	33	KAO
		29	9 5	2.18	19	25.09	155	21.03	10.03	2.2	2.3	39	1	39	.09	4	.4	.6	38	KAO
		29	1019	54.64	19	22.53	155	23.26	14.12	3.7	4.1	50	4	45	.11	4	.4	.3	46	DML F
		29	1045	2.97	19	21.63	155	21.74	8.12	1.7	1.3	30	3	56	.11	4	.4	.9	23	SWR
		29	11 8	41.26	19	26.20	155	29.15	9.10	2.2	2.2	41	4	42	.12	7	.4	.8	32	KAO
		29	1445	49.86	19	22.99	155	26.64	10.12	2.2	2.0	44	4	39	.13	2	.4	.5	35	KAO
		29	1543	11.65	19	22.53	155	23.25	13.50	3.1	3.1	51	5	45	.11	4	.4	.3	43	DML
		29	1654	49.39	19	21.86	155	.23	6.16	2.4	2.5	45	6	177	.20	6	.7	.8	31	SF5
		29	1836	20.14	19	22.15	155	30.09	8.50	2.0	2.1	38	3	46	.12	4	.4	.8	32	KAO
		29	1919	2.54	19	25.34	155	21.30	9.79	2.5	2.5	50	7	33	.12	4	.3	.4	38	KAO
		29	2131	51.32	19	23.88	155	27.03	10.11	2.0	2.1	42	3	36	.12	3	.4	.6	32	KAO
		29	2138	15.33	19	23.86	155	26.94	10.11	1.9	2.1	44	3	32	.11	3	.4	.5	36	KAO
		29	2235	29.30	19	18.80	155	12.90	5.52	1.3	1.1	22	1	90	.12	3	.5	1.4	20	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	30	152	6.41	19	27.02	155	26.02	3.93	2.1	1.8	40	3	48	.13	4	.3	1.2	30	KAO
		30	227	22.63	19	22.09	155	2.76	5.70	1.8	1.3	26	2	122	.18	4	.7	1.7	15	SFS
		30	515	55.96	19	25.45	155	21.34	8.92	2.0	1.5	42	9	32	.13	4	.3	.6	33	KAO
		30	555	59.79	19	23.38	155	20.43	10.09	1.9	1.3	28	6	56	.07	1	.4	.8	20	KAO
		30	647	26.19	19	25.25	155	21.09	8.00	1.6	1.1	35	6	40	.12	4	.4	.7	28	KAO
		30	1559	50.84	19	26.98	155	23.64	8.09	2.3	2.1	42	3	47	.12	4	.4	.7	33	KAO
		30	1618	47.94	19	25.59	155	20.54	10.02	1.7	1.2	35	6	76	.10	4	.4	.6	24	KAO
		30	1638	44.79	19	20.21	155	12.64	5.95	1.4	1.1	22	1	72	.11	5	.6	1.4	15	SF2
		30	1720	6.63	19	27.73	155	26.66	8.18	2.4	1.7	35	4	69	.13	5	.4	1.0	28	KAO
		30	1725	24.71	19	24.95	155	20.94	8.58	1.9	1.7	30	4	43	.10	3	.4	.7	23	KAO
		30	20 6	58.43	19	23.18	155	25.47	10.23	1.8	1.7	45	7	30	.12	4	.4	.6	30	KAO
	DEC	1	013	25.83	19	21.83	155	21.51	11.04	1.8	1.5	38	6	54	.11	4	.3	.4	24	SWR
		1	113	11.78	19	25.54	155	28.34	5.12	1.9	1.3	26	1	58	.11	6	.4	1.9	22	KAO
		1	543	21.18	19	25.61	155	23.43	8.70	2.5	2.5	47	4	39	.12	3	.3	.5	41	KAO
		1	642	52.50	19	25.04	155	21.35	10.60	1.6	1.2	32	4	42	.09	4	.4	.6	26	KAO
		1	7 1	.65	19	22.42	155	29.96	8.43	2.1	1.3	36	1	40	.13	4	.4	.9	31	KAO
		1	716	31.96	19	23.99	155	26.94	10.20	2.2	2.2	43	4	33	.13	3	.4	.6	35	KAO
		1	733	47.36	19	25.86	155	24.13	7.96	2.2	2.3	41	3	41	.12	2	.3	.8	32	KAO
		1	10 3	48.69	19	25.51	155	29.40	10.20	1.6	1.2	30	2	39	.10	6	.4	.9	21	KAO
		1	1149	23.64	19	21.72	155	30.12	9.19	2.7	2.5	41	3	33	.10	5	.4	.8	30	KAO
		1	12 5	36.16	19	25.95	155	27.13	5.63	2.2	2.2	41	4	60	.13	4	.4	1.1	32	KAO
		1	1239	33.78	19	27.50	155	27.19	6.29	2.6	2.4	46	6	57	.11	6	.3	.8	34	KAO
		1	17 9	40.92	19	22.87	155	1.88	4.46		1.2	20	1	177	.13	5	.8	2.8	17	SSF
		1	1829	22.83	19	22.66	155	20.76	9.24	1.7	1.3	42	7	45	.10	3	.3	.5	27	KAO
		1	2220	10.74	19	24.92	155	21.52	11.06	2.4	2.5	51	6	35	.11	4	.3	.4	40	KAO
		1	2226	42.63	19	22.36	155	29.04	10.15	2.5	2.6	47	2	36	.11	3	.3	.5	42	KAO
		1	2321	28.90	19	27.25	155	15.35	32.24	2.7	2.6	50	3	50	.10	5	.5	.9	46	DEP
		2	030	19.25	19	26.49	155	29.50	9.12	1.7	1.2	34	2	43	.11	8	.4	.9	24	KAO
		2	039	25.78	19	15.08	155	35.46	6.88	2.6	2.4	40	3	102	.19	3	.6	1.1	34	LSW
		2	140	57.06	19	26.42	155	29.98	9.19	2.0	1.4	41	4	42	.10	8	.4	.8	32	KAO
		2	256	4.54	19	21.43	155	2.67	7.21	2.1	2.1	35	3	129	.13	3	.5	.6	29	SFS
		2	442	19.47	19	22.35	155	24.75	13.46	2.0	1.2	36	4	40	.11	5	.5	.5	29	DML
		2	633	52.23	19	23.34	155	26.61	9.34	1.9	1.2	36	5	38	.12	2	.4	.6	29	KAO
		2	846	16.99	19	25.13	155	29.44	7.78	1.6	1.1	31	2	37	.12	6	.4	1.1	25	KAO
		2	10 8	24.64	19	21.08	155	3.26	4.83	1.3	1.3	21	2	112	.12	2	.5	1.2	13	SSF
		2	1014	52.33	19	20.23	155	30.17	7.53	2.0	1.5	36	2	52	.13	6	.4	1.0	28	KAO
		2	1047	17.27	19	27.18	155	23.42	11.41	2.1	2.1	46	7	75	.13	5	.4	.5	35	KAO
		2	1157	36.23	19	24.96	155	21.39	9.95	2.0	2.2	48	7	35	.12	4	.4	.5	37	KAO
		2	1411	7.43	19	25.31	155	20.95	9.13	1.7	1.5	40	8	82	.10	4	.4	.5	34	KAO
		2	1428	16.47	19	41.33	155	3.58	6.72	2.5	2.9	27	0	184	.15	30	1.0	3.4	17	HIL A
		2	1532	8.19	19	22.54	155	20.79	10.76	2.7		53	7	46	.11	3	.3	.4	41	KAO
		2	1620	23.91	19	23.83	155	16.88	14.39	1.8	1.4	44	5	43	.10	1	.5	.3	32	DEP
		2	1632	36.16	19	26.67	155	28.32	9.46	1.9	1.5	37	3	56	.11	6	.4	.8	26	KAO
		2	1735	13.05	19	26.72	155	28.78	9.47	2.4	2.1	47	5	42	.12	7	.3	.6	31	KAO
		2	1737	33.13	19	27.13	155	15.26	31.66	2.4	2.4	46	2	50	.10	5	.6	1.0	44	DEP
		2	1839	6.13	19	25.42	155	29.60	7.11	2.2	1.5	39	3	38	.13	6	.4	1.1	27	KAO
		2	1926	7.10	19	28.67	155	23.99	9.97	1.8	1.2	36	2	68	.13	2	.5	.7	27	KAO
		2	23 7	53.99	19	21.56	155	5.88	8.38	2.5	3.1	42	3	86	.11	4	.4	.5	32	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	2	2342	28.76	19	29.16	155	26.10	7.61	2.3	2.1	43	4	42	.15	5	.4	.8	33	KAO
		3	222	29.63	19	26.07	155	29.22	6.67	1.8	1.3	34	2	41	.12	7	.4	1.4	24	KAO
		3	240	5.28	19	24.76	155	20.26	7.66	1.4	1.1	28	4	75	.12	2	.4	.8	23	KAO
		3	3 9	22.78	19	29.03	155	27.76	4.97	2.3	1.9	38	2	64	.17	6	.4	1.8	34	KAO
		3	321	4.45	19	26.22	155	19.73	7.54	1.6	1.3	26	4	103	.12	3	.5	.9	20	KAO
		3	515	49.36	19	27.86	155	26.82	7.08	1.9	1.3	33	4	49	.12	6	.4	.9	20	KAO
		3	547	38.77	19	21.73	155	26.61	9.91	1.5	1.1	27	1	46	.11	2	.4	.8	19	KAO
		3	819	19.91	19	25.79	155	27.84	6.30	2.0	1.9	32	2	40	.11	5	.4	1.2	24	KAO
		3	1046	16.37	19	18.33	155	29.78	5.83	2.4	2.6	39	2	42	.16	6	.4	1.3	30	LSW
		3	1522	53.69	19	28.64	155	27.11	3.43	2.2	2.0	34	2	55	.16	6	.4	1.9	26	KAO
		3	1618	42.79	19	22.66	155	21.55	8.62	1.8	1.5	36	4	47	.14	4	.4	.7	25	KAO
		3	1737	16.30	19	23.38	155	27.44	9.49	1.9	1.3	32	2	38	.11	2	.4	.7	23	KAO
		3	1946	58.93	19	25.43	155	21.04	9.07	2.0	2.2	40	5	39	.14	4	.4	.6	31	KAO
		3	2024	32.15	19	27.68	155	25.96	7.70	2.1	1.3	36	4	68	.12	5	.4	.8	21	KAO
		3	2227	44.09	19	18.37	155	19.35	5.75	1.3	1.3	22	3	104	.12	1	.5	1.0	19	SWR
		3	2322	46.71	19	25.81	155	19.69	7.41	1.6	1.3	27	4	95	.10	4	.4	.7	20	KAO
		4	223	10.64	19	25.63	155	21.12	9.01	1.5	1.1	22	3	82	.09	4	.4	.9	17	KAO
		4	323	17.55	19	26.98	155	23.43	11.99	2.1	2.2	43	5	41	.12	4	.4	.5	28	KAO
		4	647	29.78	19	25.15	155	22.13	10.23	1.8	1.3	30	5	45	.12	5	.5	.7	23	KAO
		4	739	19.99	19	28.81	155	27.77	6.88	3.2	3.7	45	5	54	.14	6	.4	1.0	37	KAO
		4	756	5.72	19	25.24	155	21.59	9.09	1.9	1.5	26	1	40	.10	4	.5	.9	20	KAO
		4	854	28.95	19	23.68	155	27.10	9.79	1.8	1.3	31	1	37	.12	2	.4	.7	20	KAO
		4	856	25.10	19	20.32	155	4.00	6.94	2.8	3.1	39	4	121	.09	2	.5	.5	30	SF5
		4	939	47.21	19	25.28	155	19.39	5.76	1.8	1.8	22	5	112	.12	3	.5	1.2	16	KAO
		4	1021	8.81	19	21.88	155	30.41	8.51	2.7	2.8	41	1	32	.12	5	.4	.8	37	KAO
		4	1048	27.09	19	26.72	155	24.12	6.98	1.9	1.3	25	3	60	.13	3	.4	1.1	17	KAO
		4	1143	32.74	19	21.09	155	3.12	7.78	3.5	3.9	42	4	122	.11	2	.6	.4	38	SF5
		4	1236	43.03	19	25.19	155	21.42	10.09	2.0	1.7	39	4	34	.12	4	.4	.6	32	KAO
		4	1512	53.06	19	25.37	155	21.47	8.40	1.8	1.8	34	4	34	.13	4	.4	.7	30	KAO
		4	1529	15.64	19	35.46	156	7.21	14.13	3.0	3.5	43	1	246	.15	31	1.9	1.2	41	KON
		4	1735	25.48	19	22.34	155	30.38	9.22	1.8	1.3	28	1	47	.10	5	.4	1.0	23	KAO
		4	1827	34.35	19	25.27	155	21.40	10.55	2.0	2.0	40	4	33	.12	4	.4	.5	31	KAO
		4	1951	41.39	19	27.56	155	25.47	8.19	3.7	3.9	44	2	47	.15	4	.4	.7	41	KAO
		4	2024	52.51	19	25.16	155	30.59	9.32	2.3	1.8	34	3	44	.10	7	.4	.9	25	KAO
		4	2035	27.68	19	23.87	155	27.16	9.66	1.6	1.1	32	2	36	.12	3	.4	.7	20	KAO
		4	2040	37.83	19	28.84	155	25.77	8.86	1.9	1.2	25	3	56	.12	5	.4	.8	21	KAO
		4	2047	17.17	19	25.63	155	21.10	8.66	1.8	1.5	28	4	46	.12	4	.4	.7	19	KAO
		4	2051	8.97	19	23.14	155	27.67	10.74	2.1	2.1	38	2	37	.13	1	.4	.6	29	KAO
		4	2113	16.78	19	22.41	155	23.18	8.34	1.6	1.1	22	3	106	.11	6	.5	1.1	14	KAO
		4	2133	55.67	19	24.62	155	20.38	8.32	1.6	1.3	34	4	45	.12	2	.4	.7	21	KAO
		4	2141	26.55	19	25.56	155	21.50	8.73	1.5	1.1	24	4	72	.10	4	.4	.8	17	KAO
		4	2241	41.43	19	25.05	155	30.22	10.74	2.6	2.5	43	5	34	.10	7	.3	.5	32	KAO
		5	330	37.46	19	22.63	155	21.12	8.59	2.1	1.5	27	5	46	.10	3	.4	.7	22	KAO
		5	517	55.45	19	23.27	155	26.99	5.56	2.5	2.7	41	3	39	.13	2	.3	.8	31	KAO
		5	611	31.90	19	24.62	155	20.45	7.53	2.2	2.2	37	4	37	.11	2	.4	.7	30	KAO
		5	750	35.50	19	24.99	155	25.47	10.79	2.5	2.8	30	1	52	.11	6	.4	.7	17	KAO
		5	1128	49.70	19	24.94	155	29.05	9.21	2.1	1.5	36	3	37	.09	5	.4	.8	28	KAO
		5	1131	21.62	19	20.22	155	3.81	6.85	2.0	2.3	39	2	124	.12	2	.7	.6	31	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	5	1313	48.34	19	31.82	155	27.42	4.18	2.9	3.5	41	4	45	.11	1	.3	.7	32	MLO
		5	1326	41.31	19	28.64	155	27.90	3.47	2.1	1.5	36	4	58	.14	6	.4	1.8	28	KAO
		5	1335	20.08	19	26.79	155	25.04	9.25	1.9	1.3	37	4	50	.12	3	.4	.7	27	KAO
		5	14 2	23.22	19	19.63	155	13.25	9.11	2.6	3.4	42	3	71	.11	5	.4	.5	34	SF2
		5	1517	17.50	19	29.42	155	23.51	9.40	2.3	1.5	42	5	43	.12	1	.4	.6	28	KAO
		5	1817	30.50	19	22.12	155	17.15	31.24	2.4	1.9	44	4	44	.12	2	.7	.9	35	DEP
		5	1820	29.08	19	20.43	155	13.26	7.40	1.6	1.3	37	3	63	.12	4	.5	.7	26	SF2
		6	027	11.08	19	27.86	155	26.12	7.20	1.5	1.1	39	5	47	.13	5	.4	.8	30	KAO
		6	1 9	46.53	19	28.44	155	26.45	10.50	2.1	2.2	43	3	62	.12	6	.4	.6	33	KAO
		6	120	12.89	19	29.06	155	26.22	7.63	3.0	3.1	48	4	57	.12	5	.3	.7	39	KAO
		6	2 6	20.66	19	19.01	155	15.35	6.45	1.3	1.1	22	1	104	.10	4	.5	1.2	18	SF1
		6	214	2.40	19	20.35	155	30.48	8.19	2.4	2.4	40	3	42	.12	6	.4	.7	33	KAO
		6	354	43.68	19	23.77	155	26.61	10.18	1.8	1.1	27	1	52	.12	3	.5	.7	21	KAO
		6	5 9	3.49	19	19.12	155	14.44	6.21	1.2	1.3	13	2	196	.09	6	1.1	1.7	10	SF2
		6	741	14.98	19	27.65	155	15.20	32.29	3.3	4.1	40	1	41	.12	6	.6	1.4	33	DEP
		6	746	58.15	19	28.15	155	27.00	9.41	2.2	2.1	26	3	56	.10	6	.4	.9	20	KAO
		6	8 6	10.67	19	13.31	155	34.42	7.71	2.0		11	1	182	.15	6	1.0	1.9	8	LSW
		6	912	19.23	19	5.23	155	29.07	29.15	2.6	1.7	38	2	181	.09	8	.8	1.6	36	DLS
		6	920	53.84	19	22.66	155	27.42	9.70	2.4	2.8	46	6	41	.14	0	.4	.6	39	KAO
		6	11 6	29.33	19	26.04	155	24.62	10.92	1.6	1.2	32	3	49	.12	2	.5	.9	28	KAO
		6	12 8	17.08	19	29.92	155	26.82	5.22	2.1	2.4	38	4	72	.12	4	.3	1.1	30	KAO
		6	1252	2.17	19	23.37	155	26.33	11.40	2.0	2.1	34	4	31	.10	3	.4	.7	30	KAO
		6	1255	45.24	19	8.67	155	34.41	9.93	2.5	3.0	26	2	127	.21	12	.7	1.4	22	LSW
		6	1658	16.54	19	15.39	155	22.84	6.48	1.7	1.9	27	2	158	.12	3	.5	1.3	23	SWR
		6	17 4	35.85	19	16.08	155	22.85	6.23	1.9	2.4	40	1	129	.15	4	.5	1.0	34	SWR
		6	1724	9.80	19	25.47	155	22.19	11.05	1.8	1.7	39	7	41	.12	5	.4	.5	32	KAO
		6	1725	13.25	19	26.40	155	28.86	9.00	1.9	1.5	27	2	43	.09	7	.4	1.2	25	KAO
		6	1942	27.09	19	23.87	155	27.47	11.69	2.4	2.5	44	2	33	.11	3	.4	.6	42	KAO
		6	2054	45.77	19	24.00	155	26.51	10.36	2.1	2.3	43	3	35	.12	3	.4	.6	37	KAO
		7	019	48.05	19	25.36	155	21.02	9.21	2.0	2.0	47	6	39	.11	4	.4	.5	42	KAO
		7	1 3	17.00	19	18.80	155	11.29	6.91	1.7	1.5	31	3	116	.10	5	.5	.8	25	SF3
		7	132	36.42	19	22.14	155	26.53	10.15	1.8	1.5	14	2	84	.10	2	.6	1.1	12	KAO
		7	3 0	28.28	19	22.63	155	26.61	11.06	1.8	1.7	22	1	49	.09	7	.5	1.4	21	KAO
		7	345	11.37	19	22.29	155	29.73	9.30	2.9	3.2	45	2	33	.10	4	.3	.7	42	KAO
		7	1026	24.04	19	25.14	155	21.54	10.90	1.9	1.8	38	3	35	.10	4	.4	.6	33	KAO
		7	1032	10.81	19	19.95	155	11.60	7.84	2.0	2.4	43	3	85	.12	5	.5	.6	30	SF3
		7	1242	21.94	19	21.19	155	2.50	4.86	1.8	2.0	32	4	140	.15	2	.6	1.3	19	SSF
		7	1431	13.75	19	21.32	155	1.34	6.78	2.1		43	4	171	.17	4	.7	.5	36	SF5
		7	1431	55.98	19	21.79	155	1.43	7.02	2.2	2.6	40	3	159	.13	4	.6	.6	28	SF5
		7	1454	6.84	19	16.29	155	26.74	8.02	2.2	2.5	44	4	62	.16	6	.4	.8	33	LSW
		7	1744	13.18	19	23.14	155	27.23	9.69	1.9	1.3	38	3	43	.13	1	.4	.6	23	KAO
		7	1922	4.62	19	22.33	155	29.63	8.67	1.7	1.3	38	5	40	.10	4	.3	.8	30	KAO
		7	2122	56.22	19	20.20	155	12.82	8.22	1.4	1.1	28	2	70	.11	5	.5	.7	18	SF2
		7	2143	8.17	19	17.17	155	29.02	8.54	2.3	2.6	43	4	51	.15	4	.4	.7	36	LSW
		7	2153	51.10	19	22.65	155	26.90	9.03	1.6	1.1	36	3	41	.13	1	.4	.8	26	KAO
		7	22 7	10.91	19	20.73	155	6.25	6.32	1.6	1.3	21	0	102	.12	5	.6	1.3	15	SF4
		7	22 9	57.04	19	23.25	155	27.42	9.60	2.5	2.6	44	3	55	.15	1	.4	.7	37	KAO
		8	0 0	55.66	19	25.25	155	21.35	9.03	1.7	1.1	37	8	34	.13	4	.4	.6	28	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	8	235	17.28	19	22.96	155	27.69	10.30	2.6	2.7	45	5	35	.12	1	.4	.6	38	KAO
		8	241	57.97	19	23.79	155	25.12	7.80	2.1	1.5	46	7	36	.14	3	.3	.7	31	KAO
		8	253	12.32	19	25.51	155	21.76	10.45	1.7	1.5	44	4	33	.13	4	.4	.5	34	KAO
		8	257	3.37	19	17.81	155	20.63	7.38	1.4	1.1	28	3	124	.11	4	.4	.6	22	SWR
		8	522	2.09	19	23.64	155	26.86	10.59	1.6	1.2	34	2	37	.11	3	.4	.7	28	KAO
		8	650	7.29	19	29.07	155	26.37	7.49	2.6	2.6	44	3	78	.13	6	.4	.9	36	KAO
		8	749	43.46	19	23.91	155	26.74	10.04	1.8	1.5	38	2	32	.11	3	.4	.7	29	KAO
		8	932	34.44	19	25.01	155	30.25	11.65	2.3	1.6	41	3	36	.09	7	.4	.6	36	KAO
		8	10	6 41.78	19	28.33	155	26.90	3.61	1.9	1.1	33	4	76	.13	6	.4	1.6	28	KAO
		8	1121	30.93	19	21.37	155	24.13	13.12	2.2	2.4	43	5	34	.10	3	.4	.5	37	DEP
		8	1419	45.82	19	25.07	155	21.69	11.46	2.8	3.2	54	10	35	.11	4	.3	.3	47	KAO
		8	15	6 47.77	19	25.50	155	29.44	8.30	1.9	1.3	33	3	64	.11	6	.4	1.1	27	KAO
		8	1649	21.23	19	25.43	155	29.65	10.30	2.3	2.0	40	2	58	.10	7	.4	.7	36	KAO
		8	1712	11.32	19	25.55	155	20.74	10.56	2.2	2.3	47	7	46	.10	4	.3	.5	41	KAO
		8	21	5 59.76	19	5.48	156	12.38	32.79	3.0	2.9	50	4	279	.10	40	1.2	1.2	47	KON
		8	2243	11.95	19	23.50	155	20.44	10.57	1.6	1.1	31	5	54	.09	1	.4	.6	23	KAO
		9	041	11.65	19	24.99	155	30.32	12.25	2.0	1.2	33	2	43	.09	7	.5	.7	26	KAO
		9	2	7 55.05	19	25.18	155	27.96	8.98	2.0	1.1	35	4	64	.12	5	.4	1.0	29	KAO
		9	219	42.47	19	24.92	155	21.85	10.80	2.2	2.2	50	9	35	.11	4	.3	.5	43	KAO
		9	334	12.90	19	19.45	155	15.36	8.19	1.9	1.7	38	3	87	.10	4	.4	.7	28	SF1
		9	724	20.74	19	21.04	155	29.36	6.32	1.6	1.3	18	2	80	.08	4	.5	1.2	16	KAO
		9	725	59.58	19	26.31	155	22.47	10.39	1.6	1.2	27	3	63	.11	4	.5	.9	22	KAO
		9	1023	33.30	19	22.29	155	29.45	9.53	1.7	1.3	22	1	80	.10	3	.5	.9	20	KAO
		9	1040	50.00	19	23.40	155	26.74	6.47	2.4	2.6	42	3	32	.14	2	.4	.8	36	KAO
		9	12	5 50.13	19	23.54	155	26.99	5.71	1.7	1.6	26	2	47	.12	2	.4	.9	22	KAO
		9	1420	45.47	19	23.00	155	26.01	10.82	1.6	1.5	29	2	45	.11	3	.5	1.0	26	KAO
		9	1726	31.91	19	23.66	155	25.68	10.88	2.2	2.4	45	6	31	.11	3	.4	.5	38	KAO
		9	1936	58.18	19	27.67	155	29.02	10.88	2.2	1.7	28	2	82	.11	8	.5	1.1	25	KAO
		9	2056	4.72	19	24.91	155	21.50	12.41	1.8	1.6	31	4	57	.10	4	.5	.8	25	KAO
		9	2114	40.20	19	19.59	155	15.49	8.98	3.0	3.3	54	8	86	.13	3	.4	.4	45	SF1
		9	2333	41.83	19	20.97	155	29.61	6.26	2.1	2.4	34	3	45	.11	5	.3	.9	27	KAO
		10	020	17.57	19	21.58	155	21.83	11.07	1.7	1.3	25	4	87	.09	4	.5	.9	20	SWR
		10	436	14.65	19	21.28	155	6.76	7.16	1.8	1.5	19	0	87	.11	4	.7	1.1	17	SF4
		10	1015	48.46	19	20.03	155	11.21	9.27	2.2	2.5	39	3	85	.12	4	.4	.6	36	SF3
		10	1215	14.96	19	21.02	155	29.34	5.93	2.0	1.8	29	1	43	.10	4	.4	1.1	25	KAO
		10	1230	31.24	19	20.97	155	23.61	10.47	2.2	2.5	40	4	35	.11	2	.4	.5	29	SWR
		10	1324	54.09	19	22.10	155	24.24	12.73	2.4	2.4	53	8	27	.11	4	.3	.3	39	KAO
		10	1556	1.63	19	22.41	155	.99	6.59	2.1	2.5	40	1	156	.18	6	.6	.8	27	SF5
		10	16	6 47.09	19	25.92	155	29.23	9.46	2.0	2.1	44	5	40	.12	7	.4	.8	35	KAO
		10	1633	28.30	19	22.65	155	29.91	8.32	2.1	2.3	40	3	45	.11	4	.4	.8	30	KAO
		10	2014	18.37	19	25.80	155	29.06	7.95	1.8	1.3	40	5	40	.12	7	.4	1.0	26	KAO
		10	2312	52.08	19	19.76	155	7.21	6.22	1.2	1.1	22	1	110	.09	5	.6	1.5	20	SF4
		11	147	10.44	19	30.34	155	27.34	3.71	3.1	3.3	47	4	48	.13	3	.3	1.0	39	MLO
		11	7	4 23.05	19	22.63	155	28.11	8.24	1.8	1.1	35	4	40	.12	1	.4	.8	28	KAO
		11	937	32.77	19	19.30	155	13.14	5.56	1.3	1.1	30	3	77	.12	4	.4	1.3	20	SF2
		11	939	57.79	19	26.22	155	28.62	9.22	2.0	1.7	37	5	58	.11	6	.4	.9	28	KAO
		11	1031	16.47	19	19.88	155	27.27	8.87	2.6	3.0	48	5	47	.15	5	.4	.6	41	KAO
		11	1120	29.49	19	25.42	155	24.48	10.22	2.2	2.4	47	6	38	.12	1	.4	.5	35	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	11	1128	26.64	19	11.82	155	32.75	9.21	2.7	3.0	45	2	92	.16	8	.5	.8	32	LSW
		11	1239	40.25	19	28.27	155	26.79	5.85	2.1	1.5	39	5	52	.13	6	.4	1.0	28	KAO
		11	1517	43.99	19	28.29	155	27.36	3.00	2.2	2.3	40	7	54	.11	7	.3	1.0	29	KAO
		11	1611	46.03	19	15.84	155	29.68	10.76	1.8	1.4	31	0	59	.12	2	.4	.6	24	LSW
		11	17	2 34.51	19	21.72	155	28.17	8.78	2.3	2.2	40	2	40	.13	2	.4	.8	35	KAO
		11	1741	43.17	19	17.76	155	20.90	6.58	1.3	1.3	29	5	124	.12	4	.4	1.1	25	SWR
		11	19	1 .36	19	21.99	155	29.71	12.26	2.5	2.9	48	4	34	.09	4	.3	.4	41	KAO
		11	1917	3.84	19	32.60	155	58.01	8.81	2.8	2.4	39	4	215	.21	8	1.4	.5	35	KON
		11	1952	49.08	19	24.99	155	30.17	11.62	2.2	2.3	39	1	36	.10	6	.4	.6	37	KAO
		11	20	6 19.29	19	26.65	155	23.19	12.03	2.1	2.5	43	6	40	.12	4	.4	.5	39	KAO
		11	2152	53.01	19	20.23	155	12.97	6.98	1.4	1.3	34	3	68	.15	4	.5	.8	29	SF2
		12	0	9 18.57	19	22.64	155	28.60	10.29	1.8	2.0	42	4	36	.12	2	.4	.7	36	KAO
		12	1	1 41.92	19	22.99	155	25.91	10.68	1.8	2.0	40	5	39	.13	3	.4	.7	32	KAO
		12	150	40.94	19	26.44	155	23.26	13.07	1.8	1.6	34	5	59	.12	4	.5	.8	29	DML
		12	411	53.64	19	20.20	155	12.76	8.50	1.5	1.5	27	3	70	.10	5	.5	.7	23	SF2
		12	5	5 58.76	19	5.24	156	13.39	36.32	2.4	2.0	38	7	280	.11	42	1.2	1.6	35	KON
		12	529	8.96	19	27.51	155	24.07	10.33	1.7	1.2	30	3	72	.10	4	.5	.8	24	KAO
		12	748	23.71	19	21.02	155	21.58	10.61	2.0	1.8	35	5	63	.11	3	.4	.7	30	SWR
		12	939	17.97	19	19.39	155	15.05	6.24	1.9	1.6	35	0	84	.10	4	.4	.7	33	SF1
		12	1126	.95	19	22.73	155	24.43	13.54	1.8	1.2	36	3	39	.10	5	.5	.8	30	DML
		12	1251	57.96	19	24.02	155	26.92	10.66	2.0	2.4	43	4	33	.12	3	.4	.6	37	KAO
		12	1422	20.04	19	17.58	155	21.16	8.01	1.4	1.3	29	3	125	.10	5	.4	1.1	21	SWR
		12	16	4 37.49	19	25.25	155	29.49	10.02	2.2	2.0	43	4	37	.09	6	.4	.7	36	KAO
		12	1739	35.67	19	20.33	155	13.51	9.35	1.3	1.1	26	5	65	.06	4	.5	.7	20	SF2
		12	1841	34.23	19	18.95	155	13.48	8.09	1.4	1.3	23	2	72	.09	4	.6	1.0	18	SF2
		12	2020	10.70	19	22.56	155	20.88	10.56	1.8	1.5	35	5	45	.09	3	.4	.6	28	KAO
		13	018	5.28	19	23.23	155	26.24	9.36	1.9	2.0	39	3	31	.12	3	.4	.6	32	KAO
		13	523	32.13	19	23.71	155	17.00	13.72	1.9	1.4	40	3	62	.10	1	.5	.4	29	DEP
		13	553	30.55	19	22.30	155	1.21	3.18	1.5	1.1	29	1	154	.15	5	.6	1.5	19	SSF
		13	658	25.31	19	18.40	155	15.43	7.88	1.9	2.3	40	3	118	.11	4	.4	.6	28	SF1
		13	7	1 34.57	19	28.32	155	27.02	9.19	2.7	2.4	45	5	54	.12	7	.3	.6	37	KAO
		13	856	13.62	19	23.35	155	20.70	9.61	2.0	2.0	40	7	43	.12	2	.4	.6	28	KAO
		13	1052	23.77	19	27.43	155	26.08	9.98	2.4	2.0	44	5	48	.14	4	.4	.7	35	KAO
		13	1641	.05	19	18.83	155	15.53	6.88	1.3	1.3	28	5	109	.11	4	.5	.9	24	SF1
		13	1713	28.60	19	23.91	155	26.86	10.77	2.3	1.8	44	2	36	.11	3	.3	.5	36	KAO
		13	1817	37.43	19	21.42	155	23.47	10.51	1.7	1.5	36	5	45	.11	2	.4	.6	23	SWR
		13	2031	59.80	19	24.69	155	21.80	9.78	1.8	1.3	42	9	52	.12	4	.4	.5	27	KAO
		13	2059	36.10	19	25.86	155	21.68	8.28	1.7	1.1	42	6	32	.14	4	.4	.7	24	KAO
		14	0	5 4.56	19	22.57	155	26.56	9.44	1.8	1.7	41	4	42	.12	2	.4	.6	33	KAO
		14	0	6 3.39	19	24.63	155	22.03	10.57	1.8	1.5	39	5	48	.11	4	.4	.6	27	KAO
		14	225	18.28	19	20.50	155	29.89	6.08	2.0	1.8	34	3	48	.11	5	.4	1.1	27	KAO
		14	4	2 48.17	19	29.29	155	47.63	8.55	2.3	1.8	29	4	79	.14	4	.6	.7	20	KON
		14	419	23.91	19	27.19	155	29.42	8.84	2.0	1.5	36	3	57	.12	6	.4	1.0	25	KAO
		14	434	34.28	19	28.40	155	25.47	1.16	2.2	2.2	33	4	71	.12	5	.3	.6	22	KAO
		14	717	10.10	19	23.68	155	26.77	11.08	2.9	2.9	50	5	26	.12	3	.4	.5	41	KAO
		14	725	6.36	19	17.30	155	20.18	8.65	1.7	1.1	25	3	142	.10	3	.6	.5	19	SWR
		14	9	1 43.75	19	23.71	155	27.10	9.71	1.8	1.2	39	3	50	.12	2	.4	.6	30	KAO
		14	1045	25.13	19	25.57	155	20.30	5.21	2.0	1.8	35	5	47	.13	4	.4	1.1	27	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	14	1312	18.69	19	21.18	155	7.86	6.47	2.0	1.9	37	3	77	.13	4	.5	.9	25	SF4
		14	14 6	53.17	19	22.51	155	30.09	8.29	1.6	1.1	31	1	46	.12	4	.4	1.1	26	KAO
		14	1454	33.56	19	28.45	155	24.59	9.87	2.4	1.5	39	3	40	.11	3	.4	.7	24	KAO
		14	1859	38.91	19	27.56	155	24.68	7.97	2.2	1.2	43	4	51	.14	4	.4	.7	31	KAO
		14	2036	18.63	19	18.69	155	13.14	3.88	1.5	.9	31	2	66	.12	3	.4	1.2	21	SSF
		14	2037	.21	19	18.14	155	13.14	6.17	1.8	1.6	36	3	97	.11	2	.5	.8	25	SF2
		14	2056	23.97	19	21.99	155	30.13	9.98	3.6	3.8	53	5	32	.10	5	.3	.5	46	KAO F
		14	2222	32.83	19	23.88	155	26.70	9.69	2.4		47	6	32	.14	3	.4	.5	37	KAO
		15	059	22.92	19	25.37	155	21.10	9.55	2.4	2.1	49	6	37	.12	4	.4	.5	37	KAO
		15	1 9	40.50	19	27.30	155	23.48	8.95	2.0	1.6	42	5	41	.11	5	.3	.6	31	KAO
		15	528	28.21	19	25.92	154	56.48	3.04	1.9	1.3	33	1	153	.14	4	.6	.7	24	SLE
		15	6 9	34.12	19	23.30	155	23.57	13.43	2.8	2.7	51	6	36	.11	5	.3	.3	40	DML
		15	650	30.40	19	24.22	155	26.29	9.45	1.6	1.0	31	1	42	.12	3	.4	.9	23	KAO
		15	714	28.90	19	23.10	155	27.34	9.84	1.7	1.1	34	2	50	.12	1	.4	.7	26	KAO
		15	727	18.69	19	25.43	155	21.19	9.24	1.8	1.3	41	7	35	.12	4	.4	.6	33	KAO
		15	815	20.35	19	26.97	155	23.93	9.58	1.6	.9	29	4	66	.10	4	.4	.7	21	KAO
		15	838	20.12	19	26.50	155	29.82	8.21	2.1	1.4	22	0	62	.08	8	.4	1.4	22	KAO
		15	842	25.13	19	22.74	155	26.02	10.44	2.2	2.1	25	1	49	.09	3	.4	1.1	24	KAO
		15	1122	49.27	19	28.31	155	27.60	9.28	2.3	1.5	39	5	57	.11	7	.4	.8	31	KAO
		15	1337	51.33	19	22.15	155	25.92	10.28	1.5	1.3	24	2	43	.13	3	.5	1.0	17	KAO
		15	1447	47.07	19	26.48	155	19.83	6.62	2.2	1.6	37	4	48	.12	3	.4	.7	28	KAO
		15	1450	17.61	19	26.66	155	19.89	6.76	1.6	1.1	25	3	63	.11	2	.5	.9	21	KAO
		15	15 0	39.95	19	25.71	155	21.38	9.16	1.6	1.1	34	7	76	.11	4	.4	.6	26	KAO
		15	1729	5.23	19	19.70	155	11.17	6.50	2.1	1.9	39	5	93	.13	5	.5	.8	25	SF3
		15	1816	59.28	19	18.21	155	26.02	9.24	1.6	1.2	27	3	79	.10	6	.4	.8	19	LSW
		15	20 4	4.80	19	27.63	155	27.17	5.50	2.2	1.2	46	8	58	.14	6	.4	1.2	32	KAO
		15	2035	50.21	19	23.78	155	27.46	9.60	1.9	1.4	36	3	32	.10	2	.4	.7	29	KAO
		15	2151	10.30	19	21.03	155	21.66	10.07	1.9	1.3	37	6	63	.11	3	.4	.6	26	SWR
		15	22 8	45.30	19	24.31	155	25.46	8.08	1.5	1.0	31	2	47	.12	2	.4	.9	25	KAO
		15	2211	10.10	19	26.16	155	29.22	8.84	1.5	.8	32	3	41	.11	7	.4	.9	20	KAO
		15	2241	56.32	19	23.40	155	27.19	10.37	1.6	1.2	36	3	31	.12	2	.4	.7	27	KAO
		16	1 1	37.55	19	26.48	155	29.76	8.12	1.4	.9	24	2	43	.09	8	.4	1.2	17	KAO
		16	347	8.26	19	27.90	155	26.08	9.09	2.3	1.2	29	2	69	.11	5	.4	.8	27	KAO
		16	422	7.25	19	23.06	155	27.22	11.21	2.6	2.7	42	2	38	.12	1	.4	.7	40	KAO
		16	841	23.60	19	23.26	155	27.34	9.19		1.3	32	0	37	.11	2	.4	.8	32	KAO
		16	1041	19.67	19	24.51	155	19.62	6.63		1.9	29	0	70	.09	2	.4	.9	29	KAO
		16	1545	25.70	19	21.88	155	21.82	9.60		1.9	25	0	54	.08	4	.4	.8	24	SWR
		16	1558	38.91	19	19.54	155	14.76	6.02	1.4	1.1	21	0	87	.07	5	.4	1.0	21	SF1
		16	1644	.53	19	25.31	155	21.65	10.33	1.7	1.2	32	0	52	.07	5	.4	.8	31	KAO
		16	1716	22.37	19	25.72	155	15.86	19.62	2.1	2.5	43	1	38	.11	3	.5	.8	41	DEP
		16	2031	2.52	19	22.78	155	20.76	8.78	2.0	1.5	33	0	47	.11	3	.4	.6	33	KAO
		16	2047	3.43	19	19.52	155	15.65	6.34	2.1	1.3	29	0	90	.10	3	.4	.6	29	SF1
		16	2235	56.27	19	23.84	155	20.59	9.01	1.4	1.6	26	0	68	.12	2	.5	.8	26	KAO
		16	2318	27.70	19	28.38	155	25.54	9.33	2.4	1.4	36	0	63	.12	5	.4	.7	36	KAO
		16	2334	31.57	19	15.66	155	22.30	7.01		1.5	15	0	175	.08	4	.7	1.7	15	SWR
		16	2343	58.80	19	24.29	155	26.68	10.04	2.1	2.1	32	0	44	.10	4	.4	.7	24	KAO
		17	222	16.69	19	27.13	155	25.49	9.40	2.1	2.3	36	0	51	.12	4	.4	.8	34	KAO
		17	255	16.45	19	22.77	155	.34	6.32	2.0	1.3	20	0	170	.13	5	.7	1.7	20	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	17	412	52.90	19	18.09	155	12.93	4.34	1.4	1.4	25	0	108	.09	2	.4	1.1	25	SSF
		17	432	1.92	19	18.49	155	12.81	3.37	1.4	1.4	22	0	100	.11	3	.4	.9	22	SSF
		17	511	54.39	19	20.34	155	13.70	6.78	1.9	1.5	29	0	63	.11	4	.4	.9	29	SF2
		17	528	15.47	19	25.24	155	21.04	10.15	2.5	2.5	40	0	33	.09	4	.4	.6	39	KAO
		17	648	20.79	19	27.84	155	24.40	9.12	1.4	1.2	20	0	76	.10	4	.6	1.3	19	KAO
		17	815	14.62	19	17.68	155	12.79	6.84	1.6	1.4	29	2	132	.08	2	.5	.9	23	SF2
		17	1056	49.73	19	18.47	155	13.44	4.84	1.6	1.5	30	3	79	.11	3	.4	1.3	25	SSF
		17	1927	28.34	19	24.10	155	26.28	10.16	2.1	1.7	38	2	35	.13	3	.4	.7	36	KAO L
		17	2015	13.07	19	25.42	155	21.13	9.25	1.9	1.2	28	1	79	.10	4	.4	.8	27	KAO
		17	2129	26.00	19	27.93	155	27.02	5.64	2.0	1.2	30	4	70	.12	6	.4	1.4	24	KAO
		17	2154	31.88	19	25.34	155	20.90	8.29	1.6	1.4	23	1	83	.09	4	.4	.7	22	KAO
		17	2338	24.26	19	24.97	155	21.32	8.64	2.2	1.9	35	1	35	.11	4	.4	.7	34	KAO
		18	028	6.44	19	29.00	155	26.98	9.14	2.1	1.2	27	1	73	.09	6	.4	.9	26	KAO
		18	425	42.31	19	25.26	155	20.17	7.39	2.0	1.5	24	1	97	.09	3	.5	.8	23	KAO
		18	427	55.15	19	27.95	155	26.55	8.63	2.4	1.5	32	2	74	.12	6	.4	1.0	30	KAO
		18	454	25.62	19	27.86	155	26.63	8.14	2.4	1.4	20	0	78	.09	5	.4	1.1	20	KAO
		18	1020	24.49	19	23.24	155	26.00	11.46	2.6	2.6	43	5	31	.11	3	.4	.6	35	KAO
		18	1023	34.27	19	21.02	155	21.76	10.28	1.9	2.2	40	4	63	.11	3	.4	.6	33	SWR
		18	1025	51.43	19	20.92	155	21.44	10.30	1.5	1.3	28	3	64	.07	3	.4	.7	25	SWR
		18	1116	40.01	19	21.52	155	23.23	11.29	1.8	2.0	34	6	54	.08	2	.4	.5	26	SWR
		18	1139	10.70	19	25.17	155	19.21	6.20	1.7	2.1	25	4	110	.12	3	.5	1.0	21	KAO
		18	1216	36.05	19	24.96	155	19.23	5.23	1.9	2.4	29	3	45	.10	3	.4	.7	26	KAO
		18	1226	21.76	19	25.16	155	19.05	5.47	1.6	1.6	26	4	112	.10	3	.4	.8	22	KAO
		18	1229	26.98	19	24.86	155	19.09	4.99	1.6	1.3	23	3	107	.09	2	.4	.7	19	KAO
		18	1329	36.26	19	31.21	155	36.65	9.41	2.1	1.6	27	1	106	.12	4	.6	.5	21	MLO
		18	14 3	38.22	19	24.72	155	19.71	6.59	2.9	3.4	47	8	37	.10	2	.3	.5	38	KAO
		18	14 5	47.01	19	25.20	155	19.69	3.73	1.7	1.1	21	4	105	.10	3	.4	.7	16	KAO
		18	1411	9.15	19	25.14	155	19.44	3.58	1.8	1.3	26	5	106	.12	3	.4	.6	20	KAO
		18	1421	1.09	19	24.80	155	19.57	3.89	1.8	1.3	21	3	107	.11	2	.4	.7	15	KAO
		18	1427	36.04	19	25.12	155	19.70	4.64	1.8	1.5	25	4	102	.12	3	.4	.9	18	KAO
		18	1536	3.67	19	23.94	155	20.96	9.47	1.7	1.3	31	6	61	.13	2	.4	.7	20	KAO
		18	1616	20.02	19	17.81	155	20.76	6.61	1.5	1.3	27	2	123	.12	4	.5	1.2	18	SWR
		18	1619	11.83	19	25.55	155	29.42	9.13	2.5	2.6	48	4	38	.11	6	.3	.7	40	KAO
		18	1628	14.93	19	25.10	155	19.61	4.15	1.4	1.3	22	5	102	.10	3	.4	.7	16	KAO
		18	1724	21.00	19	27.63	155	24.48	9.29	2.0	1.4	38	5	38	.11	5	.4	.7	25	KAO
		18	1827	36.78	19	25.09	155	19.03	4.26	1.3	1.1	24	4	108	.11	3	.4	.6	20	KAO
		18	2015	22.24	19	20.73	155	22.42	10.85	1.8	1.5	32	5	67	.11	2	.4	.8	22	SWR
		18	2111	56.18	19	29.12	155	26.59	8.29	3.2	3.1	50	4	62	.13	6	.4	.7	42	KAO
		18	2313	51.01	19	23.41	155	23.60	13.51	2.4	2.2	48	7	35	.09	4	.3	.3	35	DML
		18	2322	36.99	19	23.79	155	26.10	11.02	1.8	1.2	32	2	32	.12	3	.4	.9	28	KAO
		18	2341	31.74	19	21.50	155	30.08	9.62	3.3	3.6	51	6	33	.11	5	.3	.5	43	KAO
		19	148	9.61	19	25.31	155	20.98	9.96	1.8	1.5	42	5	40	.12	4	.4	.5	33	KAO
		19	241	29.12	19	26.14	155	50.11	31.12	2.6	2.4	49	4	112	.11	10	.8	1.4	44	KON
		19	3 2	50.20	19	23.59	155	26.77	10.70	1.7	1.2	36	2	32	.11	3	.4	.8	33	KAO
		19	915	1.06	19	21.90	155	26.22	10.16	1.8	1.5	31	1	51	.10	3	.4	.7	27	KAO
		19	936	44.37	19	25.22	155	21.22	9.42	2.4	2.2	45	6	34	.12	4	.4	.5	38	KAO
		19	1013	41.55	19	20.40	155	13.56	6.46	1.7	2.0	35	4	59	.12	4	.4	.8	25	SF2
		19	1157	53.07	19	19.14	155	10.01	7.29	1.5		18	1	106	.03	5	.6	1.4	13	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	19	1326	43.54	19	19.68	155	11.05	7.83	1.8	2.2	36	3	93	.10	5	.4	.7	30	SF3
		19	1442	56.13	19	21.85	155	23.92	9.26	1.4	1.3	26	3	60	.09	3	.4	.7	22	SWR
		19	1450	59.45	19	28.26	155	26.88	9.29	2.8	2.5	42	5	60	.12	6	.4	.7	36	KAO
		19	1722	26.85	19	22.22	155	29.96	9.18	2.1	1.8	34	3	43	.08	4	.4	.8	27	KAO
		20	354	59.40	19	7.69	156	7.13	32.88	3.2	3.6	46	0	269	.11	30	4.9	1.9	45	KON
		20	420	46.51	19	25.00	155	20.45	10.03	2.5	2.5	47	6	42	.11	3	.3	.5	40	KAO
		20	544	38.06	19	24.86	155	21.25	11.43	1.8	1.4	35	5	43	.09	3	.4	.6	29	KAO
		20	6 6	30.97	19	25.47	155	19.97	7.55	1.5	1.1	26	5	92	.09	3	.4	.8	17	KAO
		20	652	.36	19	27.22	155	30.00	10.56	2.2	1.7	37	6	62	.12	9	.4	.7	26	KAO
		20	9 0	3.84	19	19.54	155	8.12	5.20	1.9	2.3	37	7	90	.11	4	.5	1.4	29	SF4
		20	1456	57.70	19	19.08	155	15.69	7.05	1.7	1.9	37	4	106	.12	4	.4	.8	25	SF1
		20	1731	45.82	19	20.40	155	4.40	7.37	1.9	2.1	39	6	119	.13	3	.4	.6	28	SF5
		20	1736	21.18	19	22.19	155	29.99	9.30	1.7	1.3	33	2	45	.09	4	.4	.9	25	KAO
		20	2023	43.51	19	25.59	155	20.66	10.00	2.6	2.6	50	5	39	.12	4	.4	.5	44	KAO
		20	2144	6.04	19	18.99	155	13.62	4.59	1.4	1.1	22	2	70	.10	4	.4	1.6	19	SSF
		20	2154	33.94	19	21.35	155	30.43	9.11	1.7	1.3	24	2	92	.10	5	.5	1.0	17	KAO
		21	012	4.63	19	21.26	155	23.50	9.50	1.8	1.5	37	5	44	.12	2	.4	.7	26	SWR
		21	039	25.41	19	22.87	155	26.54	10.11	2.3	2.4	45	5	40	.12	2	.4	.5	34	KAO
		21	050	5.35	19	21.33	155	28.41	8.29	1.9	1.5	35	4	46	.12	3	.4	.8	27	KAO
		21	234	49.37	19	22.70	155	4.74	8.19	3.0	3.3	48	5	79	.10	4	.3	.5	31	SF5
		21	428	7.16	19	21.51	155	2.73	7.62	2.1	2.0	44	4	127	.12	3	.5	.4	32	SF5
		21	618	51.58	19	23.90	155	20.84	10.08	1.7	1.1	31	5	62	.08	2	.4	.6	21	KAO
		21	623	42.04	19	25.25	155	19.24	5.25	2.1	1.6	26	5	113	.12	3	.4	1.0	18	KAO
		21	956	27.36	19	30.79	155	46.49	7.11	2.9	3.0	37	3	110	.14	1	.5	.7	31	KON
		21	1332	54.63	19	23.14	155	26.34	9.18	2.1	1.5	34	4	31	.13	3	.4	.7	24	KAO
		21	1431	37.34	19	20.05	155	6.88	7.24	2.4	2.5	45	5	110	.12	5	.5	.7	31	SF4
		21	15 3	34.19	19	20.93	155	29.89	2.57	2.8	2.9	39	2	69	.14	5	.4	1.1	27	KAO
		21	15 6	18.40	19	21.03	155	30.09	2.72	3.2	3.6	44	3	34	.13	5	.3	1.2	36	KAO
		21	1518	7.00	19	20.73	155	29.77	6.34	2.7	3.0	39	3	46	.15	5	.4	.9	33	KAO
		21	1523	17.87	19	20.90	155	30.17	3.22	2.5	2.7	27	2	53	.10	5	.3	1.4	16	KAO
		21	1532	52.25	19	20.94	155	29.98	2.54	3.3	3.6	46	4	47	.12	5	.3	1.0	38	KAO
		21	1632	20.04	19	19.22	155	9.30	4.70	1.1	1.1	21	3	96	.07	4	.4	1.7	14	SSF
		21	1636	4.86	19	25.07	155	19.69	6.29	2.1	2.0	29	5	64	.11	3	.4	.9	21	KAO
		21	1738	52.30	19	23.16	155	29.33	10.56	2.2	1.5	36	5	41	.08	3	.4	.7	27	KAO
		21	1930	18.79	19	22.35	155	29.88	8.77	2.0	2.0	38	3	42	.11	4	.4	.8	31	KAO
		21	20 1	32.57	19	24.53	155	25.95	10.93	2.0	1.7	37	3	34	.11	2	.4	.6	26	KAO
		21	22 3	24.36	19	25.17	155	20.26	7.91	1.9	2.2	31	5	84	.09	3	.4	.7	22	KAO
		21	23 5	5.52	19	25.57	155	30.10	9.40	2.2	1.7	35	3	40	.08	7	.4	.8	27	KAO
		21	2353	.35	19	22.25	155	29.97	9.50	2.0	1.5	35	4	45	.08	4	.4	.8	28	KAO
		22	713	58.27	19	24.32	154	58.36	7.00	1.9	1.5	23	1	168	.16	2	.8	.9	19	LER
		22	740	.10	19	24.99	155	20.02	5.79	1.6	1.3	25	5	92	.10	2	.4	1.2	18	KAO
		22	929	48.77	19	20.78	155	15.55	33.73	3.3	3.6	52	4	74	.12	3	.6	.9	48	DEP
		22	1034	14.50	19	22.65	155	2.88	4.52	2.0	1.9	33	5	116	.22	4	.7	2.3	24	SSF
		22	14 4	20.49	19	21.26	155	21.98	10.06	2.1	1.9	37	4	61	.10	3	.4	.7	28	SWR
		22	1429	13.44	19	25.30	154	59.41	5.09	2.1	2.0	28	1	134	.13	1	.7	1.1	20	LER
		22	17 0	21.90	19	21.64	155	21.85	9.66	1.6	1.1	25	4	56	.09	4	.4	.9	18	SWR
		22	1732	58.20	19	24.40	155	29.39	8.95	2.2	2.0	36	3	74	.10	5	.4	.8	24	KAO
		22	1833	39.85	19	28.10	155	27.08	9.18	2.0	1.4	29	3	71	.13	6	.5	1.2	20	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	22	2014	51.45	19	23.70	155	29.98	7.48	2.1	2.1	44	3	32	.12	5	.4	.9	33	KAO
		22	21 3	1.45	19	16.72	155	22.24	4.00	1.5	1.4	29	4	129	.11	5	.4	1.9	22	SWR
		22	2141	27.76	19	21.87	155	29.86	9.17	2.7	2.6	47	3	33	.11	4	.3	.6	37	KAO
		22	2348	39.89	19	24.81	155	21.75	10.60	2.4	2.4	50	6	36	.13	4	.3	.4	37	KAO
		23	033	31.19	19	19.08	155	15.15	6.81	1.7	1.3	39	2	90	.09	4	.4	.6	28	SF1
		23	038	54.28	19	25.57	155	21.19	10.68	2.7	2.5	47	5	32	.13	4	.3	.5	42	KAO
		23	1 3	17.24	19	11.57	155	28.96	32.42	2.3	1.7	36	3	84	.09	4	.7	1.3	32	DLS
		23	126	12.39	19	25.15	155	21.53	10.19	1.7	1.5	35	4	55	.12	4	.4	.7	30	KAO
		23	340	28.37	19	17.58	155	20.59	7.90	1.8	1.3	33	6	127	.11	4	.4	.7	20	SWR
		23	841	48.83	19	18.01	155	13.58	7.77	2.6	3.0	38	0	88	.09	2	.5	.6	38	SF2
		23	1117	31.02	19	22.20	155	29.83	9.10	2.6	2.9	46	3	34	.11	4	.3	.6	39	KAO
		23	14 0	8.82	19	29.08	155	37.83	5.36	2.7	2.9	37	2	72	.17	3	.5	1.2	24	MLO
		23	1838	6.88	19	20.71	155	21.46	10.43	1.5	1.3	30	3	66	.10	3	.5	.9	21	SWR
		23	1957	19.02	19	48.76	155	.26	39.78	2.3	1.7	32	1	261	.10	14	2.3	1.9	30	KEA
		23	2052	.03	19	11.30	155	28.59	6.79	2.9	3.1	51	5	124	.17	4	.6	.8	45	LSW F
		23	2053	33.09	19	12.98	155	27.69	8.29	3.0	3.3	49	4	107	.16	6	.5	.7	40	LSW F
		23	2328	41.17	19	22.25	155	28.90	9.55	2.2	2.1	45	3	36	.12	2	.3	.6	40	KAO
		23	2340	54.85	19	22.80	155	20.80	10.94	2.3	2.0	43	4	44	.11	3	.3	.5	30	KAO
		24	0 0	26.01	19	47.36	156	7.98	31.15	2.8	2.7	46	3	250	.12	40	1.3	1.9	38	HUA
		24	130	20.63	19	26.95	155	23.34	6.59	2.0	1.7	37	2	48	.14	4	.4	1.0	24	KAO
		24	523	8.40	19	25.75	155	19.92	7.50	1.6	1.1	23	3	119	.09	4	.5	1.0	19	KAO
		24	715	15.81	19	25.69	155	27.77	6.29	2.3	1.8	36	4	46	.12	5	.4	1.1	27	KAO
		24	838	17.40	19	23.43	155	20.61	11.19	1.8	1.4	31	4	55	.09	2	.4	.8	21	KAO
		24	1236	24.74	19	28.14	155	27.19	5.72	2.4	2.3	46	5	65	.14	6	.4	1.0	36	KAO
		24	1238	48.25	19	19.39	155	13.56	7.34	2.6	2.8	46	4	66	.13	4	.4	.7	40	SF2
		24	1320	43.34	19	25.21	155	21.23	10.58	1.8	1.4	35	6	50	.10	4	.3	.5	24	KAO
		24	1342	21.52	19	21.01	155	29.67	5.44	2.1	2.0	29	3	52	.11	5	.4	1.1	17	KAO
		24	1620	55.22	19	26.69	155	23.68	10.89	1.9	1.9	28	3	65	.10	4	.4	.8	17	KAO
		24	1654	.24	19	18.40	155	13.32	7.14	1.8	1.8	33	3	85	.11	3	.5	.9	21	SF2
		24	1727	7.84	19	21.78	155	27.99	5.63	2.8	3.0	45	3	40	.13	1	.3	.9	37	KAO
		24	21 4	48.45	19	21.28	155	7.43	6.89	2.5	2.6	45	5	81	.13	4	.4	.7	38	SF4
		24	2238	52.48	19	23.63	155	26.27	10.55	2.0	2.0	35	3	37	.09	3	.4	.6	27	KAO
		25	142	49.63	19	25.24	155	29.64	8.80	1.7	1.5	31	2	51	.12	6	.4	1.0	24	KAO
		25	224	40.43	19	24.79	155	21.69	10.94	1.8	2.0	30	4	43	.12	4	.4	.6	21	KAO
		25	447	8.38	19	23.44	155	20.25	10.40	1.9	2.0	35	5	52	.09	1	.4	.6	22	KAO
		25	639	40.53	19	46.24	155	53.56	30.04	3.1	3.0	46	4	191	.11	11	.7	2.0	38	HUA
		25	839	1.17	19	26.57	155	29.65	10.07	2.8	3.0	47	3	35	.12	6	.3	.5	40	KAO
		25	1257	32.42	19	18.90	155	15.88	6.89	1.4	1.3	32	2	111	.11	4	.4	.8	24	SF1
		25	1535	20.00	19	28.11	155	23.38	1.88	2.6	2.2	39	4	49	.13	3	.3	.6	24	KAO
		25	2136	11.38	19	19.11	155	13.61	7.37	1.5	1.5	35	3	69	.10	4	.4	.7	25	SF2
		26	214	52.11	19	20.98	155	2.77	4.80	1.9	2.1	34	5	130	.17	2	.5	1.3	18	SSF
		26	258	11.98	19	25.33	155	21.11	8.95	1.7	1.1	31	5	37	.09	4	.4	.7	22	KAO
		26	7 7	47.22	19	22.15	155	27.49	9.27	2.5	2.7	35	2	41	.12	1	.4	.9	33	KAO
		26	10 1	33.27	19	25.07	155	20.91	8.79	1.6	1.3	34	5	42	.10	3	.4	.7	25	KAO
		26	1018	14.39	19	25.33	155	21.17	9.38	2.1	2.0	43	5	62	.12	4	.4	.6	32	KAO
		26	1259	59.07	19	19.94	155	9.74	7.11	2.4	3.2	45	2	84	.13	4	.5	.7	37	SF3
		27	0 9	58.43	19	19.27	155	11.33	6.25	1.5	1.5	32	3	103	.07	6	.4	.9	26	SF3
		27	1 2	57.21	19	18.51	155	13.06	7.43	2.3	2.3	48	6	92	.13	3	.4	.6	39	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	27	326	44.66	19	23.48	155	27.28	10.97	1.9	1.4	30	1	62	.10	2	.5	.9	24	KAO
		27	613	49.99	19	25.59	155	20.98	9.87	2.3	2.3	47	5	40	.11	4	.4	.5	40	KAO
		27	621	17.69	19	25.91	155	29.95	10.37	2.3	2.0	34	3	40	.09	8	.4	.8	25	KAO
		27	934	4.19	19	26.21	155	28.71	8.85	2.2	2.0	39	1	42	.12	7	.4	1.1	32	KAO
		27	11	8 .90	19	25.88	155	29.77	8.55	1.9	1.3	32	2	70	.09	7	.4	1.1	25	KAO
		27	1450	26.55	19	18.69	155	11.63	8.77	3.4	3.7	51	6	116	.10	4	.4	.4	41	SF3
		27	1646	18.59	19	23.00	155	26.61	10.46	1.9	1.5	38	4	39	.11	2	.4	.6	30	KAO
		27	18	3 37.31	19	19.66	155	15.00	6.46	1.3	1.1	33	1	88	.10	4	.4	.8	23	SF1
		27	2057	25.04	19	22.37	155	29.79	9.31	2.2	2.0	44	3	34	.10	4	.3	.6	35	KAO
		27	21	9 41.21	19	19.58	155	10.92	8.14	1.8	1.9	43	4	96	.09	5	.4	.5	31	SF3
		27	2252	.75	19	26.21	155	20.24	6.84	1.7	1.5	28	0	47	.09	3	.4	.9	21	KAO
		27	23	7 13.24	19	17.66	155	16.19	7.87	1.8	2.1	44	3	131	.14	4	.5	.7	28	SF1
		27	2326	54.81	19	27.41	155	28.41	8.22	2.1	1.5	38	5	48	.11	7	.4	1.1	28	KAO
		28	156	23.23	19	19.13	155	15.25	6.79	1.6	1.8	38	2	100	.11	4	.4	.7	26	SF1
		28	336	.94	19	21.76	155	1.63	4.95	1.7	1.7	26	2	188	.28	8	1.5	3.9	11	SSF
		28	341	4.39	19	22.43	155	27.73	10.04	1.9	1.3	29	2	39	.11	0	.4	.7	22	KAO
		28	427	10.29	19	24.62	155	38.05	1.02	2.3	2.6	33	0	98	.13	6	.4	1.7	24	MLO
		28	1026	52.11	19	20.54	155	12.99	7.44	1.8	1.9	44	4	65	.11	4	.4	.7	35	SF2
		28	1052	42.62	19	23.36	155	26.37	10.60	1.8	1.8	35	4	38	.12	3	.4	.7	29	KAO
		28	1342	22.67	19	25.01	155	20.00	5.84	1.8	1.8	31	5	58	.11	3	.4	.9	22	KAO
		28	1627	37.03	19	24.08	155	27.08	10.14	1.6	1.1	32	2	60	.10	3	.4	.7	23	KAO
		28	1752	26.01	19	23.01	155	20.83	10.22	1.9	1.7	35	3	43	.10	2	.4	.6	26	KAO
		28	1823	35.26	19	20.92	155	21.38	9.95	1.7	1.3	31	6	63	.11	4	.4	.9	20	SWR
		28	1829	45.39	19	20.92	155	21.56	11.49	2.1	2.3	45	6	64	.09	3	.4	.4	29	SWR
		28	21	7 23.60	19	21.96	155	29.66	10.00	1.9	1.8	35	1	42	.08	4	.4	.7	22	KAO
		28	2337	49.59	19	25.94	155	21.22	8.75	2.0	1.5	33	5	31	.10	3	.4	.8	20	KAO
		29	0	4 58.92	19	25.46	155	21.43	9.58	1.6	1.1	33	5	42	.11	4	.4	.7	24	KAO
		29	115	4.90	19	22.33	155	29.89	9.35	2.0	1.5	38	2	42	.09	4	.3	.9	27	KAO
		29	133	19.34	19	30.00	155	4.03	44.25	2.3	1.9	36	2	63	.12	1	.8	1.8	32	DEP
		29	247	35.03	19	40.04	156	13.49	30.16	2.9	3.0	49	2	260	.13	38	1.6	2.1	41	HUA
		29	258	6.93	19	18.45	155	13.42	10.35	3.7	4.0	46	1	81	.09	3	.5	.4	43	SF2 F
		29	357	17.65	19	21.61	155	30.36	9.16	2.0	1.5	35	4	47	.09	5	.4	.8	24	KAO
		29	539	29.02	19	22.65	155	27.09	9.20	1.7	1.5	27	2	59	.10	1	.4	.8	22	KAO
		29	6	4 54.12	19	18.60	155	13.10	5.28	1.8	1.8	40	6	89	.16	3	.5	1.4	29	SF2
		29	616	57.47	19	18.85	155	13.59	7.38	2.0	2.0	45	4	71	.12	3	.5	.7	30	SF2
		29	620	57.19	19	19.84	155	12.41	6.19	1.7	1.3	29	2	80	.11	5	.5	1.1	23	SF2
		29	958	50.78	19	30.13	155	27.29	5.67	3.5	3.8	51	4	47	.14	4	.3	.9	46	MLO
		29	10	5 2.72	19	23.45	155	25.73	10.65	2.1	1.2	36	5	31	.11	4	.4	.7	29	KAO
		29	1150	11.82	19	25.40	155	37.64	.91	3.3	3.3	41	1	94	.12	4	.4	.9	32	MLO
		29	1319	55.50	19	29.55	155	27.39	4.30	2.1	1.2	24	3	78	.10	5	.4	2.0	17	KAO
		29	21	8 11.25	19	25.40	155	30.82	9.19	2.0	1.2	34	2	44	.11	8	.5	1.1	25	KAO
		29	2135	26.47	19	11.51	155	28.87	32.69	2.5	1.8	47	5	81	.08	4	.6	1.0	39	DLS
		30	126	17.51	19	26.14	155	22.42	8.99	1.6	1.1	38	4	40	.11	4	.3	.7	25	KAO
		30	224	41.44	19	18.39	155	13.45	6.62	1.7	1.5	41	2	80	.11	3	.5	.7	28	SF2
		30	257	17.36	19	29.70	155	38.06	3.71	2.3	1.1	38	2	74	.18	4	.5	1.0	28	MLO
		30	257	45.29	19	24.85	155	21.51	9.83	1.9	1.1	31	2	62	.11	4	.4	.7	24	KAO
		30	3	8 8.81	19	28.55	155	35.73	2.32	2.5	2.1	18	0	73	.11	1	.5	.3	9	MLO
		30	6	5 39.86	19	25.47	155	21.74	11.30	2.1	1.5	41	5	33	.10	4	.4	.6	30	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	30	9	0 19.85	19	23.98	155	20.76	9.60	1.7	1.3	33	5	63	.11	2	.4	.7	17	KAO
		30	942	46.82	19	25.55	155	21.53	10.05	2.5	2.5	49	7	35	.11	4	.3	.4	39	KAO
		30	1132	4.17	19	21.80	155	6.98	6.69	1.7	1.3	31	2	76	.13	3	.5	1.0	25	SF4
		30	1355	25.72	19	26.60	155	23.50	10.42	2.3	2.1	44	4	64	.12	4	.4	.6	27	KAO
		30	1419	29.51	19	15.74	155	23.18	5.02	2.0	2.0	36	4	127	.12	3	.4	1.4	28	SWR
		30	1535	27.21	19	18.37	155	13.33	5.23	1.5	1.5	27	3	85	.10	3	.4	1.1	21	SF2
		30	2026	50.25	19	22.24	155	30.21	8.06	1.8	1.3	36	2	44	.12	5	.4	.8	22	KAO
		31	13	8 45.60	19	22.43	155	30.12	9.70	1.8	1.2	26	1	46	.07	4	.4	1.0	22	KAO
		31	1410	25.57	19	23.58	155	25.51	9.96	1.6	1.5	34	2	34	.12	3	.4	.8	29	KAO
		31	17	1 16.40	19	20.51	155	30.02	9.64	1.8	1.5	34	1	50	.09	6	.4	.8	18	KAO
		31	2127	50.06	19	16.56	155	22.83	5.87	1.9	1.9	36	1	121	.15	5	.5	1.2	24	SWR
		31	2243	14.83	19	26.36	155	37.53	1.42	2.5	2.2	23	1	93	.14	3	.4	.7	14	MLO

Table 6. HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	JAN	1	2148	41.71	19	21.44	155	8.84	6.19	2.6	3.2	36	4	63	.12	5	.5	1.2	24	SF4	
		2	148	44.87	19	21.54	155	9.93	1.87	2.5	3.4	32	4	61	.13	1	.4	.2	22	SER	
		2	925	51.33	19	22.43	155	6.81	2.06	2.3	3.1	22	2	92	.09	1	.4	.3	21	SME	
		2	948	51.32	19	21.97	155	11.25	2.52	2.9	3.1	30	2	71	.12	3	.4	.8	22	SER	
		2	17 0	10.66	19	20.69	154	59.80	9.18	3.3	3.4	44	2	197	.12	6	.8	.5	37	LER	
		2	1939	52.51	19	18.79	155	7.29	9.52	3.3	3.0	49	9	130	.10	3	.5	.3	42	SF4	
		3	1155	4.02	19	21.03	155	3.86	7.97	3.8	4.0	44	2	85	.11	3	.4	.5	38	SF5	F
		3	1747	37.04	19	22.33	155	6.01	9.15	2.8	3.0	41	4	72	.09	1	.4	.5	35	SF4	
		5	454	13.03	19	18.77	155	13.54	9.91	3.4	3.7	43	2	80	.13	3	.5	.4	41	SF2	F
		8	1450	15.20	19	22.22	155	15.59	33.58	3.1	3.0	48	2	56	.10	1	.6	1.0	45	DEP	
		10	721	5.93	19	22.50	155	2.60	7.98	2.2	3.0	17	1	160	.10	5	1.0	1.3	12	SF5	
		13	852	35.02	19	17.03	155	15.53	11.12	3.0	3.0	29	0	151	.10	6	.7	.5	22	SF1	
		14	310	34.90	19	21.36	155	17.19	1.53	2.5	3.2	31	2	50	.13	2	.3	.4	19	SWR	
		15	029	35.81	19	37.28	156	26.60	13.70	3.2	3.0	44	3	238	.13	64	1.8	3.5	32	DIS	
		16	2 8	5.04	19	20.58	155	3.74	8.07	2.7	3.2	42	4	101	.11	2	.6	.4	35	SF5	
		16	733	53.65	19	21.23	155	7.36	9.24	3.9	3.9	48	4	82	.11	4	.4	.3	44	SF4	F
		17	1728	59.67	19	21.21	155	4.80	8.42	2.8	3.1	39	1	92	.07	4	.5	.4	32	SF5	
		19	242	25.66	19	21.17	154	59.56	.04	2.5	3.1	38	1	194	.24	6	.9	.8	21	SLE	*
		20	1629	.32	19	19.79	155	13.73	8.43	2.8	3.2	38	2	119	.11	5	.4	.6	36	SF2	
		21	046	4.01	19	21.51	155	7.36	7.02	2.5	3.1	40	2	78	.12	3	.4	.8	38	SF4	
		21	122	36.12	19	25.65	155	37.83	1.22	2.8	3.2	31	0	96	.11	4	.5	1.3	31	MLO	
		21	859	42.36	19	20.91	154	59.03	.01	2.3	3.1	31	2	200	.22	7	1.0	.8	19	SLE	*
		23	1013	39.86	19	22.76	155	3.58	12.04	3.3	3.5	46	6	99	.12	4	.5	.3	39	SF5	
		23	1046	46.62	19	22.78	155	3.60	12.02	3.5	3.9	48	5	99	.09	3	.4	.3	41	SF5	F
		23	18 0	24.92	19	21.49	155	1.85	9.53	4.3	4.3	47	2	155	.11	4	.7	.4	45	SF5	F
		24	23 8	28.23	19	13.77	155	27.28	9.72	3.3	3.5	45	2	140	.15	6	.6	.7	42	LSW	
		26	1338	34.35	19	8.54	155	30.54	11.47	3.1	3.1	36	0	155	.15	5	.7	.6	28	LSW	F
		26	1557	58.06	19	22.47	155	25.31	10.49	3.2	3.2	48	4	32	.14	4	.4	.5	42	KAO	
	FEB	1	1835	2.10	19	20.66	155	2.92	6.21	2.9	3.0	39	3	124	.09	1	.4	.6	30	SF5	
		2	1946	22.66	19	19.98	155	6.53	9.88	3.3	3.4	44	2	117	.11	5	.6	.4	41	SF4	
		6	1821	12.56	19	16.81	155	30.47	8.41	3.1	3.1	43	3	49	.18	3	.4	.8	32	LSW	F
		7	754	57.36	19	19.50	155	8.57	7.53	2.8	3.1	36	1	79	.11	4	.5	.7	27	SF4	
		7	16 2	45.49	19	21.47	155	14.44	28.01	4.1	4.2	44	0	59	.10	3	.6	.9	44	DEP	F
		10	254	32.48	19	48.04	155	42.75	20.56	2.9	3.0	38	0	245	.11	32	1.8	5.0	35	KEA	
		14	2311	54.02	19	20.17	155	6.56	8.86	3.4	3.4	43	4	112	.09	5	.4	.5	36	SF4	
		19	18 5	12.07	19	19.93	155	7.32	8.62	3.4	3.8	47	4	104	.09	5	.5	.4	35	SF4	F
		20	324	18.74	20	12.25	156	41.22	36.17	2.7	3.2	35	1	255	.12	77	2.0	2.3	19	DIS	
		21	1240	40.02	20	2.59	155	59.26	10.87	2.9	3.0	23	2	253	.14	24	1.8	.8	20	KOH	
		24	1849	46.08	19	25.28	155	38.09	1.86	3.7	3.6	34	2	100	.13	5	.4	1.0	25	MLO	
		27	513	4.92	19	19.50	155	11.28	9.56	2.6	3.0	43	1	96	.10	5	.4	.4	36	SF3	
	MAR	2	338	48.64	19	25.49	155	37.71	1.53	3.1	3.1	33	2	95	.11	4	.4	.9	28	MLO	
		4	2327	23.85	19	21.62	155	3.12	8.40	3.4	3.6	46	1	112	.12	3	.5	.4	42	SF5	F
		5	1610	2.45	19	45.51	156	8.05	40.37	3.5	3.4	45	3	249	.12	32	1.2	1.6	40	HUA	
		8	641	3.40	19	11.97	155	35.58	11.49	4.5	4.3	39	1	207	.14	6	.9	.5	38	LSW	F
		11	429	28.62	19	25.53	155	37.62	1.17	2.7	3.2	31	0	93	.12	4	.4	1.2	20	MLO	
		12	2243	4.93	19	58.92	155	19.98	13.53	3.0	3.1	45	2	204	.11	10	.9	.6	30	KEA	F
		15	652	29.50	19	35.24	156	24.69	34.92	3.1	3.1	37	0	237	.10	53	2.0	2.3	33	DIS	
		16	1610	7.13	18	27.17	154	16.71	39.46	4.3	5.0	42	0	318	.11	127	13.6	2.9	42	DIS	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1983	MAR	17	1835	42.74	19	20.10	155	11.82	10.20	3.1	3.2	41	1	81	.08	5	.4	.3	34	SF3	
		18	1845	30.05	19	23.29	155	26.56	10.03	3.5	3.8	48	3	31	.13	2	.4	.5	43	KAO	F
		20	838	26.70	19	19.71	155	6.96	8.95	2.8	3.2	36	2	116	.10	5	.6	.4	33	SF4	
		20	1718	39.21	19	21.43	155	2.99	6.88	4.8	5.0	45	1	169	.11	6	.7	.6	43	SF5	F
		20	23 2	21.41	19	21.91	155	25.12	11.27	3.9	4.0	49	4	38	.12	5	.3	.4	44	KAO	F
		21	037	28.88	19	22.01	155	25.42	11.32	3.4	3.6	46	3	39	.13	4	.4	.4	41	KAO	
		21	2136	23.05	19	21.22	155	27.76	11.16	3.3	3.3	47	4	42	.13	2	.4	.5	36	KAO	
		24	259	33.25	19	25.60	155	28.25	10.94	3.0	3.5	47	2	34	.11	6	.3	.4	40	KAO	
		29	354	39.92	19	20.14	155	20.83	31.50	3.2	3.4	48	2	72	.10	4	.6	.9	45	DEP	
	APR	4	1144	47.60	19	25.82	155	37.59	2.96	2.9	3.2	31	2	94	.12	4	.4	.9	27	MLO	
		7	11 0	33.48	19	16.88	155	28.62	8.93	3.3	3.7	50	5	54	.15	4	.4	.6	44	LSW	F
		12	049	26.90	19	29.63	155	40.00	7.08	3.6	3.8	40	4	140	.12	7	.5	.7	32	MLO	F
		15	1451	14.46	19	20.09	155	11.85	9.23	3.1	2.9	38	2	81	.09	5	.4	.6	32	SF3	F
		22	2043	41.88	19	19.99	155	8.23	9.21	3.0	3.3	43	2	84	.09	5	.4	.3	36	SF4	
		24	1 9	17.77	19	21.08	155	11.61	8.68	2.9	3.2	48	5	67	.10	4	.3	.4	36	SF3	
		25	22 2	51.59	19	21.31	155	3.14	7.89	2.9	3.2	42	3	111	.10	3	.5	.4	37	SF5	F
		27	934	4.03	20	23.70	156	17.98	25.61	3.3	3.4	38	4	207	.13	42	.8	3.0	32	KOH	
		27	2334	32.86	19	19.79	155	7.55	8.40	4.0	4.1	45	3	102	.09	5	.4	.3	38	SF4	F
		28	1315	30.37	19	35.71	156	1.69	40.10	3.0	3.0	46	3	228	.09	17	1.0	1.4	42	KON	
	MAY	2	1719	37.92	19	55.66	155	40.02	22.95	3.0	3.1	48	4	124	.10	25	.6	2.5	42	KOH	
		5	944	34.02	18	25.32	156	6.65	37.38	2.5	3.2	26	0	323	.24	106	39.9	4.7	5	DIS	L*
		7	847	10.39	19	18.08	155	29.28	9.02	3.0	3.3	45	3	45	.13	6	.4	.6	41	LSW	
		9	616	52.33	20	39.15	155	55.25	31.30	3.0	3.3	30	3	207	.09	37	1.0	1.2	21	DIS	F
		10	1457	12.03	19	41.81	155	2.17	.13	3.1		28	0	109	.20	1	1.4	1.6	22	HIL	*
		11	422	49.03	19	22.42	155	27.86	7.72	2.8	3.1	44	3	44	.12	0	.3	.7	38	KAO	
		13	030	7.96	19	10.24	155	34.95	9.40	4.4	4.1	48	4	107	.20	9	.6	.8	43	LSW	F
		14	418	18.17	19	21.67	155	2.18	8.14	3.3	3.7	44	4	142	.10	4	.6	.4	37	SF5	
		15	1343	30.94	19	20.77	155	11.98	8.31	2.8	3.0	46	3	70	.14	4	.4	.6	42	SF3	
		17	751	36.00	19	21.52	155	30.06	9.30	2.9	3.1	41	3	45	.13	5	.4	.6	34	KAO	
		17	2012	6.97	19	29.29	155	39.40	6.26	2.9	3.2	34	2	211	.12	6	.9	1.1	25	MLO	
		18	549	13.34	19	43.88	155	43.77	40.88	3.2	3.3	43	3	237	.08	25	1.1	1.5	37	HUA	
		19	1146	37.28	19	33.96	155	41.62	1.64	3.3	3.1	38	4	82	.14	10	.5	1.1	27	MLO	
		21	243	4.76	19	35.45	155	41.94	.01	3.1	3.1	36	3	89	.13	11	.4	.6	23	KEA	*
		24	749	17.85	19	19.49	155	8.67	9.52	3.1	3.3	44	2	77	.11	4	.5	.4	36	SF4	
		25	23 9	37.05	19	20.56	155	2.45	6.60	3.1	3.1	42	3	159	.12	1	.6	.5	34	SF5	
		27	245	36.98	19	49.20	155	21.29	16.79	3.0	2.3	43	3	115	.13	8	.8	2.2	37	KEA	
		27	1847	56.45	19	21.33	155	1.13	7.60	2.9	3.3	43	4	174	.10	4	.6	.4	30	SF5	
		28	012	33.72	19	46.01	156	2.84	40.10	3.0	3.3	49	4	189	.11	24	.8	1.3	41	HUA	
		30	2030	55.46	19	22.05	155	2.17	8.72	2.8	3.1	46	5	137	.09	4	.5	.4	36	SF5	
		31	359	3.40	19	20.56	155	31.37	23.74	3.4	3.6	51	5	34	.09	7	.5	.9	46	DML	F
	JUN	3	2247	38.34	19	19.84	155	15.70	8.56	3.3	3.5	44	2	87	.12	3	.4	.6	41	SF1	F
		4	2355	52.17	19	29.61	154	57.74	43.94	3.5	3.7	36	0	102	.11	6	1.6	2.8	33	LER	
		5	1854	31.04	19	9.17	155	32.44	33.11	4.1	4.0	49	3	130	.08	8	.6	1.2	46	DLS	F
		7	346	37.79	19	25.61	155	37.84	2.71	3.0	3.2	34	3	97	.12	4	.4	.8	26	MLO	
		7	12 1	40.84	19	30.38	155	52.82	10.79	2.8	3.3	33	2	125	.13	4	.7	.4	27	KON	F
		8	12 3	6.28	19	20.04	155	8.10	9.34	2.9	3.2	49	6	86	.09	5	.4	.4	37	SF4	
		12	456	21.99	18	56.59	155	30.17	14.85	2.7	3.1	39	2	237	.10	18	1.4	.7	32	DLS	
		17	152	55.27	19	18.99	155	3.62	7.22	2.8	3.3	39	3	194	.09	9	.7	.6	29	SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	JUN	21	1755	15.74	19	14.53	155	34.07	8.92	3.8	3.8	46	2	75	.14	5	.5	.6	43	LSW F
		22	1251	13.49	19	29.36	155	51.77	10.77	3.3	3.0	34	2	97	.13	6	.6	.4	27	KON
		24	1457	35.48	19	20.18	155	11.85	6.29	3.0	2.8	39	2	79	.12	5	.4	.7	35	SF3
		26	1658	48.67	19	21.78	155	4.93	9.18	3.7	3.9	48	3	79	.11	3	.5	.3	44	SF5 F
		29	4	3 52.81	19	32.04	155	36.64	10.62	3.1		42	2	84	.14	5	.5	.5	37	MLO
		30	010	56.80	19	1.14	155	30.67	38.31	3.4	3.8	51	5	202	.09	16	.8	1.2	46	DLS
		30	136	9.80	19	20.69	155	6.91	8.64	2.7	3.0	44	3	96	.10	4	.4	.4	32	SF4
		30	2011	18.61	19	23.09	155	26.71	10.24	3.4	3.3	51	5	32	.13	2	.3	.4	46	KAO F
	JUL	1	11	0 16.56	19	18.83	155	16.70	32.61	3.1	3.1	46	1	108	.10	3	.6	1.0	44	DEP
		2	959	.54	19	25.76	155	37.46	.21	3.1	3.2	39	2	92	.11	6	.4	.6	33	MLO
		7	2	5 17.29	18	23.08	155	36.38	35.76	3.7	3.4	46	5	312	.09	67	1.6	2.5	42	DIS
		7	918	43.99	19	32.23	155	56.62	9.23	3.1	2.5	35	5	209	.20	6	1.1	.6	21	KON
		9	1130	32.42	18	54.75	155	15.68	11.13	2.9	3.3	36	1	248	.12	35	1.5	.6	15	LOI
		15	10	8 51.61	19	20.75	155	11.90	8.34	3.0	2.9	48	4	70	.13	4	.4	.6	42	SF3
		16	040	29.09	19	21.42	155	1.39	7.04	3.1	3.2	43	1	167	.13	4	.6	.4	34	SF5
		18	2035	33.96	20	12.33	157	40.18	28.70	3.1	3.6	22	1	330	.18	198	4.5	4.6	13	DIS
		26	1021	29.73	19	25.57	155	24.64	9.26	3.6	3.9	48	2	36	.12	1	.4	.5	46	KAO F
		29	4	5 18.10	19	15.96	155	31.94	6.44	2.8	3.1	43	4	55	.22	4	.5	1.1	29	LSW
		30	2	1 6.76	19	21.95	155	6.54	8.10	3.0	3.0	47	4	77	.11	2	.4	.6	39	SF4
		30	749	56.08	19	25.37	155	24.75	9.84	3.3	3.4	46	3	72	.13	1	.4	.6	41	KAO
		30	950	43.75	19	21.73	155	15.21	8.92	3.0	2.9	46	3	61	.13	2	.4	.5	39	SF1
		31	343	55.23	19	21.11	155	8.31	7.55	2.8	3.2	41	3	71	.10	3	.4	.6	33	SF4 F
		31	539	16.34	19	19.70	155	7.44	8.73	3.8	3.9	44	3	105	.09	4	.5	.4	36	SF4
		31	1616	57.97	19	18.23	155	15.60	10.80	3.5	3.6	46	3	138	.11	5	.4	.4	42	SF1 F
	AUG	7	1041	26.27	19	27.29	154	50.86	8.37	2.9	3.0	40	4	232	.15	1	1.2	.4	32	LER
		8	1139	51.38	19	20.06	155	12.05	8.75	3.1	3.2	44	4	79	.09	5	.4	.5	32	SF3
		13	021	33.47	19	25.93	155	37.69	1.56	2.9	3.2	33	2	94	.14	3	.5	.8	25	MLO
		13	1714	18.67	19	19.81	155	6.95	9.34	3.6	3.7	51	5	114	.10	5	.5	.4	43	SF4 F
		15	2335	21.47	19	19.01	155	13.07	9.70	3.0	2.7	46	4	128	.14	7	.5	.5	35	SF2 F
		16	010	44.63	19	57.73	155	50.38	7.16	3.7	3.8	44	5	189	.11	19	.9	.9	37	KOH F
		18	543	59.52	19	58.49	155	8.24	31.30	4.0	4.2	46	4	262	.10	23	1.1	1.9	41	KEA F
		19	2252	50.86	19	25.95	155	37.04	2.70	3.1	3.5	46	4	63	.14	3	.4	.7	35	MLO
		22	353	38.08	19	21.21	155	6.84	8.06	2.9	3.1	45	2	87	.12	3	.4	.6	37	SF4
		23	348	35.10	19	20.25	155	12.79	9.89	3.7	4.1	44	1	70	.10	4	.4	.3	40	SF2 F
		24	2238	51.03	19	21.83	155	24.99	10.03	2.8	3.2	44	4	39	.13	4	.4	.5	33	SWR
		26	623	52.10	19	25.29	155	37.45	1.35	3.4	3.1	36	2	74	.14	4	.4	1.0	30	MLO
		28	734	.63	19	18.62	155	18.01	32.55	3.1	3.1	43	1	112	.10	2	.7	1.1	41	DEP
		31	145	35.76	18	54.78	155	14.68	11.69	3.1	3.8	35	0	248	.11	36	2.0	.8	22	LOI L
	SEP	3	140	33.35	19	39.38	156	7.48	41.46	3.2	3.0	44	1	246	.10	29	1.1	1.8	41	HUA
		5	2227	44.70	19	20.39	155	12.75	10.44	3.5	3.7	45	2	69	.10	4	.5	.4	43	SF2 F
		6	356	41.02	19	30.38	155	39.24	7.67	3.3	3.4	42	1	96	.12	6	.5	.6	37	MLO
		7	5	9 10.02	19	20.45	155	17.86	39.29	3.5	4.3	50	5	68	.11	1	.6	1.0	45	DEP F
		9	630	55.35	19	19.89	155	7.32	9.02	5.4	5.2	46	1	105	.10	5	.5	.4	45	SF4 F
		9	1027	33.74	19	20.29	155	3.58	8.19	2.8	3.0	44	4	114	.10	1	.6	.5	35	SF5
		9	1744	4.92	19	30.48	155	39.62	6.46	3.1	3.0	39	3	102	.13	7	.5	1.0	24	MLO
		12	1859	37.16	19	30.18	155	39.83	7.75	3.3	3.4	43	4	99	.11	7	.4	.6	30	MLO
		13	1939	57.53	19	21.25	155	3.14	8.89	4.0	4.0	50	1	110	.11	3	.6	.4	48	SF5 F
		14	254	59.83	19	30.58	155	39.58	5.02	2.7	3.0	43	4	97	.17	7	.5	1.5	32	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	SEP	14	643	43.50	19	30.26	155	39.32	8.05	3.5	3.6	46	3	96	.13	6	.4	.5	37	MLO F
		14	855	58.36	19	30.65	155	39.24	7.70	3.0	3.5	42	2	51	.12	6	.4	.6	32	MLO
		14	13	0 15.20	19	21.43	155	3.03	8.41	3.6	3.7	49	4	115	.10	3	.5	.4	43	SF5 F
		14	1337	17.09	19	30.46	155	39.48	7.78	3.7	4.1	44	3	51	.13	7	.4	.6	41	MLO
		14	2239	31.17	19	20.30	155	12.00	8.63	2.4	3.0	43	2	76	.13	5	.4	.5	35	SF3
		16	922	12.22	19	30.19	155	39.19	7.68	4.0	4.1	46	2	50	.12	6	.4	.6	43	MLO F
		16	15	9 53.21	19	30.08	155	39.06	8.23	4.2	4.2	45	1	50	.13	6	.4	.5	44	MLO F
		17	2328	29.07	19	22.05	155	.07	6.38	3.5	4.0	46	3	175	.12	6	.6	.5	41	SF5
		21	834	49.35	19	19.18	155	26.48	11.24	3.1	3.5	51	5	55	.13	6	.3	.5	46	KAO
		22	2250	55.69	19	25.30	155	37.60	.14	2.9	3.1	34	1	75	.14	4	.5	.7	22	MLO
		23	721	5.17	19	43.82	156	10.70	39.42	3.0	2.1	37	2	255	.10	38	1.4	1.1	26	HUA
		23	2340	9.51	19	27.23	155	35.57	9.48	2.6	3.4	18	1	48	.13	1	.5	.9	8	MLO L
		26	2	2 22.47	19	17.87	155	46.59	10.63	3.0	3.0	40	0	90	.12	11	.5	.4	35	KON
		27	1944	32.79	19	19.78	155	8.27	9.37	3.2	3.5	45	3	85	.10	5	.5	.4	38	SF4 F
	OCT	1	017	25.80	19	30.87	155	39.36	6.87	2.9	3.3	40	3	78	.15	7	.5	.9	28	MLO
		2	138	27.61	19	19.49	155	12.17	9.99	3.4	3.6	43	1	89	.10	5	.4	.3	42	SF3 F
		4	1945	53.52	19	22.13	155	25.90	10.71	3.1	3.4	48	2	40	.15	3	.4	.5	43	KAO
		5	1853	30.47	19	30.52	155	39.47	6.58	3.2	3.4	41	3	77	.14	7	.4	.9	29	MLO
		7	134	21.95	19	19.72	155	7.59	8.85	2.9	3.2	48	6	102	.09	4	.4	.4	39	SF4
		7	1721	36.29	19	44.52	155	28.38	15.84	3.9	4.2	53	6	118	.10	5	.4	.7	45	KEA F
		8	1621	34.90	19	19.52	155	11.55	8.56	3.4	3.5	44	0	95	.09	6	.4	.3	41	SF3 F
		17	1254	19.35	19	25.66	155	37.77	1.55	2.7	3.2	36	4	96	.12	4	.4	.7	31	MLO
		21	2342	15.29	19	40.18	156	3.91	34.45	3.3	3.4	51	5	235	.11	25	.8	1.3	46	HUA
		22	438	55.05	19	22.23	155	24.51	10.51	2.8	3.1	48	1	27	.13	4	.3	.4	44	KAO
		24	249	32.57	19	20.76	155	3.81	8.10	2.9	3.0	44	2	94	.11	2	.6	.4	38	SF5
		24	19	5 26.25	18	52.50	155	10.15	43.57	3.4	3.3	50	3	256	.10	44	1.7	2.2	47	LOI
		25	11	2 35.36	19	29.69	155	38.85	8.21	4.0	4.1	45	2	80	.11	5	.5	.4	43	MLO F
		25	1338	16.11	19	42.32	155	2.77	4.79	2.5	3.1	30	0	192	.18	25	1.4	3.3	24	HIL L
		27	18	3 35.35	19	19.65	155	7.80	9.25	3.4	3.5	49	5	98	.10	4	.5	.4	42	SF4
		27	1853	13.76	19	19.65	155	7.76	9.09	3.2	3.3	46	3	99	.10	4	.5	.4	42	SF4 F
		29	1926	9.09	19	20.87	155	2.84	8.82	3.2	3.4	51	4	127	.13	2	.6	.4	42	SF5
		30	1549	14.52	19	27.07	155	27.25	9.73	3.9	4.0	51	4	52	.13	5	.4	.5	46	KAO F
	NOV	11	755	43.73	19	25.94	155	37.43	2.54	3.3	3.1	31	1	92	.12	3	.4	.8	30	MLO
		11	22	5 38.32	19	24.90	155	16.05	15.51	3.6	4.0	52	3	36	.11	2	.4	.2	47	DEP
		14	716	49.42	19	26.22	155	37.14	2.07	3.5	3.3	44	2	63	.14	2	.4	.6	39	MLO
		16	613	.15	19	25.76	155	27.11	10.92	4.5	4.7	36	0	56	.12	4	.4	.9	36	KAO
		16	1022	58.61	19	20.50	155	16.28	1.30	2.4	3.3	21	1	80	.11	2	.3	.6	17	SSF
		16	1045	50.41	19	25.36	155	19.62	6.16	2.9	3.2	35	2	46	.14	3	.4	.8	34	KAO
		16	1122	4.31	19	27.15	155	27.16	1.91	2.8	3.0	21	1	85	.12	5	.4	1.4	21	KAO
		16	1330	47.55	19	29.14	155	23.77	11.75		4.2	45	4	44	.11	6	.3	.4	43	KAO F
		16	1423	43.43	19	23.61	155	26.08	11.12	3.3	3.5	42	6	31	.11	3	.3	.4	38	KAO
		16	1457	42.92	19	27.19	155	23.54	9.08	3.1	3.4	43	5	41	.14	5	.4	.6	39	KAO
		16	1559	4.75	19	25.03	155	19.69	5.22	2.8	3.1	38	0	37	.12	2	.4	1.1	33	KAO
		16	16	8 28.83	19	25.62	155	19.43	6.40	3.5	3.7	38	1	39	.15	4	.4	.9	36	KAO
		16	1618	42.01	19	28.03	155	27.15	8.07	3.0	2.7	40	3	54	.12	6	.3	.7	32	KAO
		16	1733	.24	19	21.73	155	28.42	10.57		3.4	46	4	38	.12	2	.3	.4	41	KAO
		16	2117	23.43	19	30.07	155	27.18	3.43	3.0	2.9	41	2	58	.14	4	.3	1.0	36	MLO
		16	2212	46.03	19	18.01	155	15.85	9.76	3.1	3.3	43	1	140	.12	5	.5	.5	42	SF1

HVO EARTHQUAKE SUMMARY LIST — PAGE 5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	NOV	17	417	8.64	19	21.57	155	19.63	31.97	2.7	3.1	47	3	45	.12	4	.6	1.0	44	DEP
		17	1212	47.50	19	22.19	155	28.65	8.69	3.7	3.9	48	4	37	.12	8	.3	.7	38	KAO
		17	2330	39.61	19	28.32	155	21.15	1.99		3.7	39	3	115	.14	2	.4	.3	36	KAO
		18	133	35.41	19	21.04	155	29.63	6.23		3.0	41	3	45	.12	4	.3	.8	31	KAO
		18	3 1	54.99	19	25.40	155	19.76	3.84		3.2	43	3	46	.13	3	.5	.9	35	KAO
		18	651	4.78	19	24.95	155	21.92	11.04	2.5	3.3	49	6	36	.11	5	.3	.4	38	KAO
		18	742	30.87	19	50.56	155	34.70	16.01	2.9	3.0	42	3	111	.09	14	.6	1.3	28	KEA
		18	1624	21.56	19	29.92	155	26.68	1.93	2.9	3.2	41	2	49	.14	4	.3	1.2	29	KAO
		19	137	51.72	19	17.40	155	15.65	10.49	4.1	4.1	49	3	146	.13	5	.5	.5	47	SF1 F
		19	632	37.13	19	29.13	155	26.00	9.27	3.0	3.1	51	5	43	.14	5	.4	.6	44	KAO
		19	918	34.62	19	25.07	155	30.02	10.28	3.2	3.2	49	5	35	.12	6	.3	.5	42	KAO
		19	935	24.97	19	27.25	155	29.67	10.66	3.0	3.2	50	5	34	.12	9	.3	.5	43	KAO
		19	1130	32.21	19	25.08	155	21.44	11.98	3.0	3.2	46	5	34	.10	4	.3	.4	40	KAO
		20	356	43.30	19	22.38	155	28.37	6.90	3.2	3.5	25	0	63	.14	1	.5	1.0	16	KAO
		20	6 3	4.40	19	22.82	155	26.04	10.53	2.9	3.2	32	1	75	.11	3	.4	.4	19	KAO
		20	746	7.91	19	28.47	155	26.86	7.31	2.8	3.0	16	0	80	.09	7	.6	1.2	12	KAO
		20	10 8	28.41	19	22.65	155	28.32	9.18	2.6	3.1	49	5	36	.12	1	.5	.5	43	KAO
		20	1951	45.26	19	22.92	155	25.74	10.46	2.6	3.0	48	4	39	.13	3	.5	.4	40	KAO
		21	1448	45.74	19	22.15	155	29.93	8.83	2.6	3.1	46	2	33	.11	4	.3	.6	42	KAO
		22	439	15.73	19	18.86	155	13.38	9.30	3.1	3.1	50	6	77	.11	3	.4	.4	40	SF2 F
		22	553	11.34	19	56.49	155	31.11	34.18	3.2	3.8	52	6	159	.12	19	.7	1.7	45	KEA F
		22	830	8.80	19	56.54	155	31.07	35.42	3.6	3.9	51	4	159	.10	19	.7	1.5	45	KEA
		22	2032	30.04	19	31.50	155	24.93	23.97	3.6	4.2	51	3	47	.12	4	.5	.9	47	DML F
		23	038	45.93	19	27.88	155	26.87	8.57	3.1	3.0	52	8	54	.12	6	.3	.6	42	KAO
		23	233	40.58	19	23.55	155	26.08	11.17	3.8	3.7	49	4	27	.12	3	.5	.4	45	KAO F
		24	921	13.61	19	27.25	155	23.60	7.70	2.8	3.1	54	6	41	.16	5	.4	.7	44	KAO
		25	1817	32.98	19	8.95	155	34.93	11.11	3.7	3.9	50	2	121	.17	12	.6	.6	41	LSW F
		26	17 8	52.55	19	28.29	155	27.29	9.14	3.0	3.2	50	5	40	.12	7	.3	.7	44	KAO F
		27	927	31.66	19	21.48	155	2.99	8.87	3.9	4.0	52	4	117	.11	3	.5	.4	46	SF5
		27	13 1	12.79	19	21.68	155	24.15	13.74	3.2	3.4	47	6	42	.11	3	.4	.3	41	DEP
		27	1520	41.98	19	22.34	155	27.46	10.80	3.5	3.5	50	3	39	.13	0	.3	.4	47	KAO
		27	1539	18.48	19	22.29	155	27.50	9.69	3.1	2.9	50	6	40	.11	0	.3	.4	42	KAO
		27	1933	28.13	19	29.20	155	27.41	7.11	3.7	3.7	49	4	42	.13	5	.4	.7	45	KAO
		27	2129	29.76	19	21.39	155	30.32	9.50	3.3	3.4	49	4	32	.12	5	.3	.5	42	KAO
		27	22 5	51.93	19	4.19	156	15.06	34.92	2.9	3.0	45	1	283	.09	46	2.2	1.8	38	KON
		28	8 7	44.04	19	21.96	155	2.18	7.35	2.9	3.1	42	4	138	.13	4	.5	.5	32	SF5 F
		29	1019	54.64	19	22.53	155	23.26	14.12	3.7	4.1	50	4	45	.11	4	.4	.3	46	DML F
		29	1543	11.65	19	22.53	155	23.25	13.50	3.1	3.1	51	5	45	.11	4	.4	.3	43	DML
	DEC	2	23 7	53.99	19	21.56	155	5.88	8.38	2.5	3.1	42	3	86	.11	4	.4	.5	32	SF4
		4	739	19.99	19	28.81	155	27.77	6.88	3.2	3.7	45	5	54	.14	6	.4	1.0	37	KAO
		4	856	25.10	19	20.32	155	4.00	6.94	2.8	3.1	39	4	121	.09	2	.5	.5	30	SF5
		4	1143	32.74	19	21.09	155	3.12	7.78	3.5	3.9	42	4	122	.11	2	.6	.4	38	SF5
		4	1529	15.64	19	35.46	156	7.21	14.13	3.0	3.5	43	1	246	.15	31	1.9	1.2	41	KON
		4	1951	41.39	19	27.56	155	25.47	8.19	3.7	3.9	44	2	47	.15	4	.4	.7	41	KAO
		5	1313	48.34	19	31.82	155	27.42	4.18	2.9	3.5	41	4	45	.11	1	.3	.7	32	MLO
		5	14 2	23.22	19	19.63	155	13.25	9.11	2.6	3.4	42	3	71	.11	5	.4	.5	34	SF2
		6	120	12.89	19	29.06	155	26.22	7.63	3.0	3.1	48	4	57	.12	5	.3	.7	39	KAO
		6	741	14.98	19	27.65	155	15.20	32.29	3.3	4.1	40	1	41	.12	6	.6	1.4	33	DEP

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HVO EARTHQUAKE SUMMARY LIST — PAGE 6

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1983	DEC	6	1255	45.24	19	8.67	155	34.41	9.93	2.5	3.0	26	2	127	.21	12	.7	1.4	22	LSW
		7	345	11.37	19	22.29	155	29.73	9.30	2.9	3.2	45	2	33	.10	4	.3	.7	42	KAO
		8	1419	45.82	19	25.07	155	21.69	11.46	2.8	3.2	54	10	35	.11	4	.3	.3	47	KAO
		8	21 5	59.76	19	5.48	156	12.38	32.79	3.0	2.9	50	4	279	.10	40	1.2	1.2	47	KON
		9	2114	40.20	19	19.59	155	15.49	8.98	3.0	3.3	54	8	86	.13	3	.4	.4	45	SF1
		11	147	10.44	19	30.34	155	27.34	3.71	3.1	3.3	47	4	48	.13	3	.3	1.0	39	MLO
		11	1031	16.47	19	19.88	155	27.27	8.87	2.6	3.0	48	5	47	.15	5	.4	.6	41	KAO
		11	1128	26.64	19	11.82	155	32.75	9.21	2.7	3.0	45	2	92	.16	8	.5	.8	32	LSW
		14	2056	23.97	19	21.99	155	30.13	9.98	3.6	3.8	53	5	32	.10	5	.3	.5	46	KAO F
		18	14 3	38.22	19	24.72	155	19.71	6.59	2.9	3.4	47	8	37	.10	2	.3	.5	38	KAO
		18	2111	56.18	19	29.12	155	26.59	8.29	3.2	3.1	50	4	62	.13	6	.4	.7	42	KAO
		18	2341	31.74	19	21.50	155	30.08	9.62	3.3	3.6	51	6	33	.11	5	.3	.5	43	KAO
		20	354	59.40	19	7.69	156	7.13	32.88	3.2	3.6	46	0	269	.11	30	4.9	1.9	45	KON
		21	234	49.37	19	22.70	155	4.74	8.19	3.0	3.3	48	5	79	.10	4	.3	.5	31	SF5
		21	956	27.36	19	30.79	155	46.49	7.11	2.9	3.0	37	3	110	.14	1	.5	.7	31	KON
		21	15 6	18.40	19	21.03	155	30.09	2.72	3.2	3.6	44	3	34	.13	5	.3	1.2	36	KAO
		21	1518	7.00	19	20.73	155	29.77	6.34	2.7	3.0	39	3	46	.15	5	.4	.9	33	KAO
		21	1532	52.25	19	20.94	155	29.98	2.54	3.3	3.6	46	4	47	.12	5	.3	1.0	38	KAO
		22	929	48.77	19	20.78	155	15.55	33.73	3.3	3.6	52	4	74	.12	3	.6	.9	48	DEP
		23	841	48.83	19	18.01	155	13.38	7.77	2.6	3.0	38	0	88	.09	2	.5	.6	38	SF2
		23	2052	.03	19	11.30	155	28.59	6.79	2.9	3.1	51	5	124	.17	4	.6	.8	45	LSW F
		23	2053	33.09	19	12.98	155	27.69	8.29	3.0	3.3	49	4	107	.16	6	.5	.7	40	LSW F
		24	1727	7.84	19	21.78	155	27.99	5.63	2.8	3.0	45	3	40	.13	1	.3	.9	37	KAO
		25	639	40.53	19	46.24	155	53.56	30.04	3.1	3.0	46	4	191	.11	11	.7	2.0	38	HUA
		25	839	1.17	19	26.57	155	29.65	10.07	2.8	3.0	47	3	35	.12	8	.3	.5	40	KAO
		26	1259	59.07	19	19.94	155	9.74	7.11	2.4	3.2	45	2	84	.13	4	.5	.7	37	SF3
		27	1450	26.55	19	18.69	155	11.63	8.77	3.4	3.7	51	6	116	.10	4	.4	.4	41	SF3
		29	247	35.03	19	40.04	156	13.49	30.16	2.9	3.0	49	2	260	.13	38	1.6	2.1	41	HUA
		29	258	6.93	19	18.45	155	13.42	10.35	3.7	4.0	46	1	81	.09	3	.5	.4	43	SF2 F
		29	958	50.78	19	30.13	155	27.29	5.67	3.5	3.8	51	4	47	.14	4	.3	.9	46	MLO
		29	1150	11.82	19	25.40	155	37.64	.91	3.3	3.3	41	1	94	.12	4	.4	.9	32	MLO

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Hawaiian Volcano Observatory
1984 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 84
Seismic Data, January to December 1984
By Jennifer S. Nakata, Robert Y. Koyanagi,
Alvin H. Tomori, and Wilfred R. Tanigawa

Chronological Summary
By Thomas L. Wright

Open-File Report 2007-1344
U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
Mark D. Myers, Director

U.S. Geological Survey, Reston, Virginia 2007

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY
SUMMARY 84
SEISMIC DATA, JANUARY TO DECEMBER 1984

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Menlo Park, California
1986

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 84

SEISMIC DATA, JANUARY TO DECEMBER 1984

BY

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summary presents data gathered during the year together with a chronological narrative describing the volcanic events and significant observatory related activities. The seismic summary is offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries will be published separately.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with summary 74 for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS open file report ("Hawaiian Volcano Observatory Seismic Network History 1950-79," U.S.G.S. open file report 80-302, 1980). It is designed as a reference for users of seismograms and phase data, and so includes and expands the information in the station table in this summary.

Chronological Summary - 1984

Events in 1984 featured a long-awaited eruption of Mauna Loa, continued monthly activity at Kilauea's Pu'u O'o vent, approval and funding, after 8 years, for construction of a new HVO facility, and changes in staff, including the arrival of a new scientist-in-charge.

The Mauna Loa eruption, March 25-April 15, was clearly the high point of the year. A forecast published in 1976 correctly anticipated its location (northeast rift zone between 2800 and 3000 meters altitude) but missed the time by 6 years. Another forecast published in 1983 anticipating an eruption "during the next two years" proved correct. A summary description of the eruption is given by Lockwood and others (1985). Table C-1 summarizes significant data for the eruption and Figure C-1, taken from Lockwood and others (1985), shows the extent of flows. The eruption was notable for its well developed lava channel which delivered lava very efficiently to the lower slopes of the volcano (slightly below 1000 meters elevation) where it posed a threat to the city of Hilo (Fig. C-1). Hilo was spared, however, by a repeated breakdown of the main channel at an altitude of about 2000 m. This process, a natural lava diversion, was observed and documented for the first time during this eruption. It appears that the diversion results from "aging" of the channel whereby an initially smooth channel surface characterized by laminar flow is increasingly disrupted by erosion of the enclosing levees. Pieces of the levee eventually become sufficiently large and/or numerous that channel blockage results, the flow overspills the levee, and the old channel is abandoned (see Lipman and Banks, in press). The chemistry of the Mauna Loa lavas was extremely uniform (Fig. C-2), and similar to that erupted in 1975, both being olivine-poor and slightly fractionated. Evidently the top of a much larger reservoir of magma was tapped. Temperatures of the lava remained constant, consistent with the absence of chemical change, but the crystallinity increased dramatically during the eruption, evidence that the lava was initially undercooled (Lipman and Banks, in press). Increase in viscosity associated with higher crystallinity may also have contributed to the aging of the lava channels (see above).

Deformation data were obtained for the first time to cover a complete deflation of Mauna Loa. A total of over 100 microradians of deflation was recorded at one site, which occurred in response to 63 cm of vertical subsidence measured by leveling surveys. A recording tiltmeter showed 40 microradians of rapid uplift in the hour before the outbreak, reflecting dike emplacement. Horizontal changes are also large but are complicated by a combination of expansion of certain lines in response to dike emplacement and contraction of all lines in response to removal of magma at depth. Modeling of the Mauna Loa inflation and deflation showed a magma storage area located south of the caldera at a depth of about 3 km, very similar to the geometry of the Kilauea summit magma storage reservoir (Decker and others, 1983). This conclusion is consistent with similar sizes of the summit calderas of Kilauea and Mauna Loa, and demonstrates that the magma chambers of the Hawaiian shields move up with the growth of the shield, retaining a constant relationship to the upper surface of the volcano (Ryan, in press).

Kilauea, in contrast to Mauna Loa's single eruption, was in eruption 16 different times from Pu'u O'o on the east rift zone for an aggregate eruption length of 15 days and an aggregate volume of 149 x 10^6 m^3 (Table C-2; Fig. C-3; Fig.

C-4). The average lava production for each volcano was similar, about 10^7 m^3 of lava per day of eruption. The chemical composition (Fig. C-2) was more uniform than that of the first year of eruption, attesting to a more open summit-rift connection. The Pu'u O'o cone grew from a height of 78 m at the end of 1983 to 175 m at the end of 1984. The lavas spread mainly northeast and southeast from Pu'u O'o and threatened, but did not destroy, buildings in the Royal Gardens subdivision, which was hit several times by eruptions from Pu'u O'o in 1983. The longest eruptive episode of 1984, episode 18, lasted 60 hours and sent a flow to within 1 km of the ocean (Fig. C-3). Three isolated dwellings were overrun near the terminus of the flow in the vicinity of Kapaahu. The previous episode (17) took place during the Mauna Loa eruption. Neither eruption had an obvious effect on the eruptive behavior of the other, or on the shallow seismicity and summit tilt patterns associated with the two eruptions. This confirmed the essential independence of the shallow plumbing of the two volcanoes, long inferred from the consistently different chemical composition of lavas from the two volcanoes (Fig. C-2).

Systematic gravity measurements were made on both volcanoes in 1984 (Johnson, in press). A summit monitor at Kilauea, comparing gravity at a stable base station with gravity at a station near the center of inflation-deflation, demonstrates that the gravity signal is dominated by mass changes which exceed the changes expected from uplift or subsidence alone (Johnson, in press). The interpretation suggests that magma filling the summit reservoir is compressed (becomes denser) as the reservoir fills and, conversely, expands (becomes less dense) as pressure is relieved during transport to the east rift zone. Gravity data also helps to reconcile the discrepency between horizontal and vertical changes found in modeling the Kilauea magma reservoir. Cross-caldera horizontal changes are always larger than expected from modeling of vertical changes and gravity data supports the idea that the summit reservoir is slowly expanding in the direction of the mobile south flank of the volcano. Apart from the short term changes in gravity, the long term gravity signature at Kilauea hints at continuing development of a Bouguer anomaly related most probably to solidification of intrusions at depth and accumulation of excess olivine in the lower parts of the storage complex. Gravity measurements at Mauna Loa show a somewhat different story. Gravity changes during the large deflation associated with the Mauna Loa eruption closely tracked the elevation changes. During reinflation, however, the gravity changes are small and opposite in size compared to those expected from the uplift. Hence, a greater volume and/or denser magma is coming into the storage system than would be predicted by the surface deformation measurements.

Gas geochemistry really came into its own at HVO in 1984. The first good measurements of eruptive gases (H_2O, H_2, CO_2, CO, SO_2, H_2S, HCl, HF) at Mauna Loa, combined with continuous monitoring of gas composition at Kilauea summit and near the eruptive site has yielded the following conclusions, documented by Greenland (in press) and by Greenland and others (1985).

(1) volatiles arriving at Kilauea summit are enriched in CO_2, the least soluble component; from measurements of gas composition and emission flux at fumaroles the content of volatiles in equilibrium with mantle-derived magma may be calculated (Table C-3).

2. Much CO_2 is lost during summit storage and therefore magma available for eruption on the rift zone is relatively SO_2- and H_2O-rich (Table C-3).

3. Residual gases left in the lava are dominated by H_2O, the most soluble constituent (Table C-3).

4. H_2O content of analyzed eruptive gases varies widely, partly due to contamination by meteoric water, but also by disequilibrium exsolution accompanying magma transfer (i.e. the exsolution of gases by vesiculation and diffusive transfer is too slow to keep pace with decreasing pressure accompanying rapid rise rates of magma in the eruptive conduit). CO_2 and SO_2 contents, however, maintain equilibrium at rapidly decreasing pressures and H_2O contents can be adjusted consistent with this.

5. Gases associated with the Mauna Loa eruption were depleted in CO_2, much like the Kilauea rift eruption. This is consistent with the magma chemistry which suggests eruption of the top of a large body of stored magma. It remains to be seen whether a CO_2-rich component can be seen during the reinflation of Mauna Loa. Mauna Loa gases differ from Kilauea in their halogen (F;Cl) content and ratio, matching subtle differences in the residual halogen contents of Kilauea and Mauna Loa rocks.

The mass of volatiles released by Kilauea magma is measured by COSPEC and can be correlated with magma supply rates. There was a step increase in total volatile mass at the onset of the present Kilauea eruption which agrees with estimates of increased magma supply relative to earlier periods (eg. 1969-1974 Mauna Ulu eruption).

Plans for a new HVO facility became reality in 1984 when Congress passed a bill that included a supplemental appropriation of $5,000,000 for the National Park Service construction budget. The plans covered by the budget include 3 stages (1) construction of a new HVO building; (2) renovation of the existing geochemistry wing for HVO use, and (3) renovation of the library-office wing for Park Service use as an on-site interpretation facility. When finished in 1986, this will fulfill much of the original vision of Thomas A. Jaggar, including integration of HVO monitoring and Park Service interpretation.

Changes in staff occurred, including the arrival of a new scientist-in-charge. Bob Decker's going away party was noteworthy as Mauna Loa erupted barely an hour after the party. Tom Wright arrived to take his place about a week before the end of the eruption. Other staff changes are summarized below.

Leavings			Arrivings		
Name	Position	Going To	Name	Position	Arrived From
Toni Duggan	Geology	Graduate School	Christina Heliker	Geology	CVO
Ken Yamashita	Deformation	CVO	George Ulrich	Geology	Flagstaff
Ed Wolfe	Geology	Big Island Map Project	John Hoffmann	Geology	NAGT[1] Program
Tina Neal	Geology	Big Island Map Project			

[1]National Association of Geology Teachers Program: one year extension October 1, 1984 - September 30, 1985.

Student help in 1984 included the following:

John Hoffmann]
Jim Hutton] - National Association of Geology Teachers

Teresa Atwill]
Bill Chadwick] - Graduate Students University of California at Santa Barbara

Pauline Tamura]
Joan Yoshioka] - Federal Junior Fellows

Sandra Zane]
Brian Moniz]
Keone Ah Chong]
Kaipo Ah Chong]
Kent Kikuchi]
Charlotte Forbes]
Terry Ignacio] - Minority Program in the Earth Sciences

Shyanne Nelson]
Tom Tioaquin] - Alu Like (Native American Program)

Many of the staff took a technical writing course, offerred by Shipley Associates. As a result, we have more persons helping prepare the monthly reports than before. George Kojima and Bob Koyanagi went to Indonesia in August 1984 to evaluate the radio-telemetered seismic network at Merapi Volcano Observatory. This is part of a long term collaboration between the U. S. Geological Survey and the Indonesian government. They were successful in continuing to train Indonesian volcanologists in the use of modern seismic instrumentation and interpretation of Indonesian seismicity.

All in all, 1984 was a productive year for HVO. The challenge of studying eruptions accessible only by helicopter was met with fiscal help in the form of a supplemental appropriation from Congress and, during the Mauna Loa eruption, with observing and monitoring help from HVO alumni and other visiting USGS scientists.

Table C-1. Summary data, 1984 eruption of Mauna Loa[1]

Duration: March 25, 1984 - April 15, 1984
Area covered: 48 km^2
Volume[2]: .22 km^3
Eruption rate (March 26-April 7): 10 x $10^6 m^3$/day
Channel velocity (April 2-April 7, 8200' elevation): 19 km/hr
Temperature (maximum reliable readings): 1140 $\pm$ 5° C

[1]Data from Lockwood et. al. (1985); Lipman and Banks (in press)
[2]Not corrected for vesicularity.

Table C-2.

EPISODE	SEQ[1] START DATE	SEQ[1] END DATE	EPISODE START M/DA/YR	EPISODE START HOUR	EPISODE END MM/DA/YR	EPISODE END HOUR	DAYS REPOSE PRIOR	EPISODE LENGTH HOURS	DEFLAT LENGTH HOURS	DEFLAT START M/DA/YR	DEFLAT START HOUR	DEFLAT START ID.ASM	DEFLAT END M/DA/YR	DEFLAT END HOUR	DEFLAT END ID.ASM	DEFLAT LENGTH HOURS	TILT RISE PRIOR	TOT.TLT DROP MIC.RAD	UR/HR x 100 DEFLAT
13	383	385	1/20/84	17:24	1/22/84	11:23	50	42	43	1/20/84	21:00	331.50	1/22/84	16:00	320.40	43	16.62	11.10	26
14	393	394	1/30/84	17:45	1/31/84	13:18	8	19	24	1/30/84	19:00	326.56	1/31/84	19:00	316.65	24	6.16	9.91	41
15	408	409	2/14/84	19:40	2/15/84	15:01	14	19	44	2/14/84	01:00	323.70	2/15/84	21:00	312.10	44	7.05	11.60	26
16	426	427	3/03/84	14:50	3/04/84	22:31	17	32	33	3/3/84	16:00	322.57	3/05/84	01:00	307.80	33	10.47	14.77	45
17	453	454	3/30/84	04:48	3/31/84	03:24	26	23	51	3/29/84	04:00	317.32	3/31/84	07:00	306.83	51	9.52	10.49	21
18	472	475	4/18/84	18:00	4/21/84	05:33	18	60	67.5	4/18/84	10:00	321.46	4/21/84	05:36	301.95	67.5	14.63	19.51	29
19	500	502	5/16/84	05:00	5/18/84	00:50	25	44	51	5/15/84	05:00	314.66	5/17/84	08:00	308.92	51	12.71	5.74	11
20	522	523	6/07/84	21:04	6/08/84	06:25	20	9	29	6/07/84	11:00	318.12	6/08/84	16:00	307.80	29	9.20	10.32	36
21	545	545	6/30/84	10:28	6/30/84	18:27	22	8	39	6/29/84	12:00	315.36	7/01/84	03:00	306.01	39	7.56	9.35	24
22	553	554	7/08/84	19:30	7/09/84	10:17	8	15	28	7/08/84	12:00	311.90	7/09/84	16:00	298.83	28	5.89	13.07	47
23	573	574	7/28/84	12:00	7/29/84	05:40	19	18	24	7/28/84	10:30	311.50	7/29/84	10:30	298.57	24	12.67	12.93	54
24	595	596	8/19/84	21:52	8/20/84	17:25	21	20	22	8/19/84	22:00	309.08	8/20/84	20:00	294.80	22	10.51	14.28	65
25	626	627	9/19/84	16:04	9/20/84	05:32	30	13.5	19	9/19/84	14:00	311.30	9/20/84	09:00	296.40	19	16.50	14.90	78
26	670	670	11/2/84	11:40	11/2/84	16:36	42	5	16	11/2/84	11:00	313.12	11/03/84	03:30	305.57	16	16.72	7.55	47
27	688	688	11/20/84	00:05	11/20/84	10:06	18	10	15.5	11/20/84	00:36	313.32	11/20/84	16:00	301.05	15.5	7.75	12.27	79
28	701	702	12/3/84	19:05	12/4/84	09:41	13	14.5	19	12/3/84	19:04	310.70	12/04/84	13:30	294.80	19	9.65	15.90	84

EPISODE	AREA SQ KM	VOLUME MILL. CU.MTRS	RATE 1000 CU MTRS/HR	AVG THICK MTRS	SO_2 EMISS. TONS/HR	RATE 1000 CU MTRS PER MICRORAD	TREMOR START M/DA/YR	TREM START HOUR	TREM END M/DA/YR	TREM END HOUR	TR.ST. SEQ. DATE	TR.END SEQ DATE
13	2.6	10	238	3.00	ND	901	1/20/84	14:00	1/22/84	11:19	383	385
14	2.1	6	316	2.95	>490	605	1/30/84	18:10	1/31/84	13:19	393	394
15	2.2	8	421	3.64	1100	690	2/14/84	19:46	2/15/84	15:01	408	409
16	3.2	12	375	3.72	750	812	3/03/84	14:35	3/04/84	22:29	426	427
17	3.0	10	435	3.20	>380	953	3/30/84	05:10	3/31/84	03:16	453	454
18	6.6	24	400	3.88	ND	1230	4/18/84	14:00	4/21/84	05:35	472	475
19	1.4	2	45	1.63	ND	348	5/16/84	08:16	5/17/84	18:00	500	501
20	1.6	4	444	2.56	ND	388	6/07/84	21:20	6/08/84	06:27	522	523
21	1.92	5.7	713	2.97	1200	610	6/30/84	10:28	6/30/84	18:27	545	545
22	2.69	7.7	513	2.86	ND	589	7/08/84	18:59	7/09/84	10:17	553	554
23	3.28	9.5	528	2.90	ND	735	7/28/84	11:58	7/29/84	05:43	573	574
24	3.73	11.6	580	3.11	ND	812	8/19/84	21:25	8/20/84	17:21	595	596
25	3.33	11.1	822	3.33	ND	745	9/19/84	15:30	9/20/84	05:32	625	626
26	1.64	6.6	1320	4.02	ND	874	11/02/8	11:40	11/02/84	16:34	670	670
27	2.30	8.4	840	3.65	ND	685	11/20/8	00:05	11/20/84	10:08	688	688
28	3.62	12.4	855	3.43	1300	780	12/03/8	19:05	12/04/84	09:41	701	702

[1]Days since January 2, 1983

Table C-3. H_2O-CO_2-S budget in Kilauea magma

	H_2O (wt. %)	CO_2 (wt. %)	S (wt. %)
Magma arriving from mantle	.32	.32	.09
Magma after storage and before eruption	.28	.03	.08
Residual volatiles in erupted magma	.05	<.01	.02

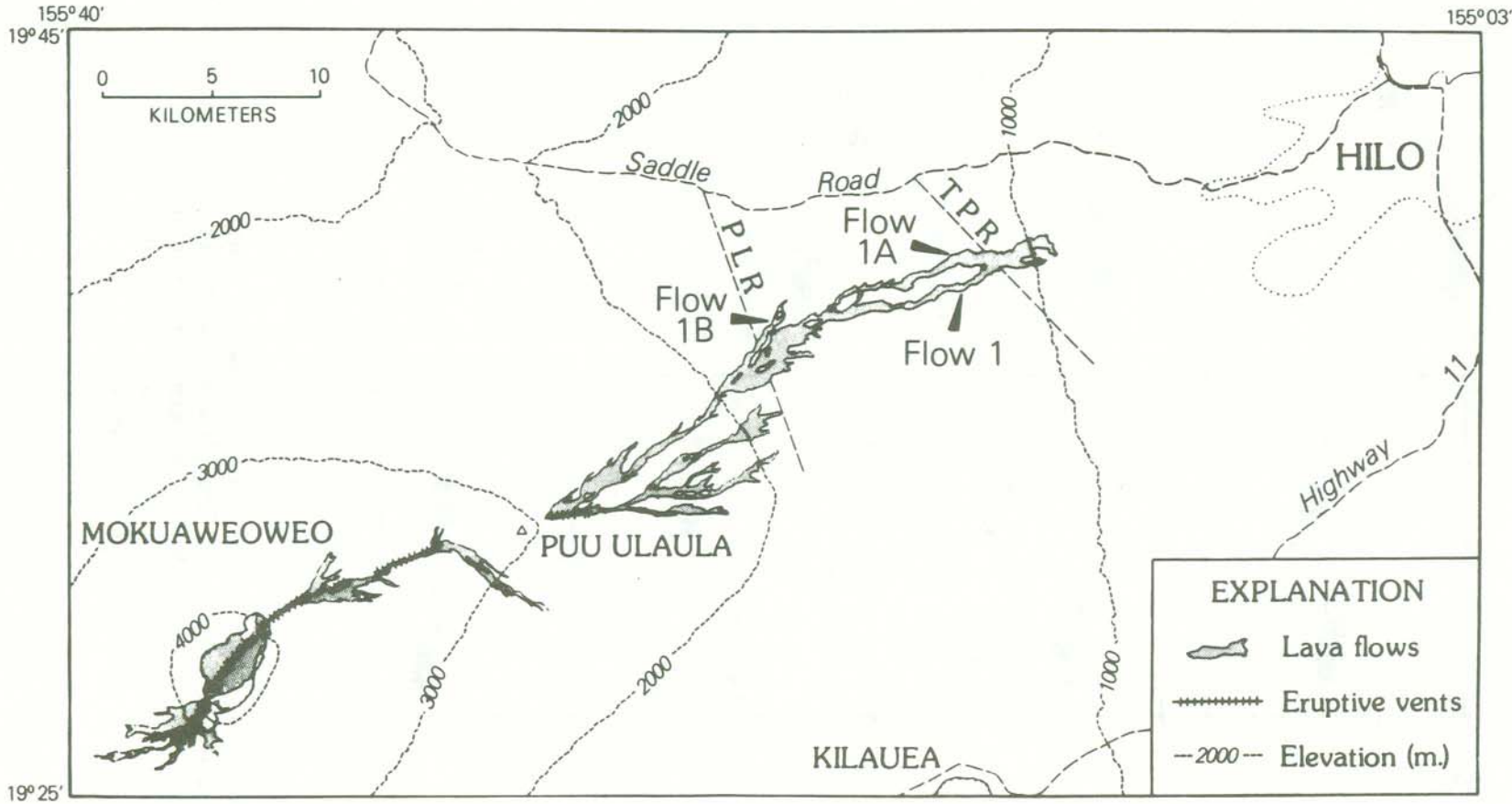

Figure C-1. Distribution of lava flows, 1984 eruption of Mauna Loa volcano (from Lockwood and others, 1985, Fig. 5).

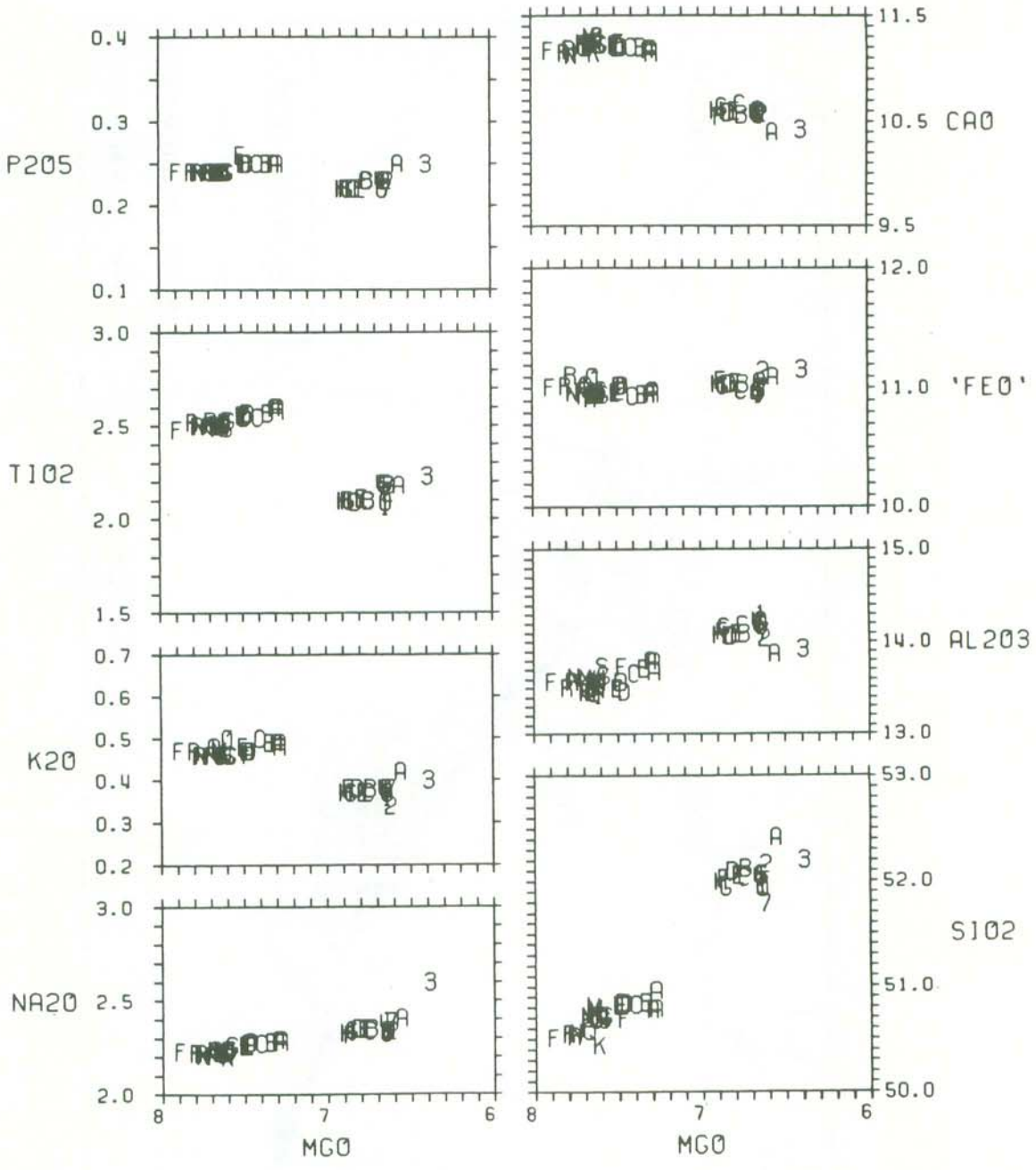

Figure C-2. MgO variation diagrams showing contrasting chemistry of Kilauea (left-hand group) and Mauna Loa (right-hand group) during 1984. Mauna Loa group shows similarity of1984 (letters A-H) and 1975 (numerals 0-7) compositions. The spread of Kilauea data is due principally to differences in olivine content of different eruptive episodes.

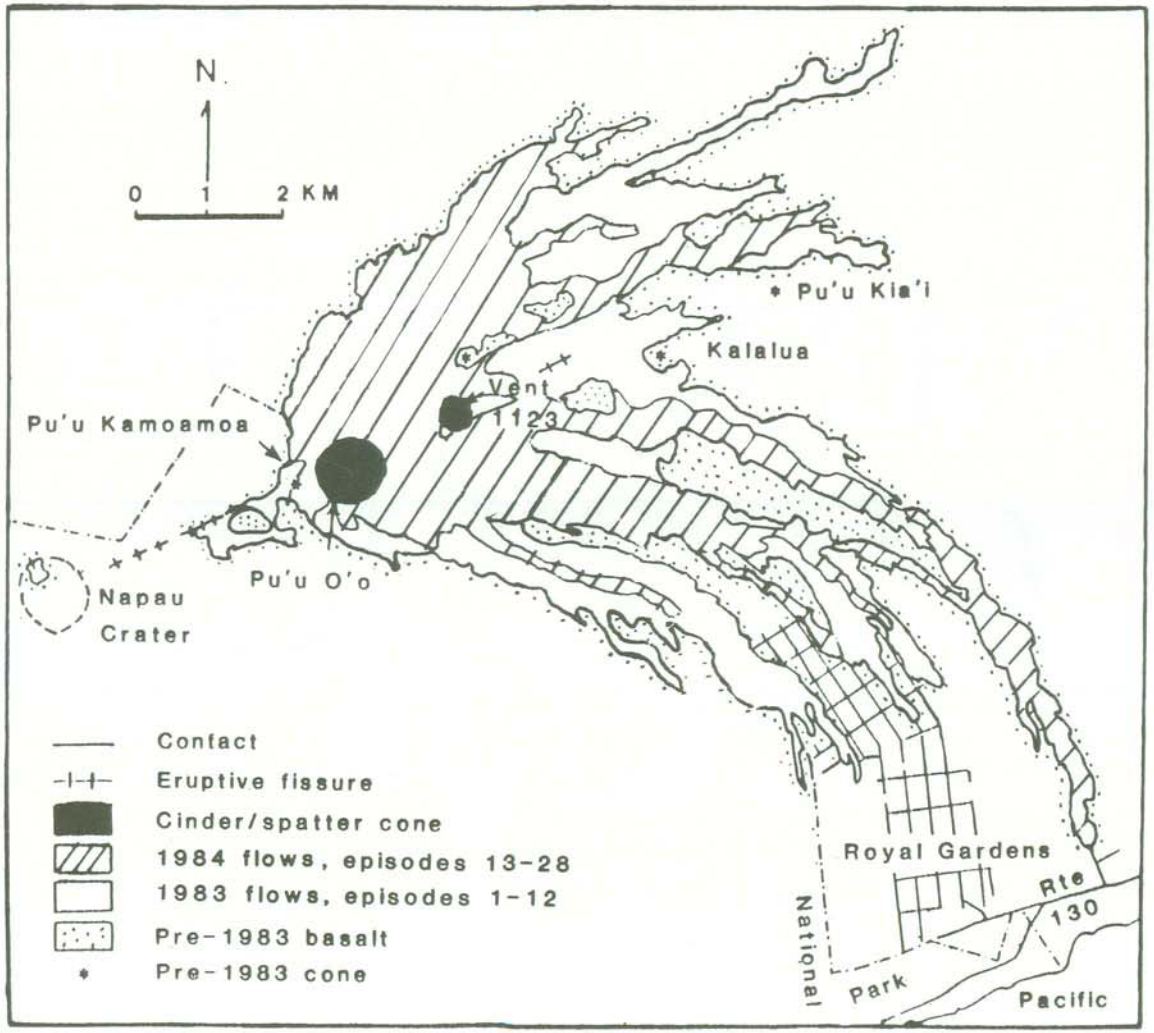

Figure C-3. Distribution of lava flows erupted from Pu'u O'o in 1984.

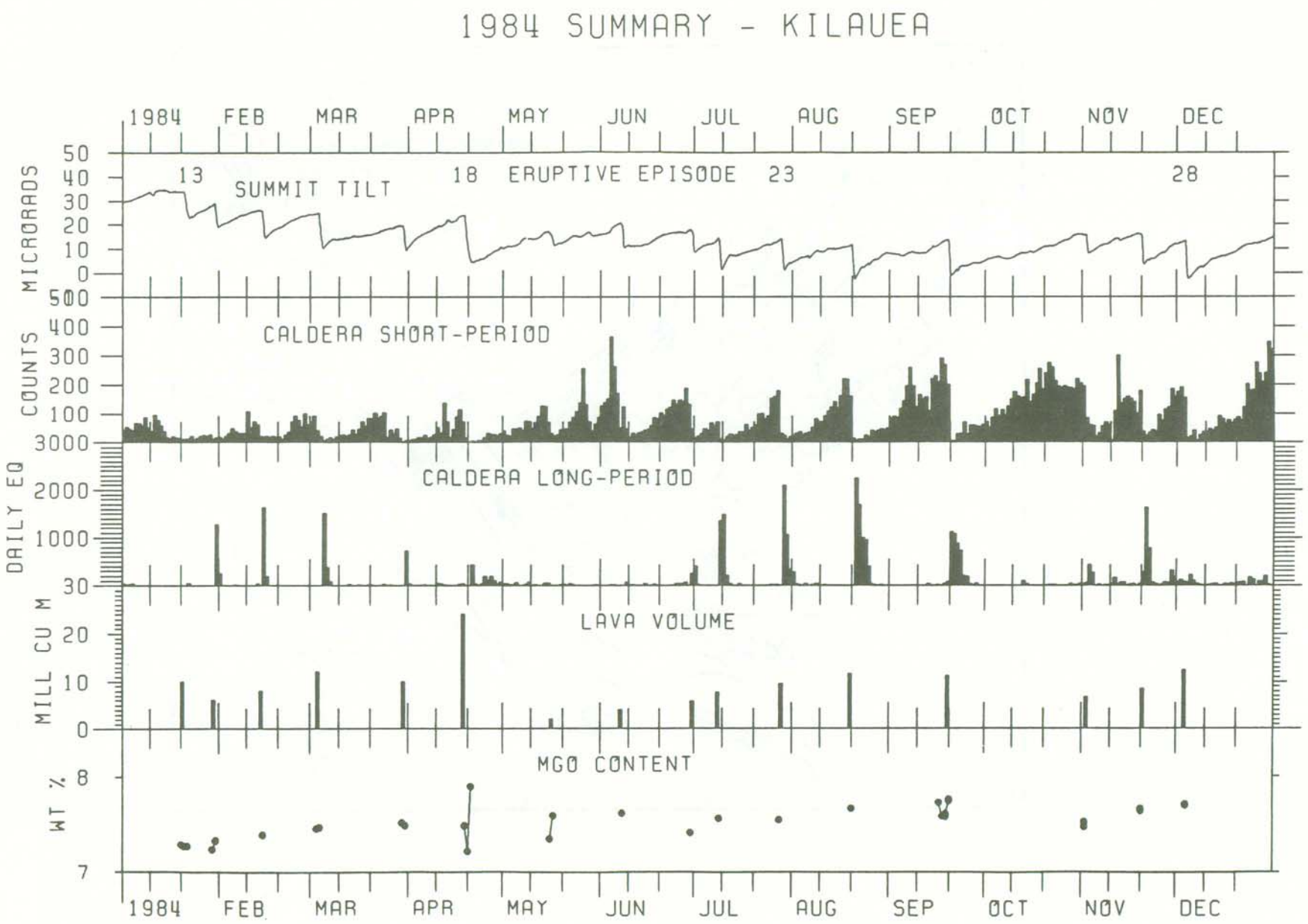

Figure C-4. Summary of selected geologic, geodetic, and seismic data associated with Kilauea eruptive episodes in 1984.

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Ryan, M., 1986, The elasticity and expansivity of Hawaiian olivine tholeiite and its role in the stability and structural evolution of intrashield magma reservoirs and rift systems: (I) Emperiments to 1223K; (II) Mixing models for computation; and (III) The pressure dependence of contractancy: U.S. Geological Survey Professional Paper 1350.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory maintains an extensive telemetering seismometer network on the island of Hawaii. In 1984 the seismometer network consisted of 50 stations; two are low-gain multicomponent stations (optical), twelve are three-component, and 36 are vertical only. The coverage is most complete on and around Kilauea Volcano. With the exception of self-contained systems at Uwekahuna and Hilo stations, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, Figure 2 shows the seismic stations which were operated on the Island of Hawaii during the year, and Figure 3 indicates the telemetry scheme for the respective seismic stations. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1984. Listed are names, three- and four-letter codes, coordinates in degrees and minutes, elevation in meters, and other data as described below pertaining to each station. In addition to seismometers listed in Table 1, a horizontal seismometer of Type 3 and a long-period, three-component set of Press-Ewing seismometers are operated in the Uwekahuna vault, all recorded on photographic paper.

Instrumentation and recording. Each telemetered station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or radio. These telemetering stations are now all of Type 1, the OEVE standard system used in USGS seismic networks (see Table 2 for details). After discrimination at the receiver, the analog signals from 36 stations are recorded on two Develocorders using 16mm microfilm. FM signals from the telemetering network are also recorded directly on one-inch magnetic tape. Selected larger events are copied onto condensed FM library tapes which are currently archived in Menlo Park and archived in digital form at HVO as part of the routine location processing. The type of recording used for each station (in addition to magnetic tape for the telemetered stations) is coded in Table 1 as follows: D - Develocorder film, S - smoked paper drum, P - photographic paper, H - Helicorder paper.

In addition to the standard stations, optical drum seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Honolulu station operated by the Pacific Tsunami Warning Center). The less sensitive optical records are used primarily for amplitude measurements for magnitude calculations to supplement readings from the high-gain stations. The paper records as well as the 16mm Develocorder microfilm are archived at HVO.

In late August, 1982, Rex Allen and Jim Ellis from the U.S. Geological Survey's Office of Earthquake Studies came to HVO to install their seismic monitoring system uniquely designed to automate picking of P-phase onset times, measuring coda lengths, and determinining preliminary epicenters for adequately recorded earthquakes. The Hawaii picker is configured to monitor a maximum of 80 stations, but is currently wired to 45 stations. Attached to the picker are a Datasouth Printer and an Apple II microcomputer. The picker output is logged on a disk and printed out on chart paper within three minutes after the earthquake occurs. The data collected on disk is tranferred to the Eclipse, the main computer system, on a daily basis using a second Apple II. The earthquake records are filtered and run through our standard location program (HYPOINVERSE). Summary listings and epicenter plots are prepared on chart

paper, and the phase data are archived on tape. The picker output is routinely compared with readings from our standard format.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 4. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard OEVE system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocorder film viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL, Table 1) to get the response for an individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20X Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited. CAL factors range from about 1 to 8, averaging about 4. A detailed history of CAL factors and other data is given in F.W. Klein and R.Y. Koyanagi, Hawaiian Volcano Observatory Seismic Network History 1950-79, U.S. Geological Survey Open File Report 80-302, 1980.

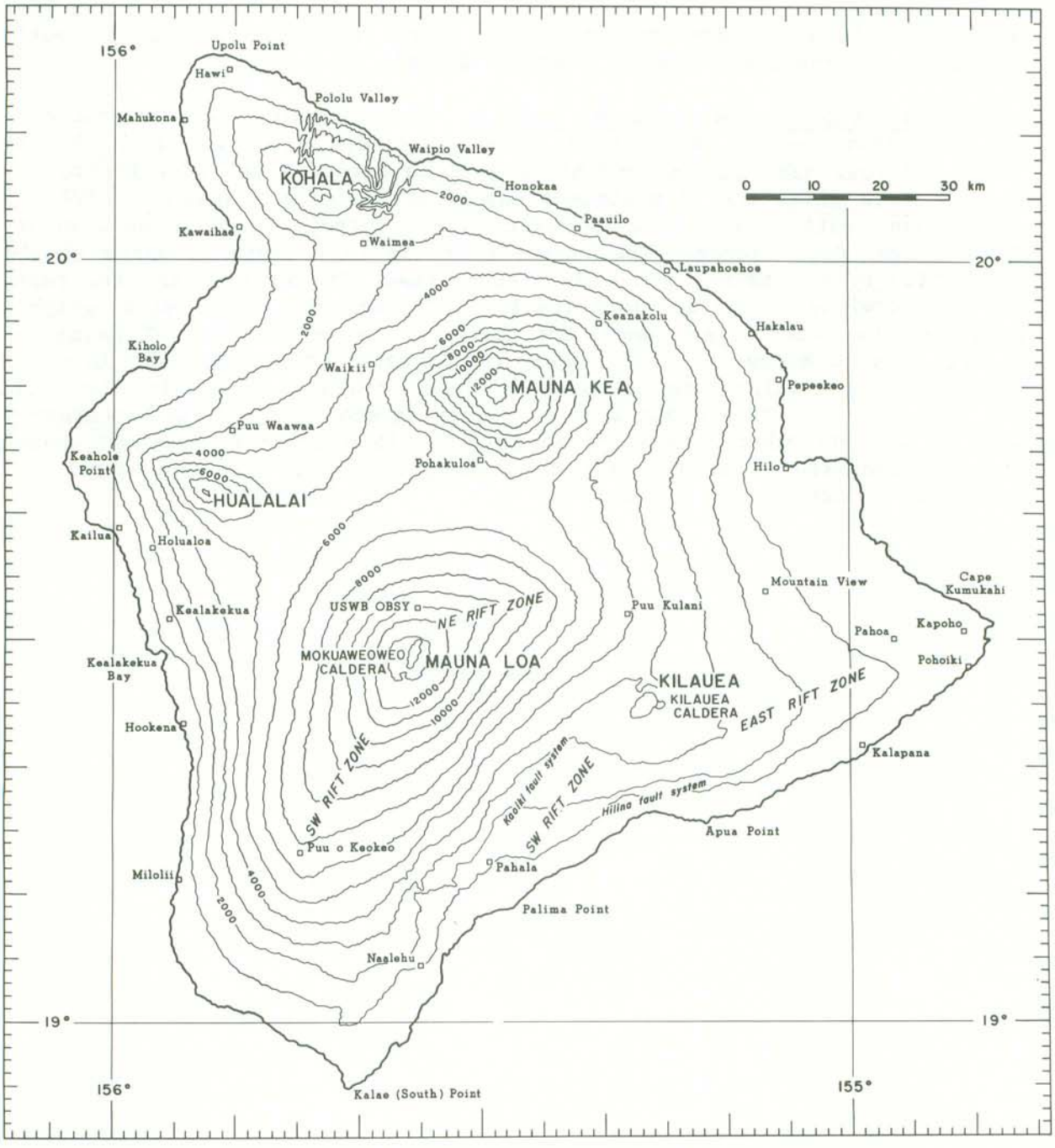

Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

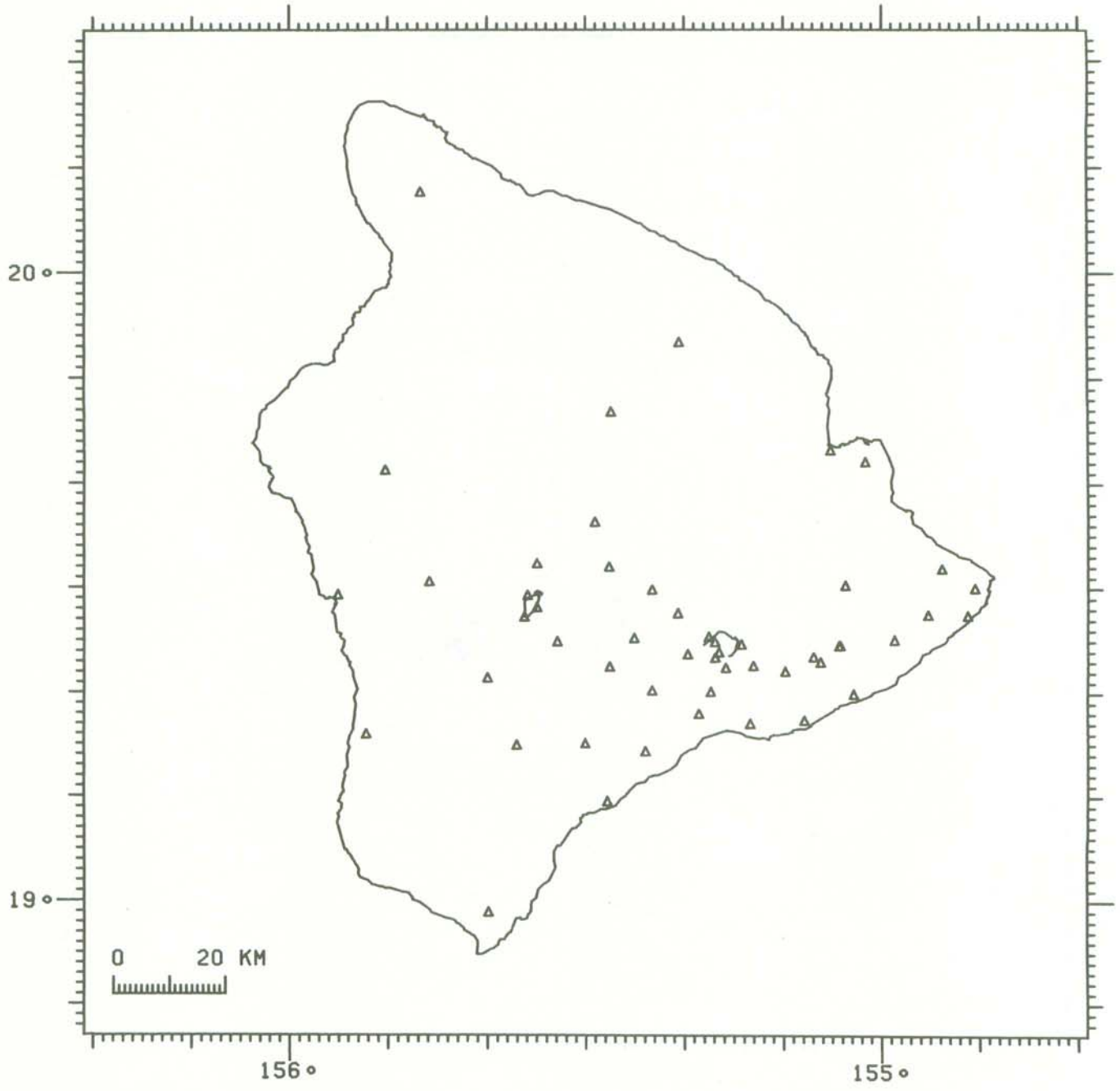

Figure 2. Map of the island of Hawaii showing seismic stations operational during 1984.

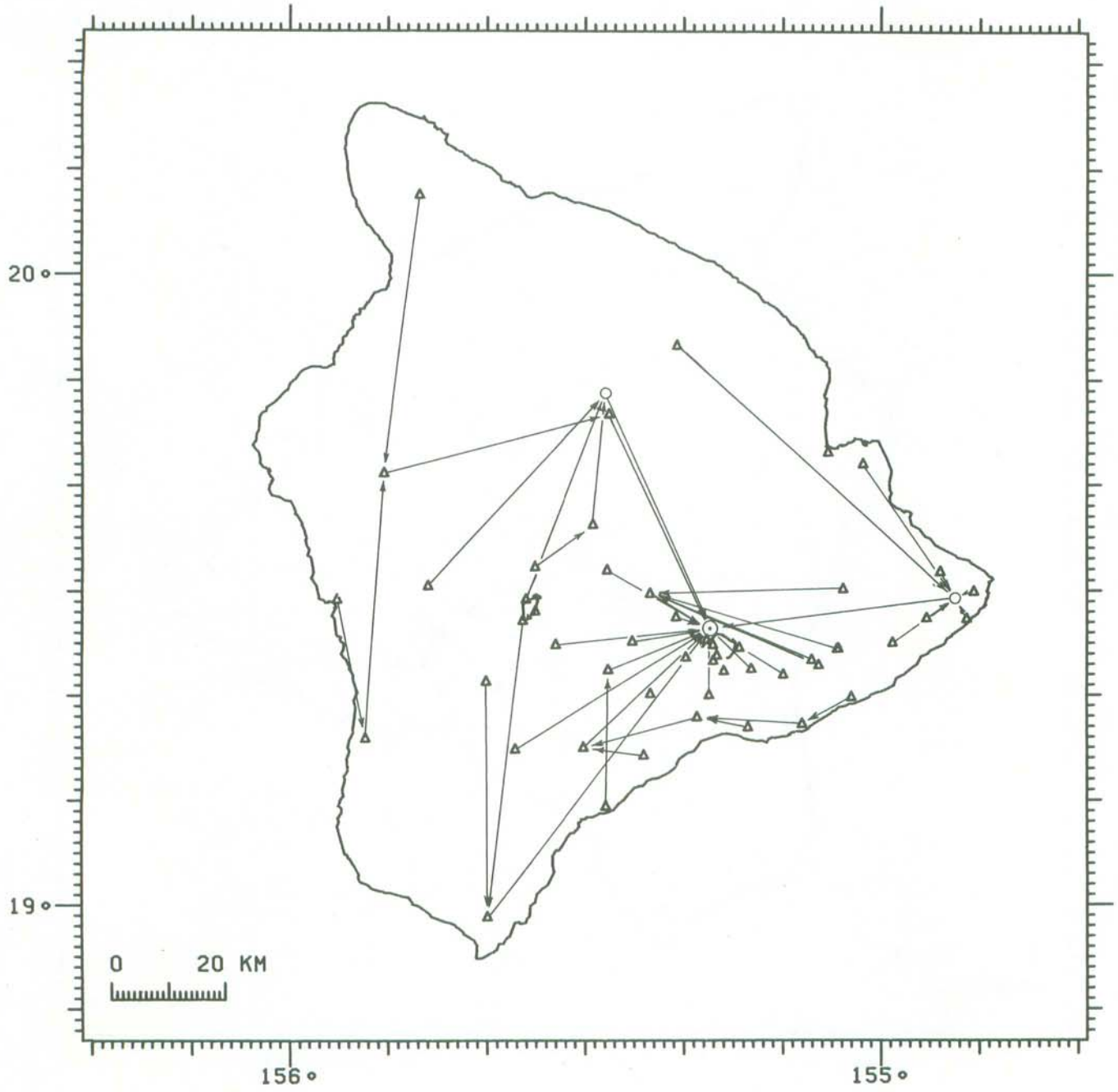

Figure 3. Map of the island of Hawaii showing the telemetry scheme for the Hawaiian Volcano Observatory seismic network.

Legend Δ Seismometer location
○ Repeater Station

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1984.

STATION NAME	CODE	--LAT--- D	M	---LON--- D	M	ELEV (M)	DELAY 1	DELAY 2	CAL	SEIS TYPE	OPTIC RECORD
AHUA	AHU Z	19	22.40	155	15.90	1070	-0.10	-0.13	2.1	E4	SD
AHUA	AHUE E	19	22.40	155	15.90	1070	-0.10	-0.13	1.0	E4	
AHUA	AHUN N	19	22.40	155	15.90	1070	-0.10	-0.13	1.0	E4	
AINAPO	AIN Z	19	22.50	155	27.62	1524	0.13	0.17	5.5	L4	D
AINAPO	AINE E	19	22.50	155	27.62	1524	0.13	0.17	1.0	L4	
AINAPO	AINN N	19	22.50	155	27.62	1524	0.13	0.17	1.0	L4	
CAPTAIN COOK	CAC Z	19	29.29	155	55.09	323	0.00	-0.16	1.1	L4	D
CONE PEAK	CPK Z	19	23.70	155	19.70	1038	-0.26	-0.07	6.0	L4	
DANDELION	DAN Z	19	21.42	155	40.04	3003	-0.27	0.03	7.0	L4	D
DESERT	DES Z	19	20.20	155	23.30	815	-0.29	-0.13	3.0	E4	SD
ESCAPE ROAD	ESR Z	19	24.68	155	14.33	1177	-0.17	-0.19	2.2	L4	D
HAWAIIAN BEACHES	HAB Z	19	31.89	154	53.89	92	-0.09	-0.24	1.0	L4	
HALEAKALA, MAUI	HAE E	20	46.00	156	15.00	2090	0.00	0.00	1.0	W	P
HALEAKALA, MAUI	HAL Z	20	46.00	156	15.00	2090	0.00	0.00	0.7	Hl	P
HALEAKALA, MAUI	HAN N	20	46.00	156	15.00	2090	0.00	0.00	1.0	W	P
HILO	HIE E	19	43.20	155	5.30	20	0.54	0.30	1.0	W	P
HILO	HIL Z	19	43.20	155	5.30	20	0.54	0.30	1.0	Hl	P
HILO	HIN N	19	43.20	155	5.30	20	0.54	0.30	1.0	W	P
HILINA PALI	HLP Z	19	17.96	155	18.63	707	0.02	0.07	2.6	L4	D
HONOLULU, OAHU	HON Z	21	19.30	158	0.50	2	0.00	0.00	0.0	Hl	P
HALE POHAKU	HPU Z	19	46.85	155	27.50	3396	0.31	0.17	3.3	L4	D
HUMUULA SHEEP ST	HSS Z	19	36.31	155	29.13	2445	0.20	0.35	5.3	L4	D
HUMUULA SHEEP STHSSE	E	19	36.31	155	29.13	2445	0.20	0.35	1.0	L	
HUMUULA SHEEP STHSSN	N	19	36.31	155	29.13	2445	0.20	0.35	1.0	L	
HOT CAVES	HTC Z	19	14.33	155	24.02	381	-0.16	-0.07	0.0	E4	
HUALALAI	HUA Z	19	41.25	155	50.32	2189	0.67	0.38	3.0	L4	D
HEIHEIAHULU	HUL Z	19	25.13	154	58.72	369	-0.17	-0.16	1.6	E4	DS
HEIHEIAHULU	HULE E	19	25.13	154	58.72	369	-0.17	-0.16	1.0	E4	
HEIHEIAHULU	HULN N	19	25.13	154	58.72	369	-0.17	-0.16	1.0	L4	
KAAPUNA	KAA Z	19	15.98	155	52.28	524	-0.12	-0.01	3.5	L4	D
KAENA POINT	KAE Z	19	17.35	155	7.95	37	-0.01	0.06	1.4	L4	D
KAHAUALEA	KAH Z	19	24.58	155	4.36	625	-0.25	-0.30	0.0	L4	DH
KAOIKI FAULTS	KFA Z	19	25.26	155	25.14	1579	0.13	0.17	0.0	E	
KAHUKU	KHU Z	19	14.90	155	37.10	1939	0.03	-0.03	2.7	E4	D
KANEKII	KII Z	19	30.56	155	45.90	1841	0.15	0.37	2.9	L4	D
KANEKII	KIIE E	19	30.56	155	45.90	1841	0.15	0.37	1.0	L	
KANEKII	KIIN N	19	30.56	155	45.90	1841	0.15	0.37	1.0	L	
KEANAKOLU	KKU Z	19	53.39	155	20.58	1863	0.68	0.24	3.3	L4	D
PUU KALIU	KLU Z	19	27.48	154	55.26	271	-0.17	-0.30	2.9	L4	D
KAMOAMOA	KMM Z	19	23.47	155	6.98	750	-0.25	-0.30	2.4	L4	DH
KAMOAMOA EAST-WE	KMME E	19	23.47	155	6.98	750	-0.25	-0.30	1.0	L4	
KAMOAMOA NORTH-S	KMMN N	19	23.47	155	6.98	750	-0.25	-0.30	1.0	L4	
KOHALA	KOH Z	20	7.69	155	46.77	1166	-0.03	-0.17	1.5	L4	D
KOHALA	KOHE E	20	7.69	155	46.77	1166	-0.03	-0.17	2.2	L4	
KOHALA	KOHN N	20	7.69	155	46.77	1166	-0.03	-0.17	2.2	L4	
KIPUKA NENE	KPN Z	19	20.10	155	17.40	924	-0.11	-0.08	3.5	E4	D
KAPOHO	KPO Z	19	30.02	154	50.51	134	-0.09	-0.24	2.5	L4	D
MAUNA LOA	MLO Z	19	29.80	155	23.30	2010	0.03	0.08	5.8	L4	SD
MAUNA LOA	MLOE E	19	29.80	155	23.30	2010	0.03	0.08	0.0	L4	
MAUNA LOA	MLON N	19	29.80	155	23.30	2010	0.03	0.08	1.5	L4	
MAUNA LOA X	MLX Z	19	27.60	155	20.70	1475	0.06	0.15	3.0	L4	
MOKUAWEOWEO	MOK Z	19	29.28	155	35.98	4104	0.15	0.16	5.5	L4	D
MAKAOPUHI	MPR Z	19	22.07	155	9.85	881	-0.17	-0.20	4.2	L4	D
MOUNTAIN VIEW	MTV Z	19	30.25	155	3.75	409	-0.02	0.01	5.0	E4	D
NATIONAL GUARD	NAG Z	19	42.12	155	1.72	18	0.54	0.30	3.2	E4	D
NORTH PIT	NPT Z	19	24.90	155	17.00	1115	-0.30	-0.18	3.0	E4	SD
NORTH PIT	NPTE E	19	24.90	155	17.00	1115	-0.30	-0.18	0.0	E4	
NORTH PIT	NPTN N	19	24.90	155	17.00	1115	-0.30	-0.18	0.0	E4	
OUTLET	OTL Z	19	23.38	155	16.94	1038	-0.19	-0.18	4.9	L4	

Table 1 (continued)

PAUAHI	PAU	Z	19 22.62	155 13.10	994	-0.21	-0.24	2.4	L4	SD
PAUAHI	PAUE	E	19 22.62	155 13.10	994	-0.21	-0.24	0.0	L4	
PAUAHI	PAUN	N	19 22.62	155 13.10	994	-0.21	-0.24	0.0	L4	
PUU ULAULA	PLA	Z	19 32.00	155 27.67	2992	-0.03	0.13	5.4	L	D
POHOIKI	POI	Z	19 27.42	154 51.22	16	-0.09	-0.24	0.0	L4	
POLIOKEAWE PALI	POL	Z	19 17.02	155 13.47	169	-0.02	0.03	2.8	E4	D
PUU PILI	PPL	Z	19 9.50	155 27.87	35	-0.15	-0.15	1.7	E4	D
RIM	RIM	Z	19 23.90	155 16.60	1128	-0.21	-0.13	0.0	L4	
SOUTH POINT	SPT	Z	18 58.91	155 39.92	244	-0.17	-0.22	2.8	L4	D
SOUTH POINT	SPTE	E	18 58.91	155 39.92	244	-0.17	-0.22	0.0	L4	
SOUTH POINT	SPTN	N	18 58.91	155 39.92	244	-0.17	-0.22	0.0	L4	
SOUTHWEST RIFT	SWR	Z	19 27.26	155 36.30	4048	0.01	0.04	5.6	E4	D
TRAIL	TRA	Z	19 24.91	155 32.96	3207	0.00	0.00	0.0	L4	
UWEKAHUNA	UEE	E	19 25.40	155 17.60	1240	-0.21	0.00	2.0	E	P
UWEKAHUNA	UEN	N	19 25.40	155 17.60	1240	-0.21	0.00	2.0	E	P
UWEKAHUNA	UEZ	Z	19 25.40	155 17.60	1240	-0.21	0.00	2.0	E	P
WAIKII	WAI	Z	19 51.58	155 39.60	1433	0.20	0.35	0.0	L4	
WAHAULA	WHA	Z	19 19.90	155 2.92	29	-0.10	-0.04	1.5	E4	D
WILKES CAMP	WIL	Z	19 28.15	155 35.02	4037	0.22	0.17	2.6	E4	D
WILKES CAMP EAST	WILE	E	19 28.15	155 35.02	4037	0.22	0.17	0.0	L	
WILKES CAMP NORT	WILN	N	19 28.15	155 35.02	4037	0.22	0.17	0.0	L	
WEATHER OBSERVAT	WOB	Z	19 32.31	155 35.01	3396	0.00	0.00	0.0	E4	
WOOD VALLEY	WOO	Z	19 15.08	155 30.12	909	-0.15	-0.06	4.6	E4	

Table 2. Seismic Instrumentation Types

The codes in parentheses refer to the seismometer types listed in Table 1.

Type 1. (Codes E, L, and 4) Consists of:

a) Geophone - Electrotech EV-17 (E) or Mark Products L4C (L) 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - USGS/OEVE Model J302 or J402 (4) voltage controlled oscillator. Three db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 3. (Code H1) Consists of:
Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. (Code S) Consists of:
Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2X critically damped. Peak magnification approximately 1500X at 2 Hz.

Type 2 instruments have been discontinued.

Code (W) is a Wood-Anderson torsion seismograph.

Code (MW) is a horizontal component seismograph based on a Type 1 system modified to a Wood-Anderson response.

Codes (TE) and (S5) are experimental seismometers.

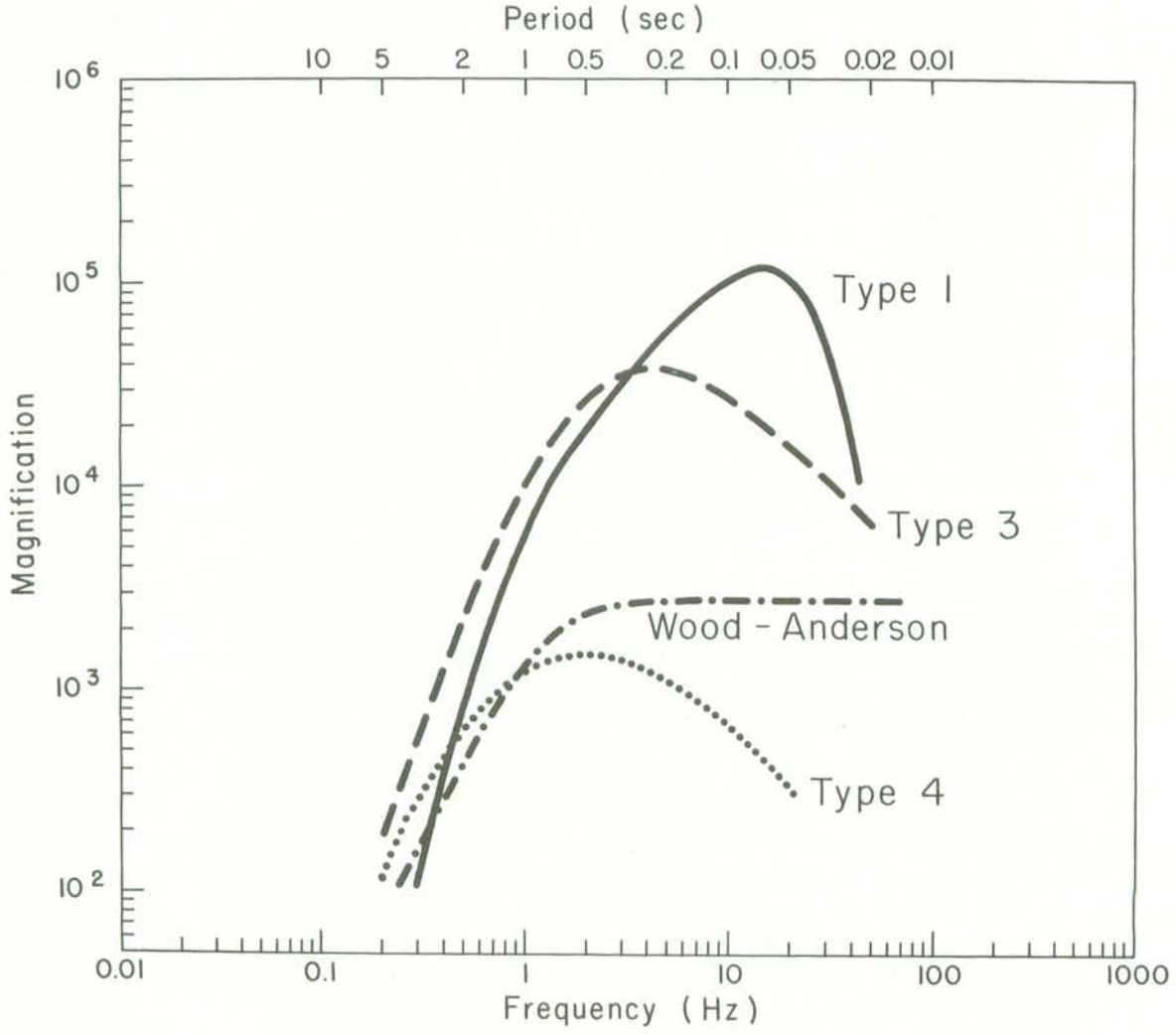

Figure 4. System response curves for the Wood-Anderson torsion seismograph and for the 3 different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard OEVE seismometer recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20X viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL), to get the reponse for an individual station.

SEISMIC DATA PROCESSING

Develocorder films are scanned on a daily basis for earthquakes, and coda durations are measured for magnitude determination. Events are digitized, timed, and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, F.W., Hypocenter location program HYPOINVERSE, U.S.G.S. Open file report 78-694, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival time and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at 4 depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are in fact separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations, and signal or coda duration on selected short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, OTL, PPL, KHU, or WIL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This time, also called the "F-P time" is measured from the first P arrival to the point where the earthquake signal has decayed nearly to the noise level. A bilinear relation is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

The equations used in magnitude determination are:

$$\text{duration } <210 \text{ sec} \quad M = -5.2 + 3.89 \log (F-P) + .013\, Z + .0037\, D$$
$$\text{duration } >210 \text{ sec} \quad M = -.905 + 2.026 \log (F-P) + .013\, Z + .0037\, D$$

where Z and D are the depth and epicentral distance in km, respectively.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south half of the island of Hawaii. Hundreds of earthquakes too small to locate are classified generally and counted daily. The set of well-recorded earthquakes located in the Hawaii Island region is nearly complete above magnitude 2.0. Many smaller events are located in the densely instrumented Kilauea area. Substantial effort is made to locate earthquakes elsewhere within the Hawaiian Archipelago. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 4.0 are located with limited precision.

Data presented in the seismic summary is in four parts. Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea and Mauna Loa. The source region is determined visually from signal character and pattern of arrival times at key stations. Maps showing computer located hypocenters are given in Figures 9-22. The location maps are of different scales and provide hypocenters with magnitude thresholds set at 1.0, 2.0, 3.0 and 3.5 varied according to region.

The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and depth. Figures 5-8 are maps of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed in Table 4. When the listed coordinates imply an overlap, precedence is given according to Figures 5-8. Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 or larger. This list includes many of the earthquakes felt in Hawaii.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea and Mauna Loa.

Earthquake categories are:

1) Kilauea summit, short period caldera: shallow earthquakes beneath the caldera.
2) Kilauea summit, long period caldera: earthquakes characterized by low frequency signatures, often originating 5-10 km below the caldera.
3) Kilauea summit 30 km: deep earthquakes about 30 km beneath the summit region.
4) Kaoiki and southwest rift: earthquakes beneath the southwest rift of Kilauea, western parts of the Koae faults and adjacent Kaoiki fault system.
5) Upper east rift: earthquakes in the upper and middle east rift zone, the adjacent parts of the south flank, and eastern parts of the Koae faults.
6) Lower east rift: earthquakes in the lower east rift zone and adjacent parts of the south flank.
7) Offshore PPL: earthquakes from offshore areas south of the Puu Pili station, including Loihi seamount.
8) Mauna Loa long period: low frequency events near Mauna Loa summit.
9) Mauna Loa short period: shallow earthquakes in the Mauna Loa caldera region.

Tremor is separated into four categories: shallow, intermediate and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs.

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)			
DATE 1984	SHORT PER. CALDERA	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA	NER
JAN 1	41	31	2	109	298	3		10	10	1440			5
2	53	20		130	370	3		177	12	1440			12
3	46	26	1	210	282	18			23	1440	15		18
4	40	30		114	345	6			8	1440	8		7
5	67	6		161	161	6		1	12	1440			17
6	64	13	2	158	345	3		2	7	1440			13
7	55	11		184	329	7		3	4	1440			
8	86	5	19	180	282	9		2	14	1440	3		13
9	52	10	15	140	245			4	7	1440			14
10	39	4	18	142	269	5		2	8	1440			5
11	94	6	10	173	206	1		13	17	1440			3
12	77	1		145	184	4		6	6	1440	37		1
13	58	1	16	147	238	8		4	3	1440			11
14	38		14	148	209	4		6	5	1440			10
15	18	1	13	165	314	11		11	5	1440			9
16	13		15	160	283	12		4	3	1440			3
17	19		8	161	245	15		4	7	1440			14
18	17		8	147	313	3		1	8	1440			20
19	14	1		104	323	6		5	6	1440			
20	12		8	118	59	5		1	16	1440			10
21	11		5	168	39	2		6	40	1440			9
22	13	46	14	160	153			6	52	1440	3		9
23	21	6	8	125	54			7	36	1440			10
24	8	7	7	118	86	3		3	71	1440	24		5
25	14		1	128	114	5		5	51	1440			1
26	20		2	101	120	7		2	14	1440			1
27	24		9	128	113	6		3	45	1440			8
28	22	1	6	145	113	2		3	44	1440			4
29	25	4		129	85	3		2	50	1440			6
30	11	2		95	15	3		3	9	1440			6
31	17	1264	14	111	140	5		24	9	1440			15
FEB 1	18	243	7	101	129	4		19	16	1440			20
2	13	6		106	153	6		56	29	1440		3	3
3	22	2	13	124	137	5		25	16	1440	42		14
4	31	4	6	120	139	11		27	9	1440			10
5	48	1	26	113	167	7		22	8	1440	20		9
6	38	16	18	135	138			13	8	1440			7
7	31		15	120	111	5		25	19	1440			15
8	31	4		75	104	10		12	6	1440			12
9	32			120	34	9			13	1440			1
10	106	3	30	120	51	7		5	7	1440			5
11	51	1	6	110	74	7		10	29	1440			13
12	70			164	92	8		9	36	1440			15
13	62	30	9	128	85	3		1	62	1440			10
14	21		4	95	24	7			22	1440			4

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)			
DATE 1984	SHORT PER.	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA	NER
FEB15	19	1631		99	290	1		2	36	1440			
16	20	184	7	96	123	3			15	1440			8
17	18	7		94	124	2			7	1440			
18	22	1		97	186	1		4	22	1440	38		3
19	18	2		108	84			4	19	1440			1
20	19	1	5	90	71	3			12	1440			13
21	12		1	91	87	5		1	9	1440			3
22	27	1	6	117	113	8		3	13	1440			6
23	37	5		118	143			2	24	1440			1
24	70	2	7	108	106	5			24	1440			15
25	91	4	3	141	86	2			65	1440			4
26	75	5	4	130	101	14			60	1440			16
27	54	1		89	101	1		1	40	1440			
28	99	8	1	110	88	7			46	1440			12
29	61	5		89	202	1		2	26	1440			
MAR 1	72	1	1	93	97	6			42	1440			
2	92	4	5	85	71	4			16	1440			8
3	40	1	2	99	37	4			26	1440			9
4	22		6	98	130	5			31	1440			4
5	6	1507		74	323	2		2	29	1440		6	
6	12	380		112	210	7		4	39	1440	35		21
7	17	86	3	89	213	3		2	50	1440			19
8	11	3		89	253	11			66	1440			5
9	19	12	1	79	209	3		2	66	1440			11
10	24	3	3	88	218	7			56	1440	18		13
11	27	2		99	276	6			31	1440			1
12	22	14	5	113	135	3			97	1440			6
13	25	26	4	107	113	7		2	134	1440	5		5
14	43	12	7	71	164	8		1	53	1440			11
15	28	5	1	73	176	5		3	21	1440			1
16	46	17		87	194	4		1	145	1440			15
17	70		1	112	264	6		1	136	1440			5
18	57	3		53	137	5		8	65	1440			7
19	83	15		92	82	8		1	44	1440	8		3
20	83	15		85	103	5		2	59	1440			13
21	101	8		97	127	1			64	1440	4		7
22	83	3		71	106	5		2	37	1440			1
23	90	5	1	64	120	8		5	32	1440	5		10
24	103	29		67	119	9			281	1440		510	5
25	18		1	38	195	2		5	533	1440		1440	30
26	43	15		82	5			2	164	1440		1440	
27	29			25	63				196	1440		1440	
28	47			39	80	5			549	1440		1440	
29	14		1	23	60			10	635	1440		1440	
30	3			25	28	3		2	804	1440		1440	

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1984	SHORT PER.	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA NER
MAR31	5	714		19	82	10		1	595	1440	1440	
APR 1	6	31	1	28	96	3		1	740	1440	1440	
2	9	14		6	55	5		2	870	1440	1440	
3	10		1	23	66	3		2	1097	1440	1440	
4	16			20	57	2		8	1693	1440	1440	
5	16	4	1	90	75	2		15	1595	1440	1440	
6	24	21		30	58	2		7	1731	1440	1440	
7	14	6		38	64	2		13	1510	1440	1440	
8	18	1		73	61			15	844	1440	1440	
9	27	12		29	100	8		1	721	1440	1440	
10	50	49		30	73	3		5	696	1440	1440	
11	33	30		34	113	2		12	651	1440	1440	
12	137	15		37	74	6		21	1514	1440	1440	
13	70	1	1	21	50			28	1104	1440	1440	1
14	18		1	57	41			77	976	1440	1440	2
15	44	9		33	40	3		26	1062	1440	1440	161
16	88	1	1	41	31	2		8	860	1440	1440	284
17	113	26	1	54	66			12	688	1440	1440	233
18	71	32		56	37	2		1	739	1440	1440	202
19	16			34	21	1		16	630	1440		83
20				41	27	8		5	658	1440		173
21	4	432		50	506	1		1	543	1440		240
22	3	37		50	546	1		83	484	1440		162
23	6	12	1	39	364			40	475	1440	6	281
24	7	32		44	527	1		55	353	1440		302
25	15	183		79	418	4		15	441	1440		510
26	31	110	1	63	326	5		1	433	1440		551
27	28	180		83	202	6		2	253	1440		574
28	25	95	1	30	138	3			182	1440	40	649
29	20	23		53	185	1		6	123	1440		793
30	29	73		57	185	9		1	112	1440		878
MAY 1	39	40	1	41	230	5		7	164	1440		1450
2	24	30		25	220				39	1440		945
3	22	17		36	186			96	208	1440	4	873
4	45	19		44	234	4			178	1440		1697
5	44	54		55	275	5			125	1440		1896
6	49	7	1	60	190	1		143	127	1440	2	599
7	41	8	1	58	133			126	38	1440		373
8	73	27		50	164	4		45	98	1440		630
9	70	62	1	45	135	3		45	80	1440		733
10	48	9	2	62	215			59	70	1440		507
11	68	18		55	264	4		27	57	1440	6	580
12	89	7		66	176	12		17	62	1440		685
13	127	10	1	52	168	1		34	37	1440		528
14	124	45		47	100	9		33	60	1440		507

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)			
DATE 1984	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA	NER
MAY15	69	49		43	150	1		29	56	1440			480
16	32	8		47	52	4		12	42	1440			518
17	23	3	2	46	161			16	30	1440	30		401
18	27	13		29	47	7		15	30	1440			417
19	43	15		48	62	4		20	23	1440			385
20	47	23		45	81	6		14	40	1440	20		494
21	46	14		37	109	5		3	42	1440			623
22	69	34		38	115	13		93	55	1440	4	8	413
23	86	20		46	190	7		4	9	1440			213
24	105			47	199	1		13	68	1440			504
25	138	6		42	121	3		14	13	1440			456
26	257	8	1	52	191			12	23	1440			498
27	132	6		46	93	2		31	10	1440			442
28	70	8		26	46	6		4	22	1440	5		379
29	39	12	1	47	46	6		21	49	1440			488
30	63	18		55	124	4		44	157	1440			376
31	87	3	2	46	170	1		17	34	1440			30
JUN 1	126	11		44	149	7		38	27	1440			249
2	138	7		38	76	1		94	45	1440			206
3	151	3		64	63	1		15	29	1440			177
4	364	22		50	142	10		57	45	1440			148
5	263	22	2	32	168	8		53	26	1440			142
6	170	9		50	173	7		31	21	1440			100
7	49	12		53	76	4		16	22	1440			98
8	123	4		59	190	10		19	27	1440	7		144
9	47	71	1	65	125	8		10	21	1440			104
10	17	20	1	80	41	2		19	19	1440			114
11	32	22		58	67	5		58	21	1440	7		105
12	27	5		50	70	10		52	27	1440	18		96
13	33	12		43	76	7		25	14	1440			48
14	35	1	2	57	138	1		25	16	1440	15		88
15	42	39		41	164	7		7	21	1440			102
16	44	7		36	129	5		35	23	1440	6		90
17	58	1		53	121			17	22	1440			99
18	84	26	2	54	146	8		36	25	1440			88
19	82	8		46	250	11		10	18	1440	5		74
20	101	11		47	227	18		5	10	1440			88
21	93	3	1	73	106	1		2	24	1440			46
22	114	6		45	126	14		15	20	1440			80
23	121	10		47	177	8		14	34	1440			76
24	147	4	2	50	200	1		8	14	1440			90
25	130	30	2	28	128	8		6	18	1440	21		65
26	146	34		35	170	10		8	20	1440			69
27	141	31	1	53	78	4		2	25	1440			62
28	188	63	2	33	80			6	12	1440			65

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)				
DATE 1984	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA INT.	MAUNA LOA DEEP	NER
JUN29	132	7		41	114	8		19	12	1440				78
30	45	254		53	128	11		8	16	1440	3	3		62
JUL 1	17	404		39	200	5		10	24	1440				17
2	21	22		61	133	4		12	21	1440				56
3	29	2		48	186	3		15	22	1440				82
4	47		2	45	267	7		9	19	1440				94
5	40	8	3	34	185	1		6	19	1440				85
6	67	5		56	222	10		4	22	1440		4		52
7	57	10		51	96	12		9	10	1440			4	67
8	69	6		37	74	2		4	20	1440				72
9	11	1345	1	49	193	4		10	32	1440				55
10	8	1470		56	207	4		18	17	1440				63
11	19	207		53	134	7		12	8	1440				62
12	28	41	3	53	154	2		3	6	1440				62
13	23	6	1	34	82	5		2	9	1440				66
14	25	6	2	43	149	4		5	13	1440				39
15	35	32		57	159	3		12	14	1440		3		90
16	35	6	1	46	175	11		12	14	1440		7		84
17	62	3		44	210	14		21	12	1440				74
18	42	8	1	41	136	11		7	17	1440				75
19	52			46	240	5		12	23	1440				56
20	59	6	1	51	374	8		3	13	1440				6
21	98	1		48	224	3		2	14	1440				110
22	100	6		35	98			8	14	1440				71
23	82	12		61	130	6		5	9	1440		6		55
24	91	10	1	50	87	11		7	16	1440		30		65
25	153	15		48	137	8		10	12	1440				60
26	159	19	4	59	96	3		6	11	1440				75
27	179	19		56	60	6		6	8	1440		4		47
28	31	2		47	28	2		4	7	1440				38
29	24	2090		50	92	2		4	13	1440				40
30	12	1054		46	123	1		8	9	1440				69
31	19	336	1	49	108	3		12	12	1440				76
AUG 1	24	281		39	101	8		1	7	1440		28		61
2	31	32		40	131	6		8	3	1440				50
3	37	20		59	87	2		6	7	1440		7		43
4	27	7	2	47	54	7		2	3	1440		22		43
5	30	32		40	115			9	5	1440		33		51
6	34	12	2	53	101	6		5	11	1440				45
7	51	22	1	40	205	2		5	7	1440				56
8	80	30	3	45	160	9		3	6	1440				41
9	70	23	2	49	267	1		2	12	1440				65
10	71	2	2	38	180	6		3	7	1440	2			48
11	91	17	1	44	223	8		9	7	1440				44
12	108	5	1	39	186	1		5	13	1440				69

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1984	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA
AUG13	123	4		48	110	9		3	7	1440		46
14	140	8		46	123	9		5	10	1440	33	48
15	119	1		49	113	8		2	11	1440		37
16	163	1		50	138				12	1440		47
17	220	2	2	46	182	5		9	9	1440		76
18	219	7	3	41	205	12		3	18	1440	25	65
19	160	11		38	72	3		3	18	1440		62
20	14		1	36	684	3			4	1440		25
21	8	2238	1	46	478	6		2	12	1440	29	36
22	11	1687		37	150	6		2	7	1440	40	41
23	11	1004		22	219	3		3	9	1440	8	55
24	24	951	1	41	141	6			4	1440		38
25	19	397		58	80	3		6	8	1440		42
26	41	39		40	71	2			6	1440		73
27	35	20	1	37	78	4		1	2	1440	6	42
28	42	7	1	45	94	8		6	10	1440		41
29	47	22		49	76	5		11	6	1440		30
30	43	10		42	92	2		4	6	1440		39
31	49	13		59	89	2		3	11	1440		50
SEP 1	83		1	45	101	3		1	8	1440		74
2	90	6		37	158	2			10	1440		60
3	87	1		70	176	13		2	14	1440		3
4	118	14		42	141	6		1	10	1440		36
5	144	5	1	37	138	4		8	9	1440		38
6	196	10		32	207	3		9	2	1440		47
7	259	3		37	125	4		3	8	1440		34
8	195	1		38	84	8		2	8	1440	60	33
9	124	4	2	44	108	5		3	4	1440		49
10	165	8		33	143	9		1	7	1440		46
11	150	3	1	37	127	3		2	3	1440		23
12	158	4		41	170	4		9	9	1440		28
13	110	39	39	25	236	15		4	13	1440		
14	220	3	1	40	217	5		6	10	1440	5	33
15	230	4		60	214	6		2	3	1440		26
16	209	18		49	210	4		4	6	1440		38
17	292	7	1	63	235	8			9	1440		30
18	269	33		23	231	2			10	1440		42
19	201	79	1	28	148	8		1	11	1440		26
20	6	1116	2	44	511	6		2	6	1440		26
21	7	1076	1	32	450	5			3	1440		45
22	29	882	2	34	356	5			5	1440	7	35
23	31	720	1	54	191	6		1	3	1440		54
24	69	201		21	169	6			8	1440	35	46
25	29	181		53	82	12		5	12	1440	59	17
26	59	30	1	37	132	2			7	1440	3	42

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)			
DATE 1984	SHORT PER. CALDERA	LONG PER. CALDERA	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA SHAL.	MAUNA LOA DEEP	NER
SEP27	59	21	1	40	133	1		1	5	1440				50
28	55	51	1	31	97	6		4	3	1440		4		43
29	54	12		50	113	12		4	6	1440				26
30	61	12		51	126	3		1	9	1440				25
OCT 1	70	3	1	40	124	9		1	13	1440				42
2	51	6	1	35	133	2		4	3	1440				42
3	85	3	1	29	153	2			7	1440				48
4	115	6		36	146	7		4	8	1440				51
5	93	4		39	113			3	4	1440				39
6	113	1	1	34	165	6		10	6	1440				58
7	94	5		37	100	5		1	3	1440				51
8	126	6		44	71	1		1		1440				27
9	150	2		31	82	8		2	2	1440				18
10	176			31	100	2				1440				18
11	160	11		36	180	1		2	5	1440				45
12	156	4		37	156	7			7	1440		33		22
13	158	92	1	18	245	3		3	5	1440	10			23
14	218	43		27	178			5	7	1440				36
15	140	8	2	11	143			3		1440				32
16	168	4		47	113			2	4	1440				17
17	205	5		44	180			2	4	1440				37
18	257	7		36	217	11		8	8	1440				24
19	187	4	1	34	185	11		1		1440				18
20	241	7	2	38	207	18		4	2	1440		7		27
21	277	16		33	177				3	1440				33
22	261	20	1	35	225	3				1440				32
23	214	17		31	195	7		3	5	1440				17
24	197	11		50	165	4		4	5	1440		5		53
25	190	9		42	158	1		2	5	1440		3		57
26	197	6	2	39	172	4			2	1440				68
27	190	4		40	166	8		2	5	1440				72
28	189	34	1	39	155	3		37	9	1440				28
29	184	18	1	48	176	10		4	4	1440		2		72
30	222	21		38	158	7			4	1440				71
31	207	33		41	83	6		1	4	1440				83
NOV 1	197	43		33	71	5		3	6	1440				79
2	84	57		38	1561	4		2	1	1440				70
3	60	421		27	1483	2			3	1440				54
4	58	263		31	298	1			10	1440				1
5	22	8		35	147	3		4	4	1440		37		82
6	33	29		54	136	15	1	3	2	1440				87
7	55	14		39	87	5		6	7	1440				63
8	69	16		49	79	12		6	10	1440				53
9	61	22		43	81	5		1	1	1440				67
10	8	38		47	63	6	19	1	8	1440				66

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)		
DATE 1984	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA INT. DEEP	MAUNA LOA	NER
NOV11	110	163		50	105	10	1	2	4	1440			53
12	301	37	1	52	130	13	1	1	6	1440		4	51
13	135	64		50	135	7		1	2	1440	8		76
14	152	73		28	90	3	1	1	4	1440			61
15	159	7		49	96	8	2	1	4	1440			25
16	153	241	440	39	65	1		6		1440			26
17	142	41		43	81	3				1440			18
18	102	10		18	59			2		1440	16		14
19	179	35	1	39	42	7			3	1440			30
20	38	282		21	991	3		1	2	1440			19
21	24	1622		37	940	4			2	1440	18		36
22	34	775		33	530	2			2	1440			38
23	43	68	2	42	372	5			8	1440			47
24	37	39		47	468	1		1	1	1440			102
25	96	15	1	24	288				3	1440			22
26	77	26		50	555	4			1	1440	31		43
27	114	64		31	375	11		1	10	1440			73
28	123	59	2	37	141	8		5	4	1440			65
29	185	300		45	150	5		6	5	1440			64
30	159	173	1	47	76	5			4	1440			58
DEC 1	175	82		41	83	10	2	1	1	1440			76
2	192	117		55	112	4		3	2	1440			113
3	156	82	1	52	124	4		8	5	1440		4	57
4	15	71		40	86	6			1	1440			23
5	20	210		35	87	6		1	2	1440			34
6	41	102		30	85	9		3	6	1440			78
7	8	40		22	41	9			1	1440	4		59
8	26	19	1	37	42	6		3	4	1440			50
9	37	8		36	51	10		1	9	1440			
10	33	12		44	75	12		2	2	1440			54
11	45	15	1	39	91	10		4	4	1440	6		59
12	42	24	2	62	122	8		1	8	1440	33		70
13	51	31		48	156	11	1	2	5	1440			84
14	91	10		36	134	3		12	12	1440	12		26
15	82	4	1	31	162	4		20	11	1440	3		27
16	63	34		48	159	1		3	6	1440			84
17	77	26		40	83	10		4	3	1440			50
18	65	45		29	68	7		2	6	1440			38
19	78	38		34	49	5		1	5	1440			79
20	85	59		39	101	15		2	5	1440			81
21	75	73	1	29	138	4	1	1	5	1440			121
22	123	80		108	197	9		2		1440			151
23	203			111	244	7			8	1440			16
24	179	171	1	40	169	10	1	1	7	1440			95
25	183	121		46	134	6		2	9	1440			54

	KILAUEA SUMMIT			KILAUEA FLANK				MAUNA LOA		TREMOR (MINUTES)			
DATE 1984	SHORT PER. CALDERA	LONG PER.	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	OFF-SHORE PPL'	LONG PER.	SHORT PER.	KILAUEA INT. SHAL.	KILAUEA DEEP	MAUNA LOA	NER
DEC26	276	10		26	91	1		1	4	1440			21
27	239	89		30	108	10		6	3	1440			59
28	209	85		50	105	4		2	8	1440	7 24		42
29	242	198		46	90	6		4	6	1440			40
30	345	25		58	46	4		10	4	1440			3
31	322	11	2	48	86	12		19	3	1440	6		15

Table 4. Coordinates of named earthquake regions.

--All earthquakes are in one of the following groups.
--Identified by a numerical class or 3-letter code:

--Shallow:
1 SNC - Shallow north caldera (0-5 km)
2 SSC - Shallow south caldera (0-5 km)
3 SEC - Shallow east caldera (0-5 km)
4 SER - Shallow east rift (0-5 km)
5 SME - Shallow middle east rift (0-5 km)
6 KOA - Koae fault zone (0-5 km)
7 SSF - Shallow south flank (0-5 km)
8 SLE - Shallow lower east rift (0-5 km)

--Intermediate depth:
9 SF1 - Kilauea south flank (5-13 km) (west end)
10 SF2 - Kilauea south flank (5-13 km)
11 SF3 - Kilauea south flank (5-13 km)
12 SF4 - Kilauea south flank (5-13 km)
13 SF5 - Kilauea south flank (5-13 km) (east end)
14 LER - Lower east rift (5-99 km)
15 MLO - Mauna Loa (0-13 km)
16 LSW - Lower SW rifts of Kilauea & Mauna Loa (0-13 km)
17 GLN - Glenwood (0-13 km)
18 SWR - SW rift (0-13 km)
19 INT - Intermediate caldera (0-13 km)
20 KAO - Kaoiki (0-13 km)

--Deep:
21 DEP - Deep Kilauea (>13 km) (below regions 1-13, 17-19)
22 DLS - Deep lower SW rift (>13 km) (below region 14)
23 DML - Deep Mauna Loa (>13 km) (below regions 15, 20)

--Outer regions, all depths:
24 LOI - Loihi (all depths)
25 KON - South Kona (all depths)
26 HUA - Hualalai (all depths)
27 KOH - Kohala (all depths)
28 KEA - Mauna Kea (all depths)
29 HIL - Hilo (all depths)
30 DIS - Distant, everywhere else

Table 4 (continued)

--The latitude and longitude limits of the regions are given below.
--When the coordinates imply an overlap, precedence is given as in the maps.

No.	Code	N.Lat.	S.Lat.	W.Lon.	E.Lon.
1	SNC	19 28	19 24.5	155 19	155 14
2	SSC	19 24.5	19 22	155 19	155 16.5
3	SEC	19 24.5	19 22	155 16.5	155 14
4	SER	19 26	19 20.5	155 14	155 07.2
5	SME	19 26	-----	155 07.2	155 00
6	KOA	19 22	19 20.5	155 17	155 14
7	SSF	-----	19 10	155 17	155 00
8	SLE	19 32	19 16	155 00	154 40
9	SF1	19 22	19 10	155 17	155 14.5
10	SF2	19 26	19 10	155 14.5	155 12.3
11	SF3	19 26	19 10	155 12.3	155 09.1
12	SF4	19 26	19 10	155 09.1	155 05.3
13	SF5	19 26	19 10	155 05.3	155 00
14	LER	19 32	19 16	155 00	154 40
15	MLO	19 35	19 19	155 35	155 19
16	LSW	19 19	18 40	155 43	155 25
17	GLN	19 35	19 26	155 19	155 00
18	SWR	19 22	19 10	155 25	155 17
19	INT	19 28	19 22	155 19	155 14
20	KAO	19 30	19 19	155 32	155 19
21	DEP	19 35	19 10	155 25	155 00
22	DLS	19 19	18 40	155 43	155 25
23	DML	19 35	19 19	155 35	155 19
24	LOI	19 10	18 40	155 25	155 00
25	KON	19 39	19 00	156 20	155 43
26	HUA	19 55	19 39	156 20	155 43
27	KOH	20 25	19 55	156 20	155 34
28	KEA	20 25	19 35	155 34	154 40
29	HIL	19 47	19 32	155 09	154 40

Figure 5. Earthquake classification, shallow 0 - 5 km deep Kilauea and east flank Mauna Loa.

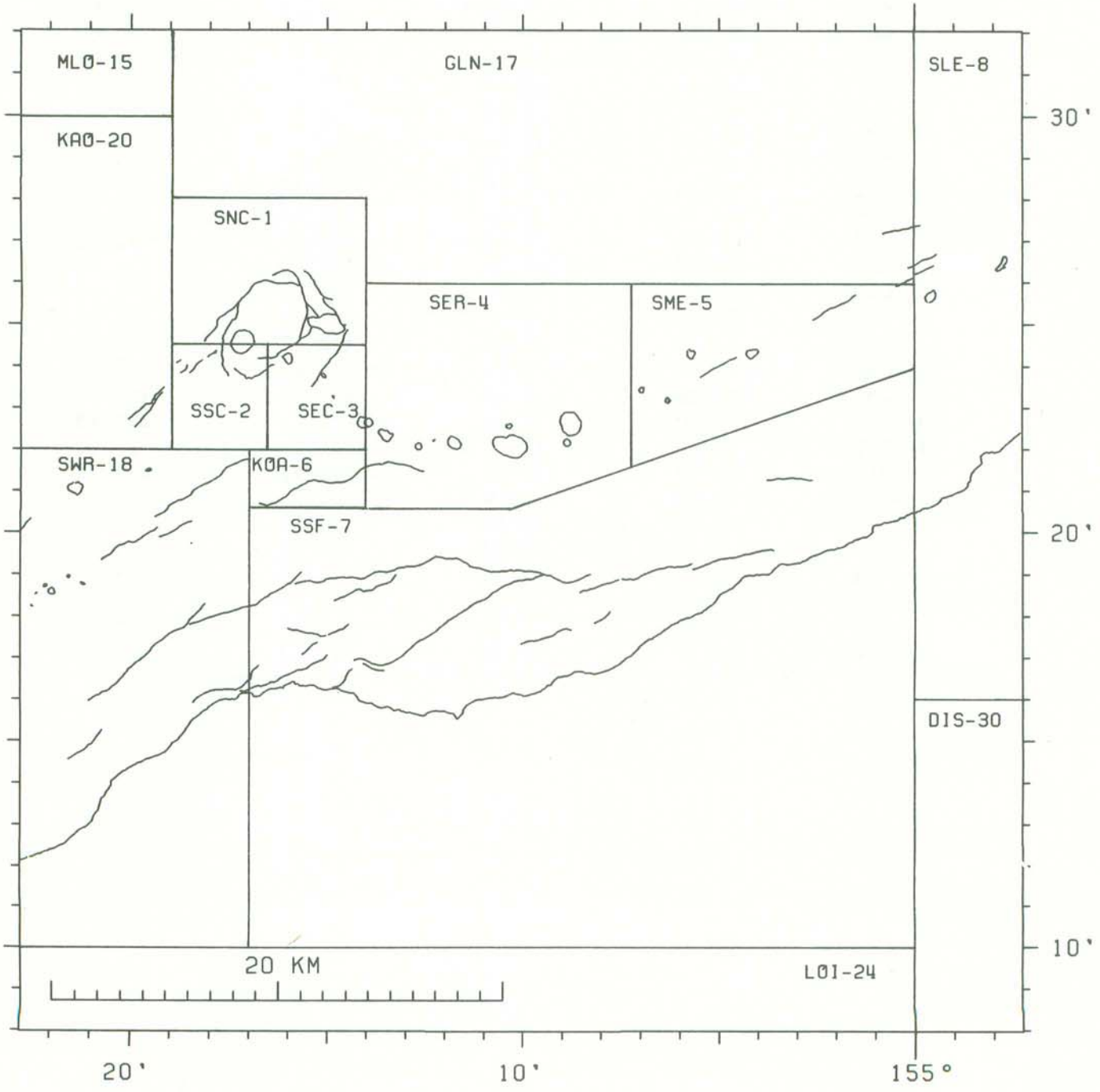

Figure 6. Earthquake classification, intermediate 5 - 13 km deep Kilauea and east flank Mauna Loa.

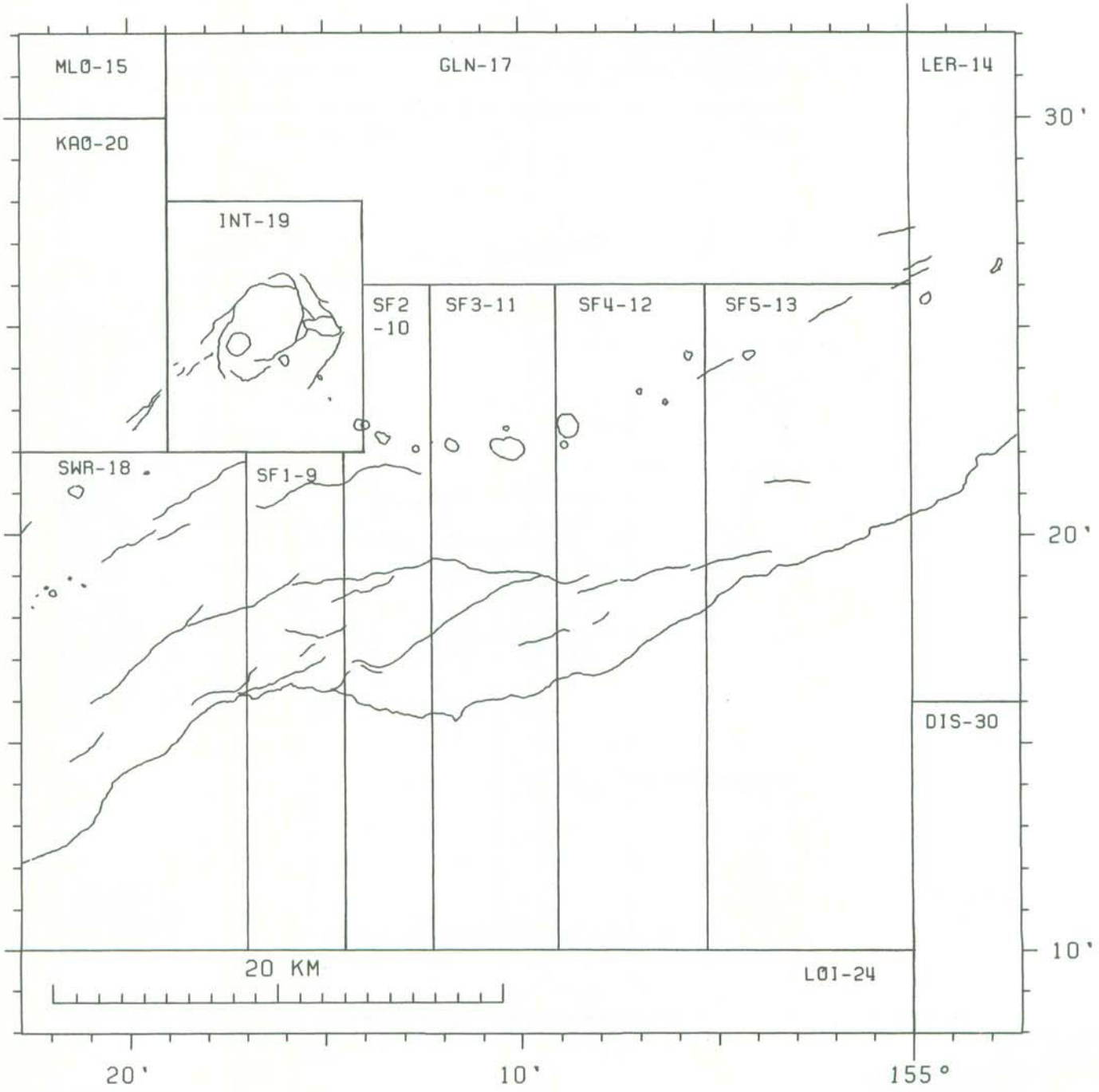

Figure 7. Earthquake classification, crustal 0 - 13 km deep island of Hawaii.

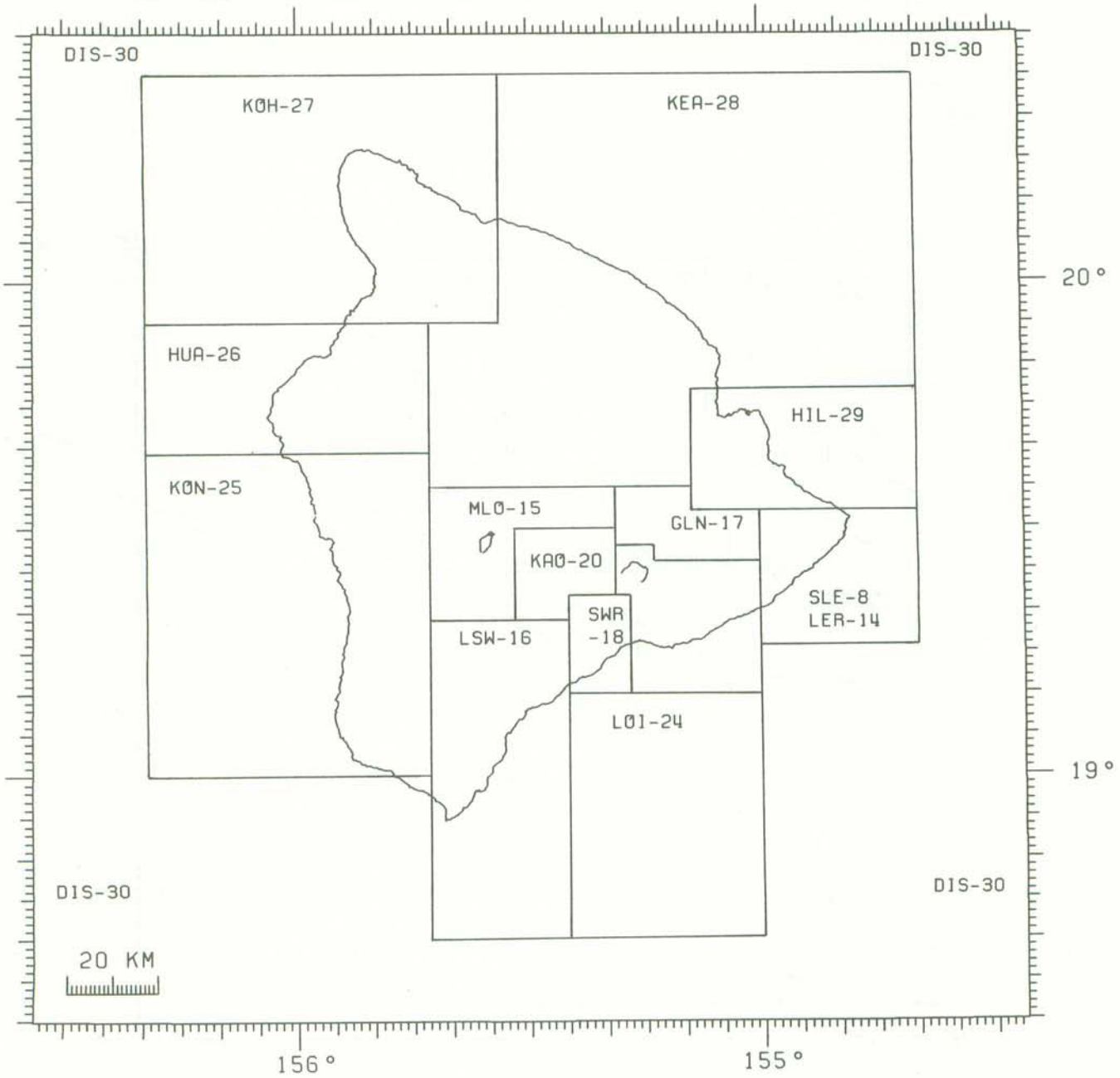

Figure 8. Earthquake classification, mantle greater than 13 km deep island of Hawaii.

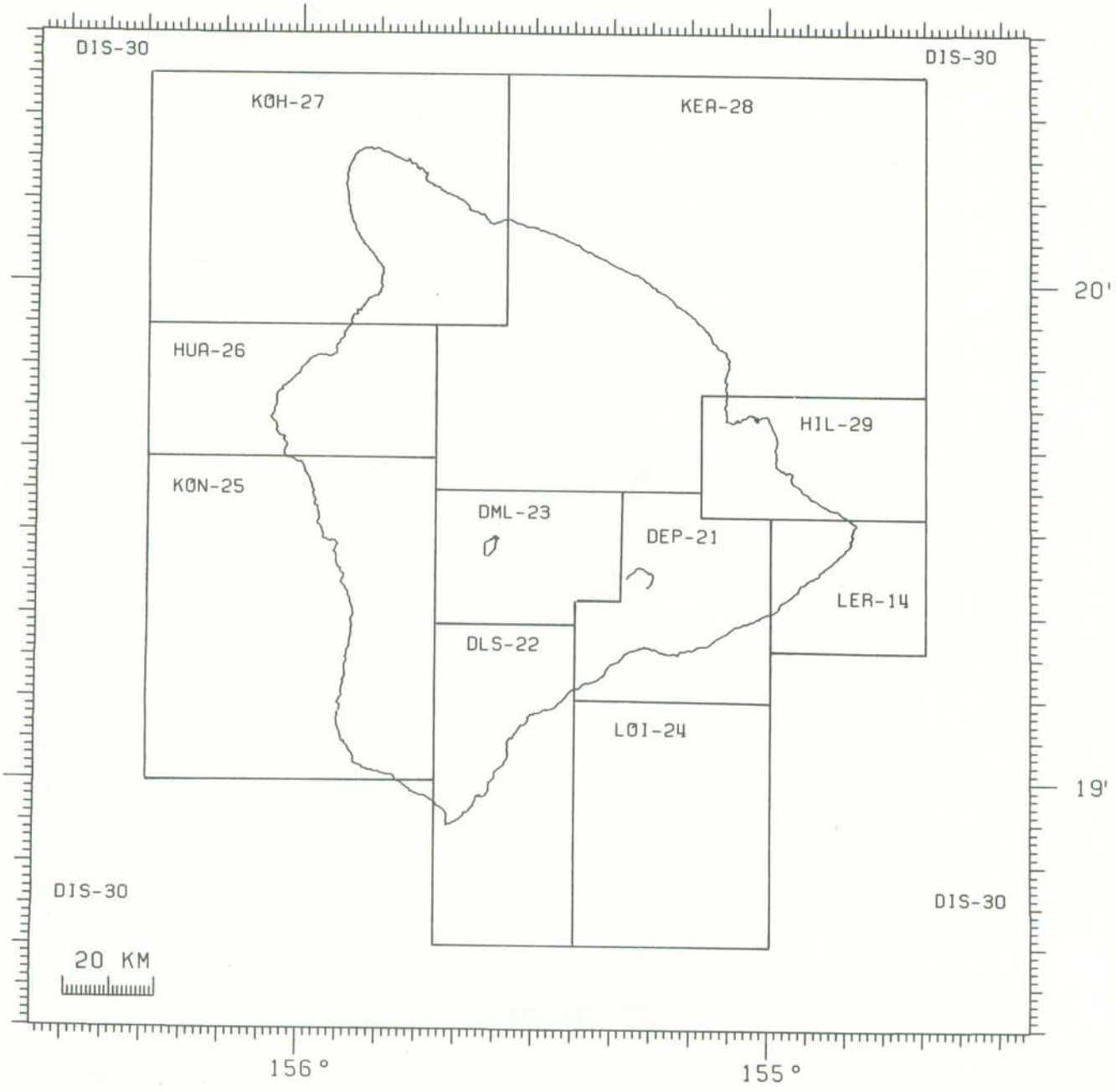

Figure 9

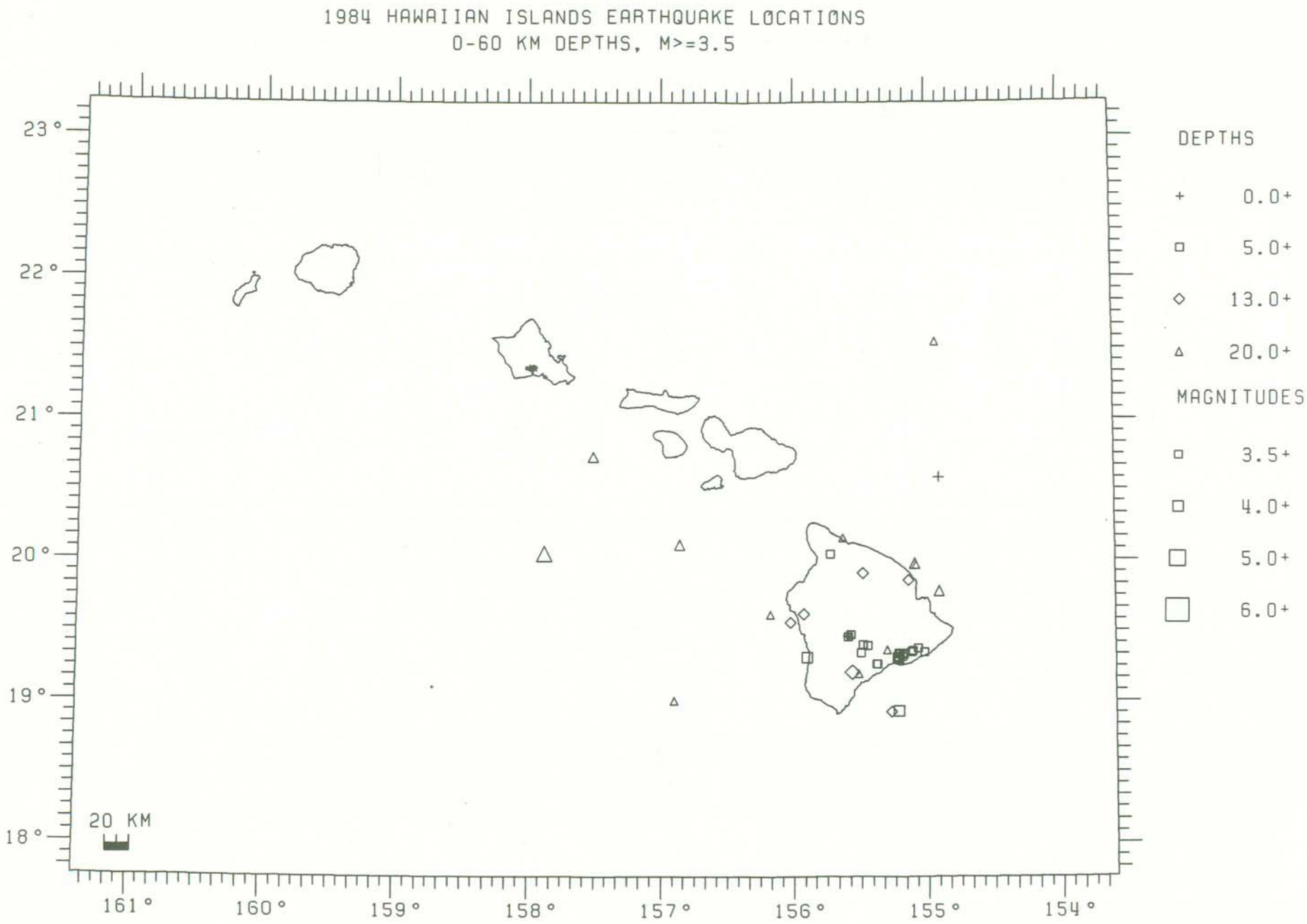
1984 HAWAIIAN ISLANDS EARTHQUAKE LOCATIONS
0-60 KM DEPTHS, M>=3.5
23°
22°
21°
20°
19°
18°
161°
160°
159°
158°
157°
156°
155°
154°
20 KM
DEPTHS
0.0+
5.0+
13.0+
20.0+
MAGNITUDES
3.5+
4.0+
5.0+
6.0+

Figure 10

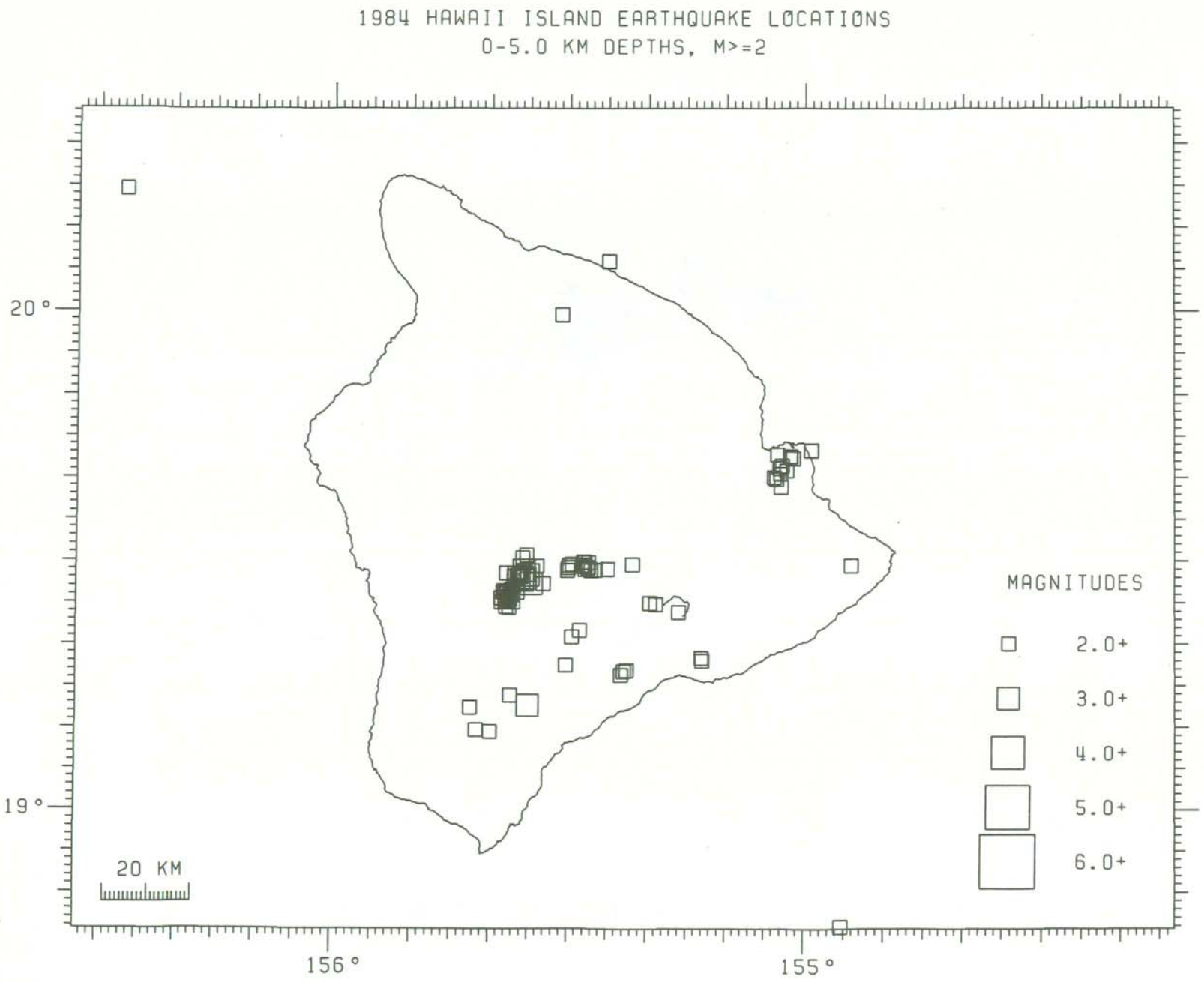
1984 HAWAII ISLAND EARTHQUAKE LOCATIONS
0-5.0 KM DEPTHS, M>=2
20°
19°
156°
155°
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 11

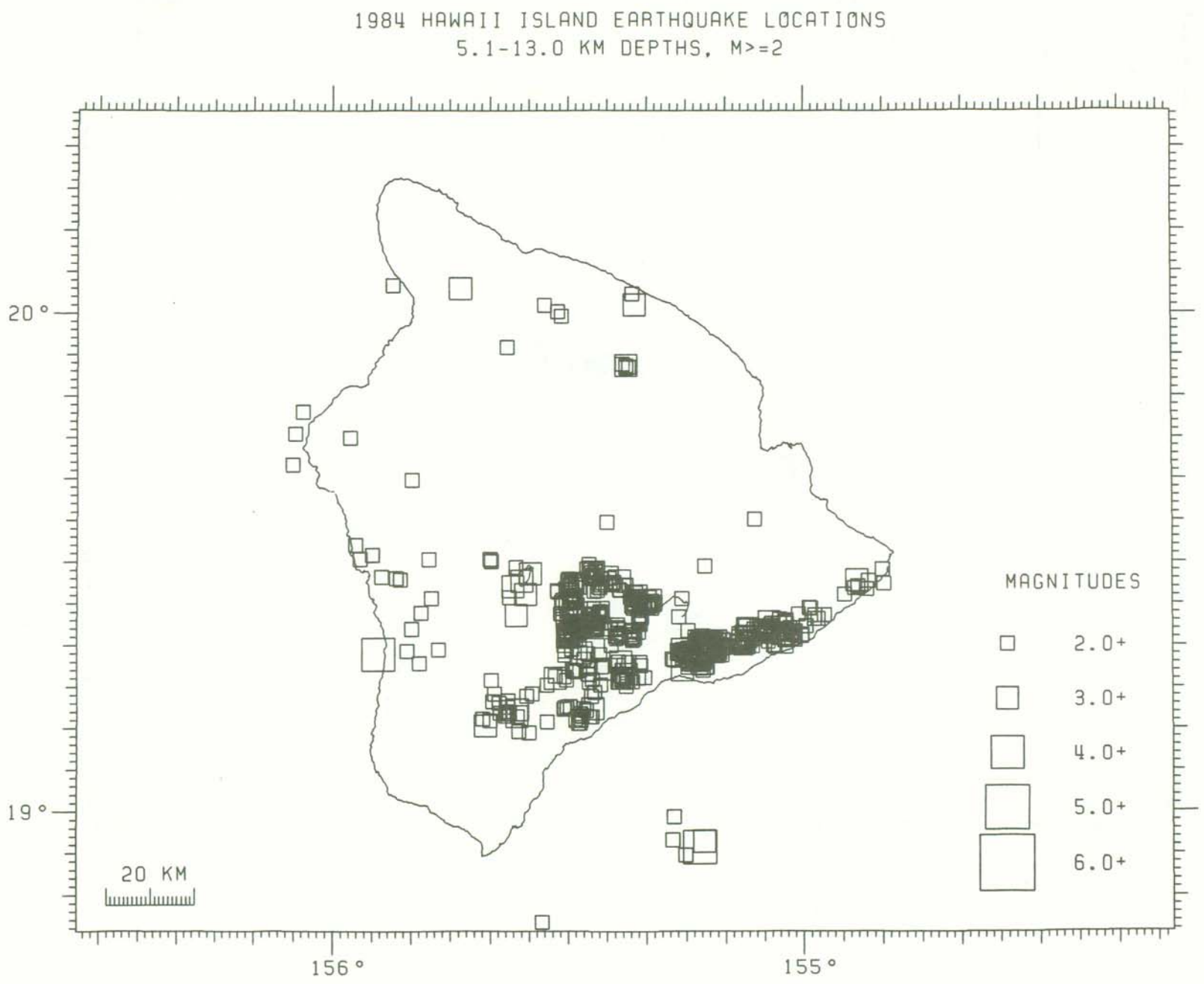
1984 HAWAII ISLAND EARTHQUAKE LOCATIONS
5.1-13.0 KM DEPTHS, M>=2
20 °
19 °
156 °
155 °
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 12

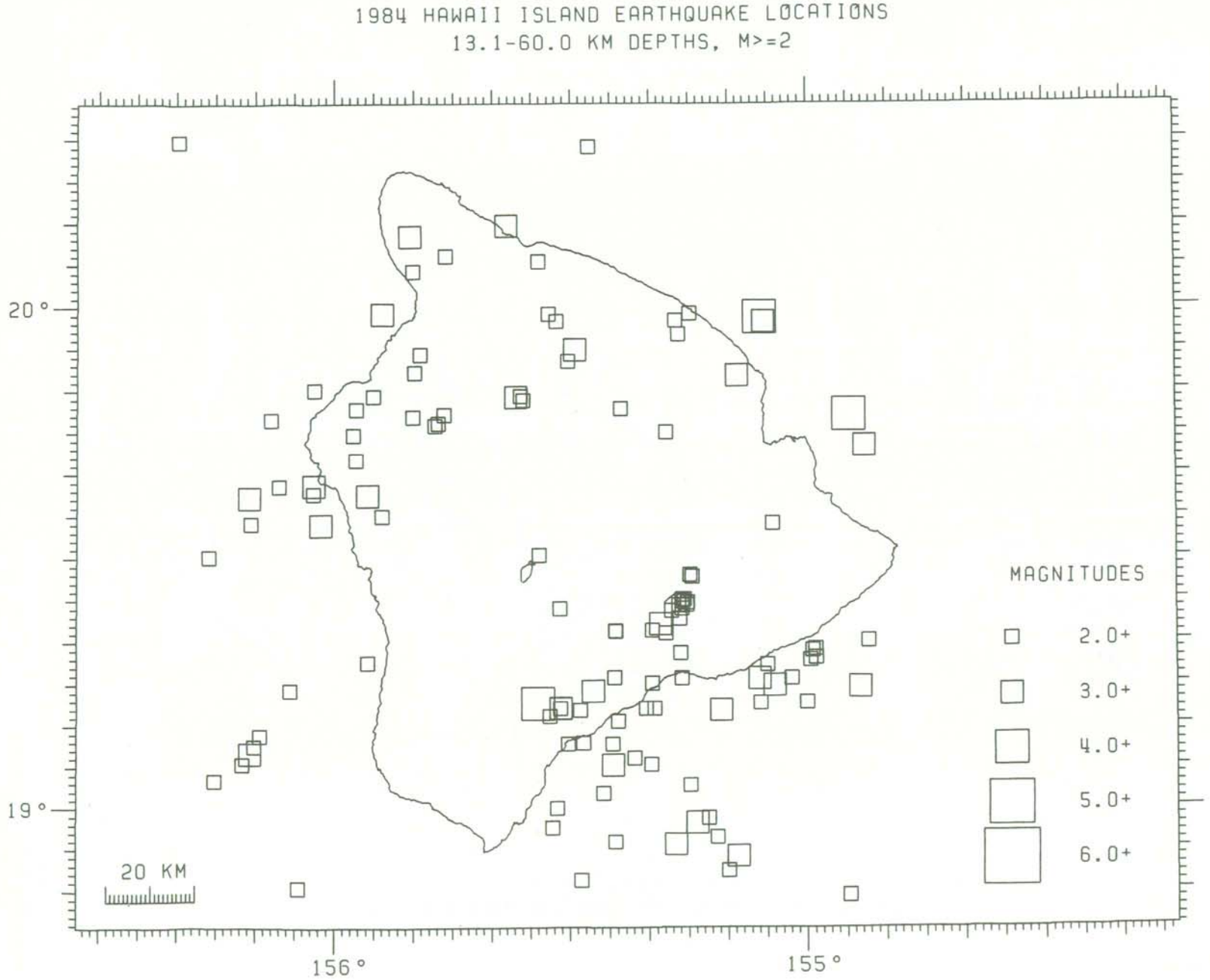
1984 HAWAII ISLAND EARTHQUAKE LOCATIONS
13.1-60.0 KM DEPTHS, M>=2
20°
19°
156°
155°
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 13

1984 KILAUEA SUMMIT EARTHQUAKE LOCATIONS
0-5.0 KM DEPTHS, M>=1.0

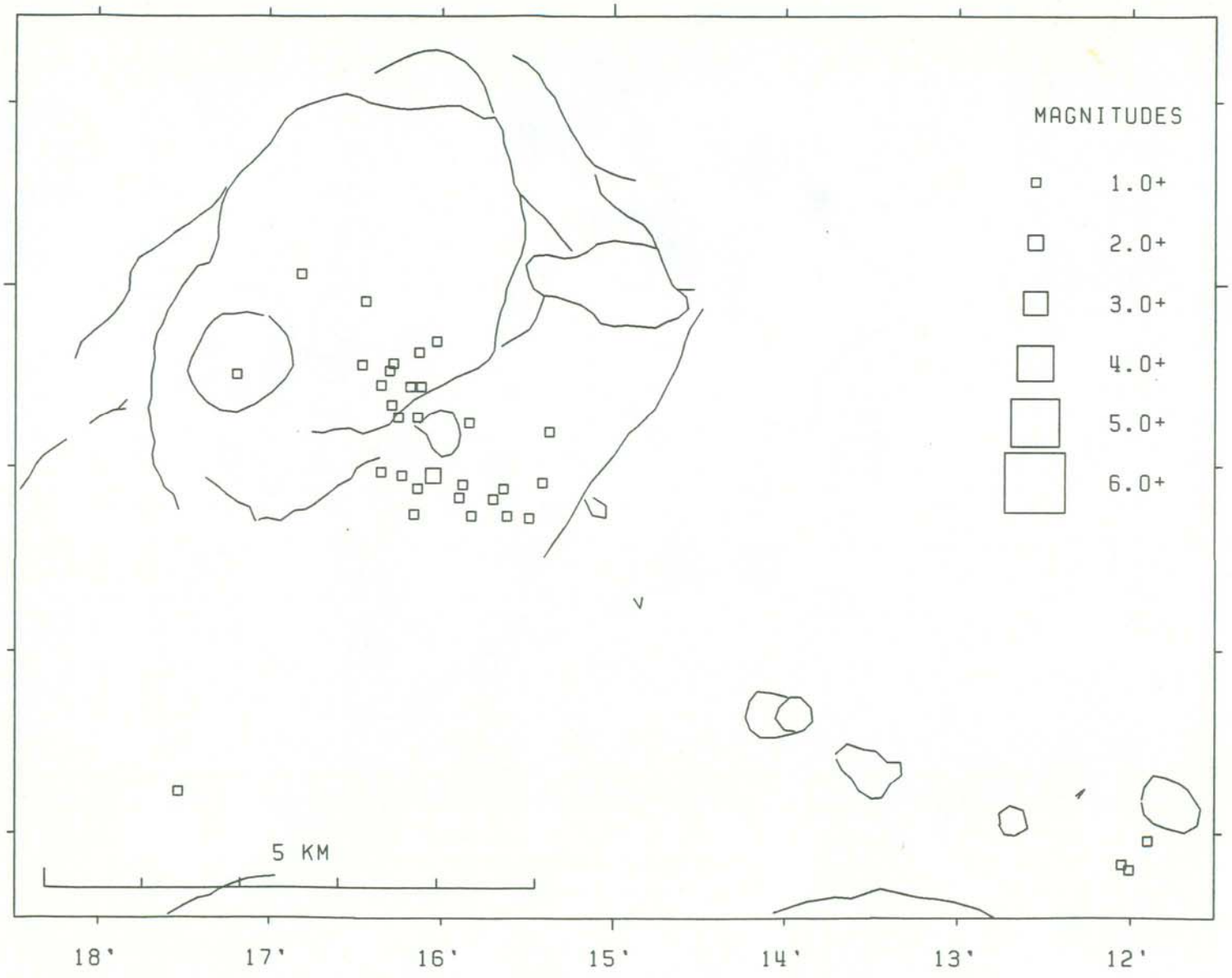

Figure 14

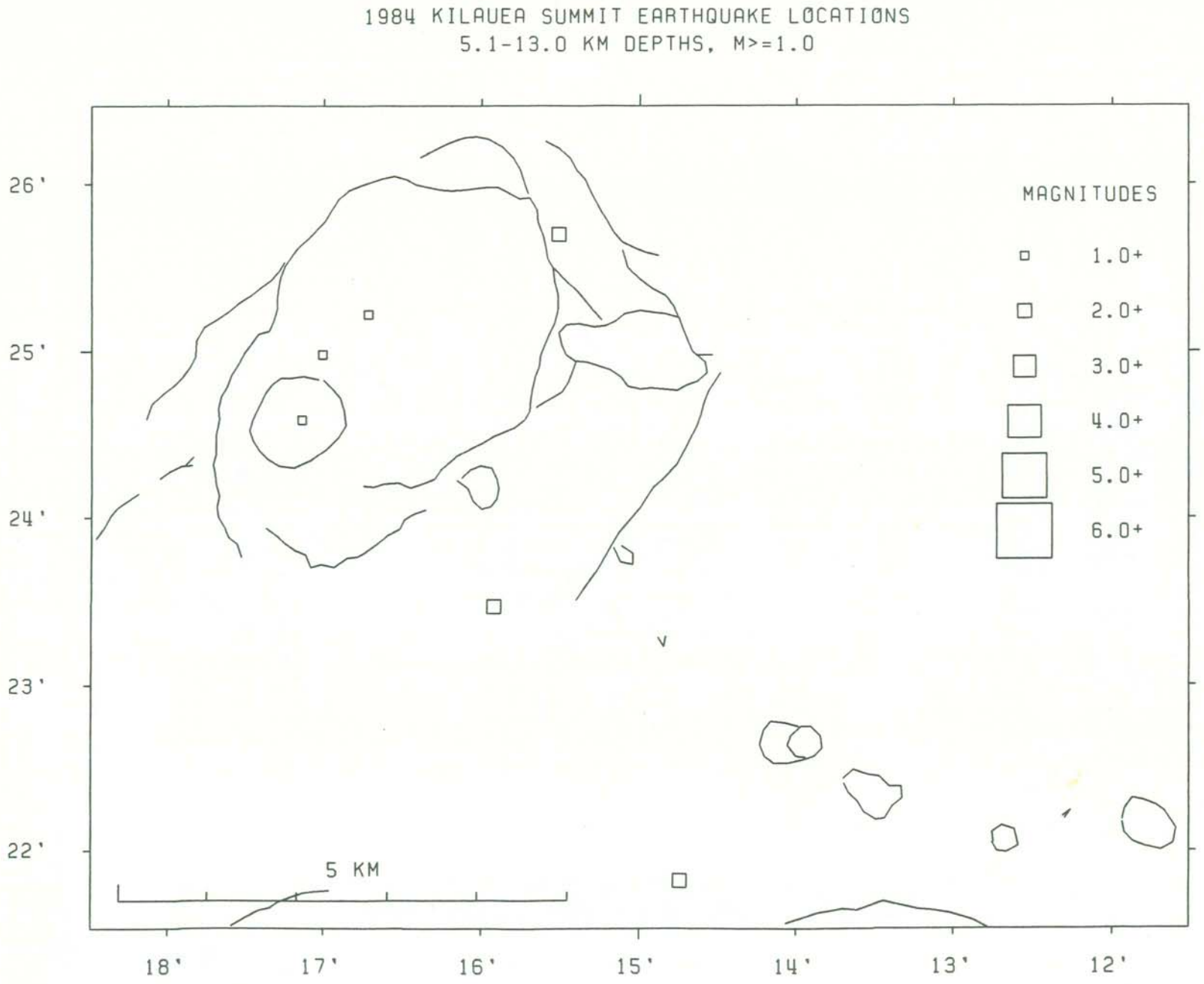
1984 KILAUEA SUMMIT EARTHQUAKE LOCATIONS
5.1-13.0 KM DEPTHS, M>=1.0
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
5.0+
6.0+
5 KM
26'
25'
24'
23'
22'
18'
17'
16'
15'
14'
13'
12'

Figure 15

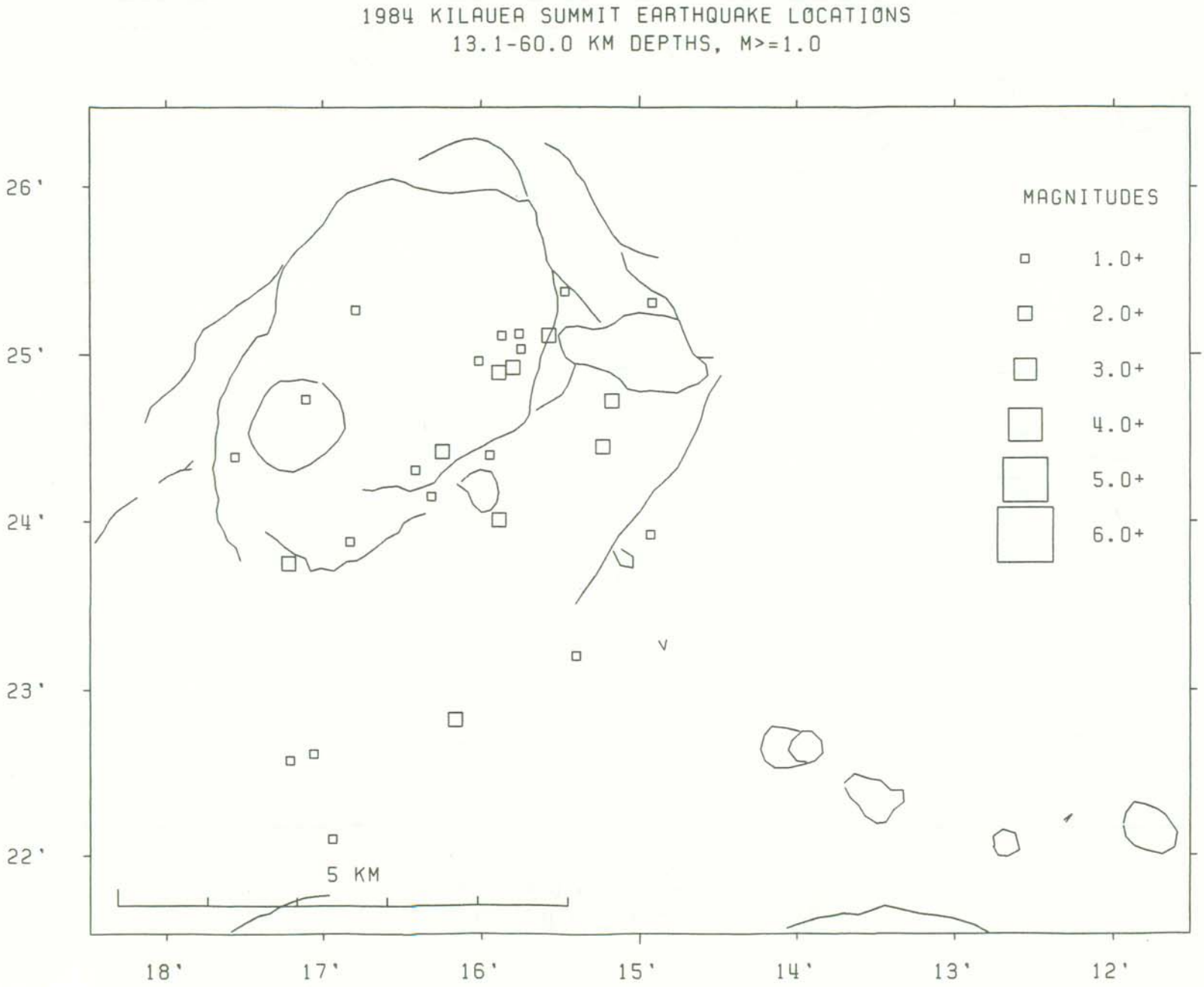
1984 KILAUEA SUMMIT EARTHQUAKE LOCATIONS
13.1-60.0 KM DEPTHS, M>=1.0
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
5.0+
6.0+
5 KM
26'
25'
24'
23'
22'
18'
17'
16'
15'
14'
13'
12'

Figure 16

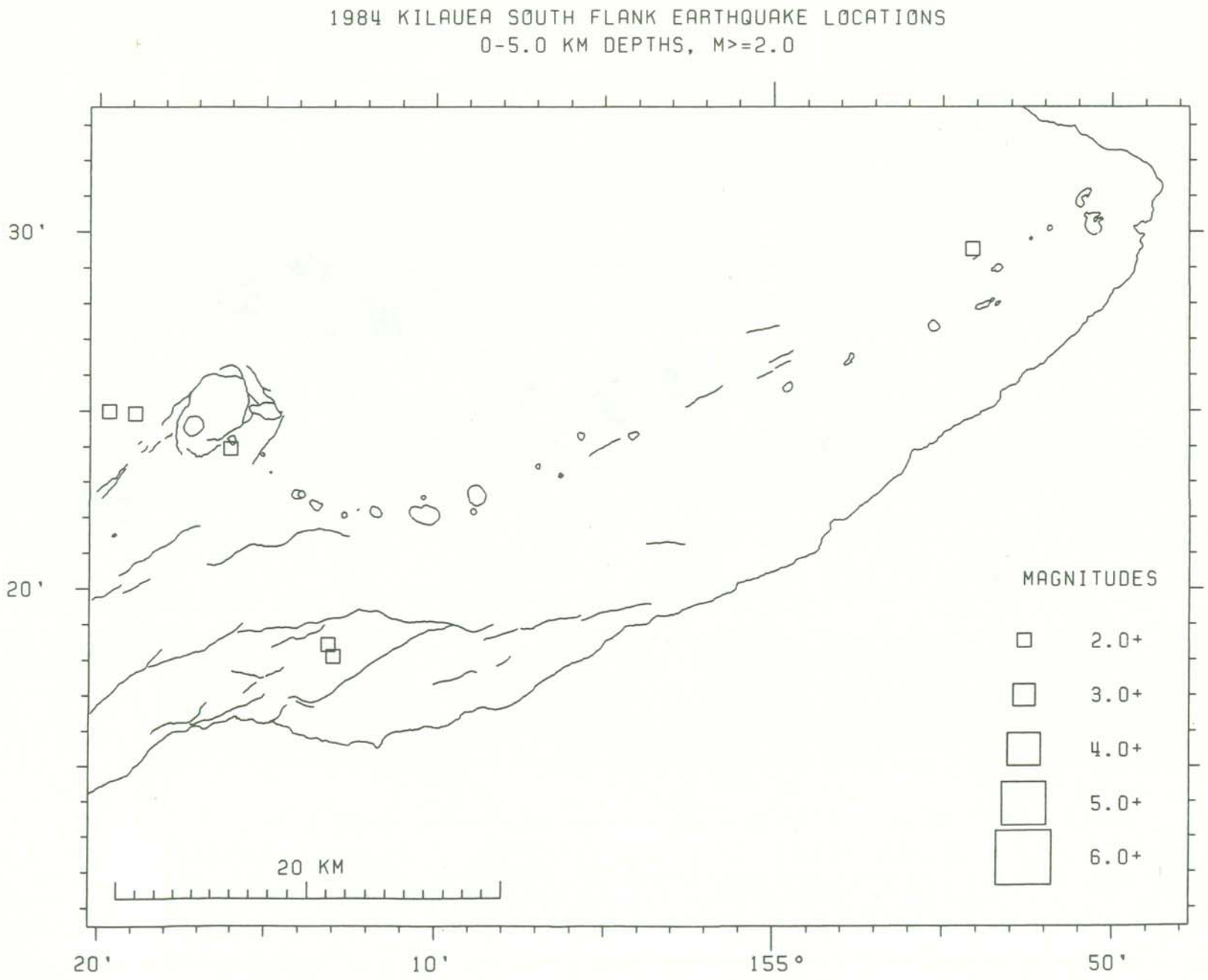
1984 KILAUEA SOUTH FLANK EARTHQUAKE LOCATIONS
0-5.0 KM DEPTHS, M>=2.0
30'
20'
20'
10'
155°
50'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 17

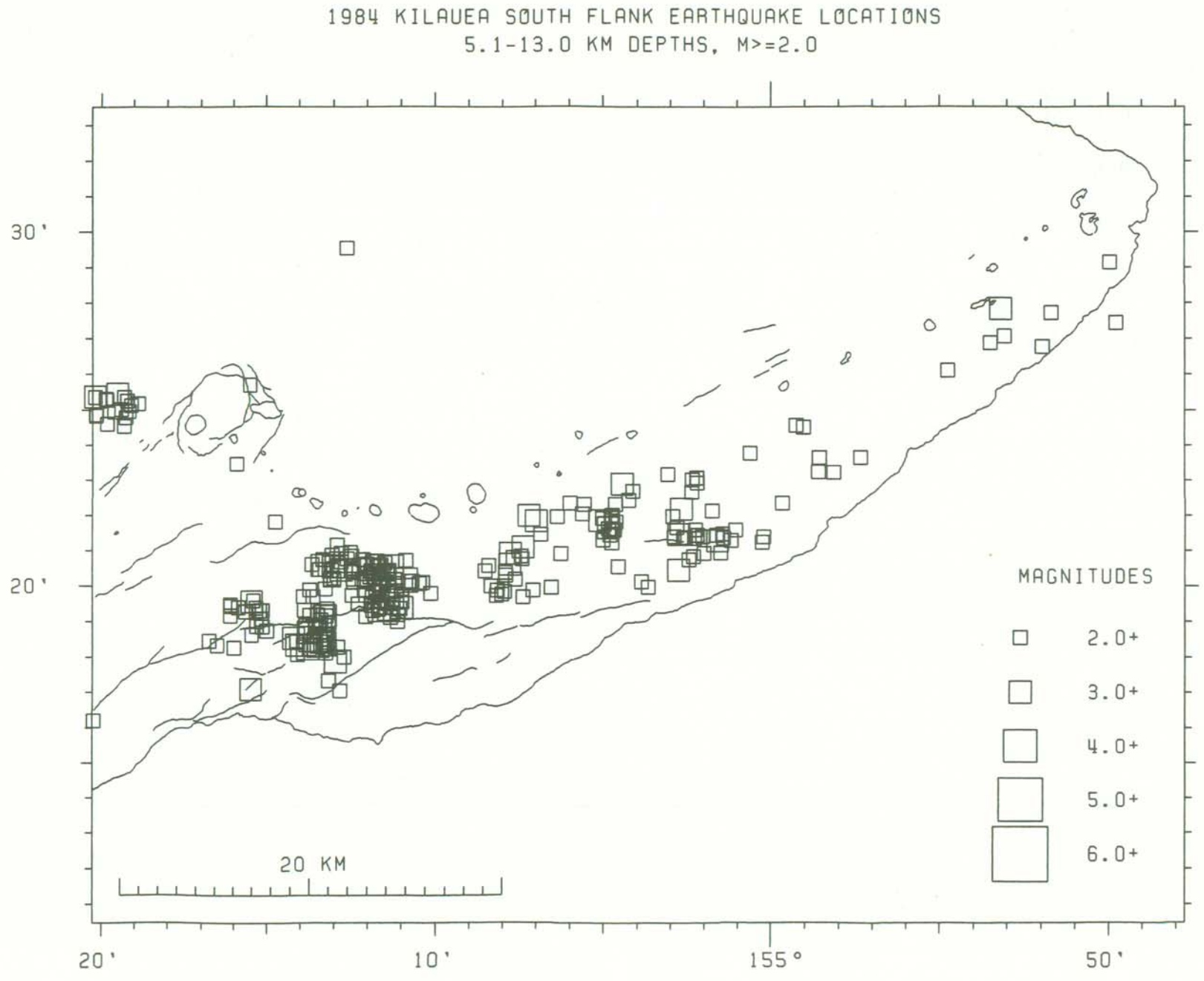
1984 KILAUEA SOUTH FLANK EARTHQUAKE LOCATIONS
5.1-13.0 KM DEPTHS, M>=2.0
30'
20'
20'
10'
155°
50'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 18

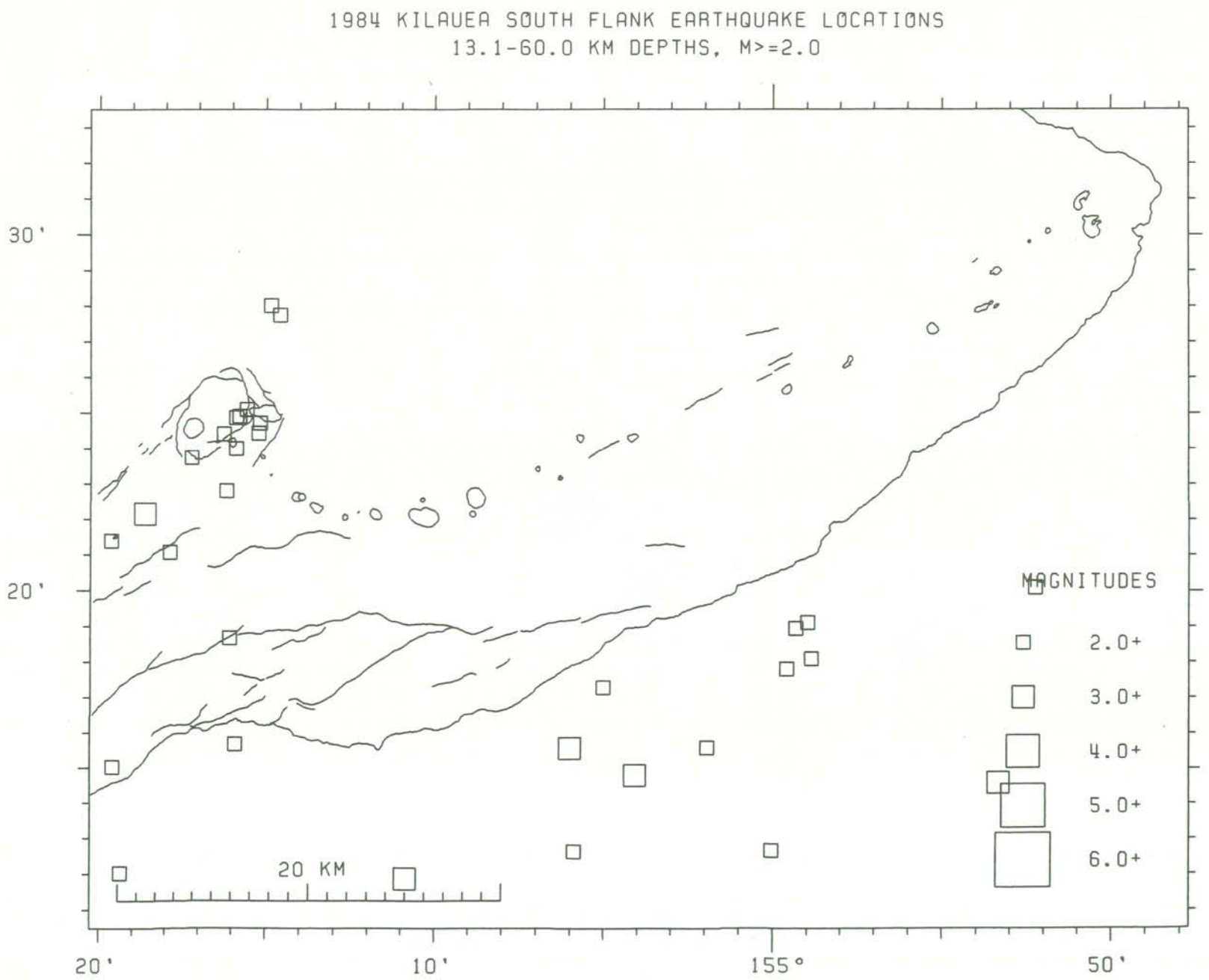
1984 KILAUEA SOUTH FLANK EARTHQUAKE LOCATIONS
13.1-60.0 KM DEPTHS, M>=2.0
30'
20'
20'
10'
155°
50'
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+
20 KM

Figure 19

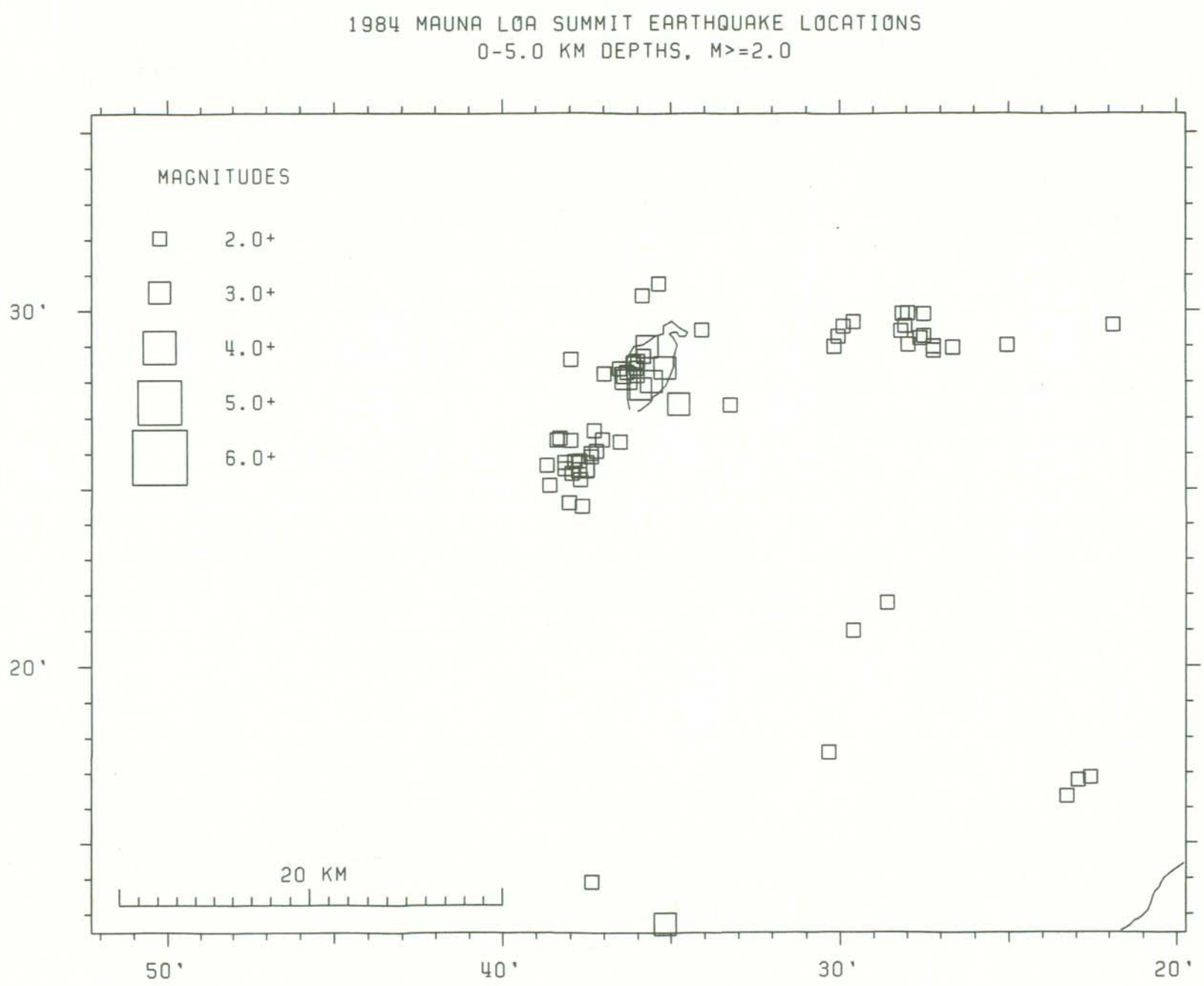
1984 MAUNA LOA SUMMIT EARTHQUAKE LOCATIONS
0-5.0 KM DEPTHS, M>=2.0
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+
20 KM
30'
20'
50'
40'
30'
20'

Figure 20

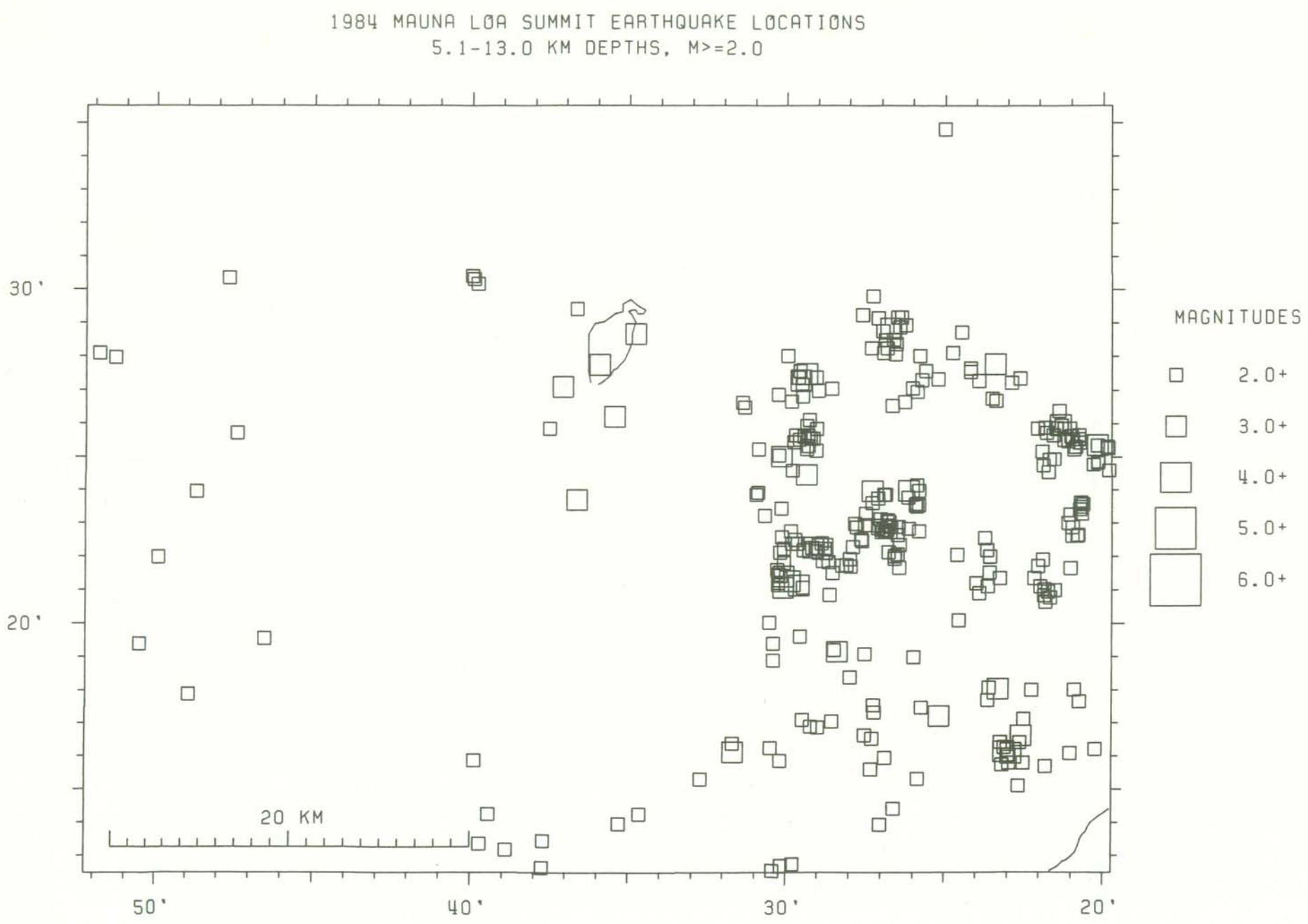
1984 MAUNA LOA SUMMIT EARTHQUAKE LOCATIONS
5.1-13.0 KM DEPTHS, M>=2.0
30'
20'
50'
40'
30'
20'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 21

1984 MAUNA LOA SUMMIT EARTHQUAKE LOCATIONS
13.1-60.0 KM DEPTHS, M>=2.0

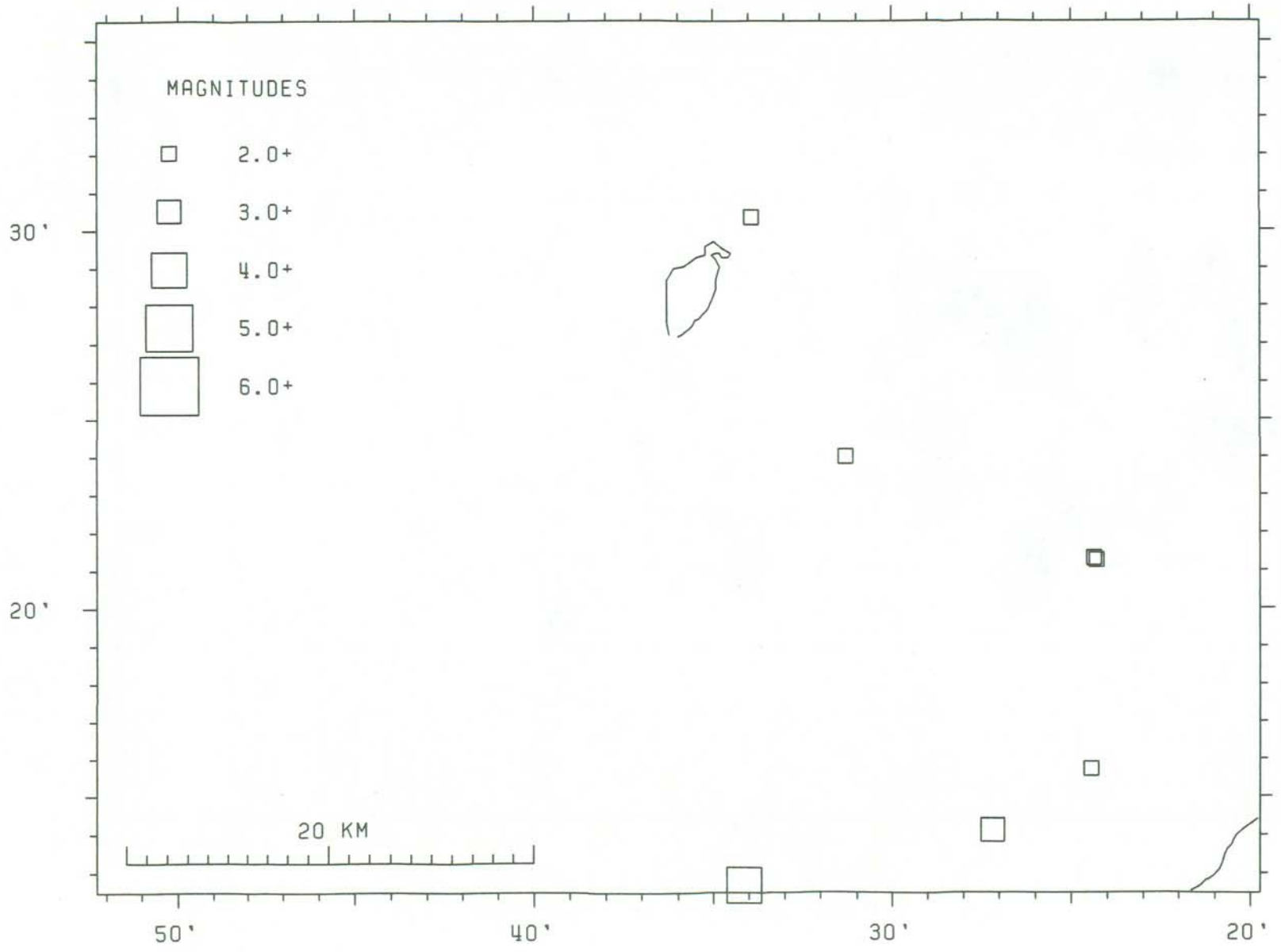

Figure 22

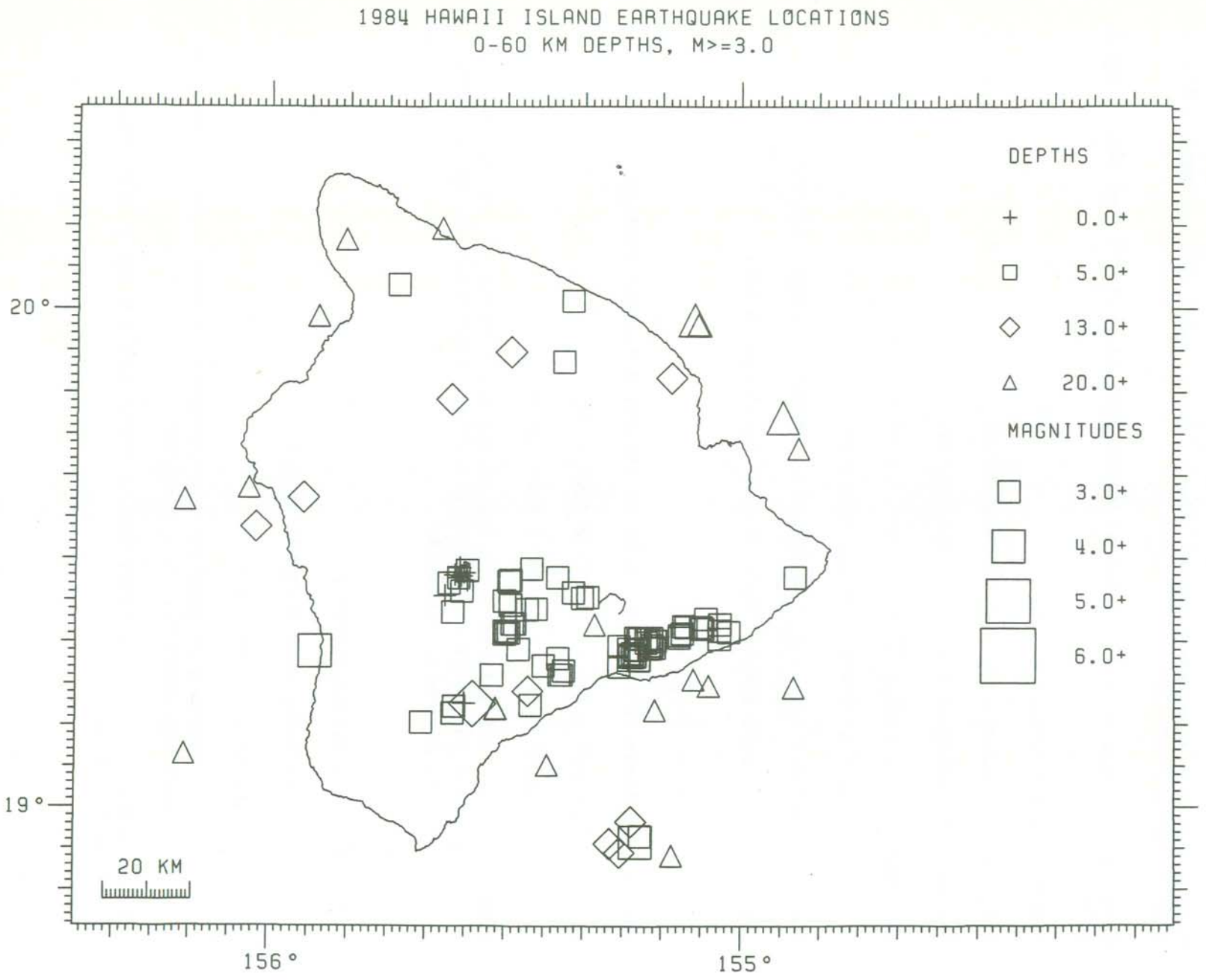
1984 HAWAII ISLAND EARTHQUAKE LOCATIONS
0-60 KM DEPTHS, M>=3.0
DEPTHS
0.0+
5.0+
13.0+
20.0+
MAGNITUDES
3.0+
4.0+
5.0+
6.0+
20 KM
20°
19°
156°
155°

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in sec.

$$RMS = (\Sigma R_i^2/NR)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of event. See Figures 5-8 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

* - the location program had a convergence problem, which usually means that the depth may be unreliable.

Table 5 lists all events located during 1984. Table 6 lists only events of magnitude 3.0 or larger.

Table 5

1984 HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JAN	1	012	5.68	19	28.64	155	37.97	3.85	2.5	2.1	37	3	79	.15	4	0.5	0.8	23	MLO
		1	1 9	40.30	19	20.30	155	12.83	6.59	1.4	1.3	39	3	69	.11	4	0.4	0.7	27	SF2
		1	432	8.19	19	26.68	155	23.38	7.67	1.9	2.1	40	4	40	.12	4	0.3	0.8	34	KAO
		1	515	54.22	19	28.72	155	24.46	5.90	2.1	1.9	43	3	39	.14	3	0.3	0.9	33	KAO
		1	534	49.58	19	16.64	155	22.58	8.03	2.7	3.4	49	1	124	.17	5	0.5	0.7	48	SWR
		1	823	7.35	19	25.13	155	21.46	11.91	2.1	1.4	43	4	34	.11	4	0.4	0.5	37	KAO
		1	827	17.72	19	59.24	155	14.83	44.64	2.7	2.5	54	8	215	.13	15	0.9	1.2	45	KEA
		1	957	23.05	19	12.74	155	29.79	8.32	2.2	2.0	40	6	129	.16	4	0.5	0.8	32	LSW
		1	1537	51.11	19	18.57	155	14.96	5.55	1.3	1.1	31	2	107	.12	4	0.5	1.2	28	SF1
		1	1544	28.07	19	22.44	155	28.99	9.83	1.8	1.3	38	1	37	.12	2	0.4	0.8	36	KAO
		1	17 5	34.57	19	21.27	155	24.29	14.17	2.5	2.3	48	6	40	.10	3	0.3	0.4	41	DEP
		1	1732	13.61	19	21.65	155	21.03	11.43	2.6	2.6	51	5	54	.11	4	0.3	0.3	44	SWR
		1	1943	9.01	19	21.77	155	26.28	10.83	1.9	1.5	38	3	46	.13	3	0.4	0.8	34	KAO
		1	2055	57.92	19	25.36	155	20.18	7.76	3.0	3.3	51	6	38	.12	3	0.3	0.6	45	KAO
		1	22 9	35.07	19	26.84	155	30.05	9.52	1.8	1.4	36	4	62	.10	9	0.4	0.9	30	KAO
		2	359	29.74	19	29.55	155	29.90	3.22	2.3	1.8	34	2	66	.12	6	0.3	1.5	30	KAO
		2	623	42.38	19	27.55	155	23.73	4.42	1.8	2.0	24	2	44	.11	4	0.4	1.3	22	KAO
		2	1144	18.67	19	26.25	155	29.00	8.84	2.0	1.2	35	2	43	.09	7	0.4	1.1	29	KAO
		2	1410	20.10	20	35.30	154	54.93	0.03	3.7	4.3	48	4	312	.11	90	9.3	2.4	44	DIS
		2	16 9	34.95	19	22.16	155	21.18	10.68	1.9	1.4	38	6	50	.10	4	0.4	0.6	25	KAO
		2	2253	37.75	19	26.75	155	23.50	10.16	2.3	2.0	48	7	41	.12	4	0.3	0.6	28	KAO
		2	23 0	50.46	19	23.30	155	20.62	9.70	1.7	2.0	36	5	53	.09	2	0.4	0.6	22	KAO
		3	035	8.00	19	21.33	155	24.35	13.95	2.3	2.3	48	5	40	.10	3	0.4	0.4	39	DEP
		3	111	54.21	19	18.96	155	11.72	3.44	1.5	1.1	38	5	107	.15	5	0.4	1.3	27	SSF
		3	1354	45.52	19	28.02	155	25.80	10.11	2.4	1.7	42	6	46	.12	5	0.4	0.6	33	KAO
		3	1826	16.87	19	24.77	155	20.04	5.53	1.7	1.1	38	5	36	.12	2	0.3	0.8	25	KAO
		3	1831	33.32	19	26.40	155	28.74	9.87	2.1	1.7	35	4	43	.10	7	0.4	0.9	28	KAO
		3	21 1	46.63	19	27.38	155	29.63	10.13	2.7	2.4	40	2	34	.10	9	0.4	0.6	38	KAO
		4	128	43.20	19	22.02	155	26.58	10.05	2.1	2.0	42	4	42	.12	2	0.4	0.7	34	KAO
		4	2 0	58.18	19	26.94	155	28.91	9.73	1.8	1.2	35	3	45	.14	7	0.4	0.9	22	KAO
		4	311	45.17	19	17.98	155	14.09	4.51	1.4	1.2	27	1	102	.12	2	0.4	1.1	18	SSF
		4	850	19.57	19	28.08	154	53.99	6.05	1.7	1.4	31	1	122	.16	3	0.7	0.9	23	LER
		4	1258	22.30	19	22.20	155	26.17	9.88	1.8	1.2	28	1	43	.08	3	0.4	0.8	24	KAO
		4	1713	20.97	19	25.30	155	29.69	7.64	1.8	1.6	36	3	39	.12	6	0.4	1.2	25	KAO
		4	1824	10.34	19	20.68	155	13.02	6.91	1.8	1.6	40	5	63	.14	4	0.4	0.7	30	SF2
		4	19 5	35.51	19	22.62	155	20.80	10.69	2.2	1.7	48	6	45	.09	3	0.3	0.4	39	KAO
		4	20 7	37.01	19	21.85	155	21.77	11.10	1.8	1.2	31	5	54	.08	4	0.4	0.6	26	SWR
		4	2027	9.26	19	22.61	155	20.61	11.23	1.8	1.2	36	5	45	.08	3	0.4	0.6	30	KAO
		4	2131	21.79	19	22.09	155	1.67	7.86	2.1	1.7	45	6	148	.12	5	0.5	0.4	40	SF5
		4	2330	21.30	19	23.04	155	26.76	10.08	2.3	1.7	48	5	33	.12	2	0.3	0.5	43	KAO
		5	023	7.89	19	22.37	155	28.74	10.38	2.1	1.8	43	2	36	.11	2	0.3	0.6	40	KAO
		5	032	42.79	19	16.39	155	31.71	6.29	2.4	2.3	44	5	52	.19	4	0.4	1.0	38	LSW
		5	143	42.98	19	21.55	155	1.93	5.40	1.9	1.8	38	2	152	.15	4	0.6	0.9	36	SF5
		5	5 8	49.52	19	18.57	155	15.55	7.07	1.3	1.3	37	4	106	.12	4	0.4	0.8	34	SF1
		5	554	15.36	19	21.49	155	8.63	8.60	1.6	1.7	40	4	83	.11	4	0.4	0.6	36	SF4

1984 HVO EARTHQUAKE SUMMARY LIST

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JAN	5	6 3	25.68	19	27.02	155	29.31	10.26	2.3	1.3	36	2	58	.11	8	0.4	0.9	33	KAO
		5	741	35.70	19	19.78	155	11.93	7.72	1.7	1.0	34	4	86	.10	6	0.5	0.8	27	SF3
		5	1415	50.28	19	24.54	155	19.22	4.87	1.5	1.5	25	3	84	.10	2	0.4	0.9	19	KAO
		5	1847	8.46	19	18.29	155	14.62	6.32	1.5	1.3	35	2	108	.10	3	0.4	0.9	26	SF1
		5	20 1	53.77	19	25.17	155	20.98	9.41	1.9	1.6	42	5	40	.12	4	0.4	0.5	33	KAO
		5	2118	10.59	19	20.04	155	30.55	5.39	2.4	2.3	38	2	34	.12	9	0.3	1.8	28	KAO
		5	2323	35.79	19	20.98	155	29.16	8.30	1.3	1.0	24	1	46	.11	4	0.4	0.7	15	KAO
		6	1 8	36.78	19	26.96	155	25.88	9.10	2.8	2.6	50	9	44	.12	3	0.3	0.6	34	KAO
		6	535	20.94	19	17.99	155	13.03	6.96	1.6	1.1	35	4	107	.12	2	0.5	0.8	22	SF2
		6	925	49.15	19	20.97	155	5.09	6.97	1.9	1.9	38	4	100	.13	4	0.5	0.8	22	SF5
		6	1133	1.58	19	21.17	155	23.64	10.19	1.9	1.5	35	5	43	.10	2	0.4	0.7	28	SWR
		6	2113	48.62	19	21.39	155	19.65	30.84	2.4	1.8	41	4	47	.11	4	0.6	1.0	32	DEP
		6	2151	1.88	19	26.65	155	29.21	8.84	2.2	1.4	36	4	63	.10	8	0.4	1.0	25	KAO
		6	2216	27.31	19	29.10	155	27.17	4.89	2.0	1.1	29	5	66	.13	5	0.4	2.4	18	KAO
		7	2 6	41.63	19	28.49	155	27.12	8.46	1.9	1.2	26	3	71	.13	7	0.5	1.4	20	KAO
		7	322	36.93	19	29.26	155	24.75	2.37	2.1	1.3	24	4	98	.14	3	0.4	0.4	13	KAO
		7	1050	33.03	19	18.13	155	13.24	8.60	2.2	2.2	31	1	177	.12	8	0.7	1.1	26	SF2
		7	1053	5.55	19	29.23	155	27.61	3.78	2.6	2.2	28	4	56	.11	5	0.4	1.7	23	KAO
		7	11 9	12.22	19	17.82	155	15.61	7.10	1.5	1.3	24	1	222	.10	5	0.9	1.1	14	SF1
		7	1828	17.93	19	20.87	155	21.69	9.92	1.7	1.1	29	5	147	.12	3	0.5	0.6	15	SWR
		7	1848	5.93	19	18.39	155	27.97	8.96	2.1	2.1	34	3	99	.15	8	0.5	0.9	22	LSW
		7	1852	45.71	19	17.64	155	29.86	5.58	2.1	1.5	25	2	88	.16	10	0.5	1.5	16	LSW
		7	2110	30.54	19	26.89	155	24.98	9.00	2.0	1.6	26	3	52	.12	3	0.5	0.9	19	KAO
		7	2116	40.23	19	20.92	155	23.89	10.11	1.9	2.2	34	3	105	.12	2	0.7	0.5	27	SWR
		8	047	54.39	19	21.08	155	21.90	10.20	1.8	1.8	33	4	104	.11	3	0.4	0.5	20	SWR
		8	1 3	41.87	19	27.39	155	29.06	10.46	2.4	2.1	31	3	60	.11	8	0.4	0.6	25	KAO
		8	115	1.94	19	22.88	155	27.77	10.28	2.4	2.5	31	3	68	.10	1	0.4	0.5	27	KAO
		8	3 4	37.41	19	18.42	155	13.72	6.47	1.5	1.3	26	2	206	.09	7	0.8	1.4	15	SF2
		8	342	38.12	19	21.41	155	22.09	9.76	1.9	1.9	29	3	118	.11	3	0.6	0.5	19	SWR
		8	532	20.32	19	24.74	155	21.88	11.62	2.4	2.5	35	4	60	.11	4	0.5	0.3	25	KAO
		8	6 5	48.96	19	24.51	155	17.19	1.60	1.0	1.4	14	2	62	.12	1	0.4	0.3	10	SSC
		8	740	34.91	19	16.20	155	20.24	8.44	2.6	2.6	34	2	162	.12	9	0.6	0.8	28	SWR
		8	928	21.45	19	22.24	155	30.20	7.83	2.1	1.7	37	2	43	.12	5	0.4	0.9	31	KAO
		8	944	3.26	19	19.18	155	13.71	8.90	2.4	2.8	45	4	65	.12	4	0.4	0.5	39	SF2
		8	1114	29.78	19	24.94	155	21.53	10.36	2.0	2.0	42	4	35	.11	4	0.4	0.5	34	KAO
		8	1428	25.03	19	22.40	155	29.36	9.24	1.9	1.8	39	1	39	.11	3	0.4	0.8	36	KAO
		8	16 0	5.62	19	23.26	155	21.01	10.36	2.1	2.4	44	4	42	.13	2	0.4	0.5	35	KAO
		8	16 5	46.95	19	19.09	155	13.58	5.17	1.6	1.1	34	4	69	.13	4	0.5	1.5	26	SF2
		8	2028	25.67	19	22.73	155	26.89	10.81	2.7	3.0	40	1	40	.10	1	0.4	0.6	39	KAO
		8	2132	42.99	19	22.88	155	26.36	9.94	1.8	1.5	37	3	40	.09	2	0.4	0.7	29	KAO
		8	2153	48.91	19	22.24	155	1.83	5.38	1.8	1.3	22	0	152	.13	5	0.6	1.2	22	SF5
		8	2247	25.14	19	15.81	155	22.51	8.10	2.3	2.7	47	3	138	.14	4	0.5	0.5	35	SWR
		8	2257	7.13	19	19.20	155	11.09	7.77	2.0	2.1	41	4	104	.11	6	0.4	0.5	34	SF3
		9	1 8	7.48	19	24.52	154	59.03	6.81	2.0	2.0	34	2	174	.13	1	0.7	0.5	24	LER
		9	626	39.84	19	14.71	155	19.21	7.15	1.8	1.5	29	0	162	.14	6	0.7	1.5	22	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JAN	9	1125	49.77	19	25.43	155	30.37	10.20	2.3	1.5	36	2	38	.11	7	0.4	0.8	31	KAO
		9	1452	42.31	19	26.36	155	28.69	7.49	1.9	1.5	34	3	43	.13	7	0.4	1.1	23	KAO
		9	1943	33.28	19	21.04	155	2.79	7.54	1.8	1.5	28	2	129	.10	2	0.5	0.6	16	SF5
		9	2249	5.32	19	20.52	155	13.57	6.77	1.9	1.9	43	4	60	.15	4	0.4	0.8	34	SF2
		9	2313	29.56	19	21.67	155	28.64	5.81	2.0	1.9	34	3	44	.12	2	0.3	0.8	21	KAO
		10	1	5 54.52	19	21.88	155	28.85	5.58	2.3	2.4	46	4	40	.12	2	0.3	0.8	36	KAO
		10	357	54.95	19	19.70	155	13.61	8.16	2.6	3.0	50	4	118	.13	6	0.4	0.6	38	SF2
		10	821	18.43	19	18.87	155	15.31	7.91	2.6	2.7	40	2	106	.11	4	0.4	0.6	38	SF1
		10	858	2.13	19	24.93	155	21.68	10.47	2.4	2.4	47	3	35	.12	4	0.3	0.4	38	KAO F
		10	1236	16.57	19	19.02	155	14.92	5.90	1.4	1.1	28	2	97	.11	5	0.4	0.9	25	SF1
		10	1330	12.81	19	19.80	155	10.14	8.41	2.2	2.4	44	4	90	.13	4	0.4	0.7	35	SF3
		10	1626	3.36	19	20.67	155	21.81	10.70	2.2	2.5	46	5	68	.13	3	0.4	0.5	33	SWR
		10	1839	57.94	19	18.68	155	13.88	8.96	2.5	2.6	47	6	95	.12	3	0.4	0.4	39	SF2
		10	23	7 16.28	19	19.21	155	11.26	5.36	1.5	1.3	29	1	104	.10	6	0.5	1.2	24	SF3
		11	118	45.10	19	17.31	155	13.11	5.93	1.6	1.1	31	4	142	.11	1	0.6	0.7	15	SF2
		11	159	18.76	19	27.67	155	27.87	10.07	1.9	1.4	36	4	52	.10	7	0.4	0.9	25	KAO
		11	228	22.01	19	20.45	155	13.05	7.24	1.8	1.6	38	4	65	.13	4	0.4	0.7	27	SF2
		11	557	38.63	19	23.75	155	27.33	10.65	1.6	1.4	32	1	33	.10	2	0.4	0.7	23	KAO
		11	626	25.10	19	17.66	155	13.09	5.56	1.5	1.5	28	2	117	.10	1	0.5	0.9	18	SF2
		11	759	15.38	19	22.25	155	29.01	10.35	2.4	2.5	42	1	38	.11	3	0.4	0.7	36	KAO
		11	1141	7.15	19	25.39	155	20.99	10.22	1.7	1.2	36	5	40	.11	4	0.4	0.6	31	KAO
		11	1524	34.68	19	23.92	155	26.98	10.35	1.7	1.2	38	2	36	.11	3	0.4	0.7	36	KAO
		11	1551	26.91	19	25.06	155	27.10	3.38	1.9	1.8	28	3	58	.12	3	0.3	0.8	25	KAO
		11	1652	23.32	19	23.61	155	27.29	10.17	2.2	2.3	45	3	55	.13	2	0.4	0.6	41	KAO
		11	1752	27.23	19	2.81	155	14.79	26.66	2.3	1.7	33	5	258	.09	26	1.3	1.8	31	LOI
		11	1947	16.29	19	19.63	155	11.24	8.08	2.6	3.0	47	4	93	.11	5	0.4	0.6	39	SF3
		11	2057	28.51	19	20.02	155	11.10	8.28	2.3	2.7	57	3	86	.14	4	0.4	0.6	54	SF3
		11	2120	0.48	19	23.65	155	30.17	9.74	1.9		31	1	71	.09	5	0.5	1.0	30	KAO
		11	2137	55.52	19	22.93	155	26.78	11.18	2.1	2.2	40	1	39	.11	2	0.4	0.6	39	KAO
		12	019	2.27	19	17.81	154	59.60	38.19	2.2	1.9	40	4	270	.10	7	1.2	1.1	36	LER
		12	327	42.27	19	25.29	155	29.34	8.95	1.7	1.3	35	2	38	.10	6	0.3	0.9	32	KAO
		12	6	9 29.88	19	19.33	155	15.04	6.30	1.4	1.3	31	4	94	.11	4	0.4	0.9	27	SF1
		12	1030	40.37	19	17.92	155	14.14	7.50	1.8	1.9	37	1	95	.12	2	0.5	0.8	35	SF2
		12	1032	27.79	19	18.54	155	14.20	9.48	3.2	3.4	50	5	135	.12	6	0.4	0.5	46	SF2
		12	1249	30.85	19	20.45	155	15.59	6.82	1.4	1.1	36	4	78	.13	3	0.4	0.7	26	SF1
		12	14	3 29.15	19	18.43	155	14.10	9.51	2.2	2.5	40	1	136	.11	7	0.5	0.7	32	SF2
		12	1432	50.37	19	25.40	155	20.83	9.22	1.8	1.3	35	5	44	.09	4	0.4	0.7	26	KAO
		12	1613	32.44	19	18.08	155	14.08	8.81	1.9	2.3	39	3	140	.10	7	0.5	0.7	26	SF2
		12	1748	15.72	19	18.34	155	14.10	10.01	3.4	3.7	48	4	137	.13	7	0.5	0.5	43	SF2
		12	1751	17.14	19	17.75	155	14.21	5.32	2.1	1.1	30	1	115	.10	2	0.5	1.1	18	SF2
		12	2037	38.53	19	28.05	155	26.33	5.11	2.0	1.1	34	6	47	.12	6	0.3	1.8	26	KAO
		13	054	16.85	19	24.98	155	19.69	4.56	2.1	2.0	36	5	37	.12	2	0.3	0.9	25	KAO
		13	210	30.58	19	19.41	155	11.61	6.66	2.0	2.0	47	6	97	.13	5	0.4	0.7	28	SF3
		13	350	11.90	19	25.69	155	21.64	9.36	1.8	1.1	31	4	37	.11	4	0.4	0.8	22	KAO
		13	738	31.99	19	22.58	155	30.15	10.95	2.5	2.3	44	3	35	.09	4	0.3	0.6	35	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JAN	13	757	4.05	19	19.46	155	11.88	8.84	2.2	2.1	46	6	93	.11	5	0.3	0.4	31	SF3
		13	926	5.91	19	25.64	155	21.43	9.25	2.0	1.5	40	5	33	.11	4	0.4	0.6	30	KAO
		13	1120	45.50	19	21.26	155	1.71	7.47	1.6	1.5	21	2	177	.09	3	0.7	0.8	15	SF5
		13	1222	36.18	19	27.78	155	23.40	11.58	3.3	3.4	47	3	42	.12	4	0.3	0.4	43	KAO
		13	1436	48.62	19	26.27	155	29.17	8.19	2.1	1.7	35	3	42	.11	7	0.4	1.0	25	KAO
		13	1542	10.86	19	27.28	155	23.92	10.84	2.5	2.3	48	5	34	.12	4	0.3	0.5	38	KAO
		13	1948	49.51	19	24.97	155	19.38	5.20	1.7	1.3	27	5	77	.12	2	0.4	0.9	20	KAO
		13	2146	28.80	19	21.12	155	7.43	5.14	1.6	1.3	28	2	83	.18	4	0.7	1.8	21	SF4
		14	050	2.57	19	22.21	155	30.34	8.66	2.1	1.3	32	2	78	.09	5	0.5	1.0	26	KAO
		14	950	13.46	19	21.46	155	30.20	9.94	1.9	1.5	36	2	46	.09	5	0.4	0.8	32	KAO
		14	1238	23.44	19	22.20	155	0.41	6.60	2.1	1.7	32	2	168	.13	6	0.6	0.8	29	SF5
		14	1241	52.73	19	23.95	155	48.68	12.92	2.8	2.9	35	2	108	.11	13	0.6	0.3	33	KON
		14	1926	12.47	19	25.16	155	19.16	6.25	1.7	1.1	21	3	110	.10	3	0.4	0.9	18	KAO
		15	645	51.04	19	19.77	155	12.18	6.44	1.5	1.1	17	0	83	.07	6	0.5	0.9	15	SF3
		15	7	2 43.93	19	20.51	155	12.38	6.58	1.4	1.1	15	0	73	.09	4	0.5	0.9	14	SF2
		15	1256	3.05	19	19.36	155	12.23	6.31	1.6	1.6	26	2	91	.08	5	0.4	1.0	24	SF3
		15	1655	38.06	19	21.67	155	0.52	8.04	1.8	1.4	31	1	177	.11	5	0.6	0.7	28	SF5
		15	2159	42.73	19	19.83	155	11.68	7.23	1.7	1.6	34	3	86	.10	5	0.4	0.7	31	SF3
		15	2315	40.25	19	19.09	155	27.52	9.91	2.2	2.7	41	4	66	.13	8	0.3	0.8	35	KAO
		16	247	13.59	19	23.78	155	30.95	10.49	1.8	1.4	23	0	81	.05	11	0.5	1.6	22	KAO
		16	5	9 16.06	19	15.71	155	21.80	8.94	1.9	2.2	30	4	177	.12	5	0.8	1.0	27	SWR
		16	1239	41.45	19	24.49	155	19.63	7.04	1.8	1.9	32	4	44	.10	1	0.4	0.7	27	KAO
		16	1546	13.19	19	21.80	155	12.01	3.38	1.4	1.4	18	3	79	.10	2	0.4	0.5	15	SER
		16	1928	38.24	19	11.59	155	37.72	8.74	2.2	2.2	33	3	98	.16	6	0.5	1.0	30	LSW
		16	2145	46.79	19	25.35	155	20.18	7.37	2.2	2.4	36	4	38	.11	3	0.3	0.6	30	KAO
		16	2157	38.01	19	23.48	155	27.33	11.01	1.8	1.4	38	2	43	.12	2	0.4	0.7	31	KAO
		16	2329	30.88	18	51.28	155	28.60	35.92	3.0	2.8	49	4	262	.09	24	1.2	1.0	46	DLS
		17	2	1 48.38	19	19.31	155	15.38	6.22	1.4	1.3	25	0	98	.09	4	0.4	1.0	25	SF1
		17	746	4.94	19	19.75	155	11.06	5.54	1.5	1.1	18	0	91	.06	5	0.4	1.4	18	SF3
		17	1021	33.68	19	23.85	155	30.96	11.61	2.5	2.7	42	6	47	.08	6	0.4	0.6	36	KAO
		17	1416	25.64	19	25.87	155	21.42	11.18	1.7	1.4	38	7	46	.11	3	0.4	0.6	32	KAO
		17	1647	14.32	19	16.74	155	22.21	6.43	1.6	1.5	26	2	129	.13	5	0.6	1.5	24	SWR
		17	2018	51.40	19	24.76	155	20.30	8.36	2.1	2.2	44	5	37	.12	2	0.3	0.6	39	KAO
		17	2347	43.14	19	21.16	155	12.89	8.46	2.3	2.6	43	3	59	.12	3	0.4	0.4	40	SF2
		18	045	39.78	19	24.78	155	21.19	11.51	2.0	1.5	37	4	44	.09	3	0.4	0.5	33	KAO
		18	432	50.23	19	22.93	155	26.25	10.05	1.6	1.1	16	1	86	.07	3	0.5	0.9	15	KAO
		18	523	52.28	19	19.96	155	30.39	10.16	2.0	1.8	21	0	55	.10	7	0.5	1.4	21	KAO
		18	526	49.26	19	29.24	155	27.60	7.19	2.4	1.8	27	1	82	.09	5	0.4	1.3	26	KAO
		18	557	47.54	19	21.15	155	21.53	6.49	1.7	1.3	18	1	61	.11	4	0.6	1.4	17	SWR
		18	720	56.36	19	23.86	155	20.74	10.82	1.8	1.9	21	1	62	.06	2	0.5	1.0	20	KAO
		18	1038	16.01	19	24.89	155	19.43	5.86	1.9	1.8	33	5	46	.11	2	0.4	0.7	28	KAO
		18	1532	37.45	19	26.72	155	14.56	30.37	2.1	1.8	33	1	125	.10	4	1.0	1.3	32	DEP
		18	1753	33.46	19	22.66	155	26.85	10.43	1.8	1.3	35	4	41	.11	1	0.4	0.8	30	KAO
		18	2233	23.43	19	19.60	155	11.95	5.52	1.9	1.6	36	4	90	.12	5	0.4	1.3	31	SF3
		19	823	51.55	19	22.90	155	26.48	10.24	2.6	2.4	31	1	44	.11	2	0.4	0.6	30	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JAN	19	14 9	50.68	19	23.56	155	20.63	11.37	2.1	2.6	34	5	57	.09	2	0.4	0.6	27	KAO
		19	1514	21.52	19	22.06	155	26.57	10.84	1.9	1.5	35	2	42	.12	2	0.4	0.8	33	KAO
		19	2015	57.67	19	19.87	155	11.58	7.88	1.6	1.5	31	3	87	.08	5	0.4	0.7	28	SF3
		19	21 4	48.62	19	22.00	155	7.20	8.73	3.1	3.2	47	5	72	.11	3	0.3	0.4	38	SF4
		20	129	35.02	19	27.35	155	22.61	9.90	2.7	2.7	46	5	49	.12	3	0.4	0.5	39	KAO
		20	152	7.45	19	17.18	155	20.54	9.68	1.7	1.5	31	5	157	.10	4	0.4	0.8	25	SWR
		20	358	31.23	19	22.00	155	23.56	10.26	2.2	2.1	39	1	41	.11	3	0.4	0.6	38	SWR
		20	919	41.99	19	21.47	155	6.85	8.25	2.6	2.8	44	5	83	.10	4	0.4	0.5	35	SF4
		20	18 0	2.10	19	23.78	155	26.16	8.18	1.8	1.5	34	2	37	.11	3	0.3	0.7	29	KAO
		20	1842	29.98	19	26.82	155	29.49	9.20	2.4	2.2	45	5	55	.13	8	0.4	0.7	38	KAO
		20	1944	50.73	19	19.02	155	11.10	8.75	2.2	1.8	40	5	110	.10	6	0.4	0.6	32	SF3
		21	416	29.36	19	27.44	155	29.77	10.36	2.3	1.6	45	5	37	.12	9	0.4	0.6	31	KAO
		21	456	35.18	19	25.14	155	19.42	5.78	1.8	1.5	30	4	72	.11	3	0.4	0.8	21	KAO
		21	647	30.95	19	25.06	155	29.20	9.01	2.0	1.1	29	1	72	.11	6	0.4	0.8	20	KAO
		21	1530	50.04	19	18.96	155	11.42	7.01	1.5	1.1	11	1	305	.13	7	2.2	1.8	7	SF3
		21	1931	28.64	19	20.69	155	23.62	10.02	2.0	1.8	14	2	128	.08	1	0.7	1.3	11	SWR
		21	22 3	46.33	19	9.74	155	41.76	4.76	2.6	2.7	14	1	133	.23	13	0.9	15.3	10	LSW
		22	0 9	43.89	19	15.39	155	13.91	9.14	1.5	1.2	9	0	267	.12	13	4.0	1.4	7	SF2
		22	251	35.37	19	20.45	155	2.75	8.12	2.9	3.1	33	3	196	.11	9	0.9	0.7	24	SF5
		22	5 8	58.71	19	21.42	155	2.27	1.98	1.9	1.5	18	2	221	.14	9	1.4	2.5	14	SSF
		22	6 4	43.31	19	25.20	155	19.39	5.00	1.5	1.1	17	3	109	.10	3	0.5	1.5	13	KAO
		22	1012	44.32	19	25.53	155	20.78	9.16	2.3	2.6	45	5	37	.13	4	0.4	0.5	34	KAO
		22	1014	26.25	19	17.77	155	16.07	8.05	1.7	1.3	30	2	140	.10	4	0.5	0.6	24	SF1
		22	15 9	31.41	19	22.36	155	29.92	8.98	2.0	1.5	34	3	45	.10	4	0.4	0.7	29	KAO
		22	1642	40.52	19	26.97	155	29.09	8.26	2.0	1.1	27	1	58	.10	8	0.4	1.1	26	KAO
		23	014	26.07	19	22.62	155	30.12	8.90	2.1	1.5	27	1	47	.09	4	0.5	1.0	22	KAO
		23	251	34.43	19	11.53	155	27.21	7.76	2.1	1.5	31	1	125	.15	4	0.7	0.9	24	LSW
		23	253	59.14	19	11.63	155	27.13	7.37	2.3	1.5	34	2	126	.16	4	0.7	1.0	23	LSW
		23	1118	45.54	19	18.46	155	13.31	5.04	1.4	1.1	22	2	84	.11	3	0.4	1.3	19	SF2
		23	1134	11.80	19	18.14	155	13.36	6.18	1.4	1.1	25	4	88	.08	2	0.4	0.8	22	SF2
		23	1312	44.11	19	19.62	155	12.28	7.68	1.5	1.1	26	3	86	.11	5	0.5	0.9	24	SF3
		23	1434	22.52	19	20.45	155	11.37	9.27	2.2	2.3	40	5	78	.10	4	0.4	0.5	35	SF3
		23	18 8	3.86	19	21.92	155	28.86	4.25	1.9	1.5	24	1	49	.09	2	0.4	0.7	22	KAO
		23	1859	40.24	19	20.85	155	21.26	10.79	1.6	1.5	27	3	63	.09	4	0.4	0.8	25	SWR
		23	19 9	15.99	19	19.40	155	15.86	8.81	2.1	2.1	40	3	101	.10	3	0.4	0.6	33	SF1
		23	2121	29.20	19	18.68	155	12.97	6.74	1.8	1.8	39	3	91	.13	3	0.4	0.9	33	SF2
		23	2150	35.10	19	25.51	155	21.09	10.05	2.0	1.8	42	6	37	.12	4	0.3	0.6	35	KAO
		23	2153	8.17	19	23.26	155	25.65	10.92	1.7	1.1	27	2	44	.11	4	0.5	1.0	25	KAO
		24	214	37.53	19	21.99	155	2.47	7.25	1.8	1.3	31	3	139	.16	4	0.6	0.8	28	SF5
		24	326	13.68	19	25.68	155	38.68	2.90	2.3	2.5	26	4	109	.10	5	0.5	1.1	23	MLO
		24	342	7.28	19	11.72	155	28.99	10.65	1.9	1.6	25	2	129	.15	5	0.8	1.1	24	LSW
		24	14 4	43.72	19	42.66	155	1.78	0.02	2.5	2.5	29	1	225	.16	1	1.0	0.6	29	HIL B
		24	15 4	42.12	19	22.75	155	29.99	9.58	2.0	1.5	27	2	48	.09	4	0.4	1.0	26	KAO
		24	16 2	51.55	19	21.14	155	22.61	8.44	1.6	1.1	26	3	62	.11	2	0.4	1.0	23	SWR
		24	1632	9.92	19	27.54	155	28.50	10.09	2.0	1.6	37	5	54	.12	7	0.4	0.8	32	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JAN	24	2214	36.84	19	28.29	155	26.02	9.66	2.1	1.5	35	4	62	.12	6	0.4	0.9	31	KAO
		25	155	31.68	19	26.38	155	38.38	3.44	2.3	2.2	28	4	200	.11	4	0.7	1.0	27	MLO
		25	1718	35.68	19	22.80	155	26.81	9.82	1.6	1.1	31	2	44	.11	2	0.4	0.8	28	KAO
		25	1748	5.53	19	27.10	155	26.15	3.44	1.7	1.2	35	4	61	.13	4	0.4	1.0	24	KAO
		26	033	27.07	19	21.59	155	5.08	8.20	2.1	1.8	40	5	84	.10	5	0.4	0.5	28	SF5
		26	219	9.58	19	25.70	155	28.56	9.46	1.7	1.2	29	2	41	.12	6	0.4	0.9	24	KAO
		26	434	18.26	19	23.50	155	25.88	10.52	2.3	2.2	44	4	29	.11	4	0.3	0.5	36	KAO
		26	523	25.64	19	25.79	155	37.86	3.12	2.5	1.7	21	2	97	.20	4	0.7	1.4	13	MLO
		26	543	42.62	19	17.94	155	24.25	7.88	1.6	1.2	32	3	81	.16	5	0.5	0.8	26	SWR
		26	545	14.26	19	20.39	155	7.91	8.27	2.5	2.6	46	5	86	.12	5	0.4	0.6	38	SF4
		26	716	26.74	19	25.96	155	21.33	9.57	3.0	3.1	47	3	31	.12	3	0.4	0.4	42	KAO
		26	952	22.64	19	26.48	155	30.10	7.85	1.6	1.5	32	2	68	.11	9	0.4	1.2	24	KAO
		26	2037	26.34	19	25.38	155	21.24	9.23	1.7	1.1	33	5	60	.11	4	0.4	0.8	28	KAO
		26	2310	25.21	19	23.42	155	27.21	9.90	1.8	1.1	30	2	58	.11	2	0.4	0.7	24	KAO
		27	013	43.77	19	19.67	155	23.30	10.83		1.1	25	2	78	.10	1	0.5	1.2	17	SWR
		27	443	39.44	19	11.58	155	27.22	8.15	1.8	1.2	21	1	147	.10	4	0.7	0.7	16	LSW
		27	659	18.02	19	27.58	155	29.57	10.58	2.3	1.9	43	3	53	.11	8	0.3	0.6	31	KAO
		27	727	58.88	19	20.63	155	4.17	4.81	1.5	1.1	37	1	107	.19	3	0.7	1.5	26	SSF
		27	11 8	28.00	19	22.61	155	20.96	10.01	2.6	2.7	46	5	46	.12	3	0.3	0.4	34	KAO
		27	1240	30.00	19	22.52	155	27.64	9.67	2.5	2.3	43	4	31	.12	0	0.3	0.5	31	KAO
		27	1751	52.23	19	21.82	155	30.08	8.71	2.1	2.0	34	1	43	.10	5	0.4	0.8	29	KAO
		28	222	7.79	19	37.18	156	10.80	28.80	3.7	4.2	46	2	254	.11	31	1.4	1.9	42	KON F
		28	329	49.80	19	26.44	155	38.29	2.82	2.8	3.1	30	1	159	.10	4	0.6	0.8	24	MLO
		28	632	58.24	19	29.00	155	27.21	4.96	2.5	2.3	39	3	75	.14	6	0.3	1.9	24	KAO
		28	7 0	43.28	19	22.74	155	27.00	9.87	2.3	2.2	46	5	36	.11	1	0.3	0.5	35	KAO
		28	816	52.48	19	22.77	155	29.86	10.76	2.8	2.7	48	5	32	.10	4	0.3	0.5	39	KAO
		28	823	7.57	19	38.66	156	2.59	43.05	3.0	3.2	52	7	231	.09	22	0.7	1.3	45	KON
		28	1456	44.61	19	22.70	155	20.78	10.67	2.1	1.5	41	6	45	.10	3	0.4	0.5	24	KAO
		28	1813	54.54	19	20.87	155	28.62	9.95	2.2	2.1	39	3	40	.11	4	0.4	0.6	28	KAO
		28	20 8	11.87	19	28.18	155	36.01	2.31	2.7	3.2	28	0	77	.11	2	0.4	0.3	27	MLO
		28	2143	22.58	19	24.02	155	31.30	14.33	2.2	2.3	29	1	81	.08	3	0.5	0.6	22	DML
		29	418	4.73	19	25.34	155	29.30	9.64	2.4	2.2	32	1	51	.11	6	0.4	0.8	29	KAO
		29	647	55.07	19	15.59	155	1.93	42.88	2.6	2.6	32	0	221	.10	8	2.0	2.3	25	DEP
		29	713	34.92	19	19.33	155	9.76	6.87	1.6	1.5	21	0	98	.10	5	0.6	1.3	18	SF3
		29	835	48.62	19	30.93	155	27.69	4.58	2.2	1.6	28	4	87	.11	2	0.4	1.0	19	MLO
		29	1133	13.26	19	19.77	155	14.76	8.90	1.7	1.2	34	3	76	.11	5	0.4	0.9	25	SF1
		29	15 2	29.70	19	21.99	155	21.64	10.52	1.8	1.1	29	3	53	.10	4	0.4	0.9	21	SWR
		29	1838	50.09	19	28.90	155	32.32	14.16	2.3	1.4	9	0	165	.11	5	1.3	2.0	8	DML
		30	510	10.17	19	21.60	155	22.12	10.75	1.9	1.2	36	5	57	.11	3	0.4	0.5	23	SWR
		30	1313	59.43	19	20.86	155	21.85	9.34	2.0	2.1	34	6	65	.12	3	0.4	0.7	19	SWR
		30	14 1	8.46	19	20.64	155	21.76	9.35	1.9	1.5	32	4	68	.12	3	0.4	0.8	25	SWR
		30	1931	1.81	19	29.67	155	29.60	2.71	2.5	1.5	43	5	89	.12	6	0.3	1.1	31	KAO
		30	2026	56.47	19	33.93	156	1.70	15.67	3.4	3.7	48	6	229	.10	14	1.0	0.7	39	KON
		30	2238	58.03	19	24.82	155	21.78	10.31	1.9	1.5	37	6	38	.12	4	0.4	0.6	27	KAO
		31	045	30.12	19	23.54	155	25.81	10.40	2.5	2.9	45	5	28	.13	3	0.3	0.5	40	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JAN	31	1 3	44.09	19	11.84	155	28.75	33.46	2.8	2.0	48	6	86	.11	5	0.6	1.0	39	DLS
		31	347	27.92	19	28.76	155	27.59	2.65	2.0	1.1	27	4	62	.13	6	0.4	1.3	21	KAO
		31	448	38.33	19	21.52	155	22.13	9.24	2.0	1.3	33	4	58	.11	3	0.4	0.7	19	SWR
		31	646	56.82	19	28.47	155	27.89	6.46	2.2	1.4	34	6	58	.14	7	0.4	1.3	25	KAO
		31	857	56.16	19	20.60	155	21.95	10.16	1.8	1.5	31	4	69	.12	2	0.4	0.7	17	SWR
		31	1134	43.81	19	20.40	155	13.11	8.59	1.8	1.7	33	3	64	.10	4	0.4	0.6	26	SF2
		31	1238	53.53	19	21.01	155	6.32	5.21	1.9		33	3	95	.13	6	0.5	1.6	24	SF4
		31	1251	12.19	19	21.40	155	0.56	3.71	1.9		26	3	182	.16	5	0.8	2.2	18	SSF
		31	1648	14.42	19	21.37	155	22.15	10.61	2.5	2.5	45	4	60	.11	3	0.3	0.3	38	SWR
		31	2222	38.19	19	23.19	155	27.64	9.80	1.6	1.1	36	2	33	.10	1	0.3	0.6	33	KAO
		31	2223	39.02	19	18.44	155	13.30	8.10	2.0	2.3	45	4	85	.12	3	0.4	0.6	40	SF2
		31	2236	6.46	19	20.94	155	22.20	10.83	1.8	1.3	32	4	64	.09	2	0.4	0.7	25	SWR
	FEB	1	314	1.58	19	27.06	155	19.69	8.12	1.4	1.3	25	4	162	.10	2	0.5	0.8	20	KAO
		1	925	54.35	19	21.80	155	23.18	10.82	1.7	1.5	35	4	53	.12	3	0.4	0.7	30	SWR
		1	2220	50.98	19	30.54	155	49.06	7.92	2.2	1.0	26	3	174	.13	6	0.8	0.7	25	KON
		1	23 6	3.74	19	19.25	155	11.95	7.40	1.5	1.3	31	4	97	.09	5	0.4	0.7	26	SF3
		1	2356	41.04	19	22.05	155	28.82	9.89	1.7	1.3	33	2	40	.11	2	0.4	0.8	29	KAO
		2	425	11.91	19	28.44	155	27.12	7.85	2.3	1.5	39	5	71	.13	7	0.4	0.9	33	KAO
		2	933	43.49	19	21.38	155	2.46	6.98	2.1	1.5	38	6	138	.13	3	0.5	0.7	30	SF5
		2	936	17.06	19	18.74	155	15.00	9.40	2.4	2.4	48	6	94	.13	4	0.4	0.5	39	SF1
		2	1112	20.86	19	19.15	155	13.26	10.65	3.5	3.7	52	7	77	.10	4	0.4	0.4	47	SF2
		2	1142	49.34	19	19.30	155	12.92	7.57	1.6	1.3	36	4	81	.12	4	0.4	0.7	34	SF2
		2	1551	22.49	19	23.71	155	36.66	5.52	3.5	3.4	54	10	66	.12	7	0.3	0.7	49	MLO
		2	17 5	50.32	19	25.08	155	30.53	9.34	1.9	1.4	33	1	44	.09	7	0.4	0.9	30	KAO
		2	1957	23.07	19	17.89	155	23.17	9.52	1.7	1.7	34	4	98	.11	4	0.4	0.6	26	SWR
		2	2313	41.40	19	25.63	155	21.00	10.16	2.6	2.5	46	5	39	.12	4	0.3	0.4	38	KAO
		3	213	17.35	19	20.18	155	12.99	8.88	2.0	2.3	43	5	69	.13	5	0.4	0.5	31	SF2
		3	3 3	53.57	19	28.51	155	28.42	9.24	2.0	1.4	39	4	59	.13	7	0.4	0.9	26	KAO
		3	622	25.10	19	18.25	155	13.78	10.13	3.5	3.7	52	6	67	.11	2	0.4	0.4	44	SF2 F
		3	841	31.93	19	19.37	155	11.04	6.36	2.1	2.0	30	2	101	.10	5	0.5	1.1	28	SF3
		3	924	59.44	19	19.76	155	10.99	7.71	2.1	2.3	40	5	92	.11	5	0.4	0.6	29	SF3
		3	1622	4.77	19	23.78	155	26.16	10.54	2.6	2.6	48	4	37	.14	3	0.4	0.4	43	KAO
		3	1945	35.89	19	11.53	155	36.60	9.09	3.3	3.5	52	8	93	.23	6	0.6	0.8	42	LSW
		3	2038	36.02	19	25.65	155	20.75	10.37	2.8	3.1	50	6	37	.11	4	0.3	0.4	40	KAO
		3	2111	41.76	19	18.96	155	13.35	7.45	1.4	1.1	31	3	77	.09	4	0.5	0.9	19	SF2
		3	2224	55.03	19	28.25	155	27.31	8.35	2.7	2.4	47	5	56	.13	7	0.3	0.8	39	KAO
		3	2344	22.96	19	23.85	155	26.86	10.39	2.7	3.0	51	6	36	.13	3	0.3	0.4	42	KAO
		4	429	51.50	19	24.77	155	20.13	4.90	1.6	1.3	29	4	70	.10	2	0.4	0.9	25	KAO
		4	1011	34.12	19	17.21	155	20.50	8.38	1.7	1.3	28	6	139	.09	4	0.4	0.6	18	SWR
		4	1012	5.08	19	26.02	155	30.10	11.54	1.8	1.4	31	2	101	.10	8	0.5	0.8	29	KAO
		4	13 0	38.92	19	16.36	155	21.81	5.53	1.4	1.8	23	3	159	.09	5	0.4	1.3	21	SWR
		4	13 1	56.04	19	21.69	155	6.90	8.53	1.5	1.5	26	3	78	.09	3	0.4	0.7	22	SF4
		4	1635	17.20	19	26.77	155	29.75	9.79	2.0	1.5	34	4	69	.09	9	0.4	0.9	29	KAO
		4	2032	0.84	19	20.18	155	12.30	7.89	1.6	1.6	38	3	76	.12	5	0.5	0.7	34	SF3
		5	857	47.93	19	16.43	155	22.82	7.07	2.2	2.6	49	4	127	.16	5	0.4	0.8	44	SWR

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	FEB	5	856	48.18	19	29.04	155	25.03	4.82	2.0	2.1	35	3	50	.15	3	0.4	1.3	32	KAO
		5	1427	9.96	19	27.42	155	29.72	9.92	2.1	1.6	38	4	46	.10	9	0.4	0.8	32	KAO
		5	1714	5.64	19	23.04	155	26.72	10.76	1.7	1.5	38	3	41	.11	2	0.4	0.6	33	KAO
		6	242	40.94	19	25.30	155	14.92	38.76	1.8	1.7	27	2	124	.08	2	1.2	2.1	23	DEP L
		6	421	10.63	19	28.09	155	25.84	9.62	2.0	1.4	39	5	46	.10	5	0.3	0.7	33	KAO
		6	720	59.52	19	27.61	155	29.13	9.58	1.8	1.2	34	3	55	.11	8	0.4	0.9	31	KAO
		6	18 1	46.74	19	17.41	155	20.80	8.85	1.8	1.8	39	6	128	.09	4	0.4	0.7	32	SWR
		6	2052	56.25	19	25.12	155	19.08	6.51	2.7	3.0	46	4	37	.13	3	0.3	0.6	37	KAO
		6	2154	13.11	19	25.17	155	18.87	5.89	2.2	2.4	38	4	73	.12	2	0.4	0.6	25	INT
		7	145	28.53	19	21.78	155	28.58	4.84	2.2	2.4	40	4	44	.11	2	0.3	0.8	28	KAO
		7	340	59.64	19	24.14	155	25.88	10.46	2.5	2.5	49	5	28	.13	2	0.3	0.4	41	KAO
		7	342	33.54	19	22.51	155	20.80	9.87	1.9	1.5	38	7	46	.12	3	0.4	0.6	27	KAO
		7	1759	53.71	19	23.67	155	26.32	3.59	1.9	1.7	28	2	37	.12	3	0.3	0.7	24	KAO
		7	1843	56.97	19	20.56	155	4.55	7.17	2.0	2.3	39	3	114	.12	3	0.4	0.6	24	SF5
		8	215	39.69	19	23.45	155	30.16	8.60	2.3	2.2	41	3	33	.11	5	0.3	0.7	30	KAO
		8	248	34.40	19	19.43	155	11.88	6.79	1.8	1.6	34	2	93	.11	5	0.5	0.7	23	SF3
		8	311	9.29	19	25.33	155	20.49	8.02	1.5	1.1	35	6	46	.11	3	0.4	0.6	25	KAO
		8	332	51.15	19	25.18	155	20.35	6.93	1.4	1.3	33	4	46	.12	3	0.4	0.7	26	KAO
		8	814	39.52	19	59.60	155	31.04	3.04	2.8	2.4	35	2	183	.14	21	0.7	1.7	24	KEA
		8	16 2	21.19	19	29.59	155	21.88	0.00	2.1	2.1	19	4	82	.14	2	0.5	0.4	12	KAO
		8	1618	15.65	19	20.75	155	12.12	7.89	2.3	2.4	42	5	103	.14	4	0.5	0.6	35	SF3
		8	1814	1.74	19	20.97	155	21.73	9.91	2.1	2.3	36	6	64	.13	3	0.4	0.5	29	SWR
		8	19 2	45.06	19	23.54	155	25.92	10.63	2.4	2.3	43	5	38	.13	3	0.3	0.4	33	KAO
		9	536	2.38	19	28.39	155	27.33	5.19	2.1	1.3	40	6	65	.13	7	0.4	1.5	27	KAO
		9	9 7	43.27	19	25.31	155	21.70	9.45	2.1	1.5	39	4	34	.12	5	0.4	0.5	28	KAO
		9	9 9	7.00	20	0.20	155	31.31	6.09	2.9	2.9	43	6	185	.17	22	0.7	0.8	25	KEA
		9	1425	52.69	19	18.60	155	15.01	7.16	1.8	1.3	37	4	108	.12	4	0.4	0.6	28	SF1
		9	1723	32.29	19	28.26	155	24.69	2.78	2.3	1.5	25	5	70	.12	4	0.3	0.7	18	KAO
		10	0 1	34.86	19	23.09	155	25.58	9.71	1.4	1.3	40	4	39	.12	4	0.4	0.6	29	KAO
		10	321	52.07	19	21.65	155	22.92	8.65	1.6	1.1	29	4	57	.11	3	0.4	0.7	21	SWR
		10	954	5.49	19	23.91	155	26.97	9.80	1.7	1.1	34	2	48	.11	3	0.4	0.7	27	KAO
		10	1935	13.47	19	26.85	155	23.59	11.19	1.9	1.2	24	3	69	.09	4	0.5	1.0	19	KAO
		10	1948	10.70	19	21.76	155	2.60	6.26	1.9	1.5	41	5	136	.15	3	0.5	0.8	27	SF5
		10	2127	23.81	19	20.86	155	21.84	8.59	1.5	1.1	34	4	65	.13	3	0.4	0.7	23	SWR
		10	2312	31.53	19	23.77	155	21.10	9.16	1.7	1.3	34	5	58	.12	2	0.4	0.7	21	KAO
		11	053	59.11	19	25.85	155	21.22	8.64	2.3	2.0	37	4	32	.11	3	0.4	0.6	25	KAO
		11	210	57.42	19	25.76	155	21.24	8.30	1.9	1.3	31	5	48	.10	4	0.4	0.7	21	KAO
		11	433	22.79	19	25.85	155	21.78	8.81	2.0	1.5	36	4	36	.12	4	0.4	0.6	27	KAO
		11	559	24.24	19	22.15	155	30.02	7.94	1.6	1.1	35	3	45	.12	4	0.4	0.8	27	KAO
		11	624	12.88	19	25.71	155	21.32	9.39	1.5	1.1	33	4	46	.11	4	0.4	0.6	26	KAO
		11	849	32.48	19	25.64	155	21.55	9.61	1.6	1.1	36	5	32	.10	4	0.4	0.7	25	KAO
		11	856	49.19	19	26.22	155	28.51	9.15	1.9	1.2	33	2	58	.11	6	0.4	0.9	25	KAO
		11	1835	28.15	19	30.15	155	39.81	7.25	2.3	1.4	26	3	52	.13	7	0.5	1.4	17	MLO
		11	1910	52.81	19	29.43	155	39.32	6.49	2.3	1.6	22	2	96	.07	6	0.5	0.9	13	MLO
		11	1925	33.17	19	18.66	155	15.55	7.00	1.9	1.6	43	4	103	.10	4	0.4	0.7	36	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	FEB	12	114	51.38	19	30.17	155	39.82	8.11	2.7	2.5	34	3	85	.12	7	0.4	0.8	24	MLO
		12	529	43.82	19	18.88	155	13.44	9.26	2.5	2.8	48	6	76	.11	3	0.4	0.4	41	SF2
		12	612	0.06	19	24.80	155	29.56	8.48	1.6	1.1	31	3	39	.10	5	0.4	1.0	21	KAO
		12	1022	1.29	19	25.56	155	37.72	1.33	2.4	1.9	19	1	95	.12	4	0.5	0.9	13	MLO
		12	1035	54.17	19	24.18	155	26.31	9.40	1.9	1.5	35	2	35	.13	3	0.4	0.7	29	KAO
		12	1451	51.97	19	25.45	155	37.94	1.34	2.4	2.3	19	1	98	.13	4	0.6	1.4	12	MLO
		12	1618	11.21	19	16.13	155	31.70	7.93	3.2	3.2	45	4	81	.19	3	0.5	0.9	41	LSW
		12	17 7	30.93	19	21.24	155	24.92	13.30	1.8	1.2	35	4	49	.11	3	0.4	0.7	31	DEP
		12	1753	44.72	19	24.72	155	24.19	9.90	1.9	1.8	34	4	40	.10	2	0.4	0.7	29	KAO
		12	1754	28.19	19	24.69	155	24.47	8.34	1.8	1.5	38	4	38	.12	2	0.3	0.7	33	KAO
		12	18 7	10.16	19	19.27	155	15.65	8.25	1.8	2.2	39	5	102	.09	3	0.4	0.5	36	SF1
		12	1844	15.22	19	24.72	155	24.39	8.51	1.6	1.1	37	5	39	.14	2	0.4	0.8	31	KAO
		12	19 6	19.91	19	29.57	155	28.06	3.33	2.4	2.6	41	5	55	.13	5	0.3	1.3	36	KAO
		12	19 8	50.93	19	29.91	155	28.14	4.58	2.7	3.0	40	4	86	.13	4	0.3	1.4	36	KAO
		12	1952	47.16	19	23.99	155	25.75	11.26	1.7	1.2	35	2	35	.12	3	0.4	0.6	30	KAO
		13	4 5	57.88	19	25.63	155	22.26	10.45	1.8	1.5	20	1	59	.09	5	0.6	1.1	19	KAO
		13	1027	21.80	19	23.98	155	26.14	9.11	3.1	3.0	50	6	28	.16	3	0.4	0.6	39	KAO
		13	1056	4.75	19	30.32	155	39.93	7.26	2.5	2.3	39	3	53	.14	7	0.4	0.8	27	MLO
		13	1650	41.34	19	28.88	155	27.21	1.91	2.5	2.3	40	5	62	.13	6	0.3	0.9	26	KAO
		13	1748	50.80	19	30.40	155	40.00	5.62	2.7	2.6	40	3	53	.15	7	0.4	1.1	22	MLO
		13	1816	10.86	19	25.27	155	19.83	5.57	2.7	3.0	46	5	46	.12	3	0.3	0.8	35	KAO
		*13	2110	12.47	30	58.05	157	35.31	29.58	6.0		45	2	344	.15500	18.0	3.9	17	DIS	L*
		14	3 8	22.17	19	19.63	155	11.98	5.70	1.8	1.6	28	0	89	.12	5	0.5	1.4	28	SF3
		14	353	51.24	19	20.82	155	6.05	6.73	1.5	1.1	26	1	101	.11	5	0.5	0.9	18	SF4
		14	355	47.05	19	20.34	155	13.00	6.54	1.8	1.9	39	4	66	.15	4	0.4	0.8	30	SF2
		14	1322	3.73	19	25.72	155	47.41	12.89	2.7	1.8	23	1	283	.13	15	3.0	0.6	20	KON
		14	1753	40.06	19	21.65	155	2.82	7.55	2.6	2.9	43	7	130	.09	3	0.4	0.4	30	SF5
		14	1956	33.62	19	25.23	155	19.26	5.12	1.7	1.5	17	1	113	.09	3	0.5	1.1	16	KAO
		14	2257	29.82	19	25.51	155	21.21	9.10	2.4	2.5	48	7	33	.14	4	0.4	0.5	41	KAO
		15	722	41.10	19	23.96	155	27.28	11.58	3.5	4.0	50	3	28	.13	3	0.3	0.3	45	KAO F
		15	1124	47.34	19	19.47	155	29.64	9.33	1.5	1.2	18	2	52	.09	7	0.4	1.1	17	KAO
		15	16 4	43.71	19	23.88	155	16.14	2.69	1.4	1.2	15	2	103	.10	1	0.3	0.3	11	SEC
		15	2024	26.83	19	14.25	155	39.45	7.06	2.4	1.6	29	2	251	.23	4	1.9	1.1	23	LSW
		15	2211	54.35	19	29.68	155	35.58	2.53	2.2	1.5	15	2	95	.11	1	0.6	0.4	12	MLO
		15	2335	43.38	19	26.94	155	23.86	11.11	2.0	1.2	38	7	67	.11	4	0.4	0.6	24	KAO
		16	652	33.13	19	28.85	155	26.72	11.97	3.2	3.1	54	7	41	.13	6	0.3	0.4	46	KAO
		16	741	52.67	19	19.00	155	15.16	7.09	1.4	1.3	33	2	101	.09	4	0.4	0.8	30	SF1
		17	026	24.84	19	24.91	155	25.37	6.98	1.9	1.6	42	4	40	.13	1	0.3	0.8	32	KAO
		17	245	6.26	19	22.89	155	4.43	8.74	3.3	3.7	50	9	87	.09	3	0.4	0.4	44	SF5
		17	838	42.49	19	22.70	155	30.00	8.49	1.7	1.5	25	0	72	.10	4	0.4	1.2	25	KAO
		17	1028	11.45	19	28.89	155	48.79	8.94	2.2	1.7	30	4	80	.16	6	0.5	0.7	25	KON
		17	2151	54.71	19	18.81	155	13.19	7.11	1.7	1.3	39	6	83	.09	3	0.4	0.6	32	SF2
		18	047	36.51	19	20.98	155	23.49	11.56	1.8	1.4	31	3	42	.10	1	0.4	0.6	26	SWR
		18	2 6	59.16	19	21.63	155	21.57	10.57	1.3	1.1	24	2	56	.09	4	0.4	0.9	20	SWR
		18	5 2	0.98	19	18.65	155	20.82	6.59	1.2	1.1	30	6	108	.09	4	0.3	0.9	24	SWR

*NEIS determination of 4.8 magnitude based on World Wide Seismograph Network Stations.

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	FEB	18	551	4.18	19	22.29	155	27.89	10.42	2.4	2.9	49	6	39	.12	1	0.3	0.6	44	KAO
		18	16 0	52.02	19	24.25	155	26.37	9.45	1.9	1.7	41	4	38	.14	3	0.4	0.7	35	KAO
		19	0 4	20.28	19	29.76	155	39.42	6.95	2.0	1.3	24	4	97	.14	6	0.5	1.3	20	MLO
		19	424	17.18	19	25.30	155	20.85	10.57	2.3	2.3	49	6	43	.11	4	0.4	0.5	42	KAO
		19	1048	56.12	19	23.00	155	2.35	8.22	2.3	2.1	40	3	133	.13	5	0.6	0.4	38	SF5
		19	2130	20.29	19	20.99	155	23.61	10.72	1.3	1.1	24	3	43	.09	2	0.4	0.8	22	SWR
		20	0 9	24.81	19	25.06	155	19.51	6.95	1.4	1.3	24	4	102	.10	3	0.5	0.9	19	KAO
		20	012	22.12	19	11.09	155	28.53	8.42	2.8	2.7	42	4	125	.16	3	0.6	0.6	39	LSW
		20	013	25.91	19	10.67	155	28.47	8.29	2.7	2.7	49	7	131	.16	2	0.5	0.5	37	LSW
		20	2 0	50.01	19	26.51	155	19.37	7.92	1.7	1.1	26	6	125	.11	3	0.5	0.8	19	KAO
		20	344	29.55	19	22.09	155	27.20	10.86	1.6	1.4	37	3	42	.11	1	0.4	0.6	30	KAO
		20	540	31.87	19	27.00	155	29.24	10.54	2.2	1.4	39	5	46	.11	8	0.3	0.7	29	KAO
		20	841	54.42	19	23.59	155	25.90	10.51	2.2	2.0	47	6	27	.12	3	0.3	0.5	34	KAO
		20	1355	53.11	19	25.07	155	30.07	9.03	1.9	1.4	31	3	36	.09	6	0.4	1.0	22	KAO
		20	1853	2.40	19	24.82	155	20.16	5.82	2.0	2.0	40	6	55	.12	2	0.3	0.8	29	KAO
		20	1952	29.35	19	23.92	155	30.90	10.92	2.3	2.2	36	4	39	.09	6	0.3	0.7	28	KAO
		20	2040	41.97	19	28.16	155	24.50	2.91	2.2	1.5	28	6	51	.13	4	0.3	0.7	20	KAO
		20	21 6	38.74	19	21.82	155	21.92	8.75	2.0	1.9	38	6	55	.12	4	0.4	0.7	27	SWR
		20	21 7	47.81	19	11.96	155	38.75	7.15	2.4	2.0	35	3	103	.14	6	0.5	1.0	26	LSW
		20	2212	43.87	19	18.63	155	13.64	8.06	1.7	1.7	35	1	73	.12	3	0.5	0.6	27	SF2
		20	2346	56.45	19	19.31	155	15.36	7.78	1.6	1.8	35	1	98	.10	4	0.4	0.6	27	SF1
		21	450	35.87	19	19.56	155	23.69	9.64	1.9	1.7	32	2	76	.15	1	0.5	1.0	25	SWR
		21	1533	19.56	19	25.85	155	37.54	5.72	2.7	2.4	24	4	92	.14	3	0.5	1.4	20	MLO
		21	16 9	35.25	19	24.57	154	59.24	7.30	2.1	2.0	33	3	185	.12	1	0.6	0.6	29	LER
		21	1729	16.52	19	21.37	155	2.55	6.25	2.0	2.1	31	2	143	.13	3	0.5	1.0	29	SF5
		21	18 8	59.38	19	25.12	155	15.76	15.00	1.5	1.2	36	6	91	.10	2	0.5	0.3	29	DEP
		21	2018	9.63	19	25.83	155	29.20	9.13	1.6	1.2	34	1	40	.11	7	0.4	1.0	25	KAO
		21	2242	47.26	19	24.17	155	25.55	11.36	1.8	1.5	38	5	33	.10	2	0.4	0.5	25	KAO
		22	217	46.11	19	15.97	155	27.50	9.48	1.7	1.3	27	1	68	.13	5	0.4	0.7	18	LSW
		22	850	5.43	19	22.74	155	26.88	9.88	2.0	1.5	42	6	36	.13	1	0.3	0.6	35	KAO
		22	1338	8.18	19	20.87	155	23.77	9.55	1.9	1.3	35	5	62	.12	2	0.4	0.6	25	SWR
		22	1455	3.73	19	23.00	155	26.08	11.18	1.9	1.5	38	5	39	.11	3	0.4	0.7	29	KAO
		22	1919	49.28	19	21.90	155	28.77	8.95	1.9	1.3	42	5	38	.11	2	0.3	0.8	27	KAO
		22	2032	27.65	19	19.25	155	10.13	7.61	1.5	1.5	26	3	103	.06	5	0.4	0.8	22	SF3
		22	23 3	30.04	19	23.60	155	27.11	9.89	1.9	1.5	40	5	49	.11	2	0.4	0.6	30	KAO
		23	118	17.26	19	29.93	155	27.96	4.41	2.8	2.9	41	5	46	.12	4	0.3	1.6	28	KAO
		23	1044	47.83	19	18.53	155	13.13	10.51	2.6	2.9	45	4	157	.11	8	0.5	0.5	39	SF2
		23	1354	52.82	19	19.92	155	13.25	8.53	2.0	2.3	45	5	116	.13	5	0.4	0.6	34	SF2
		23	1511	45.69	19	24.15	155	26.58	9.83	2.0	1.7	40	5	41	.12	3	0.4	0.6	31	KAO
		23	1528	28.43	19	15.62	155	27.32	8.93	2.1	2.3	42	5	73	.18	5	0.4	0.6	30	LSW
		23	2059	9.59	19	25.02	155	30.16	12.00	3.2	3.3	45	4	35	.09	9	0.3	0.4	38	KAO
		24	835	57.13	19	23.97	155	26.59	10.51	1.8	1.2	39	4	38	.11	3	0.4	0.7	28	KAO
		24	1351	2.99	19	19.34	155	10.87	6.82	1.7	1.5	36	4	102	.10	5	0.4	0.7	27	SF3
		24	1725	10.89	19	19.69	155	13.14	6.96	1.3	1.1	34	1	72	.12	5	0.4	0.7	28	SF2
		24	20 7	11.92	19	25.40	155	20.80	10.48	1.9	1.5	44	6	70	.12	4	0.4	0.5	36	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	FEB	24	2059	11.01	19	18.32	155	13.92	7.56	1.4	1.5	32	1	87	.10	3	0.5	0.8	30	SF2
		25	033	44.91	19	19.57	155	11.83	7.07	1.4	1.1	28	1	91	.10	6	0.5	0.9	26	SF3
		25	1 4	58.83	19	18.86	155	11.26	5.62	1.5	1.1	33	2	114	.10	5	0.4	1.1	29	SF3
		25	133	35.17	19	20.35	155	13.62	6.20	1.4	1.1	32	1	62	.12	4	0.4	0.8	29	SF2
		25	5 5	47.29	19	29.81	155	27.28	5.36	2.3	2.3	37	5	57	.12	4	0.3	1.2	32	KAO
		25	6 4	11.76	19	18.59	155	15.22	7.46	1.3	1.1	34	2	111	.10	4	0.4	0.6	27	SF1
		25	6 7	15.76	19	20.47	155	13.25	8.66	2.3	2.6	45	4	63	.12	4	0.4	0.5	37	SF2
		25	643	4.94	19	19.22	155	28.48	8.99	1.9	2.2	38	4	42	.11	8	0.3	0.8	33	KAO
		25	1115	59.68	19	21.34	155	2.29	6.93	2.6	2.9	42	5	153	.11	3	0.4	0.5	33	SF5
		25	12 2	39.66	19	23.43	155	20.57	10.86	1.7	1.7	34	5	55	.09	2	0.4	0.5	22	KAO
		25	1844	19.09	19	25.21	155	19.11	6.98	1.9	1.5	28	5	75	.13	3	0.4	0.8	19	KAO
		25	19 0	22.65	19	17.62	155	12.98	5.85	1.6	1.6	32	1	125	.10	1	0.6	1.0	23	SF2
		25	2325	20.86	19	25.91	155	37.38	1.29	2.5	3.0	33	2	91	.09	3	0.3	0.6	27	MLO
		26	6 0	42.95	19	19.19	155	13.37	7.14	1.7	1.8	40	5	74	.14	4	0.5	0.9	26	SF2
		26	817	41.50	19	24.70	155	20.81	8.57	1.8	1.5	43	5	43	.12	3	0.4	0.5	34	KAO
		26	1040	20.90	19	30.42	155	29.00	3.75	2.0	1.3	38	6	70	.12	4	0.3	1.0	30	MLO
		26	12 6	48.89	19	27.55	155	24.19	11.35	2.2	2.0	47	8	34	.12	4	0.3	0.4	38	KAO
		26	1341	41.06	19	20.07	155	8.16	7.29	1.5	1.5	34	3	85	.09	5	0.4	0.8	23	SF4
		26	14 3	40.61	19	27.31	155	25.74	6.58	2.3	2.3	48	5	45	.13	4	0.3	0.9	36	KAO
		26	1737	59.92	19	27.34	155	25.53	6.20	1.6	1.3	25	2	48	.13	4	0.5	1.3	23	KAO
		26	2012	25.58	19	15.47	155	15.28	6.33	1.5	1.5	30	2	189	.10	4	0.7	1.0	28	SF1
		27	355	44.72	19	25.06	155	30.24	10.66	2.3	2.0	38	3	36	.09	7	0.3	0.7	35	KAO
		27	1222	48.77	19	23.49	155	20.86	11.23	1.9	1.5	35	4	42	.11	2	0.4	0.6	30	KAO
		27	1842	19.77	19	19.23	155	14.89	7.48	1.6	1.1	33	0	93	.10	5	0.4	0.8	32	SF1
		27	1915	15.11	19	23.91	155	26.34	10.01	2.0	1.5	39	5	33	.12	3	0.4	0.6	32	KAO
		27	22 6	25.95	19	21.71	155	23.61	9.98	1.6	1.1	31	4	40	.09	3	0.4	0.7	26	SWR
		28	3 7	9.29	19	22.25	155	20.89	11.03	1.8	1.1	35	5	48	.09	3	0.3	0.6	29	KAO
		28	3 7	43.53	19	11.17	155	29.04	7.83	2.3	1.8	36	3	137	.14	4	0.6	1.1	33	LSW F
		28	343	18.85	19	20.52	155	2.09	7.20	1.9	1.5	31	3	186	.12	2	0.5	0.6	28	SF5
		28	559	37.68	19	27.37	155	37.17	1.80	2.2	1.3	22	2	90	.11	2	0.5	0.3	19	MLO
		28	641	19.39	19	19.46	155	12.24	4.85	1.5	1.1	27	4	89	.12	5	0.4	1.7	25	SSF
		28	1017	31.24	19	21.23	155	30.27	9.50	2.4	2.6	42	2	33	.10	5	0.3	0.8	39	KAO
		28	1232	2.97	19	21.61	155	30.30	10.70	2.0	2.0	33	1	48	.10	5	0.4	1.0	28	KAO
		28	1236	33.49	19	21.17	155	30.27	10.46	2.2	2.0	39	2	48	.08	5	0.3	0.7	36	KAO
		28	14 2	28.74	19	20.38	155	12.98	7.47	1.3	1.1	27	3	66	.12	4	0.5	0.9	25	SF2
		28	1520	8.34	19	20.93	155	7.76	8.55	3.1	3.3	50	6	82	.11	4	0.4	0.4	39	SF4
		28	1815	30.82	19	19.84	155	11.03	7.62	1.5	1.1	26	0	90	.12	5	0.6	1.2	26	SF3
		28	2122	48.54	19	26.52	155	25.89	11.33	1.7	1.4	34	3	39	.13	3	0.4	0.6	30	KAO
		28	2143	45.44	19	21.10	155	29.49	6.71	2.1	1.9	32	2	44	.10	4	0.3	0.8	29	KAO
		29	146	13.29	19	30.60	155	39.40	10.73	2.2	1.4	27	4	52	.15	7	0.5	0.9	14	MLO
		29	215	16.80	19	21.40	155	0.20	5.59	2.2	2.4	36	4	195	.16	6	0.6	0.5	26	SF5
		29	738	41.06	19	28.25	155	26.84	6.44	2.6	2.7	47	8	54	.12	6	0.3	0.9	37	KAO
	MAR	1	017	43.91	19	19.08	155	13.45	7.56	1.5	1.5	43	5	73	.14	4	0.5	0.8	31	SF2
		1	310	30.16	19	22.61	155	30.05	8.79	1.2	1.1	33	3	47	.09	4	0.4	0.8	22	KAO
		1	643	22.91	19	24.19	155	29.24	10.46	1.9	1.2	33	1	52	.09	4	0.4	0.6	30	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	MAR	1	12 3	41.67	19	18.33	155	13.57	6.37	1.7	1.9	42	3	75	.12	2	0.4	0.8	35	SF2
		1	1756	5.92	19	21.66	155	4.59	6.59		1.3	35	3	80	.16	4	0.5	0.9	25	SF5
		1	1929	47.14	19	24.30	155	29.46	8.79	1.6	1.3	39	1	34	.10	5	0.4	0.8	29	KAO
		2	2 8	51.79	19	25.20	155	18.94	5.25	1.6	1.1	22	4	114	.10	2	0.4	0.9	18	INT
		2	444	50.68	19	26.37	155	37.99	2.47	2.4	1.8	14	0	98	.10	3	0.6	0.9	9	MLO
		2	556	49.86	19	19.46	155	12.34	3.80	1.3	1.1	25	3	88	.12	5	0.4	1.4	20	SSF
		2	915	33.88	19	19.17	155	12.19	6.26	1.6	1.3	32	5	96	.12	5	0.5	0.8	25	SF3
		3	013	41.92	19	22.44	155	30.47	9.77	1.7	1.2	31	2	48	.10	5	0.4	1.1	26	KAO
		3	515	36.67	19	26.07	155	37.23	3.04	2.4	2.5	33	4	113	.16	6	0.5	1.4	27	MLO
		3	1455	10.18	19	22.19	155	23.65	12.87	2.9	2.9	54	7	38	.11	4	0.3	0.3	43	KAO
		3	1629	34.94	19	23.88	155	26.07	5.76	1.7	1.3	30	3	36	.12	3	0.4	1.0	20	KAO
		3	1720	23.38	19	20.15	155	12.02	5.24	2.1	2.1	41	7	78	.15	5	0.4	1.0	29	SF3
		3	2021	15.19	19	27.82	155	24.25	11.80	2.1	1.6	34	6	69	.11	4	0.4	0.7	22	KAO
		4	137	50.36	19	25.07	155	19.26	6.19	1.6	1.3	25	5	80	.11	3	0.4	0.9	18	KAO
		4	237	1.51	19	28.50	155	26.89	7.74	2.7	2.8	52	7	41	.14	7	0.3	0.7	41	KAO
		4	914	37.49	19	12.72	155	35.18	1.47	3.3	3.2	53	8	84	.20	10	0.5	0.8	39	LSW
		4	14 4	7.69	19	23.41	155	20.72	10.44	2.4	2.4	49	6	40	.12	2	0.3	0.4	41	KAO
		4	21 3	9.75	19	23.83	155	15.90	2.76	1.7	2.0	25	4	104	.11	1	0.3	0.3	20	SEC
		4	2233	17.79	19	28.58	155	35.98	2.56	2.3	2.5	24	1	152	.09	1	0.5	0.3	19	MLO
		4	2320	27.15	19	19.53	155	11.66	6.79	1.4	1.3	33	4	94	.11	6	0.5	1.0	22	SF3
		5	256	42.74	19	25.76	155	21.37	8.56	1.7	1.3	35	6	80	.13	4	0.4	0.7	24	KAO
		5	410	2.98	19	22.16	155	2.23	7.91	1.8	1.4	36	3	134	.14	4	0.7	0.6	29	SF5
		5	756	46.52	19	6.03	155	21.91	34.38	2.3	1.9	46	4	238	.10	12	1.0	1.2	40	LOI
		5	1443	28.92	19	17.64	155	15.03	6.88	1.5	1.3	33	3	125	.12	3	0.5	0.9	27	SF1
		5	2353	41.12	19	16.78	155	15.33	3.65		1.1	17	0	179	.09	3	0.6	0.9	17	SSF
		6	1 0	40.29	19	26.65	155	26.28	7.14	2.3	2.5	46	5	49	.14	3	0.3	0.8	38	KAO
		6	324	4.64	19	18.98	155	15.38	7.27	1.4	1.3	34	3	105	.10	4	0.4	0.6	22	SF1
		6	736	15.28	19	25.21	155	20.92	9.12	1.8	1.1	37	6	81	.12	4	0.4	0.7	29	KAO
		6	11 7	51.06	19	25.60	155	29.65	8.86	2.0	1.4	38	1	38	.11	7	0.4	1.0	33	KAO
		6	1619	1.26	19	22.44	155	28.95	9.45	1.8	1.7	44	6	37	.10	2	0.3	0.6	37	KAO
		6	1717	42.69	19	18.77	155	20.61	8.44	1.6	1.6	37	7	105	.11	4	0.4	0.7	24	SWR
		6	2012	8.99	19	26.08	155	29.03	8.30	1.8	1.7	44	7	39	.13	7	0.4	1.0	29	KAO
		6	2013	24.21	19	18.70	155	15.92	3.59	1.3	1.4	26	5	116	.13	4	0.4	0.8	19	SSF
		6	2116	20.55	19	21.74	155	23.22	11.14	1.7	1.5	36	5	53	.11	3	0.4	0.5	25	SWR
		6	2319	8.79	19	35.18	155	6.27	6.39	2.0	2.2	43	3	74	.13	10	0.3	1.4	36	HIL
		7	1 0	29.63	19	25.58	155	38.14	0.03	1.8	2.4	24	3	101	.30	5	0.7	0.9	11	MLO *
		7	623	8.65	19	11.51	155	28.52	7.06	2.1	2.4	44	7	120	.14	4	0.5	0.7	32	LSW
		7	625	35.90	19	25.01	155	29.98	11.50	1.9	1.7	39	4	44	.09	6	0.4	0.5	28	KAO
		7	724	52.20	19	22.80	155	2.63	8.14	1.8	1.7	39	4	120	.15	4	0.6	0.6	27	SF5
		7	931	28.55	19	25.66	155	29.71	9.79	2.2	2.6	45	4	38	.11	7	0.3	0.6	37	KAO
		7	1241	47.68	19	22.59	155	30.26	8.39	2.1	1.8	49	7	43	.12	5	0.3	0.6	38	KAO
		7	1550	37.25	19	11.12	155	32.58	34.17	2.3	2.1	48	8	101	.08	9	0.6	1.0	37	DLS
		7	1650	17.02	19	22.00	155	2.67	7.84	1.9	1.5	38	5	132	.14	4	0.7	0.4	27	SF5
		7	1734	34.67	19	21.93	155	27.99	10.12	2.3	2.4	49	5	39	.11	1	0.3	0.5	41	KAO
		7	19 1	56.07	19	13.16	155	16.79	41.88	1.6	1.8	27	2	213	.08	9	1.4	3.0	23	DEP L

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1984	MAR	7	20 7	26.19	19	1.79	155	25.83	37.67	2.5	1.8	41	5	209	.09	15	0.9	1.4	31	DLS	
		7	2053	2.11	19	25.57	155	29.23	8.37	2.2	1.8	42	5	46	.10	6	0.3	0.8	33	KAO	
		8	135	3.38	19	20.83	155	2.31	6.08	2.6	3.0	39	6	157	.12	2	0.4	0.6	26	SF5	
		8	525	29.63	19	20.33	155	13.18	6.73	1.3	1.1	28	3	64	.10	4	0.5	0.9	22	SF2	
		8	641	31.78	19	28.44	155	23.14	15.60	2.0	1.2	17	0	192	.09	11	1.3	0.9	16	DML	
		8	1058	49.88	19	19.32	155	11.65	8.81	3.5	3.9	46	4	98	.10	5	0.4	0.3	42	SF3	F
		8	1530	6.44	19	24.62	155	38.03	0.01	2.4	2.4	32	2	98	.22	6	0.5	0.8	22	MLO	*
		8	1736	31.22	19	23.88	155	21.05	8.89	1.9	1.4	41	7	60	.14	2	0.4	0.6	31	KAO	
		8	1851	59.06	19	28.94	155	26.25	6.97	2.9	2.8	51	7	57	.14	5	0.3	0.8	43	KAO	
		8	19 0	30.84	19	21.20	155	3.25	6.49	1.8	1.5	33	4	114	.11	2	0.4	0.8	20	SF5	
		8	20 2	54.84	19	12.74	155	31.12	6.05	2.2	1.3	35	5	80	.16	5	0.5	1.5	21	LSW	
		8	2018	48.75	19	19.85	155	11.55	8.91	2.3	2.5	46	6	87	.14	5	0.4	0.6	38	SF3	
		8	2036	18.66	19	12.50	155	31.20	6.97	2.3	1.5	42	6	79	.14	5	0.5	0.8	28	LSW	
		8	22 8	16.04	19	19.86	155	11.81	7.17	1.6	1.8	41	4	85	.12	5	0.4	0.6	33	SF3	
		9	032	39.78	19	22.10	155	24.35	13.74	2.0	1.4	43	7	30	.11	4	0.4	0.6	29	DML	
		9	532	42.07	19	30.72	155	39.36	6.89	2.0	1.6	35	5	51	.13	7	0.4	0.9	27	MLO	
		9	557	43.89	19	25.97	155	30.30	7.80	1.7	1.1	36	3	41	.13	8	0.4	1.2	27	KAO	
		9	1652	50.20	19	19.98	155	11.93	6.63	1.3	1.5	33	3	83	.11	5	0.4	0.7	23	SF3	
		9	2245	54.89	19	28.11	155	26.94	5.25	2.4	2.2	51	7	54	.14	6	0.3	1.2	38	KAO	
		9	2257	51.27	20	2.82	155	36.69	12.21	2.1	1.4	28	3	183	.11	20	1.0	0.5	22	KOH	
		10	026	49.95	19	22.05	155	30.20	8.41	2.1	1.8	42	3	32	.10	5	0.3	0.8	30	KAO	
		10	222	43.77	19	20.16	155	12.37	7.41	1.7	1.9	41	4	76	.13	5	0.4	0.6	29	SF2	
		10	511	13.38	19	20.06	155	10.86	8.06	1.4	1.3	26	2	86	.07	4	0.5	1.0	18	SF3	
		10	627	44.89	19	21.98	155	2.00	3.96	1.8	1.5	33	2	151	.16	4	0.6	1.6	17	SSF	
		10	1345	21.95	19	20.48	155	13.41	7.65	2.0	2.6	48	4	60	.14	4	0.5	0.6	40	SF2	
		10	1954	48.75	19	25.88	155	21.70	9.15	1.8	1.5	41	6	48	.11	4	0.4	0.5	27	KAO	
		10	2152	11.90	19	20.84	155	13.51	7.36	1.5	1.6	37	3	58	.11	3	0.4	0.6	28	SF2	
		10	2158	31.10	19	22.11	155	28.16	9.46	1.9	1.3	40	5	39	.11	1	0.3	0.6	30	KAO	
		10	2249	2.68	19	22.28	155	2.59	8.09	2.1	1.5	34	3	133	.12	4	0.6	0.4	26	SF5	
		11	434	1.84	19	19.06	155	13.39	7.08	2.2	2.4	47	8	74	.13	4	0.4	0.6	32	SF2	
		11	646	46.03	19	49.28	155	36.93	18.50	3.1	3.4	52	7	101	.11	6	0.5	1.5	43	KEA	F
		11	648	35.97	19	22.39	155	29.65	9.21	2.4	2.6	50	5	34	.10	4	0.3	0.5	39	KAO	
		11	1118	19.72	19	25.76	155	38.15	2.32	2.3	2.1	25	0	181	.12	4	0.6	1.0	16	MLO	
		11	1150	18.87	19	18.06	155	23.30	9.95	2.9	3.2	53	7	95	.14	4	0.3	0.4	41	SWR	
		11	1417	0.04	19	18.91	155	11.85	4.40	1.7	1.4	38	6	108	.11	4	0.4	1.3	26	SSF	
		11	2037	59.16	19	25.72	155	36.49	2.70	2.1	1.4	16	3	146	.16	3	0.5	0.8	12	MLO	
		11	23 1	38.39	19	19.57	155	13.53	4.94	2.0	1.9	47	6	66	.15	5	0.4	1.3	39	SSF	
		11	2333	8.48	19	19.21	155	12.96	7.45	1.6	1.8	44	4	82	.11	4	0.4	0.5	33	SF2	
		12	121	37.76	19	22.76	155	27.14	10.15	1.7	1.5	41	4	41	.13	1	0.4	0.6	31	KAO	
		12	5 3	41.94	19	29.26	155	30.04	2.24	2.5	2.3	42	5	63	.14	7	0.4	1.1	35	KAO	
		12	610	19.81	19	16.74	155	22.19	6.79	1.9	2.0	38	3	129	.14	6	0.5	0.9	30	SWR	
		12	713	19.31	19	18.46	155	16.75	8.54	2.6	2.7	49	5	116	.13	3	0.4	0.5	42	SF1	
		12	949	45.75	19	25.25	155	29.35	7.98	2.2	2.1	43	5	35	.13	6	0.3	0.9	35	KAO	
		12	2050	32.90	19	20.98	155	22.25	11.02	1.7	1.3	29	4	64	.09	2	0.4	0.6	20	SWR	
		13	054	35.70	19	26.64	155	28.42	9.74	1.8	1.2	28	3	57	.09	6	0.4	1.0	20	KAO	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1984	MAR	13	214	12.42	19	21.48	155	30.26	9.02	2.3	2.5	45	3	33	.10	5	0.3	0.6	34	KAO	
		13	1142	15.96	19	15.58	155	6.01	42.66	2.8	3.3	56	9	217	.11	5	0.8	0.8	47	DEP	
		13	1337	40.92	19	26.60	155	36.15	3.04	2.2	1.7	24	2	117	.14	1	0.5	0.5	20	MLO	
		13	1618	23.37	19	26.33	155	36.52	3.60	2.2	2.2	17	2	101	.12	2	0.5	0.5	10	MLO	
		13	1620	29.77	19	22.14	155	26.78	10.20	2.4	2.6	45	6	41	.12	2	0.3	0.5	34	KAO	
		13	2049	49.01	19	21.59	155	30.21	9.24	2.1	1.7	37	3	46	.10	5	0.4	0.8	31	KAO	
		13	2352	2.32	19	20.59	155	12.46	8.30	2.3	2.5	45	4	68	.11	4	0.4	0.5	38	SF2	
		14	3 7	0.94	19	28.78	155	26.43	5.31	2.0	1.3	41	5	59	.13	6	0.3	1.2	24	KAO	
		14	820	40.54	19	23.64	154	57.34	8.91	2.5	2.5	18	1	210	.15	4	1.7	0.8	14	LER	
		14	13 8	56.29	19	25.38	155	20.59	8.35	1.8	1.3	35	7	80	.11	4	0.4	0.6	25	KAO	
		14	1923	27.37	19	24.52	155	37.64	0.03	2.2	2.0	16	1	91	.18	6	0.5	0.9	15	MLO	*
		14	2040	3.72	19	21.10	155	12.41	8.67	1.9	1.9	43	5	63	.12	3	0.4	0.5	34	SF2	
		15	0 3	18.67	19	20.67	155	12.18	7.81	1.6	1.3	36	4	70	.12	4	0.5	0.6	27	SF3	
		15	427	40.40	19	23.81	155	25.67	7.78	1.6	1.1	28	3	36	.12	3	0.4	0.9	21	KAO	
		15	13 3	0.75	19	21.86	155	6.98	8.78	3.4	3.9	55	8	76	.11	3	0.4	0.3	45	SF4	F
		16	051	55.84	19	19.30	155	13.48	7.23	1.9	1.5	46	5	69	.14	4	0.4	0.7	39	SF2	
		16	210	6.83	19	28.22	155	26.86	2.83	2.4	1.3	42	7	51	.16	6	0.3	1.1	32	KAO	
		16	354	5.69	19	23.01	155	25.38	9.40	1.7	1.1	37	4	39	.12	4	0.4	0.6	28	KAO	
		16	1310	6.32	19	18.52	155	14.70	6.22	1.5	1.1	26	2	121	.12	4	0.5	1.1	22	SF1	
		16	1518	21.80	19	22.95	155	26.89	8.90	1.8	1.1	34	4	40	.13	2	0.4	0.7	25	KAO	
		16	1831	50.57	20	6.10	155	45.96	22.00	2.9	2.6	42	3	143	.09	3	0.9	1.4	39	KOH	
		16	2347	15.50	19	19.64	155	8.12	6.18	1.5	1.3	30	4	90	.12	4	0.5	1.0	21	SF4	
		17	614	35.93	19	25.27	155	37.70	2.00	2.7	2.7	27	2	95	.12	4	0.4	1.0	19	MLO	
		17	7 6	8.09	19	29.45	155	34.07	0.04	2.2	2.0	21	3	78	.17	3	0.4	1.0	16	MLO	*
		17	1428	16.57	19	21.95	155	26.60	10.91	2.4	2.9	46	5	44	.12	2	0.4	0.5	38	KAO	
		17	1437	10.22	19	25.13	155	38.59	2.49	2.4	2.3	17	3	184	.10	6	0.6	1.3	13	MLO	
		17	15 3	10.81	19	19.98	155	7.88	8.88	1.6	1.5	24	2	92	.08	5	0.6	1.0	20	SF4	
		17	16 7	32.22	19	19.14	155	13.09	8.41	1.5	1.1	20	1	80	.07	4	0.5	1.0	16	SF2	
		17	1927	35.08	19	20.01	155	11.97	9.41	3.1	3.5	46	3	82	.11	5	0.3	0.4	40	SF3	
		17	2310	13.94	19	19.66	155	12.17	6.10	1.4	1.3	27	2	85	.12	5	0.4	1.0	23	SF3	
		18	353	58.03	19	22.95	155	20.85	10.33	2.0	1.7	36	5	50	.09	2	0.3	0.6	33	KAO	
		18	611	4.50	19	21.62	155	4.61	7.07	1.7	1.7	33	2	80	.14	4	0.5	0.9	27	SF5	
		18	633	56.20	19	26.99	155	28.98	9.37	2.3	2.4	41	5	46	.11	7	0.4	0.7	33	KAO	
		18	1724	53.46	19	20.07	155	11.65	8.66	2.8	2.6	45	3	83	.12	5	0.4	0.5	40	SF3	
		18	1813	56.50	19	18.96	155	13.15	8.84	2.5	2.4	44	4	81	.12	4	0.4	0.5	40	SF2	
		18	2227	59.75	19	29.88	155	35.83	3.33	2.1	1.8	19	2	103	.09	1	0.6	0.4	14	MLO	
		19	039	43.17	19	22.84	155	27.00	10.78	1.7	1.2	31	1	40	.11	1	0.4	0.7	28	KAO	
		19	157	2.79	19	28.54	155	35.19	2.97	2.2	1.6	11	2	96	.10	1	0.8	0.5	10	MLO	
		19	1746	48.27	19	20.13	155	13.19	6.54	1.5	1.1	19	2	66	.10	5	0.5	1.1	17	SF2	
		19	2221	8.47	19	22.15	155	4.80	8.09	2.0	1.7	27	4	79	.13	5	0.6	0.9	21	SF5	
		20	4 7	41.84	19	21.77	155	4.97	8.59	2.1	2.3	41	6	80	.11	5	0.4	0.5	31	SF5	
		20	725	41.22	19	21.62	155	4.18	7.47	1.7	1.5	32	2	89	.13	4	0.5	0.8	29	SF5	
		20	726	41.69	19	28.24	155	36.99	2.35	2.5	2.3	20	3	98	.10	2	0.4	0.3	18	MLO	
		20	910	31.53	19	19.83	155	12.36	7.26	1.8	1.8	42	4	81	.11	5	0.4	0.7	38	SF2	
		20	920	34.16	19	19.57	155	12.33	6.83		1.1	28	4	85	.12	5	0.4	0.9	25	SF2	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	MAR	20	1737	2.06	19	20.23	155	11.64	9.68	2.6	3.0	48	4	80	.12	5	0.4	0.4	43	SF3
		20	1912	53.05	19	26.00	155	37.39	1.91	2.6	2.7	28	3	91	.14	3	0.5	0.7	24	MLO
		20	2137	5.87	19	25.80	155	37.73	3.16	2.5	2.7	33	5	95	.12	4	0.4	0.8	29	MLO
		20	2229	36.48	19	18.27	155	16.00	8.84	2.0	2.2	47	3	136	.10	4	0.4	0.5	32	SF1
		21	210	6.82	19	27.06	155	26.03	5.85	2.4	2.4	38	5	47	.12	4	0.3	1.2	29	KAO
		21	835	28.05	19	22.18	155	21.00	10.06	1.8	1.7	37	7	49	.10	4	0.3	0.5	27	KAO
		21	1011	37.29	19	22.80	155	26.95	9.49	2.2	2.1	43	6	35	.13	1	0.4	0.6	33	KAO
		21	1055	27.59	19	28.72	155	35.81	2.50	2.7	2.6	18	2	83	.10	1	0.4	0.3	13	MLO
		21	1345	21.21	19	27.72	154	51.69	8.23	2.3	2.1	35	3	108	.13	1	1.0	0.4	25	LER
		21	1536	19.25	19	19.48	155	12.52	5.92	1.3	1.1	19	2	85	.09	5	0.5	1.3	11	SF2
		21	1537	30.04	19	19.70	155	12.29	4.45	1.3	1.1	25	2	84	.12	5	0.5	2.2	19	SSF
		21	19	6 28.24	19	21.52	155	21.96	10.20	1.8	1.8	39	3	58	.12	3	0.4	0.6	22	SWR
		21	2055	25.63	19	19.62	155	11.00	6.67	1.4	1.6	30	2	94	.10	5	0.5	1.1	21	SF3
		21	2147	16.76	19	25.54	155	37.50	2.31	2.3	2.4	23	2	92	.11	4	0.4	0.9	18	MLO
		21	2228	24.65	19	25.64	155	37.63	2.45	3.2	3.5	42	3	77	.12	4	0.4	0.8	35	MLO
		22	240	11.43	19	20.87	155	12.88	7.67	1.7	1.6	33	4	62	.13	3	0.5	0.7	25	SF2
		22	241	50.52	19	23.27	155	2.11	8.76	1.8	1.4	23	2	134	.11	5	0.6	0.7	15	SF5
		22	323	44.42	19	20.52	155	10.86	7.50	1.9	1.9	44	4	77	.12	3	0.4	0.6	34	SF3
		22	324	31.00	19	20.45	155	13.06	7.89	2.5	2.7	48	5	65	.14	4	0.4	0.6	38	SF2
		22	548	57.30	19	27.90	155	37.34	1.47	2.2	1.5	14	0	164	.13	2	0.7	0.5	11	MLO
		22	1622	9.89	19	20.65	155	12.65	6.32	1.4	1.3	33	5	66	.14	4	0.5	0.8	23	SF2
		23	1	4 30.79	19	18.02	155	20.90	8.18	2.3	2.8	48	7	121	.13	4	0.3	0.6	37	SWR
		23	237	5.46	19	17.05	155	21.79	5.67	1.2	1.3	22	4	128	.12	6	0.5	1.6	20	SWR
		23	1727	2.08	19	21.88	155	6.65	8.54	1.8	1.5	44	5	77	.11	3	0.4	0.6	39	SF4
		23	19	0 44.38	19	23.75	155	26.40	10.89	1.5	1.2	28	1	32	.11	3	0.5	1.0	27	KAO
		23	2344	38.46	19	17.06	155	28.55	9.06	2.2	2.3	46	6	53	.15	5	0.3	0.6	40	LSW
		24	718	40.20	19	20.80	155	5.94	7.66	1.7	1.3	36	5	102	.10	5	0.4	0.7	32	SF4
		24	1210	51.18	19	26.14	155	28.73	6.60	1.9	1.3	19	0	72	.12	7	0.6	2.2	14	KAO
		24	1322	13.59	19	21.91	155	1.90	5.48	1.6	1.4	18	0	155	.14	4	0.7	2.0	16	SF5
		24	1356	0.15	19	26.25	155	21.38	9.63	1.9	1.3	20	1	75	.10	7	0.5	0.8	13	KAO
		24	1439	7.36	19	22.56	155	23.72	11.93	2.3	2.2	25	1	43	.10	4	0.5	0.5	19	KAO
		24	1651	1.88	19	45.10	155	17.92	24.64	2.8	2.4	39	4	115	.11	16	0.5	1.5	31	KEA
		24	2024	42.12	19	19.39	155	9.62	7.40	1.5	1.5	25	0	95	.08	5	0.5	0.8	20	SF3
		24	23	6 39.86	19	24.01	155	15.89	37.24	2.4	2.9	25	1	81	.10	3	1.0	1.8	22	DEP L
		25	012	57.29	19	28.16	155	36.41	1.66	2.2	1.8	15	0	103	.11	2	0.5	0.4	12	MLO
		25	050	52.75	19	28.40	155	35.17	0.08	3.3	3.3	30	0	68	.12	3	0.4	1.1	27	MLO
		25	055	13.58	19	27.80	155	35.90	1.10	3.9	3.8	36	1	43	.21	2	0.4	0.6	22	MLO
		25	1	0 22.15	19	28.02	155	35.58	1.52	3.2	3.3	21	0	68	.18	1	0.6	1.0	12	MLO
		25	1	1 20.34	19	27.38	155	34.77	2.18	3.8	4.0	27	0	45	.14	2	0.5	1.1	10	MLO
		25	1	4 32.16	19	26.21	155	35.46	6.61	3.4	3.4	28	1	69	.16	12	0.6	1.3	18	MLO
		25	1	8 8.54	19	27.10	155	37.11	5.99	3.1	3.0	24	0	91	.15	12	0.5	1.3	14	MLO
		25	126	24.05	19	28.37	155	36.54	1.73	2.4	3.0	26	0	107	.22	3	0.9	1.0	19	MLO
		25	210	24.72	19	28.68	155	34.79	8.35	3.3	4.0	27	0	69	.19	2	0.6	1.2	19	MLO
		25	614	4.51	19	19.50	155	12.27	7.60	2.1	2.2	20	0	88	.09	5	0.4	0.8	18	SF3
		25	639	58.23	19	27.36	155	33.24	2.69	2.3	2.0	26	0	73	.13	3	0.5	1.0	17	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	MAR	25	847	22.71	19	19.86	155	12.92	7.30	1.8	1.5	19	0	73	.05	5	0.4	0.6	17	SF2
		25	953	58.94	19	23.81	155	20.51	9.38	2.0	1.1	19	0	78	.11	6	0.5	1.1	13	KAO
		25	1023	5.11	19	29.30	155	33.91	1.57		1.1	12	0	194	.15	3	1.0	1.5	9	MLO
		25	1245	15.98	19	28.98	155	30.16	1.34	2.5	1.8	26	0	90	.13	7	0.4	4.6	14	KAO
		25	1346	0.85	19	26.92	155	29.50	8.22	2.3	1.5	32	0	37	.16	9	0.4	1.1	23	KAO
		25	21	5 50.33	19	27.76	155	35.93	5.91	3.3	3.9	29	1	54	.13	14	0.4	1.3	24	MLO F
		26	621	51.85	19	26.53	155	28.90	8.18	1.5	1.1	29	0	52	.12	8	0.5	1.4	23	KAO
		26	930	48.81	19	25.45	155	29.77	9.43	2.3	1.8	43	2	37	.11	7	0.4	0.8	41	KAO
		26	1155	39.44	19	25.26	155	19.45	4.74	1.7	1.6	25	5	70	.12	3	0.4	0.9	20	KAO
		26	1241	27.53	19	26.09	155	21.29	10.48	2.1	1.2	37	6	35	.12	3	0.4	0.7	30	KAO
		27	525	7.20	19	19.66	155	11.62	7.05	2.0	1.9	36	4	91	.11	5	0.4	0.7	32	SF3
		27	9	7 5.93	19	17.86	155	21.15	6.75	1.6	1.6	32	2	122	.14	4	0.5	1.1	22	SWR
		27	914	42.82	19	21.15	155	29.61	6.70	3.1	3.0	40	3	44	.13	4	0.3	0.7	33	KAO
		27	1526	25.33	19	22.80	155	26.82	10.50	2.9	2.9	47	2	35	.13	2	0.4	0.5	44	KAO
		28	811	52.10	19	20.49	155	13.48	9.08	1.7	1.8	17	0	64	.08	4	0.4	0.6	14	SF2
		28	1142	18.72	19	24.92	155	15.80	15.60	2.3	2.3	56	8	36	.11	2	0.4	0.2	45	DEP
		28	1225	0.02	19	25.17	155	21.91	11.20	2.3	1.8	45	6	40	.11	5	0.3	0.3	32	KAO
		29	539	50.10	19	20.49	155	12.76	8.70	1.6	1.8	22	2	68	.08	4	0.5	0.6	17	SF2
		29	624	52.61	19	18.45	155	13.14	2.33	2.5	2.7	45	9	136	.11	8	0.3	0.8	31	SSF
		29	1323	48.88	19	28.51	155	36.13	2.26	2.7	1.9	21	1	88	.11	1	0.4	0.3	16	MLO
		29	2059	0.36	19	22.85	155	27.11	10.51	2.5	2.0	46	3	40	.13	1	0.3	0.4	43	KAO
		30	5	0 32.79	19	21.84	155	2.55	4.13	1.6	1.2	23	2	137	.21	4	0.8	2.0	12	SSF
		30	720	34.89	19	16.54	155	23.01	5.74	1.7	1.1	24	2	118	.11	4	0.5	1.2	23	SWR
		30	940	27.50	19	18.43	155	13.29	5.66	1.8	1.3	33	1	85	.11	3	0.5	1.1	29	SF2
		30	1021	15.12	19	58.21	155	5.45	35.58	3.8	3.9	58	10	229	.12	28	0.9	1.4	48	KEA F
		30	1230	35.46	19	19.19	155	13.48	8.03	2.3	2.4	47	4	70	.14	4	0.5	0.6	42	SF2
		30	2058	8.91	19	20.04	155	12.00	7.75	1.9	1.9	43	3	80	.14	5	0.4	0.6	36	SF3
		30	2247	11.48	19	18.22	155	23.96	8.37	1.9	1.6	37	2	85	.15	4	0.4	0.7	31	SWR
		31	1221	39.57	19	23.12	155	27.02	9.44	2.3	1.8	47	5	33	.13	2	0.3	0.5	35	KAO
		31	1852	42.45	19	21.57	155	4.76	7.85	2.9	2.8	52	7	83	.12	4	0.3	0.5	40	SF5 F
		31	2020	51.10	20	2.31	155	21.81	5.88	2.6	2.4	32	4	213	.14	17	1.2	0.7	24	KEA
	APR	1	222	25.03	19	27.29	155	29.54	10.11	3.2	2.9	55	8	35	.12	9	0.3	0.4	44	KAO
		1	348	38.54	19	28.26	155	36.32	1.04	2.5	2.0	19	1	92	.24	2	0.6	0.5	13	MLO
		1	1455	53.69	19	18.61	155	13.26	6.18	1.7	1.5	34	4	83	.13	3	0.5	0.9	21	SF2
		1	15	4 45.68	19	28.53	155	36.12	2.45	2.7	2.8	33	1	88	.09	1	0.4	0.3	26	MLO
		1	15	8 3.32	19	14.88	155	35.38	7.02	2.3	1.5	42	6	76	.19	3	0.5	0.9	26	LSW
		1	17	6 27.44	19	21.91	155	21.89	10.89	2.4	2.4	45	8	54	.11	4	0.3	0.4	31	SWR
		1	2112	18.12	19	21.56	155	4.88	7.20	1.7	1.5	35	4	84	.12	5	0.5	0.6	25	SF5
		1	2142	54.74	19	12.69	155	0.04	43.35	2.5	2.3	43	4	248	.11	23	1.1	1.4	32	DEP
		2	251	15.06	19	17.69	155	20.84	6.93	1.9	1.1	29	5	125	.09	4	0.4	0.8	21	SWR
		2	517	42.68	19	17.61	155	12.85	5.31	1.3	1.1	18	2	132	.07	2	0.5	1.1	14	SF2
		2	1819	8.58	19	25.69	154	55.90	6.18	2.0	1.4	27	2	162	.13	4	0.8	1.0	20	LER
		3	512	20.21	19	21.46	155	6.72	8.55	1.3	1.1	20	3	83	.08	4	0.5	0.8	14	SF4
		3	1043	40.14	19	7.73	155	24.69	32.68	2.4	2.3	48	5	180	.09	6	0.7	1.2	43	LOI
		3	1058	14.19	19	25.65	155	21.56	9.91	2.4	2.3	47	6	37	.12	4	0.4	0.5	41	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	APR	3	1427	44.06	19	19.29	155	15.49	6.03	1.9	2.0	30	0	100	.11	4	0.4	0.9	29	SF1
		4	4	3 41.45	19	26.39	155	37.05	1.84	2.4	1.9	18	0	87	.07	2	0.4	0.5	16	MLO
		4	9	8 47.70	19	20.06	155	16.69	6.74	2.0	1.5	44	7	88	.13	1	0.4	0.6	31	SF1
		4	1241	14.74	19	18.54	155	13.38	6.83	1.7	1.5	34	2	81	.12	3	0.5	0.8	24	SF2
		4	1423	49.03	19	39.90	155	3.53	0.32	2.5	2.7	28	1	200	.20	27	0.9	1.2	20	HIL B
		4	18	2 51.06	19	28.39	155	36.04	2.47	2.7	2.3	35	4	80	.13	2	0.4	0.2	29	MLO
		4	1845	17.02	19	19.79	155	8.02	8.99	2.7	2.5	50	7	90	.10	5	0.4	0.4	41	SF4
		5	355	58.12	19	18.32	155	13.39	6.89	2.1	2.2	35	1	84	.10	2	0.4	0.8	33	SF2
		5	530	7.68	19	21.76	155	29.23	9.33	2.1	1.7	34	1	55	.12	3	0.5	1.0	33	KAO
		5	710	23.39	19	45.02	155	57.72	8.36	2.9	2.5	25	4	265	.10	15	1.2	0.5	21	HUA
		5	1539	47.90	19	21.43	155	2.20	6.55	2.1	2.4	42	5	145	.15	3	0.4	0.6	38	SF5
		5	1943	59.54	19	26.72	155	28.78	8.74	1.7	1.2	33	5	57	.09	7	0.3	0.9	26	KAO
		5	21	7 29.62	19	16.38	155	28.89	8.79	2.0	1.5	47	6	58	.19	3	0.4	0.7	37	LSW
		5	2123	11.73	19	19.16	155	16.11	8.13	2.3	2.3	48	6	100	.12	3	0.3	0.5	41	SF1
		5	22	4 6.50	19	26.64	155	37.29	2.22	2.5	2.4	21	1	89	.12	2	0.4	0.5	20	MLO
		5	23	7 30.79	19	15.85	155	28.05	9.87	1.3	1.2	26	2	71	.13	4	0.5	0.8	23	LSW
		6	1346	26.58	19	20.63	155	2.98	7.08	1.7	1.7	23	4	119	.09	1	0.5	0.9	17	SF5
		6	1351	1.85	19	24.13	155	26.73	11.09	1.8	1.2	37	2	44	.12	3	0.4	0.7	34	KAO
		6	1526	12.31	19	30.17	156	15.94	36.23	3.0	2.9	40	2	264	.14	37	1.3	1.0	37	KON
		6	1755	25.59	19	28.24	155	38.32	0.94	2.2	1.3	11	3	248	.12	4	0.5	1.0	10	MLO
		6	1839	50.52	19	24.63	155	29.17	9.36	1.8	1.2	31	3	63	.11	5	0.4	0.8	26	KAO
		6	1843	29.04	19	18.71	155	13.75	10.04	3.4	3.6	53	7	91	.12	3	0.5	0.4	47	SF2 F
		6	2218	41.53	19	24.33	154	57.96	6.52	1.6	1.2	21	1	180	.11	2	0.8	1.0	19	LER
		7	852	45.48	19	22.55	155	20.72	10.47	1.7	1.5	44	4	45	.09	3	0.3	0.5	40	KAO
		7	1240	20.84	19	22.73	155	28.15	2.37	1.9	1.9	32	3	37	.11	1	0.3	0.2	25	KAO
		7	18	8 32.69	19	28.92	155	38.35	2.69	2.0	1.5	26	2	133	.13	4	0.6	0.7	23	MLO
		7	1949	39.20	19	24.07	155	29.74	13.17	2.2	1.4	38	3	41	.09	5	0.4	0.4	34	DML
		8	023	20.39	19	12.55	155	30.42	10.10	2.4	2.2	40	4	73	.12	5	0.4	0.6	37	LSW
		8	056	32.52	19	12.42	155	30.57	9.70	2.9		50	8	76	.13	5	0.4	0.6	42	LSW F
		8	057	32.20	19	12.70	155	30.15	9.07	2.7	3.0	47	9	75	.12	4	0.3	0.6	39	LSW F
		8	116	43.32	19	12.50	155	30.45	9.52	2.0	1.4	36	4	74	.14	5	0.5	0.8	32	LSW
		8	132	54.27	19	12.59	155	30.50	9.97	1.8	1.2	33	2	74	.14	5	0.6	0.9	31	LSW
		8	836	18.81	19	21.44	155	2.12	6.91	1.9	1.3	29	5	156	.13	3	0.5	0.7	26	SF5
		8	17	3 24.28	19	27.52	155	29.91	11.15	2.2	1.6	42	5	51	.11	7	0.4	0.7	34	KAO
		8	1728	1.83	19	23.23	155	30.69	10.07	2.2	2.0	39	1	39	.08	6	0.3	0.7	34	KAO
		8	2236	30.33	19	11.45	155	26.95	7.47	2.4	2.3	38	1	134	.15	4	0.5	0.9	36	LSW
		9	7	5 39.16	19	28.10	155	36.34	1.92	3.7	3.9	48	3	78	.14	2	0.3	0.3	46	MLO
		9	1313	39.85	19	18.62	155	13.55	10.49	3.9	4.1	56	10	73	.11	3	0.4	0.3	46	SF2 F
		9	1443	15.28	19	19.11	155	13.43	8.20	1.8	1.8	42	5	73	.09	4	0.4	0.6	36	SF2
		9	23	1 34.48	19	28.61	155	35.72	2.50	2.0	1.7	21	4	140	.12	1	0.6	0.2	18	MLO
		10	1136	49.30	19	28.34	155	24.70	3.96	2.2	1.6	29	4	42	.12	4	0.3	1.0	24	KAO
		10	1137	2.66	19	10.60	156	47.69	28.41	3.4	2.6	36	2	305	.13	98	1.8	3.5	34	DIS
		10	2318	34.50	19	23.33	155	26.60	10.14	1.9	1.3	37	2	31	.09	2	0.4	0.7	33	KAO
		11	259	44.17	19	18.90	155	15.95	7.62	1.3	1.1	31	3	112	.10	3	0.4	0.6	28	SF1
		11	714	9.37	19	24.53	155	21.71	11.48	2.4	2.2	44	4	44	.11	4	0.3	0.4	39	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	APR	11	1724	44.90	19	27.55	155	24.08	9.48	2.0	1.4	38	6	67	.11	4	0.4	0.7	32	KAO
		11	2022	10.51	19	19.37	155	11.00	6.96	2.0	1.9	43	8	101	.11	5	0.4	0.6	31	SF3
		11	2323	11.10	19	25.41	155	21.15	9.01	1.4	1.1	34	6	40	.12	4	0.4	0.7	23	KAO
		11	2347	35.43	20	14.61	156	26.66	0.38	2.8	2.6	39	1	228	.17	62	1.9	0.9	32	DIS
		12	235	48.56	19	19.99	155	12.95	6.40	1.3	1.1	24	2	71	.10	5	0.5	1.1	20	SF2
		12	1013	56.01	19	22.64	155	20.78	11.11	2.4	2.4	53	9	45	.11	3	0.3	0.3	39	KAO
		12	1730	37.98	19	23.04	155	26.49	9.53	1.8	1.3	36	1	40	.11	2	0.4	0.6	33	KAO
		12	1753	40.66	19	21.21	155	22.69	9.59	1.9	1.5	30	6	61	.11	2	0.5	0.7	21	SWR
		12	1850	8.37	19	18.12	155	12.89	5.00	1.8	1.9	39	3	108	.11	2	0.4	1.1	32	SSF
		12	1935	38.22	19	21.58	154	59.58	0.72	1.8	1.6	28	2	189	.27	7	0.9	1.4	15	SLE
		13	316	39.24	19	23.19	155	1.05	8.08	1.8	1.5	35	2	144	.17	5	0.8	0.6	27	SF5
		13	2350	46.72	19	19.13	155	11.31	8.24	1.9	2.2	40	6	106	.11	5	0.4	0.7	34	SF3
		14	142	0.58	19	24.42	155	16.25	14.79	2.3	2.2	52	8	35	.13	1	0.5	0.2	41	DEP
		14	714	57.30	19	30.85	155	43.57	8.64	2.1	1.2	31	4	104	.13	4	0.5	1.0	27	KON
		14	716	11.78	19	19.89	155	11.30	8.04	1.4	1.1	27	1	88	.06	5	0.5	0.8	23	SF3
		14	1555	51.91	19	23.23	155	30.35	9.31	1.5	1.2	16	0	58	.06	5	0.4	1.3	15	KAO
		15	15	1 55.40	19	21.24	155	0.25	7.22	2.6	2.2	35	4	206	.15	5	0.9	0.6	28	SF5
		15	1630	29.39	19	21.43	155	23.26	8.36	1.8	1.3	27	5	78	.10	2	0.5	0.9	20	SWR
		15	2341	56.92	19	23.68	155	30.30	9.88	1.9	1.2	29	3	79	.07	5	0.4	0.7	25	KAO
		16	039	57.85	19	26.79	155	22.03	10.47	2.2	1.5	35	6	65	.11	3	0.4	0.6	25	KAO
		16	2159	59.79	19	16.80	155	22.94	4.52	2.0	2.2	39	4	115	.15	5	0.4	2.0	34	SWR
		17	511	30.97	19	18.87	155	11.16	5.98	1.4	1.1	23	2	114	.10	5	0.5	1.3	15	SF3
		17	1233	49.93	19	15.74	155	24.45	35.33	2.3	1.7	43	7	79	.10	3	0.7	1.1	31	DEP
		17	1413	32.57	19	20.13	155	11.53	9.18	1.4	1.5	25	2	82	.07	5	0.4	0.8	18	SF3
		17	1523	51.35	19	19.82	155	11.74	7.31	2.0	2.2	46	7	87	.13	5	0.4	0.6	35	SF3
		17	2022	49.09	19	24.99	155	28.32	8.30	1.9	1.7	42	7	34	.09	5	0.3	0.8	33	KAO
		18	053	48.65	19	20.40	155	3.83	6.56	1.7	1.5	32	2	114	.14	2	0.6	0.9	25	SF5
		18	058	59.11	19	21.63	155	4.84	8.38	2.4	2.3	43	6	82	.09	5	0.4	0.4	33	SF5
		18	354	29.03	19	17.53	155	12.95	6.61	1.4	1.5	26	3	132	.09	1	0.5	0.9	21	SF2
		18	640	13.00	19	17.88	155	12.95	6.88	3.0	3.0	44	5	114	.12	2	0.4	0.8	39	SF2
		18	757	10.12	19	17.59	155	13.04	7.75	1.5	1.3	29	5	125	.11	1	0.6	0.9	23	SF2
		18	936	11.93	19	19.78	155	23.27	8.77	1.9	1.8	27	4	76	.12	1	0.5	0.9	23	SWR
		18	957	15.65	19	18.01	155	12.70	9.68	2.6	2.8	46	6	142	.13	8	0.5	0.6	37	SF2
		18	1053	49.94	19	20.09	155	11.45	8.52	1.8	2.1	42	4	83	.11	5	0.4	0.5	32	SF3
		18	1329	39.76	19	59.64	155	30.80	10.97	2.5	2.2	35	3	184	.13	21	0.9	0.5	21	KEA
		18	17	0 11.74	19	25.98	155	29.27	8.97	2.0	1.2	40	6	39	.11	7	0.3	0.8	26	KAO
		18	2147	9.18	19	17.48	155	13.01	7.07	2.0	1.9	41	6	133	.12	1	0.5	0.8	32	SF2
		18	2234	55.59	19	22.69	155	4.13	6.96	2.0	2.1	40	5	98	.18	4	0.6	0.9	31	SF5
		18	2246	6.44	19	18.69	155	12.06	4.42	1.4	1.1	26	3	110	.11	4	0.4	1.9	20	SSF
		19	030	28.95	19	26.06	155	30.29	8.26	1.9	1.1	33	4	38	.10	8	0.4	1.0	25	KAO
		19	1355	56.56	19	25.62	154	55.10	8.45	2.0	1.7	34	3	189	.11	3	1.0	0.5	25	LER
		19	1753	30.60	19	26.83	155	25.12	9.55	2.2	1.4	22	1	49	.11	3	0.4	0.9	21	KAO
		19	1832	53.43	19	23.98	155	32.20	8.04		1.3	10	0	67	.09	2	0.5	1.4	10	MLO
		19	1835	28.44	19	39.55	156	0.04	5.30		1.5	18	2	221	.23	17	1.5	2.4	14	HUA
		19	2012	11.74	19	20.34	155	12.84	6.34		1.3	22	0	69	.11	4	0.5	0.9	19	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	APR	19	21 1	57.15	19	29.89	155	26.92	5.25	1.5	1.1	15	0	92	.08	4	0.4	1.7	14	KAO
		20	848	45.84	19	18.63	155	27.69	9.09		1.3	20	0	67	.11	7	0.5	1.3	20	LSW
		20	1717	8.29	19	20.09	155	13.13	6.20		1.1	32	4	67	.13	5	0.5	1.0	27	SF2
		20	2359	39.04	18	57.74	155	32.25	41.68	2.6	1.7	35	4	231	.09	14	1.3	1.4	30	DLS
		21	442	2.65	19	18.79	155	11.99	5.27		1.5	30	3	109	.14	4	0.5	1.5	23	SF3
		21	942	47.39	19	19.38	155	11.65	6.03	1.7	1.1	31	4	97	.09	5	0.4	1.1	19	SF3
		21	1723	24.15	18	49.48	154	54.68	46.41	2.6	2.2	43	1	278	.11	57	2.5	2.9	41	DIS
		21	2115	38.55	19	18.08	155	21.58	6.68	1.2	1.3	32	2	115	.17	5	0.4	0.9	24	SWR
		21	2143	33.23	19	21.66	154	59.89	7.27	1.8	1.5	35	4	193	.20	6	0.9	0.8	22	LER
		21	22 4	33.04	19	22.99	155	26.72	9.61	1.6	1.3	32	2	40	.11	2	0.4	0.7	27	KAO
		21	2240	47.70	19	27.97	155	29.59	11.05	2.2	1.6	42	5	48	.15	8	0.4	0.8	34	KAO
		22	223	29.03	19	18.32	155	13.46	10.56	3.7	3.8	50	6	133	.09	8	0.5	0.4	42	SF2 F
		22	226	53.40	19	18.62	155	13.40	8.06	2.3		45	3	79	.12	3	0.5	0.5	39	SF2 F
		22	227	3.59	19	18.44	155	13.37	8.41	3.8	3.9	53	8	83	.12	3	0.4	0.4	45	SF2 F
		22	240	11.83	19	18.25	155	13.72	8.10	2.0	2.4	39	3	94	.11	2	0.5	0.6	35	SF2
		22	3 9	16.62	19	18.79	155	13.44	4.96	1.3	1.1	27	2	76	.11	3	0.4	1.5	20	SSF
		22	421	31.78	19	17.93	155	13.24	5.34	1.4	1.1	28	3	98	.09	2	0.4	1.0	22	SF2
		22	9 0	37.57	19	17.77	155	13.16	6.01	1.6	1.4	33	3	108	.10	1	0.5	0.9	22	SF2
		22	1331	4.57	19	15.95	155	23.02	6.45	1.5	1.5	32	2	127	.12	3	0.4	1.2	25	SWR
		22	1457	53.82	19	29.66	155	26.75	6.18		1.0	17	4	105	.12	5	0.4	1.5	8	KAO
		22	1626	25.67	19	19.19	155	12.27	6.10	1.9	1.8	37	6	94	.10	5	0.4	0.8	26	SF3
		22	1710	35.09	19	18.90	155	15.06	5.55	1.2	1.1	29	3	102	.11	4	0.5	1.3	22	SF1
		22	1856	12.36	19	22.61	155	29.10	8.32	1.6	1.1	35	3	37	.12	3	0.4	0.7	26	KAO
		22	20 1	42.30	19	16.74	155	26.00	9.60	1.1	1.2	22	2	106	.12	6	0.5	0.7	16	LSW
		22	2359	12.51	19	17.36	155	23.40	9.06	1.2	1.1	26	2	100	.11	5	0.5	1.0	21	SWR
		23	241	52.03	19	28.36	155	37.37	11.97	2.1	1.2	25	2	103	.13	3	0.6	0.7	17	MLO
		23	3 4	33.15	19	18.93	155	48.08	4.76	1.9	1.0	25	5	132	.15	9	0.8	6.9	15	KON
		23	946	14.87	19	22.71	155	20.78	8.85	1.7	1.1	36	7	45	.10	3	0.3	0.6	25	KAO
		23	1750	6.29	19	23.16	155	20.67	8.18	1.2	1.1	27	4	61	.10	2	0.4	0.7	21	KAO
		24	454	0.15	19	21.13	155	6.89	5.92	1.2	1.1	30	3	88	.13	4	0.6	1.0	20	SF4
		24	857	48.86	19	24.91	155	19.53	6.48	1.8	1.4	22	1	97	.08	2	0.5	1.0	21	KAO
		24	1212	27.41	19	19.74	155	13.77	6.41	1.4	1.5	42	6	68	.13	5	0.4	0.7	33	SF2
		24	2049	30.93	19	16.88	155	22.58	4.39	2.2	2.6	48	5	121	.17	5	0.4	1.7	41	SWR F
		25	1011	49.83	19	20.23	155	12.68	8.29	1.4	1.3	37	5	71	.10	5	0.4	0.6	30	SF2
		25	1019	16.87	19	26.01	155	21.61	8.85	1.8	1.5	34	5	71	.12	3	0.4	0.7	24	KAO
		25	1355	30.38	19	26.42	155	20.16	6.89	2.1	1.8	36	4	69	.11	2	0.4	0.8	27	KAO
		25	1640	21.81	19	19.31	155	12.98	5.30	1.3	1.3	33	5	80	.15	4	0.5	1.8	25	SF2
		25	1644	48.70	19	48.09	155	2.17	41.12	2.1	1.2	32	5	212	.12	11	1.0	2.1	24	KEA
		25	22 3	56.38	19	18.02	155	22.24	8.56	2.0	2.2	48	8	109	.15	4	0.4	0.5	34	SWR
		26	4 6	54.25	19	28.51	155	26.63	8.85	2.6	2.2	52	8	55	.13	6	0.3	0.6	42	KAO
		26	447	28.54	19	19.07	155	15.16	9.07	2.1	2.1	46	4	91	.12	4	0.4	0.5	39	SF1
		26	710	31.84	19	21.40	155	2.04	7.16	2.3	2.6	39	5	159	.14	3	0.5	0.5	25	SF5
		26	1319	45.83	19	22.29	155	21.50	9.33	1.7	1.1	40	4	50	.13	4	0.4	0.6	27	KAO
		26	2044	29.93	19	17.56	155	21.06	4.78	1.4	1.3	36	4	125	.13	4	0.4	1.5	29	SWR
		26	2048	56.64	19	25.33	155	18.79	4.73	1.6	1.4	28	4	124	.10	2	0.4	0.7	23	SNC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	APR	27	333	17.97	19	20.21	155	12.69	6.90	1.3	1.1	33	3	71	.13	5	0.5	0.9	26	SF2
		27	4 7	19.97	19	15.88	155	30.19	7.65	2.2	2.2	41	6	56	.19	1	0.4	0.8	24	LSW
		27	422	30.98	19	23.28	155	20.67	11.24	2.4	2.6	45	8	43	.10	2	0.3	0.4	31	KAO
		27	7 4	53.98	19	21.84	155	5.87	7.69	1.9	1.1	20	3	80	.12	4	0.5	0.8	14	SF4
		27	1052	13.27	19	21.22	155	23.81	9.97	1.8	1.3	37	4	43	.12	2	0.4	0.6	30	SWR
		27	1210	25.62	19	17.58	155	34.35	3.46	2.3	1.6	44	3	54	.19	7	0.4	2.2	33	LSW
		27	2058	26.97	19	20.26	155	9.74	6.76	1.5	1.1	30	4	79	.12	3	0.6	1.1	25	SF3
		27	2344	18.16	19	22.54	155	1.13	4.10	1.8	1.3	30	2	161	.18	6	0.8	2.5	25	SSF
		27	2348	49.48	19	19.18	155	28.38	9.68	3.2	3.4	50	7	41	.12	6	0.3	0.5	41	KAO
		28	559	2.72	19	23.79	155	20.94	11.55	1.5	1.2	20	5	64	.06	2	0.5	1.0	13	KAO
		28	1846	49.76	19	24.78	155	21.98	10.26	1.6	1.3	42	6	37	.12	4	0.4	0.5	34	KAO
		28	2045	34.42	19	10.40	155	40.60	9.05	3.5	3.4	46	3	168	.21	10	0.9	0.7	38	LSW F
		29	447	12.59	19	21.23	155	4.75	8.17	2.1	2.2	37	4	92	.11	4	0.4	0.4	30	SF5
		29	526	34.76	19	20.30	155	9.52	6.56	1.5	1.1	28	4	76	.09	3	0.5	1.0	19	SF3
		29	711	19.87	19	20.86	155	2.60	7.01	1.9	1.5	30	4	149	.13	2	0.5	0.8	17	SF5
		29	1422	26.69	19	22.57	155	17.21	29.45	2.1	1.6	37	7	38	.10	2	0.6	0.9	25	DEP
		29	23 4	27.45	19	25.13	155	18.99	6.48	2.0	1.6	31	6	45	.10	3	0.4	0.7	22	INT
		30	329	43.90	19	18.31	155	15.51	4.26	2.0	1.8	38	2	121	.16	4	0.5	1.1	26	SSF
		30	4 1	54.95	19	20.31	155	12.48	6.91	1.6	1.6	33	3	72	.13	4	0.4	0.7	27	SF2
		30	547	26.97	19	21.03	155	29.40	5.02	2.0	1.8	33	3	51	.12	4	0.3	1.2	28	KAO
		30	619	16.25	19	21.72	155	22.03	10.01	2.2	2.2	44	6	56	.12	4	0.4	0.5	32	SWR
		30	1349	34.24	19	43.42	154	52.79	40.40	3.5	3.0	48	5	234	.12	22	0.9	1.4	42	HIL
		30	1537	31.08	19	19.81	155	7.43	6.45	1.9	1.6	32	2	104	.10	5	0.5	0.9	27	SF4
		30	17 9	52.61	19	18.57	155	12.59	6.20	1.4	1.1	26	2	104	.10	3	0.5	1.1	16	SF2
		30	2132	39.92	19	20.22	155	10.76	6.88	2.0	1.9	44	4	82	.14	4	0.5	0.8	36	SF3
	MAY	1	041	45.24	19	19.97	155	12.25	6.96	1.3	1.1	31	3	80	.10	5	0.5	0.9	22	SF3
		1	127	34.60	19	21.07	155	12.86	7.53	1.5	1.5	31	2	60	.13	3	0.5	0.7	26	SF2
		1	234	34.78	19	20.41	155	13.44	6.93	1.3	1.1	26	3	63	.10	4	0.5	0.9	17	SF2
		1	355	23.08	19	12.67	155	34.14	13.22	4.0	4.1	45	6	123	.15	7	0.5	0.5	39	DLS F
		1	4 1	57.52	19	12.89	155	32.73	7.19	2.1	1.7	29	2	218	.12	6	0.8	1.0	20	LSW
		1	1416	48.20	19	11.81	155	37.52	8.56	2.4	1.7	29	1	209	.18	6	1.0	1.2	21	LSW
		1	2028	32.83	19	19.96	155	11.30	8.89	1.4	1.3	32	4	86	.09	5	0.5	0.8	24	SF3
		2	0 5	33.63	19	18.40	155	14.98	6.81	1.8	1.6	37	4	112	.10	4	0.4	0.7	29	SF1
		2	133	47.88	19	19.14	155	11.10	5.12	1.4	1.1	33	3	107	.10	6	0.4	1.5	24	SF3
		2	251	9.61	19	23.17	155	27.36	10.51	1.7	1.2	28	3	61	.09	1	0.4	0.9	23	KAO
		2	6 6	43.78	19	19.45	155	29.11	9.01	2.0	1.5	34	2	46	.13	6	0.4	0.9	20	KAO
		2	945	2.86	19	19.88	155	8.12	7.25	1.5	1.1	31	3	87	.11	5	0.5	0.8	26	SF4
		2	1059	47.48	19	17.65	155	20.75	7.59	2.0	2.3	40	5	125	.11	4	0.4	0.7	29	SWR
		2	1228	13.03	19	19.88	155	11.65	7.91	1.4	1.4	28	2	86	.09	5	0.5	0.8	24	SF3
		3	1 3	20.88	19	22.65	155	26.50	10.02	2.3	2.2	39	3	36	.13	2	0.4	0.8	29	KAO
		3	151	37.02	19	25.06	155	16.81	3.24	1.5	2.4	10	0	151	.13	0	0.8	0.4	8	SNC L
		3	219	31.39	19	25.37	155	15.47	32.37	1.8	2.0	16	5	171	.07	2	1.6	1.1	6	DEP L
		3	650	2.28	19	25.70	155	15.51	8.31	2.0	2.2	11	0	184	.07	3	0.8	1.3	9	INT L
		3	1047	19.62	19	25.34	155	21.11	8.83	1.9	1.5	42	6	37	.11	4	0.4	0.5	35	KAO
		3	2010	38.15	19	26.09	155	19.63	7.47	1.5	1.1	23	5	142	.09	3	0.5	0.8	17	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	MAY	3	2016	53.97	19	27.80	155	25.89	9.81	1.9	1.2	37	4	47	.12	5	0.4	0.7	24	KAO
		3	23 0	29.14	19	18.52	155	13.07	5.93	1.4	1.2	34	2	92	.11	3	0.4	1.0	28	SF2
		4	039	55.39	19	18.64	155	13.20	8.13	2.3	2.7	43	3	85	.13	3	0.4	0.6	36	SF2
		4	442	2.87	19	26.56	155	17.36	3.36	1.1	2.4	8	0	158	.14	3	0.9	1.1	7	SNC L
		4	5 3	31.92	19	20.48	155	12.55	8.18	1.3	1.2	30	2	69	.11	4	0.5	0.7	24	SF2
		4	822	47.41	19	18.95	155	15.45	7.93		1.9	42	3	106	.13	4	0.5	0.6	33	SF1
		4	15 6	58.77	19	27.04	155	19.91	8.78	2.1	1.7	30	5	66	.11	2	0.5	0.8	22	KAO
		4	1917	54.44	19	21.94	155	27.58	8.83	2.0	1.7	41	3	41	.13	1	0.3	0.6	33	KAO
		4	1935	15.63	19	25.74	155	21.82	8.73	1.6	1.3	35	5	45	.13	4	0.4	0.8	29	KAO
		4	2213	28.36	19	25.37	155	21.14	9.13	1.9	1.7	44	7	36	.12	4	0.3	0.5	32	KAO
		5	642	10.47	19	20.49	155	12.87	7.49	1.5	1.3	31	2	66	.11	4	0.5	0.8	20	SF2
		5	742	45.02	19	19.72	155	8.21	7.02	1.5	1.5	31	2	87	.11	4	0.5	0.9	26	SF4
		5	1526	24.82	19	19.74	155	12.24	6.81	1.3	1.3	27	1	84	.10	5	0.5	1.0	20	SF3
		5	2122	33.43	19	21.37	155	23.24	10.75	2.1	1.9	44	5	55	.11	2	0.3	0.4	29	SWR
		6	253	26.94	19	34.12	155	4.35	24.53	2.3	1.8	45	6	107	.11	7	0.5	1.4	38	HIL
		6	11 8	19.93	19	34.08	156	10.61	41.63	2.8	2.2	44	3	253	.11	29	1.3	1.0	40	KON
		6	20 6	33.88	19	23.28	155	27.07	9.62	1.5	1.1	32	3	38	.11	2	0.4	0.5	17	KAO
		6	2116	15.32	19	20.26	155	9.52	8.04	1.5	1.5	34	4	77	.08	3	0.4	0.6	27	SF3
		6	2212	39.31	19	29.42	155	36.67	12.44	2.2	2.8	16	1	127	.15	1	0.8	1.8	13	MLO L
		6	2319	56.84	19	25.20	155	19.48	4.49	1.3	1.1	24	5	108	.12	3	0.4	0.9	18	KAO
		6	2329	7.57	19	26.78	154	51.96	7.26	2.3	2.5	40	4	215	.13	6	1.1	0.6	33	LER
		7	1845	2.59	19	20.55	155	12.64	7.65	1.5	1.6	37	5	68	.12	4	0.5	0.7	29	SF2
		7	23 2	59.47	19	22.49	155	29.92	9.32	1.6	1.2	35	4	47	.11	4	0.4	0.7	22	KAO
		8	036	34.26	19	21.80	155	23.90	9.37	1.9	1.8	42	6	32	.13	3	0.4	0.6	31	SWR
		8	1121	9.49	19	26.28	155	29.98	6.90	1.8	1.3	32	3	63	.11	8	0.4	1.4	28	KAO
		8	1335	11.46	19	17.96	155	24.17	8.91	1.6	1.3	30	3	82	.13	4	0.4	0.7	21	SWR
		8	1426	57.11	19	30.59	155	24.14	3.26	1.6	1.5	24	6	161	.15	2	0.7	0.5	17	MLO
		8	1429	11.46	19	11.88	155	37.90	8.12	2.4	2.4	41	6	98	.24	6	0.6	1.0	35	LSW
		8	1533	23.85	19	21.01	155	21.51	9.27	1.9	2.1	39	6	62	.10	3	0.3	0.6	22	SWR
		8	1730	39.42	19	16.97	155	15.88	7.88	1.7	1.3	33	1	149	.11	4	0.6	0.8	24	SF1
		8	1917	34.34	19	49.38	155	55.05	39.90	3.1	2.8	54	7	202	.12	17	0.7	1.2	41	HUA
		8	2158	7.78	19	19.07	155	13.85	7.21	1.5	1.5	40	4	75	.11	4	0.4	0.7	29	SF2
		9	350	25.40	19	26.88	155	27.47	6.59	1.5	1.1	32	4	64	.10	5	0.4	1.2	24	KAO
		9	633	10.13	19	21.00	155	29.61	4.74	2.4	2.4	36	3	45	.11	4	0.3	1.7	28	KAO
		9	1414	18.43	19	20.90	155	21.78	9.20	1.8	1.1	31	5	100	.11	3	0.4	0.7	20	SWR
		9	1525	57.95	19	22.23	155	4.81	6.83	1.9	1.8	43	6	79	.16	4	0.5	0.7	32	SF5
		9	1545	10.92	19	22.28	155	29.15	10.22	3.0	3.3	57	11	35	.11	3	0.3	0.4	43	KAO
		9	1638	36.42	19	20.73	155	10.86	8.72	2.0	2.5	46	5	74	.12	3	0.4	0.5	35	SF3
		9	2313	24.72	19	22.86	155	29.61	8.11	1.9	1.3	34	4	43	.11	4	0.4	0.9	28	KAO
		9	2331	25.41	19	20.01	155	12.75	6.36	1.7	1.8	35	4	73	.12	5	0.4	0.9	27	SF2
		10	2 0	31.43	19	25.25	155	19.20	7.05	1.9	2.1	39	6	86	.10	3	0.3	0.6	30	KAO
		10	737	44.35	19	9.74	155	36.34	7.38	2.8	2.7	42	5	139	.20	10	0.5	1.0	29	LSW
		10	926	58.75	19	59.20	155	53.90	22.35	3.0	3.0	18	4	221	.13	20	1.4	3.2	11	KOH
		10	1150	46.12	19	20.25	155	12.06	7.75	2.0	1.9	44	8	77	.10	5	0.4	0.5	32	SF3
		10	1459	44.03	19	20.03	155	10.72	8.01	2.1	2.6	43	6	86	.12	4	0.4	0.6	30	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	MAY	10	1850	16.63	19	22.24	155	28.78	9.68	2.6	2.6	50	7	37	.11	2	0.3	0.5	38	KAO
		11	0 6	19.06	19	12.46	155	25.65	8.65	1.8	1.1	31	1	148	.12	5	0.5	0.7	20	LSW
		11	041	45.67	19	23.77	155	26.88	9.38	1.7	1.1	43	6	36	.11	3	0.3	0.6	29	KAO
		11	536	18.73	19	19.77	155	11.50	6.95	1.4	1.2	35	5	90	.11	5	0.5	1.0	28	SF3
		11	617	9.03	19	20.96	155	29.68	5.51	1.8	1.3	30	3	45	.11	5	0.3	1.2	25	KAO
		11	811	38.56	19	21.12	155	23.63	10.70	2.3	2.4	47	7	36	.11	2	0.4	0.4	35	SWR
		11	1835	32.81	19	19.45	155	10.92	5.99	1.6	1.3	36	5	99	.14	5	0.5	0.9	28	SF3
		11	19 0	26.84	19	18.25	155	13.13	5.09	1.4	1.3	28	3	95	.10	2	0.5	1.3	21	SF2
		11	2147	36.87	19	19.86	155	7.94	6.96	2.6	3.0	46	5	92	.12	5	0.4	0.6	40	SF4
		12	758	36.08	19	21.58	155	2.26	5.96	2.2	2.2	45	8	149	.16	3	0.5	0.9	22	SF5
		12	1624	57.81	19	20.37	155	13.08	7.36	1.7	1.6	36	2	66	.13	4	0.5	0.8	28	SF2
		13	1 5	15.88	19	23.32	155	20.59	10.28	1.6	1.1	38	4	53	.09	2	0.4	0.6	27	KAO
		13	449	33.98	19	20.97	155	12.85	8.75	1.8	2.1	40	4	61	.12	3	0.4	0.5	29	SF2
		14	117	29.62	19	25.43	155	20.72	9.73	2.2	2.2	48	7	46	.11	4	0.3	0.5	37	KAO
		14	149	57.86	19	10.65	155	28.69	8.09	2.4	2.5	42	7	139	.15	3	0.5	0.7	30	LSW F
		14	349	18.56	19	25.23	155	20.91	9.40	2.5	2.6	46	5	41	.13	4	0.4	0.5	39	KAO
		14	1456	10.45	19	40.54	155	3.04	1.73	2.3	2.9	26	0	187	.18	19	1.1	25.2	18	HIL B*
		14	1540	25.17	19	22.92	155	2.19	7.67	1.9	2.1	33	5	138	.17	5	0.7	0.5	20	SF5
		14	19 3	8.34	19	21.52	155	5.93	8.39	1.6	1.1	21	3	86	.08	4	0.4	0.8	14	SF4
		14	23 4	36.64	19	25.03	155	15.75	14.93	1.8	1.9	42	5	74	.10	2	0.5	0.3	34	DEP
		15	154	26.46	19	20.34	155	12.95	6.63	1.3	1.5	31	2	67	.11	4	0.5	0.9	21	SF2
		15	535	57.05	19	16.46	155	26.20	9.44	1.7	1.7	25	2	58	.13	6	0.4	0.8	18	LSW
		15	946	20.71	19	20.05	155	12.91	6.96	1.3	1.1	26	1	71	.12	5	0.6	1.1	20	SF2
		15	1031	18.58	19	18.82	155	13.55	7.40	2.1	2.0	43	3	72	.13	3	0.5	0.7	37	SF2
		15	1740	11.41	19	19.65	155	8.15	8.25	1.6	1.3	30	3	89	.10	4	0.5	0.8	18	SF4
		15	18 5	34.20	19	23.11	155	3.46	8.85	1.6	1.4	25	5	106	.12	3	0.7	0.4	17	SF5
		15	2110	42.06	19	22.61	155	21.03	10.93	1.8	1.7	40	4	46	.13	6	0.4	0.5	29	KAO
		16	1748	9.34	19	20.01	155	11.82	7.29	1.7	1.6	35	4	82	.10	5	0.4	0.7	27	SF3
		16	2118	53.69	19	25.86	155	22.06	9.61	2.1	2.0	40	7	34	.13	4	0.4	0.8	31	KAO
		17	111	19.11	19	29.75	155	27.72	4.62	2.0	1.9	19	5	88	.11	4	0.3	1.6	14	KAO
		17	241	10.52	19	21.46	155	2.75	7.07	2.9	3.1	49	6	134	.12	3	0.4	0.5	42	SF5
		17	334	18.71	19	31.21	155	41.65	3.63	2.3	1.4	33	4	61	.17	8	0.5	3.0	27	MLO
		17	511	23.49	19	17.05	155	12.82	7.84	2.1	2.1	37	5	157	.13	1	0.5	0.8	27	SF2
		17	520	56.84	19	25.11	155	15.87	15.23	1.6	1.4	39	5	73	.09	2	0.5	0.3	31	DEP
		17	553	3.33	19	17.72	155	20.89	8.46	1.8	1.7	31	4	127	.13	4	0.4	0.9	20	SWR
		17	625	26.25	19	16.28	155	23.10	6.81	2.4	2.8	42	4	120	.14	4	0.4	0.9	37	SWR
		17	628	38.09	19	16.44	155	23.23	6.82	1.9	2.2	40	3	114	.16	4	0.5	1.0	33	SWR
		17	633	56.17	19	15.71	155	23.19	8.26	1.6	1.1	29	2	127	.16	3	0.5	1.3	19	SWR
		17	745	30.89	19	30.35	155	33.91	14.03	3.1	2.5	41	4	64	.12	4	0.4	0.3	33	DML
		17	957	15.00	19	20.14	155	10.69	7.08	2.1	2.3	46	8	84	.13	4	0.4	0.7	35	SF3
		17	1140	44.27	19	21.11	155	29.36	5.55	1.6	1.3	23	1	57	.10	4	0.4	1.2	19	KAO
		17	2048	58.35	19	24.36	155	25.23	7.30		1.1	24	2	47	.12	2	0.4	1.1	21	KAO
		17	2241	36.52	19	19.25	155	15.37	7.29	1.6	1.6	33	3	99	.11	4	0.4	0.6	22	SF1
		18	9 1	18.81	19	18.59	155	13.41	4.04	1.3	1.1	27	2	79	.12	3	0.4	1.2	21	SSF
		18	1718	5.09	19	24.98	155	17.01	8.60	1.5	1.1	29	5	112	.09	0	0.4	0.5	18	INT

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	MAY	18	1921	22.94	19	24.01	155	26.74	9.40	1.8	1.5	39	4	35	.12	3	0.4	0.6	28	KAO
		18	21 4	43.10	19	17.49	155	25.75	9.51	2.3	2.7	51	6	60	.19	7	0.5	0.6	40	LSW
		19	5 2	9.01	19	25.34	155	20.67	7.91	1.3	1.1	26	4	92	.10	4	0.4	0.9	20	KAO
		19	7 9	34.73	19	19.83	155	7.29	5.88	1.5	1.3	33	3	107	.11	5	0.5	1.3	26	SF4
		19	825	11.35	19	19.96	155	10.33	7.24	1.4	1.3	33	4	87	.10	4	0.5	0.9	24	SF3
		19	1038	17.55	19	21.59	155	1.05	7.61	2.2	2.4	37	5	178	.12	5	0.6	0.5	25	SF5
		19	1418	1.67	19	19.34	155	11.37	8.85	3.0	3.4	49	4	100	.10	6	0.3	0.4	42	SF3
		19	1841	2.66	19	20.55	155	13.00	9.47	3.3	3.7	51	6	65	.12	4	0.3	0.4	45	SF2
		19	1948	15.35	19	25.53	155	29.59	10.07	2.4	2.2	47	7	36	.11	7	0.3	0.6	34	KAO
		19	2258	33.20	19	20.56	155	22.16	10.98	1.8	1.8	32	4	69	.11	2	0.4	0.6	19	SWR
		20	254	19.96	19	20.05	155	12.66	7.25	1.3	1.1	29	2	74	.09	5	0.5	0.9	22	SF2
		20	3 1	41.53	19	28.99	155	24.96	4.24	1.7	1.3	26	4	70	.15	3	0.4	1.2	21	KAO
		20	328	47.61	19	19.28	155	15.22	7.14	1.6	1.5	33	2	97	.11	4	0.4	0.7	26	SF1
		20	330	49.10	19	19.85	155	11.69	6.77	1.9	1.9	49	9	86	.13	5	0.4	0.6	37	SF3
		20	533	19.45	19	19.68	155	11.25	9.19	2.9	3.4	51	6	93	.12	5	0.3	0.4	39	SF3
		20	1225	10.89	19	48.90	155	36.02	13.89	2.6	2.5	31	4	123	.12	8	0.7	0.5	20	KEA
		20	1644	17.88	19	24.35	155	28.27	5.23	1.9	1.6	34	3	34	.13	4	0.4	1.2	27	KAO
		20	18 3	10.97	19	20.47	155	21.72	9.88	1.6	1.1	33	6	70	.09	3	0.4	0.6	26	SWR
		21	12 6	7.77	19	19.69	155	11.85	6.00	2.1	2.0	40	6	88	.12	6	0.4	0.9	32	SF3
		21	1259	7.53	19	25.47	155	30.28	10.93	2.0	1.2	31	1	36	.08	5	0.4	0.8	20	KAO
		21	2345	11.99	19	19.41	155	49.62	3.81	2.2	1.2	19	2	160	.12	8	0.7	3.7	11	KON
		22	127	23.79	19	20.26	155	11.80	8.95	2.4	2.8	47	6	78	.13	5	0.4	0.4	34	SF3
		22	331	16.69	19	27.40	155	23.62	6.33	2.0	1.8	35	4	73	.12	5	0.4	0.9	23	KAO
		22	2145	1.54	19	20.74	155	2.65	7.32	1.8	1.3	23	2	149	.09	2	0.6	0.6	11	SF5
		23	537	31.58	19	11.03	155	29.01	7.19	2.6	2.6	23	2	139	.13	3	0.7	0.9	19	LSW
		23	549	40.60	19	11.60	155	28.25	7.13	2.3	1.8	21	0	112	.14	4	0.7	1.4	17	LSW
		23	733	57.83	19	19.24	155	13.10	6.51	1.7	1.5	24	0	78	.13	4	0.6	0.9	21	SF2
		23	11 6	6.35	19	24.84	155	19.93	5.52	1.6	1.3	29	4	46	.12	2	0.4	1.0	20	KAO
		23	1516	8.10	19	22.68	155	25.98	11.23	2.1	1.7	37	1	34	.13	3	0.4	0.6	31	KAO
		23	1524	55.30	19	19.86	155	11.31	6.94	1.9	2.3	36	3	88	.14	5	0.5	0.8	31	SF3
		23	2121	41.22	19	21.77	155	22.04	10.77	1.7	1.3	37	4	56	.10	4	0.4	0.5	21	SWR
		23	2338	30.82	19	22.27	155	29.18	9.93	2.5	2.6	46	5	35	.10	3	0.3	0.5	38	KAO
		24	1 4	59.67	19	20.83	155	6.36	7.28	1.6	1.3	23	0	99	.11	5	0.5	1.1	17	SF4
		24	348	47.36	19	9.79	155	42.05	5.08	2.7	2.0	32	3	134	.18	13	0.8	2.1	18	LSW
		24	1030	44.08	20	3.36	155	52.26	9.78	2.5	1.9	18	1	235	.10	12	2.0	0.7	10	KOH
		24	18 9	45.50	19	21.35	155	1.97	5.68	1.9	1.5	36	3	162	.14	3	0.5	0.7	19	SF5
		24	21 4	55.47	19	25.94	155	24.08	8.81	1.7	1.4	40	6	41	.14	2	0.4	0.7	27	KAO
		24	2142	26.38	19	23.42	155	20.61	9.99	1.8	1.5	41	6	43	.11	2	0.3	0.5	24	KAO
		25	021	21.65	19	30.41	155	35.85	2.24	2.5	3.0	10	0	136	.11	2	0.8	0.7	10	MLO
		25	112	15.41	19	27.26	155	29.71	9.21	2.0	1.5	42	6	58	.14	9	0.4	0.9	30	KAO
		25	114	34.22	19	29.73	155	26.01	26.16	2.2	1.5	36	4	73	.12	5	0.6	1.2	28	DML
		25	132	47.56	19	55.03	155	35.69	31.39	2.1	1.8	41	6	135	.11	9	0.6	1.1	36	KOH
		25	220	40.11	19	29.74	155	25.70	25.95	2.1	1.8	45	5	74	.12	4	0.5	0.9	38	DML
		25	833	32.11	19	25.05	155	19.46	4.91	1.8	1.5	31	5	72	.12	3	0.4	0.9	24	KAO
		25	1352	7.02	19	20.21	155	7.61	8.02	2.1	2.3	39	4	94	.11	5	0.4	0.6	29	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	MAY	25	1545	51.75	19	27.45	154	53.95	5.61	1.2	1.0	16	2	178	.13	2	1.0	0.8	13	LER
		25	1851	18.06	19	25.37	155	29.26	9.65	2.2	1.5	41	5	35	.10	6	0.3	0.7	29	KAO
		25	2231	24.36	19	29.99	155	25.96	26.03	1.7	1.4	42	5	50	.13	5	0.5	0.9	35	DML
		25	2332	0.15	19	26.06	155	23.95	9.41	1.5	1.3	37	4	43	.12	3	0.4	0.8	26	KAO
		26	915	56.45	19	17.28	155	26.93	8.98	1.9	1.5	37	3	51	.16	7	0.4	0.7	32	LSW
		26	1022	14.94	19	22.65	155	29.98	8.70	1.8	1.2	37	3	40	.12	4	0.4	0.9	30	KAO
		26	1714	3.80	19	30.75	155	35.36	0.42	2.6	3.2	15	0	200	.18	3	1.3	1.4	15	MLO
		26	1910	3.93	19	15.44	155	26.57	8.87	1.8	2.1	38	4	78	.13	5	0.4	0.7	21	LSW
		26	2218	40.84	19	15.88	155	26.67	8.77	1.7	1.6	34	3	70	.16	5	0.4	0.7	20	LSW
		26	2226	25.50	19	20.51	155	4.00	5.26	1.4	1.2	27	3	110	.11	2	0.5	0.9	19	SF5
		27	055	41.53	19	15.70	155	15.90	31.14	2.8	2.6	47	3	157	.10	5	0.6	0.9	43	DEP
		27	2 5	8.59	19	20.21	155	12.15	7.63	1.8	2.2	40	5	77	.12	5	0.4	0.6	34	SF3
		27	4 1	37.05	19	23.53	155	1.34	6.57	1.4	1.1	20	1	184	.11	5	0.6	0.8	13	SF5
		27	828	30.93	19	20.94	155	21.61	9.72		1.3	36	6	63	.13	3	0.4	0.6	23	SWR
		27	952	46.53	19	17.70	155	15.66	2.91	1.6	1.8	35	5	128	.16	4	0.4	0.8	25	SSF
		27	12 4	40.81	19	22.40	155	29.98	8.81	1.6	1.1	33	3	56	.11	4	0.3	0.9	23	KAO
		28	041	29.33	19	15.34	155	25.85	9.21	1.9	2.1	34	3	79	.10	4	0.3	0.5	23	LSW
		28	3 6	29.93	19	20.71	155	11.80	8.62	2.7	3.0	46	6	72	.11	4	0.3	0.4	38	SF3
		28	18 4	29.17	19	20.23	155	12.99	8.84	2.8	3.0	49	7	67	.11	4	0.3	0.4	41	SF2
		28	1935	26.46	19	19.55	155	10.99	9.14	2.4	2.8	39	2	96	.09	5	0.4	0.4	33	SF3
		28	2211	35.64	19	19.76	155	11.95	9.11	1.4		30	3	86	.09	6	0.4	0.7	24	SF3
		29	1318	47.55	19	43.35	154	59.23	0.03	2.4	2.7	17	0	252	.12	26	2.4	2.4	11	HIL B*
		29	1418	42.42	19	17.11	155	29.49	8.30	2.2	2.1	43	5	50	.17	4	0.4	0.8	27	LSW
		29	2145	34.73	19	26.03	155	29.54	9.59	2.1	1.5	44	7	41	.12	7	0.3	0.7	31	KAO
		29	2149	11.05	19	28.02	155	14.86	32.27	2.2	2.0	47	8	52	.11	6	0.6	0.9	38	DEP
		29	2217	51.68	19	22.40	155	29.82	8.75	2.6	2.9	47	6	33	.11	4	0.3	0.6	37	KAO
		30	646	2.38	19	15.96	155	26.89	8.07	2.1	2.3	37	4	69	.14	6	0.4	0.8	27	LSW
		30	749	21.35	19	22.04	155	26.69	11.34	2.0	1.8	35	4	42	.10	2	0.4	0.6	25	KAO
		30	10 6	15.55	19	26.24	155	24.23	7.54	1.8	1.5	27	3	53	.12	2	0.4	0.9	22	KAO
		30	1111	23.42	19	26.07	155	30.41	10.98	2.0	1.6	35	4	45	.09	8	0.4	0.7	23	KAO
		30	1352	48.82	19	20.58	155	12.46	7.16	2.1	2.4	41	1	68	.14	4	0.5	0.6	36	SF2
		30	18 7	13.60	19	28.98	155	35.70	1.58	3.0	3.5	17	2	71	.21	1	0.6	0.3	9	MLO
		30	1924	42.63	19	19.00	155	25.98	9.06	2.1	1.9	43	3	59	.15	5	0.4	0.5	34	LSW
		30	22 1	27.64	19	20.23	155	12.93	7.28	1.6	1.6	37	3	68	.13	4	0.4	0.7	27	SF2
		31	133	17.92	19	19.63	155	12.95	4.97	1.3	1.3	33	1	76	.12	5	0.4	1.2	24	SSF
		31	526	39.49	19	41.73	155	57.27	13.97	2.9	2.9	40	0	210	.13	12	1.2	0.6	29	HUA F
		31	732	7.98	19	21.06	155	22.32	10.17	1.6	1.7	37	5	63	.12	2	0.4	0.6	23	SWR
		31	739	35.09	19	20.85	155	22.21	10.00	1.7	1.9	36	7	65	.12	2	0.4	0.7	25	SWR
		31	831	21.85	19	22.58	155	29.66	9.62	1.6	1.4	22	1	59	.10	4	0.5	1.2	19	KAO
		31	1710	44.72	19	26.54	155	26.67	7.62	2.7	2.6	47	5	51	.13	8	0.3	0.9	38	KAO
		31	1725	32.28	19	25.05	155	19.24	6.63	1.6	1.1	25	6	104	.09	3	0.4	0.8	19	KAO
		31	1827	15.66	19	32.21	155	43.47	6.54	2.1	1.2	36	6	80	.14	5	0.4	1.2	20	KON
		31	2029	9.62	19	19.61	155	12.11	4.25	1.3	1.2	33	4	88	.14	5	0.4	1.7	28	SSF
		31	2057	37.17	19	25.44	155	19.51	6.98	2.7	3.3	46	6	47	.12	3	0.4	0.6	37	KAO F
		31	2223	51.00	19	19.63	155	29.57	8.86	2.2	1.8	47	7	50	.13	6	0.3	0.7	34	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	MAY	31	2318	37.64	19	12.25	155	27.66	7.98	3.0	2.9	49	5	110	.17	5	0.5	0.6	35	LSW
	JUN	1	1 2	10.14	19	23.77	155	26.45	10.67	1.5	1.4	27	4	68	.10	3	0.5	0.8	20	KAO
		1	750	48.98	19	28.31	155	27.35	4.89	1.4	1.1	40	6	64	.13	7	0.3	2.1	31	KAO
		1	13 8	15.02	19	23.20	155	25.50	9.35	1.8	1.7	39	4	30	.13	4	0.4	0.7	32	KAO
		1	1524	24.87	19	20.12	155	11.42	6.52	1.4	1.5	32	5	82	.12	5	0.4	0.8	18	SF3
		1	1548	35.84	19	17.90	155	13.24	5.81	1.6	1.5	31	3	98	.09	2	0.5	0.9	21	SF2
		1	1934	26.16	19	25.57	155	29.06	8.24	1.8	1.1	35	4	61	.09	6	0.3	0.9	23	KAO
		2	138	0.64	19	23.16	155	28.01	8.38	1.5	1.3	31	3	38	.15	1	0.4	0.9	23	KAO
		2	315	32.01	19	15.31	155	32.72	8.50	2.3	1.7	36	1	124	.17	5	0.5	0.9	25	LSW
		2	1224	57.37	19	19.26	155	12.15	8.65	1.7	1.9	37	5	95	.10	5	0.4	0.5	28	SF3
		2	1235	17.86	19	20.46	155	13.39	7.79	1.5	1.6	35	3	61	.11	4	0.5	0.7	27	SF2
		2	1744	57.58	19	19.13	154	58.97	38.60	2.6	2.0	42	5	223	.11	7	1.1	1.1	35	LER
		2	23 3	46.17	19	22.11	155	37.00	12.66	2.2	1.4	35	2	102	.10	5	0.5	0.5	25	MLO
		3	315	40.13	19	19.13	155	15.25	6.05	1.3	1.1	27	2	99	.13	4	0.5	1.2	24	SF1
		3	412	29.02	19	24.88	155	30.25	9.76	2.0	1.7	35	2	35	.10	6	0.3	0.7	30	KAO
		3	1217	52.45	19	22.02	155	28.79	4.61	1.5	1.2	26	2	76	.12	2	0.5	0.8	18	KAO
		3	2112	7.46	18	54.25	155	8.68	50.20	3.4	3.3	55	8	254	.09	43	0.9	1.5	47	LOI
		4	1213	55.38	19	16.59	155	22.45	3.56	1.4	1.6	28	4	128	.14	5	0.4	1.5	19	SWR
		4	1412	1.78	19	29.17	155	26.50	10.23	2.5	2.0	44	8	63	.12	6	0.4	0.6	29	KAO
		4	1438	34.89	19	21.40	155	7.28	5.53	1.6	1.8	38	6	81	.13	4	0.5	0.9	24	SF4
		4	1528	7.18	19	18.77	155	13.25	8.12	1.4	1.5	27	3	82	.12	3	0.6	0.9	22	SF2
		5	025	31.61	19	22.13	155	30.20	9.26	2.3	2.2	40	3	33	.14	5	0.3	0.8	32	KAO
		5	028	53.26	19	13.94	155	27.03	7.63	2.2	1.8	40	2	139	.16	5	0.6	0.8	31	LSW
		5	1430	26.25	19	18.72	155	13.45	6.74	1.7	1.5	33	4	77	.11	3	0.5	0.9	22	SF2
		5	1638	18.53	19	17.62	154	59.09	36.42	2.2	1.6	34	2	235	.10	8	1.8	1.2	31	LER
		6	010	37.71	19	26.76	155	28.77	8.35	2.0	1.5	35	5	57	.11	7	0.4	0.9	25	KAO
		6	046	15.72	19	22.23	155	17.53	3.00	1.1	1.2	17	2	85	.08	2	0.3	0.5	13	SSC
		6	114	4.85	19	12.06	155	31.27	39.21	2.7	2.5	51	8	84	.08	6	0.6	1.0	41	DLS
		6	227	5.15	19	20.40	155	13.45	6.47	1.7	1.6	35	5	62	.14	4	0.4	0.9	30	SF2
		6	436	18.03	19	25.22	155	16.72	7.34	1.2		23	4	113	.12	1*	0.5	0.7	12	INT L
		6	437	16.57	19	24.59	155	17.14	7.35	1.3	1.3	23	3	50	.11	1	0.5	0.6	9	INT
		6	9 6	12.87	19	20.77	155	23.48	10.05	1.8	1.7	21	0	86	.12	1	0.5	0.7	17	SWR
		6	12 6	52.01	19	27.65	155	24.18	9.12	2.2	1.8	25	1	44	.13	4	0.6	1.0	20	KAO
		6	1249	42.46	19	26.72	155	29.74	8.11	1.9	1.5	20	1	56	.09	9	0.4	1.5	10	KAO
		6	1934	29.00	19	24.84	155	19.23	5.42	1.9	1.8	22	2	45	.08	3	0.4	0.9	21	KAO
		7	840	47.97	19	20.36	155	12.34	7.50	1.6	1.3	25	1	73	.10	4	0.5	0.8	23	SF2
		7	1459	37.85	19	25.61	155	21.26	8.51	1.7	1.5	40	7	66	.11	4	0.4	0.6	32	KAO
		7	1622	24.43	19	21.96	155	11.90	2.28	1.2	1.1	9	1	111	.10	2	0.6	0.6	6	SER
		7	2115	15.62	19	18.62	154	58.95	38.82	2.2	1.6	38	3	228	.08	7	1.4	1.1	33	LER
		8	117	38.61	19	21.45	155	4.81	7.87	2.5	2.8	40	4	86	.11	4	0.4	0.7	31	SF5
		8	214	36.98	19	23.92	155	27.25	9.17	1.5	1.3	38	4	28	.13	3	0.3	0.7	22	KAO
		8	343	27.90	19	24.34	155	16.29	3.49	1.1	1.0	13	3	128	.06	1	0.4	0.4	8	SEC
		8	346	32.55	19	24.53	155	16.30	3.39	1.0	1.0	13	3	139	.08	1	0.4	0.5	7	SEC
		8	544	39.70	19	25.60	155	24.33	8.55	1.3	1.3	38	4	39	.12	2	0.4	0.8	27	KAO
		8	927	50.72	19	12.06	155	31.22	37.56	3.7	3.7	56	10	85	.09	6	0.6	1.0	46	DLS F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JUN	8	933	12.30	19	12.10	155	31.20	37.45	3.1	3.3	57	10	83	.10	6	0.6	0.9	47	DLS
		8	1013	24.66	19	20.94	155	1.49	7.94	2.6	2.9	45	6	186	.11	3	0.6	0.5	34	SF5
		8	12 7	59.77	19	22.87	155	20.95	9.49	2.3	2.1	47	6	44	.12	3	0.3	0.5	32	KAO
		8	1552	24.93	19	27.56	155	28.56	7.33	1.9	1.3	37	6	54	.12	7	0.3	1.0	23	KAO
		8	1710	32.73	19	23.47	155	15.92	5.75	1.8	2.4	18	4	86	.15	1	0.6	0.9	10	INT L
		8	1734	10.64	20	3.31	157	52.51	29.55	5.0	5.3	52	5	238	.13	142	1.5	2.5	41	DIS
		8	1822	27.67	19	22.13	155	28.54	6.38	1.6	1.1	19	1	77	.11	2	0.5	0.9	11	KAO
		8	1942	44.30	19	27.58	155	25.61	7.15	2.3	2.3	47	7	49	.13	4	0.3	0.8	35	KAO
		8	2318	58.58	19	24.73	155	17.11	14.80	1.6	1.6	14	1	124	.05	2	0.9	1.0	8	DEP L
		8	2341	13.60	19	19.66	155	23.27	8.45	1.4	1.1	27	3	78	.09	1	0.4	0.7	20	SWR
		9	0 9	5.67	19	19.39	155	13.06	4.67	1.3	1.2	31	1	78	.16	4	0.5	2.0	28	SSF
		9	1215	10.28	19	20.07	155	12.97	7.13		1.1	22	2	70	.09	5	0.5	1.0	16	SF2
		9	1858	59.28	19	40.04	154	52.55	14.04	2.2	1.3	21	0	265	.12	15	5.5	1.2	16	HIL
		9	1921	22.97	19	19.83	155	11.84	7.16	1.4	1.4	33	3	86	.10	5	0.5	0.8	25	SF3
		9	2310	10.47	19	22.78	155	20.84	10.31	1.7	1.3	39	3	66	.10	3	0.4	0.5	29	KAO
		10	223	59.52	19	18.23	154	58.69	39.42	2.2	1.6	35	2	232	.08	8	1.6	1.5	32	LER
		10	323	33.38	19	18.21	155	13.59	7.84	2.1	2.3	41	5	74	.11	2	0.4	0.6	28	SF2
		10	412	44.85	19	26.24	155	30.74	8.45	1.9	1.5	40	5	37	.12	8	0.4	0.9	33	KAO
		10	855	21.51	19	17.34	155	13.15	7.03	2.1	2.1	41	6	136	.13	1	0.5	0.9	29	SF2
		10	947	49.21	19	17.41	155	13.11	6.00	1.4	1.2	24	3	132	.10	1	0.5	0.9	19	SF2
		10	1635	32.28	19	16.09	155	29.84	8.45	1.8	1.2	27	3	65	.20	2	0.5	1.1	18	LSW
		10	18 2	7.70	19	20.92	155	22.27	10.16	1.7	1.2	36	6	65	.13	2	0.4	0.7	19	SWR
		10	1852	46.18	19	21.23	155	23.50	9.25	1.7	1.3	35	5	43	.12	2	0.4	0.8	22	SWR
		10	19 4	56.72	19	22.76	155	26.86	9.35	2.2	2.0	48	6	40	.12	1	0.3	0.5	41	KAO
		11	1 5	51.57	19	17.81	155	21.96	7.82	1.8	1.5	36	4	115	.18	5	0.5	0.8	26	SWR
		11	454	39.43	19	24.87	155	19.97	6.41	1.8	1.5	29	6	102	.09	2	0.4	0.8	20	KAO
		11	8 1	3.41	19	10.52	155	29.40	3.28	1.9	1.2	32	1	97	.13	3	0.5	1.1	23	LSW
		11	8 1	48.99	19	8.37	155	28.75	6.80	1.3	1.5	13	0	235	.11	3	1.6	1.0	9	LSW
		11	937	36.87	19	19.18	155	27.19	9.93	1.8	1.7	38	2	49	.12	6	0.4	0.6	32	KAO
		11	1111	44.46	19	14.08	155	26.76	7.70	1.5	1.7	32	4	109	.13	5	0.4	0.9	22	LSW
		11	1615	8.69	19	25.26	155	16.79	13.81	1.6	1.0	35	3	74	.09	1	0.4	0.4	25	DEP
		11	1850	13.57	19	18.79	155	11.23	6.68	1.4	1.5	30	1	117	.12	5	0.5	0.9	23	SF3
		11	20 7	7.19	19	20.37	155	13.35	7.02	1.6	1.6	43	8	62	.12	4	0.4	0.6	26	SF2
		11	2238	6.23	19	23.43	155	27.42	8.78	1.5	1.1	26	1	61	.11	2	0.5	0.9	15	KAO
		12	230	40.00	19	20.28	155	12.61	7.20	1.5	1.5	36	3	71	.13	4	0.4	0.7	28	SF2
		12	1132	40.50	19	20.96	155	30.00	9.00	2.0	1.3	35	3	46	.13	5	0.4	0.8	24	KAO
		12	1339	0.35	19	37.43	155	55.77	19.99	3.5	3.7	53	6	200	.11	15	0.7	1.9	44	KON F
		12	1537	13.77	19	20.39	155	11.35	8.55	2.8	3.0	47	6	78	.10	4	0.3	0.4	36	SF3
		12	1649	17.22	19	20.34	155	11.41	8.08	2.3	2.6	51	10	79	.13	4	0.4	0.5	36	SF3
		12	17 3	20.10	19	21.09	155	30.11	9.60	3.6	3.7	54	9	34	.11	5	0.3	0.5	43	KAO F
		12	21 4	12.82	19	19.42	155	13.25	7.12	1.9	1.9	45	4	73	.14	4	0.4	0.7	35	SF2
		13	152	31.17	19	20.46	155	12.78	9.23	3.5	3.9	42	5	67	.12	4	0.4	0.5	36	SF2 F
		13	451	50.73	19	22.93	155	25.48	10.41	1.4	1.1	32	2	45	.11	4	0.4	0.7	26	KAO
		13	2051	0.81	19	19.92	155	11.12	6.83	1.4	1.3	35	3	88	.11	5	0.4	0.8	24	SF3
		13	2149	28.67	19	20.26	155	12.63	6.20	1.3	1.3	34	4	71	.13	4	0.5	0.8	26	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JUN	14	046	27.41	19	25.62	155	21.44	9.63	2.1	1.8	44	6	54	.12	4	0.4	0.5	34	KAO
		14	115	10.77	19	20.50	155	11.78	9.14	1.4	1.1	18	1	146	.06	4	0.7	1.0	12	SF3
		14	122	30.69	19	25.01	155	19.39	5.94	2.2	2.5	40	7	72	.11	3	0.3	0.7	29	KAO
		14	5 7	40.35	19	22.29	155	26.30	10.36	1.8	1.7	38	4	49	.11	2	0.4	0.6	26	KAO
		14	11 1	40.12	19	26.78	155	19.72	7.53	1.5	1.1	25	7	154	.07	2	0.4	0.7	17	KAO
		14	1318	50.30	19	18.96	154	59.33	37.58	2.8	2.8	53	8	215	.10	7	0.7	0.8	44	LER
		14	1729	10.14	19	20.68	155	12.85	7.49	1.6	1.3	40	5	64	.13	4	0.5	0.7	29	SF2
		14	1842	46.54	19	25.86	155	21.06	9.93	2.4	2.5	53	8	37	.13	3	0.3	0.5	39	KAO
		14	2026	53.06	19	23.26	155	20.56	8.23	1.5	1.1	34	4	53	.11	2	0.4	0.7	24	KAO
		14	2038	43.45	19	18.24	155	13.12	8.70	2.1	2.2	47	7	95	.11	2	0.5	0.5	30	SF2
		14	2328	40.04	19	17.17	155	22.02	6.30	1.5	1.1	24	1	124	.10	6	0.4	1.1	18	SWR
		15	310	31.36	19	18.70	155	17.66	12.43	1.9	1.6	50	10	115	.11	2	0.4	0.4	38	SWR
		15	322	47.65	19	21.97	155	2.94	6.56	2.2	2.0	39	6	124	.12	4	0.5	0.9	27	SF5
		15	1455	29.50	19	20.15	155	7.53	6.39	1.6	1.3	27	2	98	.09	5	0.4	1.1	15	SF4
		15	1458	24.56	19	20.01	155	7.88	5.69	1.5	1.5	30	3	91	.12	5	0.5	1.2	19	SF4
		16	0 8	10.31	19	21.88	155	5.21	5.94	1.6	1.3	25	3	78	.14	4	0.5	1.2	19	SF5
		16	822	10.03	20	44.51	157	30.32	34.00	4.0	5.1	38	2	189	.12	83	2.3	1.9	19	DIS F
		16	1617	48.42	19	25.06	155	19.37	6.09	1.7	1.3	27	6	103	.10	3	0.4	0.9	21	KAO
		16	1918	59.03	19	16.10	155	21.03	7.65	2.1	2.7	49	5	141	.12	5	0.4	0.6	37	SWR
		17	029	6.02	19	27.05	155	29.25	10.30	1.9	1.7	35	6	46	.10	8	0.3	0.7	23	KAO
		17	048	43.64	19	22.71	155	26.40	9.44	1.8	1.7	37	5	34	.11	2	0.3	0.5	31	KAO
		17	832	41.12	19	23.06	155	2.14	7.42	1.6	1.1	22	1	137	.14	6	0.7	1.3	19	SF5
		17	11 5	23.53	19	21.42	155	30.10	9.69	3.1	3.4	55	8	33	.10	5	0.3	0.4	44	KAO F
		17	2130	6.81	19	26.75	155	28.31	9.42	1.6	1.2	35	6	56	.11	6	0.4	0.9	23	KAO
		18	348	26.68	19	18.16	155	15.63	6.63	1.1	1.1	24	2	127	.12	4	0.5	1.0	17	SF1
		18	6 6	33.02	19	20.40	155	30.91	8.93	2.0	1.5	32	4	55	.11	7	0.4	1.1	23	KAO
		18	1341	19.14	19	20.94	155	12.77	8.42	2.0	2.3	42	6	62	.13	3	0.4	0.5	29	SF2
		18	19 0	42.41	19	28.39	155	26.54	6.43	2.9	2.2	49	7	47	.12	6	0.3	0.8	39	KAO
		18	1934	34.24	19	20.37	155	7.74	5.54	1.5	1.1	32	2	89	.12	5	0.5	1.3	27	SF4
		18	2343	5.71	19	22.66	155	2.37	7.69	2.3	2.4	40	3	135	.14	5	0.6	0.4	34	SF5
		19	542	46.92	19	21.97	155	6.36	6.91	2.2	2.7	33	5	77	.12	3	0.4	0.6	24	SF4
		19	912	39.55	19	24.72	155	15.17	37.42	2.4	3.0	43	3	72	.11	2	0.8	1.4	26	DEP L
		19	1051	52.95	19	28.02	155	29.96	11.38	2.1	2.0	39	4	46	.12	8	0.4	0.6	32	KAO
		19	1844	9.65	19	20.09	155	13.57	5.67	1.2	1.1	31	4	69	.13	5	0.5	0.9	25	SF2
		19	1853	46.55	19	29.39	156	7.87	20.93		1.7	12	0	307	.11	22	12.6	4.7	12	KOH
		20	116	34.01	19	22.12	155	1.76	8.14	2.3	2.4	37	2	154	.10	5	0.7	0.4	29	SF5
		20	235	6.64	19	24.15	155	16.32	14.68	1.9	2.0	49	9	69	.11	1	0.4	0.3	40	DEP
		20	7 1	58.35	19	21.29	155	1.18	6.63	2.2	2.2	36	4	182	.13	4	0.6	0.7	26	SF5
		20	919	36.81	19	21.28	155	29.88	10.84	2.8	3.2	51	6	34	.09	5	0.3	0.4	41	KAO
		20	1459	36.90	19	19.79	155	9.95	6.51	1.7	2.0	44	8	89	.13	4	0.4	0.7	36	SF3
		20	1510	19.60	19	21.22	155	24.00	10.58	2.7	3.1	51	5	36	.13	2	0.3	0.4	45	SWR
		20	1550	10.42	19	18.85	155	12.93	4.77	1.2	1.4	28	2	89	.12	4	0.5	1.8	24	SSF
		20	2050	35.14	19	20.58	155	12.14	7.60	1.8	1.3	42	6	71	.12	4	0.4	0.5	30	SF3
		21	2 1	21.27	19	29.43	155	28.17	2.81	2.1	2.0	41	7	47	.14	5	0.3	1.1	37	KAO
		21	1034	55.11	19	22.21	155	29.46	9.22	2.6	2.6	52	7	34	.12	3	0.3	0.5	43	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JUN	21	1534	38.49	19	23.49	155	20.67	9.53	2.1	2.4	44	6	43	.12	2	0.4	0.5	31	KAO
		21	1713	18.03	19	25.54	155	20.96	9.74	2.8	3.0	51	6	40	.11	4	0.3	0.5	40	KAO
		21	1756	25.89	19	20.64	155	13.27	6.78	1.2	1.1	29	3	60	.14	4	0.5	0.9	27	SF2
		22	045	47.59	19	11.12	155	41.28	6.76	2.1	1.8	28	2	199	.21	10	1.1	1.9	20	LSW
		22	117	22.65	19	25.39	155	19.74	6.23	1.5	1.3	22	6	110	.10	3	0.4	0.9	16	KAO
		22	224	36.04	19	22.46	155	30.01	8.31	1.6	1.1	35	4	46	.12	4	0.4	0.8	26	KAO
		23	035	30.15	19	19.25	155	9.19	4.49	1.5	1.3	28	3	94	.11	4	0.4	1.7	22	SSF
		23	414	45.99	19	23.65	155	30.19	9.35	1.6	1.2	32	5	40	.06	5	0.4	0.9	27	KAO
		23	433	8.10	19	20.03	155	12.41	6.81	1.5	1.6	35	5	77	.13	5	0.5	0.8	30	SF2
		23	1029	57.15	19	20.36	155	13.60	7.29	1.3	1.1	36	5	67	.11	4	0.5	0.7	29	SF2
		23	1939	8.74	19	20.54	155	13.34	6.26	1.2	1.1	35	2	60	.14	4	0.5	0.9	29	SF2
		23	2026	13.77	19	20.99	155	21.78	9.16	1.8	1.8	43	9	63	.12	3	0.4	0.5	35	SWR
		23	2035	52.72	19	23.58	155	27.35	9.47	1.9	1.8	46	4	30	.11	2	0.3	0.5	38	KAO
		24	120	7.39	19	24.38	155	29.24	8.99	1.8	1.3	32	2	35	.09	5	0.4	0.9	28	KAO
		24	234	55.92	19	22.64	155	4.10	6.99	1.2	1.1	25	1	95	.11	4	0.5	1.0	20	SF5
		24	814	36.24	19	11.72	155	33.67	10.70	1.8	1.2	33	3	173	.18	8	0.7	0.9	22	LSW
		24	1841	44.28	19	19.87	155	11.14	7.35	1.4	1.1	26	1	89	.10	5	0.5	0.9	19	SF3
		24	2123	19.96	19	20.20	155	10.85	9.61	3.5	3.7	49	5	82	.09	4	0.4	0.3	44	SF3 F
		24	22 2	2.76	19	47.20	155	46.12	15.89	2.3	2.0	19	3	145	.12	13	0.7	1.0	10	HUA
		25	326	23.23	19	25.19	155	19.66	5.75	1.6	1.1	23	3	104	.09	3	0.4	0.9	19	KAO
		25	9 8	38.25	19	26.77	155	28.48	8.31	1.5	1.1	30	5	57	.11	6	0.4	1.0	20	KAO
		25	933	19.17	19	17.93	155	25.05	8.51	1.8	1.5	35	2	70	.14	5	0.4	0.7	23	LSW
		25	1057	13.46	19	17.53	155	30.58	7.61	2.0	1.7	34	2	79	.17	5	0.5	1.1	31	LSW
		25	1240	10.39	19	16.33	155	23.76	3.37	1.8	1.7	29	3	103	.14	4	0.4	1.4	26	SWR
		25	1329	43.71	19	14.81	155	4.08	47.57	3.1	3.0	52	5	205	.11	8	0.9	1.2	47	DEP
		25	1353	54.99	19	25.15	155	29.01	9.07	2.0	1.5	38	3	34	.09	6	0.3	0.7	31	KAO
		25	1752	53.25	19	17.52	155	12.85	6.20	1.4	1.8	31	3	140	.10	1	0.6	1.0	22	SF2
		25	1755	6.95	19	17.66	155	12.91	4.78	1.4	1.8	34	3	127	.10	2	0.5	1.1	28	SSF
		25	2332	30.40	19	27.85	155	14.62	34.38	1.4	1.5	42	4	52	.11	6	0.6	1.3	35	DEP
		26	556	16.39	19	24.45	155	15.23	37.69	2.3	2.7	33	1	88	.11	2	1.0	1.8	28	DEP L
		26	1221	40.88	19	18.68	155	12.89	7.37	1.4	1.1	22	3	94	.06	3	0.4	1.0	14	SF2
		26	1914	31.27	20	1.05	155	21.49	8.05	3.3	3.2	51	6	209	.13	28	0.7	0.8	45	KEA
		27	933	55.34	19	29.21	154	45.97	10.41	1.9	1.5	21	2	288	.21	8	3.5	0.8	20	LER
		27	1136	41.37	19	20.17	155	12.82	6.01	1.5	1.5	33	3	70	.13	5	0.5	0.8	28	SF2
		27	22 7	28.60	19	25.77	155	21.70	8.87	1.7	1.5	42	6	32	.13	4	0.4	0.6	31	KAO
		27	2256	22.67	19	21.45	155	4.69	6.86		1.1	37	5	86	.16	4	0.5	0.8	24	SF5
		28	244	36.14	19	25.09	155	19.12	3.99	1.3	1.1	25	5	100	.10	3	0.4	0.6	19	KAO
		28	248	41.25	19	24.91	155	18.93	4.78	2.3	2.3	40	5	46	.10	3	0.3	0.6	30	SNC
		28	537	16.21	19	19.47	155	16.11	7.25	1.9	2.3	41	4	95	.11	3	0.4	0.6	30	SF1
		28	853	35.31	19	22.98	155	27.83	9.44	2.3	2.3	49	5	39	.13	1	0.3	0.5	36	KAO
		28	1122	48.46	19	24.60	155	29.80	9.41	2.5	2.5	47	4	33	.11	5	0.3	0.8	39	KAO
		28	1143	14.94	19	20.61	155	12.86	8.78	1.6	1.1	33	6	64	.09	4	0.4	0.5	25	SF2
		28	12 0	41.46	19	19.89	155	10.32	8.14	1.8	1.5	39	6	89	.11	4	0.4	0.6	29	SF3
		28	1957	25.48	19	25.11	155	19.67	6.26	1.6	1.0	24	4	101	.09	3	0.4	0.9	17	KAO
		29	137	6.53	19	19.79	155	12.09	6.79	1.3	1.1	30	4	85	.12	6	0.5	0.9	18	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JUN	29	1047	7.80	19	21.03	155	21.83	10.69	2.2	2.1	38	4	63	.11	3	0.4	0.5	30	SWR
		29	1049	32.64	19	21.40	155	21.88	8.72	1.8	1.5	37	6	58	.13	3	0.4	0.6	23	SWR
		29	13 3	44.46	19	21.12	155	21.97	10.52	2.1	2.1	38	5	62	.12	3	0.4	0.6	26	SWR
		29	1837	27.48	19	28.95	155	26.64	2.81	2.1	1.9	35	6	49	.12	6	0.3	0.9	22	KAO
		30	414	45.00	19	20.49	155	11.72	9.06	2.9	3.3	49	6	75	.12	4	0.3	0.4	41	SF3
		30	5 3	32.91	19	19.80	155	12.35	5.67	1.3	1.1	22	1	81	.12	5	0.5	1.5	16	SF2
		30	13 8	21.92	19	20.02	155	12.11	6.71	1.4	1.1	26	1	80	.13	5	0.5	1.2	21	SF3
		30	1652	0.04	19	22.34	155	29.87	8.93	2.1	1.7	38	2	41	.11	4	0.3	0.7	32	KAO
		30	19 6	38.86	19	19.98	155	12.26	7.23	1.3	1.6	36	3	79	.12	5	0.5	0.7	24	SF3
	JUL	1	124	33.88	19	19.32	155	15.49	6.62	1.2	1.5	34	2	99	.12	4	0.4	0.6	28	SF1
		1	1018	21.17	19	22.58	155	26.82	9.86	1.4	1.1	28	2	61	.13	1	0.4	0.7	22	KAO
		2	2 2	35.36	19	13.90	155	37.38	0.02	2.8	2.8	39	5	225	.16	13	1.4	0.4	29	LSW
		2	341	27.77	19	24.21	155	26.27	9.26	1.5	1.1	33	3	35	.12	3	0.4	0.7	27	KAO
		2	628	27.66	19	20.09	155	11.88	8.30	1.3	1.5	26	1	80	.08	5	0.5	0.8	19	SF3
		2	844	16.41	19	23.86	155	26.90	8.71	2.0	2.2	26	1	71	.14	3	0.5	1.0	16	KAO
		2	1913	34.85	19	23.88	155	15.64	3.12	1.2	1.6	17	3	107	.07	2	0.3	0.3	12	SEC
		2	2341	52.28	19	19.12	155	15.42	6.25	1.3	1.5	37	3	93	.13	4	0.4	0.8	27	SF1
		3	150	36.83	19	25.07	155	19.68	4.04	1.7	1.8	32	5	64	.11	3	0.3	0.7	23	KAO
		3	458	37.41	19	25.12	155	19.24	5.47	1.7	1.3	28	5	107	.11	3	0.4	0.9	22	KAO
		3	5 1	29.18	19	25.29	155	19.49	4.91	1.6	1.3	25	4	111	.13	3	0.4	1.0	18	KAO
		3	9 4	10.25	19	20.92	155	6.25	7.44	2.2	2.3	45	6	98	.13	5	0.4	0.6	34	SF4
		3	1434	58.00	19	14.47	155	35.42	7.76	2.2	1.4	39	4	106	.20	3	0.6	1.0	26	LSW
		4	344	49.44	19	20.74	155	13.56	8.13	1.5	1.6	35	3	60	.11	4	0.4	0.7	28	SF2
		4	619	38.92	19	25.89	155	21.81	9.68	2.4	2.4	50	7	45	.13	4	0.3	0.5	40	KAO
		4	928	39.05	19	21.70	155	30.17	8.48	1.6	1.1	33	2	45	.11	5	0.4	0.8	26	KAO
		4	1318	22.76	19	24.39	155	17.56	15.55	1.9	1.2	47	8	46	.10	1	0.4	0.3	35	DEP
		4	1359	23.69	19	29.13	154	49.96	7.66	2.5	2.6	31	4	264	.18	2	1.5	0.5	24	LER
		4	14 2	50.71	19	23.75	155	21.10	9.39	1.5	1.2	28	6	58	.11	2	0.4	0.6	18	KAO
		4	1430	13.23	19	0.48	156	54.19	28.81	3.4	4.1	30	5	323	.12	112	1.9	4.6	23	DIS
		4	1845	20.43	19	20.66	155	11.48	8.58	2.1	2.9	51	8	74	.12	4	0.4	0.5	39	SF3
		4	2316	7.70	19	23.52	155	30.17	8.73	1.5	1.1	34	4	49	.10	5	0.3	0.7	24	KAO
		5	4 4	9.89	19	26.87	154	53.48	7.84	2.5	2.5	38	4	192	.13	3	1.0	0.5	32	LER
		5	914	8.65	19	27.23	155	22.89	8.62	2.9	3.0	52	6	49	.13	4	0.3	0.6	40	KAO
		5	1742	55.51	19	47.22	155	21.43	29.48	2.1	1.7	34	4	98	.10	11	0.7	1.3	27	KEA
		5	2212	21.93	18	41.09	154	56.27	41.12	2.4	1.8	45	0	298	.09	70	6.1	2.9	42	DIS
		6	857	46.12	19	25.56	155	29.15	10.41	2.2	2.3	46	5	36	.10	6	0.3	0.5	31	KAO
		6	1150	41.27	19	20.72	155	11.70	7.65		2.5	47	7	72	.14	4	0.4	0.6	36	SF3
		6	1152	39.28	19	26.38	155	21.38	11.96	2.6	2.5	49	6	30	.11	3	0.3	0.4	36	KAO
		6	1342	18.33	19	19.09	155	12.09	7.15	1.3	1.3	24	3	100	.06	5	0.5	0.8	19	SF3
		6	14 2	35.14	19	22.89	155	2.72	7.96	1.9	2.0	38	3	125	.14	4	0.6	0.5	25	SF5
		6	17 6	59.75	19	37.66	156	2.68	33.30	2.7	2.2	39	4	231	.09	20	0.8	0.9	33	KON
		6	1850	45.38	19	17.57	155	55.79	27.67	2.4	1.9	32	5	248	.10	7	0.9	1.4	21	KON
		6	20 9	16.39	19	26.99	155	28.35	9.17	1.7	1.2	31	4	57	.10	6	0.4	0.9	21	KAO
		6	2348	22.81	19	20.40	155	3.73	5.05	1.6	1.5	17	2	111	.08	2	0.5	1.1	10	SF5
		7	419	31.32	19	26.39	155	27.91	9.32	1.7	1.4	34	4	55	.10	5	0.4	0.8	27	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JUL	7	1343	49.41	19	19.61	155	10.86	8.03	1.8	2.1	28	0	95	.09	5	0.4	0.8	27	SF3
		7	1456	12.07	19	23.29	155	27.48	8.97	2.0	2.0	30	1	63	.10	2	0.5	0.9	29	KAO
		8	725	57.12	19	21.77	155	6.42	6.97	1.4	1.3	26	2	80	.10	3	0.5	1.0	18	SF4
		8	730	13.30	19	21.61	155	6.50	8.45	1.2	1.1	25	1	82	.09	4	0.5	0.9	20	SF4
		8	958	49.22	19	22.59	155	24.67	12.71	1.8	1.5	44	7	40	.11	5	0.4	0.5	33	KAO
		8	1134	4.28	19	19.16	155	28.99	7.11	1.9	1.5	35	2	60	.12	8	0.4	1.1	28	KAO
		8	1726	33.95	21	33.09	154	56.29	27.30	3.5	3.8	43	8	328	.13	181	1.8	4.4	23	DIS
		8	1757	10.29	19	18.28	155	15.00	6.81	1.0	1.0	26	1	116	.11	4	0.5	1.1	18	SF1
		8	1819	10.02	19	28.48	155	26.61	4.93	2.2	1.3	43	5	46	.13	6	0.3	1.8	27	KAO
		8	1959	35.22	19	25.92	155	21.31	8.36	1.6	1.3	32	5	34	.13	3	0.4	0.7	23	KAO
		9	348	43.64	19	25.25	155	20.93	8.25	1.4	1.1	34	5	42	.12	4	0.4	0.7	25	KAO
		9	655	56.07	19	20.25	155	12.62	6.55		1.1	26	1	71	.13	4	0.5	0.9	23	SF2
		9	10 0	14.40	19	27.05	155	27.62	7.78	2.0	1.3	27	4	53	.11	5	0.4	1.1	21	KAO
		9	1530	1.43	19	13.35	155	39.71	8.01	2.8	3.1	29	0	232	.23	5	2.1	1.3	25	LSW
		9	17 2	49.66	19	12.61	155	27.68	8.35	2.0	1.7	27	0	204	.10	6	0.7	0.9	19	LSW
		9	1842	17.92	19	19.89	155	7.08	6.60	1.8	2.2	32	1	110	.11	5	0.5	1.1	25	SF4
		9	1857	22.66	19	45.47	156	4.75	8.95	2.7	2.7	25	0	296	.11	43	6.2	1.3	19	HUA
		9	19 6	5.44	19	46.55	156	8.07	17.37	2.7	2.2	21	1	306	.14	49	3.3	62.4	18	HUA
		9	1913	25.67	19	21.44	155	1.61	6.95	2.2	2.3	29	4	170	.11	4	0.5	0.6	22	SF5
		9	20 2	48.93	19	21.66	155	1.67	7.51	1.7	1.4	23	1	164	.10	4	0.6	0.6	12	SF5
		9	2220	8.62	19	18.27	155	23.41	8.05	1.4	1.3	27	3	92	.12	4	0.5	0.8	19	SWR
		10	054	53.40	19	19.38	155	12.14	6.04	1.3	1.1	14	0	92	.10	5	0.6	2.0	12	SF3
		10	156	51.35	19	19.29	155	11.91	5.56	1.3	1.3	17	1	98	.09	5	0.5	1.8	14	SF3
		10	650	25.76	19	18.76	155	13.94	5.62	1.5	1.6	21	0	96	.09	3	0.5	1.5	21	SF2
		10	1116	52.40	19	21.75	155	28.24	9.79	2.2	2.2	35	3	44	.11	8	0.4	0.7	30	KAO
		10	14 6	19.11	19	58.36	155	16.67	15.01	2.4	2.4	32	4	210	.10	11	0.9	0.6	25	KEA
		10	1745	42.30	20	18.22	156	50.44	29.64	2.9	2.7	35	4	321	.12	112	2.2	3.4	25	DIS
		10	1936	32.25	19	20.85	155	7.43	8.18	2.6	3.1	47	8	87	.10	5	0.3	0.5	37	SF4
		11	055	3.12	19	22.59	155	29.88	8.93	1.5	1.1	21	2	71	.07	10	0.4	1.5	16	KAO
		11	546	19.71	19	22.55	155	29.91	8.59	1.5	1.1	31	1	71	.09	10	0.4	1.3	20	KAO
		11	1653	43.67	19	19.09	155	16.16	6.74	1.5	1.5	35	5	110	.11	3	0.4	0.6	23	SF1
		11	2155	45.62	19	19.93	155	50.46	8.82	2.2	1.3	18	1	278	.11	21	2.3	1.0	15	KON
		11	2229	49.36	19	20.43	155	11.81	7.38	1.2	1.1	35	2	75	.11	5	0.5	0.7	25	SF3
		11	2239	41.24	19	23.38	155	20.71	9.14	1.3	1.1	27	5	55	.10	2	0.4	0.7	18	KAO
		11	2257	18.29	19	15.71	155	23.17	6.19	1.5	1.6	30	4	130	.12	3	0.4	1.0	24	SWR
		12	254	56.45	19	20.62	155	6.15	5.51	1.4	1.1	19	2	106	.12	5	0.5	1.3	8	SF4
		12	342	51.22	19	19.03	155	13.28	4.40	1.7	1.9	32	5	77	.11	4	0.4	1.5	23	SSF
		12	643	8.03	19	9.53	155	35.02	7.33	2.5	2.2	38	6	114	.15	11	0.5	1.0	30	LSW
		12	645	25.59	19	26.74	155	21.97	8.77	1.8	1.3	31	5	53	.11	3	0.4	0.7	22	KAO
		12	1233	8.17	19	55.92	155	37.86	12.68	2.6	1.8	29	5	133	.15	9	0.6	0.5	18	KOH
		12	1245	2.13	19	17.80	155	20.62	7.14	1.8	1.2	40	9	124	.12	4	0.3	0.6	26	SWR
		12	1315	40.27	19	19.47	155	11.98	7.56	1.3	1.3	32	3	91	.10	5	0.5	0.8	23	SF3
		12	1320	10.92	19	19.32	155	12.00	7.57	1.3	1.4	30	5	95	.09	5	0.4	0.6	19	SF3
		12	1434	45.11	19	38.53	156	7.01	38.33	2.5	1.6	20	7	245	.10	27	1.2	1.6	11	KON
		12	1517	56.29	19	22.31	155	28.76	10.37	1.5	1.2	26	3	64	.11	2	0.5	1.0	21	KAO

YEAR	MON	ORIGIN TIME DA	HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JUL	12	1634	57.52	19	25.51	155	20.59	6.02	1.3	1.1	24	5	92	.10	4	0.4	1.0	17	KAO
		12	17 4	21.22	19	21.30	155	5.01	8.59	1.9	2.2	34	5	91	.10	4	0.5	0.5	26	SF5
		12	2158	16.38	19	21.72	155	27.96	9.87	2.2	2.0	45	4	45	.12	2	0.4	0.6	37	KAO
		12	22 9	22.98	19	21.80	155	27.88	8.97	1.8	1.3	39	5	40	.12	1	0.3	0.7	29	KAO
		13	041	53.40	19	25.68	155	21.71	8.11	1.5	1.0	34	5	37	.13	4	0.4	0.7	24	KAO
		13	045	1.28	19	20.26	155	20.91	29.37	1.9	1.7	43	6	71	.13	4	0.6	0.9	31	DEP
		13	337	48.48	19	24.38	155	29.23	9.21	1.9	1.7	40	3	33	.11	5	0.3	0.8	30	KAO
		13	5 3	41.95	19	22.11	155	28.75	9.38	2.6	2.7	50	6	37	.11	2	0.3	0.5	37	KAO
		13	645	45.14	19	19.30	155	15.13	7.46	2.2	2.4	42	4	86	.13	4	0.4	0.6	36	SF1
		14	149	33.86	19	30.37	155	28.93	4.11	1.8	1.3	35	5	46	.14	4	0.3	1.1	27	MLO
		14	612	48.81	19	20.72	155	11.84	8.29	1.8	2.3	45	8	71	.11	4	0.4	0.5	32	SF3
		14	2229	59.74	19	8.78	156	9.41	36.70	3.0	2.9	51	8	305	.08	33	1.2	1.4	43	KON
		14	2238	7.80	19	17.37	155	26.96	8.72	1.8	1.8	37	3	50	.15	7	0.4	0.9	28	LSW
		14	2348	47.81	19	37.54	155	21.58	12.50	1.6	1.3	24	3	69	.11	13	0.4	0.9	17	KEA
		15	2 4	40.87	19	24.76	155	0.99	7.10	1.7	1.7	38	4	121	.12	4	0.4	0.5	25	SF5
		15	353	7.39	19	16.38	154	55.17	34.75	2.3	1.6	42	3	241	.09	15	1.3	1.3	38	LER
		15	1023	30.80	19	19.38	155	15.32	8.57	2.3	2.4	43	3	88	.12	4	0.4	0.6	38	SF1
		15	1315	44.54	19	22.58	155	25.37	9.89	1.3	1.3	30	2	45	.13	4	0.5	0.9	24	KAO
		15	1210	1.27	19	23.77	155	0.61	8.43	2.5	2.8	43	4	154	.13	4	0.6	0.4	37	SF5 F
		15	2345	36.12	19	22.76	155	25.81	10.60	2.1	2.2	42	5	40	.12	3	0.4	0.6	29	KAO
		15	2348	2.35	19	21.91	155	1.52	7.78	2.0	1.7	34	2	163	.10	4	0.6	0.5	27	SF5
		16	2 8	12.95	19	15.03	155	19.61	34.98	1.8	2.2	19	0	183	.10	8	2.1	3.2	7	DEP L
		16	2 9	46.42	19	11.99	155	20.47	44.67	2.1	2.6	42	2	170	.10	8	0.8	1.4	31	DEP L
		16	733	18.62	19	20.49	155	12.98	6.44	1.2	1.2	27	2	65	.11	4	0.5	0.7	20	SF2
		16	1217	15.80	19	24.18	155	25.91	9.67	1.8	1.8	42	6	28	.13	2	0.4	0.7	34	KAO
		16	1235	52.01	19	25.19	155	19.83	3.59	1.7	1.9	37	6	46	.12	3	0.3	0.6	25	KAO
		16	1247	5.63	19	22.82	155	16.17	28.25	2.3	1.9	51	9	55	.11	1	0.5	0.7	39	DEP
		17	111	26.98	19	33.62	155	36.53	4.56	2.0	1.4	28	4	50	.16	8	0.4	6.9	13	HLO *
		17	213	59.83	19	28.13	155	25.33	7.30	2.1	1.3	41	6	44	.13	5	0.3	0.7	27	KAO
		17	249	12.92	19	23.57	155	20.62	11.28	1.8	1.8	40	5	43	.10	2	0.3	0.4	26	KAO
		17	257	10.43	19	23.32	155	20.88	9.93	1.9	2.0	38	5	41	.12	2	0.4	0.5	30	KAO
		17	842	33.48	19	22.51	155	20.97	7.87	1.6	1.1	12	1	71	.07	6	0.6	2.1	11	KAO
		17	13 0	36.19	19	25.62	155	19.97	1.74	1.2	1.0	19	5	113	.10	4	0.3	0.5	12	KAO
		17	1354	31.60	19	25.65	155	19.71	2.15	1.0	1.1	18	4	122	.10	4	0.3	0.5	11	KAO
		17	2015	17.20	19	21.39	155	2.81	5.84	1.3	1.1	22	2	132	.12	3	0.7	1.2	16	SF5
		17	2142	11.46	19	19.75	155	11.83	4.85	1.2	1.1	24	3	87	.14	6	0.5	2.0	18	SSF
		18	1331	10.96	19	40.09	155	3.84	4.48	2.1	2.8	19	0	227	.13	28	1.3	28.8	12	HIL B*
		18	1528	37.65	19	21.39	155	7.03	5.87	1.4	1.1	29	4	83	.11	4	0.5	1.1	23	SF4
		19	029	11.71	19	19.73	155	12.21	6.29	1.2	1.6	36	2	84	.12	5	0.4	0.8	22	SF3
		19	2 3	41.04	19	19.86	155	12.29	6.28	1.5	1.8	41	6	81	.12	5	0.4	0.7	24	SF3
		19	444	12.92	19	25.73	155	21.77	8.92	2.1	2.0	45	7	33	.13	4	0.3	0.5	36	KAO
		19	450	22.13	19	53.56	155	30.31	27.15	2.7	2.5	50	9	138	.11	13	0.6	1.1	39	KEA
		19	831	46.56	19	18.62	155	15.46	5.63	2.0	2.0	30	1	114	.12	4	0.4	1.1	29	SF1
		19	11 4	28.55	19	25.99	155	21.51	8.80	1.7	1.4	37	6	31	.12	3	0.4	0.6	24	KAO
		19	1451	51.36	19	20.78	155	8.19	8.01	1.2	1.1	21	3	90	.07	4	0.5	0.8	15	SF4

YEAR	MON	ORIGIN TIME DA	HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JUL	19	1926	15.46	19	19.36	155	12.36	5.50	1.0	1.1	26	2	89	.12	5	0.5	1.5	23	SF2
		19	2314	26.69	19	20.68	155	13.10	7.36	1.2	1.1	26	2	64	.12	4	0.5	0.9	23	SF2
		20	520	0.48	19	20.37	155	12.29	7.50	1.9	1.8	44	7	73	.13	4	0.4	0.8	34	SF3
		20	847	47.93	20	2.98	155	43.69	7.41	3.6	3.9	47	4	144	.14	10	0.7	0.8	40	KOH F
		20	1719	42.04	19	25.77	154	56.16	5.47	1.5	0.9	23	2	177	.12	4	0.9	0.9	14	LER
		20	2343	52.27	19	27.18	155	5.44	37.01	1.9	1.6	46	7	51	.12	5	0.6	1.2	36	DEP
		20	2356	36.66	19	19.36	155	13.20	8.95	2.5	2.4	49	7	123	.13	6	0.4	0.5	41	SF2
		21	121	37.42	19	18.34	155	13.26	8.19	1.9	1.9	42	4	88	.11	2	0.4	0.5	33	SF2
		21	654	9.61	19	21.13	155	21.42	11.58	1.8	1.5	41	7	60	.09	4	0.4	0.5	26	SWR
		21	1149	29.94	19	22.31	155	28.20	5.87	1.4	1.1	26	1	42	.10	1	0.4	0.9	18	KAO
		21	1638	45.41	19	24.76	155	29.61	8.52	1.9	1.3	43	5	33	.12	5	0.3	0.8	30	KAO
		21	1821	45.23	19	22.39	155	29.83	8.42	1.6	1.1	34	3	40	.11	4	0.4	1.0	23	KAO
		21	1830	24.20	19	19.52	155	8.38	7.56	1.5	1.8	35	4	84	.10	4	0.4	0.6	29	SF4
		22	12 0	3.69	19	20.73	155	12.90	7.52	1.6	1.8	40	6	64	.13	4	0.4	0.5	23	SF2
		22	1246	58.15	19	22.44	155	30.12	8.32	1.6	1.1	31	3	74	.10	4	0.4	0.8	23	KAO
		22	1729	10.12	19	24.20	155	26.37	9.55	1.9	1.2	38	3	49	.12	3	0.4	0.7	33	KAO
		22	2219	0.80	19	19.57	155	11.88	5.92	1.6	1.6	35	4	91	.12	5	0.4	0.9	24	SF3
		23	017	33.80	19	29.14	155	27.11	5.28	2.3	2.1	40	6	58	.13	5	0.3	1.9	29	KAO
		23	114	4.94	19	21.44	155	14.92	8.21	1.2	1.1	23	3	64	.11	2	0.5	0.6	18	SF1
		23	13 3	15.33	19	10.83	155	32.68	7.21	2.2	2.2	35	5	104	.17	9	0.5	1.1	22	LSW
		23	1435	7.44	19	20.96	155	3.94	4.27	1.3	1.1	29	4	90	.17	3	0.7	1.5	17	SSF
		23	1621	38.97	19	22.49	155	29.17	10.13	1.9	1.7	37	3	39	.10	3	0.3	0.6	29	KAO
		23	1918	12.80	19	25.85	155	29.05	8.62	2.1	2.2	37	5	65	.11	7	0.4	0.9	31	KAO
		23	2037	22.40	19	26.67	155	29.85	9.32	2.4	2.4	47	6	60	.12	6	0.4	0.6	36	KAO
		23	2112	36.13	19	22.76	155	0.88	8.15	1.7	1.4	31	3	162	.17	6	1.0	0.7	24	SF5
		24	0 3	7.48	19	21.48	155	1.44	7.21	2.6	3.0	41	3	173	.12	4	0.6	0.4	36	SF5
		24	955	31.50	19	19.49	155	11.84	6.49	1.6	1.8	36	5	92	.12	5	0.4	0.8	30	SF3
		24	1247	6.16	19	26.65	155	28.76	8.93	2.0	1.5	33	5	66	.09	7	0.4	0.9	26	KAO
		24	1357	18.87	19	16.88	155	28.99	9.20	2.6	2.8	43	5	53	.15	4	0.4	0.6	33	LSW
		24	1815	59.93	19	23.02	155	1.51	6.38	1.4	1.1	27	1	149	.22	6	0.9	1.5	21	SF5
		24	2031	7.30	19	17.56	155	20.17	6.60	1.7	1.3	30	5	129	.12	3	0.4	0.7	23	SWR
		24	2121	46.72	19	7.87	155	28.32	33.00	2.1	19	0	253	.10	3	2.4	2.9	9	DLS L
		24	2221	8.18	19	19.90	155	13.04	5.88	1.1	23	1	71	.13	5	0.6	1.5	21	SF2
		24	2320	53.61	19	21.38	155	17.50	27.71	1.6	1.4	31	2	37	.09	2	0.8	1.2	28	DEP
		25	138	37.86	19	44.77	155	57.64	13.25	2.4	1.8	21	2	213	.11	14	1.6	0.6	16	HUA
		25	2 7	49.82	19	22.94	155	20.90	8.11	1.5	1.1	23	3	64	.10	3	0.4	0.9	16	KAO
		25	316	10.30	19	21.68	155	21.96	10.32	1.6	1.3	35	5	82	.13	4	0.4	0.4	26	SWR
		25	557	25.44	19	19.77	155	10.31	5.06	1.3	1.1	21	1	91	.12	4	0.6	2.0	16	SF3
		25	6 5	56.68	19	20.92	155	2.00	5.42	1.7	2.3	26	2	173	.15	2	0.9	1.1	21	SF5
		25	832	38.15	19	22.16	155	18.63	30.97	3.5	3.9	46	1	35	.11	3	0.6	1.0	44	DEP
		25	9 5	51.16	19	13.16	155	30.44	6.81	1.9	1.3	28	1	200	.13	4	0.7	1.2	19	LSW
		25	1326	47.16	19	18.86	155	15.30	6.55	1.2	1.3	27	1	106	.12	5	0.5	1.1	17	SF1
		25	1430	13.20	19	21.36	155	2.12	6.53	1.4	1.1	19	2	158	.14	3	0.7	1.2	15	SF5
		25	2035	5.56	19	19.68	155	11.05	7.45	1.3	1.3	25	1	93	.11	5	0.5	0.9	20	SF3
		26	123	21.11	19	28.24	155	53.74	7.18	2.3	2.0	26	2	137	.22	3	0.9	1.1	19	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JUL	26	152	58.22	19	19.57	155	11.58	6.25	2.0	2.1	48	7	94	.16	6	0.4	0.8	32	SF3
		26	321	42.11	19	20.03	155	9.83	5.85	1.3	1.1	23	2	83	.12	4	0.6	1.4	19	SF3
		26	5	6 35.75	19	20.46	155	13.23	7.26	1.6	2.0	37	1	63	.13	4	0.5	0.7	33	SF2
		26	545	11.12	19	21.11	155	7.38	8.27	3.3	3.9	48	5	172	.12	4	0.6	0.5	42	SF4
		26	732	18.70	19	29.67	155	27.60	4.61	2.0	1.5	32	5	62	.13	4	0.3	1.8	25	KAO
		26	846	14.92	19	22.78	155	1.88	8.01		1.2	33	3	145	.14	6	0.6	0.5	22	SF5
		26	1339	1.51	19	19.58	155	15.40	8.06	2.2	2.4	43	4	86	.12	4	0.4	0.6	32	SF1
		26	1348	14.58	19	25.84	155	19.52	5.34	1.9	1.5	25	4	105	.10	4	0.4	1.0	19	KAO
		26	1748	18.84	19	21.28	155	23.27	8.74	1.2	1.1	17	3	55	.08	2	0.5	1.1	13	SWR
		26	1830	37.54	19	19.27	155	10.90	5.42	1.3	1.2	29	1	104	.12	6	0.5	1.6	16	SF3
		26	1958	48.38	19	18.33	155	16.51	8.22	2.1	2.4	45	3	117	.12	4	0.4	0.6	38	SF1
		26	2011	57.26	19	26.70	155	31.30	11.32	2.2	1.7	43	9	35	.10	4	0.3	0.5	32	KAO
		27	2	0 43.39	19	20.75	155	2.44	7.31	2.5	2.9	40	6	160	.11	2	0.6	0.4	30	SF5
		27	318	22.16	19	46.85	156	2.69	8.36	1.8	1.4	17	1	233	.12	24	1.4	0.8	8	HUA
		27	558	8.86	19	22.80	155	26.69	9.56	1.4	1.1	35	4	88	.12	2	0.4	0.6	23	KAO
		27	716	24.48	19	21.53	155	28.53	9.27	2.1	2.4	49	5	39	.11	2	0.3	0.5	36	KAO
		27	1510	2.42	19	13.96	155	35.30	7.05	2.3	2.1	46	7	81	.18	4	0.5	1.0	28	LSW
		27	1622	19.44	19	29.17	155	26.39	5.34	2.2	2.2	44	7	57	.13	6	0.3	1.3	27	KAO
		27	2354	14.91	19	17.89	155	48.94	10.97	2.5	1.8	35	3	118	.13	7	0.6	0.3	27	KON
		28	4	7 36.30	19	18.55	155	13.44	5.45	1.2	1.3	26	2	83	.10	3	0.5	1.0	20	SF2
		28	430	29.08	19	25.76	155	21.47	4.32	1.4	1.5	29	5	47	.11	4	0.3	1.2	20	KAO
		28	9	2 28.97	19	20.11	155	11.36	8.42	2.1	2.4	42	8	83	.11	4	0.4	0.5	28	SF3
		28	2117	1.65	19	23.73	155	15.83	3.01	1.6	2.1	26	4	78	.11	1	0.3	0.3	14	SEC
		29	259	44.41	19	19.33	155	12.40	3.55	1.2	1.1	24	1	89	.15	5	0.5	1.5	17	SSF
		29	321	10.67	19	23.90	155	15.88	2.63	1.3	1.7	20	3	106	.11	1	0.4	0.3	16	SEC
		29	457	46.47	19	12.12	155	37.94	7.93	2.9	2.9	51	8	97	.21	5	0.5	0.9	38	LSW
		29	624	30.57	19	25.98	155	19.73	6.37	1.5	1.6	24	5	133	.11	3	0.5	1.0	15	KAO
		29	10	6 42.54	19	12.41	155	42.53	1.99	2.7	2.4	37	2	123	.22	11	0.9	2.2	32	LSW
		29	1028	50.09	19	21.69	155	2.18	6.64	1.9	1.9	36	5	151	.15	4	0.5	0.7	19	SF5
		29	2211	31.74	19	26.11	154	54.76	8.81	2.6	3.2	44	4	187	.14	3	1.0	0.4	35	LER
		30	310	40.13	19	21.59	155	3.03	7.16	1.6	1.3	34	3	122	.14	3	0.5	0.8	28	SF5
		30	1040	59.76	19	19.53	155	11.45	7.20	1.3		26	0	95	.08	5	0.5	1.1	20	SF3
		31	523	52.44	19	27.76	155	29.13	7.54	1.5	1.1	33	5	51	.13	8	0.4	1.1	25	KAO
		31	1220	34.25	19	24.08	155	21.86	8.83	1.4	1.2	30	4	47	.12	4	0.5	0.8	19	KAO
		31	13	5 37.87	19	18.85	155	13.52	9.20	2.5	2.8	48	5	79	.11	3	0.4	0.4	40	SF2
		31	1459	39.56	19	26.30	155	28.86	9.05	1.9	1.6	34	5	40	.09	7	0.3	0.9	25	KAO
	AUG	1	317	4.68	19	22.07	155	26.29	9.96	2.0	1.4	38	4	44	.12	2	0.4	0.6	26	KAO
		1	1211	35.41	19	19.95	155	12.10	7.20	1.2	1.3	29	2	81	.12	5	0.5	0.8	23	SF3
		1	14	1 21.16	19	24.30	155	26.43	9.49	1.8	1.8	39	5	40	.14	3	0.4	0.7	30	KAO
		1	2025	23.75	19	18.34	155	13.93	4.06	1.2	1.3	28	0	87	.13	3	0.4	1.2	20	SSF
		2	431	37.63	19	22.35	154	59.65	7.87	2.7	2.9	44	6	184	.12	5	0.7	0.5	36	LER
		2	9	6 20.78	19	22.94	155	27.08	9.11	1.0	2.1	40	3	34	.12	1	0.4	0.7	32	KAO
		2	1225	47.85	19	20.01	155	13.32	7.62	1.2	1.1	22	1	66	.10	5	0.6	0.9	18	SF2
		3	343	11.93	19	27.33	155	25.22	11.57	2.3	2.4	45	7	42	.13	4	0.3	0.5	31	KAO
		3	5	8 39.32	19	19.56	155	15.46	9.15	3.1	3.6	40	4	86	.12	5	0.4	0.5	35	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	AUG	3	630	4.79	19	19.05	155	9.80	7.60	1.7	1.9	34	3	106	.08	5	0.4	0.7	24	SF3
		3	844	12.83	19	22.71	155	1.60	0.86	1.7	1.4	25	2	189	.14	6	0.7	0.9	16	SSF
		3	1211	32.44	19	18.77	155	15.03	6.92	1.8	1.8	38	3	94	.11	4	0.4	0.7	28	SF1
		3	14	4 33.55	19	25.08	155	19.52	4.75	1.3	1.1	20	2	93	.09	3	0.4	0.9	17	KAO
		3	1547	40.02	19	19.70	155	10.93	7.13	1.3	1.3	29	1	93	.10	5	0.6	0.9	24	SF3
		3	1918	56.17	19	22.39	155	3.27	7.02	1.6	1.7	31	3	115	.15	4	0.6	0.9	22	SF5
		3	2125	28.95	19	19.26	155	13.33	6.59	1.5	1.9	42	2	74	.13	4	0.4	0.8	38	SF2
		3	2149	14.96	19	20.84	155	21.58	9.90	1.9	1.8	40	6	65	.10	3	0.3	0.5	30	SWR
		3	2243	0.39	19	20.95	155	21.61	8.24	1.6	1.3	38	6	63	.12	3	0.4	0.6	24	SWR
		3	2334	32.44	19	20.92	155	21.57	9.11	1.7	1.6	36	6	64	.09	3	0.4	0.6	22	SWR
		3	2338	39.27	19	20.56	155	12.85	7.98	1.2	1.1	30	2	66	.10	4	0.5	0.8	25	SF2
		4	329	27.39	19	23.39	155	0.28	7.66	1.7	1.4	23	2	162	.10	4	0.6	0.7	13	SF5
		4	352	56.08	19	21.34	155	1.80	7.70	1.7	1.5	25	4	168	.09	3	0.6	0.8	15	SF5
		4	559	58.74	19	24.75	155	21.71	11.17	1.7	1.8	44	4	43	.11	4	0.3	0.4	31	KAO
		4	6	0 34.39	19	24.63	155	21.92	12.91	1.8	1.6	15	1	61	.04	6	0.8	1.5	14	KAO
		4	15	5 59.18	19	22.06	155	4.41	7.43	1.6	1.3	29	2	86	.15	5	0.6	0.9	18	SF5
		4	1535	45.80	19	26.49	155	31.34	11.22	2.4	2.1	40	8	42	.11	7	0.4	0.5	27	KAO
		4	1912	29.55	19	19.27	155	11.47	6.15	1.3	1.3	29	0	101	.11	5	0.5	1.0	24	SF3
		4	1933	55.79	19	22.84	155	26.15	9.85	2.1	2.0	43	5	40	.11	3	0.3	0.5	32	KAO
		4	2021	29.79	19	15.74	155	4.03	45.51	2.1	1.6	41	3	225	.10	8	1.2	1.3	31	DEP
		5	343	25.81	19	23.82	155	26.99	10.36	2.0	1.8	41	4	36	.12	3	0.4	0.6	32	KAO
		5	1047	57.26	19	18.74	155	15.36	5.04	1.2	1.1	26	1	109	.11	4	0.4	1.3	21	SF1
		5	12	6 30.00	19	30.90	155	54.88	11.81	2.8	2.7	33	4	195	.17	3	0.9	0.5	19	KON
		5	1533	12.14	19	18.43	155	13.07	6.76	1.6	1.6	8	0	142	.08	3	1.0	2.5	3	SF2
		6	036	15.78	19	20.86	155	12.47	7.46	2.0	2.5	42	2	65	.14	3	0.5	0.6	36	SF2
		6	622	25.24	19	22.04	155	5.62	8.02	1.9	2.2	36	6	77	.10	4	0.4	0.6	20	SF4
		6	14	5 2.41	19	23.10	155	26.81	10.39	2.5	2.5	49	5	39	.12	2	0.3	0.4	42	KAO
		6	1610	22.29	19	30.72	155	16.27	7.35	1.8	1.3	33	3	60	.12	10	0.4	1.4	25	GLN
		6	1735	55.53	19	17.44	155	27.80	8.05	1.6	1.7	31	2	50	.18	6	0.5	1.1	25	LSW
		6	1926	22.51	19	25.81	155	21.79	8.37	1.5	1.1	33	5	51	.11	4	0.4	0.7	23	KAO
		6	20	9 34.91	19	16.52	155	22.42	3.87	1.4	1.4	24	3	129	.11	5	0.4	1.6	20	SWR
		6	2046	17.89	19	20.00	155	11.59	7.08	1.6	1.6	39	5	84	.12	5	0.4	0.7	27	SF3
		7	144	20.55	19	20.13	155	12.69	8.47	1.3	1.1	19	1	73	.04	5	0.5	0.9	17	SF2
		7	4	0 33.07	19	23.53	155	27.38	9.27	1.6	1.3	32	3	33	.10	2	0.4	0.6	24	KAO
		7	927	29.86	19	11.91	155	30.98	38.71	1.9	1.6	33	2	85	.07	6	0.8	1.5	31	DLS
		7	941	46.55	19	19.29	155	15.32	8.77	2.3	2.8	44	3	126	.12	4	0.5	0.5	35	SF1
		7	1437	4.33	19	42.40	155	1.48	0.05	2.4	3.1	27	0	203	.15	1	1.3	0.8	14	HIL B*
		7	1733	8.92	19	20.67	155	10.77	7.08	1.8	2.0	42	6	74	.13	3	0.4	0.7	35	SF3
		7	2315	45.19	19	20.18	155	13.20	5.93	1.2	1.1	23	1	66	.11	5	0.5	1.1	20	SF2
		8	1	9 25.87	19	18.54	155	13.49	7.16	1.3	1.1	28	2	86	.09	3	0.5	0.7	21	SF2
		8	332	17.13	19	20.23	155	11.67	7.86	1.9	2.0	44	7	79	.13	5	0.4	0.6	31	SF3
		8	711	37.32	19	23.20	155	1.82	8.16	1.9	2.0	39	4	141	.15	5	0.6	0.5	26	SF5
		8	734	5.92	19	24.94	155	19.60	5.97	2.3	2.4	44	6	37	.11	2	0.3	0.7	31	KAO
		8	9	0 26.10	20	5.45	155	34.04	43.15	2.6	2.1	41	5	206	.10	23	0.8	0.9	33	KOH
		8	930	55.77	20	0.97	155	33.01	10.21	2.5	2.5	27	3	184	.19	21	1.1	0.7	12	KEA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	AUG	8	10 0	53.61	19	20.14	155	13.00	5.55	1.2	1.1	24	2	68	.10	5	0.4	1.2	19	SF2
		8	1146	1.38	19	18.49	155	15.00	6.24	1.7	2.2	39	0	100	.11	4	0.4	0.8	35	SF1
		8	1150	56.11	19	22.36	155	5.98	7.82	2.0	2.3	44	7	71	.10	3	0.3	0.5	34	SF4
		8	18 6	28.47	19	23.98	155	25.82	8.42	2.6	3.0	50	6	25	.15	3	0.3	0.7	38	KAO
		9	035	52.99	19	24.89	155	15.89	15.40	2.1	2.5	44	7	90	.09	2	0.5	0.3	36	DEP
		9	042	3.98	19	25.51	155	28.97	10.10	1.7	1.2	28	3	61	.12	6	0.4	0.9	21	KAO
		9	536	9.03	19	22.33	155	28.58	9.29	1.5	1.3	28	2	63	.11	2	0.4	0.8	23	KAO
		9	2016	40.06	19	29.77	155	15.50	7.62	1.5	1.4	35	5	109	.13	9	0.5	1.2	24	GLN
		10	417	36.16	19	30.35	155	47.69	9.24	2.7	2.8	39	5	86	.12	3	0.4	0.5	28	KON
		10	9 5	33.24	19	20.23	155	12.82	5.50	1.2	1.3	25	1	69	.12	4	0.5	1.1	20	SF2
		10	11 6	34.29	19	21.29	155	23.65	8.04	1.7	1.3	33	4	48	.12	2	0.4	0.6	25	SWR
		10	1329	13.58	19	21.40	155	5.72	6.64	1.4	1.3	33	2	89	.12	4	0.5	0.9	25	SF4
		10	2053	15.07	19	29.55	155	12.60	10.49	2.4	2.7	51	11	46	.12	10	0.3	0.7	35	GLN
		10	2145	45.26	19	6.65	156	10.73	30.61	2.9	3.1	50	5	276	.10	37	2.1	1.5	46	KON
		11	126	45.21	19	20.04	155	11.58	6.86	1.9	2.3	42	5	83	.13	5	0.5	0.7	35	SF3
		11	345	0.56	19	23.61	155	27.47	9.57	1.8	2.0	44	5	30	.13	2	0.3	0.6	37	KAO
		11	1018	11.98	19	56.71	155	16.35	14.32	2.3	2.3	32	3	205	.10	10	1.0	0.4	24	KEA
		11	1210	19.60	19	11.59	155	38.05	9.30	2.4	2.5	44	6	101	.20	6	0.5	0.8	32	LSW
		11	1313	22.32	19	3.39	156	15.23	33.44	2.3	2.6	36	1	285	.10	47	2.9	2.4	33	KON
		11	14 2	20.37	19	19.15	155	12.04	6.49	1.8	2.2	43	6	99	.12	5	0.4	0.7	33	SF3
		11	2041	40.17	19	20.18	155	13.11	7.32	1.9	2.2	49	8	66	.12	5	0.4	0.6	36	SF2
		11	2043	6.05	19	20.00	155	13.20	7.54	1.2	1.1	23	1	67	.07	5	0.5	0.9	16	SF2
		11	2052	42.19	19	19.73	155	13.06	6.65	1.2	1.1	26	1	72	.12	5	0.5	1.0	19	SF2
		11	2150	56.07	19	19.85	155	12.13	7.06	1.3	1.1	29	2	83	.10	5	0.5	0.7	22	SF3
		11	2316	0.47	19	20.43	155	12.81	8.30	1.2	1.1	27	2	68	.09	4	0.4	0.6	20	SF2
		11	2329	30.15	19	27.49	155	29.36	9.65	3.0	3.1	55	9	36	.12	8	0.3	0.5	46	KAO
		12	929	37.24	19	26.86	155	23.58	6.31	1.6	1.1	36	5	47	.13	4	0.3	0.9	27	KAO
		12	1318	34.40	19	20.93	155	13.42	7.29	1.8	1.5	43	5	57	.13	3	0.4	0.6	34	SF2
		12	1412	21.81	19	19.82	155	12.10	7.12	1.4	1.1	30	1	83	.12	5	0.5	0.8	22	SF3
		12	15 5	28.42	19	20.68	155	21.77	10.96	1.7	1.3	34	7	67	.11	3	0.4	0.5	21	SWR
		12	1513	49.98	19	15.28	155	22.47	6.35	1.2	1.5	23	2	175	.10	3	0.6	1.0	15	SWR
		12	1611	7.49	19	19.12	155	10.98	6.22	1.3	1.2	34	3	108	.14	6	0.5	0.8	22	SF3
		12	1957	46.11	19	20.31	155	12.52	6.99	1.3	1.5	33	1	72	.12	4	0.4	0.7	24	SF2
		13	151	57.63	19	27.78	155	18.96	10.66	1.4	1.2	22	2	83	.13	3	0.7	1.0	17	INT
		13	239	4.95	19	26.56	155	28.25	8.99	1.4	1.2	24	3	79	.10	6	0.5	1.1	18	KAO
		13	346	50.76	19	26.64	155	28.55	7.19	1.4	1.1	35	6	68	.12	7	0.4	1.0	27	KAO
		13	818	15.49	19	26.90	155	28.94	6.90	1.5	1.1	30	4	49	.11	7	0.4	1.2	24	KAO
		13	12 6	1.97	19	17.81	155	13.96	7.87	1.3	1.1	24	0	125	.08	2	0.5	0.7	17	SF2
		13	1436	23.40	19	23.27	155	27.57	9.26	1.4	1.1	34	4	56	.11	1	0.4	0.7	28	KAO
		13	22 3	24.76	19	14.74	155	33.06	6.31	2.0	1.3	39	3	181	.19	5	0.7	1.3	21	LSW
		14	050	2.35	19	23.06	155	2.21	6.86	2.0	2.0	34	3	136	.14	5	0.6	0.9	26	SF5
		14	724	43.46	19	25.94	155	21.59	9.19	1.8	1.7	40	6	32	.12	3	0.4	0.6	32	KAO
		14	1010	2.12	19	47.13	154	54.77	47.71	3.7	4.3	54	10	233	.10	20	0.8	1.1	43	KEA F
		14	1651	31.68	19	16.91	155	29.23	8.87	2.2	2.2	41	5	53	.16	4	0.4	0.8	31	LSW
		14	2241	32.33	19	20.75	155	13.15	8.14	1.2	1.1	25	1	61	.09	3	0.5	0.8	18	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	AUG	15	048	20.42	19	20.33	155	13.03	7.09	1.5	1.5	24	1	66	.10	4	0.5	0.9	21	SF2
		15	230	11.00	19	25.36	155	23.88	5.65	1.6	1.1	23	3	65	.11	2	0.4	1.2	17	KAO
		15	420	55.20	19	21.46	155	23.10	9.35	1.5	1.3	26	4	82	.10	2	0.4	0.6	21	SWR
		15	731	38.70	19	24.95	155	19.15	5.68	2.6	2.9	41	5	37	.12	3	0.3	0.8	36	KAO
		15	930	49.11	19	19.88	155	12.44	6.99	1.4	1.8	37	6	79	.12	5	0.4	0.7	28	SF2
		15	2352	33.87	19	28.73	155	25.59	0.45	1.9	1.6	27	4	82	.14	5	0.3	0.5	17	KAO
		16	923	56.04	19	27.59	155	28.57	9.07	1.5	1.2	30	5	67	.09	7	0.4	1.0	22	KAO
		16	927	28.47	19	19.46	155	11.35	5.49	1.3	1.1	29	3	97	.13	6	0.5	1.2	18	SF3
		16	1216	43.66	19	23.72	155	30.12	8.84	1.5	1.1	35	4	71	.10	5	0.4	0.8	26	KAO
		16	1421	51.48	19	19.25	155	10.24	7.92	1.4	1.4	37	6	103	.10	5	0.4	0.6	23	SF3
		16	1514	26.16	19	27.74	155	23.90	8.29	1.9	1.3	44	5	35	.12	4	0.3	0.6	33	KAO
		16	1834	30.95	19	26.61	155	30.16	8.41	1.9	1.2	39	5	40	.13	9	0.4	1.0	24	KAO
		16	2038	38.52	19	48.24	155	46.88	17.47	1.8	1.5	20	3	219	.13	14	1.0	2.5	12	HUA
		16	2159	24.00	19	19.58	155	10.99	6.61	1.7	1.6	40	4	96	.11	5	0.5	0.8	31	SF3
		16	2234	48.01	19	23.09	155	25.22	10.81	1.3	1.1	30	2	44	.10	4	0.4	0.8	23	KAO
		17	741	11.58	19	25.31	155	28.58	9.67	1.5	1.2	36	5	59	.09	5	0.3	0.7	25	KAO
		17	857	17.68	19	22.17	155	1.65	7.88	1.8	1.8	28	3	156	.10	5	0.6	0.4	21	SF5
		17	959	43.87	19	11.45	155	27.26	7.33	2.2	2.0	35	3	125	.16	4	0.6	1.0	29	LSW
		17	1014	56.38	19	11.62	155	27.38	7.13	2.0	1.5	34	2	121	.15	4	0.6	1.0	28	LSW
		17	1026	34.44	19	11.77	155	27.15	5.40	1.7	1.1	26	0	125	.15	4	0.7	2.4	16	LSW
		17	1040	12.02	19	22.61	155	17.06	30.20	1.9	1.5	45	6	40	.11	1	0.6	0.9	33	DEP
		17	2234	9.69	19	19.08	155	13.49	6.74	1.2	1.1	23	1	71	.09	4	0.4	1.0	16	SF2
		18	010	52.36	19	21.65	155	4.84	7.61	2.8	3.3	48	5	82	.12	5	0.4	0.5	36	SF5
		18	130	37.38	19	20.21	155	12.42	7.14	2.0	2.4	42	3	74	.14	5	0.4	0.6	36	SF2
		18	250	57.74	19	20.31	155	7.37	4.83	1.1	1.0	19	0	96	.14	5	0.6	2.3	18	SSF
		18	4 7	49.02	19	5.40	156	11.65	34.18	2.6	2.3	42	3	278	.09	39	2.0	1.4	36	KON
		18	648	42.46	19	20.99	156	14.96	33.26	2.1	1.7	20	1	286	.11	38	3.8	2.4	18	KON
		18	7 7	13.09	19	24.74	155	19.67	5.92	1.2	1.1	27	6	89	.09	2	0.4	0.9	19	KAO
		18	722	52.48	19	20.06	155	11.77	6.48	1.2	1.2	40	6	82	.12	5	0.4	0.7	26	SF3
		18	8 7	21.21	19	27.17	155	29.50	10.55	2.2	2.0	51	7	41	.11	7	0.3	0.5	37	KAO
		18	855	13.64	19	21.68	155	26.45	10.26	2.3	2.5	46	5	46	.12	3	0.4	0.5	37	KAO
		18	952	19.20	19	19.49	155	30.66	7.69	1.6	1.2	33	3	61	.12	8	0.3	1.0	23	KAO
		18	1522	15.57	19	18.81	155	13.69	7.88	1.3	1.0	21	2	88	.08	3	0.5	0.9	15	SF2
		18	1729	0.62	19	25.66	154	57.52	6.30	1.8	1.6	28	2	166	.15	2	0.8	0.6	22	LER
		18	1941	43.76	19	19.24	155	12.83	6.56	1.2	1.1	37	3	84	.13	4	0.5	0.8	24	SF2
		18	2213	39.72	19	22.22	155	28.15	9.61	1.6	1.3	39	4	38	.11	1	0.4	0.6	31	KAO
		18	2342	47.29	19	26.91	154	55.99	5.83	1.9	1.2	23	0	166	.14	2	1.0	1.0	15	LER
		19	238	27.98	19	24.99	155	19.40	5.05	1.6	1.1	23	5	94	.11	2	0.5	0.9	14	KAO
		19	450	16.82	19	32.08	155	57.05	11.82	2.7	2.4	37	4	230	.13	6	1.1	0.4	26	KON
		19	624	41.92	19	22.10	155	16.94	30.45	1.8	1.2	37	4	46	.10	2	0.8	1.2	31	DEP
		19	7 7	15.91	19	16.86	155	23.49	42.98	2.0	1.6	49	6	104	.12	5	0.7	1.1	38	DEP
		19	1248	45.20	19	25.06	155	19.41	5.87	1.6	1.4	32	6	80	.10	3	0.4	0.8	24	KAO
		20	250	3.53	19	25.87	155	21.48	10.53	2.6	2.4	45	4	38	.11	4	0.3	0.5	39	KAO
		20	3 6	5.92	19	18.84	155	12.88	5.42	1.3	1.1	32	2	90	.13	4	0.4	0.9	22	SF2
		20	6 7	16.53	19	23.95	155	26.60	10.57	1.4	1.1	28	4	45	.10	3	0.4	0.7	22	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	AUG	20	653	40.14	19	17.81	155	12.86	6.76	1.7	1.1	32	2	122	.13	2	0.5	1.0	25	SF2
		20	1133	50.28	19	19.13	155	8.21	7.37	1.5	1.7	36	5	116	.13	3	0.5	1.0	18	SF4
		20	1146	51.97	19	18.74	155	13.22	9.10	1.8	1.8	40	5	132	.12	7	0.4	0.5	32	SF2
		20	1155	4.37	19	21.29	155	12.79	8.12	1.8	2.0	42	3	157	.13	3	0.5	0.4	35	SF2
		21	034	29.58	19	27.27	155	29.79	7.62	1.6	1.3	26	3	88	.13	9	0.4	1.6	21	KAO
		21	253	32.59	19	19.28	155	15.56	5.07	1.1	1.3	23	2	101	.12	6	0.4	1.8	21	SF1
		21	5	3 40.80	19	12.64	155	5.89	49.54	2.3	2.1	34	1	237	.09	9	2.0	2.3	32	DEP
		21	621	39.83	19	21.32	155	28.17	8.44		1.1	18	0	68	.13	2	0.6	1.0	13	KAO
		21	1246	44.30	19	18.88	155	15.30	6.39	1.2	1.3	30	0	106	.10	4	0.5	1.0	22	SF1
		21	21 7	10.31	19	19.38	155	13.92	6.61		1.1	17	0	84	.07	4	0.5	1.1	15	SF2
		22	146	2.91	19	20.18	155	12.87	6.97		1.1	14	0	70	.09	5	0.6	1.3	9	SF2
		22	358	50.41	19	24.69	155	19.49	4.85	1.9	2.0	23	1	46	.11	4	0.4	1.1	18	KAO
		22	820	29.59	19	20.61	155	13.65	8.18	2.4	2.8	33	2	61	.09	4	0.4	0.6	31	SF2
		22	859	56.27	19	15.38	155	13.71	6.79	1.5	1.5	17	0	201	.14	3	1.0	1.0	13	SF2
		22	915	25.58	19	22.95	155	27.51	8.61	2.4	2.2	31	1	70	.14	1	0.5	0.8	15	KAO
		22	1530	52.36	19	28.77	155	15.97	10.20	1.7	1.4	16	1	91	.08	7	0.5	1.4	14	GLN
		22	1823	46.68	19	19.06	155	15.42	7.21	1.6	1.5	18	0	114	.06	4	0.4	0.6	15	SF1
		23	316	49.50	19	27.04	155	28.11	8.22	1.9	1.5	27	1	50	.08	8	0.3	1.1	17	KAO
		23	1323	7.73	19	17.90	155	21.77	7.34	1.3	1.3	25	3	115	.11	5	0.4	0.9	16	SWR
		23	1522	36.43	19	25.28	155	20.58	6.14	1.9	1.5	34	5	42	.14	3	0.4	1.0	26	KAO
		23	1831	33.69	19	10.47	155	24.01	48.81	2.9	3.0	47	5	168	.09	7	0.9	1.2	40	DEP
		23	1952	13.03	19	19.43	155	12.00	7.64	1.1	1.1	17	1	93	.05	5	0.6	1.3	14	SF3
		24	028	32.72	19	22.18	155	2.67	7.28	2.8	3.2	41	6	132	.12	4	0.5	0.6	32	SF5
		24	156	29.60	19	19.72	155	12.71	7.69	1.2	1.3	24	1	78	.09	5	0.5	0.8	17	SF2
		24	345	39.61	19	20.81	155	7.68	7.47	1.9	2.1	42	8	84	.11	4	0.4	0.6	32	SF4
		24	634	41.83	19	17.69	155	12.99	5.26	1.3	1.3	20	3	122	.07	1	0.5	0.9	19	SF2
		24	1019	19.00	19	20.18	155	24.42	13.25	1.9	1.8	36	4	65	.09	2	0.4	0.3	27	DEP
		24	1057	46.59	19	22.66	155	20.77	10.59	1.8	1.7	34	6	69	.09	3	0.4	0.5	26	KAO
		24	1416	43.58	19	23.22	154	58.15	8.26	2.1	2.1	31	3	188	.17	4	1.2	0.6	22	LER
		24	1448	36.21	19	17.45	155	14.65	5.48	1.4	1.8	32	3	151	.12	2	0.5	0.9	23	SF1
		24	1544	24.23	19	21.26	155	2.74	7.03	1.7	1.7	23	1	136	.16	3	1.1	1.3	15	SF5
		24	1559	55.96	19	20.40	155	9.56	8.08	1.4	1.1	24	3	75	.06	3	0.5	1.0	15	SF3
		24	1912	36.82	19	19.45	155	12.32	8.67	1.3	1.5	20	2	88	.06	5	0.6	1.1	14	SF2
		25	320	1.97	19	22.87	155	26.65	10.62	1.8	1.8	33	2	45	.10	2	0.4	0.6	27	KAO
		25	457	5.01	19	23.75	155	27.11	11.40	2.4	2.6	48	5	37	.13	3	0.3	0.4	36	KAO
		25	946	37.37	19	5.27	155	19.75	23.59	2.7	2.7	39	4	243	.09	18	1.2	1.7	35	LOI
		25	1120	1.92	19	20.11	155	24.55	13.00	2.7	2.8	49	8	65	.11	2	0.4	0.3	40	SWR
		25	12 8	12.16	19	22.74	155	26.73	9.99	2.3	2.1	40	5	40	.13	2	0.4	0.6	32	KAO
		25	1238	33.44	19	20.78	155	12.60	8.25	2.1	2.5	43	5	66	.11	4	0.4	0.5	33	SF2
		25	1653	14.79	19	19.69	155	12.96	6.17	1.2	1.1	22	1	75	.09	5	0.5	1.2	16	SF2
		26	441	22.21	19	23.91	155	15.41	3.77	1.1	1.4	14	3	107	.12	2	0.5	0.6	10	SEC
		26	1731	20.86	19	23.42	155	20.72	9.50	1.6	1.3	32	5	56	.10	2	0.4	0.6	19	KAO
		26	19 7	22.99	19	25.52	155	30.31	8.57	1.8	1.5	31	3	67	.13	7	0.5	1.0	24	KAO
		26	1936	43.11	19	19.09	155	10.11	6.17	1.4	1.5	31	4	108	.14	5	0.5	1.1	24	SF3
		26	2148	14.52	19	24.78	155	29.20	9.99	1.5	1.2	30	3	63	.08	5	0.4	0.8	20	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	AUG	27	558	37.89	19	17.86	155	21.19	5.61	1.3	1.1	12	1	122	.10	5	0.6	1.6	7	SWR
		27	1358	3.42	19	40.92	155	2.30	0.13	2.2	2.4	27	0	188	.19	20	1.0	3.6	20	HIL B*
		27	1544	21.94	19	19.33	155	10.99	4.05	1.3	1.3	35	5	102	.21	5	0.6	2.3	18	SSF
		28	154	35.55	19	19.36	155	12.82	6.69	1.4	2.0	35	1	82	.11	4	0.4	0.8	27	SF2
		28	520	57.54	19	25.11	155	15.57	35.06	1.9	2.4	20	0	92	.10	2	1.0	2.8	7	DEP L
		28	728	48.88	19	12.34	155	36.46	9.62	3.2	3.3	46	5	114	.20	5	0.7	0.8	36	LSW
		28	1114	52.34	19	19.60	155	11.57	7.37	1.5	1.5	36	4	92	.11	5	0.4	0.7	28	SF3
		28	1251	40.43	19	24.93	155	19.47	5.04	1.4	1.1	30	5	46	.11	2	0.3	0.8	20	KAO
		28	1539	55.73	19	20.35	155	11.68	7.45	2.2	2.6	48	7	77	.13	5	0.4	0.6	39	SF3
		28	1643	43.25	19	26.76	155	22.03	8.70	2.0	1.3	36	7	54	.11	3	0.4	0.7	25	KAO
		28	2115	0.35	19	23.90	155	30.90	8.90	1.8	1.2	34	2	49	.10	6	0.4	0.8	27	KAO
		28	2230	14.33	19	23.41	155	20.91	9.72	1.6	2.0	38	5	55	.12	2	0.4	0.5	27	KAO
		28	2327	25.56	19	22.31	155	5.56	7.78	2.0	2.1	41	9	71	.13	3	0.4	0.5	28	SF4
		28	2346	8.15	19	14.21	156	5.56	27.13	2.5	1.6	17	0	329	.11	47	28.1	5.9	15	KOH *
		28	2348	55.51	19	20.51	155	6.68	8.17	1.7	2.0	31	4	102	.09	6	0.4	0.7	21	SF4
		29	0 0	12.63	19	25.15	155	19.26	5.73	1.7	1.5	24	3	109	.09	3	0.4	1.0	18	KAO
		29	4 1	41.14	19	19.03	155	11.51	4.07	1.5	1.4	32	4	107	.11	5	0.4	1.6	22	SSF
		29	5 7	58.53	19	23.11	155	30.14	7.81	1.5	1.1	27	1	73	.11	5	0.5	1.0	21	KAO
		29	618	15.36	19	23.86	155	25.80	7.10	1.6	1.3	28	3	47	.11	3	0.4	0.9	23	KAO
		29	8 5	39.26	19	21.81	155	4.63	7.40	2.0	2.4	38	2	80	.14	5	0.5	0.7	32	SF5
		29	1245	34.36	19	23.37	155	28.01	9.76	1.8	1.3	33	3	59	.11	2	0.4	0.6	27	KAO
		29	1632	25.92	19	19.70	155	7.38	8.18	2.2	2.7	47	8	107	.11	4	0.4	0.6	34	SF4
		29	1641	41.55	19	28.17	155	27.01	2.54	2.2	1.5	39	4	47	.12	6	0.3	1.0	28	KAO
		29	20 6	53.37	19	21.13	155	2.61	5.24	1.4	1.1	27	3	148	.15	2	0.6	1.3	19	SF5
		29	2025	50.45	19	25.72	155	29.37	8.59	1.7	1.1	34	3	62	.11	7	0.4	0.9	24	KAO
		29	2324	22.35	19	20.50	155	12.91	7.19	1.4	1.5	34	3	66	.15	4	0.5	0.8	23	SF2
		30	142	46.78	19	23.75	155	27.19	9.73	1.8	1.8	40	4	62	.12	2	0.4	0.6	32	KAO
		30	624	39.83	18	58.89	155	12.45	43.09	2.4	2.1	51	6	262	.09	33	1.1	1.1	41	LOI
		30	847	40.23	19	21.80	155	5.30	6.78	1.2	1.1	23	1	80	.14	4	0.5	1.1	9	SF4
		30	1546	34.82	19	21.36	155	6.27	7.44	1.4	1.1	29	3	88	.13	4	0.5	0.7	15	SF4
		30	1827	47.10	19	21.75	155	28.54	5.62	1.8	1.3	30	3	43	.12	2	0.4	0.9	23	KAO
		30	20 1	32.42	19	20.44	155	30.54	9.86	1.6	1.2	31	1	61	.10	6	0.4	0.7	20	KAO
		30	2144	14.54	19	22.97	155	27.35	8.90	1.5	1.1	38	3	39	.11	1	0.3	0.6	28	KAO
		31	1015	33.95	19	17.71	155	23.63	9.71	2.0	2.1	47	5	94	.14	5	0.4	0.5	33	SWR
		31	1333	31.09	20	8.44	155	50.44	39.07	3.3	3.4	52	8	275	.11	7	0.8	0.9	44	KOH
		31	2040	31.11	19	12.44	155	28.02	8.06	2.3	2.4	41	3	102	.19	5	0.6	0.7	24	LSW F
		31	2120	32.14	19	23.29	155	27.72	9.15	1.4	1.1	31	4	57	.11	1	0.4	0.8	17	KAO
		31	2253	23.50	19	21.85	155	5.10	8.89	2.8	3.3	48	6	78	.10	4	0.4	0.3	39	SF5
SEP		1	544	6.47	19	23.24	155	29.66	8.98	1.5	1.1	25	3	51	.09	4	0.4	0.9	15	KAO
		1	1057	45.08	19	2.96	155	22.57	32.70	2.1	1.8	45	6	209	.23	15	1.4	2.2	39	LOI
		2	1527	0.18	19	21.42	155	2.03	7.28	1.3	1.3	27	2	159	.13	3	0.6	0.6	14	SF5
		2	1643	14.45	19	21.28	155	1.58	6.63	3.2	3.8	46	5	174	.12	3	0.6	0.4	32	SF5
		2	1714	5.12	19	22.08	155	2.02	7.32	1.9	1.4	35	4	149	.14	4	0.6	0.8	27	SF5
		2	2219	34.71	19	21.73	155	6.81	7.77	1.3	1.1	25	2	78	.12	3	0.5	0.7	18	SF4
		3	810	37.27	19	27.07	154	53.07	7.21	2.1	2.0	32	2	194	.17	7	1.1	0.8	23	LER

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	SEP	3	1020	33.40	19	46.14	155	46.93	14.85	2.5	2.5	41	5	147	.11	11	0.5	0.6	29	HUA
		3	1741	51.53	19	28.24	155	26.06	7.37	2.0	1.3	43	7	48	.14	6	0.3	0.8	28	KAO
		3	2010	21.00	19	21.97	155	2.58	6.51	1.3	1.1	26	2	136	.14	4	0.6	1.2	21	SF5
		3	2059	25.72	19	21.67	155	2.77	5.38	1.5	1.3	33	2	132	.17	3	0.6	1.4	22	SF5
		3	2353	33.26	19	45.86	155	47.32	14.80	2.6	2.6	38	4	149	.10	10	0.6	0.6	30	HUA
		4	0	4 0.80	19	25.67	155	19.32	7.06	1.5	1.3	27	5	101	.14	3	0.4	0.9	18	KAO
		4	042	21.85	20	43.33	155	25.58	4.89	2.6	1.8	31	2	305	.12	76	7.4	8.8	27	DIS
		4	138	44.46	19	49.46	155	34.49	16.89	1.9	1.6	28	3	139	.09	10	0.6	1.6	20	KEA
		4	146	29.71	19	12.13	155	27.48	6.77	2.0	1.7	40	7	114	.13	5	0.4	0.9	26	LSW
		4	151	34.36	19	11.72	155	27.72	7.66	2.0	1.3	32	3	111	.16	4	0.5	0.9	21	LSW
		4	214	53.07	19	12.08	155	27.62	3.92	1.7		21	1	112	.13	5	0.7	2.8	19	LSW
		4	321	59.22	19	21.67	155	4.89	8.17	1.7	1.8	33	4	81	.10	5	0.4	0.6	23	SF5
		4	412	29.91	19	19.99	155	24.67	12.43	1.4	1.4	33	2	64	.11	3	0.4	0.5	28	SWR
		4	415	54.61	18	58.73	155	31.88	38.32	2.3	1.6	41	5	222	.09	14	1.0	1.6	30	DLS
		4	517	5.81	19	21.90	155	30.19	9.39	1.9	1.7	36	3	58	.10	5	0.4	0.6	26	KAO
		4	912	48.22	19	20.29	155	12.57	7.52	1.4	1.6	36	4	72	.11	4	0.4	0.7	22	SF2
		4	1253	54.36	19	25.07	155	19.62	4.68	1.8	1.9	25	5	65	.09	3	0.3	0.9	18	KAO
		4	1931	40.78	19	20.30	155	13.50	6.26	1.2	1.1	26	1	66	.12	4	0.5	0.9	20	SF2
		5	414	23.19	19	21.59	155	29.93	9.70	1.8	1.4	35	3	44	.10	4	0.4	0.7	24	KAO
		5	1256	24.13	19	18.38	155	15.73	6.02	1.3	1.6	29	0	111	.11	4	0.4	0.9	22	SF1
		5	19	7 32.66	19	22.41	155	28.89	9.70	2.1	2.1	42	2	38	.10	2	0.3	0.6	37	KAO
		5	2119	35.70	19	30.25	155	25.78	3.09	1.6	1.3	20	6	127	.15	4	0.4	0.9	12	MLO
		5	2244	34.59	19	19.59	155	11.69	6.90	1.8	2.2	40	4	92	.13	6	0.4	0.9	30	SF3
		6	049	11.32	19	21.92	155	5.02	7.98	2.0	2.4	36	3	77	.11	5	0.4	0.6	28	SF5
		6	3	1 46.58	19	29.53	155	27.01	3.36	1.8	1.5	24	3	57	.12	5	0.3	1.3	12	KAO
		6	318	13.49	19	19.75	155	8.17	8.89	2.7	3.2	47	7	87	.11	4	0.4	0.3	40	SF4
		6	537	24.71	19	11.50	155	36.52	5.55	2.4	2.1	40	4	92	.20	13	0.6	1.5	31	LSW
		6	851	43.86	19	12.31	155	41.39	8.39	2.0	1.2	21	0	208	.14	9	1.0	1.3	15	LSW
		6	1550	16.60	19	21.17	155	1.74	6.39	1.5	1.3	28	2	173	.14	3	0.6	1.0	15	SF5
		6	1714	23.44	19	21.40	155	2.90	6.98	2.5	2.5	42	6	129	.13	3	0.5	0.6	31	SF5
		6	1719	24.11	19	29.55	155	26.27	4.20	1.8	1.1	23	4	64	.11	5	0.4	1.5	12	KAO
		6	1721	49.64	19	35.13	155	18.46	9.92	1.6	1.2	31	3	77	.11	13	0.5	1.8	15	KEA
		6	1856	58.54	19	20.10	154	52.25	40.86	3.0	2.8	53	8	244	.11	15	0.8	0.9	44	LER
		7	445	44.36	19	19.38	155	12.07	6.29	1.3	1.2	24	1	93	.10	5	0.5	1.3	17	SF3
		7	1314	56.76	19	30.40	155	56.45	12.28	3.0	2.9	35	3	224	.10	3	1.0	0.4	30	KON
		7	1428	24.38	19	24.73	155	19.48	4.78	1.2	1.3	26	5	90	.10	2	0.4	0.8	19	KAO
		7	22	8 55.96	19	29.32	155	23.80	9.12	1.6	1.4	36	5	38	.13	1	0.4	0.7	28	KAO
		7	2350	0.78	18	45.90	154	55.32	4.61	2.3	2.1	36	4	295	.13	62	1.6	1.2	20	DIS
		8	637	16.20	19	17.29	155	5.02	44.30	2.6	2.8	52	10	194	.11	5	0.7	0.9	41	DEP
		8	16	1 42.31	19	19.40	155	11.26	6.77	2.6	3.0	49	7	99	.14	6	0.4	0.6	40	SF3
		8	1831	14.10	19	19.35	155	11.83	7.03	1.4	1.1	23	1	96	.08	5	0.5	1.1	19	SF3
		8	1857	57.11	19	22.37	155	28.43	9.41	1.5	1.1	23	2	62	.10	1	0.4	0.8	19	KAO
		8	1919	9.93	19	27.05	155	28.57	9.66	2.2	2.1	47	6	56	.12	7	0.3	0.6	37	KAO
		9	17	2 6.51	19	19.51	155	16.16	6.69	1.8	1.6	41	5	94	.13	2	0.4	0.7	33	SF1
		9	21	3 51.24	19	18.82	155	14.75	6.56	1.3	1.2	33	1	89	.12	4	0.5	0.8	23	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	SEP	9	2221	27.39	19	35.03	155	53.95	33.08	2.6	2.3	33	4	208	.11	11	0.8	1.5	27	KON
		10	949	55.48	19	14.25	155	34.65	8.01	2.7	2.6	47	7	79	.21	4	0.6	0.9	35	LSW
		10	1333	47.72	19	20.75	155	13.54	7.38	1.1	1.3	30	3	62	.13	4	0.5	0.7	22	SF2
		10	1916	6.49	18	55.68	155	16.61	14.62	3.1	4.1	43	0	244	.10	32	1.7	2.0	34	LOI L
		10	1931	48.02	19	20.85	155	12.98	7.72	1.4	1.8	38	2	61	.14	3	0.5	0.7	30	SF2
		10	2351	36.28	19	20.59	155	13.34	9.04	3.4	3.9	46	5	60	.12	4	0.4	0.5	40	SF2 F
		11	2	6 22.76	19	18.12	155	13.13	7.54	1.5	1.6	39	4	99	.12	2	0.4	0.6	28	SF2
		11	216	56.77	19	18.35	155	13.17	7.58	1.8	2.2	41	4	91	.12	3	0.5	0.6	36	SF2
		11	5	4 32.78	19	22.21	155	4.02	6.95	1.6	1.3	31	3	159	.13	4	0.6	0.9	21	SF5
		11	636	50.34	19	25.27	155	20.93	7.90	1.3	1.3	37	6	67	.12	4	0.4	0.7	29	KAO
		11	1313	45.35	19	18.69	155	15.42	6.13	1.7	1.9	34	2	111	.13	4	0.4	0.9	28	SF1
		11	1518	3.07	19	20.44	155	12.42	7.89	2.3	2.8	49	6	71	.13	4	0.4	0.5	38	SF2
		11	1611	23.42	19	26.43	155	29.14	7.99	1.9	1.1	35	5	60	.14	7	0.4	1.1	25	KAO
		11	1739	31.89	19	23.84	155	26.75	10.43	1.9	1.7	38	2	27	.11	3	0.3	0.6	32	KAO
		12	041	10.75	19	24.93	155	30.34	9.30	1.8	1.2	30	4	46	.09	7	0.4	1.0	20	KAO
		12	043	39.58	19	30.18	155	25.88	25.58	1.8	1.6	38	3	74	.11	5	0.6	1.1	31	DHL
		12	1325	40.43	19	15.16	155	27.67	5.38	1.8	1.9	35	4	87	.21	4	0.6	1.6	26	LSW
		12	1558	8.23	19	20.13	155	3.87	7.64	1.9	2.3	38	2	132	.13	2	0.6	0.5	28	SF5
		12	2012	11.53	19	20.04	155	12.47	8.08	1.2	1.5	25	1	76	.08	5	0.5	0.8	19	SF2
		13	142	31.54	19	23.14	155	27.50	9.95	1.4	1.1	25	3	91	.11	1	0.4	0.6	15	KAO
		13	215	48.15	19	21.55	155	1.16	0.00	1.3	1.1	16	2	218	.23	8	1.5	1.0	10	SSF
		13	316	34.34	19	27.30	155	29.36	8.44	1.9	1.4	32	3	104	.11	8	0.4	1.1	26	KAO
		13	336	35.17	19	23.38	155	22.48	9.42	1.4	1.1	27	4	45	.09	5	0.4	0.8	20	KAO
		13	1825	56.14	19	29.70	155	42.45	7.88	1.9	1.1	31	3	55	.14	6	0.5	1.3	22	MLO
		13	2027	59.48	19	27.84	154	53.18	9.01	3.0	3.2	42	5	181	.13	4	0.9	0.3	27	LER
		13	2045	48.48	19	28.53	155	28.10	7.12	2.0	1.8	42	7	53	.10	7	0.3	0.8	28	KAO
		14	028	36.26	19	20.35	155	12.38	7.96	1.7	2.1	46	6	73	.13	4	0.4	0.5	35	SF2
		14	1113	13.41	19	26.06	155	22.12	8.27	1.3	1.1	30	5	42	.09	4	0.3	0.7	19	KAO
		14	1432	45.90	19	23.28	154	57.61	6.47	1.8	1.7	29	2	193	.17	4	1.1	1.0	16	LER
		14	1439	11.95	19	21.57	155	4.14	6.18	1.6	1.1	28	1	89	.19	4	0.7	1.2	21	SF5
		14	2259	3.81	19	21.15	155	2.63	6.93	1.7	1.8	39	5	142	.11	2	0.5	0.5	25	SF5
		15	049	39.91	19	19.85	155	9.68	6.05	1.3	1.3	20	2	86	.11	4	0.6	1.4	16	SF3
		15	431	12.10	19	20.01	155	12.36	7.06	1.2	1.5	38	3	78	.13	5	0.4	0.7	31	SF2
		15	610	36.75	19	31.13	154	40.33	9.87	2.0	1.7	27	4	329	.11	18	1.9	0.6	20	LER
		15	1134	38.86	19	25.33	155	19.97	4.01	1.2	1.1	26	3	104	.10	3	0.4	0.8	16	KAO
		15	1320	22.90	19	20.01	155	24.61	12.89	1.7	1.8	40	3	65	.10	2	0.3	0.4	32	SWR
		15	1620	1.58	19	11.22	155	40.95	5.91	2.3	2.0	36	4	120	.23	10	0.7	2.4	29	LSW
		15	1935	57.91	19	22.11	155	26.50	9.07	1.6	1.5	34	2	56	.14	2	0.4	0.7	28	KAO
		16	5	5 38.13	19	25.53	155	28.34	9.80	1.8	1.4	37	5	58	.10	6	0.3	0.6	30	KAO
		16	1258	11.26	19	20.49	155	10.88	7.11	2.0	1.9	45	5	78	.13	3	0.4	0.7	38	SF3
		16	1926	45.76	19	25.20	155	19.42	3.36	1.4	1.4	32	4	73	.13	3	0.3	0.6	22	KAO
		16	2231	8.71	19	18.09	155	12.92	5.69	1.8	1.8	41	6	108	.13	2	0.4	0.9	31	SF2
		16	2355	46.13	19	18.09	155	13.85	6.04	1.2	1.1	24	1	107	.09	2	0.5	0.9	20	SF2
		17	442	49.84	19	19.98	155	6.54	7.43	2.4	2.4	52	10	118	.11	5	0.4	0.5	39	SF4
		17	514	16.88	19	21.99	155	49.92	11.94	2.6	2.0	37	4	126	.13	12	0.5	0.3	28	KON

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1984	SEP	17	1315	17.51	19	29.52	154	54.13	1.83	1.9	2.9	19	1	127	.28	4	0.8	1.4	11	SLE	
		17	20 3	9.59	19	21.08	155	17.88	30.23	2.4	2.7	51	6	39	.11	2	0.5	0.8	45	DEP	
		17	2212	54.68	19	25.01	155	19.41	4.80	1.3	1.5	26	5	68	.10	2	0.4	0.9	18	KAO	
		18	017	22.28	19	18.30	155	12.88	5.81	2.5	3.0	47	8	103	.13	3	0.4	0.8	33	SF2	
		18	143	25.22	19	18.44	155	12.99	5.10	1.8	2.0	33	3	96	.10	3	0.3	0.8	25	SF2	
		18	450	59.68	19	21.59	155	4.67	8.12	2.3	2.6	43	5	82	.11	4	0.4	0.5	36	SF5	
		18	453	50.16	19	21.77	155	1.73	7.08	1.4	1.1	25	3	160	.12	4	0.6	0.8	19	SF5	
		18	511	14.55	19	22.48	155	29.89	8.21	1.3	1.1	28	4	71	.11	4	0.4	0.9	23	KAO	
		19	013	49.59	19	20.61	155	8.21	7.12	1.4	1.5	32	2	78	.13	4	0.5	0.8	26	SF4	
		19	134	51.59	19	19.83	155	11.66	6.67	1.8	2.1	45	5	87	.12	5	0.4	0.8	34	SF3	
		19	630	15.24	19	26.65	155	30.21	9.02	1.9	1.5	40	5	44	.12	9	0.4	0.8	29	KAO	
		19	715	18.14	19	20.96	155	12.51	7.55	2.0	2.5	45	4	63	.13	3	0.4	0.6	37	SF2	
		19	810	23.30	19	19.44	155	12.05	5.87	1.4	1.6	17	0	91	.05	5	0.5	1.6	17	SF3	
		19	1134	10.58	19	22.75	155	30.07	8.27	1.8	1.5	41	4	40	.13	4	0.4	0.8	36	KAO	
		19	1927	52.13	19	27.38	155	14.46	31.48	1.9	1.4	43	4	51	.11	5	0.5	1.1	34	DEP	
		19	22 9	30.06	19	23.95	155	16.05	2.84	1.7	2.3	25	3	104	.09	1	0.3	0.3	18	SEC	
		20	250	37.66	19	18.95	155	15.50	6.89	1.4	1.2	33	4	98	.14	4	0.4	0.8	28	SF1	
		20	536	39.30	19	24.44	155	16.12	1.42	0.8	1.2	10	2	133	.11	1	0.4	0.4	7	SEC	L
		20	632	57.22	19	24.43	155	16.34	1.24	0.6	1.0	12	2	132	.12	1	0.3	0.3	6	SEC	L
		20	728	46.35	19	24.44	155	16.18	1.38	0.6	1.4	11	2	133	.06	1	0.3	0.3	7	SEC	L
		20	833	56.04	19	12.56	155	26.97	5.67	2.1	1.5	12	0	139	.08	6	0.7	1.7	12	LSW	
		20	835	33.90	19	24.56	155	16.46	1.95	1.0	1.1	10	2	136	.05	1	0.4	0.3	9	SNC	L
		20	840	50.04	19	24.69	155	16.03	0.22	1.0	1.1	10	2	143	.10	2	0.4	0.6	8	SNC	L
		20	917	36.78	19	24.57	155	16.28	1.40	0.8	1.2	15	2	137	.12	1	0.4	0.3	10	SNC	
		20	1046	45.56	19	24.66	155	16.60	0.87	0.8	1.1	9	2	140	.15	1	0.4	0.4	7	SNC	L
		20	11 7	2.97	19	23.97	155	16.35	0.43	0.9	2.1	14	3	102	.18	0	0.3	0.3	8	SEC	L
		20	1322	7.87	19	24.45	155	16.35	1.23	1.3	1.6	15	3	133	.10	1	0.2	0.2	9	SEC	
		20	1332	58.10	19	24.63	155	16.13	1.15	1.0	1.4	12	1	140	.10	2	0.3	0.4	8	SNC	L
		20	1641	57.31	19	23.92	155	14.93	28.90	1.8	1.4	40	4	64	.11	2	0.6	1.0	33	DEP	
		20	2247	53.24	19	18.12	155	12.99	4.75	2.4	2.9	39	1	104	.14	2	0.5	1.3	36	SSF	
		21	029	50.91	19	25.53	155	29.30	9.34	1.9	1.6	38	4	37	.09	6	0.3	0.7	31	KAO	
		21	7 1	30.60	19	12.99	155	16.19	44.09	1.9	1.5	35	2	192	.09	9	1.0	1.6	28	DEP	L
		21	1652	36.58	19	19.85	155	12.55	7.23	1.3	1.5	33	4	79	.12	5	0.5	0.7	27	SF2	
		22	0 9	57.47	19	27.25	155	29.79	9.32	2.2	1.5	38	3	47	.13	9	0.4	0.7	30	KAO	
		22	1824	32.18	19	21.70	155	6.13	7.59	1.8	2.1	32	6	82	.10	4	0.4	0.8	21	SF4	
		22	19 2	33.97	19	18.32	155	13.51	6.67	1.4	1.2	29	1	82	.11	2	0.6	1.0	23	SF2	
		22	2040	34.52	19	18.14	155	12.93	5.01	1.9	2.4	39	2	106	.11	2	0.4	1.1	33	SF2	
		22	2047	53.73	19	18.10	155	12.99	4.61	1.9	2.0	36	3	105	.10	2	0.4	0.9	32	SSF	
		23	0 1	49.72	19	21.49	155	4.04	5.66	1.7	1.5	26	2	166	.14	6	0.7	1.7	18	SF5	
		23	016	2.12	19	20.70	155	10.69	7.50	1.3	1.3	22	2	85	.09	3	0.5	0.8	19	SF3	
		23	629	42.90	19	20.67	155	13.29	7.12	1.2	1.1	23	1	60	.10	4	0.5	0.7	18	SF2	
		23	1439	20.58	19	21.86	155	4.74	8.46	2.7	3.0	47	7	78	.11	5	0.4	0.4	39	SF5	
		24	1516	6.38	19	21.45	155	24.10	10.63	1.4	1.1	30	4	43	.10	3	0.4	0.6	25	SWR	
		24	2127	48.20	19	18.97	155	54.17	12.37	4.3	4.3	49	3	208	.11	6	0.9	0.4	44	KON	F
		24	2345	53.73	19	17.75	155	23.12	8.12	1.4	1.1	27	2	101	.11	5	0.4	0.7	21	SWR	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1984	SEP	25	142	57.95	19	25.94	155	29.35	10.19	2.3	2.1	49	6	40	.11	7	0.3	0.5	37	KAO	
		25	353	46.15	19	17.14	155	22.50	5.32	1.8	2.2	43	3	118	.17	6	0.5	1.4	38	SWR	
		25	1028	1.79	19	41.31	155	3.15	0.01	1.8	2.5	19	0	106	.36	3	1.4	4.4	14	HIL	B
		25	1250	3.14	19	25.09	155	37.92	25.83	2.3	1.6	44	5	55	.08	5	0.5	0.9	35	DML	
		25	1924	13.88	19	20.10	155	10.38	8.07	1.9	2.2	46	7	84	.11	4	0.3	0.5	33	SF3	
		26	1440	30.47	19	18.85	155	13.52	6.80	1.4	1.3	32	3	82	.12	3	0.4	0.7	22	SF2	
		26	1917	41.48	19	21.11	155	21.78	8.66	1.7	1.3	43	8	62	.15	3	0.4	0.7	31	SWR	
		26	2157	31.34	19	25.09	155	19.43	5.77	1.0	1.0	18	2	104	.08	3	0.5	1.1	15	KAO	
		27	342	51.42	19	25.94	155	21.31	10.26	2.9	2.9	49	6	31	.11	3	0.3	0.4	41	KAO	F
		27	7 3	12.74	19	19.40	155	10.99	9.63	3.2	3.7	51	7	100	.10	5	0.5	0.4	43	SF3	F
		27	911	24.54	19	54.77	155	16.64	37.22	1.8	1.7	31	4	200	.09	7	0.9	1.3	28	KEA	
		27	14 2	20.00	19	20.04	155	12.05	5.80	1.6	1.5	36	5	80	.13	5	0.5	0.9	26	SF3	
		27	2240	13.69	19	18.97	155	26.27	8.44	1.5	1.1	31	3	69	.11	6	0.4	0.7	27	LSW	
		28	632	17.56	19	18.17	155	44.88	0.25	2.1	1.4	22	0	230	.18	15	1.9	7.2	16	KON	*
		28	942	8.39	19	26.58	155	28.87	9.24	2.1	1.7	40	6	42	.12	7	0.4	0.8	32	KAO	
		28	1024	52.32	19	21.34	155	2.61	7.25	2.2	2.3	39	4	141	.12	3	0.5	0.6	26	SF5	
		28	1440	7.52	19	20.16	155	18.68	3.20	1.7	2.1	30	3	67	.11	2	0.3	0.7	24	SWR	
		28	1954	55.43	19	19.67	155	12.14	5.56	1.2	1.3	27	1	86	.13	5	0.5	1.2	19	SF3	
		29	8 1	7.01	19	19.30	155	15.21	7.40	1.9	2.1	26	1	105	.09	4	0.4	0.8	18	SF1	
		29	938	46.34	19	27.07	155	29.97	10.46	2.1	1.7	44	5	37	.10	7	0.3	0.6	31	KAO	
		29	1354	57.32	19	13.17	155	38.89	7.63	2.6	2.6	39	5	198	.18	5	0.8	0.9	28	LSW	
		30	1238	24.58	19	18.38	155	51.45	8.72	2.1	1.3	25	5	185	.16	5	0.9	0.6	19	KON	
		30	1827	28.08	19	20.69	155	12.77	8.04	2.0	2.3	46	6	65	.11	4	0.4	0.6	35	SF2	
OCT		1	236	57.92	19	20.29	155	12.75	6.96	1.5	1.3	41	5	69	.14	4	0.4	0.7	30	SF2	
		1	324	21.95	19	19.61	155	12.90	5.74	1.3	1.3	33	2	77	.14	5	0.5	1.1	30	SF2	
		1	547	18.91	19	19.90	155	13.72	6.58	2.0	2.0	52	8	60	.12	5	0.3	0.6	38	SF2	
		1	1240	28.49	19	19.39	155	50.53	7.12	2.6	1.5	33	1	154	.15	7	0.6	0.8	25	KON	
		1	1632	46.92	19	23.59	155	20.26	9.97	1.6	1.1	31	3	59	.10	1	0.4	0.7	21	KAO	
		2	151	25.83	19	21.67	155	6.70	7.93	1.6	1.2	30	2	80	.11	3	0.5	0.8	25	SF4	
		2	2 3	31.27	19	17.88	155	13.17	6.39	1.4	1.5	23	1	103	.08	2	0.5	1.1	22	SF2	
		2	1333	35.90	19	20.07	155	10.47	8.38	2.0	2.2	48	5	85	.11	4	0.4	0.5	39	SF3	
		2	2013	3.72	19	21.74	155	19.30	30.48	1.8	1.5	41	2	42	.12	4	0.6	1.2	35	DEP	
		2	2235	23.99	19	20.37	155	11.87	7.00	1.2	1.2	33	1	76	.13	5	0.5	0.8	26	SF3	
		3	934	11.95	19	14.12	155	27.18	13.70	3.1	3.3	54	8	103	.13	5	0.4	0.4	45	DLS	
		3	1113	26.41	19	48.09	156	3.75	9.78	2.7	2.4	25	2	238	.12	27	1.5	0.9	20	HUA	
		3	1515	49.88	19	20.11	155	12.40	8.64	2.1	2.5	47	4	76	.14	5	0.4	0.5	39	SF2	
		4	10 4	40.63	19	20.09	155	13.09	6.13	1.4	1.1	21	0	68	.12	5	0.6	1.4	21	SF2	
		4	1036	19.66	19	19.75	155	12.04	6.34	2.0	2.2	34	1	86	.12	6	0.4	0.9	33	SF3	
		4	1051	46.38	19	38.96	155	2.98	0.05	2.2	2.2	17	0	233	.19	25	1.9	6.4	10	HIL	B
		5	126	10.37	19	25.23	154	58.59	7.14	2.6	2.6	45	7	184	.19	4	0.8	0.6	29	LER	
		5	326	7.36	19	28.11	155	24.75	8.38	2.9	2.7	46	5	46	.15	4	0.3	0.6	40	KAO	
		5	358	17.06	19	19.66	155	11.33	6.36		0.6	14	0	93	.09	5	0.7	1.8	9	SF3	
		5	437	10.71	19	27.77	155	28.23	9.80	2.3	1.6	48	7	51	.12	7	0.3	0.7	36	KAO	
		5	523	17.10	19	26.00	155	20.07	6.58	1.7	1.9	35	5	47	.12	3	0.4	0.8	25	KAO	
		5	1219	56.65	19	24.19	155	15.37	3.55	1.1	1.4	19	3	118	.11	2	0.4	0.4	12	SEC	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	OCT	5	15 9	59.89	19	21.36	155	1.41	6.28	2.1	2.2	37	3	177	.14	4	0.6	0.6	34	SF5
		5	1538	11.10	19	20.72	155	3.37	6.56	1.8	1.8	31	3	100	.12	2	0.5	0.6	22	SF5
		6	3 5	41.77	19	21.08	155	13.16	8.26	1.7	1.8	36	5	58	.10	3	0.4	0.5	27	SF2
		6	1347	13.42	19	26.59	155	30.03	7.45	1.9	1.4	39	4	63	.12	9	0.4	1.1	29	KAO
		6	1754	56.82	19	11.88	155	10.87	31.70	3.0	3.0	57	9	199	.12	11	0.8	1.0	46	DEP
		6	1950	11.12	19	28.27	155	27.96	2.57	2.0	1.2	35	3	51	.14	7	0.3	1.3	29	KAO
		7	048	43.31	19	23.20	155	15.40	30.17	2.0	1.7	39	5	48	.10	2	0.6	0.9	31	DEP
		7	818	45.51	19	20.41	155	11.85	6.84	1.7	1.8	39	3	76	.15	5	0.5	0.9	33	SF3
		7	1147	16.02	18	50.43	156	4.56	17.35	2.5	1.7	27	2	303	.09	46	2.8	45.3	19	DIS
		7	1227	25.21	20	19.80	156	19.82	29.27	2.4	2.4	37	1	314	.14	62	4.1	2.8	30	KOH
		7	2112	55.32	19	25.35	155	19.65	6.32	1.4	1.2	30	5	89	.12	3	0.4	0.9	24	KAO
		7	2114	53.72	19	25.28	155	19.70	6.32	1.3	1.1	24	4	87	.10	3	0.4	0.9	17	KAO
		8	0 0	25.11	20	7.02	156	51.65	29.58	3.9	4.3	54	7	314	.11	113	1.6	2.5	47	DIS
		8	0 3	43.06	19	17.09	155	15.48	10.10	2.9	3.1	48	5	151	.11	6	0.4	0.4	42	SF1
		8	1618	10.72	19	54.90	155	29.41	17.85	3.7	4.1	56	9	151	.11	15	0.6	1.8	47	KEA F
		8	1711	0.87	19	20.75	155	13.32	7.57	2.0	2.5	46	4	159	.14	4	0.5	0.6	36	SF2
		8	1730	55.81	19	18.25	155	14.81	6.70	1.2	1.1	32	2	113	.12	3	0.5	0.7	19	SF1
		8	1957	13.61	19	26.87	155	30.27	10.22	2.7	2.6	50	7	35	.12	9	0.3	0.6	34	KAO
		8	2232	41.31	19	19.85	155	10.46	8.22	1.4	1.1	27	2	90	.08	4	0.4	0.6	22	SF3
		9	243	52.64	19	16.70	155	22.65	7.16	1.4	1.5	24	3	122	.11	5	0.5	1.1	19	SWR
		9	435	37.78	19	27.97	155	51.33	8.06	2.5	1.5	30	3	106	.15	7	0.6	0.7	21	KON
		9	1242	13.15	19	19.98	155	15.83	6.08	1.3	1.3	28	2	91	.15	3	0.5	0.9	22	SF1
		10	233	49.75	19	17.23	155	25.17	9.84	3.0	3.6	56	9	69	.15	6	0.3	0.5	45	LSW F
		10	516	12.68	19	17.59	155	22.20	7.60	1.4	1.3	32	3	115	.12	5	0.4	0.8	23	SWR
		10	1728	1.39	19	23.48	155	22.58	9.41	1.7	1.7	33	5	44	.11	5	0.4	0.6	26	KAO
		10	1739	30.40	19	29.90	155	27.50	3.23	2.2	2.0	31	3	67	.13	4	0.4	1.2	21	KAO
		10	2145	14.29	19	23.09	155	2.61	6.79	1.5	1.1	31	3	125	.14	4	0.6	1.0	21	SF5
		10	2342	13.07	19	20.69	155	1.06	5.40	1.8	2.1	29	2	197	.18	4	0.8	1.2	19	SF5
		11	036	13.77	19	13.12	155	27.11	6.34	1.9	1.3	25	2	116	.15	6	0.6	1.8	16	LSW
		11	4 9	55.92	19	24.27	155	16.25	3.34	1.0	1.2	15	4	125	.05	1	0.4	0.4	10	SEC
		11	1158	59.20	19	17.57	155	15.16	7.35	1.4		32	3	141	.09	3	0.5	0.9	25	SF1
		11	1546	19.55	19	20.08	155	13.21	7.73	1.6	1.6	38	2	67	.12	5	0.5	0.7	35	SF2
		11	1559	29.72	19	16.25	155	30.50	8.61	2.2	2.2	45	6	52	.16	2	0.4	0.7	35	LSW
		11	1916	9.34	19	28.76	155	26.97	7.61	2.7	2.5	49	7	55	.13	6	0.3	0.8	39	KAO
		11	1955	46.02	19	25.08	155	18.91	5.86	1.9	2.0	31	5	68	.10	2	0.3	0.7	23	INT
		11	2350	29.41	19	19.23	155	29.03	8.82	1.6	1.1	25	2	56	.13	7	0.4	0.7	19	KAO
		12	0 7	32.56	19	28.21	155	24.71	2.79	1.8	1.2	28	4	67	.11	4	0.3	0.8	20	KAO
		12	051	36.46	19	24.63	155	19.73	6.02	1.9	1.9	38	5	45	.11	2	0.3	0.7	32	KAO
		12	153	46.65	19	24.59	155	19.81	6.41	2.3	2.7	41	5	37	.12	2	0.3	0.6	32	KAO
		12	227	4.28	19	20.08	155	10.45	6.52	1.3	1.2	27	1	88	.12	7	0.6	1.2	23	SF3
		12	240	44.91	19	14.82	155	18.51	13.93	1.5	1.2	28	2	165	.11	6	0.7	0.6	21	DEP
		12	242	10.63	19	24.64	155	19.66	5.91	1.7	1.2	29	6	69	.09	2	0.4	0.8	20	KAO
		12	921	17.99	19	18.09	155	23.58	9.05	2.3	2.7	49	6	91	.14	4	0.4	0.5	38	SWR
		12	1914	40.37	19	25.83	155	19.15	5.61	1.2	1.1	21	3	143	.09	3	0.4	1.0	15	KAO
		12	2154	5.39	19	23.19	155	2.28	7.81	1.7	1.4	34	4	131	.18	4	0.5	0.7	19	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	OCT	12	2255	39.31	19	22.38	155	1.83	7.81	1.8	1.5	38	4	150	.14	5	0.6	0.4	30	SF5
		13	616	26.92	19	20.62	155	7.78	8.56	3.0	3.6	56	10	85	.10	5	0.3	0.4	42	SF4
		13	1031	39.37	19	20.16	155	13.27	8.26	1.2	1.1	17	1	65	.04	5	0.5	1.1	15	SF2
		13	1551	10.38	19	21.47	155	5.97	7.31	1.5	1.5	28	2	87	.11	4	0.5	0.8	20	SF4
		13	1811	36.02	19	19.71	155	11.56	7.65	1.6	2.0	38	4	90	.11	5	0.5	0.7	27	SF3
		14	0 3	41.41	19	47.81	155	57.18	13.98	2.4	2.0	28	5	215	.13	17	1.3	0.7	19	HUA
		14	230	24.15	19	20.59	155	12.85	9.41	2.6	3.2	49	6	65	.12	4	0.3	0.4	42	SF2
		14	2354	5.41	19	49.39	155	36.37	17.25	2.3	1.8	46	6	102	.09	7	0.5	1.3	38	KEA
		15	1127	4.63	19	21.65	155	3.11	8.96	2.0	1.8	37	2	120	.12	3	0.6	0.5	34	SF5
		16	4 6	12.89	20	19.17	155	27.69	36.66	2.4	2.1	43	7	266	.09	39	0.9	1.2	35	KEA
		16	534	14.72	18	54.59	155	15.32	13.08	3.0	3.8	42	2	248	.09	35	1.4	1.0	42	LOI
		16	1445	55.79	19	24.47	155	29.36	10.24	3.5	3.8	58	9	32	.10	5	0.3	0.4	49	KAO F
		16	2152	6.76	19	22.46	155	20.77	9.50	1.7	1.3	43	6	46	.11	3	0.3	0.6	30	KAO
		16	2252	50.73	18	58.28	155	16.01	13.04	1.8	1.5	23	2	287	.10	29	2.5	0.7	21	LOI L
		17	1718	27.95	19	21.53	155	6.57	7.97	1.6	1.3	39	6	83	.13	4	0.4	0.6	31	SF4
		18	2 4	41.42	19	14.65	155	28.77	8.40	1.5	0.9	31	6	102	.18	3	0.4	0.8	25	LSW
		18	414	44.52	19	23.33	155	20.72	9.95	1.3	1.1	33	8	59	.11	2	0.4	0.6	26	KAO
		18	445	53.20	19	20.85	155	2.46	38.61	2.2	1.6	51	6	156	.11	2	0.8	1.0	40	DEP
		18	550	21.38	19	21.29	155	29.10	6.16	2.0	1.5	40	2	44	.12	3	0.3	0.8	37	KAO
		18	1234	9.09	19	21.08	155	2.18	7.54	1.7	1.7	29	4	162	.10	3	0.5	0.6	26	SF5
		18	1311	19.57	19	15.75	155	2.93	44.46	2.1	1.6	41	3	217	.12	8	1.3	1.4	36	DEP
		18	1343	55.20	19	19.74	155	7.65	6.11	1.5	1.1	32	2	100	.12	4	0.5	1.1	30	SF4
		19	1 1	10.22	19	21.76	155	28.09	6.39	2.1	2.5	13	1	120	.09	2	0.6	1.0	12	KAO
		19	1059	35.55	19	21.59	155	2.51	7.53	1.9	1.7	35	5	141	.12	3	0.5	0.6	31	SF5
		19	1122	37.25	19	22.43	155	0.61	7.65	1.9	1.5	38	6	171	.13	6	0.5	0.7	33	SF5
		19	1625	52.54	19	23.88	155	16.83	14.33	1.6	1.4	43	5	43	.10	0	0.4	0.3	38	DEP
		19	2112	22.75	19	20.40	155	12.95	7.51	1.3	1.1	33	2	67	.11	4	0.5	0.6	30	SF2
		19	2136	47.43	19	19.81	155	13.03	6.36	1.2	1.1	32	2	72	.13	5	0.4	0.9	28	SF2
		20	153	37.91	19	23.78	155	26.53	11.09	1.9	1.5	42	2	26	.10	3	0.4	0.5	35	KAO
		20	348	34.68	19	20.54	155	17.28	33.18	2.1	1.8	49	7	62	.11	1	0.6	0.9	43	DEP
		20	434	20.16	19	26.11	155	29.28	10.47	2.5	2.1	50	6	40	.11	7	0.3	0.5	45	KAO
		20	623	46.49	19	19.90	155	8.14	6.57	1.4	1.6	34	2	87	.11	5	0.5	0.9	31	SF4
		20	1037	14.14	19	19.70	155	12.61	7.32	1.3	1.3	34	2	79	.10	5	0.5	0.6	33	SF2
		20	1655	24.27	19	19.57	155	12.29	4.79	1.4	1.9	31	2	86	.15	5	0.5	2.0	28	SSF
		20	1857	57.42	19	19.73	155	12.23	7.57	1.5	2.0	38	3	84	.11	5	0.4	0.6	36	SF3
		20	2245	15.65	19	28.41	155	14.84	26.14	1.7	1.4	39	5	112	.10	7	0.6	1.0	34	DEP
		21	052	13.50	19	21.16	155	17.99	31.35	2.0	1.8	42	4	58	.12	4	0.6	0.9	34	DEP
		21	254	34.92	19	22.87	155	29.93	8.49	1.8	1.7	40	3	32	.11	4	0.3	0.8	36	KAO
		21	415	9.93	19	21.84	155	28.66	10.40	2.1	2.1	42	3	38	.09	2	0.3	0.5	39	KAO
		21	1017	47.94	19	22.87	155	26.83	10.71	2.0	1.4	40	2	34	.12	2	0.4	0.7	37	KAO
		21	2030	42.97	19	14.43	155	26.62	9.15	2.4	2.8	49	6	102	.11	5	0.3	0.4	44	LSW
		21	2115	35.82	19	18.89	155	13.71	8.86	1.6	1.5	36	3	73	.09	3	0.4	0.6	32	SF2
		22	150	11.35	19	22.02	155	4.77	7.71	1.6	1.0	22	1	81	.10	5	0.4	0.6	21	SF5
		22	622	18.58	19	27.39	154	53.63	5.91	1.8		31	3	186	.14	3	0.9	0.7	25	LER L
		22	859	57.30	19	19.97	155	3.67	6.14	2.1	2.3	24	1	144	.09	1	0.6	0.8	23	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	OCT	22	2116	5.89	19	20.79	155	7.41	8.03	2.3	2.8	47	6	88	.10	5	0.4	0.5	41	SF4
		23	331	48.64	19	20.47	155	11.97	8.76	3.0	3.6	49	6	74	.11	4	0.3	0.4	44	SF3
		23	643	15.15	19	21.83	155	29.07	9.75	1.6	1.5	38	3	39	.11	3	0.4	0.6	32	KAO
		23	741	30.47	19	20.39	155	12.01	8.73	1.5	1.3	27	1	75	.10	5	0.5	0.7	24	SF3
		23	745	1.95	19	23.82	155	15.70	3.47	1.0	1.0	15	4	104	.09	2	0.4	0.5	11	SEC
		23	1127	38.06	19	23.73	155	15.62	3.13	1.1	1.4	24	7	99	.10	2	0.3	0.4	20	SEC
		23	1823	53.99	19	30.56	155	9.21	24.19	2.1	1.6	55	11	109	.11	10	0.4	1.0	47	DEP
		23	1834	7.15	19	20.04	155	11.62	8.20	2.0	2.4	45	5	84	.12	5	0.4	0.6	37	SF3
		23	2029	42.01	19	20.85	155	2.91	7.25	1.9	1.8	36	3	131	.12	2	0.6	0.5	33	SF5
		24	332	58.75	19	20.70	155	13.18	7.37	1.6	2.0	37	3	61	.12	4	0.4	0.6	34	SF2
		24	654	1.37	19	22.43	155	4.25	8.33	2.0	2.1	40	5	91	.13	4	0.5	0.4	35	SF5
		24	946	19.28	19	22.79	155	25.81	10.32	1.8	2.0	39	3	40	.11	3	0.4	0.6	36	KAO
		24	1415	44.81	19	19.89	155	12.03	7.90	1.6	1.8	35	2	83	.10	5	0.5	0.7	34	SF3
		24	1816	22.27	19	27.87	155	45.14	8.20	1.9	1.2	35	6	69	.13	5	0.4	1.1	30	KON
		25	1559	18.86	19	18.80	155	15.34	5.06	1.1	1.1	21	1	108	.13	4	0.5	1.6	21	SF1
		25	1634	36.36	19	11.06	155	28.34	9.08	2.3	2.4	42	6	120	.15	3	0.4	0.5	38	LSW F
		25	1812	46.80	19	12.63	155	37.73	8.87	2.5	2.4	35	2	202	.16	4	1.0	0.8	35	LSW
		25	1814	29.16	19	27.18	155	28.52	9.68	1.8	1.4	35	4	54	.11	7	0.4	0.9	28	KAO
		25	19 7	1.67	19	21.63	155	6.05	6.61	1.5	1.3	30	2	83	.13	4	0.6	0.9	27	SF4
		25	2050	29.16	19	17.98	155	15.11	8.13	1.6	2.2	35	4	126	.10	3	0.4	0.7	30	SF1
		25	2235	36.03	19	19.71	155	12.78	6.11	1.3	1.3	26	4	77	.10	5	0.4	0.9	23	SF2
		26	344	30.11	19	19.46	155	12.37	6.03	1.3	1.3	24	3	88	.13	5	0.5	1.1	23	SF2
		26	9 0	42.99	19	25.64	155	29.66	7.85	1.4	1.1	27	4	63	.08	7	0.3	0.9	24	KAO
		26	1038	56.81	19	20.21	155	12.69	7.12	1.4	1.5	29	1	71	.11	5	0.5	0.8	27	SF2
		26	1056	41.62	19	20.29	155	12.92	7.09	1.2	1.3	24	1	67	.12	4	0.6	0.9	23	SF2
		26	1234	44.80	19	23.17	155	3.08	7.56	2.4	3.1	42	6	113	.14	3	0.5	0.4	37	SF5
		26	2236	30.13	19	25.52	155	19.35	4.10	1.4	1.5	28	6	76	.11	3	0.3	0.7	24	KAO
		26	2310	3.85	19	20.40	155	12.99	7.75	1.6	1.9	38	2	66	.13	4	0.4	0.7	35	SF2
		26	2317	19.27	19	26.25	155	29.38	8.94	1.8	1.2	41	8	61	.11	7	0.4	0.8	34	KAO
		26	2328	48.51	19	16.51	155	28.08	9.16	1.5	1.5	32	4	59	.14	4	0.4	0.7	30	LSW
		26	2330	54.58	19	25.39	155	19.42	5.35	1.3	1.3	26	7	117	.10	3	0.4	0.8	21	KAO
		27	012	29.21	19	25.24	155	19.34	5.93	2.0	1.9	28	5	46	.11	3	0.4	0.7	24	KAO
		27	153	30.72	19	18.71	155	16.06	33.33	2.5	2.7	54	8	107	.10	4	0.5	0.7	46	DEP
		27	2 3	1.91	19	24.93	155	19.75	5.61	1.5	1.3	33	6	39	.13	2	0.4	0.8	28	KAO
		27	357	44.29	19	19.58	155	46.53	11.10	2.5	2.1	43	5	118	.10	12	0.4	0.3	39	KON
		27	457	6.50	19	21.81	155	1.33	5.15	1.4	1.3	27	1	168	.13	5	0.7	1.6	27	SF5
		27	1352	52.60	19	21.91	155	28.71	5.13	1.9	1.6	31	4	43	.13	2	0.4	1.0	29	KAO
		28	343	35.03	19	20.58	155	8.41	7.89	2.3	2.7	44	4	75	.12	4	0.4	0.5	40	SF4
		28	2118	29.26	19	20.90	155	12.98	7.64	1.8	1.7	43	5	61	.11	3	0.4	0.6	38	SF2
		29	254	43.10	19	21.83	155	12.05	3.25	1.2	1.4	19	2	78	.09	2	0.3	0.5	17	SER
		29	420	38.25	19	14.60	154	53.33	41.41	3.2	3.0	52	6	242	.11	20	1.3	1.0	47	DIS
		29	547	5.85	19	20.01	155	13.49	5.73	1.2	0.8	26	0	69	.13	5	0.6	1.5	25	SF2
		29	2135	53.13	19	20.51	155	12.48	8.56	2.5	3.1	53	10	69	.12	4	0.3	0.4	43	SF2
		29	22 6	7.61	19	20.02	155	8.34	7.14	2.0	2.1	49	7	81	.12	5	0.4	0.6	42	SF4
		29	2225	53.04	19	19.00	155	8.78	5.93	1.4	1.1	30	2	93	.10	3	0.4	1.1	28	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	OCT	29	2311	9.99	19	20.62	155	12.00	9.27	2.7	3.2	51	6	72	.12	4	0.3	0.4	44	SF3
		30	213	42.84	19	21.43	155	30.19	9.06	2.2	2.2	41	3	47	.10	5	0.3	0.7	38	KAO
		30	1017	33.36	19	19.71	155	12.98	6.41	1.4	1.5	33	2	74	.13	5	0.5	0.9	31	SF2
		30	1051	20.64	19	17.93	155	14.10	5.87	1.3	1.1	26	1	105	.09	2	0.5	1.0	25	SF2
		30	1115	38.95	19	18.57	155	14.65	6.89	1.2	1.1	26	0	102	.11	4	0.6	1.0	26	SF1
		30	1636	9.09	19	28.09	155	51.85	6.34	2.6	2.4	50	8	110	.16	6	0.5	0.7	42	KON
		30	1836	15.46	19	23.34	155	20.63	9.37	1.3	1.1	27	3	65	.11	2	0.4	0.7	25	KAO
		30	1921	47.72	19	20.36	155	12.54	8.08	1.7	2.2	44	5	71	.11	4	0.4	0.5	39	SF2
		30	21 6	47.10	19	24.97	155	19.23	6.06	1.4	1.1	26	3	75	.10	3	0.4	0.8	24	KAO
		31	344	48.95	19	21.52	155	29.84	8.99	1.6	1.1	34	2	73	.11	4	0.4	0.7	32	KAO
		31	747	6.46	19	25.98	155	27.71	6.54	1.4	1.1	32	6	55	.12	5	0.4	1.0	29	KAO
		31	1245	14.86	19	41.55	155	2.91	0.05	2.0	2.3	26	0	188	.15	24	0.9	2.6	26	HIL B*
		31	1611	2.80	19	52.22	155	49.87	39.65	2.6	2.2	45	12	177	.08	18	0.6	0.9	40	HUA
		31	1922	22.46	19	12.46	155	26.84	9.32	3.0	3.3	55	8	125	.17	6	0.5	0.4	48	LSW
		31	2114	8.45	19	22.07	155	26.50	10.62	2.0	2.0	41	4	44	.13	2	0.4	0.5	37	KAO
		31	2119	28.54	19	22.78	155	2.16	7.20	1.6	1.1	28	2	141	.13	5	0.5	0.8	26	SF5
		31	2253	45.24	19	19.23	155	8.33	4.00	1.5	1.1	28	4	87	.12	4	0.3	1.0	25	SSF
	NOV	1	1532	41.88	19	20.10	155	12.65	7.42	1.3	1.5	33	1	73	.11	5	0.5	0.7	32	SF2
		1	1627	4.93	19	26.46	155	28.58	10.06	2.1	1.5	39	3	57	.11	6	0.4	0.6	34	KAO
		1	1712	16.84	19	22.86	155	29.91	8.59	1.6	1.1	33	2	70	.12	4	0.4	0.9	26	KAO
		1	1830	29.99	19	13.61	155	29.85	11.59	2.0	1.7	35	5	122	.14	3	0.5	0.6	31	LSW
		2	0 5	7.91	19	20.12	155	12.24	6.73	1.8	2.1	32	1	77	.13	5	0.5	0.9	30	SF3
		2	032	23.82	19	19.32	155	13.88	8.12	1.9	2.2	34	5	84	.08	4	0.3	0.5	30	SF2
		2	1124	34.15	19	24.54	155	19.30	6.63	2.1	2.2	42	6	45	.12	2	0.3	0.5	37	KAO
		2	1513	36.09	19	20.16	155	12.99	7.08	1.2	1.3	21	1	69	.09	5	0.6	1.0	21	SF2
		2	1631	22.40	19	20.39	155	12.39	7.60	2.3	3.0	45	4	71	.12	4	0.4	0.6	40	SF2
		2	17 4	21.95	19	25.30	155	19.86	7.01	2.2	2.2	39	4	46	.12	3	0.4	0.8	35	KAO
		2	1916	13.10	19	21.96	155	5.94	6.75	1.4	1.1	32	2	78	.17	3	0.6	1.0	30	SF4
		2	1956	16.85	19	0.06	155	31.63	44.05	2.6	2.4	49	7	257	.09	19	1.4	1.1	45	DLS
		3	4 9	13.79	19	46.92	155	50.11	14.25	2.3	2.4	32	5	173	.15	11	0.9	0.4	26	HUA
		3	545	13.54	19	25.40	155	27.91	9.67	1.9	1.5	38	5	56	.12	5	0.4	0.8	31	KAO
		3	620	14.68	19	19.82	155	10.04	6.32	1.3	1.1	20	1	89	.10	4	0.6	1.3	19	SF3
		3	826	35.24	19	13.93	155	34.89	8.30	2.2	1.7	36	3	191	.18	4	0.7	0.6	34	LSW
		3	11 2	18.52	19	19.17	155	12.10	6.59	1.3	1.3	31	1	98	.10	5	0.5	0.9	30	SF3
		3	1315	46.50	19	19.74	155	12.62	7.14	1.2	1.3	32	1	79	.12	5	0.5	0.8	32	SF2
		3	1731	37.45	19	21.82	155	14.74	9.20	2.7	3.2	54	11	59	.11	2	0.3	0.4	45	SF1
		3	23 4	14.11	19	21.66	155	1.33	6.40	1.6	1.1	32	3	172	.15	4	0.6	0.8	29	SF5
		3	2325	44.71	19	21.16	155	2.04	6.34	1.8	1.8	32	4	165	.12	3	0.5	0.6	28	SF5
		4	434	41.86	19	19.98	155	7.53	4.09	1.4	1.3	33	4	99	.15	5	0.4	1.3	29	SSF
		4	1149	3.63	19	27.44	154	49.77	10.25	2.9	2.6	43	6	254	.13	3	1.1	0.3	40	LER
		4	1240	39.28	19	22.36	155	26.42	10.68	2.3	2.0	41	4	39	.13	2	0.4	0.6	36	KAO
		5	1023	26.24	19	22.88	155	26.17	10.16	1.6	1.1	25	2	49	.10	3	0.4	0.9	22	KAO
		5	1529	3.83	19	19.77	155	10.68	7.94	1.7	2.1	35	3	91	.11	5	0.5	0.7	33	SF3
		5	1748	58.11	18	56.52	155	11.35	46.03	2.1	2.0	46	6	266	.09	38	1.4	1.2	44	LOI
		5	2212	21.39	19	21.80	155	0.71	5.63	1.6	1.7	28	3	172	.11	5	0.6	0.9	22	SF5

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	NOV	5	2344	53.61	19	20.23	155	12.80	6.87	1.8	2.1	41	3	70	.12	4	0.4	0.7	36	SF2
		6	125	4.53	19	22.64	155	20.69	8.72	1.7	1.1	27	2	69	.10	6	0.4	0.9	22	KAO
		6	3	2 16.54	19	20.37	155	12.94	7.74	1.4	1.8	29	2	67	.11	4	0.5	0.7	27	SF2
		6	1058	29.20	19	21.96	155	30.14	8.61	1.5	1.1	26	1	78	.11	5	0.5	1.0	24	KAO
		6	1156	32.58	19	19.64	155	12.33	6.49	1.5	1.5	32	1	85	.10	5	0.5	0.9	30	SF2
		6	1347	52.30	19	20.12	155	12.39	7.61	1.4	1.3	30	0	76	.12	5	0.5	0.8	28	SF2
		6	1354	43.59	18	55.95	155	24.33	35.32	2.3	1.8	42	7	242	.08	26	1.0	1.1	38	LOI
		6	1356	29.84	19	20.68	155	10.75	7.46	1.4	1.3	31	1	75	.11	3	0.5	0.9	30	SF3
		6	1414	38.94	19	19.79	155	12.38	7.39	1.3	1.1	24	0	81	.09	5	0.5	0.9	23	SF2
		6	1746	29.20	19	20.79	155	21.66	9.99	1.9	2.1	35	5	101	.10	3	0.4	0.6	30	SWR
		7	021	7.76	19	14.53	155	34.83	7.64	2.2	1.5	32	6	78	.18	4	0.5	0.8	28	LSW
		7	149	37.51	19	19.49	155	10.52	6.71	1.3	1.3	19	1	218	.11	5	1.4	1.5	18	SF3
		7	753	20.12	19	17.88	155	25.67	8.56	1.7	1.8	36	3	62	.16	6	0.5	0.9	34	LSW
		7	13	6 59.72	19	22.84	155	29.91	9.57	1.7	1.5	34	4	71	.10	4	0.4	0.7	32	KAO
		7	2027	41.97	19	18.91	155	12.84	4.18	1.3	1.3	24	3	204	.12	7	0.8	3.0	22	SSF
		8	1428	41.06	19	26.72	155	28.66	7.50	1.7	1.1	25	2	58	.11	7	0.4	1.2	23	KAO
		8	2047	16.67	19	27.05	155	30.20	9.72	1.9	1.6	31	4	46	.10	9	0.4	0.9	26	KAO
		8	2356	57.48	19	18.65	155	13.01	8.78	1.9	1.9	36	2	171	.13	7	0.6	0.5	32	SF2
		9	424	19.75	19	20.74	155	12.44	7.71	1.4	1.6	29	2	189	.12	4	0.9	0.7	27	SF2
		9	454	48.85	19	32.25	155	36.13	9.30	1.8	1.0	28	3	67	.14	2	0.5	0.7	25	HLO
		9	1633	46.24	19	27.37	155	23.06	9.93	1.9	1.4	38	5	48	.09	4	0.3	0.5	32	KAO
		9	1636	15.34	19	25.04	155	19.01	5.86	1.4	1.3	26	5	105	.09	3	0.4	0.9	21	INT
		9	1811	40.75	19	22.50	155	3.13	7.12	1.5	1.7	26	4	198	.15	4	1.1	0.9	22	SF5
		10	445	4.95	19	21.08	155	13.08	6.77	1.4	1.6	28	2	178	.18	3	1.0	0.8	25	SF2
		10	637	11.93	19	23.84	155	30.01	9.07	1.7	1.3	27	4	61	.08	5	0.4	0.8	24	KAO
		10	19	9 57.42	19	19.30	155	13.73	6.72	1.5	1.5	29	1	192	.12	6	0.6	0.8	28	SF2
		10	1955	46.38	19	25.47	155	21.09	9.84	2.5	2.7	46	7	56	.11	4	0.3	0.4	40	KAO
		10	2229	7.78	18	55.74	155	15.06	11.26	2.0	1.5	20	1	281	.09	34	2.6	1.0	20	LOI
		10	2245	50.34	18	56.73	155	16.73	12.29	2.4	3.3	28	2	262	.12	31	2.0	0.9	26	LOI L
		11	121	9.20	19	20.71	155	21.43	12.20	1.6	1.4	26	5	138	.09	3	0.5	0.5	22	SWR
		11	440	17.47	19	27.46	155	26.59	5.86	1.5	1.1	29	5	53	.11	5	0.3	1.1	26	KAO
		11	534	6.20	18	55.84	155	13.30	8.85	4.0	4.2	47	7	244	.12	36	0.9	0.6	39	LOI F
		11	550	37.04	18	58.30	155	13.87	14.26	2.8	3.6	36	3	236	.11	32	1.3	1.4	33	LOI
		11	651	6.78	18	52.48	155	9.89	24.74	2.5	3.0	22	2	274	.10	45	2.6	6.7	19	LOI
		11	844	59.11	19	18.66	155	11.76	2.85	1.3	1.0	25	1	218	.11	7	1.0	2.2	23	SSF
		11	10	5 13.85	18	56.54	155	12.68	10.30	2.9	3.5	41	7	243	.12	36	0.9	0.6	37	LOI
		11	19	3 19.55	19	20.57	155	11.26	9.06	3.4	3.9	44	4	167	.12	4	0.6	0.5	35	SF3
		11	1923	44.07	19	16.51	155	27.66	10.15	1.8	1.8	29	3	111	.13	5	0.4	0.8	25	LSW
		11	2248	1.58	19	20.44	155	8.52	6.99	2.1	2.5	41	4	174	.13	4	0.7	0.6	35	SF4
		11	2357	0.07	19	19.47	155	11.80	7.23	1.5	1.6	28	1	198	.11	6	1.0	0.7	25	SF3
		12	1	0 42.65	19	7.53	156	10.22	42.53	2.9	2.7	37	3	274	.11	35	2.4	1.5	35	KON
		12	138	44.74	19	22.62	155	1.86	6.28	1.9	1.8	36	4	191	.19	6	1.1	1.2	30	SF5
		12	252	36.97	19	27.36	155	29.62	9.97	1.9	1.2	31	5	49	.12	7	0.4	0.9	26	KAO
		12	656	56.97	19	19.36	155	12.13	5.51	1.3	1.3	21	1	237	.08	6	1.3	1.6	19	SF3
		12	816	39.55	19	18.97	155	15.29	6.57	1.8	1.5	28	0	171	.12	4	0.8	1.0	22	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	NOV	12	817	57.00	19	26.82	155	14.95	30.86	1.6	1.4	39	6	50	.10	4	0.7	0.9	36	DEP
		12	1328	48.67	19	20.23	155	11.17	6.83	1.4	1.3	22	0	209	.12	4	1.3	1.1	21	SF3
		12	1511	19.54	19	17.79	155	12.87	7.56	1.7	1.9	37	3	122	.11	2	0.4	0.6	35	SF2
		12	1532	40.84	19	46.37	155	3.73	42.41	2.2	1.7	41	8	208	.10	9	0.7	1.1	39	HIL
		12	1557	40.70	19	17.95	155	12.98	6.82	1.3	1.1	25	1	110	.11	2	0.6	1.0	24	SF2
		12	2018	40.50	19	17.67	155	14.04	8.37	1.2	1.1	24	1	136	.08	2	0.6	0.9	24	SF2
		12	2021	14.51	19	17.85	155	13.02	8.34	1.3	1.1	25	1	113	.11	2	0.6	1.0	21	SF2
		12	22	2 28.96	19	18.02	155	14.13	6.34	1.3	1.1	26	1	102	.10	2	0.5	0.9	26	SF2
		12	2217	24.12	18	46.77	155	33.36	12.80	2.5	3.1	41	4	289	.10	25	1.4	0.9	38	LSW
		13	134	17.52	19	21.18	155	6.10	7.73	1.4	1.8	30	2	93	.13	5	0.5	0.7	27	SF4
		13	857	58.93	19	18.89	155	13.16	6.06	1.9	2.5	38	4	82	.11	3	0.4	0.8	33	SF2
		13	1110	36.49	19	19.91	155	29.72	9.29	1.8	1.7	34	2	50	.11	6	0.4	0.8	31	KAO
		13	1610	48.72	19	14.54	155	21.47	7.00	1.4	1.3	23	1	160	.09	4	0.7	1.2	22	SWR
		13	1717	1.59	19	20.21	155	13.09	9.15	1.9	2.1	40	7	67	.09	4	0.4	0.5	34	SF2
		13	1736	11.03	19	19.48	155	12.66	7.94	1.3	1.1	29	2	83	.09	5	0.4	0.8	28	SF2
		13	1752	22.91	19	26.03	155	21.86	10.35	1.4	1.2	31	6	54	.07	4	0.4	0.7	27	KAO
		13	1857	56.22	19	19.78	155	12.60	6.83	1.2	1.5	27	2	79	.11	5	0.4	0.9	27	SF2
		13	1859	1.07	19	19.74	155	12.45	7.62	1.9	2.2	38	5	81	.11	5	0.4	0.7	35	SF2
		13	2131	49.43	19	23.30	155	20.67	11.19	1.6	1.4	30	4	54	.07	2	0.4	0.7	27	KAO
		14	1	5 56.24	19	51.79	155	8.87	15.69	3.8	3.8	53	10	222	.10	21	0.9	1.0	45	KEA F
		14	142	40.78	19	19.81	155	12.13	7.60	1.3	1.5	25	1	84	.08	5	0.4	0.8	25	SF3
		14	327	7.26	19	27.34	155	26.61	7.01	1.6	1.3	30	4	49	.11	5	0.3	0.9	26	KAO
		14	4	0 49.75	19	19.49	155	12.20	7.88	1.4	1.5	34	1	88	.09	5	0.4	0.6	33	SF3
		14	9	5 31.30	18	59.46	155	16.53	10.38	2.2	3.0	19	0	274	.13	27	3.1	1.4	18	LOI L
		14	1048	58.40	19	20.21	155	11.74	8.70	1.5	1.1	25	1	80	.08	5	0.5	0.7	24	SF3
		14	1229	17.35	19	23.01	155	21.08	10.58	1.9	2.1	43	3	43	.09	3	0.3	0.5	36	KAO
		14	1321	39.12	19	14.23	155	21.96	7.24	1.4	1.7	23	1	160	.11	4	0.5	0.9	21	SWR
		14	20	8 56.27	19	20.44	155	11.90	8.03	2.4	3.0	52	7	75	.13	5	0.4	0.6	44	SF3
		15	1056	2.10	19	20.22	155	12.57	6.89	1.5	1.4	33	3	72	.12	5	0.5	0.7	23	SF2
		15	1146	33.29	19	9.51	155	39.94	4.24	2.5	2.7	41	9	121	.19	11	0.5	1.9	29	LSW
		15	1335	1.40	19	19.39	155	9.94	6.18	1.6	1.9	30	1	98	.13	5	0.6	1.3	23	SF3
		15	1656	20.51	19	23.78	155	29.90	8.63	1.5	1.2	26	1	68	.08	5	0.4	0.9	25	KAO
		15	2357	32.08	18	56.05	155	13.05	11.97	2.1	1.7	23	1	278	.09	36	2.4	0.6	17	LOI
		16	1	1 58.02	19	22.25	155	28.86	9.49	3.0	3.3	46	7	43	.11	2	0.3	0.5	31	KAO
		16	726	25.54	19	25.23	155	30.01	6.63	1.9	1.4	34	2	66	.12	7	0.4	1.4	29	KAO
		16	1323	14.74	19	20.27	155	11.93	7.45	1.9	2.1	41	5	78	.13	5	0.4	0.7	33	SF3
		16	1444	13.84	19	17.73	155	14.65	6.70	1.3	1.1	25	3	129	.11	2	0.6	0.9	19	SF1
		16	15	6 4.37	19	19.92	155	13.67	5.32	1.1	1.2	22	1	72	.12	5	0.5	1.5	16	SF2
		16	19	4 24.86	19	23.61	155	20.70	10.26	2.3	2.6	48	6	39	.11	2	0.3	0.4	34	KAO
		16	2051	59.41	19	41.71	156	5.03	5.77	3.0	2.7	29	3	280	.14	26	1.4	0.6	19	HUA
		17	118	36.38	19	19.52	155	12.59	6.09	1.3	1.2	21	0	83	.11	5	0.5	1.4	18	SF2
		17	1039	58.26	19	25.10	155	19.83	4.66	1.0	1.1	16	0	88	.06	3	0.4	1.0	15	KAO
		17	15	8 43.51	19	23.31	155	29.48	8.15	1.7	1.1	29	4	67	.12	4	0.4	0.8	25	KAO
		17	1646	18.79	19	18.09	155	12.80	3.97	1.2	1.1	19	1	112	.08	2	0.5	1.1	14	SSF
		18	1435	9.99	20	9.77	155	36.14	32.36	4.0	3.5	54	8	232	.10	16	0.7	1.4	46	KOH F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	NOV	18	2019	26.74	19	22.38	155	28.61	9.64	2.1	1.3	41	3	63	.11	2	0.4	0.6	36	KAO
		19	5 2	30.03	19	22.31	155	26.56	9.78	2.0	1.0	36	4	47	.13	2	0.4	0.6	30	KAO
		20	7 1	48.68	19	23.74	155	16.16	2.73	1.4	1.4	15	2	95	.15	1	0.4	0.4	11	SEC
		20	944	55.15	19	26.39	155	29.94	7.58	1.9	1.7	28	3	63	.10	8	0.4	1.1	21	KAO
		20	1224	58.66	19	24.27	155	16.14	3.02	1.0	1.0	10	1	128	.01	1	0.4	0.4	8	SEC
		20	22 7	7.47	19	24.11	155	25.66	6.81	1.7	1.3	33	2	35	.12	2	0.4	0.9	30	KAO
		20	2352	13.00	19	25.34	155	19.92	4.57	1.6	1.3	19	2	105	.10	3	0.4	1.1	16	KAO
		21	019	14.52	19	19.51	155	14.94	4.69	1.2	1.3	16	0	97	.10	4	0.5	1.8	14	SSF
		21	451	22.79	19	19.87	155	8.12	5.96	1.5	1.3	28	2	87	.13	5	0.5	1.2	23	SF4
		21	635	6.17	19	20.21	155	11.54	7.38	1.7	2.3	46	6	80	.14	5	0.4	0.6	35	SF3
		21	636	30.57	19	47.23	155	34.13	14.64	2.1	1.4	24	5	94	.10	12	0.5	0.4	18	KEA
		21	1047	8.97	19	25.20	155	29.06	8.93	2.1	2.0	44	7	34	.11	6	0.3	0.8	36	KAO
		21	1349	1.33	19	21.47	155	1.57	6.90	1.7	1.1	31	3	170	.13	4	0.5	0.7	25	SF5
		21	19 8	39.06	19	20.04	155	13.24	5.56	1.2	1.1	23	2	66	.12	5	0.5	1.4	21	SF2
		22	137	18.05	19	22.61	155	20.80	10.30	2.7	2.6	50	5	45	.12	3	0.4	0.4	39	KAO
		22	533	57.73	19	19.89	155	7.79	5.29	1.4	1.1	28	1	95	.13	5	0.5	1.5	21	SF4
		22	748	52.37	19	20.39	155	11.52	7.33	1.9	2.6	24	1	77	.10	4	0.5	1.1	14	SF3
		22	948	50.50	19	20.24	155	12.20	7.40		0.9	20	1	78	.07	5	0.6	1.0	15	SF3
		22	1328	0.56	19	18.11	154	58.87	38.35	2.7	2.4	49	6	216	.10	8	0.9	0.8	36	LER
		23	136	38.78	19	22.91	155	26.64	9.87	1.7	1.3	36	3	43	.11	2	0.4	0.6	22	KAO
		23	212	45.38	19	20.40	155	12.81	6.84	1.4	1.8	33	3	68	.13	4	0.5	0.9	27	SF2
		23	517	47.38	19	13.44	155	37.71	7.48	2.4	1.9	36	3	169	.25	3	0.9	1.1	31	LSW
		23	610	16.22	19	21.29	155	21.81	8.38	1.7	1.6	38	6	95	.12	3	0.4	0.7	27	SWR
		23	1317	21.69	19	28.05	155	24.45	2.40	1.3	1.3	19	3	65	.11	4	0.3	0.8	14	KAO
		23	1330	56.86	19	21.76	155	1.21	6.99	1.7	1.5	20	2	172	.10	5	0.7	1.2	13	SF5
		23	1426	46.43	19	20.60	155	12.41	7.09	1.6	1.5	31	2	69	.12	4	0.5	0.7	23	SF2
		23	2059	15.18	19	25.73	155	29.12	10.24	1.6	1.4	33	4	37	.12	7	0.4	0.7	21	KAO
		24	243	42.39	19	18.60	155	27.68	8.62	1.5	1.1	29	0	44	.13	7	0.4	1.0	20	LSW
		24	342	13.96	19	20.34	155	9.98	8.10	1.4	1.8	34	3	78	.09	3	0.4	0.6	27	SF3
		24	1525	3.84	19	27.31	155	29.60	9.56	1.9	1.4	39	6	50	.11	7	0.4	0.8	24	KAO
		24	1856	1.21	19	23.26	155	20.32	10.29	1.6	1.1	27	3	60	.09	1	0.5	0.6	22	KAO
		24	1952	14.80	19	19.38	155	15.18	6.93	1.4	1.6	36	1	94	.12	4	0.4	0.7	31	SF1
		24	20 4	24.23	19	19.87	155	12.14	6.77	1.2	1.5	35	3	82	.12	5	0.5	0.7	28	SF3
		25	1815	23.15	19	18.85	155	15.14	8.01	2.2	1.9	43	3	95	.13	4	0.4	0.6	35	SF1
		26	1023	23.15	19	19.90	155	8.15	7.00	1.9	2.2	33	2	86	.11	5	0.5	0.9	22	SF4
		26	1254	20.23	19	27.63	155	19.85	13.49	1.8	1.4	29	3	129	.10	1	0.6	0.6	22	DML
		26	14 2	12.51	19	42.84	155	3.44	0.00	2.0	2.8	24	1	215	.26	3	2.4	1.3	13	HIL B*
		27	212	47.13	19	23.50	155	50.09	11.50	2.2	1.3	21	4	125	.14	14	0.6	0.6	17	KON
		27	231	54.12	19	12.24	155	12.45	42.28	2.1	1.5	31	1	211	.09	9	1.2	2.0	27	DEP
		27	11 2	50.62	19	21.35	155	6.88	6.18	1.4	1.1	32	3	84	.12	4	0.5	0.9	28	SF4
		27	1153	42.55	20	5.97	155	25.00	1.29	2.6	2.6	36	3	273	.15	25	1.5	1.0	28	KEA
		27	18 9	53.36	19	18.42	155	16.61	7.54	2.0	1.9	41	3	117	.11	3	0.4	0.7	34	SF1
		28	215	48.51	19	47.84	155	23.63	24.82	3.1	2.7	53	10	78	.10	7	0.4	1.0	40	KEA
		28	237	47.38	19	18.99	155	14.61	6.74	1.2	1.5	33	2	93	.10	4	0.4	0.7	24	SF1
		28	716	17.52	19	18.47	155	13.36	6.86	1.3	1.5	27	4	82	.09	3	0.5	0.9	21	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	NOV	28	1651	2.44	19	20.57	155	12.81	6.88	1.2	1.5	31	2	65	.12	4	0.5	0.7	27	SF2
		28	20 3	34.43	19	25.54	155	30.51	7.46	1.8	1.3	37	2	35	.12	8	0.4	1.2	28	KAO
		28	2055	5.02	19	30.10	155	16.70	10.42	1.9	1.6	37	3	57	.12	8	0.3	0.9	27	GLN
		28	2257	11.20	19	22.90	155	26.70	10.86	2.4	2.5	44	6	40	.12	2	0.4	0.6	33	KAO
		29	030	2.69	19	16.00	155	22.49	4.81	1.4	1.3	25	2	158	.09	4	0.5	1.9	19	SWR
		29	2 3	39.09	19	28.88	155	26.44	5.27	2.3	2.2	43	6	57	.12	6	0.3	1.2	33	KAO
		29	215	19.16	19	14.47	155	28.09	6.66	1.9	1.3	28	1	97	.19	4	0.6	1.5	19	LSW
		29	1252	29.22	19	20.23	155	11.62	9.43	1.5	1.3	26	2	80	.07	5	0.5	0.8	21	SF3
		29	1339	42.12	19	23.07	155	26.09	10.12	1.7	1.5	38	1	43	.13	3	0.4	0.6	36	KAO
		29	1459	29.14	19	12.56	155	17.64	45.59	1.9	1.8	39	2	191	.09	10	1.0	1.5	35	DEP L
		29	2029	56.39	19	19.43	155	16.09	7.64	2.0	2.1	45	3	96	.12	3	0.4	0.6	36	SF1
		29	21 4	15.61	19	26.12	155	19.94	5.85	1.8	2.0	33	5	48	.12	3	0.4	0.8	28	KAO
		29	2324	58.11	19	21.34	155	5.84	8.08	1.0	1.1	23	3	90	.10	4	0.5	0.8	21	SF4
		30	125	11.72	19	26.78	155	28.74	10.02	1.9	1.5	35	3	58	.09	7	0.4	0.9	29	KAO
		30	5 1	2.82	19	24.56	155	16.91	3.30	0.6	1.1	9	0	101	.14	1	0.8	0.6	8	SNC L
		30	6 2	37.82	19	54.68	155	11.70	39.68	1.9	1.1	36	4	209	.13	16	1.0	1.6	24	KEA
		30	925	50.51	19	50.08	156	2.55	41.61	2.7	2.4	45	8	236	.12	27	0.9	1.2	41	HUA
		30	1248	43.01	19	21.53	155	23.57	10.58	2.5	2.8	54	8	41	.12	3	0.3	0.4	46	SWR
		30	1316	27.08	19	20.09	155	13.12	5.82	1.4	1.1	28	2	68	.13	5	0.5	1.1	27	SF2
		30	1850	12.75	19	29.29	155	27.50	4.94	2.4	2.5	49	8	56	.12	5	0.3	1.5	38	KAO
		30	1917	21.35	19	16.87	155	25.36	7.06	1.2	1.1	17	3	96	.09	5	0.4	1.3	16	LSW
		30	2136	32.02	19	19.69	155	12.13	6.25	1.3	1.1	25	1	86	.09	5	0.5	1.1	24	SF3
		30	23 7	15.90	19	24.40	155	15.95	22.66	1.7	1.5	44	4	71	.11	1	0.6	0.8	40	DEP
DEC		1	10 9	27.82	19	39.88	155	49.84	7.90	2.3	1.8	22	3	157	.17	3	0.9	0.8	20	HUA
		2	131	22.01	19	23.87	155	26.91	10.18	2.7	3.0	53	7	28	.12	3	0.3	0.5	45	KAO
		2	651	23.04	19	19.25	155	11.49	7.38	1.4	1.5	27	1	102	.08	5	0.5	1.0	25	SF3
		2	652	45.55	19	25.66	155	28.85	9.34	1.6	1.4	31	3	60	.10	6	0.4	1.0	23	KAO
		2	924	57.66	19	23.95	155	27.17	9.14	1.5	1.3	35	2	54	.12	3	0.4	0.7	33	KAO
		2	10 6	22.58	19	20.01	155	11.69	8.24	1.5	1.6	33	1	84	.08	5	0.5	0.8	30	SF3
		2	1754	56.75	19	9.17	155	19.55	64.65	2.1	2.6	30	3	246	.10	12	2.5	1.3	27	LOI L
		2	2216	2.45	19	23.20	155	26.78	9.34	1.5	1.3	34	3	33	.11	2	0.4	0.7	30	KAO
		3	111	15.41	19	20.19	155	11.19	8.69	2.3	2.7	41	3	83	.10	4	0.4	0.8	37	SF3
		3	124	51.61	19	23.43	155	20.57	9.84	1.6	1.7	34	4	58	.09	2	0.4	0.6	30	KAO
		3	149	42.67	19	19.87	155	11.14	8.34	1.8	2.3	39	4	89	.10	5	0.4	0.7	32	SF3
		3	233	30.59	19	23.73	155	26.72	10.92	1.8	2.0	36	1	38	.11	3	0.4	0.7	32	KAO
		3	828	22.20	19	27.05	155	28.74	11.21	1.6	1.2	21	0	82	.07	8	0.6	1.7	21	KAO
		3	919	49.84	19	20.73	155	22.99	9.09	1.6	1.6	31	3	66	.11	1	0.4	0.8	27	SWR
		3	1318	54.86	19	20.36	155	13.50	8.96	1.3	1.5	24	0	65	.09	4	0.6	0.9	24	SF2
		3	1333	38.92	19	19.97	155	12.03	9.09	1.7	1.8	33	1	81	.08	5	0.4	0.6	29	SF3
		3	1513	43.37	19	21.85	155	2.35	7.61	1.7	1.3	31	1	144	.13	4	0.6	0.6	27	SF5
		3	2110	40.87	19	21.31	155	28.89	6.36	1.8	1.9	31	2	45	.11	3	0.4	0.9	26	KAO
		3	2118	1.30	19	12.14	155	38.35	8.74	1.9	1.4	30	4	100	.22	6	0.6	1.4	29	LSW
		4	012	50.21	19	17.54	155	27.24	9.23	2.1	2.4	43	4	49	.15	7	0.4	0.7	40	LSW
		4	027	59.19	19	17.32	155	27.22	9.79	2.0	2.3	39	4	51	.15	7	0.4	0.8	36	LSW
		4	210	12.85	19	23.72	155	15.49	3.09	1.7	1.9	26	5	97	.12	2	0.3	0.3	23	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	DEC	4	8 7	52.45	19	24.24	155	15.84	3.71	1.0	1.1	15	4	124	.09	1	0.4	0.3	12	SEC
		4	1053	34.48	19	24.47	155	25.92	10.57	1.7	2.0	38	2	33	.10	2	0.4	0.6	36	KAO
		4	1056	2.50	19	53.02	155	22.21	8.56	1.8	1.3	17	2	190	.12	3	1.0	0.6	16	KEA
		4	1149	10.86	19	23.95	155	16.23	2.95	1.7	2.1	19	4	98	.06	1	0.3	0.2	15	SEC
		4	1255	17.73	19	24.91	155	16.44	0.73	1.0	1.7	11	2	148	.14	1	0.3	0.3	9	SNC
		4	1358	35.93	19	53.50	155	22.58	8.98	2.6	2.5	27	4	208	.13	4	1.0	0.6	25	KEA
		4	14 5	0.98	19	53.89	155	23.08	9.85	2.6	2.5	27	3	200	.11	5	0.9	0.4	24	KEA
		4	1422	21.01	19	11.86	155	28.42	8.13	2.3	2.1	34	2	114	.15	4	0.5	0.7	32	LSW
		4	15 2	37.92	19	53.68	155	22.63	10.07	2.1	2.4	25	3	195	.12	4	0.8	0.4	24	KEA
		4	15 5	13.75	19	25.79	155	21.58	9.38	1.5	1.1	30	3	50	.10	4	0.4	0.7	27	KAO
		4	1623	54.53	19	22.48	155	27.60	9.69	2.3	2.5	42	4	38	.11	0	0.3	0.5	39	KAO
		4	2134	57.59	19	53.73	155	22.63	9.70	3.3	3.5	48	5	215	.11	4	0.8	0.3	39	KEA F
		4	2223	15.48	19	54.15	155	23.27	8.73	2.1	1.5	21	1	205	.18	5	1.1	0.7	20	KEA
		5	3 9	6.24	19	17.72	155	20.50	5.55	1.4	1.3	24	3	126	.09	3	0.4	1.3	22	SWR
		5	1729	52.32	19	16.54	155	27.29	9.12	2.4	3.0	48	4	60	.14	6	0.3	0.5	42	LSW
		5	19 5	43.56	19	53.53	155	22.23	10.05	2.5	2.3	31	2	209	.09	3	0.9	0.4	29	KEA
		6	212	35.36	19	19.66	155	30.05	9.73	1.9	1.5	30	2	54	.10	7	0.4	0.9	28	KAO
		6	345	21.16	18	50.20	156	56.86	31.06	2.3	2.7	34	4	327	.10	123	2.3	3.3	33	DIS
		7	116	19.28	19	5.22	155	24.64	33.74	3.1	3.4	53	7	193	.09	10	0.8	1.1	46	LOI
		7	452	0.13	19	28.32	155	26.78	5.56	1.8	1.1	35	3	77	.10	6	0.3	1.2	32	KAO
		7	1646	8.67	19	19.91	155	11.69	4.79	1.6	1.6	34	2	86	.15	5	0.5	1.8	31	SSF
		8	1235	29.63	19	22.58	155	30.03	9.23	1.7	1.1	25	1	72	.09	4	0.5	0.9	24	KAO
		8	1311	55.39	19	23.86	155	26.00	6.62	2.0	1.9	38	3	36	.13	3	0.4	0.9	34	KAO
		8	1348	44.58	19	18.95	155	12.07	3.85	1.2	1.1	25	2	103	.13	4	0.5	1.7	23	SSF
		8	1628	9.52	19	23.75	155	17.22	13.91	2.2	2.4	49	8	33	.11	1	0.4	0.3	41	DEF
		9	4 0	44.80	19	25.09	155	29.34	8.13	1.8	1.1	26	2	63	.10	6	0.4	1.0	24	KAO
		9	523	37.40	19	19.04	155	9.22	4.26	1.3	1.1	22	2	100	.12	4	0.5	1.6	22	SSF
		9	623	18.55	19	20.56	155	11.63	8.99	1.9	2.1	37	3	75	.11	4	0.5	0.7	34	SF3
		9	940	46.17	19	19.42	155	30.42	9.45	2.3	2.2	42	3	59	.13	8	0.4	0.7	38	KAO
		9	1557	56.07	19	19.17	155	13.43	7.44	1.4	1.6	32	0	72	.11	4	0.5	0.9	31	SF2
		9	1630	8.03	19	20.00	155	11.78	7.49	1.4	1.1	25	0	83	.09	5	0.6	1.0	23	SF3
		10	022	17.22	19	25.60	155	29.17	10.38	1.7	1.4	30	1	46	.12	6	0.4	0.8	28	KAO
		10	115	17.68	19	25.66	155	29.32	9.81	2.2	2.0	44	4	37	.10	7	0.3	0.7	38	KAO
		10	525	14.95	19	19.56	155	8.34	7.90	1.8	1.9	30	2	85	.09	4	0.4	0.7	26	SF4
		10	925	24.44	19	25.35	155	19.31	7.09	1.9	2.1	29	4	100	.10	3	0.4	0.9	24	KAO
		10	1448	34.58	19	22.51	155	29.65	8.78	1.6	1.7	34	1	70	.12	4	0.4	0.8	33	KAO
		10	2056	17.92	19	26.63	155	31.41	12.30	2.2	2.0	39	4	35	.11	7	0.3	0.5	36	KAO
		10	2331	40.94	19	22.93	155	1.25	6.58	1.8	1.7	34	3	144	.13	6	0.5	1.0	31	SF5
		10	2356	2.58	19	58.34	155	31.78	40.50	2.3	2.0	41	4	247	.10	19	1.3	1.0	38	KEA
		11	032	57.51	19	29.01	155	51.59	7.29	2.1	1.3	31	4	140	.16	6	0.6	0.6	26	KON
		11	232	48.42	19	34.81	155	25.01	10.10	2.8	2.6	43	4	80	.12	7	0.4	0.7	36	MLO
		11	515	21.28	19	20.12	155	13.39	6.09	1.3	1.1	26	3	65	.14	5	0.5	1.1	26	SF2
		11	1233	2.42	19	21.26	155	24.05	10.39	1.6	1.1	28	4	115	.09	2	0.5	0.7	25	SWR
		11	15 2	57.22	19	21.37	155	17.36	26.81	1.7	1.4	35	4	43	.07	2	0.7	1.0	31	DEF
		11	19 7	24.42	19	20.67	155	30.48	10.16	1.8	1.4	33	2	52	.09	6	0.4	0.8	31	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	DEC	12	3 9	19.58	19	18.46	155	15.53	6.88	1.3	1.5	38	1	117	.09	4	0.4	0.7	38	SF1
		12	515	15.30	19	19.36	155	11.66	6.30	1.9	2.2	37	2	98	.12	5	0.4	0.9	33	SF3
		12	521	25.99	19	22.24	155	30.08	11.02	2.1	1.9	45	3	33	.09	4	0.3	0.6	41	KAO
		12	651	57.63	19	59.20	155	32.75	32.04	2.5	2.2	54	7	173	.09	18	0.6	1.0	48	KEA
		12	1236	1.75	19	25.69	155	30.02	10.59	1.8	1.2	29	2	65	.08	7	0.4	1.0	27	KAO
		12	1251	47.03	19	26.70	155	14.57	31.48	1.9	1.4	42	4	125	.11	4	0.8	1.0	39	DEF
		12	14 5	50.70	19	25.05	155	19.18	6.56	1.4	1.3	19	3	104	.07	3	0.5	0.9	17	KAO
		13	423	10.15	19	19.66	155	12.88	6.08	1.3	1.3	22	0	76	.12	5	0.6	1.5	21	SF2
		13	734	6.50	19	12.44	155	33.46	8.78	2.1	1.6	35	1	164	.12	8	0.6	0.7	33	LSW
		13	1029	30.18	19	22.42	155	28.91	9.58	1.6	1.5	33	1	65	.10	2	0.4	0.7	30	KAO
		13	2331	51.97	19	21.97	155	2.52	5.19	1.5	1.3	32	3	137	.16	4	0.6	1.5	29	SF5
		13	2346	38.58	19	24.19	155	37.83	0.13	2.0	1.6	19	7	92	.15	6	0.3	0.3	16	MLO
		14	4 8	57.61	19	21.00	155	6.39	6.41	1.4	1.6	28	2	95	.11	5	0.5	1.0	27	SF4
		14	1127	9.22	19	22.06	155	24.59	12.67	2.0	2.0	44	5	30	.12	4	0.4	0.5	38	KAO
		15	052	19.72	19	21.98	155	3.70	6.78	1.4	1.9	29	2	103	.16	4	0.5	1.0	27	SF5
		15	915	6.07	19	17.29	155	16.16	8.18	1.7	2.1	41	3	154	.12	5	0.4	0.6	38	SF1
		15	2020	31.63	19	22.71	155	26.81	9.77	1.6	1.6	35	3	36	.13	1	0.4	0.8	30	KAO
		15	2055	25.04	19	28.17	155	28.73	9.85	1.8	1.3	32	4	77	.10	7	0.4	0.9	28	KAO
		16	048	30.79	19	19.26	155	13.17	6.59	1.2	1.1	19	2	76	.10	4	0.5	1.4	19	SF2
		16	419	25.99	19	18.91	155	26.43	10.06	1.5	1.4	36	2	55	.14	6	0.4	0.7	32	LSW
		16	750	37.04	19	19.17	155	13.25	9.49	2.9	3.3	54	7	127	.13	6	0.4	0.4	43	SF2
		16	753	50.25	19	18.37	155	13.09	4.11	1.4	1.4	35	2	94	.12	3	0.4	1.2	27	SSF
		16	756	43.53	19	18.06	155	13.05	5.67	1.3	1.1	20	0	103	.08	2	0.6	1.4	17	SF2
		16	8 3	3.23	19	18.30	155	13.06	5.77	1.4	1.5	25	0	96	.08	2	0.5	1.2	23	SF2
		16	827	10.07	19	19.20	155	10.87	4.64	1.3	1.3	27	2	106	.13	6	0.5	2.5	18	SSF
		16	923	30.47	19	23.64	154	58.56	7.21	2.1	2.4	39	5	168	.15	3	0.7	0.5	34	LER
		16	950	45.17	19	19.16	155	13.23	8.75	2.2	2.6	44	4	127	.13	6	0.5	0.7	35	SF2
		16	13 4	48.81	19	18.23	155	13.27	6.06	1.5	1.6	32	1	90	.10	2	0.5	1.1	26	SF2
		16	1535	25.05	19	11.03	155	39.98	6.53	2.5	2.6	41	4	115	.21	9	0.6	1.6	28	LSW
		16	19 5	49.07	19	25.19	155	19.83	5.45	1.3	1.5	12	1	102	.07	4	0.8	2.3	11	KAO
		16	2043	6.44	19	21.94	155	24.47	12.15	1.6	1.5	31	2	30	.10	4	0.4	0.7	26	SWR
		16	22 1	47.40	19	26.37	155	29.99	9.28	1.8	1.5	25	2	98	.08	8	0.4	1.0	21	KAO
		16	2325	49.26	19	16.64	155	27.52	8.42	2.2	2.3	39	1	59	.15	7	0.4	0.7	32	LSW
		17	058	58.96	19	22.31	155	28.45	9.15	1.6	1.5	29	2	62	.12	2	0.5	0.9	22	KAO
		17	8 6	13.15	19	20.88	155	13.05	8.01	2.3	3.0	44	5	60	.12	3	0.4	0.5	36	SF2
		17	1052	39.33	19	20.16	155	13.01	4.80	1.0	1.1	21	0	68	.13	5	0.6	2.1	19	SSF
		17	1117	14.48	19	17.59	155	30.34	3.77	2.3	2.6	43	3	45	.21	5	0.4	1.9	38	LSW
		17	1149	50.06	19	30.47	155	46.59	7.47	1.5	1.4	25	4	229	.13	1	1.2	0.8	17	KON
		17	1621	29.13	19	20.32	155	7.90	7.18	1.9	2.1	36	3	88	.11	5	0.4	0.7	21	SF4
		18	438	49.12	19	21.73	155	6.22	5.56	1.6	2.2	40	5	81	.17	6	0.6	1.3	28	SF4
		18	547	25.18	19	29.05	155	27.95	3.52	2.2	2.0	41	5	55	.12	6	0.3	1.5	30	KAO
		18	15 3	51.07	18	50.29	156	49.30	16.06	2.9	2.6	35	7	325	.14	111	19.5	66.9	31	DIS
		18	1539	34.31	19	21.01	155	28.21	9.47	1.5	1.3	26	2	48	.11	3	0.4	0.8	17	KAO
		18	2034	42.06	19	22.31	155	4.64	7.80	2.6	3.0	48	7	78	.15	4	0.4	0.5	39	SF5
		19	120	52.42	19	18.34	155	13.07	6.91	1.5	1.9	32	1	95	.10	3	0.5	0.8	27	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	DEC	19	212	24.16	19	19.85	155	12.32	6.64	1.8	1.9	25	1	80	.12	5	0.5	1.1	22	SF2
		19	255	30.89	19	21.61	155	2.46	8.10	1.7	1.5	27	2	142	.13	3	0.6	0.7	20	SF5
		19	616	10.29	19	20.53	155	10.55	6.65	1.3	1.1	19	3	77	.09	3	0.5	0.8	14	SF3
		19	1422	46.31	19	26.26	155	29.21	9.67	1.6	1.2	28	3	60	.10	7	0.4	1.0	21	KAO
		19	1720	54.69	19	12.03	155	19.37	46.46	2.1	2.0	26	2	249	.10	9	1.5	2.1	14	DEP L
		19	2055	56.52	19	22.17	155	29.07	9.69	2.4	2.4	46	4	35	.10	3	0.3	0.6	39	KAO
		20	12 4	43.40	19	20.11	155	12.82	5.51	1.2	1.3	18	0	72	.13	5	0.7	1.8	15	SF2
		20	14 5	33.48	19	20.09	155	12.84	5.61	1.2	1.1	23	0	71	.13	5	0.6	1.6	19	SF2
		20	1453	16.82	19	24.03	155	26.40	9.55	1.7	1.7	33	2	34	.10	3	0.4	0.7	27	KAO
		20	1755	39.54	19	26.31	155	22.81	8.43	1.8	2.1	39	5	47	.12	4	0.4	0.8	28	KAO
		21	1 7	42.68	19	22.52	155	29.72	6.78	2.2	2.2	33	1	59	.12	12	0.4	1.7	24	KAO
		21	1 9	58.51	19	19.32	155	11.83	8.84	2.6	3.0	35	1	96	.11	5	0.4	0.5	23	SF3
		22	653	40.43	19	24.31	155	16.42	16.57	1.9		46	6	70	.10	1	0.4	0.4	38	DEP
		22	1724	23.31	19	7.80	155	30.23	26.99	2.2	2.0	45	4	161	.09	5	0.7	1.2	39	DLS
		22	18 8	33.84	19	22.79	155	3.53	6.89	1.8	1.5	25	2	106	.16	4	0.7	1.2	18	SF5
		22	2029	19.62	19	21.82	155	4.02	5.68	1.7	1.1	29	3	94	.19	4	0.7	1.4	18	SF5
		22	2341	40.80	19	20.71	155	11.44	7.46	1.6	1.8	39	5	73	.12	4	0.5	0.6	28	SF3
		23	039	50.65	19	20.66	155	3.00	7.00	1.6	1.3	26	1	117	.11	1	0.5	0.9	12	SF5
		23	614	19.24	19	16.11	155	22.88	7.87	3.2	4.0	56	10	128	.14	4	0.4	0.5	46	SWR F
		23	616	12.22	19	15.12	155	22.65	7.89	2.0	2.8	31	2	175	.12	3	0.6	0.8	23	SWR
		23	647	1.84	19	16.05	155	22.96	6.02	1.8	2.8	39	4	127	.13	4	0.4	0.9	29	SWR
		23	647	57.93	19	15.94	155	22.53	6.65	1.6	2.3	35	2	154	.10	4	0.4	0.7	25	SWR
		23	649	56.80	19	16.00	155	23.00	6.03	1.8	2.5	37	3	127	.10	4	0.4	0.9	32	SWR
		23	652	34.24	19	16.63	155	22.91	2.90	1.4	1.2	18	1	118	.10	5	0.4	1.2	14	SWR
		23	712	19.85	19	15.79	155	23.08	5.04	1.8	2.2	38	3	129	.12	3	0.4	1.1	29	SWR
		23	715	45.08	19	15.77	155	23.17	5.86	2.3	2.9	44	3	128	.13	3	0.4	0.8	37	SWR
		23	725	48.23	19	15.81	155	22.96	5.71	1.8	2.3	35	3	152	.12	3	0.5	1.1	30	SWR
		23	742	59.52	19	16.19	155	22.55	3.16	1.4	1.6	25	2	132	.08	4	0.4	1.1	15	SWR
		23	746	18.53	19	16.16	155	23.12	8.01	3.2	3.9	58	8	120	.17	4	0.4	0.5	44	SWR F
		23	751	51.80	19	16.50	155	23.20	5.92	1.4	1.3	21	0	127	.15	7	0.6	1.6	16	SWR
		23	816	46.86	19	16.48	155	22.34	3.63	1.0	1.1	18	1	131	.07	5	0.4	1.5	14	SWR
		23	821	5.92	19	16.34	155	23.28	3.19	1.9	2.4	21	0	115	.11	4	0.5	1.4	19	SWR
		23	856	9.56	19	15.68	155	22.86	6.25	1.7	2.0	28	1	158	.09	3	0.5	1.0	23	SWR
		23	9 0	29.48	19	15.78	155	22.94	5.96	1.5	1.5	27	2	153	.09	3	0.4	1.0	17	SWR
		23	9 9	13.85	19	15.96	155	23.37	4.01	1.2	1.5	19	1	118	.09	3	0.4	1.3	11	SWR
		23	923	36.93	19	16.24	155	23.52	3.61	1.4	1.3	18	0	109	.09	4	0.4	1.3	11	SWR
		23	10 5	3.19	19	16.07	155	22.73	3.39	1.7	2.1	29	2	132	.10	4	0.4	1.1	23	SWR
		23	1049	38.87	19	16.87	155	22.49	2.39	1.4	1.4	24	2	122	.12	5	0.4	1.1	17	SWR
		23	1059	31.46	19	16.61	155	22.88	5.49	1.6	1.8	28	2	126	.10	5	0.4	1.2	22	SWR
		23	1114	49.11	19	16.24	155	23.32	5.04	1.9	2.3	40	1	115	.12	4	0.4	1.2	27	SWR
		23	1226	31.44	19	16.58	155	22.89	2.56	1.4	1.3	22	1	119	.11	5	0.4	1.2	15	SWR
		23	1337	53.49	19	16.01	155	22.87	3.30	1.4	1.2	16	1	150	.07	4	0.5	1.2	15	SWR
		23	1352	2.20	19	28.86	155	27.54	2.99	1.6	1.1	31	4	61	.12	6	0.3	1.4	22	KAO
		23	1511	56.62	19	25.66	155	20.17	6.18	1.0	1.1	16	1	110	.09	4	0.6	1.3	12	KAO
		23	2040	16.04	19	27.17	155	24.22	10.08	1.8	1.2	29	2	64	.11	4	0.5	0.8	23	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	DEC	23	2117	45.16	19	19.59	155	28.31	9.25	1.5	1.3	22	2	60	.12	6	0.5	0.7	13	KAO
		24	419	39.23	19	20.56	155	11.68	7.66	2.1	2.6	49	5	74	.14	4	0.4	0.5	37	SF3
		24	10 8	46.89	19	19.37	155	11.32	4.64	1.3	1.3	30	2	99	.13	6	0.5	2.0	24	SSF
		24	1250	12.87	19	22.77	155	2.83	4.44	1.5	1.3	32	4	124	.16	4	0.5	1.6	20	SSF
		24	1447	15.41	19	21.53	155	20.82	9.18	1.5	1.3	30	5	85	.10	4	0.5	0.7	21	SWR
		24	1639	10.84	19	24.85	155	20.15	7.27	2.0	2.2	37	5	45	.11	2	0.3	0.7	27	KAO
		25	043	12.29	19	27.77	155	14.59	32.49	2.3	2.4	55	6	41	.12	6	0.5	0.9	47	DEP
		25	113	33.63	19	20.23	155	12.82	7.44	1.3	1.5	35	1	69	.11	4	0.5	0.7	26	SF2
		25	641	34.26	18	54.92	155	15.07	12.19	2.3	2.9	26	1	256	.10	35	2.0	0.8	20	LOI L
		25	1722	11.48	19	58.77	155	5.93	34.63	4.3	4.4	55	8	229	.12	27	0.9	1.8	47	KEA F
		25	1738	24.67	19	25.23	155	30.89	10.24	2.1	1.9	37	2	36	.10	8	0.4	0.9	29	KAO
		25	1827	40.23	19	24.33	155	29.67	8.02	1.7	1.3	34	2	42	.10	5	0.4	0.9	24	KAO
		25	1841	41.91	19	19.73	155	8.62	5.51	1.4	1.1	25	0	78	.10	5	0.5	1.5	23	SF4
		25	2243	9.34	19	24.78	155	19.25	5.33	2.0	2.5	38	5	37	.12	2	0.3	0.7	30	KAO
		26	233	57.27	19	22.08	155	26.60	9.62	1.6	1.3	27	2	50	.10	2	0.4	0.7	22	KAO
		26	328	45.56	19	24.78	155	29.22	8.06	1.5	1.1	27	2	63	.10	5	0.4	0.9	22	KAO
		26	659	9.26	19	28.08	155	26.57	10.12	2.3	2.3	41	4	47	.12	6	0.4	0.7	33	KAO
		26	934	28.54	19	19.71	155	13.90	8.10	2.2	2.3	51	8	70	.12	5	0.4	0.5	37	SF2
		26	1151	19.95	19	15.89	155	39.89	6.29	2.6	2.5	32	1	229	.15	5	1.3	0.8	29	LSW
		26	1237	59.71	19	25.44	155	19.52	5.83	1.4	1.2	21	2	117	.11	3	0.5	1.2	19	KAO
		27	138	28.88	19	19.50	155	10.07	5.41	1.6	1.1	29	3	96	.13	5	0.6	1.5	25	SF3
		27	153	3.08	19	15.76	155	5.70	42.25	2.2	1.6	28	2	220	.10	5	1.2	1.9	22	DEP
		27	620	4.58	19	20.89	155	6.22	7.70	2.1	1.5	39	6	98	.11	5	0.4	0.7	31	SF4
		27	923	0.37	19	19.64	155	11.97	4.97		1.3	28	3	88	.12	6	0.5	1.8	20	SSF
		27	1921	47.86	19	17.24	155	15.20	4.00	1.3	1.1	23	1	154	.12	3	0.6	1.0	16	SSF
		27	20 4	58.62	19	27.77	154	53.54	6.40	1.9	1.6	24	2	130	.13	3	0.7	0.8	17	LER
		27	20 5	18.37	19	27.28	154	53.26	6.19	2.0	1.6	18	3	146	.09	4	0.6	0.9	14	LER
		27	23 5	6.61	19	20.21	155	4.04	5.20	1.7	1.3	22	1	128	.10	2	0.5	1.2	16	SF5
		28	1040	2.04	19	21.75	155	46.70	11.90	1.9	1.5	28	1	187	.14	12	1.1	0.6	21	KON
		28	1148	38.05	19	15.74	155	22.78	5.06		1.6	29	3	135	.08	3	0.4	1.2	24	SWR
		28	1342	39.49	20	4.27	155	50.13	23.22	2.3	2.3	37	4	214	.10	9	1.0	1.3	30	KOH
		28	15 0	29.75	19	18.84	155	13.19	5.16	1.3	1.1	30	2	83	.11	3	0.5	1.5	27	SF2
		28	2115	4.77	19	24.85	155	30.50	11.20	1.6	1.2	26	2	70	.10	7	0.4	0.7	17	KAO
		29	9 7	25.56	19	25.62	155	29.43	9.98	2.3	2.8	42	5	38	.11	7	0.3	0.5	32	KAO
		29	12 0	11.51	19	19.75	155	12.05	6.65	1.8	1.6	29	1	86	.13	6	0.5	1.0	21	SF3
		29	1832	58.94	19	24.96	155	16.02	14.66	1.9	1.8	30	3	91	.10	2	0.4	0.4	25	DEP
		30	8 5	37.06	19	24.90	155	30.50	3.63	1.9	1.8	24	2	78	.11	9	0.4	3.1	19	KAO
		30	1048	10.30	19	21.53	155	4.84	6.59	1.6	1.4	16	2	103	.11	4	0.7	1.0	10	SF5
		30	1218	1.69	19	18.91	155	30.42	9.30	2.2	1.9	28	1	48	.10	7	0.4	0.9	22	LSW
		31	841	38.29	19	22.01	155	4.74	7.66	2.1	2.2	33	4	74	.13	5	0.4	0.6	26	SF5
		31	1331	36.67	19	21.99	155	4.77	8.43	2.4	2.6	39	7	79	.13	5	0.4	0.5	29	SF5
		31	1420	3.61	19	17.65	155	28.09	9.14	1.6	1.8	33	4	48	.13	6	0.4	0.8	28	LSW
		31	1428	8.14	19	54.37	155	49.18	37.70	2.8	2.7	45	6	176	.09	18	0.6	1.2	39	HUA

Table 6 1984 HVO EARTHQUAKE SUMMARY LIST M›=3.0

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	JAN	1	534	49.58	19	16.64	155	22.58	8.03	2.7	3.4	49	1	124	.17	5	0.5	0.7	48	SWR
		1	2055	57.92	19	25.36	155	20.18	7.76	3.0	3.3	51	6	38	.12	3	0.3	0.6	45	KAO
		2	1410	20.10	20	35.30	154	54.93	0.03	3.7	4.3	48	4	312	.11	90	9.3	2.4	44	DIS *
		12	1032	27.79	19	18.54	155	14.20	9.48	3.2	3.4	50	5	135	.12	6	0.4	0.5	46	SF2
		12	1748	15.72	19	18.34	155	14.10	10.01	3.4	3.7	48	4	137	.13	7	0.5	0.5	43	SF2
		13	1222	36.18	19	27.78	155	23.40	11.58	3.3	3.4	47	3	42	.12	4	0.3	0.4	43	KAO
		19	21 4	48.62	19	22.00	155	7.20	8.73	3.1	3.2	47	5	72	.11	3	0.3	0.4	38	SF4
		22	251	35.37	19	20.45	155	2.75	8.12	2.9	3.1	33	3	196	.11	9	0.9	0.7	24	SF5
		26	716	26.74	19	25.96	155	21.33	9.57	3.0	3.1	47	3	31	.12	3	0.4	0.4	42	KAO
		28	222	7.79	19	37.18	156	10.80	28.80	3.7	4.2	46	2	254	.11	31	1.4	1.9	42	KON F
		28	823	7.57	19	38.66	156	2.59	43.05	3.0	3.2	52	7	231	.09	22	0.7	1.3	45	KON
		30	2026	56.47	19	33.93	156	1.70	15.67	3.4	3.7	48	6	229	.10	14	1.0	0.7	39	KON
	FEB	2	1112	20.86	19	19.15	155	13.26	10.65	3.5	3.7	52	7	77	.10	4	0.4	0.4	47	SF2
		2	1551	22.49	19	23.71	155	36.66	5.52	3.5	3.4	54	10	66	.12	7	0.3	0.7	49	MLO
		3	622	25.10	19	18.25	155	13.78	10.13	3.5	3.7	52	6	67	.11	2	0.4	0.4	44	SF2 F
		3	1945	35.89	19	11.53	155	36.60	9.09	3.3	3.5	52	8	93	.23	6	0.6	0.8	42	LSW
		12	1618	11.21	19	16.13	155	31.70	7.93	3.2	3.2	45	4	81	.19	3	0.5	0.9	41	LSW
		13	1027	21.80	19	23.98	155	26.14	9.11	3.1	3.0	50	6	28	.16	3	0.4	0.6	39	KAO
		13	2110	12.47	30	58.05	157	35.31	29.58	6.0		45	2	344	.15500		18.0	3.9	17	DIS L*
		15	722	41.10	19	23.96	155	27.28	11.58	3.5	4.0	50	3	28	.13	3	0.3	0.3	45	KAO F
		16	652	33.13	19	28.85	155	26.72	11.97	3.2	3.1	54	7	41	.13	6	0.3	0.4	46	KAO
		17	245	6.26	19	22.89	155	4.43	8.74	3.3	3.7	50	9	87	.09	3	0.4	0.4	44	SF5
		23	2059	9.59	19	25.02	155	30.16	12.00	3.2	3.3	45	4	35	.09	9	0.3	0.4	38	KAO
		28	1520	8.34	19	20.93	155	7.76	8.55	3.1	3.3	50	6	82	.11	4	0.4	0.4	39	SF4
	MAR	4	914	37.49	19	12.72	155	35.18	1.47	3.3	3.2	53	8	84	.20	10	0.5	0.8	39	LSW
		8	1058	49.88	19	19.32	155	11.65	8.81	3.5	3.9	46	4	98	.10	5	0.4	0.3	42	SF3 F
		11	646	46.03	19	49.28	155	36.93	18.50	3.1	3.4	52	7	101	.11	6	0.5	1.5	43	KEA F
		11	1150	18.87	19	18.06	155	23.30	9.95	2.9	3.2	53	7	95	.14	4	0.3	0.4	41	SWR
		13	1142	15.96	19	15.58	155	6.01	42.66	2.8	3.3	56	9	217	.11	5	0.8	0.8	47	DEP
		15	13 3	0.75	19	21.86	155	6.98	8.78	3.4	3.9	55	8	76	.11	3	0.4	0.3	45	SF4 F
		17	1927	35.08	19	20.01	155	11.97	9.41	3.1	3.5	46	3	82	.11	5	0.3	0.4	40	SF3
		21	2228	24.65	19	25.64	155	37.63	2.45	3.2	3.5	42	3	77	.12	4	0.4	0.8	35	MLO
		25	050	52.75	19	28.40	155	35.17	0.08	3.3	3.3	30	0	68	.12	3	0.4	1.1	27	MLO
		25	055	13.58	19	27.80	155	35.90	1.10	3.9	3.8	36	1	43	.21	2	0.4	0.6	22	MLO
		25	1 0	22.15	19	28.02	155	35.58	1.52	3.2	3.3	21	0	68	.18	1	0.6	1.0	12	MLO
		25	1 1	20.34	19	27.38	155	34.77	2.18	3.8	4.0	27	0	45	.14	2	0.5	1.1	10	MLO
		25	1 4	32.16	19	26.21	155	35.46	6.61	3.4	3.4	28	1	69	.16	12	0.6	1.3	18	MLO
		25	1 8	8.54	19	27.10	155	37.11	5.99	3.1	3.0	24	0	91	.15	12	0.5	1.3	14	MLO
		25	210	24.72	19	28.68	155	34.79	8.35	3.3	4.0	27	0	69	.19	2	0.6	1.2	19	MLO
		25	21 5	50.33	19	27.76	155	35.93	5.91	3.3	3.9	29	1	54	.13	14	0.4	1.3	24	MLO F
		27	914	42.82	19	21.15	155	29.61	6.70	3.1	3.0	40	3	44	.13	4	0.3	0.7	33	KAO
		30	1021	15.12	19	58.21	155	5.45	35.58	3.8	3.9	58	10	229	.12	28	0.9	1.4	48	KEA F
	APR	1	222	25.03	19	27.29	155	29.54	10.11	3.2	2.9	55	8	35	.12	9	0.3	0.4	44	KAO
		6	1843	29.04	19	18.71	155	13.75	10.04	3.4	3.6	53	7	91	.12	3	0.5	0.4	47	SF2 F
		9	7 5	39.16	19	28.10	155	36.34	1.92	3.7	3.9	48	3	78	.14	2	0.3	0.3	46	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	APR	9	1313	39.85	19	18.62	155	13.55	10.49	3.9	4.1	56	10	73	.11	3	0.4	0.3	46 SF2	F
		10	1137	2.66	19	10.60	156	47.69	28.41	3.4	2.6	36	2	305	.13	98	1.8	3.5	34 DIS	
		18	640	13.00	19	17.88	155	12.95	6.88	3.0	3.0	44	5	114	.12	2	0.4	0.8	39 SF2	
		22	223	29.03	19	18.32	155	13.46	10.56	3.7	3.8	50	6	133	.09	8	0.5	0.4	42 SF2	F
		22	227	3.59	19	18.44	155	13.37	8.41	3.8	3.9	53	8	83	.12	3	0.4	0.4	45 SF2	F
		27	2348	49.48	19	19.18	155	28.38	9.68	3.2	3.4	50	7	41	.12	6	0.3	0.5	41 KAO	
		28	2045	34.42	19	10.40	155	40.60	9.05	3.5	3.4	46	3	168	.21	10	0.9	0.7	38 LSW	F
		30	1349	34.24	19	43.42	154	52.79	40.40	3.5	3.0	48	5	234	.12	22	0.9	1.4	42 HIL	
	MAY	1	355	23.08	19	12.67	155	34.14	13.22	4.0	4.1	45	6	123	.15	7	0.5	0.5	39 DLS	F
		9	1545	10.92	19	22.28	155	29.15	10.22	3.0	3.3	57	11	35	.11	3	0.3	0.4	43 KAO	
		10	926	58.75	19	59.20	155	53.90	22.35	3.0	3.0	18	4	221	.13	20	1.4	3.2	11 KOH	
		17	241	10.52	19	21.46	155	2.75	7.07	2.9	3.1	49	6	134	.12	3	0.4	0.5	42 SF5	
		19	1418	1.67	19	19.34	155	11.37	8.85	3.0	3.4	49	4	100	.10	6	0.3	0.4	42 SF3	
		19	1841	2.66	19	20.55	155	13.00	9.47	3.3	3.7	51	6	65	.12	4	0.3	0.4	45 SF2	
		20	533	19.45	19	19.68	155	11.25	9.19	2.9	3.4	51	6	93	.12	5	0.3	0.4	39 SF3	
		30	18 7	13.60	19	28.98	155	35.70	1.58	3.0	3.5	17	2	71	.21	1	0.6	0.3	9 MLO	
		31	2057	37.17	19	25.44	155	19.51	6.98	2.7	3.3	46	6	47	.12	3	0.4	0.6	37 KAO	F
	JUN	3	2112	7.46	18	54.25	155	8.68	50.20	3.4	3.3	55	8	254	.09	43	0.9	1.5	47 LOI	
		8	927	50.72	19	12.06	155	31.22	37.56	3.7	3.7	56	10	85	.09	6	0.6	1.0	46 DLS	F
		8	933	12.30	19	12.10	155	31.20	37.45	3.1	3.3	57	10	83	.10	6	0.6	0.9	47 DLS	
		8	1734	10.64	20	3.31	157	52.51	29.55	5.0	5.3	52	5	238	.13	142	1.5	2.5	41 DIS	
		12	1339	0.35	19	37.43	155	55.77	19.99	3.5	3.7	53	6	200	.11	15	0.7	1.9	44 KON	F
		12	17 3	20.10	19	21.09	155	30.11	9.60	3.6	3.7	54	9	34	.11	5	0.3	0.5	43 KAO	F
		13	152	31.17	19	20.46	155	12.78	9.23	3.5	3.9	42	5	67	.12	4	0.4	0.5	36 SF2	F
		16	822	10.03	20	44.51	157	30.32	34.00	4.0	5.1	38	2	189	.12	83	2.3	1.9	19 DIS	F
		17	11 5	23.53	19	21.42	155	30.10	9.69	3.1	3.4	55	8	33	.10	5	0.3	0.4	44 KAO	F
		20	919	36.81	19	21.28	155	29.88	10.84	2.8	3.2	51	6	34	.09	5	0.3	0.4	41 KAO	
		24	2123	19.96	19	20.20	155	10.85	9.61	3.5	3.7	49	5	82	.09	4	0.4	0.3	44 SF3	F
		25	1329	43.71	19	14.81	155	4.08	47.57	3.1	3.0	52	5	205	.11	8	0.9	1.2	47 DEP	
		26	1914	31.27	20	1.05	155	21.49	8.05	3.3	3.2	51	6	209	.13	28	0.7	0.8	45 KEA	
		30	414	45.00	19	20.49	155	11.72	9.06	2.9	3.3	49	6	75	.12	4	0.3	0.4	41 SF3	
	JUL	4	1430	13.23	19	0.48	156	54.19	28.81	3.4	4.1	30	5	323	.12	112	1.9	4.6	23 DIS	
		8	1726	33.95	21	33.09	154	56.29	27.30	3.5	3.8	43	8	328	.13	181	1.8	4.4	23 DIS	
		20	847	47.93	20	2.98	155	43.69	7.41	3.6	3.9	47	4	144	.14	10	0.7	0.8	40 KOH	F
		25	832	38.15	19	22.16	155	18.63	30.97	3.5	3.9	46	1	35	.11	3	0.6	1.0	44 DEP	
		26	545	11.12	19	21.11	155	7.38	8.27	3.3	3.9	48	5	172	.12	4	0.6	0.5	42 SF4	
	AUG	3	5 8	39.32	19	19.56	155	15.46	9.15	3.1	3.6	40	4	86	.12	5	0.4	0.5	35 SF1	
		10	2145	45.26	19	6.65	156	10.73	30.61	2.9	3.1	50	5	276	.10	37	2.1	1.5	46 KON	
		11	2329	30.15	19	27.49	155	29.36	9.65	3.0	3.1	55	9	36	.12	8	0.3	0.5	46 KAO	
		14	1010	2.12	19	47.13	154	54.77	47.71	3.7	4.3	54	10	233	.10	20	0.8	1.1	43 KEA	F
		18	010	52.36	19	21.65	155	4.84	7.61	2.8	3.3	48	5	82	.12	5	0.4	0.5	36 SF5	
		24	028	32.72	19	22.18	155	2.67	7.28	2.8	3.2	41	6	132	.12	4	0.5	0.6	32 SF5	
		28	728	48.88	19	12.34	155	36.46	9.62	3.2	3.3	46	5	114	.20	5	0.7	0.8	36 LSW	
		31	1333	31.09	20	8.44	155	50.44	39.07	3.3	3.4	52	8	275	.11	7	0.8	0.9	44 KOH	
		31	2253	23.50	19	21.85	155	5.10	8.69	2.8	3.3	48	6	78	.10	4	0.4	0.3	39 SF5	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1984	SEP	2	1643	14.45	19	21.28	155	1.58	6.63	3.2	3.8	46	5	174	.12	3	0.6	0.4	32	SF5
		10	1916	6.49	18	55.68	155	16.61	14.62	3.1	4.1	43	0	244	.10	32	1.7	2.0	34	LOI L
		10	2351	36.28	19	20.59	155	13.34	9.04	3.4	3.9	46	5	60	.12	4	0.4	0.5	40	SF2 F
		13	2027	59.48	19	27.84	154	53.18	9.01	3.0	3.2	42	5	181	.13	4	0.9	0.3	27	LER
		24	2127	48.20	19	18.97	155	54.17	12.37	4.3	4.3	49	3	208	.11	6	0.9	0.4	44	KON F
		27	7 3	12.74	19	19.40	155	10.99	9.63	3.2	3.7	51	7	100	.10	5	0.5	0.4	43	SF3 F
	OCT	3	934	11.95	19	14.12	155	27.18	13.70	3.1	3.3	54	8	103	.13	5	0.4	0.4	45	DLS
		6	1754	56.82	19	11.88	155	10.87	31.70	3.0	3.0	57	9	199	.12	11	0.8	1.0	46	DEP
		8	0 0	25.11	20	7.02	156	51.65	29.58	3.9	4.3	54	7	314	.11	113	1.6	2.5	47	DIS
		8	0 3	43.06	19	17.09	155	15.48	10.10	2.9	3.1	48	5	151	.11	6	0.4	0.4	42	SF1
		8	1618	10.72	19	54.90	155	29.41	17.85	3.7	4.1	56	9	151	.11	15	0.6	1.8	47	KEA F
		10	233	49.75	19	17.23	155	25.17	9.84	3.0	3.6	56	9	69	.15	6	0.3	0.5	45	LSW F
		13	616	26.92	19	20.62	155	7.78	8.56	3.0	3.6	56	10	85	.10	5	0.3	0.4	42	SF4
		16	534	14.72	18	54.59	155	15.32	13.08	3.0	3.8	42	2	248	.09	35	1.4	1.0	42	LOI
		16	1445	55.79	19	24.47	155	29.36	10.24	3.5	3.8	58	9	32	.10	5	0.3	0.4	49	KAO F
		23	331	48.64	19	20.47	155	11.97	8.76	3.0	3.6	49	6	74	.11	4	0.3	0.4	44	SF3
		29	420	38.25	19	14.60	154	53.33	41.41	3.2	3.0	52	6	242	.11	20	1.3	1.0	47	DIS
		31	1922	22.46	19	12.46	155	26.84	9.32	3.0	3.3	55	8	125	.17	6	0.5	0.4	48	LSW
	NOV	11	534	6.20	18	55.84	155	13.30	8.85	4.0	4.2	47	7	244	.12	36	0.9	0.6	39	LOI F
		11	550	37.04	18	58.30	155	13.87	14.26	2.8	3.6	36	3	236	.11	32	1.3	1.4	33	LOI
		11	10 5	13.85	18	56.54	155	12.68	10.30	2.9	3.5	41	7	243	.12	36	0.9	0.6	37	LOI
		11	19 3	19.55	19	20.57	155	11.26	9.06	3.4	3.9	44	4	167	.12	4	0.6	0.5	35	SF3
		14	1 5	56.24	19	51.79	155	8.87	15.69	3.8	3.8	53	10	222	.10	21	0.9	1.0	45	KEA F
		16	1 1	58.02	19	22.25	155	28.86	9.49	3.0	3.3	46	7	43	.11	2	0.3	0.5	31	KAO
		18	1435	9.99	20	9.77	155	38.14	32.38	4.0	3.5	54	8	232	.10	16	0.7	1.4	46	KOH F
	DEC	4	2134	57.59	19	53.73	155	22.63	9.70	3.3	3.5	48	5	215	.11	4	0.8	0.3	39	KEA F
		7	116	19.28	19	5.22	155	24.64	33.74	3.1	3.4	53	7	193	.09	10	0.8	1.1	46	LOI
		16	750	37.04	19	19.17	155	13.25	9.49	2.9	3.3	54	7	127	.13	6	0.4	0.4	43	SF2
		23	614	19.24	19	16.11	155	22.88	7.87	3.2	4.0	56	10	128	.14	4	0.4	0.5	46	SWR F
		23	746	18.53	19	16.16	155	23.12	8.01	3.2	3.9	58	8	120	.17	4	0.4	0.5	44	SWR F
		25	1722	11.48	19	58.77	155	5.93	34.63	4.3	4.4	55	8	229	.12	27	0.9	1.8	47	KEA F

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685-649/58159

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Hawaiian Volcano Observatory
1985 Annual Administrative Report

Introductory Note By Thomas L. Wright and Jennifer S. Nakata

Compiled By Jennifer S. Nakata

Summary 85
Seismic Data, January to December 1985
By Jennifer S. Nakata, Robert Y. Koyanagi,
Wilfred R. Tanigawa, and Alvin H. Tomori

Chronological Summary
By Thomas L. Wright

Open-File Report 2007-1345
U.S. Department of the Interior
U.S. Geological Survey

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DIRK KEMPTHORNE, Secretary

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INTRODUCTORY NOTE

The Hawaiian Volcano Observatory Summaries have been published in the current format since 1956. The Quarterly Summaries (1956 through 1973) and the Annual Summaries (1974 through 1985) were originally published as Administrative Reports. These reports have been compiled and published as U.S. Geological Survey Open-File Reports. The quarterly reports have been combined and published as one annual summary. All the summaries from 1956 to the present are now available as .pdf files at http://www.usgs.gov/pubprod.

The earthquake summary data are presented as a listing of origin time, depth, magnitude, and other location parameters. Network instrumentation, field station sites, and location algorithms are described. Tilt and other deformation data are included until Summary 77, January to December 1977. From 1978, the seismic and deformation data are published separately, due to differing schedules of data reduction.

There are eight quarters—from the fourth quarter of 1959 to the third quarter of 1961—that were never published. Two of these (4th quarter 1959, 1st quarter 1960) have now been published, using handwritten notes of Jerry Eaton (HVO seismologist at the time) and his colleagues. The seismic records for the remaining six summaries went back to California in 1961 with Jerry Eaton. Other responsibilities intervened, and the seismic summaries were never prepared.

Chronology

The following Kīlauea eruption chronology covers the two recent reports and the six missing quarters:

Location	Beginning Date	Ending Date	Comment
Kīlauea Iki crater (Kīlauea's summit)	11/14/1959	12/20/1959	19 eruptive episodes
Kapoho (lower east rift zone)	1/13/1960	2/18/1960	4 eruption stages
Halemaumau (Kīlauea's summit)	2/24/1961	2/24/1961	Intermittent activity during uninterrupted inflation following the 1960 eruption
Halemaumau (Kīlauea's summit)	3/22/1961	3/25/1961	Same as above.
Halemaumau (Kīlauea's summit)	7/10/1961	7/17/1961	Same as above.
Heiheiahulu (middle east rift zone)	9/22/1961	9/25/1961	First historical east rift eruption at this location

The 1959-1960 eruptions were among two of the most spectacular Kīlauea eruptions. The HVO staff was kept busy with acquisition of unusually high quantities of instrumental data and observations of the two sequences, which were separated by less than one month. Even with a year's interval before the beginning of the summit-east rift sequence in 1961, the staff never caught up, and the seismic records were set aside for later study.

A total of 1,672 earthquakes—1,106 for 1960 and 566 for 1961—are part of HVO's cataloged database. The annual listings have been appended to the 1st Quarter Report of 1960 and to the 4th Quarter Report for 1961. The number of earthquakes is probably low, biased toward the larger magnitudes. The entire HVO catalog, including 1960 and 1961, is accessible from the ANSS CATALOG SEARCH site at http://www.ncedc.org/anss/catalog-search.

Thomas L. Wright and Jennifer S. Nakata

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 85

SEISMIC DATA, JANUARY TO DECEMBER 1985

This report (map) is preliminary and has not been reviewed for conformity with U.S.Geological Survey editorial standards (and stratigraphic nomenclature). Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S.G.S.

1987

UNITED STATES
DEPARTMENT OF THE INTERIOR
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HAWAIIAN VOLCANO OBSERVATORY

SUMMARY 85

SEISMIC DATA, JANUARY TO DECEMBER 1985

BY

JENNIFER S. NAKATA, ROBERT Y. KOYANAGI, WILFRED R. TANIGAWA, ALVIN H. TOMORI

CHRONOLOGICAL SUMMARY
BY
THOMAS L. WRIGHT

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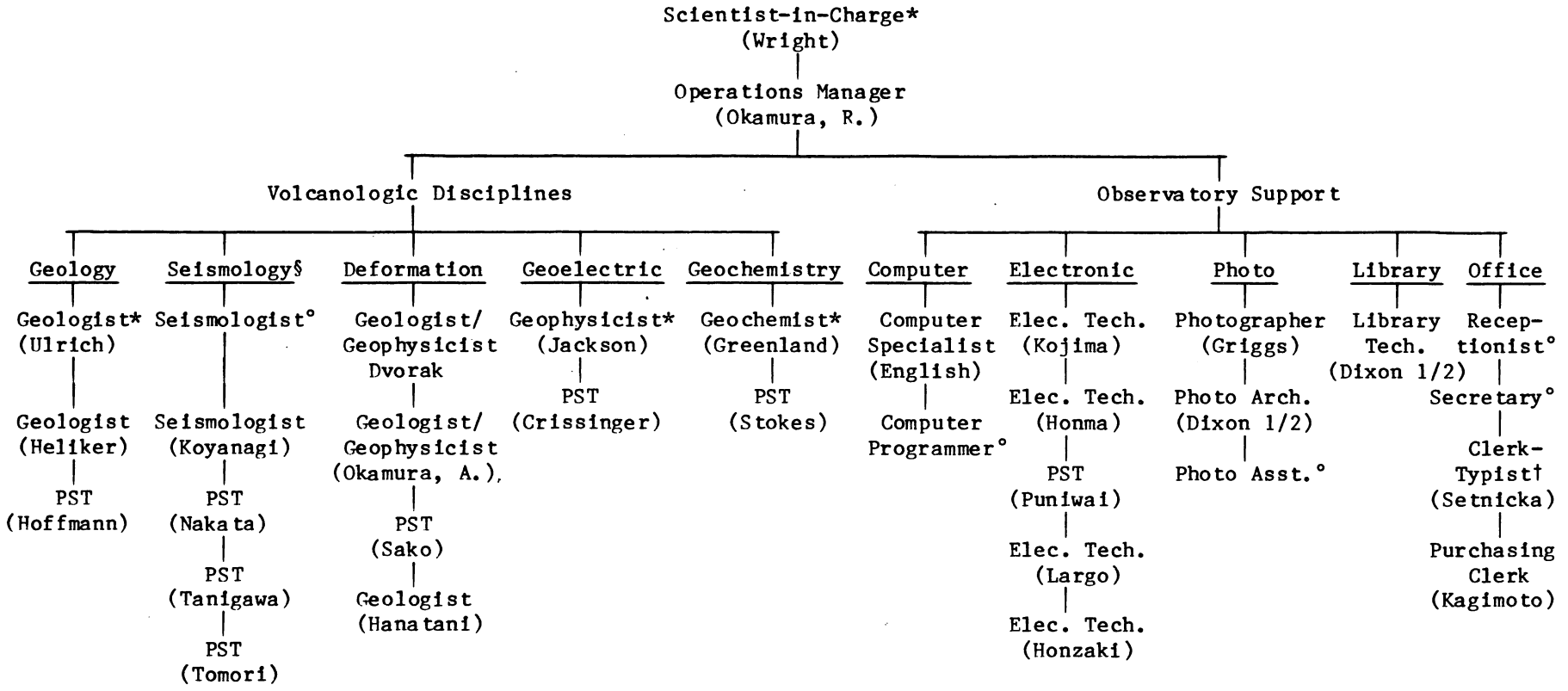

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†20 hr/week

§Seismic record changing done under contract to: J. Judd, Z. Jacobi, J. Forbes, A. Yamamoto

AFFILIATED U.S. GEOLOGICAL SURVEY PROJECTS, HAWAII NATIONAL PARK

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N. Banks	Geology of Kilauea Southwest Rift Zone
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R. Moore F. Trusdell (PST)	Geology and petrology of Hualalai Volcano, Hawaii
E. Wolfe C. Neal	Geologic map of the Island of Hawaii

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INTRODUCTION

The Hawaiian Volcano Observatory (HVO) summary presents data gathered during the year together with a chronological narrative describing the volcanic events and significant observatory related activities. The seismic summary is offered without interpretation as a source of preliminary data. The seismic summary is complete in the sense that all data routinely gathered by the observatory are included. The emphasis in collection of tilt and deformation data has shifted from quarterly measurements at a few water-tube tilt stations ("wet" tilt) to a larger number of continuously recording borehole tiltmeters, repeated measurements at numerous spirit-level tilt stations ("dry" tilt), and surveying of level and trilateration networks. Because of the large quantity of deformation data now gathered and differing schedules of data reduction, the seismic and deformation summaries are published separately.

The HVO summaries have been published in various formats since 1956. Summaries prior to 1974 were issued quarterly, but cost, convenience of preparation and distribution, and the large quantities of data dictated an annual format beginning with Summary 74 for the year 1974. Summary 74 includes an extensive description of the seismic instrumentation, calibration and processing used in recent years. The present summary includes enough background information on the seismic network and processing to use the data and understand the essentials of how it was gathered.

A report tabulating the instrumentation, calibration and recording history of each seismic station in the network by Klein and Koyanagi is available as a USGS Open-File Report ("Hawaiian Volcano Observatory Seismic Network History 1950-79," U.S.G.S. Open-File Report 80-302, 1980). It is designed as a reference for users of seismograms and phase data, and so includes and expands the information in the station table in this summary.

CHRONOLOGICAL SUMMARY - 1985

by

Thomas L. Wright

Volcanic Activity. Kilauea's east rift eruption, begun in January 1983 continued throughout 1985 with 11 episodes of high fountaining at the Pu'u 'O'o vent (fig. C-1). Approximately 20 km^2 of area was covered by new lava; most of this was over lava erupted in 1983 and 1984 (fig. C-2). In July, following high fountaining associated with episode 35, a fissure broke uprift of Pu'u 'O'o and built a small pahoehoe shield over a period of three weeks. Following the close of fissure activity, episodic high fountaining continued for the rest of the year. During 1985 the summit of Kilauea gradually deflated (fig. C-1 and C-3) with a net loss of magma volume of .007 km^3, compared to the normal magma supply rate of .1 km^3/year. The existence of a local storage reservoir adjacent to Pu'u 'O'o was confirmed by measuring an EDM line and a level line oriented normal to the rift zone and showed inflation between eruptive episodes and deflation during high fountaining. One example of elevation change accompanying inflation-deflation is shown in figure C-4. Figure C-5 shows net changes over the latter half of the year--the large elevation increase is associated with emplacement of a small dike prior to the fissure activity of episode 35.

Mauna Loa (fig. C-6) continued to reinflate following its three-week eruption in March-April 1984. Changes in tilt (fig. C-7) and horizontal displacement (fig. C-8) at Mauna Loa summit are shown from before the eruption to the survey conducted in 1985.

Facilities and Equipment. Two VAX 11-750 minicomputers were installed in February. One of these is dedicated to seismic processing; the other is the primary computer for all other HVO applications. A working version of the Caltech USGS seismic processing System (CUSP), developed by Carl Johnson, was installed in several stages and was operational by the end of the year.

Ground-breaking for the new HVO building took place in April and construction was well ahead of schedule (contract completion date - November 1986) by the end of the year.

Staffing. An organizational chart that applies to HVO during 1985 is shown following the title page. This divides the staff into various volcanologic disciplines and supporting functions and has been be useful in preparing annual summaries, budgets, student assignments, etc.

Significant progress was made in converting employees in temporary status to permanent appointments and converting some part-time appointments to full-time appointments. Our goal is to have a core of permanent full-time personnel in all areas of HVO operations who will provide the continuity in years to come. Personnel who left or arrived during 1985 are listed below.

DEPARTURES		ARRIVALS	
Name	Position	Name	Position
John Hoffmann	Geology PST	Jeffrey Judd	Contract: Seismic Record Changing
Craig Crissinger	Geophysics PST		
John Dvorak	Deformation - Geophysicist	Zoe Jacobi	Contract: Seismic Record Changing
Jeffrey Judd	Contract: Seismic Record Changing	Lu Setnicka	Office

Student appointments in 1985 were as follows:

Minority Program in the Earth Sciences (MPES):

Carl Arakaki - Electronics
Jason Takayama "
Renee Ellorda "
Charlotte Forbes - Geochemistry
Brian Moniz - Shop
Terry Ignacio - Deformation
Keone Ah Chong "
Kent Kikuchi "
Lureen Helliangao - Office/Library

Stay-in-School Program:

David Little - Geology

Federal Junior Fellows:

Pauline Tamura - Seismology
Nicole Torres - Deformation

National Association of Geology Teachers

Melissa Bode - Seismology
Michael Reason - Geology

Figure C-1.

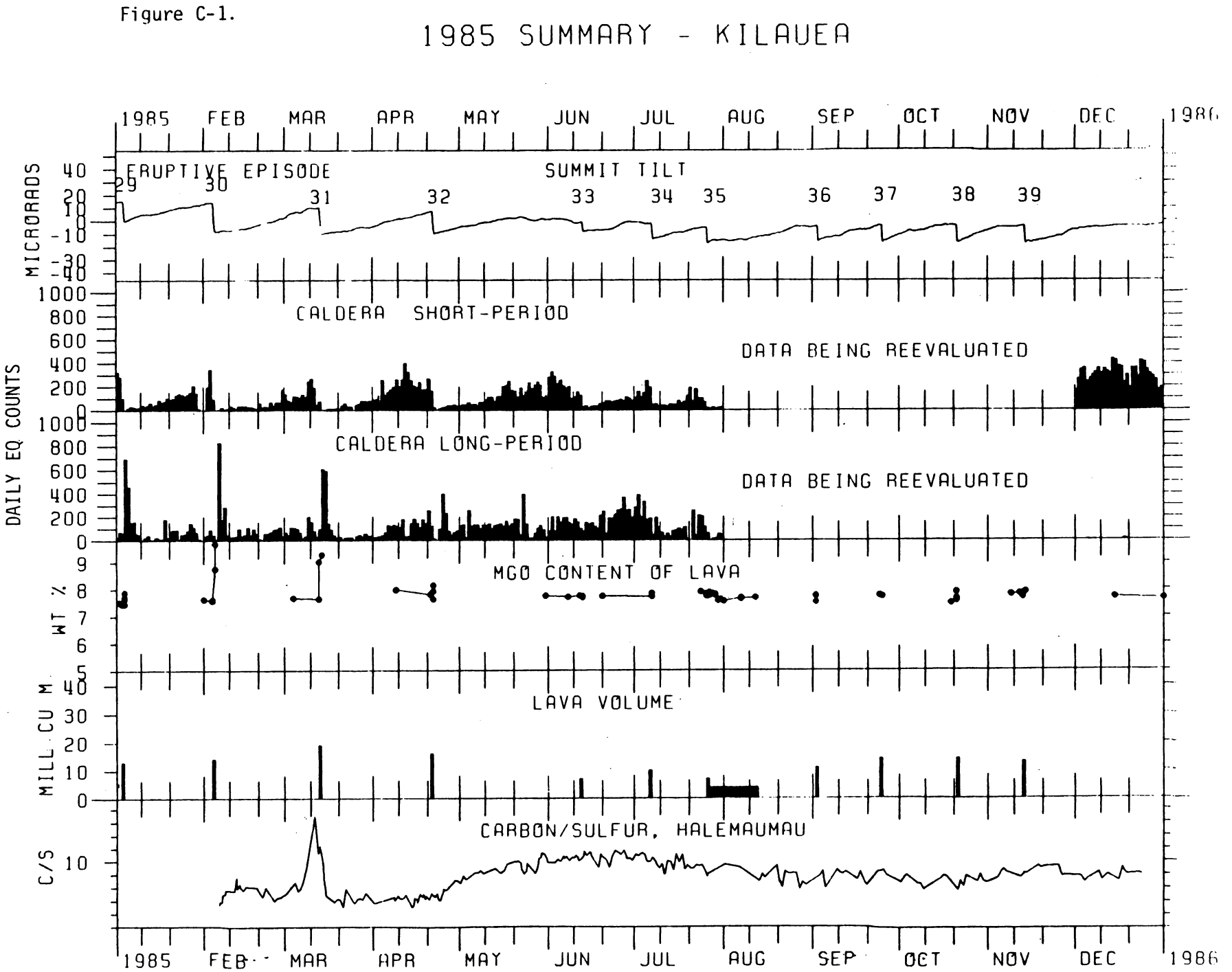
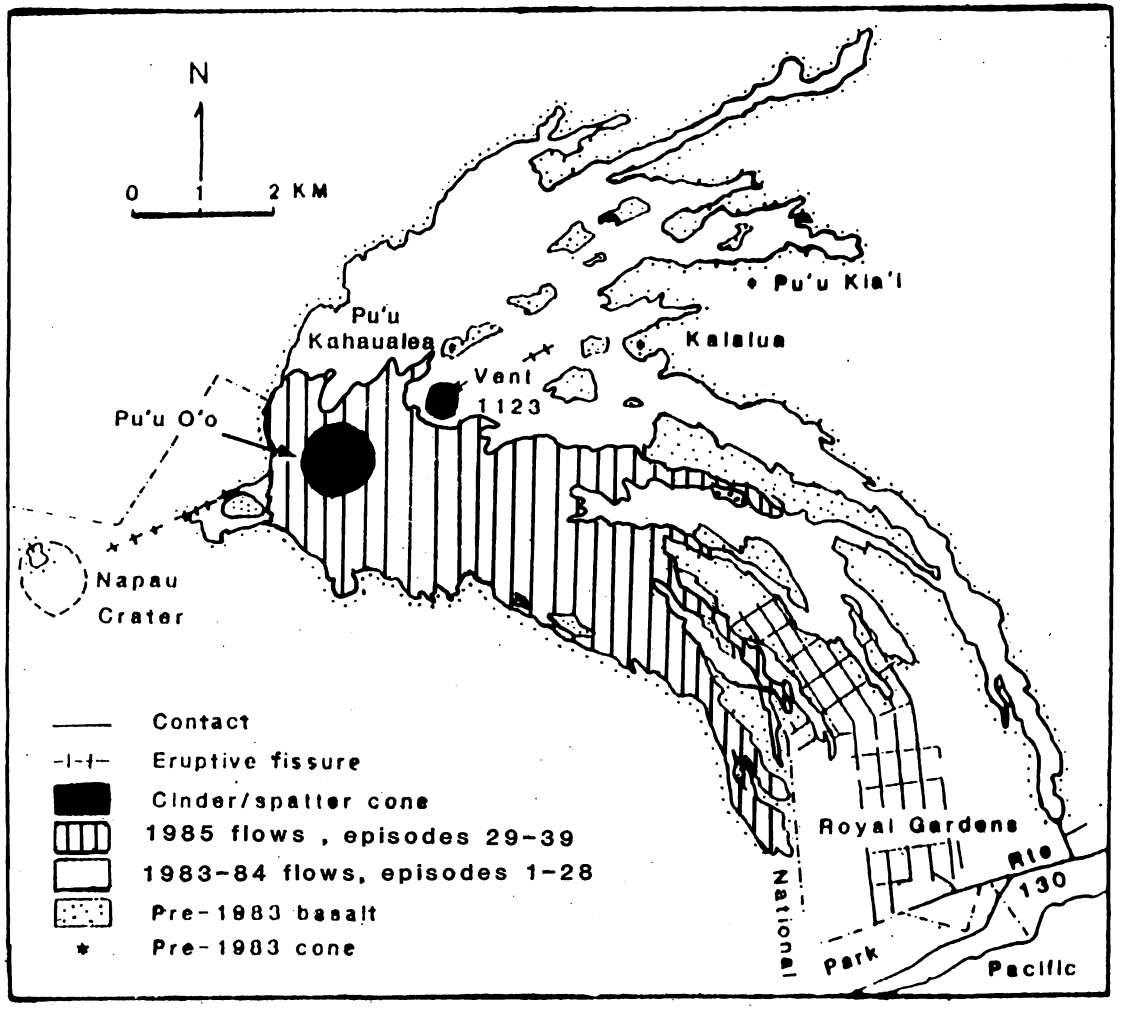

1985 SUMMARY - KILAUEA
1985 FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC 1986
ERUPTIVE EPISODE
29 30 31 32 33 34 35 36 37 38 39
SUMMIT TILT
MICRORADS
40 20 10 0 -10 -30 -40
CALDERA SHORT-PERIOD
DATA BEING REEVALUATED
DAILY EQ COUNTS
1000 800 600 400 200 0
CALDERA LONG-PERIOD
DATA BEING REEVALUATED
MGO CONTENT OF LAVA
WT %
9 8 7 6 5
LAVA VOLUME
MILL. CU M.
40 30 20 10 0
CARBON/SULFUR, HALEMAUMAU
C/S
10
1985 FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC 1986

Figure C-2.


N
0 1 2 KM
Pu'u Kia'i
Pu'u Kahaualea
Kalalua
Vent 1123
Pu'u O'o
Napau Crater
Contact
Eruptive fissure
Cinder/spatter cone
1985 flows , episodes 29-39
1983-84 flows, episodes 1-28
Pre-1983 basalt
Pre-1983 cone
Royal Gardens
Rio
130
National park
Pacific

KILAUEA SUMMIT SPIRIT-LEVEL TILT RESULTS
7/84 TØ 7/85

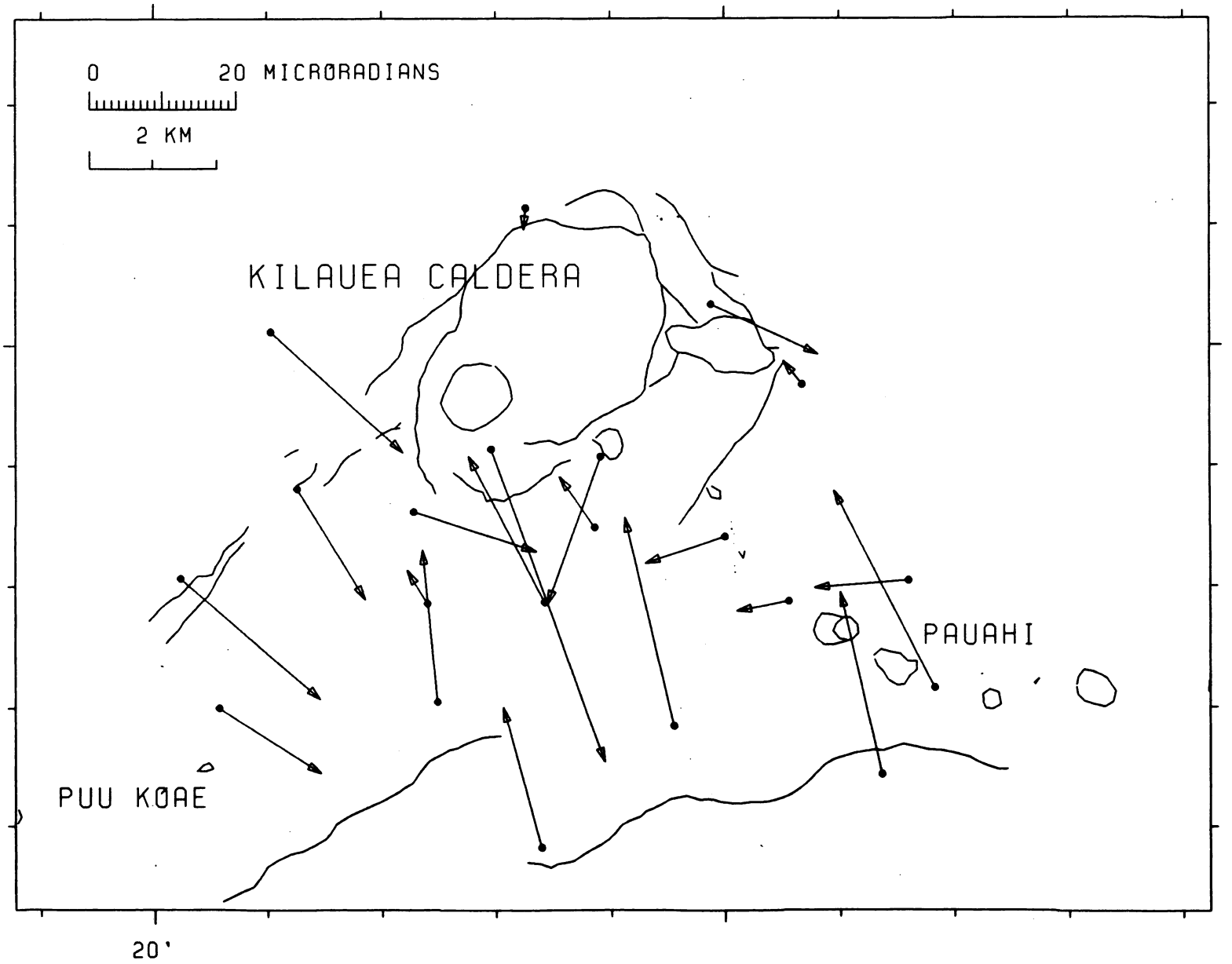
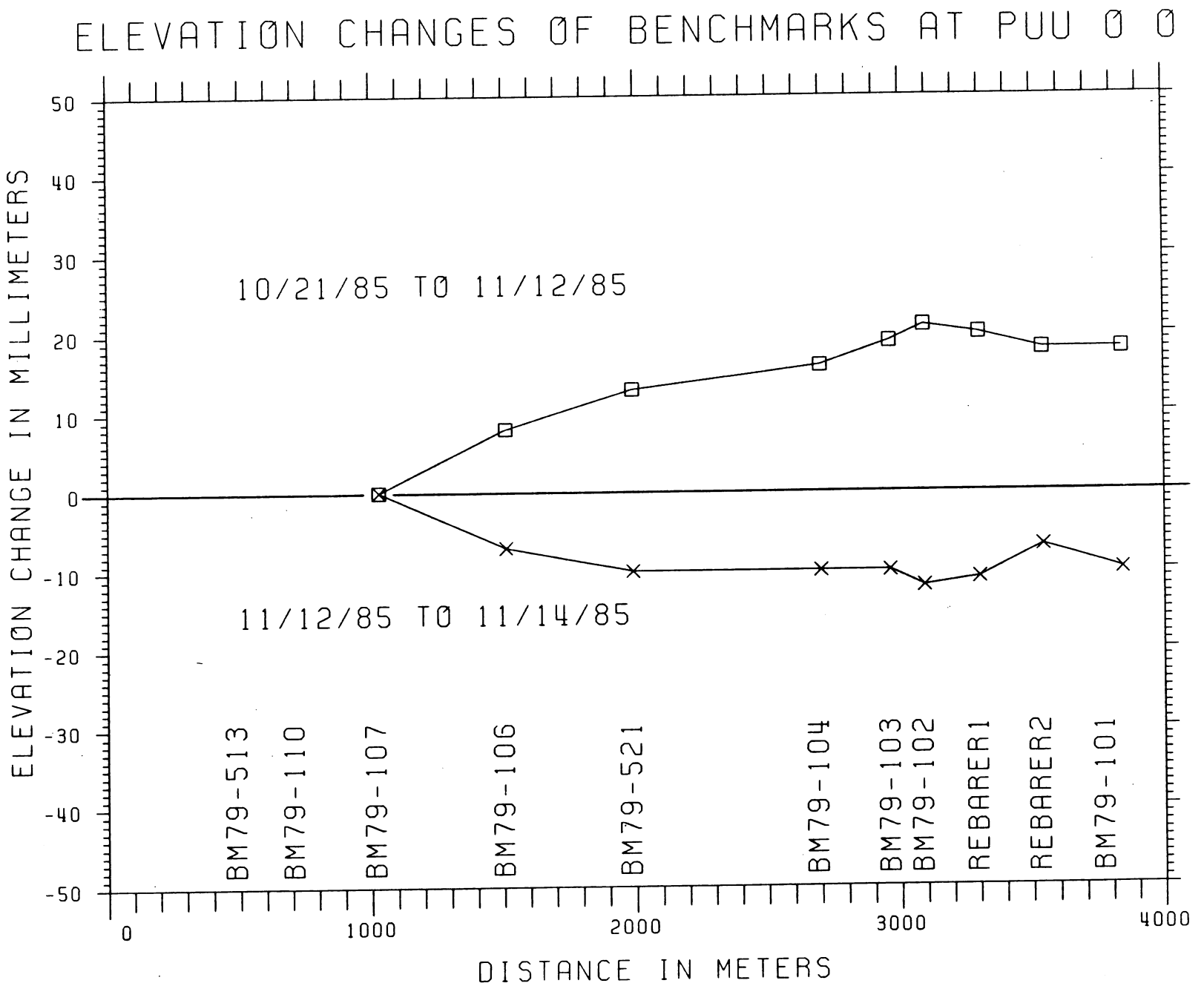


Figure C-3.

Figure C-4.


ELEVATION CHANGES OF BENCHMARKS AT PUU O O
ELEVATION CHANGE IN MILLIMETERS
50
40
30
20
10
0
-10
-20
-30
-40
-50
10/21/85 TO 11/12/85
11/12/85 TO 11/14/85
BM79-513
BM79-110
BM79-107
BM79-106
BM79-521
BM79-104
BM79-103
BM79-102
REBARER1
REBARER2
BM79-101
0
1000
2000
3000
4000
DISTANCE IN METERS

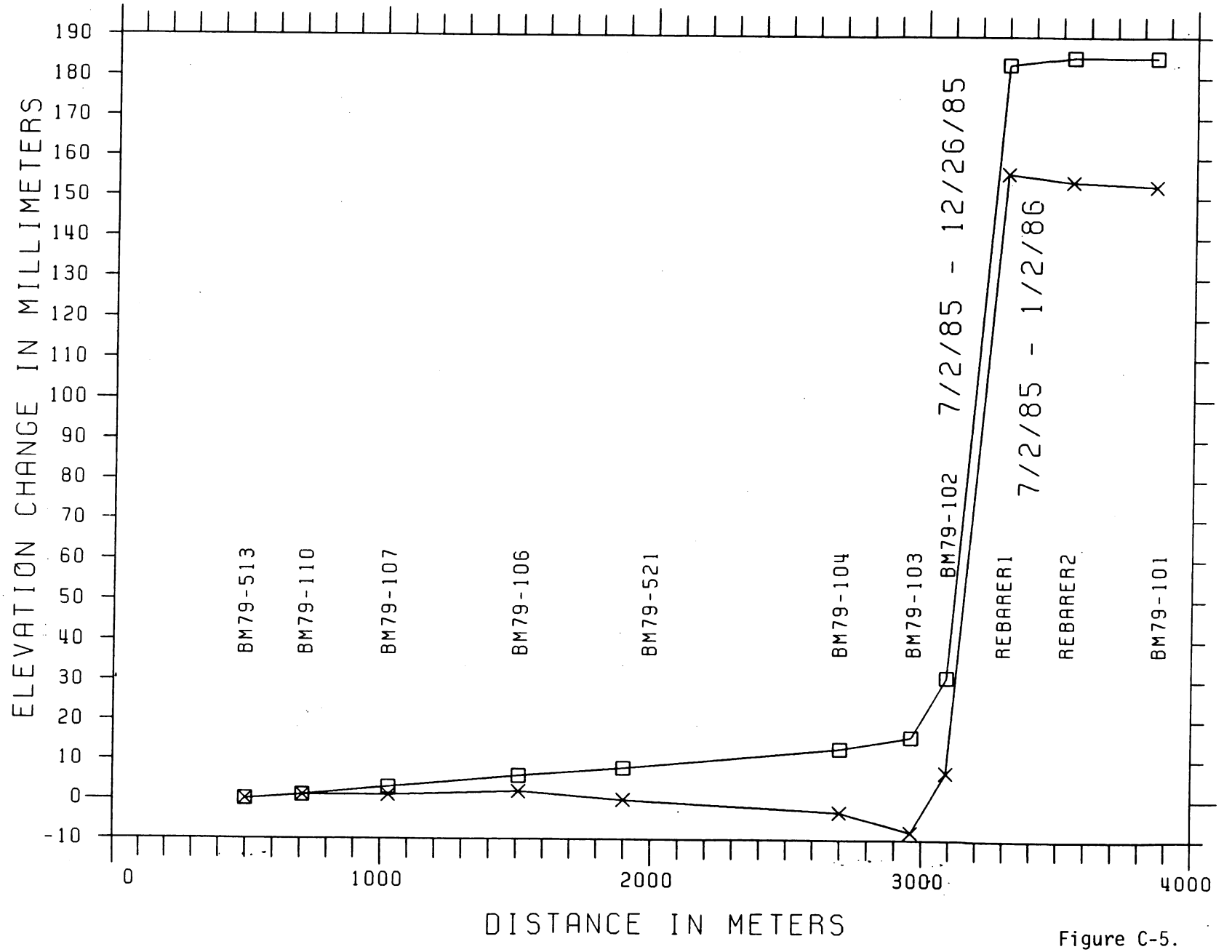

ELEVATION CHANGES OF BENCHMARKS AT PUU 0 0
7/2/85 TO 12/26/85 -- 7/2/85 TO 1/2/86
ELEVATION CHANGE IN MILLIMETERS
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
0
1000
2000
3000
4000
DISTANCE IN METERS
BM79-513
BM79-110
BM79-107
BM79-106
BM79-521
BM79-104
BM79-103
BM79-102
REBARER1
REBARER2
BM79-101
7/2/85 - 12/26/85
7/2/85 - 1/2/86

Figure C-5.

MAUNA LØA SUMMIT PERMANENT GLASS AND MØK #2 DRYTILT STATIØN LØCATIØN MAP

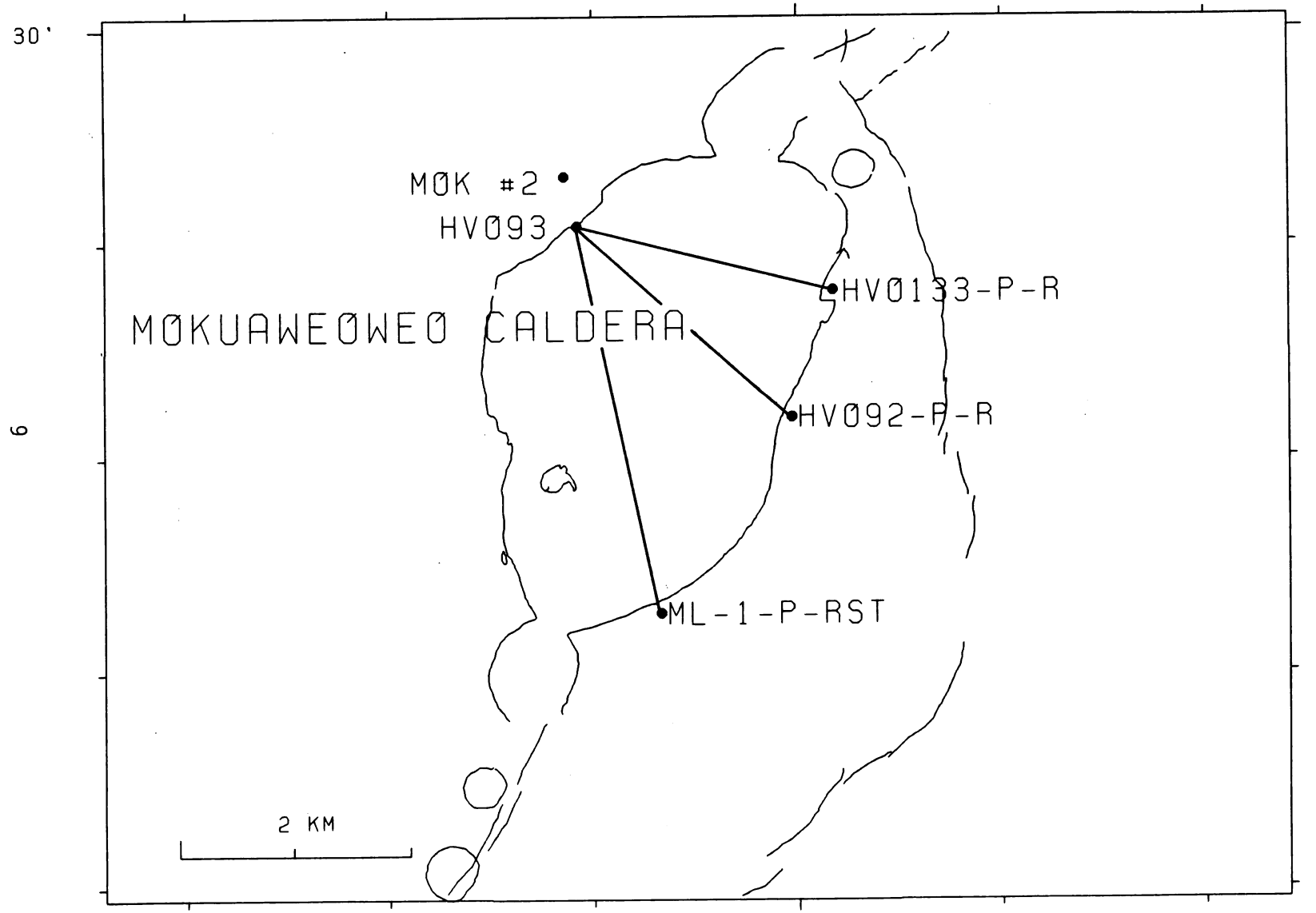


Figure C-6.

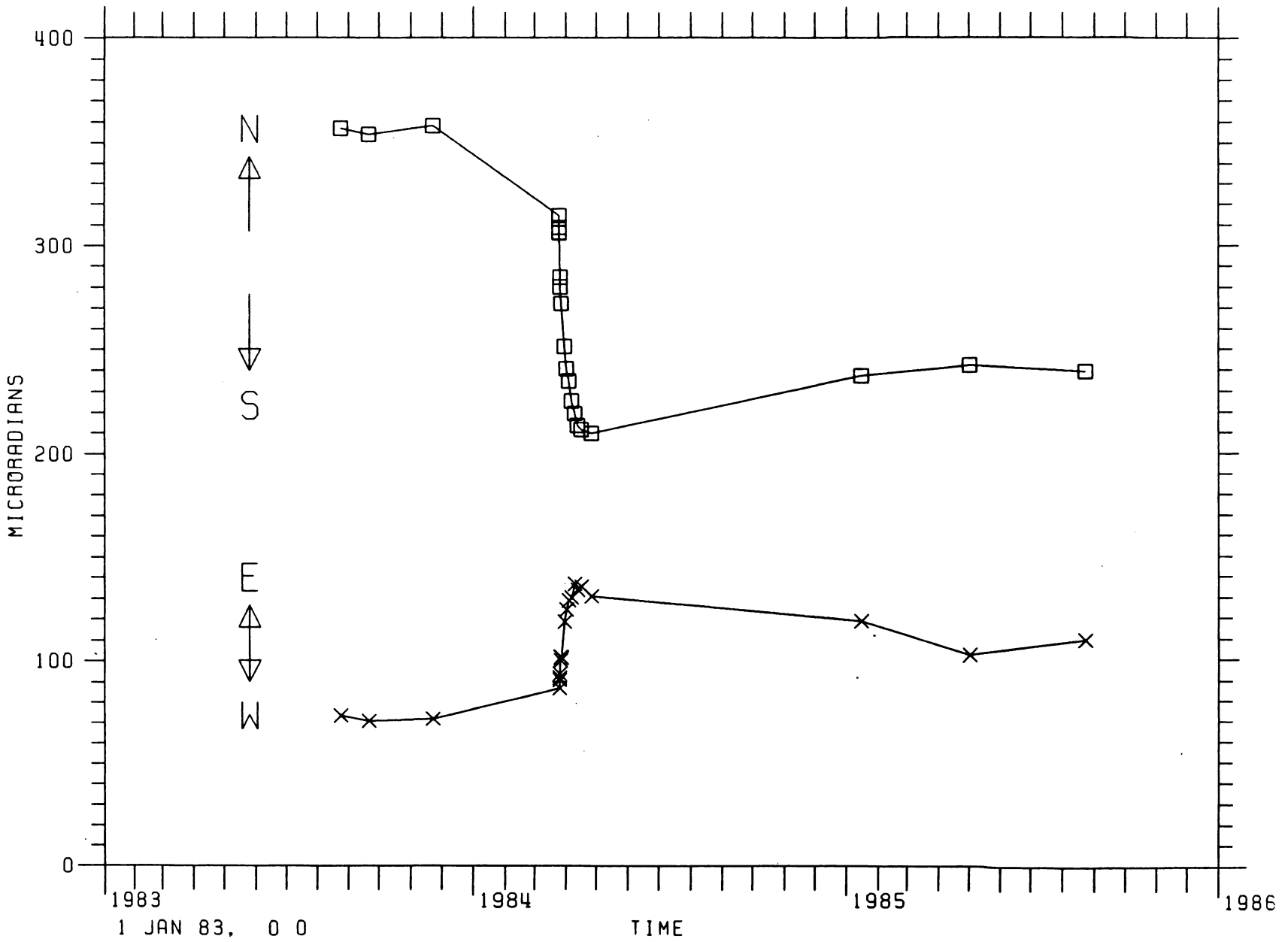

PLOT OF N-S AND E-W COMPONENTS OF MOK #2 DRYTILT STATION
LOCATED ON THE NORTH EDGE OF MOKUAWEOWEO CALDERA, MAUNA LOA
400
300
200
100
0
MICRORADIANS
N
S
E
W
1983
1 JAN 83, 0 0
1984
1985
1986
TIME

Figure C-7.

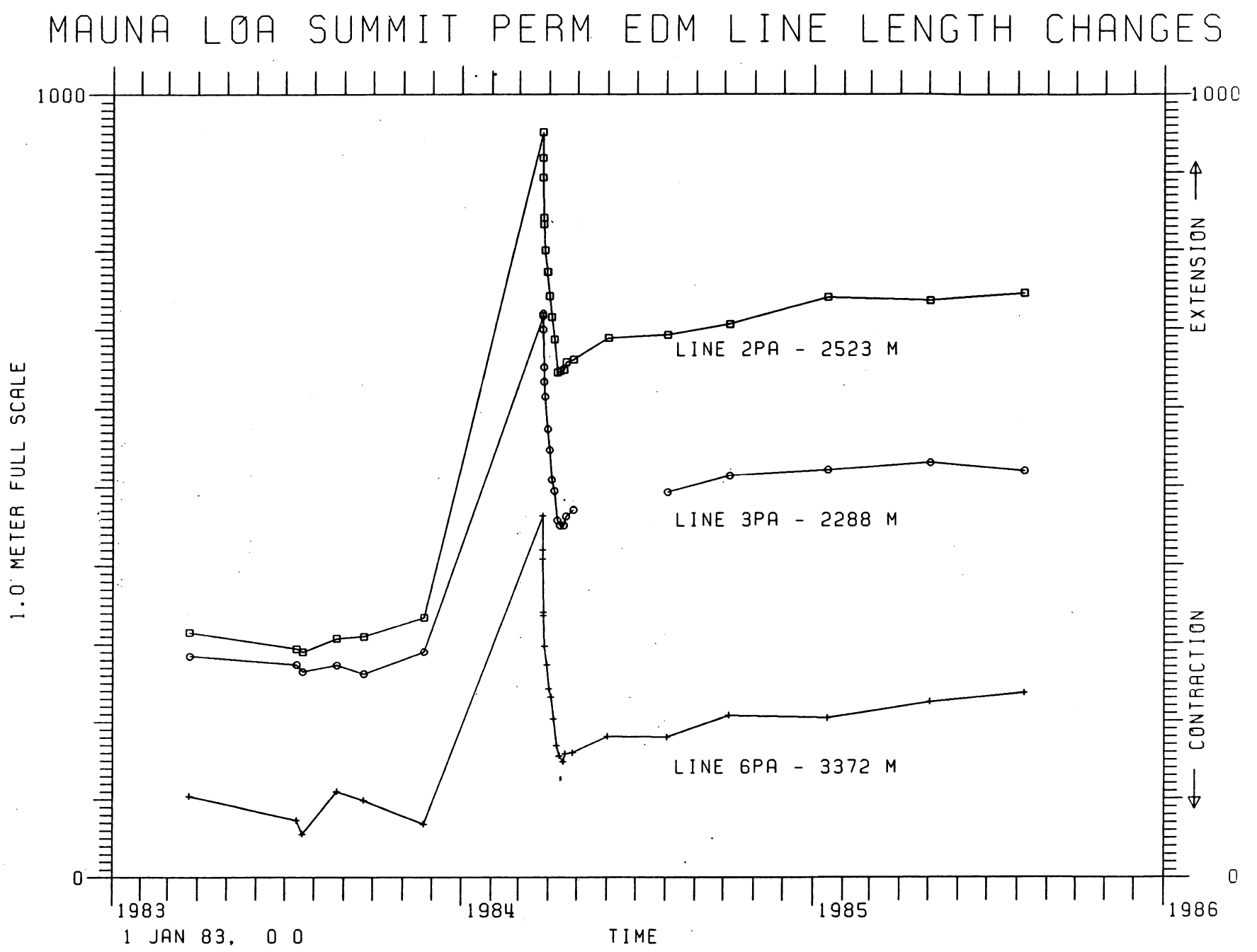

MAUNA LØA SUMMIT PERM EDM LINE LENGTH CHANGES
1000
0
1.0 METER FULL SCALE
EXTENSION
CONTRACTION
LINE 2PA - 2523 M
LINE 3PA - 2288 M
LINE 6PA - 3372 M
1983
1984
1985
1986
1 JAN 83, 0 0
TIME

Figure C-8.

FIGURE CAPTIONS

C-1. Daily monitoring of stations at Kilauea summit correlated with composition and volume of lava erupted at the Pu'u O'o vent during 11 episodes of high fountaining and one fissure eruption.

a. E-W component of tilt measured at Uwekahuna Vault using Ideal-Arrowsmith tiltmeter. Inflation is marked by increase in the tilt values. Numbers refer to eruptive episodes marked by sharp summit deflation.

b. Short period earthquakes measured on the North Pit seismometer, Kilauea summit. Note the correlation of increase in earthquake counts with inflationary tilt preceding eruptive episodes.

c. Long period earthquakes measured on the North Pit seismometer, Kilauea summit. Note increase in earthquake counts accompanying and following eruptive episodes.

d. Composition of erupted lava represented by MgO content. Episodes 30 and 31 showed significant increase in MgO during the eruptive episode correlated with increased amount of olivine in the erupted lava. Composition during other episodes remained constant within and between episodes.

e. Lava volumes. Note positive correlation with amount of deflation at Kilauea summit. Volume for the episode 35 fissure activity averaged over entire episode.

f. Carbon/sulfur atomic ratio measured at a fumarole near Halemaumau Crater. Sharp spike in early March correlated with a burst of intermediate depth tremor. Broad increase in June and July correlated with increased shallow long-period earthquakes (c).

C-2. Lava erupted in 1985 compared to overall lava production January 1983-December 1985. Episode 35 pahoehoe not shown separately.

C-3. Kilauea summit tilt pattern July 1984-July 1985. Tilt vectors point toward a center of deflation south of the caldera rim; the southwest rift zone also shows net deflation between Kilauea summit and Pu'u Koae, and the east rift zone shows deflation near Makaopuhi Crater. These deflations are probably associated with increased efficiency of magma transport to Pu'u O'o, resulting in partial draining of the summit and upper rift storage systems.

C-4. Altitude changes along a cross-rift level line just uprift from Pu'u O'o. North is to the left. Top graph shows inflation following episode 38 and preceding episode 39. Lower graph shows deflation associated with episode 39. Center of inflation-deflation is a broad area extending south of the January 1983 fissure system (BM 79-102).

C-5. Net altitude changes from the period preceding episode 34 to both before and after episode 40 (January 1, 1986). The great increase an elevation

of stations on and south of the 1983 fissures reflects emplacement of a dike preceding fissure activity of episode 35.

C-6. Index map to monitoring stations, Mauna Loa summit. Data for the summit dry tilt station MOK #2 are shown in Figure C-7. Data for these cross-caldera EDM lines are shown in Figure C-8.

C-7. Tilt record at station MOK #2. Mauna Loa summit. Inflation preceding and deflation during eruption of March-April 1984 is shown as a reference to compare reinflation during 1985.

C-8. Change in straight line distance across Mokuaweoweo caldera, Mauna Loa summit. Extension prior to and contraction during March-April 1984 eruption is shown for comparison with extension (re-inflation) during 1985.

SEISMIC INSTRUMENTATION

The network. The Hawaiian Volcano Observatory maintains an extensive telemetering seismometer network on the island of Hawaii. In 1985 the seismometer network consisted of 50 stations; two are low-gain multicomponent stations (optical), twelve are three-component, and 36 are vertical only. The coverage is most complete on and around Kilauea Volcano. With the exception of self-contained systems at Uwekahuna and Hilo stations, all seismometer signals from the short period network are telemetered to the observatory for recording.

Figure 1 is a map of selected geographic and geologic features, Figure 2 shows the seismic stations which were operated on the island of Hawaii during the year, and Figure 3 indicates the telemetry scheme for the respective seismic stations. Table 1 lists all seismic stations operated by the U.S. Geological Survey in Hawaii during 1985. Listed are names, three-and four-letter codes, coordinates in degrees and minutes, elevation in meters, and other data as described below pertaining to each station. In addition to seismometers listed in Table 1, a horizontal seismometer of Type 3 and a long-period, three-component set of Press-Ewing seismometers are operated in the Uwekahuna vault, all recorded on photographic paper.

Instrumentation and recording. Each telemetered station has a voltage controlled oscillator (VCO) for FM multiplex transmission to HVO via either hardwire or radio. These telemetering stations are all of Type 1, the OEVE standard system used in USGS seismic networks (see Table 2 for details). After discrimination at the receiver, the analog signals from 36 stations are recorded on two Develocorders using 16mm microfilm. FM signals from the telemetering network are also recorded directly on one-inch magnetic tape. Selected larger events are copied onto condensed FM library tapes which are currently archived in Menlo Park and archived in digital form at HVO as part of the routine location processing. The type of recording used for each station (in addition to magnetic tape for the telemetered stations) is coded in Table 1 as follows: D - Develocorder film, S - smoked paper drum, P - photographic paper, H - Helicorder paper.

In addition to the standard stations, optical drum seismographs are maintained at Uwekahuna (HVO), Hilo, Maui, and on Oahu (Honolulu station operated by the Pacific Tsunami Warning Center). The less sensitive optical records are used primarily for amplitude measurements for magnitude calculations to supplement readings from the high-gain stations. The paper records as well as the 16 mm Develocorder microfilms are archived at HVO.

Seismograph response and calibration. Displacement response curves for the four short-period seismograph types in use are given in Figure 4. Types three and four are electro-mechanical systems recorded on paper records. The Type 1 curve gives the displacement magnification of the standard OEVE system from ground motion at the seismometer to the seismic trace as seen on a 20x Develocoder film viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL, Table 1) to get the response for and individual station. Individual CAL factors for Type 1 seismographs are equal to the peak-to-peak amplitude measured in mm on the 20x Develocorder viewer of a 10 microvolt 5 Hz signal introduced to the preamp/VCO in place of the geophone. Calibration is normally done each time a station is visited.

CAL factors range from about 1 to 8, averaging about 4. A detailed history of CAL factors and other data is given in F.W. Klein and R.Y. Koyanagi, Hawaiian Volcano Observatory Seismic Network History 1950-79, U.S. Geological Survey Open-File Report 80-302, 1980.

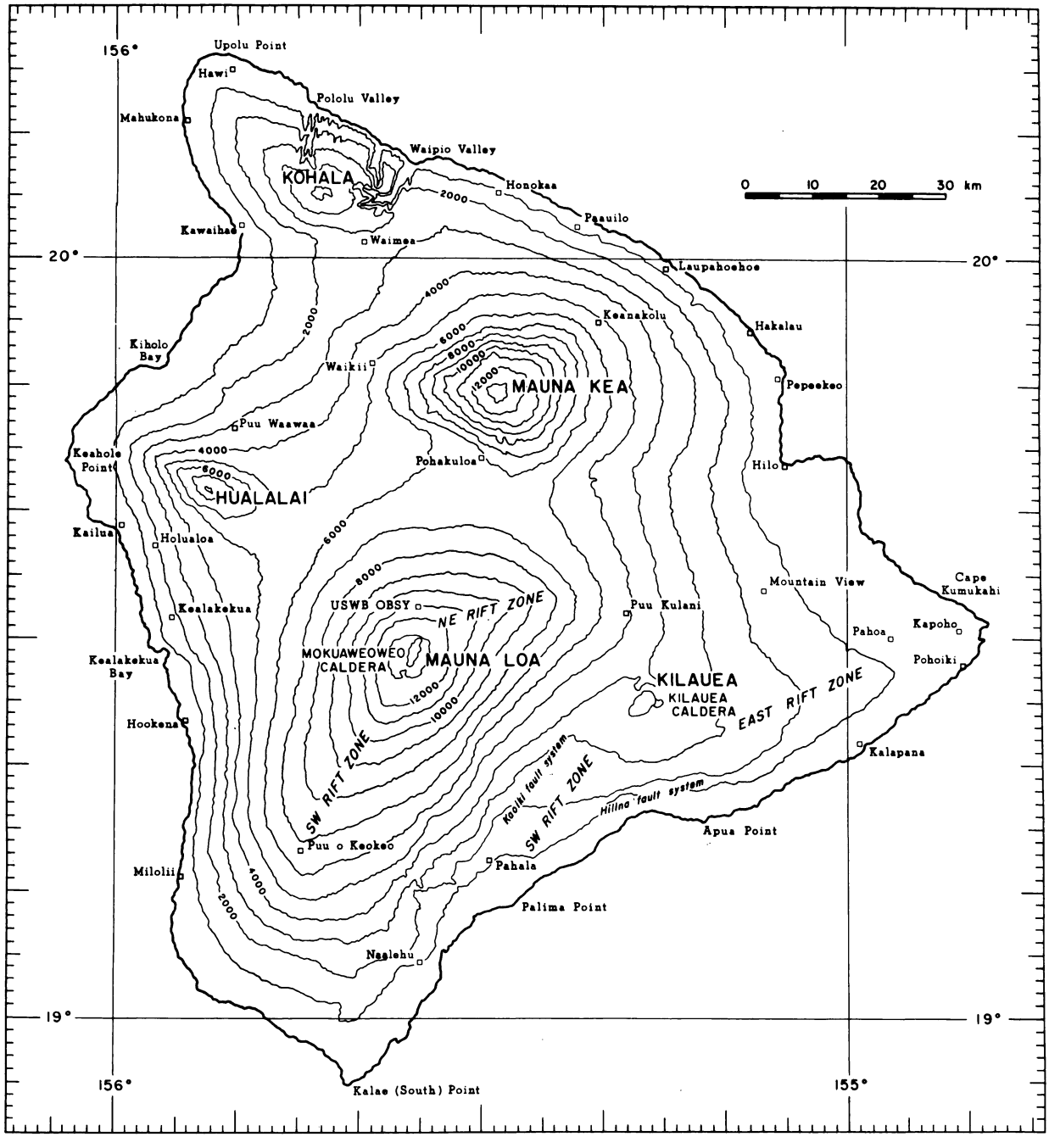


Figure 1. Map of the island of Hawaii showing principal settlements and selected geographic and geologic features.

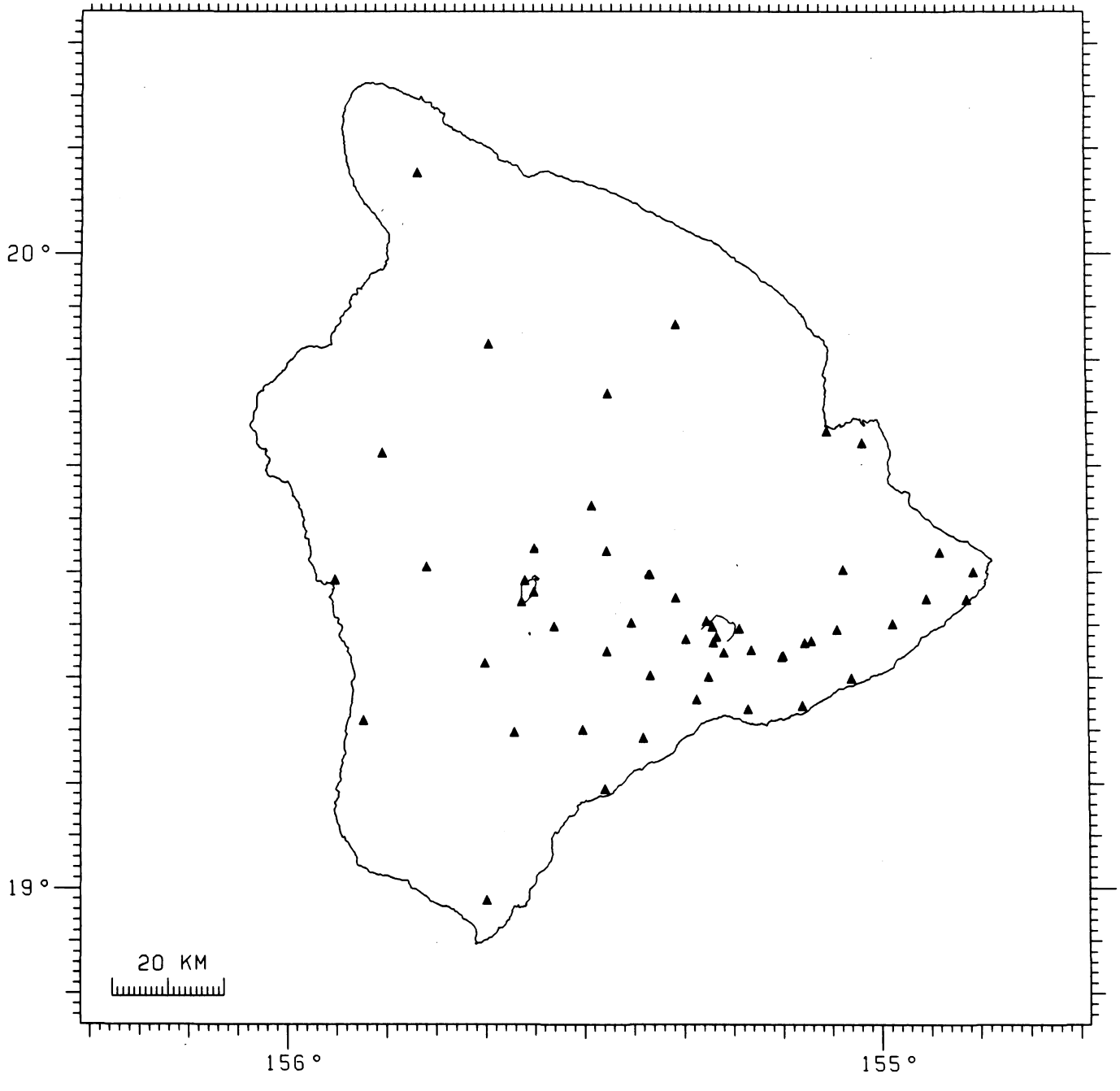


Figure 2. Map of the island of Hawaii showing seismic stations operational during 1985.

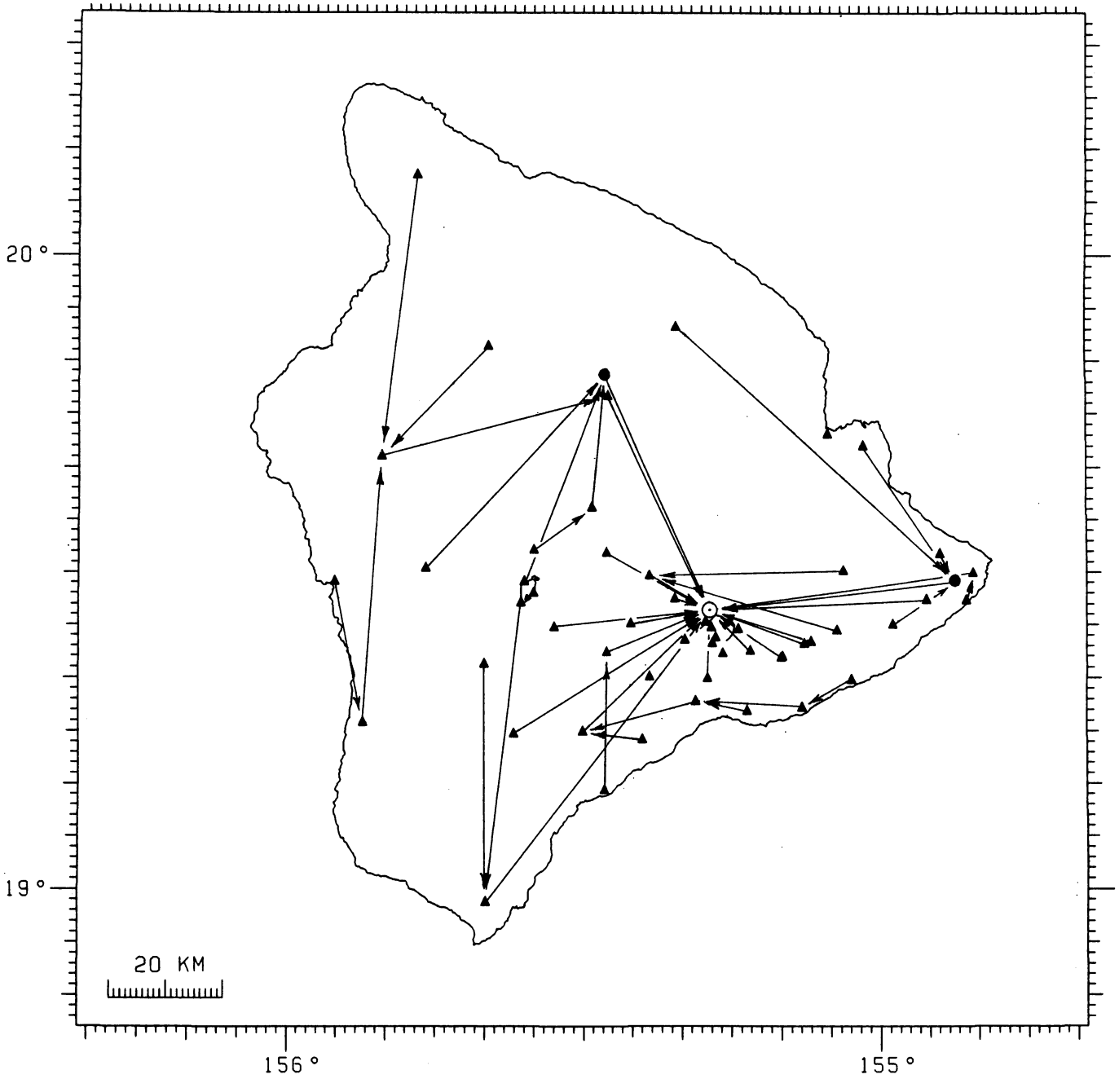


Figure 3. Map of the island of Hawaii showing the telemetry scheme for the Hawaiian Volcano Observatory seismic network.

Legend △ Seismometer location
○ Repeater station

Table 1. Seismometer stations in Hawaii operated by the U.S. Geological Survey, 1985.

STATION NAME	CODE	--LAT--- D	M	---LON--- D	M	ELEV (M)	DELAY 1	DELAY 2	CAL	SEIS TYPE	OPTIC RECORD
AHUA	AHU Z	19	22.40	155	15.90	1070	-0.10	-0.13	2.1	E4	SD
AHUA	AHUE E	19	22.40	155	15.90	1070	-0.10	-0.13	3.0	E3	
AHUA	AHUN N	19	22.40	155	15.90	1070	-0.10	-0.13	3.0	E3	
AINAPO	AIN Z	19	22.50	155	27.62	1524	0.13	0.17	5.5	L4	D
AINAPO	AINE E	19	22.50	155	27.62	1524	0.13	0.17	3.0	L3	
AINAPO	AINN N	19	22.50	155	27.62	1524	0.13	0.17	3.0	L3	
CAPTAIN COOK	CAC Z	19	29.29	155	55.09	323	0.00	-0.16	1.1	L3	D
CONE PEAK	CPK Z	19	23.70	155	19.70	1038	-0.26	-0.07	6.0	L4	D
DANDELION	DAN Z	19	21.42	155	40.04	3003	-0.27	0.03	7.0	L4	D
DESERT	DES Z	19	20.20	155	23.30	815	-0.29	-0.13	3.0	L4	SD
ESCAPE ROAD	ESR Z	19	24.68	155	14.33	1177	-0.17	-0.19	2.2	L4	D
HAWAIIAN BEACHES	HAB Z	19	31.89	154	53.89	92	-0.09	-0.24	1.0	L4	
HALEAKALA, MAUI	HAE E	20	46.00	156	15.00	2090	0.00	0.00	1.0	W	P
HALEAKALA, MAUI	HAL Z	20	46.00	156	15.00	2090	0.00	0.00	0.7	H1	P
HALEAKALA, MAUI	HAN N	20	46.00	156	15.00	2090	0.00	0.00	1.0	W	P
HILO	HIE E	19	43.20	155	5.30	20	0.54	0.30	1.0	W	P
HILO	HIL Z	19	43.20	155	5.30	20	0.54	0.30	1.0	H1	P
HILO	HIN N	19	43.20	155	5.30	20	0.54	0.30	1.0	W	P
HILINA PALI	HLP Z	19	17.96	155	18.63	707	0.02	0.07	2.6	L4	D
HONOLULU, OAHU	HON Z	21	19.30	158	0.50	2	0.00	0.00	0.0	H1	P
HALE POHAKU	HPU Z	19	46.85	155	27.50	3396	0.31	0.17	3.3	L4	D
HUMUULA SHEEP ST	HSS Z	19	36.31	155	29.13	2445	0.20	0.35	5.3	L4	D
HUMUULA SHEEP STHSSE	E	19	36.31	155	29.13	2445	0.20	0.35	3.0	L3	
HUMUULA SHEEP STHSSN	N	19	36.31	155	29.13	2445	0.20	0.35	3.0	L3	
HOT CAVES	HTC Z	19	14.33	155	24.02	381	-0.16	-0.07	0.0	E4	
HUALALAI	HUA Z	19	41.25	155	50.32	2189	0.67	0.38	3.0	L4	D
HEIHEIAHULU	HUL Z	19	25.13	154	58.72	369	-0.17	-0.16	1.6	L4	DS
HEIHEIAHULU	HULE E	19	25.13	154	58.72	369	-0.17	-0.16	3.0	L4	
HEIHEIAHULU	HULN N	19	25.13	154	58.72	369	-0.17	-0.16	3.0	L4	
KAAPUNA	KAA Z	19	15.98	155	52.28	524	-0.12	-0.01	3.5	L4	D
KAENA POINT	KAE Z	19	17.35	155	7.95	37	-0.01	0.06	1.4	L4	D
KAHAUALEA	KAH Z	19	24.58	155	4.36	625	-0.25	-0.30	0.0	L4	D
KAOIKI FAULTS	KFA Z	19	25.26	155	25.14	1579	0.13	0.17	0.0	E3	
KAHUKU	KHU Z	19	14.90	155	37.10	1939	0.03	-0.03	2.7	E4	D
KANEKII	KII Z	19	30.56	155	45.90	1841	0.15	0.37	2.9	E4	D
KANEKII	KIIE E	19	30.56	155	45.90	1841	0.15	0.37	3.0	L3	
KANEKII	KIIN N	19	30.56	155	45.90	1841	0.15	0.37	3.0	L3	
KEANAKOLU	KKU Z	19	53.39	155	20.58	1863	0.68	0.24	3.3	L4	D
PUU KALIU	KLU Z	19	27.48	154	55.26	271	-0.17	-0.30	2.9	L4	D
KAMOAMOA	KMM Z	19	23.47	155	6.98	750	-0.25	-0.30	2.4	L4	D
KAMOAMOA	KMME E	19	23.47	155	6.98	750	-0.25	-0.30	3.0	L4	
KAMOAMOA	KMMN N	19	23.47	155	6.98	750	-0.25	-0.30	3.0	L4	
KOHALA	KOH Z	20	7.69	155	46.77	1166	-0.03	-0.17	1.5	L4	D
KOHALA	KOHE E	20	7.69	155	46.77	1166	-0.03	-0.17	2.2	L4	
KOHALA	KOHN N	20	7.69	155	46.77	1166	-0.03	-0.17	2.2	L4	
KIPUKA NENE	KPN Z	19	20.10	155	17.40	924	-0.11	-0.08	3.5	E3	D
KAPOHO	KPO Z	19	30.02	154	50.51	134	-0.09	-0.24	2.5	L4	DH
MAUNA LOA	MLO Z	19	29.80	155	23.30	2010	0.03	0.08	5.8	L4	SD
MAUNA LOA	MLOE E	19	29.80	155	23.30	2010	0.03	0.08	0.0	L4	D
MAUNA LOA	MLON N	19	29.80	155	23.30	2010	0.03	0.08	1.5	L4	
MAUNA LOA X	MLX Z	19	27.60	155	20.70	1475	0.06	0.15	3.0	L4	
MOKUAWEOWEO	MOK Z	19	29.28	155	35.98	4104	0.15	0.16	5.5	L4	DH
MAKAOPUHI	MPR Z	19	22.07	155	9.85	881	-0.17	-0.20	4.2	L4	D
MOUNTAIN VIEW	MTV Z	19	30.25	155	3.75	409	-0.02	0.01	5.0	E4	D
NATIONAL GUARD	NAG Z	19	42.12	155	1.72	18	0.54	0.30	3.2	E4	D
NORTH PIT	NPT Z	19	24.90	155	17.00	1115	-0.30	-0.18	3.0	E4	SD
NORTH PIT	NPTE E	19	24.90	155	17.00	1115	-0.30	-0.18	3.0	E4	
NORTH PIT	NPTN N	19	24.90	155	17.00	1115	-0.30	-0.18	3.0	E4	
OUTLET	OTL Z	19	23.38	155	16.94	1038	-0.19	-0.18	4.9	L4	
PAUAHI	PAU Z	19	22.62	155	13.10	994	-0.21	-0.24	2.4	L4	SD
PAUAHI	PAUE E	19	22.62	155	13.10	994	-0.21	-0.24	3.0	L3	
PAUAHI	PAUN N	19	22.62	155	13.10	994	-0.21	-0.24	3.0	L4	
PUU ULAULA	PLA Z	19	32.00	155	27.67	2992	0.03	0.13	5.4	L4	D

Table 1. (continued)

POHOIKI	POI	Z	19	27.42	154	51.22	16	-0.09	-0.24	0.0	L4	
POLIOKEAWE PALI	POL	Z	19	17.02	155	13.47	169	-0.02	0.03	2.8	E4	D
PUU PILI	PPL	Z	19	9.50	155	27.87	35	-0.15	-0.15	1.7	E4	D
RIM	RIM	Z	19	23.90	155	16.60	1128	-0.21	-0.13	0.0	L3	
SOUTH POINT	SPT	Z	18	58.91	155	39.92	244	-0.17	-0.22	2.8	L4	D
SOUTH POINT	SPTE	E	18	58.91	155	39.92	244	-0.17	-0.22	3.0	L4	
SOUTH POINT	SPTN	N	18	58.91	155	39.92	244	-0.17	-0.22	3.0	L4	
STEAM CRACKS	STC	Z	19	23.30	155	7.67	765	-0.25	-0.30	2.4	L4	D
STEAM CRACKS	STCE	E	19	23.30	155	7.67	765	-0.25	-0.30	3.0	L3	
STEAM CRACKS	STCN	N	19	23.30	155	7.67	765	-0.25	-0.30	3.0	L3	
SOUTHWEST RIFT	SWR	Z	19	27.26	155	36.30	4048	0.01	0.04	5.6	E4	D
TRAIL	TRA	Z	19	24.91	155	32.96	3207	0.00	0.00	0.0	L4	
UWEKAHUNA	UEE	E	19	25.40	155	17.60	1240	-0.21	0.00	2.5	E	
UWEKAHUNA	UEN	N	19	25.40	155	17.60	1240	-0.21	0.00	2.5	E	
UWEKAHUNA	UEZ	Z	19	25.40	155	17.60	1240	-0.21	0.00	2.5	E	
WAIKII	WAI	Z	19	51.58	155	39.60	1433	0.20	0.35	0.0	L4	
WAHAULA	WHA	Z	19	19.90	155	2.92	29	-0.10	-0.04	1.5	E4	D
WILKES CAMP	WIL	Z	19	28.15	155	35.02	4037	0.22	0.17	2.6	E4	D
WILKES CAMP	WILE	E	19	28.15	155	35.02	4037	0.22	0.17	0.0	L3	
WILKES CAMP	WILN	N	19	28.15	155	35.02	4037	0.22	0.17	0.0	L3	
WEATHER OBSERVAT	WOB	Z	19	32.31	155	35.01	3396	0.00	0.00	0.0	E4	
WOOD VALLEY	WOO	Z	19	15.08	155	30.12	909	-0.15	-0.06	4.6	E4	D

Table 2. Seismic Instrumentation Types

The codes in parentheses refer to the seismometer types listed in Table 1.

Type 1. (Codes E, L, 3 and 4) Consists of:

a) Geophone - Electrotech EV-17 (E) or Mark Products L4C (L) 1.0 sec. period moving magnet vertical component seismometer or horizontal component adjusted for an output of 0.5 volts/cm/sec. and 0.8 critically damped.

b) Preamp/VCO - USGS/OEVE Model J302 (3) or J402 (4) voltage controlled oscillator. Three db points for bandpass filter at 0.1 Hz and 30 Hz. Signals are transmitted on audio FM carrier over cable or FM radio link to HVO.

Type 2 instruments have been discontinued.

Type 3. (Code H1) Consists of:
Electrotech EV-17 or observatory-built 0.8 sec. period moving coil seismometer with HVO-built solid state seismic preamplifier, galvanometer driver, and 2 Hz galvanometer. Peak magnification approximately 40,000 at 4 Hz.

Type 4. (Code S) Consists of:
Sprengnether short period vertical and horizontal seismometers (E-W) with 1.5 sec. galvanometers, coupling factor = 0.25, 2x critically damped. Peak magnification approximately 1500x at 2 Hz.

Code (W) is a Wood-Anderson torsion seismograph.

Code (MW) is a horizontal component seismograph based on a Type 1 system and modified to a Wood-Anderson response.

Codes (TE) and (S5) are experimental seismometers.

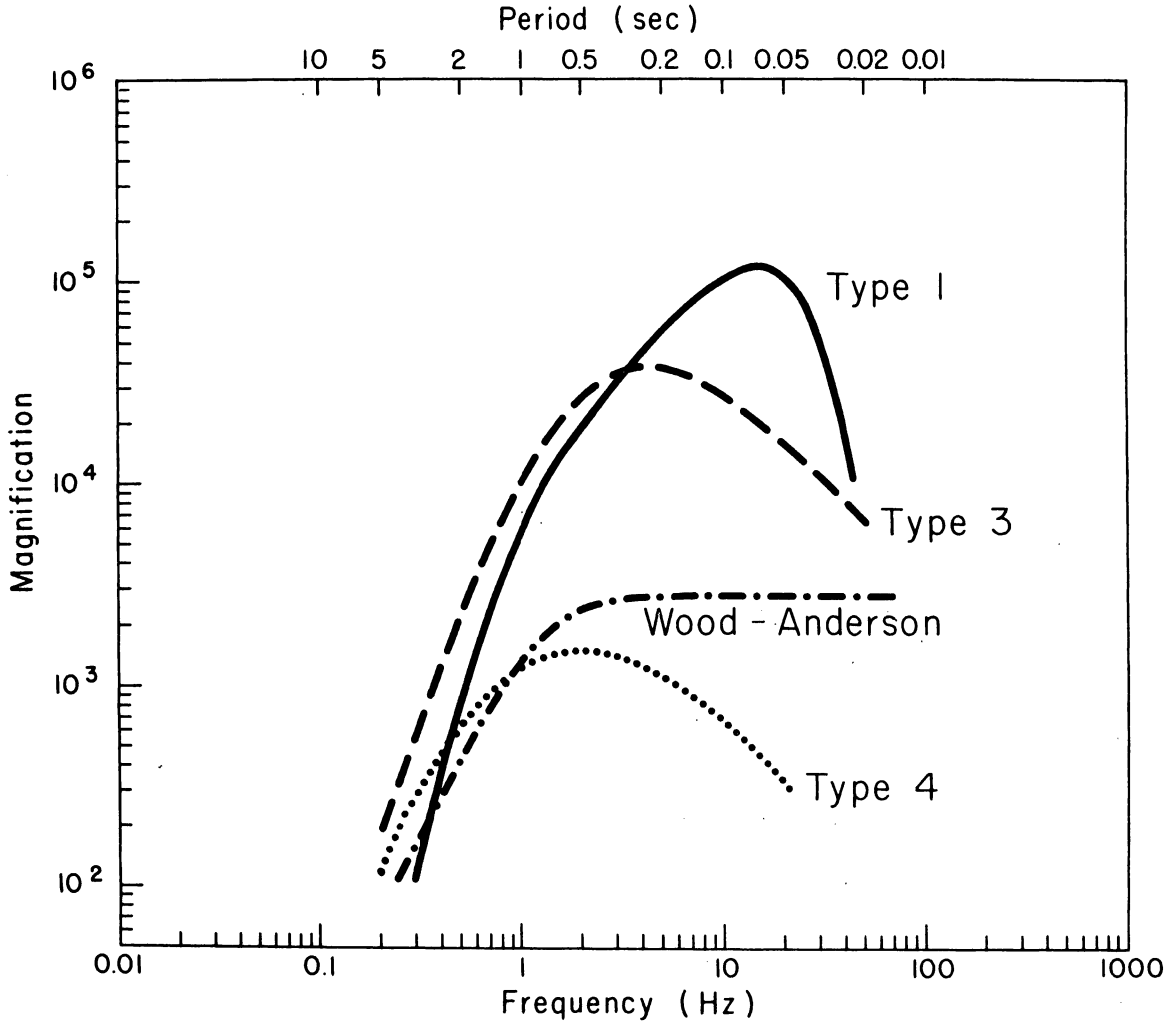


Figure 4. System response curves for the Wood-Anderson torsion seismograph and for the three different types of seismometers in use by the Hawaiian Volcano Observatory. Types 3 and 4 are electro-mechanical seismographs recorded optically on photographic paper. Type 1 is the standard OEVE seismometer system recorded on Develocorder film and magnetic tape. The curve for Type 1 includes response of the geophone, all electronics including telemetry, Develocorder galvanometer, and projection of film by a 20x viewer. The curves plot the unit response which should be multiplied by a constant but known factor (CAL), to get the response for an individual station.

SEISMIC DATA PROCESSING

Develocorder films are scanned on a daily basis for earthquakes and coda durations are measured for magnitude determination. Events are digitized, timed, and located on the Eclipse computer at HVO. Computer locations are made using the program HYPOINVERSE (Klein, F.W., Hypocenter location program HYPOINVERSE, U.S.G.S. Open-File Report 78-694, 1978), and problem events are reread and rerun. Magnetic tape copies of all arrival times and output summary data are kept in Menlo Park and HVO.

The crustal model used is specified by velocities at four depth points. Velocity at any depth is given by linear interpolation between points and uses a homogeneous half-space below.

VELOCITY (km/sec)	DEPTH (km)
1.9	0.0
6.5	4.6
6.9	15.0
8.3	16.5

Two empirical sets of station delays or corrections were used in the locations, and are given in Table 1. Delay model 1 is used for events on Kilauea and its south flank, and delay model 2 applies to the rest of the island and offshore earthquakes. The delay models are separated by a circle of radius 34 km centered at 19°22'N and 155°10'W.

Magnitudes for most events were computed using both recorded amplitudes on low gain or Wood-Anderson stations, and signal or coda duration on selected short-period vertical stations. Amplitudes read from other than Wood-Anderson instruments are corrected to an equivalent Wood-Anderson amplitude using the curves of Figure 3 and CAL factors. Amplitude magnitudes larger than 2.5 are generally based on the Wood-Anderson instruments in Hilo or Type 4 seismographs at Uwekahuna. Smaller events may occasionally include amplitude readings from stations AHU, OTL, PPL, KHU, or WIL.

Duration magnitudes are determined from the length of signal in seconds read from the Develocorder viewer. This length of time, also called the "F-P time," is measured from the P arrival to the point where the earthquake signal has decayed nearly to the noise level. A bilinear relation is an appropriate fit to the data sample and is used to compute all duration magnitudes. Duration times are only read from Type 1 seismographs. Because duration magnitudes are relatively insensitive to station response and can be determined using the high-gain short-period stations, it is felt that duration magnitudes are more accurate and complete at the lower magnitudes (below 2).

The equations used in magnitude determination are:

$$\text{duration} < 210 \text{ sec} \quad M = -5.2 + 3.89 \log (F-P) + .013\, Z + .0037\, D$$
$$\text{duration} > 210 \text{ sec} \quad M = -.905 = 2.026 \log (F-P) + .013\, Z + .0037\, D$$

where Z and D are the depth and epicentral distance in km, respectively.

SEISMIC SUMMARY

The emphasis in both station coverage and detailed data analysis is on the highly active south half of the island of Hawaii. Hundreds of earthquakes too small to locate are classified generally and counted daily. The set of well-recorded earthquakes located in the Hawaii Island region is nearly complete above magnitude 2.0. Many smaller events are located in the densely instrumented Kilauea area. Substantial effort is made to locate earthquakes elsewhere within the Hawaiian Archipelago. Such coverage cannot be as complete as on the south flank, but nearly all events above magnitude 4.0 are located with limited precision.

Data presented in the seismic summary is in four parts: 1) Table 3 gives duration of harmonic tremor and numbers of earthquakes (most too small to locate) from several source regions around Kilauea and Mauna Loa. The source region is determined visually from signal character and pattern of arrival times at key stations. 2) Maps showing computer located hypocenters are given in Figures 9-22. The location maps are of different scales and provide hypocenters with magnitude thresholds set at 1.0, 2.0, 3.0 and 3.5 varied according to region. 3) The list of computer locations constitutes the bulk of this summary, and is given in Table 5. Each earthquake in the list is assigned a three-letter code based on its location and depth. Figures 5-8 are maps of the regions used to assign the location codes. The latitude and longitude limits of rectangular regions are listed Table 4. When the listed coordinates imply an overlap, precedence is given according to Figures 5-8. 4) Table 6 relists the events in Table 5 for which either duration or amplitude magnitude is 3.0 or larger. This list includes many of the earthquakes felt in Hawaii.

Table 3. Number of earthquakes and minutes of tremor recorded on seismographs around Kilauea and Mauna Loa.

Earthquake categories are:

1) Kilauea summit, short period caldera: shallow earthquakes beneath the caldera.
*2) Kilauea summit, long period caldera A: earthquakes characterized by low frequency signatures of 3 to 5 Hz, often originating 0-5 km beneath the summit.
*3) Kilauea summit, long period caldera B: earthquakes characterized by low frequency signatures of 1 to 3 Hz, often originating 0-5 km beneath the summit.
*4) Kilauea summit, long period caldera C: earthquakes characterized by low frequency signatures of 1 to 5 Hz, often originating 5-12 km beneath the summit.
5) Kilauea summit 30 km: deep earthquakes about 30 km beneath the summit region.
6) Kaoiki and southwest rift: earthquakes beneath the southwest rift of Kilauea, western parts of the Koae faults, and adjacent Kaoiki fault system.

* Jan to May - Long period caldera earthquakes counted in a single catagory.
Jun to Dec - Long period caldera earthquakes catagorized into A, B, or C.

Table 3. (Continued)

7) Upper east rift: earthquakes in the upper and middle east rift zones, the adjacent parts of the south flank, and eastern parts of the Koae faults.
8) Lower east rift: earthquakes in the lower east rift zone and adjacent parts of the south flank.
9) Mauna Loa short period: shallow earthquakes in the Mauna Loa summit region.
10) Mauna Loa long period: earthquakes characterized by the low frequency signatures near Mauna Loa summit.
11) Mauna Loa northeast rift: earthquakes beneath the northeast rift zone of Mauna Loa.
12-15) Tremor is separated into four catagories: shallow, intermediate, and deep Kilauea, and Mauna Loa. Depth is inferred on the basis of relative amplitudes on seismographs.

The criteria for Kilauea shallow tremor has been changed to accommodate the ongoing eruption where tremor in the middle east rift zone was continuous. Distinction was made between high amplitude tremor related to strong eruptive periods and low amplitude tremor during periods with no lava production. Only minutes of tremor at saturated levels recorded locally at KMM (later STC) is included in Table 3.

	KILAUEA SUMMIT					KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)			
DATE 1985	SHORT PER. CALD.	LONG PERIOD CALDERA A	B	C	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	SHORT PER.	LONG PER.	NE RIFT	KILAUEA SHAL.	KILAUEA INT.	KILAUEA DEEP	MAUNA LOA
JAN 1	319	24				46	135	12	4	18	15	1440		4	
2	281	72				36	67	7	3	14	13				
3	101	65				29	67	12	7	8	4	919			
4	4	690				45	39	3	7	1	8				
5	18	458			1	47	48	8	7	1	16				
6	32	155			1	35	86		3	2	13				5
7	28	162				52	111	8	4	3	44				
8	21	56				86	122	8	2		56				
9	26	52				57	95	14	4	1	44				4
10	42	8				53	47	11	3	1	14				
11	32	25				45	112	6	1	1	40				
12	39	42				50	100	9			34				
13	61	7				9	46		2	1	6				
14	34	7				20	48	5	1						
15	44	23			1	36	100	3			3				
16	86	12				36	116	4	4	1	33			31	
17	68	14				30	38	3	3	7	39			120	
18	75	180				28	65	2			20			5	
19	106	24				44	92	9	5	3	21				
20	95	83				59	157	12	6		79				
21	100	88				51	247	11	7	1	31				
22	129	88				44	166	10	4	1	36				
23	142	10				31	204	9	2	1	10				
24	132	50				43	280	7			30				
25	125	53				40	271	7	2	1	35				
26	136	83				60	170	16	2	4	50				
27	152	148				48	212	13	2	3	76				
28	207	110				43	177	4	5	2	30				
29	148	69				43	124	4	2	4	27				
30	12	12				31	113	13			8				

	KILAUEA SUMMIT					KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)			
DATE 1985	SHORT PER. CALD.	LONG PERIOD CALDERA A	B	C	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	SHORT PER.	LONG PER.	NE RIFT	KILAUEA SHAL.	KILAUEA INT.	KILAUEA DEEP	MAUNA LOA
JAN31	1					25	51	6			4				
FEB 1	1	33				38	69	6	3	1	3				
2	196	47				49	95	12	6	12	18				
3	344	91			1	37	85	16	5	4	25	100		2	
4	95	49				26	44	11	3	2	27	1121			
5	5	9				41	52	9	7		23			4	
6	7	826				45	45	4	2	5	47				
7	24	181				53	132			1	16				
8	7	285				41	116	5	3	3	77				
9	12	45				31	171	6	3	4	105				
10	35	29				33	192	3	1	1	129				
11	26	31			1	58	133	10	3	1	97				
12	13	35				58	91	5	1	5	93				
13	38	98				48	48	12	2	1	34		7		
14	35	33				43	58	13	1		15				
15	37	48			1	31	48	7	5		51				
16	29	109				33	51	4	3		25			4	
17	29	48			1	43	38	4	4	1	35				
18	21	97				48	43	7	2	5	141			5	
19	16	55				37	51	8		3	153				
20	62	14				47	55	12		2	38				
21	25	7				91	223	1	4		9				
22	32	55				36	131	7	8	5	71				7
23	27	61				39	94	5	6	5	93				
24	66	74			1	43	98	6	3	5	131				
25	37	95				42	79	8	1	7	98				
26	66	98				46	81	4	3	2	104				
27	68	114				31	86	5		2	37				
28	176	37				31	47	4	6		9				
MAR 1	140	67				37	57	1	7		5				
2	83	48				30	39	4	11		3				6
3	73	110				30	61	8	7	2	123				4
4	125	108				28	59	3	9	6	124			7	
5	120	104				32	57	7	2	2	66			6	
6	114	70				24	29	4	2	1	9			11	
7	133	18			1	11	42		4		9				
8	117	38				23	27	9	4	2	75			5	
9	247	200				34	71	11	6		125			6	
10	265	156			1	42	79	4	9		122			24	
11	190	78				22	41	5	5	6	60				
12	46	31				32	36	3	4	7	119	120			
13	76	104				17	19	6	1	2	14	1260	34		
14	6	607				18	23	7	5	8	5		3		
15	8	592				25	22	2	5		4		6		
16	16	146				29	36	10	1	2	13				
17	16	94				35	34	10	14	1	108				
18	13	43			1	38	29	13	14	4	117				
19	17	27				37	43	8	8	4	117			32	
20	14	28				28	40	9		9	115	4		6	
21	40	4				41	106		4		15				

	KILAUEA SUMMIT					KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)			
DATE 1985	SHORT PER. CALD.	LONG PERIOD CALDERA A	B	C	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	SHORT PER.	LONG PER.	NE RIFT	KILAUEA SHAL.	KILAUEA INT.	KILAUEA DEEP	MAUNA LOA
MAR22	56	20				42	40	2	9	2	86				2
23	31	23				38	37	7	6	1	147				
24	31	25			1	27	27	5	3	4	147				
25	4	8				18	37			1	63			23	
26	45	33				22	71	9	1		115				
27	54	46		1		38	58	8	5	1	142				
28	77	31			1	53	61	6	2	1	47		4		
29	78	57				33	64	12	3	4	38				
30	79	40				50	69	11	1		50				
31	79	41				50	73	5	4	1	171			18	
APR 1	92	23				45	71	12	4	2	84				
2	94	30				46	69	5	1		40				
3	129	38				36	76	8	3	3	118				
4	253	43			1	58	151	10	4	3	124				
5	136	69			1	49	65	6	5		170				
6	157	130				64	95	4	3	3	90				
7	179	125				58	81	9	6	2	112				
8	198	132				53	68	9	13	1	115				
9	261	124				54	68	7	7	5	109			9	
10	204	115			1	69	87	8	9	1	123				
11	263	176				50	61	11	6		156				
12	395	32				49	64	1	3	2	100		5	3	2
13	326	34				38	43	3	5	2	95				
14	253	143				65	46	7	8	1	121				
15	211	183				45	54	3	6	4	104				
16	193	151				46	75	10	5	3	61				
17	238	112				50	62	3	1	2	66				
18	178	181				47	68	4	3	2	67				
19	176	147				54	56	9	2	3	71				
20	268	256				48	63	9	4	1	58				
21	163	124				41	36	4	9	1	63	790			
22	23	11				41	49	9	7	4	46	64			
23	1	5			1	38	58	8	3	3	30				
24	12	97				30	112	4	5	6	25				
25	23	393				28	81	12	3	3	65				
26	28	236			1	29	72	13	1		79			3	
27	39	77				23	54	8	6		78				
28	41	49				27	62	9	5	5	77				
29	49	70				42	66	11	3	1	115				
30	35	85			1	36	58	8	8	3	57				
MAY 1	36	127				45	68	7	6	5	45				5
2	45	134			1	27	64	5	3	5	63				
3	46	26				44	75	5	2	1	61				
4	64	255				48	75	17	8	4	53				
5	49	126			1	44	86	6	3	3	67				
6	51	136				33	71	6	3	3	81				
7	37	137				36	65	6	7	3	112				
8	69	103				38	95	6	1	1	124				
9	66	132			1	46	76	6	8	1	45				6
10	93	130				45	69	7	7	15	63			11	4

	KILAUEA SUMMIT					KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)			
DATE 1985	SHORT PER. CALD.	LONG PERIOD CALDERA A	B	C	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	SHORT PER.	LONG PER.	NE RIFT	KILAUEA SHAL.	INT.	DEEP	MAUNA LOA
MAY11	114	142			1	42	90	4	5	2	74				
12	111	101				28	67	3	5	2	60			32	
13	75	129		4		47	54	3		1	45				
14	120	132			2	52	79	5	2		51				
15	119	142			1	46	53	9	4	2	73				
16	201	122			2	30	51	8	2	3	53				
17	211	164				46	107	8	1		37				
18	247	124			1	40	88	4	2		26				
19	172	146				124	92	11	2		76				
20	167	186				67	85	10	3		44				
21	115	179			1	33	78	9	5		42			4	
22	192	47			2	31	53	7	4		22				
23	125	391				46	58	16	1		34		94		
24	163	140				54	51	4	2		57		7		
25	234	18				35	65	19	2		85			2	
26	192	19			2	49	37	6	1		52				
27	215	62				38	65	9	1		44				
28	238	105			1	33	80	7	1		28				
29	213	128				47	76	3	3	1	38				
30	115	89			1	36	84	13	1		53			27	
31	129	23				34	72	7	3	2	52				
JUN 1	387	7		87	2	31	51	8	3	2	75			14	
2	501			95	2	49	77	10	8	1	82		4	7	
3	411	2		3		48	78	11	4		49		2		
4	440	3		16	2	48	77	7	4	1	87				
5	426	3		29	1	40	43	6	3	6	50				
6	417	1		38		49	42	10	2	1	56				
7	434			42	1	58	47	6	3	1	52			26	7
8	430			26		61	81	3	3	1	71				
9	268	1		60		43	99	9	9	1	96				9
10	273	1		67	1	53	82	5	3		87				
11	267			100	1	49	85	11	3		89				
12	199	28	10	68		30	46	16	3		60	348			
13	53	227	20	48		37	244	12	2	3	73				
14	55	7	6	150	1	38	164	6	4		77				
15	58	3	5	135		41	128	6	1		63				
16	79	1	1	140	1	56	102	9	4	1	76				3
17	70	1	1	124		47	59	7	6		55			5	
18	75	2		76		42	73	8	3	3	55			3	
19	88	2		184		45	70	9	1	1	57				
20	157			215		33	72	8	2	2	43				
21	146			100		34	53	8	6	9	17				
22	159			237		28	72	10	5		32				
23	211	7		101		54	104	10	4	2	29		20	5	
24	206	24	3	161		59	94	19	2	2	25			47	
25	206	2		143	1	39	113	10	2	2	28				
26	230	5		143		27	125	7	4		49			22	
27	224	3	1	316	2	40	88	7	2		44				
28	229	7		223		36	69	12	5	1	42				
29	181			254		47	65	11	1	2	40		4		

	KILAUEA SUMMIT					KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)			
DATE 1985	SHORT PER. CALD.	LONG PERIOD CALDERA A	B	C	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	SHORT PER.	LONG PER.	NE RIFT	KILAUEA SHAL.	INT.	DEEP	MAUNA LOA
JUN30	188	9		99	1	42	63	12	1	2	48				8
JUL 1	237	2		147		37	82	12	3		53				
2	279			316		31	68	12	1	7	56				
3	262	2		119		32	50	5		3	34			37	
4	347	1		121		40	99	10	3	3	68				2
5	271	2		227	3	37	90	6	1		42				
6	255	6		160	3	110	72	11	4	1	78	776		5	
7	246	1507	16	22		54	55	4	1	3	32	54		16	
8	151	146		94		51	39	11	4	2	29				
9	157	13	1	63		45	46	16	3	1	30				
10	50	29	1	46	1	29	142	3	4	22	11			80	
11	64	8		2		35	65	9			58				
12	81	12	2	4	1	38	96	11	1		82				
13	92			5		49	81	9	2	34	135				
14	119	2		13		43	78	10	5		142		4		
15	121			9		30	62	8	4	2	131				
16	172			10		36	95	12	7	1	124				
17	158			1	1	43	67	8	6		119				
18	187	1		2		48	38	10	2	3	99				
19	176					39	45	11	5	6	41				
20	226			4		25	52	11	3		36				
21	264	2		36		36	67	11	4	7	211				
22	232	2		4	1	27	50	10	5		91				
23	284			16		45	45	9	3	2	39				
24	319			3		41	59	8	1	1	26				
25	203	12		10	1	29	74	8	4	3	20	316			4
26	35	206	11	3		29	140	11			17	415			
27	23	2679				43	47	11	3		32	1440			
28	39	248	1			34	33	6	1		26	1440			
29	31	5		8		29	42	11			19	1440			
30	48	8		20	1	32	71	10	3	3	50	1440			
31	61	2		16		39	69	13	2		70	1440		47	
AUG 1	51	3		9	2	28	49	10	3		18	1440			
2	29			7		18	58	17	1		11	1440			2
3	58	1		9		30	36	12			18	1440		15	
4	66			12		50	41	16	1		27	1440			
5	70	1		13		48	53	7	6	4	9	1440			
6	83			26		58	55	8	5	1	24	1440		6	
7	89		1	22		38	35	6	1		2	1474			
8	95		1	20		47	103	8	1	6	9	1406			
9	88	1		36		46	62	10	1	2	13	1440		31	
10	106			37	1	42	59	9	3		23	1440			4
11	106			54		48	73	8		1	54	1200			
12	112			75		56	55	10	5	4	18				3
13	200	2	4	21		38	83	2	5	1	12				
14	195	9	3	49		39	100	5	5	1	12				
15	253	2	3	31		23	98	6	2	11	11			9	
16	327	3		21		32	142	9	2	6	8			8	
17	301	3		68		46	68	6	5	1	14			12	
18	396	8		133		48	88	2	2	4	16		8		

	KILAUEA SUMMIT					KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)		
DATE 1985	SHORT PER. CALD.	LONG PERIOD CALDERA A	B	C	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	SHORT PER.	LONG PER.	NE RIFT	KILAUEA SHAL.	INT.	DEEP	MAUNA LOA
AUG19	318	1		3		47	83	7	4	2	17				
20	233	5	3	3		27	49	2	1	1	9				
21	282	5	2	4		29	55	5	2		7				
22	476	3		9		43	79	6	1	6	13			6	
23	477	1		4		54	79	10	2	2	18				
24	524			8		44	106	10	5	1	21			37	2
25	570			9		60	122	5	5	3	16				
26	422	3	1	4	1	56	62	3	1	1	10				
27	392	5	2	14	1	30	44	7	3		15				
28	446	7	2	2		31	50	6		3	9				
29	461	5	1	2		36	64	3	5	2	7				
30	461	2		1	4	58	89	11	2	5	21				
31	569	1	1	26	1	37	77	8	1	1	16				
SEP 1	499	5		10	1	52	73	11	8	3	13			8	3
2	261	640	2	46		58	85	9	3	4	7	575			
3	39	926	5	2		47	65	10	8		13				
4	61	158	2	8	1	44	97	7	6	3	9				
5	40	4	1	3		33	43	5	1		6			2	
6	68	2				28	52	6	2	2	10				
7	82	7	10	60		49	77	1	1	5	4			13	4
8	82	8	2	2		49	71	7	2	3	17				
9	87	4		9		38	102	8	4		15				
10	124	3		1		38	94	8	1		11				
11	140	2		14		28	61	12			14				
12	128	1	2	1		31	99	10	3		6			26	
13	136			2	1	31	70	7	2		21				
14	130	8	2	8	1	27	71	11	2		23				
15	256	7				49	73	12	2	1	4				
16	227	6	3	4		33	81	15	2	1	3				
17	212	54	1			34	66	5			3				
18	223	43	3	1		43	54	7	2	2	8			6	
19	207	43	1		1	24	66	3	2	2	16				
20	319	91	1			44	97	8	1	2	10				
21	451	15	3		11	52	77	5	3	6	9				
22	588	4	7	4		44	126	7	2	2	10				
23	487	6	2	14		99	6			2					17
24	349	7	11	18		29	96	5	1	7	7	470			8
25	34	160	87			39	45	15					4		
26	41	243	3	13		55	73	9		1	3				6
27	44	320	7	28	1	31	53	5	1		21				
28	50	70		26		44	48	10	2		11				
29	56	49	4	24		31	50	3	1	3	12			3	
30	53	77		70		63	69	5	1	1	3				
OCT 1	71	17		6		48	61	12	3	5	4				
2	84	12		3		51	92	11	3	1	5				
3	100	10		14		37	68	12	3	7	6				
4	112	4	1	12	3	33	72	9	3	3	2				
5	99		1	10		46	72	5	1		6				
6	170	9		22		46	137	11	3	5	6				
7	178	23	5	28		38	91	9	1	2	7			4	

	KILAUEA SUMMIT					KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)			
DATE 1985	SHORT PER. CALD.	LONG PERIOD CALDERA A	B	C	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	SHORT PER.	LONG PER.	NE RIFT	KILAUEA SHAL.	INT.	DEEP	MAUNA LOA
OCT 8	153	1		18		27	66	1	1		17			4	
9	156	4		1	1	50	59	10	2	5	13				4
10	181	4				31	68	8		3	12				
11	202	3		1		45	49	6		1	10				
12	276	1			3	36	106	1	1	5	17				
13	302	6		7		46	77	14	3	3	16				
14	412	11		2		57	118	11	4	4	7			15	
15	496	2		7		34	103	14	1	2	11				
16	473	5		14		60	100	7	5	1	3				
17	396	6		19		32	87	2	4	1	4				
18	522			14		43	117	5	4	3	2			14	
19	461			26	1	37	104	3	3	2	12				
20	550	10	3	30		39	104	10	3	6	8	300			2
21	69	421	2	3		29	62	5	1	2	7	204			3
22	32	592	1	15		37	52	7	2	6	10				
23	76	97	4	50		25	58				7				
24	83	15		28	2	28	62	3		2	8		36		
25	73	6		20		30	67	4	1	2	9				
26	90	5		58		27	94	6	2	4	10				
27	106	1		39		39	71	12	1	2	9			5	
28	91	1		30		28	60	2	1	7	10				
29	90	4		25		23	42	9	4	2	6				
30	132	16	3	15		27	52	6	3	7	9			4	
31	177	4	2	7		25	52	7	1	2	14				
NOV 1	186	11	1			58	56	12	2	8	6				
2	171	9	2			86	66	7		9	1				
3	248	5	1			151	63	9		6	6				3
4	189	3	6	19		47	61	2	2	4	2				
5	257	19	6	1		55	71	8	1	6	4				
6	337	33	5	2		44	57	11	1	6	2				
7	324	21	2	3	1	32	82	14		5	2				
8	284	38		2	1	62	63	10	2	3	4				4
9	417	21		5	1	48	79	6	5	1	1			2	
10	391	55		4	1	44	64	6			6				
11	535		2	2		36	76	8	3	3	6				
12	376		3	3		45	94	4	2		4			42	
13	215		16	2	2	49	59	7	3	2	7	556			
14	49	586	7	1	1	41	60	8		2	2				
15	68	113	5	6		19	32	12		1					
16	65	45	3	48		35	40	9	4	1	3				
17	67	42		80		25	46	14	5		10				
18	48	5	3			20	46	6	6		5				
19	83	14		132		37	48	4	1		4				
20	75	4		107		32	49	3	2		4				
21	100	4	1	67		37	48	4	2	2	8			3	
22	77	3	1	124		36	43	1	3	1	1				
23	105	3		10		35	59	1	3	2	14				
24	134	3		123	1	34	60	9	3					3	
25	143	9	1	151		41	66	7	1	1	4				
26	119	11		100		27	56	5	5		9				

	KILAUEA SUMMIT					KILAUEA FLANK			MAUNA LOA			TREMOR (MINUTES)		
DATE 1985	SHORT PER. CALD.	LONG PERIOD CALDERA A	B	C	30 KM	KAO. & SW RIFT	UP. EAST RIFT	LOW. EAST RIFT	SHORT PER.	LONG PER.	NE RIFT	KILAUEA SHAL.	INT.	DEEP	MAUNA LOA
NOV27	174	3		81		54	46	8		2	1				
28	202	1		87		51	65	5			3				
29	213	2			1	48	64	12	1	1	6				
30	232	1		34		45	54	9		2	2				
DEC 1	163	1		27		26	44	5	2		1			5	
2	263	3	1	20	1	35	44	2	1	3	1				
3	338	2		31		36	54	4	3	1	8				
4	353	3		9		36	63	2		5	10			39	
5	241	7		8	1	40	60	1	2		3			16	
6	270	3		5		19	70	5	1		9				
7	296	3		15		47	84	1		2	12				
8	317	4		22		49	84	8	1	5	11			6	
9	349	1	1	18		47	71	7	1	3	8				
10	313	2	2	11	1	23	72	12		1	8				
11	347			7		59	74	5	1		3				
12	327	2		12		39	87	11	2	3	3				
13	314	2		4	1	32	106	5	4	1	4				
14	430			51		34	75	9	2		3				
15	419			40		45	82	4	1		50				
16	373	1		3		55	67	8			5				
17	360	2		1		57	91	7			4				
18	232	12		2		24	71	2	2	2	10				
19	294	8		34		43	71	7	4	4	8				
20	188	1		21		26	45	4	2	2	4				
21	352	4		7		42	63	1		1	6			73	
22	358	1		20		58	67	3	3	4	4				
23	290	4		16		51	50	4		3	3				
24	417	4		13		43	78	7	2		1				
25	406	2		30		56	85	9			8				
26	346	2		26		56	62	10		5	4			15	
27	310	2		18		37	49	19	4	1	6			3	
28	289	3		18		45	32	8	2		3				
29	257	1		25		35	49	4	1	2	3				
30	173	3				26	19	3						39	
31	190	3		9		201	25	1							

Table 4. Coordinates of named earthquake regions.

All earthquakes are in one of the following groups, identified by a numerical class or 3-letter code:

--Shallow:
1 SNC - Shallow north caldera (0-5 km)
2 SSC - Shallow south caldera (0-5 km)
3 SEC - Shallow east caldera (0-5 km)
4 SER - Shallow east rift (0-5 km)
5 SME - Shallow middle east rift (0-5 km)
6 KOA - Koae fault zone (0-5 km)
7 SSF - Shallow south flank (0-5 km)
8 SLE - Shallow lower east rift (0-5 km)

--Intermediate depth:
9 SF1 - Kilauea south flank (5-13 km) (west end)
10 SF2 - Kilauea south flank (5-13 km)
11 SF3 - Kilauea south flank (5-13 km)
12 SF4 - Kilauea south flank (5-13 km)
13 SF5 - Kilauea south flank (5-13 km) (east end)
14 LER - Lower east rift (5-99 km)
15 MLO - Mauna Loa (0-13 km)
16 LSW - Lower SW rifts of Kilauea and Mauna Loa (0-13 km)
17 GLN - Glenwood (0-13 km)
18 SWR - SW rift (0-13 km)
19 INT - Intermediate caldera (5-13 km)
20 KAO - Kaoiki (0-13 km)

--Deep:
21 DEP - Deep Kilauea (>13 km) (below regions 1-13, 17-19)
22 DLS - Deep lower SW rift (>13 km) (below region 16)
23 DML - Deep Mauna Loa (>13 km) (below regions 15, 20)

--Outer regions, all depths:
24 LOI - Loihi
25 KON - South Kona
26 HUA - Hualalai
27 KOH - Kohala
28 KEA - Mauna Kea
29 HIL - Hilo
30 DIS - Distant, everywhere else

The latitude and longitude limits of the regions are given below. When the coordinates imply an overlap, precedence is given as in the maps.

No.	Code	N. Lat.	S. Lat.	W. Lon.	E. Lon.
1	SNC	19 28	19 24.5	155 19	155 14
2	SSC	19 24.5	19 22	155 19	155 16.5
3	SEC	19 24.5	19 22	155 16.5	155 14
4	SER	19 26	19 20.5	155 14	155 07.2
5	SME	19 26	-----	155 07.2	155 00
6	KOA	19 22	19 20.5	155 17	155 14
7	SSF	-----	19 10	155 17	155 00
8	SLE	19 32	19 16	155 00	154 40
9	SF1	19 22	19 10	155 17	155 14.5
10	SF2	19 26	19 10	155 14.5	155 12.3
11	SF3	19 26	19 10	155 12.3	155 09.1
12	SF4	19 26	19 10	155 09.1	155 05.3
13	SF5	19 26	19 10	155 05.3	155 00
14	LER	19 32	19 16	155 00	154 40
15	MLO	19 35	19 19	155 35	155 19
16	LSW	19 19	18 40	155 43	155 25
17	GLN	19 35	19 26	155 19	155 00
18	SWR	19 22	19 10	155 25	155 17
19	INT	19 28	19 22	155 19	155 14
20	KAO	19 30	19 19	155 32	155 19
21	DEP	19 35	19 10	155 25	155 00
22	DLS	19 19	18 40	155 43	155 25
23	DML	19 35	19 19	155 35	155 19
24	LOI	19 10	18 40	155 25	155 00
25	KON	19 39	19 00	156 20	155 43
26	HUA	19 55	19 39	156 20	155 43
27	KOH	20 25	19 55	156 20	155 34
28	KEA	20 25	19 35	155 34	154 40
29	HIL	19 47	19 32	155 09	154 40

Figure 5. Earthquake classification, shallow 0 - 5 km deep Kilauea and east flank Mauna Loa.

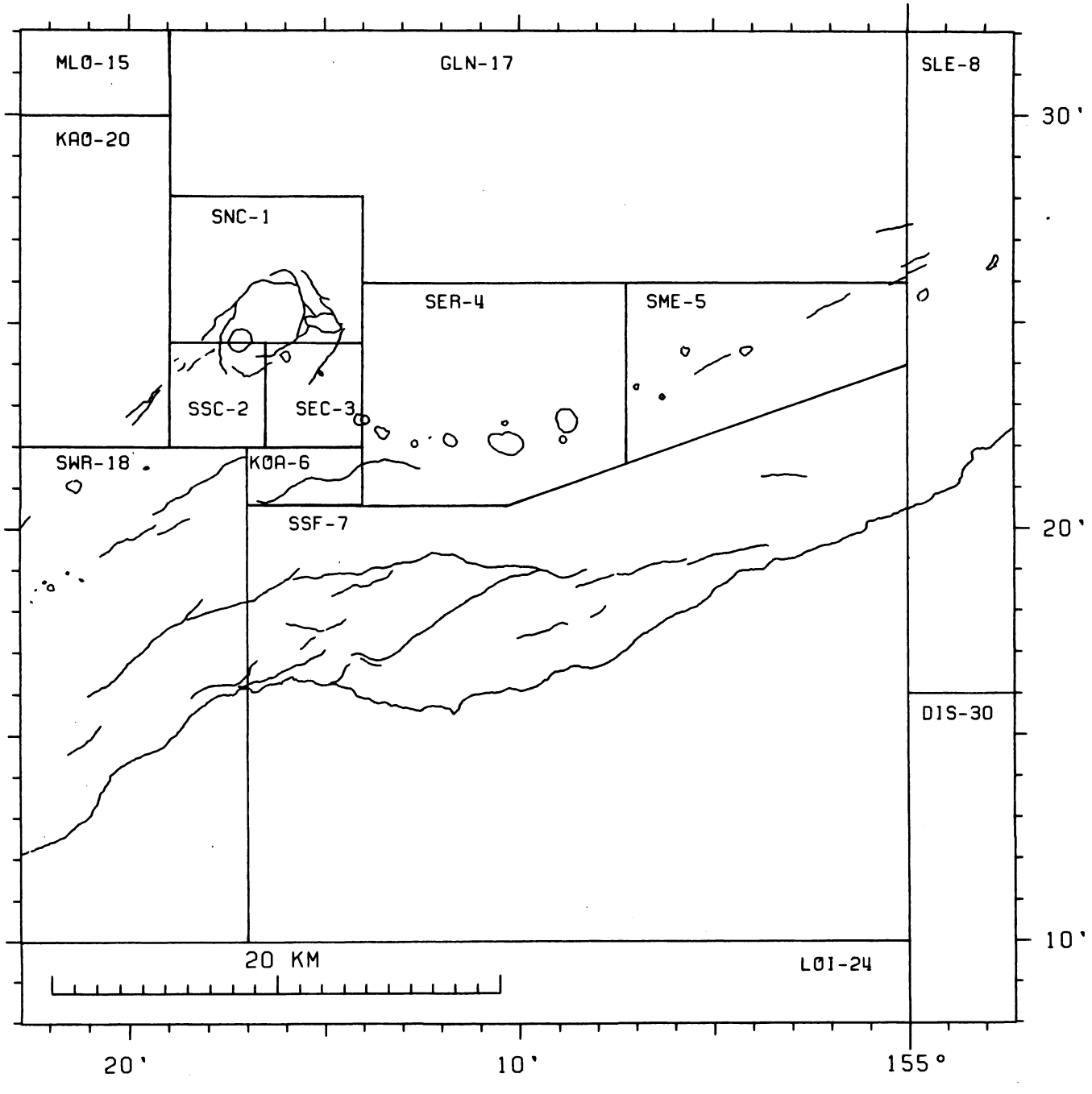


Figure 6. Earthquake classification, intermediate 5 - 13 km deep Kilauea and east flank Mauna Loa.

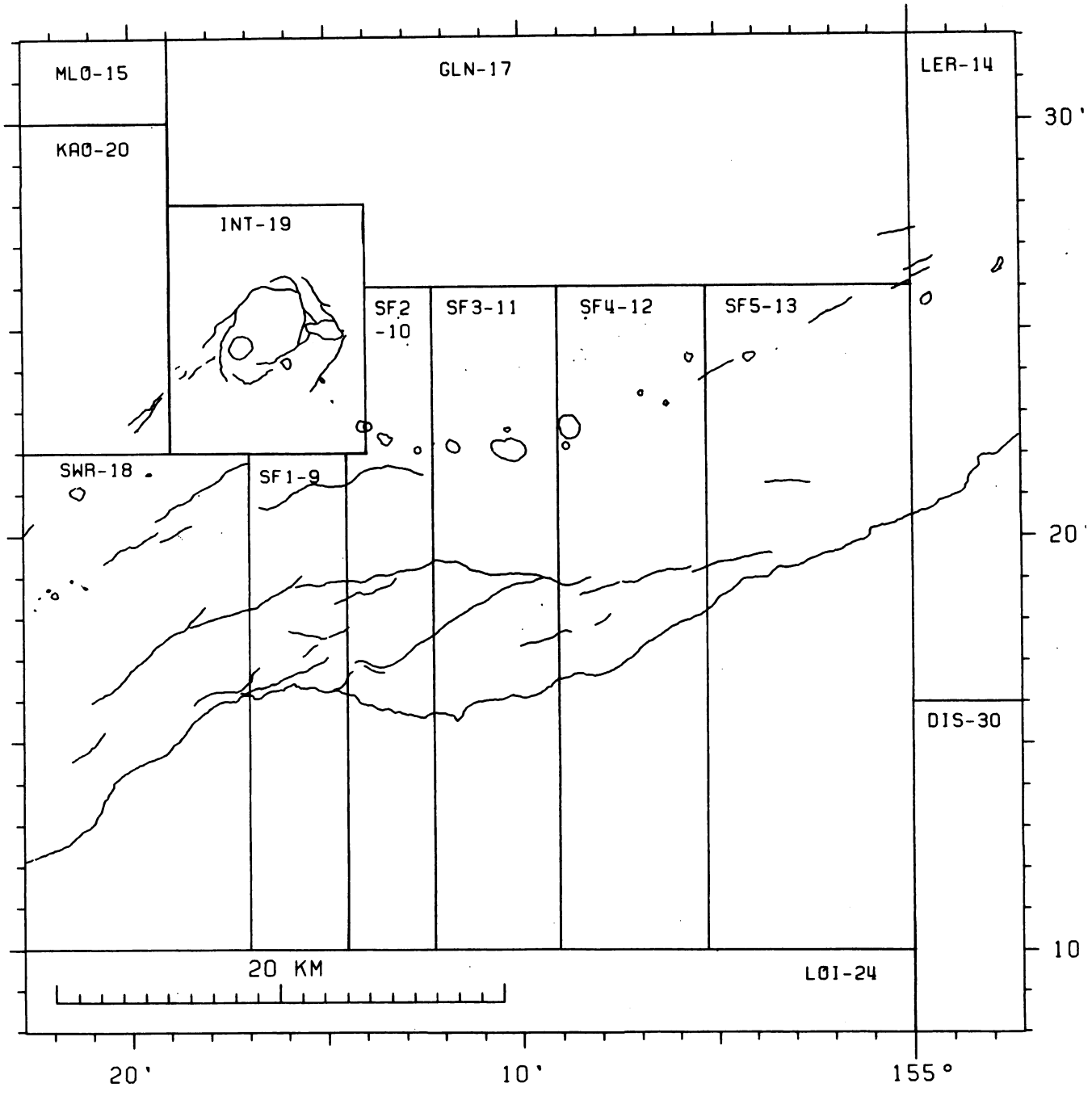


Figure 7. Earthquake classification, crustal 0 - 13 km deep island of Hawaii.

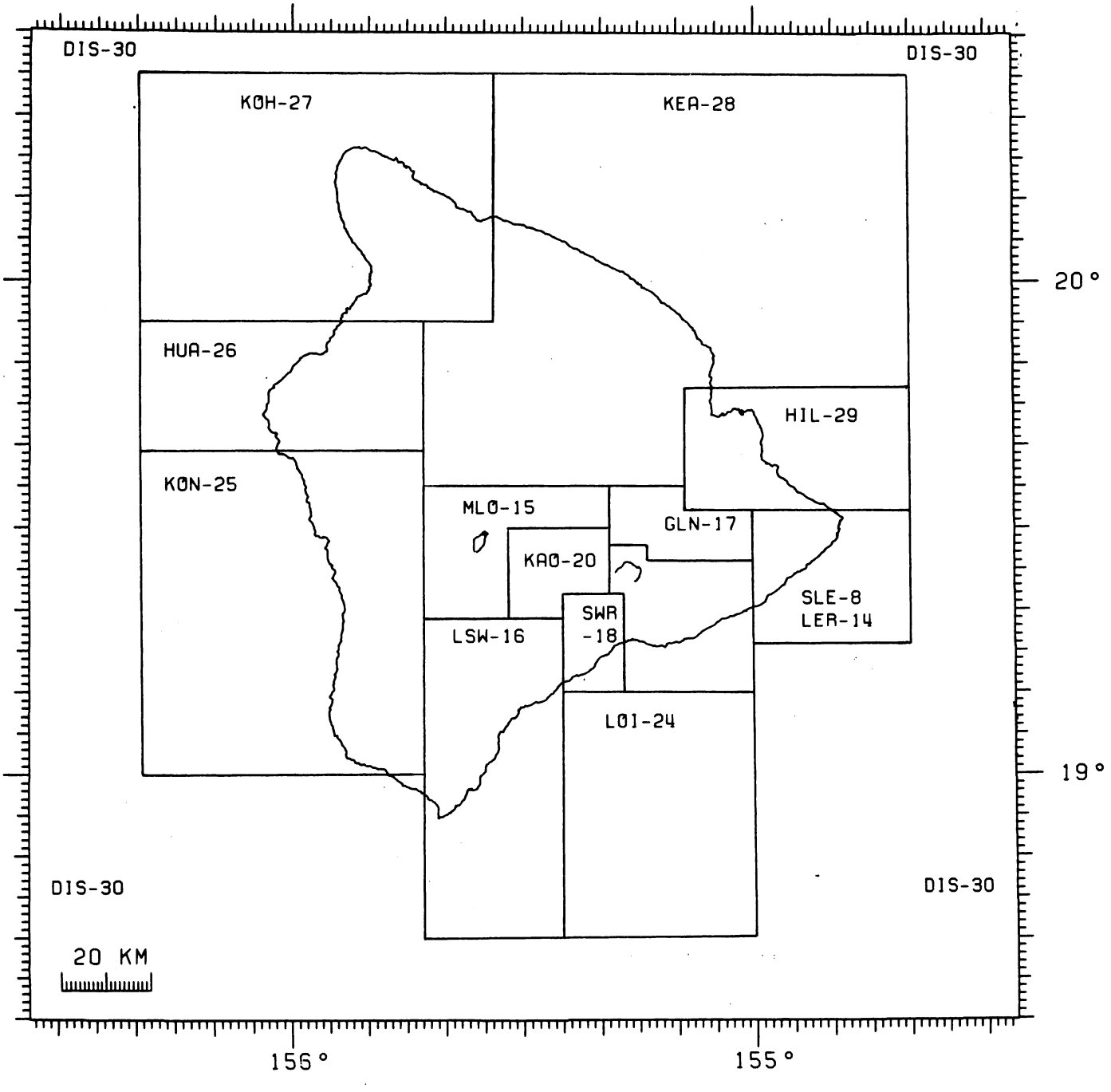


Figure 8. Earthquake classification, mantle greater than 13 km deep island of Hawaii.

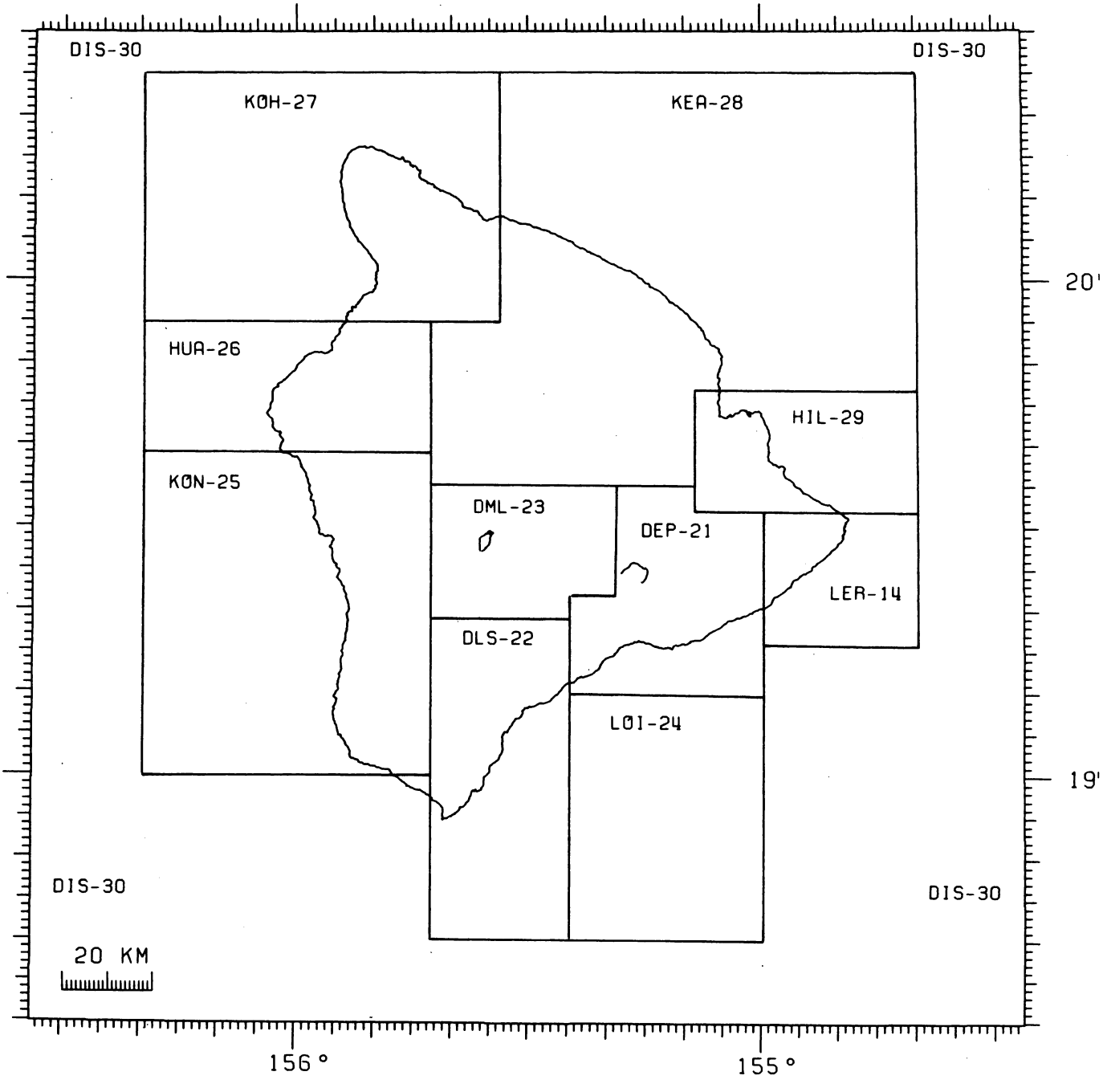


Figure 9

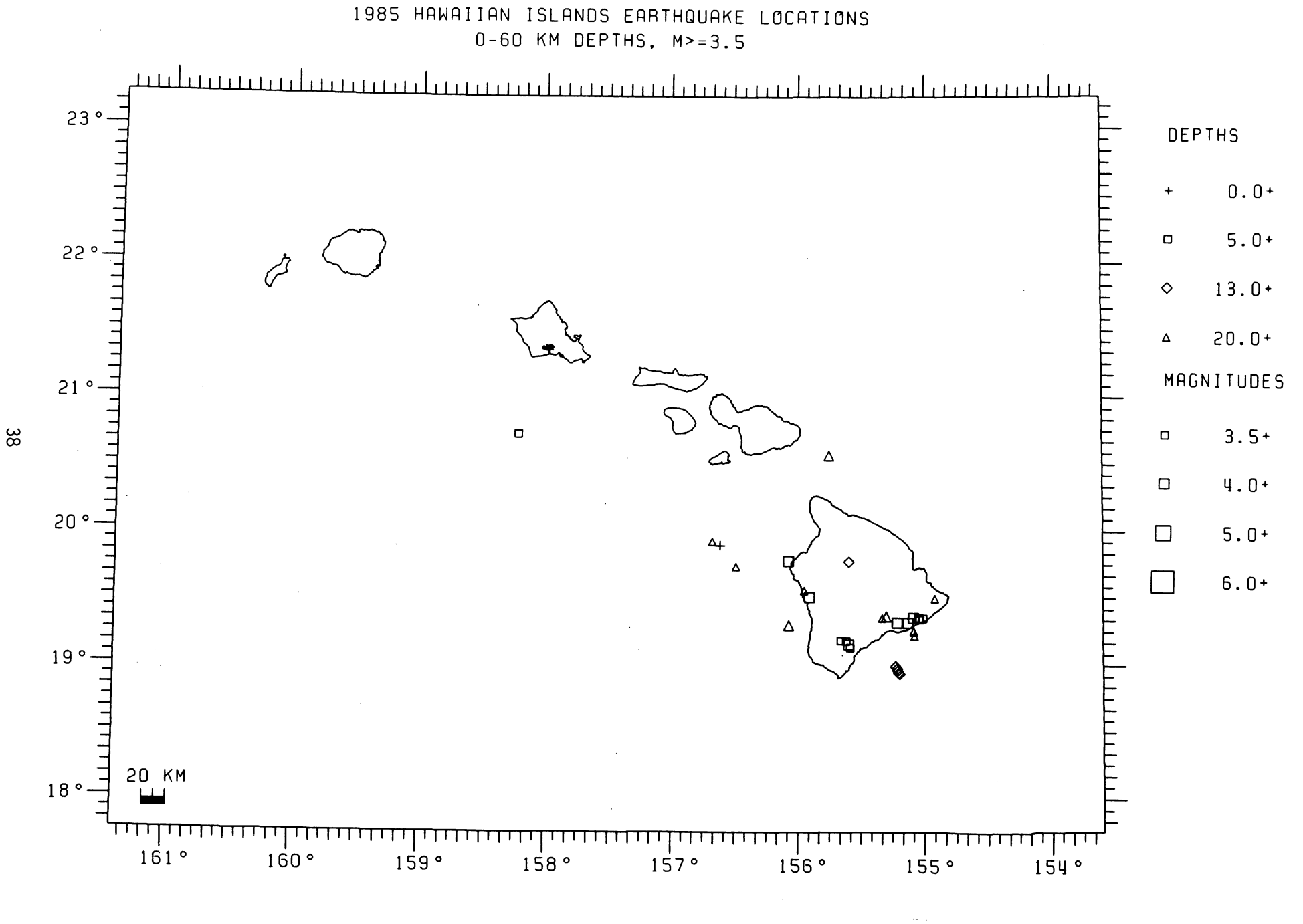

1985 HAWAIIAN ISLANDS EARTHQUAKE LOCATIONS
0-60 KM DEPTHS, M>=3.5
23°
22°
21°
20°
19°
18°
161°
160°
159°
158°
157°
156°
155°
154°
20 KM
DEPTHS
0.0+
5.0+
13.0+
20.0+
MAGNITUDES
3.5+
4.0+
5.0+
6.0+

Figure 10

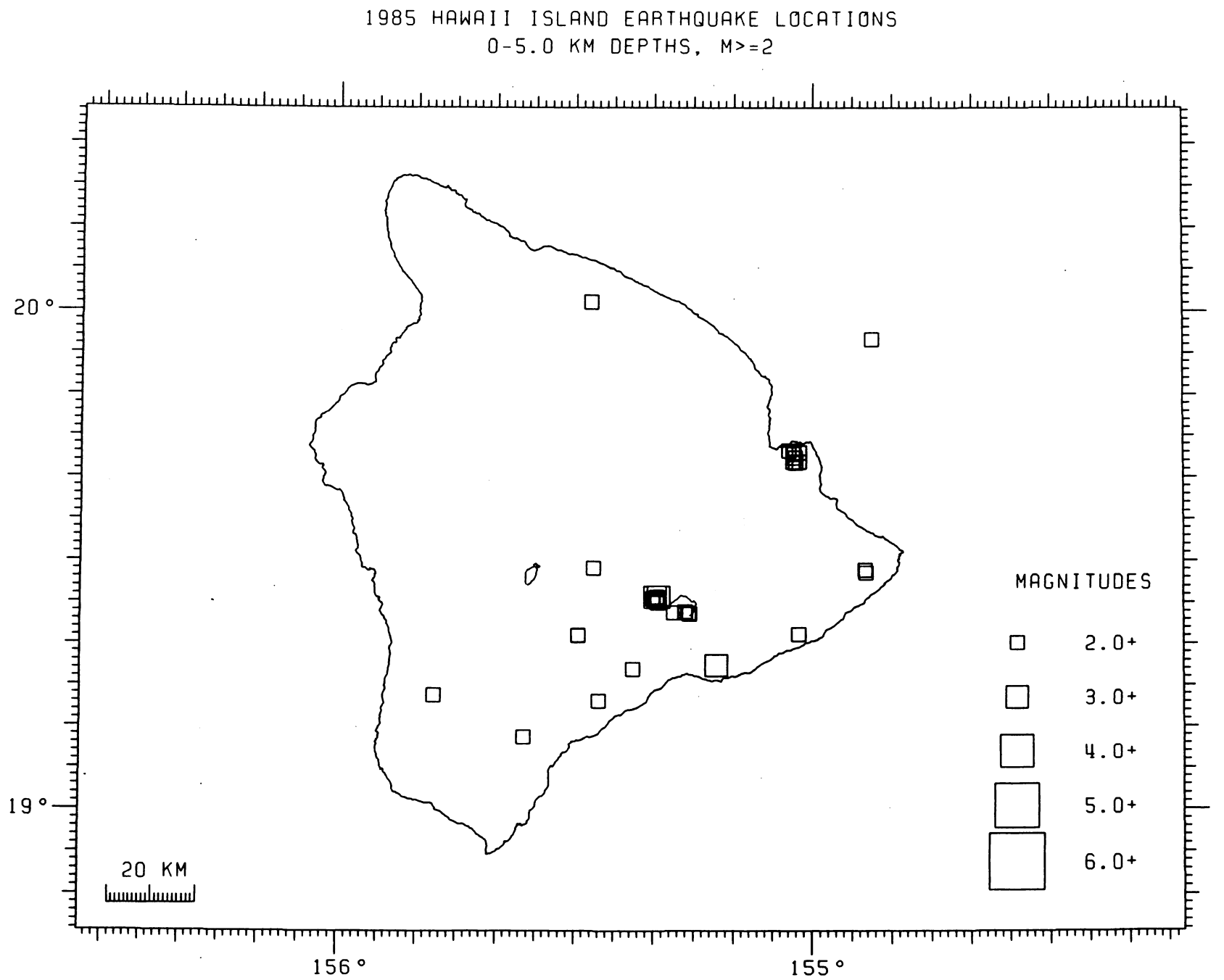

1985 HAWAII ISLAND EARTHQUAKE LOCATIONS
0-5.0 KM DEPTHS, M>=2
20°
19°
156°
155°
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 11

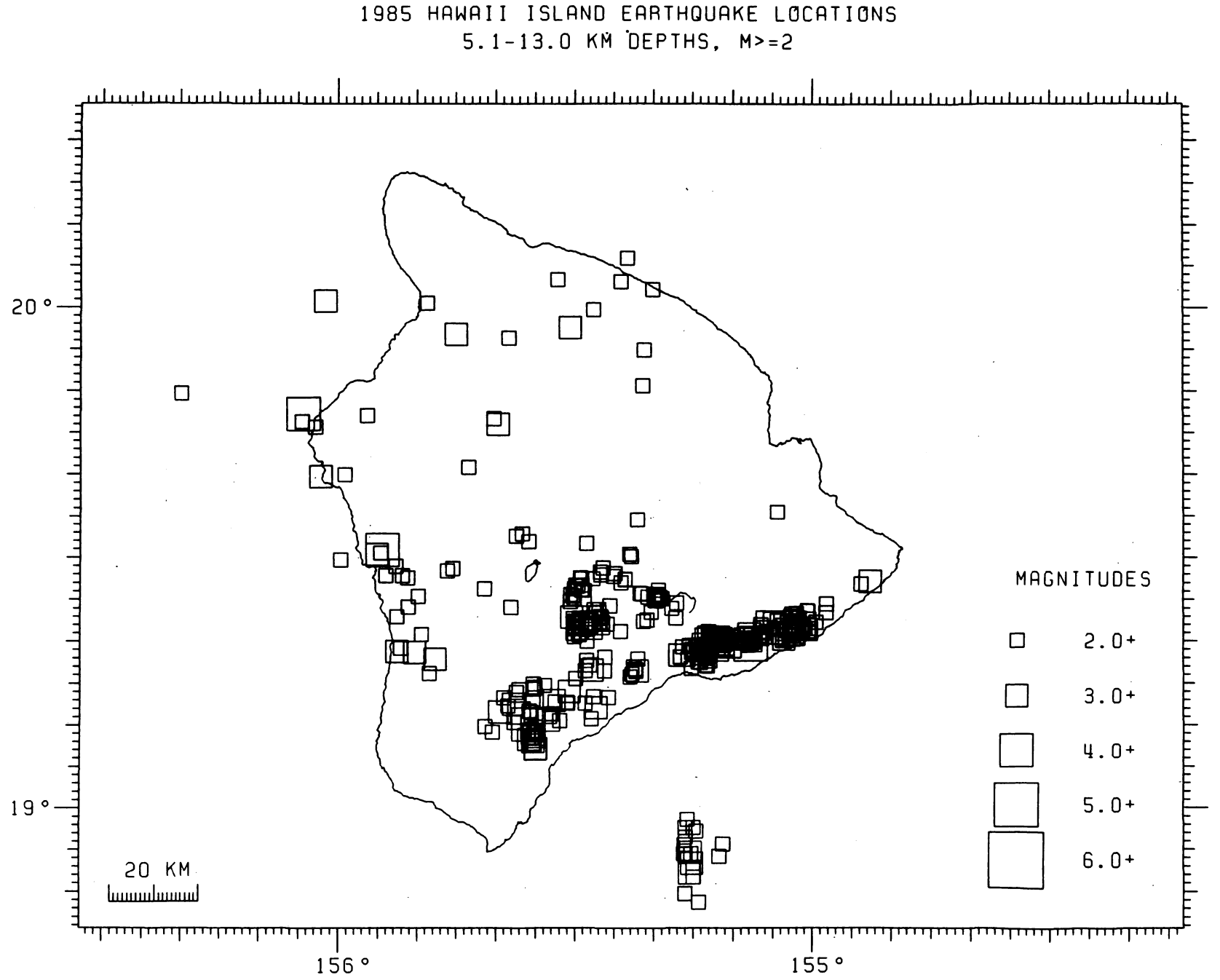

1985 HAWAII ISLAND EARTHQUAKE LOCATIONS
5.1-13.0 KM DEPTHS, M>=2
20°
19°
156°
155°
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 12

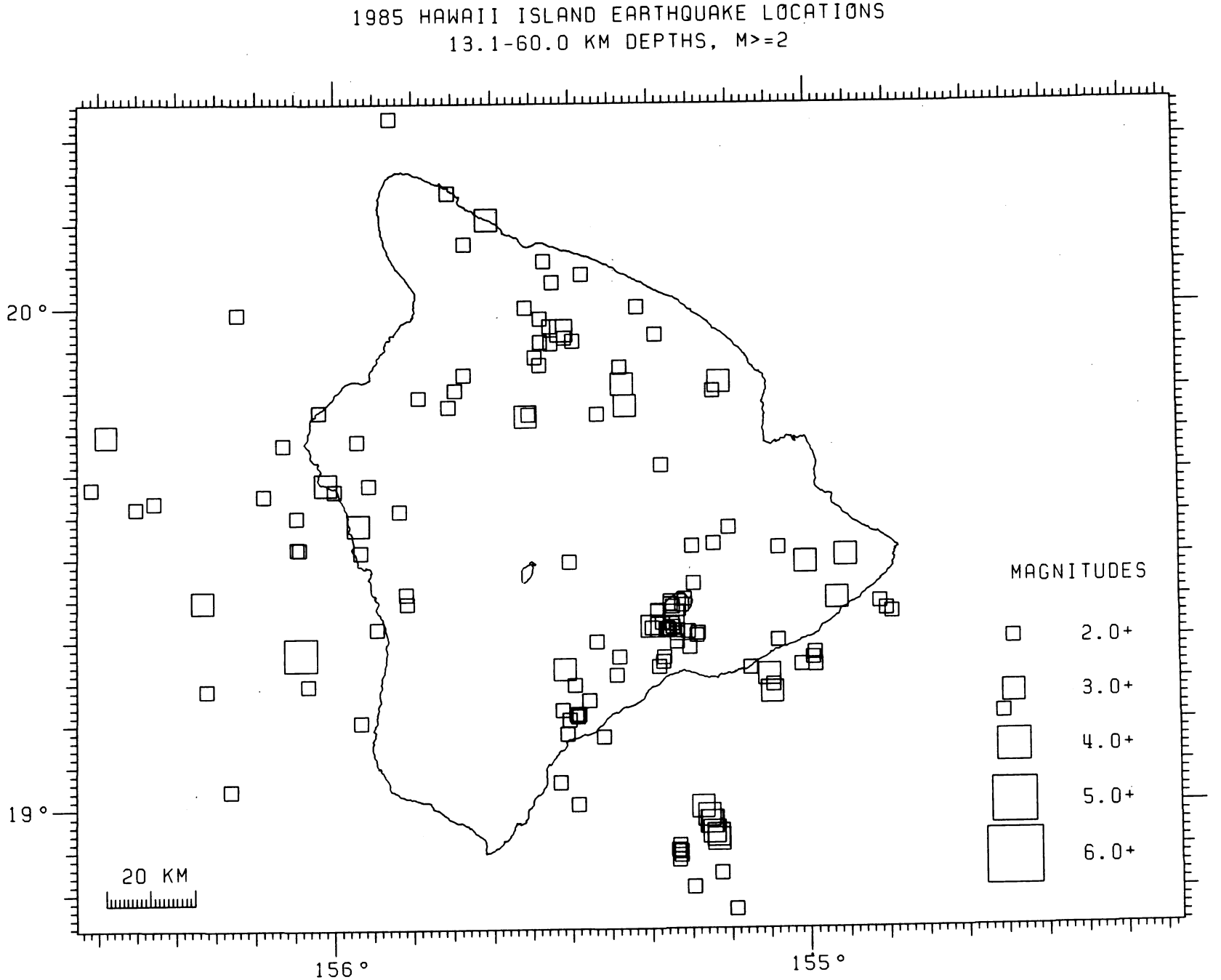

1985 HAWAII ISLAND EARTHQUAKE LOCATIONS
13.1-60.0 KM DEPTHS, M>=2
20°
19°
156°
155°
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 13

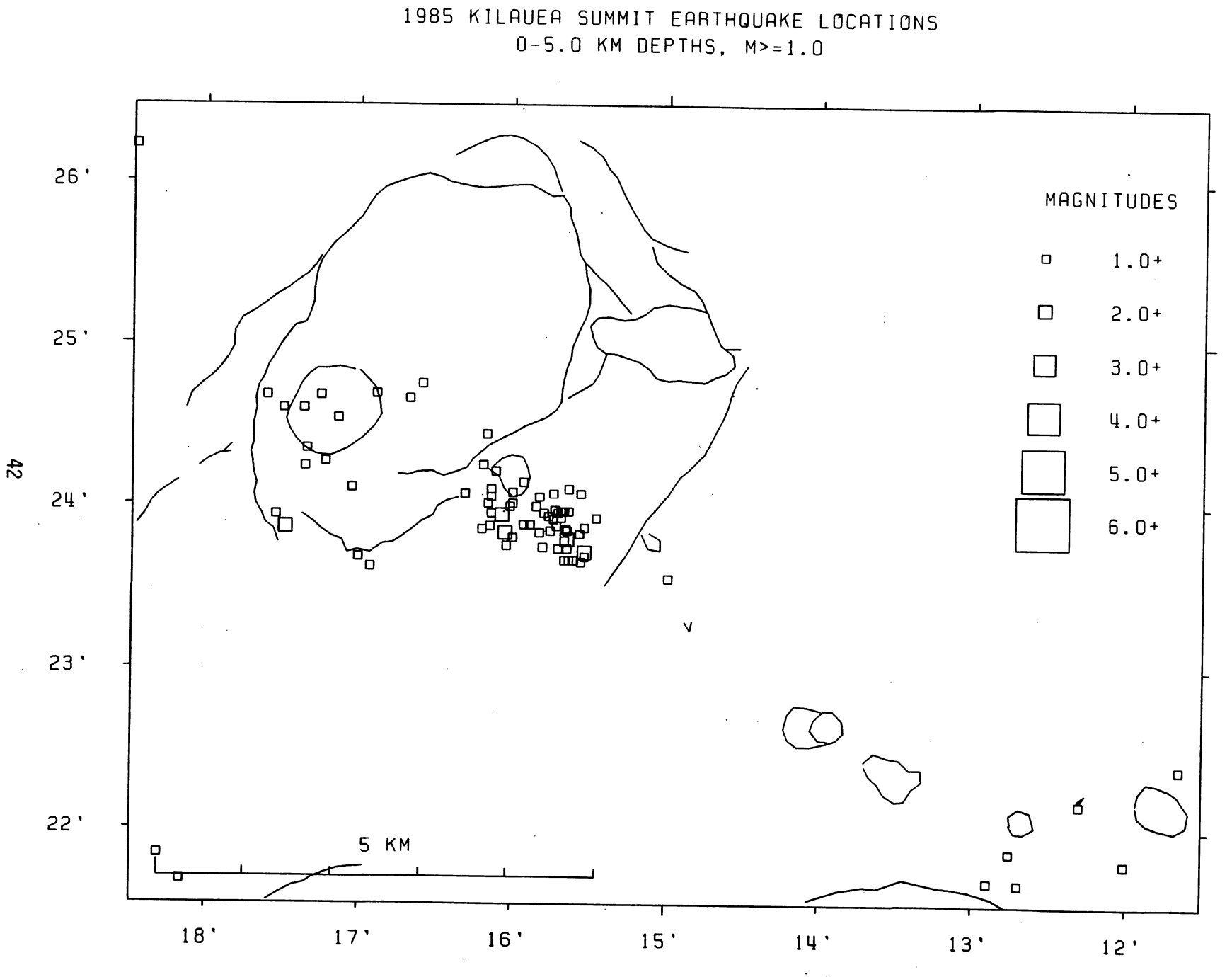

1985 KILAUEA SUMMIT EARTHQUAKE LOCATIONS
0-5.0 KM DEPTHS, M>=1.0
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
5.0+
6.0+
5 KM
26'
25'
24'
23'
22'
18'
17'
16'
15'
14'
13'
12'
42

Figure 14

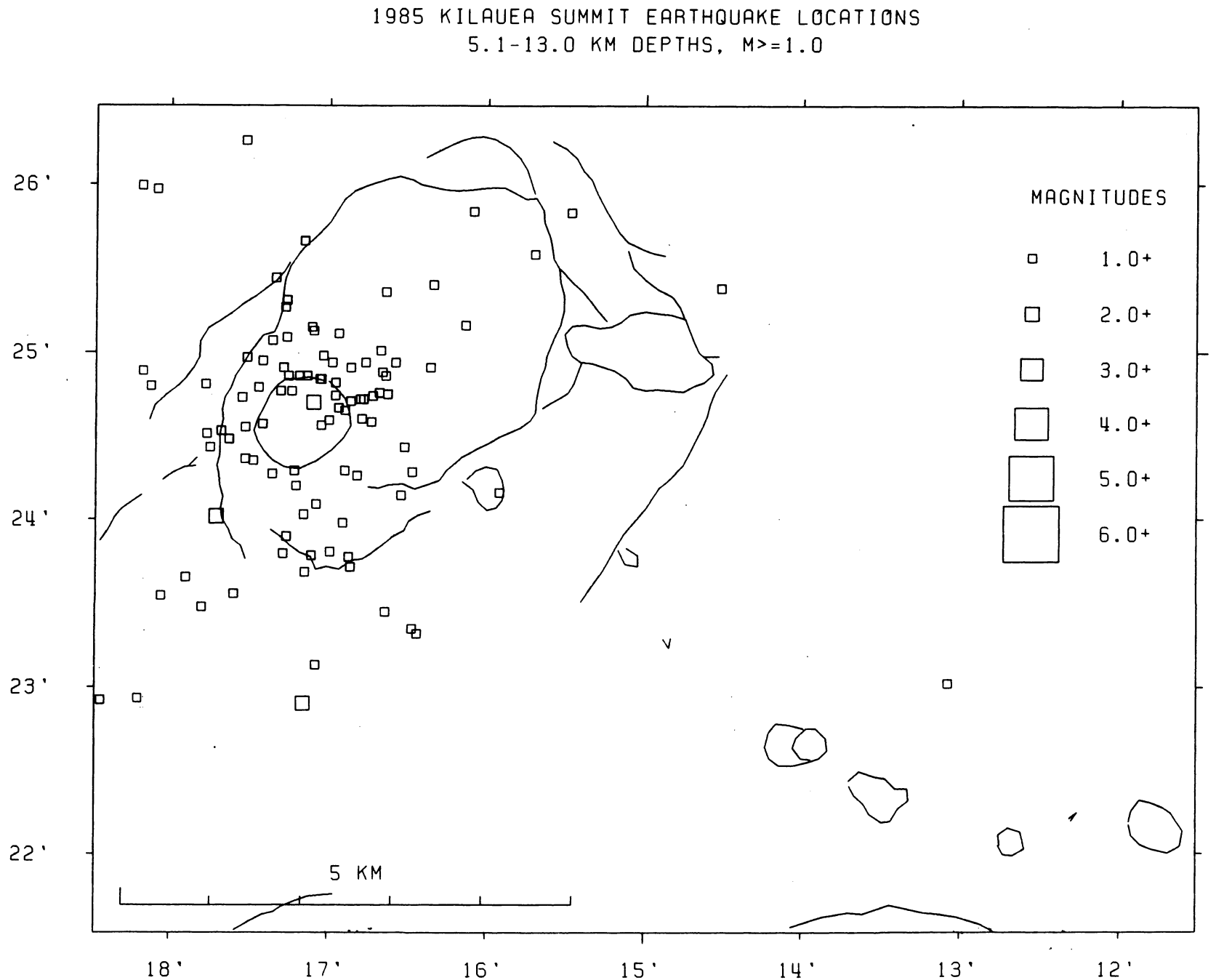

1985 KILAUEA SUMMIT EARTHQUAKE LOCATIONS
5.1-13.0 KM DEPTHS, M>=1.0
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
5.0+
6.0+
5 KM
26'
25'
24'
23'
22'
18'
17'
16'
15'
14'
13'
12'

Figure 15

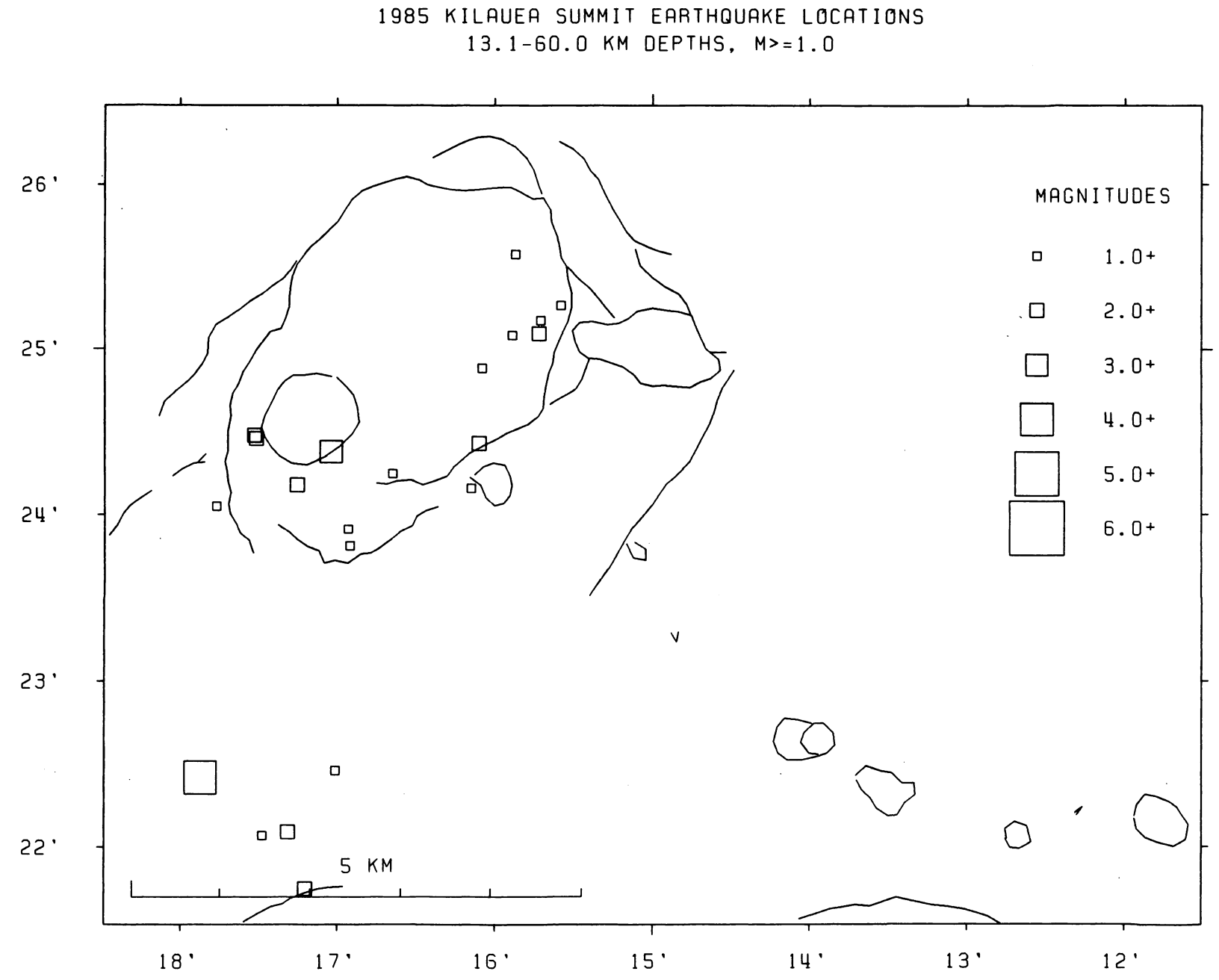

1985 KILAUEA SUMMIT EARTHQUAKE LOCATIONS
13.1-60.0 KM DEPTHS, M>=1.0
MAGNITUDES
1.0+
2.0+
3.0+
4.0+
5.0+
6.0+
5 KM
26'
25'
24'
23'
22'
18'
17'
16'
15'
14'
13'
12'

Figure 16

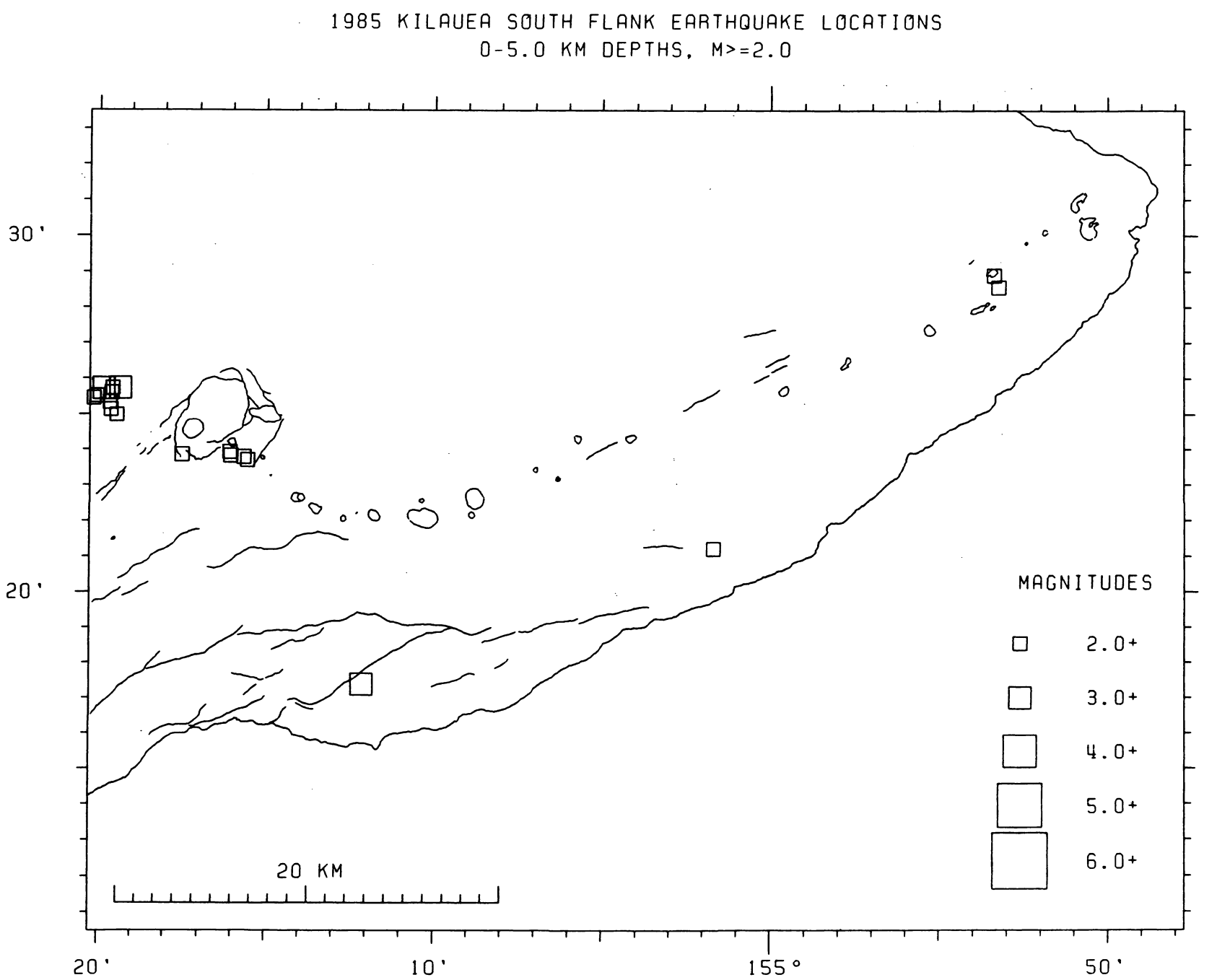

1985 KILAUEA SOUTH FLANK EARTHQUAKE LOCATIONS
0-5.0 KM DEPTHS, M>=2.0
30'
20'
20'
10'
155°
50'
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+
20 KM

Figure 17

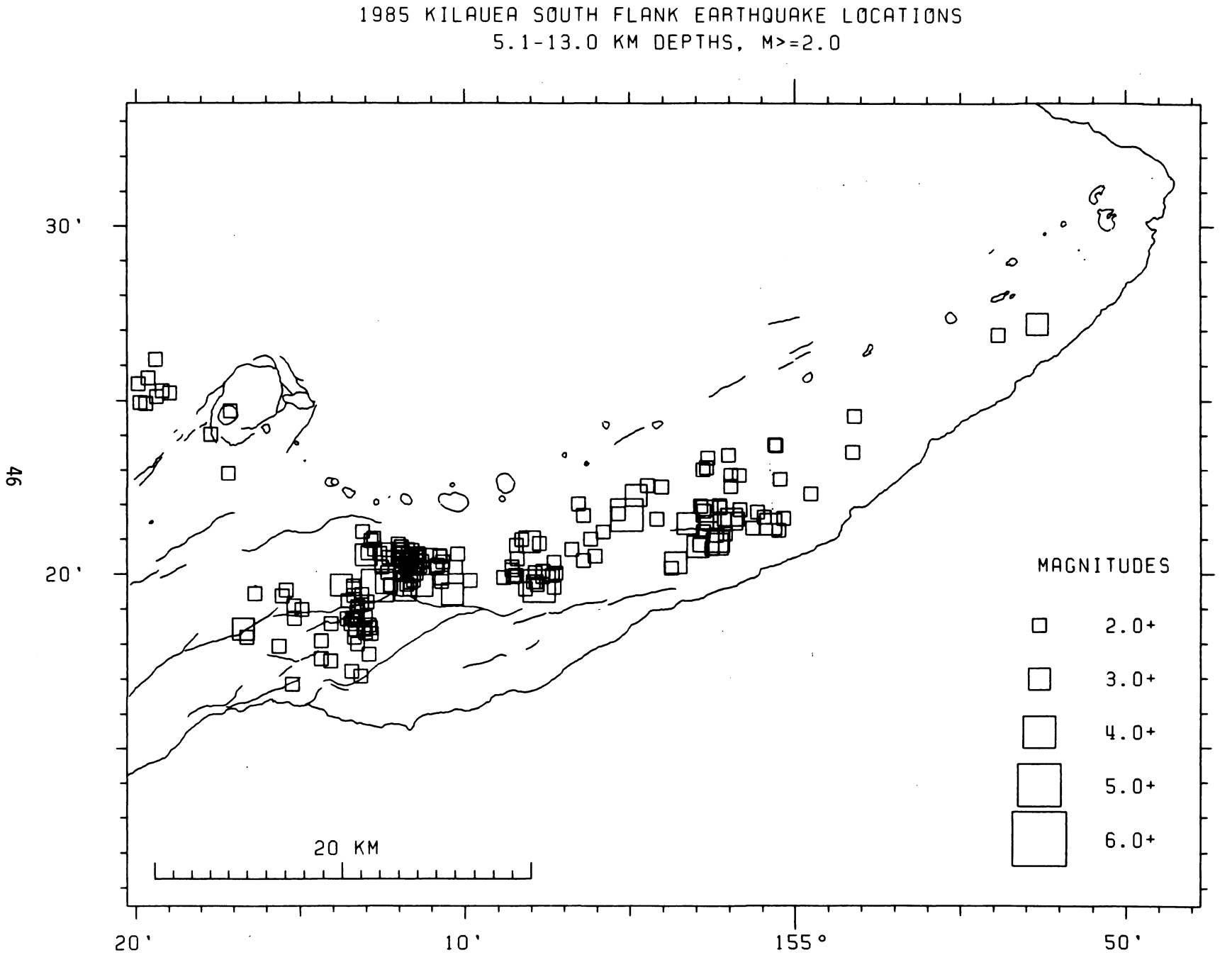

1985 KILAUEA SOUTH FLANK EARTHQUAKE LOCATIONS
5.1-13.0 KM DEPTHS, M>=2.0
30'
20'
20'
10'
155°
50'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 18

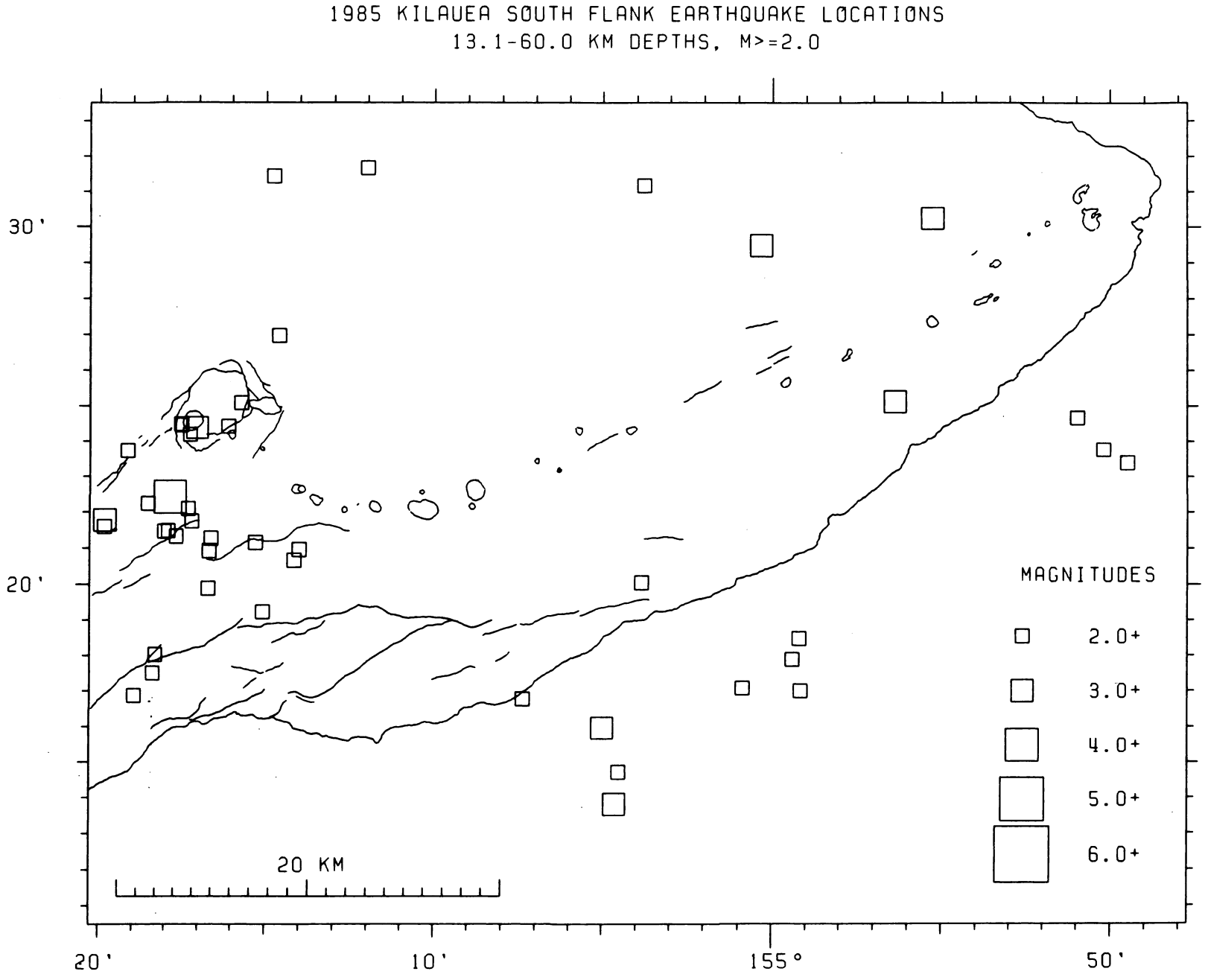

1985 KILAUEA SOUTH FLANK EARTHQUAKE LOCATIONS
13.1-60.0 KM DEPTHS, M>=2.0
30'
20'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+
20'
10'
155°
50'

Figure 19

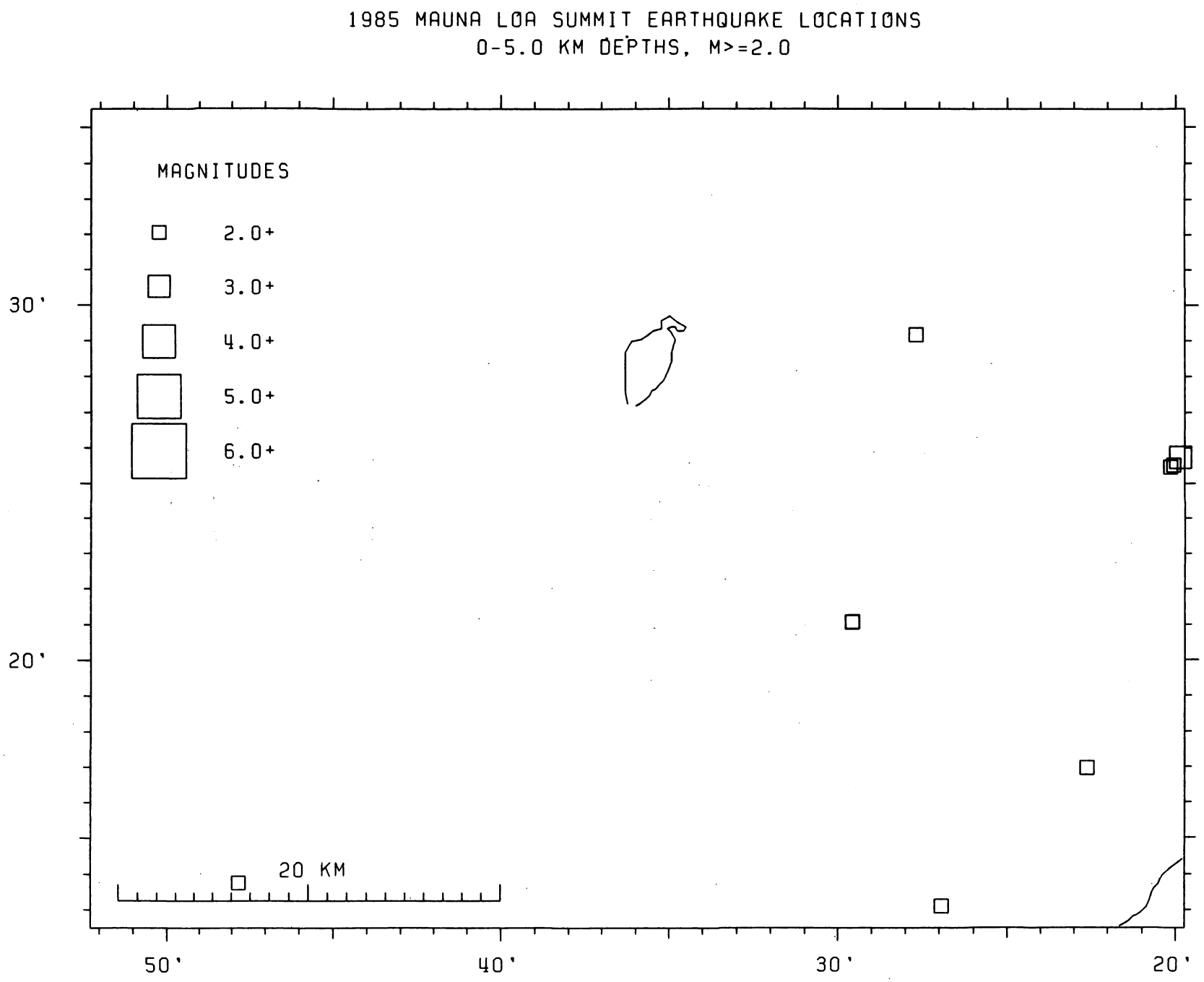

1985 MAUNA LOA SUMMIT EARTHQUAKE LOCATIONS
0-5.0 KM DEPTHS, M>=2.0
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+
20 KM
30'
20'
50'
40'
30'
20'

Figure 20

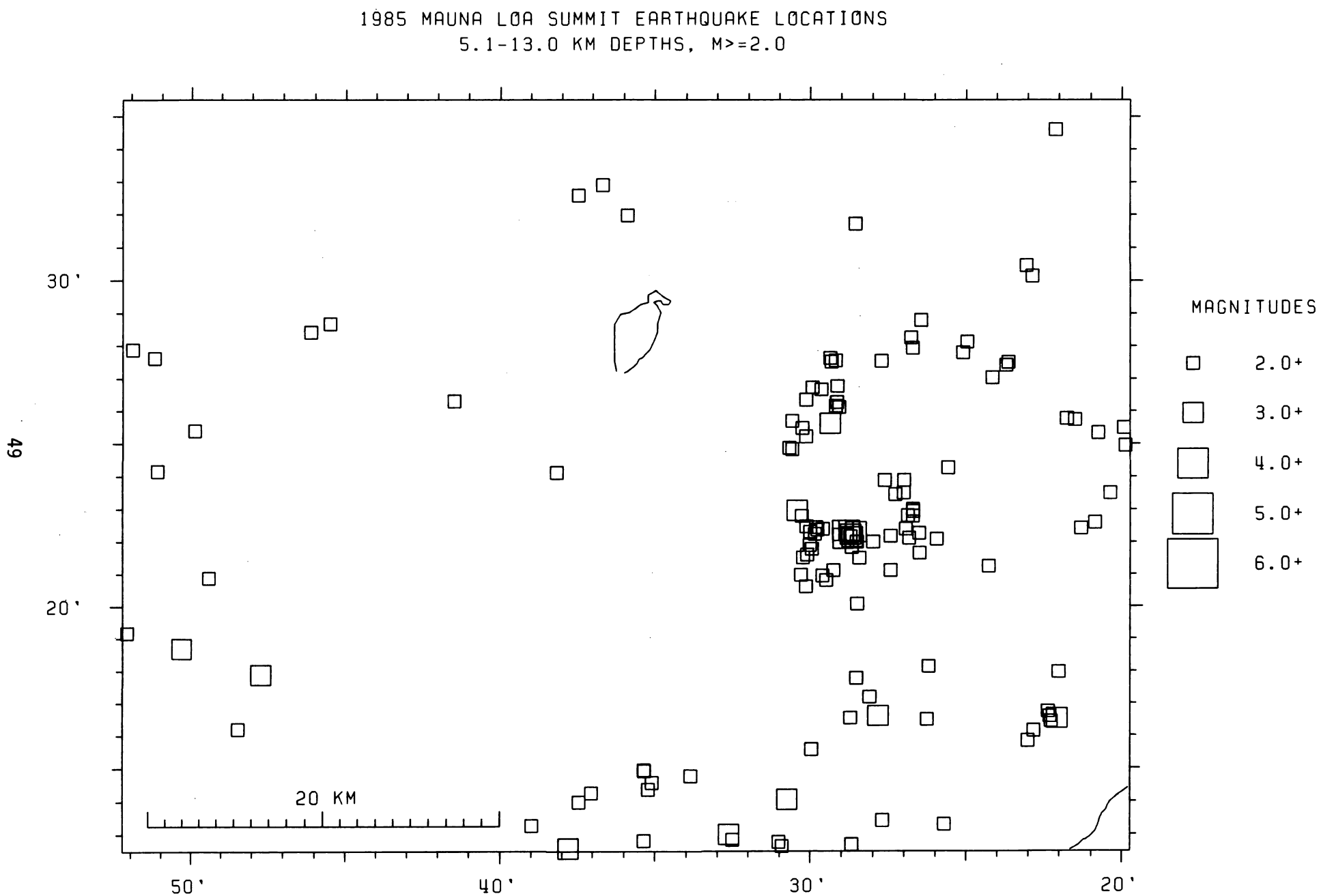

1985 MAUNA LOA SUMMIT EARTHQUAKE LOCATIONS
5.1-13.0 KM DEPTHS, M>=2.0
30'
20'
50'
40'
30'
20'
20 KM
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+

Figure 21

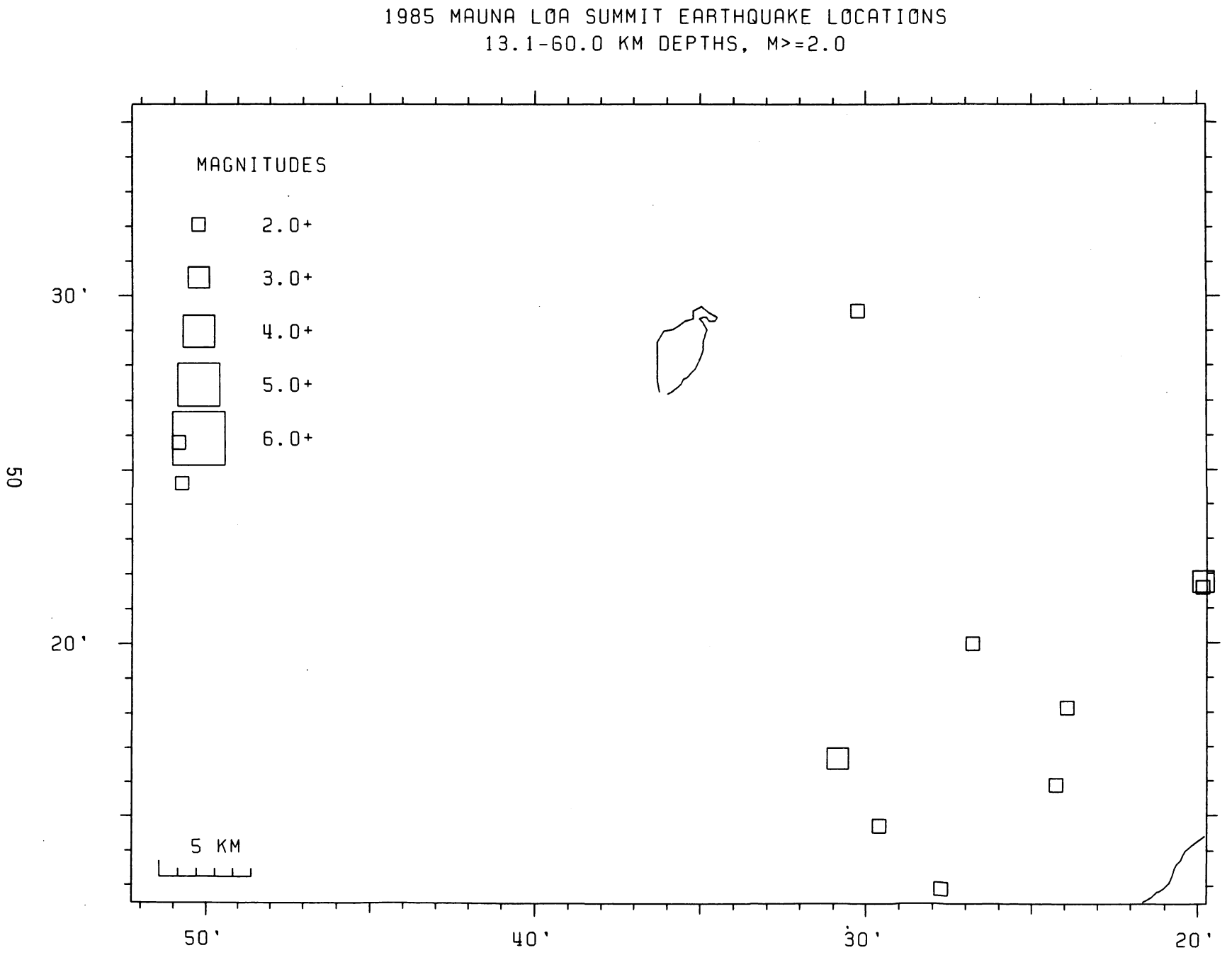

1985 MAUNA LOA SUMMIT EARTHQUAKE LOCATIONS
13.1-60.0 KM DEPTHS, M>=2.0
MAGNITUDES
2.0+
3.0+
4.0+
5.0+
6.0+
5 KM
30'
20'
50
50'
40'
30'
20'

Figure 22

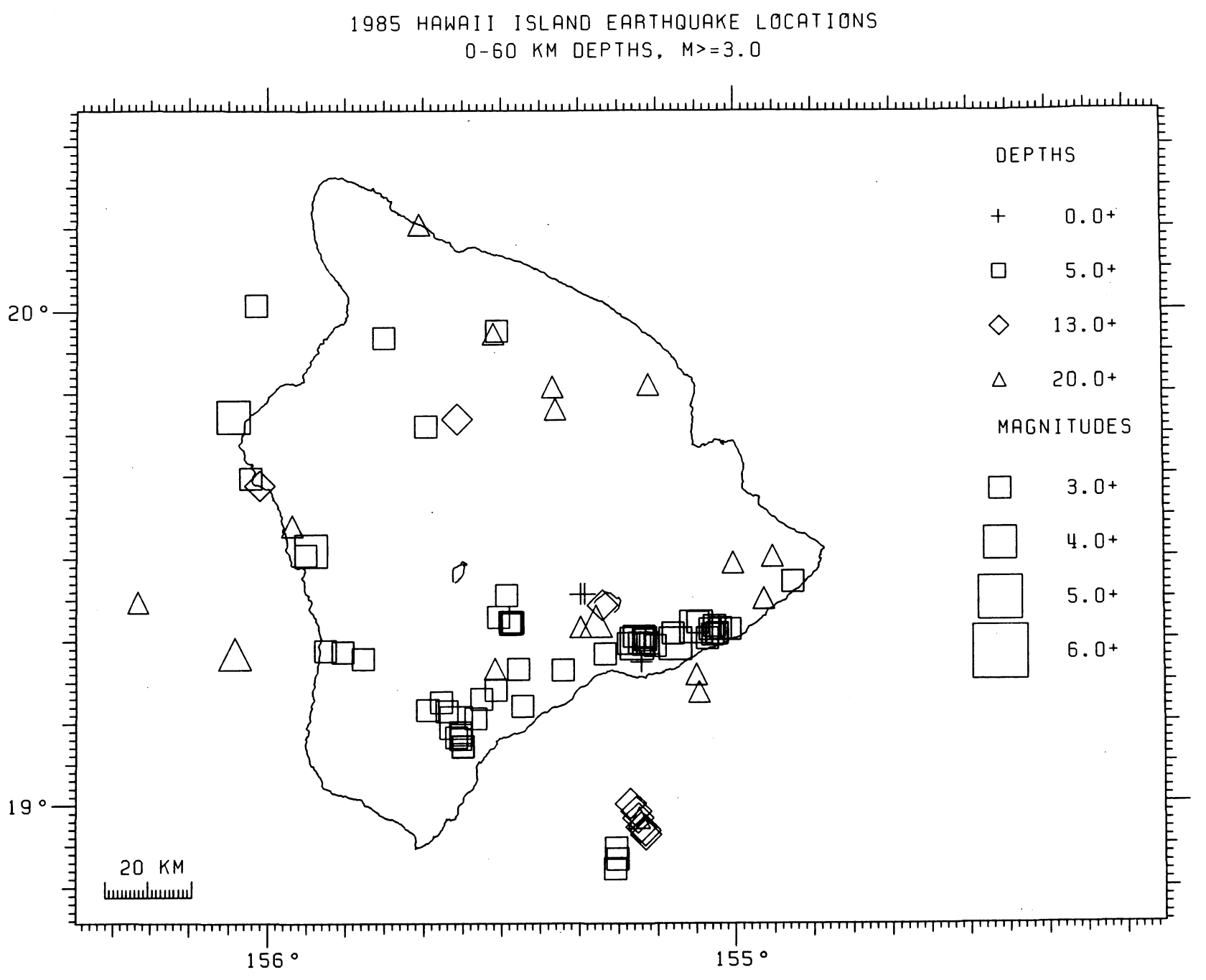

1985 HAWAII ISLAND EARTHQUAKE LOCATIONS
0-60 KM DEPTHS, M>=3.0
DEPTHS
0.0+
5.0+
13.0+
20.0+
MAGNITUDES
3.0+
4.0+
5.0+
6.0+
20 KM
20 °
19 °
156 °
155 °

Table 5 is a chronological listing of successfully located earthquakes. For each event the following data are presented:

Origin time in Hawaiian Standard Time: date, hour (HR), minute (MN), and second (SEC).

Epicenter in degrees and minutes of north latitude (LAT N) and west longitude (LON W).

DEPTH - Depth of focus in km.

AMP MAG - Amplitude magnitude, if determined.

DUR MAG - Duration magnitude, if determined.

NR - Number of arrivals (P or S) used for solution.

NS - Number of S arrivals used for solution.

GAP DEG - Largest azimuthal separation in degrees between stations.

RMS SEC - Root mean square error of time residuals in second.

$$RMS = (\Sigma R_i^2/NR)^{1/2}$$

MIN DIS - Epicentral distance in km to the third nearest station.

ERH km - Standard error of the epicenter in km.

ERZ km - Standard error of depth of focus in km.

REMK - Remarks, three letter code for geographic location of events. See Figures 5-8 for location of mnemonic code. Additional one letter codes have the following meanings:

F - felt

L - long period character

T - associated with harmonic tremor

B - quarry or other blast

* - the location program had a convergence problem, which usually means that the depth may be unreliable.

Table 5 lists all events located during 1985. Table 6 lists only events of magnitude 3.0 or larger.

Table 5

1985 HVO EARTHQUAKE SUMMARY LIST PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JAN	1	221	44.91	19	22.84	155	1.70	7.94	2.4	2.3	41	5	137	.13	6	0.6	0.4	31	SF5
		1	648	56.85	19	24.05	155	25.46	9.00	1.8	1.9	35	4	32	.12	2	0.3	0.6	27	KAO
		1	1037	10.10	19	19.84	155	13.25	7.97	1.5	1.8	37	4	69	.13	5	0.4	0.7	28	SF2
		1	1153	46.95	19	17.97	155	22.02	6.78	1.8	2.2	31	3	112	.13	5	0.4	0.8	22	SWR
		1	1310	47.57	19	23.00	155	25.72	9.92		1.1	21	2	47	.11	3	0.5	0.9	14	KAO
		1	1728	21.78	19	25.69	155	18.68	7.30	1.4	1.2	18	4	147	.13	2	0.7	1.2	13	INT
		1	19 1	6.38	19	19.68	155	53.31	12.09	1.4	1.6	15	1	187	.10	7	0.8	0.6	6	KON
		2	129	21.78	19	18.82	155	15.54	6.73	1.6	1.6	28	1	100	.11	4	0.4	0.8	20	SF1
		2	459	6.93	19	21.68	155	18.16	4.69	1.3	1.2	8	1	114	.12	3	0.8	2.0	7	SWR
		2	5 0	44.34	19	24.49	155	16.76	11.41	1.2	0.7	8	1	146	.05	1	0.9	1.6	6	INT
		2	514	38.46	19	24.12	155	38.17	9.70	2.4	2.2	39	4	49	.14	6	0.4	0.6	31	MLO
		2	6 3	44.91	19	22.28	155	29.77	8.73	1.5	1.2	25	2	43	.09	4	0.4	0.9	18	KAO
		2	1058	31.36	20	5.93	155	23.32	8.92	2.5	2.6	25	2	224	.18	24	1.4	0.8	17	KEA
		2	1117	35.74	19	25.31	155	17.27	11.43	1.3	1.5	9	1	165	.04	1	0.9	1.3	7	INT
		2	1118	32.80	19	19.82	155	9.85	6.68	2.0	2.4	42	6	87	.13	4	0.4	0.8	31	SF3
		2	1935	51.81	19	21.64	155	4.40	8.18	1.7	1.9	30	4	78	.13	4	0.5	0.6	21	SF5
		2	2248	28.11	19	26.17	155	19.40	7.82	1.9	2.1	28	5	112	.11	4	0.4	0.6	19	KAO
		3	1014	54.72	19	22.41	155	30.00	8.62	1.5	1.4	30	3	45	.09	4	0.4	0.8	22	KAO
		3	1818	18.71	19	20.87	155	2.37	6.87	2.9	3.3	46	5	152	.16	2	0.5	0.6	33	SF5
		3	2016	27.07	19	22.47	155	27.63	9.31	2.0	1.5	37	5	39	.12	0	0.3	0.5	29	KAO
		3	2236	49.07	19	19.54	155	8.10	7.14	1.6	1.3	35	3	91	.10	4	0.4	0.7	22	SF4
		3	2255	14.39	19	19.50	155	11.91	5.19	1.8	1.7	17	0	92	.11	5	0.4	1.6	17	SF3
		3	2319	6.22	19	24.07	155	16.31	2.88	1.4	1.8	11	1	109	.09	2	0.4	0.4	9	SEC
		4	229	29.42	19	24.35	155	17.34	2.88	1.4	1.1	9	1	81	.11	1	0.6	0.5	9	SSC
		4	639	24.11	19	27.75	155	23.74	3.84	1.4	1.6	20	1	81	.10	4	0.4	1.0	12	KAO
		4	9 7	23.41	19	16.79	155	23.01	1.42		1.0	18	1	114	.14	5	0.4	1.2	16	SWR
		4	16 3	37.50	19	22.34	155	21.40	7.73	1.2	1.1	23	3	51	.12	5	0.4	1.1	18	KAO
		4	1820	42.05	19	19.28	155	10.45	7.38	1.6	1.3	19	0	103	.10	5	0.6	1.2	14	SF3
		4	2223	44.92	19	25.14	155	19.27	5.20	1.3	1.2	19	3	108	.10	3	0.4	1.2	16	KAO
		5	116	33.40	19	21.59	155	54.56	40.92	2.8	3.0	40	6	273	.08	23	1.0	0.9	33	KON
		5	2 5	44.58	19	30.58	155	54.67	11.30	2.8	2.8	30	3	184	.15	3	0.9	0.5	22	KON
		5	10 8	37.30	19	18.76	155	10.76	7.78	1.5	1.6	19	1	119	.07	6	0.5	1.1	16	SF3
		5	1057	20.03	19	27.33	155	20.69	11.58	1.9	1.8	30	4	99	.10	1	0.4	0.6	18	KAO
		5	1212	11.06	19	19.72	155	12.55	5.59	1.2		24	0	80	.13	5	0.5	1.2	19	SF2
		5	1520	5.00	19	19.89	155	16.69	36.13	2.5	2.8	52	7	91	.11	1	0.6	0.9	42	DEP
		5	1917	38.41	19	21.00	155	8.29	7.47	2.0	2.2	37	5	73	.13	3	0.4	0.6	28	SF4
		5	2155	32.93	19	12.91	155	22.02	14.36	1.7	1.7	24	2	163	.11	4	0.7	0.3	17	DEP
		6	732	58.31	19	21.94	155	0.64	6.12	1.3	1.3	13	1	169	.12	6	0.9	1.7	6	SF5
		6	938	59.94	19	22.35	155	28.74	9.83	3.0	3.3	46	7	36	.10	2	0.3	0.4	37	KAO
		6	17 1	9.44	19	22.36	155	29.50	9.39	1.8	1.4	26	2	51	.10	3	0.4	0.8	17	KAO
		6	2322	50.01	19	20.19	155	12.59	7.02	1.5	1.1	30	2	73	.12	5	0.4	0.7	23	SF2
		7	047	0.41	19	20.95	155	13.28	8.44	1.8	1.5	31	3	58	.12	3	0.4	0.6	26	SF2
		7	557	52.03	19	22.44	155	28.71	10.47	1.8	1.2	27	3	51	.11	2	0.3	0.6	19	KAO
		7	1628	47.29	19	27.42	155	29.60	9.92	1.8	1.4	35	5	47	.13	8	0.4	0.9	26	KAO
		8	040	55.68	19	23.96	155	15.64	3.13	1.3	1.4	18	2	111	.06	2	0.3	0.3	12	SEC

1985 HVO EARTHQUAKE SUMMARY LIST PAGE 2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JAN	8	047	47.55	19	22.38	155	2.19	7.79	1.9	1.4	34	4	141	.14	5	0.6	0.5	23	SF5
		8	1 8	37.50	19	20.06	155	10.73	5.49	1.3	1.3	40	1	86	.16	4	0.5	1.0	34	SF3
		8	648	49.95	19	19.92	155	12.45	5.87	1.2	1.1	30	3	78	.12	5	0.4	0.9	23	SF2
		8	954	2.06	19	17.79	155	28.52	9.54	1.8	2.2	38	2	46	.14	6	0.4	0.7	32	LSW
		8	1046	38.57	19	20.42	155	12.85	6.52	1.2	1.3	27	1	67	.13	4	0.6	1.1	24	SF2
		8	1335	37.90	19	43.03	155	2.43	0.00	2.1	2.7	35	2	197	.35	2	1.9	1.1	23	HIL B
		8	1355	7.90	19	26.33	154	55.78	6.20	1.9	1.6	22	2	151	.13	2	0.6	0.8	15	LER
		9	040	38.44	18	58.44	155	16.21	13.43	2.1	1.7	25	0	242	.11	29	2.6	0.7	20	LOI
		9	041	25.68	18	57.21	155	16.15	12.39	2.1	1.7	23	1	242	.11	31	1.6	0.7	15	LOI
		9	045	38.10	18	57.68	155	15.98	12.68	2.1	2.4	27	1	238	.10	30	1.4	0.6	21	LOI
		9	427	29.13	18	57.66	155	15.18	12.76	2.1	1.7	22	1	245	.12	31	1.7	0.7	11	LOI
		9	8 0	49.31	19	19.28	155	12.37	2.30	1.3	1.0	18	1	144	.17	6	0.7	2.4	15	SSF
		9	855	56.44	19	10.60	155	30.24	28.42	2.1	2.4	45	2	104	.08	5	0.6	1.1	42	DLS
		9	1538	33.50	18	44.14	155	12.62	14.43	2.4	2.5	27	3	286	.11	54	4.2	6.5	17	LOI L
		9	2019	50.28	19	19.37	155	11.49	7.66	1.4	1.8	34	1	98	.10	6	0.5	0.9	30	SF3
		9	2148	59.75	19	19.38	155	15.53	7.25	2.0	2.5	42	4	90	.12	4	0 4	0.7	30	SF1
		10	139	37.04	18	57.24	155	12.17	13.24	3.1	3.9	42	3	241	.12	36	1 5	0.9	36	LOI
		10	221	14.21	19	16.92	155	22.75	7.39	1.5	1.9	23	2	125	.11	6	0.5	1.1	17	SWR
		10	654	26.86	18	58.34	155	12.56	13.36	3.6	4.3	46	2	238	.10	34	1.2	0.6	40	LOI
		10	7 0	22.69	19	0.14	155	13.53	13.77	3.2	4.1	45	2	231	.11	31	1.2	0.6	33	LOI
		10	717	21.34	18	59.16	155	12.81	13.59	3.4	4.2	42	2	271	.10	33	1.6	0.6	35	LOI
		10	1553	17.44	19	30.52	155	28.84	5.22	2.0	1.5	37	6	54	.12	3	0.3	1.1	26	MLO
		10	1844	38.96	19	17.28	155	24.95	8.47	1.0	1.2	20	2	83	.09	6	0.5	1.0	12	SWR
		10	2120	5.15	19	19.98	155	12.81	7.69	1.3	1.5	20	1	73	.08	5	0.6	1.3	19	SF2
		11	131	52.00	19	25.70	155	21.88	8.06	1.5	1.4	35	5	33	.13	4	0.4	0.8	25	KAO
		11	4 5	11.87	19	22.66	155	20.77	9.12	1.7	1.4	37	4	45	.11	3	0.4	0.6	24	KAO
		11	2121	35.55	19	20.39	155	12.88	6.09	1.2	1.1	22	0	67	.14	4	0.6	1.4	18	SF2
		12	120	1.64	19	30.00	155	3.55	11.14	1.8	1.4	26	0	117	.11	1	0.6	0.9	20	GLN
		12	1153	24.97	19	20.62	155	11.88	8.95	2.5	3.0	54	7	72	.12	4	0.3	0.4	39	SF3
		12	1841	22.35	20	22.58	155	52.84	29.22	2.3	2.0	27	4	314	.12	30	2.1	1.5	24	KOH
		14	140	10.39	19	17.59	155	14.35	6.97	2.0	2.2	25	1	115	.09	2	0.6	0.9	18	SF2
		14	725	18.47	19	21.74	155	5.35	7.77	3.0	2.7	46	6	82	.12	4	0.4	0.5	34	SF4
		15	037	19.89	19	22.22	155	26.24	9.57	1.5	1.1	19	2	75	.11	2	0.5	1.0	14	KAO
		15	1125	3.43	19	19.67	155	12.21	5.74	1.2	1.6	32	3	86	.12	5	0.5	1.2	24	SF3
		15	1139	25.88	19	20.56	155	12.99	8.87	3.1	3.7	49	5	65	.13	4	0.4	0.4	40	SF2 F
		15	1424	41.29	19	18.92	155	13.28	7.47	2.1	2.6	39	3	102	.14	4	0.5	0.8	30	SF2 F
		15	1457	39.29	19	19.05	155	13.31	4.13	1.5	1.7	31	5	76	.14	4	0.4	1.5	23	SSF
		15	1722	16.09	19	19.33	155	8.69	6.18	1.6	2.2	36	3	82	.11	4	0.5	1.0	24	SF4
		15	18 2	17.33	19	21.68	155	4.80	5.87	1.6	1.5	27	2	80	.15	5	0.6	1.3	22	SF5
		15	1924	1.45	19	30.15	155	22.86	8.40	2.3	2.3	39	5	46	.12	1	0.3	0.6	31	MLO
		16	732	24.69	19	20.83	155	22.70	11.06	1.3	1.1	21	3	65	.12	2	0.5	1.1	13	SWR
		16	744	50.24	19	21.04	155	23.02	9.86	1.3	1.8	25	2	92	.10	2	0.5	0.9	19	SWR
		16	937	10.44	19	28.60	155	26.62	6.25	1.9	1.3	35	4	76	.12	6	0.4	0.9	20	KAO
		16	11 5	1.14	19	21.52	155	30.10	8.65	1.6	1.5	27	2	75	.12	5	0.4	1.0	23	KAO
		16	1235	24.36	19	18.21	155	16.60	7.58	2.0	2.5	37	3	120	.14	4	0.5	0.9	26	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JAN	16	2210	34.72	19	25.97	155	28.92	8.37	1.8	1.5	34	3	60	.12	7	0.4	0.9	23	KAO
		16	2240	29.91	19	23.63	154	58.64	6.43	1.8	1.6	26	1	167	.13	3	0.8	0.9	18	LER
		17	0	9 58.29	19	22.77	155	2.16	8.66	1.6	1.2	28	2	139	.15	5	0.8	0.5	19	SF5
		17	411	16.90	19	18.79	155	13.02	5.67	1.3	1.3	29	1	88	.11	3	0.5	1.3	21	SF2
		17	19	5 7.26	19	27.37	155	23.57	10.52	1.9	1.3	38	5	48	.10	5	0.4	0.6	28	KAO
		17	2154	11.02	19	17.54	155	27.69	8.77	1.8	2.0	34	3	50	.17	6	0.5	0.8	26	LSW
		18	829	20.05	19	26.86	155	28.52	7.02	1.6	1.2	30	4	56	.14	7	0.4	1.4	21	KAO
		18	1039	45.39	19	27.64	155	25.11	10.45	1.6	1.3	15	1	63	.10	5	0.6	1.7	13	KAO
		18	2159	33.76	19	24.04	155	15.70	2.63	0.7	1.0	8	1	124	.08	3	0.4	0.6	6	SEC
		19	126	53.76	19	23.96	155	15.68	3.26	1.1	1.7	17	3	111	.07	2	0.3	0.3	12	SEC
		19	434	30.99	19	30.23	155	26.84	4.79	1.6	1.4	22	4	116	.12	4	0.4	1.3	10	MLO
		19	534	18.44	19	20.55	155	13.18	7.17	1.5	1.3	27	2	63	.12	4	0.5	0.9	22	SF2
		19	1121	38.42	19	20.05	155	12.34	7.20	1.9	2.2	45	3	77	.13	5	0.4	0.7	36	SF2
		19	1650	22.05	19	20.11	155	3.86	6.91	1.6	1.5	32	1	133	.13	2	0.6	0.7	26	SF5
		19	19	1 5.04	19	19.70	155	12.30	5.53	1.2	1.3	30	2	84	.12	5	0.5	1.2	27	SF2
		19	2319	36.47	19	26.68	155	28.94	8.97	1.9	1.3	35	5	43	.09	7	0.3	0.8	28	KAO
		19	2323	54.30	19	19.21	155	13.62	5.08	1.9	2.5	44	2	66	.13	4	0.4	1.2	37	SF2
		20	931	16.83	19	44.52	155	57.49	14.34	1.6	1.4	21	1	256	.10	14	1.9	0.6	12	HUA
		20	1210	52.58	19	21.33	155	24.31	9.15	1.5	1.1	29	3	82	.12	3	0.5	0.8	20	SWR
		20	1342	7.21	19	20.59	155	30.10	3.77	1.8	1.8	23	1	63	.11	6	0.4	2.3	21	KAO
		20	1615	47.28	19	13.38	155	29.81	10.00	1.8	1.2	22	1	74	.11	3	0.5	0.9	18	LSW
		20	17	3 43.82	19	25.56	155	19.43	6.20	1.4	1.3	23	2	124	.11	3	0.5	1.1	19	KAO
		20	1740	36.04	19	22.79	155	21.06	9.48	1.3	1.3	33	3	47	.10	3	0.4	0.8	22	KAO
		20	2232	59.07	19	21.43	155	23.24	7.55	1.2	1.1	17	3	59	.08	2	0.4	0.9	12	SWR
		20	2258	46.40	20	13.75	155	45.52	39.31	2.6	2.3	24	2	298	.12	11	2.7	1.6	17	KOH
		21	313	23.51	19	19.68	155	11.29	8.80	2.8	3.4	51	6	92	.12	5	0.3	0.4	38	SF3
		21	717	40.47	19	19.92	155	11.76	6.51	1.7	1.3	32	3	85	.11	5	0.4	0.8	23	SF3
		21	840	45.24	18	55.70	155	11.26	12.04	2.6	3.2	38	2	248	.13	39	1.5	0.8	21	LOI
		21	852	28.31	18	56.82	155	11.64	15.43	3.5	4.4	54	7	243	.12	37	1.2	4.0	48	LOI
		21	855	50.83	18	56.34	155	11.57	13.45	2.7	3.5	44	2	245	.12	38	1.6	1.3	30	LOI
		21	1053	41.30	19	21.08	155	21.77	8.75	1.6	1.8	30	4	62	.12	3	0.4	0.8	21	SWR
		21	12	4 59.26	19	28.19	155	26.39	3.18	1.8	1.6	30	4	78	.16	6	0.4	1.5	24	KAO
		21	1731	22.26	19	24.07	155	15.74	3.51	0.9	1.2	11	2	117	.09	2	0.4	0.4	7	SEC
		22	542	30.79	19	25.85	155	27.16	7.45	1.8	1.9	37	4	46	.14	4	0.4	0.8	28	KAO
		22	1410	43.61	19	22.83	155	26.78	9.20	1.4	1.1	31	3	49	.13	2	0.4	0.7	25	KAO
		22	2050	48.02	19	21.65	155	0.94	6.97	2.3	2.8	41	5	171	.14	5	0.5	0.6	30	SF5
		22	2314	9.94	19	21.96	155	2.87	7.58	2.1	2.3	40	4	119	.13	4	0.4	0.6	31	SF5
		23	225	23.06	19	13.62	155	29.77	9.49	1.7	1.4	22	0	74	.10	3	0.4	0.9	18	LSW
		23	1813	20.68	19	20.06	155	7.88	7.08	2.1	2.4	45	6	91	.12	5	0.4	0.7	35	SF4
		23	1854	59.93	19	20.57	155	13.02	6.89	1.4	1.2	33	3	64	.12	4	0.5	0.8	29	SF2
		23	1951	13.48	19	20.34	155	4.91	4.96	1.4	1.5	22	1	122	.15	4	0.6	1.8	16	SSF
		23	2216	40.28	19	20.62	155	12.62	7.29	1.5	1.8	36	4	67	.12	4	0.5	0.8	25	SF2
		23	2232	14.79	19	23.66	155	15.67	2.64	1.1	1.6	19	3	96	.11	2	0.3	0.3	14	SEC
		23	2233	56.53	19	14.36	155	35.21	9.41	2.1	2.0	37	3	79	.21	3	0.6	0.9	27	LSW
		24	337	39.13	19	19.90	155	10.71	6.57	2.3	2.5	38	2	89	.17	4	0.5	1.0	32	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JAN	24	1722	39.01	19	23.45	155	29.80	8.48	1.2	1.1	23	2	68	.08	4	0.4	0.9	19	KAO
		25	410	59.83	19	20.34	155	3.61	8.61	2.8	3.2	45	3	112	.12	1	0.6	0.5	39	SF5
		25	1340	31.00	19	21.32	155	17.67	30.52	2.2	2.8	46	7	31	.12	2	0.6	0.9	33	DEP
		25	1611	33.80	19	10.35	155	37.69	8.22	2.3	1.9	28	1	102	.18	9	0.8	1.5	26	LSW
		25	1645	13.15	19	24.05	155	17.76	14.08	1.6	1.9	10	1	59	.14	2	1.0	1.3	4	DEP L
		25	1746	13.12	19	23.45	155	16.64	5.87	1.3	2.1	13	0	84	.10	1	0.6	0.9	3	INT L
		25	1956	56.31	19	19.22	155	15.31	7.14	1.3	1.8	34	2	99	.10	4	0.4	0.8	25	SF1
		25	2136	19.57	19	17.02	155	21.97	4.72	1.4	1.8	29	4	143	.12	6	0.4	2.5	23	SWR
		25	2330	9.16	19	19.80	155	7.65	8.14	1.5	1.3	25	2	99	.08	5	0.5	1.0	18	SF4
		25	2336	24.72	19	18.91	155	15.22	6.82	1.2	1.5	25	1	104	.11	4	0.5	1.0	19	SF1
		26	117	25.75	18	47.96	155	9.43	15.62	2.2	1.8	35	5	268	.10	51	2.2	5.8	23	LOI
		26	133	15.41	19	20.23	155	7.76	6.69	1.4	1.5	35	3	91	.12	5	0.5	0.7	26	SF4
		26	153	18.86	19	25.72	155	21.99	8.65	1.3	1.1	30	2	42	.12	4	0.4	0.8	25	KAO
		26	821	52.43	19	21.03	155	29.25	4.80	1.7	1.8	24	2	45	.12	4	0.4	1.4	17	KAO
		26	1148	43.27	19	19.14	155	15.16	5.98	1.2	1.1	23	1	99	.12	4	0.5	1.3	16	SF1
		26	1733	3.09	19	19.13	155	15.68	5.49	1.2	1.5	29	0	104	.11	4	0.4	1.1	23	SF1
		26	1810	24.52	19	35.85	154	59.84	42.91	1.9	1.7	42	5	171	.11	12	0.9	1.5	26	HIL
		27	039	34.11	19	21.69	155	6.40	6.68	1.8	2.5	38	3	81	.12	3	0.5	0.9	27	SF4
		27	132	58.10	19	14.27	155	37.04	8.67	2.3	2.5	37	4	142	.19	1	0.6	1.0	28	LSW
		27	153	58.62	19	25.27	155	19.77	4.76	0.9	1.1	15	2	116	.10	3	0.5	1.3	13	KAO
		27	824	34.36	19	23.52	155	29.99	9.34	1.4	1.2	21	2	45	.07	5	0.4	1.0	18	KAO
		27	1625	33.69	19	23.55	155	18.06	9.27	1.4	1.9	12	1	50	.12	3	0.7	1.6	1	INT L
		27	1923	8.31	19	20.30	155	12.41	7.03	1.2	1.5	32	1	73	.12	4	0.5	0.8	23	SF2
		27	22	3 19.19	19	19.57	155	11.66	6.14	1.8	2.2	38	3	92	.14	6	0.5	1.0	27	SF3
		28	0	6 10.12	19	27.20	154	52.66	8.36	2.7	3.3	40	3	153	.13	3	0.8	0.4	34	LER
		28	040	6.21	19	56.38	155	30.74	32.89	2.3	1.7	34	6	160	.08	18	0.6	1.3	28	KEA
		28	146	30.21	19	21.03	155	12.76	7.31	1.9	2.6	41	5	61	.13	3	0.4	0.6	32	SF2
		28	341	6.56	19	17.23	155	13.44	11.31	2.6	3.3	51	6	153	.12	9	0.6	0.4	44	SF2
		28	530	12.80	19	22.53	155	30.09	9.21	1.6	1.3	28	3	45	.08	4	0.4	0.8	21	KAO
		28	15	4 8.69	19	22.98	155	1.86	7.76	2.0	1.7	35	3	143	.15	5	0.6	0.5	24	SF5
		28	1559	0.99	19	20.44	155	10.73	7.62	1.8	1.9	43	3	79	.12	3	0.4	0.7	34	SF3
		28	19	7 54.02	19	22.52	155	8.59	2.08	1.5	1.4	17	2	130	.07	2	0.7	0.4	12	SER
		28	2036	33.47	19	20.08	155	12.99	5.98	1.3	1.4	25	3	70	.11	5	0.4	1.0	21	SF2
		28	2257	30.38	19	11.74	155	27.61	7.59	2.0	1.3	33	4	113	.19	4	0.7	1.6	22	LSW
		28	2257	58.99	19	15.72	155	22.66	6.14	1.8	2.1	29	3	154	.11	4	0.5	1.2	24	SWR
		29	434	55.65	19	17.69	155	30.21	9.83	1.7	1.5	32	2	69	.13	5	0.4	1.0	22	LSW
		29	654	54.19	19	31.15	155	53.23	7.56	2.2	1.7	23	2	191	.19	5	1.5	0.9	15	KON
		29	16	3 34.22	19	21.79	155	1.14	7.94	2.3	2.6	36	2	164	.14	5	0.7	0.5	30	SF5
		29	2113	50.02	19	18.97	155	13.93	7.15	1.4	2.0	36	3	68	.10	4	0.4	0.7	27	SF2
		30	412	9.83	19	23.71	155	0.57	6.68	2.1	2.2	26	3	185	.12	4	0.9	1.1	20	SF5
		30	5	3 59.95	19	25.76	155	21.76	8.97	2.2	2.5	34	5	48	.14	4	0.4	0.8	27	KAO
		30	548	14.07	19	16.13	155	22.82	6.28	1.8	2.4	31	4	129	.11	4	0.4	0.9	27	SWR
		30	1731	46.15	19	19.35	155	11.46	6.78	1.3	1.1	15	0	99	.09	6	0.6	1.3	14	SF3
		30	2249	31.77	19	21.80	155	12.01	2.98	1.6	2.2	16	1	79	.05	2	0.3	0.4	12	SER
		31	213	31.99	19	17.62	155	25.90	8.34	1.5	2.2	24	3	59	.14	7	0.4	1.0	20	LSW

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JAN	31	223	16.90	19	19.66	155	12.46	7.99	1.3	1.2	21	2	82	.06	5	0.4	0.7	15	SF2
		31	1336	27.60	19	43.06	155	3.75	0.01	1.6	2.3	19	1	221	.21	3	2.7	1.5	15	HIL
		31	1741	10.20	19	28.90	154	53.36	0.07	2.4	2.5	23	1	105	.18	4	0.5	0.9	16	SLE
		31	1757	11.72	19	20.60	155	11.86	8.81	2.9	3.1	38	4	72	.13	4	0.4	0.5	33	SF3
		31	2143	29.14	19	28.37	155	28.56	10.08	1.9	1.3	26	3	58	.10	7	0.4	0.8	22	KAO
	FEB	1	1717	12.58	19	9.83	155	41.36	8.57	2.7	1.9	30	2	129	.25	12	0.9	1.6	18	LSW
		1	2036	15.17	19	20.60	155	12.49	7.46	1.6	1.5	29	3	68	.12	4	0.5	0.8	24	SF2
		1	2233	28.59	19	8.42	155	34.72	7.97		1.3	16	0	128	.12	12	0.6	2.1	11	LSW
		1	23 1	22.36	19	20.62	155	9.42	7.89	1.6	1.3	30	4	70	.10	3	0.5	0.8	22	SF3
		1	2314	44.44	19	23.13	155	17.08	11.49	1.6	1.2	39	6	38	.10	1	0.4	0.5	28	INT
		2	224	34.45	19	14.73	155	29.61	40.76	2.6	2.1	42	5	68	.09	1	0.6	1.1	34	DLS
		2	257	18.15	19	21.34	155	0.75	6.78	1.7	1.1	23	1	180	.11	5	0.7	1.2	16	SF5
		2	614	9.03	19	24.07	155	15.56	3.19	1.2	1.2	13	3	117	.07	2	0.4	0.5	7	SEC
		2	7 6	47.51	19	24.97	155	19.14	5.23	1.3	1.0	16	3	101	.10	3	0.7	1.6	12	KAO
		2	927	18.92	19	27.55	155	27.73	9.61	2.4	2.1	40	4	53	.15	6	0.4	0.7	27	KAO
		2	1328	2.67	19	21.84	155	18.31	2.39	1.4	1.5	15	2	66	.09	4	0.3	0.8	8	SWR
		2	15 8	32.47	19	20.05	155	13.03	6.57	1.8	1.9	34	4	69	.12	5	0.4	0.7	23	SF2
		2	1526	30.66	19	22.95	155	26.70	10.73	2.5	2.5	43	4	40	.12	2	0.3	0.5	32	KAO
		2	1912	15.91	19	25.12	155	20.72	2.94	0.7	1.2	13	1	84	.05	5	0.4	1.1	7	KAO
		2	1957	30.29	19	20.11	155	9.47	7.20	1.5	1.1	22	0	79	.09	4	0.6	1.2	17	SF3
		3	542	11.42	19	21.64	155	5.15	6.09	1.6	1.2	25	3	83	.13	5	0.5	1.1	16	SF5
		3	1526	49.20	19	22.74	155	3.65	7.93	1.3	1.2	15	1	104	.11	4	0.6	1.0	7	SF5
		3	23 7	44.43	19	19.62	155	30.44	8.28	1.6	1.4	30	1	58	.13	7	0.5	1.2	24	KAO
		3	2342	11.24	19	17.05	155	25.48	5.37		0.9	14	0	129	.18	7	0.8	2.2	9	LSW
		4	123	49.02	19	26.29	155	28.91	6.63	1.5	1.1	16	0	83	.07	7	0.5	1.8	12	KAO
		4	315	51.81	19	22.07	155	17.47	31.65	1.7	1.6	34	2	40	.08	3	0.6	0.9	27	DEP
		4	4 6	16.79	19	21.86	155	12.76	3.08	1.1	1.2	13	0	87	.05	2	0.4	0.5	12	SER
		4	744	10.03	19	18.69	155	12.26	5.29	1.3	1.1	24	2	107	.10	4	0.5	1.0	19	SF3
		4	1217	14.44	19	23.73	155	15.71	2.84	1.6	2.1	27	4	81	.10	2	0.3	0.3	18	SEC
		4	1218	36.33	19	20.17	155	11.54	7.06	1.6	1.8	31	3	82	.11	5	0.5	0.8	25	SF3
		4	2134	2.27	19	23.95	155	16.14	2.96	1.3	1.8	17	3	107	.09	1	0.4	0.3	9	SEC
		4	2338	33.19	19	23.87	155	15.72	2.55		1.1	16	3	107	.09	2	0.4	0.3	7	SEC
		5	3 0	57.53	19	24.24	155	17.35	1.63	1.2	2.1	14	2	81	.08	1	0.4	0.2	9	SSC
		5	1149	29.83	19	25.79	155	28.95	8.44	1.6	1.1	26	2	41	.11	7	0.4	1.0	20	KAO
		5	15 9	8.12	19	23.56	155	30.11	8.09	1.8	1.3	26	2	49	.09	5	0.4	1.0	20	KAO
		5	1614	42.03	19	21.45	155	4.64	6.75	1.4	1.2	23	2	85	.11	4	0.5	0.8	15	SF5
		6	630	51.77	19	22.32	155	29.99	8.94	2.1	2.9	32	1	45	.11	4	0.4	0.7	24	KAO
		6	732	1.86	19	22.80	155	30.27	8.42	2.4	2.0	41	3	47	.11	5	0.3	0.6	34	KAO
		6	858	25.67	19	22.04	155	2.32	0.01	1.5	1.6	25	1	134	.20	4	0.5	1.0	18	SSF
		6	945	41.62	19	27.15	155	29.54	8.98	1.5	1.4	31	4	87	.09	7	0.4	0.9	23	KAO
		6	1458	9.92	19	25.76	155	21.86	9.47	1.5	1.3	28	2	44	.11	4	0.4	0.7	20	KAO
		7	445	6.67	19	23.25	155	27.26	9.45	1.4	1.3	27	3	33	.11	2	0.4	0.7	19	KAO
		7	7 7	25.82	19	19.44	155	10.37	9.23	2.9	3.4	47	7	99	.12	5	0.4	0.4	38	SF3
		7	8 1	36.60	19	18.84	155	13.27	6.32	1.7	1.9	30	5	80	.10	3	0.4	0.8	21	SF2
		7	13 0	3.23	19	20.66	155	6.44	7.39	2.1	1.1	38	5	102	.11	5	0.4	0.6	28	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	FEB	8	430	13.83	19	13.43	155	27.69	8.27	2.4	2.0	38	0	141	.15	5	0.6	0.8	30	LSW F
		8	2041	52.85	19	22.49	155	30.12	9.67	2.1	2.1	34	2	42	.10	4	0.4	0.7	27	KAO
		8	2252	54.22	19	26.60	155	28.81	8.40	1.8	1.8	35	3	58	.12	7	0.4	0.9	27	KAO
		8	2323	33.66	19	30.46	155	23.05	8.40	2.2	2.0	39	6	73	.14	1	0.4	0.7	29	MLO
		9	241	21.25	19	18.83	155	9.85	6.79	1.5	1.1	19	0	114	.09	4	0.5	1.3	14	SF3
		9	259	15.06	19	20.23	155	12.70	7.45	1.5	1.9	33	1	71	.12	5	0.5	0.8	29	SF2
		9	4 9	11.96	19	21.22	155	1.69	0.53	2.0	2.8	27	2	166	.10	3	0.4	0.8	18	SSF
		9	446	21.30	20	48.97	154	53.26	9.73	2.6	2.8	37	1	307	.13	113	7.7	9.5	34	DIS
		9	843	34.34	19	22.35	155	28.96	10.67	2.9	3.1	47	2	35	.12	2	0.3	0.4	44	KAO
		9	850	53.90	19	22.39	155	30.05	9.35	1.7	1.1	21	2	51	.07	4	0.5	1.0	18	KAO
		9	1059	32.07	19	21.05	155	28.01	9.54	1.8	1.8	30	2	49	.12	3	0.4	0.6	23	KAO
		9	18 6	58.88	19	20.02	155	12.71	5.89	1.3	1.9	33	2	74	.12	6	0.4	0.9	29	SF2
		9	19 7	44.84	19	18.76	155	15.24	4.88	1.0	1.3	26	1	107	.12	4	0.5	1.5	19	SSF
		9	2240	11.80	19	21.48	155	30.16	7.52	1.7	1.3	32	3	46	.13	5	0.5	1.0	25	KAO
		10	113	40.60	19	57.65	155	30.58	12.77	3.1	3.6	50	7	170	.14	19	0.9	1.5	42	KEA
		10	1644	16.32	19	20.81	155	13.37	6.35	1.7	1.9	41	3	58	.14	3	0.4	0.8	32	SF2
		10	1828	22.80	19	25.94	155	30.53	7.90	2.0	1.7	29	4	86	.12	8	0.4	1.1	18	KAO
		10	2350	20.22	19	19.48	155	12.58	5.13	1.0	1.1	26	0	84	.11	5	0.5	1.7	16	SF2
		11	918	43.66	19	21.16	155	15.29	32.75	2.6	2.6	48	7	68	.12	3	0.5	0.9	39	DEP
		11	12 5	19.46	19	19.30	155	11.89	6.18	1.3	1.1	24	1	97	.12	5	0.5	1.2	18	SF3
		11	1249	27.04	19	25.63	155	29.28	8.06	1.7	1.1	25	2	63	.11	7	0.4	1.1	22	KAO
		11	1758	24.86	19	25.51	155	29.17	8.93	1.9	1.5	31	3	69	.08	6	0.4	0.8	21	KAO
		11	1952	17.67	19	19.76	155	12.38	8.60	2.8	3.2	45	6	82	.10	5	0.3	0.3	33	SF2
		11	2022	54.84	19	22.49	155	30.04	9.24	1.7	1.5	28	3	45	.10	4	0.4	0.8	23	KAO
		11	2035	42.55	19	20.60	155	12.58	8.18	2.5	3.0	51	6	104	.14	4	0.4	0.4	40	SF2
		12	0 3	1.40	19	22.20	155	3.26	8.50	1.8	1.7	26	2	116	.10	4	0.5	0.7	18	SF5
		12	219	33.49	19	19.55	155	12.42	8.26	1.4	1.1	21	1	85	.04	5	0.5	0.9	15	SF2
		12	436	43.53	19	19.71	155	7.82	7.59	1.9	2.3	37	6	97	.10	4	0.4	0.6	28	SF4
		12	742	53.16	19	24.90	155	19.62	5.25	1.0	1.1	14	1	112	.07	2	0.5	1.3	12	KAO
		12	13 3	52.72	19	19.73	155	10.31	7.53	1.5	1.3	24	1	92	.06	4	0.5	1.1	18	SF3
		12	1922	9.33	19	18.62	155	25.20	8.90	1.0	1.3	23	2	68	.11	5	0.5	0.9	18	LSW
		12	2123	25.98	19	19.35	155	15.27	6.64	1.3	1.3	25	0	96	.10	4	0.5	1.1	21	SF1
		12	2230	2.42	19	19.75	155	12.23	6.69	1.3	1.3	25	1	84	.10	5	0.5	1.1	22	SF3
		12	2248	32.37	19	20.02	155	11.37	7.79	1.4	1.1	23	1	85	.11	5	0.6	1.1	18	SF3
		13	453	54.84	19	27.64	155	24.24	9.84	1.8	1.5	14	0	68	.09	4	0.7	1.8	14	KAO
		13	541	55.38	19	27.74	155	24.22	10.62	1.9	1.4	24	2	69	.11	4	0.5	0.8	22	KAO
		13	10 6	35.43	19	23.79	155	1.57	6.26	1.5	1.5	20	2	188	.08	5	1.0	1.0	14	SF5
		13	1340	21.42	19	20.32	155	11.77	8.26	2.2	2.1	42	6	77	.11	5	0.4	0.6	33	SF3
		13	1357	8.40	19	21.67	155	28.78	9.41	1.6	1.4	33	2	39	.10	3	0.3	0.7	25	KAO
		13	1540	16.15	18	8.90	155	34.78	30.24	2.9	2.7	40	4	320	.11	93	2.0	5.2	39	DIS
		14	5 3	15.87	19	24.67	155	16.94	10.08	1.5	1.2	18	0	77	.08	0	0.6	0.9	11	INT L
		14	522	5.19	19	24.28	155	16.47	8.95	1.6	1.5	15	0	101	.13	1	0.7	1.0	8	INT L
		14	6 1	16.29	19	20.53	155	8.42	7.46	1.3	1.2	18	1	76	.13	4	0.6	1.0	14	SF4
		15	126	55.12	19	25.26	155	30.30	7.52	1.6	1.2	30	3	67	.10	7	0.4	1.1	21	KAO
		15	753	24.59	19	19.51	155	11.80	6.19	1.5	1.5	29	1	93	.10	5	0.5	0.9	23	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	FEB	15	18 0	14.49	19	27.40	155	13.35	34.68	2.0	1.8	47	6	39	.11	5	0.5	1.0	38	DEP
		15	1923	46.04	19	15.94	155	21.81	6.66	1.6	1.6	24	3	169	.10	5	0.6	1.2	18	SWR
		15	2134	14.79	19	20.56	155	9.99	7.76	1.5	1.5	29	3	74	.10	3	0.5	0.7	21	SF3
		16	025	26.26	19	19.98	155	11.56	7.29	1.4	1.1	30	3	85	.15	5	0.6	1.0	27	SF3
		16	045	23.51	19	17.44	155	20.34	6.64	1.5	1.1	18	4	158	.09	3	0.6	1.2	15	SWR
		16	113	8.04	19	19.57	155	12.29	8.00	1.4	1.2	16	1	86	.07	5	0.5	1.1	15	SF3
		16	4 2	21.44	19	21.76	155	6.83	7.80	1.5	1.1	24	0	78	.11	3	0.5	1.0	21	SF4
		16	634	55.47	19	20.83	155	29.49	6.87	2.4	2.3	35	2	45	.12	5	0.4	0.8	31	KAO
		16	20 7	57.85	19	27.62	155	51.23	8.01	2.6	2.6	34	5	110	.15	7	0.5	0.6	25	KON
		17	215	55.35	19	25.99	155	19.60	6.25	1.2	1.5	11	1	106	.13	4	0.9	1.5	5	KAO L
		17	324	52.39	19	20.55	155	11.64	7.64	1.9	1.7	39	5	75	.13	4	0.5	0.7	32	SF3
		17	332	32.83	19	19.80	155	10.70	9.24	2.7	2.8	47	6	91	.10	4	0.3	0.4	34	SF3
		17	343	43.80	19	29.62	155	14.50	11.13	1.8	1.9	12	1	237	.13	10	1.7	1.7	2	GLN L
		17	544	23.05	19	19.31	155	26.68	9.15	1.6	1.3	34	3	53	.13	6	0.4	0.7	25	KAO
		17	614	9.77	19	24.65	155	16.90	6.89	1.4	1.8	14	1	86	.17	1	0.8	1.1	11	INT L
		17	646	52.45	19	19.74	155	11.41	7.11	1.4	1.2	26	2	90	.11	5	0.6	1.1	18	SF3
		17	1232	54.55	19	24.88	155	16.08	14.51	1.7	1.3	15	3	150	.10	3	1.1	1.1	4	DEP L
		17	1313	2.67	19	22.63	155	2.92	8.42	2.0	1.6	30	3	124	.15	4	0.6	0.7	21	SF5
		17	19 0	27.03	19	17.03	155	24.99	8.62	1.7	1.7	31	3	72	.14	5	0.4	0.8	22	SWR
		17	2058	35.89	19	25.33	155	20.76	9.12	2.3	2.2	48	6	38	.12	4	0.3	0.4	38	KAO
		17	2318	11.24	19	27.24	155	16.02	12.45	1.6	1.3	11	2	233	.11	4	1.8	1.1	1	INT L
		17	2321	57.15	19	24.69	155	16.89	3.65	1.0	1.2	12	0	107	.10	2	0.5	0.6	6	SNC L
		17	2342	16.80	19	20.61	155	12.97	9.04	1.6	1.2	18	3	64	.06	4	0.6	1.0	14	SF2
		17	2343	27.59	19	20.23	155	11.37	8.56	2.4	2.3	45	5	81	.12	4	0.4	0.5	35	SF3
		18	419	31.76	19	14.93	155	35.34	7.68	2.8	2.7	41	3	103	.17	3	0.5	0.8	35	LSW
		18	6 5	30.04	19	22.41	155	26.94	9.80	2.9	2.9	47	6	39	.14	1	0.3	0.5	33	KAO
		19	223	34.30	19	19.61	155	12.39	5.73	1.3	1.3	24	1	84	.11	5	0.5	1.4	18	SF2
		19	526	7.19	19	18.81	155	15.20	5.52	1.4	1.6	28	1	105	.11	4	0.4	1.2	23	SF1
		19	754	59.07	19	18.42	155	13.07	6.06	1.4	1.5	28	1	94	.09	3	0.5	0.8	23	SF2
		19	911	10.78	19	20.84	155	2.89	6.87	2.6	3.0	38	5	124	.10	2	0.4	0.5	30	SF5
		19	1424	26.24	19	20.55	155	12.76	6.61	1.3	1.5	26	2	66	.11	4	0.5	0.7	23	SF2
		19	1447	42.35	19	18.98	155	14.71	6.08	1.3	1.3	22	1	95	.10	4	0.5	1.1	19	SF1
		19	18 6	21.53	19	17.75	155	23.66	8.61	1.8	1.9	31	3	92	.14	5	0.4	0.8	23	SWR
		19	2130	16.45	19	20.04	155	7.25	7.76	2.4	2.6	38	3	104	.09	5	0.4	0.6	29	SF4
		20	353	13.64	19	21.86	155	6.95	8.97	1.6	2.2	26	1	75	.07	3	0.4	0.8	19	SF4
		20	923	16.49	19	19.33	155	11.15	6.00	1.4	1.0	24	3	101	.10	6	0.5	1.3	20	SF3
		20	1033	21.04	19	22.38	155	29.77	9.68	2.7	2.9	38	2	34	.10	4	0.4	0.7	35	KAO
		20	1242	52.52	19	25.26	155	30.48	9.25	2.0	1.2	29	3	59	.10	7	0.4	1.1	23	KAO
		20	13 5	34.28	19	25.48	155	30.26	9.41	2.3	2.2	39	4	38	.12	7	0.3	0.9	31	KAO
		20	1321	23.20	19	18.35	155	13.34	7.13	1.8	1.8	39	2	84	.10	2	0.5	0.7	29	SF2
		20	1414	25.33	19	18.03	155	13.19	6.50	1.3	1.2	22	2	98	.08	2	0.5	1.0	18	SF2
		20	2311	43.82	19	23.60	155	27.08	9.75	1.4	1.3	23	3	79	.10	2	0.4	0.9	16	KAO
		21	855	48.70	19	20.42	155	12.91	8.08	1.9	1.6	39	3	66	.11	4	0.4	0.6	29	SF2
		21	928	29.78	19	23.17	155	25.48	9.99	2.0	1.8	41	3	30	.12	4	0.4	0.6	31	KAO
		21	1035	3.26	19	20.43	155	12.95	6.72	1.3	1.0	24	0	65	.12	4	0.5	0.9	21	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	FEB	21	1948	29.39	19	19.68	155	12.65	9.45	4.8	4.7	48	3	80	.10	5	0.4	0.4	43	SF2 F
		21	1957	17.40	19	19.40	155	12.08	7.00	1.7	1.3	30	3	92	.10	5	0.5	0.9	21	SF3
		21	1959	49.80	19	25.52	155	21.23	9.93	1.9	1.3	37	5	34	.10	4	0.4	0.7	30	KAO
		21	20 3	9.26	19	20.39	155	12.62	6.25	1.5	0.9	27	2	70	.14	4	0.5	1.1	18	SF2
		21	20 5	29.56	19	20.49	155	12.30	7.93	2.3	2.2	45	4	71	.12	4	0.4	0.6	39	SF3
		21	20 9	7.79	19	20.23	155	12.03	4.20	1.3	0.3	17	1	143	.12	5	0.8	2.4	11	SSF
		21	2030	34.01	19	20.44	155	11.88	8.46	2.2	1.8	45	4	75	.11	5	0.4	0.6	38	SF3
		21	2049	6.44	19	19.27	155	12.04	7.30	1.3	1.0	21	1	95	.10	5	0.6	1.1	17	SF3
		21	2139	47.61	19	20.14	155	12.07	7.85	1.6	0.9	21	1	78	.08	5	0.6	1.0	15	SF3
		21	22 7	49.19	19	19.45	155	13.40	5.23	1.1	0.8	26	2	70	.12	4	0.4	1.5	21	SF2
		21	2257	8.57	19	23.73	155	0.62	8.47	2.4	2.1	40	5	143	.14	4	0.6	0.4	31	SF5
		21	23 3	35.59	19	19.23	155	13.09	6.76	1.7	1.6	39	5	78	.12	4	0.4	0.9	28	SF2
		22	114	42.31	19	18.78	155	13.45	6.91	1.4	1.5	23	2	76	.08	3	0.4	0.9	17	SF2
		22	154	14.66	19	19.77	155	11.84	7.98	1.5	1.1	31	3	87	.09	5	0.4	0.6	21	SF3
		22	257	56.55	19	15.47	155	22.76	3.96	1.5	1.6	23	2	137	.09	3	0.4	1.2	14	SWR
		22	333	3.99	19	19.50	155	11.62	7.06	1.6	1.2	27	1	95	.10	6	0.5	1.1	21	SF3
		22	343	6.93	19	15.10	155	22.75	6.00	1.6	1.1	21	2	168	.11	3	0.6	1.5	15	SWR
		22	514	31.86	19	15.48	155	22.96	5.98	1.9	1.8	23	2	164	.11	3	0.7	1.7	18	SWR
		22	517	22.90	19	15.82	155	23.01	5.30	2.3	2.5	38	3	131	.14	3	0.5	1.2	35	SWR
		22	6 2	39.31	19	19.88	155	7.30	7.34	1.6	0.9	30	1	105	.09	5	0.5	0.8	22	SF4
		22	646	37.02	19	26.10	155	23.24	4.61	1.7	1.3	18	2	58	.23	4	0.7	2.3	14	KAO
		22	755	14.39	19	21.26	155	2.15	3.95	1.8	1.3	15	0	159	.07	3	0.6	1.2	12	SSF
		22	1317	0.06	19	41.94	155	1.62	0.00	2.1	2.2	27	1	166	.20	0	1.3	0.7	15	HIL B
		22	1441	45.29	19	22.87	155	2.16	7.60	2.1	1.6	30	3	138	.14	5	0.6	0.8	18	SF5
		22	22 4	38.97	19	24.10	155	15.64	3.93	1.6	2.0	20	4	107	.10	2	0.4	0.5	12	SEC
		22	2359	14.54	19	18.26	155	13.16	7.43	1.5	1.5	31	4	94	.09	2	0.5	0.8	24	SF2
		23	141	39.68	19	19.13	155	13.14	6.98	1.3	1.2	28	1	80	.11	4	0.5	1.1	23	SF2
		23	219	12.24	19	18.17	155	13.22	7.08	1.4	1.1	22	1	93	.08	2	0.6	1.1	12	SF2
		23	527	0.97	19	19.69	155	13.17	6.35	1.3	1.1	22	0	71	.12	5	0.5	1.5	17	SF2
		23	818	1.16	19	20.05	155	11.31	9.01	1.4	1.3	22	0	85	.08	5	0.6	1.0	18	SF3
		23	818	35.18	19	19.76	155	11.35	4.61	1.4	1.1	22	0	91	.20	5	0.7	3.1	19	SSF
		23	843	56.33	19	18.44	155	13.06	8.56	1.9	2.2	43	5	136	.13	8	0.5	0.7	35	SF2
		23	958	10.06	19	16.43	155	22.26	8.46	2.1	2.7	41	4	133	.14	5	0.5	0.8	29	SWR
		23	1445	18.86	19	19.34	155	12.04	5.97	1.5	1.5	28	2	94	.09	5	0.5	1.2	22	SF3
		23	15 3	19.18	19	25.89	155	30.14	9.93	2.1	1.7	34	3	63	.10	8	0.3	0.7	21	KAO
		23	15 6	27.59	19	19.28	155	8.83	7.34	1.6	1.9	26	1	87	.08	4	0.5	1.0	23	SF4
		23	16 2	9.15	19	18.31	155	13.58	6.81	1.4	1.5	28	2	92	.08	2	0.5	0.8	19	SF2
		23	18 2	30.31	19	28.68	155	26.92	3.34	2.0	1.3	32	5	71	.13	6	0.3	1.3	20	KAO
		24	840	31.19	19	18.65	155	12.87	8.35	1.7	1.9	37	2	94	.10	3	0.5	0.6	23	SF2
		24	15 8	42.08	19	20.71	155	12.33	7.66	2.6	2.9	53	9	104	.15	4	0.4	0.5	42	SF2
		24	1930	10.20	19	28.83	155	19.88	12.27	1.8	1.4	31	3	85	.12	3	0.5	0.7	22	KAO
		24	2141	57.41	19	57.32	155	31.07	41.54	3.2	3.2	53	8	236	.10	18	0.9	1.2	45	KEA
		24	2246	1.12	19	23.89	155	27.00	9.87	2.2	2.6	45	5	27	.12	3	0.3	0.5	37	KAO
		24	23 0	6.07	19	22.05	155	2.14	6.94	1.8	1.3	27	1	147	.12	4	0.6	0.9	19	SF5
		24	2330	45.69	19	18.21	155	13.36	8.49	2.3	2.6	44	5	86	.11	2	0.4	0.5	27	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1985	FEB	25	059	13.60	19	22.55	155	2.71	4.80	1.7	1.5	25	3	129	.19	5	0.6	1.9	14	SSF	
		25	757	20.43	19	35.55	155	24.41	13.72	2.0	1.6	34	4	62	.13	8	0.3	0.5	18	KEA	
		25	1226	5.43	19	21.71	155	1.56	3.71	1.8	1.3	31	3	158	.17	4	0.6	1.6	21	SSF	
		25	16 8	29.04	19	20.03	155	11.46	7.60	1.5	1.8	36	2	85	.12	5	0.5	0.8	28	SF3	
		25	1636	6.88	19	13.31	155	25.71	9.36	2.2	2.4	36	4	137	.11	4	0.4	0.6	23	LSW	
		25	1827	46.41	19	47.23	156	4.40	10.68	3.9	4.3	47	2	240	.12	27	1.1	0.7	46	HUA	F
		25	1851	24.51	19	24.88	155	30.67	11.83	2.2	2.1	36	3	36	.11	4	0.4	0.5	28	KAO	
		26	733	28.70	19	18.13	155	20.98	5.05	1.3	1.1	18	1	120	.10	4	0.4	1.5	14	SWR	
		26	11 8	27.06	19	24.40	155	28.60	9.14	1.9	1.7	41	5	34	.12	3	0.3	0.7	34	KAO	
		26	1442	1.59	19	24.88	155	19.35	6.28	1.8	1.7	24	5	96	.11	2	0.4	0.9	18	KAO	
		26	1852	3.08	19	23.50	155	20.36	9.91	1.9	2.2	36	5	54	.09	1	0.4	0.6	27	KAO	
		26	1927	46.91	19	23.86	155	17.48	3.45	2.1	2.4	12	1	53	.11	1	0.4	0.6	4	SSC	L
		26	1928	26.55	19	12.81	155	35.35	8.69	3.1	2.6	36	2	201	.20	5	1.0	0.9	28	LSW	
		26	2349	46.68	19	19.93	155	30.51	9.00	1.7	1.1	27	1	57	.12	7	0.5	1.1	17	KAO	
		27	10 6	15.95	20	3.10	155	24.11	10.23	2.6	2.8	39	0	211	.13	19	1.1	0.8	35	KEA	
		27	1339	28.16	20	10.54	155	40.57	27.01	3.2	3.0	42	6	243	.10	12	0.8	1.5	29	KOH	
		27	15 5	34.17	20	0.00	155	35.74	14.21	2.4	1.8	26	4	270	.10	17	1.5	0.6	22	KOH	
		27	1751	28.20	19	19.63	155	10.60	8.48	1.1	1.1	19	0	95	.06	5	0.6	1.1	17	SF3	
		27	1941	0.12	19	24.00	155	25.62	7.73	1.4	1.2	27	2	46	.12	3	0.4	0.9	22	KAO	
		27	2258	24.65	19	19.43	155	11.65	7.83	1.4	1.3	20	0	96	.05	5	0.6	1.0	18	SF3	
		28	2 7	39.99	19	51.10	155	11.17	33.58	3.3	2.9	43	3	210	.12	17	0.9	2.0	39	KEA	
		28	16 3	40.06	19	20.33	155	4.87	4.84	1.3	1.1	27	2	123	.14	3	0.6	1.8	21	SSF	
		28	2112	0.22	19	25.34	155	19.60	4.35	1.5	1.5	22	4	108	.08	3	0.4	0.8	17	KAO	
		28	2325	32.46	19	10.58	155	41.04	4.58	2.1	1.4	23	1	124	.21	11	1.0	3.4	20	LSW	
	MAR	1	414	20.66	19	9.56	157	0.27	30.49	2.9	2.7	34	2	327	.12	120	2.6	3.4	26	DIS	
		1	5 1	3.82	19	25.41	155	19.70	3.84	1.2	1.2	17	3	127	.09	3	0.4	0.8	13	KAO	
		1	830	1.17	19	22.52	155	1.95	7.88	2.4	2.1	28	1	145	.11	5	0.6	0.6	18	SF5	
		1	1954	27.90	19	25.50	155	19.52	3.70	1.2	1.1	16	2	120	.10	3	0.5	0.8	13	KAO	
		1	2346	40.55	19	21.91	155	1.99	6.34	2.0	1.5	32	3	152	.16	4	0.6	1.0	25	SF5	
		2	249	27.94	19	23.82	155	16.97	2.56	0.8	0.9	12	2	71	.06	1	0.3	0.4	8	SSC	
		2	548	30.65	19	24.68	155	24.18	9.86	1.5	1.4	30	3	39	.11	2	0.4	0.7	25	KAO	
		2	719	45.37	19	31.19	155	3.79	46.85	2.8	2.5	32	1	85	.09	2	0.9	2.1	28	DEP	
		2	1032	23.69	19	19.99	155	11.47	7.46	1.6	1.1	28	0	85	.13	5	0.6	1.1	26	SF3	
		2	1315	3.98	19	19.00	155	13.95	8.65	1.4	1.1	22	1	91	.08	4	0.5	0.9	21	SF2	
		3	637	5.06	19	19.18	155	16.07	6.14	1.2	1.2	32	2	108	.13	3	0.5	0.9	28	SF1	
		4	045	57.27	19	19.56	155	11.80	8.90	3.2	3.5	48	7	91	.12	6	0.3	0.4	40	SF3	
		4	049	56.26	19	19.39	155	11.82	7.18	1.4	1.0	24	0	95	.06	5	0.5	1.0	24	SF3	
		4	2054	2.25	19	25.40	155	16.34	9.58	1.1	1.2	16	1	171	.12	2	1.0	1.2	15	INT	L
		4	21 9	3.42	19	22.11	155	28.94	9.94	3.0	3.4	52	10	37	.11	2	0.3	0.4	39	KAO	F
		4	2211	13.47	19	19.73	155	12.23	6.10	1.4	1.2	25	0	84	.12	5	0.5	1.4	24	SF3	
		4	2256	31.87	19	20.25	155	13.36	7.71	1.8	1.9	38	3	63	.13	4	0.4	0.7	34	SF2	
		4	2319	4.89	19	24.16	155	15.92	9.97	1.8	2.1	14	1	121	.14	2	1.0	1.5	13	INT	L
		5	142	26.71	19	20.70	155	11.91	7.87	2.0	2.5	43	3	71	.13	4	0.4	0.6	36	SF3	
		5	1332	8.31	19	21.08	155	29.58	4.87	1.9	2.1	24	2	51	.13	4	0.4	1.5	21	KAO	
		5	1813	39.92	19	20.58	155	11.70	7.55	2.5	2.8	45	4	74	.15	4	0.4	0.6	39	SF3	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1985	MAR	5	1842	14.97	19	19.53	155	11.08	6.11	1.6	1.8	36	4	97	.08	5	0.4	0.8	31	SF3	
		6	747	52.54	19	20.59	155	11.42	8.11	2.4	2.8	47	4	75	.13	4	0.4	0.6	43	SF3	
		6	839	58.62	19	19.83	155	12.70	5.56	1.7	1.8	33	4	77	.13	5	0.4	1.1	28	SF2	
		6	12 1	12.60	19	24.84	155	30.57	12.13	2.5	2.1	38	3	45	.08	7	0.4	0.5	35	KAO	
		6	1216	54.41	19	21.88	155	4.96	7.58	1.3	1.5	26	2	78	.11	5	0.6	0.9	25	SF5	
		6	1419	20.17	19	20.35	155	10.65	7.35	2.3	2.7	43	2	80	.17	3	0.6	0.8	39	SF3	
		6	1558	40.49	19	23.42	155	2.02	8.78	1.9	2.1	28	2	133	.15	5	0.8	0.6	25	SF5	
		6	20 4	39.00	19	21.77	155	6.88	7.48	1.5	1.1	25	2	77	.11	3	0.4	0.7	23	SF4	
		6	21 3	12.45	19	19.73	155	11.75	8.42	1.8	1.9	39	3	88	.12	5	0.4	0.7	34	SF3	
		6	2227	23.13	19	22.16	155	28.65	10.32	3.0	3.2	49	6	37	.12	2	0.3	0.4	43	KAO	
		6	2329	14.56	19	16.97	155	22.61	4.79	2.3	2.8	46	3	118	.18	5	0.4	1.7	41	SWR	
		6	2331	13.17	19	23.92	155	15.46	3.15	1.9	2.0	24	3	105	.09	2	0.3	0.4	20	SEC	
		7	242	27.95	19	17.80	155	13.04	6.12	1.4	1.1	21	1	113	.07	2	0.6	1.0	21	SF2	
		7	850	17.27	18	56.57	155	15.93	11.86	2.6	2.7	15	0	286	.10	32	5.2	1.3	14	LOI	L
		7	947	53.38	19	26.34	155	30.13	9.52	2.6	2.0	43	6	42	.10	8	0.3	0.7	37	KAO	
		7	1431	10.95	19	20.29	155	11.92	8.81	2.5	2.4	45	4	77	.13	5	0.4	0.6	39	SF3	
		7	1617	50.57	19	11.15	155	29.08	34.06	2.8	2.3	46	7	76	.07	4	0.6	1.1	38	DLS	
		8	1916	51.00	19	29.57	155	30.24	22.31	2.5	2.3	46	5	66	.10	6	0.4	0.8	41	DML	
		9	122	20.04	19	21.42	155	22.57	11.35	1.7	1.4	27	6	59	.08	3	0.4	0.7	22	SWR	
		9	822	35.18	19	18.93	155	12.88	6.22	1.4	1.2	32	0	89	.10	4	0.5	1.0	30	SF2	
		9	1315	44.81	19	19.48	155	11.64	6.44	1.3	1.3	30	2	95	.12	6	0.5	1.0	29	SF3	
		9	2013	19.04	19	21.59	155	28.08	10.52	1.6	1.7	38	2	40	.13	2	0.4	0.6	36	KAO	
		10	059	32.64	19	25.84	155	16.09	8.30	1.3	1.7	19	1	128	.13	2	0.7	1.1	17	INT	L
		10	324	31.12	19	23.52	154	58.25	7.71	2.3	2.2	43	4	172	.16	3	0.8	0.5	39	LER	
		10	735	48.89	19	24.48	155	17.63	9.02	1.4	1.7	18	2	53	.14	1	0.6	1.0	17	INT	L
		10	1314	56.22	19	20.45	155	13.35	7.78	1.6	1.5	29	3	61	.11	4	0.5	0.8	26	SF2	
		10	19 5	9.20	19	20.87	155	12.02	8.27	2.0	2.2	40	3	68	.10	4	0.4	0.6	36	SF3	
		11	622	41.44	19	20.79	155	13.74	7.26	1.1	1.1	19	0	64	.10	4	0.5	1.0	15	SF2	
		11	821	45.05	19	20.95	155	2.32	7.57	3.4	3.7	34	2	160	.09	2	0.6	0.4	19	SF5	F
		11	1252	44.83	19	22.63	154	59.19	6.20	2.0	1.5	33	2	176	.21	5	1.2	1.3	28	LER	
		11	13 0	27.42	19	24.21	155	16.11	0.50	0.9	1.5	10	3	123	.09	2	0.2	0.5	8	SEC	
		11	16 1	45.12	19	21.65	155	1.86	5.73	1.8	1.7	33	3	151	.17	4	0.6	1.2	31	SF5	
		12	536	53.73	19	22.87	155	26.93	9.43	1.5	1.1	32	3	36	.13	1	0.4	0.8	28	KAO	
		12	1230	26.22	19	17.90	155	13.04	8.48	1.6	1.5	31	1	109	.11	2	0.6	0.9	25	SF2	
		13	2122	6.39	19	24.01	155	16.16	3.37	1.1	1.1	14	4	109	.11	1	0.4	0.5	10	SEC	
		13	22 1	22.53	19	19.95	155	8.25	7.42	1.5	1.2	29	1	84	.10	5	0.5	1.0	25	SF4	
		14	126	47.28	19	23.68	155	15.54	2.67	1.5	1.7	27	6	96	.13	2	0.3	0.3	23	SEC	
		14	322	54.81	19	24.60	155	17.36	2.02	1.1	1.8	17	4	62	.07	1	0.3	0.2	12	SNC	
		14	331	1.77	19	24.05	155	16.14	3.15	1.4	1.7	23	6	105	.08	1	0.3	0.3	18	SEC	
		14	734	34.68	19	26.26	155	17.53	5.18	1.4	1.5	8	1	255	.12	2	2.7	1.1	7	INT	L
		14	938	42.65	19	19.08	155	12.83	6.70	1.8	1.6	35	0	87	.13	4	0.5	0.9	34	SF2	
		14	1322	49.10	19	24.75	155	16.59	0.90	1.1	1.8	15	3	120	.10	1	0.2	0.2	12	SNC	L
		14	1623	57.33	19	24.46	154	59.35	7.24	2.0	1.5	28	2	148	.10	2	0.6	0.6	26	LER	
		14	18 7	40.60	19	20.34	155	12.94	6.52	1.5	1.4	39	3	67	.12	4	0.4	0.7	37	SF2	
		14	1958	38.74	19	19.48	155	30.74	24.73	2.2	1.6	48	7	35	.09	8	0.4	0.8	44	DML	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ NO KM	FM	REMK
1985	MAR	14	2048	58.67	19	18.70	155	26.30	9.69	1.6	1.5	33	4	56	.14	6	0.4	0.7	30	LSW
		15	046	37.78	19	19.48	155	12.38	6.38	1.5	1.1	26	1	86	.13	5	0.6	1.2	24	SF2
		15	432	44.31	19	12.94	155	37.28	7.92	2.0	1.6	28	0	92	.16	4	0.7	1.0	28	LSW
		15	455	28.31	19	18.10	155	14.35	9.22	2.7	2.6	55	9	91	.11	3	0.4	0.4	45	SF2
		15	1250	5.89	19	20.63	155	11.27	9.00	2.0	1.9	42	7	74	.10	4	0.4	0.5	36	SF3
		15	1749	15.88	19	21.91	155	30.02	9.62	2.2	2.1	43	5	33	.10	4	0.3	0.6	32	KAO
		16	140	59.14	19	24.91	155	17.29	8.44	1.2		13	0	116	.11	1	0.9	1.3	13	INT L
		16	141	59.83	19	23.81	155	16.99	8.45	1.5	0.9	17	0	62	.09	1	0.6	0.9	17	INT L
		16	338	52.70	19	25.17	155	30.42	9.46	1.7	1.2	31	2	43	.09	7	0.4	1.0	27	KAO
		16	632	33.12	19	20.04	155	12.21	7.22	1.6	1.2	28	1	79	.12	5	0.5	0.9	25	SF3
		16	755	2.32	19	24.87	156	16.66	32.00	3.4	3.4	37	2	295	.11	39	2.1	1.7	33	KON
		16	1659	39.79	19	11.14	155	36.59	8.29	2.3	1.6	39	7	94	.13	7	0.4	1.0	36	LSW
		16	1717	58.21	19	22.93	155	26.87	9.58	1.8	1.4	38	3	34	.14	2	0.4	0.7	32	KAO
		16	2126	14.06	18	58.36	155	12.43	46.52	3.4	3.5	59	11	238	.11	34	0.9	1.1	51	LOI
		17	045	33.21	19	26.89	155	19.61	6.91	1.7	1.5	29	3	66	.11	5	0.5	0.9	24	KAO
		17	1232	8.41	19	19.72	155	11.75	7.64	2.3	2.7	46	4	89	.13	5	0.4	0.7	38	SF3
		17	2133	44.53	19	20.10	155	13.24	4.69	1.2	1.0	22	0	66	.11	5	0.5	1.9	19	SSF
		18	850	14.21	19	19.13	155	9.75	6.59	1.5	1.2	27	3	104	.09	5	0.5	0.9	25	SF3
		18	1049	5.43	19	12.50	155	7.37	42.17		1.6	39	4	242	.10	9	1.4	0.9	38	DEP
		18	1541	23.22	19	20.78	155	6.41	6.01	1.6	1.5	32	3	100	.15	5	0.5	1.1	25	SF4
		18	1555	15.42	19	28.13	155	24.95	10.17	2.8	2.6	53	7	34	.13	4	0.3	0.5	43	KAO
		18	1943	56.41	19	18.35	155	15.46	7.16	1.2	1.1	23	1	120	.09	4	0.5	1.0	17	SF1
		18	1958	14.61	19	20.03	155	7.33	7.66	1.4	1.1	23	3	102	.08	5	0.5	0.9	20	SF4
		19	0 4	38.18	19	19.38	155	15.33	7.48	1.7	1.6	38	3	88	.10	4	0.4	0.6	31	SF1
		19	218	6.90	19	20.08	155	8.29	7.66	1.8	1.8	35	2	82	.11	5	0.5	0.7	32	SF4
		19	1524	0.38	19	26.39	155	28.78	9.47	1.5	1.2	28	2	58	.10	7	0.4	1.1	24	KAO
		19	1612	15.99	19	19.42	155	14.91	7.63	1.9	1.8	38	3	90	.12	5	0.4	0.6	33	SF1
		19	1637	34.69	19	18.49	154	59.19	40.41	2.5	2.0	49	6	212	.10	7	0.9	0.8	43	LER
		19	17 1	23.05	19	23.35	155	16.47	8.40	1.4	1.8	13	1	68	.11	1	0.9	1.2	12	INT L
		19	18 5	40.80	20	29.97	154	55.69	22.73	2.9	2.6	49	6	307	.10	80	1.6	6.6	48	DIS
		19	2232	46.71	19	20.31	155	10.95	7.76	1.4	1.1	26	3	80	.10	4	0.5	0.7	21	SF3
		20	7 1	27.32	19	19.98	155	11.38	8.07	1.5	1.2	26	1	85	.10	5	0.5	0.9	26	SF3
		20	1550	8.54	19	21.33	155	1.29	7.56	2.1	2.0	39	3	171	.11	4	0.6	0.5	34	SF5
		20	1745	49.23	19	19.62	155	11.99	6.48	1.3	1.3	25	0	89	.09	5	0.5	1.2	19	SF3
		20	2345	7.12	19	17.79	155	13.32	6.04	1.4	1.1	23	0	96	.06	1	0.6	1.0	21	SF2
		21	125	41.60	19	19.82	155	8.83	5.83	1.7	1.8	30	0	77	.10	5	0.5	1.0	22	SF4
		21	1431	36.97	19	50.65	155	21.38	5.41	2.1	1.9	30	5	124	.11	5	0.5	1.6	24	KEA
		21	20 8	15.95	19	19.25	155	15.08	30.61	2.4	2.1	47	5	85	.10	4	0.8	0.9	43	DEP
		22	535	51.95	19	53.60	156	36.64	1.73	3.3	3.5	45	10	183	.12	84	1.4	0.7	26	DIS
		22	7 7	54.85	19	53.99	156	36.64	1.56	4.1	4.3	55	7	298	.12	84	5.2	2.3	39	DIS
		22	714	43.53	20	43.89	158	12.51	5.98	3.9	3.4	18	7	350	.90273		54.6	82.6	13	DIS
		22	1843	26.30	19	20.45	155	8.42	8.78	2.7	2.8	43	2	76	.11	4	0.4	0.5	36	SF4
		23	056	49.10	19	25.79	155	50.86	13.62	3.0	2.9	40	2	124	.13	10	0.6	0.4	35	KON
		23	2 9	36.24	19	52.85	155	23.72	26.60	2.5	1.7	38	8	193	.09	6	0.6	0.9	30	KEA
		24	238	52.82	19	26.31	155	41.47	7.35	2.9	2.7	32	1	74	.12	9	0.4	1.3	23	MLO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ NO KM	FM	REMK
1985	MAR	24	1343	21.22	19	16.76	155	23.68	2.71	1.5	1.4	32	1	100	.22	5	0.5	1.6	23	SWR
		24	16 9	36.02	19	27.85	155	54.00	9.45	2.7	1.7	24	3	153	.12	3	0.9	0.5	19	KON
		24	1626	43.03	19	21.13	155	2.39	8.35	2.2	2.3	39	3	153	.15	2	0.7	0.5	24	SF5
		24	1837	33.36	19	20.61	155	11.83	5.49	1.4	1.1	29	0	73	.14	4	0.5	1.0	21	SF3
		25	553	52.67	19	28.66	155	27.95	8.01	2.1	1.7	37	4	60	.13	6	0.4	0.9	23	KAO
		25	1416	25.80	19	17.51	155	18.39	30.85	2.3	2.4	40	2	134	.13	1	0.8	1.4	20	DEP
		26	014	41.44	19	21.25	155	24.26	9.62	2.0	2.1	38	1	65	.13	3	0.4	0.6	25	SWR
		26	2 4	33.65	19	22.80	155	26.72	10.63	2.6	2.7	42	2	35	.12	2	0.4	0.5	28	KAO
		26	1157	14.08	19	21.85	155	4.31	7.76	1.7	1.3	29	3	88	.12	4	0.5	0.9	26	SF5
		27	321	31.85	19	19.97	155	12.21	7.18	1.7	1.6	41	4	79	.12	5	0.4	0.6	38	SF3
		27	916	47.40	18	50.69	155	14.73	49.50	2.3	2.3	46	5	259	.09	42	1.2	1.7	42	LOI
		27	1326	30.67	19	10.37	155	37.63	8.14	2.1	1.4	27	4	102	.12	9	0.4	1.3	24	LSW
		27	1641	39.32	19	19.99	155	8.35	6.66	1.4	1.6	34	4	81	.11	5	0.4	0.8	30	SF4
		27	19 6	16.69	19	22.35	155	4.91	5.90	1.7	1.9	34	1	74	.17	4	0.6	1.2	28	SF5
		28	614	14.39	19	20.08	155	11.88	8.03	1.4	1.2	29	1	81	.12	5	0.6	0.9	27	SF3
		28	713	47.78	19	22.80	155	20.77	8.98	1.8	1.2	37	6	48	.11	3	0.4	0.7	29	KAO
		28	839	43.95	19	25.17	155	15.71	14.67	1.6	1.4	43	6	74	.11	2	0.5	0.3	36	DEP
		28	936	28.16	19	50.88	155	39.59	13.34	2.2	1.7	35	8	112	.17	1	0.6	0.5	31	KEA
		28	1241	30.29	19	11.07	155	29.21	33.74	2.2	1.7	53	12	80	.08	4	0.5	0.8	46	DLS
		28	1815	43.65	19	25.61	155	27.42	5.31	1.9	1.5	38	3	54	.12	4	0.4	1.1	30	KAO
		29	257	45.02	19	20.38	155	11.56	9.15	3.1	3.2	55	12	78	.11	4	0.3	0.4	43	SF3 F
		29	927	51.05	19	26.12	155	29.18	8.23	1.6	1.1	31	3	61	.12	7	0.4	1.0	25	KAO
		29	1121	41.32	19	17.27	155	14.73	6.51	1.3	1.4	32	3	152	.11	2	0.6	1.0	29	SF1
		29	1540	44.53	19	24.75	155	16.63	10.40	1.1	1.3	12	1	144	.12	1	1.2	1.7	11	INT L
		30	142	27.98	19	17.76	155	29.41	6.97	1.8	1.5	37	2	46	.20	5	0.5	1.2	35	LSW
		30	425	1.16	19	25.24	155	26.77	5.12	1.3	1.2	35	4	69	.12	3	0.3	1.2	32	KAO
		30	720	22.91	19	20.31	155	11.68	8.66	2.8	2.8	57	11	79	.13	5	0.3	0.4	46	SF3
		30	9 3	9.01	19	16.68	155	30.87	43.23	3.4	3.5	62	14	48	.09	3	0.5	0.8	52	DLS F
		31	014	37.86	19	20.70	155	12.18	7.79	1.8	1.2	39	2	103	.12	4	0.5	0.6	38	SF3
		31	210	22.41	19	17.17	155	30.68	8.04	2.1	1.4	42	5	46	.20	4	0.4	1.0	38	LSW
		31	756	11.15	19	18.42	155	14.91	6.34	1.5	1.2	24	1	99	.12	4	0.5	0.9	20	SF1
		31	16 5	41.82	19	27.81	155	25.10	9.34	2.8	3.0	55	11	40	.13	5	0.3	0.6	44	KAO
		31	1818	54.24	19	23.37	154	59.51	7.27	1.8	1.3	34	2	162	.19	4	0.8	0.8	29	LER
		31	2039	30.99	19	25.33	155	19.42	6.05	1.4	1.6	27	7	71	.09	3	0.4	0.7	22	KAO
	APR	1	0 5	15.19	19	23.45	155	29.97	9.43	1.7	1.5	36	4	38	.10	4	0.4	0.7	32	KAO
		1	118	23.29	19	20.27	155	3.64	6.08	1.5	1.1	34	4	117	.16	1	0.6	0.9	31	SF5
		1	1131	18.48	19	21.70	155	5.08	9.00	4.1	4.3	58	10	82	.11	5	0.4	0.3	50	SF5 F
		1	1251	39.47	19	41.81	155	2.10	0.00	2.1	2.5	30	2	104	.22	1	0.9	1.0	26	HIL B
		1	18 0	37.16	19	21.22	155	5.81	7.06	1.9	2.1	47	8	93	.12	5	0.4	0.6	41	SF4
		1	1928	8.37	19	24.77	155	19.75	7.39	1.3	1.1	27	4	89	.10	2	0.4	0.9	21	KAO
		1	21 9	21.70	19	38.43	156	31.00	27.43	2.1	2.2	37	5	305	.11	65	1.4	3.3	32	DIS
		2	457	26.30	19	28.99	155	52.74	6.98	2.6	2.2	37	7	255	.23	12	1.4	0.6	30	KON
		2	531	15.92	19	20.74	155	12.91	9.39	1.3	1.3	23	2	64	.07	4	0.5	0.8	20	SF2
		3	512	28.19	19	23.97	155	26.43	9.28	1.7	1.6	33	5	41	.11	3	0.4	0.8	26	KAO
		3	2050	34.32	19	24.35	155	26.66	9.91	1.6	1.3	35	3	45	.11	3	0.4	0.7	32	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	APR	3	2056	44.43	19	20.22	155	8.59	6.69	1.9	2.2	43	7	75	.12	4	0.4	0.7	38	SF4
		3	2157	48.16	19	15.45	155	23.28	7.93	1.7	1.8	35	6	151	.12	2	0.5	0.8	32	SWR
		4	333	5.03	19	20.00	155	12.06	7.57	1.4	1.3	30	1	81	.11	5	0.5	1.0	29	SF3
		4	539	31.53	19	20.48	155	12.99	6.43	1.4	1.3	34	4	65	.14	4	0.5	0.9	29	SF2
		4	735	14.66	19	17.60	155	20.66	7.86	1.8	1.9	41	9	127	.12	4	0.4	0.6	32	SWR
		4	917	37.90	19	18.19	155	16.43	7.64	1.5	1.5	41	5	120	.12	4	0.4	0.6	36	SF1
		4	1056	50.01	19	25.50	155	20.13	5.98	1.1	1.0	22	4	92	.12	3	0.4	0.9	20	KAO
		4	1748	7.36	19	20.55	155	11.96	7.11	1.3	1.2	38	2	72	.16	4	0.5	0.7	34	SF3
		4	23	5 0.54	19	26.23	155	20.05	3.82	1.3	1.1	23	4	129	.11	3	0.4	0.7	20	KAO
		5	211	10.94	19	23.55	155	29.94	8.68	1.5	1.1	28	2	44	.07	5	0.4	0.9	24	KAO
		5	340	35.77	19	23.15	155	25.61	10.41	1.4	1.4	38	3	38	.12	4	0.4	0.6	33	KAO
		5	424	7.29	19	19.79	155	12.51	7.63	1.4	1.2	33	2	80	.11	5	0.5	0.8	30	SF2
		5	10	7 23.03	19	24.95	155	19.54	5.89	1.1	1.1	22	2	97	.10	2	0.5	1.0	20	KAO
		5	1158	10.43	19	23.18	155	30.38	8.45	1.9	1.8	43	4	33	.11	5	0.3	0.9	35	KAO
		5	12	6 54.72	19	22.64	155	30.04	9.12	1.5	1.6	34	4	72	.11	4	0.4	0.8	29	KAO
		5	1215	22.94	19	20.76	155	12.77	7.20	1.5	1.4	29	3	64	.11	4	0.4	0.7	27	SF2
		5	1311	5.38	19	13.98	155	37.45	7.47	2.3	1.9	45	7	90	.20	2	0.5	0.9	39	LSW
		5	19	4 35.97	19	54.91	155	21.22	10.97	2.1	1.9	30	5	185	.12	3	0.8	0.6	26	KEA
		5	2123	4.13	19	11.74	155	31.11	39.53	2.4	2.3	53	10	88	.09	6	0.6	0.8	48	DLS
		5	2348	18.93	19	22.54	155	2.27	8.03	1.9	1.7	38	3	130	.16	5	0.7	0.5	34	SF5
		6	330	42.01	19	20.52	155	17.07	31.59	1.8	1.3	35	3	75	.10	1	0.9	1.4	32	DEP
		6	448	0.61	19	19.33	155	13.15	6.71	1.2	1.0	26	1	77	.10	4	0.5	1.1	25	SF2
		6	1324	22.84	19	22.56	155	29.89	9.08	1.8	1.6	38	3	44	.09	4	0.3	0.8	35	KAO
		6	1714	24.24	20	1.15	155	28.00	1.89	2.4	2.5	28	5	200	.17	19	0.7	0.9	26	KEA
		6	2025	33.13	19	19.40	155	11.95	8.67	1.4	1.2	26	2	94	.08	5	0.5	0.9	26	SF3
		6	2147	29.40	19	24.37	155	16.23	10.89	0.8	0.7	14	2	131	.12	1	1.1	1.3	13	INT L
		7	131	30.21	19	19.32	155	15.38	7.43	1.8	1.6	39	3	98	.11	4	0.4	0.6	34	SF1
		7	251	1.55	19	20.70	154	59.42	0.01	1.4	1.3	24	3	208	.23	6	1.4	0.9	21	SLE
		7	529	58.00	19	20.26	155	11.64	8.24	1.6	1.6	37	4	80	.11	5	0.4	0.8	33	SF3
		7	945	11.10	19	19.83	155	11.55	8.38	2.4	2.7	45	4	87	.14	5	0.4	0.8	42	SF3
		7	10	4 0.29	19	21.31	155	30.00	11.04	1.8	1.3	27	2	46	.13	5	0.5	1.0	26	KAO
		7	1939	42.37	19	17.58	155	13.14	6.28	1.8	1.5	37	3	117	.10	1	0.4	0.7	35	SF2
		7	22	6 38.56	19	55.83	156	40.35	26.20	3.4	4.5	52	10	251	.14	91	1.3	3.3	42	DIS
		8	116	16.97	19	18.08	155	13.13	4.21	1.4	1.4	26	2	99	.09	2	0.5	0.9	26	SSF
		8	120	54.58	19	21.88	155	28.63	5.38	1.6	1.6	27	2	42	.10	2	0.4	0.9	25	KAO
		8	917	5.53	19	24.54	155	29.92	7.65	1.5	1.1	28	3	66	.11	6	0.4	1.0	25	KAO
		8	1245	17.66	19	20.39	155	12.09	7.15	1.4	1.3	31	4	75	.10	5	0.4	0.8	29	SF3
		8	2239	12.16	19	26.15	155	29.18	10.45	2.6	2.7	55	10	45	.10	7	0.3	0.4	46	KAO
		9	258	3.49	19	28.67	155	51.44	5.82	2.3	1.3	28	4	97	.13	6	0.5	1.2	27	KON
		9	411	44.23	19	22.31	155	3.27	5.40	1.6	1.3	27	3	115	.17	4	0.6	1.5	25	SF5
		9	6	6 5.13	19	18.77	155	13.61	7.89	1.6	1.3	34	3	71	.10	3	0.5	0.7	32	SF2
		9	815	2.51	19	22.54	155	49.11	13.09	2.8	2.4	17	0	116	.09	13	0.6	0.5	10	KON
		9	1411	17.19	19	58.23	156	49.90	23.09	2.9	2.7	46	10	322	.12	109	1.5	5.1	42	DIS
		9	1644	33.77	19	23.91	155	15.74	3.36	1.1	1.4	18	7	109	.07	2	0.3	0.3	14	SEC
		9	1654	34.00	19	22.98	155	30.42	9.47	3.1	3.5	51	6	33	.10	5	0.3	0.4	42	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	APR	9	2134	53.57	19	19.21	155	15.34	6.10	1.2	1.2	34	3	100	.13	4	0.4	1.0	31	SF1
		10	117	29.70	19	26.77	155	29.99	8.18	1.9	1.8	44	8	44	.11	6	0.3	0.8	38	KAO
		10	946	45.98	19	24.20	155	17.21	8.11	1.2	1.7	21	3	49	.13	1	0.6	0.8	18	INT L
		10	12	2 23.20	19	26.67	155	29.64	9.79	2.4	2.6	50	9	35	.11	8	0.3	0.5	43	KAO
		10	19	9 55.30	19	26.80	155	16.13	24.28	1.9	1.4	44	9	81	.10	4	0.6	0.7	40	DEP
		10	2253	22.66	19	17.36	155	15.23	6.07	1.3	1.3	27	0	161	.09	3	0.6	1.3	26	SF1
		11	1920	42.39	19	23.74	155	15.81	3.16	1.4	1.6	24	6	79	.09	1	0.3	0.3	20	SEC
		11	2252	51.49	19	20.66	155	10.87	8.27	1.7	1.6	38	5	75	.11	3	0.4	0.6	30	SF3
		12	019	35.24	18	53.45	155	15.13	11.99	2.8	3.9	44	6	251	.11	37	0.9	0.7	41	LOI L
		12	021	31.19	18	56.11	155	15.22	12.61	1.9	1.2	30	5	252	.11	33	1.3	0.7	30	LOI L
		12	426	50.87	18	57.28	155	14.65	11.32	2.4	3.2	37	6	240	.11	32	1.0	0.5	34	LOI L
		12	657	6.83	19	20.09	155	12.00	8.47	1.5	1.5	33	2	80	.11	5	0.5	0.8	30	SF3
		12	1011	39.15	18	52.96	155	15.00	11.22	2.6	3.0	41	8	263	.10	38	1.0	0.6	37	LOI L
		12	1931	25.13	19	26.25	155	30.11	7.45	1.8	1.2	37	4	42	.12	8	0.4	1.1	31	KAO
		12	2210	55.64	19	25.74	155	19.24	3.80	1.4	1.1	22	3	138	.10	3	0.4	0.7	19	KAO
		12	2256	53.43	20	4.15	155	27.79	27.38	2.1	1.7	39	7	209	.11	24	0.9	1.3	36	KEA
		13	951	57.59	19	19.55	155	29.88	9.86	1.5	1.3	26	3	53	.11	7	0.5	1.1	25	KAO
		13	1319	13.00	19	20.60	155	10.01	7.31	1.4	1.1	30	2	74	.10	3	0.5	0.9	28	SF3
		13	20	1 6.00	19	23.69	155	26.95	9.99	1.6	1.3	42	4	28	.12	3	0.3	0.6	39	KAO
		13	23	1 29.52	19	26.66	155	29.27	9.01	1.7	1.4	30	6	43	.09	8	0.4	0.9	26	KAO
		14	857	7.06	18	54.21	155	11.74	9.40	2.4	2.9	32	5	264	.16	40	1.4	0.8	31	LOI L
		14	952	8.73	19	8.76	155	36.46	4.37	2.3	2.1	34	6	115	.15	11	0.5	2.4	32	LSW
		14	1255	29.77	19	21.51	155	28.39	5.84	1.7	1.5	28	2	45	.16	2	0.4	1.1	26	KAO
		15	548	50.58	19	16.04	155	23.13	6.31	1.6	2.0	38	6	123	.15	4	0.4	0.9	35	SWR
		15	616	43.51	19	20.68	155	11.81	7.84	1.8	1.9	42	7	72	.13	4	0.4	0.6	35	SF3
		15	16	0 56.97	19	15.43	155	22.98	5.70	1.6	1.6	24	4	160	.10	3	0.5	1.1	22	SWR
		15	1855	55.21	19	18.72	155	13.29	8.36	2.0	2.4	47	3	81	.12	3	0.4	0.5	41	SF2
		15	2035	6.05	19	18.90	155	26.48	9.51	1.3	1.2	26	2	71	.13	6	0.5	1.0	24	LSW
		16	1	7 2.11	19	11.15	155	29.07	34.33	2.2	1.6	39	6	148	.10	8	0.7	1.0	36	DLS
		16	625	40.32	19	25.83	155	15.47	12.66	1.4	1.5	17	3	143	.12	3	0.9	0.8	15	INT L
		16	1122	24.12	19	27.99	155	26.61	3.80	1.9	1.6	40	6	46	.15	6	0.4	1.7	28	KAO
		16	14	1 6.40	19	20.55	155	11.43	8.45	1.7	1.6	44	4	75	.11	4	0.4	0.6	40	SF3
		16	1753	24.63	19	19.93	155	7.91	7.21	1.7	1.7	33	2	92	.11	5	0.5	0.9	31	SF4
		16	2018	24.75	19	24.82	155	16.96	10.98	1.3	1.2	21	4	116	.13	0	0.7	0.9	17	INT L
		17	120	52.94	19	25.16	155	16.14	10.09	1.3	1.1	19	4	127	.09	2	0.6	0.7	16	INT L
		17	535	48.61	19	11.12	155	41.30	3.39	2.0	1.4	29	7	123	.21	10	0.7	2.2	28	LSW
		17	546	38.83	19	24.57	155	17.42	8.31	1.1	1.5	18	2	60	.09	1	0.5	0.6	16	INT L
		17	612	44.17	19	19.58	155	11.68	7.31	1.5	1.5	32	2	92	.11	6	0.5	1.0	29	SF3
		17	720	26.50	19	18.83	155	15.49	6.41	1.2	1.3	25	1	108	.10	4	0.5	1.1	25	SF1
		17	748	55.14	19	24.88	155	16.66	9.92	1.4	1.7	22	4	122	.12	1	0.7	0.8	18	INT L
		17	1145	46.72	19	24.76	155	16.68	9.99	1.3	1.4	20	3	124	.11	1	0.6	0.9	17	INT L
		17	1156	51.84	19	25.81	155	29.35	9.85	2.9	3.1	55	9	36	.11	7	0.3	0.4	49	KAO
		17	1343	37.74	19	24.58	155	16.73	7.78	1.2	1.1	21	4	109	.14	1	0.6	0.8	17	INT L
		17	1812	39.97	19	25.40	155	49.88	9.53	2.6	2.5	36	4	115	.16	12	0.6	0.6	31	KON
		17	1845	8.64	19	52.02	155	43.60	35.91	2.4	2.1	50	10	235	.10	7	0.6	0.8	46	HUA

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1985	APR	18	924	20.12	19	17.87	155	13.18	6.74	1.6	1.1	26	0	103	.09	2	0.6	1.1	26	SF2	
		18	1038	47.18	19	22.02	155	28.07	9.52	1.5	1.3	31	2	43	.11	1	0.4	0.7	28	KAO	
		18	1247	37.76	19	20.49	155	11.47	8.21	2.4	2.6	47	7	76	.13	4	0.4	0.5	41	SF3	
		18	1320	30.08	19	22.46	155	17.01	32.15	2.2	1.6	47	5	41	.13	2	0.7	1.0	43	DEP	
		19	2 2	7.25	19	21.92	155	2.28	7.06	2.1	2.1	41	4	136	.17	4	0.5	0.8	36	SF5	
		19	1418	55.62	19	20.42	155	20.39	11.70	1.6	1.6	38	6	65	.10	5	0.4	0.5	33	SWR	
		19	1540	22.80	19	24.91	155	16.36	10.86	1.4	1.5	20	3	124	.14	1	0.8	0.6	17	INT	L
		19	2155	51.00	19	21.02	155	21.66	10.26	1.7	2.1	34	4	63	.13	3	0.4	0.8	31	SWR	
		20	1 3	0.45	19	20.04	155	13.46	6.53	1.4	1.2	29	1	69	.13	5	0.5	1.1	28	SF2	
		20	514	15.62	19	19.36	155	8.75	6.92	1.7	2.0	36	0	83	.13	4	0.5	0.8	34	SF4	
		20	553	29.92	19	20.90	155	49.42	9.56	2.5	2.0	43	10	119	.14	10	0.4	0.5	39	KON	
		20	646	1.18	19	22.65	155	26.80	10.11	1.9	1.7	43	4	52	.12	1	0.4	0.6	40	KAO	
		20	1110	54.05	19	19.40	155	13.25	5.05	1.2	1.1	25	1	73	.13	4	0.5	1.6	23	SF2	
		20	12 3	10.55	19	20.63	155	12.77	8.62	1.4	1.3	26	2	66	.10	4	0.6	0.8	24	SF2	
		20	1913	3.17	19	24.98	155	17.04	8.27	1.4	1.2	24	2	112	.13	0	0.5	0.8	21	INT	L
		20	2020	41.49	19	20.09	155	11.87	7.42	1.5	1.2	33	2	81	.11	5	0.5	0.8	32	SF3	
		20	2110	29.07	19	23.98	155	16.91	8.53	1.1	1.1	20	2	67	.10	1	0.6	0.8	18	INT	L
		20	2127	59.46	19	24.29	155	16.90	11.70	1.3	1.2	19	3	78	.11	1	0.7	0.9	16	INT	L
		20	23 2	21.81	19	19.25	155	13.54	6.23	2.4	2.6	51	6	69	.14	4	0.4	0.8	46	SF2	
		21	928	51.10	19	20.50	155	12.78	7.14	1.5	1.2	30	3	67	.12	4	0.5	0.7	27	SF2	
		21	933	41.38	19	23.97	155	15.73	3.40	1.4	1.7	22	4	110	.08	2	0.3	0.3	18	SEC	
		21	1131	36.64	19	23.79	155	15.65	2.94	2.2	2.6	38	4	37	.10	2	0.3	0.3	34	SEC	F
		21	1217	44.46	19	23.38	155	32.62	7.41	1.8	1.5	30	7	45	.10	3	0.3	0.8	25	MLO	
		21	1237	41.99	19	38.87	156	1.08	14.67	3.3	3.3	43	6	225	.12	19	1.0	0.5	40	KON	
		21	2350	46.14	19	23.75	155	16.04	2.89	1.3	1.4	21	3	98	.10	1	0.3	0.3	18	SEC	
		22	5 4	48.39	19	24.68	155	17.25	1.89	1.3	1.2	17	4	70	.09	1	0.4	0.2	15	SNC	
		22	541	52.73	19	24.59	155	17.35	1.90	1.0	0.6	14	1	61	.10	1	0.4	0.2	12	SNC	
		22	621	38.07	19	24.64	155	17.15	1.90	0.9	0.2	13	2	66	.08	1	0.4	0.2	11	SNC	
		22	823	2.52	19	23.85	155	16.20	2.64	1.6	1.2	9	0	100	.08	2	0.5	0.6	8	SEC	
		22	831	21.22	19	24.60	155	17.49	1.88	1.2	1.2	16	2	63	.10	1	0.3	0.2	12	SNC	
		22	915	8.42	19	25.25	155	16.41	6.51	1.1	0.4	9	1	222	.11	1	1.9	1.7	8	INT	
		22	924	20.65	19	24.54	155	17.14	2.22	1.5	1.6	19	4	67	.11	1	0.4	0.2	16	SNC	
		22	2140	48.02	19	20.53	155	10.76	8.79	1.9	2.1	40	2	77	.11	3	0.4	0.7	37	SF3	
		23	21 3	59.79	19	22.89	154	58.68	7.56	1.8	1.3	35	3	177	.17	4	0.8	0.6	32	LER	
		24	2 7	52.91	19	20.92	155	16.67	35.37	2.9	3.0	55	9	72	.11	2	0.5	0.8	45	DEP	
		24	713	18.89	19	18.54	155	13.85	8.28	1.4	1.3	28	1	95	.09	3	0.6	0.9	27	SF2	
		24	1046	51.86	19	27.38	155	25.74	6.14	1.6	1.1	27	2	50	.13	4	0.4	1.2	25	KAO	
		24	1229	45.91	19	17.26	155	15.74	6.49	0.8	1.2	19	0	155	.09	4	0.6	1.2	19	SF1	
		24	2253	51.13	19	28.08	154	52.36	3.81	1.8	1.1	21	3	109	.12	2	0.9	1.3	19	SLE	
		24	2332	23.45	19	22.65	155	26.90	10.06	1.6	1.3	37	3	36	.13	1	0.4	0.7	35	KAO	
		25	0 1	34.45	19	19.59	155	13.38	8.65	2.0	2.3	49	4	69	.12	5	0.5	0.5	45	SF2	
		25	928	37.74	19	20.83	155	8.45	7.25	2.7	3.0	48	5	73	.13	3	0.5	0.6	44	SF4	
		25	2018	52.76	19	24.68	155	17.60	2.20	1.1	1.4	16	4	68	.10	1	0.3	0.2	13	SNC	L
		25	2154	19.46	19	24.24	155	17.35	1.79	0.7	1.0	11	3	102	.11	1	0.3	0.3	8	SSC	L
		25	2321	4.36	19	24.56	155	17.05	9.22	1.3	1.5	17	1	64	.11	1	0.6	0.9	16	INT	L

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1985	APR	25	2327	5.30	19	25.01	155	16.67	9.41	1.0	1.1	18	2	124	.14	1	0.7	0.9	15	INT	L
		26	040	21.53	19	19.00	155	14.94	8.39	2.2	2.0	46	3	89	.11	4	0.4	0.5	43	SF1	
		26	4 7	26.05	19	24.11	155	17.05	1.94	1.4	2.0	18	4	74	.09	1	0.3	0.2	14	SSC	L
		26	1010	24.09	19	22.64	155	26.76	10.40	1.7	1.2	33	2	70	.12	2	0.5	0.8	30	KAO	
		26	1318	13.28	19	28.71	155	27.08	6.68	1.5	1.1	26	6	76	.13	6	0.4	1.3	19	KAO	
		26	1347	33.75	19	25.80	155	29.68	8.79	1.9	1.2	37	4	39	.11	7	0.4	0.9	31	KAO	
		26	1539	56.10	19	16.87	155	18.96	32.29	2.4	2.1	48	3	140	.10	2	0.6	1.0	45	DEP	
		26	2220	43.46	19	9.47	155	15.95	63.79	2.1		29	6	260	.11	15	2.2	1.1	27	LOI	T
		27	754	48.37	19	13.82	155	4.65	47.86	3.7	3.6	56	9	216	.12	9	1.0	0.7	50	DEP	F
		27	837	32.94	19	22.14	155	28.49	10.54	1.7	1.4	34	1	37	.11	2	0.4	0.6	33	KAO	
		27	1636	31.85	19	19.74	155	7.80	5.18	1.4	1.1	28	4	97	.13	4	0.5	1.4	26	SF4	
		27	2143	52.80	19	25.26	155	15.58	14.87	1.3	1.0	42	8	114	.10	2	0.5	0.3	35	DEP	
		29	113	56.60	19	18.82	155	14.80	7.08	1.2	1.1	28	0	99	.11	4	0.5	1.0	28	SF1	
		29	426	26.12	19	19.79	155	11.63	7.50	1.5	1.5	39	3	88	.10	5	0.5	0.8	36	SF3	
		29	2058	33.08	19	20.50	155	13.23	6.82	1.3	1.1	29	1	62	.14	4	0.6	1.0	28	SF2	
		29	22 9	3.69	19	24.27	155	17.22	2.08	0.8	1.2	14	3	74	.09	1	0.3	0.2	12	SSC	L
		30	5 7	25.84	19	20.23	155	11.51	7.94	2.5	2.8	49	7	80	.14	4	0.4	0.5	42	SF3	
		30	2249	14.23	19	23.66	155	17.90	10.01	1.4	1.5	22	3	64	.11	2	0.6	0.7	17	INT	L
	MAY	1	012	47.80	19	24.59	155	17.00	10.24	1.5	1.7	36	6	65	.11	1	0.4	0.5	30	INT	L
		1	530	50.76	19	21.82	155	2.77	8.01	2.6	2.5	47	8	123	.10	4	0.4	0.4	40	SF5	
		1	548	9.91	19	22.08	155	2.27	8.11	2.0	1.7	37	3	135	.11	4	0.5	0.6	34	SF5	
		1	615	21.15	19	24.86	155	17.14	10.33	1.4	1.3	29	6	103	.14	0	0.5	0.6	22	INT	L
		1	658	58.72	19	17.53	155	14.08	7.90	2.3	2.5	46	6	110	.11	1	0.5	0.6	41	SF2	
		1	950	52.79	19	24.94	155	16.58	10.32	1.6	1.8	31	4	118	.12	1	0.5	0.6	25	INT	L
		1	1518	50.83	19	22.10	155	25.95	9.97	2.4	2.3	49	7	40	.13	3	0.3	0.4	43	KAO	
		2	051	57.05	19	11.09	155	29.18	34.43	2.2	1.3	43	7	79	.08	4	0.6	0.8	40	DLS	
		2	21 2	20.07	19	20.87	155	2.84	6.29	1.5	1.5	30	3	127	.13	2	0.5	0.8	28	SF5	
		2	2129	43.42	19	18.13	155	23.93	34.60	2.2	2.1	60	13	86	.11	4	0.6	0.7	53	DEP	
		2	2238	49.70	19	24.74	155	16.72	6.88	1.5	1.6	35	6	89	.11	1	0.4	0.5	30	INT	L
		3	416	54.32	19	24.51	155	17.77	5.59	0.9	1.3	21	2	56	.13	2	0.6	0.8	19	INT	L
		3	740	43.82	19	24.77	155	17.24	9.11	1.5	1.5	24	4	67	.11	1	0.5	0.7	20	INT	L
		3	1033	37.30	19	43.01	155	1.68	0.00	2.1	2.4	28	1	205	.19	2	0.9	1.1	27	HIL	B
		3	1259	6.50	19	24.72	155	16.78	10.08	1.3	2.0	24	3	112	.12	1	0.6	0.7	21	INT	L
		3	1425	16.78	19	17.46	155	21.58	6.19	1.9	2.0	44	4	124	.14	5	0.4	1.0	40	SWR	
		3	2117	46.18	19	25.09	155	17.27	9.42	1.1	1.1	18	3	141	.10	1	0.9	0.7	15	INT	L
		4	1031	33.06	19	25.07	155	17.36	7.20	1.4	1.8	25	2	72	.15	1	0.5	0.7	23	INT	L
		4	1144	58.18	19	24.43	155	17.75	8.31	1.5	1.9	25	3	50	.13	2	0.5	0.6	22	INT	L
		4	1152	11.45	19	22.94	155	26.78	9.20	1.8	1.1	41	4	39	.14	2	0.4	0.8	37	KAO	
		4	1916	33.92	19	23.48	155	17.80	7.50	1.2	1.5	20	3	69	.13	2	0.7	0.7	17	INT	L
		4	2051	9.72	19	24.77	155	17.31	8.11	1.7	1.8	19	2	87	.12	1	0.7	0.7	17	INT	L
		4	2311	9.20	19	19.62	155	11.10	7.60	1.7	1.5	35	1	94	.12	5	0.5	0.8	34	SF3	
		5	011	6.95	19	24.29	155	17.22	8.03	1.6	1.8	26	4	46	.13	1	0.5	0.7	18	INT	L
		5	239	24.13	19	25.13	155	17.10	8.31	1.4	1.8	21	2	91	.10	0	0.6	0.6	20	INT	L
		5	250	26.31	19	24.72	155	16.80	9.40	1.3	1.1	25	4	111	.11	1	0.6	0.7	20	INT	L
		5	315	13.00	19	20.64	155	6.23	7.02	1.9	1.8	38	3	104	.11	5	0.4	0.7	36	SF4	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	MAY	5	932	5.11	19	19.16	155	13.54	8.05	1.8	1.6	43	5	69	.11	4	0.4	0.6	39	SF2
		5	11 6	28.48	19	25.11	155	16.94	8.37	1.2	1.7	22	3	117	.11	0	0.5	0.6	19	INT L
		5	1519	46.56	19	19.33	155	6.26	4.29	1.4	1.3	27	2	141	.12	5	0.6	2.3	24	SSF
		5	2136	21.36	19	22.12	155	0.37	7.54	1.7	1.2	40	3	170	.11	6	0.6	0.5	36	SF5
		5	2259	15.13	19	16.13	155	22.25	7.99	1.4	1.6	29	3	156	.09	5	0.4	0.8	26	SWR
		6	1 5	22.56	19	17.29	155	26.01	9.24	1.4	1.4	34	3	56	.13	7	0.4	0.9	30	LSW
		7	215	1.54	19	18.46	155	27.65	8.07	1.4	1.2	38	4	44	.14	8	0.4	0.8	36	LSW
		7	710	27.20	19	20.39	155	11.69	8.80	1.8	1.5	33	2	77	.11	4	0.5	0.7	30	SF3
		7	1057	59.45	19	12.78	155	31.02	8.71	2.1	1.9	45	7	75	.13	5	0.4	0.6	42	LSW
		7	11 0	24.45	19	12.65	155	30.92	9.17	2.3	2.0	49	9	75	.12	5	0.3	0.5	42	LSW
		7	1215	49.95	19	13.37	155	30.97	8.72	2.0	1.3	44	9	69	.12	4	0.4	0.6	41	LSW
		7	1456	54.85	19	39.97	155	59.18	11.82	2.8	2.1	43	7	253	.12	21	1.0	0.7	35	HUA
		7	1541	24.62	19	22.81	155	26.88	9.58	2.2	2.1	50	9	35	.12	1	0.3	0.5	43	KAO
		8	217	14.69	19	14.70	156	3.30	46.03	2.5	2.0	43	8	259	.10	19	1.0	0.8	36	KON
		8	436	2.34	19	20.00	155	11.64	7.84	1.4	1.1	27	3	84	.12	5	0.5	0.9	26	SF3
		9	1527	29.88	19	11.27	155	29.15	33.96	2.8	2.9	58	13	75	.08	4	0.5	0.7	48	DLS F
		9	1855	56.22	19	20.48	155	12.51	8.69	1.3	1.2	30	2	70	.10	4	0.5	0.8	27	SF2
		10	411	14.81	19	10.22	155	33.22	1.34	1.8	1.5	30	5	113	.17	9	0.6	0.9	28	LSW
		10	17 3	0.88	19	19.55	155	11.73	7.07	1.5	1.5	27	2	93	.10	6	0.5	1.0	26	SF3
		10	2249	5.22	19	25.08	155	19.55	5.46	1.7	1.6	29	6	102	.12	3	0.4	0.9	24	KAO
		11	034	49.61	19	22.51	155	24.44	12.65	1.7	1.2	37	4	41	.11	5	0.4	0.5	35	KAO
		11	110	30.58	19	36.79	156	22.89	30.90	2.7	2.6	43	5	274	.13	51	1.4	2.5	40	DIS
		11	315	21.73	19	21.59	155	1.75	5.63	2.1	2.0	41	5	155	.15	4	0.5	0.9	37	SF5
		11	1329	10.34	19	28.10	155	27.35	3.14	1.8	1.3	35	5	73	.14	7	0.4	1.5	30	KAO
		11	17 4	39.15	19	19.80	155	11.50	9.00	1.8	1.7	33	0	88	.10	5	0.5	0.8	32	SF3
		11	2353	40.81	19	21.42	155	2.28	5.49	1.6	1.5	31	2	143	.18	3	0.7	1.4	28	SF5
		12	820	4.57	19	18.74	155	15.17	9.11	2.3	2.5	47	3	132	.12	5	0.4	0.5	42	SF1
		12	1037	4.55	19	15.89	155	24.27	45.41	2.6	2.3	56	10	87	.11	3	0.6	0.9	50	DEP
		12	1527	5.38	19	18.99	155	15.08	7.24	1.9	1.8	45	5	91	.12	5	0.4	0.6	43	SF1
		12	1638	6.52	19	24.70	155	19.36	6.62	1.5	1.3	28	3	69	.12	2	0.4	0.9	25	KAO
		13	252	46.82	19	27.09	155	29.16	9.79	1.7	1.3	34	7	54	.09	8	0.3	0.7	29	KAO
		13	1431	57.85	19	19.31	155	11.71	7.36	1.9	1.8	36	2	99	.10	5	0.5	0.8	33	SF3
		14	238	12.16	19	21.85	155	2.15	5.37	1.6	1.1	34	4	141	.13	4	0.5	1.2	33	SF5
		14	554	18.09	19	12.87	155	30.23	6.94	1.9	1.3	35	4	69	.14	4	0.5	0.8	35	LSW
		14	7 9	53.27	19	28.44	155	27.40	3.78	1.7	1.2	39	8	52	.13	7	0.3	1.7	34	KAO
		14	1434	38.54	19	19.10	155	11.77	6.93	1.6	1.3	29	1	103	.13	5	0.6	1.1	27	SF3
		14	1533	14.54	19	23.87	155	25.67	7.77	1.7	1.3	33	4	45	.13	3	0.4	0.8	30	KAO
		14	1828	25.17	19	19.57	155	11.74	7.25	1.4	1.5	32	4	92	.11	6	0.4	0.8	30	SF3
		14	19 8	10.86	19	22.12	155	3.02	7.71	1.7	1.7	35	5	113	.14	4	0.5	0.7	31	SF5
		14	1948	21.80	19	28.85	155	26.46	5.44	2.0	1.4	45	8	47	.11	6	0.3	1.1	39	KAO
		14	2052	19.19	19	19.14	155	8.58	6.99	1.4	1.3	31	4	85	.10	4	0.4	0.8	25	SF4
		15	035	53.78	19	24.60	155	19.59	6.08	1.5	1.3	28	3	85	.10	2	0.4	0.8	25	KAO
		15	116	17.88	19	19.68	155	12.26	6.69	2.0	2.3	51	7	85	.13	5	0.4	0.7	44	SF3
		15	135	19.47	19	19.21	155	13.53	7.67	1.3	1.3	37	3	69	.12	4	0.4	0.7	34	SF2
		15	155	48.98	19	24.60	155	16.79	9.78	1.4	1.8	23	3	104	.15	1	0.7	0.8	21	INT L

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	MAY	15	233	22.92	19	19.28	155	13.71	5.85	1.3	1.1	34	2	81	.13	4	0.5	1.1	31	SF2
		15	320	50.12	19	21.48	155	17.92	30.58	2.2	2.2	58	11	31	.11	3	0.5	0.6	49	DEP
		15	349	7.98	19	12.37	155	38.45	7.32	2.5	2.5	44	5	100	.17	5	0.5	1.0	28	LSW
		16	14 6	6.30	19	41.90	155	2.47	0.01	1.9	2.5	36	1	129	.21	1	0.7	1.2	36	HIL B
		16	1618	34.98	19	14.15	156	16.16	32.66	2.5	2.5	49	6	274	.12	42	1.5	1.6	46	KON
		16	1946	23.77	19	22.84	155	1.89	8.21	1.4	1.4	32	3	143	.15	5	0.6	0.8	31	SF5
		17	129	16.03	19	23.54	155	20.33	9.37	1.6	1.4	38	5	54	.10	1	0.4	0.6	34	KAO
		17	230	3.14	19	23.66	155	15.61	2.59	1.4	1.4	22	3	96	.13	2	0.3	0.3	19	SEC
		17	641	53.12	19	56.65	154	52.55	0.61	2.1	2.3	19	6	272	.12	31	2.2	0.8	19	KEA
		17	741	23.32	19	22.66	155	29.99	9.04	1.6	1.2	35	2	45	.11	4	0.4	0.8	34	KAO
		17	1323	56.83	19	24.66	154	50.97	44.53	2.6	2.7	52	8	242	.08	5	1.0	0.8	48	LER
		17	1952	22.57	19	17.73	155	14.11	6.68	0.8	1.1	17	1	136	.09	2	1.0	1.4	17	SF2
		17	2014	25.26	19	26.25	155	22.34	9.44	1.8	1.5	42	7	46	.11	4	0.3	0.7	34	KAO
		17	2112	39.98	19	17.87	155	14.30	5.21	0.8	1.1	19	1	113	.07	2	0.5	1.0	18	SF2
		17	23 3	39.50	19	23.15	155	20.46	9.68	1.5	1.3	33	6	52	.09	2	0.3	0.7	29	KAO
		18	240	26.76	19	20.15	155	12.22	7.01	1.4	1.3	37	3	77	.11	5	0.4	0.7	34	SF3
		18	2150	9.37	19	18.50	155	14.80	7.32	1.2	1.1	27	2	106	.10	4	0.5	1.0	27	SF1
		19	621	54.02	19	20.92	155	21.61	10.36	1.5	1.1	29	3	64	.09	3	0.4	0.8	27	SWR
		19	1236	39.00	19	19.98	155	8.48	7.51	2.3	2.7	48	7	79	.12	5	0.4	0.6	44	SF4
		19	1532	26.05	19	20.03	155	12.19	7.13	1.3	1.1	28	1	79	.10	5	0.5	0.9	26	SF3
		20	047	16.33	19	19.54	155	11.64	7.88	1.4	1.2	32	2	93	.08	6	0.5	0.9	31	SF3
		20	434	45.30	19	22.57	155	27.46	9.21	1.3	1.1	40	4	41	.13	0	0.4	0.7	36	KAO
		20	616	38.10	19	25.00	155	19.37	5.19	1.1	0.6	22	5	101	.08	3	0.4	0.9	19	KAO
		20	618	39.49	19	25.05	155	19.24	5.03	1.4	1.1	25	8	105	.07	3	0.4	0.7	20	KAO
		20	624	46.93	19	25.28	155	19.19	6.23	2.6	2.8	53	11	38	.12	3	0.3	0.6	43	KAO
		20	728	15.90	19	25.15	155	19.32	4.71	0.9	0.9	21	4	108	.09	3	0.4	0.8	18	KAO
		20	752	45.65	19	25.19	155	19.54	4.74	1.8	1.7	30	5	68	.10	3	0.3	0.8	26	KAO
		20	810	36.14	19	25.14	155	19.30	4.36	1.8	2.0	31	7	71	.10	3	0.3	0.6	26	KAO
		20	1324	26.18	19	20.53	155	6.05	7.06	2.5	2.9	48	6	109	.11	6	0.4	0.5	42	SF4
		20	15 3	10.03	19	26.22	155	18.47	3.41	0.8	1.6	18	2	162	.11	4	0.6	0.7	17	SNC L
		20	1551	8.25	19	20.96	155	29.61	6.09	2.1	2.4	32	2	63	.12	5	0.4	1.0	30	KAO
		20	1558	9.26	19	25.01	155	19.35	6.45	1.6	1.5	27	5	101	.11	3	0.4	0.8	22	KAO
		20	1812	35.09	19	18.05	155	21.51	5.03	1.3	1.3	27	2	116	.15	5	0.5	1.6	25	SWR
		21	033	36.74	19	23.94	155	17.54	1.27	1.3	1.8	23	5	46	.10	2	0.2	0.3	20	SSC
		21	417	22.59	19	24.43	154	55.87	4.48	1.9	1.4	23	5	194	.12	5	0.8	1.4	21	SLE
		21	1159	32.97	19	26.85	155	44.00	12.84	2.0	1.5	35	9	71	.15	8	0.5	0.4	30	KON
		21	1527	6.75	19	22.18	155	28.70	10.03	2.1	2.0	48	4	50	.10	2	0.3	0.5	45	KAO
		22	210	28.28	19	39.78	156	2.21	10.94	3.2	3.3	50	7	229	.13	21	0.9	0.6	37	HUA F
		22	1157	52.18	19	27.03	155	24.14	10.52	2.1	2.0	46	6	38	.10	4	0.3	0.6	40	KAO
		22	2236	54.60	19	11.53	155	37.07	9.32	3.6	3.6	61	14	95	.18	6	0.4	0.6	51	LSW
		22	2359	20.53	19	29.31	155	26.66	6.83	1.6	1.0	42	7	68	.13	5	0.3	0.9	35	KAO
		23	146	52.64	19	15.69	155	34.94	7.43	1.8	1.2	36	4	64	.17	4	0.5	1.0	35	LSW
		23	313	54.40	19	18.02	155	13.26	6.86	2.0	2.1	39	7	94	.12	2	0.4	0.7	32	SF2
		23	733	10.28	19	21.13	155	27.43	9.58	2.2	2.2	40	3	44	.11	3	0.3	0.5	37	KAO
		23	2050	39.25	19	22.26	155	29.00	9.47	1.7	1.4	38	2	40	.12	2	0.3	0.7	36	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	MAY	24	411	57.13	19	22.63	155	29.99	7.75	1.6	1.3	45	6	36	.14	4	0.4	0.8	41	KAO
		24	1245	48.42	19	21.20	155	6.18	6.75	1.8	1.7	33	3	92	.12	4	0.5	0.9	30	SF4
		24	1416	41.56	19	14.95	155	35.35	7.90	2.5	2.5	47	7	74	.18	3	0.5	0.7	44	LSW
		24	15	2 53.62	19	23.00	155	2.80	7.82	2.2	2.2	39	5	122	.14	4	0.5	0.4	36	SF5
		24	1638	46.00	19	23.72	155	16.86	10.43	1.3	0.9	26	3	44	.14	1	0.5	0.6	23	INT L
		25	139	2.17	19	23.05	155	26.62	9.92	1.4	1.2	33	2	39	.12	2	0.4	0.7	31	KAO
		25	1454	51.94	19	24.87	155	26.94	5.83	1.3	1.1	22	3	73	.10	5	0.4	1.4	19	KAO
		26	539	8.94	19	20.35	155	10.78	8.99	1.4	1.1	29	1	80	.10	4	0.5	0.9	27	SF3
		26	1336	22.67	19	19.24	155	13.66	7.30	1.7	1.3	39	3	80	.12	4	0.4	0.6	37	SF2
		26	1611	26.49	19	19.68	155	12.39	5.76	1.4	1.2	31	3	82	.13	5	0.4	1.1	29	SF2
		26	1941	49.23	19	59.78	155	27.62	8.92	2.8	2.5	54	12	191	.13	17	0.5	0.6	44	KEA
		26	2036	40.45	19	16.52	155	22.07	8.10	2.9	3.4	58	13	132	.16	5	0.4	0.5	50	SWR F
		26	2039	19.51	19	16.58	155	21.82	5.87	1.4	1.1	26	3	133	.11	6	0.4	1.3	25	SWR
		26	2116	12.04	19	16.70	155	21.90	6.98	1.8	1.4	37	4	132	.13	6	0.4	1.0	35	SWR
		27	637	26.02	19	26.45	155	29.03	8.20	1.9	1.5	35	4	59	.14	7	0.4	1.1	30	KAO
		27	732	11.71	19	22.30	155	0.57	6.51	2.0	1.4	37	4	174	.16	6	0.6	0.9	33	SF5
		28	143	34.44	19	11.07	155	28.93	34.28	2.0	1.5	44	10	80	.07	3	0.6	0.8	41	DLS
		28	538	28.74	19	27.44	154	53.71	7.24	1.8	1.4	25	3	139	.14	3	0.7	0.9	24	LER
		28	1232	12.18	19	21.81	155	6.25	7.75	1.5	1.3	29	3	79	.09	3	0.5	0.8	27	SF4
		28	1355	9.71	19	20.73	155	13.57	7.91	1.9	1.8	39	4	60	.12	4	0.4	0.6	35	SF2
		28	1435	45.81	19	20.05	155	9.49	6.38	1.4	1.3	26	3	81	.15	4	0.5	1.1	24	SF3
		28	1755	22.53	19	21.82	155	0.98	2.98	1.6	1.1	31	5	167	.14	5	0.5	1.3	27	SSF
		28	20	6 32.05	19	25.17	155	19.09	5.28	1.5	1.5	24	6	111	.13	3	0.6	1.4	20	KAO
		28	2055	13.77	19	40.87	155	43.46	8.75	2.2	1.8	37	11	104	.20	12	0.5	1.0	34	HUA
		28	2327	26.79	19	18.97	155	13.25	6.73	1.6	1.9	45	3	79	.13	4	0.4	0.8	43	SF2
		29	255	59.63	19	23.67	155	16.50	2.86	1.1	0.8	18	5	83	.11	0	0.4	0.2	15	SSC
		29	329	11.66	19	24.71	155	19.99	6.58	2.0	1.9	41	8	46	.12	2	0.3	0.6	36	KAO
		29	1526	22.13	19	23.62	155	16.93	3.10	1.1	1.0	19	5	50	.07	0	0.3	0.2	16	SSC
		29	2256	7.91	19	23.53	155	21.00	8.80	1.7	1.7	40	4	55	.13	2	0.4	0.6	37	KAO
		30	059	36.50	19	16.50	155	26.26	9.35	1.9	2.2	44	5	58	.14	6	0.4	0.6	41	LSW
		30	245	24.50	19	25.09	155	15.72	15.91	2.6	3.0	63	15	46	.11	2	0.4	0.3	52	DEP
		30	6	4 17.20	19	24.26	155	16.82	9.17	1.4	2.1	22	5	78	.09	1	0.5	0.6	21	INT L
		30	9	7 59.74	19	20.57	155	11.56	7.36	1.5	1.5	34	2	74	.14	4	0.6	0.8	33	SF3
		30	935	35.28	19	22.09	155	17.31	32.12	2.6	2.8	56	10	39	.12	3	0.5	0.7	50	DEP
		30	1057	14.86	19	27.42	155	23.69	11.62	2.6	2.4	49	8	45	.11	4	0.3	0.5	43	KAO
		30	1549	37.90	19	22.63	155	8.48	3.40	1.3	1.3	13	2	104	.07	3	0.7	0.5	12	SER
		30	18	6 51.86	19	22.09	155	12.99	3.35	0.8	1.0	9	1	143	.04	1	0.6	0.5	8	SER
		30	2045	45.35	19	22.48	155	2.62	6.29	1.6	1.3	33	4	131	.15	5	0.5	0.9	31	SF5
		31	853	30.86	19	23.09	155	27.46	10.02	2.0	1.9	44	6	33	.12	1	0.3	0.6	41	KAO
		31	856	52.28	19	49.26	155	49.26	35.70	2.4	1.9	53	10	171	.09	15	0.6	0.9	47	HUA
		31	1917	47.44	19	27.51	155	23.63	11.21	2.3	1.9	49	9	39	.10	4	0.3	0.5	43	KAO
		31	2038	4.04	19	22.51	155	29.77	8.88	2.1	1.8	46	5	33	.12	4	0.4	0.8	43	KAO
		31	2143	17.56	19	22.87	155	25.58	10.78	1.5	1.3	35	4	39	.11	4	0.4	0.8	31	KAO
	JUN	1	1325	25.00	19	16.55	155	22.02	6.08	1.5	1.4	38	6	133	.13	5	0.4	1.0	35	SWR
		1	1553	27.60	19	25.73	155	21.51	10.01	2.6	2.5	55	7	32	.11	4	0.3	0.4	47	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JUN	1	18 1	9.13	19	28.98	155	26.26	2.07	1.3	1.0	14	2	93	.17	5	0.4	1.7	13	KAO
		1	20 5	25.61	19	25.26	155	29.32	9.06	1.5	1.1	30	4	62	.09	6	0.4	0.9	26	KAO
		1	2215	26.10	19	20.27	155	12.89	5.73	1.5	1.6	28	2	68	.13	4	0.4	1.0	27	SF2
		2	1147	55.66	19	18.59	155	15.55	6.91	1.3	1.5	32	0	115	.09	4	0.5	0.8	32	SF1
		2	1448	46.29	19	21.62	155	2.69	6.92	1.8	1.5	35	7	135	.14	3	0.5	0.8	29	SF5
		2	1517	26.32	19	20.45	155	7.61	5.43	1.3	1.3	31	2	91	.14	5	0.5	1.3	29	SF4
		2	1846	21.46	19	18.46	155	13.31	5.18	1.3	1.3	30	3	84	.12	3	0.4	1.2	30	SF2
		2	1859	36.63	19	19.21	155	28.64	9.53	1.8	1.5	40	5	43	.12	6	0.3	0.6	36	KAO
		2	2317	29.64	19	13.28	155	38.98	7.10	2.7	2.6	47	7	99	.21	5	0.7	0.9	44	LSW
		3	241	29.76	19	21.58	155	1.93	7.94	2.8	3.4	48	7	150	.12	4	0.5	0.4	44	SF5
		3	243	8.07	19	21.57	155	1.77	6.75	1.7	1.7	36	3	155	.13	4	0.5	0.8	33	SF5
		3	414	41.16	19	21.59	155	2.14	6.94	2.7	2.9	48	6	145	.12	3	0.4	0.5	44	SF5
		3	720	54.33	19	23.15	155	30.38	8.79	1.1	1.1	26	3	115	.08	5	0.5	0.9	25	KAO
		3	1017	15.45	19	45.67	156	2.88	9.01	2.4	2.4	41	8	233	.12	33	0.8	0.6	36	HUA
		4	238	39.49	19	21.91	155	7.09	7.28	1.5	1.7	31	3	75	.12	3	0.5	0.8	29	SF4
		4	311	44.73	19	15.28	155	31.76	7.76	2.1	1.8	46	6	60	.19	3	0.4	0.8	42	LSW
		4	544	38.94	19	21.88	155	30.21	4.53	1.8	1.5	36	1	45	.14	5	0.4	1.9	32	KAO
		4	743	29.55	19	21.10	155	29.56	4.76	2.3	2.5	46	8	43	.11	4	0.3	1.3	41	KAO
		4	2041	6.26	19	20.59	155	12.15	7.15	1.3	1.3	33	4	71	.11	4	0.4	0.6	31	SF3
		5	251	32.74	19	24.71	155	19.18	5.71	1.4	1.3	24	3	67	.09	2	0.4	0.9	20	KAO
		5	253	1.67	19	23.03	155	27.00	9.69	1.4	1.1	31	3	39	.12	1	0.4	0.6	29	KAO
		5	310	10.22	19	50.00	155	11.99	46.03	2.5	2.2	67	19	190	.12	16	0.6	0.9	59	KEA
		5	418	46.34	19	24.65	155	30.37	10.83	1.8	1.2	36	4	41	.10	6	0.4	0.8	33	KAO
		5	2355	4.61	19	18.91	155	13.40	6.94	1.4	1.3	29	3	76	.11	3	0.5	0.9	27	SF2
		5	2359	2.36	19	25.47	155	28.87	9.96	1.7	1.2	33	2	60	.11	6	0.4	0.8	31	KAO
		6	1455	59.15	19	19.26	155	8.99	7.82	1.6	1.9	30	2	91	.09	4	0.4	0.8	19	SF4
		6	1629	15.01	19	19.45	155	16.35	8.04	2.0	2.1	43	3	97	.12	2	0.4	0.5	30	SF1
		6	2113	45.93	19	24.15	155	51.12	11.63	2.6	2.1	32	2	136	.15	12	0.7	0.4	22	KON
		6	2230	59.09	19	57.80	155	32.55	42.96	2.4	1.8	28	3	244	.11	17	1.0	1.5	24	KEA
		7	028	54.25	19	11.67	155	39.95	4.83	1.9	1.4	25	2	112	.22	8	0.8	3.9	22	LSW
		7	449	44.45	19	19.48	155	11.67	6.65	1.3	1.2	26	1	94	.11	6	0.5	1.2	21	SF3
		7	627	25.02	19	19.16	155	15.06	4.50	1.2	1.3	26	2	88	.13	4	0.4	1.6	20	SSF
		7	918	26.06	19	50.19	155	44.71	13.88	2.4	2.2	25	2	222	.11	9	1.5	0.7	19	HUA
		7	2336	11.08	19	33.97	155	56.93	26.43	3.6	3.8	59	10	209	.12	9	0.7	1.2	48	KON F
		7	2339	3.63	19	19.79	155	24.87	11.78	2.0	1.7	40	3	64	.11	3	0.4	0.5	32	SWR
		8	330	48.64	19	22.38	155	29.90	9.86	1.8	1.5	36	3	41	.11	4	0.4	0.7	27	KAO
		8	1510	44.91	20	0.41	155	26.15	12.88	2.1	1.5	18	4	212	.11	16	1.2	0.6	12	KEA
		8	1546	29.23	19	24.22	155	16.15	3.15	0.9	1.0	13	3	123	.05	1	0.3	0.4	11	SEC
		8	1643	0.95	19	19.60	155	11.16	6.76	1.7	1.9	37	4	95	.11	5	0.5	0.9	24	SF3
		8	17 0	9.74	19	21.23	155	2.78	6.67	2.0	2.0	31	3	135	.11	2	0.5	0.8	25	SF5
		8	1745	33.86	19	24.14	155	15.93	2.80	1.6	2.3	28	4	86	.11	1	0.3	0.3	22	SEC
		8	23 2	36.23	19	22.47	155	26.81	10.27	1.5	1.1	27	1	41	.10	1	0.4	0.8	20	KAO
		9	148	1.68	19	20.20	155	10.28	8.72	2.1	2.3	46	6	82	.11	4	0.4	0.5	42	SF3
		9	449	13.37	19	22.69	155	0.90	7.41	1.8	1.5	36	4	153	.17	6	0.5	0.8	33	SF5
		9	759	32.66	19	19.29	155	13.06	6.50	1.2	1.3	17	0	79	.08	4	0.6	1.3	13	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JUN	9	14 2	44.57	19	23.42	155	2.66	7.82	1.6	1.5	38	3	116	.14	4	0.5	0.6	36	SF5
		9	2029	22.65	19	19.99	155	26.80	51.10	2.5	2.5	60	12	51	.11	5	0.6	0.9	53	DML
		10	020	36.96	19	18.82	155	26.25	9.45	1.5	1.4	28	4	71	.11	6	0.4	0.7	26	LSW
		10	050	32.73	19	17.91	155	47.72	10.77	3.1	3.1	46	5	88	.12	9	0.5	0.3	38	KON
		10	123	47.93	19	10.98	155	29.25	33.84	2.5	2.2	53	13	82	.08	4	0.5	0.8	46	DLS
		10	357	57.17	19	19.27	155	9.43	4.40	1.4	1.1	25	3	97	.12	4	0.4	1.5	24	SSF
		10	544	52.60	19	26.74	155	29.93	10.06	2.9	2.8	47	2	32	.12	9	0.3	0.6	36	KAO F
		10	734	54.59	19	19.58	155	12.12	5.54	1.3	1.2	29	3	88	.11	5	0.5	1.4	27	SF3
		10	748	10.23	19	20.00	155	11.91	9.24	2.7	3.0	49	7	82	.12	5	0.4	0.4	36	SF3
		10	837	26.23	19	19.43	155	11.73	5.41	1.6	1.6	31	4	95	.10	5	0.4	1.2	29	SF3
		10	1157	28.10	19	25.66	155	17.16	6.51	0.9	1.6	20	4	164	.12	1	0.6	0.6	18	INT L
		10	1436	48.19	19	20.19	155	11.75	7.49	1.7	2.2	30	2	80	.12	5	0.6	1.0	29	SF3
		10	1549	28.62	19	20.00	155	8.35	5.71	1.8	1.9	40	6	82	.11	5	0.4	0.8	36	SF4
		10	1553	43.50	19	21.84	155	5.10	7.22	1.4	1.5	33	3	79	.12	5	0.4	0.7	31	SF5
		10	1938	35.95	19	25.99	155	18.19	5.21	1.0	1.8	23	6	119	.12	2	0.5	0.6	21	INT L
		10	2046	1.02	19	23.82	155	19.50	5.41	0.6	0.9	17	5	74	.19	4	0.8	1.9	15	KAO L
		10	2322	40.77	19	24.80	155	18.13	7.62	1.1	1.7	25	4	81	.11	1	0.5	0.6	23	INT L
		11	026	32.29	19	24.48	155	17.52	16.77	2.6	2.9	55	7	34	.13	1	0.3	0.5	47	DEP
		11	519	15.17	19	17.39	155	12.98	8.06	1.8	2.1	46	6	142	.12	1	0.5	0.6	41	SF2
		11	839	47.55	19	19.96	155	11.84	7.13	1.4	1.4	33	4	83	.10	5	0.4	0.7	30	SF3
		11	13 1	37.44	19	26.13	155	28.95	8.37	2.0	1.7	44	6	45	.10	7	0.3	0.8	39	KAO
		11	1338	58.26	19	18.75	155	13.41	8.12	2.0	2.2	49	6	77	.13	3	0.4	0.6	45	SF2
		11	1349	0.10	19	18.60	155	13.33	5.72	1.3	1.1	31	2	82	.11	3	0.4	1.1	31	SF2
		11	1357	29.41	19	18.53	155	13.15	7.22	1.6	1.6	40	4	88	.11	3	0.4	0.7	38	SF2
		11	1428	45.94	19	18.36	155	13.27	6.82	1.5	1.5	41	4	87	.11	2	0.4	0.8	37	SF2
		11	1510	12.50	19	18.27	155	13.12	8.01	1.4	1.3	30	4	95	.09	2	0.4	0.7	30	SF2
		11	1511	22.90	19	20.18	155	3.74	6.37	2.1	2.2	36	5	127	.11	2	0.5	0.6	30	SF5
		11	1739	47.05	19	18.68	155	13.36	7.47	1.3	1.3	34	2	80	.11	3	0.4	0.7	33	SF2
		11	1912	43.75	19	19.27	155	13.24	6.49	1.3	1.2	30	4	75	.11	4	0.4	0.8	27	SF2
		11	2136	17.28	19	24.14	155	16.54	9.41	1.2	1.4	24	4	66	.12	0	0.6	0.6	20	INT L
		12	149	45.56	19	21.59	155	2.43	6.44	1.9	1.8	40	5	136	.12	3	0.4	0.7	36	SF5
		12	532	38.33	19	19.91	155	10.58	7.39	1.4	1.5	37	2	89	.12	4	0.5	0.7	36	SF3
		12	7 8	54.50	19	24.18	155	17.25	16.04	2.4	2.3	60	14	25	.12	1	0.4	0.3	51	DEP
		12	15 0	29.67	19	29.00	155	27.18	5.14	1.8	1.2	25	5	69	.10	6	0.4	2.0	21	KAO
		13	527	39.55	19	21.51	155	28.42	10.21	2.1	2.2	44	4	39	.10	2	0.3	0.6	38	KAO
		13	1113	49.34	19	18.77	155	13.02	9.41	2.8	3.0	55	9	88	.12	3	0.4	0.5	49	SF2
		13	1115	35.19	19	17.60	155	12.91	6.47	1.4	1.2	26	3	130	.09	1	0.4	0.8	25	SF2
		13	1129	46.41	19	17.52	155	13.02	7.79	2.0	1.8	43	6	130	.12	1	0.5	0.6	37	SF2
		13	1157	7.35	19	18.48	155	12.87	9.69	2.8	2.9	54	8	99	.12	3	0.5	0.5	46	SF2
		13	1228	45.78	19	18.16	155	12.80	9.66	1.6	1.5	31	4	111	.09	2	0.6	0.7	29	SF2
		13	1228	53.37	19	18.31	155	12.84	10.31	2.6	2.7	52	8	104	.12	3	0.4	0.5	47	SF2
		13	1347	42.14	19	17.82	155	16.32	7.81	1.8	1.8	38	3	127	.12	4	0.5	0.8	35	SF1
		13	1638	49.85	19	17.72	155	12.91	7.67	2.0	2.1	42	5	124	.11	2	0.5	0.6	38	SF2
		13	1658	36.51	19	17.76	155	12.86	7.14	1.4	1.5	33	4	123	.09	2	0.5	0.8	31	SF2
		14	0 8	23.63	19	19.62	155	29.00	9.88	1.6	1.3	25	5	45	.11	6	0.4	0.9	24	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	GAP NS	DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JUN	14	019	16.64	19	19.93	155	29.17	9.44	1.6	1.3	32	5	46	.12	6	0.4	0.8	29	KAO
		14	046	59.12	19	11.63	155	32.67	7.46	1.8	1.4	31	3	95	.15	8	0.6	1.2	26	LSW
		14	1646	58.03	19	33.61	155	10.10	24.28	2.8	2.4	55	11	68	.11	13	0.5	0.9	47	DEP
		15	351	56.11	19	26.12	155	29.07	9.54	2.2	1.8	47	3	40	.11	7	0.3	0.7	44	KAO
		15	623	42.62	19	20.41	155	12.59	5.85	1.4	1.3	35	1	70	.13	4	0.5	0.9	33	SF2
		15	1138	12.18	19	24.64	155	30.34	10.91	2.0	1.5	38	4	45	.10	6	0.4	0.8	33	KAO
		15	1557	35.08	19	20.44	155	11.89	7.83	1.4	1.2	26	1	75	.09	5	0.5	0.8	26	SF3
		16	011	23.21	19	18.69	155	13.34	8.42	2.3	3.0	53	6	80	.12	3	0.4	0.5	48	SF2
		16	012	17.96	19	18.44	155	13.32	6.47	1.9	2.2	46	4	84	.12	3	0.4	0.7	44	SF2
		16	1 1	44.44	19	18.47	155	13.33	6.55	1.3	1.1	35	2	83	.11	3	0.4	0.9	35	SF2
		16	114	55.04	19	18.43	155	13.16	7.99	1.7	1.8	44	4	90	.09	3	0.4	0.6	41	SF2
		16	943	5.10	19	22.98	155	27.35	10.05	1.9	1.8	44	3	35	.12	1	0.4	0.6	41	KAO
		17	049	37.71	19	31.14	156	4.42	38.29	2.5	2.0	49	6	240	.11	17	1.0	0.8	46	KON
		17	231	12.49	19	15.97	155	5.01	45.68	3.6	3.8	63	13	195	.11	6	0.8	0.6	53	DEP
		17	5 8	17.20	19	20.10	155	11.09	7.03	1.7	1.6	41	4	85	.13	4	0.4	0.7	39	SF3
		17	7 4	27.13	19	24.46	155	17.51	16.76	2.4	2.6	57	11	35	.11	1	0.3	0.4	47	DEP
		17	737	42.58	19	22.24	155	28.71	10.09	3.1	3.3	59	12	36	.11	2	0.3	0.4	51	KAO F
		17	1743	3.48	19	19.73	155	10.35	8.01	1.5	1.2	29	1	92	.12	4	0.6	0.9	29	SF3
		17	2139	8.35	19	24.61	155	30.27	11.40	1.9	1.6	40	5	35	.11	5	0.4	0.6	37	KAO
		17	22 1	41.99	19	25.97	155	18.09	7.25	1.2	1.8	22	4	126	.10	1	0.7	0.7	19	INT L
		18	042	46.57	19	22.42	155	21.31	9.72	2.0	2.1	52	8	48	.13	4	0.3	0.5	46	KAO
		18	3 8	25.62	19	20.48	155	11.64	7.27	2.1	2.6	46	4	76	.14	4	0.4	0.7	42	SF3
		18	437	37.07	19	25.94	155	29.36	8.37	1.5	1.2	30	2	62	.10	7	0.4	1.1	27	KAO
		18	519	44.64	19	36.12	156	25.16	30.12	2.2	1.9	40	8	299	.14	54	1.2	2.8	37	DIS
		18	2315	33.75	19	19.30	155	12.84	6.96	1.6	1.7	43	4	83	.11	4	0.4	0.7	39	SF2
		19	258	45.54	19	20.84	155	48.65	9.10	1.9	1.4	35	4	109	.13	11	0.5	0.7	33	KON
		19	357	4.72	19	20.47	155	12.17	8.63	2.4	2.8	52	6	73	.13	4	0.4	0.5	47	SF3
		19	413	37.75	19	19.83	155	12.13	7.04	1.7	1.8	43	5	83	.12	5	0.4	0.6	40	SF3
		19	532	37.31	19	20.13	155	47.94	11.33	2.2	1.5	43	9	99	.12	11	0.4	0.4	39	KON
		19	1721	50.04	19	18.85	155	11.54	6.58	1.4	1.3	33	4	112	.11	5	0.4	0.9	30	SF3
		19	1820	29.11	19	21.50	155	28.82	8.29	1.6	1.1	29	2	44	.12	3	0.4	0.7	28	KAO
		20	212	39.54	19	21.06	155	29.07	6.60	1.8	1.6	24	2	46	.11	4	0.4	1.0	22	KAO
		20	243	45.77	19	27.83	155	25.42	8.21	1.9	1.1	39	4	43	.11	5	0.3	0.7	34	KAO
		20	421	41.70	19	24.84	155	17.06	10.41	1.2	1.8	15	2	86	.13	0	0.9	1.2	14	INT L
		20	18 4	55.35	19	20.09	155	7.63	6.90	1.9	2.1	41	3	95	.11	5	0.4	0.7	38	SF4
		20	2023	15.19	19	18.99	155	12.82	7.13	1.4	1.4	38	3	89	.11	4	0.4	0.6	37	SF2
		20	2037	13.52	19	28.23	155	27.60	2.67	1.7	1.1	34	5	60	.14	7	0.3	1.3	30	KAO
		20	2222	15.77	19	26.98	155	28.89	9.98	1.7	1.4	33	4	56	.10	7	0.4	0.8	30	KAO
		21	2 1	1.02	19	24.52	155	18.71	6.39	1.3	1.8	16	1	98	.13	2	0.6	1.0	16	INT L
		21	247	57.86	19	24.27	155	25.57	10.31	2.6	2.7	49	4	23	.12	2	0.3	0.4	44	KAO
		21	334	17.12	19	16.07	155	32.21	4.45	1.7	1.4	29	2	171	.24	9	0.9	4.1	16	LSW
		21	1431	12.80	19	21.30	155	0.64	5.27	1.6	1.5	29	3	183	.13	5	0.7	1.2	26	SF5
		21	1516	24.03	19	22.90	155	17.16	9.25	1.8	2.2	29	6	50	.13	1	0.5	0.6	24	INT L
		21	1733	36.51	19	25.36	155	16.64	8.83	1.0	1.0	19	5	183	.08	1	0.8	0.5	17	INT L
		21	1853	10.42	19	19.93	155	7.02	6.44	1.9	1.4	38	4	110	.15	5	0.5	1.0	36	SF4

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JUN	21	1934	18.59	19	23.44	155	2.78	6.75	1.6	1.2	32	2	117	.13	3	0.6	0.8	31	SF5
		21	1954	52.72	19	24.36	155	17.53	7.62	1.2	1.0	16	3	55	.14	1	0.7	1.1	13	INT L
		21	2234	25.26	19	25.03	155	19.14	5.65	1.4	1.0	25	3	78	.11	3	0.4	0.9	22	KAO
		22	620	35.78	19	19.95	155	8.33	6.78	1.4	1.2	26	0	82	.11	5	0.5	1.1	26	SF4
		22	1114	11.92	19	19.38	155	11.47	7.02	1.6	1.2	32	2	98	.10	6	0.5	1.0	25	SF3
		22	1412	3.79	19	21.27	155	2.67	6.10	1.9	1.1	29	4	131	.11	3	0.4	0.7	18	SF5
		23	452	2.17	19	16.84	155	30.28	9.59	1.7	1.2	34	3	50	.12	3	0.4	0.8	24	LSW
		23	635	4.54	19	24.44	155	16.17	4.02	1.5	1.9	16	0	108	.14	1	0.6	0.6	3	SEC L
		23	757	40.91	19	25.10	155	30.18	7.49	1.6	1.3	36	3	37	.12	7	0.4	1.1	27	KAO
		23	13 5	15.72	19	53.89	155	22.12	10.36	2.0	1.7	29	5	168	.12	3	0.7	0.3	28	KEA
		23	1755	6.14	19	19.15	155	15.31	6.57	1.2	1.3	28	1	100	.10	4	0.5	1.0	27	SF1
		23	19 1	49.99	19	20.13	155	8.50	6.92	1.4	1.3	35	3	77	.12	4	0.5	0.8	33	SF4
		24	132	44.05	19	20.08	155	9.64	6.85	1.5	1.3	30	2	81	.08	4	0.4	0.8	29	SF3
		24	437	43.43	19	19.58	155	11.70	6.79	1.4	1.3	27	1	92	.07	6	0.4	0.9	26	SF3
		24	555	29.51	19	19.79	155	7.85	6.26	1.9	2.5	41	4	95	.13	5	0.5	0.9	38	SF4
		24	556	9.33	19	53.20	155	33.92	16.02	2.5	2.5	53	12	128	.13	10	0.5	0.8	48	KEA
		24	1840	59.76	19	15.37	155	27.04	7.54	1.6	1.5	34	5	79	.13	5	0.4	0.8	32	LSW
		24	2047	44.03	19	22.07	155	2.45	8.13	1.8	1.7	38	4	130	.16	4	0.7	0.5	35	SF5
		24	22 2	5.61	19	13.74	155	15.15	38.59	1.5	1.5	34	2	213	.12	7	1.2	1.1	33	DEP L
		25	645	38.57	19	9.76	155	27.62	38.08	1.3		29	4	162	.08	1	1.4	1.3	29	DLS T
		25	17 7	21.64	19	18.72	155	12.86	8.39	1.6	1.8	43	7	93	.11	3	0.5	0.5	32	SF2
		25	1833	21.54	19	18.57	155	12.93	6.23	1.3	1.6	35	3	95	.09	3	0.4	0.7	22	SF2
		25	2124	42.94	19	21.46	155	18.04	30.54	2.0	2.1	50	6	54	.11	4	0.5	0.8	45	DEP
		25	2350	20.89	19	31.74	155	28.55	6.26	2.2	2.3	42	5	57	.11	2	0.3	0.7	32	MLO
		26	413	51.59	19	21.89	155	26.58	10.90	2.0	1.8	39	3	45	.11	2	0.4	0.6	29	KAO
		26	425	17.48	19	19.15	155	11.74	6.17	1.3	1.4	30	3	102	.09	5	0.5	1.1	21	SF3
		26	1441	56.15	19	21.50	155	2.68	7.19	2.1	2.2	43	6	128	.12	3	0.5	0.5	36	SF5
		26	17 4	33.27	19	2.17	156	13.11	37.41	2.6	2.2	43	7	285	.10	45	1.1	1.7	38	KON
		26	2111	31.85	19	19.37	155	11.56	4.09	1.3	1.2	31	2	98	.15	5	0.5	1.9	27	SSF
		26	2132	11.57	19	26.49	155	16.57	6.26	1.1	1.8	18	1	174	.12	3	0.8	1.3	7	INT L
		26	2350	9.11	19	24.74	155	16.96	9.79	1.6	1.8	14	1	104	.11	0	1.1	0.9	4	INT L
		27	427	35.48	19	24.70	155	17.10	8.74	1.8	2.4	18	1	58	.13	0	0.7	0.9	6	INT
		27	448	47.24	19	25.44	155	17.34	10.51	1.3	1.7	16	2	149	.08	0	0.7	0.8	7	INT L
		27	1621	20.64	19	24.03	155	17.16	8.74	1.2	1.3	19	2	54	.12	1	0.6	0.8	10	INT L
		27	2053	45.94	19	24.73	155	17.55	5.82	1.7	2.2	23	0	42	.14	1	0.5	0.8	9	INT L
		27	2138	47.36	19	23.99	155	15.85	3.32	1.1	1.6	24	4	110	.08	1	0.3	0.3	16	SEC
		28	526	26.92	19	18.70	155	50.32	11.59	3.1	2.9	40	3	123	.12	6	0.7	0.3	34	KON
		28	17 9	46.60	19	11.74	155	35.78	6.98	2.9	3.0	52	10	92	.21	6	0.5	1.0	47	LSW
		28	23 9	28.93	19	22.74	155	0.46	8.26	2.2	2.4	37	2	159	.13	5	0.6	0.5	35	SF5
		28	2333	47.85	19	19.78	155	8.26	7.80	1.5	1.4	36	6	85	.10	5	0.4	0.7	33	SF4
		29	214	53.45	19	21.61	155	0.34	6.89	2.7	3.0	43	6	180	.13	6	0.5	0.4	37	SF5
		29	533	23.07	19	20.40	155	6.41	7.54	2.1	2.3	43	4	108	.12	8	0.4	0.6	37	SF4
		30	040	35.21	19	20.37	155	11.30	8.76	2.0	2.2	42	5	79	.09	4	0.3	0.5	39	SF3
		30	214	16.28	19	26.14	155	29.57	10.20	2.2	1.7	46	7	41	.10	6	0.3	0.6	41	KAO
		30	219	3.58	19	18.69	155	15.24	5.88	1.6	1.3	34	0	109	.13	4	0.5	1.1	33	SF1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JUN	30	5 3	25.90	19	26.56	155	29.45	8.12	1.9	1.7	36	4	44	.10	8	0.4	1.0	31	KAO
		30	5 9	50.88	19	22.32	154	59.52	8.10	2.2	2.4	39	4	177	.13	5	0.7	0.5	36	LER
		30	7 1	26.58	19	25.15	155	17.11	9.73	1.2	1.7	21	4	117	.09	1	0.5	0.5	19	INT L
		30	723	59.96	19	23.07	155	17.12	7.36	0.8	1.1	17	3	71	.14	1	0.6	1.1	16	INT L
		30	1020	27.49	19	20.25	155	8.09	7.95	1.5	1.7	36	5	84	.11	5	0.4	0.7	29	SF4
		30	1112	24.05	19	22.42	155	17.87	26.87	4.2	4.6	51	2	27	.12	2	0.5	0.8	47	DEP F
	JUL	1	252	10.28	19	19.94	155	8.55	8.25	2.7	3.0	49	8	77	.09	5	0.3	0.4	43	SF4
		1	726	27.03	19	20.11	155	6.59	7.12	1.4	1.3	34	5	113	.10	6	0.4	0.8	31	SF4
		1	1010	47.79	19	21.50	155	1.99	4.76	1.5	1.4	28	3	159	.16	3	0.7	1.6	27	SSF
		1	1147	19.22	19	20.47	155	11.05	7.10	1.2	1.2	25	3	78	.11	4	0.5	0.9	24	SF3
		1	1450	10.01	19	15.98	155	13.50	5.59	1.7	1.3	31	3	186	.09	2	0.6	0.8	30	SF2
		1	1859	34.96	19	20.30	155	24.15	12.96	1.6	1.5	32	3	71	.10	2	0.5	0.6	29	SWR
		1	1951	19.98	19	19.80	155	12.06	7.26	1.4	1.3	30	3	84	.10	6	0.4	0.7	29	SF3
		1	2037	25.00	19	20.98	155	50.14	8.37	2.3	1.6	41	8	129	.14	10	0.4	0.7	35	KON
		1	2231	23.04	19	20.64	155	30.14	7.39	2.3	2.5	42	8	50	.10	6	0.3	0.6	38	KAO
		2	018	37.71	19	24.00	155	27.13	10.08	1.8	1.5	40	5	35	.12	3	0.4	0.6	37	KAO
		3	118	38.39	19	23.90	155	17.27	7.33	1.0	1.6	21	5	57	.11	1	0.5	0.4	20	INT L
		3	151	25.15	19	16.79	155	7.38	42.05	2.9	2.9	55	10	195	.12	1	0.6	0.7	47	DEP
		3	314	27.04	19	22.71	155	20.64	9.95	1.8	1.3	46	5	43	.10	2	0.3	0.5	41	KAO
		3	459	1.78	19	29.17	155	27.69	3.16	2.6	2.3	43	6	56	.13	5	0.3	1.2	37	KAO
		3	515	10.42	19	56.01	155	29.69	21.03	2.5	2.6	54	11	160	.09	17	0.5	1.0	48	KEA
		3	1550	22.09	19	25.47	155	19.86	4.62	1.3	1.3	22	2	91	.09	3	0.4	1.0	20	KAO
		3	1553	37.23	19	12.45	155	30.57	7.22	1.9	1.3	42	4	76	.14	5	0.4	0.8	33	LSW
		4	535	27.21	19	25.14	155	30.51	11.12	2.3	1.6	41	4	69	.10	7	0.3	0.4	37	KAO
		4	621	29.78	19	18.60	155	27.42	7.98	1.9	1.6	42	2	75	.15	7	0.5	0.8	39	LSW
		4	645	52.26	19	20.50	155	11.99	8.45	2.1	2.3	45	5	73	.13	4	0.5	0.6	40	SF3
		4	1128	37.17	19	11.41	155	32.97	7.41	1.9	2.1	36	4	97	.16	8	0.5	1.1	32	LSW
		4	13 6	20.82	19	19.61	155	10.96	7.03	1.6	1.4	36	2	95	.13	5	0.5	0.8	34	SF3
		4	17 3	44.59	19	16.73	155	22.35	7.59	2.2	2.6	47	5	127	.14	5	0.4	0.6	44	SWR
		5	441	11.42	19	22.64	155	0.95	7.60	1.9	2.0	43	4	153	.14	6	0.6	0.6	38	SF5
		5	1910	25.74	19	25.53	155	20.07	6.49	1.1	1.3	25	3	93	.09	3	0.4	1.0	22	KAO
		5	1911	42.21	19	25.68	155	20.06	6.26	1.1	1.3	25	2	96	.12	4	0.5	1.0	23	KAO
		5	1933	15.69	19	23.50	155	27.01	10.01	2.2	1.9	49	5	29	.14	2	0.3	0.6	44	KAO
		5	2339	3.66	19	22.92	155	18.45	5.84	1.5	1.9	30	6	58	.13	3	0.4	0.6	25	INT L
		6	149	53.05	19	20.48	155	30.34	8.59	1.2	1.2	32	3	52	.11	6	0.3	0.8	23	KAO
		6	253	49.43	19	19.92	155	10.59	7.21	1.5	1.4	35	4	89	.11	4	0.4	0.7	30	SF3
		6	333	46.77	19	24.02	155	17.71	8.12	2.0	2.3	30	6	46	.16	2	0.5	0.6	28	INT L
		6	7 3	48.67	19	20.05	155	3.84	39.95	1.9	2.7	48	8	138	.12	2	1.0	0.8	46	DEP
		6	845	16.57	19	12.93	155	16.30	45.21	1.4	1.5	41	6	216	.12	9	1.3	1.0	40	DEP L
		6	845	56.82	19	12.86	155	16.42	45.98	1.4		35	4	216	.10	9	1.3	1.1	35	DEP L
		6	847	6.22	19	12.52	155	17.24	50.41	1.5	1.9	40	8	177	.14	10	0.9	0.9	39	DEP L
		6	10 6	40.14	19	25.38	155	14.52	8.69	1.3	1.8	17	3	214	.11	1	0.9	0.7	16	INT L
		6	1212	0.28	19	20.36	155	12.98	7.03	1.4	1.2	28	2	66	.11	4	0.5	0.7	27	SF2
		6	13 0	48.27	19	23.79	155	17.11	8.56	1.0	1.0	22	4	69	.14	1	0.6	0.7	20	INT L
		6	1412	17.93	19	26.28	155	29.14	10.23	2.9	2.7	54	7	37	.12	7	0.3	0.4	46	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JUL	6	1533	1.28	19	20.79	155	11.93	8.34	2.4	2.4	52	7	70	.12	4	0.3	0.4	45	SF3
		6	1551	7.13	19	23.00	155	52.59	7.89	2.6	2.4	43	8	163	.20	12	0.6	0.8	38	KON
		6	1559	47.78	19	20.12	155	11.76	7.36	1.5	1.1	34	2	81	.10	5	0.4	0.7	31	SF3
		6	1954	17.62	19	20.60	155	11.55	8.72	2.0	1.9	41	3	74	.12	4	0.4	0.6	38	SF3
		6	2154	9.12	19	24.94	155	16.77	8.12	1.3	1.8	21	3	117	.12	0	0.6	0.7	20	INT L
		6	22 2	12.48	19	27.19	155	29.10	10.06	1.4	1.0	33	4	49	.11	8	0.4	0.9	28	KAO
		7	158	35.69	19	20.52	155	5.86	34.96	1.8	1.3	37	4	111	.12	5	1.0	1.3	35	DEP
		7	2 0	37.46	19	10.14	155	35.92	10.81	4.3	4.5	57	11	105	.18	9	0.5	0.5	48	LSW F
		7	2 6	12.62	19	8.61	155	35.17	5.72	2.3	1.9	31	4	123	.11	12	0.5	2.2	28	LSW
		7	2 6	40.93	19	8.95	155	35.32	7.44	3.2	3.0	49	9	119	.14	12	0.5	0.8	44	LSW
		7	210	24.55	19	9.07	155	35.07	6.42	2.0	1.2	30	4	130	.13	11	0.5	1.5	28	LSW
		7	220	18.92	19	9.20	155	35.24	8.62	2.1	1.4	31	4	117	.13	11	0.4	1.1	31	LSW
		7	225	3.97	19	8.65	155	35.20	10.77	3.6	3.6	48	7	123	.15	12	0.5	0.5	43	LSW
		7	236	15.39	19	8.85	155	35.25	6.43	2.4	2.1	36	4	120	.15	12	0.6	1.9	35	LSW
		7	244	25.94	19	9.42	155	36.60	7.65	1.9	1.2	27	4	108	.15	10	0.5	1.6	25	LSW
		7	246	56.10	19	8.85	155	35.36	5.55	1.9	1.4	27	4	120	.12	12	0.5	3.1	24	LSW
		7	3 2	14.18	19	9.17	155	35.16	6.19	1.8	1.2	30	5	117	.14	11	0.5	1.8	29	LSW
		7	3 5	9.39	19	8.86	155	34.67	8.45	2.2	2.0	35	4	123	.15	12	0.5	1.4	32	LSW
		7	3 6	34.03	19	8.89	155	35.00	7.65	3.0	2.8	46	10	121	.14	12	0.4	1.1	41	LSW
		7	310	57.21	19	24.86	155	17.26	7.95	1.2	1.9	22	2	101	.11	0	0.6	0.7	21	INT L
		7	4 3	44.93	19	23.94	155	16.07	2.89	2.0	2.3	34	4	35	.11	1	0.3	0.2	32	SEC
		7	433	3.99	19	20.21	155	12.52	8.81	2.2	2.4	48	6	73	.13	5	0.3	0.5	44	SF2
		7	6 9	15.25	19	8.32	155	35.87	10.74	3.1	3.1	51	9	123	.15	12	0.4	0.5	44	LSW
		7	628	32.06	19	8.10	155	35.36	11.12	3.2	3.0	47	6	128	.13	13	0.3	0.3	43	LSW
		7	853	59.08	19	23.86	155	15.54	3.41	1.1	1.2	16	5	105	.04	2	0.3	0.4	13	SEC
		7	1220	53.82	19	8.53	155	35.92	8.30	2.1	1.9	35	4	120	.14	12	0.5	1.2	33	LSW
		8	012	24.82	19	28.69	155	45.50	9.80	2.2	1.8	36	5	67	.12	4	0.4	0.6	32	KON
		8	235	11.23	19	20.12	155	8.58	7.97	2.6	3.0	49	5	75	.12	4	0.4	0.6	44	SF4
		8	1158	16.34	19	9.22	155	35.19	8.11	2.5	2.7	36	4	117	.13	11	0.5	1.5	32	LSW
		9	220	13.12	19	19.20	155	10.82	6.05	1.3	1.3	26	1	106	.09	6	0.5	1.2	26	SF3
		9	227	21.71	19	17.20	155	28.11	8.76	2.1	2.1	48	7	52	.15	5	0.3	0.7	44	LSW
		9	1334	29.93	19	21.56	155	2.07	5.06	1.9	1.5	35	3	147	.18	3	0.7	1.6	32	SF5
		9	2132	4.82	19	22.63	155	1.83	5.48	1.7	1.3	32	2	138	.15	5	0.5	1.5	30	SF5
		10	311	31.55	19	14.56	155	35.10	7.76	2.2	1.9	42	5	79	.20	4	0.5	0.9	40	LSW
		10	814	33.24	19	21.67	155	19.20	26.15		1.6	14	1	79	.09	4	1.4	2.3	13	DEP
		10	2120	8.43	19	13.01	155	32.63	10.29	3.1	3.1	51	9	80	.18	6	0.5	0.6	45	LSW
		11	322	12.68	19	19.20	155	12.96	8.42	2.0	2.0	51	5	82	.12	4	0.4	0.5	48	SF2
		11	654	27.81	19	23.45	155	27.28	10.32	2.2	2.1	46	6	31	.13	2	0.3	0.5	41	KAO
		11	1511	58.59	19	30.26	154	55.27	40.31	3.6	3.6	59	11	65	.10	4	0.7	0.9	51	LER
		11	1547	57.32	19	16.87	155	7.14	40.76	2.2	1.6	43	8	198	.12	2	1.0	0.9	40	DEP
		11	1725	59.79	19	20.65	155	8.90	8.26	1.6	1.7	38	2	67	.09	3	0.4	0.7	35	SF4
		11	2126	15.83	19	12.85	155	32.51	9.22	2.5	2.6	42	5	80	.12	6	0.4	0.7	39	LSW
		12	1055	10.54	19	21.75	155	17.20	31.20	2.2	2.0	50	9	44	.12	3	0.5	0.7	43	DEP
		12	1435	55.02	19	35.74	155	51.68	14.46	2.8	2.4	44	9	166	.13	10	0.6	0.3	40	KON
		12	16 1	36.65	20	36.10	154	52.62	17.22	2.5	2.0	37	4	297	.12	93	2.1	99.0	37	DIS

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JUL	13	6 4	34.22	19	19.73	155	11.94	8.24	1.4	1.4	32	4	87	.09	6	0.4	0.7	30	SF3
		13	719	48.94	19	19.70	155	12.44	7.54	1.9	1.9	37	2	82	.09	5	0.4	0.6	35	SF2
		13	1223	39.90	19	21.38	155	2.67	5.90	1.5	1.1	32	3	131	.13	3	0.6	1.0	30	SF5
		13	1410	34.41	19	22.12	155	26.83	9.28	2.3	1.9	48	4	42	.15	2	0.4	0.6	43	KAO
		13	1537	4.47	19	28.48	155	28.12	8.90	1.9	1.2	39	6	58	.11	7	0.3	0.9	30	KAO
		14	357	42.17	19	46.08	155	39.72	12.44	3.2	3.1	56	10	98	.12	10	0.5	0.4	48	KEA
		14	1217	3.53	19	19.45	155	7.94	6.53	1.3	1.1	26	3	97	.08	4	0.4	0.8	24	SF4
		14	2126	56.24	19	20.36	155	11.41	7.78	1.9	1.9	45	4	79	.13	4	0.4	0.7	39	SF3
		15	251	10.22	19	18.61	155	15.58	6.37	1.3	1.1	34	2	114	.14	4	0.5	0.9	33	SF1
		15	317	49.38	19	14.87	155	35.19	7.46	2.1	1.7	41	5	76	.18	3	0.5	0.8	39	LSW
		15	8 4	31.90	19	11.23	155	35.57	8.17	2.9	2.7	47	8	96	.20	7	0.5	0.8	43	LSW
		16	328	26.84	19	19.62	155	8.65	8.13	1.7	1.7	40	5	78	.10	4	0.4	0.6	37	SF4
		16	632	1.10	19	20.69	155	11.60	9.70	2.1	2.3	41	5	72	.10	4	0.3	0.4	36	SF3
		16	1638	17.33	19	20.27	155	12.95	7.26	1.4	1.3	30	1	68	.10	4	0.4	0.8	28	SF2
		16	23 8	17.51	19	19.49	155	9.69	6.58	1.6	1.6	36	5	94	.08	5	0.4	0.6	31	SF3
		16	2337	34.49	19	20.58	155	10.21	8.44	2.0	2.3	42	3	75	.12	3	0.4	0.7	39	SF3
		17	8 0	24.53	19	19.79	155	11.50	7.65	1.6	1.6	27	0	88	.10	5	0.5	0.7	26	SF3
		17	23 7	59.99	19	20.38	155	12.99	7.24	1.3	1.3	34	2	66	.13	4	0.5	0.8	33	SF2
		17	2333	7.61	19	22.54	155	4.46	8.37	2.0	2.0	43	5	83	.14	4	0.4	0.5	38	SF5
		18	218	28.55	19	23.89	155	27.62	10.46	2.8	2.9	54	9	29	.12	3	0.3	0.3	45	KAO F
		18	327	4.84	19	31.44	155	14.78	25.24	2.4	1.9	48	6	62	.11	12	0.5	0.9	42	DEP
		18	815	33.47	19	23.16	155	20.96	10.82	2.1	1.6	40	5	43	.08	7	0.4	0.5	31	KAO
		18	11 1	14.04	19	26.19	155	21.83	9.16	1.8	1.3	29	3	52	.13	3	0.4	0.8	26	KAO
		18	1628	39.68	19	16.69	155	28.30	7.78	1.8	1.7	42	5	56	.16	4	0.4	0.9	40	LSW
		18	1740	39.16	19	25.67	155	29.58	8.51	1.9	1.3	37	4	38	.13	6	0.4	0.9	33	KAO
		18	1829	49.16	19	20.01	155	11.73	6.80	1.4	1.1	26	1	83	.12	5	0.5	0.9	25	SF3
		18	1956	9.56	19	25.62	155	21.82	8.52	1.5	1.1	36	3	33	.13	4	0.4	0.8	32	KAO
		19	846	9.08	19	19.94	155	7.65	8.91	1.9	2.1	45	6	97	.08	5	0.3	0.4	40	SF4
		19	2357	27.10	19	14.67	155	33.36	6.82	1.9	1.3	37	4	73	.17	6	0.5	1.2	36	LSW
		20	635	24.33	19	16.26	155	12.73	7.07	1.4	1.3	30	1	190	.13	2	0.6	0.8	30	SF2
		20	737	53.53	19	22.30	155	4.37	7.59	1.6	1.8	36	4	83	.12	4	0.4	0.6	32	SF5
		20	1345	12.00	19	23.90	155	26.54	10.44	1.9	1.8	36	3	36	.10	3	0.4	0.7	33	KAO
		21	914	14.91	19	19.72	155	11.63	7.08	1.7	1.5	40	4	89	.10	5	0.4	0.7	38	SF3
		21	1247	44.71	19	0.53	155	29.22	38.31	2.3	2.0	48	5	209	.08	17	0.8	1.0	45	DLS
		21	1910	0.13	19	11.57	155	35.57	8.69	2.3	1.7	35	5	93	.13	7	0.4	0.7	33	LSW
		22	534	3.28	19	19.71	155	6.25	4.99	1.8	1.9	31	5	129	.13	5	0.5	1.8	28	SSF
		22	6 4	53.07	19	17.51	155	27.14	8.06	1.5	1.5	33	3	48	.17	7	0.4	1.1	33	LSW
		22	948	59.18	19	24.72	155	19.26	7.07	1.3	1.2	26	4	68	.11	2	0.5	0.8	22	KAO
		22	1719	4.22	19	24.25	155	16.65	15.83	1.5	1.4	42	5	70	.10	1	0.5	0.3	39	DEP
		23	2 4	30.48	19	19.98	155	7.35	8.45	2.1	2.1	41	5	103	.10	5	0.4	0.4	37	SF4
		23	627	2.93	19	22.32	155	27.45	11.09	1.8	1.2	34	0	43	.12	7	0.4	0.9	31	KAO
		23	740	25.59	19	24.61	155	50.77	14.13	2.4	1.6	30	5	129	.13	11	0.6	0.4	28	KON
		23	943	4.52	19	25.28	155	19.77	6.10	1.7	1.6	32	4	38	.10	3	0.3	0.8	27	KAO
		23	1531	22.37	19	20.46	155	12.56	7.57	1.2	1.1	24	2	69	.09	4	0.5	0.8	23	SF2
		24	720	10.30	20	7.65	155	43.41	29.64	2.6	2.7	22	2	212	.11	6	1.4	1.6	20	KOH

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	JUL	24	1147	59.35	19	47.25	155	26.59	23.98	2.9	2.5	61	16	84	.11	2	0.4	0.9	49	KEA
		25	517	38.86	19	9.17	155	35.96	7.62	2.5	2.6	39	5	114	.16	11	0.5	0.9	36	LSW
		25	534	13.55	19	44.69	156	29.07	35.11	3.7	4.1	58	11	238	.12	66	0.9	1.7	49	DIS F
		25	1825	52.91	19	22.27	155	28.92	9.64	1.8	1.5	37	2	38	.10	2	0.3	0.6	35	KAO
		25	2345	23.67	19	28.21	155	25.89	2.39	1.6	1.1	27	5	76	.17	5	0.4	1.2	24	KAO
		26	749	49.93	19	31.68	155	12.01	24.45	2.4	1.9	50	11	62	.12	14	0.5	1.0	46	DEP
		26	23	4 41.84	19	25.48	155	19.23	6.47	1.5	1.5	26	3	124	.10	3	0.4	1.0	24	KAO
		27	552	41.13	19	22.96	155	27.58	10.20	2.0	1.7	38	3	35	.12	1	0.4	0.6	35	KAO
		27	1023	29.50	19	18.34	155	13.02	9.48	2.1	2.1	43	5	97	.11	3	0.5	0.5	40	SF2
		27	1237	35.37	19	21.26	155	24.40	10.59	1.8	1.7	34	3	66	.11	3	0.4	0.6	29	SWR
		27	1842	49.89	19	21.71	155	30.27	8.93	1.7	1.1	32	2	46	.10	5	0.4	0.9	30	KAO
		28	1857	25.60	20	3.40	155	32.19	8.58	2.6	2.2	47	9	198	.13	25	0.6	0.6	42	KEA
		28	2152	35.71	19	24.16	155	16.15	18.81	1.7	1.7	48	7	70	.11	1	0.5	0.6	44	DEP
		28	2356	51.69	18	54.48	155	16.31	14.44	2.4	3.1	30	3	256	.11	34	1.4	3.3	29	LOI L
		29	252	30.12	18	48.76	155	14.27	11.60	2.3	2.4	27	3	269	.12	45	1.5	1.8	26	LOI
		29	410	45.64	19	20.56	155	11.60	8.56	2.2	2.3	48	7	75	.13	4	0.4	0.4	42	SF3
		29	1122	29.97	19	19.80	155	11.50	8.21	1.7	1.1	25	2	88	.12	5	0.6	0.9	23	SF3
		30	220	20.34	19	19.46	155	15.14	8.62	1.8	1.7	41	4	93	.11	4	0.4	0.5	38	SF1
		30	943	59.21	19	21.86	155	1.67	6.13	2.3	2.0	42	6	152	.13	4	0.5	0.8	38	SF5
		30	15	3 25.55	19	18.50	155	15.35	8.70	1.8	1.7	37	4	104	.10	4	0.4	0.5	34	SF1
		31	650	38.77	19	25.05	155	19.09	5.37	1.3	1.1	24	3	106	.08	3	0.4	0.8	31	KAO
		31	813	27.60	19	26.11	154	54.19	8.03	1.8	1.4	31	1	169	.12	3	0.8	0.8	31	LER
		31	940	15.67	18	54.77	155	15.28	11.20	2.9	3.5	45	5	247	.12	35	1.0	0.6	44	LOI
		31	1822	53.06	19	19.49	155	11.25	6.79	1.5	1.2	22	0	97	.10	5	0.6	1.1	21	SF3
		31	1929	15.33	19	19.23	155	9.58	7.76	1.9	1.8	42	6	100	.08	5	0.3	0.5	38	SF3
		31	20	3 51.81	19	17.84	155	27.82	9.21	1.7	1.8	40	4	78	.13	6	0.4	0.6	37	LSW
		31	22	5 34.08	19	24.83	155	19.32	6.25	2.0	1.9	34	5	45	.11	2	0.4	0.7	30	KAO
		31	2321	28.25	19	21.82	155	2.77	6.32	1.3	1.1	26	4	136	.15	4	0.6	1.1	23	SF5
		31	2343	1.02	19	19.97	155	8.47	5.92	1.9	2.0	43	6	79	.10	5	0.4	0.6	38	SF4
	AUG	1	714	17.22	19	20.03	155	7.52	7.31	1.7	1.6	39	5	98	.10	5	0.4	0.7	36	SF4
		1	15	5 17.63	19	21.69	155	6.66	7.52	1.7	1.4	33	3	80	.11	3	0.4	0.7	25	SF4
		1	15	9 59.76	19	22.86	155	1.96	8.09	2.4	2.4	42	2	133	.12	5	0.5	0.4	25	SF5
		1	2320	45.23	19	23.58	155	23.11	10.06	1.5	1.3	41	4	41	.13	5	0.4	0.6	26	KAO
		2	052	22.49	19	11.26	155	29.16	34.17	2.0	1.5	42	3	147	.10	7	0.8	1.3	37	DLS
		3	123	26.75	19	20.80	155	13.05	7.17	1.6	1.2	36	2	61	.14	3	0.5	0.7	30	SF2
		3	1621	39.76	19	11.11	155	29.27	33.32	2.0	1.7	40	4	81	.08	4	0.6	1.0	39	DLS
		4	217	58.51	19	24.01	155	16.00	3.05	1.1	1.4	23	5	107	.09	1	0.3	0.2	20	SEC
		4	441	55.34	18	52.33	155	11.23	22.63	2.3	3.0	28	6	269	.12	43	1.4	6.0	26	LOI L
		4	8	6 16.72	19	19.90	155	11.94	6.76	1.5	1.3	40	3	83	.12	5	0.4	0.8	38	SF3
		4	825	37.49	19	24.86	155	16.64	10.85	0.9	1.2	17	2	145	.11	1	0.8	1.1	15	INT L
		4	10	7 22.56	19	10.82	155	27.94	7.51	2.3	2.1	42	6	106	.15	2	0.4	0.8	39	LSW
		4	12	3 40.90	19	29.49	155	0.34	42.78	3.2	3.1	55	6	73	.11	6	0.7	1.1	49	DEP
		4	1724	38.08	19	25.13	154	56.37	38.88	3.1	2.9	50	7	166	.11	4	0.8	0.9	45	LER
		4	1846	31.74	19	41.08	155	18.59	35.04	2.8	2.6	60	15	94	.11	19	0.5	0.9	50	KEA
		4	2010	22.76	19	21.53	155	25.76	9.49	1.7	1.3	39	2	48	.13	4	0.4	0.7	36	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	AUG	5	821	27.05	19	18.14	155	13.18	7.03	1.3	1.1	17	0	96	.09	2	0.7	1.3	14	SF2
		5	1710	4.11	19	21.22	155	13.10	9.01	2.3	2.5	47	7	57	.13	3	0.3	0.5	42	SF2
		5	1821	22.72	19	19.67	155	13.38	9.44	2.1	1.9	46	5	120	.12	6	0.5	0.5	42	SF2
		5	1848	4.92	19	19.70	155	11.81	6.62	1.5	1.1	33	1	89	.12	6	0.5	1.0	31	SF3
		6	032	22.79	19	24.91	155	19.70	5.63	2.4	2.5	46	9	37	.11	2	0.3	0.6	38	KAO
		6	150	29.00	19	19.13	155	13.08	5.79	1.7	1.6	38	5	80	.14	4	0.5	1.1	35	SF2
		6	710	53.74	19	15.84	155	27.10	9.34	1.6	1.7	30	1	70	.12	5	0.4	0.9	26	LSW
		6	8	6 59.39	19	12.11	155	27.31	8.84	3.2	3.6	51	5	119	.19	5	0.5	0.7	42	LSW F
		6	12	1 23.63	20	0.02	155	21.51	13.94	2.3	2.1	21	4	207	.08	12	0.9	0.4	20	KEA
		6	1429	13.05	19	11.83	155	27.07	4.73	1.8	1.2	32	2	126	.15	5	0.6	2.7	32	LSW
		6	2027	7.37	19	11.20	155	29.38	33.89	2.2	1.9	47	6	81	.08	4	0.6	0.9	45	DLS
		6	2126	50.53	19	11.70	155	27.52	6.24	1.9	1.4	33	2	117	.14	4	0.6	1.4	30	LSW
		7	035	55.69	19	18.89	155	13.43	5.86	1.5	1.5	37	5	75	.14	3	0.4	0.9	33	SF2
		7	4	6 58.71	19	16.73	155	22.45	7.33	1.9	2.0	52	5	125	.16	5	0.4	0.7	49	SWR
		7	446	43.85	19	11.61	155	27.49	6.78	1.8	1.3	33	3	118	.15	4	0.6	1.4	30	LSW
		7	858	12.61	19	19.50	155	11.69	8.36	1.3	1.1	24	0	94	.10	6	0.6	1.2	23	SF3
		7	1439	30.96	19	22.02	155	6.55	7.93	1.8	2.2	36	2	75	.14	2	0.5	0.8	34	SF4
		7	1752	11.35	19	10.08	155	33.04	1.18	1.7	1.4	31	4	115	.16	9	0.5	0.8	30	LSW
		8	1231	52.79	19	19.07	155	13.25	9.50	2.4	2.5	48	5	128	.12	7	0.5	0.5	43	SF2
		8	1233	16.29	19	17.88	155	12.97	7.59	1.8	1.7	39	5	113	.10	2	0.5	0.7	36	SF2
		8	1258	6.71	19	12.58	155	28.56	6.65	2.1	1.7	34	5	91	.12	5	0.4	0.9	30	LSW
		8	1646	29.90	19	20.97	155	12.84	8.92	2.6	2.7	46	5	61	.11	3	0.3	0.4	41	SF2
		8	1652	6.72	19	20.20	155	12.86	6.93	1.3	1.1	27	1	70	.12	5	0.6	1.0	26	SF2
		9	1445	32.96	19	16.22	155	48.46	10.92	2.4	1.8	39	7	112	.15	7	0.6	0.4	34	KON
		9	21	5 32.29	19	25.22	155	30.13	11.37	2.9	2.9	48	5	34	.11	7	0.3	0.4	43	KAO
		9	23	1 32.52	19	25.46	155	19.54	5.84	1.5	1.4	26	4	117	.08	3	0.3	0.9	22	KAO
		10	022	54.43	19	38.11	155	59.97	38.93	2.4	1.8	39	2	253	.12	18	1.7	1.5	38	KON
		10	945	42.96	19	49.83	156	8.50	32.85	2.1	1.8	42	7	290	.12	36	1.1	1.3	40	HUA
		10	1428	40.03	18	52.38	155	15.38	13.23	2.1	1.5	31	4	295	.11	39	1.5	2.0	30	LOI L
		10	1853	54.54	19	21.71	155	26.46	9.89	1.7	1.7	35	3	46	.13	3	0.4	0.7	31	KAO
		10	1857	26.90	19	21.67	155	26.50	10.23	2.1	2.0	43	3	46	.12	3	0.4	0.5	38	KAO
		10	1934	56.89	18	57.72	155	14.94	12.57	2.3	2.8	31	1	280	.10	31	2.5	0.6	30	LOI L
		10	2223	6.08	19	32.61	155	37.47	10.30	2.6	2.2	43	4	49	.17	4	0.5	0.7	40	MLO
		11	210	57.17	18	31.88	153	59.30	17.88	2.3	2.3	39	2	332	.16	137	7.2	98.7	38	DIS
		11	1743	40.18	19	21.31	155	23.26	9.84	1.4	1.2	22	3	55	.10	2	0.5	0.9	20	SWR
		11	1745	53.79	19	16.37	155	28.90	10.31		1.3	22	3	58	.17	3	0.6	1.4	22	LSW
		11	1857	11.91	20	0.73	156	1.56	10.10	2.9	3.3	44	7	254	.13	29	0.8	0.5	42	KOH
		11	2334	25.23	19	16.87	155	21.85	4.73	0.9	1.3	25	3	130	.13	6	0.5	2.7	24	SWR
		11	2358	4.43	19	22.50	155	4.03	8.50	2.1	2.3	45	7	96	.14	4	0.5	0.4	40	SF5
		12	746	45.24	19	17.69	155	12.94	6.84	1.5	1.5	37	3	124	.11	2	0.4	0.7	36	SF2
		12	752	38.78	19	17.88	155	14.45	7.14	1.4	1.1	29	1	118	.12	2	0.6	0.8	29	SF2
		12	1650	50.60	19	19.31	155	26.30	9.84	1.6	1.3	36	3	56	.14	6	0.4	0.7	34	KAO
		12	1933	9.76	19	20.00	155	10.10	6.64	1.4	1.1	27	2	85	.12	4	0.6	1.1	25	SF3
		12	2356	16.03	19	19.77	155	8.15	6.93	1.4	1.5	33	4	87	.10	5	0.4	0.7	32	SF4
		13	728	4.19	19	27.94	155	26.73	9.04	2.3	2.0	34	4	44	.12	7	0.4	0.9	22	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	AUG	13	10 2	53.93	19	11.63	155	39.47	10.63	3.5	3.9	35	1	108	.19	7	0.7	0.8	23	LSW F
		13	1112	10.58	19	19.79	155	11.64	7.80	2.2	2.6	45	5	87	.14	5	0.4	0.6	41	SF3
		13	1138	19.42	19	17.37	155	14.17	6.94	1.3	1.1	26	3	148	.10	1	0.5	0.8	26	SF2
		13	2219	56.96	19	20.05	155	15.78	6.27	1.3	1.1	38	5	90	.13	3	0.4	0.7	34	SF1
		14	839	13.28	19	21.28	155	16.62	25.85	2.3	2.2	50	6	66	.11	2	0.6	0.7	43	DEP
		14	1919	24.63	19	21.80	155	29.94	9.70	2.1	2.2	44	2	34	.09	4	0.3	0.6	41	KAO
		14	20 1	7.28	19	19.63	155	11.55	6.70	1.4	1.3	32	2	92	.10	5	0.4	0.9	32	SF3
		14	22 0	17.65	19	18.79	155	14.86	7.80	1.2	1.3	30	2	101	.08	4	0.5	0.8	29	SF1
		15	356	52.30	19	22.51	155	30.12	9.99	1.6	1.3	32	3	46	.10	4	0.4	0.8	31	KAO
		15	634	22.18	19	47.15	155	33.55	28.02	2.1	1.6	44	11	115	.11	11	0.5	1.1	42	KEA
		15	1840	41.66	19	20.61	155	13.06	7.52	1.6	1.3	35	2	63	.12	4	0.5	0.7	34	SF2
		16	257	13.53	19	20.33	155	7.70	7.68	1.9	2.0	47	5	90	.13	5	0.4	0.6	44	SF4
		16	1148	15.11	19	21.97	155	0.78	1.91	1.6	1.1	22	2	175	.15	5	0.7	1.6	20	SSF
		16	1415	53.00	19	21.32	155	6.38	6.98	1.4	1.1	25	3	88	.11	4	0.5	0.8	25	SF4
		16	1547	13.36	19	22.02	155	5.68	7.90	1.8	1.7	33	3	76	.11	3	0.4	0.7	29	SF4
		16	1742	5.14	19	9.79	155	35.03	9.65	2.6	2.3	41	5	112	.14	10	0.5	0.7	40	LSW
		16	1758	9.57	19	21.13	155	6.55	5.50	1.5	1.4	38	4	91	.19	4	0.6	1.3	38	SF4
		16	1835	1.49	19	27.34	155	28.31	8.82	1.8	1.3	39	5	56	.11	7	0.4	0.9	35	KAO
		16	19 0	16.95	19	19.99	155	12.12	7.14	1.3	1.2	26	1	81	.09	5	0.6	1.0	25	SF3
		16	19 5	3.20	19	9.44	155	34.91	8.72	2.1	1.6	29	5	116	.14	11	0.5	1.1	27	LSW
		17	1652	23.41	20	2.40	155	27.30	11.28	1.5	1.4	26	3	212	.25	20	1.6	1.1	22	KEA
		17	20 1	58.31	19	16.86	155	15.24	10.17	2.1	2.2	31	1	154	.12	6	0.6	0.7	27	SF1
		18	424	55.95	19	20.54	155	12.55	7.22	1.2	1.2	25	0	68	.10	4	0.5	0.7	20	SF2
		18	6 5	8.94	18	51.80	155	14.94	12.30	2.2	1.9	18	2	273	.10	40	1.6	1.3	17	LOI L
		18	940	58.95	19	26.77	155	29.13	10.61	2.2	1.9	41	5	45	.10	8	0.4	0.6	36	KAO
		18	10 5	21.24	19	21.69	155	5.93	7.55	1.8	1.8	44	7	82	.13	3	0.4	0.6	39	SF4
		18	1538	15.21	19	23.59	155	26.12	10.96	1.9	1.5	41	4	37	.12	3	0.4	0.5	37	KAO
		19	356	6.25	19	25.77	155	21.90	9.02	2.0	1.7	47	5	32	.13	4	0.3	0.6	42	KAO
		19	530	3.70	19	15.59	155	29.96	9.05	2.2	1.9	43	4	67	.15	1	0.4	0.7	41	LSW
		19	855	56.93	19	15.59	155	33.70	7.98	2.2	1.7	43	5	63	.18	6	0.5	0.8	41	LSW
		20	722	4.54	19	16.58	155	22.30	7.22	2.6	3.0	52	5	130	.14	5	0.4	0.6	48	SWR
		20	723	55.74	19	15.97	155	21.81	7.50	1.3	1.2	26	3	176	.11	5	0.6	1.0	22	SWR
		20	1030	2.66	19	19.48	155	11.92	7.51	1.8	1.7	38	4	92	.10	5	0.5	0.7	35	SF3
		20	1715	43.93	19	20.69	155	12.79	7.46	1.6	1.3	35	3	64	.13	4	0.5	0.7	33	SF2
		20	1948	54.60	21	0.50	156	10.01	32.83	3.2	3.1	44	6	302	.13	28	1.6	1.2	41	DIS
		21	1 6	4.77	18	49.83	155	15.97	12.04	2.2	1.9	28	2	300	.10	42	1.8	1.8	28	LOI L
		21	2 8	47.00	19	20.20	155	11.79	7.73	2.3	2.2	53	6	79	.14	5	0.4	0.5	48	SF3
		21	541	58.77	19	20.61	155	7.95	7.13	1.9	1.8	41	5	83	.10	4	0.4	0.6	36	SF4
		21	10 6	3.84	19	20.50	155	11.79	8.34	1.6	1.5	29	0	74	.12	4	0.6	1.0	29	SF3
		21	14 2	0.30	19	41.97	155	2.11	0.01	2.2	2.2	24	0	124	.25	1	1.3	1.3	24	HIL B
		21	1445	46.35	19	19.34	155	10.22	6.41	1.6	1.5	35	2	102	.14	5	0.6	0.9	33	SF3
		22	628	0.16	19	18.55	156	4.22	40.04	4.2	4.7	62	14	248	.09	21	0.7	0.6	51	KON F
		22	948	41.24	19	19.69	155	12.24	7.06	2.1	2.0	43	2	85	.16	5	0.5	0.7	41	SF3
		23	225	25.02	19	18.38	155	13.17	8.02	2.0	1.9	46	5	91	.12	3	0.4	0.5	43	SF2
		23	4 1	8.97	19	19.13	155	13.12	9.10	2.4	2.7	50	5	79	.12	4	0.4	0.5	46	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	AUG	23	15 3	5.15	19	20.77	155	12.29	7.96	1.8	1.8	38	4	68	.10	4	0.4	0.5	35	SF3
		23	1555	29.37	19	56.79	155	19.23	27.39	2.5	2.1	51	13	198	.12	7	0.7	1.0	45	KEA
		23	1811	28.71	18	54.92	155	16.33	13.78	2.3	3.3	24	3	262	.11	34	1.4	1.3	24	LOI L
		24	111	10.65	20	32.71	155	31.19	0.70	3.1	3.4	41	6	297	.14	54	7.0	2.2	37	DIS
		24	757	51.59	19	29.55	155	27.64	5.89	2.0	1.7	20	1	80	.09	5	0.4	1.8	18	KAO
		24	1026	13.53	19	22.62	155	8.34	2.85	1.3	1.4	18	1	95	.11	3	0.5	0.5	18	SER
		24	2018	59.09	18	54.56	155	15.24	11.52	2.1	2.3	27	3	257	.12	35	1.6	0.8	27	LOI L
		24	2139	58.64	19	23.00	155	26.71	10.09	2.1	2.2	43	4	40	.12	2	0.4	0.5	40	KAO
		24	2140	52.57	19	9.29	155	34.75	7.73	2.6	2.2	37	5	119	.14	11	0.5	1.3	35	LSW
		25	047	35.27	19	20.27	155	11.72	7.68	1.7	1.8	43	4	78	.12	5	0.4	0.6	40	SF3
		25	253	57.89	19	20.59	155	11.91	7.92	2.9	3.0	55	7	73	.14	4	0.4	0.5	49	SF3
		25	358	57.84	19	22.32	155	4.51	7.18	1.7	1.7	33	4	86	.18	4	0.6	1.1	30	SF5
		25	443	1.48	19	17.08	155	22.78	5.06	2.0	2.3	48	4	114	.16	6	0.4	1.3	47	SWR
		25	711	7.13	19	20.52	155	10.74	7.59	2.5	3.0	53	7	77	.14	3	0.4	0.5	49	SF3
		25	735	30.52	19	17.66	155	12.60	6.40	1.2	1.5	27	2	140	.10	2	0.6	1.0	27	SF2
		25	1419	22.00	19	23.11	155	8.51	2.82	1.0	1.0	11	1	106	.12	3	0.9	0.5	11	SER
		25	16 9	26.98	19	18.26	155	13.38	7.84	1.5	1.5	35	3	85	.09	2	0.5	0.7	33	SF2
		25	1936	33.97	19	23.02	155	13.08	6.56	1.2	1.1	17	3	85	.15	1	0.7	1.1	14	SF2
		25	1941	43.86	18	54.53	155	15.93	12.22	2.1	2.1	29	3	256	.11	35	1.4	0.8	29	LOI L
		25	1944	47.74	18	58.70	155	15.71	12.22	2.0	2.4	32	6	242	.11	29	0.9	0.5	32	LOI L
		26	6 6	29.79	19	19.22	155	9.83	6.80	1.7	1.5	41	4	102	.10	5	0.4	0.7	38	SF3
		26	7 1	47.31	19	24.97	155	19.37	5.30	1.7	1.8	35	5	38	.10	2	0.3	0.7	30	KAO
		26	1130	56.91	19	20.34	155	7.30	8.18	2.3	2.3	44	6	97	.11	6	0.4	0.6	39	SF4
		26	1926	39.34	19	21.05	155	6.07	7.69	1.5	1.7	32	2	96	.12	4	0.5	0.8	32	SF4
		26	1932	29.99	19	21.35	155	5.89	7.60	1.3	1.3	32	2	90	.12	4	0.4	0.8	31	SF4
		27	016	18.70	19	26.98	155	14.62	32.07	2.3	1.8	55	9	49	.11	4	0.5	0.7	49	DEP
		27	147	27.21	19	17.62	155	15.16	6.74	1.3	1.1	34	1	140	.11	3	0.5	0.8	32	SF1
		27	7 5	4.00	19	24.94	155	19.88	7.19	2.1	2.0	44	6	37	.12	2	0.3	0.6	39	KAO
		27	1054	55.82	18	55.08	155	16.71	13.32	2.4	2.8	34	6	253	.11	33	0.9	0.7	33	LOI L
		27	1342	6.94	19	21.29	155	2.49	7.18	1.8	1.4	26	2	204	.12	3	1.1	0.7	25	SF5
		27	1525	18.92	19	20.44	155	11.85	8.11	1.4	1.1	28	2	76	.12	5	0.6	0.9	26	SF3
		27	1545	57.65	19	10.20	155	37.09	28.12	2.0	1.5	42	7	100	.09	9	0.5	1.0	40	DLS
		27	1820	20.59	18	59.27	155	14.48	12.03	1.5	1.4	27	3	269	.14	30	1.9	0.7	27	LOI L
		27	1923	14.19	19	20.02	155	8.69	5.81	1.5	1.3	32	2	74	.12	4	0.5	1.0	29	SF4
		27	1949	16.62	19	13.99	155	21.72	7.98	1.4	1.3	26	3	165	.09	4	0.6	0.9	26	SWR
		28	748	40.69	19	20.72	155	6.76	6.87	1.9	2.2	40	6	97	.13	5	0.5	0.8	36	SF4
		29	846	33.75	19	14.71	155	4.52	46.76	2.9	2.7	53	8	201	.11	8	0.8	0.8	48	DEP
		29	1042	41.08	19	19.92	155	8.13	7.30	1.6	1.7	37	3	86	.10	5	0.5	0.8	34	SF4
		30	5 5	47.58	19	19.09	155	15.21	6.99	1.3	1.5	37	3	100	.10	4	0.4	0.6	35	SF1
		30	540	18.94	19	20.72	155	12.74	7.65	2.0	2.2	48	5	65	.13	4	0.4	0.6	44	SF2
		30	855	48.88	19	46.32	156	4.59	11.65	2.8	2.7	48	7	239	.12	27	0.9	0.6	42	HUA
		30	10 2	46.51	19	23.91	155	16.93	16.16	1.3	1.2	40	5	65	.10	1	0.4	0.4	38	DEP
		30	1013	35.29	19	22.01	155	27.99	6.98	2.3	2.3	48	6	44	.14	1	0.4	0.7	43	KAO
		30	1029	45.14	19	21.61	155	30.09	9.36	2.2	2.0	43	4	37	.11	5	0.4	0.7	41	KAO
		30	1133	29.63	19	23.71	155	15.54	3.10	2.1	2.2	39	7	36	.12	2	0.3	0.3	35	SEC

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	AUG	30	1259	1.93	19	23.95	155	15.71	3.58	1.6	1.6	23	4	110	.08	2	0.3	0.3	21	SEC
		30	23 2	26.72	19	21.91	155	5.79	6.94	1.5	1.5	36	1	79	.17	3	0.6	1.0	35	SF4
		31	028	40.43	19	20.08	155	12.08	7.01	1.5	1.6	41	3	80	.11	5	0.4	0.6	38	SF3
		31	041	3.20	19	24.56	154	58.20	7.38	2.2	2.6	38	1	166	.14	1	0.7	0.6	34	LER
		31	051	39.25	19	19.61	155	8.19	7.80	1.6	2.0	37	2	88	.08	4	0.4	0.7	35	SF4
		31	229	29.38	19	22.05	155	28.96	10.19	1.5	1.4	37	3	40	.11	3	0.3	0.6	35	KAO
		31	533	16.97	19	25.21	155	18.96	6.17	2.4	2.6	48	10	38	.11	2	0.3	0.5	41	INT
		31	534	34.05	19	24.90	155	19.28	6.20	1.6	1.1	24	4	98	.10	2	0.4	0.8	21	KAO
		31	619	1.15	19	21.52	155	6.19	7.24	1.7	1.5	36	2	85	.14	3	0.5	0.9	36	SF4
		31	14 8	11.53	20	3.99	155	28.48	48.81	2.0	2.0	44	10	207	.11	24	0.9	0.7	40	KEA
		31	16 3	9.47	19	26.62	155	26.27	4.81	1.5	1.2	29	3	58	.11	3	0.3	1.3	26	KAO
		31	1735	11.16	19	17.07	155	15.01	6.31	1.5	1.2	26	0	162	.07	3	0.6	1.1	25	SF1
		31	2214	51.68	19	22.28	155	2.27	7.47	1.6	1.3	33	3	146	.17	5	0.8	0.5	33	SF5
		31	23 1	34.01	19	22.36	155	29.95	9.54	1.7	1.2	33	1	45	.12	4	0.4	0.7	33	KAO
	SEP	1	014	3.90	19	22.56	155	29.91	9.39	1.4	1.2	33	2	44	.08	4	0.3	0.8	32	KAO
		1	641	55.82	19	21.67	155	12.70	2.86	1.0	1.1	16	3	89	.07	2	0.4	0.5	14	SER
		1	851	54.02	18	55.32	155	16.34	13.17	1.6	1.3	27	4	288	.13	33	1.7	1.0	27	LOI L
		1	856	36.50	19	21.06	155	2.59	4.84	1.4	1.3	31	2	146	.14	2	0.6	1.1	31	SSF
		1	1633	2.82	19	10.59	155	31.96	12.14	2.4	2.2	46	10	108	.12	7	0.4	0.5	41	LSW
		1	1843	43.45	18	54.55	155	16.14	12.86	2.1	2.0	27	2	255	.11	35	1.6	1.2	27	LOI
		1	20 5	37.43	19	26.93	155	29.51	9.25	1.7	1.2	35	5	61	.12	8	0.4	1.0	30	KAO
		2	341	13.61	19	22.05	155	6.87	7.81	1.3	1.2	25	2	74	.13	2	0.4	0.9	25	SF4
		2	440	9.58	19	49.72	156	19.90	6.32	2.9	2.5	50	9	277	.12	54	0.8	0.8	44	HUA
		2	930	9.10	19	27.45	155	29.60	9.64	1.8	1.2	38	4	49	.17	8	0.5	1.1	35	KAO
		2	1053	27.79	18	55.67	155	16.10	12.47	2.3	2.9	36	4	244	.12	33	1.4	0.6	35	LOI L
		2	1456	46.92	19	26.88	155	28.57	8.54	1.9	1.7	43	4	44	.12	7	0.3	0.9	38	KAO
		2	1951	12.42	19	19.69	155	13.75	9.66	3.3	3.5	54	10	61	.12	5	0.3	0.3	46	SF2
		2	2048	54.04	19	34.61	155	22.12	9.39	2.3	2.0	47	5	83	.20	9	0.5	0.9	43	MLO
		3	318	2.24	19	24.25	155	16.19	3.54	1.0	1.2	17	5	110	.08	1	0.4	0.3	14	SEC
		3	1122	54.75	18	52.29	155	15.43	12.91	3.1	3.7	52	6	255	.11	39	1.0	1.3	49	LOI
		3	12 5	0.20	19	23.88	155	15.93	3.22	1.5	1.6	25	5	104	.11	1	0.3	0.3	22	SEC
		3	17 9	53.35	18	53.95	155	16.61	14.71	2.4	2.9	38	5	249	.11	35	1.2	3.1	38	LOI L
		3	23 6	58.07	19	16.36	155	15.04	7.07	1.4	1.5	32	2	176	.13	3	0.6	0.9	32	SF1
		4	045	17.97	19	20.72	155	12.95	8.23	1.4	1.3	30	1	67	.10	4	0.5	0.7	29	SF2
		4	1327	25.48	19	21.46	155	3.24	7.23	3.0	3.1	47	5	107	.13	3	0.5	0.5	44	SF5
		4	1649	2.09	19	22.35	155	30.12	9.58	1.8	1.5	36	2	46	.11	4	0.4	0.7	34	KAO
		5	421	26.24	19	20.02	155	10.01	7.40	1.5	1.1	27	3	85	.07	4	0.5	0.8	23	SF3
		5	6 5	37.45	19	47.14	155	22.15	26.26	2.1	1.5	44	11	91	.10	9	0.4	0.9	37	KEA
		5	832	30.37	19	23.60	154	58.21	6.06	2.0	1.7	36	5	171	.20	3	0.9	1.0	33	LER
		5	10 4	28.24	19	25.86	155	19.73	7.17	1.8	1.5	28	5	73	.12	4	0.4	0.8	24	KAO
		5	1129	40.30	19	17.36	155	27.89	10.66	1.6	1.4	27	4	94	.12	6	0.4	0.7	26	LSW
		5	13 1	7.40	19	19.97	155	11.63	9.56	2.9	3.0	53	7	85	.11	5	0.4	0.3	47	SF3
		5	1355	9.06	19	19.92	155	12.08	8.15	1.4	1.3	21	0	82	.08	5	0.6	1.1	21	SF3
		5	2232	13.36	19	20.82	155	9.82	7.05	1.4	1.3	31	2	70	.11	2	0.5	0.8	30	SF3
		6	1 3	52.32	19	19.87	155	12.85	6.66	1.2	1.3	26	1	74	.13	5	0.5	0.9	24	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	SEP	6	857	40.83	19	11.36	155	28.32	6.02	2.0	1.5	25	2	116	.14	4	0.7	1.5	25	LSW
		6	923	20.38	19	25.69	155	27.89	8.69	2.0	1.7	38	4	56	.11	5	0.4	0.9	34	KAO
		6	1232	56.96	18	55.62	155	16.52	19.35	2.5	2.4	31	4	275	.12	33	1.7	7.0	30	LOI L
		6	2040	40.66	19	25.29	155	30.50	9.84	1.8	1.2	34	4	35	.10	7	0.3	0.8	30	KAO
		7	244	48.54	19	19.95	155	8.08	7.84	1.9	1.8	40	3	87	.10	5	0.4	0.7	37	SF4
		7	1223	45.80	19	22.26	155	29.85	9.74	2.3	2.1	42	2	33	.10	4	0.3	0.7	40	KAO
		7	14 4	49.13	19	19.42	155	13.12	9.32	2.6	2.8	49	6	76	.13	4	0.4	0.5	43	SF2
		7	14 6	35.96	19	18.60	155	12.90	5.51	1.6	1.6	37	3	95	.13	3	0.4	1.1	33	SF2
		7	1556	6.40	19	18.85	155	13.09	4.55	1.5	1.8	38	2	84	.12	3	0.4	1.5	37	SSF
		8	138	32.09	19	19.72	155	3.79	7.44	1.8	1.8	37	2	163	.13	2	0.8	0.5	35	SF5
		8	945	14.36	19	23.39	154	49.49	43.10	2.3	1.8	54	10	259	.12	8	1.1	0.7	52	LER
		8	1654	27.45	19	55.75	155	32.45	23.46	2.4	2.2	39	9	149	.14	15	0.6	1.1	36	KEA
		9	253	15.95	19	20.99	155	30.29	8.79	2.0	2.0	37	2	33	.12	5	0.4	1.0	35	KAO
		9	355	52.44	19	25.64	155	19.63	8.02	2.4	2.6	42	5	38	.12	4	0.3	0.6	34	KAO F
		9	858	10.58	19	22.19	155	27.43	9.81	2.0	2.0	45	4	41	.12	1	0.3	0.6	41	KAO
		9	12 4	57.92	19	19.88	155	8.00	6.88	1.5	1.5	23	2	90	.09	5	0.5	1.0	23	SF4
		10	1619	50.79	19	12.70	155	28.68	8.20	2.2	2.1	42	5	113	.14	5	0.4	0.6	39	LSW
		10	1625	15.67	19	11.22	155	29.11	34.17	2.4	2.0	50	10	75	.09	4	0.6	0.8	45	DLS
		11	531	23.03	19	19.40	155	15.75	7.56	1.8	1.8	41	3	101	.12	3	0.4	0.5	35	SF1
		11	548	44.26	20	1.30	155	20.93	13.37	2.2	1.6	25	4	211	.12	15	1.1	0.5	24	KEA
		11	1252	36.60	19	20.37	155	3.15	6.32	1.5	1.2	30	2	97	.16	1	0.7	0.8	29	SF5
		12	333	16.12	19	22.70	155	0.48	5.91	1.3	1.1	31	2	159	.15	5	0.8	1.4	30	SF5
		12	627	25.56	19	19.25	155	15.26	6.88	1.3	1.7	34	3	98	.11	4	0.4	0.8	31	SF1
		13	3 7	12.98	19	23.48	155	25.62	10.63	1.8	1.5	45	3	27	.13	3	0.3	0.5	42	KAO
		13	422	5.27	19	22.40	155	28.66	9.67	1.8	1.5	38	1	36	.10	2	0.3	0.6	36	KAO
		13	10 4	27.97	19	50.66	155	12.24	36.22	1.7	1.3	18	2	296	.08	40	3.3	3.6	18	KEA
		13	2122	6.80	19	5.45	156	11.61	30.18		1.5	29	4	287	.13	39	1.7	2.1	27	KON
		14	1059	45.93	19	22.43	155	28.68	10.89	1.4	1.2	28	3	44	.11	2	0.4	0.8	27	KAO
		14	2359	27.89	19	20.14	155	11.60	9.70	2.9	3.3	52	9	81	.11	5	0.4	0.3	45	SF3 F
		15	1 5	15.15	19	20.75	155	2.53	6.71	2.7	3.1	41	5	148	.16	2	0.6	0.5	38	SF5
		15	258	2.19	19	23.78	155	27.17	9.78	1.2	1.1	28	4	55	.09	3	0.4	0.6	26	KAO
		15	437	2.05	19	28.18	155	26.94	7.53	1.8	1.1	29	3	69	.12	6	0.4	0.9	23	KAO
		15	625	37.20	19	11.06	155	35.48	35.46	2.2	1.8	30	4	316	.12	41	2.2	2.8	29	DIS
		15	1718	23.93	19	17.95	155	15.63	8.76	2.1	2.0	46	6	121	.13	4	0.4	0.5	43	SF1
		15	1745	11.94	19	22.20	155	29.39	9.76	1.8	1.5	36	3	39	.09	3	0.3	0.6	33	KAO
		15	1943	8.39	19	20.92	155	49.76	7.02	2.2	1.7	40	11	124	.13	10	0.4	0.8	38	KON
		16	120	45.04	19	19.94	155	7.49	8 89	1.4	1.1	28	4	100	.11	5	0.6	1.0	27	SF4
		16	9 2	23.73	19	21.01	155	2.88	5.93	1.4	1.1	18	2	140	.14	2	0.9	1.3	16	SF5
		16	1142	10.83	19	19.92	155	11.06	8.82	1.7	1.6	27	2	88	.12	5	0.5	1.1	23	SF3
		16	1221	51.46	19	47.54	156	1.90	41.69	2.8	2.7	51	11	232	.11	23	0.7	0.7	47	HUA
		16	1318	15.62	19	10.32	155	56.63	18.48	2.8	2.3	24	4	239	.13	13	1.3	1.5	24	KON
		16	1318	53.46	19	19.82	155	11.79	7.74	1.5	1.3	15	2	86	.06	5	0.5	1.5	15	SF3
		16	1455	16.07	19	18.53	155	14.89	6.95	1.7	1.6	32	4	108	.09	4	0.4	0.6	30	SF1
		16	1844	49.32	19	18.48	155	13.18	6.21	1.4	1.3	31	3	89	.12	3	0.5	1.0	29	SF2
		16	1846	57.38	19	18.25	155	13.25	6.31	1.4	1.1	32	3	90	.10	2	0.4	0.8	29	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	SEP	16	19 6	21.23	19	18.78	155	13.26	7.21	2.4	2.9	50	7	82	.14	3	0.4	0.6	45	SF2
		17	811	42.40	19	21.03	155	2.39	5.54	2.0	1.6	34	4	148	.14	2	0.5	1.0	32	SF5
		17	935	27.56	19	21.56	155	4.99	5.75	1.6	1.6	31	5	84	.15	4	0.5	1.0	28	SF5
		17	13 4	25.24	19	24.02	154	57.42	6.69	1.9	1.6	32	4	172	.20	3	0.7	0.7	29	LER
		18	5 5	20.97	19	21.74	155	30.50	9.77	1.8	1.5	37	3	33	.08	5	0.3	0.7	35	KAO
		18	12 7	56.54	19	56.33	155	38.38	11.44	2.9	2.7	48	9	133	.14	9	0.6	0.3	42	KOH
		18	1521	9.02	19	43.26	155	2.99	0.01	2.1	2.3	16	2	238	.14	3	1.8	0.9	15	HIL B'
		19	614	3.76	19	20.39	155	11.46	7.70	2.3	2.4	49	5	78	.12	4	0.4	0.6	46	SF3
		19	616	0.45	19	19.10	155	15.19	7.73	2.2	2.3	49	5	91	.11	4	0.4	0.5	42	SF1
		19	2229	54.62	19	19.16	155	8.71	5.75	1.4	1.0	27	4	105	.13	4	0.5	1.1	26	SF4
		20	346	2.45	19	25.42	155	29.38	7.83	1.8	1.3	39	3	63	.11	6	0.4	0.9	34	KAO
		20	4 8	58.35	19	25.14	155	19.18	6.96	1.7	1.6	26	4	109	.12	3	0.5	0.9	22	KAO
		20	536	9.65	20	27.39	157	44.34	41.79	3.3	3.6	26	1	225	.18	100	2.3	2.5	24	DIS
		20	942	4.30	19	24.86	155	19.44	6.54	1.7	1.6	30	5	75	.11	2	0.4	0.8	25	KAO
		20	1049	29.36	19	42.86	155	2.32	0.01	2.1	2.6	26	2	246	.24	2	2.0	0.9	25	HIL B'
		20	1134	0.15	19	21.58	155	6.27	10.38	1.1	1.7	20	3	84	.08	3	0.5	0.9	19	SF4
		20	1818	22.70	19	23.07	155	2.69	8.44	2.1	2.0	35	5	117	.15	4	0.5	0.4	32	SF5
		21	023	5.56	19	22.27	155	30.45	9.03	1.7	1.3	39	2	35	.12	5	0.4	0.7	38	KAO
		21	2 9	47.67	19	20.67	155	12.64	7.58	1.4	1.5	32	1	66	.12	4	0.5	0.7	31	SF2
		21	1140	37.23	19	29.68	155	59.72	10.69	2.9	2.8	47	10	245	.17	8	0.9	0.5	41	KON
		21	2035	4.01	20	2.14	155	20.10	6.97	2.8	2.6	64	17	216	.13	16	0.6	0.5	56	KEA
		21	2037	15.54	19	19.53	155	7.55	7.03	1.5	1.7	35	3	107	.09	4	0.4	0.7	34	SF4
		22	450	59.74	19	21.96	155	3.49	5.19	1.6	1.1	20	1	109	.14	4	0.6	1.7	16	SF5
		22	452	18.20	19	25.48	155	19.93	7.08	1.9	2.1	39	4	38	.11	3	0.3	0.6	33	KAO
		22	712	9.83	19	19.18	155	52.12	7.98	2.6	1.6	45	10	162	.15	6	0.5	0.5	39	KON
		22	1440	4.81	19	19.52	155	11.40	6.54	1.3	1.1	26	1	96	.11	5	0.6	1.1	26	SF3
		22	16 5	28.26	19	20.20	155	12.94	7.22	1.3	1.1	30	3	68	.11	5	0.5	0.8	30	SF2
		23	053	8.39	19	19.99	155	11.40	6.16	1.4	1.1	29	2	86	.13	5	0.5	1.1	29	SF3
		23	312	42.01	19	21.77	155	29.93	8.12	1.8	1.3	24	1	116	.13	4	0.6	1.3	17	KAO
		23	415	44.59	19	19.67	155	11.60	7.24	1.5	1.6	40	4	91	.10	5	0.4	0.7	38	SF3
		23	641	51.30	19	20.18	155	10.35	8.06	1.8	1.8	37	2	82	.10	4	0.4	0.6	36	SF3
		23	16 1	28.63	19	8.47	155	35.51	10.73	2.5	1.9	31	4	123	.16	12	0.7	0.7	28	LSW
		23	1732	52.60	19	23.40	155	30.03	7.72	1.5	1.1	25	1	85	.13	5	0.5	1.3	21	KAO
		23	2316	57.99	19	19.74	155	11.25	8.34	1.4	1.7	30	0	91	.11	5	0.4	0.7	27	SF3
		24	656	23.27	19	21.13	155	6.90	6.08	1.5	1.3	19	0	88	.09	4	0.6	1.1	17	SF4
		24	1232	25.83	19	20.71	155	11.46	8.45	1.8	2.1	41	3	73	.11	4	0.4	0.6	40	SF3
		25	038	30.33	19	29.16	155	27.53	3.31	1.9	1.3	31	3	61	.11	5	0.3	1.4	29	KAO
		25	051	56.80	19	23.99	155	16.02	2.93	1.4	1.4	19	5	111	.09	1	0.4	0.3	16	SEC
		25	512	38.25	19	23.66	155	15.64	3.48	1.3	1.7	21	6	95	.08	2	0.3	0.3	17	SEC
		25	734	42.52	19	23.80	155	16.00	2.95	1.8	2.1	28	6	76	.12	1	0.3	0.2	24	SEC
		26	0 4	11.63	19	22.21	155	26.70	8.94	1.8	1.6	32	5	113	.11	2	0.3	0.5	26	KAO
		26	1227	1.38	19	22.96	155	26.31	9.37	2.0	1.8	26	2	99	.10	2	0.4	0.8	23	KAO
		26	1945	58.66	19	20.14	155	3.87	7.31	1.4	1.3	19	2	132	.10	2	0.6	0.8	16	SF5
		27	1138	42.61	19	22.23	155	18.54	31.48	2.1	2.0	35	2	33	.11	4	0.6	1.0	33	DEP
		27	12 7	54.13	19	59.28	156	12.32	38.87	2.2	1.8	22	6	324	.08	63	2.1	3.5	21	KOH

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	SEP	27	1423	2.10	19	19.87	155	30.35	9.43		1.2	26	1	133	.11	7	0.6	1.1	23	KAO
		28	3 8	57.54	19	20.99	155	12.86	7.74	1.8	1.9	31	1	61	.12	3	0.5	0.7	29	SF2
		28	612	54.29	19	27.52	155	29.32	9.85	2.2	1.9	37	4	56	.11	9	0.4	0.6	32	KAO
		28	2251	5.60	19	21.45	155	23.86	9.15	1.6	1.3	32	1	58	.11	3	0.4	0.6	22	SWR
		30	1442	29.24	19	20.86	155	21.57	10.62	1.2	1.3	24	3	65	.09	3	0.4	0.8	22	SWR
		30	1928	11.20	19	48.22	155	23.05	24.39	3.0	3.5	66	17	82	.10	8	0.4	0.8	60	KEA F
		30	2133	42.15	19	18.36	155	14.94	7.06	1.5	1.6	35	2	102	.13	4	0.5	0.8	34	SF1
		30	2143	3.44	19	18.44	155	15.11	6.38	1.4	1.3	34	2	103	.14	4	0.5	0.8	32	SF1
	OCT	1	012	47.94	19	18.76	155	13.29	5.87	1.3	1.5	35	3	81	.13	3	0.5	1.0	33	SF2
		1	333	41.31	19	22.90	155	2.88	6.91	1.6	1.5	32	3	114	.20	4	0.6	1.2	30	SF5
		1	756	22.44	19	21.12	155	21.41	9.52	1.7	1.7	29	4	60	.09	4	0.3	0.8	27	SWR
		1	952	40.59	19	19.89	155	10.48	6.83	1.6	1.1	22	1	89	.12	4	0.6	1.2	22	SF3
		1	1434	33.18	19	25.76	155	29.23	8.67	1.8	1.4	38	3	61	.12	7	0.4	0.9	35	KAO
		1	1628	20.86	19	25.09	155	19.30	7.01	1.3	1.2	25	5	106	.09	3	0.4	0.8	21	KAO
		1	2132	10.24	19	16.44	155	23.14	7.01	1.7	1.8	35	7	116	.13	4	0.4	1.0	32	SWR
		1	23 2	30.68	19	18.56	155	15.36	8.07	1.7	1.9	43	4	113	.13	4	0.4	0.6	41	SF1
		2	1319	36.16	19	21.55	155	18.51	2.70	1.3	1.3	18	4	72	.09	3	0.3	0.7	15	SWR
		2	2317	39.14	19	18.59	155	14.06	8.56	1.9	2.2	40	3	76	.11	3	0.5	0.6	39	SF2
		2	2338	26.45	19	19.89	155	8.13	5.63	1.5	1.5	35	3	87	.12	5	0.5	1.1	34	SF4
		3	519	23.65	19	18.16	155	13.08	6.33	1.3	1.5	30	2	99	.08	2	0.4	0.9	30	SF2
		3	610	6.79	19	20.09	155	28.49	9.55	2.0	2.0	40	4	41	.10	5	0.3	0.6	36	KAO
		3	612	48.71	19	46.97	155	35.72	15.31	3.7	4.1	67	19	96	.10	11	0.3	0.5	63	KEA F
		3	1017	7.32	19	47.17	155	35.36	13.95	2.4	2.6	47	13	92	.10	11	0.4	0.4	41	KEA
		3	23 3	54.86	19	21.13	155	2.53	6.19	1.4	1.3	28	3	139	.16	2	0.5	0.9	27	SF5
		4	324	7.34	19	20.74	155	28.32	10.65	1.6	1.3	32	3	50	.11	4	0.4	0.6	31	KAO
		4	1025	45.76	19	20.68	155	14.16	31.19	2.8	2.8	54	11	60	.12	4	0.6	0.7	47	DEP
		4	1122	51.35	19	55.95	155	33.84	34.94	2.8	2.2	47	11	146	.11	13	0.6	1.0	41	KEA
		4	1737	37.58	19	20.96	155	14.01	33.23	2.8	2.6	62	12	56	.11	3	0.5	0.6	52	DEP
		4	1812	9.02	19	20.24	155	12.53	6.86	1.4	1.6	38	2	73	.13	5	0.5	0.8	35	SF2
		4	1953	8.18	19	22.50	155	1.16	6.63	1.6	1.5	35	3	152	.16	6	0.6	1.0	34	SF5
		5	339	48.30	19	15.77	155	30.14	9.56	1.8	1.4	37	5	85	.12	1	0.3	0.6	35	LSW
		5	6 5	48.75	19	17.20	155	11.56	1.67	1.4	1.6	34	2	170	.14	3	0.6	0.9	33	SSF
		5	6 7	20.16	19	17.18	155	11.60	1.68	1.4	1.6	30	2	157	.12	3	0.6	0.8	29	SSF
		5	723	3.70	19	16.78	155	11.55	1.90	1.3	1.3	24	2	179	.09	3	0.6	0.6	23	SSF
		5	957	39.32	19	17.02	155	12.40	2.70	1.3	1.1	29	2	172	.10	2	0.8	0.4	29	SSF
		5	1153	54.11	19	18.98	155	29.17	8.76	1.9	1.8	40	4	48	.14	7	0.4	0.8	39	LSW
		5	2112	8.97	19	19.38	155	13.03	6.10	1.2	1.1	30	2	78	.10	4	0.4	1.1	29	SF2
		6	042	32.89	19	22.10	155	2.63	8.44	1.5	1.4	25	2	136	.12	4	0.6	0.9	23	SF5
		6	3 5	10.52	19	19.83	155	7.85	5.33	1.3	1.1	28	3	95	.10	5	0.4	1.1	24	SF4
		6	538	34.78	19	20.20	155	10.87	7.56	2.1	2.5	46	5	83	.12	4	0.4	0.6	43	SF3
		6	557	3.98	19	22.86	155	25.55	10.56	1.6	1.3	42	3	30	.11	4	0.4	0.5	36	KAO
		6	819	6.10	19	17.75	155	12.78	6.55	1.5	1.5	30	3	128	.09	2	0.4	0.8	29	SF2
		6	824	39.25	19	25.46	155	29.11	9.63	1.7	1.3	41	6	45	.10	6	0.3	0.6	35	KAO
		6	1535	7.04	19	18.10	155	12.93	5.81	1.9	1.9	48	7	108	.11	2	0.4	0.7	41	SF2
		6	1537	6.09	19	17.45	155	12.85	7.64	1.7	1.7	38	5	144	.10	1	0.5	0.5	34	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	OCT	6	1739	51.00	19	17.27	155	13.14	6.50	1.5	1.3	32	4	145	.11	1	0.5	0.7	31	SF2
		6	1741	32.09	19	17.10	155	12.87	5.41	1.5	1.3	30	3	156	.08	1	0.4	0.7	28	SF2
		6	1745	5.25	19	16.56	155	12.89	7.81	1.7	1.8	36	5	164	.11	1	0.5	0.5	34	SF2
		6	1936	11.23	19	17.31	155	13.30	4.31	1.8	2.0	41	4	121	.11	1	0.4	0.6	39	SSF
		6	2044	11.19	19	20.61	155	10.75	7.86	1.6	1.5	33	4	76	.09	3	0.4	0.6	30	SF3
		7	11 6	25.71	19	17.23	155	13.33	5.57	1.7	1.6	28	2	124	.10	0	0.5	0.8	28	SF2
		7	1319	58.26	19	21.67	155	0.58	7.53	1.8	1.7	33	2	175	.14	5	0.8	0.6	31	SF5
		7	1524	21.50	19	19.54	155	15.42	8.92	2.8	3.0	53	9	95	.12	4	0.3	0.4	45	SF1
		7	1643	33.43	19	19.66	155	8.33	6.07	1.9	2.0	44	5	84	.10	4	0.4	0.7	42	SF4
		7	2334	25.43	19	18.57	155	14.45	6.74	1.5	1.1	35	2	97	.11	3	0.4	0.6	34	SF2
		8	252	53.01	19	14.32	155	13.52	0.54	1.7	1.8	34	2	191	.13	5	0.5	0.9	33	SSF
		8	3 8	17.50	19	13.81	155	12.44	0.13	1.9	1.9	37	3	199	.12	6	0.5	0.6	35	SSF
		8	930	33.19	19	17.48	155	12.98	6.31	1.5	1.3	30	2	135	.08	1	0.5	0.8	30	SF2
		8	1036	43.80	19	16.86	155	11.98	1.93	1.4	1.0	19	2	196	.09	3	0.9	0.5	18	SSF
		8	12 9	32.95	19	22.67	155	20.64	9.57	1.4	1.1	30	2	44	.10	3	0.4	0.9	27	KAO
		8	1326	25.10	19	23.90	155	26.77	9.62	1.6	1.1	32	2	42	.11	3	0.4	0.8	30	KAO
		8	1348	37.18	19	17.41	155	12.12	2.38	2.9	3.1	48	5	153	.13	2	0.4	0.6	45	SSF
		8	1611	0.36	19	19.44	155	12.06	6.09	1.5	1.1	38	3	91	.10	5	0.4	0.8	35	SF3
		8	1842	21.74	19	23.28	155	26.84	5.90	1.4	1.3	24	1	52	.13	2	0.4	0.9	23	KAO
		8	2120	39.85	19	22.68	155	20.75	9.85	2.0	1.9	44	2	45	.11	3	0.3	0.4	41	KAO
		8	2359	24.24	19	19.60	155	8.22	6.14	1.3	1.1	24	2	87	.12	4	0.5	1.1	24	SF4
		9	755	58.61	20	4.94	155	47.25	30.26	2.1	1.6	38	9	177	.10	5	0.6	0.9	35	KOH
		9	11 5	50.60	19	28.39	155	24.66	2.89	1.8	1.0	27	4	59	.11	4	0.3	0.8	24	KAO
		10	550	35.09	19	21.12	155	29.25	6.35	2.3	2.5	41	6	43	.11	4	0.3	0.9	37	KAO
		10	743	55.07	19	20.08	155	11.05	5.93	1.7	1.6	32	3	84	.15	4	0.5	1.0	30	SF3
		10	10 2	26.58	19	18.83	155	52.58	11.31	3.4	3.2	53	15	175	.12	5	0.5	0.2	50	KON
		10	1632	9.52	19	21.08	155	2.71	4.60	1.5	1.1	26	2	132	.19	2	0.8	1.5	24	SSF
		11	031	32.26	19	21.74	155	30.09	8.33	1.6	1.2	37	2	44	.12	5	0.4	0.9	35	KAO
		11	1251	1.98	19	28.44	155	27.48	2.96	1.8	1.2	36	6	71	.13	7	0.3	1.2	29	KAO
		11	1252	38.73	19	25.97	155	29.10	8.98	1.4	1.1	25	3	66	.07	7	0.4	1.0	21	KAO
		11	1344	46.08	19	17.79	155	23.66	8.80	1.7	1.2	18	2	92	.08	5	0.4	0.8	17	SWR
		11	1441	47.64	19	26.48	155	28.78	8.73	1.7	1.2	31	4	58	.09	7	0.4	1.0	27	KAO
		11	2048	53.25	19	9.69	155	32.07	6.84	1.5	1.5	33	4	123	.16	7	0.5	1.2	33	LSW
		11	2051	8.49	19	20.16	155	11.64	7.52	1.6	1.3	37	4	81	.10	5	0.4	0.6	35	SF3
		12	735	18.83	19	14.19	155	21.88	1.74	1.6	1.7	35	5	157	.10	4	0.4	0.6	32	SWR
		12	833	45.70	19	20.50	155	11.81	7.34	1.6	1.1	34	3	75	.13	4	0.5	0.7	32	SF3
		12	844	7.08	19	21.76	155	19.83	31.01	3.6	4.0	58	7	46	.12	4	0.5	0.8	51	DEP F
		12	9 2	52.56	19	21.84	155	19.50	27.73	1.7	1.4	39	3	43	.10	3	0.7	1.1	36	DEP
		12	941	8.60	19	22.35	155	19.30	29.49	1.8	1.4	30	3	94	.12	5	0.8	1.4	27	DML
		12	1753	40.15	19	20.75	155	12.64	6.79	1.5	1.7	32	3	75	.12	4	0.5	0.8	30	SF2
		13	020	33.21	19	24.13	155	15.66	3.00	0.6	1.1	13	4	120	.09	2	0.4	0.5	10	SEC
		13	115	50.67	18	27.26	156	54.14	14.79	3.0	3.0	45	5	327	.19141	27.5	43.4	45	DIS	
		13	340	25.56	19	19.66	155	12.31	5.90	1.4	1.2	27	0	84	.13	5	0.5	1.2	26	SF2
		13	533	19.39	19	28.26	155	26.78	8.95	2.1	2.0	44	8	47	.13	6	0.3	0.8	37	KAO
		13	737	30.44	19	22.30	155	29.59	9.59	1.3	1.2	24	2	44	.10	3	0.5	0.9	22	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	OCT	13	2312	55.91	19	50.87	155	23.41	30.42	3.0	3.1	66	17	98	.12	7	0.5	0.8	58	KEA
		14	415	55.74	19	22.70	155	24.81	9.37	1.3	1.1	27	2	42	.11	5	0.4	0.7	25	KAO
		14	5 8	37.98	19	56.55	155	41.30	9.99	2.0	1.5	28	7	127	.18	10	0.6	0.6	27	KOH
		14	7 6	29.08	19	47.17	155	25.54	25.22	1.9	1.5	36	6	108	.11	3	0.6	1.3	33	KEA
		14	741	28.05	19	20.88	155	7.75	8.67	2.7	2.7	54	8	83	.11	4	0.4	0.3	48	SF4
		14	1334	55.82	19	26.50	155	23.80	8.91	1.9	1.3	36	5	45	.12	3	0.3	0.6	32	KAO
		14	1822	55.00	19	25.72	155	29.66	8.27	1.7	1.1	33	3	38	.10	7	0.3	0.9	27	KAO
		14	1913	40.87	19	20.80	155	2.95	8.67	3.1	3.3	50	7	120	.12	2	0.6	0.4	44	SF5 F
		14	2015	25.90	19	20.79	155	2.89	7.83	2.0	1.7	43	3	126	.13	2	0.6	0.5	41	SF5
		15	341	7.75	19	22.62	155	27.43	9.84	1.8	1.3	42	4	37	.12	0	0.4	0.6	38	KAO
		15	1445	21.17	19	20.98	155	8.10	7.65	1.5	1.2	23	1	75	.10	4	0.6	1.0	23	SF4
		15	1623	50.84	19	20.46	155	10.75	7.77	1.4	1.8	34	1	78	.11	3	0.5	0.7	33	SF3
		15	1659	18.79	19	20.28	155	11.31	7.58	1.4	1.7	38	2	81	.09	4	0.4	0.7	37	SF3
		15	2117	33.12	19	17.02	154	59.15	45.35	2.7	2.5	53	6	210	.11	9	1.1	0.8	49	LER
		15	2324	15.02	19	14.77	155	33.86	7.69	2.7	2.7	51	9	73	.19	6	0.5	0.8	45	LSW
		16	157	45.15	19	17.69	155	14.08	5.74	1.3	1.0	26	2	150	.09	2	0.5	0.8	25	SF2
		16	6 5	7.87	19	24.60	155	19.46	7.29	1.8	1.8	37	5	37	.11	2	0.4	0.6	32	KAO
		16	1052	17.81	19	18.87	155	13.40	7.56	1.6	1.8	40	4	76	.10	3	0.4	0.7	38	SF2
		16	1818	0.45	19	20.32	155	12.83	6.41	1.4	1.2	37	2	69	.13	4	0.4	0.7	35	SF2
		17	0 0	8.99	19	18.38	155	14.60	6.66	1.2	1.1	32	2	105	.11	3	0.4	0.9	31	SF1
		17	118	30.61	19	23.82	155	15.57	3.05	1.4	1.7	26	6	85	.10	2	0.3	0.3	22	SEC
		17	257	53.94	19	7.14	155	34.98	9.18	2.0	1.2	31	6	140	.14	13	0.6	1.2	29	LSW
		17	525	30.32	19	7.56	155	35.06	10.04	2.1	1.8	33	5	135	.14	13	0.5	0.8	31	LSW
		17	533	22.25	19	7.72	155	35.23	10.19	2.4	2.1	43	5	132	.13	13	0.5	0.7	41	LSW
		17	623	4.77	19	22.26	155	30.17	9.65	1.8	1.4	39	2	46	.10	5	0.3	0.7	37	KAO
		17	740	17.87	19	7.70	155	35.13	9.63	2.1	1.9	39	5	133	.15	13	0.5	0.9	35	LSW
		17	8 3	46.80	19	7.21	155	34.97	11.46	3.1	3.7	28	1	139	.13	13	0.5	0.4	26	LSW
		17	8 6	15.93	19	7.17	155	35.02	11.16	3.2	3.6	27	3	140	.13	13	0.5	0.6	24	LSW
		17	12 6	8.26	19	23.29	155	8.69	2.44	1.2	1.0	9	1	147	.11	3	1.0	0.8	9	SER
		17	1241	11.39	19	20.85	155	21.52	9.78	1.3	1.1	22	1	64	.09	3	0.5	0.7	21	SWR
		17	1423	43.24	19	21.13	155	12.68	7.84	1.8	2.0	40	5	61	.13	3	0.4	0.5	37	SF2
		17	1438	8.39	19	22.62	155	8.30	3.24	1.4	1.8	18	2	99	.08	3	0.4	0.5	17	SER
		17	1857	42.60	19	30.42	155	55.14	11.91	3.0	3.2	49	10	194	.15	2	0.7	0.3	45	KON F
		17	21 2	27.96	19	20.31	155	23.64	9.73	1.7	1.6	35	4	68	.14	1	0.4	0.6	31	SWR
		18	2 5	36.04	19	21.92	155	4.95	8.20	1.7	1.6	34	4	76	.12	4	0.4	0.8	32	SF5
		18	530	54.99	19	23.84	155	15.65	4.31	1.2	1.1	14	4	105	.13	3	0.4	0.9	11	SEC
		18	943	48.43	19	21.74	155	28.59	5.22	1.6	1.3	24	1	41	.12	2	0.4	0.9	22	KAO
		18	1641	47.60	19	19.55	155	10.78	7.07	1.4	1.1	30	1	97	.11	5	0.5	0.9	30	SF3
		18	2023	11.73	19	20.35	155	7.62	6.91	1.5	1.3	33	2	92	.11	5	0.5	0.8	33	SF4
		18	2042	2.77	19	18.24	155	15.23	6.84	1.3	1.3	38	3	109	.10	4	0.4	0.7	36	SF1
		18	2145	33.20	19	19.60	155	13.64	6.76	1.5	1.6	43	5	64	.14	5	0.4	0.7	40	SF2
		19	458	5.08	19	13.11	155	26.94	4.62	2.1	2.3	41	3	118	.12	6	0.4	2.1	37	LSW
		19	1053	49.75	19	24.75	155	21.69	10.13	1.8	1.4	41	6	43	.10	4	0.4	0.6	38	KAO
		19	1439	12.53	19	29.64	155	27.87	4.44	1.8	1.3	25	4	83	.10	4	0.4	1.7	21	KAO
		19	19 1	36.14	19	18.89	155	13.44	5.98	1.7	1.1	38	2	75	.14	3	0.4	0.9	37	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	OCT	19	19 3	49.16	19	21.55	155	6.03	6.16	1.9	1.9	39	5	85	.15	3	0.5	1.0	36	SF4
		20	234	35.77	19	22.11	155	26.42	10.69	1.4	1.2	25	1	82	.10	2	0.5	0.8	24	KAO
		20	359	53.45	19	28.83	154	51.66	3.37	1.5	0.9	13	3	121	.11	3	1.4	1.7	13	SLE
		20	615	13.60	19	22.39	155	11.66	3.51	0.9	1.2	8	2	147	.12	3	1.4	0.7	7	SER
		20	828	54.52	19	26.28	155	29.13	9.55	2.0	1.4	39	4	41	.09	7	0.3	0.8	34	KAO
		20	1532	3.11	19	18.15	155	26.21	9.73	2.3	2.2	48	3	56	.14	6	0.4	0.6	45	LSW
		20	1846	7.27	19	17.97	155	13.00	6.45	1.6	1.6	40	3	108	.11	2	0.4	0.7	36	SF2
		21	2046	10.60	19	22.46	155	26.42	10.39	1.9	1.4	35	2	47	.10	2	0.4	0.6	33	KAO
		21	2047	11.78	19	22.22	155	26.52	10.95	1.6	1.2	37	2	40	.11	2	0.4	0.6	34	KAO
		21	2140	21.42	19	11.36	155	38.21	7.96	2.2	1.6	37	4	102	.21	7	0.6	1.0	35	LSW
		22	1611	36.72	19	18.39	155	13.56	5.08	1.2	1.3	34	5	83	.11	3	0.4	1.0	31	SF2
		23	751	5.90	19	43.60	156	6.55	37.42	2.4	1.9	45	8	279	.13	29	1.4	1.0	43	HUA
		23	15 3	32.05	19	20.15	155	8.18	6.87	1.4	1.2	27	3	83	.09	5	0.4	0.8	26	SF4
		23	1651	50.46	19	24.88	155	30.68	11.72	1.7	1.2	34	2	71	.10	7	0.4	0.6	32	KAO
		24	050	3.36	19	19.24	155	11.55	5.18	1.3	1.0	28	2	101	.13	5	0.4	1.4	27	SF3
		24	539	4.78	19	20.00	155	11.56	6.77	1.9	2.2	47	5	85	.13	5	0.4	0.8	44	SF3
		24	1210	25.87	19	19.00	155	13.65	6.11	1.3	1.0	23	1	71	.10	4	0.5	1.2	23	SF2
		24	13 9	37.13	19	25.73	155	28.89	9.77	1.5	1.2	25	2	71	.08	6	0.4	1.0	22	KAO
		25	220	23.91	19	14.01	155	31.40	7.64	2.1	1.6	37	3	67	.15	3	0.5	0.8	36	LSW
		25	449	43.97	19	31.24	156	4.75	39.61	2.6	2.4	49	8	265	.11	17	1.0	0.9	45	KON
		25	1422	44.70	19	19.91	155	8.84	6.13	1.9	2.2	45	4	76	.13	4	0.5	0.8	43	SF4
		25	1452	41.65	19	42.45	155	2.14	0.00	2.3	2.4	37	1	186	.22	1	1.3	0.5	36	HIL B
		25	1534	27.22	19	20.80	155	3.99	4.84	1.5	1.1	30	2	97	.15	2	0.6	1.3	30	SSF
		25	19 6	28.48	19	22.32	155	28.53	11.02	3.1	3.4	53	8	37	.12	2	0.3	0.4	46	KAO
		25	20 1	29.48	19	24.43	155	16.10	14.80	2.0	2.0	41	3	71	.10	2	0.5	0.3	38	DEP
		26	711	57.55	19	20.13	155	9.13	5.88	1.5	1.1	26	1	75	.11	4	0.5	1.0	26	SF3
		26	1151	41.42	19	25.58	155	15.70	10.76	1.3	1.1	14	2	219	.08	3	1.3	1.0	13	INT L
		26	1319	41.65	19	22.16	155	4.10	8.04	1.9	1.8	37	3	88	.14	5	0.4	0.7	35	SF5
		26	2028	6.55	19	54.13	155	34.53	20.16	2.6	2.1	49	7	133	.11	10	0.6	1.1	46	KEA
		26	2342	58.93	19	22.85	155	20.62	9.92	1.8	1.1	32	3	45	.10	2	0.4	0.7	29	KAO
		27	0 0	6.18	19	29.41	155	27.34	4.14	1.9	1.3	29	4	68	.12	5	0.3	1.9	26	KAO
		27	1517	0.21	19	17.98	155	15.37	4.29	1.5	1.8	43	5	118	.14	4	0.4	1.2	40	SSF
		27	1635	2.15	19	21.16	155	2.11	6.87	2.0	2.1	38	5	163	.14	3	0.6	0.6	35	SF5
		27	18 6	55.15	19	20.22	155	11.50	7.16	2.3	2.8	47	5	81	.13	4	0.4	0.6	42	SF3
		27	2055	43.60	20	5.56	155	33.33	35.74	2.3	1.7	38	10	274	.08	28	0.8	0.9	33	KEA
		27	2134	29.21	19	25.41	155	21.02	8.90	1.7	1.3	45	6	32	.12	4	0.3	0.5	40	KAO
		28	7 7	13.76	19	18.03	155	12.58	2.75	1.3	1.4	12	1	179	.10	9	0.8	3.2	12	SSF
		28	1221	46.66	19	18.43	155	13.07	7.64	1.8	2.2	43	6	93	.13	3	0.5	0.7	39	SF2
		28	1431	8.32	19	13.04	155	27.17	7.70	2.0	1.7	39	5	115	.13	6	0.4	0.8	38	LSW
		29	649	45.09	19	24.06	155	25.61	7.20	1.6	1.3	43	4	35	.12	2	0.3	0.8	40	KAO
		29	1010	19.62	19	20.47	155	12.02	7.20	1.8	1.8	43	6	73	.10	4	0.4	0.6	39	SF3
		29	2154	20.90	19	23.65	155	1.90	8.29	1.6	1.1	32	3	126	.14	5	0.6	0.6	29	SF5
		30	430	12.73	19	20.67	155	30.01	11.08	1.7	1.4	25	1	97	.11	5	0.5	1.0	24	KAO
		30	611	58.15	19	16.97	155	23.15	3.18	1.6	1.8	39	4	109	.13	5	0.3	1.2	39	SWR
		30	912	19.70	19	19.95	155	9.74	7.11	1.5	1.1	22	3	84	.10	4	0.5	0.9	19	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	OCT	30	14 6	18.12	19	20.06	155	10.66	9.06	1.8	1.1	22	0	86	.05	4	0.6	1.0	22	SF3
		30	1847	54.03	19	31.81	155	42.46	9.58	2.3	1.3	35	2	64	.14	6	0.5	0.9	33	MLO
		31	1148	4.26	20	3.05	155	32.27	38.63	2.5	1.9	43	9	197	.11	25	0.8	0.8	40	KEA
		31	1456	56.26	19	22.01	155	26.30	10.30	1.6	1.1	26	1	42	.09	2	0.4	0.8	25	KAO
		31	1535	14.74	19	21.84	155	28.67	10.18	2.1	2.1	40	2	37	.10	2	0.4	0.7	38	KAO
		31	2050	23.71	19	28.43	155	46.13	7.22	2.7	2.5	44	8	71	.14	4	0.4	0.8	40	KON
		31	2146	32.49	19	30.52	155	27.30	5.32	1.7	1.2	17	5	113	.08	3	0.4	1.0	13	MLO
	NOV	1	1828	47.20	19	18.88	155	15.33	6.26	1.1	1.0	21	1	106	.11	4	0.6	1.3	20	SF1
		2	922	33.81	19	19.88	155	7.23	6.38	1.2	1.1	21	2	107	.12	5	0.5	1.1	20	SF4
		2	1050	37.34	19	13.77	155	47.80	1.27	2.6	1.8	44	7	145	.17	9	0.5	0.7	39	KON
		2	1429	52.58	19	20.20	155	11.35	6.85	1.5	1.6	37	3	82	.13	4	0.5	0.7	35	SF3
		2	1951	22.46	20	1.05	155	13.43	41.05	2.2	1.7	48	9	223	.12	19	0.9	1.0	44	KEA
		3	136	6.89	19	44.92	155	22.96	14.71	1.8	1.4	32	6	125	.11	9	0.7	0.5	28	KEA
		3	427	54.74	19	20.78	155	11.96	7.56	1.5	1.5	39	5	69	.12	4	0.5	0.6	34	SF3
		3	1820	56.77	19	18.03	155	18.31	29.71	1.7	2.5	26	3	134	.13	1	1.1	1.6	26	DEP L
		4	159	27.17	19	25.06	155	19.36	7.16	1.5	1.2	30	4	80	.11	3	0.4	0.9	27	KAO
		4	7 3	9.10	19	21.98	155	2.30	7.85	2.1	2.1	36	2	135	.15	4	0.6	0.7	34	SF5
		4	1444	8.88	19	19.98	155	12.70	6.08	1.3	1.1	26	2	74	.11	5	0.5	1.1	24	SF2
		4	1515	15.92	19	47.33	155	32.95	26.81	2.0	1.4	38	10	94	.11	10	0.6	1.0	37	KEA
		4	2228	31.73	19	28.80	155	47.24	7.83	2.1	0.9	23	2	73	.13	4	0.5	1.0	22	KON
		5	438	59.69	19	19.02	155	12.88	6.62	1.7	1.4	44	3	87	.13	4	0.4	0.7	42	SF2
		5	613	48.87	19	49.14	155	12.53	14.29	1.8	1.3	36	4	184	.11	16	1.4	1.0	34	KEA
		5	1057	28.35	19	21.68	155	12.90	3.17	1.1	1.1	17	2	84	.06	2	0.4	0.5	16	SER
		6	057	46.92	19	27.33	155	28.42	10.42	1.8	1.3	29	5	53	.11	7	0.4	0.8	25	KAO F
		6	4 8	49.10	19	19.81	155	30.24	6.94	2.0	1.9	47	7	35	.14	7	0.3	0.9	45	KAO
		6	16 4	45.78	19	58.74	155	33.85	43.19	2.4	1.8	46	9	166	.11	17	0.8	1.0	46	KEA
		7	1211	11.02	19	23.73	155	15.65	2.93	1.4	1.9	23	6	99	.13	2	0.3	0.3	19	SEC
		7	14 3	12.62	19	23.92	155	15.64	2.91	0.8	1.0	18	5	108	.09	2	0.3	0.3	15	SEC
		7	15 1	55.82	19	20.48	155	11.68	8.32	1.6	1.6	36	3	76	.10	4	0.4	0.6	33	SF3
		7	1537	37.92	19	23.55	155	30.22	9.27	1.6	1.2	30	1	45	.09	5	0.4	1.0	28	KAO
		8	113	38.83	19	25.08	155	19.74	5.69	1.4	1.5	30	5	93	.10	3	0.4	0.9	26	KAO
		8	747	18.95	19	21.96	155	4.30	7.69	1.7	1.7	33	4	88	.14	5	0.4	0.7	32	SF5
		8	10 4	13.48	19	20.82	155	7.58	6.91	1.3	1.1	26	3	85	.10	5	0.5	0.9	25	SF4
		8	1221	45.41	19	20.42	155	11.94	7.42	1.6	1.2	28	2	75	.10	5	0.5	0.8	26	SF3
		8	1319	41.49	19	22.47	155	3.09	7.96	1.5	1.3	31	3	119	.19	5	0.7	1.0	29	SF5
		8	2042	54.96	19	25.18	154	58.47	4.73	1.3	0.7	29	2	162	.13	0	0.6	0.6	28	SLE
		9	427	29.46	19	25.35	155	19.49	3.28	1.6	1.9	27	5	114	.12	3	0.4	0.6	23	KAO
		9	5 9	34.72	19	16.90	155	13.22	6.54	1.5	1.2	22	2	180	.08	1	0.6	0.8	22	SF2
		9	12 4	20.62	19	20.45	155	12.84	5.38	1.0	0.9	25	2	67	.14	4	0.5	1.3	24	SF2
		9	1224	51.26	19	21.53	155	1.88	6.24	1.7	1.3	30	2	161	.17	4	0.8	1.1	28	SF5
		9	13 5	33.96	19	23.83	155	15.83	3.68	1.1	1.0	19	6	105	.09	1	0.4	0.4	15	SEC
		9	15 4	2.43	19	23.78	155	15.67	3.34	1.1	1.1	21	6	101	.10	2	0.3	0.4	17	SEC
		9	2259	52.69	19	23.00	155	27.75	9.56	1.6	1.2	38	2	34	.11	1	0.3	0.6	37	KAO
		10	228	4.15	19	33.99	155	41.00	6.92	1.6	0.9	25	4	76	.17	11	0.6	2.2	24	MLO
		10	9 0	0.07	19	20.16	155	11.75	7.31	2.3	2.1	39	3	80	.12	5	0.4	0.6	37	SF3

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	NOV	10	1040	55.88	19	20.20	155	11.66	7.52	2.5	2.9	47	5	80	.13	5	0.4	0.6	44	SF3
		10	1058	21.10	19	21.71	155	19.84	28.88	2.0	1.5	43	5	47	.13	4	0.6	0.9	36	DEP
		10	1317	13.99	19	21.97	155	1.14	6.96	2.0	1.9	40	5	169	.17	5	0.6	0.7	35	SF5
		10	1839	18.42	19	22.26	155	24.32	12.93	1.9	1.2	37	3	41	.12	4	0.4	0.6	34	KAO
		10	2119	32.43	19	19.89	155	11.27	8.43	1.5	1.2	25	2	88	.09	5	0.5	0.9	25	SF3
		11	549	40.85	19	20.55	155	11.04	7.59	2.1	1.9	46	4	77	.12	4	0.4	0.6	42	SF3
		11	1713	39.15	19	21.25	155	6.69	7.48	1.3	1.1	26	2	88	.11	4	0.5	0.9	26	SF4
		11	1755	18.21	19	26.30	155	30.64	8.80	1.9	1.5	38	2	37	.14	8	0.4	1.0	36	KAO
		11	2234	30.25	19	20.17	155	10.61	6.78	1.4	1.3	34	2	83	.14	4	0.5	0.9	33	SF3
		12	5	9 51.01	19	25.08	155	15.89	14.51	1.5	1.4	43	5	73	.11	2	0.5	0.3	39	DEP
		12	555	1.80	19	27.43	154	53.37	1.62	1.7	1.6	22	4	185	.19	3	0.6	0.7	19	SLE
		12	814	45.03	19	19.60	155	10.83	7.24	1.7	1.3	30	3	96	.10	5	0.5	0.9	28	SF3
		12	922	20.06	19	27.64	155	29.36	11.30	2.8	3.1	48	5	35	.11	8	0.3	0.4	42	KAO
		12	940	54.62	19	24.75	155	30.57	7.86	1.8	1.3	21	0	85	.10	7	0.5	1.7	14	KAO
		12	1639	24.27	19	22.17	155	12.30	4.65	1.1	1.2	14	2	114	.12	2	0.6	1.0	13	SER
		12	2138	54.01	19	18.53	155	15.05	6.07	1.0	1.0	22	3	110	.09	4	0.5	1.1	22	SF1
		12	2319	42.04	19	22.76	155	26.60	10.86	1.3	1.2	24	1	52	.10	2	0.5	1.0	23	KAO
		13	1135	37.17	19	27.02	155	29.41	9.36	1.8	1.3	30	1	46	.10	7	0.4	1.2	29	KAO
		13	16	2 3.14	19	17.48	155	30.67	5.97	1.8	1.3	33	3	81	.21	5	0.5	1.5	32	LSW
		13	20	1 55.34	19	24.38	155	17.04	19.28	3.0	3.3	58	9	36	.13	1	0.4	0.6	49	DEP F
		13	2120	30.12	19	26.45	155	28.95	10.57	1.7	1.3	33	3	41	.11	7	0.4	0.7	29	KAO
		13	2134	33.96	19	24.10	155	16.14	3.32	1.2	1.0	14	4	116	.07	1	0.4	0.4	12	SEC
		13	2141	38.07	19	23.65	155	15.56	2.56	1.7	1.9	26	6	82	.09	2	0.3	0.3	22	SEC
		13	2241	32.20	19	23.96	155	15.67	3.41	1.1	1.4	16	5	111	.07	2	0.3	0.4	11	SEC
		14	348	42.54	19	25.38	155	21.11	8.62	2.1	1.8	50	6	32	.13	4	0.3	0.5	44	KAO
		14	4	0 24.23	19	23.88	155	15.89	2.78	1.3	1.5	20	6	81	.11	1	0.3	0.3	16	SEC
		14	425	18.99	19	23.83	155	16.05	3.26	2.2	2.8	32	5	67	.09	1	0.2	0.2	29	SEC
		14	519	6.15	19	23.05	155	27.49	10.50	1.5	1.1	29	1	56	.10	1	0.4	0.8	26	KAO
		14	13	5 56.77	19	37.56	156	8.98	37.17	2.9	2.8	52	10	250	.12	29	0.9	0.8	49	KON
		14	1659	37.28	19	38.80	155	55.60	15.11	2.5	2.2	42	6	199	.12	10	0.9	0.5	41	KON
		14	20	0 50.00	19	23.29	154	58.58	5.75	1.7	1.2	25	1	183	.13	3	0.9	1.0	24	LER
		15	132	26.22	19	19.02	155	12.93	6.48	1.3	1.3	29	3	86	.13	4	0.5	1.1	27	SF2
		15	415	1.21	19	23.71	155	19.15	31.39	2.3	2.4	46	4	35	.13	1	0.6	0.9	42	DML
		15	1324	12.19	19	25.82	154	56.31	5.31	1.7	1.2	22	1	175	.14	4	0.9	1.1	21	LER
		15	2311	41.93	19	18.54	155	12.82	6.95	1.2	1.1	25	2	98	.09	3	0.4	1.0	24	SF2
		16	415	58.08	19	19.16	155	11.03	6.70	1.6	1.5	24	2	107	.11	6	0.6	0.9	22	SF3
		16	10	3 43.46	19	23.75	154	50.20	40.23	2.5	2.2	45	7	252	.12	12	1.2	0.8	42	LER
		17	018	46.31	19	28.80	155	26.45	7.97	2.6	2.2	46	6	48	.13	6	0.3	0.7	40	KAO
		17	228	39.19	19	25.63	155	28.37	8.10	1.6	1.1	29	1	58	.10	6	0.4	1.0	28	KAO
		17	1235	2.70	19	22.46	155	29.81	9.10	2.4	2.8	42	4	34	.11	4	0.3	0.6	38	KAO
		17	1646	43.89	19	21.06	155	12.85	7.44	1.8	2.0	33	4	61	.13	3	0.5	0.7	30	SF2
		17	20	2 10.49	19	24.86	155	19.52	6.39	1.5	1.1	24	5	65	.08	2	0.4	0.8	20	KAO
		18	110	28.11	19	19.37	155	11.65	5.38	1.4	1.1	21	1	97	.11	5	0.5	1.4	21	SF3
		18	417	7.20	19	12.58	155	37.79	8.19	3.1	3.2	49	8	96	.18	5	0.6	0.7	45	LSW
		18	6	2 23.46	19	19.31	155	13.67	6.49	1.6	1.5	33	1	69	.13	4	0.5	0.9	31	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	NOV	18	837	34.43	19	19.40	155	14.76	7.40	1.6	1.5	39	3	80	.12	5	0.4	0.7	38	SF1
		18	935	42.42	19	21.69	155	2.13	7.95	2.0	1.6	37	4	152	.17	4	0.7	0.6	34	SF5
		18	10	1 45.66	19	21.94	155	28.95	10.03	2.0	1.6	46	3	36	.10	3	0.3	0.5	43	KAO
		18	1658	19.32	19	19.99	155	7.00	5.45	1.4	1.0	26	1	109	.13	5	0.6	1.5	25	SF4
		18	2215	57.47	19	20.61	155	11.31	8.38	1.9	1.6	39	2	75	.10	4	0.4	0.6	37	SF3
		19	6	8 48.00	19	17.77	155	21.67	7.93	1.5	1.0	33	2	118	.11	5	0.4	0.8	31	SWR
		19	855	14.82	19	27.47	155	51.11	5.91	2.3	1.6	30	6	121	.12	8	0.5	1.0	28	KON
		19	1241	1.00	19	25.59	155	19.87	7.48	1.7	1.8	32	4	46	.12	4	0.4	0.8	28	KAO
		19	1355	54.31	19	44.00	155	57.08	28.36	2.4	1.6	44	7	210	.13	13	0.8	1.0	42	HUA
		19	16	4 54.68	19	20.54	155	11.38	8.18	2.7	3.0	51	8	76	.12	4	0.3	0.5	44	SF3
		20	139	27.14	19	28.39	154	54.09	1.92	1.8	1.7	24	3	161	.13	3	0.7	0.5	23	SLE
		20	8	9 5.46	19	22.93	155	18.21	10.76	1.3	1.3	9	2	188	.10	4	1.5	2.2	8	INT L
		20	942	45.79	19	17.90	154	59.39	38.40	2.3	1.8	42	3	219	.11	7	1.2	1.2	41	LER
		20	1040	8.88	19	23.32	155	16.44	8.81	1.1	1.3	19	4	69	.22	1	0.8	1.3	17	INT L
		20	14	7 4.15	19	24.35	155	17.48	11.36	1.2	1.4	17	3	45	.15	1	1.0	1.1	15	INT L
		20	1810	22.59	19	24.09	155	17.08	12.21	1.3	1.2	16	4	78	.08	1	0.8	0.9	14	INT L
		20	1812	43.51	19	23.69	155	17.15	7.79	1.0	1.2	19	4	63	.11	1	0.5	0.7	18	INT L
		20	1816	17.51	19	24.97	155	17.52	9.09	1.1	1.5	18	3	102	.11	1	0.7	0.9	16	INT L
		20	1818	40.29	19	24.53	155	17.68	11.51	1.2	1.2	18	4	107	.10	1	0.9	0.8	16	INT L
		20	1951	48.59	19	23.56	155	27.24	9.78	1.9	1.9	45	4	54	.11	2	0.3	0.5	40	KAO
		20	2123	4.27	19	21.58	155	3.88	8.27	1.6	1.7	32	2	95	.15	4	0.6	0.8	31	SF5
		20	2339	59.38	19	46.71	155	40.23	12.13	2.3	2.2	29	8	126	.09	9	0.6	0.4	23	KEA
		21	3	3 4.95	19	19.58	155	7.30	5.34	1.0	1.1	23	2	111	.12	4	0.5	1.7	23	SF4
		21	9	2 7.44	19	18.58	155	27.99	9.38	1.4	1.3	30	2	42	.14	7	0.4	1.0	28	LSW
		21	1227	46.76	19	25.93	155	29.57	10.62	2.1	1.8	41	3	40	.11	7	0.4	0.7	38	KAO
		21	1426	45.64	19	22.63	155	26.68	10.43	1.9	1.7	38	1	37	.13	2	0.4	0.7	37	KAO
		22	156	11.63	19	24.89	155	18.18	12.35	1.2	1.1	17	4	87	.13	1	0.8	1.0	14	INT L
		22	248	41.33	19	24.95	155	17.42	9.99	1.1	1.4	21	4	90	.16	1	0.8	0.9	19	INT L
		22	545	16.45	19	24.94	155	16.98	10.14	1.2	1.2	13	2	145	.09	0	0.8	0.8	12	INT L
		22	629	22.32	19	12.04	155	41.88	2.07	2.1	1.4	29	4	121	.23	10	0.7	1.8	27	LSW
		22	943	16.58	19	24.86	155	17.19	10.22	1.3	1.4	20	4	113	.14	0	0.7	0.9	17	INT L
		22	1038	10.81	19	24.91	155	16.86	11.01	1.6	1.5	22	6	146	.13	0	0.8	0.7	18	INT L
		22	1133	24.59	19	18.59	155	14.84	7.62	1.8	1.2	36	1	95	.10	4	0.5	0.8	35	SF1
		22	13	0 52.02	19	24.84	155	17.05	11.16	1.3	1.3	22	5	82	.10	0	0.6	0.8	18	INT L
		22	1335	28.69	19	18.73	155	13.57	7.81	2.0	2.1	47	5	72	.14	3	0.5	0.6	43	SF2
		22	1337	51.93	19	24.43	155	16.52	8.86	1.1	1.3	18	5	126	.11	1	0.6	0.8	15	INT L
		22	1622	11.44	19	20.19	155	12.12	7.35	1.4	1.3	39	2	77	.12	5	0.4	0.7	36	SF3
		22	1741	16.95	19	25.27	155	17.28	10.85	1.7	1.9	27	7	152	.14	1	0.6	0.5	22	INT L
		22	1742	30.54	19	24.79	155	17.45	7.76	1.0	1.2	17	2	119	.11	1	0.7	0.9	16	INT L
		22	1743	44.98	19	24.55	155	17.53	10.20	1.0	1.0	21	5	57	.12	1	0.7	0.7	18	INT L
		22	1756	43.57	19	24.71	155	16.86	9.38	1.1	1.2	18	2	104	.14	0	0.6	0.7	17	INT L
		22	18	9 3.24	19	23.56	155	17.60	8.75	0.8	1.3	18	2	51	.11	1	0.6	0.9	16	INT L
		22	1859	10.12	19	25.57	155	15.87	34.97	1.7	2.1	17	0	179	.13	3	2.9	7.6	17	DEP L
		22	2047	20.42	19	10.64	155	33.75	1.20	2.0	1.5	39	5	106	.15	10	0.5	0.7	36	LSW
		23	842	59.00	19	21.77	155	0.99	7.58	1.6	1.2	28	2	175	.18	5	0.9	1.1	26	SF5

YEAR	MON	ORIGIN TIME DA	HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	NOV	23	853	29.11	19	16.61	155	27.83	8.87	2.9	3.2	54	8	59	.15	5	0.3	0.6	48	LSW F
		23	1124	45.41	19	20.44	155	12.02	7.52	2.0	2.0	41	5	74	.13	4	0.4	0.6	38	SF3
		23	1610	7.60	19	21.58	155	4.18	7.53	2.0	2.2	37	6	89	.12	4	0.4	0.6	33	SF5
		23	1915	4.17	19	19.60	155	11.59	6.44	1.5	1.2	29	2	92	.12	5	0.5	1.0	28	SF3
		23	20 2	21.64	19	21.39	155	21.69	9.91	1.3	1.1	27	1	59	.11	4	0.6	1.0	25	SWR
		23	2035	10.65	19	21.48	155	21.76	9.11	1.2	1.0	27	2	58	.10	4	0.5	0.9	26	SWR
		24	0 7	10.24	19	27.91	155	24.33	3.22	1.6	1.3	23	4	68	.11	4	0.3	0.8	20	KAO
		24	958	7.54	19	20.41	155	13.41	6.92	1.2	1.2	27	1	61	.12	4	0.6	1.0	25	SF2
		24	1516	20.53	19	26.88	154	53.84	7.57	2.4	3.0	40	4	187	.13	3	0.9	0.5	38	LER
		24	1630	27.78	19	56.81	155	45.02	7.20	2.9	3.1	29	3	154	.14	14	0.6	0.6	26	KOH
		24	17 1	54.80	19	16.30	155	30.32	6.30	1.7	1.1	26	3	88	.17	2	0.4	1.2	25	LSW
		24	21 4	21.68	19	24.66	155	16.67	1.56	1.2	1.7	21	5	138	.12	1	0.3	0.2	18	SNC
		25	611	26.07	19	23.27	155	20.55	10.98	1.4	1.1	19	2	53	.06	2	0.6	1.2	18	KAO
		25	1048	40.56	19	24.81	155	17.78	8.22	1.1	1.7	21	5	61	.16	1	0.6	0.7	17	INT L
		26	0 4	17.72	19	19.85	155	7.03	6.79	1.3	1.2	27	1	112	.10	5	0.5	1.0	26	SF4
		26	053	11.35	19	23.80	155	17.29	8.00	1.5	1.8	23	3	55	.16	1	0.6	0.8	20	INT L
		26	2 1	18.05	19	23.81	155	16.92	13.16	1.6	1.6	22	5	73	.12	1	0.6	0.9	19	DEP L
		26	257	42.52	19	19.63	155	7.85	7.15	1.6	1.7	33	2	97	.10	4	0.5	0.9	32	SF4
		26	314	5.18	19	23.78	155	16.87	9.06	1.2	1.7	17	1	71	.13	1	0.6	1.2	16	INT L
		26	11 2	36.21	19	24.27	155	17.36	9.60	1.2	1.7	24	6	53	.14	1	0.6	0.7	20	INT L
		26	1732	7.03	19	19.24	155	13.31	7.75	1.5	1.6	37	3	74	.12	4	0.4	0.7	36	SF2
		26	2058	20.25	19	22.21	155	29.86	10.01	1.5	1.1	29	1	44	.07	4	0.4	0.8	28	KAO
		26	2352	36.61	19	22.86	155	25.46	10.37	1.7	1.3	29	1	50	.09	4	0.4	0.9	28	KAO
		27	443	52.44	19	31.99	155	35.88	9.89	2.7	2.2	43	5	88	.14	2	0.4	0.4	40	MLO
		27	721	21.43	19	19.63	155	7.30	7.26	2.1	2.4	42	6	111	.10	4	0.4	0.7	37	SF4
		27	1428	16.50	19	30.78	155	56.65	21.41	2.5	2.7	39	7	225	.13	4	1.0	1.0	35	KON
		27	17 4	55.26	19	24.08	155	16.00	3.08	1.2	1.0	15	4	117	.09	1	0.4	0.4	13	SEC
		27	23 4	49.50	19	27.87	155	51.94	8.08	2.6	2.1	33	3	114	.17	6	0.6	0.7	31	KON
		28	448	52.98	19	22.41	155	29.59	9.24	2.2	2.1	45	3	33	.11	3	0.3	0.6	41	KAO
		28	656	1.71	19	25.50	155	29.08	9.48	2.0	1.8	35	3	47	.10	6	0.3	0.7	30	KAO
		28	829	47.58	19	18.44	155	16.70	9.16	3.0	3.2	51	8	116	.12	3	0.4	0.5	45	SF1
		28	840	59.46	19	21.58	155	25.79	10.50	1.7	1.3	28	3	48	.11	4	0.5	0.9	26	KAO
		28	1127	10.30	19	18.85	155	13.77	7.22	1.5	1.6	38	4	76	.13	3	0.5	0.8	36	SF2
		28	1141	48.53	19	14.54	155	27.04	8.74	1.9	2.0	42	7	95	.13	5	0.4	0.7	40	LSW
		28	1716	0.46	19	25.95	155	26.90	2.19	1.6	1.3	24	1	64	.11	3	0.3	0.8	23	KAO
		28	2311	23.06	19	18.59	155	13.46	7.15	2.1	2.2	47	4	78	.12	3	0.4	0.7	44	SF2
		29	558	54.02	19	19.17	155	13.12	4.90	1.5	1.8	39	2	79	.13	4	0.4	1.5	38	SSF
		29	1018	30.63	19	21.77	155	7.08	7.50	1.2	1.1	23	3	76	.10	3	0.4	0.8	22	SF4
		29	11 8	38.48	19	20.59	155	8.47	7.61	0.9	1.3	17	2	96	.10	4	0.7	1.0	17	SF4
		30	1059	25.26	19	18.88	155	16.06	7.04	1.3	1.1	29	4	113	.11	3	0.4	0.8	26	SF1
		30	14 6	51.29	19	24.49	155	29.82	8.63	1.9	2.0	44	4	33	.11	5	0.3	0.9	41	KAO
		30	1529	16.23	19	19.60	155	12.16	6.42	1.5	1.5	35	0	87	.11	5	0.5	0.9	35	SF3
		30	1728	32.47	18	59.11	155	28.70	41.28	2.2	1.6	35	3	220	.07	19	0.9	1.3	34	DLS
		30	2343	19.06	19	18.49	155	13.11	4.99	1.4	1.3	32	3	90	.11	3	0.4	1.0	29	SSF
	DEC	1	442	18.67	19	24.55	155	19.46	5.36	1.7	1.9	19	2	98	.08	4	0.4	1.2	18	KAO

YEAR	MON	ORIGIN TIME DA	HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	DEC	1	448	37.89	19	16.85	155	22.37	8.08	1.5	1.3	21	2	128	.12	6	0.6	1.3	16	SWR
		1	1242	22.24	19	23.93	155	15.77	2.87	1.2	1.2	17	6	110	.09	1	0.3	0.4	13	SEC
		1	1951	59.83	19	17.09	155	13.16	6.73	2.1	2.2	42	5	156	.12	1	0.5	0.7	39	SF2
		2	241	40.07	19	19.40	155	13.37	6.35	2.0	2.1	48	7	71	.13	4	0.4	0.6	42	SF2
		2	2237	10.49	19	21.59	155	19.84	30.69	2.2	2.1	49	6	47	.12	4	0.6	0.8	45	DEP
		3	213	49.84	19	19.55	155	11.91	6.56	1.7	1.8	40	5	91	.14	5	0.5	0.8	37	SF3
		3	945	13.46	19	19.49	155	8.41	6.14	1.4	1.3	26	1	132	.11	4	0.6	1.2	26	SF4
		3	1515	44.84	19	21.39	155	30.10	10.56	1.6	1.5	30	1	45	.08	5	0.4	1.0	29	KAO
		3	2347	29.04	19	21.01	155	6.18	7.71	2.6	3.1	45	4	146	.12	5	0.4	0.6	42	SF4
		4	022	38.45	19	21.73	155	6.55	7.11	1.4	1.5	24	0	132	.13	4	0.7	1.1	24	SF4
		4	1135	17.81	19	22.27	155	26.52	9.78	2.4	2.6	48	5	40	.11	2	0.3	0.5	43	KAO
		4	1413	19.18	19	27.07	155	29.94	8.57	2.0	1.4	35	3	46	.10	9	0.4	1.0	30	KAO
		4	2013	41.39	19	20.33	155	11.57	8.38	1.8	1.6	39	2	78	.10	4	0.4	0.6	38	SF3
		4	2039	39.46	19	17.00	155	13.98	7.50	1.5	1.5	34	3	177	.10	1	0.6	0.7	29	SF2
		5	226	31.91	19	12.31	155	23.49	38.81	1.7		27	1	225	.12	4	1.6	2.3	27	DEP L
		5	237	42.99	19	20.84	155	12.85	8.16	1.9	1.9	42	3	63	.12	3	0.4	0.5	38	SF2
		5	339	34.82	19	19.92	155	10.76	7.66	1.3	1.1	24	0	88	.08	4	0.6	1.1	24	SF3
		5	8 2	48.85	19	20.26	155	10.83	8.31	2.4	3.0	43	3	82	.11	4	0.4	0.6	40	SF3
		5	2112	12.29	19	26.41	155	28.11	8.26	1.6	1.1	35	3	56	.11	6	0.4	1.0	31	KAO
		6	014	50.89	19	17.04	155	22.20	3.16	0.9	1.0	24	4	124	.12	6	0.4	1.4	22	SWR
		6	256	30.99	19	22.03	155	30.38	9.40	1.6	1.2	37	2	47	.10	5	0.4	0.7	34	KAO
		6	1658	36.05	19	24.29	155	16.36	1.47	0.9	1.0	12	3	122	.06	1	0.2	0.3	10	SEC
		6	1829	6.83	18	57.13	155	34.77	40.86	2.1	1.5	37	6	246	.08	10	1.4	1.4	36	DLS
		6	1850	29.05	19	29.29	155	53.46	8.29	2.2	1.4	33	6	120	.17	3	0.7	0.5	30	KON
		6	2239	6.51	19	18.75	155	13.42	4.68	1.3	1.1	33	4	77	.12	3	0.4	1.4	31	SSF
		7	053	14.61	19	22.79	155	20.71	8.61	1.4	0.9	31	2	46	.12	2	0.4	0.7	27	KAO
		7	154	21.60	19	21.56	155	2.06	6.64	1.4	1.3	35	2	155	.15	3	0.7	0.8	34	SF5
		7	3 8	8.46	19	19.55	155	10.38	6.89	1.4	1.3	35	4	97	.12	5	0.5	0.8	33	SF3
		7	326	4.46	19	20.03	155	12.06	6.19	1.3	1.1	33	3	80	.13	5	0.5	0.9	30	SF3
		7	1938	27.09	19	19.76	155	12.05	6.94	1.3	1.3	38	3	86	.12	6	0.4	0.7	35	SF3
		8	130	15.17	19	27.44	155	28.38	9.98	1.5	1.1	24	2	55	.11	7	0.5	1.3	22	KAO
		8	451	14.94	19	22.33	155	2.94	5.61	1.6	1.2	29	1	125	.17	5	0.6	1.7	27	SF5
		8	10 5	53.81	19	26.84	155	45.35	3.37	2.1	1.1	35	7	73	.16	7	0.5	1.8	33	KON
		8	1049	28.75	19	35.51	155	4.46	12.45	2.1	2.2	45	8	89	.14	10	0.4	0.6	39	HIL
		8	1937	10.57	19	27.64	155	29.77	8.95	2.1	1.7	44	4	37	.13	8	0.4	0.9	39	KAO
		8	1956	57.65	19	18.17	155	12.98	7.31	1.4	1.5	36	1	103	.11	2	0.5	0.7	35	SF2
		9	342	27.26	19	17.46	155	12.79	7.44	1.9	1.9	44	6	146	.14	1	0.5	0.6	39	SF2
		9	5 1	59.76	19	22.78	155	26.65	9.95	1.5	1.3	32	1	41	.11	2	0.4	0.6	29	KAO
		9	928	1.23	19	23.90	155	30.29	9.32	1.5	1.4	30	1	45	.08	5	0.4	0.9	29	KAO
		9	1515	33.91	19	20.13	155	13.18	6.72	1.3	1.1	21	1	66	.09	5	0.5	1.0	20	SF2
		9	1625	53.13	19	20.79	155	29.99	9.28	1.6	1.3	30	1	47	.10	5	0.4	1.0	28	KAO
		10	124	58.02	19	19.61	155	12.38	6.09	1.4	1.1	25	1	84	.10	5	0.5	1.1	24	SF2
		10	153	20.91	19	25.70	155	49.96	6.89	1.6	1.2	29	4	114	.19	11	0.6	1.9	27	KON
		10	333	3.89	19	13.47	155	26.14	6.91	1.3	1.5	32	3	130	.15	4	0.4	0.9	30	LSW
		10	457	45.66	19	18.55	155	12.91	6.80	2.1	1.9	41	4	95	.13	3	0.4	0.8	38	SF2

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	DEC	10	1826	31.61	19	18.85	155	30.48	7.95	2.0	1.7	39	3	39	.13	7	0.4	1.0	37	LSW
		10	2226	33.12	19	47.34	155	35.96	14.80	2.0	1.8	35	6	93	.10	10	0.4	0.5	34	KEA
		11	332	53.30	19	12.91	155	27.76	40.86	2.1	2.8	39	9	106	.12	6	0.8	1.2	38	DLS L
		11	342	50.26	19	23.92	155	15.69	3.11	1.5	2.1	28	6	76	.09	2	0.3	0.3	24	SEC
		11	345	2.79	19	23.95	155	15.80	3.38	1.3	1.6	16	5	111	.09	1	0.3	0.4	13	SEC
		11	457	17.59	19	21.93	155	2.46	5.21	1.4	1.1	24	2	146	.23	4	1.1	2.6	23	SF5
		11	5 5	9.21	19	17.88	155	21.41	8.29	1.2	1.1	28	2	119	.11	5	0.5	0.8	27	SWR
		12	251	26.97	19	25.95	155	21.42	9.27	1.7	1.1	34	5	75	.11	3	0.4	0.6	30	KAO
		12	748	33.33	19	19.48	155	11.67	5.63	1.2	1.1	27	3	94	.13	6	0.5	1.3	26	SF3
		12	9 1	22.87	20	34.68	155	45.31	25.05	4.7	4.9	55	8	208	.11	50	0.9	3.0	49	DIS F
		12	922	18.54	19	19.53	155	11.98	7.19	1.7	1.8	35	5	91	.10	5	0.4	0.8	32	SF3
		12	1118	39.33	19	30.96	155	54.45	11.80	4.0	4.3	57	13	171	.13	3	0.6	0.3	52	KON F
		12	1154	11.09	19	28.23	155	26.76	6.10	2.0	1.3	39	4	51	.13	6	0.4	1.1	34	KAO
		12	1211	52.19	19	11.60	155	38.75	8.12	2.1	1.7	31	5	105	.19	7	0.6	1.2	30	LSW
		12	1330	41.20	19	22.14	155	26.71	9.75	1.6	1.1	30	2	44	.13	2	0.4	0.7	29	KAO
		12	1331	5.17	19	22.83	155	2.35	6.27	1.7	1.7	27	3	134	.13	5	0.5	1.1	26	SF5
		12	2040	3.80	19	47.05	155	56.38	8.95	2.9	1.9	25	5	258	.12	15	1.3	0.6	25	HUA
		12	2217	44.48	19	21.81	155	2.67	8.95	3.4	3.9	52	11	134	.12	4	0.5	0.3	44	SF5 F
		12	23 1	28.19	19	22.68	155	25.28	10.13	1.8	1.9	39	4	41	.12	4	0.4	0.6	34	KAO
		13	0 7	7.62	19	20.22	155	12.86	6.33	1.4	1.3	30	3	69	.12	4	0.4	0.7	29	SF2
		13	429	10.41	19	22.26	155	4.81	8.79	3.2	3.4	53	9	80	.11	4	0.4	0.3	47	SF5
		13	753	18.79	19	19.42	155	11.30	5.67	1.6	1.6	29	3	98	.11	6	0.5	1.1	27	SF3
		13	1320	57.37	19	19.67	155	7.76	9.34	4.0	4.1	56	10	99	.11	4	0.4	0.3	48	SF4 F
		13	1329	13.88	19	19.39	155	8.32	6.40	1.3	0.9	16	2	86	.08	4	0.6	1.3	15	SF4
		13	1343	13.89	19	23.96	155	15.69	2.95		1.2	16	5	112	.09	2	0.3	0.3	14	SEC
		13	1453	42.80	19	20.46	155	8.51	6.58	1.2	1.1	23	2	75	.11	4	0.5	1.0	22	SF4
		13	2132	53.55	19	19.58	155	8.18	7.08	2.1	2.3	40	3	88	.11	4	0.5	0.7	37	SF4
		14	017	56.05	19	22.40	155	4.58	6.97	1.7	1.8	37	3	85	.14	4	0.4	0.9	36	SF5
		14	633	19.63	19	20.80	155	28.63	10.16	1.4	1.2	32	3	48	.14	4	0.4	0.9	31	KAO
		14	750	40.27	19	19.33	155	13.64	7.55	1.3	1.1	29	3	69	.10	4	0.4	0.8	27	SF2
		14	10 8	1.07	19	22.60	155	20.86	10.28	2.2	2.1	47	5	45	.11	3	0.3	0.5	43	KAO
		14	17 4	20.67	19	23.37	155	21.23	9.69	1.7	2.0	39	5	52	.11	3	0.3	0.5	34	KAO
		14	1726	32.46	19	23.87	155	16.15	2.62	1.4	1.7	23	6	101	.09	1	0.3	0.2	18	SEC
		14	1949	34.86	19	16.28	155	23.08	7.45	1.7	2.1	25	3	120	.11	4	0.5	1.2	22	SWR
		15	449	29.51	19	19.86	155	12.17	6.79	1.4	1.6	33	4	82	.10	5	0.5	0.8	30	SF3
		15	928	47.81	19	20.43	155	11.60	7.89	2.6	2.9	49	5	77	.14	4	0.4	0.6	44	SF3
		15	1629	54.44	19	16.55	155	28.71	8.19	2.0	2.3	38	4	57	.17	4	0.4	0.9	34	LSW
		15	1859	18.55	19	23.86	155	26.95	10.20	1.9	1.8	58	2	27	.13	3	0.4	0.6	36	KAO
		16	050	26.16	19	24.05	155	15.83	3.61	0.9	1.4	15	5	116	.07	1	0.3	0.4	12	SEC
		16	153	26.09	19	23.85	155	15.66	3.23	1.3	1.9	23	5	84	.09	2	0.3	0.3	20	SEC
		16	243	52.24	19	32.93	155	36.68	8.07	2.2	1.9	34	5	127	.12	7	0.5	0.8	32	MLO
		16	313	35.85	19	20.19	155	10.72	8.76	1.4	1.7	22	2	83	.04	4	0.5	0.8	20	SF3
		16	1313	35.40	19	27.56	155	29.18	9.79	2.8	2.9	39	2	55	.12	9	0.4	0.7	23	KAO
		16	2158	7.44	19	25.12	155	19.74	6.01	1.9	1.9	28	4	63	.12	3	0.4	1.0	24	KAO
		17	345	53.84	19	25.70	155	30.58	9.49	2.2	2.4	40	4	36	.10	8	0.3	0.7	36	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	DEC	17	347	16.97	19	28.57	154	53.23	1.11	2.6	2.8	39	6	167	.22	4	0.6	0.8	36	SLE
		17	1046	48.24	19	23.62	155	20.45	9.65	1.7	1.5	40	13	56	.10	1	0.3	0.4	34	KAO
		17	1221	39.40	19	20.05	155	11.74	6.35	1.2	1.3	18	1	82	.07	5	0.5	1.2	18	SF3
		17	1724	12.73	19	19.43	155	13.13	6.44	1.3	1.8	43	5	75	.14	4	0.4	0.8	42	SF2
		18	313	39.42	19	19.99	155	11.14	8.04	1.3	1.1	28	6	87	.07	4	0.4	0.6	26	SF3
		18	341	6.90	19	23.68	155	17.01	3.10	1.1	1.2	22	6	60	.13	1	0.4	0.2	19	SSC
		18	411	47.90	19	19.09	155	12.10	4.67	1.3	1.4	33	2	100	.13	5	0.4	1.7	32	SSF
		18	457	37.13	19	9.19	155	40.45	6.07	2.1	1.9	34	4	125	.20	12	0.6	2.0	32	LSW
		18	8 1	51.72	19	17.12	155	27.40	6.82	1.7	1.3	33	2	53	.18	6	0.5	1.6	32	LSW
		18	1548	21.20	19	19.65	155	8.12	4.85	1.4	1.0	21	0	157	.10	5	0.8	2.5	16	SSF
		18	1943	12.89	19	26.74	155	30.07	3.32	1.6	0.8	25	1	57	.14	9	0.4	4.3	18	KAO
		19	7 4	9.12	19	19.10	155	13.42	5.14	1.5	0.8	23	0	74	.12	4	0.5	1.4	18	SF2
		19	8 4	27.07	19	19.25	155	2.72	3.25		0.9	16	0	210	.12	10	1.4	35.5	13	SSF
		19	857	8.99	19	27.36	155	25.73	5.30	1.2	1.3	29	3	62	.10	4	0.4	1.5	27	KAO
		19	935	16.21	19	27.33	155	25.64	5.96	1.1	1.3	20	2	62	.13	4	0.5	1.5	18	KAO
		19	1320	46.26	19	21.61	155	29.73	9.53	1.5	1.5	30	1	43	.08	4	0.4	0.8	28	KAO
		19	1924	49.55	19	20.47	155	11.46	7.73	1.6	1.9	29	1	76	.10	4	0.5	0.9	28	SF3
		19	2321	59.05	19	18.42	155	13.21	5.76	1.2	1.1	20	0	137	.09	3	0.8	1.7	20	SF2
		20	314	36.55	19	20.61	155	10.32	6.51	1.4	1.3	27	2	75	.09	3	0.5	0.8	26	SF3
		20	449	8.91	19	26.64	155	28.71	10.15	1.7	1.5	34	3	42	.10	7	0.4	0.8	30	KAO
		20	5 4	13.72	19	20.39	155	11.71	9.13	1.5	1.1	17	0	77	.07	5	0.5	1.0	17	SF3
		20	1717	43.51	19	27.36	155	25.49	5.65	1.9	1.8	40	12	47	.14	4	0.3	1.2	36	KAO
		20	2131	45.60	19	23.38	155	11.24	0.54	1.4	1.7	15	5	156	.27	3	0.8	0.5	13	SER
		21	242	28.39	19	21.53	155	30.23	8.92	2.4	2.3	52	13	46	.11	5	0.3	0.5	48	KAO
		21	537	8.75	19	19.78	155	7.94	7.37	2.1	2.2	45	8	93	.11	5	0.4	0.7	41	SF4
		21	910	13.73	19	22.01	155	28.50	9.36	2.6	2.9	55	9	38	.13	2	0.3	0.5	48	KAO
		21	1033	30.40	19	20.39	155	12.98	6.63	1.2	1.2	33	4	66	.11	4	0.4	0.9	31	SF2
		21	11 9	29.94	19	20.59	155	11.46	7.47	2.2	2.4	49	7	75	.13	4	0.4	0.5	44	SF3
		21	1559	51.08	19	23.76	154	58.18	6.34	1.8	1.4	23	1	181	.15	3	1.0	0.8	20	LER
		21	1753	32.40	19	8.90	155	30.54	44.53	2.5		50	11	146	.12	5	0.8	1.0	42	DLS T
		21	1754	5.02	19	10.23	155	28.89	35.87			35	3	98	.14	2	0.9	1.4	34	DLS T
		21	1925	19.81	19	3.09	155	31.52	34.89	2.2		33	4	185	.12	14	1.0	1.3	32	DLS T
		21	1930	35.62	19	8.49	155	26.00	46.01	2.2		34	2	172	.15	4	1.2	2.2	33	DLS T
		22	122	9.27	19	24.96	155	29.13	9.77	1.8	1.2	42	5	33	.09	5	0.3	0.6	37	KAO
		22	1435	59.37	19	20.52	155	7.59	6.90		1.3	29	3	90	.13	5	0.6	0.9	26	SF4
		22	1738	53.21	19	25.57	155	29.95	9.18	1.6	1.2	32	2	38	.08	7	0.4	0.9	32	KAO
		22	2131	28.90	19	11.07	155	33.22	6.60	2.7	2.8	49	9	133	.16	9	0.5	0.8	48	LSW F
		22	2255	58.65	19	19.35	155	18.66	7.48	1.2	1.1	29	6	111	.10	3	0.4	0.8	27	SWR
		23	025	42.25	19	19.61	155	7.66	7.50		1.1	22	1	102	.11	4	0.6	1.4	22	SF4
		23	638	35.12	19	21.45	155	0.74	8.71	3.2	3.8	45	6	186	.11	5	0.7	0.5	39	SF5 F
		23	646	50.29	19	21.05	155	0.62	6.76	1.6	1.8	29	1	197	.11	5	0.8	0.7	29	SF5
		23	921	45.55	19	17.09	155	0.87	37.67	2.1	1.9	52	14	217	.10	6	0.7	0.8	50	DEP
		23	958	21.55	19	21.43	155	0.79	5.94		1.3	27	3	186	.13	5	0.8	1.5	27	SF5
		23	2134	47.63	19	25.98	155	27.59	6.94	1.7	1.3	33	8	56	.11	5	0.3	1.1	31	KAO
		23	2228	48.32	19	22.58	155	28.92	9.93	1.8	1.5	38	10	39	.09	2	0.3	0.8	36	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	DEC	24	354	19.42	19	19.37	155	12.01	6.01	1.3	1.1	22	3	94	.10	5	0.5	1.5	22	SF3
		24	558	14.10	19	50.54	155	32.11	12.72	2.1	1.6	21	6	156	.09	13	0.6	0.5	21	KEA
		24	14 0	14.09	19	20.94	155	8.04	8.04	2.8	3.5	53	11	77	.15	4	0.4	0.5	46	SF4
		24	16 6	1.45	19	19.74	155	11.61	9.01	1.3	1.1	19	3	89	.07	5	0.6	1.2	19	SF3
		24	2338	26.81	19	14.07	155	30.74	9.64	3.3	3.5	48	8	129	.16	2	0.6	0.6	47	LSW F
		25	042	37.23	19	19.73	155	11.14	9.83	1.4	1.1	19	2	92	.07	5	0.7	1.1	19	SF3
		25	316	23.46	19	11.90	155	27.38	6.55	2.0	1.8	38	6	118	.19	5	0.6	1.2	37	LSW
		25	510	25.28	19	21.27	155	0.50	6.28	2.0	2.0	34	4	193	.14	5	0.7	0.9	32	SF5
		25	635	9.75	19	23.35	155	2.64	7.65	2.2	2.4	41	6	121	.13	4	0.5	0.5	38	SF5
		25	11 4	45.48	19	21.04	155	13.00	8.18	1.3	1.5	26	3	67	.10	3	0.4	0.8	25	SF2
		25	1123	6.00	19	48.11	155	45.48	14.85	2.5	2.2	38	11	151	.27	33	1.0	2.7	35	HUA
		25	1153	43.43	19	19.63	155	9.96	8.36		1.1	22	3	92	.04	5	0.5	1.0	21	SF3
		25	1422	31.83	19	24.57	155	19.87	6.29	1.3	1.3	30	8	70	.09	2	0.3	0.8	26	KAO
		25	1716	26.70	19	34.94	156	4.79	44.34	2.4	2.4	41	9	239	.10	20	1.0	1.3	41	KON
		25	2255	33.09	19	24.89	155	19.55	6.34	1.4	1.6	28	5	95	.10	2	0.4	0.8	24	KAO
		26	628	29.45	19	10.62	155	33.35	8.90	2.9	3.1	41	2	134	.13	10	0.5	0.7	40	LSW
		26	949	33.66	19	19.46	155	11.07	9.14	1.4	1.5	24	3	99	.06	5	0.6	1.0	22	SF3
		26	954	17.61	19	20.61	155	12.93	8.72	2.5	2.8	52	9	64	.13	4	0.4	0.4	45	SF2
		27	042	39.38	19	18.23	155	30.00	6.68	1.6	1.3	26	3	61	.19	6	0.5	1.5	25	LSW
		27	328	0.67	19	19.84	155	8.97	6.42	1.4	1.1	29	4	78	.12	4	0.5	0.9	28	SF4
		27	1453	40.72	19	19.00	155	13.70	6.84	1.4	1.3	27	4	72	.07	4	0.4	0.9	24	SF2
		27	1549	33.85	19	1.82	155	22.14	36.08	2.1	1.8	39	3	225	.09	17	1.0	1.1	38	LOI
		27	16 9	11.46	19	29.58	155	27.22	13.19	1.9	1.4	35	5	72	.09	5	0.4	0.5	30	DML
		28	1035	0.47	19	20.56	155	11.15	7.62	1.8	1.8	37	5	76	.11	4	0.4	0.6	33	SF3
		28	1226	6.25	19	17.78	155	21.00	7.69	1.5	1.6	27	3	125	.10	4	0.4	0.8	25	SWR
		28	1310	4.98	19	28.18	154	52.52	4.45	1.9	1.4	22	2	185	.14	5	0.9	1.9	22	SLE
		28	1657	52.66	20	0.47	155	48.67	8.24	2.3	2.1	20	3	188	.14	14	0.9	0.7	20	KOH
		28	2033	16.72	19	26.12	155	24.36	9.06	1.8	1.5	37	3	38	.12	2	0.3	0.7	33	KAO
		29	947	40.93	19	17.28	155	13.05	6.72	1.7	1.9	30	3	150	.10	1	0.5	0.8	29	SF2
		29	11 7	49.15	19	17.75	155	13.18	5.08	1.3	1.3	22	2	107	.09	1	0.6	0.9	22	SF2
		29	2012	11.26	19	24.00	155	26.64	9.86	1.6	1.1	24	1	40	.10	3	0.4	0.9	23	KAO
		29	2135	5.06	19	20.61	155	19.58	2.06	0.9	1.0	17	1	57	.11	4	0.3	1.0	17	SWR
		30	036	4.20	19	23.55	155	14.99	3.03	1.4	1.9	21	7	95	.10	2	0.3	0.3	17	SEC
		30	158	6.67	19	18.14	155	13.37	6.60	1.8	1.9	39	4	87	.11	2	0.4	0.8	36	SF2
		30	852	36.33	19	16.34	155	30.14	8.52	1.8	2.0	35	3	79	.17	2	0.4	0.9	34	LSW
		30	1448	2.75	19	20.22	155	11.35	5.75	1.3	1.1	14	1	94	.10	4	0.6	2.1	13	SF3
		30	1457	21.19	19	20.02	155	11.74	7.24	1.8	1.9	31	3	83	.07	5	0.4	0.6	28	SF3
		31	436	33.83	19	23.84	155	15.76	2.94	1.5	1.7	20	4	105	.09	1	0.3	0.2	18	SEC
		31	10 2	25.12	19	25.56	155	20.05	2.97	1.9	1.4	27	4	54	.13	4	0.4	0.9	22	KAO
		31	10 2	59.89	19	25.46	155	20.15	3.47	2.5	2.5	37	7	46	.13	4	0.3	0.8	32	KAO F
		31	10 5	59.10	19	25.68	155	19.87	3.01	1.9	1.7	25	4	67	.12	4	0.3	0.8	22	KAO F
		31	1018	6.67	19	25.51	155	20.05	2.79	2.1	2.2	29	6	53	.13	4	0.3	0.8	23	KAO
		31	1018	31.66	19	25.72	155	19.85	3.16	2.9	3.2	38	7	60	.14	4	0.3	0.6	29	KAO F
		31	1026	30.99	19	25.57	155	19.85	2.74	1.4	1.2	18	2	114	.12	4	0.5	1.1	16	KAO
		31	1041	54.39	19	25.89	155	19.48	3.43	1.4	1.4	19	4	138	.11	3	0.6	0.8	16	KAO

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	DEC	31	12 7	20.92	19	25.74	155	19.58	3.67	2.4	2.7	40	7	38	.13	4	0.3	0.7	32	KAO F
		31	1228	30.32	19	25.72	155	19.81	2.41	1.3	1.2	16	3	121	.11	4	0.5	0.9	14	KAO
		31	1321	9.18	20	26.36	156	6.55	34.87	3.1	3.1	28	9	170	.10	39	0.7	0.8	24	DIS
		31	1335	34.06	19	25.74	155	19.35	3.98	3.1	3.4	48	6	47	.13	3	0.3	0.7	43	KAO F
		31	1352	17.70	19	25.67	155	19.45	5.31	1.6	1.2	22	5	100	.10	3	0.4	1.4	18	KAO
		31	14 0	46.10	19	25.57	155	19.80	3.52	1.4	1.1	24	6	67	.12	4	0.4	0.8	20	KAO
		31	14 7	5.74	19	25.60	155	19.60	3.66	2.7	2.9	47	8	38	.13	4	0.3	0.7	40	KAO F
		31	1523	2.25	19	25.79	155	19.58	2.65	1.5	1.1	25	4	130	.14	4	0.4	0.7	20	KAO
		31	1533	35.80	19	25.11	155	19.38	6.06	3.0	2.9	42	6	38	.11	3	0.3	0.7	37	KAO F
		31	1537	51.26	19	25.26	155	19.65	3.81	1.6	1.4	22	4	93	.10	4	0.4	0.8	19	KAO
		31	1611	24.52	19	25.62	155	19.25	5.21	1.8	1.1	13	1	139	.08	3	0.5	1.2	12	KAO
		31	1613	25.91	19	25.63	155	19.43	4.31	1.5	1.0	14	1	137	.07	3	0.5	1.1	13	KAO
		31	1617	31.66	19	25.39	155	19.57	3.81	1.7	1.3	15	2	90	.12	4	0.6	1.4	14	KAO
		31	1627	57.13	19	24.98	155	19.46	3.56	2.4	1.9	24	1	59	.12	3	0.4	1.1	22	KAO
		31	1647	8.60	19	25.22	155	19.54	5.09	2.1	2.3	19	1	61	.11	3	0.5	1.3	18	KAO F
		31	1755	51.92	19	25.32	155	19.51	3.77	1.9	1.2	14	1	125	.07	3	0.5	1.0	13	KAO
		31	18 8	35.02	19	25.33	155	19.65	3.79	2.1	2.0	33	5	46	.10	4	0.3	0.7	28	KAO
		31	1813	31.46	19	25.61	155	20.24	1.11	1.5	1.2	18	4	105	.10	4	0.3	0.8	15	KAO
		31	1816	0.16	19	18.93	155	15.29	6.54	1.1	1.1	20	1	104	.09	4	0.5	1.2	20	SF1
		31	1946	6.49	19	25.13	155	19.63	4.58	2.6	2.5	43	6	37	.14	4	0.3	1.0	38	KAO F

Table 6

HVO EARTHQUAKE SUMMARY LIST 1985 M›=3.0 PAGE 1

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1985	JAN	3	1818	18.71	19	20.87	155	2.37	6.87	2.9	3.3	46	5	152	.16	2	0.5	0.6	33	SF5	
		6	938	59.94	19	22.35	155	28.74	9.83	3.0	3.3	46	7	36	.10	2	0.3	0.4	37	KAO	
		10	139	37.04	18	57.24	155	12.17	13.24	3.1	3.9	42	3	241	.12	36	1.5	0.9	36	LOI	
		10	654	26.86	18	58.34	155	12.56	13.36	3.6	4.3	46	2	238	.10	34	1.2	0.6	40	LOI	
		10	7	0 22.69	19	0.14	155	13.53	13.77	3.2	4.1	45	2	231	.11	31	1.2	0.6	33	LOI	
		10	717	21.34	18	59.16	155	12.81	13.59	3.4	4.2	42	2	271	.10	33	1.6	0.6	35	LOI	
		15	1139	25.88	19	20.56	155	12.99	8.87	3.1	3.7	49	5	65	.13	4	0.4	0.4	40	SF2	F
		21	313	23.51	19	19.68	155	11.29	8.80	2.8	3.4	51	6	92	.12	5	0.3	0.4	38	SF3	
		21	852	28.31	18	56.82	155	11.64	15.43	3.5	4.4	54	7	243	.12	37	1.2	4.0	48	LOI	
		21	855	50.83	18	56.34	155	11.57	13.45	2.7	3.5	44	2	245	.12	38	1.6	1.3	30	LOI	
		25	410	59.83	19	20.34	155	3.61	8.61	2.8	3.2	45	3	112	.12	1	0.6	0.5	39	SF5	
		28	0	6 10.12	19	27.20	154	52.66	8.36	2.7	3.3	40	3	153	.13	3	0.8	0.4	34	LER	
		31	1757	11.72	19	20.60	155	11.86	8.81	2.9	3.1	38	4	72	.13	4	0 4	0.5	33	SF3	
	FEB	7	7	7 25.82	19	19.44	155	10.37	9.23	2.9	3.4	47	7	99	.12	5	0.4	0.4	38	SF3	
		9	843	34.34	19	22.35	155	28.96	10.67	2.9	3.1	47	2	35	.12	2	0.3	0.4	44	KAO	
		10	113	40.60	19	57.65	155	30.58	12.77	3.1	3.6	50	7	170	.14	19	0.9	1.5	42	KEA	
		11	1952	17.67	19	19.76	155	12.38	8.60	2.8	3.2	45	6	82	.10	5	0.3	0.3	33	SF2	
		21	1948	29.39	19	19.68	155	12.65	9.45	4.8	4.7	48	3	80	.10	5	0.4	0.4	43	SF2	F
		24	2141	57.41	19	57.32	155	31.07	41.54	3.2	3.2	53	8	236	.10	18	0.9	1.2	45	KEA	
		25	1827	46.41	19	47.23	156	4.40	10.68	3.9	4.3	47	2	240	.12	27	1.1	0.7	46	HUA	F
		27	1339	28.16	20	10.54	155	40.57	27.01	3.2	3.0	42	6	243	.10	12	0.8	1.5	29	KOH	
		28	2	7 39.99	19	51.10	155	11.17	33.58	3.3	2.9	43	3	210	.12	17	0.9	2.0	39	KEA	
	MAR	4	045	57.27	19	19.56	155	11.80	8.90	3.2	3.5	48	7	91	.12	6	0.3	0.4	40	SF3	
		4	21	9 3.42	19	22.11	155	28.94	9.94	3.0	3.4	52	10	37	.11	2	0.3	0.4	39	KAO	F
		6	2227	23.13	19	22.16	155	28.65	10.32	3.0	3.2	49	6	37	.12	2	0.3	0.4	43	KAO	
		11	821	45.05	19	20.95	155	2.32	7.57	3.4	3.7	34	2	160	.09	2	0.6	0.4	19	SF5	F
		16	755	2.32	19	24.87	156	16.66	32.00	3.4	3.4	37	2	295	.11	39	2.1	1.7	33	KON	
		16	2126	14.06	18	58.36	155	12.43	46.52	3.4	3.5	59	11	238	.11	34	0.9	1.1	51	LOI	
		22	535	51.95	19	53.60	156	36.64	1.73	3.3	3.5	45	10	183	.12	84	1.4	0.7	26	DIS	
		22	7	7 54.85	19	53.99	156	36.64	1.56	4.1	4.3	55	7	298	.12	84	5.2	2.3	39	DIS	
		22	714	43.53	20	43.89	158	12.51	5.98	3.9	3.4	18	7	350	.90273		54.6	82.6	13	DIS	*
		29	257	45.02	19	20.38	155	11.56	9.15	3.1	3.2	55	12	78	.11	4	0.3	0.4	43	SF3	F
		30	9	3 9.01	19	16.68	155	30.87	43.23	3.4	3.5	62	14	48	.09	3	0.5	0.8	52	DLS	F
	APR	1	1131	18.48	19	21.70	155	5.08	9.00	4.1	4.3	58	10	82	.11	5	0.4	0.3	50	SF5	F
		7	22	6 38.56	19	55.83	156	40.35	26.20	3.4	4.5	52	10	251	.14	91	1.3	3.3	42	DIS	
		9	1654	34.00	19	22.98	155	30.42	9.47	3.1	3.5	51	6	33	.10	5	0.3	0.4	42	KAO	
		12	019	35.24	18	53.45	155	15.13	11.99	2.8	3.9	44	6	251	.11	37	0.9	0.7	41	LOI	L
		17	1156	51.84	19	25.61	155	29.35	9.85	2.9	3.1	55	9	36	.11	7	0.3	0.4	49	KAO	
		21	1237	41.99	19	38.87	156	1.08	14.67	3.3	3.3	43	6	225	.12	19	1.0	0.5	40	KON	
		27	754	48.37	19	13.82	155	4.65	47.86	3.7	3.6	56	9	216	.12	9	1.0	0.7	50	DEP	F
	MAY	22	210	28.28	19	39.78	156	2.21	10.94	3.2	3.3	50	7	229	.13	21	0.9	0.6	37	HUA	F
		22	2236	54.60	19	11.53	155	37.07	9.32	3.6	3.6	61	14	95	.18	6	0.4	0.6	51	LSW	
		26	2036	40.45	19	16.52	155	22.07	8.10	2.9	3.4	58	13	132	.16	5	0.4	0.5	50	SWR	F
	JUN	3	241	29.76	19	21.58	155	1.93	7.94	2.8	3.4	48	7	150	.12	4	0.5	0.4	44	SF5	
		7	2336	11.08	19	33.97	155	56.93	26.43	3.6	3.8	59	10	209	.12	9	0.7	1.2	48	KON	F

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK	
1985	JUN	10	050	32.73	19	17.91	155	47.72	10.77	3.1	3.1	46	5	88	.12	9	0.5	0.3	38	KON	
		17	231	12.49	19	15.97	155	5.01	45.68	3.6	3.8	63	13	195	.11	6	0.8	0.6	53	DEP	
		17	737	42.58	19	22.24	155	28.71	10.09	3.1	3.3	59	12	36	.11	2	0.3	0.4	51	KAO	F
		28	526	26.92	19	18.70	155	50.32	11.59	3.1	2.9	40	3	123	.12	6	0.7	0.3	34	KON	
		30	1112	24.05	19	22.42	155	17.87	26.87	4.2	4.6	51	2	27	.12	2	0.5	0.8	47	DEP	F
	JUL	7	2	0 37.46	19	10.14	155	35.92	10.81	4.3	4.5	57	11	105	.18	9	0.5	0.5	48	LSW	F
		7	2	6 40.93	19	8.95	155	35.32	7.44	3.2	3.0	49	9	119	.14	12	0.5	0.8	44	LSW	
		7	225	3.97	19	8.65	155	35.20	10.77	3.6	3.6	48	7	123	.15	12	0.5	0.5	43	LSW	
		7	6	9 15.25	19	8.32	155	35.87	10.74	3.1	3.1	51	9	123	.15	12	0.4	0.5	44	LSW	
		7	628	32.06	19	8.10	155	35.36	11.12	3.2	3.0	47	6	128	.13	13	0.3	0.3	43	LSW	
		10	2120	8.43	19	13.01	155	32.63	10.29	3.1	3.1	51	9	80	.18	6	0.5	0.6	45	LSW	
		11	1511	58.59	19	30.26	154	55.27	40.31	3.6	3.6	59	11	65	.10	4	0.7	0.9	51	LER	
		14	357	42.17	19	46.08	155	39.72	12.44	3.2	3.1	56	10	98	.12	10	0.5	0.4	48	KEA	
		25	534	13.55	19	44.69	156	29.07	35.11	3.7	4.1	58	11	238	.12	66	0.9	1.7	49	DIS	F
		31	940	15.67	18	54.77	155	15.28	11.20	2.9	3.5	45	5	247	.12	35	1.0	0.6	44	LOI	
	AUG	4	12	3 40.90	19	29.49	155	0.34	42.78	3.2	3.1	55	6	73	.11	6	0.7	1.1	49	DEP	
		4	1724	38.08	19	25.13	154	56.37	38.88	3.1	2.9	50	7	166	.11	4	0.8	0.9	45	LER	
		6	8	6 59.39	19	12.11	155	27.31	8.84	3.2	3.6	51	5	119	.19	5	0.5	0.7	42	LSW	F
		11	1857	11.91	20	0.73	156	1.56	10.10	2.9	3.3	44	7	254	.13	29	0.8	0.5	42	KOH	
		13	10	2 53.93	19	11.63	155	39.47	10.63	3.5	3.9	35	1	108	.19	7	0.7	0.8	23	LSW	F
		20	1948	54.60	21	0.50	156	10.01	32.83	3.2	3.1	44	6	302	.13	28	1.6	1.2	41	DIS	
		22	628	0.16	19	18.55	156	4.22	40.04	4.2	4.7	62	14	248	.09	21	0.7	0.6	51	KON	F
		24	111	10.65	20	32.71	155	31.19	0.70	3.1	3.4	41	6	297	.14	54	7.0	2.2	37	DIS	
	SEP	2	1951	12.42	19	19.69	155	13.75	9.66	3.3	3.5	54	10	61	.12	5	0.3	0.3	46	SF2	
		3	1122	54.75	18	52.29	155	15.43	12.91	3.1	3.7	52	6	255	.11	39	1.0	1.3	49	LOI	
		4	1327	25.48	19	21.46	155	3.24	7.23	3.0	3.1	47	5	107	.13	3	0.5	0.5	44	SF5	
		14	2359	27.89	19	20.14	155	11.60	9.70	2.9	3.3	52	9	81	.11	5	0.4	0.3	45	SF3	F
		20	536	9.65	20	27.39	157	44.34	41.79	3.3	3.6	26	1	225	.18	100	2.3	2.5	24	DIS	
		30	1928	11.20	19	48.22	155	23.05	24.39	3.0	3.5	66	17	82	.10	8	0.4	0.8	60	KEA	F
	OCT	3	612	48.71	19	46.97	155	35.72	15.31	3.7	4.1	67	19	96	.10	11	0.3	0.5	63	KEA	F
		8	1348	37.18	19	17.41	155	12.12	2.38	2.9	3.1	48	5	153	.13	2	0.4	0.6	45	SSF	
		10	10	2 26.58	19	18.83	155	52.58	11.31	3.4	3.2	53	15	175	.12	5	0.5	0.2	50	KON	
		12	844	7.08	19	21.76	155	19.83	31.01	3.6	4.0	58	7	46	.12	4	0.5	0.8	51	DEP	F
		13	115	50.67	18	27.26	156	54.14	14.79	3.0	3.0	45	5	327	.19	141	27.5	43.4	45	DIS	
		13	2312	55.91	19	50.87	155	23.41	30.42	3.0	3.1	66	17	98	.12	7	0.5	0.8	58	KEA	
		14	1913	40.87	19	20.80	155	2.95	8.67	3.1	3.3	50	7	120	.12	2	0.6	0.4	44	SF5	F
		17	8	3 46.80	19	7.21	155	34.97	11.46	3.1	3.7	28	1	139	.13	13	0.5	0.4	26	LSW	
		17	8	6 15.93	19	7.17	155	35.02	11.16	3.2	3.6	27	3	140	.13	13	0.5	0.6	24	LSW	
		17	1857	42.60	19	30.42	155	55.14	11.91	3.0	3.2	49	10	194	.15	2	0.7	0.3	45	KON	F
		25	19	6 28.48	19	22.32	155	28.53	11.02	3.1	3.4	53	8	37	.12	2	0.3	0.4	46	KAO	
	NOV	13	20	1 55.34	19	24.38	155	17.04	19.28	3.0	3.3	58	9	36	.13	1	0.4	0.6	49	DEP	F
		18	417	7.20	19	12.58	155	37.79	8.19	3.1	3.2	49	8	96	.18	5	0.6	0.7	45	LSW	
		23	853	29.11	19	16.61	155	27.83	8.87	2.9	3.2	54	8	59	.15	5	0.3	0.6	48	LSW	F
		24	1630	27.78	19	56.81	155	45.02	7.20	2.9	3.1	29	3	154	.14	14	0.6	0.6	26	KOH	
		28	829	47.58	19	18.44	155	16.70	9.16	3.0	3.2	51	8	116	.12	3	0.4	0.5	45	SF1	

YEAR	MON	DA	ORIGIN TIME HRMN	SEC	LAT N DEG	MIN	LON W DEG	MIN	DEPTH KM	AMP MAG	DUR MAG	NR	NS	GAP DEG	RMS SEC	MIN DIS	ERH KM	ERZ KM	NO FM	REMK
1985	DEC	12	9 1	22.87	20	34.68	155	45.31	25.05	4.7	4.9	55	8	208	.11	50	0.9	3.0	49	DIS F
		12	1118	39.33	19	30.96	155	54.45	11.80	4.0	4.3	57	13	171	.13	3	0.6	0.3	52	KON F
		12	2217	44.48	19	21.81	155	2.67	8.95	3.4	3.9	52	11	134	.12	4	0.5	0.3	44	SF5 F
		13	429	10.41	19	22.26	155	4.81	8.79	3.2	3.4	53	9	80	.11	4	0.4	0.3	47	SF5
		13	1320	57.37	19	19.67	155	7.76	9.34	4.0	4.1	56	10	99	.11	4	0.4	0.3	48	SF4 F
		23	638	35.12	19	21.45	155	0.74	8.71	3.2	3.8	45	6	186	.11	5	0.7	0.5	39	SF5 F
		24	14 0	14.09	19	20.94	155	8.04	8.04	2.8	3.5	53	11	77	.15	4	0.4	0.5	46	SF4
		24	2338	26.81	19	14.07	155	30.74	9.64	3.3	3.5	48	8	129	.16	2	0.6	0.6	47	LSW F
		26	628	29.45	19	10.62	155	33.35	8.90	2.9	3.1	41	2	134	.13	10	0.5	0.7	40	LSW
		31	1018	31.66	19	25.72	155	19.85	3.16	2.9	3.2	38	7	60	.14	4	0.3	0.6	29	KAO F
		31	1321	9.18	20	26.36	156	6.55	34.87	3.1	3.1	28	9	170	.10	39	0.7	0.8	24	DIS
		31	1335	34.06	19	25.74	155	19.35	3.98	3.1	3.4	48	6	47	.13	3	0.3	0.7	43	KAO F

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☆U.S. GOVERNMENT PRINTING OFFICE: 1987 786-693/79079

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